OFFICIAL GAZETTE

UNITED STATES PATENT OFFICE

VOL 32

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1885

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CLEVELAND. OHIO

OFFICIAL GAZETTE

OF THE

UNITED STATES PATENT OFFICE

VOLUME XXXII.

JULY 7 TO SEPTEMBER 29, INCLUSIVE.

1885.

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1885.

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INDEX OF PATENTS AND PATENTEES FOR THE QUARTER YEAR, JULY TO SEPTEMBER, 1885.

ERRATA.

321,541, page 37, in title, after residence of inventor, insert *assignor of one-half to John O'Brien.*

322,011, page 158, in title, after "(No specimens.)" insert *Patented in France Dec.* 20, 1884, *No.* 166,039, *and in Belgium Dec.* 22, 1884, *No.* 67,294.

322,087, page 177, in title, for "assignor of one-half" read *assignor of one-fourth.*

322,269, page 220, first claim, line 1, for "movable" read *removable.*

322,654, page 320, in title, after residence of inventor, insert *assignor of one half to Maturen R. Capron, same place.*

322,703, page 334, in title, after residence of inventor, insert *assignor of one-half to William H. Anthony, same place.*

322,771, page 348, in title, name of inventor, for "Peter Ahnlwnd" read *Peter Ahnlund.*

323,238, page 477, in title, name of inventor, for "Thomas B. Van Anken" read *Thomas B. Van Anken.*

323,965, page 673, strike out all after number—title, drawing, and claims—and insert WITHDRAWN.

324,044, page 690, in title, name of assignee, for "George Fnick" read *George Finck.*

324,123, page 711, in title, name of inventor, for "Hester Lande" read *Hester Lande.*

324,389, page 789, in title, after residence of inventors, insert *assignor of one third to Herbert Glanville, same place.*

324,414, page 796, claim, line 3, strike out comma between "structure" and "with."

325,048, page 963, in title, after residence of inventor, insert *assignor to Hamilton Disbrow, Brooklyn, and Herman G. Disbrow, New York, N. Y.*

325,162, page 988, fourth claim, line 5, for "diaphragm" read *diaphragms.*

325,402, page 1063, in title, after residence of inventor, insert *assignor to Schwob Frères.*

325,436, page 1072, sixth claim, line 5, insert *permitting* between "for" and "the."

325,646, page 1128, in title, name of inventor, for "John C. Antley" read *John C. Antley.*

325,938, page 1198, in title, for "assignor" read *assignor of one half.*

326,101, page 1245, in title, name of inventor, for "Nicholas Harleston Brown" read *Nicholas Harleston Brown.*

326,123, page 1219, first claim, line 2, strike out hyphen between "armature" and "rods" and insert comma instead.

326,032, page ~~1200~~ 1221, strike out all after number—title, drawing, and claims—and insert WITHDRAWN.

326,181, page 1266, second claim, line 3, for "sheath" read *sheare.*

326,238, page 1280, in title, name of inventor, for "James W. Blessing" read *James H. Blessing.*

326,265, page 1288, strike out all after number—title, drawing, and claims—and insert WITHDRAWN.

326,327, page 1305, in title, for "assignor" read *assignor of one half.*

326,354, page 1312, strike out all after number—title, drawing, and claims—and insert WITHDRAWN.

326,521, page 1349, first claim, line 2, and second claim, line 2, insert comma after lubricant.

326,722, page 1411, strike out all after number—title, drawings, and claims—and insert WITHDRAWN.

326,773, page 1421, strike out all after number—title, drawing, and claims—and insert CANCELED.

327,025, page 1491, strike out all after number—title, drawing, and claims—and insert WITHDRAWN.

327,265, page 1548, claim, line 3, for "I and I" read I' *and* I^2.

327,487, page 1596, in title, for "Anti-Induction Cable" read *Anti-Induction Electric Cable.*

16,159, (design,) page 140, name of assignee, for "The Harden Hand Fire Extinguisher Company" read *The Harden Hand Grenade Fire Extinguisher Company.*

16,194 and **16,195,** (designs,) page 655, strike out all after numbers, and insert CANCELED.

16,201, (design,) page 656, after residence of inventor, insert *assignor to William V. Channon and Joseph W. Emery, Quincy, Ill.*

Decision of United States courts, page 1372, first column, line 31, for "creditable" read *credible.*

Decision of United States courts, page 651, second column, title to first illustration, for "Thompson's Bung and Bushing, August 5, 1870," read *Thompson's Bung and Bushing, August* 5, 1873.

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Joseph Locke 1128

OFFICIAL GAZETTE

OF THE

UNITED STATES PATENT OFFICE.

JULY–SEPTEMBER, 1885.

THE OFFICIAL GAZETTE

OF THE

United States Patent Office.

[BY AUTHORITY OF CONGRESS.]

VOL. 32—No. 1. TUESDAY, JULY 7, 1885. PRICE—$5 per year.

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The Official Gazette.

The OFFICIAL GAZETTE is published every Tuesday, simultaneously with the weekly issue of patents. From January 1, 1872, (the commencement of its publication,) to June 30, 1883, it was published and bound in semi-annual volumes; since July 1, 1883, in quarterly volumes. All subscriptions must commence with the beginning of a volume; none taken for less than three months. Terms: To all subscribers within the United States and Canada, $5 per annum; to foreign subscribers, $7; single copies, 10 cents; bound semi-annual volumes, (prior to June 30, 1883,) full sheep, $4 per volume; bound quarterly volumes, (subsequent to July 1, 1883,) full sheep, $2.75 per volume. No club rates. *Payment in advance.* All orders should be addressed to "The Commissioner of Patents, Washington, D. C."

Indexes to Patents on Electricity.

Appendix No. 2 to the index to patents relating to electricity, covering the period of time from July 1, 1882, to June 30, 1883, has been issued, and is now for sale. These indexes, arranged alphabetically, numerically, and by classes, are completed to June 30, 1883, and comprise the following volumes:

Vol. 1. Index to patents relating to electricity granted by the United States prior to June 30, 1881, with an appendix, July 1, 1881, to June 30, 1882. One volume, 250 pages. In paper covers, $3; bound, $5.

Vol. 2. Appendix No. 2, July 1, 1882, to June 30, 1883. One volume, 50 pages. In paper covers, $1.50.

Vol. 3. Appendix No. 3, July 1, 1883, to June 30, 1884. One volume, 60 pages. In paper covers, $1.50.

Indexes to Foreign Patents.

The following indexes to foreign patents have been translated, compiled, and published under the authority of the Commissioner of Patents, and may be obtained as a Patent Office publication at the prices given below.

Issue of July 7, 1885.

Patents	522	No. 321,413 to No. 321,934, inclusive
Designs	14	No. 16,145 to No. 16,158, inclusive.
Trade-Marks	24	No. 12,377 to No. 12,400, inclusive.
Labels	2	No. 4,497 to No. 4,498, inclusive.
Reissues	5	No. 10,619 to No. 10,623, inclusive.
Total issue	567	

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States.	Patents and Designs.	Trade-Marks and Labels.	States.	Patents and Designs.	Trade-Marks and Labels.
Alabama	2	.....	Nebraska	1	.....
Arizona Territory	.....	.....	Nevada	.....	.....
Arkansas	.....	.....	New Hampshire	5	.....
California	18	.....	New Jersey	24	.....
Colorado	.....	.....	New Mexico Territ'y	.....	.....
Connecticut	23	.....	New York	88	9
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Delaware	.....	.....	Ohio	41	2
District of Columbia	1	.....	Oregon	1	.....
Florida	.....	.....	Pennsylvania	63	1
Georgia	2	.....	Rhode Island	7	.....
Idaho Territory	.....	.....	South Carolina	3	.....
Illinois	42	2	Tennessee	3	.....
Indiana	9	1	Texas	8	.....
Indian Territory	.....	.....	Utah Territory	.....	.....
Iowa	5	.....	Vermont	.....	.....
Kansas	6	.....	Virginia	4	.....
Kentucky	9	.....	Washington Territ'y	.....	.....
Louisiana	1	.....	West Virginia	3	.....
Maine	6	1	Wisconsin	29	.....
Maryland	5	.....	Wyoming Territory	.....	.....
Massachusetts	43	2	United States Army	.....	.....
Michigan	27	2	United States Navy	.....	.....
Minnesota	7	2			
Mississippi	1	.....	Total to citizens of the United States	506	22
Missouri	17	.....			
Montana Territory	2	.....			

TO CITIZENS OF FOREIGN COUNTRIES.

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Austria-Hungary	.....	.....	Ireland	1	.....
Barbadoes	.....	.....	Mexico	.....	.....
Belgium	1	.....	New Zealand	1	.....
Bermuda	.....	.....	Russia	1	.....
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Chili	.....	.....	Sweden	1	.....
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Cuba	.....	.....	West Indies	.....	.....
Denmark	.....	.....			
Ecuador	.....	.....	Total to citizens of foreign countries	30	4
England	12	.....			
France	1	.....			

DESIGNS.

16,145.—STOVE.—*H. Clay Bascom*, Troy, *Tobias S. Heister*, Lansingburg, N. Y., assignors to *The Richmond Stove Company*, Norwich, Conn. Application filed May 25, 1885. Term of patent 7 years.

16,146.—TOY BANK.—*Henry C. Hart*, Detroit, Mich. Application filed April 24, 1885. Term of patent 7 years.

16,147 and 16,148.—RUG.—*R. Paul Hemming*, Philadelphia, Pa., assignor to *George W. Ennis & Co.*, same place. Applications filed June 1, 1885. Term of patents 3½ years.

16,149.—CHAIN OR BRACELET.—*Joseph F. Infeld*, Newark, N. J. Application filed September 8, 1884. Term of patent 7 years.

16,150.—THAT.—*August Ledig*, Philadelphia, Pa. Application filed May 14, 1885. Term of patent 3½ years.

16,151.—THERMOMETER-BACK.—*Charles H. Myers*, Phelps, N. Y. Application filed April 30, 1885. Term of patent 14 years.

16,152.—BOTTLE-STAND.—*Frederick A. Ohrenschall*, Baltimore, Md., assignor to *John H. Winkelmann*, same place. Application filed June 2, 1885. Term of patent 3½ years.

16,153.—FIRE-PLACE LINING.—*James Austin Page*, Philadelphia, Pa., assignor to *The Abram Cox Stove Company*, same place. Application filed May 15, 1885. Term of patent 3½ years.

16,154.—RUG.—*Adolph Petzold*, Philadelphia, Pa., assignor to *John Bromley & Sons*, same place. Application filed May 7, 1885. Term of patent 3½ years.

16,155.—RUG.—*Adolph Petzold*, Philadelphia, Pa., assignor to *John Bromley & Sons*, same place. Application filed May 25, 1885. Term of patent 3½ years.

16,156.—RUG.—*Adolph Petzold*, Philadelphia, Pa. Application filed April 11, 1885. Term of patent 3½ years.

16,157.—CLOCK-STAND.—*William S. Weiss*, New York, N. Y. Application filed March 9, 1885. Term of patent 7 years.

16,158.—ORNAMENTATION OF A BELT.—*Leopold Werner*, Newark, N. J. Application filed April 9, 1885. Term of patent 3½ years.

TRADE-MARKS.

[Certificates of registration of Trade-Marks numbered 8,191 and upward are registered under the act of March 3, 1881.]

12,377.—VAPOR COOKING AND HEATING STOVES.—*American Vapor Stove Company*, Cleveland, Ohio. Application filed June 4, 1885.

"The words 'FRONT RANK.'"

12,378.—SMOKING AND CHEWING TOBACCO.—*Charles W. Allen Company*, Chicago, Ill. Application filed April 23, 1885.

"A picture of the American standard flag, with the arbitrarily-selected words 'OUR FLAG,' in connection with the representative heads and faces of a German, Irishman, Yankee, and American Indian."

12,379.—WOOD-BURNING BASE-HEATING STOVE.—*Culter & Proctor Stove Company*, Peoria, Ill. Application filed June 6, 1885.

"The word 'PEORIA.'"

12,380.—GRAY AND BLEACHED SHEETINGS, SHIRTINGS, DRILLS, AND JEANS.—*Fearon, Low & Co.*, New York, N. Y. Application filed May 26, 1885.

"The Chinese picture of a bat."

12,381.—CERTAIN-NAMED ARTICLES OF STATIONERY.—*Friedrich Gotthelf Froeschcis* and *Carl Ludwig Heinrich Grasser*, Nuremberg, Bavaria, Germany. Application filed November 21, 1884.

"The representation of a stringed musical instrument commonly known as a 'LYRA.'"

12,382.—STRAIGHT FLOUR.—*Frank A. Johnston*, Winona and Wabasha, Minn. Application filed June 11, 1885.

"The word-symbol 'DIAMOND JO' and its equivalent, the figure of a diamond and the word 'JO.'"

12,383.—PATENT FLOUR.—*Frank A. Johnston*, Winona and Wabasha, Minn. Application filed June 11, 1885.

"The arbitrary words 'SNOW FLAKE.'"

12,384.—COFFEE AND TEA URNS AND POTS.—*Georgine A. Jones*, New York, N. Y. Application filed June 10, 1885.

"The arbitrary word 'EUREKA.'"

12,385.—COLORED DRILLINGS.—*Massachusetts Cotton Mills*, Boston, Mass. Application filed April 30, 1885.

"A rectangular red ticket, upon which is prominently printed in gold the letter 'B.'"

12,386.—FRUIT-FLAVORS.—*McMonagle & Rogers*, Middletown, N. Y. Application filed May 18, 1885.

"A sphere, the title 'PREMIUM FRUIT-FLAVORS,' and scrolls, arranged as follows: The title 'PREMIUM FRUIT-FLAVORS' is written across the upper portion of the sphere. Through the center of the sphere, making, as it were, the horizontal diameter of the sphere, a scroll, nearly in the form of the figure 8, is drawn, and through the lower portion of the sphere there is a scroll, nearly in the form of a half-circle. The upper portion of this scroll touches the scroll that is drawn through the center."

12,387.—GLOSS LUMP-STARCH.—*Wm. F. Piel & Co.*, Indianapolis, Ind. Application filed June 12, 1885.

"The word 'CHAMPION.'"

12,388.—CERTAIN-NAMED MEDICINES.—*F. Ad. Richter & Co.*, Nuremberg and Rudolstadt, Germany, Vienna, Austria-Hungary, and Rotterdam, Netherlands. Application filed May 6, 1885.

"The representation of a red anchor in an oval space or field."

12,389.—CHAMPAGNE-WINES.—*Rheingauer Schaumweinfabrik Schierstein*, Schierstein, Germany. Application filed June 5, 1885.

"Three interlocking circles forming a triangular figure with a comet in the center of each circle."

12,390.—WHEAT-FLOUR.—*Steelton Flouring Mill Company*, Steelton, Pa. Application filed June 11, 1885.

"The word or title 'CRYSTAL.'"

12,391.—REMEDY FOR MALARIAL DISEASES.—*George Van Den Hoeck Dunn*, New York, N. Y. Application filed March 12, 1885.

"The arbitrary term 'AVERY'S BLOOD DISINFECTANT' within a circular border, the word 'AVERY'S' being arranged in a semicircle within the upper part of the border, the word 'DISINFECTANT' being arranged in a semicircle within the lower part of the border, and the word 'BLOOD' being arranged across the center of the circle formed by the border."

12,392.—AXES.—*Jennie C. O. Wetmore*, Adrian, Mich. Application filed May 13, 1885.

"The word 'WETMORE' and a monogram of the letters 'C I W.'"

12,393.—MEDICINE FOR CERTAIN NAMED DISEASES.—*Herman Knorr*, Detroit, Mich. Application filed June 1, 1885.

"The words 'HIEN FO .G ESSENCE.'"

12,394.—WOVEN COTTON GOODS, BLEACHED OR UNBLEACHED.—*Massachusetts Cotton Mills*, Boston, Mass. Application filed April 30, 1885.

"The figure of a horse in the act of flying or springing into the air."

12,395.—FLAVORING EXTRACTS AND POWDERS.—*M. Michaelis & Son*, New York, N. Y. Application filed May 8, 1885.

"The word and representation of an eagle."

12,396.—SEWING-MACHINES AND SEWING-MACHINE ATTACHMENTS AND SUPPLIES.—*The Singer Manufacturing Company*, New York, N. Y. Application filed June 8, 1885.

"The representation of a sewing-machine shuttle and bobbin, behind which are two sewing-machine needles crossing each other, with a thread passing through their respective eyes and formed into a letter S, and the word 'SINGER.'"

12,397.—BITTERS.—*Rudolph Sternsdorf*, Buffalo, N. Y. Application filed April 29, 1885.

"The word 'CAPITOL.'"

12,398.—TOOTH-POWDER.—*E. Clifford Wardsworth*, Brooklyn, N. Y. Application filed May 28, 1885.

"A representation of a crown with an encircling border having crosses radiating therefrom at intervals."

12,399.—MOWING AND REAPING MACHINES AND GRAIN-BINDERS.—*Walter A. Wood Mowing and Reaping Machine Company*, Hoosic Falls, N. Y., and Chicago, Ill. Application filed June 11, 1885.

"A cut or picture of a finger-bar and of a sickle or cutter-bar of a mowing or reaping machine crossing each other, and above them the words 'WALTER A. WOOD.'"

12,400.—CERTAIN ELECTRO-HOMEOPATHIC MEDICAMENTS AND HOMEOPATHIC EXTRACTS AND TINCTURES.—*Albert Sauter*, Genova, Switzerland. Application filed May 26, 1885.

"The representation of a star having five points."

LABELS.

4,497.—Title: "VAMPIRE BLACK" (FOR A WATERPROOF LEATHER DRESSING.)—*Canton Paint and Oil Company*, Saco, Me., and Boston, and Canton, Mass. Application filed June 8, 1885.

4,498.—Title: "CATARRH REMEDY."—*Andrew J. McFarland*, St. Clairsville, Ohio. Application filed June 6, 1885.

This number of THE OFFICIAL GAZETTE is gotten out by Mr. NORRIS PETERS, the former and present contractor, at my special request. The illustrations are from the weekly issue of reproductions by other parties. If there are errors or imperfections in such reproductions Mr. PETERS is not responsible therefor, nor is he responsible for the delay in this publication.

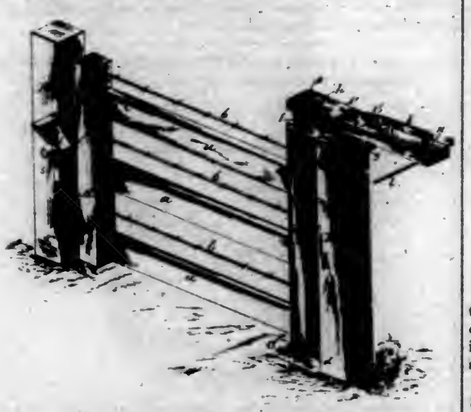
M. M. Montgomery

Commissioner of Patents.

PATENTS

GRANTED JULY 7, 1885.

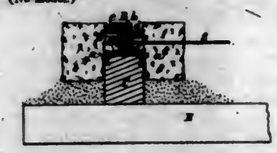
321,413. FARM-GATE. LEONIDAS T. AKIN, Fort Worth, Tex. Filed Aug. 23, 1884. (No model.)



Claim.—1. In a swinging gate, the combination of a plate provided with notches upon its upper outer end and connected to the upper end of the inner gate-post, a lever pivoted to the plate and connected with the upper pintle of the gate, a latch pivoted to the lever and extending down through a slot therein to engage with the notches in the plate, and suitable cords and pulleys for operating the latch and lever, substantially as and for the purpose set forth.

2. The combination of a slotted and notched plate connected to the upper end of the inner gate-post, a lever pivoted to said plate, a pivoted latch extending down through a slot in the lever to engage with the notches of the plate, and a pivoted gate having a pin in its batten extending up through slots in the plate and lever, as and for the purpose set forth.

321,414. RAIL FOR STREET-RAILWAYS. ELZUR BARNES, Boston, Mass., assignor of one-half to Calvin A. Richards, same place. Filed Feb. 7, 1885. (No model.)

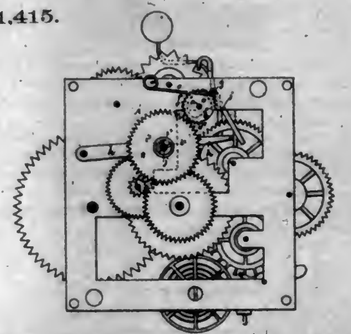


Claim.—1. Two rails, each having a base, A, vertical web D, and head B, provided with a flange, *d*, in combination with two fish-plates, *e* and *f*, for joining the rails, of different widths, each of a width equal to the depth of the corresponding space between the tread or flange of the head and the base, substantially as specified.

2. In combination with longitudinal timber C, two rails, each composed of base A, vertical web D, and head B, substantially as described, and the two rails joined by means of fish-plates *e* and *f*, substantially as specified.

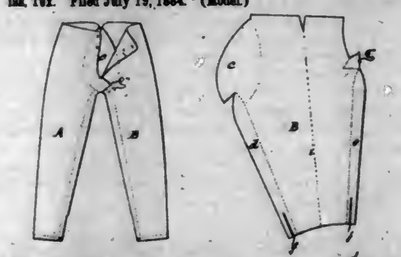
321,415. ALARM-CLOCK. TITUS L. BISSELL, Charleston, S. C. Filed Dec. 12, 1884. (No model.)

321,415.



Claim.—In combination with an alarm-clock as above described, the combination of pinion *d*, meshing with wheel *k* and rigidly secured on the outer end of shaft *a*, eccentric *c*, spring *e*, cam-wheel *b*, also rigidly secured on shaft *a*, and rod *f*, extending downward from shaft *g*, all substantially as shown and described.

321,416. DRAWERS AND PANTALOONS. SAMUEL D. BLAKE, Dallas, Tex. Filed July 19, 1884. (Model.)



Claim.—1. A pair of pantaloons, each leg of which is composed of a single piece, having extended portions *c*, *g*, *d*, and *e*, as described, overlapped and united by two lines of stitching, as described.

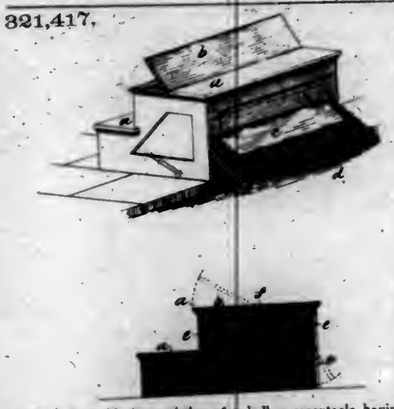
2. A pair of pantaloons, each leg of which is composed of a single piece, having the two edges *d* and *e* extended from the crotch to the foot of the leg, said extended portions being lapped one upon the other and united by double lines of stitching, one in front and the other in rear of the usual line of the inside seam, whereby the leg is given a double thickness on the inside, and a smooth unbroken surface, adapting them to be worn in the saddle with comfort.

3. In a pair of pantaloons or drawers, a leg having the slits or incisions at its lower end, said incised portion consisting of two thicknesses lapped and united in the manner described and shown, whereby the formation of a seam at the end of the slit is avoided and increased strength secured.

321,417. STREET CARRIAGE-BLOCK. DAVID H. BLASCOW, Milwaukee, Wis., assignor of one-half to George Sylvester, same place. Filed May 19, 1885. (No model.)

Claim.—1. A carriage or horse block consisting of a hollow receptacle having one or more steps on one or more sides, and provided with a lid-covered opening in its top and a door-closed opening on one side, near the bottom, and adapted for the reception of ashes or other refuse, substantially as set forth.

321,417.



2. A horse-block consisting of a hollow receptacle having one or more steps on one or more sides, and provided with a lid-covered opening in its top adapted for the reception of ashes or other refuse, substantially as set forth.

3. In a horse-block, the combination of a hollow receptacle, *a*, having a discharging-aperture covered by door *c*, and an opening in the top provided with the spring-closed lid *b*, substantially as set forth.

321,418. TURN-UP BED. LEANDER W. BOYNTON, Hartford, Conn. Filed Feb. 21, 1884. (No model.)

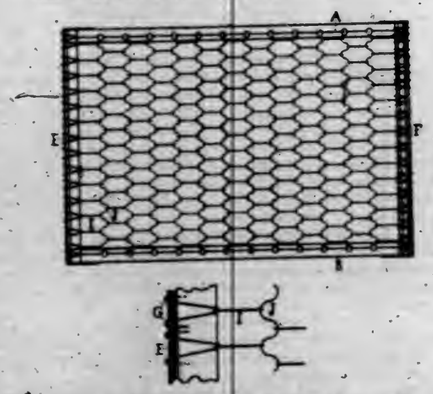


Claim.—1. The frame A, provided with legs *f f'* and fulcrum *i i'*, in combination with the standards *h h'*, which are provided with concave rollers *l l'* and with coil-springs *m m'*, adapted to run upon said rollers, substantially as set forth.

2. The frame A, the standards *h h'*, and the concave bracketed rollers *l l'*, in combination with the springs *m m'*, adapted to run upon said rollers, substantially as set forth.

3. In a turn-up bed, the rollers *l'*, in combination with the springs *m m'*, adapted to run thereon, one end of said springs being immediately attached to the standards *h h'*, and the other end of the same being immediately attached to the mattress-frame A, substantially as set forth.

321,419. SPRING BED-BOTTOM. LEANDER W. BOYNTON, Hartford, Conn. Filed Mar. 25, 1884. (No model.)



Claim.—1. The combination of a bed-bottom frame with a series of two or more V-shaped springs, G, and with a series of two or more serpentine springs, J, and with a series of two or more hook-springs, I all substantially as described and shown.

2. In a bed-bottom, the wire spring bent centrally in V form, and having its diverging branches extending rearwardly and curved downwardly, and terminating in forwardly-extending parallel prongs to be inserted into the rail, substantially as specified.

321,420. HORSESHOE-BAR. ARTHUR T. CULVER, Chicago, Ill., assignor to Josiah J. Parkhurst, same place. Filed July 28, 1884. (No model.)



Claim.—1. A bar of horseshoe-iron having its outer edge or surface beveled or rounded, substantially as and for the purposes set forth.

2. A bar of horseshoe iron having its outer edge or surface beveled or rounded to a sufficient extent to compensate for the swaging of the metal consequent upon creasing the same in the forming of horseshoes, substantially as shown and described.

3. As a new article of manufacture, a bar of horseshoe-iron having both its outer and inner edges or surfaces beveled or rounded, substantially as and for the purposes specified.

321,421. DEVICE FOR TAPPING BARRELS. LEVI DAROHE and NAPOLEON BOURET, Lynn, Mass. Filed Apr. 4, 1884. (No model.)

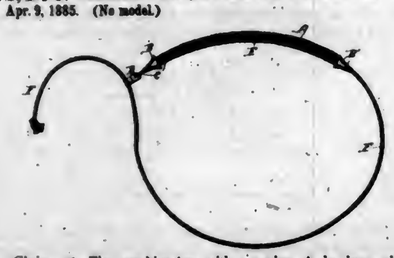


Claim.—1. The combination, with a faucet and stuffing-box, of a device for clamping the same to a barrel-head without positively securing the same thereto, consisting of an adjustable bar, F, held to the barrel by means of its ends fitting the barrel-chines, the said bar bearing upon a part of the stuffing-box of the faucet, and clamping the same to the barrel-head, all substantially as described.

2. In combination with the faucet, the stuffing-box, and the holding-lever, arranged substantially as described the screws 2 2, substantially as and for the purpose stated.

3. The combination, with the faucet and stuffing-box, of the clamping devices therefor, consisting of the divided bar connected by a collar and set-screw, the ends of said bar bearing on the chines, and the spring *e* beneath the bar, all as set forth.

321,422. ARMLET. HOMER B. DITWILER, Mansfield, Ohio. Filed Apr. 9, 1885. (No model.)



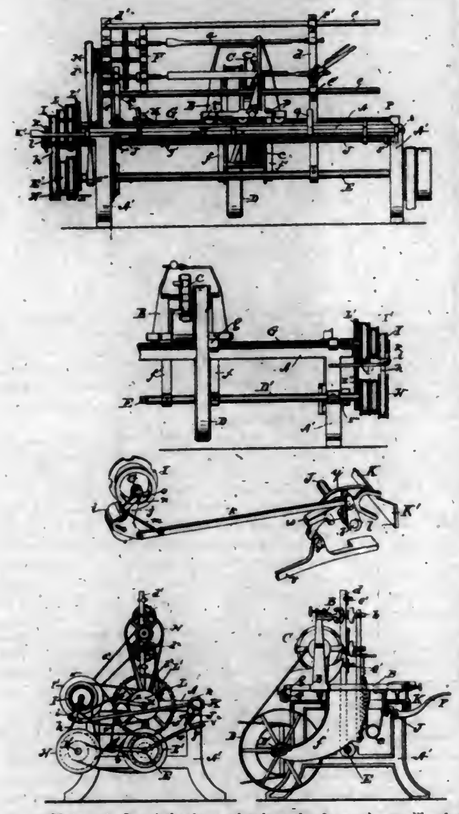
Claim.—1. The combination, with a spring, A, having a clasp at one end, of a cord connected with the opposite end, having a free end extending outside of said spring and adapted to be held by the clasp, substantially as described.

2. The combination, with a spring, A, having a slip-clasp at one end, of a cord connected with the opposite end, having a free end extending outside of said spring and adapted to be drawn through and be held by said slip-clasp, substantially as described.

3. The combination of a spiral spring, A, with a clasp fast on one end of said spring, and a cord having one end adapted to be held by said clasp and passing through the opposite end of said spring and connected with the end thereof to which the clasp is attached, substantially as described.

4. The combination of the spring A, having caps B B', the clasp D, pivotally attached to cap B, and the cord F, connected with said cap and passing through cap B' and having its loose end passed through the clasp D, substantially as described.

321,423. LATHE FOR TURNING IRREGULAR FORMS. WILLIAM H. DOANE and GEORGE W. BOURER, Cincinnati, Ohio. Filed Aug. 9, 1883. (No model.)



Claim.—1. In a lathe for turning irregular forms, the combination, with the main driving-shaft and screw-counter-shaft by which the carriage is actuated, of a belt-connection between said shafts, a tightening-idler mounted in a swinging support pivoted to the counter-shaft, a catch connected with the swinging support, by which the idler is held in operative position, said catch adapted to be actuated to release the swinging support and idler by the motion of the carriage, substantially as described.

2. In a lathe for turning irregular forms, the combination of a differential or double-faced pulley mounted upon the main driving-shaft, a corresponding differential pulley mounted upon a counter or carriage-driving shaft, a double belt-connection between said pulleys, a tightening-idler mounted upon a radius-arm swinging from the end of the main shaft, the idler being located above and below said belts, and mechanism, substantially as described, for operating the radius-arm by the movement of the carriage, whereby the idler is elevated or lowered to its extreme limit for bringing it into operative contact with one or the other of said belts, and a differential speed thus transmitted to the carriage-driving shaft, substantially as and for the purpose specified.

3. In a lathe for turning irregular forms, the combination of a differential or double-faced pulley mounted upon the screw-shaft, a corresponding differential pulley mounted on a counter or spindle-driving shaft, a tightening-idler mounted upon an arm swinging from the end of the screw-shaft, a double belt-connection between said pulleys above and below said idler, a radius-bar on the main driving-shaft, differential pulleys with double belt-connections on the main driving-shaft and carriage-driving shafts, respectively, a tightening-idler mounted on the radius-bar, a link connecting the arm on the screw-shaft with the radius-bar so that they will move in unison, and mechanism, substantially as described, whereby the radius-bar, by the movement of the carriage, is elevated or lowered to its extreme limit, and the idlers thus brought into operative contact with the belts, to transmit a differential speed to the carriage and spindle driving shafts, substantially as and for the purpose specified.

4. In a lathe for turning irregular forms, the combination of differential pulleys on the main and screw driving shafts, corresponding differential pulleys on the carriage and spindle driving shafts, double belt-connections between each set of pulleys, an idler mounted upon a radius-arm swinging from the main shaft, a similar idler mounted upon an arm on the screw-shaft, said idlers being adapted to be brought into operative contact with the belts by the movement of the carriage, a link connecting said arms together so that they will move in unison, and mechanism, substantially as described, for actuating the radius-arm and causing the idlers to assume an intermediate position between the belts of each belt-connection, and thus be out of operative contact therewith, substantially as and for the purpose described.

5. In a lathe for turning irregular forms, the combination of the differential or double-faced pulleys on the main driving-shaft and screw-driving shaft, corresponding differential pulleys on the carriage and spindle driving shafts, double belt-connections between each set of pulleys, tightening-idlers mounted upon arms swinging from the main and screw driving shafts, and adapted to be brought into operative contact with the belt-connections, respectively, as the swinging arms are elevated or lowered to their extreme limits, a connection between said arms so that they will move in unison, a catch-block for holding the arm on the main shaft in an elevated position, and holding the idlers in operative contact with one belt of each belt-connection, and an actuating-lever actuated by the movement of the carriage for releasing the catch-lever and allowing the idlers to fall or be depressed, and thus be brought into operative contact with the other belt of each belt-connection, whereby a differential speed is transmitted to the carriage and spindle driving shafts, substantially as described.

6. In a lathe of the character described, the combination of the differential driving and transmitting pulleys H E' I' L, provided with double belts connecting them together in pairs, as described, the belt-tightening idlers located above and below the two belts of each pair, respectively, whereby they will be brought into operative contact therewith as they are elevated or lowered to their extreme limits, the swinging arms carrying said idlers connected together by a link so as to move in unison, a holding-lever by which said arms and idlers are retained in one position against their gravitating tendency toward the other, and a sliding bar adapted to hold and release said lever, and actuated by the movement of the carriage, substantially as and for the purpose described.

7. In a lathe of the character described, the sliding bar J, provided with mechanism for its actuation by the cutter-carriage, and with the curved catch-block *y*, in combination with the extended arm *v*, pivoted to the main shaft E, and provided with the projection v^2, the idler mounted upon the other end of the arm *v*, and the differential pulleys and belt-connections, substantially as and for the purpose described.

8. In a lathe for turning irregular forms, the combination of a cutter-carriage reciprocated by a screw-shaft, with a fixed pulley on said shaft for imparting backward motion thereto, driven by a belt-connection normally loose, but held in operative contact by an adjustable tightening-idler, a loose pulley on said shaft adjacent to the fixed pulley, and provided with lateral projections for engaging said screw-shaft through said fixed pulley as a clutch, and mechanism, substantially such as described, for shifting said loose pulley and said belt-tightening idler into and out of engagement, substantially as set forth.

9. In a lathe for turning irregular forms, the combination of a reciprocating cutter-carriage with a screw-shaft for driving the same, and a work-carrying frame, a loose pulley for giving forward motion to the carriage, adapted to be shifted into and out of connection with a fixed clutch upon the screw-shaft, provided with a shifting yoke, and a connected system of levers and an attached weight for simultaneously releasing the clutch-connection and withdrawing the work-frame from the cutter, and a catch for holding said pulley and work-frame in operative positions, arranged to be tripped and released by the movement of the carriage, substantially as set forth.

10. In a lathe for turning irregular forms, the combination of the screw-shaft, reciprocating cutter-carriage, work-carrying frame, loose pulley on the screw-shaft adapted to engage the fixed clutch, the shifting yoke and connected system of levers, the catch-arm arranged in the path of the carriage, and the weight arranged as described to increase the effective leverage in falling when the catch is released, substantially as set forth.

11. In a lathe for turning irregular forms, the moving carriage, the catch-arm *t*, arranged in the path of the carriage, bell-crank r^3, connected with said catch, a weighted lever connected with said bell-crank by a link, and a link, r^2, provided with a slot, s^2, engaging a pin upon the vibrating frame, combined substantially as set forth.

12. In a lathe for turning irregular forms, the vibrating work-carrying frame, the advancing-spring *c*, for impelling said frame toward the

cutters, and a weighted lever, and connections, substantially as described, for withdrawing said frame from engagement with the cutters, in combination, substantially as and for the purpose set forth.

13. In a lathe of the character described, a screw-shaft for driving the cutter-carriage, a loose belt-connection between said screw-shaft and the driving-pulley shaft, a tightening-idler arranged to disengage and engage said belt, and connecting mechanism, substantially as described, leading to the cutter-carriage, whereby the idler is shifted by the movement of the carriage, combined substantially as set forth.

14. In a lathe of the character described, the combination of the pulley I, and its belt-connection for giving backward motion to the carriage, the tightening-roll *i*, controlled by the carriage through mechanism substantially such as described, and a friction clutch or brake operating on said pulley or shaft when the belt-roll is released to check the momentum of the shaft when the driving-power is withdrawn, substantially as set forth.

15. In a lathe of the character described, the combination of a screw-driven cutter-carriage with the pulley I on the screw-shaft, the swinging arm *j*, pivoted in the axis of said pulley, the friction clutch or brake *o*, arranged to bear on said pulley, the actuating-crank and connecting-rod *n m*, and the controlling-link *k*, connecting with the arm *j* and rod *m*, in combination with suitable mechanism adapted to hold said link and retain said friction-clutch inoperative until released and rendered operative by the movement of the carriage, substantially as and for the purpose set forth.

16. In a lathe of the character described, the combination of the screw-shaft G, its pulley I, belt-connection, tightening-idler mounted in the arm *j*, pivoted to the shaft G, the catch-lever *k*, connected with said arm *j*, the sliding bar K, having tripping-head K', for engaging and releasing said catch-lever, and mechanism, substantially as described, for actuating said catch-lever, substantially as and for the purpose specified.

17. In a lathe of the character described, the combination of the movable carriage, screw-shaft G, pulley I, belt-connection, the idler *i*, mounted in the arm *j*, pivoted to the shaft G, the catch-lever *k*, sliding bar K, actuated by the carriage to release the catch-lever, the crank *l*, and manipulating-handle for returning the catch-lever to its normal position of engagement, substantially as described.

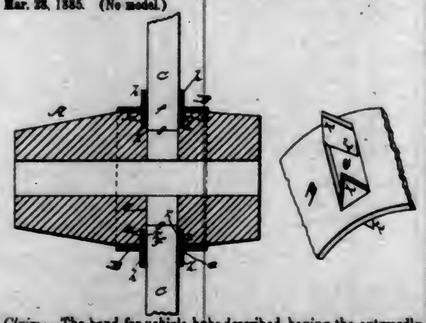
18. In a lathe of the character described, the combination of the movable carriage, screw-shaft G, pulley I, loose belt-driving connection, the idler *i*, mounted in the arm *j*, pivoted to the shaft G, the catch-lever *k*, connected to said arm *j*, the sliding bar K, with tripping-head K', actuated by the carriage, and a spring, *s*, for restoring it to its normal position after the actuation by the carriage, substantially as described.

19. In a lathe of the character described, a swinging work-carrying frame, a spindle-shaft journaled therein and provided with a dog or stop, d^2, in combination with an arresting-standard arranged in such relation to the dog as to serve as a stop therefor when the frame is swung toward said stop, substantially as set forth.

20. In a lathe for turning irregular forms, the combination of a spindle-shaft having bearings in the vibrating frame, provided with a dog, d^2, on said spindle, with an arresting-standard, d^3, pivoted to the lathe-bed, and adapted to have a limited oscillation into the path of movement of the dog against the pressure of a spring, substantially as and for the purpose set forth.

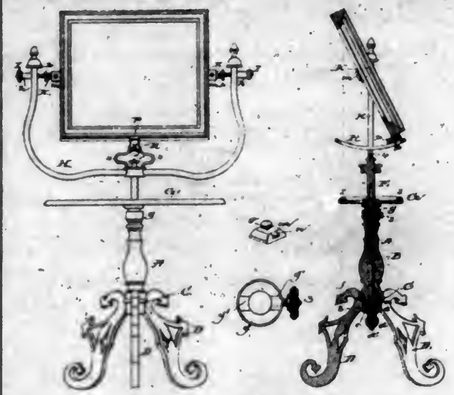
21. In a lathe of the character described, the vibrating frame carrying a spindle, arresting mechanism, substantially as described, for stopping said spindle, and an auxiliary driving-belt leading from the carriage-driving mechanism to the spindle, said belt arranged to be slack when the frame is in operative relation to the cutter, but tightened by the movement of the frame away from the cutter, substantially as set forth.

321,424. VEHICLE-HUB. JACOB DUMP, Chillicothe, Ohio. Filed Mar. 28, 1885. (No model.)



Claim.—The band for vehicle-hubs described, having the outwardly and inwardly turned lugs, *h h'*, arranged at opposite ends of the slot *e*, the latter adapted to be bent inwardly to secure the band to the hub, and to be bent in a horizontal position for placing and removing the same from the hub, as described, and for the purpose set forth.

321,425. PICTURE-EXHIBITOR. GEORGE F. DYAR, Chelmsford, Mass. Filed Nov. 17, 1884. (No model.)



Claim.—1. The combination, with the body suitably supported on legs, having a central longitudinal bore, and provided with a screw-rod rigidly secured at its bottom in the bore of said body and of less diameter than the bore, of an interiorly screw-threaded sleeve fitting the screw-rod and adapted to be moved on the said rod in the bore of the body, and provided in its upper end with a yoke having suitable picture-holding devices, substantially as described.

2. The combination of the hollow body provided with a metallic plug having a screw-threaded orifice with a screw-rod passing through the plug and projecting into the bore of the body, and means for securing the head of the screw-rod to the plug, substantially as described.

3. The combination, with the hollow body provided with the metallic plug having a screw-threaded orifice, of a screw-rod projecting through the orifice in the plug and into the hollow body and provided with a disk-like head having dowel-pins, as specified, means for securing the head of the screw to the plug, and the cap secured to the body and having sockets in its bottom to receive the dowel-pins, substantially as described.

4. The combination, with a yoke provided with lateral extensions or bearings and the headed screws fitting said bearings, of the back plate having the bent ends provided with screw-orifices, and the clamps having the set-screws and holding-prongs, substantially as and for the purpose described.

5. The combination, with a standard supported on legs and provided with a yoke having pivotal picture-holding supports, of a slotted sector provided with a thumb-screw and a rest, substantially as described.

6. The combination, with a body, A, supported on legs and having a central bore and a screw-rod of less diameter than the bore of the body, and screw-rod secured at one end to the body and projecting in the bore thereof, of an interiorly-screw-threaded sleeve engaging the screw-rod and provided with a yoke with its ends provided with pivotal picture-holding means, substantially as set forth.

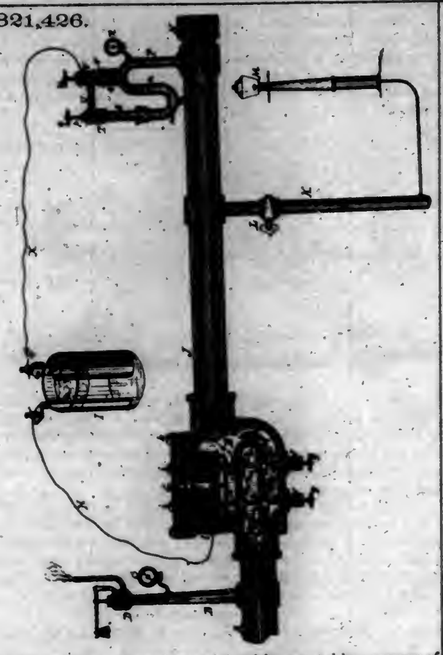
7. The combination, with a body, A, supported on legs and having a central bore and a screw-rod of less diameter than the bore of the body, and screw-rod secured at one end to the body and projecting in the bore thereof, of an interiorly-screw-threaded sleeve engaging the screw-rod and provided with a yoke with its ends provided with pivotal picture-holding means, and the table having the rim 2, substantially as described.

321,426. MEANS FOR CONTROLLING GAS UNDER PRESSURE. JOSIAH W. ELLS, Pittsburg, Pa. Filed July 18, 1884. (No model.)

Claim.—1. The combination consisting of a pipe leading from a gas-producing well, a valve-chest communicating with said pipe, a valve therein, with an electro-magnet for operating the same, a low-pressure pipe receiving gas through the valve-chest, one or more branch pipes extending therefrom to burners for the combustion of gas, a vessel containing water or other fluid matter attached to said low-pressure pipe, a wire from an electric battery connected thereto, and the electro-magnet whereby an increased pressure of gas within said pipe shall cause the fluid matter to come in contact with a metallic conductor of electricity, and thus make or establish its circuit or current through the electro-magnet.

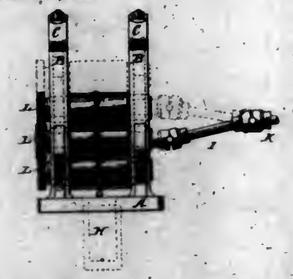
2. The combination consisting of a pipe for conveying gas under great pressure from a well, a valve-chest communicating with said pipe, a valve therein, and an electro-magnet for operating the same, a receiving-pipe and branches extending therefrom to burners for the combustion of

321,426.



such gas, and a movable conductor of electricity actuated by a pressure of gas within the receiving and distributing pipe less than that contained within the high-pressure pipe.

321,427. ROLLING-MILL. CHARLES F. ELWES, Chicago, Ill. Filed Aug. 23, 1884. (No model.)

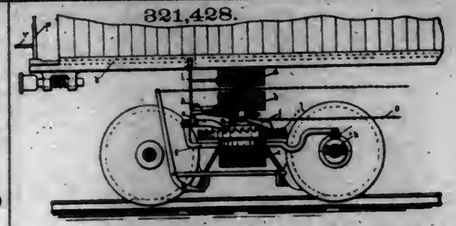


Claim.—1. In a rolling mill, the combination, substantially as herein set forth, of a frame or standard, movable housings supported therein, a set of rolls carried by the housings, and means, substantially as described, for raising and lowering the housings, whereby the housings may be moved up and down and the rolls preserve their relative positions to each other.

2. The combination, substantially as herein set forth, of a frame or standard having grooves therein, a set of rolls and pinions supported in housings working in said grooves, and power connected to said housings, the arrangement being such that the housings may be raised or lowered to bring the different pairs of rolls in line with the floor while their relation to each other is unchanged, so that the metal billets or bars may be fed back and forth between the different rolls without raising the bars.

3. The combination, substantially as herein set forth, of the standards B, housings *b*, sliding therein, a set of rolls, D E F, means, substantially as described, for raising and lowering the housings in their supports, while the relations of the rolls are unchanged, and a universal coupling-shaft connecting the rolls with the power-shaft.

321,428. CAR-BRAKE. SIMON FAIRMAN, Baltimore, Md. Filed Jan. 26, 1885. (No model.)

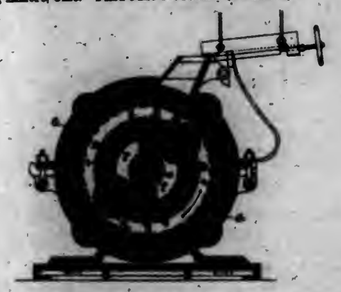


Claim.—1. In a car-brake for steam-railways, the actuating-bar *k*, in combination with the hand-lever *p* and the coupler *s*, substantially as and for the purposes set forth.

2. The combination of the coupler *s*, the forked lever *i*, and the loop *d*, substantially as and for the purposes set forth.

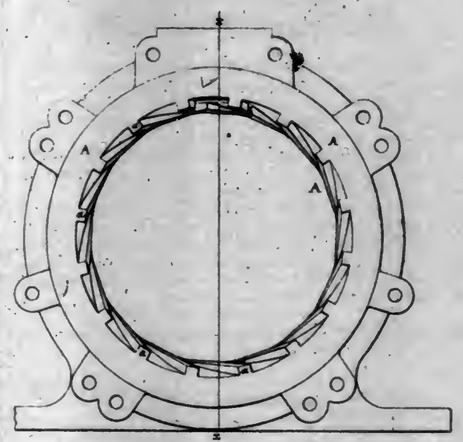
3. The combination of the ratchet-disk *l* and its sheave *n*, the oscillating arm *g*, and the cam *h*, all substantially as and for the purposes set forth.

321,429. MACHINE FOR PULVERIZING ORES, &c. GIDEON FREBER, Elmore, Ohio. Filed June 12, 1884. (No model.)



Claim.—In a machine for pulverizing ores, &c., the combination of the drum, the disks F F, having grooves *c c*, the drivers D D, provided with feathers *b b*, the arms B B, shaft *a*, and rollers A A, substantially as and for the purpose described.

321,430. MACHINE FOR PULVERIZING ORES, &c. GIDEON FREBER, Elmore, Ohio. Filed Sept. 8, 1884. (No model.)

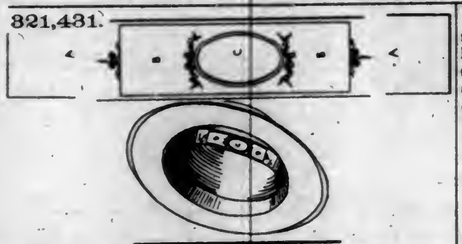


Claim.—In a pulverizing-machine, a chamber provided with a series of wedge-shaped lugs or ribs, arranged diagonally on the inside of the chamber, in combination with the rollers, the wedge-shaped ribs being for the purpose of retarding the material and directing it into the path of the rollers, substantially as and for the purpose described.

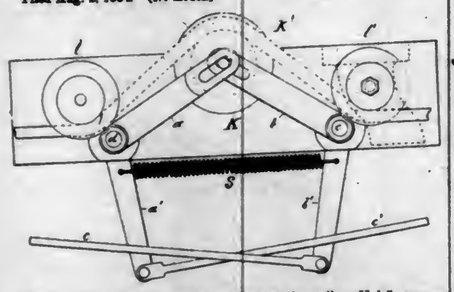
321,431. ADVERTISING-MAT. SELDEN F. GIBSON, Portland, Me., assignor of a part of his right to William H. Stevens and Wilbur F. Last, both of same place. Filed Jan. 12, 1885. (No model.)

Claim.—The combination of a mat, A, advertising-space B, and mirror C, in the form described, and adapted to be inserted and worn within the crown of a hat, substantially as above described and set forth.

321,431.



321,432. CAR-BRAKE. WILLIAM GILL, Toronto, Ontario, Canada. Filed Aug. 2, 1884. (No model.)



Claim.—In a brake-worker composed of the pulleys K *l l'*, arms *a b*, axles *d e*, journals *f g h i*, provided with any suitable journal-boxes, and the arms *a' b'*, the combination of the common chain, constructed in sections, and lock-links at each end for operating the brake-workers, the rods *c c'*, and levers *p p'*, the whole constructed and operating substantially as described, and for the purposes set forth.

321,433. COFFIN. FRANCIS C. GOFF, Englewood, Ill. Filed May 17, 1884. (No model.)

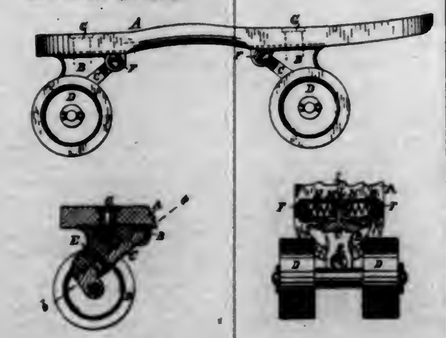


Claim.—1. The combination, with the coffin-case A, of the false or supplemental bottom B, hinged to the case A at the foot, and an adjustable support for the upper end of the latter, whereby the upper or head portion of the bottom may be adjusted and held at any desired height, substantially as and for the purposes set forth.

2. The combination, with the coffin-case A, of the false bottom B, composed of the frame B', ribs R, and canvas bottom P, substantially in the form and for the manner and purposes set forth.

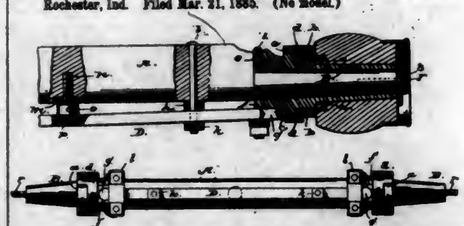
3. The combination, with the coffin-frame A, of the bottom B, hinged thereto, the struts or supports I, pivoted to the said bottom, the handles F, the shanks of which extend loosely through the said bottom and carry nuts *p*, forming bearings for the depressing-springs S, and stops H, attached to said handles and capable of engagement with the racks R', substantially as and for the purposes set forth.

321,434. ROLLER-SKATE. OLAUS HANSON, Worcester, Mass. Filed Mar. 19, 1885. (No model.)



Claim.—In a roller-skate, the combination of the pivoted roll-carrying T-piece having a tongue whose end passes through a slot in a tubular spring-bolder, provided with a mid-rib limiting the action of its spring-bearing pistons, with the slotted spring-bolder, the spring-pistons, and retaining-screws, substantially as and for the purposes set forth and described.

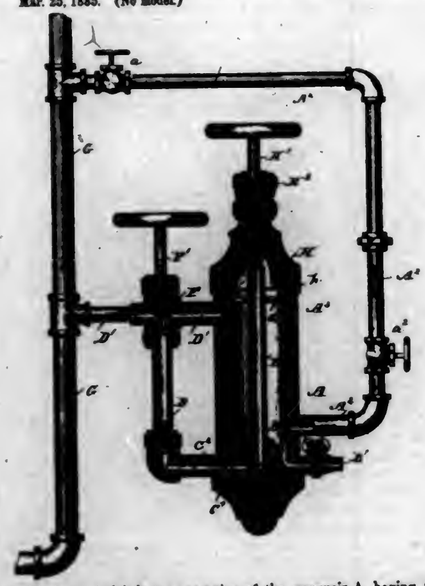
321,435. SAND-BAND FOR VEHICLE-AXLES. SAMUEL HEFFLEY, Rochester, Ind. Filed Mar. 21, 1885. (No model.)



Claim.—1. The axle having its spindle provided with the annular walls *c*, and the sand-bands *d*, fitted to the walls, in combination with the hubs having the annular rings *b*, secured therein and projecting outward, and flanges extending from the ends of the rings and working against the walls C, sand-bands *d* projecting beyond the walls over the rings *b*, for the purpose set forth.

2. The axle having its spindles provided with the shoulders *a*, and annular walls *c* in rear thereof, in combination with the hubs having the annular rings *b* projecting from its inner ends over the shoulders *a*, flanges on the ends of the rings working against the walls *c*, and sand-bands *d*, secured to the said walls and projecting outward over the rings *b* nearly to the inner ends of the hubs, for the purpose set forth.

321,436. LUBRICATOR. WILLIAM R. HOLDER, Verbena, Ala. Filed Mar. 25, 1885. (No model.)

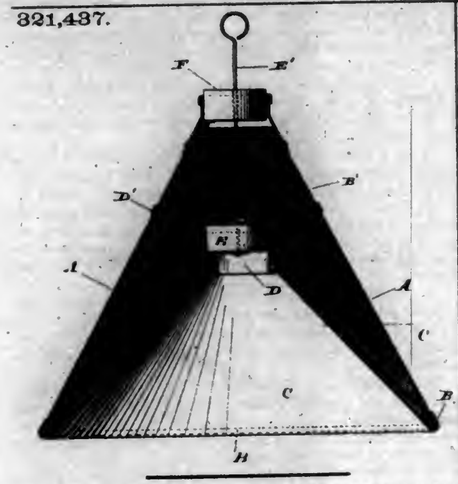


Claim.—A lubricator consisting of the reservoir A, having the steam-pipe A^2, the central tube, E, secured to the bottom of said reservoir, the cover H, and its stuffing-box H^3, with the screw-threaded stem H', the lateral pipes C^2 and D', connected by a glass tube, and the plug-valve F, adapted to control either one of said pipes, substantially as and for the purpose described.

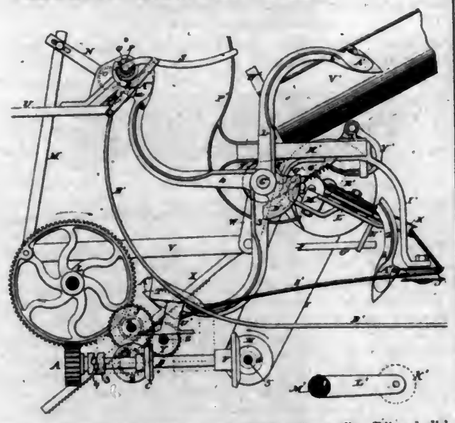
321,437. FLY-TRAP. PETER D. HORTON, Oakland, Cal. Filed Sept. 3, 1884. (No model.)

Claim.—In a fly-trap, the combination of an outer conical basket having an opening at its apex closed by a removable plug, and an interior smaller funnel-shaped chamber with an opening at its top, also closed by a removable plug, all arranged and adapted to be placed over a vessel or over any locality where the insects collect or congregate for entrapping the same, substantially as shown and described.

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321,438. AUTOMATIC BINDING-MACHINE. GEORGE H. HOWE, Hoosick Falls, N. Y. Filed Apr. 7, 1883. (No model.)



Claim.—1. The combination of the rotating pulley D'' and disk with the vibrating picker, substantially as and for the purpose described.

2. The combination of the fixed receptacle, constructed with an opening in the bottom, with a vibrating picker and a pulley, D'', substantially as and for the purpose described.

3. The combination of the stationary receptacle, the band-forming mechanism and the picker, and mechanism for operating the same, as described, whereby the picker partially withdraws the straw from the receptacle, a small quantity at a time, and delivers it to the band-forming mechanism, which completes the withdrawal of the same during the process of forming it into a band, substantially as described.

4. The automatic band-forming device composed of the pulley D'', the disk B'', and the rollers *s'* and *t*, arranged and operating substantially as described.

5. The combination of the revolving pulley D'' with its disk B'', the rollers *s'* and *t*, and the fixed pinion J'', substantially as and for the purpose described.

6. The combination of the pulley D'' and its disk B'', rollers *s'* and *t*, and loose pulley F'', substantially as described.

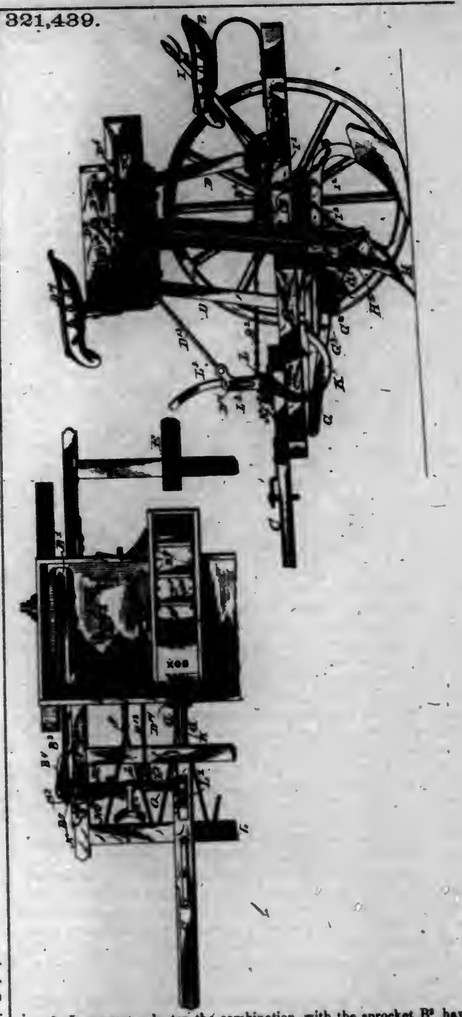
7. The combination of the rollers *s'* and *t* with the pulley D'' and its disk B'', the rollers being incased by and included between the wheel D'' and the disk B''.

321,439. POTATO-PLANTER. JAMES M. KARR, Almond, N. Y. Filed Sept. 25, 1884. (No model.)

Claim.—1. The combination of the shaft L, having arms $L' L^2$, bent rod K, shoe H, valve J, rod D^{12}, pawl-arm D^{13}, and feed-belt D^6, substantially as shown and described.

2. The combination of the shaft L, having arms $L' L^2$, sprocket B^2, and spring-latch M with rods K D^{12}, shoe H, valve J, and feed-belt D^6, substantially as shown and described.

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3. In a potato-planter, the combination, with the sprocket B^2, having the projection B^3, of the spring-seated latch M, having the projections $M' M^2$, the shaft L, box M', and cam N, substantially as specified.

4. The combination, with a hopper, of the feeding-belt D^6, rolls D^7, ratchet D^{10}, pawl D^{11}, arm D^{13}, and rod D^{12}, of the conductor H', shoe H, valve J, rod K, and rock-shaft L, having the rock-arms $L' L^2$, substantially as shown and described.

5. The combination of the sprocket B', chain B^5, sprocket B^2, having the projection B^3, the cam N, the latch M, the rock-shaft L, the rods D^3 and K, the feed-belt D^6, the shoe H, and valve J, substantially as shown and described.

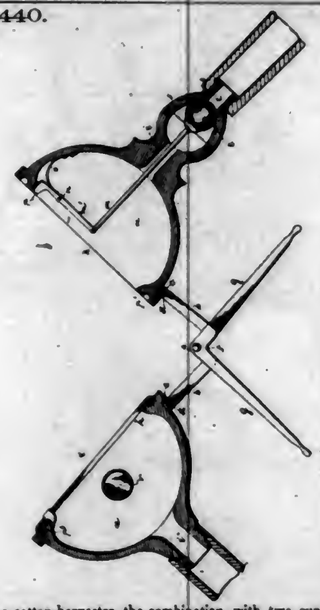
321,440. COTTON-HARVESTER. JOSEPH LEDWARD, Westerly, R. I. Filed July 14, 1884. (No model.)

Claim.—1. A cotton-harvester consisting of two cups adapted to inclose a cotton-boll, and each provided with an aperture, one aperture adapted to the passage of a steam or air blast and the other to the passage of the air or steam with the cotton, substantially as set forth.

2. In a cotton-harvester, the combination, with two cups adapted to inclose a cotton-boll, each cup having an aperture for the passage of steam or air, of a spring-actuated valve located in one of said cups, and mechanism whereby the valve is operated by the closing of the cups, substantially as set forth.

3. In a cotton-harvester, the combination, with two cups adapted to inclose a cotton-boll, of apertures formed in said cups for the passage of a steam or air blast, and a valve located in one of the cups, and means for operating the same, whereby the steam or air blast will be admitted, substantially as set forth.

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4. In a cotton-harvester, the combination, with two cups adapted to inclose a cotton-boll, and each provided with an aperture, of a hose or tubing secured to one of the apertures for the conveyance of steam or air to the cups, substantially as set forth.

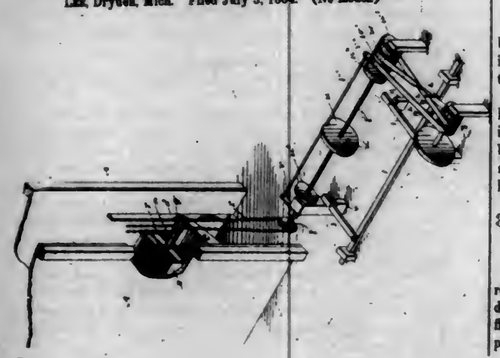
5. In a cotton-harvester, the combination, with two cups, each provided with an aperture, of a flexible hose or tubing secured to one of said apertures for the conveyance of a steam or air blast, a valve for cutting off the blast, and mechanism connected with the valve, whereby the contact of the cups opens the valve, substantially as set forth.

6. In a cotton-harvester, the combination, with two funnel-shaped cups, the one adapted to the passage of an air or steam blast and the other to the passage of the blast and cotton, of operating-handles secured to the edges of the cups and pivoted together like shears, whereby the cups may be opened and closed, and an automatically-operated valve for cutting off the flow of the blast, substantially as set forth.

7. In a cotton-harvester, the combination, with two cups adapted to inclose a cotton-boll, and provided at their inner ends with circular grooves and packing, of a hose or tubing secured to the small end of one of the cups for the admission of a steam or air-blast, and a valve for arresting the action of the blast, and mechanism connected with the valve, whereby the contact of the cup opens the valve, substantially as set forth.

8. In a cotton-harvester, the combination, with two funnel-shaped cups adapted to inclose a cotton-boll, the escape-cup being provided with observation-holes, of operating-handles secured to the edges of the cups and pivoted together, whereby the cups are opened and closed, and an automatically-operated valve for arresting the flow of the blast, substantially as set forth.

321,441. BOLTING-CHEST AND MIDDLINGS-PURIFIER. JULIUS T. LEE, Dryden, Mich. Filed July 3, 1884. (No model.)



Claim.—1. In a bolting-chest, the combination, with a casing, of a series of hollow screens provided with opposite screen-faces and arranged one above the other, the mechanism for vibrating and intermittently rotating the same, substantially as herein shown and described.

2. In a bolting-chest, the combination, with a casing, of a series of hollow screens having opposite screen-faces, and means for rotating all the screens simultaneously to bring either face into use, substantially as herein shown and described.

3. In a bolting-chest, the combination, with a casing, of vertical bars, the hollow screens, their shafts journaled in said bars, and means for oscillating said bar, substantially as herein shown and described.

4. In a bolting-chest, the combination, with the casing A, the vertical bars *d*, and springs *e* for supporting said bars, of the shafts *a*, the screens B, the shafts *p*, provided with crank-arms *p'*, connected to the bars *d*, and means for operating said shafts, substantially as shown and described.

5. In a bolting-chest, the combination, with the casing A, the spring-supported bars *d*, the crank-shaft *p p'*, and means for operating the said shaft, of the shafts *a*, the screens B on said shafts, and means for intermittingly rotating the screens, substantially as herein shown and described.

6. In a bolting-chest, the combination, with the casing A, the end bars, *d*, and means for vibrating the same, of the screens B, journaled in said bars, the cant-boards C, rigidly secured to said bars below the screens, and means for imparting an intermittent rotary movement to the screens, substantially as herein shown and described.

7. In a bolting-chest, the combination, with the casing A, the shafts *a*, provided with the chain-wheels *q*, the screens B on said shafts, and the chain *r*, of the shaft *t* of the belt-shifter, provided with the chain-wheel *s*, substantially as herein shown and described.

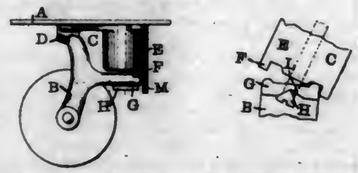
321,442. GRATE-BAR. JOHN D. MCKINNON, Bay City, Mich. Filed May 28, 1885. (No model.)



Claim.—1. In a grate-bar, the combination of the bar *a*, the diagonal corrugations *b* on the fire-surface of the said bar, the longitudinal brace-ribs *i* beneath the bar, and the draft-holes *c* through the bar, with the longitudinal slots *h*, cut through the said bar, between and joining the two alternate holes *c*, substantially as and for the purpose set forth.

2. A grate-bar having the corrugations *b* on its fire-surface, and the holes *c* and slots *h* through its body, in combination with the stiffening-ribs *i*, extending the whole length of and beyond the ends of the said bar, and arranged at their ends to form a bearing-surface for supporting the bar, and with the open space *n* between the said ribs and at the end of the said bar, substantially as and for the purpose described.

321,443. ROLLER-SKATE. CORNELIUS F. MILLER, Hamilton, Ohio. Filed Mar. 14, 1885. (No model.)



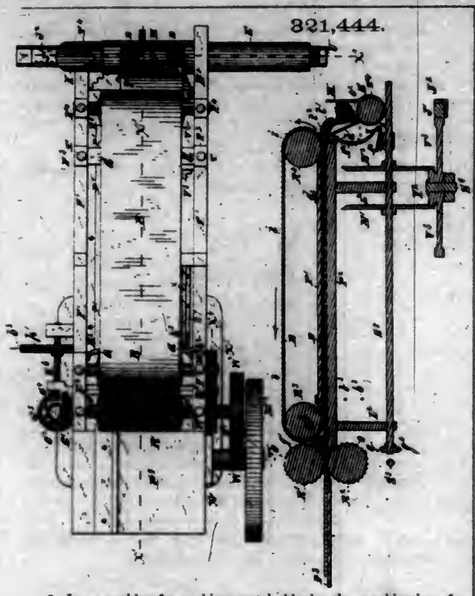
Claim.—1. In the truck of a roller-skate, the combination of upper bearing, D, bearing G, having groove I, lips F at the sides of the bearing, T-headed screw H, nut K, and spring J, substantially as and for the purpose set forth.

2. In the truck of a roller-skate, the combination of hanger C, having upper bearing, D, hollow boss E, and lips F, housing B, engaging the bearing, D, and having the lower bearing, G, seating upward between the lips of the hanger, the spring J within the hanger boss, the nut K over the same, and the screw H, engaging through the lower hanger-bearing and the nut, substantially as and for the purpose set forth.

321,444. MACHINE FOR MAKING MATCH-BLANKS. GEORGE E. NORRIS and WILLIAM E. HAGAN, Troy, N. Y. Filed Nov. 12, 1883. (No model.)

Claim.—1. In a machine for making match blanks or splints, the rollers R' and R², formed with parallel straight grooves *g'*, with coincident severing-edges *e*, extended entirely across the faces thereof, and the flat guide-plate P⁰, all combined, to operate substantially as and for the purpose stated.

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2. In a machine for making match-blanks, the combination of a conveying plate or table leading from where the blanks are cut to the delivering end of the machine, a belt constructed to be moved along and over said conveying plate or table toward the delivery end of the machine, an adjustable plate above the lower stretch of said belt and between the rollers R² and R⁴, a cross-bar on said adjustable plate and attached thereto near the delivery end of the belt, slots in vertical studs on the machine-frame to receive the ends of the said cross-bar, and set-screws in the ends of the studs adapted to engage with said cross-bar at its ends, as and for the purposes herein set forth.

3. The combination of the belt B, the lower conveying-plate, P², the upper adjustable plate, P', and the shaft S', provided with knives *k*, arranged behind the cutting-rollers to the side of and parallel with the adjacent edges of the plate P² and belt B, substantially as described, and for the purpose set forth.

4. In a mechanism for boxing match-blanks, the combination of a hopper open at the bottom and thereat in communication with a boxing-tube, and a holder constructed and actuated to swing into said hopper through a slotted passage-way in the side thereof, to arrest the descent, and to detain the match-blanks falling into the hopper when the boxing mechanism is boxing a charge of match-blanks, and then swing from out the hopper to release the detained blanks, to allow them to descend into the boxing-tube, substantially in the manner herein shown and described.

5. In a machine for boxing match-blanks, the combination of the hopper H, made with the bottom opening, O², and a side passage for the holder, the holder D, with its holder-plate hinged at its top to the top of the beveled side of the hopper, and said holder adapted to enter the hopper at its side, and the angular lever A, adapted to engage with the said holder-plate and with the cam C², substantially as and for the purposes herein set forth.

6. In a machine for boxing match-blanks, the combination of a hopper having an open bottom, a holder constructed and adapted to arrest and detain the passage of match-blanks through said hopper at mechanically-arranged periods of operation, and, in sequence, to release the said detained blanks, a boxing-tube connected therewith to receive match-blanks from said hopper, and constructed to have a match-box body inserted on and over its open end, a piston constructed to be rapidly reciprocated within said tube to force the match-blanks therein into the box-body on the end of the tube and the filled box-body from off the latter, in the manner herein shown and described.

7. The combination of the wheels N' and N², arranged on the same shaft for receiving motor power, and each constructed with the segmental beveled gears *n*², and the perimetral spaces *n*⁴ without gears, the pinion Y², made with bevel-gears, the gear-wheel V², arranged on the same vertical shaft as said pinion, the rack-guide J², the rack J', adapted to engage with said wheel V², the stud U on the end of the rack, the piston E at one of its ends attached to said stud, and with the said parts arranged and constructed to operate substantially as and for the purposes set forth.

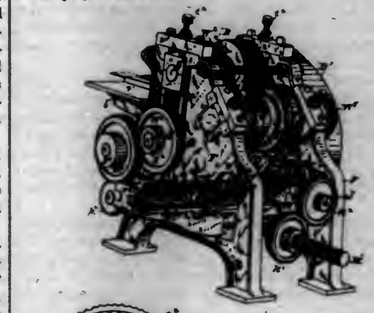
8. In a machine for making match-blanks, the combination of the rollers R' and R², each constructed with the grooves *g'*, the coincident cutting-edges *e*, and adapted to be actuated together by a geared connection, the conveying table or plate P², and the belt B, adapted and arranged to be moved over, along, and adjacently to said plate or table from or in the immediate vicinity of the cutting-rollers toward or to the delivery end of the machine, as and for the purposes herein set forth.

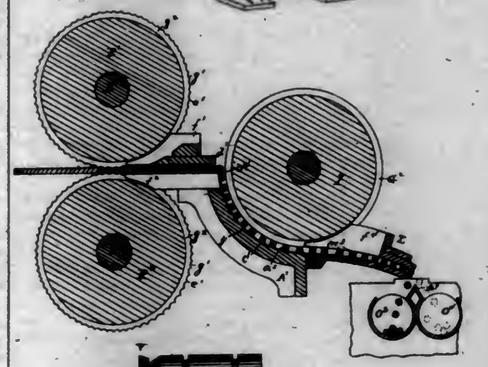
9. In a machine for making match-blanks, the combination of the rollers R' and R², each constructed with the grooves *g'*, and the intermediate cutting coincident edges, e, and adapted to be actuated together by a geared connection, the conveying table or plate P², and the belt B, adapted and arranged to be moved over and along adjacently to said plate or table from or in the immediate vicinity of said cutting-rollers toward or to the delivery end of the machine, and the adjustable plate P', above said belt, when moving toward the delivery end of the machine, and in contact with said belt, as and for the purposes herein set forth.

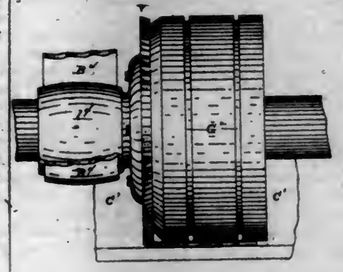
10. In a machine for making and pointing match-blanks, the combination of the beveled gear-wheel G' on the motor-shaft, the bevel-geared pinion G², and bevel-geared wheel G³ on the same vertical shaft, and receiving motion and power from the engagement of said pinion G² with the wheel G', the bevel-geared pinion G⁴ on the shaft S², connecting with said wheel G³, the pulley *p'* on said shaft S², the pulley *p*² on the knife-shaft S', and the belt *b*², connecting said pulleys, substantially as and for the purposes herein described and set forth.

321,445. MACHINE FOR MAKING MATCHES. GEORGE E. NORRIS and WILLIAM E. HAGAN, Troy, assignors of one-third to James K. P. Pine, Lansingburg, N. Y. Filed Feb. 13, 1885. (No model.)

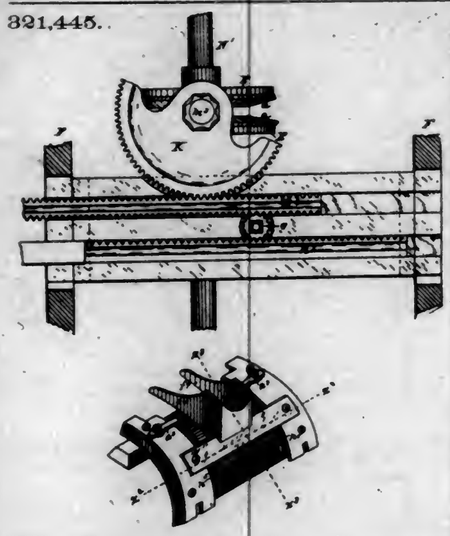
Claim.—1. In a machine for making match blanks or splints, the combination of rollers R' and R², connected by gears to rotate as described, said rollers having grooves and intermediate cutting-edges arranged parallel to their axes, and the ring-form grooves *g*² *g*², arranged in the cylindrical faces thereof circumferentially to their axes, and the conveying-trough or passage-way *d'*, made with the fingers *f'*, as and for the purposes set forth.







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2. In a machine for making match blanks or splints, the combination of the rollers R' and R², connected by gears to rotate as described, said rollers having grooves and intermediate cutting-edges arranged parallel to their axes, and the ring-form grooves g^3 g^3, arranged in the cylindrical faces thereof circumferentially to their axes, and the conveying-trough or passage-way d', made with the fingers f' and f^3, as and for the purposes set forth.

3. The combination of the rollers R' and R², formed with parallel grooves having intermediate coincident severing-edges and provided with circumferential grooves g^3 g^3, the trough d', arranged to receive the blanks from the cutting-rollers, and having stripping-fingers projected within said circumferential grooves of the cutting-rollers, the concave guide-plate C', and the rubber roller I, arranged across the said concave guide-plate and in juxtaposition thereto, all substantially as and for the purposes specified.

4. In combination with the severing-rollers made as described, the trough d', arranged to receive the cut blanks, the concave guide-plate C', arranged at the delivery end of said trough, and having a polishing-exterior, y, and the rubber roller I, arranged to roll the match-blanks along and over said concave guide-plate, substantially as and for the purpose set forth.

5. In a machine for making match-blanks, the combination of the rubber roller I, made with the ring-form grooves G^3, the curved surface C', having a polishing-exterior, y, and the trough L, made with the fingers f^4, said parts being constructed and arranged to be operated, substantially in the manner as and for the purposes set forth.

6. In combination with the severing-rollers, the trough d', arranged to receive the cut blanks, the concave guide-plate C', arranged at the delivery end of said trough, the rubber roller I, arranged to roll the match-blanks along over said concave guide-plate, and a circular saw, V, having beveled teeth and mounted on a hub-bearing, s, rotated independently on the rubber-roller shaft with the free face of the saw contiguous to the end of the rubber roller, substantially as described, and for the purpose set forth.

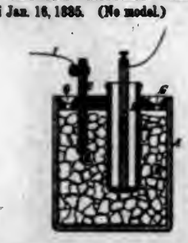
7. The combination of the trough d', the concave guide-plate C', the rubber roller I, having the circumferential grooves g^3 g^3, said concave guide-plate and rubber roller being arranged at the delivery end of said trough, and in relative position to receive the blanks and move them forward between their adjacent surfaces, and the trough L, provided with fingers f^4, all substantially as described.

8. The combination of the concave guide-plate C' and the rubber roller I, arranged to receive a series of match-blanks between their adjacent surfaces, the circular saw V, made with beveled teeth and constructed to turn on said rubber-roller shaft at the side thereof and independent of said rollers, with its teeth in contact with the projecting ends of the match-blank, substantially as described.

9. In a machine for boxing match-blanks, the combination of two boxing-tubes, O^3 O^4, made with top openings and arranged side by side, the pistons U' and U^3, each having a headed end and provided with the spring d^6, the racks R^6 and R^7, each constructed with the guide G^6 and the pivoted latch L^2, the pinion c, the tripping-bar t^3, and the rack-wheel K, the latter being arranged to be reciprocatingly rotated, substantially as and for the purposes set forth.

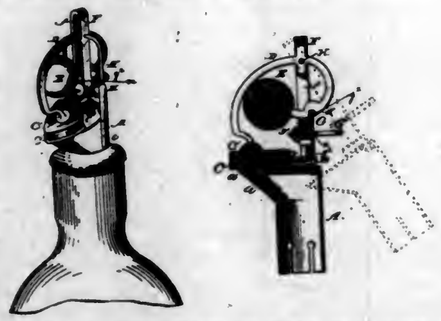
10. In a boxing mechanism for a match-machine, the combination of the boxing-tubes O^3 O^4, having top openings, and arranged side by side, the center piece, A^7, having inclined sides, a piston constructed to be alternatingly reciprocated in each of said tubes, and the hopper-guides H' H^3, constructed to oscillate intermediately to the reciprocation of each of said pistons, substantially in the manner as and for the purposes set forth.

321,446. GALVANIC BATTERY. CHARLES P. ORME, Cambridge, Mass. Filed Jan. 16, 1885. (No model.)



Claim.—The improved galvanic battery, substantially as described, consisting of the glass or leaden vessel A, the porous cup B, the stick C of carbon, the stick D of zinc, the packing E of lumps of gas-retort carbon, and the layer f of paraffine-wax or gutta-percha having one or more holes, G, in it, all arranged essentially as set forth.

321,447. AUTOMATIC BOTTLE-STOPPER. STACY B. OPDYKE, New Haven, Conn. Filed Apr. 15, 1885. (No model.)



Claim.—1. A nozzle provided with an outlet and an air-inlet, in combination with a pivoted arm, and an automatic valve or stopper carried by said arm, which opens and closes both of said openings, substantially as set forth.

2. A pivoted valve provided with a weight, in combination with a nozzle having an outlet and an inlet, said valve fitting against both of these openings, and being shifted by said weight to open or close both of these openings together, substantially as set forth.

3. In combination with a nozzle having two openings, a valve which closes both of them, and a locking device operated by hand for holding said valve in position for closing.

4. The combination of nozzle A and valve C with pivoted bent air-inlet tube b, which may be turned out of the way of said valve at will, substantially as set forth.

5. The recessed disk G, in combination with the notched and curved bar D, the support to which it is pivoted, the nozzle, and the valve, substantially as set forth.

6. In combination with the nozzle A, having an outlet, a', in its top and an angular air-inlet tube, b, which is presented horizontally, a soft valve, C, set into a case, C', and having an upward rear extension outside of said case to cover said air-inlet, substantially as set forth.

7. A pivoted valve, in combination with a nozzle, a bent rod to which the valve is attached, and detachable fastenings for allowing said rod to be removed from said nozzle at will, substantially as set forth.

8. The arched rod H and slotted standard F, in combination with curved bar D, which is pivoted on said rod and guided in said standard, the valve and weight attached to said bar on one side of its pivotal point, as stated, and the nozzle having two openings arranged to be simultaneously opened or closed by said valve, substantially as set forth.

321,448. BOTTLE-STOPPER. STACY B. OPDYKE, New Haven, Conn. Filed Apr. 15, 1885. (No model.)

Claim.—1. A nozzle having two openings in its top, in combination with a pair of vertically-operating stoppers and connecting devices,

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said stoppers being arranged over said openings, respectively, and operated together, substantially as set forth.

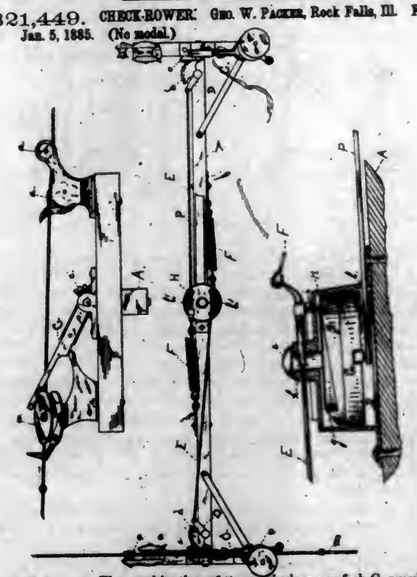
2. A nozzle provided with two openings, in combination with two stoppers, respectively, operating thereon, a rod or bar connecting the two, and a friction device which prevents the dislodgment of said stoppers, substantially as set forth.

3. A nozzle provided with two openings, in combination with two stoppers, respectively, operating thereon, a rod connecting the two, a bar attached to said rod, a sectional spring-pressed friction-tube attached to said rod, and a guide-tube attached to the nozzle in which said friction-tube is fitted, substantially as and for the purpose set forth.

4. In combination with a nozzle, a guide-tube attached thereto, and a stopper or stoppers, a spring-pressed friction-tube moving with said stopper or stoppers, but preventing the accidental dislodgment thereof.

5. The bar E, having lips e, in combination with the sections of C, having slots c, that engage said lips, the spring D, surrounding a stud, C', that extends inward from one section of said tube, the guide-tube G, within which said tube C is fitted, and the stoppers and connecting devices which move with said bar E and are held by said friction-tube C, substantially as set forth.

321,449. CHECK-ROWER. GEO. W. PACKER, Rock Falls, Ill. Filed Jan. 5, 1885. (No model.)



Claim.—1. The combination of the vertical arm or fork C, provided with gear c on its shank, the geared lever D, and the actuating-rod E, connected directly to such last-named gear, substantially as shown, whereby the interposition of the usual rock-shaft is avoided, and the parts employed are fewer, simpler, and more easily operated, while the advantages of a vertical arm are retained.

2. The combination of the vertical fork C, provided with the gear c, the lever D, provided with the gear d, the rod E, the spring F, the pawl i, and the ratchet G, provided with notches g, substantially as shown, and for the purpose specified.

3. The combination of the vertical fork C, provided with the gear c, the lever D, provided with the gear d, the rod E, the spring F, the pawl i, and the ratchet G, provided with the notches g, such ratchet being located between such spring and fork, substantially as shown, and for the purpose specified.

4. The combination of the fork C, provided with the gear c, the lever D, provided with the gear d, rod E, provided with the pawl i, spring F, ratchet G, provided with notches g, second rod, E, having pawl i, and the second spring, F, whereby the ratchet G is alternately actuated and locked, substantially as shown, and for the purpose described.

5. The combination of the ratchet G, provided with the grooves L, the pitman P, and the travelers M and N, substantially as shown, and for the purpose mentioned.

6. The combination of the ratchet G, provided with grooves L, and the pitman P, provided with the travelers M and N, substantially as shown.

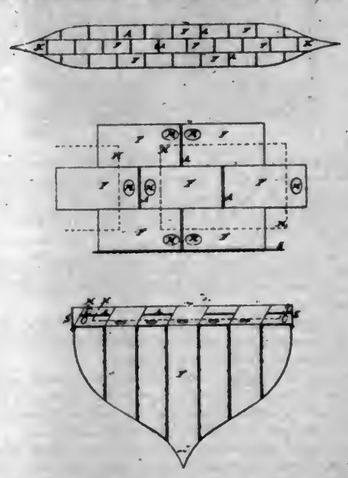
7. The combination of the pivoted ratchet G, provided with the grooves L, suitable actuating-pawls or their equivalent, the pitman P, and travelers M and N, substantially as shown, and for the purpose described.

8. The ratchet G, provided with the notches g, and grooves L, the latter being, respectively, on a line midway of such notches, substantially as shown.

9. The combination of the cap H, provided with slots h', the ratchet G, provided with four equidistant notches, g, the screw e, and pawl i, whereby such pawl is guided in its operations, and each outward motion thereof imparts a quarter-revolution to such ratchet, substantially as shown, and for the purpose described.

10. The combination of an actuating-fork, a reacting spring, intermediate actuating mechanism, and a ratchet located between such fork and spring, whereby the alternate action of such fork and spring shall be from such ratchet, substantially as shown, and for the purpose described.

321,450. CONSTRUCTION OF THE HULLS OF VESSELS, &c. GOLDSBURY H. POND, New York, N. Y. Filed Mar. 23, 1883. (No model.)



Claim.—1. A hull for vessels formed of air and water tight hollow sections secured together by bolts or rivets passing through their sides, leaving spaces between their contiguous ends through which water may escape from the deck, and through which air is drawn under the vessel when in motion, forming a thin layer of air between the bottom of the boat and the water, relieving the friction of the water on the bottom of the boat in passing through it, substantially as and for the purpose set forth.

2. A boat or vessel composed of hollow blocks or sections secured together at their sides, and having air-spaces at their ends extending from the bottom to the deck, and having the tops of said sections secured thereto by air and water tight joints, whereby the boat or vessel is enabled to float if the bottom be destroyed.

321,451. MACHINE FOR REDUCING WOOD AND OTHER FIBROUS MATERIAL TO A PULP. GOLDSBURY H. POND, Glen's Falls, N. Y. Filed Aug 26, 1884. (No model.)

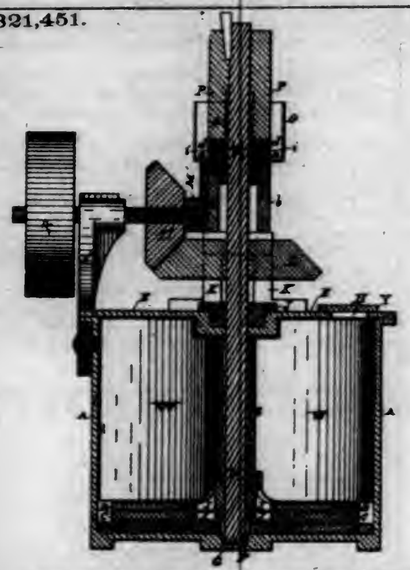
Claim.—1. In an apparatus for reducing wood to a pulp, an air-tight vessel having arranged therein the adjustable rubbers whose shaft is mounted and suspended from a bearing arranged at its upper end.

2. In an apparatus for reducing wood to a pulp, an air-tight vessel having arranged therein the adjustable rubbers whose shaft is mounted and suspended from a bearing arranged near its upper end, the said bearing being carried upon the adjustable cross-bar b, substantially as described.

3. In an apparatus for reducing wood to a pulp, the air-tight vessel having the shaft carrying the grinders, in combination with the bearing by which the said shaft is supported, the same consisting of the runner P, keyed to the shaft, and the adjustable bed-block a, substantially as described.

4. In an apparatus for reducing wood to a pulp, the air-tight vessel having the shaft carrying the grinders, in combination with the runner P, the circulating-wings, the disk d, having the grooves i, the bed-block a, and the inclosing oil-pan O, all substantially as described.

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5. In an apparatus for reducing wood to a pulp, the air-tight vessel A, in combination with the shaft carrying the grinders, the circulating-wings of the stands K K, the bridge-bars *b b*, the screws V V, the bed-block *a*, and the head metal disk *d* with the runner P, and the oil-pan O, substantially as described.

321,452. BLEACHING WOOD PULP AND OTHER FIBROUS MATERIALS. GOLDSBURY H. POND, Glen's Falls, N. Y. Filed Oct. 13, 1884. (No specimens.)

Claim.—1. The process of bleaching wood pulp and other fibrous material by the generation of oxygen in contact with it in a bath of metallic oxides in water, substantially as described.

2. The process of bleaching wood pulp and other fibrous material in an oxide bath by the generation of oxygen within the mass of fibers of the material and in actual contact with the innumerable points of generation of the oxygen, as herein set forth and described.

3. The process of bleaching wood pulp and other fibrous material in air under heat by the generation of oxygen within the mass of fibers of the material and in contact with the points of generation of the oxygen, substantially as described.

4. The process of bleaching wood pulp and any other fibrous material within a metallic-oxide bath with chlorine added, whereby oxygen is generated and the bleaching effected while the oxygen is being developed, as herein set forth.

5. The transformation of chlorine and water or other solutions by metallic oxide into oxygen in a bath or in the air under heat in contact with wood pulp or any other fibrous material producing oxygen, thereby bleaching the fibrous material, substantially as herein described.

6. The decomposition of metallic oxides producing oxygen, with chlorine or any other solutions containing oxygen in a bath or in the air under heat and in contact with wood pulp or any other fibrous material generating large volumes of oxygen, thereby bleaching the fibers of the pulp, &c., substantially as herein set forth and described.

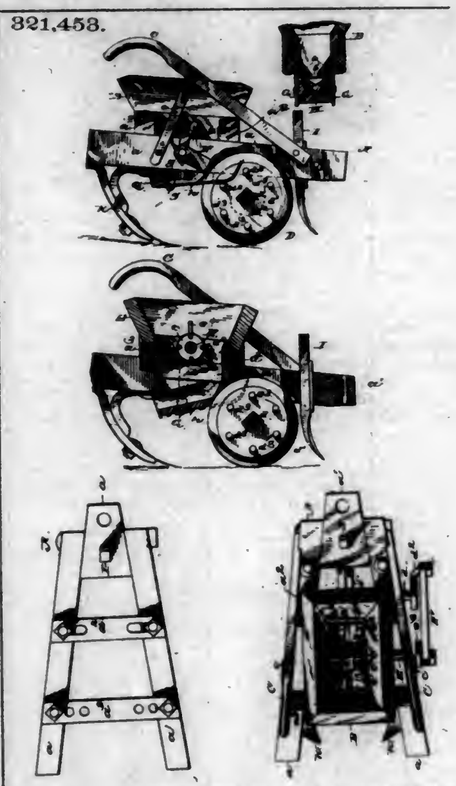
7. The formation of large volumes of oxygen by the agency and action of chlorine or other substances with metallic oxides in a bath or in the air in contact with wood pulp or any other fibrous material while under heat, thereby bleaching the material with the oxygen as it is developed in contact with the textile or fibrous material, as herein fully described and set forth.

8. In a process of bleaching, the use of a metallic-oxide bath for the protection and preservation of the fibers of the material from decomposition, preventing the strength of the fibers from being weakened while exposed for any length of time to the action of the bleaching process, substantially as set forth.

9. In a process of bleaching with oxygen, the use of a metallic-oxide bath for the purpose of generating oxygen, and also for the complete and positive protection of the fibers of the material from being weakened or decomposed during the process of bleaching.

321,453. COMBINED SEED-PLANTER AND FERTILIZER-DISTRIBUTER. SAMUEL O. RICHARDSON, Cantrell, S. C. Filed Feb. 14, 1885. (No model.)

321,453.

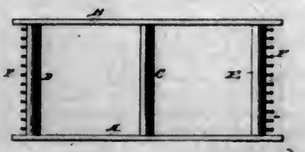


Claim.—1. The combination of the frame, the hopper, and inclined boards *b*, located within the latter on each side so as to form the bottom, a space or opening, *b'*, being left between the boards, with lateral arms or pins b^2 projecting inwardly from the inner sides of the hopper above the boards, the stirrer-shaft carrying the disk *e*, radial arms or stirrers *e'* projecting from the periphery of the disk, lateral or horizontal stirrers e^2, extending from the sides of the disk and registering with the spaces between the arms b^2 of the hopper, and the shaker or dropper H, communicating with the bottom of the hopper, for the purpose set forth.

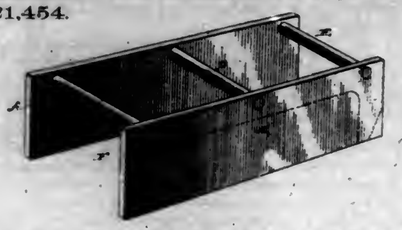
2. The herein-described adjustable frame, comprising the block *a'*, side beams, *a*, secured together at their front ends on each side of the blocks, and the cross-beams a^2 a^3, connecting the side beams and adjustable in length, whereby the side beams may be drawn nearer to each other, as set forth.

3. The frame and carrying-wheel provided with the radial pins, in combination with the hopper, the inclined boards *b*, located on each side thereof so as to form the bottom, an opening or space, *b'*, being left between the boards, lateral pins or arms b^2 projecting inwardly from the hopper above the boards, the stirrer-shaft E, a rod, F, connecting the latter with the shaft of the carrying-wheel, a disk, *e*, located on the shaft E above the opening *b'*, a series of radial arms or pins, *e'*, projecting from the periphery of the disk and working in the opening, a series of lateral or horizontal pins, e^2, projecting outwardly from the sides of the disk and working in the spaces between the arms or pins b^2 of the hopper, hangers G, depending from the latter, the inclined shaker or dropper H, adjustably pivoted to the hangers and having its rear end open, and the bar *h*, fitted to the shaker and extending forward so as to be acted upon by the pins of the carrying-wheel, as set forth.

321,454. FRINGE-REEL. CHARLES ROTHENGATTER, Philadelphia, Pa. Filed Nov. 26, 1884. (No model.)



321,454.



Claim.—1. A reel consisting of side supports and cross-pieces arranged between the side supports out of the central line, and adapted to support the fringe in a pendent position and keep it from contact with objectionable matter, substantially as described.

2. A reel consisting of side supports connected by cross-pieces arranged out of the central line, said cross-pieces being provided with pins or hooks, and adapted to support the fringe in its normal position without contact with objectionable matter, substantially as described.

3. The combination, in a reel, of the side supports and cross-pieces therefor, and pins or hooks arranged adjustably upon said cross-pieces, substantially as described.

4. A reel consisting of the supports A B, joined by cross-pieces D E, provided with pins projecting diagonally downward and outward therefrom, and a central cross-piece, C, adapted to form a handle for the reel, substantially as described.

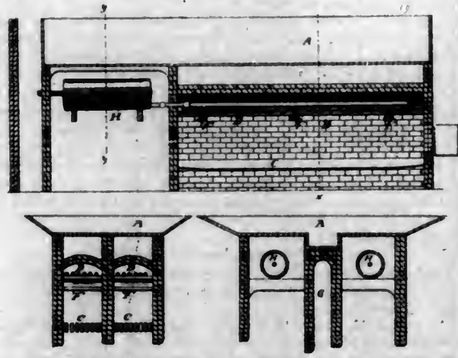
321,455. ORGAN STOP-ACTION. CHARLES F. SHARPE, Meriden, Conn. Filed May 19, 1884. (No model.)



Claim.—1. In an organ stop mechanism, in combination, a name-board, a stop-rod, a link having parallel and threaded arms, one of which is socketed in the inner end of the stop-rod, and the other in the link-support, and the link-support, all substantially as described.

2. In combination, in an organ stop mechanism, a stop-rod, *c*, link *e*, with threaded ends *e'* e^2, and a link-support, *f*, all substantially as described.

321,456. SALT-EVAPORATING PAN. GEORGE H. SMITH, New York, N. Y. Filed Dec. 19, 1884. (No model.)



Claim.—1. The combination, with a salt-evaporating pan or its equivalent, and a furnace the heat from which comes in contact with some part of the bottom of the pan, of a series of water-pipes under said pan, a fresh-water-supply pipe leading into said pipes, and a pipe leading from the series to the place of its utilization away from the pan, as set forth.

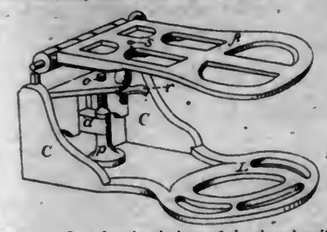
2. In combination with a salt-evaporating pan, a series of fresh-water pipes between the bottom of the pan and the furnace-bars, said pipes having no entrance into or communication with the pan, and a collecting-drum for steam connected to said series of pipes and in the rear thereof under the evaporating-pan.

3. The combination, with a salt-evaporating pan, of an arch of brick-work forming the crown of the furnace under said pan, and a series of fresh-water pipes under the crown of the arch, and resting on suitable supports, substantially as stated.

4. The combination, with an evaporating-pan, of a central brick-work support, said brick-work being hollow and forming a drying oven or kiln under the pan, as set forth.

5. The combination, with the furnace of a salt-evaporating pan, of a steam-generating apparatus interposed between the grating and the pan, and having no communication with said pan, and a pipe leading from said steam-generator to a place of utilization of said steam away from the pan, as set forth.

321,457. DENTAL ARTICULATOR. GEORGE E. SMITH, Windsor, N. Y. Filed May 21, 1885. (No model.)

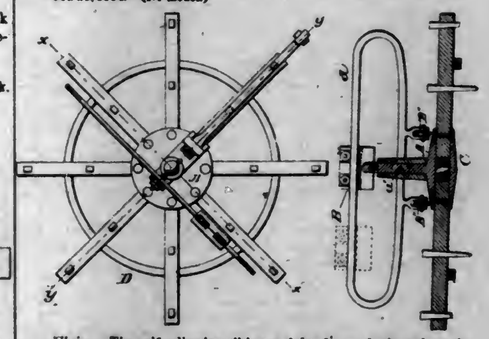


Claim.—1. In a dental articulator of the class described, the plate A, with grooves and binding-screw, in combination with the sliding plate B, made with stop-button and hinge to form the upper plate of an articulator, all constructed substantially as shown and described.

2. In a dental articulator, the combination, with the vertical portion of the base-plate L, made with arm *d* and adjusting-screw *p*, of a sliding plate, K, carrying the hinge, and provided with wing *w*, having conical-head screw *m*, locking-nut *r*, made to lock under the wing, and hole *o*, to receive the adjusting-screw *p*, all constructed substantially as shown and described.

3. In a dental articulator, a base-plate having a vertical sliding plate which carries the hinge, and having its height regulated by means of an adjusting-screw journaled in an arm on the stationary part of the base-plate, in combination with an upper plate formed of two sections sliding one upon the other and fastened in position by a binding-screw, all substantially as shown and described.

321,458. HARROW. ALBERT J. SPRAGUE, Clarington, Ohio. Filed Oct. 25, 1884. (No model.)



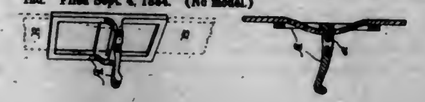
Claim.—The self-adjusting tilting weight-frame *d*, pivoted to the rear of draft-beam *a*, in combination with the traveling weighted wheels B and the caster-wheels B", constructed substantially in the manner described, and for the purposes set forth.

321,459. ARTIFICIAL STONE OR MARBLE. WALTER H. STEARNS, Jr., Newton, Mass. Filed Oct. 13, 1884. Renewed May 22, 1885. (No specimens.)

Claim.—1. The herein-described liquid cementitious compound consisting of acetic acid, manganese borate, carbonate of ammonia, Glauber's salt, and balsam, in substantially the proportions specified.

2. The herein-described compound for artificial stone, consisting of sand or fragmentary stone material and Portland cement united by a cementitious compound consisting of acetic acid, terra-japonica, manganese borate, carbonate of ammonia, Glauber's salt, and balsam, in substantially the proportions specified.

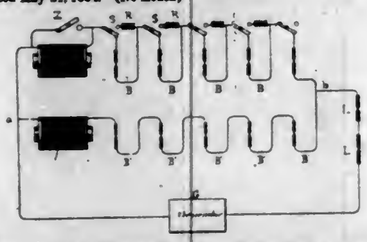
321,460. REIN-SUPPORT. WILLIAM S. R. TARKINGTON, Indianapolis, Ind. Filed Sept. 4, 1884. (No model.)



Claim.—1. The combination, with a harness, of the rein-support A, consisting of two sides connected by cross-bars, between which the strap to which it is secured is passed, one of said cross-bars being provided with a tongue, *a*, for securing said support in position, and a projecting arm for supporting the rein, substantially as set forth.

2. The combination, with a harness, of a rein-support consisting of a base provided with openings, through which the strap to which it is secured may be passed, and an outwardly-projecting arm or tongue, which passes through said strap, thereby securing the device is position, and also serving to support the rein, substantially as set forth.

321,461. ELECTRIC LIGHTING SYSTEM. ELIHU THOMSON, Lynn, Mass., assignor to the Thomson-Houston Electric Company, of Connecticut. Filed May 21, 1884. (No model.)



Claim.—1. The combination, with two or more multiple or parallel arc branches fed by a continuous-current dynamo-electric machine, of electric-arc lamps arranged in series in said branches, and a coil or coils of the dynamo included in one or more of said branches, as and for the purpose described.

2. In a system of electric distribution for electric-arc lamps in which said lamps are fed in multiple or parallel arc from a continuous-current main, the combination, with one or more of said multiple-arc branches, of one or more reactive coils constructed in the manner described to have a definite or positive electro-motive tendency suited to the current-supply, as and for the purpose described.

3. The combination, with two or more parallel or multiple arc branches fed from a continuous-current main, of electric-arc lamps arranged in series in said branches, and one or more reactive coils in one or more of said branches, said coil or coils being constructed in the manner described to have a positive or determinate counter-electro-motive force, according to the current-supply, as and for the purpose described.

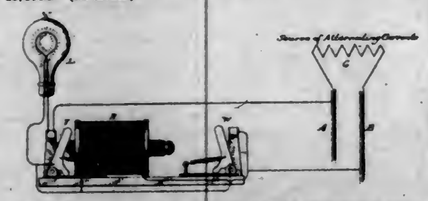
4. The combination, with two or more multiple or parallel arc branches containing electric-arc lamps and fed from a common supply, of an automatic variable resistance for governing the flow of current to a branch, and a reactive coil or coils placed in one or more of said branches and constructed to have a definite or positive counter-electro-motive force adapted to the current-supply.

5. The combination, with a dynamo-machine supplying two or more multiple or parallel arc branches, of derived or shunt field-magnet coils and accessory direct-circuit field-coils in circuit with branches containing arc lights.

6. The combination, in a generator, of a derived or shunt field-magnetizing coil, and a series of field-magnet coils or branches from the armature through separate arc-light circuits.

321,462. WITHDRAWN.

321,463. ELECTRIC SWITCH. ELIHU THOMSON, Lynn, Mass., assignor to the Thomson-Houston Electric Company, of Connecticut. Filed May 23, 1884. (No model.)



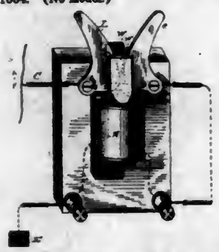
Claim.—1. The combination, with an incandescent electric lamp or other electric apparatus, of a reactive coil having an adjustable core, and switch devices operated therewith for switching the current from the coil and the lamp, respectively, in extreme conditions of adjustment of the core.

2. The combination, with an incandescent lamp fed by alternating currents, of a reactive coil, a movable core for the latter, and switch appliances for shunting current from the coils and lamp, respectively, said switch appliances being operatively related to the core so that in one position of the latter the lamp will be shunted and in the other position the coils will be shunted.

3. The combination, with an incandescent lamp fed by an alternating current, of a reactive coil having means whereby its reactive effects may be adjusted, and switch appliances operatively related to the adjusting devices so as to cut off the flow of current to the lamp when the coil is adjusted to give the maximum reactive effects.

4. The combination, with an electric lamp or other device fed with alternating currents, of a reactive coil and core therefor, means for adjusting the reactive effect, and switching appliances operatively related to the adjusting mechanism for switching the current from the lamp and the coils, respectively, in opposite extremes of adjustment.

321,464. LIGHTNING-ARRESTER. ELIHU THOMSON, Lynn, Mass. Filed Nov. 3, 1884. (No model.)



Claim.—1. The combination, with the plates or electrodes in a lightning-arrester, of an arc-rupturing device applied thereto in the manner described, so as to rupture any arc that may form across the space between the plates or electrodes.

2. The combination, with an electric circuit fed by a dynamo-electric machine or other source of current capable of forming and maintaining an electric arc, of lightning-arresters connected to said circuit and arc-rupturing devices applied to the lightning-arresters, as described, whereby short-circuiting of the dynamo or other source after the passage of a lightning stroke may be prevented.

3. The combination, with a lightning-arrester, of an electro-magnet coil in the circuit of the discharge through the same and means for disrupting or severing any electric arc that may form across the electrodes of the lightning-arrester, said means being brought into action by the current flowing through the arrester and the coils.

4. The combination, with a lightning-arrester formed by separated electrodes or plates, of an electro-magnet in the circuit with said electrodes, as and for the purpose described.

5. The combination, with a lightning-arrester, of a magnet whose poles are arranged to embrace the electrodes or plates of the arrester, as and for the purpose described.

6. The combination, with a lightning-arrester having connecting electrodes or plates separated by an interval of irregular width, of means, substantially such as described, for driving or forcing an electric arc from a narrow to a wider portion of the space between the electrodes.

321,465. PROCESS OF REFINING PETROLEUM. JULIUS H. TEMANN, Brooklyn, N. Y. Filed May 17, 1884. (No specimens.)

Claim.—The process of removing sulphuric acid from petroleum distillates and producing a finished merchantable product, which consists in adding directly to such distillates—that is, next after the acid treatment—an anhydrous alkali, or alkaline earth or composition thereof, or an anhydrous compound of the metals, whereby any washing is avoided, substantially as described.

321,466. ROLLER-SKATE. FREDERIC W. WALL, Connersville, Ind., assignor of one-half to James Nelson Huston, same place. Filed Mar. 10, 1885. (No model.)

Claim.—1. In a roller-skate, the combination of the hanger B, secured to the foot-board of said skate and having a bearing-plate, B', formed on its lower end, the bearing-surface of which is inclined, the axle C, axle-block C' on said axle having a concave face, C^2, formed on the inner end of said plate, box D, having the flange *d* and arm d^2, the



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spring D', inclosed in said box, and the pivot-pin E, inserted through holes in said several parts, substantially as described, and for the purposes set forth.

2. In a roller-skate, the combination of the foot-board A, hangers B, secured thereto and provided with bearing-plates on its lower end, axle C, axle-blocks C', formed on said axle, having concave face C^2, spring-box D, and spring D', inclosed therein, substantially as set forth.

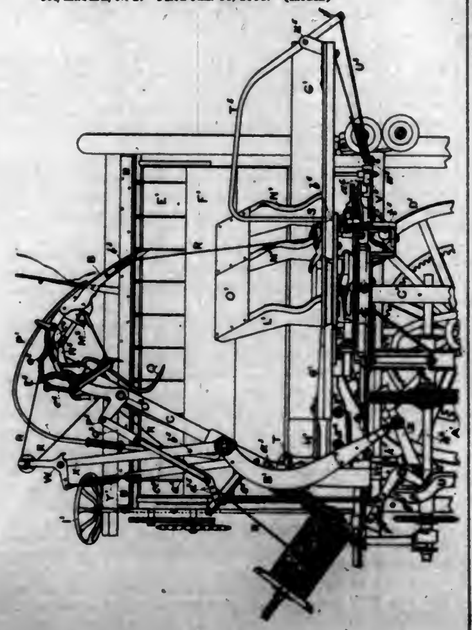
3. The combination, in a roller-skate, of the hanger B, secured to the under side of the foot-board, bearing-plate B', formed on the lower end of said hanger and having an inclined face, axle C, axle-block C', rigidly secured on one side of said axle and provided with a bearing-surface on its front end, and the box D, having a spring, D', therein, said several parts being secured together by a pivot-pin, E, which passes through them at a right angle to the line of motion, substantially as set forth.

4. In a roller-skate, the combination, with the foot-board and hanger B, secured thereto, of the axle-block C', rigidly secured to the axle C at one end and having a concave face, C^2, on its other, the spring-box D, secured in front of said concave face, its open end being adapted to receive said block, and the spring D', inclosed in said box, one end of which bears against said concave face of the block C^2, whereby said pivot-block and the rolls are kept in proper position, substantially as set forth.

5. The combination of the foot-board, the hangers, the axle-blocks, the axle-rolls thereon, the spring-box, the spring D', interposed between said spring-box and said axle-block, a plate, d^2, behind said spring in said spring-box, and a set-screw, d^3, passing through said box and bearing against said plate, substantially as described, and for the purposes specified.

6. The combination of the foot-board, the hangers B, having inclined-faced plates B', the correspondingly-inclined faced axle-blocks, suitable springs, and pivot-pins passing through said plates and said axle-blocks at right angles with the faces thereof, which are in contact, substantially as set forth.

321,467. GRAIN-BINDER FOR HARVESTERS. CYRENUS WHEELER, Jr., Auburn, N. Y. Filed Jan. 11, 1881. (Model.)



Claim.—1. The compressing devices carried on the binder-arm, in combination with the horizontally-oscillating knotter-arm and the shield-plate having projecting fingers, substantially as described.

2. The combination, with the binder-arm, the laterally-projecting compressing-arm connected with and carried by said binder-arm, and the compressing-strap connecting said binder-arm and hinged compressing-arm, of the automatic let-off, arranged and operating substantially as described.

3. In combination with the binder-arm, the hinged compressing-arm secured to and carried by said binder-arm, the compressing-strap connecting said binder-arm and hinged compressor-arm, the automatic let-off, and means by which the latter is operated to automatically take up the slack of the compressing-strap, substantially as described.

4. In combination with the compressing-strap connecting the hinged compressor-arm and binder-arm, the automatic let-off, and means by which it can be set to let off at different points in the outward movement of the binder-arm, substantially as described.

5. The vertically-vibrating compressor-arm hinged to the horizontally-vibrating knotter-carrying arm below the grain-platform, and means for operating it, in combination with the vertically-oscillating and horizontally-swinging binder-arm, substantially as described.

6. The compressor-arm, pivoted to the knotter-carrying arm below the grain-receiving platform, in combination with the rod, lever, and fixed cam for operating the same, substantially as described.

7. In combination with the compressor-arm pivoted to the knotter-carrying arm below the grain-receiving platform, and means for operating it, as described, the knotter shield-plate having projecting fingers arranged above the plane of the grain-receiving platform, substantially as and for the purpose described.

8. The vertically-oscillating and horizontally-swinging binder-arm, the laterally-projecting rigid arm, the compressing-arm hinged thereto, the compressing-strap connecting the binder-arm and compressing-arm, the compressor-arm pivoted to the knotter-carrying arm below the platform, the fixed camway, and connecting devices for operating the same, the whole arranged and combined for joint operation substantially as described.

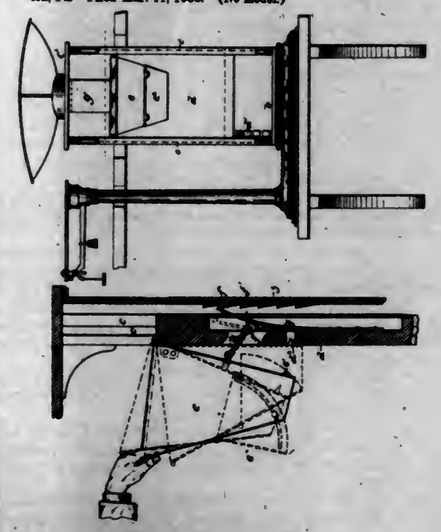
9. The combination of the compressor-arm pivoted to the knotter-carrying arm, the rod connecting it with its operating-lever, and the spring, substantially as and for the purposes stated.

10. The bundle-arresting arm, in combination with the horizontally-oscillating knotter-carrying arm, the compressor-arm pivoted thereto, and the vertically-oscillating and horizontally-swinging binder-arm, substantially as and for the purposes stated.

11. The grain-receiving platform, the bundle-arresting arm hinged to it, the horizontally-swinging lever arranged below the platform, the link connecting said arm and lever, and the roller carried by the knotter-arm, arranged and combined for joint operation as shown and described.

12. The combination of the grain-receiving platform, the bundle-arresting arm hinged to it, the horizontally-swinging lever below it, the link connecting said arm and lever, the roller carried by the knotter-arm, and the vertically-pivoted switch carried on the swinging lever, substantially as described and shown.

321,468. SACK FILLER AND WEIGHER. HENRY T. WILEY, Boston, Pa. Filed Mar. 11, 1885. (No model.)



Claim.—1. The combination of a weighing-scale with a vertically-adjustable bag-holder, consisting of the frame *c*, slide *d*, and a hopper secured to said slide, substantially as and for the purpose specified.

2. The combination of the platform *a* with the flanged plate *b*, vertical frame *c*, and hopper *e*, substantially as and for the purposes described.

3. The combination of the platform *a* with the vertical frame *c*, slide *d*, and a hopper secured to such slide, substantially as and for the purposes described.

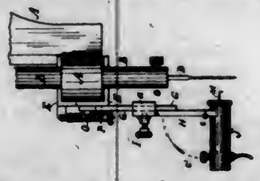
4. The combination of the frame *c*, slide *d*, and a hopper secured to such slide, substantially as and for the purposes described.

5. The combination of the vertical frame *c*, slide *d*, and pivoted hopper provided with bag-impaling pins, substantially as and for the purposes described.

6. The combination of the frame *c*, slide *d*, hopper *e*, pawl *f*, and ratchet *g*, substantially as and for the purposes described.

7. The hopper *e*, provided with impaling-pins *e'* and hinged side *e³*, substantially as and for the purposes described.

321,469. NEEDLE-THREADER FOR SEWING-MACHINES. SAMUEL R. WILSON, Irving Park, Ill. Filed Nov. 6, 1884. (No model.)



Claim.—1. A needle-threading attachment for sewing-machines, in which are combined a clasp or clamp for securing the attachment to a sewing-machine, an extensible arm applied to the said clasp or clamp, and a hook adapted to pass through the needle-eye and movable in a support on the said arm, substantially as and for the purposes set forth.

2. A needle-threading attachment for sewing-machines, in which are combined a clasp or clamp for securing the attachment to a sewing-machine, a pivoted and extensible arm applied to the said clamp or clasp, and a hook adapted to pass through the needle-eye and movable in a support on the said arm, substantially as and for the purposes specified.

3. A needle-threading attachment for sewing-machines, in which are combined a clasp or clamp for securing the attachment to a sewing-machine, a pivoted and extensible arm applied to the said clasp or clamp, and a hook adapted to pass through the needle-eye and yieldingly movable in a support on the said arm, substantially as and for the purposes set forth.

321,470. CAR-COUPLING. EDWARD W. WOOLLEY and STARR C. WOOLLEY, Jersey City, N. J. Filed Jan. 6, 1885. (No model.)



Claim.—1. In a car-coupler, the combination of a coupling-pin having a slotted lower end, and a bell-crank lever, operating in the manner substantially as and for the purpose set forth.

2. In a car-coupler, the combination of a coupling-pin and a bell-crank lever having a removable side piece, substantially as and for the purpose set forth.

3. In a car-coupler, the combination of the coupling-pin having a curved slot in its lower end and the bell-crank lever having a hook-shaped inner end and pivoted substantially as described, and for the purpose set forth.

4. In a car-coupler, the combination of the bell-crank lever C and the coupling-pin E, provided with flange or head P below the lever-slot, substantially as and for the purpose set forth.

5. In a car-coupler, the combination of the coupling-pin, the bell-crank lever, the chain or rope H, the rod I, provided with a projection, and a recessed or slotted locking-plate, substantially as and for the purpose set forth.

6. In a car-coupler, the combination of the slotted draw-head B, provided with socket *b*, made square on one side, the coupling-pin E, having a flat front, and the bell-crank lever C, substantially as described.

7. In a car-coupler, the combination of the coupling-pin E, and the bell-crank lever C, provided with cut-out R, and the removable side piece, S, substantially as described.

8. In a car-coupler, the combination of the bell-crank lever C, the coupling-pin E, the chain or rope H, rod I, with its arm K, hooked rod J, and the slotted locking-plate M, substantially as and for the purposes set forth.

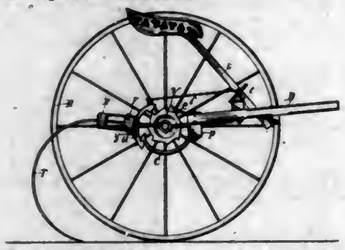
321,471. WATCH-PROTECTOR. JACOB ADLER, Mülheim, Prussia, Germany. Filed Mar. 5, 1885. (No model.)



Claim.—1. In a watch-protector, the movable claw 5, provided with a piston, 9, in combination with a cylinder, 8, containing a pin, 10, a spring, 15, and a pin, 13, and knob 11, for the purpose set forth.

2. A safety device for watches and other similar objects, composed of the base-plate 6, provided with pins 1 1 1, having eyes, the stationary claw 4, the claw 5, provided with a piston, 9, and movable upon the cylinder 8 by means of a pin, 13, having a knob, 11, the said device secured by a safety-pin, 5, as described, closing under the action of a spiral spring, and opening upon drawing the claw 5 backward by partially rotating the knob 11 with pin 13, in order to cause the said pin to engage the slot 14, made in the cylinder 8.

321,472. HORSE HAY-RAKE. JAMES ANDERSON, Oshtemo, Mich. Filed Aug. 18, 1884. (No model.)



Claim.—1. In a self-dumping rake, the combination of the rake-head, a hooked spring-actuated pawl pivoted to the head, a trip-bar connected to the rake-frame in position to trip the pawl, a lifting-ratchet secured to the rake-axle, and a lock-bar connected to the rake-frame and adapted to lock with the pawl when the teeth fall to their used position, substantially as set forth.

2. In a self-dumping rake, the combination of the ratchet secured to the wheel-axle, a spring-actuated pawl centrally pivoted to the rake-head and having a hook at each end, and a hooked lock-bar secured in position to lock with the lower end of the pawl, substantially as set forth.

3. A rake provided with a hooked pawl connected with the rake-head and a hooked lock-bar adjustably secured to the frame in position to lock with the pawl when the teeth fall to their used position, substantially as set forth.

4. The combination of the spring-actuated lock-pawl connected with the rake-head, the slotted adjustable lock-bar, and the brace-casting adapted to receive and support the lock-bar, substantially as set forth.

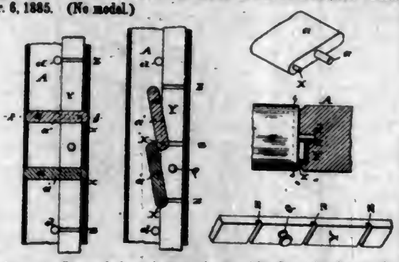
321,473. CAR-COUPLING LINK. RUBEN B. AYRES, St. Louis, Mo. Filed Dec. 12, 1884. (No model.)



Claim.—1. As an improved article of manufacture, a car-link having a wire-rope core and a covering of metal welded to said core, substantially as described.

2. In a car-link, the combination of the wire-rope core A and bearing-clamp B B, welded to said core, substantially as described, and for the purposes set forth.

321,474. WINDOW-BLIND. RUBEN B. AYRES, St. Louis, Mo. Filed Mar. 6, 1885. (No model.)



Claim.—1. In a window-shutter, the combination of a frame, A, slats *a*, having pivots *a'*, and lugs *x*, situate on a line with the pivots parallel with the faces of the slats, pivot-bearings *d*, and a lifting-bar having horizontal slots *z*, substantially as and for the purpose specified.

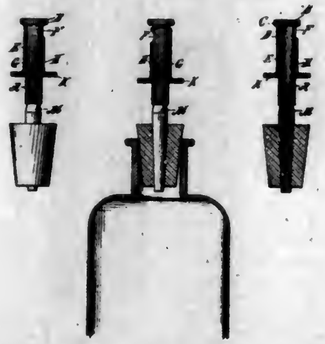
2. In a window-shutter, the combination of a frame, A, having pivot-bearings *d*, a sliding bar, Y, fitting in a recess in the frame A, and having horizontal slots *z* and knob Q, and slats *a*, having pivots *a'*, situate at the middle of the end faces of the slats, and lugs *x*, situate on a line with the pivots parallel to the side faces of the slats, substantially as and for the purpose specified.

321,475. FRUIT-JAR FASTENER. JOEL C. BALDWIN, Oakland, Cal. Filed Jan. 26, 1885. (Model.)



Claim.—As an article of manufacture, the combination of the clamp D, the cross-bar E, and the eccentric lever F, substantially as and for the purpose set forth.

321,476. FAUCET. ALFRED J. BANTIN, Norwalk, Conn. Filed May 4, 1885. (No model.)

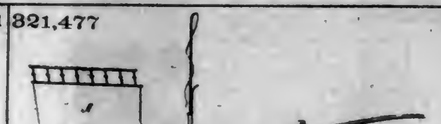


Claim.—1. In a combined faucet and guard, a tube closed at its upper end and having a pouring-hole, and a pin projecting outward, in combination with an outer tube adapted to turn upon the inner one and having a similar pouring-hole, an inclined slot, in which the pin engages, and a finger-wheel made sufficiently large to form a rest for a can or bottle in pouring.

2. The inner tube having a pouring-hole, a pin, G, and a head closing its outer end, and provided with a groove, C, in its under side, in combination with an outer tube having a similar pouring-hole, which registers when in the opened position, an inclined slot, in which pin G engages, and whose upper end is adapted to engage groove C when in the closed position, to effect a perfect cut-off.

3. A combined faucet and guard consisting of a tube having a pouring-hole and pin G, and closed at its outer end, and an outer tube adapted to turn thereon and having a corresponding pouring-hole, an inclined slot engaged by pin G, and a finger-wheel, which serves as a guard to prevent the forward movement of a can or bottle in pouring.

321,477. TWO-WHEELED VEHICLE. JOE H. BARNES, Cincinnati, Ohio. Filed Jan. 3, 1885. (No model.)



Claim.—1. In a two-wheeled vehicle, in combination with shafts pivotally secured to the body, adjustable yokes Y, in which the shafts are retained between springs acting vertically in opposite directions against the shafts, as set forth.

2. In a two-wheeled vehicle, the combination, with the body and shafts, of a plate, C, provided with flanges *a*, bolt *b*, and yoke Y, provided with springs *z*, arranged and operating substantially as and for the purpose set forth.

321,478. MACHINE FOR DRAWING WIRE. ALEXANDER R. BENTON, Boston, Mass., assignor to the S. G. Nail Company, Portland, Me. Filed May 3, 1884. (No model.)



Claim.—1. In a machine for spirally grooving wire of the described construction, the combination of the bearing recessed in its forward end, the anti-friction balls placed in the said recess or recesses, the flat ring bearing against the exposed portions of the balls, and the shouldered die, as and for the purpose shown and set forth.

2. In a machine for spirally grooving wire of the described construction, the combination of the bearing having an annular recess in its forward end, a flat ring placed in the bottom of the said recess, anti-friction balls of a diameter greater than the depth of the recess, anti-friction balls of a diameter smaller than the depth of the recess placed in the intervals between the larger balls, the rotary die having the shoulder, and the flat ring placed between the shoulder of the die and the forward end of the bearing, as and for the purpose shown and set forth.

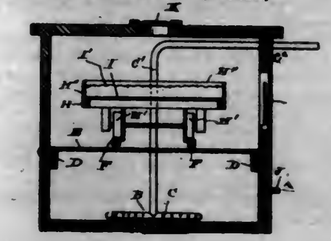
321,479. TYPE-WRITING MACHINE. VIRGIL W. BLANCHARD, New York, N. Y. Filed Apr. 1, 1884. (No model.)



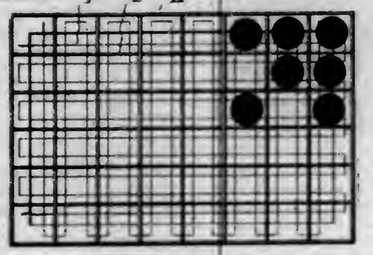
Claim.—1. A type-writer key-lever having pivoted to the strap *a* thereof a link, the lower end of which is flattened and its upper end bored centrally, as at b^3, and slotted to form a mortise extended under the perforation b^3, in combination with the cylindrical stem *d*, having a rectangular tenon, d^3, at its lower end, a finger-key, D, at its upper end, substantially as and for the purpose described.

2. The combination of the finger-key D, provided with a cylindrical stem and a tenon at the lower end of the latter, and a link provided with a cylindrical socket, and a slot extending across and under said socket, with a key-lever and a strap pivoted to said socketed link, substantially as and for the purpose described.

321,480. COOKING AND CANNING APPARATUS. JOHN G. BRIGGS, San José, Cal. Filed Nov. 28, 1884. (No model.)



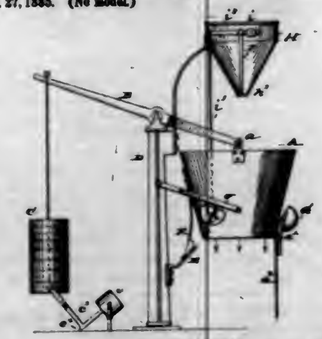
321,480.



Claim.—1. In a canning and cooking apparatus, the car H, having sides H'', wire-mesh floor I, and can-retaining wires I' I', substantially as and for the purpose described.

2. In an apparatus for cooking and canning fruit, the combination, with a steam-heated apartment having a railway-track, of a car provided with a wire-mesh floor and can-retaining wires, substantially as described.

321,481. GRAIN-SCALES. ALFRED J. BUIE, St. Louis, Mo. Filed Apr. 27, 1885. (No model.)



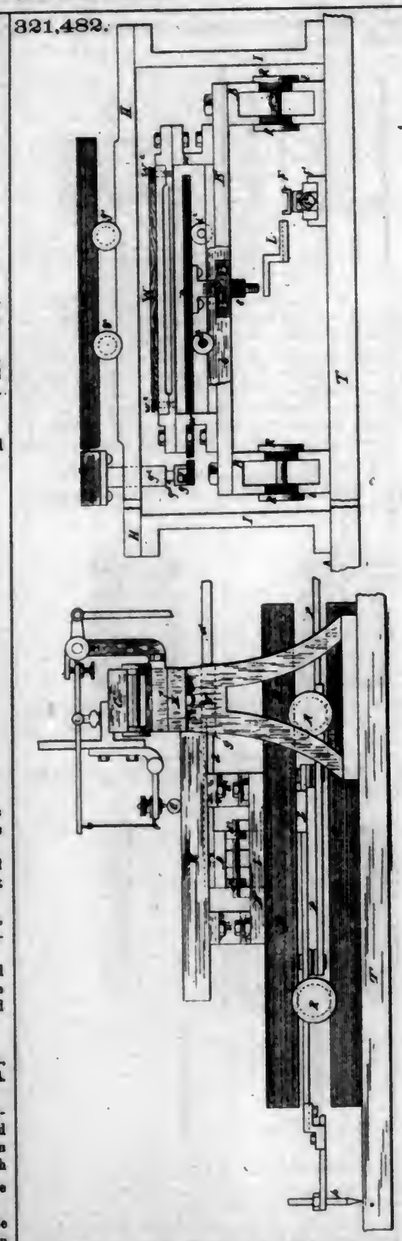
Claim.—1. The combination of the standard D, the bucket A, the lever B, the weight C, the lever c', and the weight c, substantially as described.

2. The combination of the standard D, the bucket A, the weighted lever B, the hopper H, the lever I, the slide h', the rod i'', and the weight i^3, substantially as described.

3. The combination of the standard D, the bucket A, the lever B, the arm J, the spring-latch F, and the deflector E, substantially as described.

4. The combination of the standard D, the bucket A, the hinged bottom a^2, weighted at G, the weighted lever B, the spring-latch F, the deflector E, the hopper H, the slide h', the lever I, and the weighted rod i'', substantially as described.

321,482. ENGRAVING-MACHINE. ROBERT BURGESS, Passaic, N. J., assignor of one-half to J. F. Reinhard, same place. Filed July 23, 1884. (No model.)



Claim.—1. In an engraving-machine substantially such as designated, the adjustable fulcrum-plate formed with a fulcrum-socket and elongated slots f^1 f^1, and provided with set-screws f^2, for securing it in position, substantially as set forth, in combination with the pantograph arranged to actuate the work and graver carriages, substantially in the manner and for the purpose described.

2. In an engraving-machine substantially such as designated, the adjustable fulcrum-plate formed with the fulcrum-socket and resting in grooved ways, and provided with the adjusting-screws f^2 f^2, substantially as set forth, in combination with the pantograph arranged to actuate the work and graver carriages, substantially in the manner and for the purpose described.

3. In an engraving-machine substantially such as designated, the fulcrum-link or elbow formed with the fulcrum-pin upon its under side, and with the horizontal grooved limb for the reception of the pantograph-lever, substantially as set forth, in combination with the adjustable fulcrum-plate and the pantograph and engraving mechanism actuated thereby, substantially in the manner and for the purpose described.

4. In an engraving-machine substantially such as designated, a connecting-link for uniting the pantograph with the slides which actuate the work and graver carriages, which is so formed and secured to a lever of the pantograph that it may be reversed thereon, substantially in the manner and for the purpose described.

5. In an engraving-machine substantially such as described, the broad horizontal work plate or platen W, mounted upon the reciprocating bridge-plate B', which is also provided with transversely-reciprocating slide S, attached to the pantograph below and to the graver-carriage above, in combination with the graver-carriage mounted upon suitable transverse ways above the path of the said work-platen W, the whole being arranged and operating, substantially as described, to adapt the apparatus to engrave upon either flat or cylindrical surfaces, in the manner set forth.

6. In an engraving-machine substantially such as designated, the combination, with the work-table, graver-carriage, and pantograph, of the slide S, situated between transverse ways formed in the supporting-frame of the said horizontal work-table and connected with the pantograph below and the graver-carriage above, substantially in the manner and for the purpose described.

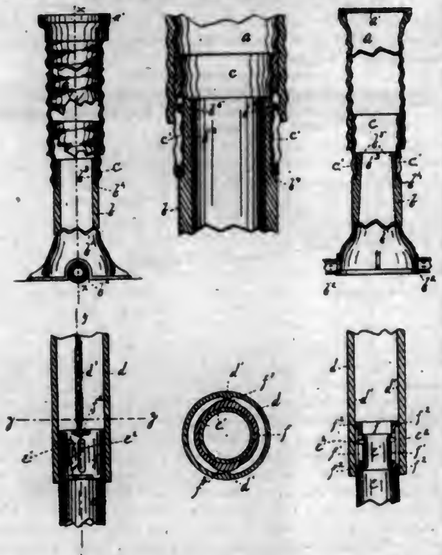
7. In an engraving-machine substantially such as described, the slide S, which connects the horizontal work-table and graver-carriage with the pantograph, substantially as described, provided with an adjusting device for fitting it according to the transverse way in which it travels, substantially in the manner and for the purpose described.

8. In an engraving-machine substantially such as described, the combination and arrangement of the slide S, carriage D, and rollers d^2 d^3, supported between suitable ways in the frame of the work-table and connected with the pantograph and the graver-carriage, substantially in the manner and for the purpose described.

9. In an engraving-machine substantially such as designated, the graver-carriage capable of rectilinear motion at right angles to the motion of the work-table, provided with the pendent sleeve for engagement with the connecting-rod secured to the transverse slide, which is actuated by the pantograph, the said parts being combined and arranged for the purpose and substantially in the manner described.

10. In an engraving-machine substantially such as designated, the combination of a graver-carriage and a work-carriage, arranged to reciprocate at right angles with relation to each other for the purpose and substantially in the manner described, with a pantograph connected therewith and actuating the said carriages either independently or simultaneously, substantially as described.

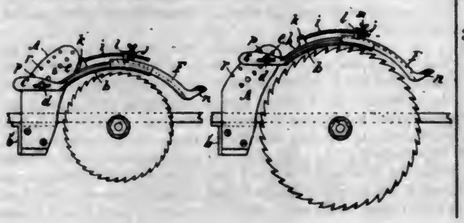
321,483. EXTENSION SERVICE AND VALVE SHUT-OFF BOX. W. A. BURROWS, Buffalo, N. Y. Filed May 5, 1885. (No model.)



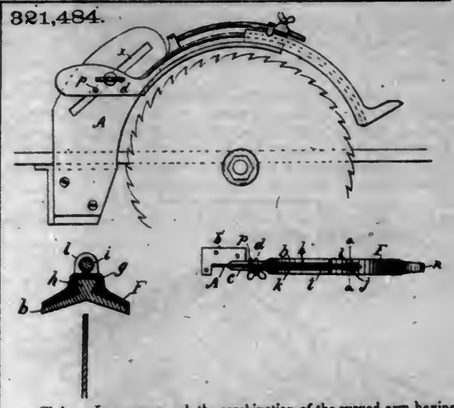
Claim.—1. An extensible service or valve shut-off box for gas and water, consisting of two boxes or pipes, one adjustable within the other one of such boxes or pipes being provided with a collar loosely surrounding its end and having a limited play thereon, such movable collar being adapted for engagement with and adjustment upon the other portion of the box, substantially as and for the purpose stated.

2. In an extension service or valve shut-off box for gas or water, the combination, with the upper screw-threaded portion, a a', of the lower portion, b, having the upper end of smaller diameter and provided with the lugs b^1 b^1, and the screw-threaded collar c, having the slots c' c', substantially as and for the purpose stated.

321,484. SAW-GUARD. JOSEPH A. COMER, Indianapolis, Ind., assignor to the National Saw Guard Company, same place. Filed Feb. 19 1885. (No model.)



321,484.



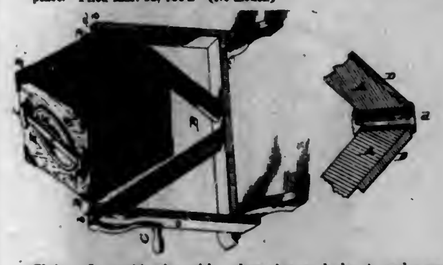
Claim.—In a saw-guard, the combination of the curved arm having a longitudinal rib on its outer surface, a curved guard having in its inner surface a groove embracing and adapted to slide upon said rib, the lug projecting from said arm, the rod secured in said lug, the stop adjustably secured to said rod, and the leg projecting from the guard, all combined and adapted to co-operate for the purpose specified.

321,485. COMBINED CIGAR-CASE AND MATCH-HOLDER. GEORGE W. CONOVER, Philadelphia, Pa. Filed Dec. 30, 1884. (No model.)



Claim.—The combined cigar-case and match-holder herein described, consisting of the front and rear pieces, A' A^3, held together by side pieces, A^3 A^3, and forming a tapering cigar-receptacle open at the top, the front piece being provided with a slot, a, leading to a pocket, B, on the inside of the receptacle adapted to hold matches, all constructed as described and shown.

321,486. CHURN. DAVID W. CURTIS, Fort Atkinson, Wis., assignor of two-thirds to Oscar S. Cornish and Walter S. Greene, both of same place. Filed Mar. 13, 1884. (No model.)

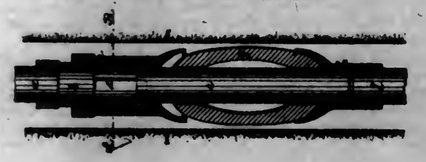


Claim.—In combination with a churn box or body, A, and a metallic corner-piece applied thereto, an outlet-tube passing through the corner of the churn and corner-piece and spread at its ends, to prevent the contents of the churn from entering the pores of the wood or the space between the body and corner-piece, substantially as and for the purpose set forth.

321,487. HAIR-RESTORATIVE. RUDOLPH DAHAHN, Augusta, Me. Filed Apr. 6, 1885. (No specimens.)

Claim.—The herein-described composition of matter to be used as a hair-restorative, consisting of lime, plumbago, borax, beeswax, tallow, salt, lac sulphur, and coal-oil, in the proportions specified.

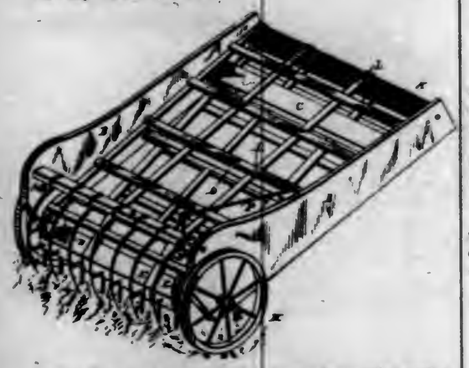
321,488. PACKING FOR OIL-WELL TUBING. MARTIN DAYHUFF, Volcano, W. Va. Filed Mar. 12, 1885. (No model.)



Claim.—1. In an oil-well packer, the spindle *e*, with a solid head and grooves *f*, the same fitting on the tongues *d* of the barrel *c*, connected with the upper cup, substantially as shown, and for the purpose specified.

2. In an oil-well packer, the combination of two cone, globe, or oval shaped cups *c* and *h*, with a globe or oval shaped piece of india-rubber, *g*, between, and a spindle, *e*, securing an opening of the size of the tubings *a* and *l*, said spindle *e* having a solid head and grooves *f*, fitting into the tongues *d* of the barrel *c*, connected with the upper cup, substantially as shown, and for the purpose specified.

321,489. **HAY RAKE AND LOADER.** JAS. DWIGANS, Tipton, Iowa. Filed May 3, 1884. (No model.)



Claim.—The combination, with the elevator-frame, roller, toothed eel, and endless apron, of the rake-head provided with the curved rake-fingers N N', the end finger, N', having a heel extension above the rake-head provided with an eye, O, at its upper end, and the spring P, connected to the eye O and to the elevator-frame, substantially as specified.

321,490. **MILK-COOLER.** JOHN M. EBERHIGER, Palmyra, Pa. Filed Apr 9, 1885. (No model.)



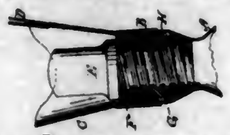
Claim.—1. In a milk-cooler, the cold-water reservoir B, provided with lugs B^2 on the inner side, and arms B' on the outer and upper portion thereof, in combination with the piston-like stopper C, provided with packing C', a central tube, C^2, extending to the bottom thereof, and small tube C^3, with hose C^4 connected thereto, substantially as and for the purpose described.

2. In a milk-cooler, the water-reservoir B, provided with hooked arms B', lugs B^2, stopper C, provided with packing C', and tubes C^2 and C^3, in combination with the milk-receptacle A, the cover D, having ventilating-holes D^2 and hoods D^3, and provided with a central cylinder, D'; and handles D^4, substantially as and for the purpose described.

3. In a milk-cooler, the reservoir B, its arms B', internal lugs, B^2, the piston-like stopper C, its tubes C^2 and C^3, and cover D, having ventilating-holes D^2 and hoods D^3, in combination with the milk-receptacle A, having a conical bottom, its pipe A^2, faucet A^3, feet *a'* at the bottom thereof, and the cream-gage A^4, substantially as and for the purpose described.

4. In a milk-cooler, the combination of the milk-receptacle A, having hooks a^2 upon its rim, a conical bottom, pipe A^2, faucet A^3, with the water-reservoir B, having arms B', to engage with the hooks a^2, the piston-like stopper C, having packing C', tubes C^2 and C^3, and the cover D, substantially as and for the purpose described.

321,491. **MEANS FOR CLOSING THE OPENINGS IN RUBBER BOTTLES AND OTHER SIMILAR RUBBER ARTICLES.** EDWARD A. FELLOWS, Reading, Mass. Filed Oct. 31, 1884. (No model.)

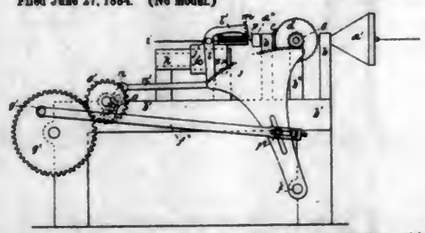


Claim.—1. An india-rubber bottle or similar article, with its neck or opening provided with a collar vulcanized thereon, having an inelastic screw-thread of hard rubber, in combination with a stopple or plug having a corresponding inelastic screw-thread, substantially as described.

2. An india-rubber bottle or similar article having in its neck the hard inelastic rubber collar provided with a soft-rubber washer vulcanized thereon, in combination with a stopper or plug of hard inelastic rubber, substantially as described.

3. An india-rubber bottle or similar article of soft rubber, with a neck provided with a hard inelastic rubber collar having a soft-rubber covering and washer all vulcanized so as to be integral with each other, substantially as described.

321,492. **WIRE-TWISTING MACHINE.** HIRAM FRANK, New York, N. Y., assignor to the Twisted Wire Box Strap Company, same place. Filed June 27, 1884. (No model.)



Claim.—1. In a wire-twisting machine, the combination, with a rotating wire-carrier, and means, substantially as described, for causing it to periodically change its direction of rotation, of a reciprocating feeding device constructed and operated to draw the wires through the revolving head while said head is revolving in both directions, as set forth.

2. In a wire-twisting machine having a revolving head constructed to twist the strands in opposite directions in the adjacent sections of the twisted band, the combination therewith of a reciprocating feeding device provided with a stud which passes between the strands in close proximity to the revolving head of the machine, whereby eyes are formed in the twisted wires at the junctures of the opposite twists, substantially as set forth.

3. A feeding device for drawing the strands of wire through the revolving head of a wire-twisting machine, composed of the following elements in combination: a sliding block, a bent lever-arm pivoted thereto and provided with a stud at its gripping end, two stops on the block between which the lower end of the arm plays, and actuating mechanism, connected to the lower end of the arm, by which the arm is caused to rock on its pivot, and then, with the block, is reciprocated, substantially as and for the purpose set forth.

4. The combination, with a revolving head constructed to carry two or more wire strands in separate passages formed through it, and means for causing said head to periodically change its direction of rotation, of a holding and feeding device opposite one end of it to hold and feed the strands forward as they are twisted, and a guide opposite the other end of the head at sufficient distance therefrom so that the strands are not injuriously affected by the reverse twists imparted to them between it and the head as the head revolves in the opposite directions, substantially as set forth.

5. In a machine for making twisted-wire bands having eyes formed therein by outward bends of the strands of which it is composed, and having the twist in opposite directions on the opposite sides of each eye, the combination of a revolving head, a reciprocating feeding device provided with a holding-stud to form the eyes, and operating mechanism, substantially as described, whereby the head is rotated in one direction, while the feeding and holding device is moved to draw the wire strands through it, is brought to rest and stops while the feeding device moves back for a fresh grip, and is then rotated in the opposite direction as the feeding device again acts to draw the strands through it, and is then brought to rest, while the feeding device again moves back for a fresh grip, and so on.

6. In a wire-twisting machine, in combination, the revolving head *a a' a²*, the sliding block *j*, the bent arm *l l'* pivoted thereto, the stud *m* in the arm *l'*, and the stop-pins *j''* and *j³*, substantially as set forth.

7. In a feeding device for wire-twisting machines, in combination, the sliding block *j*, the stop-pins *j'' j³*, the bent arm *l l'*, the stud *m*, and the stripping-plate *p*, substantially as set forth.

8. In a wire-twisting machine, in combination, the revolving head *a a' a²*, the ring-guide *q* opposite the entrance end of the head, and the reciprocating feeding device *j l l' m* opposite the other end, and mechanism, substantially as described, for actuating the revolving head and feeding device in unison, as set forth.

9. In combination, the sliding block *j*, provided with stop-pins *j'' j³*, the bent arm *l l'*, provided with the stud *m*, the link *n'*, the slotted lever *n*, and the crank-pin *o* on the shaft of wheel *o'*, driven by the wheel *g'* of the main shaft *h*, substantially as and for the purpose set forth.

10. In combination, the revolving head *a a' a²*, the bevel-wheels *c* and *d*, the pinion *e*, the segmental gear *f*, provided with the stud *f''*, the crank-pin *g* of the wheel *g'* on the main shaft *h*, the connecting-rod *f''*, slotted at one end, the sliding block *j*, provided with stop-pins *j'' j³*, the bent arm *l l'*, provided with the stud *m*, the link *n'*, the slotted lever *n*, and the crank-pin *o* on the shaft of wheel *o'*, driven by the wheel *g'* of the main shaft *h*, substantially as and for the purpose set forth.

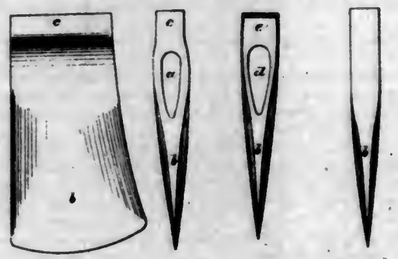
321,493. **ELECTRIC-LAMP HOLDER.** ALFRED HAID, Rahway, N. J., assignor to the Excelsior Electric Apparatus Company, New York, N. Y. Filed Feb. 24, 1885. (No model.)



Claim.—1. A tubular holder for a portable or hand incandescent electric lamp, formed in sections adapted to be united in the manner described, in combination with fixed terminals in the lamp-containing section and loose removable terminals in the other, connected with the battery-wires, and arranged to be joined with the fixed terminals, and held in contact therewith by uniting the two sections together, substantially as set forth.

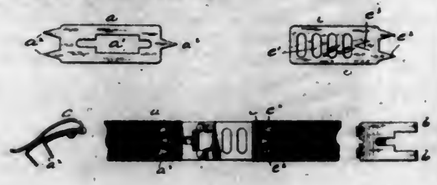
2. A tubular holder for an incandescent lamp, formed in two sections, adapted to be united in the manner described, in combination with metal strips D F, secured in one section, and springs P P, secured to an insulating-plug and connected with the battery-wires, and fitting loosely within the other section, these parts being so constructed that the springs P P when joined to the strips D F are held in contact therewith by uniting the two sections of the holder, as and for the purpose set forth.

321,494. **MANUFACTURE OF AXES.** HENRY HAMMOND, New Haven, Conn. Filed Sept. 27, 1884. (No model.)



Claim.—The process of making the eye and head of an ax, which consists in first heating an ax-blank and then in forcing the sides thereof apart at the eye portion till that portion is expanded to the ultimate thickness and form desired, and in upsetting the upper end of the blank till it reaches the thickness and shape desired for the head of the ax, all substantially as described.

321,495. **SHOE-CLASP.** JOSEPH C. HAMMOND, Jr., Rockville, Conn. Filed Apr. 27, 1885. (No model.)

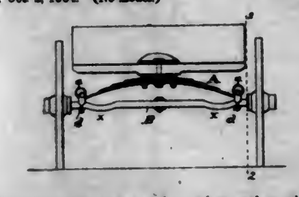


Claim.—1. The improved tongue-blank formed of thin metal, with a central opening contracted at each end, and the sharpened integral projections or spurs on each end of the blank, which lie with their broadest part widthwise of the plate, all substantially as described.

2. In a shoe-clasp, the tongue-plate formed of a single piece of metal folded back upon itself, with the projecting tongue-holding arms between which the tongue is pivoted, and with the respective ends of the plate bearing the integral spurs broadened at the base and lying widthwise across the plane of the plate, in combination with the tongue pivoted to said plate, all substantially as described.

3. In a shoe-clasp, in combination with a tongue with its pivot held between the folded parts of the tongue-plate, the tongue-plate formed of a single piece of metal folded upon itself, with the projecting tongue-holding arms, between which the tongue is located, and with the respective ends of the plate bearing the integral spurs, whereby the plate is firmly attached to any article and its parts closed upon the tongue-point, all operating substantially as shown and described.

321,496. **CARRIAGE-SPRING.** MICHAEL HAUGHEY, St. Louis, Mo. Filed Oct. 2, 1884. (No model.)



Claim.—As an improvement in carriage-springs, the combination of a half-elliptic spring, A, having the ends *a a* of its bottom plate curved into a circular form and scored directly to pintles of clips away from the axles, clips *d d*, rigidly secured to the axle, and the axle B, situate below the spring, so that the spring shall have a lateral play or movement and the axle shall act as a stop to the downward movement of the middle portion of the spring, substantially as and for the purposes specified.

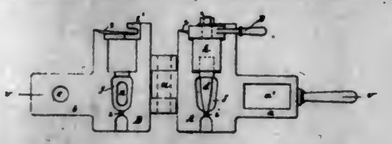
321,497. **GLOVE OR MITTEN.** SIMON HELFAER, Milwaukee, Wis., assignor to O. C. Hansen, same place. Filed Sept. 25, 1884. (No model.)



Claim.—1. A glove or mitten provided with a continuous strengthening-strip extending across the knuckle portion from side to side.

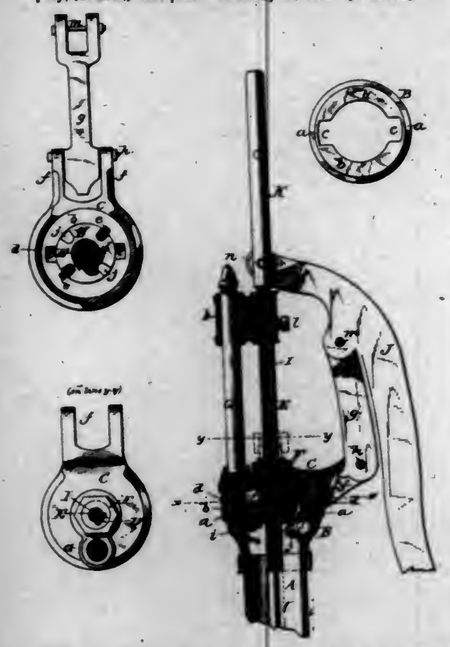
2. A glove or mitten provided on its exterior with a continuous strengthening-strip extending across the knuckle portion from side to side.

321,498. **FORM OR MOLD FOR GLASS CIGAR-MOLDS.** HERMANN HILDE, Rosswein, Germany. Filed Oct. 30, 1884. (No model.)



Claim.—The herein-described form for making glass cigar-molds, consisting of the hinged parts A and B, secured together by a bolt, *c*, and containing the desired cavity, J, and opening *n*, the plug *h*, with die *d*, and lever D, working against inclines *l* and projections *l'*, in combination with a suitable press-plunger provided with a plug, S, and die *m*, the whole being arranged to operate in the manner and for the purpose substantially as set forth.

321,499. PUMP. WILLIAM H. HOLCOMBE and CLIFFORD A. HOLCOMBE, Beloit, Wis., assignors to Holcombe Bros. & Stone Manufacturing Company, (Limited,) same place. Filed May 31, 1884. (No model.)



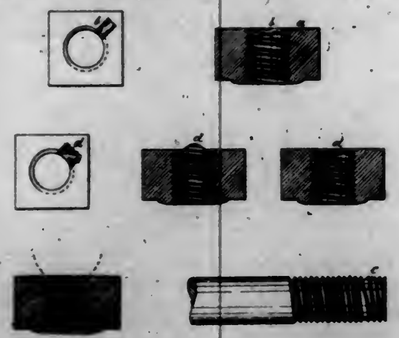
Claim.—1. The combination, in a pump, of top B, cap C, guide rod G, cross-head H, carrying tubular piston-rod E, pump-rod L, arranged within the latter, and the tabular bolt D, connecting the top and cap and forming a guide for the piston-rod, as shown.

2. In a pump, the combination, with top B, rotatable cap C, tubular plug D, connecting the top and cap, as described, guide-rod G, attached to and rotatable with the cap-plate, cross-head H, sliding upon the guide-rod, tubular rod E, and pump-rod L, attached to the cross-head and arranged to work through the tabular bolt, as set forth.

3. In a pump, the combination of top B, rotatable cap C, provided with guide-rod G, tubular bolt D, connecting the cap and top, cross-head H, sliding upon the guide-rod and carrying tubular rod E and piston-rod I, and set-screw *l*, whereby the rods E and I may be connected or disconnected at will, as and for the purpose set forth.

4. In a pump, the combination of top B, provided with flange *b*, having notches *c*, cap C, resting and adapted to be rotated upon said top, and provided with depending lugs *e*, and tubular bolt D, binding said cap and top together, as described, and provided with lugs *i* and two sets of notches, *j j*, as and for the purpose set forth.

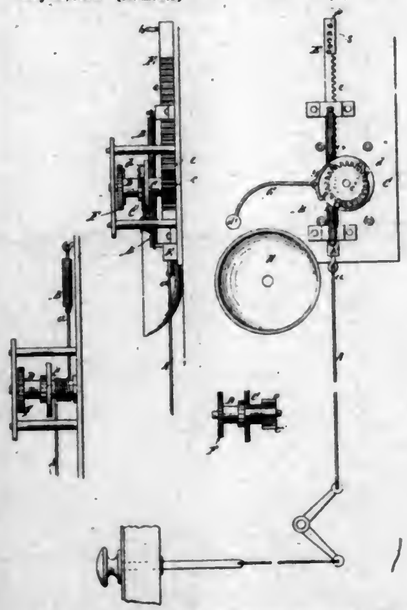
321,500. NUT-LOCK. ROBERT HOWARTH, Wolverhampton, County of Stafford, England, assignor to Moses Bayliss, Edwin Jones, William Bayliss, Samuel Bayliss, and William Edwin Jones. Filed July 9, 1884. (No model.) Patented in England May 12, 1884, No. 7,589, and in Belgium Feb. 18, 1885, No. 67,927.



Claim.—1. A nut or other analogous article which has internal screw-threads, having one or more of the convolutions of its screw-thread pressed or indented in the direction of the nut-axis, substantially as described, to form a locking device, whereby, when said nut is screwed onto a bolt or other analogous article having an external screw-thread, the indented portion of the thread in the nut will distort or force out of true pitch some portion of the convolutions of the thread on the bolt, as set forth.

2. A nut or other analogous article which has internal screw-threads, having a lump or projection, *d*, formed on its face, in which a portion of the screw-thread is formed, whereby, when this lump or projection is hammered down, as described, in the direction of the nut-axis, the threads of the screw in the nut will be distorted, as and for the purposes set forth.

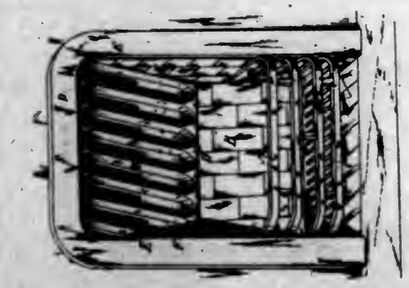
321,501. DOOR-BELL. CHARLES D. HUGHES, Brooklyn, N. Y. Filed May 12, 1884. (No model.)



Claim.—1. In a device for prolonging the vibration of a bell or gong substantially such as designated, the reciprocating rack-bar actuated in one direction by the bell-pull and in the opposite direction by a retractile spring, and engaging with and rotating a pinion upon the spindle to which the hammer-vibrator is attached, substantially in the manner and for the purpose described.

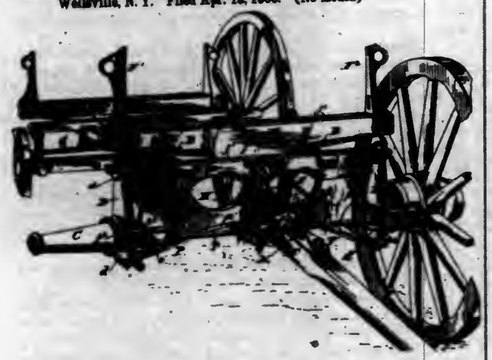
2. In combination with a bell or gong, a device for oscillating its actuating-hammer, interposed between such hammer and the pull wire or cord, and adapted to receive and store the energy imparted to the latter when drawn outward and to operate the bell or gong during the retractile movement of the parts, the parts being made relatively adjustable for the purpose of regulating the extent of motion, substantially in the manner and for the purpose described.

321,502. DRAFT-REGULATOR. WILLIAM HUNTER, San Francisco, Cal. Filed Oct. 31, 1884. (No model.)



Claim.—In a fire place or grate, the inclined plate fixed above and behind the fire, within the chimney or flue opening, and having the vertical slots, as shown, in combination with a secondary plate sliding transversely between guides upon the back of the first plate, and having slots made of different widths or with offsets between the top and bottom, said slots aligning themselves with those in the first plate, whereby the position of the draft-opening may be regulated, substantially as herein described.

321,503. RUNNING-GEAR FOR WAGONS. LORENZO D. HURD Wellsville, N. Y. Filed Apr. 13, 1885. (No model.)



Claim.—1. The combination, with the fixed or stationary axle-bar, of the axle-arms pivoted to said axle-bar, and the rock-bolster also pivoted to said axle-bar, and provided with the fixed stakes or uprights, substantially as and for the purpose described.

2. The king-bolt for uniting the bolster to the stationary axle-bar, provided with the shoulder or collar forming the bolt-head, and the lugs or ears on said bolt above the shoulder or collar, for uniting the bolster to and holding it in place on the axle, substantially as described.

3. The tongue-socket for uniting the tongue to the forward axle, consisting of the curved upright provided with the forwardly-projecting ears or side plates for embracing the rear end of the tongue, and the rearwardly-projecting perforated ears or lugs for attachment to the king-bolt, substantially as described.

4. The tongue-socket H, having the forwardly-projecting ears or side plates, A and A', for uniting it to the tongue, the curved upright A^2, uniting said side plates, the lugs or ears A^3 and A^4, for engaging the king-bolt, and the truss rod or brace K, substantially as described.

5. The pivoted axles provided with the forwardly-extending lever-arms, in combination with pivoted links connecting each separately, with the pivoted tongue in front of the axle, substantially as described.

6. The pivoted axle-arms in combination with links connecting them with the pivoted tongue through ball-and-socket joints, substantially as described.

7. The extensible links for uniting the arms or levers on the pivoted axles with the tongue, composed each of the rod and a clevis adjustable thereon, and united to the axle-arm by a ball-and-socket or universal joint, substantially as described.

8. The pivoted axle-arm provided with the lever-arm having the vertical longitudinal slot, in combination with the pivoted link for uniting said lever to the pivoted tongue, the clevis on said link, and the through bolts or pins for uniting said clevis and axle lever-arm, substantially as described.

9. The detachable socket-plate for uniting the upright pivot of the axle-arm to the stationary axle-bar, provided with the oil cup or receptacle, substantially as described.

10. The combination, with the stationary axle-bar, of the projecting axle-bar straps, the axle-arms provided with vertical sleeve-pivots, the socket-pieces for uniting said pivots to said projecting straps, and the through-bolts for uniting said sleeve-pivots, socket-pieces, and axle-bar, substantially as described.

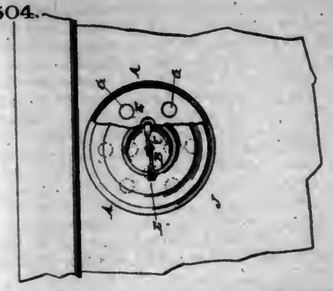
11. The combination, with the fixed or stationary forward axle, of the pivoted axle-arms, provided with the forwardly-projecting levers, and stay-chains connecting said levers with the double-tree, substantially as described.

12. The combination of the stationary axle-bar, the axle-arms pivoted thereto, the pivoted tongue, the double-tree, and stay-chains connecting said axle-arms and double-tree, substantially as described.

321,504. SEWER-GAS EXCLUDER. LYDIA N. JACKSON, New York N. Y. Filed July 17, 1884. (No model.)

Brief.—The crossed pivoted levers are provided with hooks at their inner ends and finger-plates at their outer ends and a spring for holding them together.

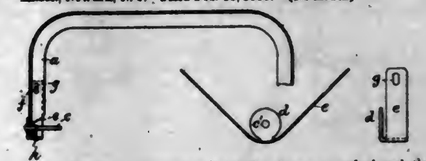
321,504.



Claim.—1. The combination, with the rubber cup A, of the crossed pivoted levers C, having spring-pressed hooks D on the inner ends and finger-plates E on the outer ends, substantially as herein shown and described.

2. The combination, with the rubber cup A, of the crossed pivoted levers C, having hooks D on the inner ends and finger-plates E on the outer ends, and of the spring F, connected with the levers and drawing the two hook ends of the same toward each other, substantially as herein shown and described.

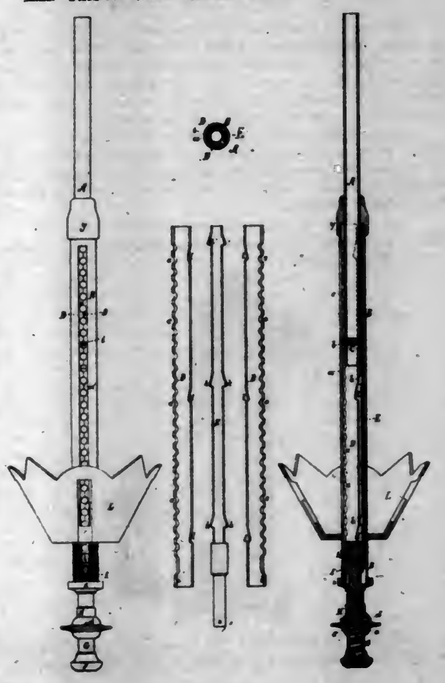
321,505. BAG AND SATCHEL FRAME SPRING. RICHARD C. JENKINSON, Newark, N. J. Filed Feb. 18, 1885. (No model.)



Claim.—1. The combination, with the frames *a* and *a'* and their hinge-pin *c*, of the combined cap *d* and leaf-spring *e*, substantially as herein set forth.

2. The combined cap and leaf-spring for a riveted bag-hinge, consisting in the leaf *e*, having the cap *d*, formed at one side thereof and in one piece therewith, substantially as herein shown and described.

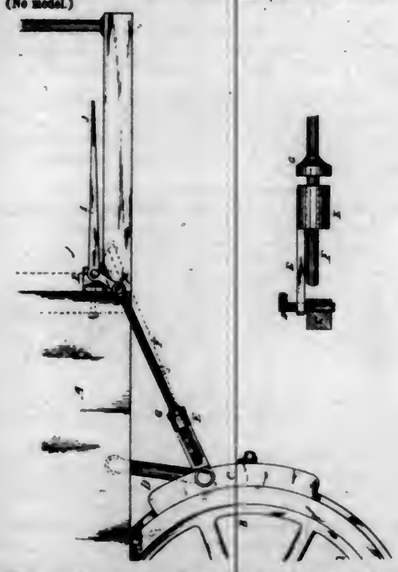
321,506. EXTENSION-CHANDELIER. JOSEPH KINTZ, Ballard Vale, Mass. Filed Oct. 1, 1884. (No model.)



Claim.—1. The combination of the tube A, having the stud or headed screw C, and the slotted tube B, with the jaws or strips D D, notched as set forth, and with mechanism for moving each jaws laterally toward and away from each other, to either engage them with or disengage them from the said stud or screw, all being substantially as set forth.

2. The combination, substantially as described, for operating the notched jaws D D within their tube, and so as to engage them with and disengage them from the stud or screw C, of the rod or tube A, such combination consisting of the neck G, with the spiral spring *g*, the connected sliders F and H, the wedge I, projections *i i*, and notches *l* of the bars D D, and the actuator E, having the cams or projections *k k*, all being arranged and to operate essentially as represented.

321,507. CAR-BRAKE. FRANK O. LANDGRAFF, San Francisco, Cal., assignor of one-half to Milton E. Willis, same place. Filed Jan. 16, 1885. (No model.)



Claim.—1. In a street-car, the combination of a suspended swinging brake-shoe and suspending-link, a rod sliding loosely within the sleeve, and having a collar or stop upon it, which may be drawn away from or brought in contact with the end of the sleeve, and a lever having one arm connected with the end of the rod, and the other within reach of the operator, substantially as herein described.

2. A suspended swinging brake-shoe with a hollow sleeve, a rod sliding therein and having a collar or stop fixed to it, as shown, the operating-lever connected with the rod having the fulcrum-pin passing through a lug which is fixed to the front of the car or platform, substantially as herein described.

321,508. BICYCLE. ERNST G. LATTA, Friendship, N. Y. Filed Dec. 10, 1884. (No model.)



Claim.—1. The combination, with a bent handle-bar, of a handle-bar lug having an elongated opening through which the bent handle-bar can be passed, and a fastening whereby the bent handle-bar is secured in said elongated opening, substantially as set forth.

2. The combination, with the bent handle-bar and a handle-bar lug having an elongated opening, of a space-block inserted in said opening and securing the handle-bar in the same, substantially as set forth.

3. The combination, with the steering-head and a bent handle-bar, of a handle-bar sleeve provided with an elongated opening and a space-block having a socket which surrounds the steering-head, substantially as set forth.

4. The combination, with the steering-head B C and the sleeve D, provided with the elongated opening *e*, of the bent handle-bar E, space-block F, provided with socket *g*, and screw-nut d^2, substantially as set forth.

5. The combination, with the axle having a dished or recessed end, of a crank fitted on the axle and provided in its socket with an inwardly-projecting ring fitting into the dished end of the axle, substantially as set forth.

6. The combination, with the axle, of a crank fitted on the axle and having the outer portion of its socket provided with an inwardly-projecting ring, i^2, having an internal screw-thread, substantially as set forth.

7. The combination, with the axle, of the crank I, provided with a ring, i^2, of a key, *k*, whereby the crank is held on the axle, and a screw, J, whereby the crank and key are held on the axle, substantially as set forth.

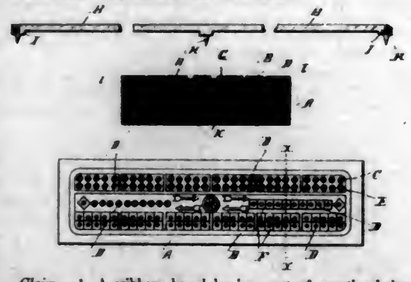
8. The combination, with the pedal-shaft and pedal-cones, of a differential screw-adjusting device, substantially as set forth.

9. The combination, with the crank, of a pedal shaft and pedal-cones, a differential screw, whereby said shaft is adjusted, and a spring, whereby said adjusting-screw is held in position, substantially as set forth.

10. The combination, with the pedal-shaft L, provided with screw *l*, longitudinal groove l^2, and cone m^3, of the sleeve M, provided with cones m^2 and a head, *m*, a differential adjusting-screw, N, and pin l', substantially as set forth.

11. The combination, with the pedal-shaft L, provided with screw *l*, longitudinal groove l^2, and cone m^3, of the sleeve M, provided with cone m^2 and a head, *m*, a differential adjusting-screw, N, pin l', and spring n^3, substantially as set forth.

321,509. CRIBBAGE-BOARD. CHARLES W. LE COUNT, South Norwalk, Conn. Filed Jan. 29, 1885. (No model.)



Claim.—1. A cribbage-board having a set of counting-holes provided with a distinguishing-mark consisting of raised angular bosses surrounding them, and another set or sets of holes having a distinguishing-mark consisting of raised circular beads, whereby the holes belonging to one player are distinguished from those belonging to other players.

2. A cribbage-board having a set of counting and a set of game holes provided with a distinguishing-mark, consisting of raised angular bosses surrounding them, and another set or sets of counting and game holes having distinguishing-marks consisting of raised circular beads, substantially as and for the purpose set forth.

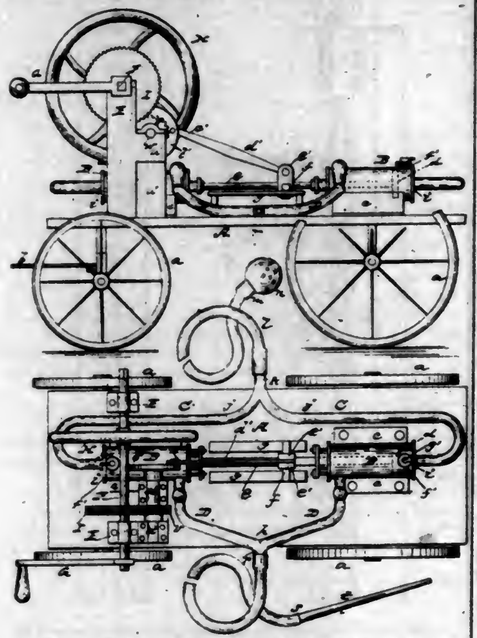
3. In a cribbage-board, the combination, with a block having a recess, of a plate having pin-holes, which is adapted to fit in said recess, and is provided upon its under side with spurs which are adapted to be driven into the block, whereby the plate is held in place without the use of screws.

4. The combination, with the recessed block, of a plate having pin-holes, and provided on its under side with spurs which are adapted to be driven into the wood to hold the plate in position, and bosses which rest upon the surface within the recess, whereby an open space is left between the plate and the block.

5. The plate having undercut pin-holes, spurs, and bosses, as shown, in combination with a block having a recess within which the plate fits, and pin-holes which register with those in the plate.

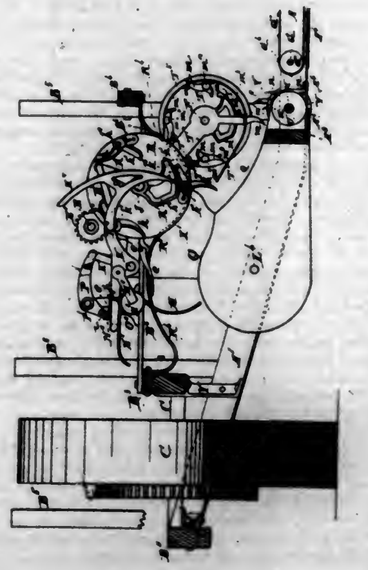
6. The block having holes upon its under side, into which blocks, M, of rubber are turned for rests, and upon its upper side a recess and holes K, in combination with the plate having pin-holes, spurs which engage the block, and bosses upon which the plate rests, substantially as described.

321,510. FIRE-ENGINE. HENRY LOSEE, Pinckneyville, Ill. Filed Mar. 11, 1885. (No model.)



Claim.—The fire-engine herein described, consisting of the frame or bed A, having the transporting-wheels and draft-tongue, and provided with the standards E E, shaft F, having the cranks, fly-wheel H, gear-wheel I, pinion *v* on the shaft *w*, crank *b'*, pitman *d'*, the double or twin cylinders B B, piston-rod *e*, having at each end the plungers *d d*, and provided at its center with the cross-head *f*, the inlet-pipes C C, outlet-pipes D D, the hose, and the cylinders having the openings in their ends and provided with the removable plugs *g' g'* for closing the same, the whole operating as described, and arranged as specified.

321,511. GRAIN-BINDING HARVESTER. WILLIAM W. MARSH and MAURICE E. BLOOD, Sycamore, Ill. Filed Apr. 25, 1883. (Model.) Patented in Canada May 27, 1884, No. 19,420.



Claim.—1. The sprocket-wheels or pulleys D', E', F', G', and H', and tightener I I', in combination with a drive chain or belt, D'', for rotating the packing devices through the shaft E and gear E'', and driving the grain-adjusting devices, platform-carrier, and pickers through their shafts F, G, and H, respectively, as shown and described.

2. The combination of the sprocket wheels or pulleys E' F' G', and their shafts, and the drive-chain engaging therewith, as and for the purpose described, adapted for raising the shaft F by straightening the chain when increased labor is brought to bear upon the chains, substantially as and for the purpose specified.

3. A suspended and revolving disk or wheel having fingers or teeth to engage the grain mounted on the end of a shaft that is free to rise and fall by swinging on a pivot at its opposite end, in combination with a driving-pulley mounted on said shaft between the disk or wheel and the pivot-point, and a driving-chain acting on the pulley in such manner that when increased labor is brought upon the chain the disk or wheel will be raised by the action of the chain, substantially as and for the purpose specified.

4. A suspended and revolving disk or wheel having fingers or teeth to engage the grain, and a driving-pulley, both mounted on a shaft that is free to rise and fall, in combination with a driving-chain operating on the pulley in such manner that the shaft will be raised by the tendency of the chain to lift the pulley and disk or wheel when increased strain is brought upon the chain, for the purpose specified.

5. The combination of a vertically-revolving grain-adjuster, adapted to stand at varying angles in relation to the grain, and a vertically-revolving packer or carrier, both having fingers or teeth to engage the grain, and both rotated by a driving-shaft, on which they are mounted, and means for driving such shaft, substantially as and for the purpose described.

6. The combination of a vertically-revolving grain-adjuster and a vertically-revolving packer, both having fingers or teeth to engage the grain, and both rotated by a shaft, on which they are mounted, the adjuster being adapted to be turned at varying angles in relation to the grain, and the packer to be moved bodily or squarely lengthwise of the grain, and means for adjusting the adjuster and packer simultaneously, substantially as specified.

7. A suspended or revolving wheel or disk adapted to stand at varying angles in relation to the grain, and a vertically-revolving wheel or disk which stands squarely with the grain, both having fingers or teeth to engage the grain, in combination with a shaft carrying both wheels, which is free to rise and fall to allow the wheels to ride over varying thicknesses of grain, substantially as and for the purpose specified.

8. A suspended and revolving grain-adjuster adapted to be turned at varying angles in relation to the grain, and a suspended and revolving packer adapted to move squarely lengthwise of the grain, both provided with fingers or teeth to engage the grain, in combination with a driving-shaft, on which both are mounted and rotated, and means for moving said driving-shaft endwise to change the position of the packer and adjuster simultaneously, substantially as described.

9. The swinging adjuster consisting of a wheel, T, with teeth, and the auxiliary packer consisting of a wheel, S, with teeth, both mounted on and rotated by the driving-shaft F, in combination with the lever M, for moving said shaft endwise and changing the positions of the packer and adjuster, substantially as and for the purpose specified.

10. The driving-shaft F, carrying and rotating the vertically-revolving packer and adjuster, provided with fingers or teeth to engage the grain and move it toward the binder, and pivotal bearing F'' at one end of the driving-shaft, in combination with supports T'' and T^6, swinging on the arm T^4, substantially as and for the purposes specified.

11. The vertically-revolving and horizontally-swinging adjuster consisting of the wheel T, having teeth, in combination with the arm or support T'' and T^6, and stationary-pin T^4, passing through the tapering slot in T^6, for allowing the adjuster to swing both laterally and vertically, substantially as and for the purpose specified.

12. The picker-wheels U, having pivoted teeth *n*, constructed as shown, and operated by a fixed cam, U', in combination with the binding-platform Q, having slots U^2, for the passage of the teeth, and the cross-piece A^6, serving as a step to catch the grain scattered from the apron and hold it until the picker-teeth take it away, and to which is secured the lower end of the binding-platform, all substantially as shown, and for the purpose specified.

13. The picker-wheel U, cam U', and arm U'', in combination with the cross-sill A^3, supporting the binding-platform Q and guard A^5, all substantially as described, and for the purpose set forth.

14. The combination, with the carrier G^3 and picker-wheels U, having teeth *n* pivoted thereon, and operated by a stationary cam, U', of a grain-adjuster and an auxiliary packer, which are located and operate on the opposite side of the grain from the pickers, substantially as specified, and for the purposes set forth.

15. The combination of the main packer, grain-adjuster, and auxiliary packer, all suspended above the grain, and each consisting of a disk provided with teeth, of the picker-wheels U, having pivoted teeth *n* and carrier G^3, located beneath the grain, for delivering the grain to the binding-receptacle, substantially as specified

16. The combination of the shaft J, located in bearings on the main frame X', and having its inner end terminating in close proximity and adjacent to the binder-arm, and having located thereon, between the binder-arm and frame X', the packer consisting of the wheel R, having pivoted teeth and swinging cam R', attached to the arm or crank R'', and connected by link R^3 with the binding-arm for projecting the teeth, substantially as and for the purposes specified.

17. A vertically-revolving wheel or disk, R, having on one face a gear by which it is rotated, and carrying on its opposite face a series of pivoted fingers or teeth to engage the grain, in combination with a shaft, E', and gear-wheel E'', substantially as and for the purpose specified.

18. A vertically-revolving wheel or disk, R, having on one face a gear by which it is rotated, and carrying on its opposite face a series of fingers or teeth to engage the grain, in combination with a guard, R^4, for protecting the teeth and guiding the grain while entering and passing out from the binding-receptacle, substantially as specified.

19. The packer consisting of the wheel R, having fingers or teeth pivoted thereon, and operated by a cam, R', on the arm R'', and link R^3, in combination with the trip *e*, finger *d*, stop *c*, spring *d''*, and crank K', all operating substantially as set forth, and for the purpose specified.

20. The combination of a binding-arm and a compressing-arm with a pitman, M'', provided with a locking cam or face, and the lever P P', provided with the locking-roller *i*, and means for operating the lever P P' to lock and unlock the compressor, substantially as described.

21. The combination, with a binding-arm and a compressing-arm, M, of a pitman, M'', having the locking cam or face *h*, the lever P P', having the tripping-cam *j*, and tripping-roller *f'* on the heel of the binder-arm, substantially as described, and for the purpose specified.

22. The combination, with a binding-arm and a compressing-arm, M, of a pitman, M'', a locking device for holding the compressor locked, a roller *f'*, on the tail K^3 of the binding-arm, and an arm, N', on the pitman M, co-operating with the roller *f'*, for forcing the compressor into position to be locked, substantially as described.

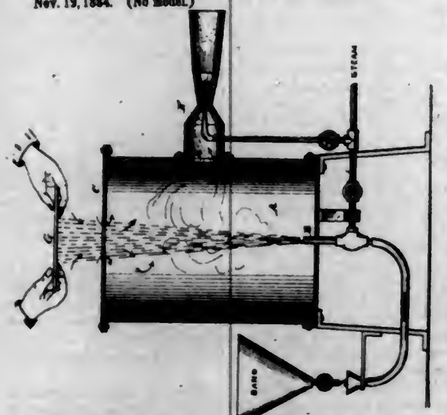
23. The combination, with a binding-arm and a compressor, M, of a pitman, M'', swinging pendant O, locking-roller *i*, locking-cam *h*, roller *f'*, tail-piece K^2, binding-arm K'', arm N', and spring-arm P having the cam *j*, substantially as and for the purpose specified.

24. The combination, with a binding-arm and a compressing-arm, M, of a locking-roller, *i*, locking-cam *h*, unlocking-cam *j*, and roller *f'*, and a binding-arm, substantially as and for the purposes specified.

25. The packer-wheel S, having teeth *l*, with heel *l'*, in combination with a cam having a face, l^4, for projecting and holding the teeth in working position, and an inclined face, l^5, arm S'', and yielding support S^2, substantially as shown, and for the purpose specified.

26. The plate V'', carrying a cam, V', and provided with a flange, V^3, and a nose, V^4, in combination with a toothed disk or wheel, V, substantially as and for the purposes specified.

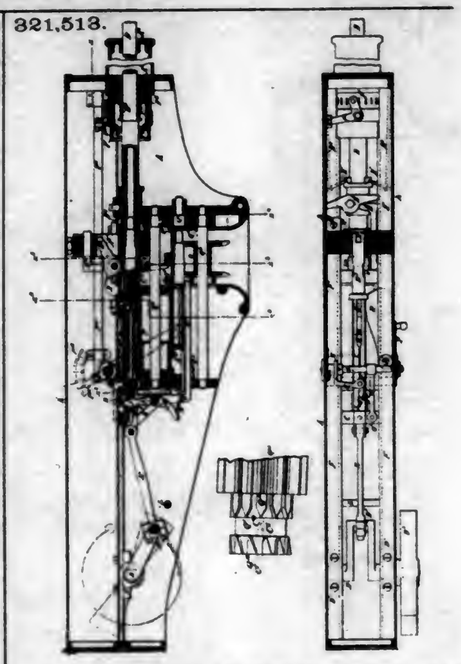
321,512. SAND-BLAST PROCESS. JEREMIAH E. MATHEWSON, Sheffield, England, assignor to Benjamin C. Tilghman, Philadelphia, Pa. Filed Nov. 19, 1884. (No model.)



Claim.—In the sand-blast process, the method of drying a jet of steam-driven sand, which consists of causing a reverse or cross current of dry air to pass through the sand-jet, substantially as shown and described.

321,513. MACHINE-GUN. HIRAM S. MAXIM, London, England, assignor to Albert Vickers and Robert R. Symon, both of same place. Filed May 2, 1884. (No model.) Patented in England Feb. 23, 1884, No. 3,944; in France June 13, 1884, No. 162,735, and in Belgium Sept. 16, 1884, No. 64,323.

321,513.



Claim.—1. In a machine or battery gun, the combination, with the barrel, a reciprocating breech-block arranged to slide from and toward the breech, a fly-wheel or equivalent connected to the breech-block for causing the return of the same to the breech after a recoil, cartridge-feeding mechanism, cartridge-exploding mechanism, and shell extracting and ejecting mechanism, all connected with the breech-block and operated by the movement of the same, substantially as herein set forth.

2. In a machine or battery gun, the combination, with a longitudinally-movable barrel, of a reciprocating breech-block arranged to slide from and toward the breech and in line with the barrel, a fly-wheel or equivalent connected with the breech-block for causing the return of the same after a recoil, cartridge-feeding mechanism, cartridge-exploding mechanism, and shell extracting and ejecting mechanism, all connected with the breech-block and operated by the movement of the same, substantially as set forth.

3. In a machine or battery gun of the kind described, the combination, with the barrel, a reciprocating breech-block arranged to slide from and toward the breech and in line with the barrel, and a fly-wheel or equivalent connected with the breech-block for causing the return of the same to the breech after a recoil, a part of the said breech-block being capable of a limited movement relatively to the main portion and adapted to engage with the rim of a shell in the breech, of cartridge-feeding mechanism and cartridge-exploding mechanism connected with and operated by the sliding breech-block, all as set forth.

4. In a machine or battery gun of the kind described, the combination, with a longitudinally-movable barrel, a reciprocating breech-block arranged to slide from and toward the breech, and a fly-wheel or equivalent connected with the breech-block for causing the return of the same to the breech after a recoil, a part of the said breech-block being capable of a limited movement relatively to the main portion and adapted to engage with the rim of a shell in the breech, of cartridge-feeding mechanism and cartridge-exploding mechanism connected with and operated by the sliding breech-block, all substantially as set forth.

5. In a machine-gun of the kind described, the combination of the barrel and the sliding breech-block arranged to move in line with the barrel, a crank and fly-wheel or its equivalent connected with the breech-block in such manner that the movement imparted to the fly-wheel by the recoil of the breech-block causes the return of the same to the breech, and loading and firing mechanism connected with and operated by the sliding breech-block, substantially as set forth.

6. In a machine or battery gun of the kind described, the combination, with the barrel, of a reciprocating breech-block arranged to slide from and toward the breech and in line with the barrel, cartridge-exploding devices in or on the breech-block, a fly-wheel, and a crank connecting the same with the reciprocating breech-block, whereby the recoil of the breech-block sets the fly-wheel in motion and effects the return of the breech-block to the breech, as set forth.

7. In an automatic machine or battery gun of the kind described, the combination of a reciprocating breech-block arranged to slide from and toward the breech and in line with the barrel, a hammer, sear, and firing-pin carried by the breech-block, a stop or device attached to the frame of the gun and extending into the path of movement of the hammer for cocking the same on the backward movement of the breech-block, and a fly-wheel and crank or equivalent connected to the breech-block for causing the return of the same to the breech after a recoil, as set forth.

8. In an automatic machine-gun of the kind described, the combination of a sliding breech-block, a hammer and sear carried thereby, a pin or stop in the path of movement of the hammer for cocking the same on the backward movement of the breech-block, and the adjustable cam N, mounted on the stationary frame of the gun in the path of the sear, as and for the purpose set forth.

9. In a machine-gun, the combination, with a sliding barrel and a sliding breech-block that is free to be moved away from the breech by the explosive force of a discharge, of the toggle-arms B', connected with the barrel, and springs B^2, acting upon said arms in a manner to force the barrel into either of its extreme positions, substantially as set forth.

10. In an automatic machine-gun, the combination, with a sliding barrel and breech-block, of the hooked lever B^3, pivoted to the barrel and adapted to engage with the breech-block, and the adjustable arm A^4, secured to the stationary frame and extending into the path of movement of the lever B^3, in such manner that as the barrel is moved it is automatically secured to the breech-block by the engagement of the lever therewith, or released from the same by the action of the arm A^4 upon the lever, as and for the purpose set forth.

11. In an automatic machine-gun, the combination, with a sliding barrel and breech-block, of the lever B^3, pivoted to the barrel, the rod B^4, arranged to slide in ways or guides in the frame between the breech-block and one end of the lever B^5, and the stop A^5, secured to the stationary frame in the path of movement of the other end of the lever, as and for the purpose specified.

12. In an automatic machine-gun, the combination, with the sliding barrel, the breech-block, and the lever B^5, pivoted to the barrel, of means for changing the leverage or action of lever B^3, consisting of the rod B^4 and stop or shoulder A^5 in the path of movement of the arms of said lever, and having the parts that come in contact with the lever rounded, substantially as shown and described.

13. In an automatic machine-gun, the combination of the sliding barrel, the breech-block, the crank and fly-wheel or its equivalent connected with the breech-block, the lever B^5, pivoted to the barrel, the stop A^5 in the path of said lever, and fixed to the frame of the gun, and the rod B^4, arranged to slide in ways or guides between the breech-block and the lever B^5, as and for the purpose set forth.

14. In an automatic machine-gun, the combination, with a sliding barrel, of the lever G^3, pivoted thereto, and arranged to form part of the seat for the cartridge when inserted in the barrel, and a fixed stop, G^4, in the path of movement of lever G^3, whereby the same is operated by impingement with the stop for starting the shell or cartridge from the barrel, all as set forth.

15. In a machine-gun, the combination, with a sliding barrel and reciprocating breech-block, of two shell-extracting levers, one carried by the breech-block, the other pivoted to the barrel, and both adapted to engage with the rim of a shell in the breech, a fixed stop in the path of the lever pivoted to the barrel, by encountering which stop on the movement of the barrel the lever pivoted to the barrel is caused to start the shell, and a stop in the path of the lever carried by the breech-block for causing said lever at a given point in its path of movement to release the shell, as set forth.

16. In an automatic machine-gun, the combination, with a stationary frame and a sliding barrel and breech-block, of the extractor-lever G, pivoted to the breech-block, and provided with inclined projections G^2, the stationary projections A^2, and the fingers A^1 on the frame A, for arresting the movement of the shell when drawn back by the extractor, all substantially as set forth.

17. In an automatic machine-gun, the combination, with a sliding barrel and breech-block, of a feed-wheel and belt of cartridges, a delivery-wheel for bringing the cartridges into position to be forced into the barrel by the breech-block, and intermediate mechanism connected with and operated by the breech-block for transferring the cartridges from the feed-wheel to the delivery-wheel, all substantially as set forth.

18. In an automatic machine-gun, the combination, with a longitudinally-movable barrel and reciprocating breech-block, of a fly-wheel and crank connected to the breech-block for causing its return to the breech after a recoil, a cartridge-feed wheel and a cartridge-delivery wheel, gearing for imparting an intermittent rotary movement to the same from the reciprocating breech-block, and a hooked rod or lever connected to the breech-block, and adapted to engage with the cartridges in the feed-wheel and transfer the same to the delivery-wheel, as set forth.

19. In an automatic machine-gun, the combination, with a longitudinally-movable barrel, a reciprocating breech-block arranged to slide in line with the barrel, and a fly-wheel and crank or equivalent connected to the breech-block, of a cartridge-feed wheel in gear with the breech-block, whereby it is intermittently rotated by the movement of the breech-block, a cartridge-delivery wheel geared with the feed-wheel, and mechanism, substantially as described, for transferring the cartridges from the feed to the delivery wheel, the said mechanism being connected with and operated by the reciprocating breech-block, as set forth.

20. In a machine-gun, the combination of a barrel, a sliding breech-block, a cartridge-feed wheel, and a delivery-wheel, a device connected with the sliding breech-block for transferring the cartridges from the feed-wheel to the delivery-wheel, and means for rotating the feed and delivery wheels intermittently and in unison with the movement of the breech-block, as and for the purpose set forth.

21. In a machine-gun, the combination, with the barrel, the sliding breech-block, and a wheel for delivering the cartridges into proper position to be forced into the barrel by the breech-block, of projections C^6 on the breech-block having inclined faces C^6 C^7, and the rows of teeth or ways Q^{10} on the delivery-wheel, arranged in such manner that the said wheel will be intermittently rotated by the reciprocation of the breech-block and action of the projection C^6 upon the teeth Q^{10}, as described.

22. In a machine or battery gun, the combination, with the barrel, the sliding breech-block, a delivery-wheel, and a feed-wheel, of an extractor for withdrawing the shells from the barrel, and an extractor for transferring the cartridges from the feed to the delivery wheel, both of said extractors being connected with the breech-block and arranged for simultaneous operation, all substantially as set forth.

23. In a machine-gun, the combination, with the barrel, the sliding breech-block, the delivery-wheel, and the feed-wheel, of the bracket K, extending from the breech-block, and the hooked lever K', pivoted thereto and adapted to engage with and transfer the cartridges from the feed to the delivery wheel, all as specified.

24. In a machine-gun, as a means of regulating the number of shots fired in a given time, the combination, with the sliding barrel, of a device such as an adjustable dash-pot and piston, one member of which is fixed, the other connected with and moved by the barrel, whereby the movement of the barrel is more or less related, as set forth.

25. In a machine or battery gun, as a means of regulating the number of shots fired in a given time, the combination, with the sliding barrel, of a perforated cylinder and a piston sliding therein, the cylinder and piston being concentric with the barrel, and secured, respectively, to the frame and the barrel, and means for varying the apertures for the escape of air when compressed by the forward movement of the barrel and piston, whereby the intervals between the recoil of the barrel and the time when it reaches its firing position may be varied or controlled, all as set forth.

26. In an automatic machine-gun, the combination, with the breech-block having a recessed cross-head, C', the firing-pin, and hammer, of the shaft O, trigger-arm P, arm O', extending from shaft O, and pin or stud O^2 on the end of arm O', adapted to enter the recess in cross-head C', and thereby lock the same and prevent the discharge of the gun before the trigger P is pulled.

27. In a machine or battery gun of the kind described, the combination, with the sliding breech-block and wheel containing the cartridges, of a swinging plate, R, and spring F, acting upon the same, the said plate being adapted to cover the exposed cartridge and prevent the displacement of the same, substantially as and for the purpose specified.

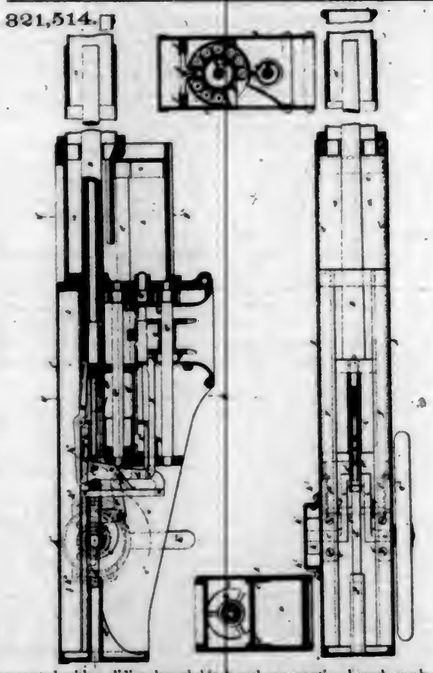
321,514. MACHINE-GUN. HIRAM S. MAXIM, London, England, assignor to Albert Vickers and Robert R. Symon, both of same place. Filed May 27, 1884. (No model.) Patented in England Jan. 3, 1884, No. 606, and in France June 13, 1884, No. 162,737.

Claim.—1. In a machine or magazine gun, the combination, with the barrel, of a chamber located in proximity to the barrel, with its open end near the muzzle, so that the escape of gases at each discharge will produce a partial vacuum in the chamber, a piston in the chamber adapted to be moved by the air-pressure caused by the vacuum, a sliding breech-block and breech mechanism, and connections between the piston and breech mechanism, whereby the movement of the piston operates the said breech mechanism, as and for the purpose set forth.

2. In a machine or magazine gun, a casing surrounding the barrel and forming a chamber in the open end of which is the muzzle of the barrel, so that a partial vacuum will be produced in the chamber by the escape of gases at each discharge, and a piston in said chamber adapted to be moved by the air-pressure caused by the vacuum, combined and connected with a sliding breech-block, and the breech mechanism co-operating therewith, whereby the movement of the piston sets in operation the breech mechanism, as and for the purpose set forth.

3. In a machine or magazine gun, a chamber located in proximity to the barrel, and having its open end near the muzzle of the barrel, so that a partial vacuum will be produced in the chamber by the escape of gases at each discharge, and a piston within said chamber adapted to be moved by the air-pressure caused by the vacuum, combined and

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connected with a sliding breech-block and co-operating breech mechanism, and a device, such as a volute spring, connected to the frame of the gun and to the breech-block, for storing the energy developed by the movement of the piston and forcing it back, and thereby effecting the operation of the gun.

4. In a machine-gun, the combination, with a chamber located in proximity to the barrel, and having its open end near the muzzle, so that a partial vacuum will be produced in the chamber by the escape of gases at each discharge, of piston C, working in the chamber, breech mechanism, and a crank-shaft with a volute spring, *k*, operatively connected with said breech mechanism, and connections between the piston C and the breech mechanism, whereby a movement of the piston sets the breech mechanism into operation, as set forth.

5. In a machine-gun, a chamber located relatively to the muzzle, so that a partial vacuum is produced therein by the escape of gases at each discharge, and a piston working in said chamber, in combination with a slotted cross-head, *d*, and crank-shaft *e*, a spring, *k*, operating on said crank-shaft, the breech-block C, connected with the cross-head, and a hooked arm, K', these parts being constructed and combined for operation in substantially the manner described.

6. The breech mechanism consisting of the slotted cross-head *d*, crank-shaft *e*, and crank-pin e^2, in combination with the breech-block, the firing-pin *i*, (having the head i^2 formed with a knife-edge, and provided with roller i^3,) and the arm *j*, pivoted to the cross-head, these parts being constructed and arranged in substantially the manner set forth.

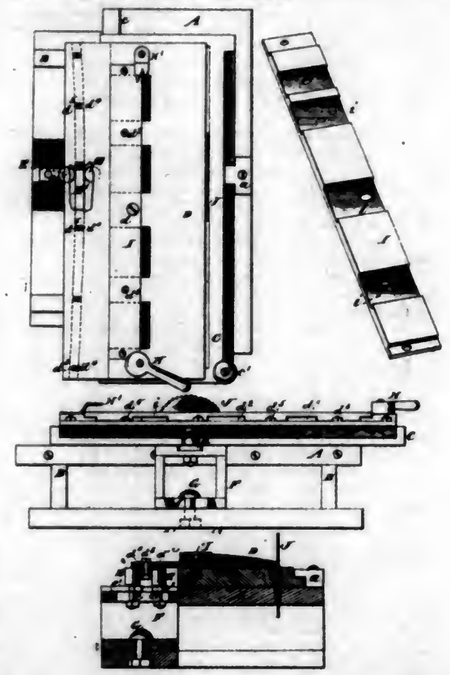
7. In a magazine-gun, the combination, with the breech-block, the cross-head *d*, and crank-shaft for operating the same, of the arm *j*, pivoted to the cross-head, the firing-pin *i*, the sear *h*, extractor *g*, and spring h^4, carried by the breech-block, and arranged to be operated by the crank-pin e^2, substantially as set forth.

8. In a machine-gun of the kind described, the combination, with the breech-block and a crank-shaft for imparting a to-and-fro movement to the same, of a volute spring, *k*, connected to the crank-shaft, and a cover adjustably secured to the frame of the gun for regulating the tension of said spring, as and for the purpose specified.

9. In a machine-gun of the kind described, the combination, with the breech-block, the cross-head *d*, connected therewith, and the crank-shaft *e*, for imparting movement to the cross-head, of the volute spring *k*, connected with the crank-shaft, and the adjustable cover or case k^5, for varying the tension of the spring, as set forth.

10. In a machine-gun, the combination of a sliding breech-block, the cross-head connected therewith, the crank-shaft E, for imparting movement to the cross-head, a chamber containing a piston connected with the crank-shaft, the said chamber being placed in proximity to the barrel, and having its open end near to the muzzle, and a hand-wheel on the crank-shaft for starting the gun in operation, as described.

321,515. STAVE-JOINTING MACHINE. WILLIAM B. MCCARTY, Russellville, Ky. Filed Nov. 7, 1884. (No model.)



Claim.—1. In a stave-jointing machine, the combination of the board or plate A, having guide-clip *a* and flange *a'*, the plate C, slotted at *c* to slide on said flange, and the plate D, pivoted to said plate C, and carrying the subjacent guide-bar *d'*, with a pair of vertically-arranged rolls, E E, as and for the purpose described.

2. In a stave-jointing machine, the guide-box F, slotted longitudinally on the bottom and transversely on top, a screw-clamp connected with each slot, and the slide-bars *e' e'*, in combination with the roller-guide journals *e e*, whereby said box is made longitudinally adjustable on a frame bar or board, while the rollers are adjustable across the box, for the purpose specified.

3. In a stave-jointing machine, the strip I, having the transverse grooves *i*, in combination with the horizontally-vibrating plate, D, connected with said strip by screws *d*, and having transverse projections which fit said grooves, whereby fillets may be inserted in said grooves to regulate the bevel of stave, as described.

4. In a stave-jointing machine, the combination, with the guide-bar *d'*, of the horizontally-vibrating plate D, having the cross-slots d^8 and the clamps d^9, whereby said guide-bar may be moved so as to change the bulge of stave, as set forth.

321,516. ANTI-FRICTION BEARING FOR CAR-WHEELS. STEPHEN C. MENDENHALL, Richmond, Ind. Filed Feb. 26, 1885. (No model.)

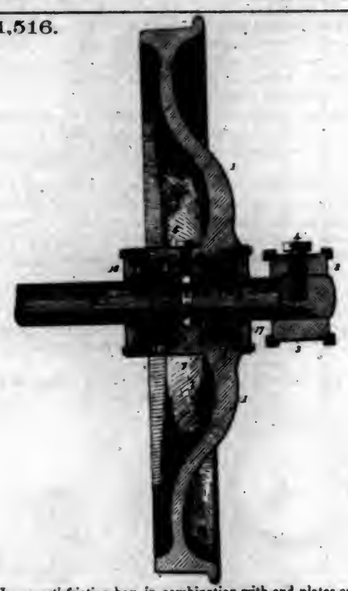
Claim.—1. In combination with a car or other axle and its box, a separate butting-ring applied to said axle so as to be prevented from endwise movement thereon, and two series of anti-friction rollers placed around the axle between the said ring and the ends of the box, substantially as set forth, so as to relieve the lateral strain between axle and box.

2. In combination with an axle having groove or way encircling it, a box surrounding said axle, and butting-ring within said box having a groove on its interior face, a series of balls retained between the said ring and axle within the said grooves, and two annular series of anti-friction rollers arranged within the box on opposite sides of said ring, substantially as and for the purpose set forth.

3. In combination with a car or other axle and a wheel revolving loosely thereon having a cylindrical enlargement or box, two series of loose anti-friction rollers, (one at each end of said box,) and a butting-ring fixed or formed on and revolving with the box between the two series of anti-friction rollers, substantially as set forth.

4. In an anti-friction box, the rollers having cylindrical rolling surfaces and rounded axial teats projecting beyond the end surfaces of the rollers, substantially as set forth.

321,516.

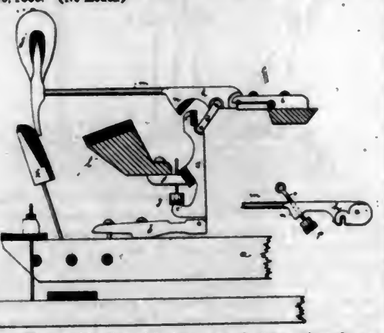


5. In an anti-friction box, in combination with end plates or covers, and butting-ring having raised anti-friction ridges, rollers having axial teats or projections, substantially as set forth.

6. In combination with an axle, its journal-box and two series of anti-friction rollers between the same, a ring separating the said two series of rollers, having annular ridges, on which the ends of said rollers bear for limiting the frictional contact, as set forth.

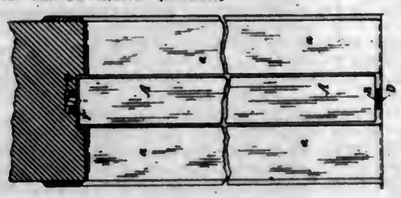
7. In combination with the car axle and wheel, the latter having cylindrical enlargement or box, and suitable anti-friction rollers between the axle and box, the cap plates or covers having interior annular ridges for receiving the end-thrust of said anti-friction rollers, substantially as and for the purposes set forth.

321,517. PIANO-ACTION. PHILIPP MEDICUS, New York, N. Y. Filed Feb. 16, 1885. (No model.)



Claim.—The combination of jack composed of two pivoted arms, *c d*, of which one has an extension beyond its pivotal connection, with hammer-shank *m*, carrying hammer *j* and stop, and with back-check *k*, the stop being adapted to bear against the extension of the jack, substantially as specified.

321,518. SLIDING-DOOR FIXTURE. EDWARD Y. MOORE, Chicago, Ill. Filed Dec. 10, 1884. (No model.)



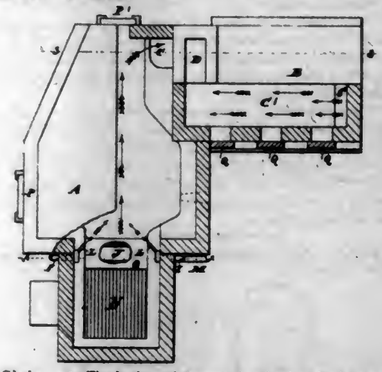
Claim.—1. The combination, with each other and a sliding door, of door-supporting wheels or rollers attached to the lower end or edge of the door, the outer wheel being either flat or slightly convex on its tread, and a way or track having upturned sides or flanges for guiding the said wheels, the said way or track being located wholly within the door-recess, substantially as and for purposes specified.

2. The sliding-door fixtures, consisting, essentially, of a sheave or roller, B, having bearings in a block, B', on which are the depending flanges *a' a'*, a wheel or roller, C, made either flat or slightly rounded out on its tread, and a track, D, having upturned sides or flanges, substantially as and for the purposes specified.

3. The sliding-door fixtures consisting of the grooved or channeled track D, the rollers or wheels B and C, the former having a flat or slightly convex tread, and the brush E, all adapted for operation together, substantially as and for the purposes specified.

4. The combination, with each other and a sliding door, of the horizontally-arranged rollers F and F' on the upper edge of the door, a recess for receiving the said rollers, the wheel or roller B, applied to the door at or near its lower outer corner and having a flat or slightly convex tread, and the wheel or roller C, extending inward from the lower inner corner of the door, substantially as and for the purposes specified.

321,519. FURNACE. JOHN NEVILLE, Jersey City, N. J. Filed Mar. 12, 1884. (No model.)



Claim.—1. The horizontal furnace herein described, comprising smelting-chamber A, having doors P P' at the side and outer end, respectively, and the roasting-chamber B, at right angles to the smelting-chamber, connected to the latter by a flue, C, and having doors, substantially as set forth.

2. The horizontal furnace comprising smelting-chamber A, having doors P P', roasting-chamber B, at right angles thereto and having doors, flue C, connecting the chambers, and a chimney, D, in a central position above the flue, substantially as set forth.

321,520. BARREL-CONNECTION. TIMOTHY O'BRIEN, Boston, Mass., assignor of one-half to David A. Murray and James Crowley, both of same place. Filed Apr. 21, 1884. (No model.)



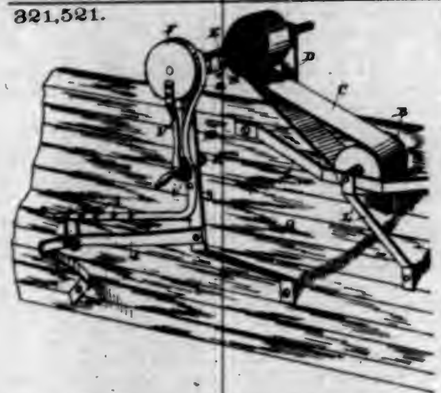
Claim.—1. The bushing A, having the enlarged chambered head A^2, and screw-threaded externally to enter the barrel, and also screw-threaded internally, combined with the longitudinally-movable screw-threaded plug B, fitting the threaded interior of the bushing, and having the screw-threaded projection b^2 and cap *d*, all arranged to operate substantially as shown and described.

2. The screw-threaded hollow plug B, having the nut *c*, packing *c'*, and openings *b* at one end, and the flange b^4, packing *m*, and screw-threaded projection b^3 at the other end, combined with the internally-screw-threaded bushing A, having the chambered head A^2, and the screw-cap *d*, substantially as and for the purpose described.

321,521. BELT-WINDER FOR THRASHING-MACHINES. PERRY OLMSTED, Dixon, Cal. Filed Aug. 30, 1884. (No model.)

Claim.—1. A belt-winder for disposing of the driving-belt of a thrashing-machine, comprising the cylinder-pulley B, the frame D, rotating shaft E, with bearings *e e'*, swinging finger H, a brake-lever pir-

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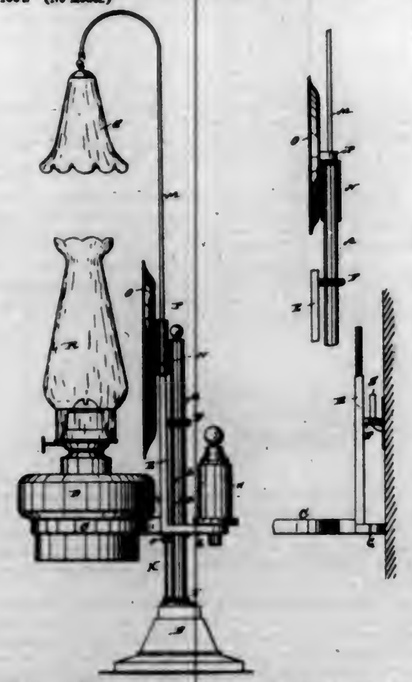


oted to frame D, a diverging arm, *d*, and a ring, J, embracing the arm *d* and adapted to engage notches in the end of the brake-lever, substantially as herein described.

2. In a belt-winder for disposing of the driving-belt of a thrashing-machine, the rotating shaft E and the pivoted swinging finger H, adapted to receive the belt, in combination with the pivoted brake G, and the friction-pulley F upon the shaft E and against which the brake impinges, substantially as herein described.

3. In a belt-winder for disposing of the driving-belt of a thrashing-machine, the rotating shaft E, having friction-pulley F, and the pivoted finger H, attached to the said shaft, in combination with the pivoted brake-lever G, adapted to impinge against the frictional pulley, and means by which said brake is held, consisting of the diverging arm *d* and the ring J, embracing the end of the brake-lever and the arm *d*, substantially as herein described.

321,522. LAMP. CHARLES PAINE, Philadelphia, Pa. Filed Apr. 15, 1884. (No model.)



Claim.—1. In a lamp, the combination, with the standard A, having apertures I, of a lamp-carrier adapted to turn on the said standard, the pin J, the chain K, and the ring I, substantially as herein shown and described.

2. In a lamp, the combination, with the standard A, of a revolving lamp-carrier, the vertical rod E thereon, and the rod M, having a socket, N, in its lower end, and bent at its upper end to allow of a smoke-bell being suspended therefrom, substantially as set forth.

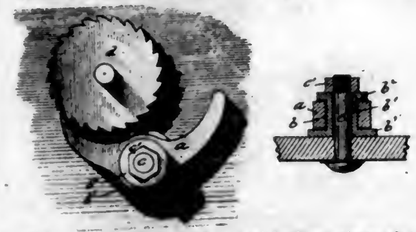
3. The combination, with the standard A, of a revolving lamp-carrier, C, mounted thereon and provided with the removable balancing-weight H, substantially as set forth.

4. The combination, with the rod E, having a lamp-holding ring, C, a ring, F, and a reduced shouldered portion at its upper end, of a smoke-bell support having a socket to engage said shouldered portion, substantially as set forth.

5. In a lamp of the character described, the upright rod E, having the lamp-supporting ring on one side and the eye F and apertured arm G on its opposite side, the aperture of the arm G being in vertical alignment with the eye F, whereby the rod, with its parts, may be applied to a vertical lamp-standard or to a hook on the wall, substantially as set forth.

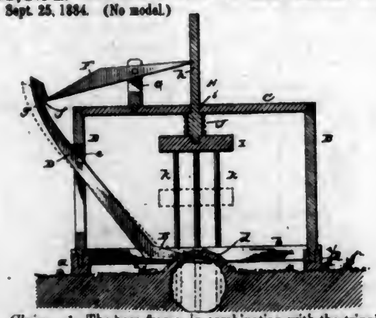
6. In a lamp, the combination, with a fount-holding ring and the upright rod projecting from one side thereof, of a smoke-bell rod held to the said upright rod, and a reflector provided with an eye through which said smoke-bell rod passes, substantially as set forth.

321,523. RATCHET-AND-PAWL MECHANISM. EDGAR M. PALMER, Hartford, Conn. Filed June 1, 1885. (No model.)



Claim.—In combination with a pawl having a pivot-socket, the loose bushing located within said socket and having on both its ends the integral flanges which overhang the pawl, all substantially as described.

321,524. MOLE-TRAP. DAVID H. PAYNE, Coffeeville, Tex. Filed Sept. 25, 1884. (No model.)

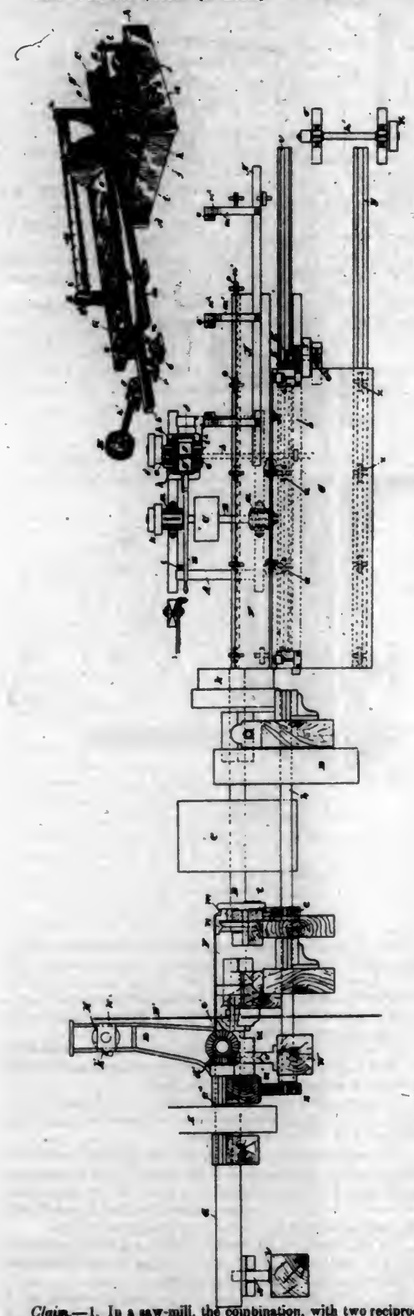


Claim.—1. The base-frame, in combination with the tripping-lever D, pivoted at an intermediate point of its length, a pointed shoe, E, provided on the end of the lever and inclining downward therefrom at an angle, so as to be inserted transversely through the top of the mole-hill without otherwise disturbing the latter, a vertically-movable rod, H, carrying the drop or fall I, a series of spears or spiked rods connected to the latter, a spring mounted on the rod and pressing against the fall, a series of notches, *h*, formed in the rod H, a slotted post, and a trigger, F, pivoted in the post and having one end engaging with any one of the notches of the rod to adjust the pressure of the spring, and the other end engaging with the upper end of the tripping-lever, as set forth.

2. The combination, with the loose frame, consisting of the end bars, *a*, connected by longitudinal side bars, *b*, the latter being recessed at *d* to enable the frame to fit over the mole-hill, the end bars, *a*, resting firmly on the ground, of the pivoted tripping-lever D, having an inclined pointed shoe, E, to be inserted into the hill, a movable rod, H, carrying the drop or fall I, a series of spears or spiked rods connected to the latter and working through the side bars, *b*, a series of notches at the upper end of the rod H, a slotted post, G, mounted on the frame, and a trigger, F, pivoted in the post and having one end engaging with any one of the notches of the rod H, and at the other end with the upper end of the tripping-lever D, as set forth.

3. In a mole-trap, the combination, with the frame of the drop or fall, a trigger, a tripping-lever, and a shoe provided on the end of the lever and inclining downward therefrom at an angle, said shoe tapering to a point and being inserted transversely through one side of the mole-hill and extending into the same across the top, for the purpose set forth.

321,525. CIRCULAR SAW MILL. WILLIS J. PERKINS, Grand Rapids, Mich. Filed Oct. 7, 1884. (No model.)



Claim.—1. In a saw-mill, the combination, with two reciprocating tables and a saw situated between them, of a rack secured to each table, and pinions and gearing engaging with the rack of each table and adapted to reciprocate them, substantially as set forth.

2. In a saw-mill, the combination, with two reciprocating tables, a saw situated between them, and racks and pinions and gearing connecting with each table for reciprocating them, of feed-rollers, one or more mounted on one of said tables, and constructed and adapted to feed the timber being sawed crosswise of the saw, substantially as set forth.

3. In a saw-mill, the combination, with a saw and a reciprocating table, of a spiked roller, and mechanism for rotating the same for feeding the bolt to the saw, and a spiked roller located over the lower spiked roller and disconnected therefrom, and serving simply as an idler, and pawl and ratchet for preventing the rearward rotation of the upper roller, substantially as set forth.

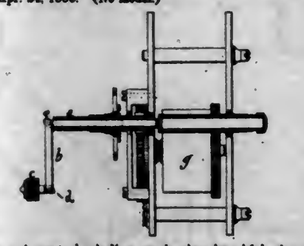
4. In a saw-mill, the combination, with a reciprocating table, a feed-roller journaled to said table at one side edge thereof, and a friction wheel and gearing journaled in bearings secured to or moving with the table, of stationary bearings, a shaft journaled in said latter bearings, and a friction-wheel secured to the shaft and adapted to automatically transmit motion to the feed-roll when the table has been moved to the end of its travel, substantially as set forth.

5. In a saw-mill, the combination, with a saw, a timber-carrying table, a shaft for moving the timber-carrying table, and a friction-wheel secured on said shaft, of a pivoted yoke, two friction-pulleys mounted in said yoke, intermeshing gear-wheels secured to said pulleys or to the shafts of said pulleys, and a belt-pulley secured to the shaft of one of said friction-pulleys, substantially as set forth.

6. In a saw-mill, the combination, with a saw, a timber-carrying table, mechanism for reciprocating the table, a feed-roller journaled on the table, and a friction wheel and gearing for transmitting rotary motion to the feed-roller, of a friction-wheel secured to a shaft mounted in stationary bearings and arranged to engage the friction-wheel connected with the table at the limit of the travel of the table, substantially as set forth.

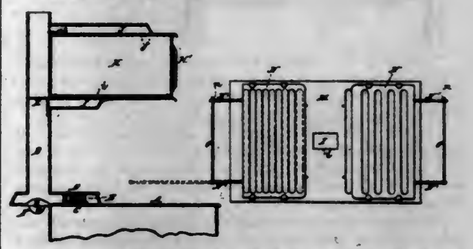
7. In a saw-mill, the combination, with a table, a shaft, gearing connecting the shaft and table, a friction-pulley secured on said shaft, a saw and saw-arbor, and a pulley mounted on the saw-arbor, of a yoke carrying two friction-pulleys, which latter are connected by intermeshing gearing, and a band-pulley secured on the shaft of one of said latter pulleys, substantially as set forth.

321,526. WINDING MECHANISM FOR CLOCKS. LOUIS FREDERIC PORTEBOIS, Paris, France, assignor to Victor Emile Versepuy, same place. Filed Apr. 24, 1885. (No model.)



Claim.—A central winding mechanism in which the winding-stem slides inward upon the central arbor, so as to be concealed within the movement, and is jointed so as to be converted into a crank when pulled out for winding, as hereinbefore described, and shown in the drawings.

321,527. STOVE OR RANGE. JOHN A. PRICE, Scranton, Pa. Filed Mar. 29, 1883. (No model.)



Claim.—1. The combination, with the stove or range and the vertical smoke-pipe, of the elevated hot-closet projecting over the top of the stove or range and having a flue leading from within it to and into the smoke-pipe, and having also a grated bottom covered by a valve which can be opened to admit the heat and gases rising from the stove or range top and conduct the same directly through the closet into the smoke-pipe, substantially as described.

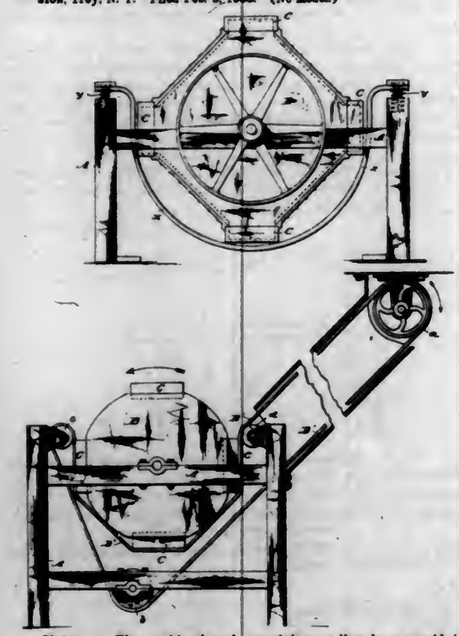
2. The combination, with the stove or range, of the elevated hot-closet, the vertical heat and smoke flue, a flue leading out of the vertical flue and opening directly into the hot-closet, and another flue leading directly out of the hot-closet back into the vertical flue, whereby the heat passing up the vertical flue may be conducted directly through the hot-closet and back again into the vertical flue, substantially as described.

3. The combination, with the stove or range, of the elevated hot-closet, the vertical heat and smoke flue, a lower flue leading out of the vertical flue and opening directly into the hot-closet, and an upper flue leading directly out of the hot-closet back into the vertical flue, and valves for controlling the passage of hot air through said upper and lower flues, substantially as described.

4. The combination, with the stove or range, of the elevated hot-closet having the grated bottom provided with the adjustable slides or valves, of the vertical heat and smoke flue, the lower flue leading out of the vertical flue and opening directly into the hot-closet, and the upper flue leading out of the closet back into the said vertical flue, and valves for controlling the upper and lower flues, whereby more or less heat can be conducted from the vertical flue directly through the hot-closet, and whereby, also, at the same time more or less of the heat arising from the range top can be conducted through the hot-closet, substantially as described.

5. The handle of the adjustable register-slide, consisting of the two rods projecting in substantially the same plane and the third rod hinged to one of said rods and adapted to rest in a depression in the other, or to be swung out so as to serve as a towel or cloth holder, substantially as described.

321,528. MACHINE FOR SANDING BRICK-MOLDS. DAVID RAISTON, Troy, N. Y. Filed Feb. 5, 1883. (No model.)



Claim.—1. The combination of a revolving sanding-drum provided with mold-receiving openings, and a concave mold-holding bed applied to the under portion of said drum in position to contact with the molds thereon, substantially as and for the purposes hereinbefore set forth.

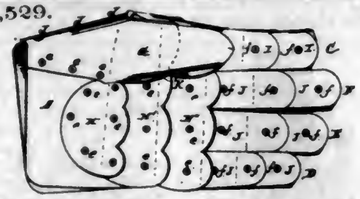
2. The combination of a revolving sanding-drum provided with mold-receiving openings and a yielding concave mold-holding bed applied to the under portion of said drum, and arranged and adapted to bear against the molds thereon, substantially as and for the purposes hereinbefore set forth.

3. The combination of a revolving sanding-drum provided with mold-receiving openings, and mold-retaining straps encircling the lower half or under portion of the drum in position to bear against and retain the molds thereon.

4. The combination of a revolving sanding-drum provided with mold-receiving openings, and yielding mold-retaining straps encircling the lower half or under portion of the drum in position to bear against and retain the molds thereon, substantially as and for the purposes hereinbefore set forth.

5. The combination, with the sanding-drum provided with mold-receiving openings, of an endless power-driven belt arranged and operating both to impart rotary movement to the drum and to hold the molds in place thereon, substantially as hereinbefore set forth.

321,529. HUSKING-GLOVE. EDWARD F. RATE, Chicago, Ill. Filed Feb. 26, 1884. (No model.)

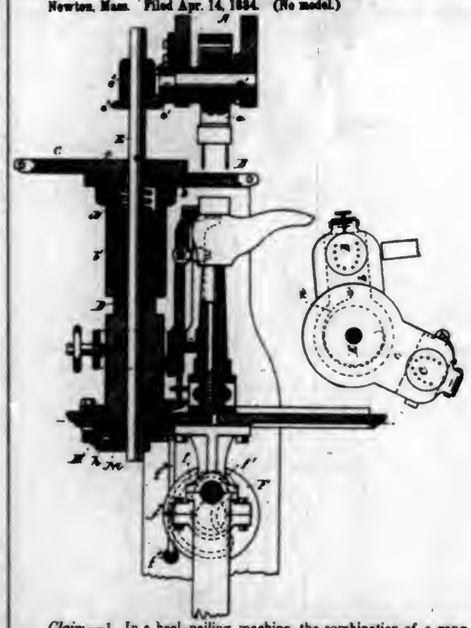


Claim.—1. A glove having its palm backed or supported by a series of overlapping strips, substantially as shown and described.

2. A glove having its palm and fingers backed or supported by overlapping strips, substantially as shown and described.

3. A glove having its palm, fingers, and thumb backed or supported by a series of overlapping strips, substantially as shown and described.

321,530. HEEL-NAILING MACHINE. FREEBORN F. RAYMOND, 2d, Newton, Mass. Filed Apr. 14, 1884. (No model.)



Claim.—1. In a heel-nailing machine, the combination of a gang of awls, a gang of drivers, and a heel-spanker, or any two of them, the nail-holder plate *c*, and shaft E, connected with the main shaft of the machine, whereby, upon the revolution thereof, the nail-holder plate is automatically moved into and out of operative position, all substantially as and for the purposes described.

2. The nail-holder plate *c*, carrying the nail-holder C, in combination with the shaft E, the main shaft of the machine, and suitable connecting mechanism for automatically revolving the plate.

3. The combination of the nail-holder plate *c*, templet-plate *b*, having vertical movements, and the automatically-revolved shaft E, all substantially as and for the purposes described.

4. The nail-holder plate *c*, carrying the nail-holder C, in combination with the shaft E, the main shaft of the machine, suitable connecting mechanism for automatically revolving the plate, and devices, substantially as described, for stopping the revolution of the shaft E immediately upon the stopping of the main shaft, all substantially as set forth.

5. The combination of the shaft *a'*, disk a^3, and friction device a^5, for preventing the rotation of the shaft when not directly actuated, all substantially as and for the purposes described.

6. The combination of a gang of awls, a gang of drivers, and a spanker, or any two of them, the shaft E, the bevel-gears c' c^3, the shaft *f'* and connecting mechanism, whereby the awls, drivers, and spanker, or any two of them, are moved automatically into and out of position, all substantially as and for the purposes described.

7. The combination of the cross-head A, the revolving head *a* carried thereby, the shaft *a'*, its bevel-gear *c'*, the bevel-gear c^3, supported by the cross-head and vertically movable upon the shaft E, the nail-holder plate *c*, and the shaft E, automatically operated by the main shaft of the machine, all substantially as and for the purposes described.

8. The combination, in a heel-nailing machine, of the shaft E, for operating the revolving head and the nail-holder plate, or either, the cam *f* and connecting mechanism, whereby intermittent rotation is given to the shaft, all substantially as and for the purposes described.

9. The combination, in a heel-nailing machine, of the shaft *f'*, the cam *f*, the lever f^2, the connecting-rod f^3, the lever f^4, the pawl g', the ratchet-wheel G, the gear-wheel g^2, the pinion H, the shaft E, the cross-head A, and the revolving head *a*, all substantially as and for the purposes described.

10. The combination of the stationary templet B, mounted on a sleeve, and the top-lift holder also carried by said sleeve and adapted to be rotated beneath the templet, all substantially as described.

11. In a heel-nailing machine, in combination with suitable nailing devices and operative mechanism, the top-lift holder, comprising the plate N, the front gage-plate, *n'*, and the movable jaw or clamp O, all substantially as and for the purposes described.

12. The combination, in a heel-nailing machine, of the templet and nail-holder plates, or either of them, with a reciprocating centering and locking device, substantially as described, for centering the said plates in operative position and holding them locked in said position during the reciprocation of the awls and drivers, or either, all substantially as and for the purposes described.

13. In a heel-nailing machine, in combination with the movable templet and nail-holder plates, or either, a centering device, substantially as described, carried by the cross-head of the machine, and arranged to center the said plate or plates in operative position with their holes in register with the awls and drivers, or either, and before they enter the holes in said plates, in combination with the awls and drivers, or either, all substantially as and for the purposes described.

14. The combination of a gang of reciprocating awls and a gang of reciprocating drivers, or either, a templet and a nail-holder, or either, and a centering device, substantially as described, and adapted to be moved automatically into position to center the templet or nail-holder, or either, and to lock the awl-holder or nail-holder to said plate or plates during their downward vertical movement, all substantially as described.

15. The combination of the templet B, fixed in an operative position, with the automatic nail holder and carrier C, all substantially as and for the purposes described.

16. In a heel-nailing machine, the combination of the stationary templet B and the nail-holder carrier C, moved automatically into and out of position with the templet, and a gang or group of reciprocating drivers, all substantially as and for the purposes described.

17. In a heel-nailing machine, the combination of the stationary templet B, the nail holder and carrier C, moving in relation to the templet, and the plate N, carrying or supporting a top-lift holder and adapted to be moved into and out of operative position below the templet B, all substantially as and for the purposes described.

18. The combination, in a heel-nailing machine, of the vertically-yielding templet B, the plate N, carrying or supporting the top-lift holder and adapted to be moved into and out of operative position below the templet, and vertically movable therewith, and a reciprocating gang of drivers, all substantially as and for the purposes described.

19. The combination, in a heel-nailing machine, of the vertically-movable templet B, the plate N, carrying or supporting a top-lift holder and movable into and out of operative position below the templet B, and a reciprocating spanker, A^2, all substantially as and for the purposes described.

20. The combination of the templet, the templet-plate *b*, having the sleeve *b'*, with the post D, all substantially as described.

21. The combination of the post D, the templet-plate *b*, having the sleeve *b'*, and templet B, fixed in operative position, and the nail-holder plate supported upon the templet-plate, vertically movable therewith and carrying the nail-holder C, all substantially as described.

22. The combination of the post D, the templet, the templet-plate *b*, having the sleeve *b'*, and the spring *d*, all substantially as and for the purposes described.

23. The combination of the post D, the templet, the templet-plate *b* carried thereby, and the shaft E, for moving the revolving head and nail-holder, or either, extending vertically through said post, all substantially as and for the purposes described.

24. In a nail heeling machine, a horizontally-swinging top-lift-holder plate for carrying a top lift to and holding it in position over the heel-blank, combined with an actuating-spring to return the plate to its normal condition, all substantially as and for the purposes described.

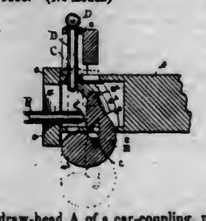
25. In a heel-nailing machine, the horizontally-movable top-lift plate, bearing upon its under surface a device for suspending the top lift in an inverted position while the same is being applied to the heel-blank, all substantially as and for the purposes described.

321,531. FARM-FENCE. WILLIAM H. REED, Servia, Ind. Filed June 3, 1884. (No model.)



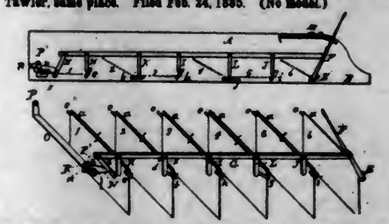
Claim.—In a farm-fence, the cross-braces and binders thereof, in combination with wire loops connecting the braces together at their upper ends, loops securing the binders to the braces and holding them against the sides of the fence-rails, as shown, and a trussing-wire extending under the lower rail, and thence upward to a point where the braces cross each other, where the said wire is crossed and brought over the two upper or rider rails in opposite directions and fastened, substantially as and for the purpose set forth.

321,532. CAR-COUPLING. EDMUND A. RICHARDS, Farmington, Me. Filed Mar. 12, 1885. (No model.)



Claim.—The draw-head A of a car-coupling, provided with a vertically-sliding frame, C, seated in suitable ways on the sides of the draw-head, and the top end or cross-bar of the said frame C adapted to receive and hold in place the coupling-pin D, which slides vertically in a suitable hole provided for it in the draw-bar, and the bottom part of the said sliding frame adapted to receive the bearings of a pivoted latch-piece E, which said latch-piece has a laterally-projecting weighted arm, e^2, which acts as a stop to limit the upward movement of the frame C at the point required for the bottom of the pin D to drop into the connecting-link B, at which point of limitation of the upward movement the weighted stop strikes the bottom side of the draw-head, and then by its gravity throws the hook *e'* of the latch-piece over a ledge provided on the draw-bar to receive it, substantially as shown and set forth.

321,533. DUMPING-WAGON BOTTOM. GEORGE W. RICHARDSON, Chicago, Ill., assignor to Jason H. Shepard, E. T. Fawler, and Willard A. Fawler, same place. Filed Feb. 24, 1885. (No model.)



Claim.—1. The bar G, in combination with the rigid cams H I J, pivoted cams K L, lever F, elbow-pivots *e b g h i*, and sectional bottom 1 2 3 4 5 6, as specified.

2. The lever F and bar G, in combination with the lock O P P', slotted plate N, cam-shaped on its top *n*, lever M, and the button R, as specified.

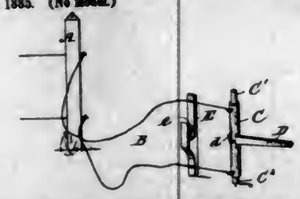
321,534. FENCE-MAKING MACHINE. WILLIAM S. ROBSON and DANIEL ROBSON, Wichita, Kans. Filed Aug. 6, 1884. (No model.)



Claim.—1. A twister for a fence-making machine, having the hollow shaft C, and secured thereto cross-plate *d*, having flanges *e*, and bracket or support B, having open-ended slots *b*, for supporting the spool-shaft, substantially as shown and described.

2. In a fence-machine, the twisting-head shaft having the spool-supports provided with a wire rod or guide disposed in a plane extending transversely through the passage of said shaft, substantially as and for the purpose set forth.

321,535. WIRE GATE. DANIEL J. RUNDELL, Norton, Kans. Filed Jan. 29, 1885. (No model.)



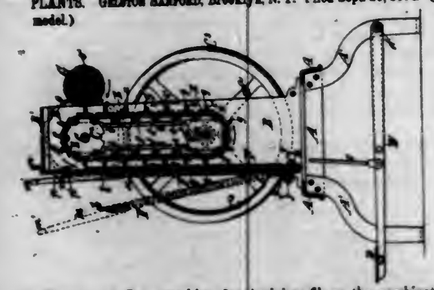
Claim.—1. The combination, with the flexible-wire gate and the post having staples, of the shaft at the front end of the gate, a lever-arm extended therefrom, and a retaining-bar for said lever attached to the wires behind the shaft, substantially as set forth.

2. The combination of the flexible-wire gate, the post having staples *a*, the shaft at the front end of the gate, the retaining-bar secured to the wires of the gate behind the shaft and provided with a latch-seat, *e*, and the arm pivoted at one end of the shaft and movable at its other end into engagement with latch-seat *e*, substantially as set forth.

3. The combination of the flexible-wire gate, the post having staples *a* and notch *a'*, the shaft forming the front end of the gate and provided with a projection, *d*, and a lever-arm, D, and a retaining-bar for said lever secured to the wires behind the shaft, substantially as set forth.

4. The combination of the flexible-wire gate, the post, the end shaft, C, having tenons C' C², the lever-arm D, pivoted to the shaft and having one end extended to form the latch projection *d*, and the retaining-bar secured to the wires behind the end shaft, and provided with a latch-seat, *e*, to receive the other end of of said lever-arm, substantially as set forth.

321,536. MACHINE FOR OBTAINING FIBERS FROM LEAVES OR PLANTS. GELSTON SANFORD, Brooklyn, N. Y. Filed Sept. 29, 1884. (No model.)



Claim.—1. In a machine for obtaining fibers, the combination with an endless chain of scrapers and wheels and shafts for operating the same, of a board or plate on which the leaves are supported while under the action of the scrapers, and which is movable away from the scrapers to provide for placing leaves thereon and removing leaves therefrom, substantially as herein described.

2. In a machine for obtaining fibers, the combination, with an upright chain or belt of scrapers and wheels and shafts for operating the same, of a board or plate for supporting leaves while under the action of the scrapers, and hinged at the lower end to provide for placing leaves thereon and removing them therefrom, substantially as herein described.

3. The combination, with the upright chain or belt of scrapers and wheels and shafts for operating the same, of the front plate or board, F, having a yielding or elastic hinge-support at the lower end, substantially as herein described.

4. The combination, with the upright chain or belt of scrapers and shafts and wheels for operating the same, of the front plate or board, F, hinged at the lower end and provided at the upper end with a handle attached to the plate or board at one side only, whereby an opening is left at the other side for placing leaves on and removing them from said plate or board, substantially as herein described.

5. The combination, with the chain or belt of scrapers and shafts and wheels for operating the same, of the hinged front plate or board, F, armed at the upper edge with a serrated plate, *l*, substantially as herein described.

6. The combination, with the chain or belt of scrapers and shafts and wheels for operating the same, of the hinged front plate or board, F, armed with a serrated plate, *l*, and the adjustable guard-plate *p*, substantially as herein described.

7. The combination, with the chain or belt of scrapers and shafts and wheels for operating the same, of a brush past and in contact with which the scrapers are moved and a plate or board for supporting leaves while under the action of the scrapers and movable to provide for placing leaves thereon and removing them therefrom, substantially as herein described.

8. The combination, with an endless chain or belt of scrapers having rollers upon its pintles or joint-pins, of shafts and pairs of wheels or flanges for operating said chain, a movable front plate or board for supporting leaves while under the action of the scrapers, and tracks or ways on which the said rollers travel and by which that portion of the chain which is operative is prevented from yielding away from the supporting plate or board, substantially as herein described.

9. The combination, with a chain or belt of scrapers, consisting of plates E, severally provided with scrapers and pintles or joint-pins connecting said plates, of shafts and wheels for operating said chain of scrapers and a movable front plate or board for supporting leaves while under the action of the scrapers, substantially as herein described.

10. The combination, with the endless chain of scrapers, consisting of plates E, having intermatching lugs or ears *c*, pintles or joint-pins *f*, and rollers *f'* on said pins, of the side plates or pieces, B, provided with ribs or surfaces *h*, past and close to which the ends of the pintles *f* move, and which form guards to keep the rollers on said pintles, and a movable front plate or board, F, for supporting leaves, substantially as herein described.

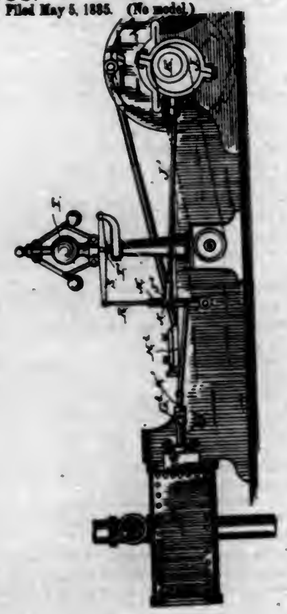
321,537. OIL-CAN. WM. C. F. SCHOELLKOPF, Cleveland, Ohio. Filed May 4, 1885. (No model.)



Claim.—1. In an oil can or package, the mouth or inlet thereof having formed on its edge a screw-thread, said thread being an integral part of the metal of the can, in combination with the shell E, screwed into the mouth or inlet of the can, so that the annular flange *b* shall be drawn tightly down upon the rib or raised portion of the screw-thread of the inlet and packing, substantially as described, and for the purpose specified.

2. In combination with the can, the shell E and cap F, forming conjointly a chambered stopple for the said can or package, valve and screw-stem I, and spout K, substantially as described, and for the purpose set forth.

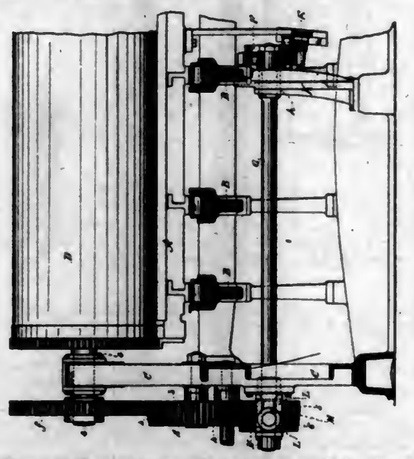
321,538. CUT-OFF-VALVE GEAR. GEORGE SCHUMANN, Reading, Pa. Filed May 5, 1885. (No model.)



Claim.—1. The combination of a riding cut-off valve and main valve of a steam or other engine, connected by suitable rods with a rock-arm, its shaft, and a segmental arm also secured thereto, an automatically-adjustable sliding box upon said arm, connected with an eccentric upon the crank-shaft by a rod provided with a bifurcated jaw, and suspended in movable control from the governor by lever S and links R, as shown, described, and for the purpose set forth.

2. In combination, the segmental arm M, secured to the rock-shaft L, the slide N, its adjustable gibs P, screws N², trunnions N' N², suspension-links R, rod J', jaws J², eccentric J, shaft E, governor T, and lever S, substantially as shown, and for the purpose specified.

321,539. CYLINDER PRINTING-MACHINE. WALTER SCOTT, Plainfield, N. J. Filed June 2, 1884. (No model.)



Claim.—1. The combination, with the impression-cylinder, the bed, and a gear-wheel, *f*, upon the shaft of the impression-cylinder, of a toothed rack, E, connected with the bed, the pinion-shaft G, and pinion, said pinion being above the rack-teeth when its shaft is level and below the rack-teeth when the shaft is inclined, a compound gear, N, upon the pinion-shaft, and a compound gear-wheel, S, between the gear N on the pinion-shaft and the gear *f* upon the impression-cylinder shaft, said compound gear-wheels N S having teeth, the surfaces of one half of the length of each tooth being parallel with the axis, and the surfaces of the other half of each tooth tapering, for the purposes and substantially as set forth.

2. In combination with the bed, the rack, pinion and pinion-shaft, and bearings, of a compound gear on the pinion-shaft and a compound gear to drive the same, such compound gears being composed of teeth, the surface of one-half the length of each tooth being parallel with the axis of the pinion, and the surface of the other half of each tooth tapering, for the purposes and substantially as set forth.

321,540. SOFA-BED. WILLIAM R. SHABER, San Francisco, Cal. Filed Aug. 15, 1884. (No model.)



Claim.—1. In a sofa-bed, the combination, with a folding seat and a folding back, of a pivoted central section or frame, the strap-hinges E between said section and back, and elongated slots *c* and pins *a*, whereby, when the back is raised, the frame is dropped below the bottom of the folded seat to form a receptacle for the bed-clothes, substantially as herein described.

2. In a sofa-bed, the main frame A, and the back C, pivoted or hinged thereto, in combination with the central section or frame, D, pivoted within the main frame, strap-hinges E between the back and the central section, and the elongated slots *c* and pins *a*, whereby, when the back is raised, the central section is dropped below the level of the top of the main frame, and when the back is dropped the central section is raised to the level of the top of the main frame, substantially as herein described.

3. In a sofa-bed, the main frame A, and the seat B and back C, both hinged to said frame, in combination with the central section or frame, D, pivoted at its forward side to the ends of the main frame near their top front, strap-hinges E between the back of the central section D and bottom of the folding back, whereby said section is dropped below the folded seat by the back, and elongated slots *c* and pins *a*, when raised, and raised to the level of the extended seat when said back is dropped, substantially as and for the purpose herein described.

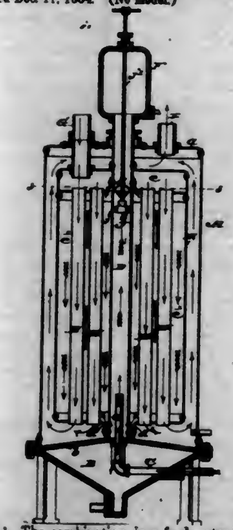
4. In a sofa-bed, the main frame and the back attached to said frame by a sliding connection, in combination with the central section or frame pivoted to the main frame at its upper and front end and hinged to the back, substantially as herein described.

5. In a sofa-bed, the main frame A, in combination with the back C and central section or frame, D, pivoted or hinged thereto, the pivots *d* at the front of the central section, the elongated slots *c* in the bottom of the ends of the back playing on pins *a* in the ends of the main frame, and the strap-hinge E, substantially as herein described.

6. In a sofa-bed, the main frame A, and central section or frame, D, pivoted thereto, as described, in combination with the back C, hinged to the back of the central section, and the slots *c* in the ends of the back playing on pins *a* in the ends of the main frame, and having the angled extensions *c'*, whereby said back is held in position when raised, substantially as herein described.

7. A sofa-bed consisting of the main frame A, having pins *a* in its ends, the back C, having slots *c* playing on said pins, the central section, D, pivoted to the main frame and hinged to the back, and the seat B, hinged to the front of the main frame and adapted to cover the central section when folded, and expose it when opened, substantially as herein described.

321,541. FEED-WATER HEATER. HENRY W. SHEPARD, St. Louis, Mo. Filed Dec. 11, 1884. (No model.)



Claim.—1. The combination, in a feed-water heater, of the heater proper, E, and the settling-tube D, said settling-tube and the water-space *d'* being connected at the upper and lower ends of the water-space, as and for the purpose described.

2. The combination of the case A, the settling-chamber B, the pipes C G I K *m*, the settling-tube D, perforated at *d d'*, the heater proper, E, the scum-chamber F, and the valves J L M, substantially as described.

3. The combination, in a feed-water heater, of the settling-tube D, perforated at *d*, the water-space *d'*, the valve J, and the scum-chamber F, substantially as described.

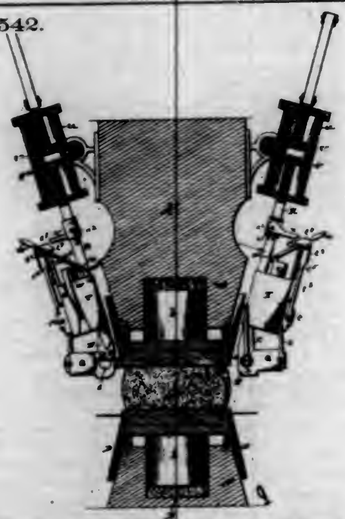
4. The combination of the water-space *d'*, the settling-tube perforated at *d'* and *d*², and the valve J, substantially as described.

321,542. COTTON-PRESS. JOHN L. SHEPPARD, Charleston, S. C. Filed May 29, 1885. (No model.)

Claim.—1. In a press, a pair of flexible platens adapted to simultaneously shape the bale and force the bands into position for fastening, substantially as set forth.

2. In a press, the combination, with a set of flexible platens adapted to force the bands into position for fastening, of a combined punch and riveting device adapted to secure the ends of the bands, substantially as set forth.

321,542.



3. In a press, the combination, with a band pressed into a bale in a position for fastening, and provided with a rivet-blank set in one of its ends, of a punch adapted to form a seat for the end of the band provided with the rivet-blank, and a plunger located within the punch for heading the rivet-blank, substantially as set forth.

4. In a press, the combination, with a half-section band pressed into a bale in position for fastening, of combined punching and riveting devices located on opposite sides or ends of the bale for securing the ends of the band-sections, substantially as set forth.

5. In a press, the combination, with a bale-band pressed into the bale in position for fastening, of a punch adapted to force a rivet through the band, and a plunger adapted to upset the end of the rivet, substantially as set forth.

6. In a press, a combined punch and riveting device, consisting, essentially, of a punch-support having a bed-block secured thereto for receiving the end of the band carrying a rivet-blank, a punch for forcing the rivet through the band, and a plunger for heading the rivet, the punch and plunger being operated by a triple cam, substantially as set forth.

7. The combination, with a press, of a combined punch and riveting device, consisting, essentially, of a support provided with a bed-block adapted to form a seat for the end of the blank carrying the rivet-blank, a punch secured in sliding adjustment to the support and adapted to force the rivet through the band, and a plunger secured in sliding adjustment within the punch and adapted to head the rivet, substantially as set forth.

8. The combination, with a press, of the combined punch and riveting device, provided with a rotary and longitudinally-sliding bed-block for holding and releasing one end of the band, and further provided with a pair of jaws adapted to form a die when closed, and with a plunger for heading the rivet, substantially as set forth.

9. In a combined punch and riveting device for presses, the combination, with a bed-block adapted to receive the end of a bale-band and hold a rivet therein, of a pair of jaws pivoted to the punch, adapted to form a die when closed, and a double-cam plunger adapted to separate the jaws and head down the rivet, substantially as set forth.

10. In a combination punch and riveting device for presses, the combination, with a two-part die and a plunger adapted to slide between the die-sections, of a cylindrical bed-block provided with a series of cam-grooves and a spring-actuated dog adapted to engage the grooves, whereby a rotary movement of the bed-block slides the same longitudinally, for the purpose substantially as set forth.

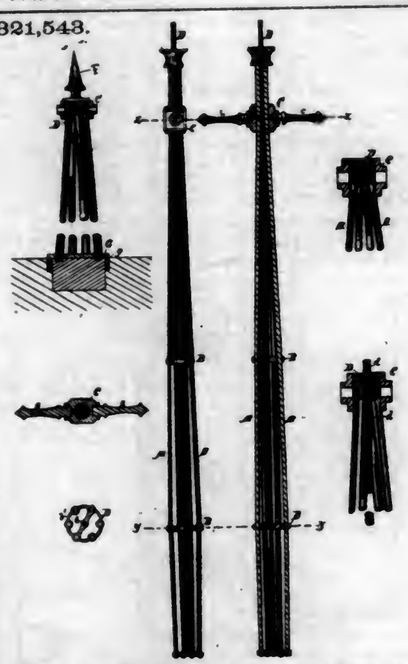
11. The combination, with a press adapted to hold the bale-bands in a position for fastening, of a combined punch and riveting device secured to the push-rod of a band-tightening device, for the purpose substantially as set forth.

12. The combination, with a press adapted to hold the bale-bands in a position for fastening, of a combined punch and riveting device secured in yielding adjustment in the housing attached to the push-rod of a band-tightening device, substantially as set forth.

321,543. POST OR POLE. JOSEPH SMITH, Ottawa, Ontario, Canada. Filed July 11, 1884. (No model.)

Brief.—Formed of a series of rods passing through apertures in a plate and entering at their upper end a collar, where it is held by a central key.

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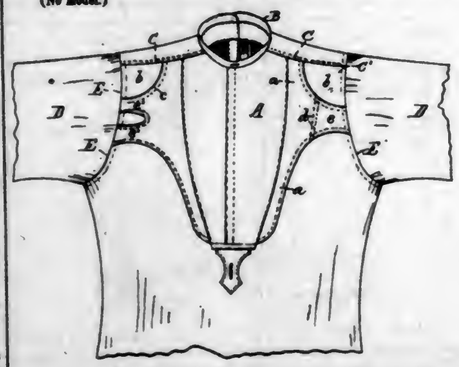
Claim.—1. The combination, in a post, pole, or other analogous article, of the rods A, the collar C, and a key set in the center of the rods, substantially as described.

2. The combination, in a post, pole, or other analogous article, of the rods A, the collar C, and a key screwed into the center of the rods, substantially as described.

3. The combination, in a post, pole, or analogous article, of the rods A, the collar C, and the hollow key set in the center of the rods, substantially as described.

4. As a new article of manufacture, a post formed of a series of rods, A, passing through apertures in a plate, B, and entering a collar, C, where it is held by a central key, D, substantially as described.

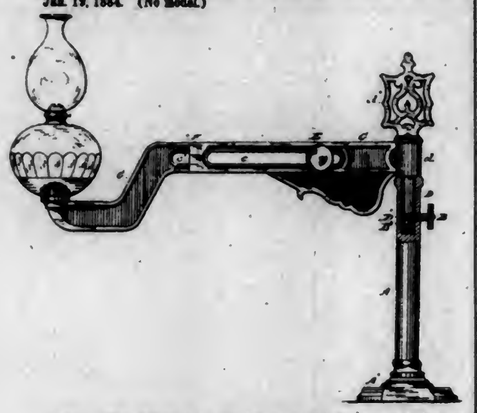
321,544. SHIRT. J. WILSUR SMITH, Newark, N. J. Filed Feb. 9, 1885. (No model.)



Claim.—1. In a shirt, the combination, with the bosom, of a re-enforce piece formed with the longitudinal part *a* and lateral tongue *e*, and having an opening at or near the junction of the armhole and shoulder-seam, and operating to render the same more flexible, substantially as shown and described.

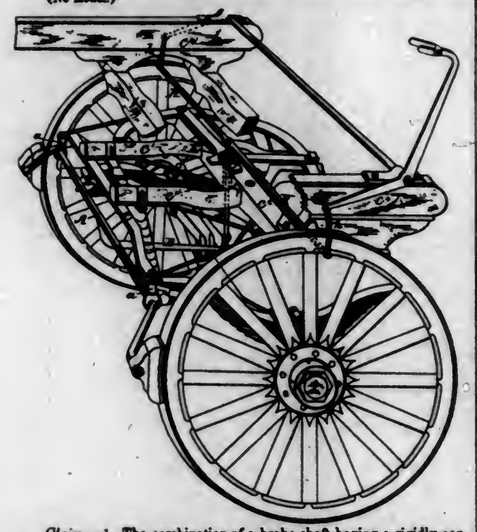
2. In a shirt, the combination, with the bosom, of the re-enforce piece having a longitudinal part, *a*, attached to the edge of the bosom, the opening *b*, formed in the same, substantially as described, at the outer edge to render it more flexible, and the tongue *e*, extended from the part *a* below the shoulder-seam and joined to the armhole, substantially as and for the purpose set forth.

321,545. LAMP-SUPPORT. JOH. SPILLINGER, Lancaster, Pa. Filed Jan. 19, 1884. (No model.)



Claim.—The hub *d*, to which the extensible lamp-supporting arm is attached, and which is provided with the downwardly-extending stem D, having an annular groove, D', in combination with a hollow standard, A, which receives said stem and supports said hub, and a screw, B, which works through the wall of said standard and into the groove of said stem, substantially as set forth.

321,546. VEHICLE-BRAKE. ERNST STECK, Chicago, Ill., assignor to the Fire Extinguisher Manufacturing Company. Filed Mar. 2, 1883. (No model.)



Claim.—1. The combination of a brake-shaft having a rigidly-connected arm with a flexibly-connected link, a hollow king-bolt through which said link passes, and a rock-shaft flexibly connected with said link and mounted on the portion of a vehicle which is pivotally connected with the fifth-wheel head-block, substantially as described.

2. The combination, with a brake-lever and brake-shaft, of a hollow king-bolt, a link passing therethrough and connected at one end with the brake-lever, and at the other end having a pivotal or flexible connection with the brake-shaft, substantially as described.

3. The combination of a brake-shaft pivotally connected to the springs of a running-gear, and having an arm pivotally connected with one end of a link passing through a hollow king-bolt, and a brake-lever connected with the other end of said link, substantially as described.

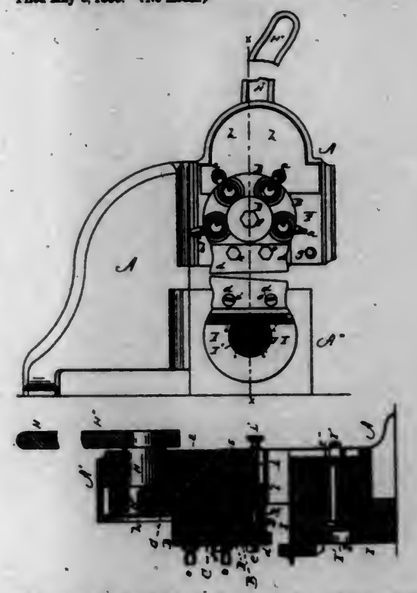
4. The combination of a brake-shaft having a rigidly-connected arm, a flexibly-connected link, a hollow king-bolt through which said link passes, a bar pivotally connected to said link and flexibly connected to a rock-shaft mounted upon the portion of a vehicle which is pivotally connected with the fifth-wheel head-block, substantially as specified.

5. The combination of the springs of a vehicle with the brake-shaft extending across said vehicle and pivotally connected with said springs, and provided with an operating-lever mounted upon the brake-shaft between said springs, substantially as described.

6. The combination of the brake shaft A, connecting mechanism D, hollow king-bolt E, cross-bar H, and fifth-wheel head-block C², with a brake-lever mounted on the frame-work C⁴ and flexibly connected to said cross-bar, substantially as shown and described.

7. The combination of the brake-lever G, rock-shaft F, chains A, cross-bar H, hollow king-bolt E, connecting mechanism D, arm B, and brake-shaft A, substantially as shown and described.

321,547. COMPOUND METAL-WORKING MACHINE. ABNER S. TOWLE, Rochester, N. H., assignor of one-half to John D. Fogg, same place. Filed May 6, 1885. (No model.)



Claim.—1. The herein-described machine for punching and cutting metal, the same consisting, essentially, of the following parts, viz: the rotary head B, provided with the punches *a* and cutters *b* and *d*, the registering-pin L, the portion A' of the frame, and mechanism for imparting vertical movement to said head, and the rotary die I, provided with the openings *i*, cutter *d*, and chamber J, and part A'' of the frame, substantially as and for the purpose set forth.

2. The combination of the frame A A' A'', head B, provided with the punches and cutters *a b d*, screw *f*, sliding block E, having its sides beveled as described, projection C, eccentric G H' H, die I, provided with the cutter *d*, openings *i*, and chamber J and the registering mechanism, arranged and constructed substantially as and for the purpose described.

321,548. PLASTIC COMPOSITION. J. J. VARLEY, Merton, County of Surrey, England. Filed July 10, 1884. (Specimens.) Patented in England June 19, 1884, No. 9,205; in Germany June 28, 1884, No. 30,066; in France July 2, 1884, No. 163,102, and in Canada Dec. 13, 1884, No. 20,726.

Claim.—1. Treating articles or goods made from plastic compositions, such as above named, by subjecting them to heat and so changing them in character and quality, as and for the purpose hereinbefore described.

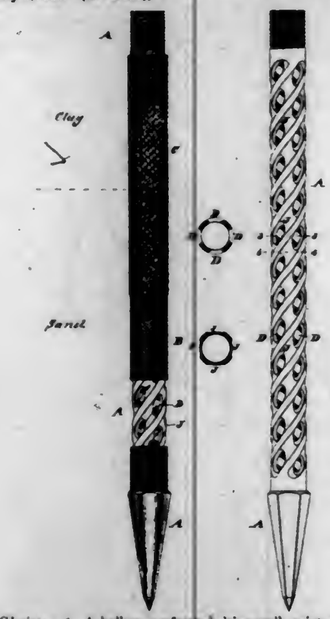
2. The manufacture of articles of a tough, hard, and heat-resisting character, by subjecting them, when made of plastic compositions such as are above mentioned, and while in a comparatively plastic state, to the action of heat, substantially in the manner described.

321,549. CASING FOR CASTING STOVE-DOOR CATCHES. CASPAR VETTER, Louisville, Ky., assignor to Henry Sulzer, same place. Filed Jan. 6, 1885. (No model.)



Claim.—The herein-described casing for casting catches upon stove-doors and the like, constructed of sheet metal, having opposite corresponding sides with the angular notches or recesses in opposite corners thereof, and a strip of metal uniting said sides and bent up to form an angular inwardly-projecting cent, substantially as shown and described.

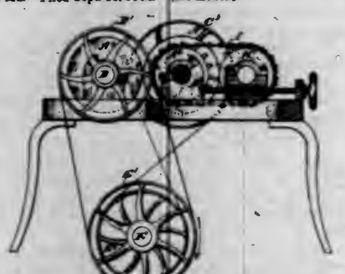
321,550. DRIVE-WELL POINT. JACOB VOSBURGH, St. Louis, Mo., assignor to the N. O. Nelson Manufacturing Company, same place. Filed May 3, 1885. (No model.)



Claim.—1. A hollow perforated drive-well point provided with spiral grooves on its outer surface, for the purposes set forth.

2. A drive-well point provided with spiral grooves on its outer surface, in combination with porous covers, substantially as and for the purpose set forth.

321,551. ROLLER GRINDING-MILL. WILLIAM H. WAKEFORD, Baltimore, Md. Filed Sept. 11, 1884. (No model.)



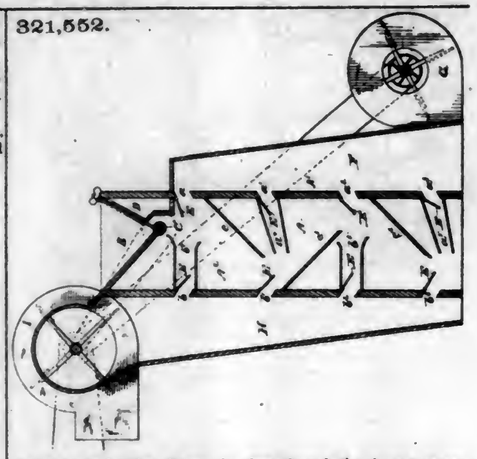
Claim.—In a roller grinding-mill the breaks of which are arranged in one and the same horizontal plane, the combination, substantially as before set forth, with the adjustable roller of one break and the adjustable roller of the next succeeding break, of the chain-wheels and drive-chains for transmitting the motion of one adjustable roller to the other adjustable roller.

321,552. GRAVITY-SEPARATOR. WILLIAM H. WAKEFORD, Baltimore, Md. Filed Sept. 11, 1884. (No model.)

Claim.—1. The combination, substantially as before set forth, of a gravity-chest having valved ports on opposite sides, a blast-fan for blowing air into the chest through the air-ports on one side, and a suction-fan for exhausting air from the chest through the exhaust-ports in its other side.

2. The combination, substantially as before set forth, of a gravity-chest having valved ports on opposite sides, and alternating cant-boards.

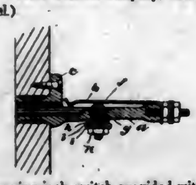
321,552.



a blast-fan for blowing air into the chest through the air-ports on one side, and a suction-fan for exhausting air from the chest through the exhaust-ports in its other side.

3. The combination, substantially as before set forth, of a gravity-chest having valved ports on opposite sides, and alternating corrugated cant-boards, a blast-fan for blowing air into the chest through the air-ports on one side, and a suction-fan for exhausting air from the chest through the exhaust-ports in its other side.

321,553. SPRING-JACK SWITCH. JAMES C. WARNER, Chicago, Ill., assignor to the Western Electric Company, same place. Filed Oct. 22, 1883. (No model.)



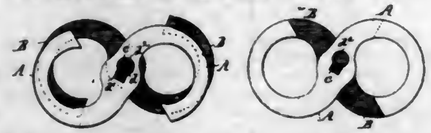
Claim.—1. A spring-jack switch provided with a lug or collar and a forwardly-projecting sleeve adapted to be inserted through the switch from the rear of said board, and to receive the connecting-plugs from the front of said boards, substantially as specified.

2. The combination, with a frame, *a*, having lug *c* and forwardly-projecting sleeve *d*, of a spring, *b*, and insulated contact-point *f*, substantially as described and shown.

3. The combination, with the spring, the contact-point, and frame of a spring-jack switch, of a tapered or conical insulator for said contact-point, substantially as set forth.

4. The combination, with a frame, *a*, having lug *c* and forwardly-projecting sleeve *d*, of a spring, *b*, a contact-point, *f*, and a tapered insulator, *g*, substantially as shown and described.

321,554. CONNECTING-LINK FOR CHAINS. CHARLES N. WATERHOUSE, St. Louis, Mo. Filed Jan. 19, 1885. (No model.)

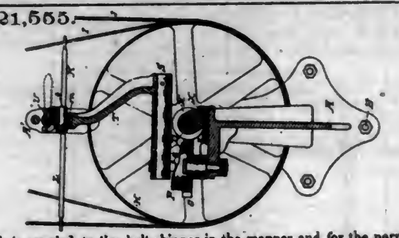


Claim.—A connecting-link or lap-ring consisting of the counterpart S-shaped body-sections A B, having their bars crossing each other, and in the center thereof the lower S-shaped section carrying a square-shaped spindle, *c*, the upper S-shaped section provided with slot *d*, made partly square and rounded at d' d^2, the rivet-head *c'* attached to the spindle, all operating as and for the purposes set forth.

321,555. DRIVING MECHANISM FOR WASHING-MACHINES. F. M. WATKINS, Cincinnati, Ohio, assignor of one-half to John T. Weighell, same place. Filed May 28, 1885. (No model.)

Claim.—1. In a reversible rotary driving mechanism, the combination, with the vertically-revolving worm N upon one of the loose pulleys H, and in gear with the horizontally-revolving worm-wheel O, crowned by cam P, which supports and operates the foot Q, of a rocker, Q S T,

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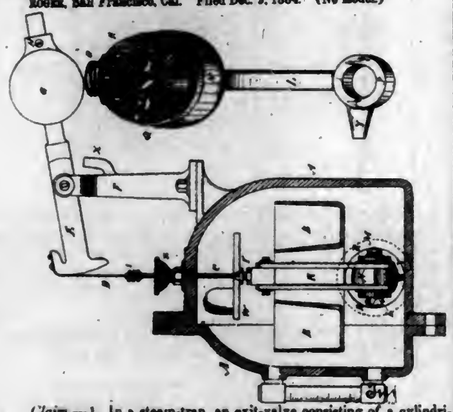


which is coupled to the belt-shipper in the manner and for the purpose set forth.

2. In an automatically-reversing driving mechanism for washing-machine cages and other rotary objects, the combination of the shaft D, carrying a tight pinion, E, and a tight pulley, F, flanked by loose pulleys G H, having reversely-moving belts I J, the belt-shipper M, the vertically-revolving worm N upon loose pulley H, gearing in worm-wheel O, whose cam P supports and operates rocker Q S T, whose wrist *t* occupies a slot in and supports the belt-shipper M, and engages in the vibratable yoke U of said shipper in the manner set forth.

3. In the described combination with the automatically-reversed driving mechanism of a washing-machine, the rod W, journaled in the belt-shipper M, and having the yoke U, the handle *w*, the hook *w'*, and the notch *v*, as and for the purpose explained.

321,556. STEAM-TRAP. CHARLES WATSON and ALBERT GAUKROGER, San Francisco, Cal. Filed Dec. 9, 1884. (No model.)



Claim.—1. In a steam-trap, an exit-valve consisting of a cylindrical casing, N, having closed ends with radial slots formed in them so that the slots at opposite ends do not stand in line with each other, a shaft extending through the center of the casing and having slots or perforations corresponding to those in the casing, in combination with a lever by which the disks may be rotated to open or close the slots, the disks R, and sleeve T, having shoulders, against which the disks are pressed, substantially as herein described.

2. In a steam-trap, a hollow cylindrical casing with radially-slotted ends, slotted or perforated disks fitted to said ends, a shaft passing through said disks and casing and having a lever fixed to it, a float with inclined sides suspended within the trap-casing and connected with said lever by links, in combination with a counterbalance-lever exterior to the casing and connected with the float by a ribbon, D, and a rod, C, substantially as herein described.

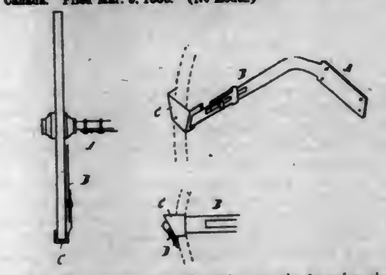
3. In a steam-trap, an exterior casing having an inlet-passage and an outlet-passage with a controlling-valve, as shown, in combination with a float, a ribbon, D, and rod *c*, for suspending the float, and a counterbalance and weight, said float being made in the form of an annular chamber with open center, and with the sides made wider at the top than at the bottom, substantially as herein described.

4. In a steam-trap, an exterior casing having inlet and outlet passages, a valve controlling the outlet-passage and connected with an annular float within the case, the movement of which actuates said valves, a ribbon and rod, by which said float is suspended, extending up through the top of the casing and connected with the counterbalance-lever above, in combination with a stop on the exterior of the casing, by which the downward movement of the outer end of the lever is arrested, substantially as herein described.

5. In a steam-trap, an exterior casing having inlet and outlet passages, a valve by which the escape of water is regulated, and a float suspended within the casing and connected with said valve, an exterior counterbalance-lever fulcrumed above the casing, together with a flexible ribbon and a stem or wire of small diameter passing through the top of the casing and connected with the float, and an exterior cap surrounding said wire, whereby the stuffing-box is dispensed with, substantially as herein described.

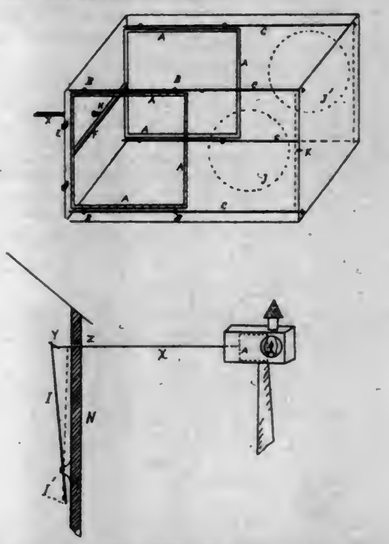
6. In a steam-trap, a casing having inlet and outlet passages, a valve controlling the escape of water from the latter, a float connected with and operating said valve, a counterbalance-lever fulcrumed to the exterior casing, a flexible ribbon and stem or wire by which the float is connected with the lever through the top of the casing, together with the split clamps and nuts whereby the ends of the ribbons and wire are connected, adjusted, and held, and the lower end of the wire is connected with the float, substantially as herein described.

321,557. WHEEL-SCRAPER. WILLIAM M. WELCH, Windsor, Ontario, Canada. Filed Mar. 5, 1885. (No model.)



Claim.—In a scraper, the adjustable arm, the fastening-plate, the flaring U-shaped scraper-iron, and the rubber or other y elding scraper, substantially as described.

321,558. RAILROAD-SIGNAL BOX. CLARK F. WILLIAMS, Reed City, Mich. Filed Apr. 10, 1885. (No model.)

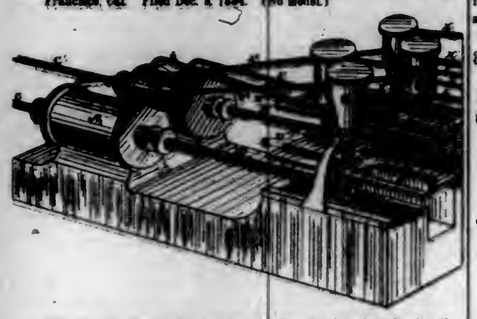


Claim.—1. The combination, in a signal-box, of the frames A A A A, attached together by means of the cross-bar F, with the four iron rods *c c c c* so arranged parallel with each other that the frames A A A A, fastened to said rods *c c c c* by means of screw-eyes B B B B, move back and forth upon said rods before a lamp in said signal-box, substantially as specified.

2. The combination, in a signal-box, of the frames A A A A, moving back and forth upon the rods *c c c c*, with the piston X, moving horizontally, attached to the cross-bar F at H, and worked by the lever I, as hereinbefore set forth and specified.

3. The combination, in a signal-box, of the frames A A A A, attached together by means of the cross-bar F, and moving upon the rods *c c c c*, attached to said rods by means of the screw-eyes B B B B, the said frames A A A A being attached to the piston X at H, with the lever I, fastened to the piston X at Y, together with the joint Y, used to give the piston X a perfect horizontal motion, all as substantially herein specified.

321,559. WATER-PRESSURE ENGINE. JOHN N. S. WILLIAMS, San Francisco, Cal. Filed Dec. 3, 1884. (No model.)



Claim.—1. In a water-pressure engine, a valve-chest having the inlet-valve H, spring *h*, and stem *h'*, in combination with the exhaust or outlet valve I, spring *i*, and annular or hollow stem *i'*, through which the stem *h'* passed, both stems projecting through the chest, substantially as herein described.

2. In a water-pressure engine, one or more valve-chests, having valves H I, with concentric and independent stems *h' i'*, as described, and projecting through the chests, in combination with the single and double inclined planes connected with the piston or pistons of the engine, and having a rectilinear reciprocating movement under said stems, whereby they are independently raised and relieved to operate their valves, substantially as herein described.

3. In a water-pressure engine, the cylinders A A', having pistons B B', with rods C C', and the valve-chests G G' G^2 G^2, having each an inlet or pressure valve and an outlet or exhaust valve, a pressure-pipe, and an exhaust-pipe, in combination with the cross-pipes J J' J^2 J^3, connecting said chests with the ends of the cylinders, and suitable sliding bars and inclined planes by which the piston of one cylinder operates the valves connecting with and operating the piston of the other cylinder, substantially as herein described.

4. In a water-pressure engine, the cylinders A A', having pistons B B', with rods C C', the valve-chests G G' G^2 G^2, each having the inlet or pressure valve H and the outlet or exhaust valve I, said valves having concentric independent stems *h' i'*, projecting through the chest, a pressure-pipe, K, and an exhaust-pipe, L, communicating with said chests, in combination with the cross-pipes J J' J^2 J^3, connecting said chests with the ends of the cylinders, and the mechanism by which the piston of one cylinder operates the valves connecting with and operating the piston of the other cylinder, consisting of the sliding bars D D' on the ends of the piston-rods C C', and the oppositely-located single inclined planes E E' E^2 E^3, and double inclined planes F F' F^2 F^3 on the sliding bars, and adapted to move under the valve-stems and operate the valves, substantially as herein described.

321,560. WELL-BORING DRILL OR BIT. R. P. WILLIAMS and EPHRAIM B. MORRELL, Santa Cruz, Cal. Filed Mar. 1, 1884. Renewed Jan. 6, 1885. (No model.)



Claim.—1. A well-boring drill or bit having a movable section, B, sliding up a vertically-inclined dovetail and mortise, and held in position by a spring-catch operated by a disk to cause the movable section or bit to drop, substantially as shown, for the purpose set forth.

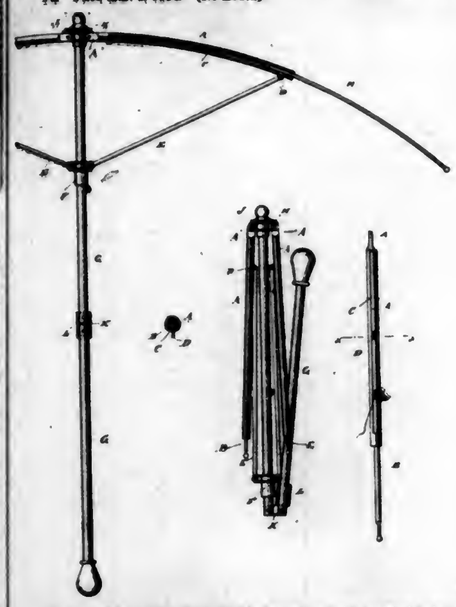
2. A well-boring drill having a movable section and connected together by a dovetail, C, and mortise D, and provided with shoulders or rabbets E and F, and stub-holes H H, substantially as shown, for the purpose set forth.

3. In a well-boring drill, the movable section or bit B, provided with a vertical rabbet, N, adapted to receive the holding-pin L, projecting from the fixed section or bit A, substantially as shown, for the purpose set forth.

4. In a well-boring drill having a movable bit, the spring-catch J, countersunk in the main bit or section A, and engaging with a rabbet, N, cut in the meeting face of the movable bit and operated by a disk, M, to allow the said movable bit to drop when brought into contact with and forced back by the lower edge of the well-casing, substantially as shown and set forth, for the purpose specified.

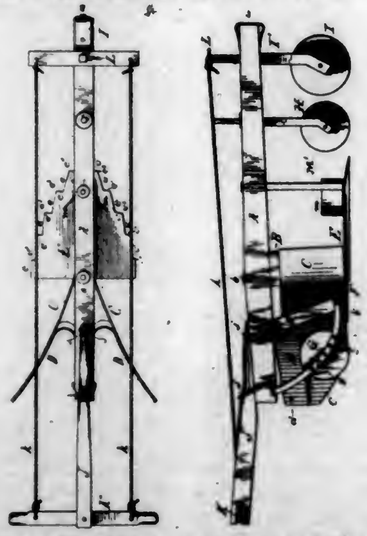
5. In a well-boring drill, the cutters *a a*, secured within the lower face of the drill-stock and confined to place by shoulders *b* and screws *c*, substantially as shown, for the purpose set forth.

321,561. FOLDING UMBRELLA. SAMUEL J. WILSON, Wellsborough, Pa. Filed Mar. 2, 1884. (No model.)



Claim.—The combination, with the stick G, provided with the sleeve H and the runner F, of the tubular sections A, having their inner ends flattened and provided with the longitudinal slots C, the section B, fitting in said tubular sections, and provided with the lugs D, projecting through the slots of the tubular sections, and the braces E, substantially as herein shown and described.

321,562. SUGAR-CANE SCRAPER AND PEA-VINE HARVESTER. JOHN F. WOOD, Houma, La. Filed May 23, 1885. (No model.)



Claim.—1. The combination, with the beam A, having the standards B B' secured thereto, of the cutting point or share E, made triangular and convex in shape, and with the serrated edges *s s' s^2*, shoe F, elastic mold-board C C, and springs D D, all constructed and arranged substantially as described, for the purposes specified.

2. The combination, with the beam A, standards B B', elastic mold-board C C, springs D, triangular share E, having serrated edges, of the roller I, arranged at the front end of the beam, and roller G at the rear substantially as described, for the purposes specified.

3. The combination, with the beam A, carrying the standards B B', mold-board C, springs D, and triangular serrated-edged cutter-share E, roller G, and roller I I', arranged at the front of the said beam A upon a standard, I', carrying a cross-bar, L, of the inclined bar J, secured to the rear end of the beam A, cross-bar K, pivoted to said bar, and ropes *k*, connecting the same with the one L, substantially as described, for the purposes specified.

4. The combination, with the beam A and standards B B', of the elastic mold-boards C C, springs D, share E, shoe F, rollers G and I, revolving colter H, bar J, cross-bars K and L, and connecting-ropes *k*, all substantially as described, for the purposes described and shown.

5. The combination, with the beam A, standards B B', elastic mold-boards C C, springs D, share E, revolving colter H, rollers G and I, of the removable fender M M' *m*, arranged at the top front portion of the said share E, for the purposes specified.

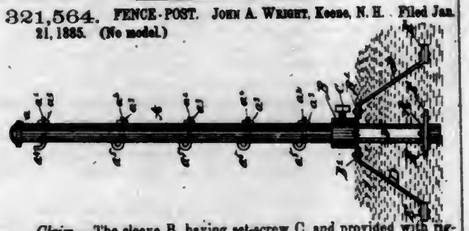
321,563. FANNING-MILL. WALTER S. WOOD, Kalamazoo, Mich. Filed Feb. 3, 1885. (No model.)



Claim.—1. In combination, in a fanning-mill, the longitudinally and laterally oscillating shoe B, the rock-shaft provided with the arm *r*, the rod *s*, the Y-shaped support provided with prongs bent in different directions, and the adjusting-strap *c'*, for permitting longitudinal oscillating motion and vertical adjustment of said shoe, as shown and described.

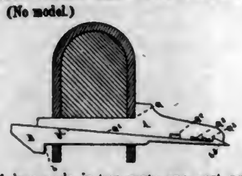
2. In combination with a grain-separator shoe and means for moving the same, the perforated plate or rack *y*, the round or ball-toothed wheel *u*, and the rubber inserted between the said plate or rack and the bottom of the shoe for deadening noise, as shown and described.

321,564. FENCE-POST. JOHN A. WRIGHT, Keene, N. H. Filed Jan. 21, 1885. (No model.)



Claim.—The sleeve B, having set-screw C, and provided with rigidly-connected inclined arms D, having transverse base-plates E, in combination with the fence-post, as set forth.

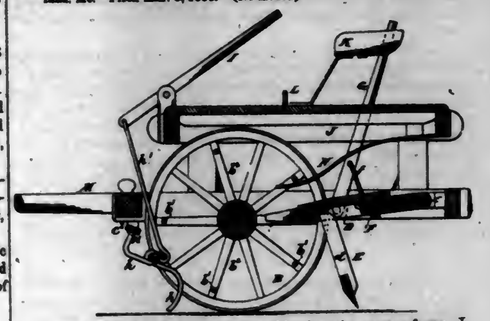
321,565. SELF-LOCKING KEY. THOS. YOUNG, Bradford, Pa. Filed Dec. 3, 1884. (No model.)



Claim.—1. A key made in two parts, one part provided with an elastic tongue, either fixed or removable, having a projecting tooth adapted to lock over the end of or into a depression in the other part, substantially as shown and described.

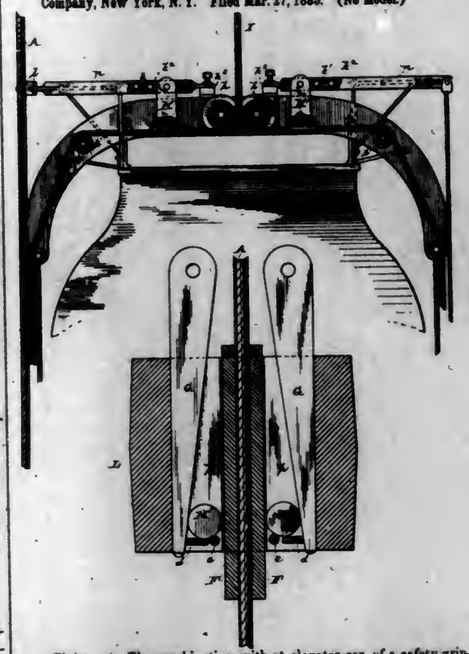
2. The part B of a self-locking key, provided with an elastic tongue, either fixed or removable, having a tooth, b^2, substantially as shown and described.

321,566. CORNSTALK-CHOPPER. WILLIAM O. ALEXANDER, Richland, Mo. Filed Mar. 5, 1885. (No model.)



Claim.—In stalk-choppers, the combination of an upper frame, J, carrying a subjacent spring, N, a lower frame, C, carrying a transversely rear pivoted hoe-frame, D, and two front ground-wheels provided with corresponding lateral studs adapted to simultaneously lift front projections on frame D, whereby frame D is raised against the actuating-spring N, for the purpose specified.

321,567. ELEVATOR. CHARLES L. AMPERSON, New York, N. Y., and CHARLES F. REED, Greene, Me., assignors to the Elevator Safety and Motor Company, New York, N. Y. Filed Mar. 27, 1885. (No model.)



Claim.—1. The combination, with an elevator-car, of a safety gripping-support, gripping-jaws on the car surrounding such support, a loose gib in said jaws, and devices held out of action by the hoisting apparatus and acting when released to force the gib against the gripping-support, substantially as set forth.

2. The combination, with an elevator-car, of a safety gripping-support, gripping-jaws on the car surrounding such support, the loose gib, the roller, and the wedge connected with the hoisting apparatus, substantially as set forth.

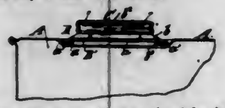
3. The combination, with an elevator-car having hoist-ropes extending around the sides of the car, of saddles riding on horizontal sections of the hoist-ropes, and connections between such saddles and the safety device for throwing such safety device into action when a hoist-rope breaks or slackens, substantially as set forth.

4. The combination, with an elevator-car having hoist-ropes extending around the sides of the car, of saddles riding on horizontal sections of said ropes, levers pivoted in said saddles, and the two sets of cross-levers connecting the saddle-levers with the safety devices, substantially as set forth.

5. The combination, with an elevator-car and safety gripping-support, of the gripping-jaws and the double set of gripping devices in said jaws acting upon opposite sides of the said gripping-support, substantially as set forth.

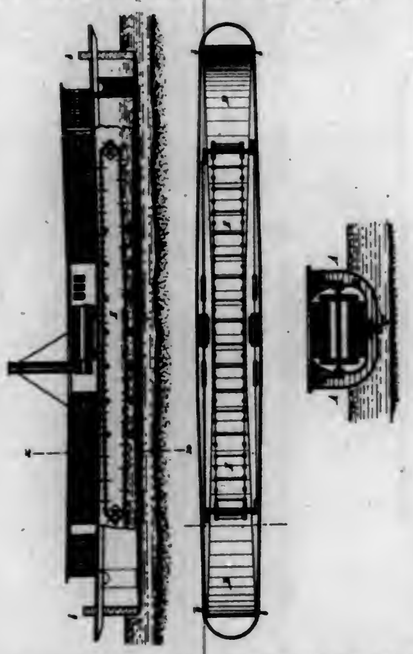
6. The combination, with an elevator-car and safety gripping-support, of the gripping-jaws surrounding said support, loose gibs within said jaws on opposite sides of the support, and two sets of rollers, and wedges for forcing said gibs against the support, substantially as set forth.

321,568. MEANS FOR CLOSING CANS. PAUL BABCOCK, Jr., Montclair, N. J. Filed May 7, 1885. (No model.)



Claim.—The combination, with a can-head having in it a filling-hole, of a closing-piece comprising a portion, B, formed with a circular projection, upon which is fitted a cap and a base portion, B', the top of the circular projection and the base portion being of thin metal, so that they may be readily cut away, and forming between them an intervening space, substantially as and for the purpose herein described.

321,569. CONSTRUCTION OF VESSELS. ADOLF BELIN, Brooklyn, N. Y. Filed Feb. 5, 1883. Renewed Mar. 27, 1885. (No model.)



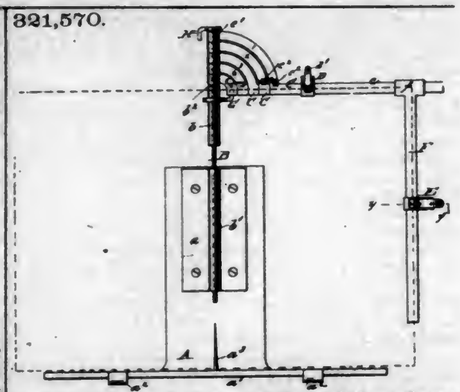
Claim.—A vessel composed of an exterior and interior hull, including an exterior and interior bottom, forming a space between the hulls for machinery and for storage-room, a longitudinal water-channel above the upper or interior bottom, said channel being at the ends larger than in the center, drums supported in bearings at the ends of the vessel, and a paddle-wheel chain passing over said drums in said channel, substantially as described.

321,570. MUSIC-LEAF TURNER. GEORGE G. BENJAMIN, New York, N. Y. Filed May 1, 1884. (No model.)

Claim.—1. A music-holder consisting of the combination of a bottom board or foot-rest having an upright socket, *b'*, a rod, B, sliding in the said socket and having at its upper end a shoulder, *b²*, and above said shoulder a pivot or hinge-pin, a series of bars, C, having horizontal arms *c*, which overlap each, and provided at their inner ends with upturned portions 1 2 3 4 5, ending with respective and successively superjacent eyes or hinge-loops *c'*, by which they are fitted to turn upon the said hinge-pin, and paper-clasps D, arranged to slide upon the said horizontal arms *c*, substantially as and for the purpose set forth.

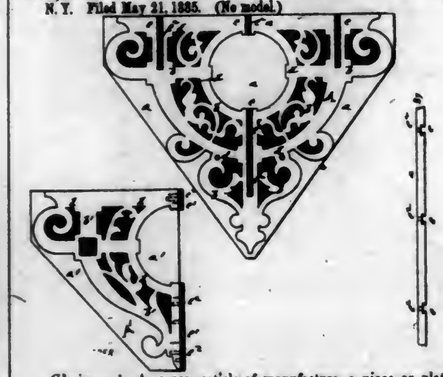
2. In a music-holder having an adjustable upright rod, B, and horizontal bars C, pivoted upon the said rod in position to overlap each other

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and serve as lateral supports to the upper edges of the leaves, the combination, with the said bars C, of downwardly-projecting bars F, fitted to slide by a transverse socket, *f*, upon the said bars C, the said bars F being arranged to support the vertical edges of the leaves, and provided with sliding paper-clasps E, substantially as specified.

321,571. SCROLL-SAW ARTICLE. ADOLPH BERNRITTER, New York, N. Y. Filed May 21, 1885. (No model.)



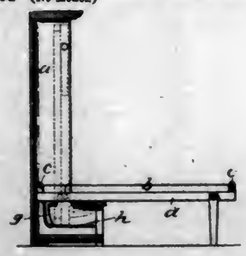
Claim.—1. As a new article of manufacture, a piece or plate of scroll-saw work provided with designs for the scroll-saw, said designs being marked with parallel lines within the contours of the parts to be cut out, and protected by a coating of varnish, substantially as set forth.

2. As a new article of manufacture, a plate or piece of scroll-saw work provided with designs for the scroll-saw, the portions to be cut out being provided with parallel lines within the contours of the designs, and covered by a coating of varnish for fixing the same to the wood, and with holes for the admission of the saw, substantially as set forth.

3. As a new article of manufacture, a plate or piece of scroll-saw work provided with a design fixed thereto, holes within the portions to be cut out for the admission of the saw, and with dovetailed grooves or tongues, substantially as set forth.

4. As a new article of manufacture, a plate or piece of scroll-saw work provided with a design fixed thereon by a coating of varnish, holes within the parts to be cut out for the admission of the saw, interlocking dovetailed grooves or tongues, and holes through the grooves or tongues for the fastening devices, substantially as set forth.

321,572. FOLDING BED. SAML. H. BINGHAM, Hartford, Conn. Filed July 14, 1884. (No model.)



Claim.—In combination, a bed-supporting case and a bed-frame pivotally suspended in the case, the frame bearing the curved bracket in the plane of motion of the frame, and the spring attached to both the case and the bed-frame and with part of its length lying against the curved side of the bracket when the bed-frame is horizontal, all substantially as described.

321,573. HYDRAULIC DIRT-CONVEYER. ALBERT BORCHER, San Pedro, Cal. Filed Apr. 1, 1885. (No model.)



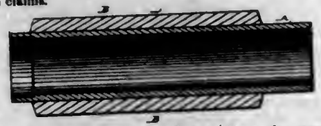
Claim.—1. A receiver and a discharge pipe or elbow, in combination with an exterior pipe surrounding its mouth, so as to form an annular space between the two, and a means for discharging an annular stream of water through this space, so as to surround the material which is passing out of the discharge-pipe, substantially as herein described.

2. A receiver having a discharge pipe or elbow, and a second pipe of larger diameter, into which the first one enters, so that an annular space is formed between the two, and a casing or pressure-chamber connecting with this annular space, and having pipes through which water may be brought into it under pressure, substantially as herein described.

3. The receiving-hopper with its discharge-pipes and water-pressure chamber, as shown, in combination with a pipe or chamber having jet-openings into the hopper, and a pipe connecting the same with the pressure-chamber, substantially as herein described.

321,574. TOP ROLL FOR SPINNING-MACHINES, &c. GEORGE O. BOYNTON and GEORGE STEPHEN, Boston, Mass., assignors, by mesne assignments, to the Leatheroid Novelty Company. Filed Oct. 27, 1883. (No model.)

Brief.—A covering for top rolls, &c., possessing toughness, durability, elasticity, and a smooth surface, composed of the ingredients named in the claims.



Claim.—1. A roll for spinning or other machines, the covering of which is made of paper-pulp, in combination with borax, shellac, and a sizing, for the purpose specified.

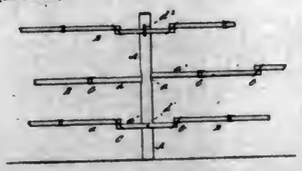
2. A roll for spinning or other machines, the covering of which is made of paper-pulp, in combination with borax, shellac, and a sizing made of soda-ash and resin, for the purpose specified.

321,575. JAR-FASTENING. PHILIP BRIODY, San Francisco, Cal., assignor of one-half to John W. Flinn, same place. Filed Apr. 24, 1884. (No model.)

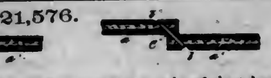


Claim.—In combination with a jar-cover having inclines on the top and around the margin thereof, the clips B B, having hooks at one end, and attached at the other end to the jar by a connection of such character that the clips are free to slide laterally as well as to turn up and down, substantially as described.

321,576. FENCE. ADALINE BROCK, Dunellen, N. J. Filed Nov. 7 1884. (No model.)



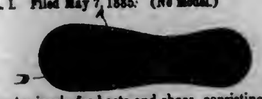
321,576.



Claim.—1. A fence-rail composed of a series of short lengths of wood connected together by detachable links, as shown and described, the adjoining ends of said lengths made to overlap each other, and said links made to embrace both of said adjoining ends, so that the latter bear against each other when subjected to lateral pressure, as set forth.

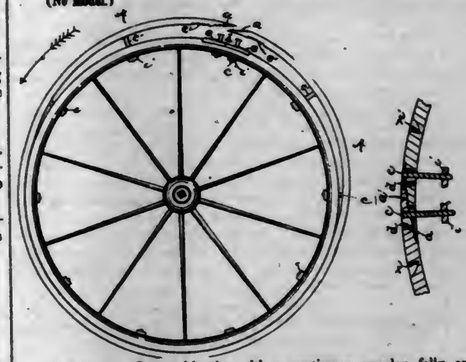
2. In a flexible wooden fence, the combination of the lengths *a a'*, having pins or staples *c*, driven into their ends, with a detachable link, C, embracing the slightly overlapping ends of said lengths, and a supporting-post, A, the whole constructed as shown and described.

321,577. INSOLE FOR BOOTS AND SHOES. GEORGE S. BROWN, Providence, R. I. Filed May 7, 1885. (No model.)



Claim.—An insole for boots and shoes, consisting of a layer of hair cloth, a layer of absorbent paper, and a layer of fabric cut in the form of a sole and united together, substantially in the manner and for the purpose specified.

321,578. TIRE-TIGHTENER. HENRY A. BURLINGAME, Griswold, Conn., and ELISHA S. BURLINGAME, Central Falls, R. I. Filed Nov. 20, 1884. (No model.)

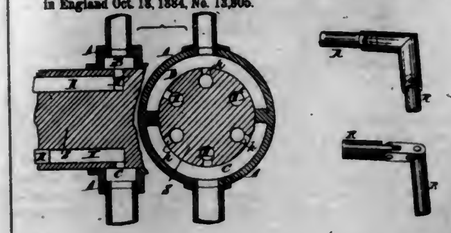


Claim.—1. In combination with a continuous wooden felly, an open tire having its ends cut diagonally to form a lap, said diagonal engaging-surfaces being provided with serrations or notches which interlock with each other when the tire is in place, suitable bolts for securing the tire to the felly, and depressions, substantially as described, by which a clamping device may be applied to tighten said tire on said felly, all substantially as and for the object set forth.

2. In combination with the felly of a wagon-wheel, the metallic segment A, having on its outer side notches *e*, and a tire having notches *a a'* on the engaging-surfaces of the lap, and notches *e'*, so located that when the tire is secured rigidly in place on the felly notches *e* will enter notches *e'*, the complete tire being secured to the felly by a series of bolts passing through said felly and tire, all substantially as and for the purpose set forth.

3. A tire having diagonally-cut ends formed with engaging-notches *a a'* and elongated bolt-slots whose outer portion is enlarged to receive and support the beveled bolt-heads, in combination with a suitable felly and bolts, whose heads are so flattened that a quarter-turn of said bolts will release the tire, all as and for the purpose specified.

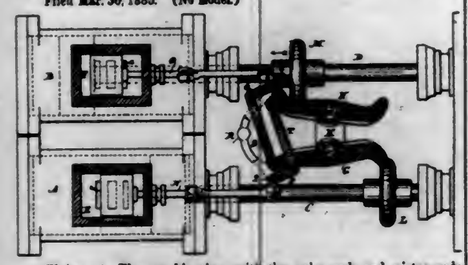
321,579. COUPLING TO COMMUNICATE ROTARY MOTION BETWEEN AXES. DONALD R. CAMERON, Military Barracks, Sheerness, County of Kent, England. Filed June 2, 1885. (No model.) Patented in England Oct. 18, 1884, No. 13,305.



Claim.—1. A coupling or connection for communicating, conveying, or transmitting rotary motion between axes at an angle or inclination to each other, wherein the essential feature is the arrangement of rods or their equivalents angled to correspond with the relative angles, or hinged or jointed to accommodate themselves to the varying angles of the axes between which motion is communicated, conveyed, or transmitted, the said rods or the like being capable of moving longitudinally to accommodate themselves to the varying distances during rotation of the revolving shafts or parts with which they are used, substantially as hereinbefore described.

2. A coupling comprising a pair of shafts having holes in their adjacent ends, and rods jointed together in pairs, end to end, and sliding in said holes.

321,580. DUPLEX ENGINE. LEON B. CARRICABURU, New York, N. Y. Filed Mar. 30, 1885. (No model.)



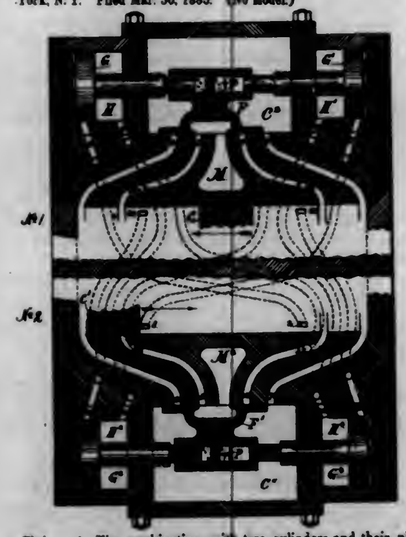
Claim.—1. The combination, with the valve-rods and piston-rods in a duplex engine, of two rockers and tappets upon the piston-rods, and connections that cross from the rocker of one engine to the valve-rod of the other engine, substantially as specified.

2. The combination of the rockers G H and tappets L M, the cylinders A B, valve-chests and valve-rods N O, levers P Q and links S T, crossing from one engine to the other, substantially as set forth.

3. The combination, with the two rockers G H, and the tappets and piston-rods for moving the same, of the bent levers P Q, valves and connections to these levers, and the links S T, connecting the rockers to the bent levers, substantially as specified.

4. The combination, with the two engines and their valves, of rockers and links, and bent levers standing in opposite directions and connected at their upper ends to the valve-rods, and at their lower ends to the rockers, substantially as specified.

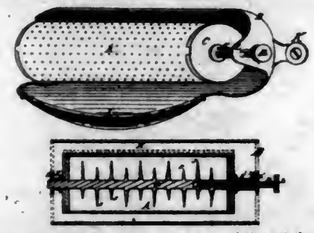
321,581. STEAM-ACTUATED VALVE. LEON B. CARRICABURU, New York, N. Y. Filed Mar. 30, 1885. (No model.)



Claim.—1. The combination, with two cylinders and their pistons and valves and valve-actuating pistons, of the ports 2 3 8 9 and 20 30 80 90, extending from the valve-moving cylinders of one engine to the cylinder and ports of the opposite engine, substantially as set forth.

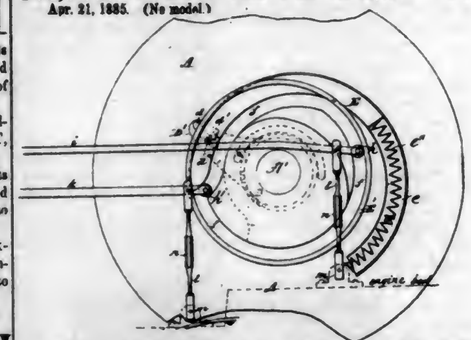
2. In a duplex engine having steam-actuated valves, the combination, with two cylinders, their pistons and valves, of four valve-moving pistons with their cylinders having ports crossing from one engine to the other, substantially as specified, by means of which one engine causes the valve of the other to be moved just before stopping, and remains quiescent until its valve is moved in its turn by steam from the other engine, without the intervention of mechanism to open, close, or control said crossing-ports, substantially as set forth.

321,582. DEVICE FOR SALTING CATTLE. STEPHEN J. COX, New York, N. Y. Filed Apr. 19, 1884. (No model.)



Claim.—A device for salting cattle, consisting of the supporting frame B, provided with the apron I, extension H, and supports L L', and rod or bar G, provided with spurs J, the perforated cylinder A, having cap C, the pin D, provided with knob E, the washers F F', and pin M, substantially as shown and described.

321,583. VALVE-GEAR. SAMUEL E. CRAWFORD, Ripon, Wis. Filed Apr. 21, 1885. (No model.)



Claim.—1. The combination, in a governor-valve gear, of the movable segment-cam E, pinion D, having the radially-extending arm D', and its curved slot *d* therein, with the bolt *d''*, friction-roller *d'*, wheel A, and engine-shaft A', substantially as described.

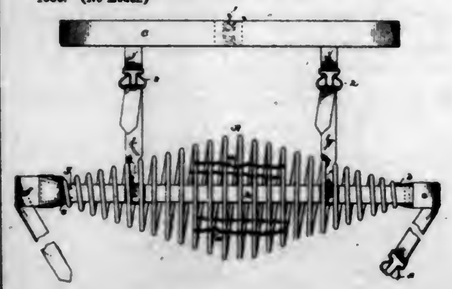
2. The centrifugal weights C C, racks B', springs B, pinion D, having arm D', in combination with the segmental cam E, constructed and operating substantially as described.

3. The centrifugal weights C C, racks B', springs B, pinion D, having the slotted arm D' and segmental cam E, moving in the circle E', in combination with the cam F, having slot *e'*, as described.

4. The valve-stems *i* and *k*, having the friction-rollers *h* and *h'*, traveling in groove *f*, in combination with the links *l* and *m*, having turn-buckles *n n* thereon, substantially as described.

5. The combination, in a governor-valve gear, of the wheel A, secured to shaft A', having upon one of its sides the toothed pinion D, its slotted arm D', racks B', springs B, weights C, guide-rods *a'*, and rods *b*, with the segment-cam E, cam F, groove *f*, valve-stems *i* and *k*, and their friction-rollers *h h'*, arranged and operating upon the other, substantially as and for the purposes described.

321,584. BUSTLE. CHARLES R. DAVIS, Dallas, Tex. Filed Mar. 11, 1885. (No model.)

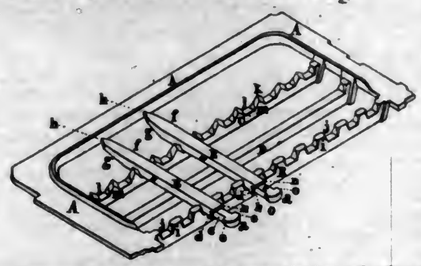


Claim.—1. A bustle consisting of a single piece of wire bent in spiral form, and a series of cords connecting the coils at the central portion of the bustle, as set forth.

2. A bustle consisting of a single piece of wire bent in spiral form, and bent at its ends to form loops *b c*, to which are secured straps *e f*, the strap *e*, having a buckle, *d*, and the elastic strap *h*, secured to the strap *e*, and engaging a buckle, *g*, on the strap *f*, as set forth.

3. A bustle consisting of a single piece of wire bent in spiral form, and bent at its ends to form loops *b c*, to which are secured straps *e f*, the strap *e*, having a buckle, *d*, the elastic strap *h*, secured to the strap *e*, and engaging a buckle, *g*, on strap *f*, and the strap C, connected adjustably with the bustle, so that said bustle may be raised and lowered with relation to strap C, as set forth.

321,585. GRATE FOR BURNING ANTHRACITE COAL. ANSON W. DEBOW, Bangor, Me. Filed Apr. 16, 1884. (No model.)



Claim.—1. In a grate designed for burning hard or anthracite coal in a stove, furnace, or any kind of a fire-box, the sliding grate-bar E, formed at the outer end, *a*, with the lateral spurs or projections *o o*, recessed narrow neck *c*, projecting caps or catches *n n*, stop *d*, so arranged as to adapt it to be grasped and operated by a suitably-formed lifter, H, acting upon the principle of a common stove-lifter, as shown and described.

2. In a grate for burning hard or anthracite coal, the sliding bar E, formed with the projections *o o*, neck *c*, catches *n n*, and stop *d*, and having the inner end of the bar formed sloping upward from the bottom toward the top in the distance from *f* to *h*, as shown at *g*, all as shown and described.

3. In a grate for burning hard coal, the sliding bar E, constructed as shown and described, in combination with the lifter H, formed with the two beaks or hooks *r' r*, separated by the space *s*, the lifter operating to raise and draw out or push in the sliding grate-bar E into the grate, as shown and described.

4. In a grate designed for use in a stove, furnace, or fire-box, having separately-movable grate-bars E E, and supporting-bars C, formed with studs or standards, the studs or standards *m m*, formed with the tops beveled or sloping at a suitable angle from the middle each way in such a manner as to guide or slide the bars E E into the spaces *l l*, between the studs *m m*, as shown and described.

5. In a grate for burning hard or anthracite coal in any fire-box or chamber, the separately-sliding grate-bars E E, having the inner ends formed sloping from the bottom upward, as at *g*, and the outer ends formed as shown, to adapt them to be lifted and operated by a suitable lifter, as H, supported and guided by the supporting and guiding bars B C, formed with the vertical standards *i m*, and intervening spaces, *j l*, arranged and operating in connection with any desirable number of plain supporting-bars, D, arranged intermediately to the supporting and guiding bars B C.

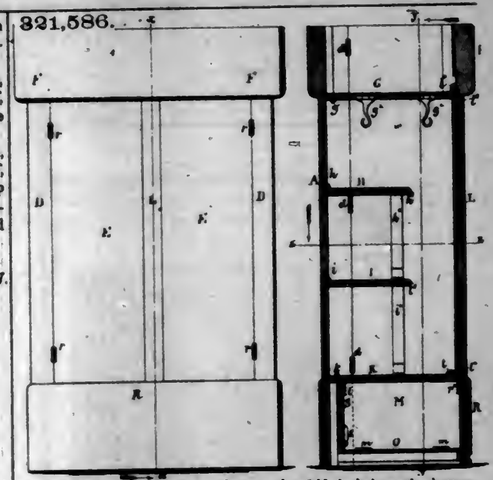
6. In a grate adapted to a stove, furnace, or fire-box designed for burning hard or anthracite coal, the combination of the frame A, guiding and supporting bar B, formed with the vertical standards *i* and spaces *j*, plain supporting-bars D, guiding and supporting bar C, formed with the sloping-topped standards *m* and spaces *l*, and the sliding grate-bars E, formed with the inner end sloping upward, as at *g*, and the outer end formed with the stop *d* and collar *b*, the caps or catches *n n*, neck *c*, and lateral projections *o o*, and operated by the detachable lifter H, all formed and arranged as shown and described.

321,586. FOLDING CABINET-FURNITURE. LYSANDER F. DEMING, New York, N. Y. Filed Nov. 10, 1884. (No model.)

Claim.—1. The combination of the rigid back A, the bottom piece, K, hinged to the said back to fold upward, the top piece, G, hinged to said back to fold downward, the side pieces, C C, hinged to the said back to fold inward and backward toward the said top and bottom pieces, and the door-stiles D D, hinged to the said side pieces to fold inward between them, and the top and bottom pieces, substantially as herein described.

2. The combination of the rigid back A, the shelves H I, hinged to said back to fold upward close against the same, the top piece, G, hinged

321,586.



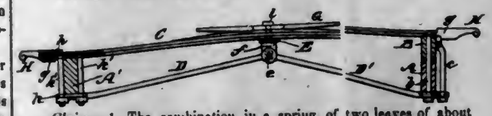
to said back to fold downward upon the folded shelves, the bottom piece, K, hinged to said back to fold upward upon the folded shelves, side pieces, C C, hinged to the back to fold inward and backward toward the top and bottom pieces, and the door-stiles D D hinged to said side pieces to fold inward between them and the top and bottom pieces, substantially as herein described.

3. The combination of the rigid back A, the bottom piece, K, hinged to said back to fold upward, the top piece, G, hinged to said back to fold downward, the side pieces, C C, hinged to said back to fold inward and backward toward the top and bottom pieces, the rigid front brace, F, detachably connected with said side pieces at the top thereof, and the door-stiles D D hinged to said side pieces to fold inward between them and the top and bottom pieces, substantially as herein described.

4. The combination, with the rigid back A, the side pieces, C C, and top and bottom pieces, G K, hinged thereto, and the front brace, F, engaging the side pieces of the central upright post or stile, L, between the bottom piece, K, and the top piece, G, and brace F, substantially as herein described.

5. The combination, with the back piece, A, and hinged folding side pieces, C C, of a drawer, the bottom of which engages by tongue-and-groove guides with the said side pieces and serves to brace the lower part of the latter, substantially as herein described.

321,587. SIDE-BAR VEHICLE. ELISHA DEPUE, Skinner's Eddy, Pa. Filed Apr. 6, 1885. (No model.)



Claim.—1. The combination, in a spring, of two leaves of about equal length, one upon the other and secured together centrally, and a tip having a pocket in its end fitted to receive the ends of both leaves at once, and means for securing the said tip to one of the leaves, substantially as shown and described, whereby the two leaves are positively clamped together with freedom for longitudinal motion between them.

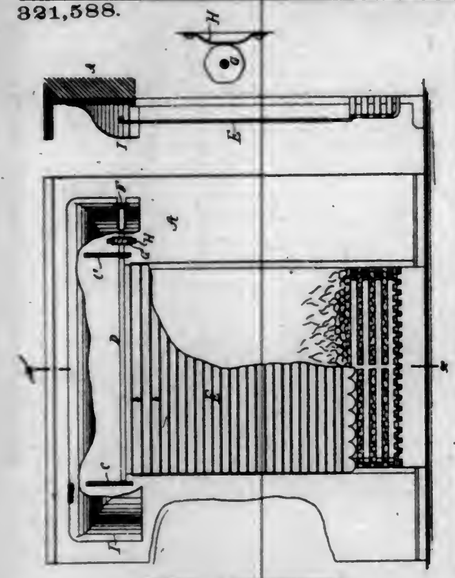
2. The combination of a carriage-axle, a pair of side springs having two leaves, one upon the other and of about equal length, the lower leaf placed directly across the top of the axle, a clip for the axle, the bolts whereof pass through the said lower leaf, their heads being countersunk flush into the said leaf, the upper leaf resting directly thereon, and a clamp receiving the ends of both leaves and securing them together substantially as shown and described.

321,588. FIRE-PLACE ATTACHMENT. THOMAS W. DICKINSON, Sharon, Pa. Filed June 13, 1884. (No model.)

Claim.—1. In a fire-place attachment, the metallic or fire-proof flexible curtain with its roller supported in brackets detachably connected by hooks and slots to the mantel or fire-place front, said roller having a handle and an irregular wheel or cam held by the action of a spring, substantially as and for the purpose set forth.

2. In a fire-place attachment, the metallic or fire-proof flexible curtain with its rollers supported in brackets detachably connected by hooks and slots to the mantel or fire-place front, said roller having a handle and an irregular wheel or cam held by the action of a spring, and the covering overhanging the brackets, roller, and wheel, with its spring, substantially as and for the purpose set forth.

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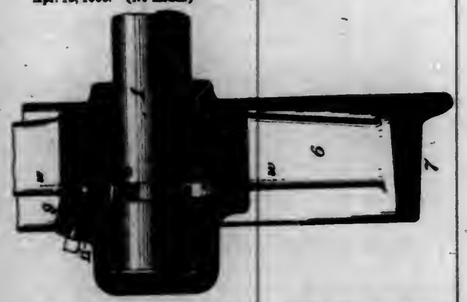


321,589. MANUFACTURE OF HYDRAULIC CEMENT. JOHN DUNLOW, Post Oak Grove, Travis County, assignor to himself, and Charles W. Deiss, Austin, Tex. Filed Mar. 24, 1885. (No specimens.)

Claim.—1. The mode of preparing hydraulic cement from decomposed refuse limestone and the deposits of rivers or similar material, by burning the refuse limestone, pulverizing it, mixing it with the deposit of rivers, soaking the mixture in water, grinding it, sifting it, evaporating the water, burning in a furnace, and, finally, grinding the material to powder, substantially as described.

2. The mode of preparing hydraulic cement from decomposed limestone excavations, which consists in grinding the conglomerated mass into fine powder, casting it into water, molding it into bricks or chunks, burning it, and subsequently grinding it to fine powder.

321,590. CAR-WHEEL. LUTHER B. FAUGHT, Philadelphia, Pa. Filed Apr. 13, 1885. (No model.)

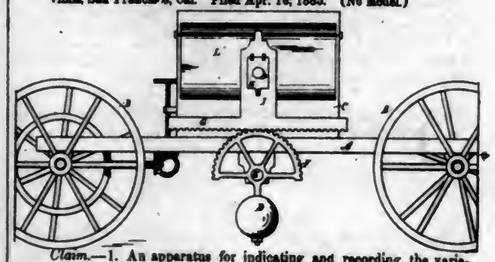


Claim.—1. The combination of an axle having an annular groove, a wheel mounted freely on said axle, a key-block capable of being entered through the axle-opening of the inner end of the hub and fitting in an outwardly-closed recess between guides or stops formed wholly within the body of the hub, said key-block engaging the groove of the axle, and a locking screw or pin passing through the hub and bearing upon the key-block, substantially as set forth.

2. The combination of an axle having an annular groove, a wheel having a hub closed at its outer end and mounted freely on the axle, guides or stops formed within said hub and adapted to retain a key-block in position longitudinally therein, a key-block capable of being entered through the open inner end of the hub and fitting in a recess between said guides or stops, said key-block engaging the groove of the axle, and a locking screw or pin passing through the hub and bearing upon the key-block, substantially as set forth.

3. The combination of an axle having an annular groove, a wheel having a hub closed at its outer end and mounted freely on the axle, guides or stops formed within the hub, a key-block capable of being entered through the open inner end of the hub and fitting in a recess between said guides or stops, said key-block engaging the groove of the axle, a bearing-plate fixed upon the key-block and interposed between the end of the axle and the inner face of the hub, and a locking screw or pin passing through the hub and retaining the key-block in position between the guides, substantially as set forth.

321,591. AUTOMATIC GRADE-DELINEATOR. BERNARD FAYBONVILLE, San Francisco, Cal. Filed Apr. 16, 1885. (No model.)

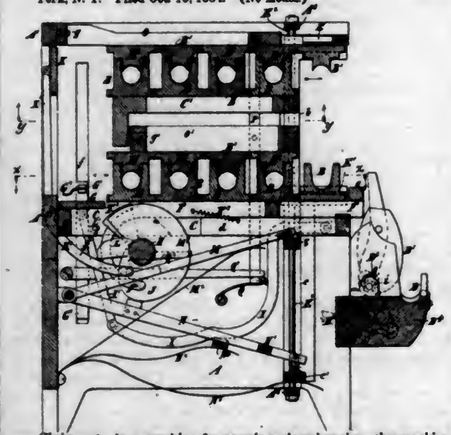


Claim.—1. An apparatus for indicating and recording the variations of surface, consisting, essentially, of a wheeled vehicle, a pendulum or weight suspended so as to change its position with relation to the vehicle, a toothed arc, and a rack connected with the weight and carrying a marking-point, which will be shifted from side to side by the movements of the weight, in combination with a strip of paper or receiving-surface traveling in contact with the pencil and receiving its mark, substantially as described.

2. A vehicle having a weight suspended therefrom, a toothed arc connected with said weight so as to be rotated by its movements with relation to the body of the vehicle, a rack moving in guides and having its teeth engaging with those of the arc, a frame supported from said rack and carrying an adjustable marking-point, in combination with a strip of paper caused to travel over the surface in front of the marking-point by means of gearing connected with the vehicle, substantially as herein described.

3. The combination, with the casing C, rack G, and the hinged section which carries the pencil, of the wheels O O', from one of which the paper is uncoiled upon the other, upon which it is again coiled, guiding and driving rollers, and a shaft and gearing connected with the vehicle-wheels, whereby they may be driven, substantially as herein described.

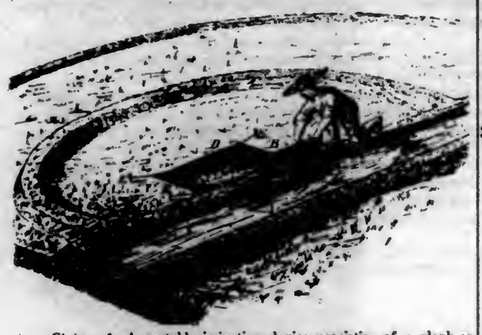
321,592. MACHINE FOR MOLDING CIGARS. WILLIAM J. FOX, New York, N. Y. Filed Oct. 15, 1884. (No model.)



Claim.—1. In a machine for pressing cigar-bunches, the combination of a series of molds, a propeller for moving the molds along, a mold opener and closer, and a presser independent of the propeller and the mold opener and closer exerting pressure on the molds after they are closed to keep them under pressure, substantially as specified.

2. In a machine for pressing cigar-bunches, the combination, with mold-supports, of mold-sections having cavities extending lengthwise of them between the ends, and having flanges at the ends adapted to be received by said supports and sustained thereby, a propeller for moving the mold-sections along in a direction transverse to their length, a mold opener and closer, and a presser independent of the propeller and the mold opener and closer exerting pressure on the molds after they are closed to keep them under pressure, substantially as specified.

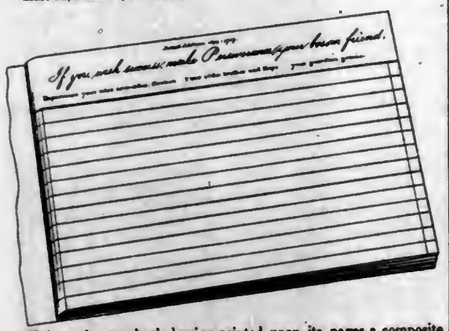
321,593. MOVABLE GATE FOR IRRIGATING. JOHN A. FRY, Bakersfield, Cal. Filed June 30, 1884. (No model.)



Claim.—1. A portable irrigating device consisting of a plank or frame having an opening cut through it, a vertically-sliding gate fitted to move across the openings, and a flexible apron secured below the opening and extending outwardly therefrom, substantially as herein described.

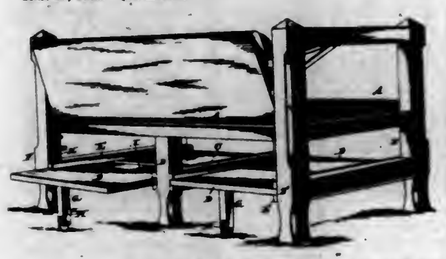
2. A portable irrigating device consisting of a plank or frame which may be set in the side of the channel or basin from which water is to be drawn, and having an opening through it with a sliding gate fitted to move across the opening, a flexible apron secured below the opening and extending outwardly, and a flexible apron extending inwardly from the frame, substantially as herein described.

321,594. COPY-BOOK. JONA. W. C. GILMAN, Reading, Mass. Filed Mar. 31, 1884. (No model.)



Claim.—A copy-book having printed upon its pages a composite exercise in script and type other than script for reproduction, in script only, upon a portion of the page below, whereby the character or style of the penmanship to be followed is indicated by the script portion of the exercise, and it serves as a copy in determining the style and character of the entire copy to be reproduced, and whereby the part of the exercise not in script must be reproduced in script without any other assistance than that provided by the set script copy, all substantially as and for the purposes described.

321,595. RAILROAD-CHAIR. HENRY J. GRAY, Staunton, Va. Filed Mar. 27, 1885. (No model.)

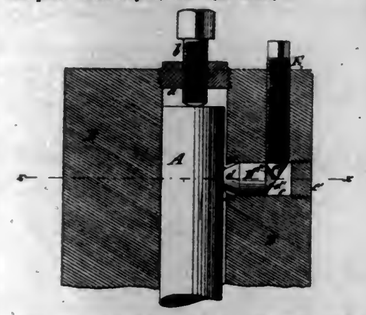


Claim.—1. The combination, with a seat having a reversible back-rest, of a sliding seat adjustable independently of the back-rest and adapted to be moved so as to project on either side of said seat, substantially as set forth.

2. The combination, with a car-seat having a movable or reversible back, of a sliding foot-rest located below the seat and adapted to be moved so as to project on either side of said seat, and a spring for automatically returning the rest beneath the seat, substantially as set forth.

3. The combination, with a seat and the sliding foot-rests located below said seat, of the spring I, secured at its opposite ends to said rests, and stops for limiting the movement of said rests, substantially as set forth.

321,596. FASTENING FOR CUTTER-HEADS. WILLIAM H. GRAY, Brooklyn, N. Y., assignor to the Glen Cove Machine Company, (Limited,) same place. Filed May 11, 1885. (No model.)

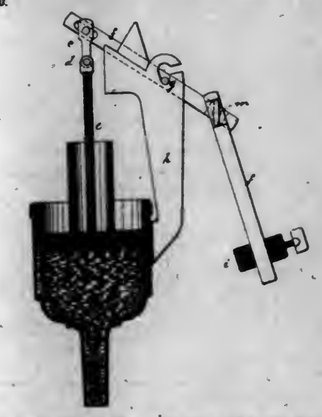


Claim.—1. The combination, with a shaft and a head or hub to be secured thereon, of a saddle in the head or hub movable toward and from the shaft, and having an inclined or beveled outer face, and a screw inserted through the end of the head or hub in a direction lengthwise of the shaft and at an angle to the saddle, and having its inner end conical or tapered to operate with a wedge-like action upon the inclined or beveled outer face of the saddle, substantially as herein described

2. The combination, with a shaft and a head or hub having in it a slideway or socket extending transversely to the shaft, of a plug or saddle fitting said slideway and having an inclined or beveled outer face, and a screw inserted through the end of the head or hub in a direction lengthwise of the shaft and at an angle to the saddle, and having its inner end conical or tapered to operate with a wedge-like action upon the inclined or beveled outer face of the plug or saddle, substantially as and for the purpose herein described.

3. The combination, with a head or hub, B, having a transverse slideway, *c*, and an inwardly-projecting flange or stop, c^2, at the inner end thereof, of the plug or saddle D, having its outer end inclined or beveled, and its inner end of reduced diameter, so as to project through the flange or stop c^2, and a screw, E, having its end tapered to operate with a wedge-like action on the inclined or beveled outer end of the plug or saddle, and arranged at an angle thereto, substantially as herein described.

321,597. LUBRICATOR. JULIUS GÜNTHER, Nakel, Prussia, Germany. Filed Mar. 19, 1885. (No model.) Patented in Belgium Mar. 7, 1885, No. 68,120.



Claim.—1. The combination of an oil-cup, a piston movable therein, and a fulcrumed jointed weighted lever connected to the piston-rod of said piston, one member of said lever being adjustably connected to the other member, substantially as described.

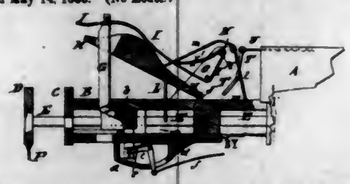
2. The combination of an oil-cup, a piston movable therein, a pivoted weighted lever connected with the piston-rod of said piston, an adjustable extension connected with said lever, and a weight adjustable on said extension, substantially as described.

3. The combination of an oil-cup, a piston movable therein, a fulcrumed weighted lever, a bifurcated link connecting one end of said lever with the rod of said piston, and a weighted extension adjustably connected to the other end of said lever, substantially as described.

4. The combination of the oil-cup *a*, provided with the upright standard *h*, the piston *b* within said cup, provided with the rod *c*, a lever, *f*, pivoted in said standard, link *e*, connecting one end of said lever with said piston-rod, an adjustable extension connected with said lever by means of a set-screw, *m*, and the weight *i* on said extension, substantially as described.

5. The combination, with an oil-cup, of a piston movable therein, a fulcrumed weighted lever provided with a slot, a piston-rod connected with said lever by means of a pin passing through said slot, and a weighted extension adjustably connected to said lever, substantially as described.

321,598. CAR-COUPLING. JOSEPH T. HAMRICK, Rhinebeck, N. Y. Filed May 14, 1885. (No model.)



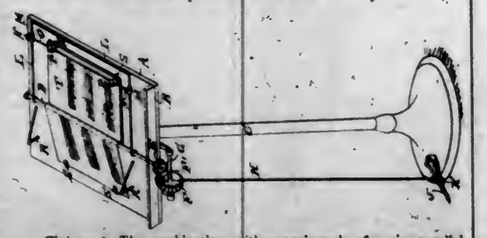
Claim.—1. In a car-coupling, the combination, with the draw-bar B, having perforated lugs F and flanges N, the stationary draw-head C, having side apertures, and the coupling-pin G, of the movable draw-head D, the bars E, attached to the said movable draw-head and sliding in the perforated stationary draw-head and the side lugs, the lever-bail L, hinged to the sliding bars, the block H, hinged to the draw-bar and to the lever-bail, and provided with a perforation to receive the coupling-pin, and the hinged angular plate I, resting upon the hinged block and connected with the coupling-pin, substantially as herein shown and described, whereby the coupling-pin will be raised and lowered by the movements of the said movable draw-head and sliding bars, as set forth.

2. In a car-coupling, the combination, with the hinged angular plate I, the coupling-pin G, connected therewith, and the car-body A, of the bent lever T, the cords or chains U Y Y, and the guide-pulleys V Z Z, substantially as herein shown and described, whereby the said angular plate can be operated to raise the said coupling-pin and uncouple the cars from the top or sides of the car, as set forth.

3. In a car-coupling, the combination, with the draw-bar B and the car-body A, of the recessed block *b*, the spring *a*, holding the said block up, the elbow-lever *c*, connected with the said recessed block, and the cords or chains *f h* A, connected with the said elbow-lever, and the guide-pulleys *g i i*, connected with the said car-body, substantially as herein shown and described, whereby the said recessed block can be operated from the sides of the car to guide the coupling-link into the draw-head of an adjacent car, as set forth.

4. In a car-coupling, the combination, with the stationary draw-head C and the sliding bar E, carrying the movable draw-head D, and having perforation S, of the bolt R, substantially as herein shown and described, whereby the said sliding bar and movable draw-head are held from being drawn forward and uncoupling the cars accidentally, as set forth.

321,599. MUSIC-LEAF TURNER. THOMAS H. HATHAWAY, New Bedford, Mass. Filed Aug. 14, 1884. (No model.)



Claim.—1. The combination, with a music-rack, of a wire parallel with the swinging axis and adjustable a greater or less distance from the same, and of magnets held on the said wire, substantially as herein shown and described.

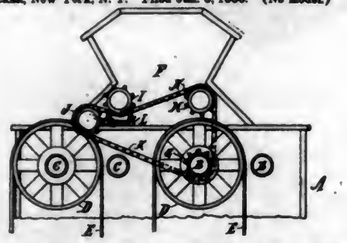
2. The combination, with the rack A, of the swinging frame L, the sliding pieces M on the top and bottom piece, the wire O, connecting the top and bottom piece, the screws N, and the magnets P on the wire O, substantially as herein shown and described.

3. The combination, with a music-rack, of a swinging frame carrying magnets, and of stops on the left-hand side of the rack, substantially as herein shown and described.

4. The combination, with the rack A, of the swinging frame L, having a wire parallel with the swinging edge, which wire is adjustable in relation to the swinging edge, and carries leaf-engaging devices, substantially as herein shown and described.

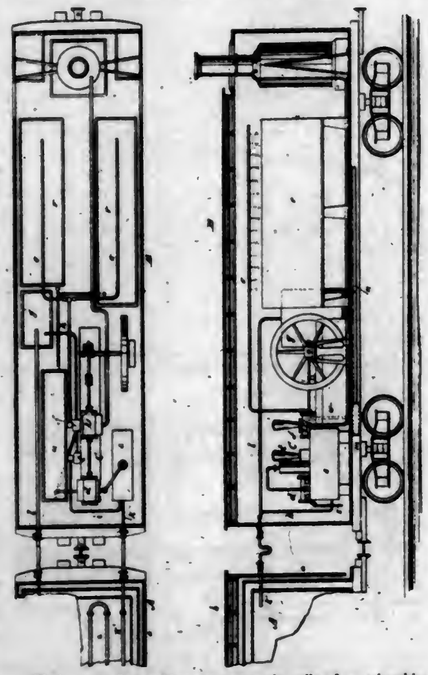
5. The combination, with the rack A, of the shaft D, the frame L on the same, the bevel-pinion E on the lower end of the shaft, the bevel cog-wheel F, the rod H, the foot-lever J, and the spring K, substantially as herein shown and described.

321,600. DRIVING MECHANISM FOR ROLLER-MILLS. JOHN V. HECKER, New York, N. Y. Filed Jan. 3, 1885. (No model.)



Claim.—In a roller-mill, the combination of the two pairs of crushing-rolls and suitable driving mechanism therefor, one of the shafts of said rolls being provided with a spur or sprocket wheel, G, the hopper, the feed-rolls provided with spur or sprocket wheels H and I at their ends, the sprocket-wheel J and its sleeve and shaft, the chain-belt K, passing around or rotating said spur or sprocket wheels G, H, I, and J, the slotted tightener-bracket L, and the screws *a* and *b* for adjusting said bracket, substantially as shown and described.

321,601. REFRIGERATOR SYSTEM FOR CARS. DAVID HENNESSY, New York, N. Y. Filed Aug. 16, 1884. (No model.)



Claim.—1. In a refrigerator system for railroad-cars, in which an ice-machine is used, the combination of a fresh-water condenser with the refrigerating apparatus and with the motor which operates said apparatus, substantially as specified.

2. In combination with the car B, ice-machine C, condenser *u*, the motor which operates said machine and tank or tanks *v*, for supplying both the condenser and motor-boiler of the water-cooling tank *m*, essentially as described.

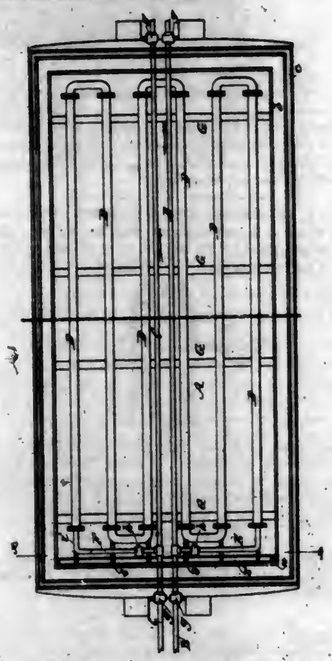
3. In combination with the car B, its ice-machine C, and motor for operating the refrigerating apparatus, of water-cooling circulating means, substantially as described, arranged beneath and outside of the car-body, essentially as and for the purposes herein set forth.

4. The perforated water-spray pipes *o*, in combination with the tanks *v m*, pump *f*, and condenser *u*, substantially as specified.

5. The combination, with car B, ice-machine C, and tank *v*, of the tank *m*, coil *n*, and spray-pipe *o*, substantially as and for the purpose specified.

6. The cars A, provided with pipes *k' l'*, and the back-and-forth circulation-pipes *r*, substantially as described.

321,602. REFRIGERATING-CAR. DAVID HENNESSY, New York, N. Y. Filed Mar. 6, 1885. (No model.)



Claim.—1. In refrigerating-cars in which cold brine or liquid is circulated through pipes within the car, the combination, with the circulating-pipes D, brine-supply pipe B, and brine-return pipe C, of the branch inlet-pipe E, arranged to rise or incline upward from its connection with the supply-pipe to its connection with the circulating-pipes, substantially as and for the purpose herein set forth.

2. In refrigerating-cars in which cold brine or liquid is circulated through pipes within the car, the combination, with the circulating-pipes D, brine-supply pipe B, and brine-return pipe C, of the branch inlet-pipe E, arranged to connect the supply-pipe with the circulating-pipes at or near the bottom or lower level of the latter, and the branch brine-outlet pipe F, arranged to connect the return-pipe with the circulating-pipes at or near their top or higher level, essentially as and for the purposes described.

3. The branch outlet-pipe F, constructed with an upward bend or crook, *i'*, in combination with the brine-return pipe C and the brine-circulating pipes D, substantially as specified.

4. In a refrigerating-car, the combination, with the brine-circulating pipes D and chairs supporting the same, of the beams G, for carrying the chairs and for suspending the articles to be preserved within the car, essentially as described.

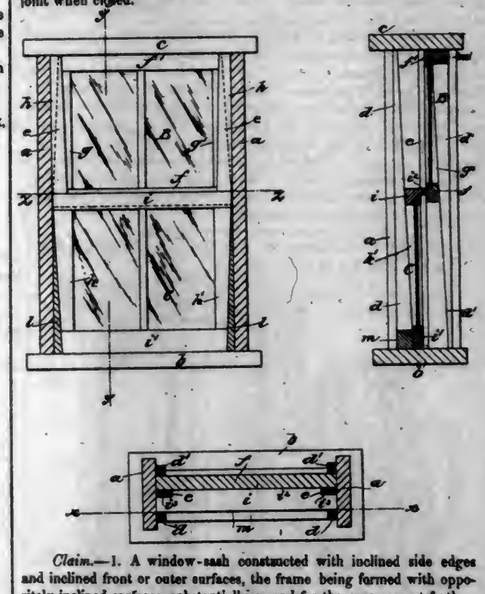
5. The combination, with the brine-circulating pipes D, chairs carrying the same, and the beams G, carrying the chairs, of the straps or clips I, bars or connections *k*, angle-irons *l*, bolts *m*, and roofs *e f*, substantially as and for the purposes specified.

6. In a refrigerating-car, the combination, with the brine-circulating pipes D, of the gutters *s s'* and the drip-outlet pipe *u*, constructed or provided with a trap, *v*, essentially as described.

7. The chairs H, constructed with a lower recess, *r*, and with an opening, *w*, in their top for reception of the brine-circulating pipes D and gutters *s*, for carrying off the drip from said pipes, substantially as herein set forth.

321,603. WINDOW SASH AND FRAME. GEORGE W. HENRY, Elizabeth, N. J. Filed Nov. 15, 1884. (No model.)

Brief.—A window-sash having both its side edges and frame beveled, in combination with parting and stop beads similarly beveled, and inclined wedge-shaped pieces *h*, thus forming practically an air-tight joint when closed.

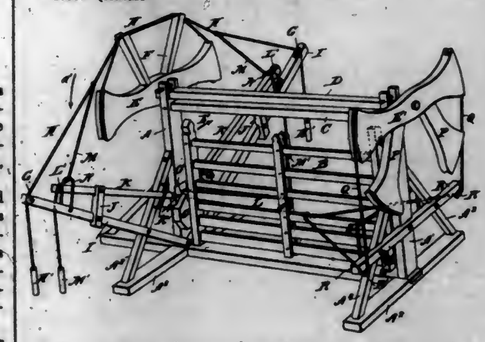


Claim.—1. A window-sash constructed with inclined side edges and inclined front or outer surfaces, the frame being formed with oppositely-inclined surfaces, substantially as and for the purposes set forth.

2. A window-sash made thicker and wider at its one end than at its other end, substantially as described.

3. The inclined division-stripe *e*, in combination with the sash C, formed with the lip *i'*, substantially as described.

321,604. GATE. JOHN F. HORSCOD, Morganfield, Ky. Filed Feb. 26, 1885. (Model.)



Claim.—1. The combination, with the standards or posts A A' and the gate B, of the bar D, arranged to turn on the posts, the cross-pieces E and E', ropes or wires for swinging the cross-piece E, and ropes or wires connecting the cross-piece E' with the gate, substantially as herein shown and described.

2. The combination, with the standards or posts A A' and the gate B, of the bar D, arranged to turn on the posts A A', the cross-pieces E E' on the ends of the bar D, the cross-bar R on the post A', and wires or ropes secured to the ends of the cross-piece E' and to the gate, and passed through eyes on the cross-bar R, substantially as herein shown and described.

3. The combination, with the standards or posts A A' and the gate B, of the bar D, arranged to turn on the posts, the cross-pieces E E' on the ends of the bar D, ropes or wires connecting the ends of the cross-

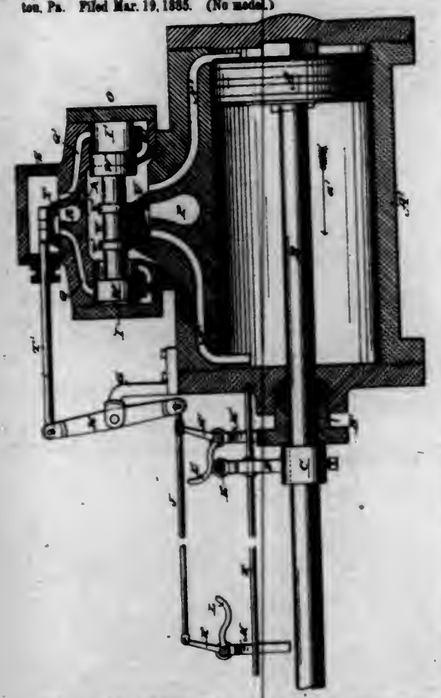
piece E' with the gate, the bars I, and the wires or ropes H, secured to the ends of the cross-piece E and passed over pulleys on the end of the bars I, substantially as herein shown and described.

4. The combination, with the standards or posts A A' and the gate B, of the bar D, the cross-pieces E E', the wires or ropes Q, connecting the ends of the cross-piece E' with the gate, the bars I, the levers K, the latch-lever L, pivoted on the gate, the wires or ropes H, secured to the ends of the cross-piece E and passed over pulleys on the ends of the bars I, and the ropes or wires M, connected with the ropes or wires H and passed over the pulleys on the ends of the levers K, substantially as herein shown and described.

5. The combination, with the standards or posts A A' and the gate B, of the bar D, the cross-pieces E E' on the ends of the same, the ropes or wires Q, connecting the ends of the cross-piece E' with the gate, the bars I, the levers K, the ropes or wires H, secured on the ends of the cross-piece E and passed over pulleys on the ends of the bars I, the ropes or wires M, secured to the wires or ropes H and passed over pulleys on the ends of the levers K, the loops N, the latch L, and the block O on the post A, substantially as herein shown and described.

6. The combination, with a hinged gate, of the guard S, pivoted at or near its middle portion to the post to which the gate is hinged, substantially as herein shown and described.

321,605. STEAM-ACTUATED VALVE. ALFRED HORNFIELD, Hazleton, Pa. Filed Mar. 19, 1885. (No model.)



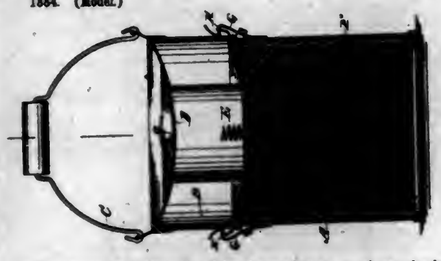
Claim.—1. The combination of the cylinder A', the steam-chest O, having channels Q, Q', and R, and provided with cylindrical chambers I I' and ports *d d'*, opening at one end at the outer ends of the chambers I I' and at their other ends into the said chambers near the inner ends thereof, and the valve U, having pistons W W', substantially as set forth.

2. The combination, with a cylinder having the channels N, N', and P, of the steam-chest O, having the channels Q, Q', and R, the compartments I I', the channels *d d'* at the bottoms of the said compartments, the slide-valve U, the shaft V, having pistons W W', the steam-chest S, connected with the steam-chest O by the channels *h*, the slide-valve T, and mechanism for operating the slide-valve from the main piston-rod, substantially as herein shown and described.

3. The combination, with the cylinder A', of the piston A and piston-rod B, the collar C on the piston-rod, the arm D projecting upward from the same, the roller E, the guide-rod F, the pivoted angle-tappets K, the rod J, the pivoted lever H, the slide-valve T, operated by a rod from the lever H, and a steam-actuated valve in a steam-chest below the slide-valve T, substantially as herein shown and described.

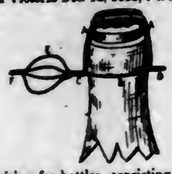
4. The combination, with the piston-rod having an arm, D, the pivoted lever H, the valve J, and connection between said valve and lever, of the tappets K K', arranged at the opposite ends of the path of the arm D, the arms L L', extended from tappets K K' toward each other and in position to be engaged by the arm D, and a rod extended between the tappets and connected with the lever H, substantially as set forth.

321,606. MINNOW-BUCKET. WILLIAM W. HOUGH, Mound City, Ill., assignor to himself and Joseph P. Roberts, same place. Filed Sept. 10, 1884. (Model.)



Claim.—As an improved article of manufacture, a minnow-bucket consisting, essentially, in the perforated bucket A, the annular float B, having projections H on its lower outer edges, the spring-operated cover D, hinged to the top of the float over its central opening, and the outer imperforate bucket, A, having catches G on its upper edge to engage the projections H, substantially as set forth.

321,607. WIRING FOR BOTTLE-STOPPERS. ROBERT L. HOWARD, Luton, County of Bedford, England. Filed Mar. 30, 1885. (No model.) Patented in England Jan. 19, 1883, No. 324; in France July 18, 1883, No. 156,613, and in Victoria Dec. 12, 1883, No. 3,619.



Claim.—A wiring for bottles, consisting of four pieces of wire, two of them passing over the stopper, and two of them passing at opposite sides of and around the neck and twisted together close up to such neck, and the wires extending off beyond the twist at one side and forming a loop, substantially as and for the purposes set forth.

321,608. FLIER FOR PRINTING-MACHINES. LEWIS W. HYDE, Brooklyn, and ALBERT H. SEAMAN, New York, N. Y. Filed June 25, 1884. (No model.)



Claim.—A flier, C, for printing-presses, consisting of a series of fingers framed together and provided with set of friction-rollers D, arranged therein with their axes transverse to the fingers, and to roll in a lengthwise direction with respect to the same, substantially as shown and described.

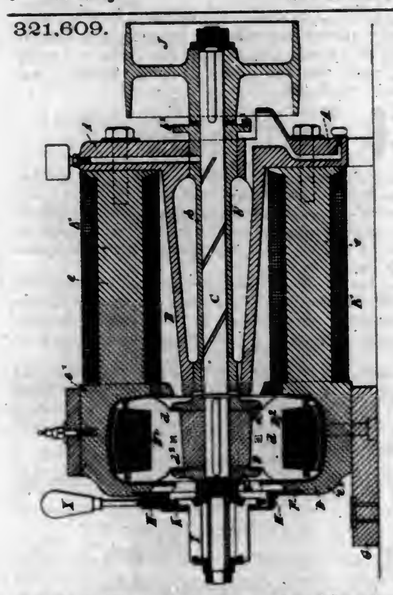
321,609. DYNAMO-ELECTRIC MACHINE. EDWARD JONES, Leeds, County of York, England. Filed Sept. 8, 1884. (No model.)

Claim.—1. In a dynamo-electric machine, the combination, with a single standard or end plate carrying a single long bearing and an armature mounted upon a spindle adapted to rotate within the said single bearing, of two or more channeled pole-pieces, each having a separately-wound core or shank secured to the said single end plate and arranged parallel to the armature-spindle, and a commutator mounted on the said spindle in close proximity to the armature and at that side thereof which is remote from the single end plate or standard of the machine, substantially as and for the purpose set forth.

2. In a dynamo-electric machine, the combination, with a standard or end plate carrying a single long central bearing and an armature and commutator mounted close together on one end of a spindle, of one or more pairs of separately-wound electro-magnets bolted to the said standard, with their pole-pieces supported at a distance from the bed-plate, and a frame or ring of brass or its equivalent connecting the said pole-pieces, and serving as a bearing or guide for the brush-rocker, substantially as set forth.

3. In a dynamo-electric machine, the combination, with the standard or end plate, A, a single long central bearing, B, separately-wound electro-magnets E E, spindle C, armature D, and commutator I, of a

321,609.



bush, *b*, fitted within the bearing, means, substantially as described, for adjusting the said spindle lengthwise within the said bush, and a brush-rocker, H, mounted upon a frame or ring, F, connecting the pole-pieces of the electro-magnets, and serving to prevent their vibration, all substantially as set forth.

4. An armature for dynamo-electric machines, consisting of a soft-iron core supported on U-shaped iron pole-pieces arranged radially in pairs around a hub of non-conducting material, the pole-pieces in each pair being separated the one from the other by spacing-blocks of insulating material, and the several pairs of pole-pieces being secured on the hub and dividing the core into fan-shaped sections for the reception of the coils of conducting-wire, substantially as described, and for the purpose set forth.

5. In a single-bearing dynamo-machine, the combination, with the armature D, field-magnets E E, commutator I, and brush holder and rocker H, of the diamagnetic ring or frame F, forming a rigid connection between the pole-pieces of the said field-magnets, and also a bearing or guide for the brush-rocker, and the covering plate or ring K, for retaining the said brush-rocker in place, and serving to conceal and protect the connections between the armature and commutator, substantially as described with reference to the drawings.

6. In a dynamo-electric machine, the combination, with a commutator, of a brush or collector consisting of a number of wires or strips of metal packed closely together, so as to present their ends in a line or lines parallel to the commutator-bars, a guide or sheath for the brush, and a spring, whereby the brush is automatically and constantly pressed or fed forward through the guide or sheath in a radial or nearly radial direction against the periphery of the commutator, for the purpose of maintaining constant the rubbing area of the brush and holding it steadily to its work, substantially as herein set forth.

7. In a dynamo-electric machine, the combination, with the commutator I, of the brush-rocker H, brushes H', guide cases or sheaths A', and springs *h*, or their equivalent, substantially as described, for the purpose of automatically imparting a forward feed to the brushes in a radial or nearly radial direction with respect to the commutator, and thereby maintaining constant their rubbing area, as set forth.

321,610. BOOT AND SHOE STRETCHER. WILEY JONES, Norfolk, Va. Filed Apr. 29, 1885. (No model.)



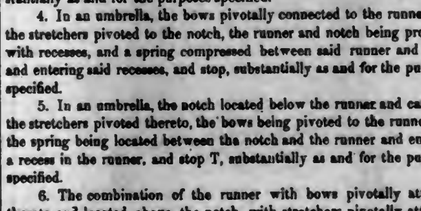
Claim.—1. The combination, in a shoe-stretcher comprising a divided last expanded by an operating-screw, of the compound nut D, tapped to receive the said screw both horizontally and vertically, as shown and described.

2. The combination, in a shoe-stretcher comprising a divided last with overlapping portions T T', and the instep-cap G, of apertures J J, provided with a pin, I, and recesses or pockets *u*, containing a compound nut, D, as and for the purposes described.

3. The combination, in a shoe-stretcher comprising a divided last hinged at the heel, of a bottom plate, R, provided with cavity F, and a single arm pivoted in socket H, substantially as and for the purposes described.

4. In a shoe-stretcher, the parts Q Q, provided with flanges T and T', socket H, and recesses or pockets *u*, in combination with links E E, provided with swivel-nut A, compound nut D, provided with screw C, and bottom plate, R, provided with cavity F, all substantially as and for the purposes described.

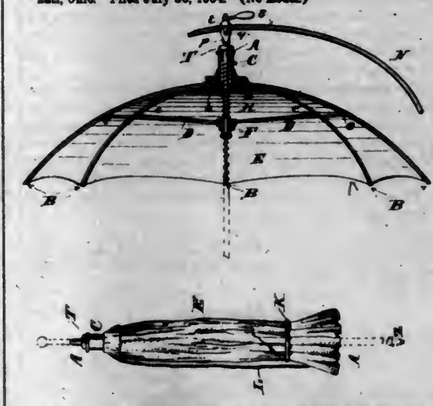
321,611. ESCAPEMENT FOR WATCHES. GERSON KRICHEVSKI and ABRAHAM EDMONDS, New York, N. Y. Filed Jan. 19, 1885. (No model.)



Claim.—1. The detent *a*, connected with the lever *e* by an arm or disk, *c*, and pin *c'*, entering a slot in the lever, substantially as described.

2. The semicircular detent *a*, formed or provided with an arm or plate, *c*, substantially as shown and described.

321,612. UMBRELLA AND PARASOL. EDWARD C. KUHN, Cincinnati, Ohio. Filed July 30, 1884. (No model.)



Claim.—1. In an umbrella, the bows pivotally connected to the runner, and the inner end of the stretchers pivotally connected to the notch, and a spring interposed between the notch and the runner, substantially as and for the purposes specified.

2. The combination of a runner located above the notch, the latter pivotally connected to the stretchers, and the runner pivotally connected to the bows, and a spring interposed between the notch and the runner, substantially as and for the purposes specified.

3. The combination of a runner located above the notch, the latter pivotally connected to the stretchers, and the runner pivotally connected to the bows, and a spring interposed between the notch and the runner, and device for retaining the umbrella when closed in that position, substantially as and for the purposes specified.

4. In an umbrella, the bows pivotally connected to the runner, and the stretchers pivoted to the notch, the runner and notch being provided with recesses, and a spring compressed between said runner and notch and entering said recesses, and stop, substantially as and for the purposes specified.

5. In an umbrella, the notch located below the runner and carrying the stretchers pivoted thereto, the bows being pivoted to the runner, and the spring being located between the notch and the runner and entering a recess in the runner, and stop T, substantially as and for the purposes specified.

6. The combination of the runner with bows pivotally attached thereto and located above the notch, with stretchers pivotally attached thereto, and a spiral spring surrounding the stick A between the notch and the runner, and stop on the stick A above the runner, substantially as and for the purposes specified.

7. The runner with bows pivotally attached thereto and provided with recess, and the notch pivoted to the inner ends of the stretchers

and provided with a recess, the runner being located above the notch, and a spring compressed between the runner and the notch and fitting into said recesses in said notch and runner, substantially as and for the purposes specified.

8. The runner located above the notch and provided with a recess, the bows of the umbrella being at their inner ends pivotally attached thereto, and a notch to which the stretchers are pivotally attached, a spring being compressed between the notch and the runner, and entering said recess in the latter, substantially as and for the purposes specified.

9. The runner located above the notch and carrying the inner ends of the bows and provided with annular recess inclosing the stick, and the notch having the stretchers pivotally connected thereto, and a spiral spring inclosing the stick and compressed between the notch and runner and received above in the recess in said runner, substantially as and for the purposes specified.

10. The runner located above the notch and carrying the inner ends of the bows and provided with annular recess inclosing the stick, and the notch having the stretchers pivotally connected thereto, and a spiral spring inclosing the stick and compressed between the notch and runner and received above in the recess in said runner, and stop, as T, substantially as and for the purposes specified.

11. The runner located above the notch and carrying the inner ends of the bows and provided with annular recess inclosing the stick, and the notch having the stretchers pivotally connected thereto, and a spiral spring inclosing the stick and compressed between the notch and runner and received above in the recess in said runner and stop, T, and ring K, substantially as and for the purposes specified.

12. The runner located above the notch and carrying the inner ends of the bows and provided with annular recess inclosing the stick, and the notch having the stretchers pivotally connected thereto, and a spiral spring inclosing the stick and compressed between the notch and runner and received above in the recess in said runner, and device for retaining the umbrella when closed in that position, and the stop T, substantially as and for the purposes specified.

13. The runner located above the notch and carrying the inner ends of the bows and provided with annular recess inclosing the stick, and the notch having the stretchers pivotally connected thereto, and a spiral spring inclosing the stick and compressed between the notch and runner and received above in the recess in said runner, and device for retaining the umbrella when closed in that position, and the stop T, formed in one piece with the stick and lying above the runner, substantially as and for the purposes specified.

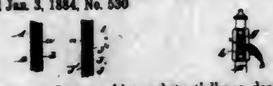
321,613. CLOCK-CASE. ALBERON M. LANE, Winsted, Conn., assignor to the Wm. L. Gilbert Clock Company, same place. Filed Feb. 10, 1885. (No model.)



Claim.—1. The combination, with a clock-case and a pair of bells secured thereon, of a handle connecting the bell-posts, substantially as set forth.

2. The combination, with a pair of bells secured to the top of a clock-case by means of rigid supports, of a cross-bar connecting the said supports and a handle secured to the cross-bar, substantially as set forth.

321,614. MACHINE FOR CRUSHING AND STEMMING TOBACCO-LEAVES. ALEXANDER T. LENDRUM, Mount View Terrace, Cork, County of Cork, Ireland. Filed Aug. 9, 1884. (No model.) Patented in England Jan. 3, 1884, No. 530

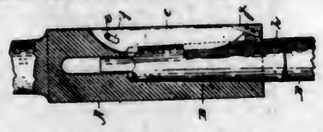


Claim.—1. In a machine, substantially as described, the combination, with the shafts 1, 2, and 3, geared together, and the wheel A, having peripheral groove *a* and rounded portions upon either side thereof, of the cutter-wheel B, having cutting-disk *d* and disks *l*, with rounded peripheries, and the clearer J, having toothed central disk, *j*, and bristles, as and for the purposes set forth.

2. The hollow standard E, having jaw *h*, and the eccentric-pin *f'*, combined with the rod *g'*, having heart-cam *b*, the reciprocating knife *g*, and connections with the power-shaft, the parts *h g* having clamping-shoulders adapted to detain the leaf after the stem has been cut, as set forth.

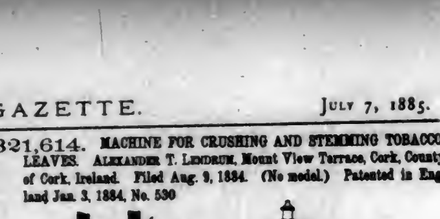
3. In combination with the shaft 2 and power connections, and with the shafts 1 and 2, the wheel A, having groove *a*, and the cutter-wheel B and clearer J, all geared to revolve together, the fixed grooved jaw *h*, reciprocating jaw *g*, the rod *g'*, having heart-cam *b*, the eccentric-pin *f'*, and connections with the shaft 2, as specified.

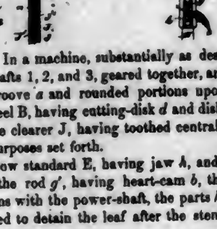
321,615. SOCKET FOR TWIST-DRILLS. GEORGE A. LEITER, Chicago, Ill. Filed Apr. 4, 1885. (No model.)



Claim.—A drill-socket, A, having a movable key, *c*, pivoted therein for the purpose of holding the drill when the keeper is broken off, substantially as described.

321,616. SPOKE-SETTING MACHINE. CHARLES P. LEWIS, Sweet Springs, W. Va. Filed Oct. 20, 1884. (No model.)





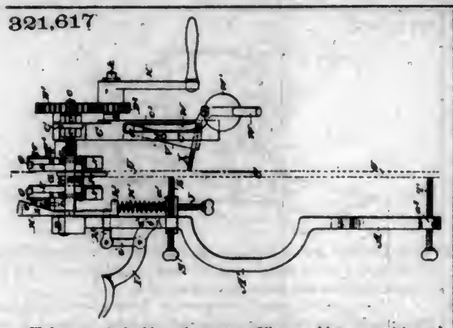
Claim.—1. In a spoke setting and gaging machine, the combination, with the bed A, provided with the slot G, of the gage-body H, secured in the slot, and having the hinged head H', and means for locking the same in position, substantially as herein shown and described.

2. In a spoke setting and gaging machine, the combination, with the bed A, provided with the slot G, of the gage-body H, secured in the slot, and having the hinged head H', means for locking the said head in position, the lever L, and the bar M on the end of the said lever and projecting through the slot of the bed, substantially as herein shown and described.

3. The combination, with the gage-body H, screw-threaded and provided with the nuts J J, of the head H', hinged to the body, and the spring-latch P, secured to the head and engaging the body, substantially as herein shown and described.

321,617. MACHINE FOR DRESSING SAW-TEETH. CALVIN LOVELAND, Spencer, Wis., assignor to himself and Frank Whipple, same place. Filed May 2, 1885. (Model.)

321,617



Claim.—1. A double-acting rotary filing-machine, comprising relatively fixed and movable concaved files mounted facing each other on a rotatable shaft, and means for shifting the movable file along the shaft toward the fixed file for dressing both sides of the saw-teeth or work at once, substantially as herein set forth.

2. In a filing-machine, the combination of the frame A B C, shaft D, file-head and file E L, fixed thereto, file-head and file F M, splined to the shaft, spring G, block H, having inclined face *h*, means, substantially as described, for depressing the block, a spring for lifting the block, and the gage-screw J, substantially as herein set forth.

3. The combination of the frame A B C, shaft D, fast and loose rotatable files L M, spring G, gage P, notched at P', block H, having inclined face *h*, means, substantially as described, for depressing the block, a spring for lifting the block, and a gage-screw, J, substantially as herein set forth.

4. The combination, with the frame A B C, shaft D, gage P, notched at P', and the rotatable file L, of the screws *c c* and nuts *c' c'*, substantially as herein set forth.

5. The combination of the frame A B C, shaft D, fast and loose rotatable files L M, block H, having inclined face *h*, the stud h^2, link *i*, lever I, spring H, and stop-screw J, substantially as herein set forth.

6. The combination, with the frame A B C, shaft D, fast and loose rotatable files L M, and gage P, notched at P', of the gage-screws S T, fitted in the frame, substantially as herein set forth.

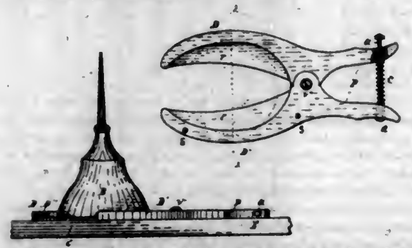
7. The combination, with the frame A B C, shaft D, fast and loose rotatable files L M, and gage P, notched at P', of the gage-screws S T and the clamp-screw X, fitted in a pivoted plate, V, and the lever W, substantially as herein set forth.

8. The combination, with the frame, the shaft D, and files L M, of the gage P, provided with a notch, P', and held to the arms *b b* of the frame by clips R *r*, substantially as herein set forth.

9. The rotatable file holder and clamp, comprising a head and clips N O, held thereto, and said clip O provided with a slot, *o'*, and flange o^2, and secured to the head by screws *o* o^2, substantially as herein set forth.

10. In a saw-filing machine, consisting of a frame, A B C, shaft D, files L M, wedge-block H, and devices, substantially as described, for operating said machine, the portion A of said frame provided with a hand-grasp, A', adjacent to the depressing-lever, I, of block H, whereby the machine can be conveniently held, adjusted, and operated, as set forth.

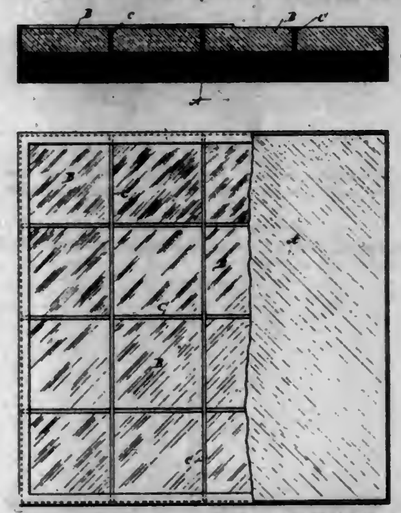
321,618. OIL-CUP HOLDER. JAY J. LUDWICK, Charlotte, Mich. Filed Nov. 22, 1884. (No model.)



Claim.—1. The oil-cup holder consisting of the jaw adapted for stationary connection with the frame of an implement or machine-vehicle, the movable jaw pivoted thereto, said jaws provided with the bottom rests and the bevel-gains, the ends of the handles of said jaws bearing a loose bolt and tension-spring, all substantially as set forth.

2. The combination of an implement frame or machine vehicle-frame, the oil-cup holder consisting of the stationary jaw and the pivotally-connected spring-actuated jaw, and an oil-cup, said jaws being adapted to engage the bottom and lower side of the cup, substantially as set forth.

321,619. TILE-WORK ADAPTED TO HEARTHS, FIRE-PLACES, AND VESTIBULES. ELMER P. MAC KINNEY, New York, N. Y., assignor to J. S. Conover & Co., same place. Filed May 4, 1885. (No model.)



Claim.—1. The combination, in tile-work, with the separate tiles, of strips of metal between such tiles placed edgewise and cemented so that the edges of the strips of metal appear between the tiles, substantially as set forth.

2. The combination, with a backing, of tiles cemented to such backing, and intermediate strips of sheet metal placed edgewise and cemented in between said tiles, substantially as set forth.

321,620. COMPOSITION OF MATTER TO BE USED AS A PLASTER FOR BUILDING PURPOSES. ERBERT MARSH and EDWARD W. MARSH, Bridgeport, Conn. Filed Oct. 10, 1884. (No specimens.)

Claim.—The herein-described compound for building purposes, consisting of calcined gypsum, sand, and water, in substantially the proportions stated, with the addition thereto, as a means of hardening the compound and delaying the setting for a predetermined time, of substantially the proportions stated of the resin-lac dissolved in solution of caustic soda.

321,621. PLASTIC COMPOUND TO BE USED AS A STUCCO. ERBERT MARSH and EDWARD W. MARSH, Bridgeport, Conn. Filed Oct. 10, 1884. (No specimens.)

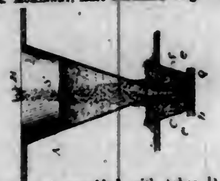
Claim.—The herein-described compound for finishing walls and analogous purposes, consisting of calcined gypsum and water, in substantially the proportions stated, with the addition thereto, as a means of controlling the setting and rendering the compound hard and able to withstand the action of moisture, of the resin-lac, in substantially the proportions stated, dissolved in solution of caustic soda.

321,622. HORSE-COLLAR PAD. EDWARD L. MCCLAIN, Greenfield, Ohio. Filed July 9, 1884. (No model.)



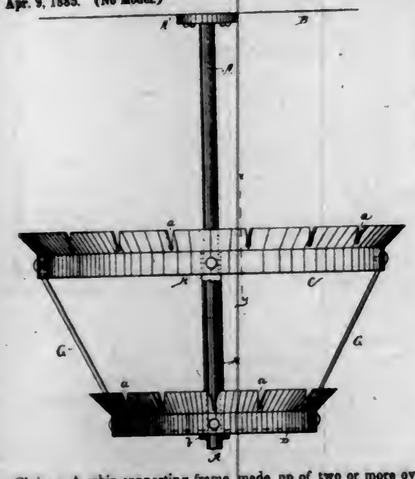
Claim.—The combination, with a collar-pad, of the flexible binding-strip 1, the elastic metallic binding-spring 3, having curved portions *r*, *v*, *s*, and adapting it to the exterior contour of the collar and to be pressed into the depression at the juncture of the fore roll with the body of the same, and to be clamped between the hame and the collar, whereby it is made to tighten the binding-strip to which it is attached to the collar, and hence to firmly secure the pad to the collar.

321,623. APPARATUS FOR SEPARATING FINE GOLD FROM SAND, &c. ISAAC R. MCKINSEY, East Portland, Oreg. Filed May 19, 1884. (No model.)



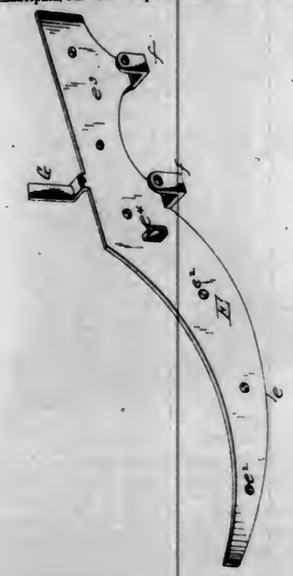
Claim.—The reservoir A, provided with tubes D and *e*, as described, in combination with the vessel C, substantially as herein set forth.

321,624. WHIP-RACK. JAS. A. MCPHERSON, Brunswick, N. Y. Filed Apr. 9, 1885. (No model.)

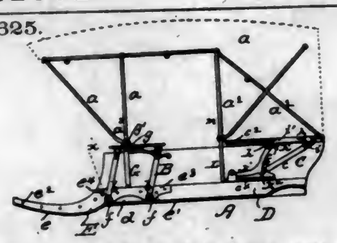


Claim.—A whip-supporting frame made up of two or more overlying horizontal sections having in their edges whip-supporting notches, said sections gradually increasing in diameter or size from the lower section upward, and provided with a vertical supporting-spindle, on which the sections are mounted and adapted to be revolved, substantially as and for the purposes set forth.

321,625. SHIFTING SEAT FOR VEHICLES. CHRISTIAN K. MELLINGER, Philadelphia, Pa. Filed Sept. 4, 1884. (No model.)



321,625.



Claim.—1. A metal sill-plate, E, for phaetons, composed of a front curved part, *e*, a rear straight part, e^2, and having door-post G and lugs *f*, substantially as and for the purpose set forth.

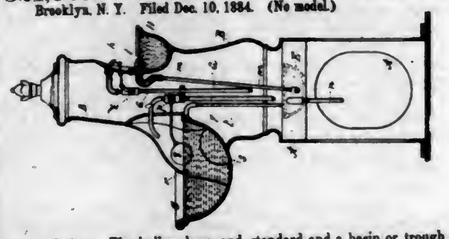
2. The metal sill-plate E, composed of forward curved part, *e*, and rear straight part, e^2, having door-post G, all formed integral, in combination with post L, having eyebolt *l*, substantially as and for the purpose set forth.

3. The combination, with sill-plates E, having curved ends *e*, integral posts G, lugs *f*, and stops e^4, of a jump-seat, B, substantially as shown and described.

4. The jump-seat iron C, composed of double-curved bar *c'*, with stud l^2, arms *i*, having angle-stops i^2, plates c^3, having stops A A', and plates i' and c^4, as and for the purpose set forth.

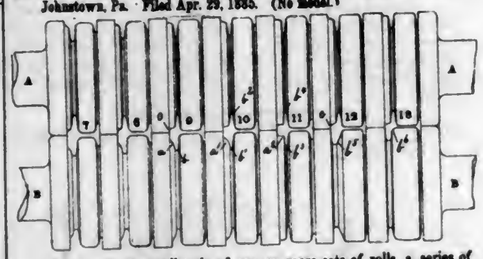
5. In a jump-seat iron, C, the double or reversed curved bar *c'*, and limiting-stops l^2, A, A', and i^2, substantially as shown and described.

321,626. DRINKING-TROUGH FOR ANIMALS. JONATHAN MOORE, Brooklyn, N. Y. Filed Dec. 10, 1884. (No model.)



Claim.—The hollow base and standard and a basin or trough at one side of the same, in combination with the shield *r*, extending down from the standard to near the bottom of the basin, the water-supply pipe and cock located in the hollow standard, and an arm and float to the cock, the float being within the basin but protected by the shield, substantially as set forth.

321,627. ROLL FOR STREET GIRDER-RAILS. ARTHUR J MOXHAM, Johnstown, Pa. Filed Apr. 29, 1885. (No model.)



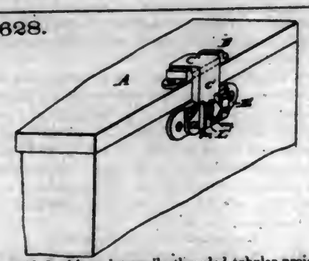
Claim.—1. In a roll-train of one or more sets of rolls, a series of passes substantially of the respective conformations shown from Nos. 1 to 9, inclusive, whereby a bar or rail may be rolled having a cross-section indicated by said pass No. 9, and of a primary form adapted for immediate further rolling, while hot, into other described shapes, substantially as and for the purposes set forth.

2. In a roll-train of one or more sets of rolls, a series of passes substantially of the respective conformations shown from Nos. 10 to 13, inclusive, next succeeding another series of passes substantially of the conformations shown from Nos. 1 to 9, inclusive, whereby either one of three shapes of rails may be rolled from the same bloom, the shape indicated by pass No. 9 being first rolled as a primary to the other two—namely, the shapes respectively indicated by the passes Nos. 9, 11, and 13—substantially as and for the purposes set forth.

321,628. BOX-FASTENER. CHARLES R. NELSON, New York, N. Y. Filed Sept. 15, 1884. (No model.)

Claim.—1. In a box-fastener, the combination, with a clamp-plate having an aperture in one end, of a plate adapted to be secured on the

321,628.



box, and provided with an internally-threaded tubular projection, which is passed through the aperture in the clamp-plate, and a screw for holding the clamp-plate on the tubular projection, substantially as herein set forth.

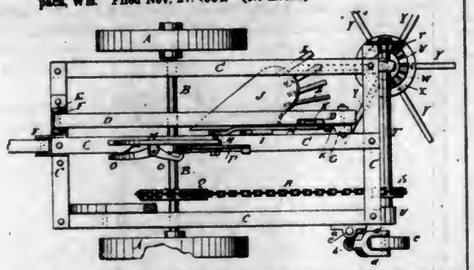
2. The combination, with a clamp-plate having an offset, *h*, and an aperture at its lower end, of the plate E, having lugs I, on which lugs on the clamp-plate can catch, and a screw passing through the aperture in the clamp into the plate E, substantially as herein shown and described.

3. The combination, with the saddle B, having transverse ridges, of the plate E, having an internally-threaded projection, D, and lugs I, the angular clamp-plate C, formed with the aperture F, and lugs G on opposite sides thereof, and the screw L, for clamping the parts in place, whereby when said parts are in place on a box all lateral movement will be prevented by the lugs I and ridges on the saddle, and the strain be equally distributed between them, substantially as set forth.

4. In a box-fastener of the character described, the clamp-plate C, having an aperture, F, and the ridges *m* on opposite sides of the aperture for imparting additional strength to said perforated part, substantially as set forth.

5. The combination, with the plate E, provided with an internally-threaded projection, D, of the angular clamping-plate provided with an aperture adapted to receive the projection D, and formed on its under surface above the plate E with an offset, *h*, of the depth of the thickness of plate E, whereby when applied to a box all mortising will be avoided and the inner face of the clamp-plate will be flush with the outer surfaces of the plate E and the box, substantially as set forth.

321,629. POTATO-DIGGER. HANS NELSON and JACOB NELSON, Waupaca, Wis. Filed Nov. 21, 1884. (No model.)



Claim.—1. In a potato-digger, the combination, with a supporting-frame and a plow, of a wheel journaled in rear of the said plow, and provided with toothed arms projecting from the rim of the wheel and inclined upward from the plane of the said wheel, and means for revolving the wheel by the forward movement of the machine, substantially as herein shown and described.

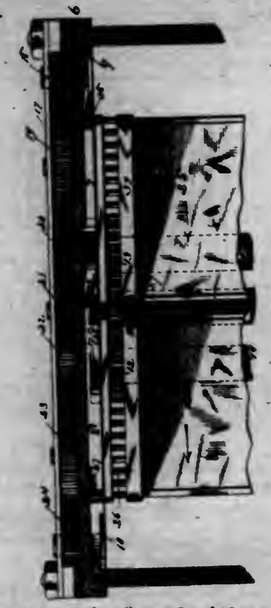
2. In a potato-digger, the combination, with the wheel A, axle B, frame C, and plow J, of the shaft T, journaled in the rear part of the frame, the bevel gear-wheels V W, the wheel X, arranged in rear of the plow, and provided with the toothed arms Y Z, projecting upwardly from the plane of the wheel and intermediate mechanism for operating the said shaft from the axle, substantially as herein shown and described.

3. A potato-digger consisting of a frame mounted on wheels, a plow-beam hinged to the forward end of the frame, a plow on the beam, and a revolving rake at one corner of the frame, in rear of and at the mold-board side of the plow, the teeth of the rake being adapted to come in contact with the ground in front of the axis of its head, substantially as herein shown and described.

321,630. PRINTING-MACHINE. JOEL G. NORTHRUP, Marcellus Falls, N. Y. Filed June 2, 1884. (No model.)

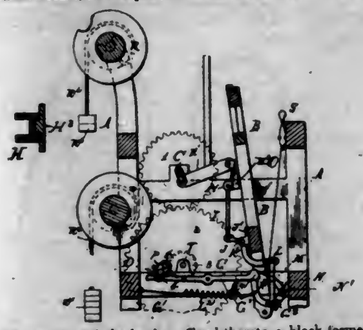
Claim.—In a press of the class described, the combination of the beds 25, having the marginal open racks 26, the long trunnions 27, and short trunnions 28, with the side frames, 6, having the narrow tracks 7 and wide tracks 8, and one of which said side frames, 6, having slots

321,680.



31, leading into said ways, the rolls 14, 15, and 16, arranged to support said beds, gears 12 13, the disks 9 and 10, having each a single slot, 11, and a series of gears connecting the disks and rolls, substantially as shown and described.

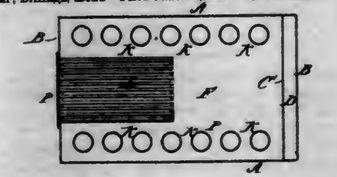
321,631. LOOM FOR WEAVING LOOPED OR TERRY FABRICS. JAMES NUGENT, Philadelphia, Pa. Filed Dec. 21, 1883. (No model.)



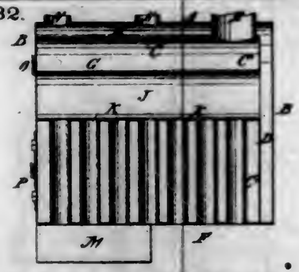
Claim.—1. A lathe having affixed thereto a block formed with an inclined rear side, as described, a block adapted to slide on said inclined rear side, a crank-shaft, a crank-arm pivoted to the sliding block, the rods I M, arms J L, shaft K, lever G, and means, substantially as described, for operating said lever, in combination with the pawl N, rod O, and lever S, the several parts being connected and operated substantially in the manner shown and described.

2. A lathe having affixed thereto a block having an inclined rear side, as described, a block adapted to slide upon said inclined rear side, a crank-shaft, a crank-arm pivoted to the sliding block, the rods I M, arms J L, shaft K, lever G, spring L^2, shaft D, and arm P, in combination with the pawl N, rod O, and lever S, substantially as described, and for the purposes set forth.

321,632. HOT-AIR FURNACE. CHARLES W. OAKES and EDGAR B. CAMP, Billings, Mont. Filed June 12, 1884. (No model.)



321,632.



Claim.—The hot-air furnace herein described, the same consisting, essentially, in outer casing, A, having end walls, B B', the inner casing, C, having a rear end wall, C', between which and the end wall B' and air-space, D, is formed, the air-space E, between the top and sides of the said casings, the fire-box G, formed by the interior of the casing C, the two horizontal drums J in the upper part of casing C, the series of vertical inclined pipes K, extending from the drums J to openings in the bottom F, and the grate L in the space between the drums and pipes K, substantially as set forth.

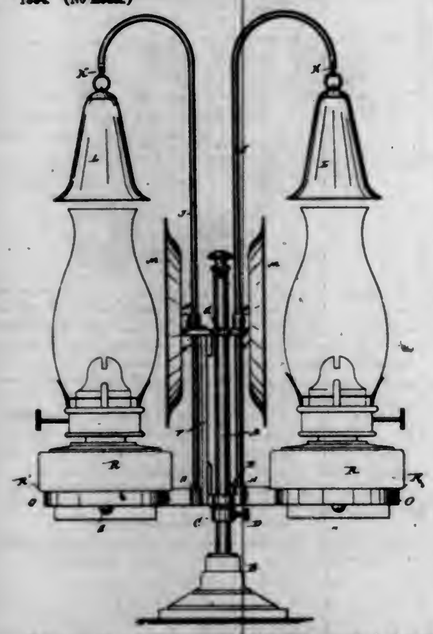
321,633. WAGON-TONGUE SUPPORT. FRANK ORLIKOWSKI and CASPER YANKER, Cleveland, Ohio. Filed Oct. 30, 1884. (No model.)



Claim.—1. In a wagon-tongue support, the spring or support A, with hole O, and the clevis or hanger B, and pole-bolt C, in combination with the coupling-pin E, split key D, and axle F, substantially as set forth and described.

2. In a wagon-tongue support, the spring or support A, with the hole O, and split or space N, and band R, and clevis or hanger B, and bolt C, in combination with tongue or pole G, coupling-pin E, and key D, substantially as set forth and described.

321,634. LAMP. CHARLES PAREL, Philadelphia, Pa. Filed Dec. 24, 1884. (No model.)



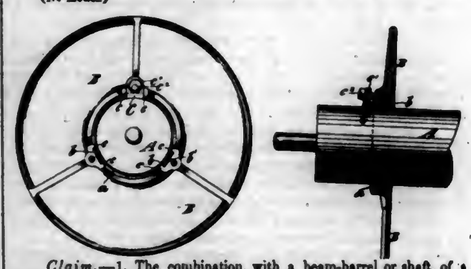
Claim.—1. In a lamp, the combination, with a standard, of a vertically-adjustable cross-piece on the same, a fount-holding ring on each end of the cross-piece, and of two upright rods for holding smoke-bells, substantially as herein shown and described.

2. In a lamp, the combination, with an upright, of a cross-piece at the top and bottom, a fount-holding ring on the bottom cross-piece, and a smoke-bell rod passed through the top cross-piece and having its lower end held in a socket in the bottom cross-piece, substantially as herein shown and described.

3. In a lamp, the combination, with an upright, of a cross-piece on the top and bottom of the same, a fount-holder on the bottom cross-piece, a reflector having an eye on its back, and of a smoke-bell rod passed through the eye on the back of the reflector and through the top cross-piece, and having its lower end held in the bottom cross-piece or fount-holder, substantially as herein shown and described.

4. In a lamp, the combination, with an upright, of a projecting fount-holding ring provided with downwardly-projecting legs, substantially as herein shown and described.

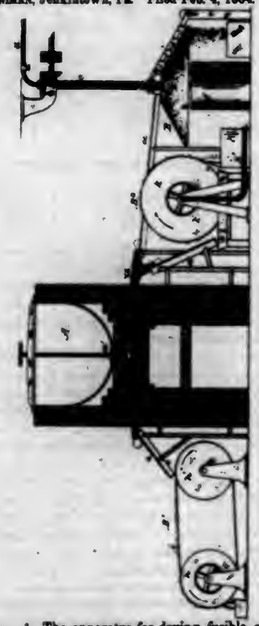
321,635. MEANS FOR SECURING BEAM-HEADS UPON BEAM-BARRELS. ISAAC E. PALMER, Middletown, Conn. Filed Jan. 19, 1884. (No model.)



Claim.—1. The combination, with a beam-barrel or shaft, of a head or wheel having a central aperture loosely receiving the shaft, and provided at different points in its circumference with inclined wedge-seats, a number of wedges adapted to said seats, and screws or bolts connecting the several wedges with the head or wheel, and capable of adjustment independently of each other, whereby provision is afforded for securing the head or wheel truly upon said barrel or shaft, substantially as herein described.

2. The combination, with the beam-head B, having the central aperture, *a*, and inclined wedge-seats *b*, provided on opposite sides with lips or ribs *c*, of the wedges C and screws c^2, capable of independent adjustment, substantially as and for the purpose herein described.

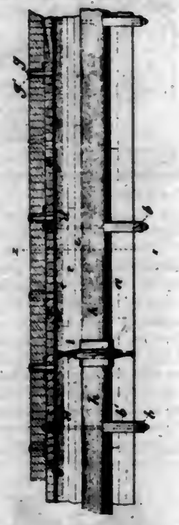
321,636. APPARATUS FOR DRYING FUSIBLE SALTS. RUSSELL S. PENNIMAN, Jenkintown, Pa. Filed Feb. 4, 1884. (No model.)



Claim.—1. The apparatus for drying fusible salts, substantially as hereinbefore described, and consisting of the combination of one or more suitable melting-kettles and furnaces, one or more mechanically-operated cooling-tables, and pipes or tubes for delivering the melted salts from the kettles to said tables.

2. The combination of the conical cooling-table having a central receptacle for melted salts and a scraper for keeping the edge or lip of said receptacle free from hardened salt, substantially as described, whereby the melted salt may freely flow over said lip and upon the inclined cooling-surface of the table, as set forth.

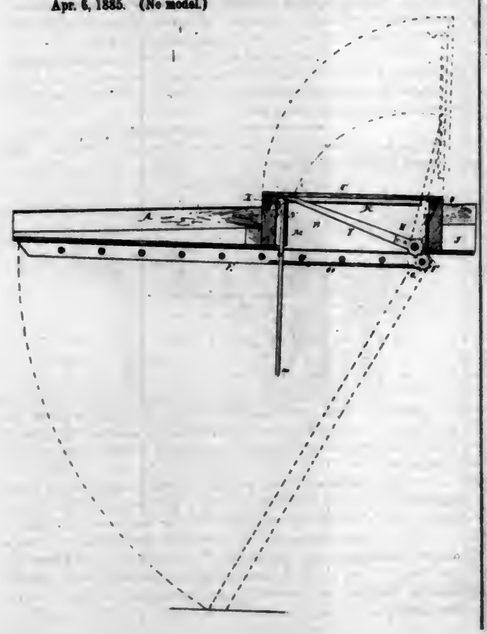
321,637. NATURAL-GAS CONDUCTOR. JOSEPH N. PEW, Pittsburg, Pa. Filed Feb. 24, 1885. (No model.)



Claim.—1. An improvement in the art of conducting and distributing natural gas, which consists in a gas pipe or main placed in a case or trench at or immediately below the surface, which trench is vented continuously throughout its length, substantially as and for the purposes described.

2. A natural-gas pipe, case, or trench at or immediately below the surface, having its sides lined with strong timbers connected by top and bottom cross-timbers and provided with a continuously-vented surface-cover, in combination with a gas-pipe, substantially as and for the purposes described.

321,638. HATCHWAY. ALEXANDER RALPH, Philadelphia, Pa. Filed Apr. 6, 1885. (No model.)



Claim.—1. A trap-door and its passage-way, combined with a hinged ladder or steps adapted to be raised or lowered to connect the trap-door passage-way with the floor, the said ladder or steps being provided with a solid or closed portion, which, when said ladder is raised, offers an obstruction to passage to the lower part of said passage-way, substantially as and for the purpose specified.

2. A trap-door and its passage-way, combined with a hinged ladder or steps adapted to be raised or lowered to connect the trap-door passage-way with the floor, the said ladder or steps being provided with a solid or closed portion, which, when said ladder is raised, offers an obstruction to passage to the lower part of said passage-way, and a lock to secure said ladder or steps in its raised position, substantially as and for the purpose specified.

3. A trap-door and its passage-way, combined with a hinged ladder or steps adapted to be raised or lowered to connect the trap-door passage-way with the floor, the said ladder or steps being provided with a solid or closed portion, which, when said ladder is raised, offers an obstruction to passage to the lower part of said passage-way, and lever mechanism connecting said trap-door and ladder, so that when the ladder is lowered the trap-door is raised, and vice versa, substantially as and for the purpose specified.

4. A trap-door and its passage-way, combined with a hinged ladder or steps adapted to be raised or lowered to connect the trap-door passage-way with the floor, the said ladder or steps being provided with a solid or closed portion, which, when said ladder is raised, offers an obstruction to passage to the lower part of said passage-way, lever mechanism connecting said trap-door and ladder, so that when the ladder is lowered the trap-door is raised, and vice versa, and a lock to simultaneously lock the trap-door when closed and ladder when raised, substantially as and for the purpose specified.

5. A trap-door, in combination with a hinged ladder, arranged substantially as set forth, and a lock to simultaneously lock said trap-door when closed and ladder when raised, substantially as and for the purpose specified.

6. A trap-door, in combination with a hinged ladder, arranged substantially as set forth, and a locking-lever carried by the ladder to simultaneously lock said trap-door when closed and ladder when raised, substantially as and for the purpose specified.

7. A trap-door, in combination with a hinged ladder, arranged substantially as set forth, and a lock to simultaneously lock said trap-door when closed and ladder when raised, and a metal casing located between the trap-door and ladder to protect the locking devices, substantially as and for the purpose specified.

8. A trap-door and its passage-way, in combination with a hinged ladder, gear, and lever mechanism, substantially as described, connecting said trap-door with said ladder, by which the ladder is lowered, the trap-door is raised, and vice versa, substantially as and for the purpose specified.

9. The combination of door C, passage-way B, hinged ladder E, having gear-segment G, and lever I, having segment J, substantially as and for the purpose specified.

10. The combination of door C, passage-way B, hinged ladder E, having gear-segment G, lever I, having segment J and ends or pins *i* and guide K, substantially as and for the purpose specified.

11. The combination of door C, having catch L, hinged ladder E, and locking-lever M, carried by the ladder, substantially as and for the purpose specified.

12. The combination of a hinged trap-door with a hinged ladder, the raising or lowering of which lowers or raises the trap-door, lever mechanism, substantially as set forth, by which the movement of the ladder operates the trap-door, and guide-irons having a longitudinal groove or slot secured to said trap-door, and in which the free end of the lever works, substantially as and for the purpose specified.

321,639. KNOT-TYER FOR GRAIN-BINDERS. CHARLES REED, Dwight, Ill. Filed Apr. 8, 1884. (Model.)



Claim.—The knotter for grain-binders having the body of the knotter D provided with the cord-retaining shoulder B on its outer side, and terminating in two fixed jaws, the upper jaw, *a*, having the retaining-hook H, and the lower jaw, *a'* *a''*, consisting of two prongs, *a'* *a''*, said retaining-hook standing over and between the prongs of the lower jaw, substantially as described.

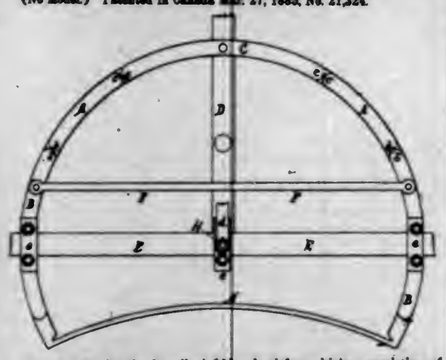
321,640. BOTTOMLESS SHOE-FORM. ANDREW W. ROGERS, Salem, Mass. Filed July 17, 1884. (No model.)



Claim.—1. A bottomless shoe-form, having vamp A, and the rear portion or quarters, B, united by pivots c, which respectively unite the front ends of the quarters with the rear end of the vamp at a point below the instep, substantially as specified.

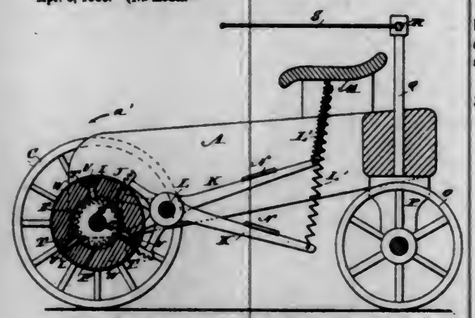
2. In combination with a hollow shoe-former, an elastic metallic spring secured therein at or near the ball thereof, and adapted to maintain the normal expansion of the form, substantially as specified.

321,641. FIFTH-WHEEL FOR VEHICLES. ELMER E. ROWE, Ellsworth, Me., assignor to Rowe Brothers, same place. Filed Apr. 15, 1885. (No model.) Patented in Canada Mar. 27, 1885, No. 21,324.



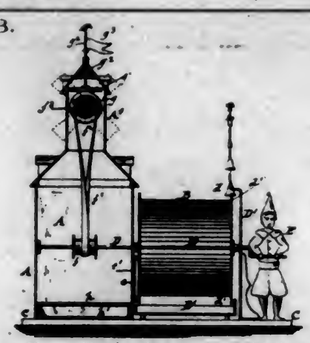
Claim.—The herein-described fifth-wheel for vehicles, consisting of the upper ring, A, having the stop C, formed as shown, in combination with the segments B B of the lower ring formed with the angularly-pointed ends *b b* or re-entrant angular notches *b' b'*, adapted to fit into or receive the corresponding re-entrant angular notches *c c*, or angularly-pointed ends *c' c'* of the stop C, all as shown and described, and substantially as and for the purpose specified.

321,642. VELOCIPEDE. ADAM RUSALLY, New York, N. Y. Filed Apr. 8, 1885. (No model.)



Claim.—In a velocipede, the combination, substantially as herein described and shown, of the drive-axle B, the lever K, having a segmental rack, the pinion H, geared by said rack and having the ratchet-wheels G fixed rigidly to and located to one side of the pinion, said pinion and ratchet being sleeved loosely on the drive-axle, a disk, E, fixed on the axle alongside of the ratchet and having its side adjacent said ratchet recessed to receive the same, and having the lateral annular flange formed by said recess projected and fitting over and incasing the said ratchet, and having radial recesses I, opening at their inner ends onto the said ratchet, and the spring-actuated pawls T, held in said recesses and adapted to engage the ratchet, substantially as set forth.

321,643. MOUSE-CAGE. CHARLES SCHANTZ, Elizabeth, N. J. Filed July 18, 1884. (No model.)



Claim.—1. The combination of a cage, A, rotating drum B, crank-shaft D, toy figure E, upright standard D', having bells *d d*, and teeth *d'* at the circumference of one head of the drum, substantially as set forth.

2. The combination of the cage A, having a tower, A', rotating drum B, crank-shaft D, belt and pulley transmission *f f' f²*, shaft *f²*, having extension-wings *f³*, friction-disks *g g'*, and vertical shaft *g²*, having a vane, *g³*, substantially as set forth.

3. The combination of a cage, A, having a tower, A', rotating drum B, crank-shaft D, toy figure E, applied to the crank-shaft, upright standard D', having bells *d d*, teeth *d' d'*, belt and pulley transmission *f f' f²*, horizontal shaft *f²*, having wings *f³*, friction-disks *g g'*, and vertical shaft *g²*, having a vane, *g³*, substantially as set forth.

321,644. HEAD-PROTECTOR. OLIVER SCHLEMMER, Cincinnati, Ohio. Filed Mar. 5, 1885. (No model.)



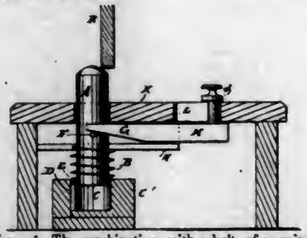
Claim.—1. The garment consisting of the triangular parts A A and connecting-piece B, and having projecting corners *b b*, the upper portion of said garment being cut away at the rear, so as not to interfere with the hair, substantially as and for the purposes described.

2. The garment consisting of the triangular parts A A and connecting-piece B, and rubber D on the connecting-piece, substantially as and for the purposes described.

3. The garment consisting of the triangular parts A A and connecting-piece B, the garment at rear being cut away at top, and the corners *a a* shaped, substantially as described, to button on the throat beneath the chin, substantially as and for the purposes specified.

4. The garment made in one single piece, consisting of the triangular parts A A, connecting-piece B, having projecting corners *a a* and *b b*, and having the shirring-cord D and the connecting-cord C, substantially as and for the purposes described.

321,645. DOOR-CHECK. CHRISTIAN A. SCHMIDT, Hoboken, N. J. Filed Aug. 8, 1884. (No model.)

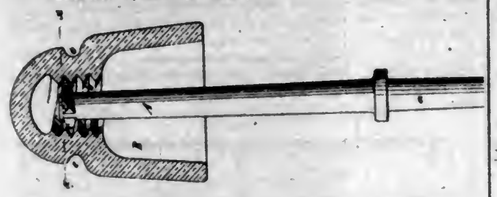


Claim.—1. The combination, with a bolt, of a spring acting on the same, and of a wedge-shaped or tapered slide for adjusting the distance the bolt is forced out by the spring, substantially as herein shown and described.

2. The combination, with a bolt, of a spring acting on the same, pins or other projections on the bolt, and a slide having beveled prongs resting against the pins, substantially as herein shown and described.

3. The combination, with the bolt A, of the block C', forming a socket, C, having a groove, D, the pin E, projecting from the bolt into the groove D, the spring B, surrounding the bolt, the pins F, and the slide H, provided with beveled prongs, substantially as herein shown and described.

321,646. ELECTRIC-WIRE INSULATOR. EDWARD T. SCHOONMAKER, New York, N. Y., assignor of one-half to John E. Smith, same place. Filed Dec. 11, 1884. (No model.)



Claim.—1. The combination, in an insulator, of a shield having a grooved inner surface and a shank having spurs on different sides thereof to engage with the said grooved surface, and support and hold the shield out of contact with the body of the shank, substantially as herein described.

2. The combination of the shield having in its interior a groove in the form of a female screw-thread and the shank having a series of spurs arranged at distances apart thereon, on different sides thereof, and in spiral relation to each other to form portions of a male screw-thread corresponding with the groove or female thread in the shield, substantially as herein described.

3. The combination of the shank having at one end of its exterior a series of spurs arranged to form sections of a screw-thread and the shield having in its interior a taper female screw-thread fitting the said spurs to become tight thereon, while the end of the shank does not touch the crown of the shield, substantially as herein described.

4. The combination of the shank furnished on different sides with spurs having angular extremities and the shield having in its interior a groove or grooves, the angle of whose transverse section is more obtuse than that of the extremities of the spurs, for the purpose of limiting the contact to and near the ends of the spurs, substantially as herein described.

321,647. GARMENT-SUPPORTER. CHRISTOPHER C. SHELBY, New York, N. Y. Filed Nov. 11, 1884. (No model.)



Claim.—1. A garment-supporter provided at one end with a clasp for securing said end to the article to be supported and at its other free or adjustable end with a hook, which, by its inherent elasticity, is capable of securing said adjustable end in a fixed position to the body of the garter, substantially as set forth.

2. A garment-supporter consisting of a flat band, the free end of which is provided with an elastic hook, and a round pendent piece secured at one end to the flat band and carrying at its opposite end an attaching-clasp, substantially as set forth.

321,648. GARMENT-SUPPORTER. CHRISTOPHER C. SHELBY, New York, N. Y. Filed Dec. 29, 1884. (No model.)



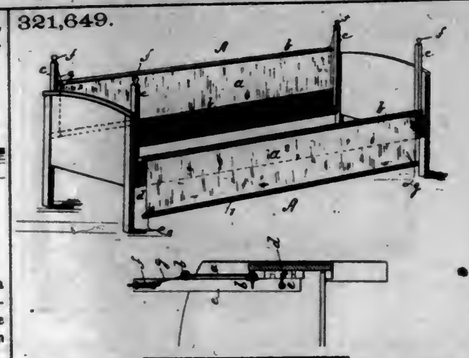
Claim.—1. An elastic-webbing garment-supporter having at one end an attaching-clasp and at its other free or adjustable end an attaching device or hook, as D, in combination with a buckle for regulating the length of the supporter, and an adjustable device independent of said buckle and adapted to receive the attaching device or hook on the free end of the supporter, substantially as set forth.

2. A garment-supporter provided with the adjustable slide E, and having at its free end the attaching device D, which is constructed with an eye substantially round in outline, and with an elongated portion next to the round eye having substantially parallel walls, and adapted to co-operate with the slide E, as and for the purpose set forth.

321,649. GUARD FOR BEDSTEADS. LOUISA J. SHELLEY, Keokuk Iowa. Filed Dec. 3, 1884. (No model.)

Claim.—The spring-holding device *f* and the cords *g*, combined with the flexible guards A on a bedstead, substantially as described.

321,649.



321,650. TOY SAVINGS-BANK. CHARLES G. SHEPARD and PETER ADAMS, Jr., Buffalo, N. Y.; said Adams assignor to Walter J. Shepard, same place. Filed Jan. 15, 1885. (No model.)



Claim.—1. The combination, with a coin-receptacle and a receiving-trough having closed sides and provided with a movable bottom, of a figure secured to said receptacle and having a movable head adapted to receive the coin, and a sliding bar connected with said movable head and movable bottom, whereby both the movable bottom and head are lowered simultaneously to deposit the coin in the receptacle, substantially as set forth.

2. The combination, with the stationary body B^3 and the neck portion B^2, pivoted thereto, and provided with an arm, *c*, of the elbow-lever D, connected with said arm, and the sliding bar F, bearing against said elbow-lever, substantially as set forth.

3. The combination, with the receptacle A and stationary figure B, secured thereto, of the neck portion B^2, pivoted to said figure, and provided with an arm, *c*, the elbow-lever D, connected to said arm, the sliding bar F, provided with a shoulder bearing against said elbow-lever, and a spring, *i*, applied to said sliding bar, substantially as set forth.

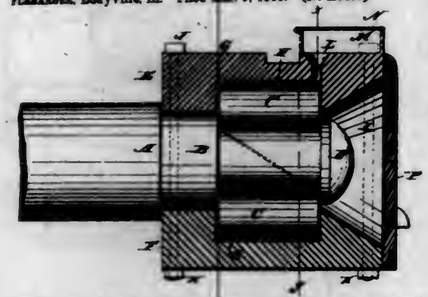
4. The combination, with the receptacle A and receiving-trough K, having a hinged bottom, *k*, of the sliding bar F, provided with a finger, *l*, bearing against said hinged bottom, substantially as set forth.

5. The combination, with the receptacle A and the stationary figure provided with a movable head, of the receiving-trough K, arranged on the receptacle A below said head, and provided with a hinged bottom, *k*, and a stationary inclined bottom, *k'*, having a slot, *m*, substantially as set forth.

6. In a toy savings-bank, the combination, with the side plates, A' A^9, and end plates, A^3 A^4, of the top plate a^5, provided with raised front and side plates, *o o'*, a top portion composed of a front plate, *p*, and side plates, *p'*, resting respectively upon the plates *o o'*, and a flanged end plate, Q, the whole forming a coin-receptacle having an elevated receiving-trough, substantially as set forth.

7. The combination, with a coin-receptacle, A, of a receiving-trough, K, composed of an upper and a lower portion made separate from each other, and a hinged bottom confined between the two portions, substantially as set forth.

321,651. JOURNAL-BOX. SIMON SHUFFLEBARGER and WILLIS SHUFFLEBARGER, Eddyville, Ill. Filed Mar. 9, 1885. (No model.)



Claim.—In a journal, the combination, with the axle having the annular groove B, of the box-sections E F, provided with cavities G, the anti-friction rollers C in the groove B, and cavities G, and of the split steel spring-band H, surrounding the said rollers, substantially as herein shown and described.

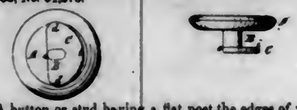
321,652. HARNESS ATTACHMENT. JOHN SIEBEL, Oskaloosa, Iowa. Filed Feb. 27, 1885. (No model.)



Claim.—1. The combination, with the pad C, of the yoke D, pivoted in suitable bearings and provided with attaching devices for the reach B, substantially as described.

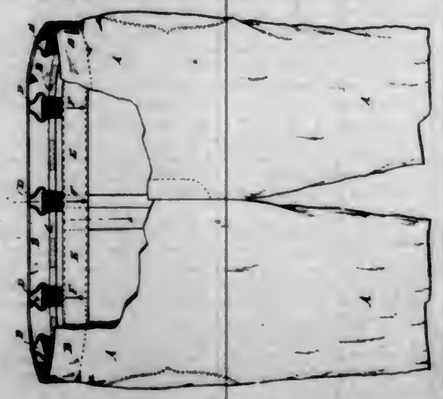
2. The yoke D, pivoted in bearings *d*, and the bows *f f'* thereof provided with studs *g g'*, substantially as and for the purposes described

321,653. BUTTON OR STUD. THOMAS W. F. SMITTEN, Brooklyn, N. Y. Filed July 5, 1883. (No model.) Patented in England Sept. 13, 1883, No. 4,463; in France Sept. 22, 1883, No. 145,303, and in Germany Nov. 30, 1883, No. 51,275.



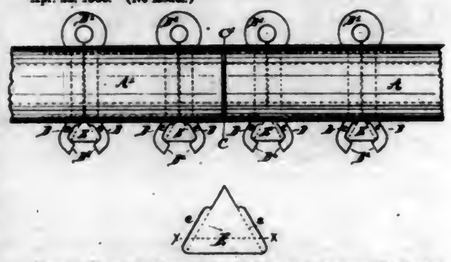
Claim.—A button or stud having a flat post the edges of which are straight and parallel throughout, and which is perpendicular to the head or front plate, and a back plate, or shoe, one edge of the post being flush, or nearly so, with one edge of the back plate, and the other edge of the post being opposite the center of the back plate, or opposite a point midway of the length and width of the back plate, all substantially as herein described.

321,654. SUPPORTING ATTACHMENT FOR PANTS, OVERALLS, AND DRAWERS. ISIDOR STARK, New York, N. Y. Filed Mar. 3, 1885. (No model.)



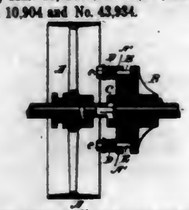
Claim.—The combination, with the body A and waistband B of a pair of pants, overalls, or drawers provided with loops C, eyes D, and band or tape G, of a curtain, E, provided with button-holes F, in line with the said loops and eyes C D, substantially as herein shown and described, whereby the said curtain can be used to suspend the said pants, overalls, or drawers, when required, as set forth.

321,655. RAIL-JOINT. JOHN STEWART, Grantville, Tenn. Filed Apr. 22, 1885. (No model.)



Claim.—The keys B and wedges E, in combination with the fish-plates and rails, substantially as specified, for the purpose set forth.

321,656. CLUTCH. MAX STOLTERFOHT, Berlin, Germany. Filed Apr. 5, 1884. (No model.) Patented in Belgium Mar. 18, 1884, No. 64,543; in France Mar. 18, 1884, No. 161,014; in England Mar. 18, 1884, No. 5,090; in Germany Mar. 19, 1884, No. 28,471, and in Austria-Hungary Sept. 25, 1884, No. 10,904 and No. 43,934.



Claim.—1. In two-part couplings for transmitting motion, in which one of the sections of the coupling is adapted to slide on its shaft into or out of engagement with the other section, the combination of a friction device, the frictional resistance of which is uniform and constant either when the sections are coupled or uncoupled, for the purpose specified.

2. In two-part couplings for transmitting motion, in which one of the sections of the coupling is adapted to slide on its shaft into or out of engagement with the other section, the combination of a friction device, the frictional resistance of which is uniform and constant but yielding either when the sections are coupled or uncoupled, for the purpose specified.

3. In two-part couplings for transmitting motion, in which one of the sections of the coupling is adapted to slide on its shaft into or out of engagement with the other section, the combination of a friction device and adjusting mechanism for varying the frictional resistance thereof, and maintaining said resistance uniform and constant whether the sections are coupled or uncoupled, for the purpose specified.

4. In two-part couplings for transmitting motion, in which one of the sections of the coupling is adapted to slide on its shaft into or out of engagement with the other section, the combination of a friction device and adjusting mechanism for varying the frictional resistance thereof maintaining said resistance uniform and constant but yielding, for the purpose specified.

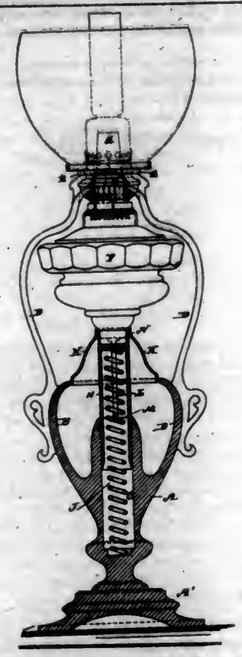
5. In couplings for transmitting rotary or reciprocating motion, the combination, with the driving or the driven section of the coupling, of a friction device for taking up the frictional resistance exerted in coupling, and a signal controlled by said friction device, for the purpose specified.

321,657. LAMP. FRITZ S. SVENSON, Lund, Sweden. Filed Dec. 27, 1884. (No model.)

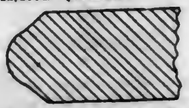
Claim.—1. In a lamp-holder, the combination, with the foot A, having an aperture, C, of the fount F, having a downwardly-projecting tube-H, working in the aperture C, the spring J in the tube H, and aperture C, and a fixed globe and chimney-holder connected with the foot, substantially as herein shown and described.

2. In a lamp, the combination, with the foot A, having a vertical aperture, C, of the fount F, the tube H, having a longitudinal slot, L, and notches N at the upper end of the slot, the lug or stud M on the foot, the spring J, and a fixed globe and chimney-holder connected with the foot, substantially as herein shown and described.

321,657.

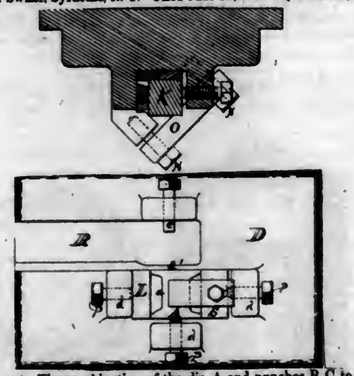


321,658. BILLET FOR ROLLING WIRE. WM. A. SWEET, Syracuse, N. Y. Filed June 12, 1884. (No model.)



Claim.—The end or ends of a billet for rolling into small rods or wire formed of a convex shape, substantially as and for the purposes specified.

321,659. MACHINE FOR CUTTING TOE-CALKS FOR HORSESHOES. WM. A. SWEET, Syracuse, N. Y. Filed June 12, 1884. (No model.)



Claim.—1. The combination of the die A and punches B C to produce the toe-calk herein described, substantially as specified.

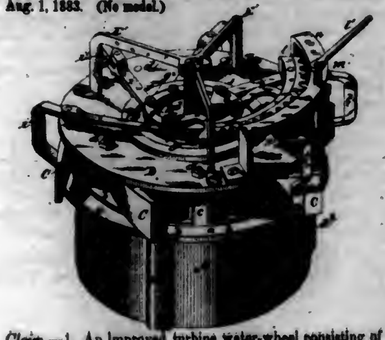
2. The double reversible die A, as described, having its opposite sides parallel and so shaped as to have both sides conform to the figure of the toe-calk throughout their length, with flat parallel end, so that either cutting-edge of said die can be used successively for the cutter, substantially as and for the purposes set forth.

3. The combination of the die A, punch B, and guide-piece L, constructed, arranged, and operated as and for the purposes specified.

4. In a machine for cutting toe-calks, as described, the combination of the punches B and C for forming and cutting off toe-calks from a rolled bar, H, constructed and arranged in the manner set forth.

5. The combination of the adjustable punches B C and block K, by which they can be affixed by a cap, O, as described.

321,660. TURBINE WATER-WHEEL. CHAS. R. SYLVESTER, Little Falls, assignor of one-half to George Sylvester, Milwaukee, Wis. Filed Aug. 1, 1883. (No model.)



Claim.—1. An improved turbine water-wheel consisting of casing A, having flange *a*, step *b*, water-guides *c' c' c'*, and ribs d^2 d^3, wheel proper, B, having conical hub *a'*, curved vanes *b'*, outer rim-plate, c^2, and shaft B', of gates C C, crown-plate D, having adjusting-table *g'*, with ring g^3, links *i i i*, jointed freely with arms *i' i'* of gates C C, curved bracket *n*, pinion-bolt *m*, and pinion-operating toothed segment *l*, spider E, having bolts *e e*, and tripod E', having central opening for shaft B', all the parts being in combination substantially as shown and described.

2. In a turbine water-wheel, the casing A, having water-guides *c' c' c'*, flange *a*, step *b*, and ribs d^2 d^3, substantially as shown and described, and for the purpose set forth.

3. In a turbine water-wheel, the combination of crown-plate D, having posts *c c*, bolts *d d*, and elevated central portion, *f*, having groove *g*, gates C C, shafts *d' d'*, bent arms *i' i'*, forked links *i i*, and adjusting-table *g'*, substantially as and for the purpose set forth.

4. In a turbine water-wheel, the combination, with the wheel-casing A, having flange *a*, step *b*, and water-guides *c' c'*, of the wheel B, having cone-shaped hub *a'*, curved vanes *b'*, outer rim-plate, c^2, and lower openings, b^2, substantially as shown and described.

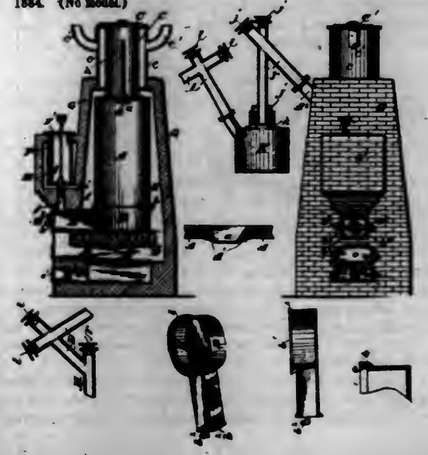
5. In a turbine water-wheel, the combination, with casing A, having flange *a*, step *b*, and water-guides *c' c' c'*, of crown-plate D, having posts *c c c*, bolts *d d*, and central elevated portion, *f*, having annular groove *g*, gates C C, the shafts *d' d'*, bent arms *i' i'*, forked links *i i*, the adjusting-table *g'*, and its gearing, substantially as shown and described, and for the purpose set forth.

6. The combination of the casing A, the guides *c'*, at the top of the casing, and the wheel B, having hub *a'*, vanes *b'*, and buckets a^2, at the bottom of the casing.

7. The combination of the casing A, the spider E, secured to the bottom of the casing, the shaft B, supported in the spider at a point below the bottom of the casing, the wheel B, conterminous with the bottom of the casing, and the guides *c'*, terminating upwardly at the top of the casing.

8. The combination of the adjusting-table *g'*, the links *i*, the arms *i'*, and the gates C, with the guides *c'*, and the wheel B, having hub *a'*, vanes *b'*, and buckets a^2.

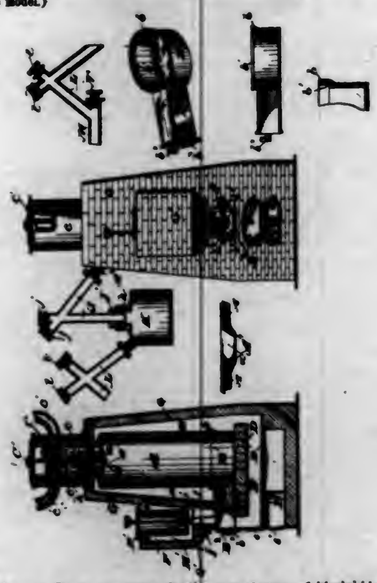
321,661. APPARATUS FOR THE MANUFACTURE OF CARBON BISULPHIDE. EDWARD R. TAYLOR, Cleveland, Ohio. Filed July 19, 1884. (No model.)



Claim.—1. In an apparatus for the manufacture of bisulphide of carbon, the combination, with a furnace, a retort located therein and provided centrally at its upper end with a valve-seat, a charcoal-container mounted on and communicating with said retort and projecting upwardly above the furnace, and a valve for closing communication between the container and retort, of a jacket in open relation at its lower end with and mounted on the furnace and surrounding the retort, substantially as set forth.

2. In an apparatus for the manufacture of bisulphide of carbon, the combination, with a furnace open at its top, a retort located therein, a charcoal-container mounted on and communicating with the retort and extending upwardly through the open top of the furnace, and a valve for closing communication between the retort and container, of a jacket seated on the top of the furnace and in open relation with the interior thereof and surrounding the greater portion of the container, and smoke-pipes connected to the jacket, substantially as set forth.

321,662. APPARATUS FOR THE MANUFACTURE OF CARBON BISULPHIDE. EDWARD R. TAYLOR, Cleveland, Ohio. Filed July 19, 1884. (No model.)



Claim.—1. In an apparatus for the manufacture of bisulphide of carbon, the combination, with a furnace, a vertical retort located therein, and a container located above the retort, of a sulphur-box, pipes connecting the retort and sulphur-box, and condensing-tubes connected with the sulphur-box.

2. In an apparatus for the manufacture of bisulphide of carbon, the combination, with a furnace, a vertical retort located therein, and a charcoal-container located above the retort, of the sulphur-box having a flanged opening, a cup surrounding said flanged opening, pipes connecting the retort and sulphur-box, and provided with an inverted cup the lower edge of which rests between the flange and the cup of the sulphur-box, and a pipe leading from said sulphur-box, substantially as set forth.

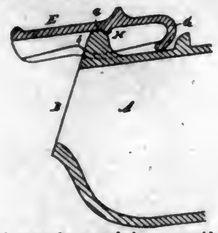
321,663. VEHICLE-SPRING. EMIL C. TECKTONIUS, Racine, Wis., assignor of one-half to Mitchell & Lewis Company, (Limited,) same place. Filed Feb. 10, 1885. (No model.)



Claim.—1. The combination, with a vehicle-body, of crossed elliptical springs, one end of each spring being secured to the under side of the body near its edge, and then extending beyond the opposite edge, the two springs crossing each other under the center of the body and being there clipped to the pivoted leaves of a depending bracket, substantially as described.

2. The combination, with a vehicle-body, of the crossed elliptical springs B B and the depending bracket C, with lugs *a a' a*, and the leaves *b b*, pivoted on bolt *b'*, passing through said lugs, and the said leaves extending in opposite directions, and each clipped to one of the springs B on opposite sides of the center of the bracket, as shown and described.

321,664. CAR-AXLE-BOX COVER. JOHN TESSEYMAN, Dayton, Ohio. Filed May 13, 1885. (No model.)



Claim.—1. A cover for car-axle boxes provided upon its two side edges with inwardly-projecting flanges, and upon the top edge with a curved flange, uniting at the corners with the side flanges, each of said side flanges formed with a curved enlargement near its upper end, and diverging at the point *b* from the line of the cover to its open end, substantially as and for the purpose specified.

2. In a car-axle box, the combination of the following elements: an axle-box, A, provided at the lower corners of the door-opening with the outwardly-projecting wedge-blocks C, and at the top with a bead, *a*, terminating at each end in the lugs D, rounded on top and flattened on the bottom, a cover, D, provided with the inwardly-projecting L-shaped flanges F upon its two edges formed upon a curved enlargement near their upper ends, and a curved flange, G, upon the upper edge, when constructed, combined, and operating substantially in the manner and for the purposes described.

321,665. BUTTON-FASTENER. JAMES F. THAYER, Providence, R. I. Filed May 7, 1885. (No model.)

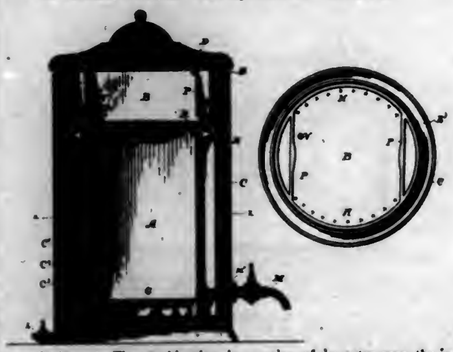


Claim.—1. A fastener for the purposes specified, consisting, essentially, of equal sides or halves and a folded top or connecting portion, each of said sides having a penetrating prong or prongs, substantially as set forth.

2. A fastener consisting of halves having a connecting portion or top and folded against or next each other, each of said halves having a penetrating prong or prongs adjacent to the like prong or prongs of the other half, as set forth.

3. A fastener consisting, essentially, of two sides or halves, and having a folded top or connecting portion, 2, each of said sides having two penetrating prongs, *c*, substantially as shown and described.

321,666. COOLER FOR WATER AND OTHER LIQUIDS. JOHN A. VAN DERLEEN, Peoria, Ill. Filed Apr. 18, 1885. (No model.)



Claim.—1. The combination, in a cooler, of the outer case, the inner reservoir, and the ice-box fitting within said case upon said reservoir, and having the series of perforations through the portion of the bottom of said ice-box jutting beyond said reservoir, substantially as and for the purpose specified.

2. The combination, in a cooler, of the outer case, the inner reservoir having the crown-shaped supporting-flange and the vertical ribs, and the ice-box fitting within said case upon said reservoir, and having the series of perforations through the portion of the bottom of said ice-box jutting beyond said reservoir, substantially as and for the purpose specified.

3. The combination, in a cooler, of the outer case, the inner reservoir having the crown-shaped supporting-flange, the vertical ribs, and the outlet-valve, and the ice-box fitting within said case upon said reservoir, and having the series of perforations through the bottom of said ice-box jutting beyond said reservoir, substantially as and for the purpose specified.

4. The combination, in a cooler, of the outer case, the inner reservoir, and the ice-box fitting within said case upon said reservoir, and having the pockets and the series of perforations through the bottom thereof where the same juts beyond said reservoir, substantially as and for the purposes described.

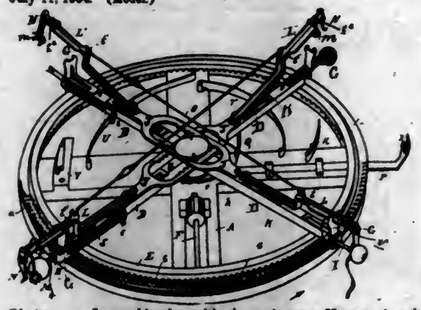
5. The combination, with the vessel A, of the box B, having series of perforations H through its bottom where it juts beyond said vessel, and having the rim R, projecting from the under side of said bottom and adapted to fit about the upper edge of said vessel, as and for the purposes set forth.

6. The combination, with the vessel A, of the box B, having the series of perforations H, and the downwardly-projecting rim R, provided with the perforated frusto-conical flange K, said rim being adapted to fit about the upper edge of said vessel, as and for the purpose described.

7. In combination, an outer case, the inner reservoir, and the ice-box fitting within said case and upon said reservoir, having the series of perforations through the portion of the bottom jutting over said reservoir, and having the downwardly-projecting rim provided with the perforated frusto-conical flange, said rim being adapted to fit about said reservoir, as and for the purposes specified.

8. In combination, the outer case, C, having the annular groove E in its edge, the cover D for said case, and an annular projection beneath said cover for fitting into said groove, the drip-pipe L, the inner reservoir, A, having valve M, and the ice-box B, having the pockets F, perforations H, and flanged rim R, as set forth, for the purpose specified.

321,667. APPLE-PARER. JOSHUA L. WILCOX, Flint, Mich. Filed July 11, 1884. (Model.)



Claim.—1. In combination with the spring-stop V, engaging the cross D during the intervals of its rotation, the pins *v*, loosely seated within said cross, and the knife-bar L', the parts being arranged and operating as described, whereby the downward movement of the knife-bar causes a disengagement of the stop and cross, substantially as specified.

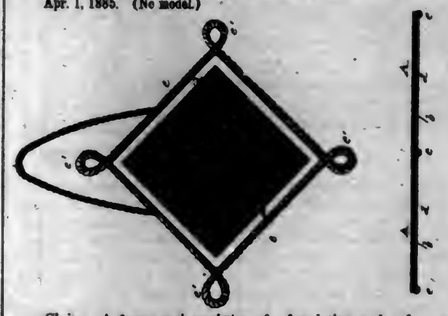
2. In an apple paring, slicing, and coring machine, the devices for stripping the apple from its core, the same consisting of the radially-movable stripping-bar P, the trip-lever Q, for projecting such bar, and the spring *o*, for retracting it, in combination with the rotating arms provided with projecting pins *p* upon their under sides for operating the trip-latch, substantially as described.

3. In an apple paring, slicing, and coring machine, the devices for holding and guiding the knife-bars during the operation of the knives, the same consisting of the flanges *t* upon the outer ends of the knife-bars having narrowed portions *t' t²*, the dovetailed jaws on top of the standards G, the pins *m* and *n*, secured near the rear ends of the knife-bars, and the plates K, provided with the slots *k* on top of each arm of the cross, all combined and operating substantially in the manner and for the purposes specified.

4. In an apple-paring machine, the hollow fork-shaft H, secured to the rotating cross, in combination with the rod I, and stationary incline R, for automatically removing the core from the fork, and the bar P, for retaining the apple on the fork during such operation, substantially as described.

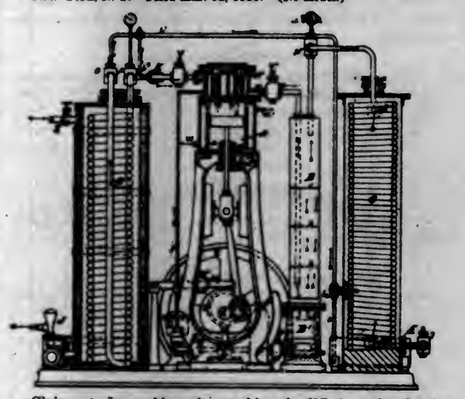
5. In an apple paring, slicing, and coring machine, the combination of a cross having a fixed center upon a suitable bed and adapted to be rotated in a horizontal plane thereon, hollow rotatable forks, radially-movable knife-bars, a stripping-bar for pushing the pared and sliced apple on the shaft of its impaling-fork, sliding rods in the hollow forks for removing the core, and sliding bars for pushing off the apple, all arranged and combined substantially in the manner and for the purposes described.

321,668. FANCY CARD. WALTER WIRTH, Jersey City, N. J. Filed Apr. 1, 1885. (No model.)



Claim.—A fancy card consisting of a foundation-card, a face-card, an intermediate backing between the face-card and foundation-card, said backing and face-card being of smaller size than the foundation-card, and an ornamental edge-cord extending around the backing and face-card and having looped corners, substantially as set forth.

321,669. REFRIGERATING AND ICE MACHINE. WM. H. WOOD, New York, N. Y. Filed Mar. 12, 1885. (No model.)



Claim.—1. In a refrigerating-machine, the diffusion-valve chamber K, with the cone-shaped orifice 9, adapted to inject the liquefied vapor in the form of a mist through the injecting-nozzle 12 from the pipe L², with the hand-plate K², the flanges 10 and 11, placed between the refrigerator and the vacuum side of the compression-pump, all substantially as and for the purpose specified and set forth.

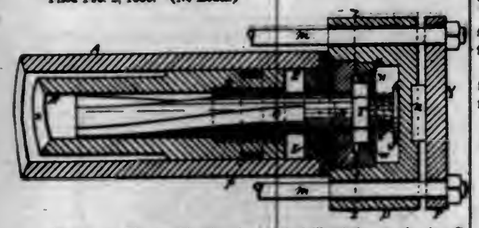
2. In combination with a refrigerating-machine, the vessel F, for holding a known quantity of lubricating-fluid, automatically taken therefrom and put in the compression-pump cylinder by the lubricator-pump G, operated by the lever M and weight *m'* from the cam of cold-water pump H, and forced up the pipe *g*, in quantity as requisite for the speed of the pump, substantially as described.

3. In combination with a receiver for a refrigerating-machine, the water-jacket bottom B', with inlet for water, 14, and outlet 15, the inverted cone 16, facing the bottom of receiver, the discharge-pipe 17, and the trays 1 2 3 in the upper part of the receiver, with holes 19 and slots 20, the inlet gas-pipe 18, supporting the trays, and the outlet-pipe 34, all substantially as shown, for the purpose set forth.

4. In combination with a compression-pump cylinder, A, the valve-box and cover A', with outlet and inlet branches, 1 and 2, forming cylinder-head and cover, with openings 4, the valve-cages 3, having valves Y and Y', with angular seats, piston tops, extended stems, steel springs 5, all substantially as and for the purposes herein set forth.

5. In a refrigerating-machine, the combination of vapor-cock V for operating the machine, the solid plug 22, put in the reverse way, and shouldered down, at 23, for stuffing-box and screwed gland 26, and for threading for nut and lock-nut 27 to hold the plug tight in position, the cavities 30 and 31, connected by vertical hole 32, with plug 33, for filling in lubricating-fluid, which insures the plug being freely moved and gas-tight, the spring 28 to keep the plug in position during the process of packing, and the bottom made gas-tight by the screwed cap 29, substantially as and for the purpose described and set forth.

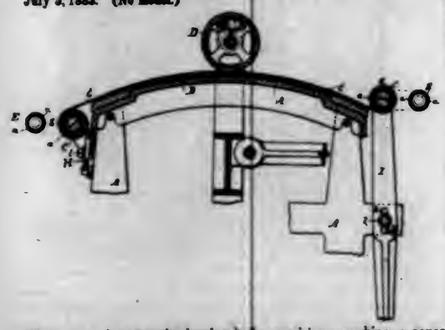
321,670. ROCK-DRILL. LEANDER S. WOODBURY, Calumet, Mich. Filed Feb. 2, 1885. (No model.)



Claim.—1. The combination, in a rock-drill, of the rotating bar C, the clutch H K, the washer W, spring S, and cylinder-head D, when one part of the clutch is fixed and forms a guide for the bar and the other part is so attached to the bar as to rotate with it, and at the same time slide upon it, when the purpose of the combination is to rotate the piston of a rock-drill, and the parts operating to that end, except the spiral portion of the bar, are within the cylinder-head.

2. The combination, with the rotating bar, of a rock-drill, made substantially as and for the purpose herein described, with the fixed part K of the rotating clutch, the ring L, the fibrous packing R, and the cylinder-head D, when the fixed part of the clutch is attached to the cylinder-head, substantially as shown, the packing-ring R being formed with a cylindrical body flanged at one end for the purpose of being held between the disk K and ring L, the latter being recessed to allow a free admission around the body of the packing-ring of any pressure within the cylinder, the tendency of which is to close the packing-ring around the rotating bar for the purpose of preventing any escape of pressure around the bar.

321,671. IRONING-MACHINE. CHARLES ANGUS, Albany, assignor to the Troy Laundry Machinery Company, (Limited,) Troy, N. Y. Filed July 5, 1883. (No model.)



Claim.—1. A composite ironing-bed comprising a cushion, a cover longer than the bed and movable thereon, and mechanism, substantially as shown and described, for retaining desired portions of the cover upon the cushion, substantially as specified.

2. In combination with the cushion of a composite ironing-bed, a covering longer than and movable upon the cushion, and mechanism, substantially as shown and described, arranged to take up the surplus length of the covering and to retain a portion thereof in contact with the cushion, substantially as specified.

3. In an ironing-machine, a composite bed comprising a movable covering longer than the bed, and adjustably-mounted rollers arranged at the ends of the bed for carrying the surplus of the covering, substantially as specified.

4. In a composite ironing-bed, the combination of a base, a cushion, as B, a covering, as C, capable of movement upon the cushion, and slotted rollers E, provided with ratchets *b*, and holding-pawls *c c*, substantially as specified.

5. The combination, with the frame A, of the adjustable brackets H, the rolls E, and the adjustable standards I, substantially as shown and described.

321,672. PAPER-WEIGHT AND GUIDE-RULE. CHARLES E. BABBITT, Cincinnati, Ohio. Filed Aug. 30, 1884. (No model.)

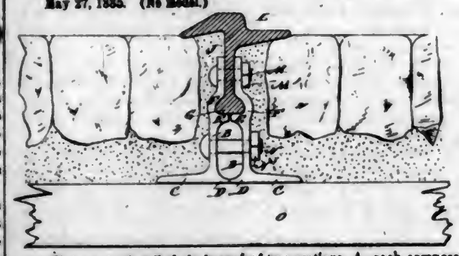


Claim.—1. The combination, with a strip or guide-ruler, of a movable weight, substantially as set forth.

2. The combination, with a guide-ruler curved at one end, as described, of a weight adjustably secured to said ruler, substantially as set forth.

3. The combination, with a grooved ruler or strip, of a weight formed with a finger-piece or knob and adapted to be adjusted upon said ruler, substantially as set forth.

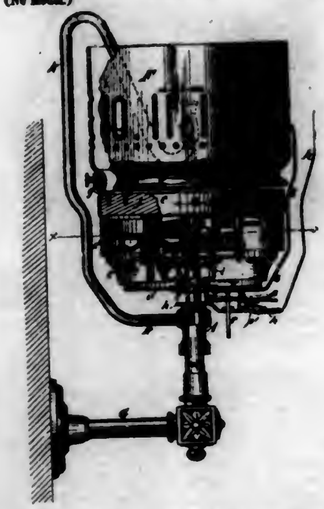
321,673. RAIL-CHAIR. TIMOTHY L. BRAMAN, Knoxville, Tenn. Filed May 27, 1885. (No model.)



Claim.—1. A rail-chair formed of two sections, A, each composed of a web, B, having an outwardly-projecting base-flange, C, and an inwardly-projecting base-flange, D, at the bottom edge, an inwardly-extending projection, E, an outwardly-curved part, F, above the projection E, and an upwardly-projecting part, H, above the curved part F, substantially as herein shown and described.

2. The combination, with a rail, of the sections A, each composed of a web, B, having two outwardly and inwardly projecting base-flanges, C D, the inward projections E, the curved parts F above the projections E, and the straight parts H above the curved parts F, the bolts M, passed through the parts H and the web of the rail, and the bolts N, passed through the webs B, substantially as herein shown and described.

321,674. CLOCK. PETER C. BRANT, New York, N. Y. Filed Jan. 10, 1885. (No model.)



Claim.—1. The combination, with the fixed central axial support, A, and fixed time-hand *h*, of the revolving clock B *c*, mounted on said support A, and provided on the top with the clamps *g g*, one of which is provided with a thumb-screw, with the dial-globe F, mounted over said clock, and formed with the lipped neck *e*, to engage said clamps, substantially as shown and described.

2. The combination, with a revolving clock, a fixed central support, and a fixed time-hand, of an alarm-movement in said clock, and an adjustable alarm-hand moving with the clock and movable about the dial thereof, with a trip or latch controlling the release of the alarm-movement arranged in the path of the alarm-hand, whereby the said latch is tripped and the alarm released when the clock with the alarm-hand revolves into the position corresponding to the hour for which the alarm-hand was set, substantially as shown and described.

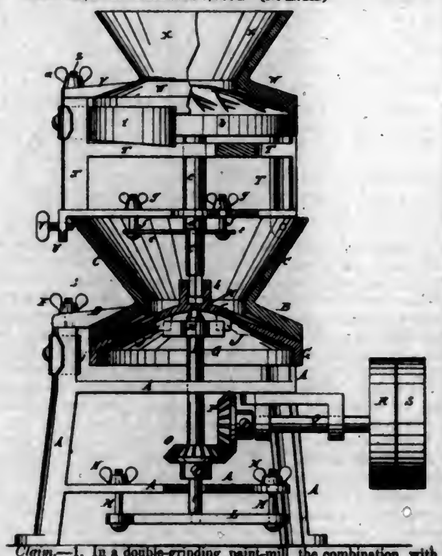
3. The combination, with a revolving clock, a fixed central support, and a fixed time-hand and an alarm-movement embodied in said revolving clock, of the detaining-ring *o*, forming a stop to the alarm-escapement and supported upon and encircling the fixed central support, with a manipulating device, *p*, for locking said ring, spring *p'*, for retracting the same, and a trip-pawl, *r*, for releasing the locking device, with the alarm-hand *s*, adjustable around the clock in the path of said pawl, substantially as herein shown and described.

4. The combination, with a revolving clock embodying an alarm-movement and inclosed by the case *c*, having a central opening in the base, with a fixed central support rising therein and a fixed time-hand extending from the support, with the adjustable time-hand *s*, extending from the case c and formed with the grooved friction-ring *t*, sprung into the central opening of the case, with suitable trip devices for controlling the release of the alarm arranged in the path of said hand *s*, substantially as herein set forth.

5. The combination, with a revolving clock and its inclosing resonant-case *c*, of an alarm-movement inclosed in said case, with its hammer arranged to strike against the interior of said case, substantially as set forth.

6. The combination, with the fixed central support, A, revolving clock B *c* F, mounted thereon, and fixed time-hand *h*, with alarm-movement B, stop-ring *o*, finger-lever *p*, spring *p'*, pawl *r*, and adjustable alarm-hand *s*, arranged and operating substantially as and for the purpose set forth.

321,675. DOUBLE-GRINDING PAINT-MILL. JOHN A. BERRILL, Waterville, N. Y. Filed June 5, 1884. (No model.)



Claim.—1. In a double-grinding paint-mill, the combination, with a lower mill, of an upper mill supported upon and detachably secured to the hopper of the lower mill, and having its shaft connected with and driven from the runner of the lower mill, substantially as herein shown and described.

2. In a double-grinding paint-mill, the combination, with the hopper C, of the frame T, having the downwardly-projecting lugs U and the hand-screws V, substantially as herein shown and described, whereby the said upper mill will be supported by and securely connected with the said lower mill, as set forth.

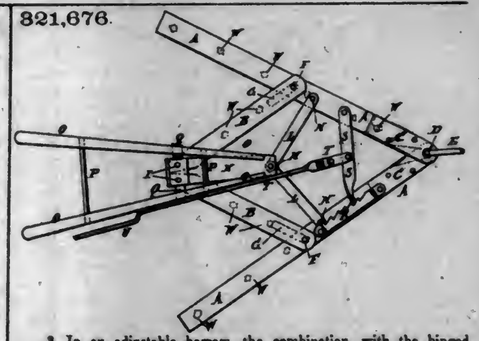
3. In a double-grinding paint-mill, the combination, with the hopper C and socketed runner G, of the frame T, the adjustable spider *e*, secured to the base of the said frame, and shaft *c*, having shoulder *d*, and fitting the socket of the runner G, substantially as herein shown and described.

321,676. ADJUSTABLE HARROW. WILLIE BOATNER, Woodville, Miss. Filed Sept. 4, 1884. (No model.)

Claim.—1. The herein-described harrow, consisting of the outer bars, A, pivoted together at their forward ends, the center bar, K, the inner bars, B, having their outer ends pivoted to the outer bars and their inner ends to the rear end of the center bar, and the braces L, pivoted to the outer bars and to the forward end of the center bar, as set forth.

2. In an adjustable harrow, the combination, with the hinged toothed bars A B, the center bar, K, and the braces L, of the ratchet-bar R and pawl S, substantially as herein shown and described, whereby the said toothed bars will be held in place against the resistance of the soil, as set forth.

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3. In an adjustable harrow, the combination, with the hinged toothed bars A B, the center bar, K, the braces L, and the ratchet-bar R and pawl S, of the lever T U V, substantially as herein shown and described, whereby the said pawl can be readily raised from the ratchet-bar when the harrow is to be contracted, as set forth.

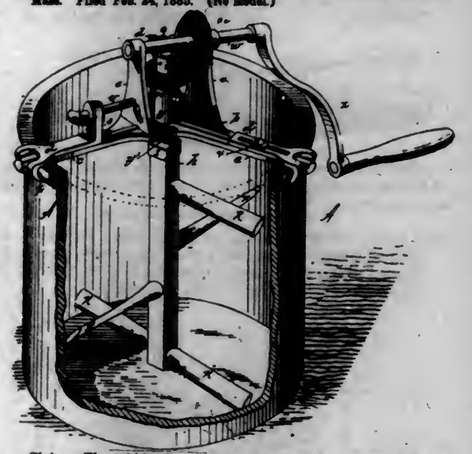
321,677. CAR-COUPLING. GEORGE W. BOLTON, Detroit, Mich., assignor of one-half to John B. Corliss and Frank D. Andrus, same place. Filed May 20, 1885. (No model.)



Claim.—1. The combination, with the draw-head having the shorter arm and the longer hollow recessed arm, of the pivoted spring-actuated locking and releasing head and the pivoted releasing and holding catch, substantially as specified.

2. The combination, with the draw-head having the shorter curved arm and the longer hollow slotted and recessed curved arm, of the locking and releasing head, the pivoted spring-actuated locking and releasing head, the pivoted catch and stop, and the operating-lever, and the rod connecting the lever and pivoted catch and stop, substantially as specified.

321,678. CHURN ATTACHMENT. ORLO BRECKENRIDGE, Westfield, Mass. Filed Feb. 24, 1885. (No model.)

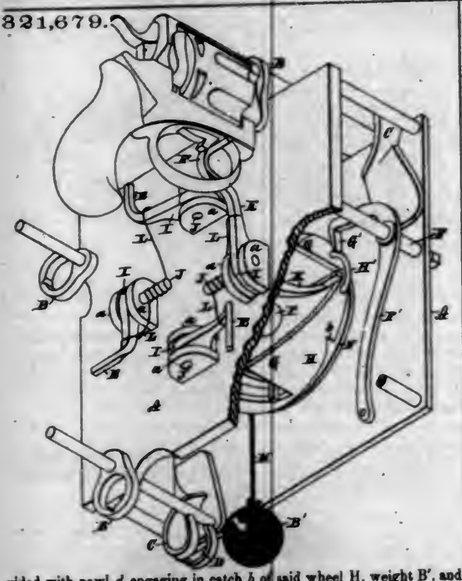


Claim.—The within-described churning attachment, consisting of the frame *b*, having the arms *c*, provided with the adjustable hooks *d*, the shaft *y'*, and means, substantially as described, for rotating the latter, combined with the shaft *h*, detachably connected with said shaft *y'*, and having the arms K thereon, substantially as set forth.

321,679. BURGLAR-ALARM. STEPHAN BROUGHAM, Milwaukee, Wis. Filed Dec. 6, 1884. (Model.)

Claim.—1. In a burglar-alarm, the combination, with the frame A, of one or more arms, I, pivoted to said frame, springs L, adapted to bear upon said arms, wheel H, having ratchet-teeth G, pulley N, pro-

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vided with pawl *d*, engaging in catch *b* of said wheel H, weight B', and cord M, said cord being attached at one end to said weight and at its other end to an arm actuated by the opening of a door, through which arm and cord motion is communicated from the opening door to the operative mechanism of said alarm, substantially as set forth.

2. In a burglar-alarm, the pulley N, the rotating wheel H, provided with a bearing-lug, H', lever E', one arm of which bears against said lug H' and the other end of which is connected with an alarm-bell, and the alarm-bell K', in combination with cord M and weight B', substantially as set forth.

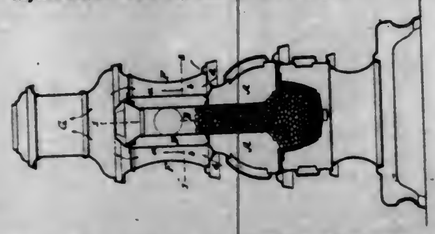
3. In a burglar-alarm, the arm S, pivoted to the door, in combination with bracket U, attached to the casing of the door, the sliding arm supported in said bracket and provided with projecting finger T, the alarm mechanism, the cord M, and weight B', for connecting said sliding arm and alarm mechanism, substantially as set forth.

321,680. BRUSHING AND FINISHING SILK HATS. EDWARD F. BROWN, New York, N. Y. Filed May 26, 1885. (No model.)



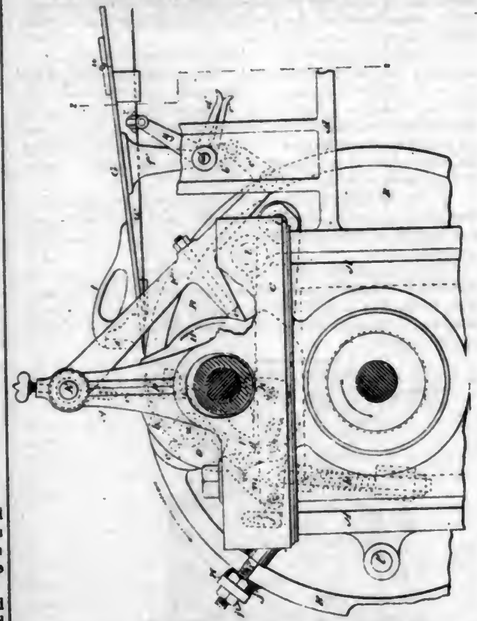
Claim.—The process herein described, which consists in brushing and finishing the surface of silk or beaver hats with vaseline, as and for the purpose set forth.

321,681. HEATING-STOVE. EDWARD L. CALEY, Philadelphia, assignor to George W. Floyd, Irvin I. Wells, Isaac Brooks, Christian W. Wagner, William Wagner, Isaac Haltzan, and David Finkbiner, all of Royer's Ford, Pa. Filed Aug. 21, 1884. (No model.)



Claim.—The combination, in a heating-stove, of the gas-chamber having a straight casing, *a*, with the outer casing, F, having a concavity or contraction whereby the air ascending the passage between the casings is caused to impinge against the casing *a* without interference with its upward movement, the greatest contraction of the casing F being at or about the center, as set forth.

321,682. GRIPPER-MOTION FOR PRINTING-MACHINES. ANDREW CAMPBELL, Brooklyn, assignor to John and Edmund McLoughlin, New York, N. Y. Filed Aug. 8, 1882. (No model.)



Claim.—1. In a cylinder printing-press, a finger-motion comprising a gripper-shaft and grippers, a tripping-bar mounted on the said gripper-shaft and arranged to be tripped by the closing-stud, the said stud, a square-ended locking-tail mounted on the gripper-shaft and arranged to engage a square recess in the locking-bar, the said locking-bar provided with a supporting-spring or cam-plate on the locking-bar, and the unlocking-stud arranged in the path of the said cam-plate and of one end of the tripping-bar, whereby the grippers are brought down to the point of closing wholly by the action of the closing-stud on the tripping-bar, and whereby the unlocking of the grippers is and must be effected by the unlocking-stud before the grippers can be opened, as set forth.

2. In a cylinder printing-press, a finger-motion comprising a gripper-shaft rotatively mounted in the cylinder and provided with frictional appliances, substantially as described, to prevent its too free rotation in its bearings, a tripping-bar mounted on the gripper-shaft, a closing-stud arranged in the path of the cam-shaped end of said tripping-bar, and adapted to turn the grippers over to their final closing on the sheet by the movement of the cylinder alone, and means, substantially as described, for positively locking the grippers when thus closed and for unlocking them and then opening them, whereby the employment of a spring for assisting in the closure of the grippers is avoided, all arranged to operate substantially as set forth.

3. In a finger-motion for a cylinder printing-press, the mechanism for closing the grippers, which consists of the tripping-bar *n*, connected to the gripper-shaft and provided with a tip, *g*, shaped as shown, the gripper-shaft and grippers, and a stud, *p*, with a flattened lower face arranged in the path of the said tripping-bar, substantially as set forth.

4. In a finger-motion for a cylinder printing-press, the combination, with a gripper-shaft provided with a plate, *c*, of the yielding friction-washer *e*, a spring, *d*, arranged to draw the plate *c* up against said washer, and the printing-cylinder, all arranged substantially as set forth, whereby the momentum of the moving grippers may be neutralized as specified.

5. A cylinder printing-press provided with grippers to close on the front edge of the sheet, a feed-board arranged to be raised and lowered, and moving front and bottom guides, the said moving parts being arranged to act nearly simultaneously at the moment the grippers take the sheet, substantially as set forth.

6. A printing-press provided with front and bottom guides for the sheet to be fed, said guides being arranged to be drawn out of the way at the moment the sheet is taken by the grippers, in order that the edge of the sheet may be fairly taken by the grippers, substantially as set forth.

7. In a printing-press, the under or bottom guide mounted, substantially as shown, and adapted to be reciprocated, whereby it may be drawn back from under the edge of the sheet an instant before the grippers seize the sheet, for the purposes specified.

8. In a printing-press, the combination of the reciprocating bottom guide, *w*, and the swinging front guide, *r*, said guides being arranged to recede from each other at the moment of taking the sheet, substantially as set forth.

9. The combination, in a printing-press, of the shifting front guide and the mechanism for operating the same, constructed substantially as shown and described, whereby the front guide is moved quickly up nearly to its final position to receive the sheet in feeding, and then moved slowly up against the edge of the sheet to its final position at the latter part of the feeding operation, for the purposes specified.

10. The combination, with the cam-disk D, of a swinging arm, F, provided with a toe to ride on said cam, and a projection, *s*, and the hinged feed-board provided with a lug, *t*, substantially as and for the purposes set forth.

11. The combination, with the cam-disk D, of the swinging arm F, provided with a projection, *s*, the hinged feed-board provided with the lug *t*, the bottom guides, *w*, provided with clips *z*, the shaft *x*, mounted in bearings on the feed-board and provided with arms *y*, toe *d'*, and retracting-spring *x'*, the link *c'*, and the shaft *a'*, provided with arms *b'* and lifting-toe *e'*, all arranged substantially as and for the purposes set forth.

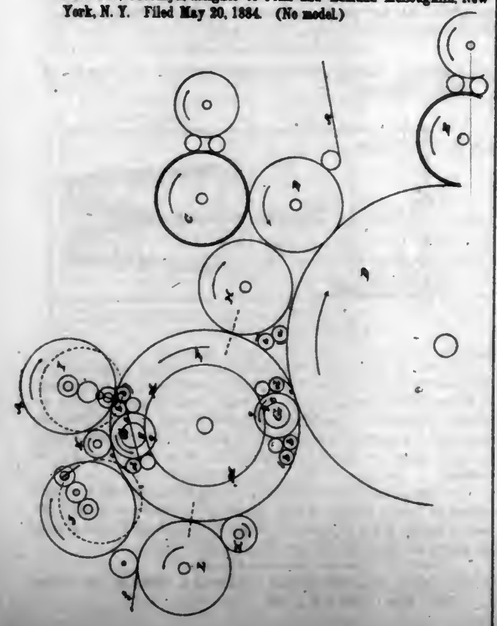
12. The combination of the following coactive elements, namely: the rotating cam-disk D, the shaft E, front guides, *r*, arm F, provided with a toe to rest on the cam and a projection to take under a lug on the hinged feed-board, said feed-board, the link *c'*, shaft *a'*, having an arm, *b'*, and toe *e'*, shaft *x*, having arms *y*, toe *d'*, and spring *x'*, and bottom guides, *w*, arranged to play in bearings in the feed-board and provided with slotted clips *z*, all arranged to operate substantially as set forth.

13. The combination, with the cylinder A, of the gripper-shaft and grippers, the disk *c*, with locking-tail *f* and tripping-bar *n*, the locking-bar C, provided with recessed plate *h*, cam-plate *m*, and a spring to uphold it normally, and the unlocking-stud *l* on the main frame, all arranged substantially as set forth.

14. The combination of the printing-cylinder provided with a beveled clamping-face, *h'*, the gripper-shaft and grippers mounted in the cylinder, the disk D, provided with a closing-pin, *p*, and driven from the cylinder, the intermediate gears, *o*, the disk *c*, provided with a locking-tail, the tripping-bar *n*, fixed to disk *c*, the locking-lever O, provided with cam-plates *h* and *m* and upheld by a spring, and the unlocking-stud *l* in the press-frame, all arranged to operate substantially as set forth.

15. A cylinder printing-press provided with a finger-motion arranged and adapted to be unlocked by a stud removably mounted in the frame of the press at the proper point to deliver the sheet under the feed-board, and provided also with a socket, *l'*, in the press-frame, to receive a removable unlocking-stud, substantially as and for the purposes set forth.

321,683. SUPERIMPOSING AND FOLDING MACHINE. ANDREW CAMPBELL, Brooklyn, assignor to John and Edmund McLoughlin, New York, N. Y. Filed May 20, 1884. (No model.)



Claim.—1. The combination, in a rotary folding-machine, of a main folding-cylinder bearing a folding and peripheral delivery mechanism, constructed substantially as described, a cutter to sever the sheets from the web, a first folding-blade cylinder provided with a folding-blade and its operative mechanism, constructed substantially as described, and a second folding-blade cylinder provided with a folding-blade and its operative mechanism, constructed substantially as described, for producing the second fold in the sheet at the periphery of the main cylinder after the sheet has been once folded and delivered at the periphery of the main cylinder, as described.

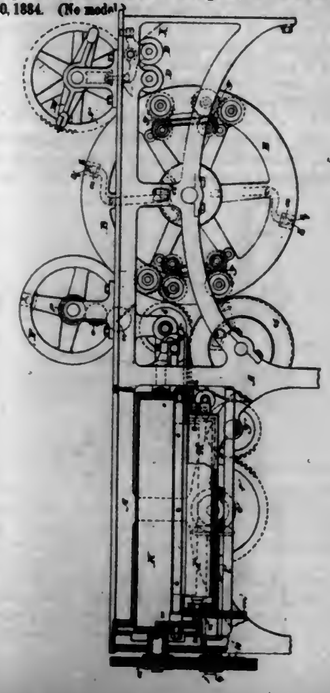
2. The combination, in a rotary folding and superimposing machine, of a main folding-cylinder bearing a folding and peripheral delivery mechanism, constructed substantially as described, a cutter to sever the sheets from the web, a first folding-blade cylinder provided with a folding-blade and cutter and their operating mechanisms, constructed substantially as described, and a second folding-blade cylinder provided with a folding-blade, its operative mechanism, constructed substantially as described, for effecting a second fold in the sheet folded and cut by the operation of the first folding-blade cylinder, as set forth.

3. The combination, in a rotary folding-machine, of a main folding-cylinder bearing a folding and peripheral delivery mechanism, constructed substantially as described, a cutter to sever the sheet from the web, a first folding-blade cylinder provided with a pneumatic grip and with a folding-blade and its operative mechanism, constructed substantially as described, and a second folding-blade cylinder provided with a folding-blade and its operative mechanism, constructed substantially as described, all arranged to operate substantially as set forth.

4. The combination, in a rotary folding-machine, of a main folding-cylinder bearing a folding and peripheral delivery mechanism, constructed substantially as described, and arranged to receive the sheet at one point on the periphery of the main folding-cylinder and to deliver it in a backward direction at another point on the periphery of said cylinder, and two folding-blades and their operative mechanism, constructed substantially as described, mounted at different points and adjacent to the periphery of the main folding-cylinder and arranged, as described, to act in succession on the sheet to produce two folds in the same, whereby the same folding and delivery mechanism in the main cylinder is utilized to effect both folds in the sheet, as set forth.

5. The combination, with the first folding-blade cylinder, the folding-blade and its shaft borne thereby, and the gear-wheels for effecting the proper rotation of said shaft, of the cutting-blade provided with a yoke, the shaft *q*, provided with an eccentric and a pinion, *s*, the spring *r*, the pinion *t*, mounted loosely on an eccentric portion, *u*, of the folding-blade shaft, and provided with a horn, *v*, and the block or detent *w*, all arranged to operate substantially as and for the purposes set forth.

321,684. ROTARY FOLDING-MACHINE. ANDREW CAMPBELL, Brooklyn, assignor to John and Edmund McLoughlin, New York, N. Y. Filed May 20, 1884. (No model.)



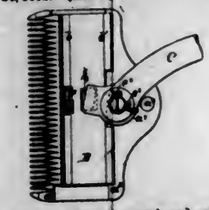
Claim.—1. A rotary folding-machine comprising a folding-cylinder provided with one or more folding and peripheral delivering mechanisms, and one or more pneumatic grips, substantially as described, a folding-blade cylinder provided with a pneumatic grip, and a folding-blade and its operative mechanism, all substantially as described, and a rotary cutter, all arranged to operate substantially as and for the purposes set forth.

2. The combination, with a rotatively-mounted cylinder, F, of the folding-blade and its shaft mounted therein, the wheel *n*, mounted on the folding-blade shaft, the non-rotative wheel *p*, mounted concentrically with the axis of the cylinder F, and the intermediate wheel, *o*, the wheels being geared together, and the wheels *n* and *p* being of the relative proportions specified, whereby the folding-blade will be carried around in a circle by rotation of the cylinder, and be held with its plane parallel with a given plane, substantially as described.

3. The combination, with the folding-cylinder B and the fixed gear A, of the mechanism for folding and delivering the sheet peripherally and tangent to the cylinder B, comprising the rollers *e e'*, the guides *j*, the rollers *i*, the delivery-roller *f*, and the train of gears for driving said rollers, all arranged substantially as set forth.

4. The combination, in a rotary folding-machine, of the folding-cylinder provided with a folding and peripheral delivering mechanism, substantially as described, and a pneumatic grip, the folding-blade cylinder provided with a folding-blade and its operative mechanism, and a pneumatic grip, the rotary cutter, the off-bearing cylinder provided with a grip, and gearing, substantially as shown, for driving the said cylinders and the cutter in unison, substantially as set forth.

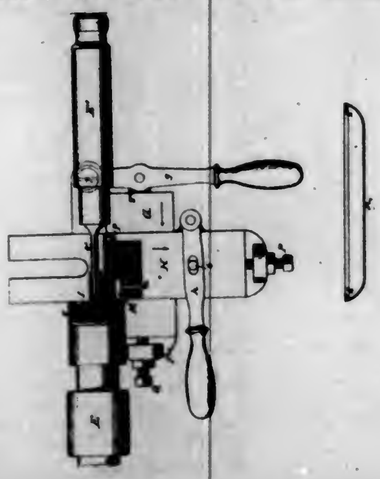
321,685. HAIR-CLIPPING MACHINE. CYRUS CARLETON, Providence, R. I., assignor to the Brown & Sharpe Manufacturing Company, same place. Filed Sept. 26, 1883. (Model.)



Claim.—1. The combination, with the comb and cutter plates having the depressions and raised bearings, as described, of the cover having the front projection, d^3, the bearing d^4, the rear projection, d', and the pin d^5, as and for the purposes described.

2. In a hair-clipper, the combination of the comb-plate A, having the raised bearing-surfaces a' a^3 and holes a^2 a^4 a^5, the cutter-plate B, having the grooves on its upper side, the raised bearings on its under side, and the holes b^2 b^4, the cover D, having the fixed lever *d*, the guide d^3, working in groove *b*, the bearings d^4 and projections d' d^5, the lever C, having the boss *c'*, with its stud c^2, the split post E, and thumb-screw F, as and for the purpose described.

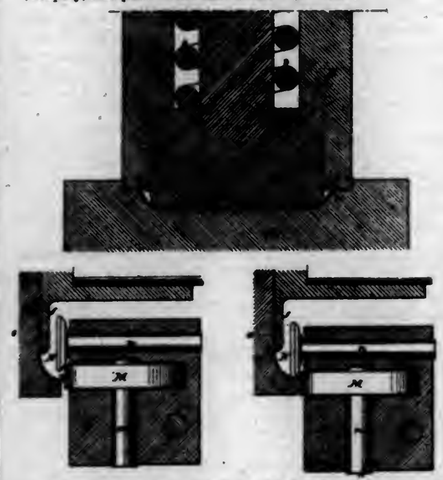
321,686. MECHANISM FOR FORMING BEVELED RIMS ON WATCH-CASES. CYPRIEN CHABOT, Philadelphia, Pa., assignor to the Philadelphia Machinery Company, same place. Filed July 21, 1884. (No model.)



Claim.—1. The mode herein described of forming the inwardly-projecting beveled rim on a watch-case or other sheet-metal plate, said mode consisting in first forming an internal bead on the edge of the case, and then flattening the outer face and compressing the inner face of said bead while the case is being rotated, as set forth.

2. The mode herein described of forming the inwardly-projecting beveled rim on a watch-case or other sheet-metal plate, said mode consisting in first forming an internal bead on the edge of the case, and then rolling the inner and outer faces of said bead, so as to flatten said outer face and press out the inner face, as set forth.

321,687. METHOD OF FORMING RIMS ON WATCH-CASES. CYPRIEN CHABOT, Philadelphia, Pa., assignor to the Philadelphia Machinery Company, same place. Filed Mar. 9, 1885. (No model.)



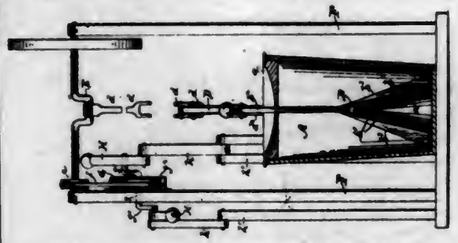
Claim.—1. The combination of the case-holding chuck with a carrier movable in respect thereto, and having a presser, M, with flat face, and a presser, N, with beveled face, as set forth.

2. The combination of a case-holding chuck with a flat-faced disk, M, and beveled disk N, and with a carrier whereby said disks are held at right angles, as specified.

3. The combination of the case-holding chuck, the disks M and N, the slide H, carrying the same, and the slide G, carrying the slide H, as set forth.

4. The combination of the case-holding chuck, the facing-disk M, the beveled pressing-disk N, and a carrier in which said disk N is free to yield, as set forth.

321,688. CHURN. JAMES M. CHAMPE, Litchfield, Ill. Filed Feb. 18, 1885. (No model.)

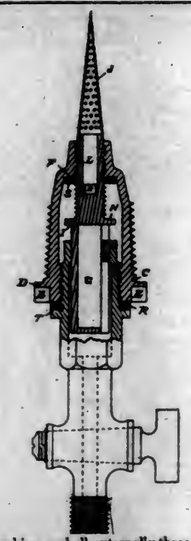


Claim.—1. In a churn, the combination, with the dasher-rod and the standards F F A', of the crank-shaft E, journaled in the standards F, the connecting-rod *d*, pulley *e* on crank-shaft E, band I, pulley G, shaft *g*, journaled in one of the standards F, and provided with the cranks *g'*, the levers H, and the links *h*, pivoted to the standards *h'* and to the end of the levers H, substantially as herein shown and described.

2. The combination of vessel A, having lid *a* and cone *a'*, conical dasher B, having holes *b'* therein, rod b^2, link *d*, standards F, pulleys *e* and G, cranks E and *g'*, levers H, links *h*, and standards *h'*, substantially as shown and described, and for the purpose set forth.

321,689. FAUCET-SOCKET. CLARENCE A. CHANDLER, East Bridgewater, Mass. Filed Apr. 2, 1885. (No model.)

321,689.



Claim.—1. The bushing or shell externally threaded and shouldered for engagement with a cask, and provided with an internal chamber and with oppositely-threaded sockets at the opposite ends of said chamber, combined with the plug or valve adapted to be screwed into the inner socket of the shell, and having ports which are covered by the inner socket when the valve is screwed to place and uncovered when the valve is partly unscrewed, and a stem projecting outwardly into the chamber in the socket and containing a longitudinal slot or spline in one side, as set forth.

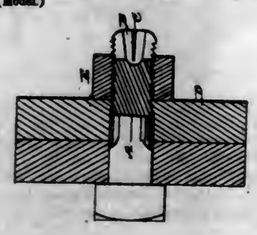
2. The combination of the bushing or shell externally threaded or shouldered for engagement with a cask, and provided with an internal chamber and with threaded sockets at the opposite ends of said chamber, said sockets being oppositely threaded, as described, the plug or valve adapted to be screwed into the inner socket of the shell, and having ports which are covered by the inner socket when the valve is screwed to place, and a stem projecting outwardly into the chamber and provided at one side with a longitudinal slot or spline, N, and the faucet externally screw-threaded to be screwed into the outer socket in the shell and provided at its inner end with an internal lug, M, formed to engage with the slot or spline in the stem of the valve, the arrangement being such that the rotation of the faucet in one direction while it is engaged with the shell and slotted valve-stem will cause the simultaneous inward movement of the faucet and outward movement of the valve, and vice versa, the lug of the faucet sliding in the slot or spline of the valve-stem when the faucet and valve are in motion, as set forth.

321,690. BUTTON-FASTENER. ADLER C. CLAUSEN, Minneapolis, Minn., assignor of one-half to J. C. Slafter, same place. Filed Oct. 16, 1884. (No model.)



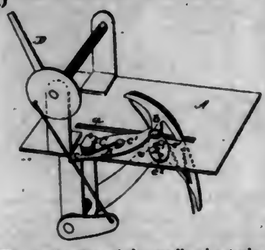
Claim.—The improved button-fastener herein described, consisting of a wire shank provided with a fastening bend or hook, *b*, and bowed or bent therefrom in the form of a loop, terminating in a free end, *d*, whereby, and after the shank has been inserted in the cloth or other material, its free end *d* is adapted to be sprung into the bend or loop *b*, substantially as and for the purpose set forth.

321,691. NUT-LOCK. JAMES H. CONSTOCK, Newport, R. I. Filed Mar. 25, 1885. (Model.)



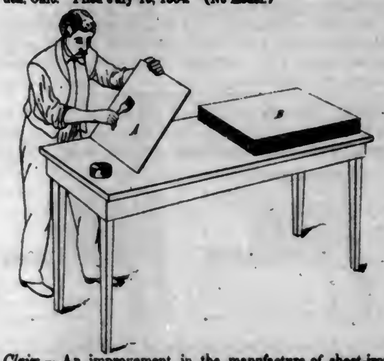
Claim.—A bolt having a smooth-surfaced recess or cavity in its end and a series of radial slits extending from the inner surface of the recess or cavity to the outer surface of the bolt and from the base of the cavity to the end of the bolt, substantially as herein shown and described.

321,692. GRAIN-BINDER. ORVILLE COOLEY, Batavia, N. Y., assignor to the Johnston Harvester Company, same place. Filed Apr. 16, 1884. (No model.)



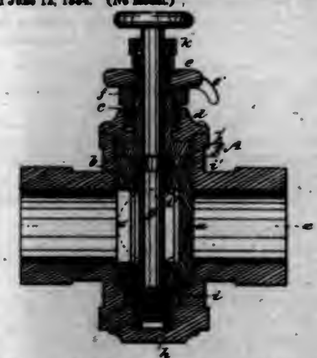
Claim.—The combination of the needle, the tucker, the tucker-securing bolt upon which it turns, and the bundle-discharging arm made to act directly upon the rear extension of the tucker, substantially as herein described.

321,693. MANUFACTURE OF SHEET-IRON. ISAAC E. CRAIG, Camden, Ohio. Filed July 10, 1884. (No model.)



Claim.—An improvement in the manufacture of sheet-iron, consisting in coating the surface during the process of manufacture with a composition of matter before the final heat and working, consisting of graphite and the oxide or a salt of either or both tin and lead.

321,694. FAUCET OR VALVE. JOSEPH DARLING, Karns City, Pa. Filed June 12, 1884. (No model.)



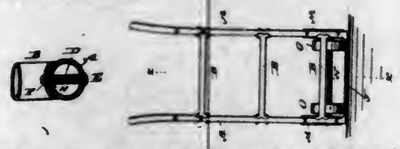
Claim.—1. The combination, with the valve-body, of the hollow divided plug having radial slots, the stem having radial lugs fitting into said slots, the screw-threaded stem working in a nut, and the conical expanders, one having connection with said nut, substantially as and for the purpose set forth.

2. In a valve, the spindle *g*, fitted for endwise movement by a screw and nut, the tapering expanders *i i'*, the divided plug *a*, and hollow stem *c*, one of said expanders having connection with said nut, substantially as described, combined for operation as specified.

3. In a valve, the combination, with expanding plug *a*, of spindle *g*, nut *h*, and stem *c*, and expanders *i i'*, substantially as and for the purpose specified.

4. In a valve or faucet, the hollow divided plug, in combination with the screw-threaded stem working in a nut having a neck and annular flange, and the conical expanders, one slotted or constructed to receive said neck and flange of nut, substantially as and for the purpose set forth.

321,695. HAND-TRUCK. JOHN C. DEAN, Indianapolis, Ind. Filed May 19, 1885. (No model.)



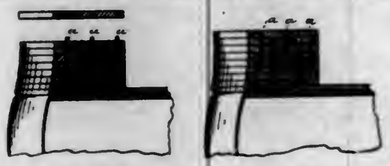
Claim.—1. A hand-truck having its side pieces formed of tubes oval in cross-section, the longer axes extending from front to rear, and the shorter axes from side to side, substantially as herein shown and described.

2. In a hand-truck frame, the combination, with two side tubes, of transverse tubes having their ends split to form opposite tongues, which are rested against and riveted to the inner sides of the side tubes, substantially as herein shown and described.

3. The combination, with the side tubes, A, of the transverse tubes B and the rivets D, having stems F, forming shoulders H, substantially as herein shown and described.

4. In a hand-truck frame, the combination, with the side tubes, A, united by cross-pieces, of the nose J, having end parts, K, which are inserted and welded in the lower ends of the tubes A, substantially as herein shown and described.

321,696. MANUFACTURING AND ATTACHING HEELS TO BOOTS OR SHOES. GEORGE T. DEHART, Boston, Mass., assignor to the National Heeling Machine Company, same place. Filed Jan. 23, 1885. (No model.)



Claim.—1. That improvement in the art of attaching heels to boots and shoes which consists in securing the heel to the sole by long nails driven through them and upset, and simultaneously therewith driving shorter heel-nails, leaving the butts projecting, all substantially as specified.

2. That improvement in the art of attaching heels to boots or shoes which consists in securing the heel to the sole by long nails driven through them and upset, and simultaneously therewith driving shorter headless nails, leaving the butts projecting, and afterward attaching the top lift by spanking it upon the heads or butts of the projecting nails, all substantially as specified.

321,697. FLOOD-GATE. WILLIAM DONNAN, Burgettstown, Pa. Filed July 31, 1884. (No model.)

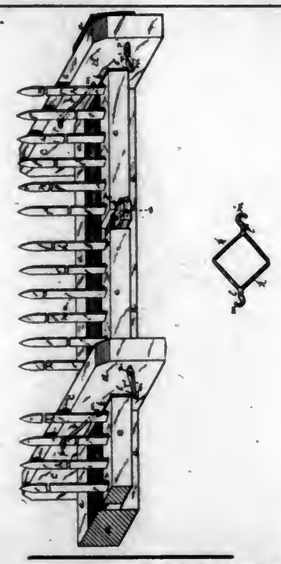
Claim.—1. In flood-gates, the combination of the log or beam extending across the creek and carrying bearings *b* and cross-planks *c*, the blocks or bars *e*, carrying wickets and mounted between said bearings and cross-planks, and rubber springs connected to hooks on the blocks and pins *p* on the cross-planks, substantially as and for the purposes set forth.

2. In flood-gates, the combination of the block or bar *e*, carrying wickets *h* and pivoted in suitable bearings, the brace *k*, fitting thereon and having the arm *l* and hook *m*, and the rubber springs *r*, substantially as and for the purposes set forth.

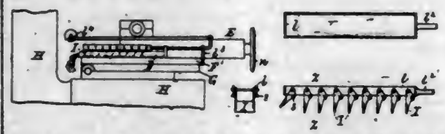
3. In flood-gates, the combination of the log or beam *a*, blocks *e*, mounted in bearings supported by said log, and shields *s*, extending over said blocks, substantially as and for the purposes set forth.



321,697.



321,698. CHIP-CLEARER FOR GEAR-CUTTING MACHINES. ULRICH EBERHARDT and HENRY E. EBERHARDT, Newark, N. J. Filed June 10, 1884. (No model.)

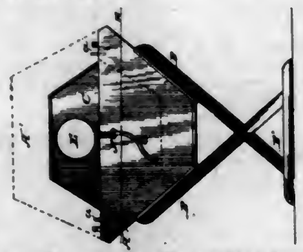


Claim.—1. The mechanism for clearing the chips from the bed of a milling-machine, which consists in a clearer placed in the path of the falling chips, means for moving the clearer bodily toward the chip-discharge outlet, and a connection between such means and the revolving cutter for actuating the clearer in the prescribed manner, substantially as herein set forth.

2. The combination, with the bed of a milling-machine, of a reciprocating clearer arranged in the path of the falling chips, and consisting of the frame *l* and the hinged scrapers I, means for reciprocating the clearer backward and forward among the chips, and a connection to the revolving cutter for operating such clearer, substantially as shown and described.

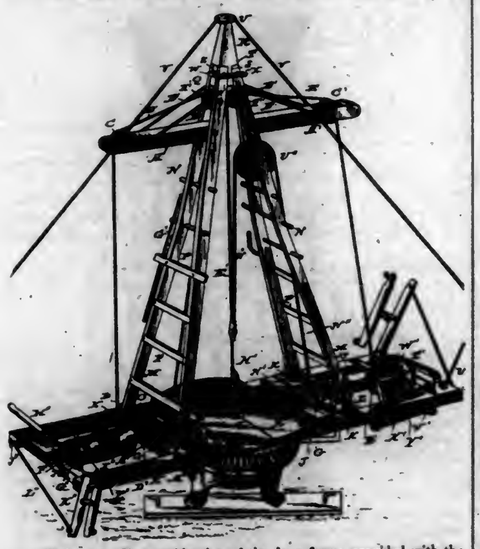
3. The combination, with the cutter C and its movable slide E, of the table G, adjustable in a vertical plane upon its pivot G', a clearer arranged in the path of the falling chips, and mechanism mounted upon the table and movable therewith for moving the clearer bodily toward the chip-discharge outlet, substantially as herein set forth.

321,699. WASHING-MACHINE. AXEL F. EKMAN, Austin, Tex. Filed Aug. 27, 1884. (No model.)



Claim.—The combination of the suds-box A, having a removable top, A', and connected by dowel-pins *a* with the hexagonal drum C, whose angles in its revolution within the suds-box create cleansing-currents in the water, said drum having journals J J, exteriorly attached thereto, and an opening, E, at one end, the crank *c*, and the frame B B B', the suds-box resting on the X-shaped supports, but capable of being removed therefrom, all substantially as described.

321,700. ROCK-DRILLING AND WELL-BORING MACHINE. LEONARD R. EMERY, Corsicana, Tex. Filed Oct. 14, 1884. (No model.)



Claim.—1. The combination of the base-frame provided with the cogged rim and the annular shoulder, the annular frame turning upon the shoulder, the parallel beams and the platform, the short shaft having the pinion engaging the cogged rim, the disk having the spiral shoulder and secured upon the short shaft, the rope secured to a sleeve turning upon the shaft, passing over the pulley at the upper portion of the derrick, and having means of attachment at the free end, and the drill, as and for the purpose shown and set forth.

2. The combination of the base-frame having the cogged rim and the annular shoulder having the groove, with the annular casting or frame bearing the frame and the derrick, and having the annular groove in its lower edge, and the anti-friction balls, as and for the purpose shown and set forth.

3. The drilling and boring machine, consisting of the base-frame having the cogged rim and the annular shoulder, the annular frame, the parallel bars having the cross-pieces and having means for attaching draft-animals at their ends, the derrick-legs connected in pairs and secured together at the top, having the pulleys journaled between their upper ends, and having the arms projecting to the sides provided with pulleys at their outer ends, the short shaft having the pinion at one end, the disk provided with the spiral shoulder, and the half-clutch at its outer end, the windlass sliding and turning in bearings between the ends of the parallel beams and having means for sliding it and provided with a clutch at its inner end, the drill-operating rope secured to a sleeve turning upon the short shaft passing over a pulley at the top of the derrick and having a rope-clamp at its other end, the short shaft having the pinion at its inner end and the clutch at its outer end, the sand-pump windlass having the half-clutch at one end of its shaft and having means for sliding it in its bearings between the ends of the parallel beams, the sand-pump rope and the sand-pump, the drill-rope winding upon the drill-windlass and passing over pulleys at the end of one of the laterally-projecting arms and between the ends of one pair of derrick-legs, and the drill secured to the end of the drill-raising rope, all constructed and arranged as and for the purpose shown and set forth.

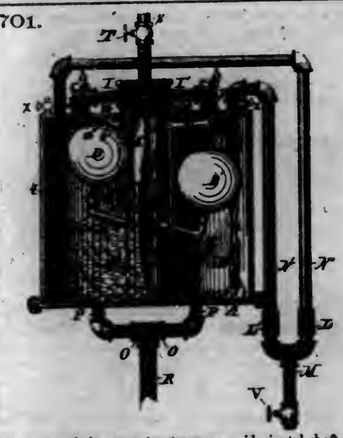
4. The rope-clamp consisting of two long jaws, the curved plate secured to one jaw passing around the back edges of the jaws and around the side of the other jaw, and the wedge inserted between the curved plate and the jaw, as and for the purpose shown and set forth.

321,701. STEAM-TRAP. JAMES B. ERWIN, Milwaukee, Wis. Filed Mar. 27, 1885. (No model.)

Claim.—1. The combination of two separate chambers, a single pivotal shaft extending into and partially across each of said chambers, and two floats, one in each of said chambers, secured to and adapted to counterbalance each other upon said pivotal shaft within the respective chambers, each of said floats being connected with and adapted to control the action of the valves communicating with the respective chambers, substantially as set forth.

2. The combination, in a steam-trap, of two separate chambers, a single pivotal shaft extending into and partially across each of said chambers, two floats, one in each of said chambers, secured to and

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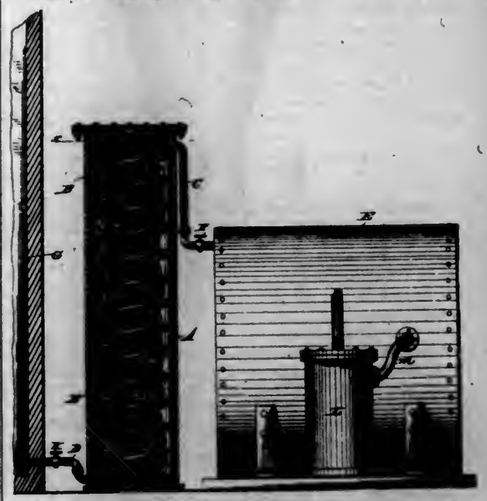
adapted to counterbalance each other upon said pivotal shaft within the respective chambers, two inlet steam valves and ducts, and two inlet and outlet water-ducts, and mechanism for communicating motion from the respective floats to said inlet steam-valves, substantially as and for the purpose specified.

3. In a steam-trap, the combination of two separate chambers, B B', partition C, pivotal shaft E, extending through said partition, floats D D', arms K' K', rods A' A', levers *b' b'*, valve-rods E' E', valves *d d*, and water-ducts *a a*, communicating from the supply to the respective chambers, substantially as and for the purpose specified.

4. In a steam-trap, the combination, with the two separate chambers B B', of the two branch water-pipes N N', each provided with outward-closing check-valves, single pipe M, communicating between said branch pipes and the heating-coils, outlet branch pipes P P, each provided with inward-closing check-valves, single pipe R, communicating from said branch pipes P P to the boiler, and steam-pipes *h'* and J', communicating between the respective chambers and the boiler, substantially as set forth.

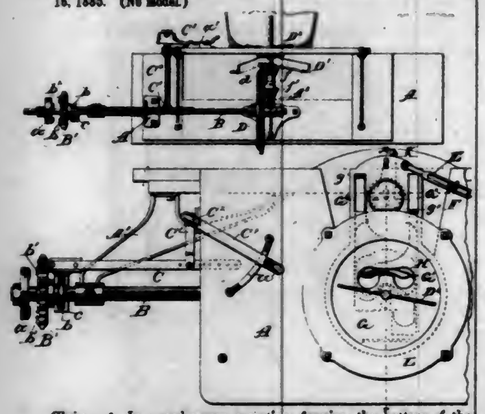
5. The combination, within the receptacle A, of the partition C, pivotal shaft E, extending through said partition into the respective chambers B B', stuffing-nut H, closing communication between said apartments, around said shaft upturned arms *h h*, floats D D', located above said pivotal shaft, and valve-rods K K, suspended by pivotal attachments from the steam-valves I I' above said arms *h*, substantially as and for the purpose specified.

321,702. REFRIGERATING APPARATUS. WALTER T. FORBES, Atlanta, Ga. Filed Apr. 21, 1885. (No model.)



Claim.—The combination, with the closed ice-chamber and the spirally-coiled tube B therein, having projecting ends, of the storage-tank and the chamber or box to be cooled respectively connected to said projecting ends by pipes, a check-valve, and the air-pump connected to the storage-tank, substantially as specified.

321,703. SEED-SOWER. HENRY J. FOSTER, Racine, Wis. Filed Feb. 16, 1885. (No model.)



Claim.—1. In a seed-sower, a casting forming the bottom of the hopper and having a seed-opening that leads to the distributer, in combination with a confining annulus that allows it a limited horizontal play on an arc of a circle, as set forth.

2. The combination, with the casting G, of the slotted slides H H', one sliding upon the other, and a lever having projecting pins passing through said slots for adjusting the slides with relation to each other, as set forth.

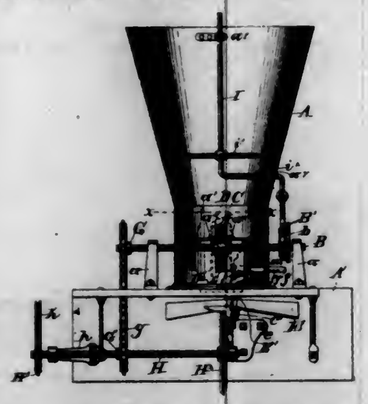
3. The combination, with the casting G, having guiding-ribs *h h*, of the slides H H', sliding one upon the other between said ribs and lever K, as set forth.

4. In a sower, the casting G and plates H H', in combination with the sectional and independently-adjustable slides *g g*, as set forth.

5. The casting having seed-opening adjacent to the center and adapted for adjustment on an arc of a circle, in combination with a device for securing said casting in the required adjustment, as set forth.

6. The shaft A^3, bevel-pinion fixed thereon, distributer and bevel-pinion carried thereby and turning loosely thereon, in combination with a stirring-pin, double bevel-wheel, and the driving-shaft, as set forth.

321,704. BROADCAST SEEDER. STEPHEN FREEMAN, Racine, Wis. Filed Nov. 19, 1884. (No model.)

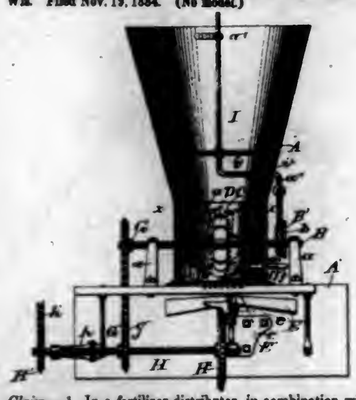


Claim.—1. In a seed-distributer, in combination with the box A, having the slotted bottom *a'*, a seed-feeder having a series of pegs projecting radially from it and mounted in the slotted bottom, means for regulating the flow of the seed and for guiding the same from the seeder to the distributer, and an adjustable hinged apron to vary the throw of the latter, substantially as set forth.

2. The combination, with a feed-wheel and an adjustable hood, of an apron depending from the bottom of the box or hopper and partly beneath the said feed-wheel, substantially as described, and for the purpose set forth.

3. In a grass-seed distributer, the combination of the feed-wheel located below the bottom of the hopper and projecting up therethrough, and adjustable guiding-apron for regulating the direction of the flow of the seed to the distributing-wheel, substantially as set forth.

321,705. FERTILIZER-DISTRIBUTER. STEPHEN FREEMAN, Racine, Wis. Filed Nov. 19, 1884. (No model.)



Claim.—1. In a fertilizer-distributer, in combination with the box A, having the slotted bottom *a'*, a paddle-wheel mounted below said bottom and projecting up through the slot, and provided with means for regulating the flow of the fertilizer to it, and means for guiding the fertilizer from the paddle-wheel to the distributer, substantially as set forth.

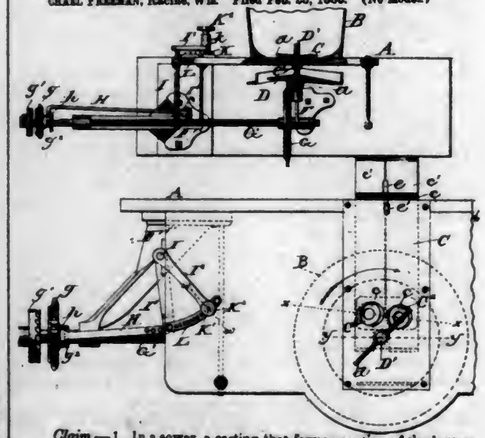
2. In a fertilizer-distributer, in combination with the box A, having the slotted bottom *a'*, a paddle-wheel mounted below said bottom and projecting up through the slot, means for regulating the flow of the fertilizer to it and for guiding the same from the paddle-wheel to the distributer, and adjustable means, as herein described, to vary the throw of the latter, substantially as set forth.

3. The combination, with the paddle-wheel projecting up through the slotted bottom of the box or hopper and adjustable hood, of an apron depending from the bottom of the box or hopper and partly beneath the paddle-wheel, substantially as described, and for the purpose set forth.

4. In a fertilizer-distributer, the paddle-wheel and adjustable guiding-apron hinged above the axis of the wheel and projecting partly thereunder, for regulating the direction of the flow of the fertilizer to the distributing-wheel, substantially as set forth.

5. In a fertilizer-distributer, in combination with an eccentric, the shaft of the feed-wheel, and connecting mechanism, the fertilizer-agitator I, substantially as described, and for the purpose set forth.

321,706. BROADCAST SEED-SOWER. STEPHEN FREEMAN and MICHAEL FREEMAN, Racine, Wis. Filed Feb. 25, 1885. (No model.)



Claim.—1. In a sower, a casting that forms a portion of the bottom of the hopper, having an opening for the exit of the seed or fertilizer, said opening having a beveled edge, in combination with a stirring-pin, substantially as and for the purpose set forth.

2. In a sower, the combination of the casting and its beveled openings with plate *c* and its openings, and the stirring-pin, as set forth.

3. In a sower, the combination, with casting C, of plate *c'*, formed in two sections, capable of independent adjustment, as set forth.

4. In a sower, the driving-shaft carrying a fixed clutch-wheel and loose sprocket-wheel, in combination with a spanner-arm, shaft I, arm P, spring-dog K, its housing, and quadrant L, as set forth.

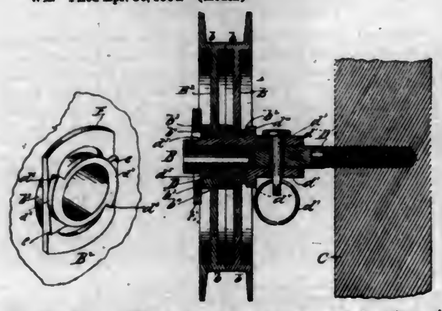
321,707. CLIP FOR WAGONS. CLARENCE A. GALE, Big Rapids, Mich. Filed May 13, 1885. (No model.)



Claim.—1. A securing-saddle for wagons having an interior recess, *a*, to receive the ends of the bolster-plate, and an exterior recess, *b*, to receive the clip F, combined with said plate and clip, axle A, plate G, and securing means *c*, as set forth.

2. The combination, with the axle, sand-board C, bolster-plate D, and bounds B, of the saddle E, having interior recess, *a*, and external recess, *b*, upon three sides, the clip F, plate G, nuts *c*, and braces H, all constructed and arranged to serve as and for the purposes set forth.

321,708. ROLLER FOR GATES. DE ALTON GARDNER, Plymouth, Wis. Filed Apr. 30, 1884. (Model.)



Claim.—1. A roller for swinging farm-gates, consisting of two circular-flanged disks rotating on a common-hinged stem and held together in place thereon by means of a locking-washer fitting between the flanged end of said stem and the outer disk, substantially as set forth.

2. In a roller for swinging farm-gates, the flanged circular disks B B', in combination with the bearing-stem D, having bifurcated end d', shoulders d^3 and d^5, and flanges d^4 d^4, and the washer E, having beveled locking-edges adapted to impinge against the wedge-shaped inner surfaces of the flanges d^4 d^4, between said flanges and the shoulder d^5 of the stem D, substantially as set forth.

3. In a roller for swinging farm-gates, the combination, with a bearing-stem, of two circular-flanged disks, adapted for independent rotation thereon, substantially as set forth.

321,709. WAGON-BRAKE. ADAM M. GARMAN, Sinking Creek, Va., assignor to himself and William Jackson Garman, same place. Filed Mar. 10, 1885. (No model.)



Claim.—The combination, with the axle and an upright thereon, of the bent rods pivoted to said axle, and having hooks at their ends to bear upon or hug the wheel-tires, and the rod-operating chain or cord with its ends connected to said rods, said cord or chain also being looped through a ring or aperture of said upright, substantially as and for the purpose set forth.

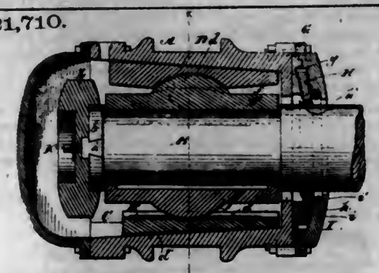
321,710. CAR-AXLE BOX. JAS. P. GARTON, Jersey City, N. J. Filed May 8, 1885. (No model.)

Claim.—1. The combination, with an axle-box having interior space to form an oil-reservoir, and having also a return-incline, as *d'*, of the flanged dovetailed spindle having a cross-head provided with lugs, and a recessed pump having flaring cups secured to the spindle by a pin-connection, as shown and described.

2. The spindle B, having flange *b*, with dovetail recesses, the cross-head K, with lugs *k*, corresponding with the recesses, and the pump L, having cups *l* and recess *l'*, and the reservoir, as set forth.

3. In an axle-box, as described, the combination, with the plate G, having annular incline *g*, and the plate I, having concave *i*, of the loose ring H, having bevel *h*, fitting loosely in said concave, and the packing-ring *s'*, all combined and adapted to serve to the axle and box, as and for the purposes set forth.

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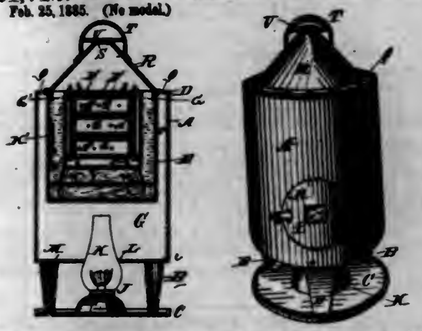
321,711. PREPARING ARTICLES FOR PLATING PURPOSES. W. A. GAY, Newark, N. J. Filed Apr. 16, 1885. (No specimens.)

Claim.—1. Preparing non-conducting bodies for electroplating by the process of carbonization, as and for the purpose set forth.

2. The within-described process of treating earthenware and analogous material for metal plating, which consists in coating the surface with some carbonaceous substance, and carbonizing the same, as and for the purpose set forth.

3. The compound herein described for producing a basis to receive metallic deposits, consisting of finely-powdered clay, coke, or similar material mixed with a solution of sugar or other binding substance and carbonized, as set forth.

321,712. INCUBATOR. ABRAHAM A. GRIMAN, Newton, Kans. Filed Feb. 25, 1885. (No model.)



Claim.—1. In an incubator, the combination of a casing having a central perforation in its bottom, a perforated flange at its upper end, a water-vessel attached to said flange and extending downward within the casing, a chamber in said casing below the water-vessel having a door provided with a pane of mica, legs supporting the said casing and attached to a flanged base, a lamp placed upon the said base and having its chimney extending through the central perforation in the bottom of the casing into the lower chamber thereof, and a conical condensing and ventilating cover for the water-vessel, substantially as and for the purpose herein set forth.

2. In an incubator, the combination, with a casing, a water-vessel, and heating apparatus, constructed substantially as described, of the conical cover having at its apex a ventilating-opening, a bail or handle, and a deflector secured between the sides of the latter, substantially as and for the purpose herein set forth.

3. In an incubator, the herein-described egg-holder, consisting of a suitable receptacle, legs supporting the same, and a deflector or diaphragm secured between said legs below the bottom of the holder, and having a central perforation, substantially as and for the purpose herein set forth.

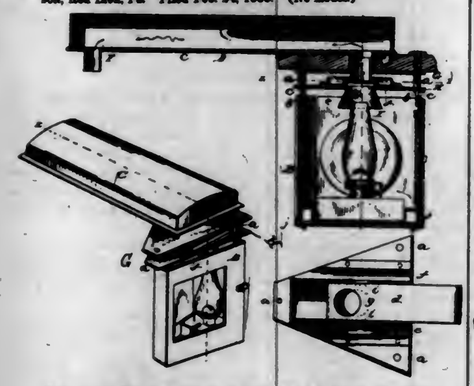
4. The combination, with the egg-holder, of the egg baskets or trays consisting of perforated sheet-metal pans, the lowermost one of which is supported upon low legs, and all of which are provided with cross-pieces or handles, and a mat covering the uppermost egg-tray, substantially as and for the purpose herein set forth.

5. The combination of the egg-holder, the bottom basket having legs or supports and laterally-projecting lugs, the upper egg-baskets, the top piece or cover having upwardly-projecting legs and laterally-projecting perforated lugs, and the connecting rods or bolts and thumb-nuts, substantially as and for the purpose herein set forth.

6. As an improvement in incubators, the combination of a casing having a bottom with a central perforation and mounted upon legs secured to a flanged base, a water-vessel secured to a perforated flange at the upper end of the casing and extending downwardly within the latter, a lamp, the chimney of which extends through the central perforation in the bottom of the casing, a door at the lower end of the latter, a

conical cover for the water-vessel, said cover being provided at its apex with an opening and a handle, between the sides of which is secured a deflector, an egg-holder mounted upon legs, between which is secured a deflector having a central perforation, the egg-trays arranged in said holder, all of said trays being provided with transverse handles and the lowermost one with low legs, a mat covering the uppermost tray, a top piece or cover having upwardly-extending legs, and means for connecting all said egg-trays and the top piece or cover, all arranged and operating substantially as and for the purpose herein shown and specified.

321,713. CARRIAGE-LAMP AND FOOT-WARMER. JACOB F. GIBSON, Red Lion, Pa. Filed Feb. 24, 1885. (No model.)



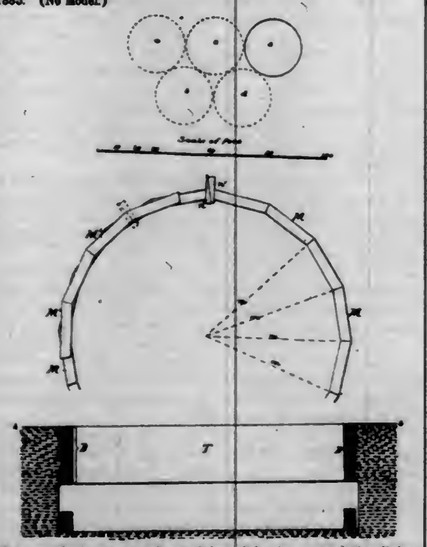
Claim.—1. The combination of the lamp B, having chambers *j j* constructed with perforations, with the valve beneath, pivoted to operate to close said chambers, substantially as set forth.

2. The combination of the lamp B, having chambers *j j* constructed with perforations, with the upper and lower plates, G H, and the valve *d*, interposed between said plates, as set forth.

3. A combined carriage-lamp and foot-warmer, consisting of the lamp *b* and foot-warmer C, provided with valve *d*, interposed between them, said valve having a vertical aperture and side apertures arranged to operate substantially as set forth.

4. The combination, with a foot-warmer proper, of the lamp B, having plates G H and passages therethrough, and controlling-valve *d*, with the deflector I, and thimbles between the plates, substantially as set forth.

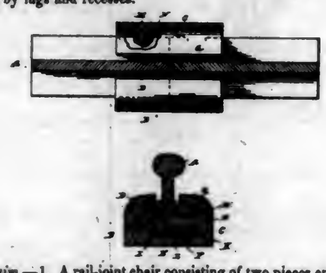
321,714. MINING-PIT. MOSES GOLDEN, Trenton, N. J. Filed Feb. 2, 1885. (No model.)



Claim.—The herein-described mining-pit having a supporting-lining consisting of a succession of circular layers of timber abutting against each other, end to end, and wedges holding the timbers and passing into the soil, substantially as described.

321,715. RAIL-JOINT. JOSEPH D. GREEN, Coloma, Mo. Filed July 14, 1884. (No model.)

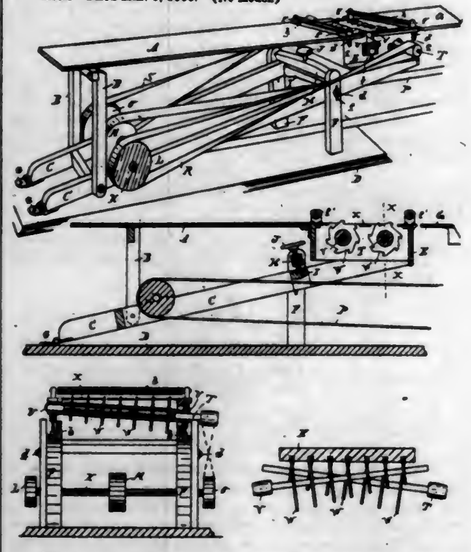
Brief.—One side piece of the chair is so grooved in its depending portion as to embrace a right-angled flange of the other side piece, and they are held in place by a pin or wedge, and both engage the flange of the rail by lugs and recesses.



Claim.—1. A rail-joint chair consisting of two pieces embracing the flanges of the rails, one piece having an extended base with a right-angle flange, said base extending under the rails, and the other piece a midway-flanged extension, on which the rails rest, and a grooved downward projection, said groove receiving the right-angle flange, the interlocking parts resting entirely under the rails, and being secured by a pin, substantially as and for the purpose specified.

2. A rail-joint chair consisting of two pieces embracing the flanges of the rails, one piece having an extended base under the rails, and having a right-angle flange, and the other piece a midway-flanged extension, on which the rails rest, and a downward grooved projection, one or both pieces having lugs which engage in enlarged recesses in the rails, and secured together by a pin, substantially as and for the purpose specified.

321,716. LATH-SAWING MACHINE. JAMES T. HALL, St. Louis, Mich. Filed Mar. 5, 1885. (No model.)



Claim.—1. In combination with adjustable saw-arbors carrying graduated saws, and inclined in opposite directions, journals for said arbors formed in an adjustable frame pivoted to the floor and adjustable in standards arising therefrom, and the table A, supported upon the pivoted frame, and providing recesses through which the saws operate, as set forth.

2. In a machine for the purposes described, the combination, with the standards F, rigid with the floor, and the frame C, pivoted to said floor and carrying the table A and saw-frame E, of the cross-girth H, connecting said standards, and set-screw J, operating through said girth and in the frame to adjust the table relatively to the planer-bed G, as set forth.

3. The pivoted frame C A E, substantially as described, in combination with the standards F, rigid with the floor, and provisions—as the girth H, connecting said standards, and the set-screw J, passing through said girth into the cross-bar L—for adjusting the height of the bed relatively to the planer-bed G, the saw-arbors T V, journaled in the frame K, and connected by belts with a power-shaft, also journaled in the pivoted frame, the whole arranged and serving as and for the purposes specified.

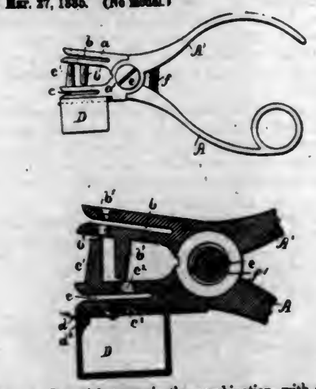
4. In a machine substantially as described, the combination, with the bed A, planer-bed G, and the saws, of a frame located between said beds A G and moving with the bed A, and the rollers K, carried by said frame and serving the double function of holding the work to the saws when the saws are in position, and as friction-rollers for work from the planer when the movable frame is lowered, as set forth.

321,717. PICKET-FASTENING. WILLIAM W. HAMILTON, Lexington, Ky. Filed July 19, 1884. (No model.)



Claim.—The combination, with the rails of a picket fence having oblong holes, of pickets having notches upon one side, passing through said holes in said rails, and two clamping-pieces fitting in each of said holes around said pickets and securing them in place, one of said clamping-pieces having a groove cut around its lower outer portion, forming shoulders, which engage with the top and bottom sides of the rail, and having an inwardly-projecting lug or flange upon its inner side, directly opposite the groove upon the outer side, and engaging with the notch in the picket in a line with the rail of the fence, the other one of said clamping-pieces having a shoulder around its outer upper portion, engaging with the top of the rail of the fence, and a downwardly-projecting wedge-shaped lug adapted to be bent outwardly from the picket and against the bottom of the rail, substantially as shown, and for the purpose set forth.

321,718. TICKET-PUNCH. WALTER C. HARDEN, Valley Falls, R. I. Filed Mar. 27, 1885. (No model.)



Claim.—1. In a ticket-punch, the combination, with a jaw carrying a spur and formed with a slit having an aperture, of a second jaw hinged to the first and carrying a second spur, and a receptacle for clippings and formed with a slit having an aperture, the spur of the first jaw working through the aperture of the second jaw and feeding its clippings into the receptacle, and the spur of the second jaw working into the aperture of the first jaw, substantially as and for the purposes described.

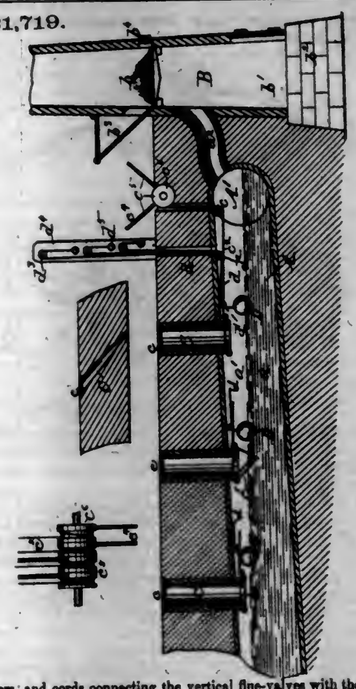
2. The combination, with the arm A, having the bifurcated jaw *a*, with its spur *b'*, of the arm A', having the bifurcated jaw *a'*, with its spur *c'*, and receptacle D, substantially as set forth.

3. The combination of the arm A, having the jaw *a*, with slit *b*, spur *b'*, and holes b^2 b^3, the arm A', with its jaw *a'*, slit *c*, spur *c'*, holes c^2 c^3, the box D, having the lugs *d*, and spring-catch *d'*, the said arms being pivoted together and provided with a spring to hold them apart, substantially as specified.

321,719. VENTILATING SEWERS. GEORGE HARGREAVES, Detroit, Mich. Filed Oct. 20, 1884. (No model.)

Claim.—1. The combination, with the sewer, of a chimney having a fire-place therein, a flue connecting the sewer with the chimney below the fire-place, vertical flues leading from the outer surface to the sewer, with valves at their lower ends, a shaft having drums provided with

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levers, and cords connecting the vertical flue-valves with the said drums, substantially as specified.

2. The combination, with a sewer, of a vertical frame or standard having horizontal rollers, floats arranged in the sewers, and cords or chains connecting the floats and weights, substantially as specified.

3. The combination, with a sewer and flues having hinged doors or valves at their lower ends, of a horizontal shaft having one or more drums, and a lever-handle, and cords connecting the valves and drums, substantially as specified.

321,720. THILL-COUPLING. JOHN HARRIMAN, Milwaukee, Wis. Filed Feb. 2, 1885. (No model.)



Claim.—In a thill-coupling, the combination of the thill-strap F', having eye F, thill-clip B, having lugs C rigid therewith, said lugs terminating in jaws C', and screw-threaded pins C^2 solid therewith, and arranged at an angle to the line of projection of the lugs C, rubber cushion D, plate E, having short flanges E', and securing-nuts *a*, substantially as set forth.

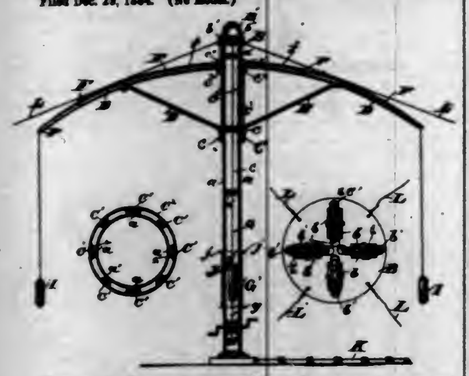
321,721. SURGICAL INSTRUMENT. MIDBURY W. HARMAN, Rochester, N. Y. Filed May 19, 1885. (No model.)



Claim.—1. In a surgical instrument for removing abnormal growths, the combination, with the cutters B B, of the inclosing-shield C, turning freely on the same pivot that connects the cutters, said shield being open in front and constructed in concave form in cross-section, as shown and described, and for the purpose specified.

2. In a surgical instrument for removing abnormal growths, the combination of the cutters B B, the shield C, turning freely on the same pivot with the cutters, and the toggle-arms D D, to which the shanks of the cutters are pivoted, said arms being pivoted to the operating-levers, in the manner and for the purpose specified.

321,722. PORTABLE ROOF. HIRAM C. HERRON, Cleveland, Ohio. Filed Dec. 29, 1884. (No model.)



Claim.—1. The combination, with a hollow supporting-standard, of a roof having a central opening therein for the passage of the standard, and a counterbalance-weight located within said standard and connected to the roof, substantially as set forth.

2. In a portable roof, a hollow skeleton post, and a skeleton frame to slide thereon, and ribs to support the roof detachably secured to the top of the sliding frame, and braces to support the ribs detachably secured to the bottom portion of the said frame, and the ribs and braces secured to each other by means of clips, substantially as set forth.

3. In a portable roof, in combination with a skeleton post and skeleton frame to slide thereon, the latter provided with a frame-work and roof, a cap attached to the top of the post, and sheaves mounted thereon, a counter-balance operating in the post and connected with the sliding frame by cables passing over the said sheaves, substantially as set forth.

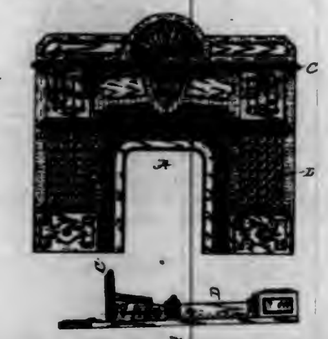
4. The combination, with a hollow skeleton standard constructed to serve as a support for the roof, and a ventilating-shaft, of a roof having a central opening for the passage of said standard, and a counterbalance-weight connected with said roof, substantially as set forth.

5. In a portable roof, in combination with a skeleton post, a skeleton frame to slide thereon, and consisting, essentially, of the bars C', secured to and on the inside of the bands C^2, and the former provided with the loops c' and the shoulders c^3, substantially as set forth.

6. In a portable roof, in combination with a skeleton post and skeleton frame sliding thereon, ribs set edgewise, and twisted and bent at the upper end to hook on and lay flatwise on the upper band, C^2, substantially as set forth.

321,723. MANTEL. JOSEPH HEWITT, Allegheny, Pa. Filed Oct. 14, 1884. (No model.)

Brief.—Consists of transparent glass sections provided with figures or designs on the rear thereof, which are visible in relief through the glass.

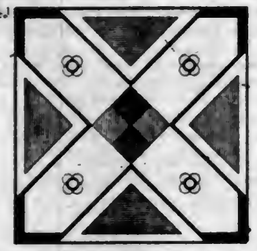


Claim.—A mantel having its glass sections transparent, and provided on the rear thereof with figures or designs visible in relief through the glass, substantially as shown and described.

321,724. TILE FOR WALLS, WOOD-WORK, &c. JOHN HIPPLE, Philadelphia, Pa. Filed May 18, 1885. (No model.)

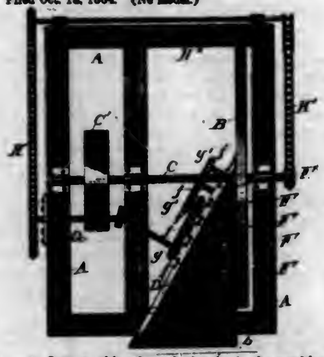
Claim.—1. The herein-described decorative tile, consisting of a metal back having an enameled decorated surface, substantially as described.

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2. The herein-described decorative tile, consisting of a metal backing with an enameled decorated surface and securing-strips on the rear of the plate, substantially as set forth.

321,725. MACHINE FOR REDUCING TAN-BARK. BYRON HOLBROOK, Kenosha, assignor of one-half to Jacob Cryderman, Milwaukee, Wis. Filed Oct. 13, 1884. (No model.)

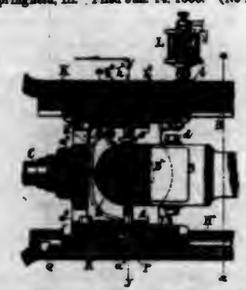


Claim.—1. In a machine for reducing bark, the combination of the frame A, inclined feed-table D, extending within and to the base of the machine, and having side board, D', and shear-plate *b*, with the disk B, having tangential slots *d d*, and knives *a a*, substantially as shown and described.

2. In a machine for reducing bark, the combination of the frame A inclined feed-board extending within the machine, disk B, carrying tangentially-arranged cutting-knives projecting beyond the face of the disk and above similarly-arranged tangential slots, feed-rolls F F, driving-shaft C, sprocket-wheels, shafts, and drive-chains, substantially as shown and described.

3. In a machine for reducing bark, the combination of frame A, disk B, having tangentially-arranged slots and knives, triangular inclined feed-table D, provided with side board, D', and shear-plate *b*, shafts C, H^2, and G, feed-rollers F F, shafts *f f'*, sprocket-wheels, and drive-chains H, H', *g*, and *g'*, substantially as shown and described.

321,726. STEAM-ENGINE CROSS-HEAD LUBRICATOR. ALBERT L. IDE, Springfield, Ill. Filed Jan. 14, 1885. (No model.)



Claim.—1. The combination, with the cross-head guides and connecting-rod of an engine, and means for feeding a lubricant to the upper guide, of a cross-head provided with a passage adapted to convey the lubricant from the upper guide to the bearing-surfaces of the pivotal joint between the said cross-head and rod, substantially as described.

2. The combination, with the cross-head guides of an engine, and means for feeding a lubricant to the upper guide, of a cross-head constructed with a passage to convey the lubricant from the upper to the lower guide, substantially as described.

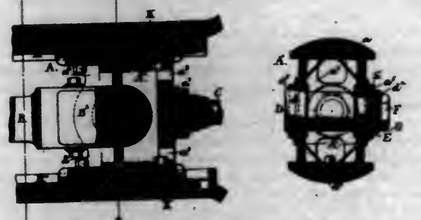
3. The combination, with the cross-head guides of an engine, and means for feeding a lubricant to the upper guide, of a cross-head provided in its upper bearing-surface with a channel adapted to collect lubricant fed to the upper cross-head guide and connecting with a feed-passage leading to other parts to be lubricated, substantially as described.

4. The combination, with the cross-head guides and connecting-rod of an engine, and means for feeding a lubricant to the upper guide, of a hollow cross-head adapted to receive the end of the connecting-rod, and provided with a passage, *h'*, for conveying lubricant from the upper guide to the interior of the cross-head, said connecting-rod being provided with a funnel communicating with the bearing-surfaces of the pivotal joint between the rod and cross-head, substantially as and for the purpose set forth.

5. The combination, with the cross-head guides and connecting-rod of an engine, and means for feeding a lubricant to the upper guide, of a hollow cross-head adapted to receive the end of the connecting-rod, and provided with a passage, *h'*, in its top to convey the lubricant from the upper guide to the interior of the cross-head, and with a passage, P, in its bottom for the passage of lubricant to the lower guide, substantially as described.

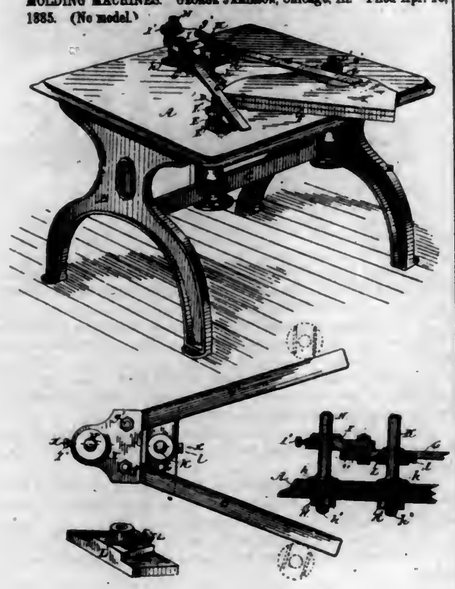
6. The combination, with the cross-head guides of an engine, of the hollow cross-head A, a connecting-rod, B, provided with a funnel, N, communicating with the bearing-surfaces of the pivotal joint between the cross-head and rod, and a depending tube, M, located in the said cross-head over the said funnel, substantially as and for the purpose set forth.

321,727. STEAM-ENGINE CROSS-HEAD. ALBERT L. IDE, Springfield, Ill. Filed May 18, 1885. (No model.)



Claim.—The combination, with the cross-head guides and connecting-rod of an engine, of a hollow cross-head provided with opposite tapered apertures in its side walls, a wrist-pin provided with a tapered portion, *d*, at one end adapted to fit one of the said apertures, a split tapered bushing, E, fitting the opposite end of the wrist-pin and the aperture adjacent thereto, and a nut for clamping the parts mentioned in place, substantially as described.

321,728. SAFETY-GUARD AND WORK-HOLDER FOR EDGE-MOLDING MACHINES. GEORGE JAMIESON, Chicago, Ill. Filed Apr. 10, 1885. (No model.)



Claim.—1. A safety attachment and work-holder for molding-machines, consisting of a combined safety-guard and spring presser-finger, G, attached at one end to a support and having its opposite end free and extended forward to and alongside of a cutter-head, the free end portion of said combined safety-guard and spring presser-finger being constructed and arranged, substantially in the manner described, to bear directly upon the work at a point adjacent to the cutter-head, and to constitute of itself a safety-guard and work-holding device, substantially as specified.

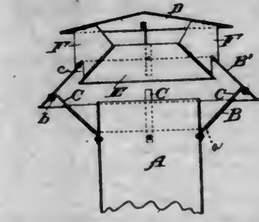
2. In combination with a molding-machine provided with a pair of cutter-heads arranged above a table, a pair of combined safety-guards and spring presser-fingers, G G, supported at one end over the table and diverging from their supported ends to their free ends, said free ends being extended alongside of one and the other of the cutter-heads, respectively, and being constructed and arranged, substantially as described, each to bear directly upon the work nearest its alloted cutter-head, in the manner and for the purpose specified.

3. In combination with a molding-machine provided with a pair of cutter-heads arranged above a table, the vertically and horizontally movable combined safety-guards and spring presser-fingers G, each supported at one end, substantially as described, and having its opposite end free and extended alongside one of the cutter-heads, substantially in the manner and for the purpose herein specified.

4. The combination, with the table of a shaping-machine, of the diverging arms secured at their contiguous ends to the table and capable of vertical adjustment thereon, and a spreader-plate arranged to be adjustable vertically beneath the said presser-arms, substantially as described, for the purpose specified.

5. In combination with the table and cutter-heads, such as set forth, the butt-plate I, adjustably secured upon a standard pin rising from the table, the spring-arms G, secured in sleeves which are attached to the butt-plate, and a spreader-plate, L, adjustably secured upon a standard pin, K, which is susceptible of application to both spring-arms, in the manner and for the purpose herein described.

321,729. CHIMNEY CAP AND VENTILATOR. WILLIAM J. KATHER and CHARLES KATHER, Milwaukee, Wis. Filed Apr. 1, 1885. (No model.)

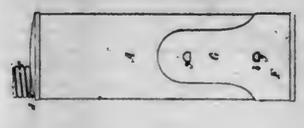


Claim.—1. In a chimney-cap and ventilator, the combination, with the chimney-pipe, of an inverted truncated cone secured thereto, rising to the same height with the said pipe, and an upright truncated cone of greater diameter than the inverted cone, and secured by the same braces to the chimney-pipe, the lower rim of the upright cone coming just below the line of the top rim of the inverted cone, leaving an annular space between the adjacent rims, substantially as and for the purpose set forth.

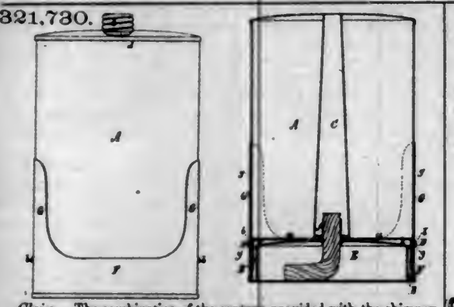
2. In a chimney cap and ventilator, the combination, with the chimney-pipe and inverted truncated cone secured thereto, the upper edges of both parts rising to the same height, the upright truncated cone, of greater diameter, secured to the braces that support the inverted cone and with its lower rim extending just below the top rim of the inverted cone at some distance all around it, and another truncated cone secured to the large upright cone and passing up therethrough, with half its height above the top rim of said cone substantially as and for the purpose set forth.

3. In a chimney-cap and ventilator, the combination of the chimney-pipe A, inverted cone B, larger upright cone B', and cone E, forming an interior shield, all relatively arranged, substantially as described, with the pipe-cap D, supported above the cone shield E by the braces or partitions F F, forming air-chambers between them beneath the said cap, substantially as and for the purpose set forth.

321,730. CANTEEN. TIMOTHY F. KELLY, Boston, Mass., assignor, by mesne assignments, to said Timothy F. Kelly and Michael R. Gately, same place. Filed Mar. 2, 1885. (No model.)

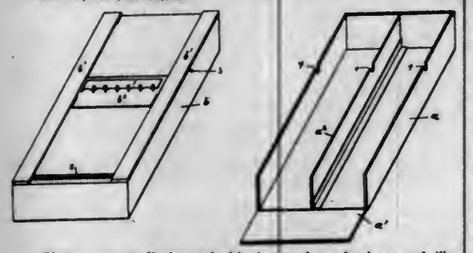


321,730.



Claim.—The combination of the canteen provided with the chimney extending upward through it, and also with the spring-catches and their chamber in and arranged in its lower part, as described, with the lamp and its carrier having the perforated jaws to embrace the canteen, and provided with sets of holes *g*, to engage with the catches, all being substantially as set forth.

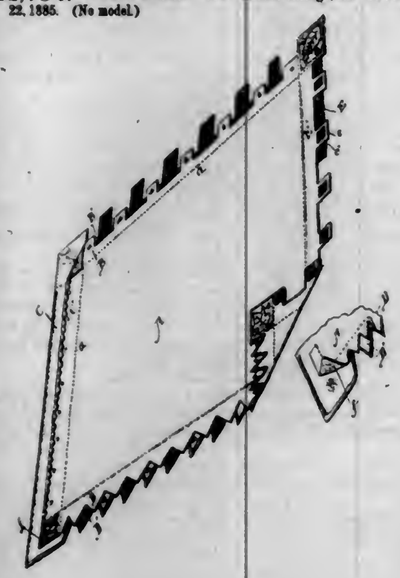
321,731. DISPLAY BOX AND PACKAGE FOR LACES. J. E. LEE, Chicago, Ill. Filed Sept. 10, 1884. (No model.) Patented in England Nov. 19, 1884, No. 15,199.



Claim.—1. A display and shipping package for laces and like fabrics, the same consisting of a box-body proper, wherein the fabric is arranged in loose superposed layers, a lid for said box having parallel guide-strips and a slit through which the loose end of the fabric may be drawn, and a slide removably retained by said strips, and designed to cover the slit, substantially as described.

2. The combination, with the box-body *a*, having end flap, *a'*, of the lid *b*, having guide-strips *b'*, slide b^2, slit 2, and cord 3, said slit and cord being adapted to retain the free end of the fabric to be stored in the box in loose superposed folds or layers, substantially as described.

321,732. HANDKERCHIEF. JOHN E. LEE, Chicago, Ill. Filed Apr. 22, 1885. (No model.)

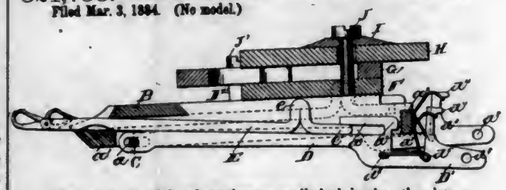


Claim.—1. A handkerchief having a border composed in whole or in part of several thicknesses of plain fabric suitable for embroidering and having free outer edges, substantially as described.

2. A handkerchief having a border formed in whole or in part of several thicknesses of plain fabric, portions of one or more thicknesses being cut away to expose the subjacent fabric, substantially as described.

3. A handkerchief having its corner formed of several thicknesses of embroidered plain fabric having free edges, substantially as described.

321,733. KNITTING-MACHINE. SALLY M. LEVY, Milwaukee, Wis. Filed Mar. 3, 1884. (No model.)



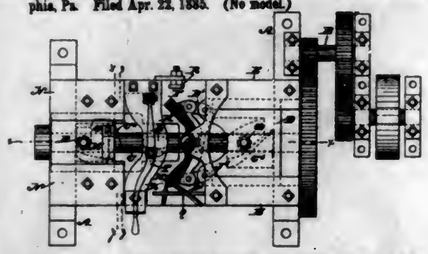
Claim.—1. A solid and continuous needle-bed having the slots *a*, in combination with needle-operating cams, and with shifters D, provided with arms d', rear-extending catches d^2, and lower rear-extending parts, D', having vertical projections d^3, hooks d^4, pins d^5, holes d^6, and wire springs d^7 on each side of the parts D' d^2, through the holes and around the pins named, and the needles E *e e'*, substantially as set forth.

2. The combination of the needle-bed A, solid and continuous at each end and at each side, a' and a^2, provided between said sides and ends with transverse slots or grooves *a a*, extending entirely through the bed from top to bottom, and having a longitudinal bevel-edged groove in its upper surface with the bevel-edged gib B, and rod C, located in a longitudinal groove in the lower surface of the bed beneath the gib, the needle-shifters D, having oval slots in their front ends, whereby they are hinged to said rod C, and the needles E, supported on said shifters, substantially as set forth.

3. The combination of the needle-bed A, solid and continuous, as described, and having the transverse slots *a a*, gib B, rod C, needles E, having heels *e* and feet *e'*, and shifters D, having oval slots *d* at one end, and arms d' at the other end, by means of which arms the feet *e'* of the needles are kept from rising when their hooks carry loops, substantially as set forth.

4. The combination of the solid and continuous needle-bed A, provided with the transverse slots *a a*, the gib B, rod C, needles E *e e'*, and the shifters D, having oval slots *d* at one end and at the other end the arms d', with rearwardly-extending catches d^3, and the lower rear-extending parts, D', having vertical projections d^3, hooks d^4, pins d^5, holes d^6, and wire springs d^7, extending on each side of the parts D' d^2 from the said holes d^6 and around the said pins d^5, all arranged and adapted to operate substantially as set forth.

321,734. LINK-BENDING MACHINE. WILLIAM R. LEWIS, Philadelphia, Pa. Filed Apr. 22, 1885. (No model.)



Claim.—1. In a link-bending machine, the bending-jaws H, in combination with links D', slide D, and means to give a reciprocal motion to said slide D, substantially as described.

2. In a link-bending machine, bending-jaws hinged or pivoted to a stationary cross-bar of the machine and to a slide on the machine, substantially as described.

3. A link-bending machine having a cam-shaft, a slide engaging therewith, and bending-jaws pivoted or hinged to said slide and to a stationary part of the machine, substantially as described.

4. In a link-bending machine, a die for bending the ends of the blank, formed with depressions, between which is a separating-rib, substantially as described.

5. In a link-bending machine, the die M, having its working-face formed with depressions for bending the ends of the blank and made laterally adjustable, substantially as described.

6. The former L, connected with a removable cross-head or support, K, in combination with hinged jaws H and die M, substantially as described.

7. The cam-shaft, slide, hinged jaws, former, and die, constructed, combined, and operating substantially as and for the purpose set forth.

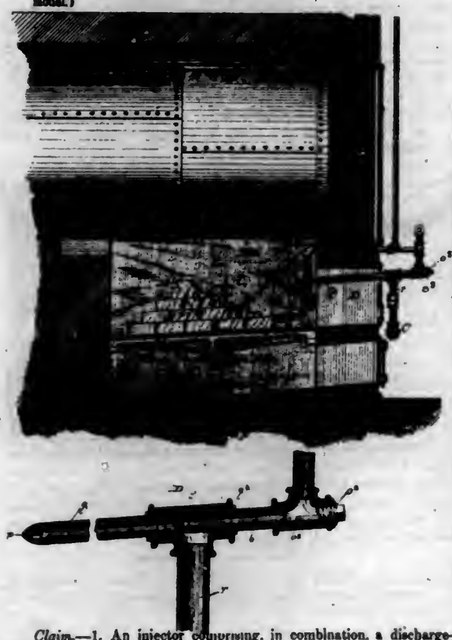
321,735. NUT-LOCK. JAMES M. LEDDELY, Grove City, Ill. Filed Feb 16, 1885. (No model.)



Claim.—1. In a nut-lock, the combination of a bolt having a longitudinal groove in its threaded portion, a nut having longitudinal grooves in its thread, a key fitting in the groove of the bolt and into a registering-groove in the nut, and a retaining-head having a notch in its edge corresponding to the groove in the bolt, and turning upon the end of the bolt, as and for the purpose shown and set forth.

2. The combination, in a nut-lock, of a bolt having a longitudinal groove in its thread and having a female threaded recess in its end, a nut having a number of longitudinal grooves in its thread, a key fitting into the groove of the bolt and into one of the grooves of the nut, and having a shoulder at its upper end, and a screw having its shank fitting into the recess in the end of the bolt, having its head fitting against the shoulder of the key, and having a notch in the end of its head corresponding to the groove in the bolt, as and for the purpose shown and set forth.

321,736. FUEL-INJECTOR FOR FURNACES. HENRY MASON, Chicago, Ill., assignor of three-fourths to James H. Hildreth, John Riordan, and W. E. S. Trowbridge, all of same place. Filed Feb. 7, 1885. (No model.)



Claim.—1. An injector comprising, in combination, a discharge-pipe provided toward one extremity with a flaring opening and communicating at its opposite extremity with the fuel-supply, and a pipe provided toward one extremity with a cylindrical orifice in line with said flaring opening, and communicating with the said discharge-pipe beyond the inlet of the said fuel-supply, and communicating toward its opposite extremity with a suitable steam-supply, substantially as described.

2. The combination, with a furnace, of an injector, D, projecting into the fire-chamber of the said furnace, and comprising the discharge-pipe *q*, provided toward one extremity with the flaring opening *p*, and a pipe, *o*, provided toward one extremity with a cylindrical orifice, *o'*, in line with the said flaring opening *p*, and communicating at its opposite extremity with a steam-superheater, *t*, connected with a suitable steam-supply, and a receptacle, B, for liquid fuel, supported to lie above the level of the point of introduction of the said injector into the said furnace, and communicating with the discharge-pipe *q* of the said injector on the lower side of the same, behind the forward extremity of the said orifice *o'*, the whole being constructed and arranged to operate substantially as described.

3. The combination, with a furnace, of an injector, D, projecting obliquely into the fire-chamber of the said furnace, containing piled fire-brick *m'*, and comprising the discharge-pipe *q*, provided toward one extremity with the flaring opening *p*, and a pipe, *o*, provided toward one extremity with a cylindrical orifice, *o'*, in line with the said flaring opening *p*, and communicating at its opposite extremity with a steam-superheater, *t*, connected with a suitable steam-supply, and a receptacle, B, for hydrocarbon oil, supported to lie above the level of the point of introduction of the said injector into the said furnace, and communicating with a discharge-pipe, *q*, of the said injector on the lower side of the same, behind the forward extremity of the said orifice *o'*, the whole being constructed and arranged to operate substantially as described.

4. The combination, with a furnace, of an injector, D, projecting obliquely into the fire-chamber of the said furnace, containing piled fire-brick *m'*, upon a layer of cinders on the grate-bars *m*, and comprising the discharge-pipe *q*, provided toward one extremity with the flaring opening *p*, and a pipe, *o*, provided toward one extremity with a cylindrical orifice, *o'*, in line with the said flaring opening *p*, and at its opposite extremity with a removable plug, o^2, and communicating toward said opposite extremity with a steam-superheater, *t*, connected with a suitable steam-supply, a receptacle, B, for hydrocarbon oil, supported to lie above the level of the point of introduction of the said injector into the said furnace, and communicating with the discharge-pipe *q* of the said injector on the lower side of the same, behind the forward extremity of the said orifice *o'*, and a pipe, C, forming the connection between the said receptacle B and injector D, and provided with a trap, *l*, having a suitable cock, *k*, the whole being constructed and arranged to operate substantially as and for the purpose set forth.

321,737. BIT FOR HORSES. DAVID MCCANCE, Newark, N. J. Filed Nov. 28, 1884. (No model.)

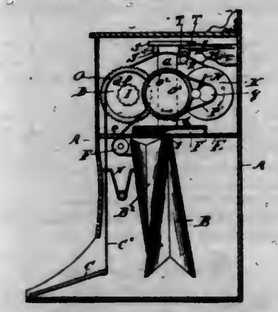


Claim.—1. In a bit, the combination of a resilient strip, pieces of leather arranged at the sides of the said strip, and clips or clamps for fastening cheeks or rings thereto, substantially as specified.

2. In a bit, the combination of a resilient strip, pieces of leather arranged at the sides of the said strip, clips embracing the ends of the pieces of leather and strip, and provided with spurs indenting themselves into the pieces of leather, and rivets passing through the strip, the pieces of leather, and the clips, substantially as specified.

3. In a bit, the combination of a resilient strip, pieces of leather arranged at the sides of the said strip, clips for fastening rings thereto, and a covering of leather, substantially as specified.

321,738. MECHANICAL MUSICAL INSTRUMENT. JOHN MCTAMMANY, Worcester, Mass., assignor to Alexander McTammany, same place. Filed Nov. 27, 1883. (No model.)



Claim.—1. In an automatic musical instrument, the combination of two treadles and their cords with two feeder or pump bellows, two disks on the shaft of a winding-roll and having a pawl-and-ratchet connection therewith, a drum arranged to engage with and turn said winding-roll, and a coiled spring attached at one end to the shaft and at the other to said drum, each cord being carried over one of said disks and then down to one of said feeder or pump bellows, in order that each motion of its treadle may operate the winding-roll shaft as well as the bellows, substantially as set forth.

2. In an automatic musical instrument, a winding-roll having the radial stud or projection *k'*, in combination with a spring-operated drum

and a bar or plate, L', which is adjustable so as to extend at will beyond the periphery of said drum for the purpose of being brought into contact with said stud, substantially as set forth.

3. In an automatic musical instrument, a winding-roll provided on one end thereof with a disk of larger diameter having a radial stud, *k'*, on its periphery, in combination with a spring-operated drum provided on its periphery with a slotted bar or plate, L', which is movable-longitudinally of said roll, so that it may be adjusted into or out of position to come in contact with said stud, substantially as set forth.

4. In an automatic musical instrument, the combination, with a lower feed-roll and a music-sheet, of a pivoted rack provided with two upper feed-rolls which bear against said lower feed-roll, substantially as described.

5. In an automatic musical instrument, a pivoted rack provided with a pressure-roll arranged to bear against the music-sheet in proximity to the reed-ducts, and two upper feed-rolls, in combination with the lower feed-roll, the reed-ducts, and the sound-producing devices, one of said upper feed-rolls being in the same vertical plane with the axis of the rack when the instrument is in readiness to operate, and said upper feed-roll being obliquely above and behind the central line of the lower feed-roll, substantially as set forth.

6. The combination of the case and sound-producing mechanism with a rack pivoted to said case or fixed attachments thereof, and adapted to hold the music-sheet in position, and bearings for the pivots of said rack, each bearing consisting of a fixed downwardly-curved piece and a spring-plate which bears up against said curved piece to close the bearing, though allowing the easy removal of said rack, substantially as set forth.

321,739. HOT-AIR ENGINE. JAMES J. MCTIGUE, Freeport, Pa. Filed Jan. 28, 1885. (No model.)



Claim.—1. A reverser-chamber for hot-air engines, divided into compartments, each compartment having a vibrating reverser, substantially as shown and described.

2. A reverser-chamber for hot-air engines, divided into compartments, each compartment having a vibrating reverser therein, and a working-cylinder communicating therewith, substantially as described.

3. A reversing device for hot-air engines, consisting of chambers, and a means, substantially as shown and described, for establishing communication between said chambers, whereby the superfluous pressure at the end of the stroke of the piston is transferred from one chamber to the other.

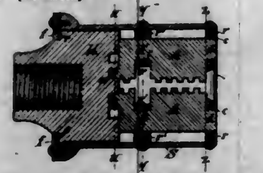
4. In a hot-air engine, the combination of a vibrating or rocking reverser and a heating or cooling device contained within the same chamber, substantially as described.

5. In a hot-air engine, the combination of a heater and cooler and a vibrating or rocking reverser contained within said chamber, substantially as described.

6. In a hot-air engine, the combination of chamber A, inclosing heating or cooling tubes C C', with vibrating reverser D, whereby the air is transferred from one side of the chamber to the other, substantially as described.

7. In a reverser for hot-air engines, the combination of heating and cooling devices with shunt or auxiliary passages connecting the ends of said reversing-chambers, substantially as described, whereby the air may be transferred from one end to the other without coming in contact with the heating or cooling devices.

321,740. LATHE-CHUCK. CHAS. R. MEAD, Community, N. Y. Filed Apr. 13, 1885. (No model.)



Claim.—1. The combination, with the chuck-head, of a sleeve arranged rotatively about said head and parallel with the axis thereof, journal-bearings on said sleeve eccentric to the axis of the chuck, and jaws pivoted in said bearings eccentrically in relation to the gripping-faces of the jaws, substantially as described and shown.

2. The combination, with the chuck-head provided with segmental cam-grooves *a a a* in the face thereof, of the sleeve S, arranged rotatively and confined longitudinally on the chuck-head, journal-bearings on the sleeve, and jaws pivoted in said bearings eccentrically in relation to their gripping-faces, and provided with lugs *b b b*, extending into the grooves *a a a*, substantially as described and shown.

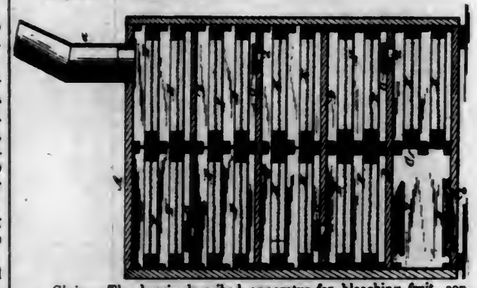
3. The combination, with the head H, of the rotary sleeve S, projecting from said head, journal-bearings attached to the interior of the projecting portions of the sleeve and equidistant from the center of the chuck, and jaws pivoted in said bearings eccentrically in relation to the gripping-faces of the jaws, substantially as described and shown.

4. In combination with the chuck-head H and the rotary sleeve S, projecting from said head and confined longitudinally thereon, the rings *r r'*, detachably connected to the interior of the sleeve, and provided with the journal-bearings *c c c*, and the jaws A A A, confined between the chuck-head and outer ring, *r*, and having eccentric journals *d d'* in the bearings *c c c*, substantially as described and shown.

5. In combination with the chuck-head H, rotary sleeve S, and jaws A A, having eccentric journals *d d'*, the ring *r*, secured to the outer end of the sleeve and provided with the journal-bearings *c c*, and the ring *r'*, composed of two detachable concentric annular sections arranged one surrounding the other, each provided with a portion of the respective journal-bearings *c c*, and the outer section being subdivided transversely and detachably connected to the sleeve, substantially as described and shown.

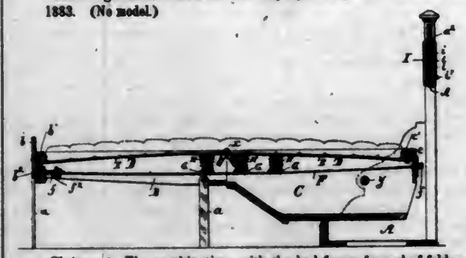
6. The improved chuck composed of the cylindrical head H, provided with the rabbet *e* and segmental cam-grooves *a a a*, the sleeve S, mounted loosely on said head and projecting therefrom, the band *f* on the sleeve, entering the rabbet *e*, the ring *r*, secured to the outer end of the sleeve, and provided with journal-bearings *c c*, the ring *r'*, composed of detachable sections detachably connected to the interior of the sleeve, and provided with journal-bearings *c c*, and the jaws A A, provided with journals *d d'*, eccentric in relation to the gripping-faces of the jaws, and lugs *b b* on the inner end of the jaws, extending into the grooves *a a*, all constructed and combined substantially in the manner specified and shown.

321,741. APPARATUS FOR BLEACHING FRUIT. AARON W. MILLER, WILLIAM BOWER, and ABNER W. COLEMAN, Newark, N. J. Filed Aug. 8, 1884. (No model.)



Claim.—The herein-described apparatus for bleaching fruit, consisting of the following elements in combination: the case A, vertical perforated partition C, horizontal partitions D, provided with openings at opposite ends, for the purposes described, valves G, to close or disclose said openings, the pan B, and shield *c*, all arranged and operating substantially as shown, and for the purposes described.

321,742. BEDSTEAD. ALBERT F. MILLER, Chicago, Ill., assignor, by mesne assignments, to the Burr Bed Company, same place. Filed Dec. 19, 1883. (No model.)



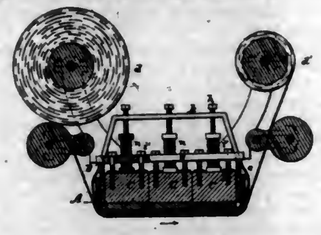
Claim.—1. The combination, with the bed-frame formed of folding sections, of a bottom-cover, a series of springs located centrally beneath said bottom-cover, a platform or slats for preventing disarrangement of said springs, and flexible cables for sustaining said platform connected to the ends of the bed-frame, substantially as described.

2. The combination, with the bed-frame formed of folding sections, of a flexible longitudinally-inelastic bottom-cover, a series of springs located beneath the central portion of said cover, a platform for sustaining said springs, and flexible cables for supporting said platform, substantially as described.

3. The combination, with a bed-frame formed of folding sections, of a flexible-wire bottom-cover having the straight wires E, extending longitudinally through the same and connected to the ends of the bed-frame, a series of springs located beneath the central portion of said cover, a platform or slats for preventing the disarrangement of said springs, and flexible cables for sustaining said platform or slats, substantially as described.

4. The combination, with the folding bed-frame and its head-board, of a top board having a flexible portion and a rigid portion, and brackets for sustaining said rigid portion in horizontal position, substantially as described.

321,743. PLATE-PRINTING MACHINERY. JAMES MILLIGAN, Brooklyn, N. Y. ELIZABETH R. MILLIGAN, executrix of said MILLIGAN, deceased. Filed Jan. 29, 1883. (No model.)



Claim.—1. A wiper for plate-printing presses, consisting of a single pad, springs, and a backing set to secure a gradually-increasing spring-pressure toward the back of the pad, and a cloth traversing the face of the pad, substantially as set forth.

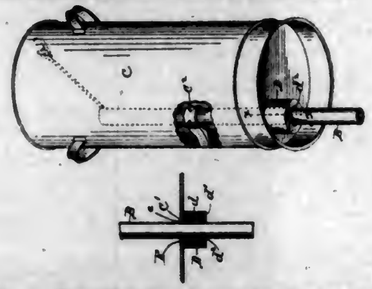
2. The combination of a single wiping-pad, a backing constructed to secure increased pressure as the plate passes beneath the pad, adjustable spring-bearings for the backing, and appliances for reciprocating the pad in respect to the plate, substantially as specified.

3. The combination, in a mechanical wiper, of a single pad, a backing consisting of a series of pieces, and means for adjusting said pieces to different heights, substantially as set forth.

4. The combination of a single pad, the backing, adjustable devices for limiting the vertical movements of the latter, and springs interposed between the backing and its bearings, substantially as specified.

5. The frame carrying a backing consisting of a series of independent pieces and a single pad extending below the same, in combination with devices for adjusting the pieces independently, and with spring-bearings and devices for varying the pressure of the springs, substantially as set forth.

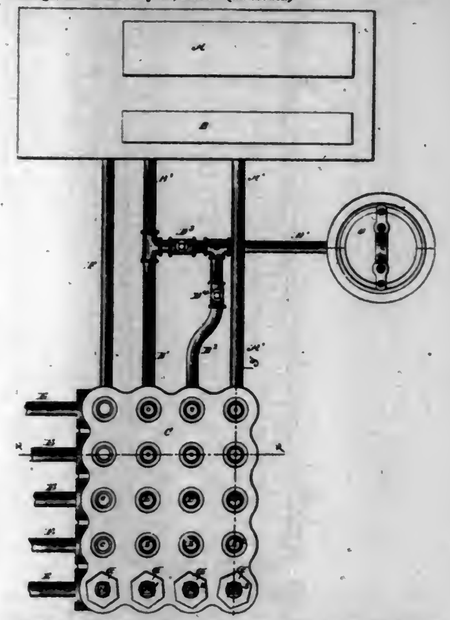
321,744. CREAMING-CAN. GEORGE W. MILLER, Charlottetown, Prince Edward Island, Canada. Filed Mar. 17, 1885. (Model.)



Claim.—1. The combination, with the can having an opening, C', and a hook, C^3, fixed within said can near its upper end, of the tube movable longitudinally through the opening C', and a handle pivoted at one end to the tube, and having its other end supported on the hook C^3, substantially as set forth.

2. The combination, substantially as herein set forth, of the can having an opening, C', a guide, C^4, secured in the can in line with opening C', a hook, C^3, secured within and close to the top of the can, the tube movable longitudinally through guide C^4 and opening C', and handle B', pivoted at one end to the tube, and provided at its other end with a hand-hold, *b*, adapted to engage and be held by the hook C^3, substantially as set forth.

321,745. HYDRAULIC PRESS ATTACHMENT. OLIVER R. NELSON, Chicago, Ill. Filed July 27, 1883. (No model.)



Claim.—1. The combination, with the pump, change-block, and accumulator, of a pipe leading from the pump to the accumulator and having a check-valve, a pipe also provided with a check-valve leading from the accumulator to the change-block, and valved passages in the change-block communicating with pipes adapted to connect with several presses, whereby the accumulator may act upon a standing-press while another press is being pressed up, substantially as described.

2. The combination, with a pump, change-block, and accumulator, of a valved pipe leading from the pump to the accumulator, and a pipe leading from the pump to the change-block, a pipe leading from the accumulator to the change-block and provided with a leaking valve, and valved passages in the change-block communicating with pipes adapted to connect with several presses, substantially as and for the purpose described.

3. In combination with the pump and accumulator of a hydraulic pressing apparatus, the change-block provided with a pump chamber or chambers, a discharge-chamber, press-chambers transverse to the pump and discharge chambers, and connecting-passages and valves, and also provided with a chamber, C^2, communicating with the accumulator and with the press-chamber C^3, the valve I' in the passages *c*, means for holding said valve closed, a check-valve in the pipe leading from the pump to the accumulator, and a leaking check-valve, D^4, in the pipe leading from the accumulator to the chamber C^2 of the change-block, substantially as described.

321,746. APPARATUS FOR MIXING, HEATING, AND DRYING SUGAR, &c. GEORGE M. NEWHALL, Philadelphia, Pa. Filed Apr. 27, 1885. (No model.)

Claim.—1. A mixer and conveyer consisting of a horizontal or nearly horizontal revolving drum provided with inwardly-projecting or transverse blades with inclined faces, the said blades being adapted to cut through the material under treatment and feed it forward as the drum revolves, substantially as and for the purpose set forth.

2. A mixer and conveyer consisting of a revolving drum provided with inwardly-projecting blades having inclined faces and adjustable to vary their inclination, substantially as described.

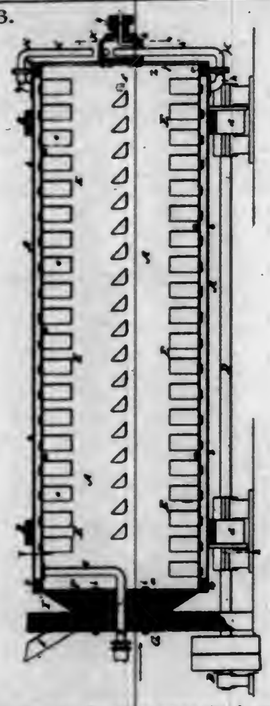
3. A mixer and conveyer consisting of a revolving jacketed drum provided with hollow inwardly-projecting stirring and feeding blades, as specified.

4. The combination of the revolving drum with a fixed filling plate or head, F, in the end thereof, and a chute, *f*, supported thereby, substantially as described.

5. The combination of the revolving jacketed drum with an outlet-pipe, H, connected to the outer of the two cylinders and communicating with a central escape-pipe in line with the axis of the drum, the said pipe having a bent neck or trap, *h*, as and for the purpose set forth.

6. The combination of the revolving jacketed drum carrying a series of bent discharge-pipes, H, connected to the outer cylinder of the jacket,

321,746.

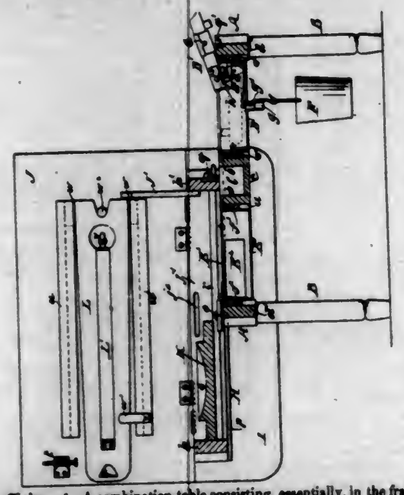


and a central receiving-box, K, with an escape-pipe, *k*, opening into said box, substantially as described.

7. The combination of the revolving jacketed drum, having a discharge-pipe, H, connected to the outer cylinder of the drum, and bent as described, and provided with a lip to prevent the return of the water of condensation to the jacket, as set forth.

8. The combination of a heated mixing-conveyer with a heated distributing-conveyer into which said mixing-conveyer discharges, as set set forth.

321,747. COMBINATION-TABLE. GEORGE D. OVERIN and OTTO MEYERS, New York, N. Y. Filed July 25, 1884. (No model.)



Claim.—1. A combination-table consisting, essentially, in the frame provided in its upper part with a sink and a bread-box, the frame H, constructed to slide on the upper edge of the frame A, and provided with a bread-board, the top J, hinged at one edge to the frame H, and an ironing-board sliding in ways on the under side of the top J, whereby when the top is raised and the frame H is moved to one side the sink, bread-box, and bread-board may be used, and when said top is down the ironing-board may be brought into use in the manner described.

2. In a combination-table, the frame A, the sink D in the upper side thereof, the drainer D′, hinged to the frame at one end to fold within the sink or fold outward at an inclination thereto, and the hinged table-top, all constructed and combined, substantially as set forth, whereby when said table-top is raised the sink and the drainer may be used.

3. In a combination-table, the frame A, the bread-box E, and the sink D in the upper side thereof, the cutlery-trays E′ within the bread-box, the drainer D′, hinged within the sink, and the hinged table-top J, all constructed and combined substantially as set forth.

4. In a combination-table, the frame A, the sliding frame H on the upper edge thereof, the reversible bread and chopping board K thereon, and the top J, hinged at one edge to said sliding frame, all constructed and combined substantially as set forth.

5. In a combination-table, the frame A, having compartments in its upper side, the hooks *m*, the sliding frame H on the upper edge of said frame A, and having grooves *l* in its side pieces, the said hooks *m* engaging said grooves, latch *q*, and catch *q′* on said frames for locking them together, and the hinged top J, all constructed and combined substantially as set forth.

6. In a combination-table, the frame A, the sliding frame H on top thereof, and the top J, hinged to said sliding frame, and leaves I, hinged to the top J, all constructed and combined substantially as set forth.

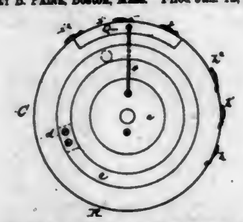
7. In a combination-table, the frame A, having a sink, D, the sliding frame H, and the top J, hinged at one edge to the sliding frame, all constructed and combined substantially as set forth.

8. In a combination-table, the frame A, having a sink, D, a drainer, D′, hinged within the sink, a soap-receptacle, G, removably secured to the side of the drainer, the sliding frame H, and the top J, hinged to the top of the frame H, all constructed and combined substantially as set forth.

9. In a combination-table, the frame A, provided with the sink D, bread-box E, compartment C, sliding frame H, and the top J, hinged to the sliding frame, all constructed and combined substantially as set forth.

10. In a combination-table, the frame A, the hinged top J, having ways *u* on its under side, the ironing-board L, sliding therein, and the folding leg L′, hinged to the said board, all constructed and combined substantially as set forth.

321,748. REGULATOR FOR ELECTRIC LIGHTS. WALTER J. PAINE and SIDNEY B. PAINE, Boston, Mass. Filed Jan. 12, 1885. (No model.)



Claim.—1. The combination, with groups of incandescing electric lamps, of a regulating-switch having moving and stationary contacts, constructed and connected to throw the lamps into arrangements in series, and a resistance and contacts for throwing such resistance into connection with the groups successively, substantially as set forth.

2. The combination, with two or more groups of lamps connected directly part with one side of the circuit and part with the other side, of a regulating-switch, with which such groups are also connected, the current flowing to and from the switch through lamps, substantially as set forth.

3. The combination, with two or more groups of lamps connected directly part with one side of the circuit and part with the other side of the circuit, of a regulating-switch having contacts with which said groups are also connected, and contacts for connecting and disconnecting the group-contacts on the switch for throwing the groups into and out of series, substantially as set forth.

4. The combination, with groups of lamps connected directly part with one and part with the other side of the circuit, of a regulating-switch with which said lamps are also connected, and a resistance with which the groups are successively connected, substantially as set forth.

5. The combination, with groups of lamps connected directly part with one and part with the other side of the circuit, of a regulating-switch with which said lamps are also connected, contacts for connecting and disconnecting the groups in series at the switch, and a resistance with which the groups are successively connected, substantially as set forth.

6. The combination, with groups of lamps, of two main conducting-wires extending to said groups which are connected directly part with one and part with the other side of the circuit, a regulating-switch having direct connections to both sides of circuit, and connections between the contacts of said switch and all of said groups, substantially as set forth.

7. The combination of two or more sets of lamps, each composed of two or more groups, one or more regulating-switches for regulating the candle-power of the lamps, and a separate circuit making and breaking switch for each set of lamps, whereby any set of lamps can be removed from the action of the regulating-switch, substantially as set forth.

8. The combination, with two or more sets of lamps, each composed of two or more groups, a separate candle-power-regulating switch for each set, and a driving mechanism connecting the switches mechanically for simultaneous operation, substantially as set forth.

9. The combination, with two or more sets of lamps, each composed of two or more groups, a separate candle-power-regulating switch for each set, a common driving mechanism for the two or more switches, and devices permitting each switch to be connected with such driving mechanism or disconnected therefrom independent of the other switch or switches, substantially as set forth.

10. The combination, with two or more sets of lamps, each composed of two or more groups, of the separate regulating-switches, one for each set, having spindles capable of longitudinal movement and carrying gear-wheels, a central gear-wheel for operating the switches together, a catch for locking each switch-wheel in gear with the driving-wheel, and a spring for throwing each switch-wheel out of gear with the driving-wheel, substantially as set forth.

11. The combination, with two or more sets of lamps, each composed of two or more groups, and separate regulating-switches, one for each set, of the driving-wheel, the switch-wheels on spindles parallel to that of driving-wheel and adapted to be moved into and out of gear with the driving-wheel, the teeth of the wheels being beveled on opposing faces, substantially as set forth.

12. The combination, with two or more sets of lamps, each composed of two or more groups, and separate regulating-switches, one for each set of the driving-wheel, the switch-wheels engaging the driving-wheel for a part only of their circumference, and the stops and spring-arms, substantially as set forth.

13. In a regulating-switch, the combination of the pole-plates N⁺ M⁻ with the bridging contact-plates O O′, and the two sets of fingers connected through lamps to opposite sides of the circuit, substantially as set forth.

14. In a regulating-switch, the combination of the pole-plates N⁺ M⁻ with the resistance contacts and springs, the resistance-plates P P′, bridging-plates O O′, and the two sets of fingers connected through lamps to opposite sides of the circuit, substantially as set forth.

15. The combination, with two or more lamps or groups of lamps, of switching-contacts for throwing a lamp or group of lamps from a series to a multiple-arc arrangement, and vice versa, the contacts being constructed and arranged relatively, substantially as described, whereby these changes will be effected without breaking the circuit of or extinguishing the lamp or group of lamps, substantially as set forth.

16. The combination, with two or more lamps or groups of lamps, of an adjustable resistance and switching-contacts for throwing a lamp or group of lamps from a series arrangement into connection with said resistance and into a multiple-arc arrangement, or vice versa, the contacts being constructed and arranged relatively, substantially as described, whereby these changes will be effected without breaking the circuit of or extinguishing the lamp or group of lamps, substantially as set forth.

17. The combination, with a current-supplying circuit of lamps and a regulating-switch connected to both sides of the circuit, of a resistance arranged, substantially as described, to be thrown by said switch into connection with either side of the supplying-circuit, substantially as set forth.

18. The combination, with a regulating-switch, of a resistance connected with the switch-contacts, substantially as described, whereby it will be thrown into circuit successively with different lamps or groups of lamps, the switch-contacts for said resistance being arranged to throw the resistance into connection with the lamps or groups of lamps at different points, whereby the initial incandescence of the lamps or groups so connected will be varied, substantially as set forth.

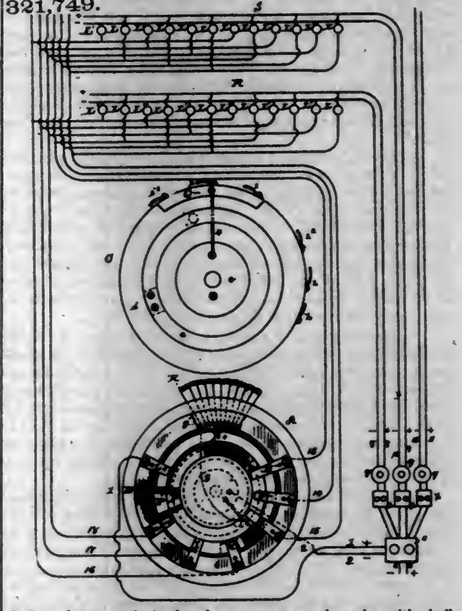
321,749. METHOD OF REGULATING ELECTRIC LIGHTS. WALTER J. PAINE and SIDNEY B. PAINE, Boston, Mass. Filed May 23, 1885. (No model.)

Claim.—1. The method herein described of raising and lowering the candle-power of incandescing electric lamps, consisting in throwing groups of lamps into and out of circuit successively, and varying the candle-power of the lamps of each group in succession by throwing them into and out of series with other lamps and into and out of connection with external resistance.

2. The method herein described of raising and lowering the candle-power of a group of incandescing electric lamps, consisting in throwing such group into series with a progressively increasing or decreasing number of similar groups.

3. The method herein described of raising or lowering the candle-power of a group of incandescing electric lamps, consisting in throwing it through progressively-changing arrangements in series with similar groups and then into connection with a gradually increased or decreased resistance.

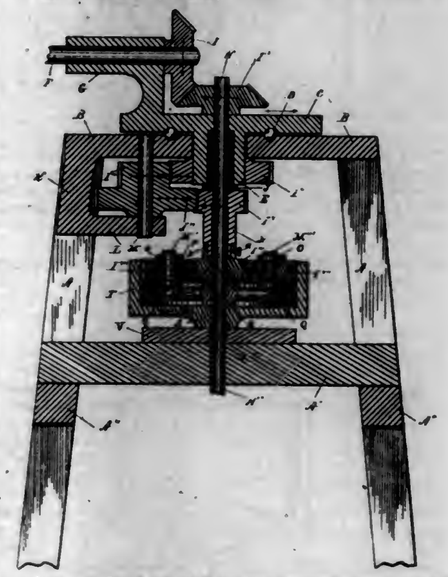
321,749.



4. The method herein described of raising and lowering the candle-power of incandescing electric lamps, consisting in throwing them into and out of circuit in groups successively, and passing them while in circuit through progressively-changing arrangements in series.

5. The method herein described of raising and lowering the candle-power of incandescing electric lamps, consisting in throwing them into and out of circuit in groups successively, and passing them while in circuit through progressively-changing arrangements in series, and successively into connection with a gradually increased or decreased resistance.

321,750. WINDMILL-GEARING. GEORGE H. PATTISON, Freeport, Ill. Filed June 2, 1885. (No model.)



Claim.—1. In a windmill of the class described, the combination of a rotating turn-table, a wind-wheel shaft journaled therein, and a gear formed upon or rigidly attached to the turn-table, a vertical shaft

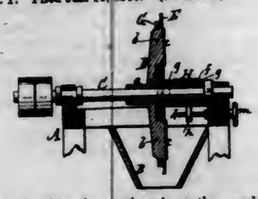
journaled in the turn-table and connected by suitable gears with the wind-wheel shaft, a power-transmitting internal gear having its axis coincident with the axis of said vertical shaft, a planet-gear supported by and rotating bodily with said vertical shaft and engaging with said internal gear, a gear mounted loosely on said vertical shaft and engaging with said planet-gear, and gearing connecting said loosely-mounted gear and said turn-table gear, whereby the rotation of either the turn-table gear or the loosely-mounted gear rotates the other at a different rate of speed.

2. The combination of a turn-table rotating freely about the vertical axis of the mill, a wind-wheel shaft journaled in said turn-table, a vertical shaft also journaled in the turn-table, and gearing connecting the wind-wheel shaft and said vertical shaft, a spur-gear, I'', rigidly mounted on the turn-table, a power-transmitting internal gear, T, independent of the vertical shaft, a planet-gear, I^{iv}, supported by said vertical shaft and engaging with said internal gear, a loosely-mounted gear, I^{v}, turning freely on said vertical shaft, and gearing connecting the gears I^{v} I'', whereby the gear I^{v} is rotated at a higher rate of speed than the gear I'', substantially as and for the purpose set forth.

3. The combination of the turn-table, the spur-gear I'', rigidly mounted thereon, and the vertical shaft H', journaled therein, the power-transmitting internal gear, T, the planet-wheel I^{iv}, supported by the vertical shaft H and engaging with said internal gear, the gear I^{v}, loosely mounted on said vertical shaft and engaging with said planet-wheel, and gearing, substantially as shown and described, connecting the gears I'' I^{v}, whereby the rotation of the turn-table, when the internal gear is stationary, rotates the shaft H in the same direction and at the same rate of speed, substantially as and for the purpose set forth.

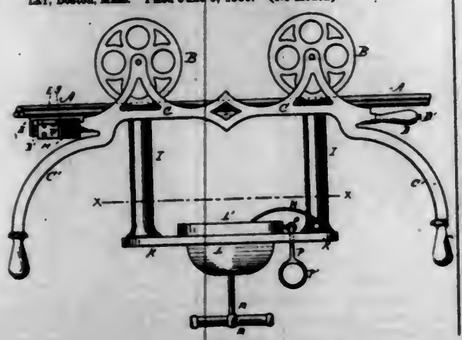
4. The combination of the turn-table, the wind-wheel shaft journaled therein, and the beveled gear I, mounted on said wind-wheel shaft, the vertical shaft H and the beveled gear I', engaging with the gear I, the power-transmitting internal-gear, T, the planet-gear I^{iv}, supported by and turning bodily with the shaft H and engaging with the internal gear, T, the loosely-mounted gear I^{v}, engaging with the planet-gear, and the gear I', turning with said gear I^{v}, the turn-table gear I'', and the gears I^{iv} I'', connecting the gears I'' I', whereby, when the internal gear, T, is held stationary and the gear I^{v} is rotated, the turn-table gear I'' and the shaft H are rotated in the same direction and at the same rate of speed, substantially as shown and described, and for the purpose set forth.

321,751. MACHINE FOR CUTTING MEAT. BENJAMIN F. PENNY, Rochester, N. Y. Filed Jan. 10, 1885. (No model.)

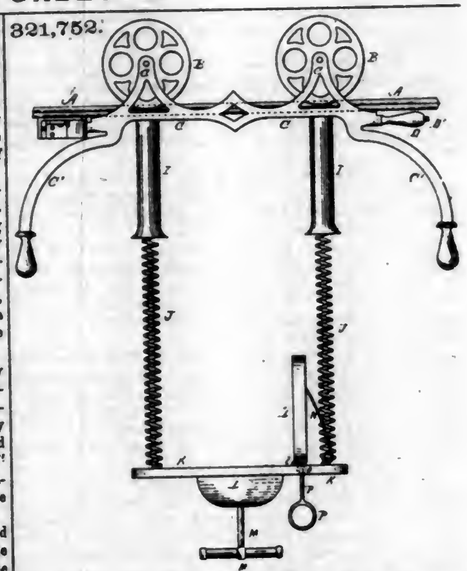


Claim.—In a machine for cutting meat, the combination of the shaft C, driven by band or gear, the disk D, permanently fastened to the shaft, provided with offset-lugs *b b*, having the cutters attached thereto, the face-plate E, and its disk G, moving freely on the shaft and having holes *d d*, which pass over the lugs, the spool *f*, attached to the face-plate, the collar H, fitted loosely on the spool and resting between the shoulders of the same, the arm *h*, projecting from the collar, and the screw *k*, connected with the arm, the whole arranged to operate in the manner and for the purpose specified.

321,752. CASH-CARRIER. FRANCIS C. PERKINS and CHARLES H. KELLEY, Boston, Mass. Filed June 5, 1885. (No model.)



321,752.



Claim.—1. The plate E E', secured to the track, and the blocks F, pivoted at *f* to said plate, and provided with the springs H, in combination with the frame C, provided with the bulb-shaped projections D, substantially as and for the purpose set forth.

2. The vertical tubes I, extending downward from the frame of the cash-carrier, and containing the springs J, secured at the upper ends of said tubes, in combination with the cash-box frame K, secured to the lower ends of said springs, substantially as and for the purpose described.

3. The cash-box frame K, provided with the spring N, in combination with the cover L' of the cash-box hinged to said frame, substantially as and for the purpose set forth.

4. The combination of the cash-box frame K, provided with the spring N, the cash-box cover L', hinged to said frame and provided with the hooks O, and the wire P P' depending from said hooks through said frame, substantially as and for the purpose described.

5. The combination of the frame C, provided with the tubes I, the springs J, cash-box frame K, provided with the spring N, the cash-box cover L', provided with the hooks O and wire P P', the cash-box L, and handle M, substantially as and for the purpose set forth.

321,753. ROPE DRILL-JAR. CHAS. PHILLIPS, Richburg, N. Y. Filed May 11, 1885. (No model.)

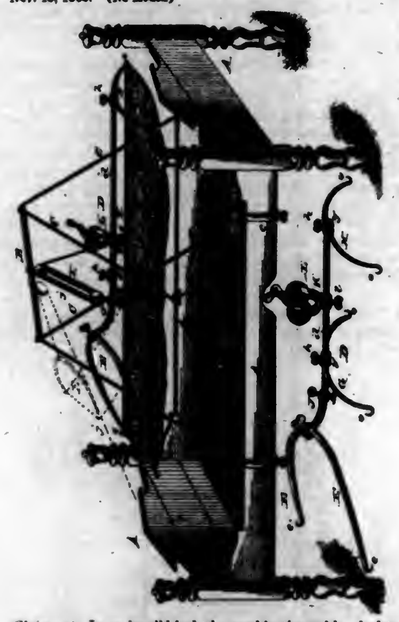


Claim.—1. In jars for drilling machinery, the combination, with the drill-stem having the vertical slot and the grooves extending from the same to the top of the handle, of the jar-box having the inclined perforations, the rope-bight, and the keys passing through transverse perforations in the jar-box between the ends of the rope-bight, for the purpose set forth.

2. In jars for drilling machinery, the combination of the jar-box having the inclined apertures, the rope-bight, the drill-stem having the vertical slot and the grooves extending from the same to the top of the handle, and the removable grooved steel block, arranged as described, for the purpose set forth.

3. In jars for drilling machinery, the combination, with the drill-stem having the vertical slot and the grooves extending from the same to the top of the handle, and the removable grooved steel block, of the rope-bight, and the jar-box having inclined apertures and provided with the transverse keys, arranged to operate for the purpose set forth.

321,754. INVALID-BED. HERMAN PISTORIUS, Saginaw, Mich. Filed Nov. 13, 1883. (No model.)



Claim.—1. In an invalid-bed, the combination, with a bedstead, of a transverse bar and braces for supporting the latter, a frame suspended from said bar, and consisting of a longitudinal rod and yokes formed with hooks, and a sheet or hammock suspended from said frame, substantially as set forth.

2. In an invalid-bed, the combination, with a transverse bar and its supporting-braces, of a longitudinal rod suspended from said bar, a windlass located on said rod, pulleys secured, respectively, upon said bar and rod, an elevating-rope, a hammock, and adjustable yokes supporting the latter, substantially as set forth.

3. In an invalid-bed, the combination, with a transverse bar and its supporting-braces, of a longitudinal rod suspended from said bar, adjustable arms or yokes, adjustable rings or eyes, and elevating reels and cords, substantially as set forth.

4. In an invalid-bed, the combination, with a transverse bar and its supporting-braces, of a longitudinal rod suspended from said bar, arms or yokes supported upon said bar and formed with hooks, and a sheet or hammock formed with an opening, as described, and with flaps N and O, substantially as set forth.

321,755. SCREW-CUTTING DIE. ANDREW J. POLK, Millersburg, Pa. Filed Dec. 20, 1884. (No model.)



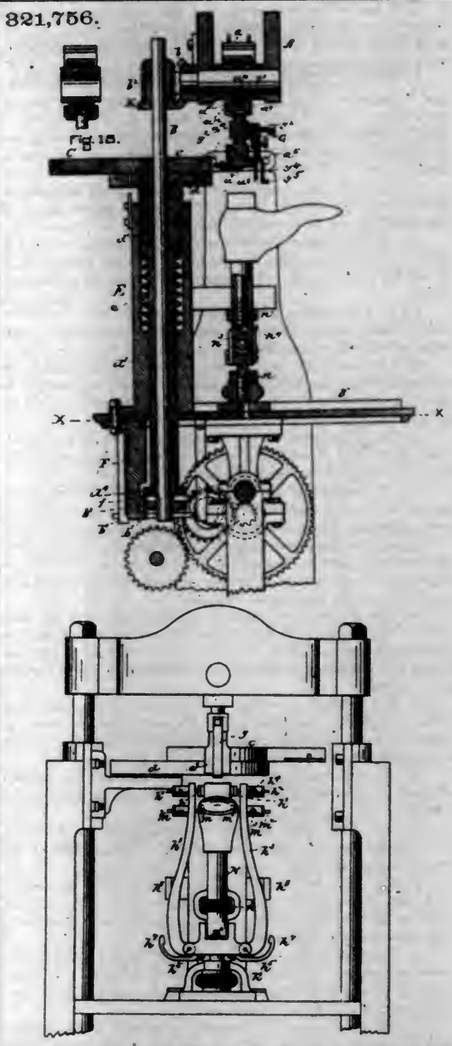
Claim.—1. A screw-cutting die consisting of a single piece of metal having a central orifice, a longitudinal split at one side, a tapering screw-threaded hole running parallel to said split, and a tapering screw fitting in said hole, substantially as described.

2. The combination, with a cylindrical die having a slot at one side and a depression at the other, of a stock having screw-threaded handles adapted to screw into the stock, their ends projecting, respectively, into said slot and depression, substantially as described.

3. The combination, with die-stock A, having opening A', for the reception of a die and handles, B B', whose ends project into said opening, of die C, having split C' at one side, tapering hole F, receiving tapering screw G, slot *c'*, and depression *c*, all constructed and arranged substantially as described.

321,756. HEEL-NAILING MACHINE. FREEBORN F. RAYMOND, 2d, Newton, Mass. Filed Apr. 25, 1884. (No model.)

321,756.



Claim.—1. The heel-nailing machine provided with a rotating head having carrying-arms upon which are mounted, respectively, heel-piercing, nail-driving, top-lift-spanking, and heel-breasting devices, in combination with a support for the boot or shoe.

2. The heel-nailing machine provided with a rotating head having carrying-arms upon which are mounted, respectively, heel-piercing, nail-driving, top-lift-spanking, and heel-breasting devices, in combination with a cross-head for reciprocating the same, and a support for the boot or shoe.

3. In a heel-nailing machine, the combination of the nail-holder plate *c*, its nail-holder C, and mechanism, substantially as described, for automatically oscillating it upon an arc of a circle into and out of operative position.

4. In a heel-nailing machine, the combination of the templet-plate *d*, the templet D, the shaft B, and means, substantially as specified, for oscillating the templet automatically upon an arc of a circle into and out of operative position, substantially as specified.

5 In a heel-nailing machine, the combination of the templet-plate *d*, the templet D, the nail-holder plate *c*, the nail-holder C, and means, substantially as specified, for operating the same automatically upon an arc of a circle into and out of operative position, substantially as described.

6. The combination of the templet D, nail-holder C, and mechanism, substantially as described, for moving them automatically upon an arc of a circle into and out of operative position, and suitable heel-attaching devices, substantially as described.

7. A heel-nailing machine provided with a templet, D, and a nail-holder, C, and mechanism, substantially as described, for moving them automatically upon an arc of a circle into and out of operative position, and suitable heel attaching and breasting devices.

8. In a heel-nailing machine, the combination of a reciprocating head having arms shaped, as described, for supporting blocks carrying, respectively, a gang of awls, a gang of drivers, and a heel-spanker, or either of them, with the springs or spring resting in sockets in the rear of the shanks of said blocks, all substantially as and for the purposes described.

9. In a heel-nailing machine, the combination of the cross-head A, the heel-breasting block g', spring g^4, knife a^3, and presser-foot g^3, all substantially as and for the purposes described.

10. The combination, in a heel-nailing machine, of the cross-head A, block g', carriage g, horizontally adjustable thereon, the spring g^2, knife a^3, and the presser-foot g^3, all substantially as and for the purposes described.

11. In a heel-nailing machine, the combination of the nail-holder plate c, shaft B, gear b^9, sector b^4 b^5, the cam b^{12}, and connecting mechanism, substantially as specified.

12. In a heel-nailing machine, the combination of the head a, the nail-carrier plate c, the shaft B, the sector b^4, pivoted as described, its arm b^7, the sliding bar b^8, operated by a cam, all substantially as and for the purposes set forth.

13. The combination of the templet-plate d, its shaft d^3, gear-wheel d^6, sector d^5 d^6, connecting-rod d^7, and cam d^9 for operating the same, all substantially as and for the purposes described.

14. The combination of the templet-plate d, its support d' and d^3, the post E, extended about said support d, and suitable operating mechanism, all substantially as and for the purposes described.

15. The combination of the post E, the tubular shaft d^3 for operating the templet-plate, and the shaft B within the tubular shaft for operating the nail-holder plate, and suitable operating mechanism, all substantially as and for the purposes described.

16. The combination of the reciprocating cross-head A, the head a carried thereby, the shaft B, and means for moving it a portion of a revolution forward and back, consisting of the sector b^4, cam b^{12}, and intermediate connecting mechanism, all substantially as and for the purposes described.

17. In a heel-nailing machine, the combination of the arms h^3, supporting the yielding heel-blank guides h h', and shoe-guides m m', or either, and means for moving them laterally toward each other, all substantially as and for the purposes described.

18. The combination of the nail-holder plate c, and the movable nail-holder C and spring P, all substantially as and for the purposes described.

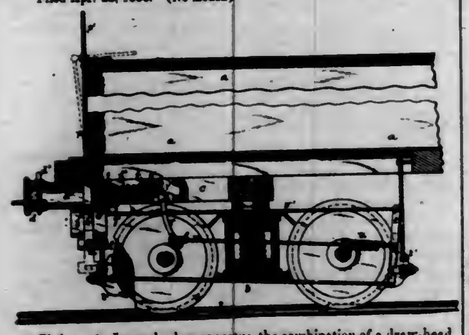
19. In a heel-nailing machine, the combination of a jack-post, hinged as described, the stop n^3, and spring n^4, all substantially as and for the purposes described.

20. The combination, in a heel-nailing machine, of the templet, and mechanism, substantially as described, for moving it vertically, with the hinged or pivoted jack adapted to be moved beneath and from the templet, all substantially as described.

21. The combination, in a heel-nailing machine, of the templet, and means, substantially as described, for moving it horizontally, with the hinged or pivoted jack adapted to be moved beneath and away from the templet, all substantially as described.

22. The combination, in a heel-nailing machine, of the templet, suitable heel-nailing devices, and a hinged jack provided with guides h h' m m' carried thereby, all substantially as described.

321,757. CAR-BRAKE. ABRAM REESE, Pittsburg, Pa., assignor to Harry W. Reese, same place, and Robert C. Totten, Allegheny City, Pa. Filed Apr. 22, 1885. (No model.)



Claim.—1. In car-brake apparatus, the combination of a draw-head, a draw-bar, a movable plate extending into the draw-head in front of the draw-bar, and suitable connection between the draw-bar and car-brakes.

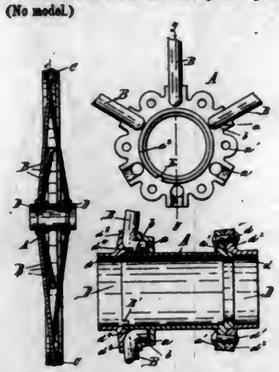
2. In car-brake apparatus, the combination of a draw-head, a draw-bar, a movable plate extending into the draw-head in front of the draw-bar, and lever mechanism for moving said plate.

3. In car-brake apparatus, the combination of the draw-head, the draw-bar, the movable plate h, extending into the draw-head in front of the draw-bar, and having a shoulder, i, and the bracket k, having a guide-slot therein, substantially as and for the purposes set forth.

4. In car-brake apparatus, the combination of the draw-head, the draw-bar, the movable plate h, extending into the draw-head in front of the draw-bar, and having the slot l, open at the back, and the lever m, fitting in said slot, substantially as and for the purposes set forth.

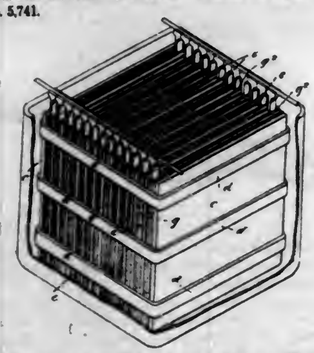
5. In car-brake apparatus, the combination of the draw-head, the draw-bar, the movable plate h, extending into the draw-head in front of the draw-bar, and having the shoulder i and slot l, open at the back, the bracket k, having the guide-slot open at the front, and the lever m, fitting in the slot l, substantially as and for the purposes set forth.

321,758. VEHICLE-WHEEL. MARSHALL SATTLEY, Taylorville, Ill., assignor of one-third to Archibald Sattley, same place. Filed Sept. 10, 1884. (No model.)



Claim.—The herein-described vehicle-wheel, consisting of the cylindrical hub A, having formed on its exterior, near each end, the independent sockets a and the perforated lugs a', arranged between the said sockets, the rim C, the spokes B, secured thereto and having their inner ends bent inward to enter the sockets a, the caps D, cut away at d to fit over the ends of the hub A, and provided at their edges with the half-seats d^2 to rest against the spokes, and the perforated lugs d^2, arranged opposite the lugs a', and suitable bolts or rivets, d', passing through the lugs a' and d^2 to secure the caps in place, substantially as and for the purposes specified.

321,759. SECONDARY BATTERY OR ELECTRICAL ACCUMULATOR. JOHN S. SELLON, Hatton Garden, County of Middlesex, England. Filed Mar. 27, 1884. (No model.) Patented in England Dec. 14, 1883, No. 5,741.



Claim.—1. In a secondary battery, and in combination with positive and negative plates thereof, interposed distance-plates formed of strips of wood or similar stiff non-conducting material connected by threads to form a matting, substantially as described.

2. The combination, with the series of positive and negative plates of a secondary battery and the clamping means for binding them together, of interposed distance-pieces of rigid non-conducting material provided with longitudinal grooves or passages for permitting the escape

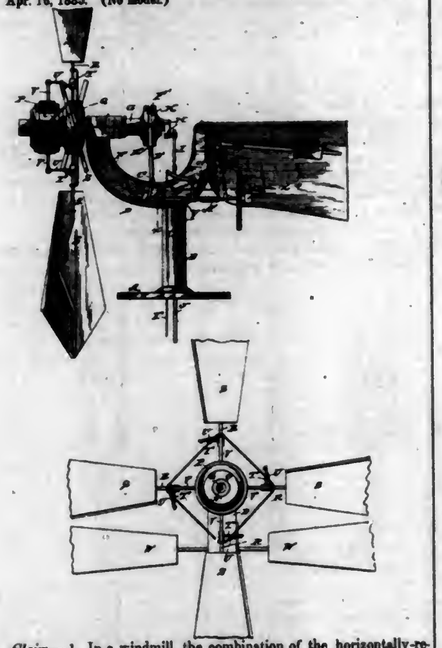
of the gases, said distance-plates covering the faces of the battery-plates and being separated from one another, so as to bear upon the battery-plates with a degree of pressure depending upon the force of the clamping means, substantially as described.

3. The combination, with the battery-plates, of rigid spacing-pieces interposed between the plates having the parts joined by an elastic connection, substantially as described.

4. A secondary battery or electric accumulator comprising battery-plates, the negative being of larger superficial area than the positive, porous active material, or material to become active, applied thereto, the larger proportion being carried by the negative plates, separating-pieces of rigid non-conducting material, such as specified, and clamping devices, substantially as described.

5. A secondary battery having the negative plates or elements of greater superficial area than the positive plates or elements, and having the larger amount of active material applied thereto, but containing in the frame or support a smaller quantity of solid metallic lead or other material than said positive plates or elements, substantially as described.

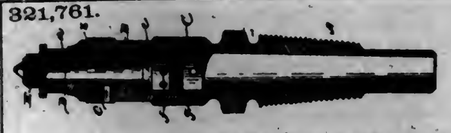
321,760. WINDMILL. ALFRED L. SHERRED, Venango, Pa. Filed Apr. 16, 1885. (No model.)



Claim.—1. In a windmill, the combination of the horizontally-revolving frame, the tubular shaft journaled in the same and having a straight and a diagonal slot, respectively, near its rear and its front ends, a sliding hub having a lug or stud extending through the straight slot, a sliding hub having a lug extending through the diagonal slot, a rod connecting the said lugs, a stationary collar having pivoted vanes, rods connecting the shanks of said vanes with the front sliding collar, and mechanism connecting the rear sliding collar with the regulating-vanes, substantially as and for the purpose set forth.

2. In a windmill, the combination of the revolving frame or bracket, the tubular shaft, the stationary collar or hub having the pivoted vanes, the sliding adjusting-collars connected by a rod extending through the longitudinal tubular shaft, the stationary vertical tail-vane, the horizontal regulating-vanes hinged to the latter, forwardly-extending rods pivoted to the shanks of said regulating-vanes, a rock-shaft having arms connected with one of said rods and with an annular groove in the rear adjusting collar, an adjusting bell-crank connected with said rod, and a weighted lever connected by a pivoted arm with the said vane-rod, substantially as and for the purpose set forth.

321,761. GAGE-COCK. LEVI SHOOK, Pittsburg, Pa. Filed May 9, 1885. (No model.)



Claim.—1. In a gage-cock, the combination of the valve with the stem and the steel strengthening center piece, substantially as shown and described.

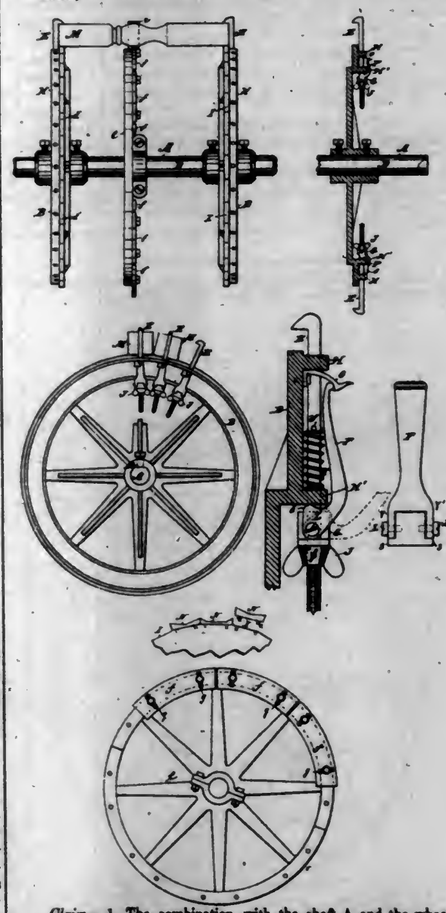
2. In a gage-cock, the combination of the cap and plug with a hollow valve provided with collars upon its outside and forming grooves for water-packing, substantially as described.

3. In a gage-cock, the combination of the cap and plug with a hollow valve provided with collars upon its outside, and with tangential holes to the axes of the valve, said holes forming communication to each side of the collar, substantially as set forth.

4. In a gage-cock, the combination of the hollow valve provided with tangential holes and closed by pressure, with the valve-stem and the steel strengthening center piece, substantially as described.

5. The combination, in a steam gage-cock, of the body A, sleeve B, cylindrical piston-rod C b, having steel center piece, d, and nut E, substantially as set forth.

321,762. LATHE FOR TURNING POLYGONAL FORMS. DE WITT C. SMITH and SPENCER E. SMITH, St. Paul, Minn. Filed Dec. 17, 1884. (No model.)



Claim.—1. The combination, with the shaft A and the wheels B fixed thereon, and the middle wheels, e, fitted to the shaft A, of an adjustable hoop securable around the wheels e over timbers thereon, substantially as and for the purpose described.

2. The combination, with a turning-lathe, of the band r, having notches at one end, m, and bifurcated and provided with hooks h at the other end, the stirrup j, having trunnions i, to engage the hooks h, and pivoted in a block, l, the slide k, having notches in it adapted to engage the notches in the hoop, and secured to the block l, substantially as shown and described.

3. The combination, with a turning-lathe, of the band r, having notches at one end and bifurcated and provided with hooks h at the other

end, the stirrup *j*, having trunnions *i*, to engage the hooks *h*, the block *l*, pivoted to the hooks *h*, the slide *k*, having notches in it and adjustably secured to the block *l*, and the screw *p*, acting between the block and slide, substantially as shown and described.

4. The combination, with the shaft A, the wheels B, and the radially-perforated rims H and H', of the hooks E, having shanks fitted to slide in the perforated rims, and screw-threaded, the screw-nuts J, and the springs T, as and for the purpose specified.

5. The combination, with the shaft A, the wheels B, and the radially-perforated rims H and H', the hooks E, having shanks fitted to slide in the perforated rims, and screw-threaded, the screw-nut J, and the springs T, of the blocks G, having shoulders S, the lever F, having arms Y Y' pivoted to block G and adapted to engage the shoulders S, and the rim H', and the retaining-hook O, as and for the purpose specified.

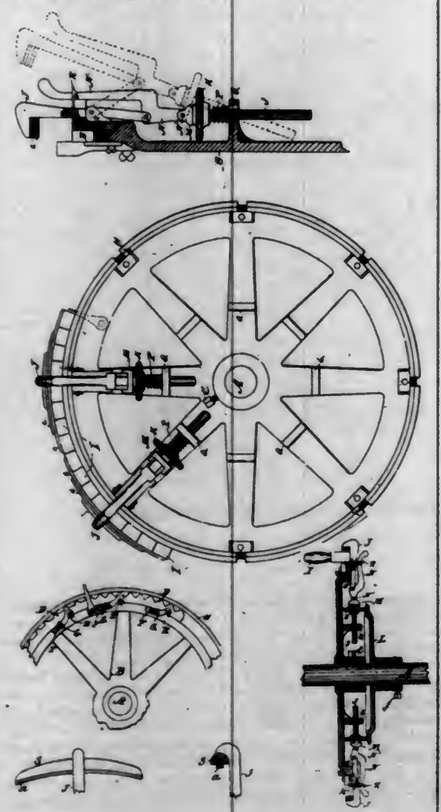
6. The combination of the shaft A, the wheels B secured thereon and provided with a series of faces, I, and dowel-holes, the forked seats N, provided with dowels *e*, fitted to register with the said dowel-holes, and means, substantially as described for holding timbers thereon, as and for the purpose specified.

7. The combination of the wheels B, each having two projecting rims, H and H', provided with radial holes registering with each other, the hooks E, each having a shank fitted to slide radially through two of the said rims, the spring T, acting between each hook and a fixture of the said wheel to force the hook outward, the nut J, screw-threaded on the hook-shank, the block G on the hook-shank, and the lever L, pivoted to the said block G and provided with a cam, *b*, to act against one of the wheel-rims, substantially as shown and described.

8. The combination, with the shaft A and the wheels B fixed thereon, of the parted clamp-wheel *e*, fitted to the shaft A, and the radially-adjustable segments *f* on the wheel *e*, substantially as shown and described.

9. The combination, with the shaft A, the wheels B secured thereon, and the clamp-wheel *e*, removably fitted to the shaft, and provided with radially-adjustable segments *f*, of an adjustable hoop securable around the wheel *e* over work thereon, substantially as and for the purpose specified.

321,763. WOOD-TURNING LATHE. DE WITT C. SMITH and SPENCER E. SMITH, St. Paul, Minn. Filed Apr. 13, 1885. (No model.)



Claim.—1. The combination of two wheels, B, having circumferential corner grooves in their adjacent sides, the segments D, fitted to said grooves and having angular seats in their outer faces, pins E, projecting from one side of each segment, slotted hooks F, and screws G, securing the hooks adjustably to the wheels, substantially as shown and described.

2. The combination of the wheels B, provided with radially-slotted rims A and radially-perforated brackets or rims Q, the hooks J, fitted freely in said slots and perforations, and the links O, pivoted at one end to the wheels and at the other end to some attachment of the hooks, and means for operating said hooks, substantially as shown and described, whereby the hooks may be swung to or from their seats in the rim A, for the purpose specified.

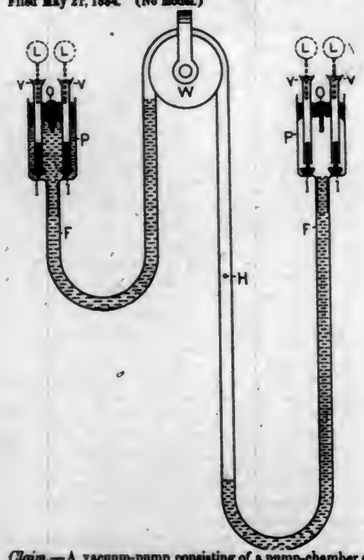
3. The combination of the wheels B, each provided with a radially slotted rim, A, and a perforated bracket, Q, the hook J, threaded on one end, a screw-nut, K, engaging the said screw, a spring, P, between the nut K and the bracket Q, the base-piece M, resting on the said nut, the lever N, pivoted to the piece M, the links O, pivoted at one end to the wheel B and at the other end to the lever N, and the hook R, engaging the lever N, substantially as shown and described.

4. The combination of the wheel B, the radial hooks J, adjustably attached thereto, and the shoes S, attached to the hooks, each extending over an arc of the wheel, substantially as shown and described, whereby two or more posts may be held upon the wheel by each shoe, for the purpose specified.

5. The combination of the wheel B, the hooks J, fitted radially thereon, and elastic arc-shaped shoes secured to the hooks adapted to fit circles larger than the wheel, substantially as shown and described.

6. The combination of the shaft A, the wheel B, provided with the slotted rim A and perforated bracket Q, the screw-shanked hooks J, the circular toothed nuts K, screw-threaded upon the shank of the hooks J, and the clamp beveled gear-wheel L, fitted to engage the nuts K and the shaft A, as and for the purpose specified.

321,764. VACUUM-PUMP. FREDERICK H. SMITH, Baltimore, Md. Filed May 21, 1884. (No model.)



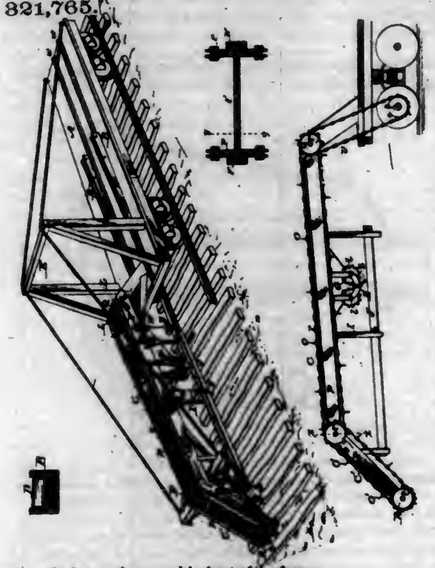
Claim.—A vacuum-pump consisting of a pump-chamber open at its bottom, and provided with a valved roof, a vacuum tube or tubes extending down through the said roof and having valves at their bottoms, and mechanism, substantially as shown, for exhausting the air from said chamber and tubes, as and for the purpose set forth.

321,765. TRACK-LAYING DEVICE. GEORGE A. SMITH, Los Angeles, Cal. Filed Sept. 16, 1884. (No model.) Patented in Canada Dec. 22, 1884, No. 20,773.

Brief.—A frame, having an endless-chain carrier propelled from the car-truck, projects in front of the construction-car, and delivers the ties From the under side of said frame is pivoted a runway, which receives the rails from the fixed inclined runways upon the car.

Claim.—1. In a track-laying device, a frame projecting from the front of a construction-car, and provided with endless chains adapted to be connected with and propelled by the car-truck, substantially as set forth, such chains having projections upon them, whereby ties, when laid upon them, will be carried forward by the motion of the chains and

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be deposited upon the ground in front of the frame.

2. The track-laying device consisting, substantially as shown, of a construction-car having a frame projecting in front thereof, and provided with tie-carrying endless chains extending along it and connected by gearing, substantially as shown, with the axle of the car, whereby the rotation of the car-wheels is caused to propel the chains to carry forward the ties.

3. In combination with a construction-car, a frame extending forward therefrom and bent downward toward the road-bed at its forward end, carrying-chains extending from the rear end of the frame to the bend thereof, separate carrying-chains extending from the bend down to the lower front end of the frame, and a chain-wheel shaft located at the bend, carrying and common to both sets of chains, substantially as shown, whereby the first set of chains is caused to deliver to the second, and both sets are caused to move in unison.

4. In a track-laying device, the following elements: the shafts *t t'*, having the toothed wheels L, P, R, and Q, the endless chains C and C', having the spikes or projections O O', the wheels and axle of the construction-car, the toothed wheel X on such axle, and the endless chain V, all being in combination substantially as shown and described.

5. In a track-laying device, tie-bearing endless chains trained upon wheels mounted on a frame projecting in front of a construction-car, and being connected by means of gearing, substantially as shown, with the axle of the car, whereby the rotation of the car-wheels actuates the chains to carry the ties forward, substantially as set forth.

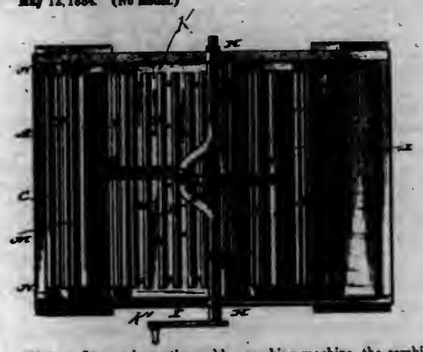
6. In a track-laying machine, the device for handling the rails, consisting, substantially as shown, of the inclined runway having rollers along its bottom, one part of the runway being mounted upon the car, and the other part being separate therefrom and pivoted near its middle length to a support in front of the car, whereby the rail may be slid down the incline from off the car and then be brought to a horizontal position before the grapnels for lifting and placing it are attached.

7. In a track-laying machine, a runway having three supports attached to a frame projecting from the front of a construction-car, the two supports nearest the car being on a level with each other, and the other support being lower than they, such runway being pivoted to the middle support at a point between its center of gravity and the car, and engaging with a swinging trigger mounted above its forward end, substantially as set forth, the middle support being placed more than half the length of a rail from the car. all being in combination substantially as set forth.

8. In a track-laying machine, and mounted upon a frame, as shown, two sets of tie-carrying endless chains, C and C', having the projecting spikes O O', such chains being geared together upon a common shaft, and being mounted upon toothed wheels, all being in combination substantially as shown, the forward set of chains, C', being inclined downward, whereby the weight of the ties upon the same tends to propel the chains.

9. In combination with a supporting-frame, a runway pivoted at or near its mid-length to said frame, substantially as shown, whereby a rail may be changed from an inclined to a horizontal position preparatory to being lowered to the road-bed.

321,766. WASHING-MACHINE. ISRAEL E. SMITH, York, Pa. Filed May 12, 1884. (No model.)



Claim.—In a reciprocating rubber washing-machine, the combination of the perforated false bottom of the suds-box, provided with the rubbing-strips K, and formed with the smooth tracks K' at their side edges, with the rubbers having their end pieces, N, formed with straight lower edges, N', provided with the rollers P and shield Q, and having means, as described, for reciprocating them, as and for the purpose shown and set forth.

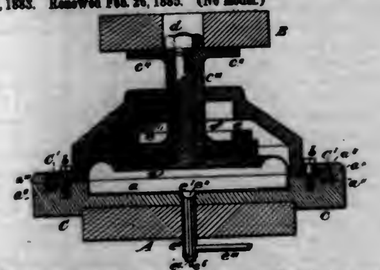
321,767. GATE. ISRAEL E. SMITH, York, Pa. Filed Mar. 9, 1885. (No model.)



Claim.—1. In a vertically-sliding gate, the combination of the gate-posts having the ways upon their inner faces, the gate sliding in the said ways and having ropes and counterpoises for drawing it up, and provided with latches retaining it in position between the posts, and doors hinged to swing over and cover the ways in the inner faces of the posts, and bearing, when closed, with their lower ends against the upper ends of the end posts of the gate, when the said gate is drawn down, as and for the purpose shown and set forth.

2. In a vertically-sliding gate, the combination of the gate-posts having the grooved ways in their inner faces, the gate sliding in the said ways and having ropes and counterpoises for drawing it up, the latch-lever, and the horizontally-sliding bolts H, the doors hinged to the gate-posts and having springs at their hinges for throwing them open, the catches secured upon the upper ends of the end posts of the gate, and the catch-operating cords and lever connected to the latch-lever, as and for the purpose shown and set forth.

321,768. AIR-SPRING. LYMAN SMITH, Kansas City, Mo. Filed Dec 7, 1883. Renewed Feb. 26, 1885. (No model.)



Claim.—1. An elastic metallic spring or buffing device consisting of a receiver rigid at its center and flexible at its periphery, and adapted to surround or inclose a body of compressed air, substantially as set forth.

2. A hollow metallic elastic spring consisting of a receiver rigid at its center and flexible at its periphery, said receiver being filled with compressed air, combined with means for attachment to the truck and body, respectively, of a car or vehicle, substantially as set forth.

3. A hollow metallic elastic spring or buffer consisting of a receiver rigid at its center and flexible at its periphery, combined with a valvular arrangement whereby compressed air may be admitted to the interior of the spring and retained, substantially as set forth.

4. In an air-spring or buffer, a metallic plate or diaphragm rigid at its center and flexible at its periphery, combined with the frame of the car-body, substantially as set forth.

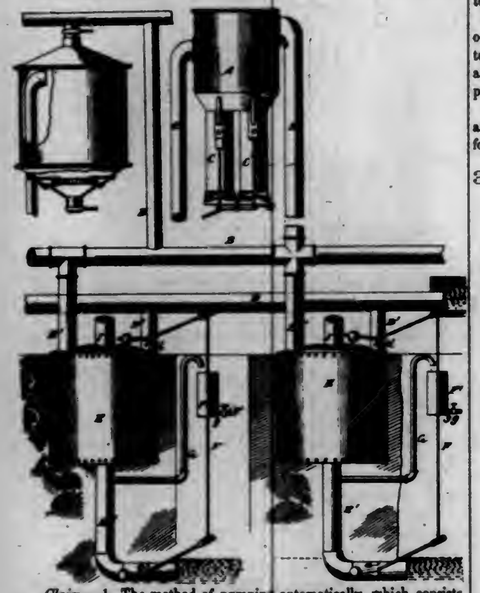
5. In an air-spring or buffer, a cast-iron case and a sheet of thin plate-steel, hardened brass, or other suitable material to render the cast case proof against the escape of compressed air, combined with a metallic diaphragm adapted to connect with the car-body, substantially as set forth.

6. In an air-spring, the combination of a case, a metallic plate or diaphragm rigid at the center and flexible at its periphery, and a sliding connection between said plate or diaphragm and the car-body, substantially as set forth.

7. In an air-spring, the combination of a case, a hollow metallic spring inclosed thereby, said spring being rigid at the center and flexible at its periphery, and a connection between said spring and the car-body, substantially as set forth.

8. In an air-spring, the combination of a case, a hollow elastic metallic spring inclosed thereby, a sliding connection between said elastic spring and the car-body, and an interposed body of rubber or suitable material to absorb concussion between the spring and case, substantially as set forth.

321,769. APPARATUS FOR TRANSFERRING GRAIN AND THE STORAGE THEREOF. LYMAN SMITH, Kansas City, Mo. Filed Feb. 26, 1885. (No model.)



Claim.—1. The method of pumping automatically, which consists in alternately introducting water into a reservoir connected with a suction-pipe, and cutting off the supply of water and affording an outlet therefor by means of the overflow, substantially as set forth.

2. The method of pumping automatically, which consists in alternately filling with water a reservoir connected with a suction-pipe and emptying the same to create a vacuum, substantially as set forth.

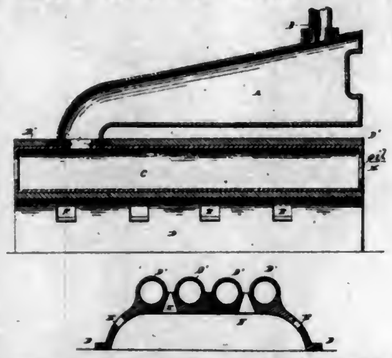
3. The process of utilizing water in a reservoir to produce a vacuum-power and an air-compressor alternately, substantially as described.

4. The process of utilizing a water-reservoir as a motive power for conveying grain and the like, which consists, first, in displacing the water in the reservoir, thereby creating a vacuum, then applying the suction-power of said vacuum to an air-tight chamber, which in turn is connected to a place in which grain is stored, in such manner that the grain rushes with the air to the vacuum-chamber, substantially as described.

5. The process of utilizing the water in an air-tight reservoir, which consists in automatically raising the water in the reservoir, by which the air is displaced and compressed into a smaller compass, then connecting the compressed-air chamber to a place where grain is stored in such manner as to force the grain out of said chamber by the force of said compressed air, substantially as described.

6. The process herein described of drying and curing grain, which consists of first drawing air through it in an air-tight bin or receiver until it is dry, then exhausting said bin or receiver of the air therein contained, then permitting it to remain in the storage-places sufficiently long to kill or destroy the life of the insect in or among the grain, as set forth.

321,770. GAS-GENERATING RETORT-FURNACE. ROLAND H. SMITH, Pittsburg, Pa. Filed Apr. 22, 1884. (No model.)

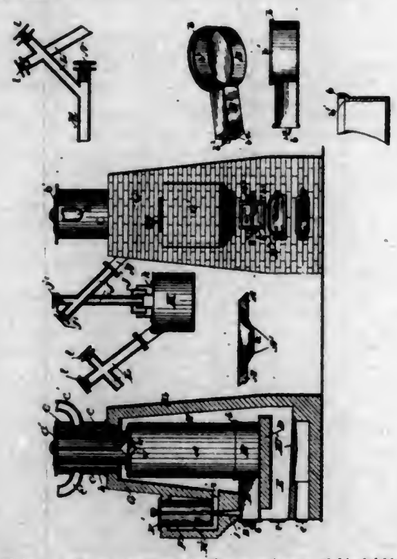


Claim.—1. A grooved arch provided with draft-openings for the passage of heat and the semi-cylindrical plates, adapted to cover the tubes of the retort, all operating as and for the purpose specified.

2. The combination, with a grooved arch provided with draft-openings for the passage of heat and semi-cylindrical plates, of retort-tubes resting on the arch and covered by the plates and retorts placed above the said tubes and connected to them, substantially as and for the purpose specified.

3. The combination of the retorts, the supporting perforated arch and coverings, the removable plates and the casing, all arranged as and for the purpose specified.

321,771. APPARATUS FOR THE MANUFACTURE OF CARBON BISULPHIDE. EDWARD R. TAYLOR, Cleveland, Ohio. Filed July 19, 1884. (No model.)



Claim.—1. In an apparatus for the manufacture of bisulphide of carbon, the retort A, consisting of an upright cast-iron hollow cylinder open at the bottom, and provided at the top with the man-hole plate A', with the opening *a* and stopper *a'*, and an inclined flanged nozzle, A^2, integral with the cylinder, and joining it on the side near the upper end, and projecting outward and upward, substantially as set forth.

2. In an apparatus for the manufacture of bisulphide of carbon, a sub-retort consisting of the parts B and B', the former provided with the hooks b^2, the bar b^2, and the head B^2, and the latter provided with the flange or rim *b*, substantially as set forth.

3. In an apparatus for the manufacture of bisulphide of carbon, the combination, with a retort, a charcoal-container secured on said retort, and communicating therewith, and a valve for closing communication between said retort and container, of a sulphur-pot communicating with the lower portion of the retort, and condensing-pipes connected with the upper end of the retort.

4. In an apparatus for the manufacture of bisulphide of carbon, the combination, with the retort, arranged as described, of a sulphur-melting pot located above the part B, and provided with an opening and stopper, and a flaring tube, by means of which the melted sulphur may be drawn from the pot to the part B, substantially as set forth.

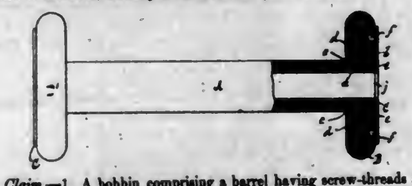
5. In an apparatus for the manufacture of bisulphide of carbon, the combination, with a retort, a charcoal-container secured on said retort, and communicating therewith, and a valve for shutting off communication between said retort and container, of a sulphur-pot communicating with the lower portion of the retort, a valve for shutting off communication between said pot and retort, a sulphur-box, K, the pipes connecting the retort and sulphur-box, the condensing-chamber, and pipes connecting the condensing-chamber and sulphur-box.

6. In an apparatus for the manufacture of bisulphide of carbon, the combination, with the retort A and the sub-retorts B and B', of the charcoal-container located above and communicating with the retort A, and the sulphur-pot located above and communicating with the sub-retort B', substantially as set forth.

7. In an apparatus for the manufacture of bisulphide of carbon, the combination, with the furnace-setting, having the arch D, spanning the fire-box, of the retort located on the arch, and the charcoal-container and sulphur-pot communicating with said retort, substantially as set forth.

321,772. BOBBIN. JOHN R. THORWARTH and WILLIAM TURNBILL, Jr., Brooklyn, N.Y. Filed Mar. 12, 1885. (No model.)

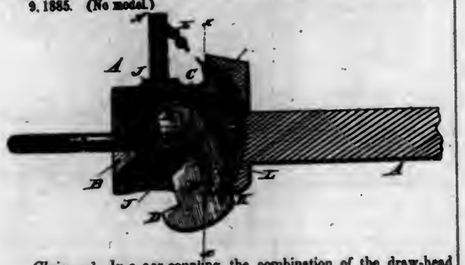
Brief.—Radial slots are cut across the screw-threads on the end of the barrel and corresponding slots near the center of the head. A metallic plate, provided with radial projections to engage the slots and fastened to the head, securely locks the head upon the barrel.



Claim.—1. A bobbin comprising a barrel having screw-threads at its end and radial grooves crossing said threads, a head provided with internal screw-threads fitting the threads on the barrel and having radial grooves corresponding with the grooves in the end of the barrel, and a metallic plate fastened to the head and provided with radial projections to engage the radial grooves in the barrel and head, substantially as described.

2. A bobbin the barrel of which has a screw-thread at its end, a head provided with an internal screw-thread fitting the thread on the barrel, and a key which is fastened to the head and engages with grooves which cross the threads on the barrel and in the head, substantially as shown and described.

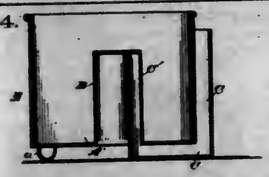
321,773. CAR-COUPLING. HENRY C. TRASK, Vienna, Me. Filed May 9, 1885. (No model.)



Claim.—1. In a car-coupling, the combination of the draw-head having a vertical slot or opening, the pivoted and vertically-sliding tongue having a shoulder or rest for the coupling-pin, and a chain connecting the said tongue with the said coupling-pin, substantially as herein described, for the purpose set forth.

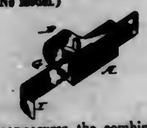
2. In a car-coupling, the combination of the draw-head, a vertically-sliding pivoted tongue, a vertically-sliding coupling-pin, a chain connecting the latter with the tongue, and the tubular guideway for the said chain, formed on top of the draw-head, substantially as and for the purpose set forth.

321,774. MILK-COOLING CAN. JOHN WILHELM, Jr., Wooster, Ohio. Filed Oct. 10, 1884. (No model.)



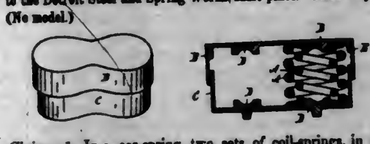
Claim.—A milk-cooling can provided with a central upright cooling-tube closed at the top and passing through the bottom of the can, an air-tube located on the outside of the cooling-tube and in open communication therewith at the upper end, and a spout formed integral with the air-tube and passing along the bottom of the can and up the side thereof, and terminating near the top of said can, substantially as set forth.

321,775. DOOR-SECURER. FRANK R. WOODWARD, Hill, N. H. Filed Sept. 5, 1884. (No model.)



Claim.—In a door-securer, the combination of a sleeve having an enlarged portion forming a casing at one end, a latch arranged to slide transversely in the said casing, a spring arranged to bear against and retain the said latch, and a slide longitudinally adjustable in the sleeve, and having notched sides adapted to engage the latch, substantially as and for the purpose set forth.

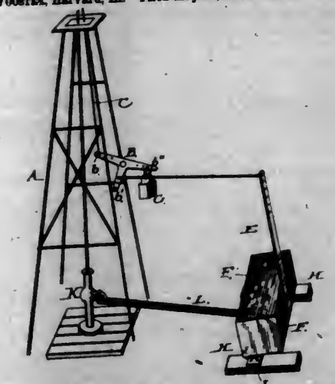
321,776. CAR-SPRING. JAMES K. WOOLLEY, Detroit, Mich., assignor to the Detroit Steel and Spring Works, same place. Filed May 13, 1885. (No model.)



Claim.—1. In a car-spring, two sets of coil-springs, in combination with an inclosing telescopic case, each part of which is contracted in the middle between the two sets of coil-springs, substantially as described.

2. As a new article of manufacture in car-springs, two sets of springs, each composed of two or more concentric coil-springs, an inclosing-case, each part of which is contracted in the middle between the two sets of springs, studs D, engaging into the eyes of the inner coil-springs, and stops E in the top or larger part of the case, all arranged and combined substantially as described.

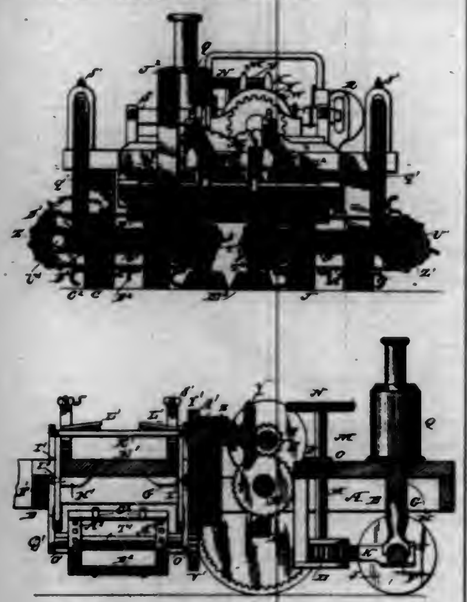
321,777. MEANS FOR CONTROLLING WINDMILLS. WILLIAM I. WOOSTER, Harvard, Ill. Filed May 19, 1885. (No model.)



Claim.—1. The tank F, the vertical arm E, and weight G, in combination with the wire D, the bell-crank lever B, and rod C, all constructed to operate substantially as and for the purpose described.

2. The rod C, lever B, weight G, wire D, and arm E, in combination with the tank F, provided with the bottom plate, J, having the slotted tube *j*, the timbers H, and the plate I, provided with the bench-bar *i*, all constructed and combined to operate substantially as and for the purpose set forth.

321,778. STEAM ROAD-WORKER. WILLIAM D. YEAGER, Douglasville, Ga. Filed Sept. 29, 1884. (No model.)



Claim.—1. In a road-working machine, the combination, with a table or platform, of a pair of frames secured under the same, to be adjusted laterally, carrying endless belts having plows and scrapers, as and for the purpose shown and set forth.

2. In a road-working machine, levers pivoted to the front and rear sides of the table or platform, in combination with frames hinged to the lower ends of the said levers, and mechanism for supporting the outer ends of the said frames adjustably, substantially as and for the purpose set forth.

3. In a road-working machine, the combination of a table or platform, levers pivoted to the front and rear sides of the same, cross-pieces or handles connecting the upper ends of the said levers, suitable latch mechanism for retaining the said handles and levers in any position to which they may be adjusted, frames hinged to the lower ends of the said levers, and mechanism for supporting the outer ends of the said frames adjustably, substantially as and for the purpose set forth.

4. In a road-working machine, the combination, with a table or platform, of the operating-frames arranged transversely underneath the same, mechanism for moving the said frames together or apart and for retaining them securely in any position to which they may be adjusted, and mechanism for vertically adjusting and retaining the outer ends of the said frames, substantially as and for the purpose set forth.

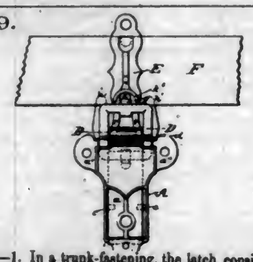
5. In a road-working machine, the combination of a table or platform, levers pivoted to the front and rear sides of the same, frames hinged to the lower ends of the said levers, upwardly-extending arms pivoted to the outer ends of the said frames, cross-bars connecting the upper ends of the said arms and sliding in vertically-slotted standards upon the ends of the table or platform, and suitable adjusting-screws working in the upper ends of the said standards, substantially as and for the purpose set forth.

6. In a road-working machine, the combination of a table or platform, the transverse adjustable frames arranged underneath the same, substantially as described, and provided at their ends with shafts having chain or sprocket wheels, the chains provided with cross-bars carrying plows and scrapers, and operating mechanism whereby the said chains shall be caused to travel in opposite directions toward the center of the table or frame, substantially as and for the purpose set forth.

7. In a road-working machine, the combination, with a table or platform attached to a traction-engine and carrying adjustable frames having the dirt loosening and scraping mechanism, of vertically-reciprocating tampers sliding in suitable bearings upon the rear cross-beam of the said table or platform, a transverse shaft having cams adapted to operate the said tampers, and a belt or band connecting the said transverse shaft with a band-wheel upon the main shaft of the traction-engine, substantially as and for the purpose set forth.

321,779. TRUNK-FASTENING. JAMES H. ALEXANDER, Philadelphia, Pa. Filed Mar. 14, 1885. (Model.)

321,779.



Claim.—1. In a trunk-fastening, the latch consisting of a skeleton frame having a transverse pintle, in combination with the catch-plate E and with the latch plate or holder having a slotted pintle-socket, said latch and socket being adapted for connection and operation, substantially as described.

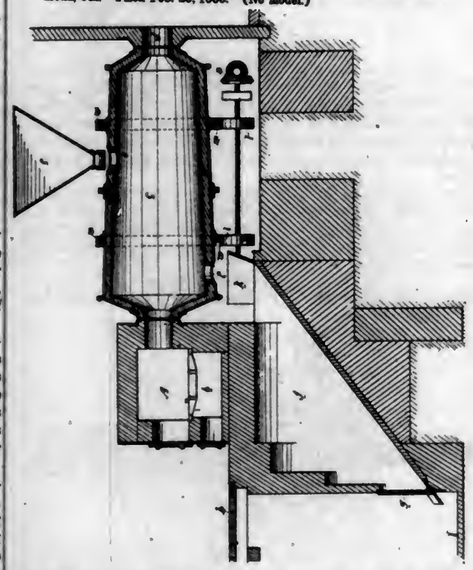
2. In a trunk-fastening, the combination, with the catch-plate and with the latch plate or holder having a slotted socket for the reception of the latch-pintle, of a skeleton or buckle shaped latch having its pintle offset from the frame and adapted for insertion in and removal from the socket by a lengthwise movement from or toward one end, substantially as described.

3. The combination, with the catch-plate E and with the latch-holder A, provided with a latch-spring, *a*, and formed with a slotted socket, B, of the skeleton or buckle shaped latch D, having an offset transverse pintle constructed and adapted for insertion in the socket by an endwise movement or manipulation, substantially as described.

4. The combination, with the latch-holder A, having spring *a*, and slotted socket B, holding buckle-shaped latch D, of the catch-plate E, having beveled lugs or hooks *i*, substantially as described.

5. The catch-plate E of a trunk-fastening, having cast integral therewith the lugs or hooks *h h'*, adapted to embrace the edges of the trunk band or hoop, in combination with the band E and with a latch engaging with said catch-plate, substantially as described.

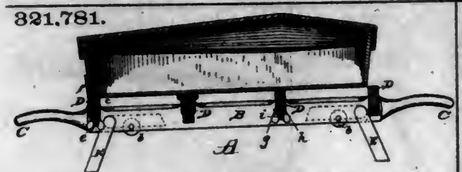
321,780. ROTARY ROASTING-FURNACE. ALBERT ARENTS, Alameda, Cal. Filed Feb. 28, 1885. (No model.)



Claim.—In a roasting-furnace, the combination, with a horizontal conical ore-chamber having axial end passages or openings, as described, rings or flanges surrounding the chamber, and rollers upon which they rest and by which the chamber is caused to rotate, of a fire-box connecting with the axial openings in the larger end of the chamber, a chimney with which the opening in the smaller end communicates, ore-discharge openings in the periphery of the chamber near its larger end, a receiving-bin beneath the furnace having an inclined floor with a discharge-gate at its lower end, and a removable guide or funnel between the floor and the cylinder, substantially as herein described.

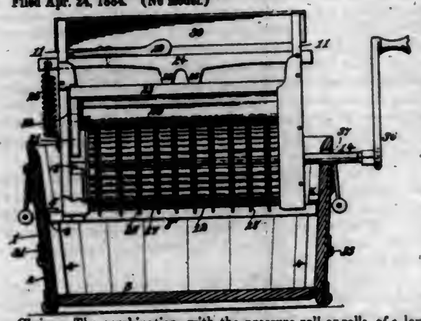
321,781. BIER. SAMUEL E. BARRETT, Weston, W. Va. Filed May 23, 1885. (No model.)

321,781.



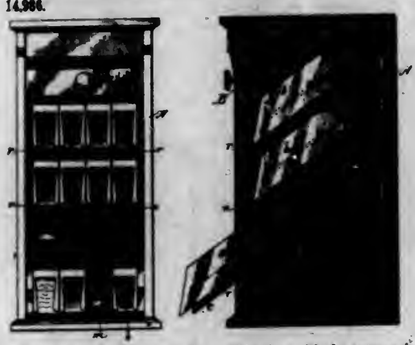
Claim.—A supporting-bier for coffins, comprising side rails connected by cross-bars, a stop-plate projecting upwardly from the end cross-bar, threaded openings in two or more of the cross-bars, and set-screws working in the same, as and for the purpose set forth.

321,782. WASHING-MACHINE. JOHN S. BRAZELL, Chillicothe, Mo. Filed Apr. 24, 1884. (No model.)



Claim.—The combination, with the pressure roll or rolls, of a lever pivoted at one end and having a spring connection at the other, and an auxiliary lever pivotally mounted upon the spring-actuated lever, and adapted to be turned transversely thereto to give it a fulcrum-bearing upon the frame, substantially as described.

321,788. TICKET-CASE. LEONARD J. BLADES, Chicago, Ill. Filed Dec. 18, 1884. (No model.) Patented in England Nov. 11, 1884, No. 14,986.



Claim.—1. In a ticket-case, the combination, with the outer casing, of side supports, section-trays open at the outer end supported thereon, two or more ticket-drawers carried by each tray, and stops for holding said trays in desired positions, substantially as described, and for the purposes set forth.

2. In a ticket-case, the combination, with removable trays open at the outer end for holding ticket-drawers, of two or more individual ticket-drawers in each of said trays and separately removable therefrom without withdrawing the trays from the case, substantially as described, and for the purposes set forth.

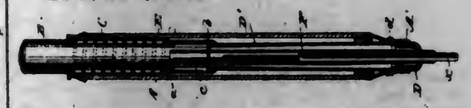
3. In a ticket-case, the combination, with a supporting-tray, of two or more individual ticket-drawers, projections on said drawers for interlocking with suitable recesses in said supporting-trays, and springs adapted to securely hold the said drawers in position by their pressure, substantially as described, and for the purposes set forth.

4. The combination, in a ticket-case, of a ticket-drawer, a supporting-tray therefor, an ear or lip on the under side of the said drawer for interlocking with a recess in said supporting-tray, and a spring for holding said drawer in its locked position, substantially as described, and for the purposes set forth.

5. The combination, in a ticket-case, of inclined side supports, removable trays, said trays being open at their front ends, two or more ticket-drawers in each of said trays and separately removable therefrom, and lugs or stops connected with the side supports for holding said removable trays in desired positions, substantially as described, and for the purposes set forth.

6. In a ticket-case, the combination of a tray for holding ticket-drawers, inclined side supports therefor, stops upon the side supports, and notches near the rear ends of the trays for engaging with said stops and operating in conjunction with said side supports to hold the said trays when drawn out at substantially the same angle of inclination as when within the case, substantially as and for the purposes set forth.

321,784. LEAD AND CRAYON HOLDER. CLARK W. BOMAN, New York, N. Y., assignor to the Eagle Pencil Company, same place. Filed Mar. 17, 1885. (No model.)



Claim.—1. The combination of the sheath or handle, the lead tube or receptacle, and collapsible nozzle, from which the lead protrudes when in use, and the stop-gage jaws longitudinally movable with reference to said nozzle, provided with stops to limit the extent to which the lead can protrude from the pencil, and, in accordance with the direction of the movement of the jaws, to cause said nozzle to clamp or release the protruding lead, substantially as hereinbefore set forth.

2. The combination of the sheath or handle, the lead-tube and collapsible nozzle, the stop-gage jaws longitudinally movable with reference to said nozzle, provided with stops both to limit the extent to which the lead can protrude and to cause the nozzle to clamp or release the lead, the pressure-cap, and the retracting-spring, substantially as and for the purposes hereinbefore set forth.

3. The combination, substantially as hereinbefore set forth, with the sheath or handle and the lead tube or receiver having a split front end or nozzle normally open for the free passage of the lead, of longitudinally-movable stop-gage jaws normally closed upon said nozzle and provided with stops arranged, when pushed forward beyond said nozzle, to relieve the latter from pressure and permit it to open for the free passage of the lead, and also to limit the extent to which the released lead can drop from the pencil, substantially as and for the purposes set forth.

4. The longitudinally-movable stop-gage jaws recessed to permit the expansion of the lead nozzle or tube, the sheath or handle, the lead tube attached to said handle and inclosed or surrounded by the stop-gage jaws, the pressure-cap, and the retracting-spring, these parts being combined and arranged for joint operation substantially as and for the purposes hereinbefore set forth.

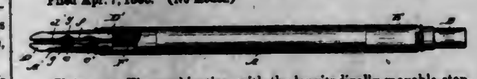
5. In a lead and crayon holder, the combination, with a lead tube or receiver terminating at its front end in clamping-jaws, of a longitudinally-movable stop-gage provided with stops to limit the extent to which the loose lead in the said tube can drop from the pencil, and, according to the direction of movement, to cause said clamping-jaws to close upon or release the lead, substantially as and for the purposes hereinbefore set forth.

321,785. LEAD AND CRAYON HOLDER. CLARK W. BOMAN, New York, N. Y., assignor to the Eagle Pencil Company, same place. Filed Mar. 17, 1885. (No model.)



Claim.—The combination, with the sheath and its contracted front end, the longitudinally-movable grasping-jaws, the pressure-cap, and the retracting-spring, of the lead tube or receiver having a collapsible or split nozzle acted upon by said jaws to effect the clamping of the lead, as hereinbefore shown and described.

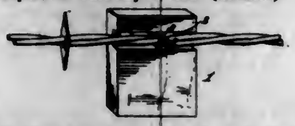
321,786. PENCIL AND CRAYON HOLDER. CLARK W. BOMAN, New York, N. Y., assignor to the Eagle Pencil Company, same place. Filed Apr. 7, 1885. (No model.)



Claim.—1. The combination, with the longitudinally-movable stop-gage jaws having openings or enlargements and an intermediate contracted or narrowed portion, of the split or collapsible nozzle provided with projections adapted to enter said openings, and to operate in connection with the jaws during the longitudinal movement of the latter to clamp and release the lead, substantially as and for the purposes hereinbefore set forth.

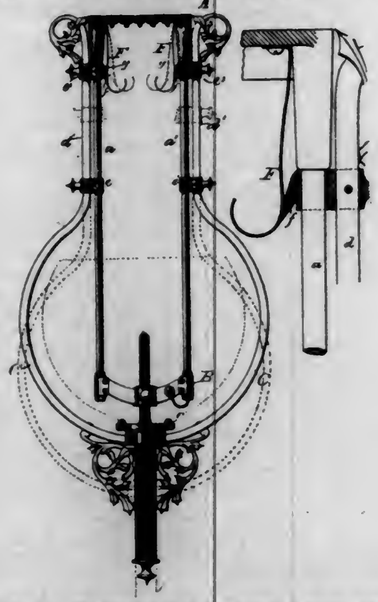
2. The sheath or case, the pressure-cap, and the retracting-spring, in combination with the longitudinally-movable stop-gage jaws having enlargements or openings and an intervening contracted or narrowed portion, and the split or collapsible nozzle fast to the case or sheath, and provided with projections adapted to enter said openings, and to operate in connection with said jaws to clamp and release the lead, substantially in the manner and for the purposes hereinbefore set forth.

321,787. VISIBLE GUARD FOR WIRE FENCES. ROBERT BOOKE, Jr., Philadelphia, Pa. Filed July 24, 1884. (No model.)



Claim.—In a wire fence, the combination, with a strand thereof, of a block forming a guard or signal thereto, longitudinally slotted across one of its faces, and a wire fastening passing through the body of such guard and twisted around the strand, whereby such strand and such guard are secured together, substantially as described.

321,788. ELECTRIC-LAMP-GLOBE SUPPORT. ANDERT BOSSARD, New York, N. Y. Filed July 24, 1884. (No model.)



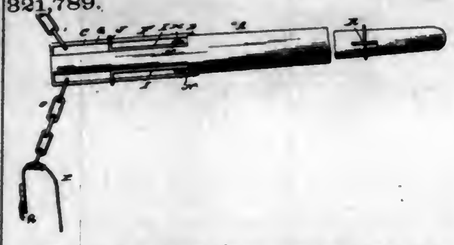
Claim.—1. The combination of lamp-frame A, having arms and catches attached thereto, with globe-holder C, attached to said arms by collars or clips, so as to allow the globe-holder to be slid up and down, substantially as shown and described.

2. The combination of lamp-frame A, having arms a a' and spring-catches F F, with the globe-holder C, attached to the arms a a by collars or clips a a' a^2 a^3, so as to allow the globe-holder to be slid up and down, substantially as shown and described.

321,789. ANIMAL-POKE. WILLIAM H. BOSWORTH, Shaytown, Mich., assignor of one-half to Fred. Bosworth, same place. Filed Mar. 12, 1885. (No model.)



321,789.



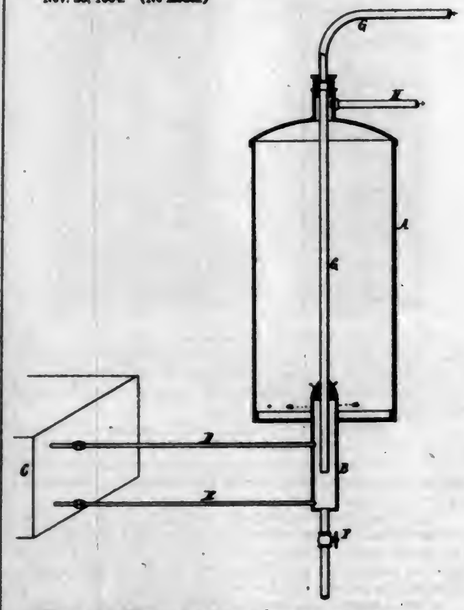
Claim.—1. In an animal-poke, the combination of the poke-bar, longitudinally-sliding chains attached to the inner end of the same, and provided with straps for attachment to the legs of the animal, and means for regulating and restricting the sliding movement of the said chains, substantially as and for the purpose herein set forth.

2. In an animal-poke, the combination of the poke-bar having a beveled block secured to the under side of its outer end, longitudinally-sliding chains attached to the inner end of said poke-bar, and provided with means for attachment to the legs of the animal, and means for regulating and restricting the sliding motion of the said chains, substantially as and for the purpose set forth.

3. In an animal-poke, the combination of the poke-bar, longitudinally-sliding chains at the inner end of the same, having means for attachment to the legs of the animal, means for regulating and restricting the sliding movement of said chains, and a ring near the outer end of the poke-bar for the attachment of the halter-strap, substantially as and for the purpose set forth.

4. The combination of the poke-bar having recesses at its inner end and slots extending into the body of the bar from the said recesses, the metallic bail or strap secured over the said recesses, the slotted longitudinally-sliding plates having slotted brackets encircling the legs of the bail, the transverse screw-threaded rod or bolt passing through the body of the bar secured to the legs of the bail, and having nuts between said legs and sliding plates, and the chains sliding upon the legs of the bail provided with straps for the attachment to the legs of the animal, all arranged and operating as and for the purpose shown and set forth.

321,790. RANGE-BOILER. EDWARD BOURNE, Allegheny, Pa. Filed Nov. 23, 1884. (No model.)



Claim.—1. The combination of a main and an auxiliary boiler, a heater, and circulating-pipes connecting the auxiliary boiler with the heater, substantially as described.

2. The combination of a main and an auxiliary boiler, a heater, circulating-pipes connecting the heater and the auxiliary boiler, and a supply-pipe extending through the main boiler into the auxiliary boiler to a point between the circulating-pipes, substantially as described.

3. The combination of a main and an auxiliary boiler, the latter provided with a screen at its upper end and a drain-pipe at its lower end, a heater, and circulating-pipes connecting the heater with the auxiliary boiler, substantially as described.

321,791. CORSET. MORRIS P. BRAY, Birmingham, Conn. Filed Mar. 2, 1885. (No model.)



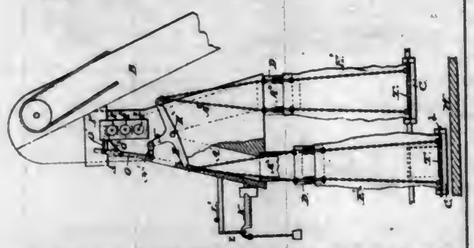
Claim.—A corset having an elastic gore or section composed of two thicknesses of fabric, transversely stitched to form a series of parallel pockets, with an elastic cord composed of several individual strands of india-rubber, inclosed by a braided covering run through said series of pockets from side to side, the said section stitched into the adjacent sections by lines of stitches running through the fabric and cord of said elastic sections, substantially as described.

321,792. HUB-BAND. THOMAS BROWN, Dayton, Ohio, assignor to S. N. Brown & Co., same place. Filed May 26, 1883. (No model.)



Claim.—As a new article of manufacture, a hub-band or analogous ring-shaped article having a plane exterior and a projecting interior surface, and consisting of a strip or bar of metal coiled and welded to leave a layer of solid metal between the terminals of the strip on the inner and outer surfaces of such band or analogous article, substantially as described.

321,793. BAG FILLING, WEIGHING, AND REGISTERING MACHINE. JOHN R. CAMPBELL, Troy, Minn. Filed Apr. 27, 1885. (No model.)

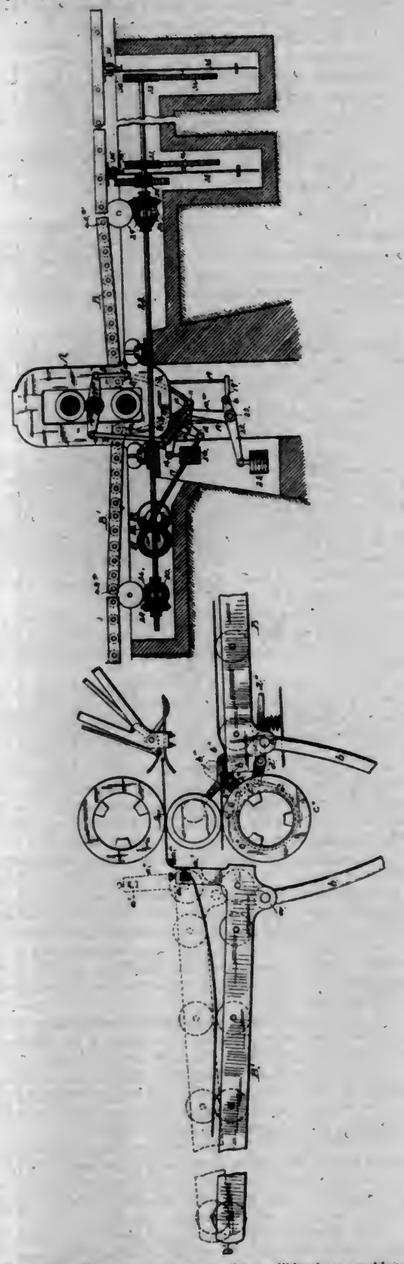


Claim.—1. The combination, with the hopper A and diverging chutes A' and A^3, provided with a gate, J, secured to a transverse pivotal rod or shaft, H^3, and operating to direct the grain from the hopper into the one chute or the other, and with a scale-beam, K, suitably mounted below said pivotal shaft, of a beam, H′, fixed centrally to the end of the shaft over the scale-beam, scale-boards C C, suspended from each end of the beam, an arm, M′, projecting downward from its axis at a right angle to its length, and a pivoted link, M, coupling said arm to the inner end of the scale-beam to form a toggle-joint therewith, all substantially in the manner and for the purpose herein set forth.

2. The combination, with the rocking beam H′, coupled by a toggle-joint, M M′, with the end of the scale-beam K upon one side of the hopper A, and its chutes A' and A^3, and with the transverse pivotal rod or shaft H^3, carrying the gate J within the hopper, of a counterpart beam, H, fixed centrally to the opposite end of the shaft, an arm, N, projecting upward from the center of said beam, a lever, O, pivoted to the side of the hopper, pawls O′ and O^2, pivoted to said lever on each side of its pivot, a ratchet-wheel engaged by said pawls and actuating a train of counters, P' P^2 P^3, and a link, N′, coupling the arm N to the lower end of the lever O, all substantially in the manner and for the purpose herein set forth.

3. The combination, with the spouts A^2 A^4, the rocking beams H H′, the scale-boards C C, depending therefrom, the fixed supports W W under said scale-boards, and a movable casing, D, upon each spout, of clamp-levers F F′, pivoted in brackets on the side of said casing, and cords connecting the ends of said levers with the scale-boards and the end of the rocking beams, substantially in the manner and for the purpose herein set forth.

321,794. ROLLING-MILL. HARVEY B. CHESS, Pittsburg, Pa. Filed May 9, 1885. (No model.)



Claim.—1. The combination, in a rolling-mill having movable tables which are automatically adjusted with relation to the middle roll, of slotted bell-crank levers, sliding crank arms or wrists engaging said levers, and mechanism, substantially as described, connected with the slotted levers, whereby a simultaneous movement is given both the tables and middle roll, substantially as and for the purpose described.

2. In a rolling-mill, the pivoted tables B B', in combination with slotted levers, movable wrists, and intermediate mechanism whereby the tables maintain their full movement independent of the fixed adjustment of the middle roll, substantially as described.

3. In a rolling-mill, the combination, with the stands A and the rolls, of the pivoted tables B B', provided with links *a*, the connecting-arms *b b*, a crank-lever, and a gear-wheel, 39, whereby the tables are automatically moved from one position to another by the semi-revolution of said gear, substantially as herein described.

4. In a rolling-mill, the stands and rolls, in combination with the pivoted tables B B', provided with links *a*, the connecting-arms *b*, a lever having crank-arms 12 and 15, a link, 17, gear 39, and driving mechanism whereby the tables are moved from their lowest to their highest positions, or vice versa, by the semi-rotation of said gear, substantially as and for the purpose herein described.

5. In a rolling-mill, the stands A and upper and lower roll, in combination with the middle roll, the horizontal levers 4ª, the links 5, supported by yielding wrist 6, the slotted crank-levers 12, a link, 7, and a sliding wrist, 8, substantially as herein described.

6. In a rolling-mill, the combination, with the stands and rolls of a shaft, 23, the counterbalancing-lever 22, and rods 19, for sustaining the upper roll, the arms 10ª on the shaft 23, the links 9ª, and sliding wrists 8, the movement of said wrists being through an arc sufficient to adjust the middle roll to each position of full up or down, substantially as herein described.

7. In a rolling-mill, the combination, with the stand and rolls, of the shaft 23, counterbalancing-lever 22, the arms 10ª, links 9ª, sliding wrists 8, the rods 19, saddle 19', and shaft *c*, whereby the sliding wrists are drawn toward the center of motion of the slotted arms in which they slide, thereby giving a lesser arc of movement to the wrists and middle roll without interfering with the fixed movement of the tables, substantially as herein described.

8. In a rolling-mill, the rock-shaft 14ª, horizontal lever 4ª, the link 7, and mechanism for operating the lever, in combination with a yielding wrist, 6, whereby an excess of movement of said lever 4ª is lost by the double-movement yielding wrist 6, substantially as herein described.

9. In a rolling-mill, the tables B B', in combination with the shafts 30 30', the gears 54 54', adapted to engage gears 29 30 and 29' 30', the main driving-shaft 28, and a clutch mechanism for throwing the gears 29 29' or 30 30' into or out of engagement with the gear 54 54', substantially as and for the purpose herein described.

10. In a rolling-mill, the tables B B', in combination with a track, 36', the wheels 36, and suitable gearing for transferring portions of the table, with the rolled plates, to the finishing-stand, substantially as herein described.

11. In a rolling-mill, the tables B B', provided with detachable sections, in combination with the tracks 36', and wheels 36, suspended bars 35, the slotted guides 35ª, and a mechanism for moving the sections and rolled plates from one stand to another, substantially as herein described.

12. In a rolling-mill, the combination, with the tables B B', of the detachable sections, the track 36', wheels 36, suspended bars 35, slotted guides 35ª, pivoted links 34ª, gears 34, provided with wrists for the links, pinions 33, and the gears 31 32, and shafts 28 and 52, substantially as herein described.

13. In rolling-mills, the means for driving the feed-rollers in each position of the movable section, consisting, essentially, of the driving gears E, the pinions 42 and 22ª, and suitable yielding clutch mechanism, whereby in either position the tables will discharge their functions of receiving and delivering material, substantially as herein described.

14. In rolling-mills, the tables B B', in combination with means for scraping the rolled plate, consisting, essentially, of an adjustable transverse bar, *a'*, a support, *a''*, and a transverse bar, *a'''*, substantially as herein described.

15. In rolling-mills, transversely-placed bars for bending and scraping at one operation the upper and lower surface of the rolled plate, in combination with the feeding-tables, substantially as described.

16. In roller-mills, the combination, with the tables, of a means for scraping the plate on the return pass, consisting, essentially, of a fixed bar, *b'*, a swiveled bar, *b''*, an arm, *b'''*, a link, a suitable brake-strap, a lever, *d'*, and pedal *d''*, substantially as described.

17. In rolling-mills, a mechanism for automatically stopping the screwing down of the upper roll, consisting of the stands, the screws G G', the bevel-wheels D', the shaft *d'*, the bearings *d'''*, having circular bases fitted to the wheels D', and a loose pulley, F', and the pinions for driving the wheels D', substantially as described.

18. In rolling-mills, the stands A, the screws G G', and the gear-wheels D', in combination with the shaft *d'*, bearings *d'''*, pinions *f*, *f'*, and *f''*, the pulley F', the fixed and sliding clutches K and K', and suitable clutch-levers for giving an upward or downward movement to the upper roll, substantially as described.

19. In rolling-mills, the stand A and upper roll, in combination with the screw G, a shell or drum, G'', having threads or grooves *h* on its outer circumference, a series of cams, *h'*, and levers and connecting-rods for shifting the position of the clutches, substantially as and for the purpose described.

20. As an improvement in rolling-mills, a drum, G'', provided with dovetailed grooves *h*, suitable nuts engaging the grooves and having the cams *h'*, in combination with the screw G, gear D', and suitable connections for operating the clutches K K', substantially as described.

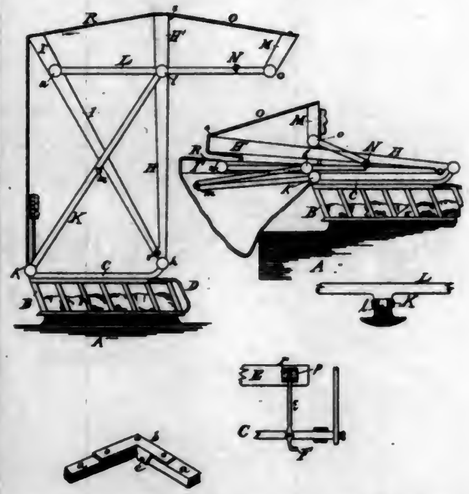
21. In rolling-mills, the stands A, the upper roll, screw G, gear D', and spirally-grooved drum G'', having the cams *h'*, in combination with a stud, H', a lever, H, provided with an arm, I, a toe, *i*, and heel *i'*, a rod, I', the clutch-levers J J'', a pivoted arm, J', and the fixed and sliding clutches and gearing, substantially as herein described.

22. In rolling-mills, the screw G, gear D', spirally-grooved drum G'', and cams *h'*, in combination with the lever H', and a depending cam, L, secured to the wheel D', and adapted to engage the heel *i'* of the lever H', substantially as herein described.

23. In rolling-mills, the shaft *d'*, screws G G', and gears D', in combination with a pinion, *f'''*, adapted to have a longitudinal movement on the shaft, and having an oblique feather-way, a sleeve, *m*, having an oblique or spirally-placed feather, *m'''*, and a hand-wheel, whereby one of the housing-screws may have a slight forward or backward adjustment, substantially as and for the purpose described.

24. In rolling-mills, the shaft *d'*, screws G G', and gears D', in combination with a sliding and spirally-grooved pinion, *f'''*, a sleeve, *m*, having a spirally-placed feather, *m'''*, the feather *m'* and *m''*, a collar, *n*, a screw, *o'*, a cross-head, and a hand-wheel, substantially as herein described.

321,795. VEHICLE-TOP. SAML. M. CHESTER, Cincinnati, Ohio. Filed Oct. 6, 1884. (No model.)



Claim.—1. A folding top consisting upon each side of the combination of a horizontal brace having a single joint intermediate of its center and front end, a plain upright standard pivoted at its base to the seat-rail, an inclined standard pivoted to both the upright standard and the horizontal brace, and an inclined jointed brace pivoted at its base to the seat-rail and at its upper end pivoted to the horizontal brace intermediate of the ends thereof, substantially as described.

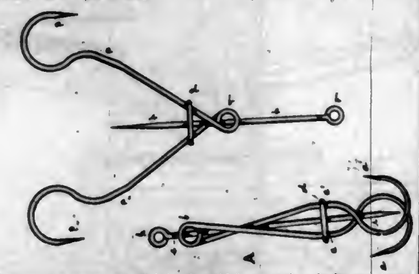
2. In a folding top, the combination upon each side of the horizontal brace L, having a single joint, N, intermediate of its center and front end, the upright standard H, pivoted to the seat-rail at *h*, the inclined standard pivoted to the brace L at *n*, and the inclined brace K, jointed at *m*, and pivoted to the seat-rail and to the brace L intermediate of the ends thereof, substantially as described.

3. In a folding vehicle-top, the combination of the jointed bow L, upright standard H, inclined standard I, jointed brace K, all pivoted and arranged as described, and the arm M, pivoted to the brace L, substantially as described.

4. The combination of the regular seat-rail *a*, plate *b*, provided with slots *c*, secured thereto, brace-handle D, having an aperture to receive lug *d*, and supplementary rail C, provided with pivoted arms *e*, having hooks F to engage in slots *c*, and lugs *d* to engage in apertures in brace-handle D, substantially as described.

5. The combination of the supplementary rail C, to which the folding top is attached, arms *e* pivotally secured thereto, and seat-back E, having cleats *r r*, whereby the seat-back may be attached to or removed from the supplementary rail, substantially as described.

321,796. FISH-GRAPPLE. ERRI W. CLARK, Nashua, N. H. Filed Dec. 3, 1884. (No model.)



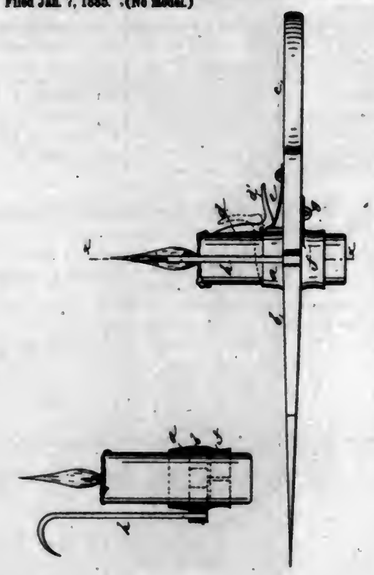
Claim.—An expansible fish-hook, which comprises in its construction a single length of wire having hooked ends and coiled to form a coil-spring, *b*, central of its length, in combination with a compressing-slide, *d*, having a rod, *e*, above the slide for attachment of the line, and a spear, *i*, below the slide to penetrate the bait, said rod and spear being attached to and moving with the slide, substantially as described.

321,797. TOBACCO-DRIER. STEPHEN COLLIER, Huntsville, Ala., assignor of two-thirds to John Sanders Elder and Abner Bondurante Maxey, both of Clarksville, Tenn. Filed Oct. 11, 1884. (No model.)



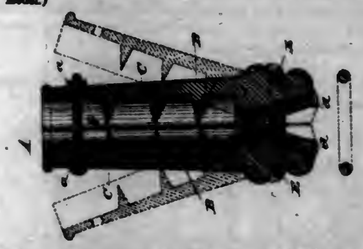
Claim.—A furnace for use in a tobacco-curing house, consisting of a cylindrical casing, B, having a conical inclosed top, B', said top being provided with means for connecting a smoke-pipe thereto, when desired, and said casing being provided with a series of openings, B^2, in its sides near its bottom, which are covered with screens, and also provided with a door, B^3, rings b^2 b^2 being secured around the top and bottom of the interior of the casing, whereby said casing is strengthened and kept in perfect form, all substantially as set forth.

321,798. MINER'S CANDLESTICK. THOMAS COX, Gloster, Mont. Filed Jan. 7, 1885. (No model.)



Claim.—The combination, with a miner's candle-stick, of the spring-holder *f*, detachably secured to the under surface of the same, below the candle-socket, substantially as herein shown and described.

321,799. ROPE-FASTENER. SILAS J. CRITES, Ashland, Ohio, assignor of one-half to J. C. Hissem, same place. Filed Aug. 25, 1884. (No model.)



Claim.—A rope-clamp consisting of two independent sections having spurs on their inner sides, a bolt securing said sections together at one end, the other ends of said sections being beveled on their inner sides, and a clamping-ring, substantially as set forth.

321,800. CEMENT ROOF. ARNOLD N. D. DELPH, Bedford, Tenn. Filed Feb. 2, 1884. (No model.)



Claim.—1. In combination with the rafters A of a house, a roof formed of two sections, M and N, hinged at the top and resting loose on said rafters, substantially as and for the purpose set forth.

2. In combination with the rafters A of a house, a roof formed of a secondary set of rafters, sheathing, and a cement covering resting upon the rafters A, but detached from them, substantially as and for the purpose set forth.

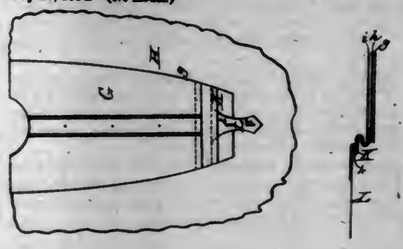
3. The guard-strips F, having flanges *f* and *f'*, in combination with the sheathing E and cement covering P, substantially as described, and for the purpose set forth.

4. In a roof, the combination of the sheathing E, provided with guard-strips F, having flanges *f* and *f'*, a thin coating of non-cementing and non-adhesive material, and a layer of cement and sand, substantially as described, and for the purpose set forth.

5. In a roof, the combination of the sheathing E, provided with guard-strips F, having flanges *f* and *f'*, a thin coating of non-cementing and non-adhesive material, a layer of cement and sand, and a coat of asphaltam and sand, substantially as described, and for the purpose set forth.

6. The combination of the primary rafters A, secondary rafters C, carrying the roof, and beveling wedges G, substantially as described, and for the purpose set forth.

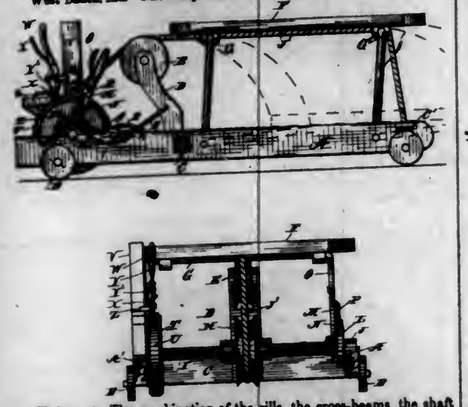
321,801. SHIRT-BOSOM. EDMUND DRUCKER, Philadelphia, Pa. Filed July 15, 1884. (No model.)



Claim.—1. The combination, with a shirt-bosom having a front ply, *g*, and an inner ply, *i*, whose lower end extends below the ply *g*, of a folded supplementary or finishing ply, K, whose upper edge is fastened behind the ply *g*, its fold *k* embracing the lower edge of the inner ply, *i*, substantially as shown and described.

2. The shirt-bosom G, constructed substantially as described, and composed of the plies *g* and *h* of equal dimensions, the ply *i* of the same width as plies *g* and *h*, but of greater length, the folded supplementary or finishing ply K, and the tab L, secured to the ply *i* and supplementary ply K, substantially as shown and described.

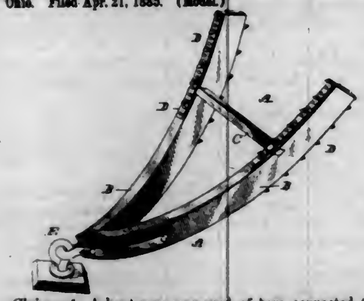
321,802. FREIGHT-TRUCK. JOHN DIXON and ELVET B. RHODES, West Baden, Ind. Filed May 9, 1885. (No model.)



Claim.—1. The combination of the sills, the cross-beams, the shaft having the pulley or sprocket-wheel, the rope or chain attached to said pulley, the upright secured to one of the cross-beams and carrying a sheave, the platform mounted upon bearing-arms, and the pawl and ratchet mechanism for applying a rotary motion to the shaft, substantially as and for the purpose herein shown and set forth.

2. The combination of the sills, the cross-beams, the shaft having the pulley or sprocket-wheel, the rope or chain attached to said pulley, the upright secured to one of the cross-beams and carrying a sheave, the platform mounted upon bearing-arms, the pawl-and-ratchet mechanism for applying a rotary motion to the shaft, a drum secured to the shaft, a metal band to encircle said drum, and the brake-lever mechanism, substantially as and for the purpose shown and set forth.'

321,803. LOG-TURNER. DAVID W. DORRANCE, Moore's Salt Works, Ohio. Filed Apr. 21, 1885. (Model.)



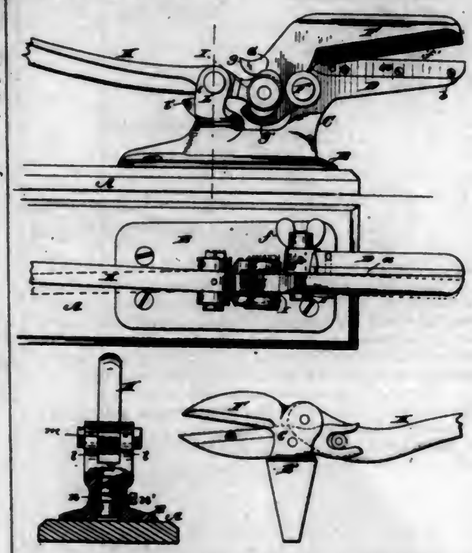
Claim.—1. A log-turner composed of bars connected together at their lower ends, and from thence extending upwardly and outwardly in a sidewise direction, and having at their upper portions outwardly-extending pins or teeth.

2. A log-turner composed of a V-shaped frame, having at its narrow or pointed base a swivel-support, and at its upper portion a series of outwardly-projecting teeth, substantially as and for the purpose set forth.

3. A log-turner composed of upwardly and outwardly extending side bars, each having at its upper portion a series of outwardly and upwardly projecting teeth, and a cross bar or brace connecting the bars together, and a swiveled support connected to the connecting lower ends of said bars, substantially as shown and described.

4. A log-turner having outwardly and upwardly extending curved bars provided on their concave faces with downwardly-projecting pins, teeth, or hooks, and on their convex faces with upwardly-projecting pins, teeth, or hooks, and having a pivotal base-support.

321,804. LEVER-SHEARS. JOSEPH W. DOUGLAS, Middletown, Conn. Filed June 10, 1884. (No model.)



Claim.—1. In a lever shearing mechanism, the combination, with a fixed jaw, of a movable jaw actuated by a lever which is fulcrumed upon a support swiveled upon the base-plate, whereby a lateral movement of said lever throws said movable jaw toward or from the fixed jaw, substantially as described.

2. In a lever shearing-machine, the combination, with a fixed jaw, of a movable jaw pivoted to its heel, and having a rearwardly-projecting forked extremity which receives a friction-disk, the latter being journaled upon the forked end of an operating-lever fulcrumed upon a stud rising from the bed-plate, substantially as described.

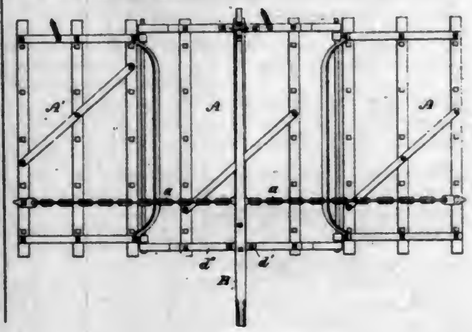
3. In a lever shearing-machine, the combination, with the bed-plate, of a post carrying the fixed jaw, a movable jaw pivoted to the heel of the fixed jaw, and having a forked rearwardly-projecting extremity, which receives a friction-disk carried by an actuating-lever, a stud upon which said lever is fulcrumed, and a swivel-joint between said stud and the bed-plate, substantially as described.

4. In a lever shearing-machine, the combination, with a movable jaw having a fork, G, of an actuating-lever having journaled in its end a friction-disk, I, which engages with the branches of said fork, substantially as described.

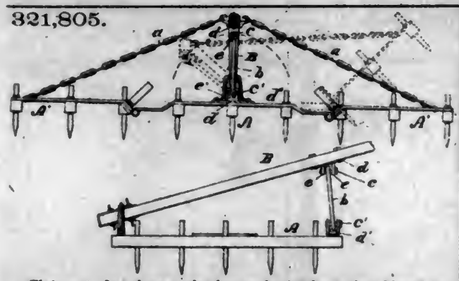
5. In a lever shearing-machine, the combination, with a fixed jaw, of a movable jaw pivoted to the heel thereof, and having a rearwardly-projecting forked extremity, an actuating-lever, K, fulcrumed upon a swiveled stud, L, and a friction-disk carried by said lever and engaging with the forked end of the movable jaw, substantially as described.

6. The combination of a bed-plate carrying a post, having an attached fixed cutting-jaw, a movable jaw fulcrumed on the post and provided with a forked shank, and a pivoted lever having a friction disk or roller engaging the forked shank, substantially as described.

321,805. HARROW. AUSTIN C. EVANS, Springfield, Ohio. Filed Feb. 9, 1885. (No model.)



321,805.



Claim.—1. In a three-section harrow having its sections hinged together and operated by a lever, as specified, the combination, with the latter and the middle section, of a link pivotally connecting the same, whereby said lever is free to operate toward either side of said middle section in elevating the outside sections without changing its point of attachment to the latter or detaching it therefrom.

2. In a three-section harrow operated by a lever loosely pivoted at the front end over the middle section, and connected by chains with the outside sections, as set forth, the combination, with the lever, the chains, and the harrow-sections, of a link pivoted, respectively, to said lever and the rear of the middle section, whereby said lever is supported in its elevated position by said link and the tension of the chains, and is adapted to move freely around its pivotal connection in elevating said side sections without disconnecting it from its pivotal point of support on said middle section.

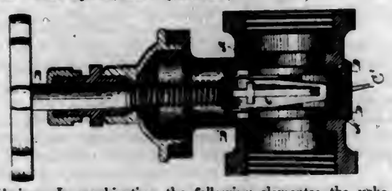
3. In a three-section harrow, a lever extending over the middle section, and chains connecting the same with the outside sections, a link pivotally connecting said lever with the rear of the section beneath it, said link being held in an erect position by the tension of the chains connecting said lever with the outside sections, and being free to incline toward either side in operating said lever, as set forth.

321,806. ROAD-CART. ABNER C. FISH, Racine, Wis., assignor to M. L. Fish, same place. Filed Aug. 7, 1883. (No model.)



Claim.—In a road-cart or sulky, the shafts pivoted to the axle, in combination with semi-elliptic springs adjustably clipped to the under side of the axle and adapted to support and adjust the shafts, as described.

321,807. VALVE. THADDEUS GALVIN and JOHN GALVIN, Detroit, Mich. Filed Apr. 13, 1885. (No model.)



Claim.—In combination, the following elements: the yoke C, screw-tapped for the passage of the valve-stem, and provided with lugs c and a wedge-shaped extension, C', and disks D, provided with ears D' and slots *d*, said lugs slightly rivet-headed beyond the disks to prevent displacement, substantially as and for the purpose described.

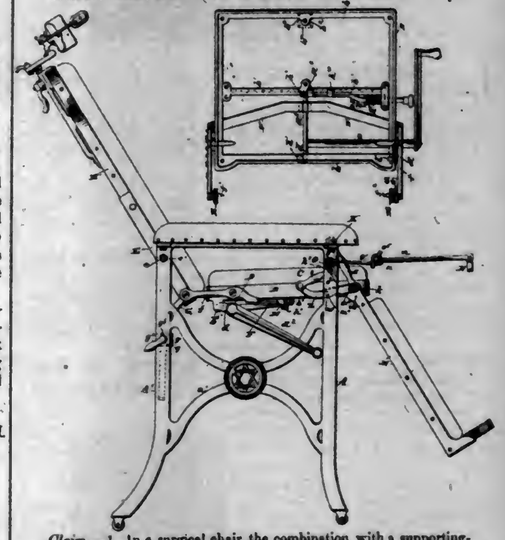
321,808. STOVE-PIPE FASTENER OR CLAMP. HILAND W. GOODWIN, Detroit, Mich., assignor to Andrew C. Hutchison and Joseph Goss, both of Beloit, Wis. Filed Apr. 28, 1884. (No model.)



Claim.—1. The combination, with the stove-pipe fitted in the flue-opening, of the fastening band or clamp, and the flue-hole hook provided with a flange, *f*, at one end, and loop H at the other end, the inner termination of which loop is open to receive the fastening-band, as and for the purpose set forth.

2. The combination, with the stove-pipe fitted in the flue-opening, of the fastening band or clamp, and the flue-hole hook provided with a flange, *f*, at one end, a loop, H, at the other to encircle the band or clamp, and a stop, *e*, at the inner termination of the loop intermediately between the ends of the hook, as set forth.

321,809. SURGICAL CHAIR. AARON P. GOULD and HERBERT R. SPENCER, Canton, Ohio. Filed Jan. 5, 1885. (No model.)



Claim.—1. In a surgical chair, the combination, with a supporting-frame, of a back-section pivotally secured to the supporting-frame, a seat-section pivotally secured to the back-section and to the supporting-frame, and a rock-shaft connected with the seat and back-rest for changing their relative positions.

2. The combination, with a supporting-frame provided with arm-rests, of a back-section pivotally secured to the rear portion of the supporting-frame, a seat-section located normally below the side arms and connected with the back-section, swinging arms connecting the seat-section to the supporting-frame, and devices for swinging the seat and back sections into the same horizontal frame on a level with the arm-rests, substantially as set forth.

3. The combination, with the supporting-frame and the back-frame pivotally secured thereto, of a seat-section, swinging arms connecting said seat to the supporting-frame, a shaft, and a rocking frame connected with the back-frame and operated by the shaft, substantially as set forth.

4. The combination, with the seat-section, secured to the supporting-frame at its front by a pair of swinging arms, of a pair of jointed arms, also connecting the seat-section and the supporting-frame, and a foot-rest section hinged to the seat-section and provided with arms adapted to engage the said jointed connection, whereby the forward and upward motion of the seat-section tends to elevate the foot-rest section into the same plane with the seat-section, substantially as set forth.

5. The combination, with the seat and back sections pivotally secured to the supporting-frame, of an auxiliary rocking frame secured to the seat-section and to the lower end of the back-section, a rock-shaft secured to the seat-section, and having an engagement with the rocking frame, and means for imparting a rotary motion to the rock-shaft, and thereby adjusting the seat and back sections, substantially as set forth.

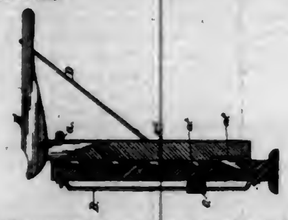
6. The combination, with the seat and back sections, pivotally secured to the supporting-frame and to each other, of a rock-shaft, a handle or crank for operating said shaft, a rocking frame for throwing the said sections into the desired angular adjustments relatively to each other, and means for locking the sections in any desired adjustment, substantially as set forth.

7. The combination, with a supporting-frame, a seat and back section pivotally connected to the frame, a rocking frame connected to the seat, and a rock-shaft for operating said rocking frame, of a spring-actuated catch located beneath the seat-section and adapted to automatically lock the rocking frame in elevated adjustment, substantially as set forth.

8. The combination, with seat and back sections, of a rocking frame connecting the two, and a rock-shaft journaled in bearings on the lower

side of the seat and adapted to transmit motion to the rocking frame, substantially as set forth.

321,810. WAGON-JACK. JOHN L. GRAY, Peshtigo, Wis. Filed May 26, 1885. (No model.)

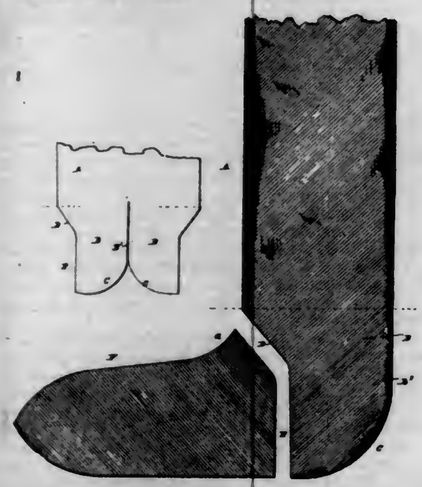


Claim.—1. The combination, in a wagon-jack, of a rigid standard provided on its inner side with a series of notches, a pair of retaining-hooks secured to the standard at its upper end, and a second standard adjustable along the rigid standard, and provided at its lower end with a tooth for engaging the notches in the rigid standard, substantially as described, and for the purposes set forth.

2. The combination, in a wagon-jack, of the rod B, secured to the front of the rigid standard, the sleeve C, sliding along the rod B, the bail D, pivotally secured to the sleeve C, and the lever E, substantially as described and shown.

3. The wagon-jack hereinbefore described, consisting of the standard A, provided on its inner side with a series of notches, a', the standard A', provided at its lower end with the tooth a^2, the retaining-hooks a, the lever E, the rod B, secured to the standard A, the sleeve C, and bail D, all arranged and operating substantially as described and shown.

321,811. ART OF MANUFACTURING OVERSOCKS. RICHD. GREEN, New Albany, Ind., assignor of one-half to W. A. Hedden, same place. Filed May 21, 1884. (Model.)



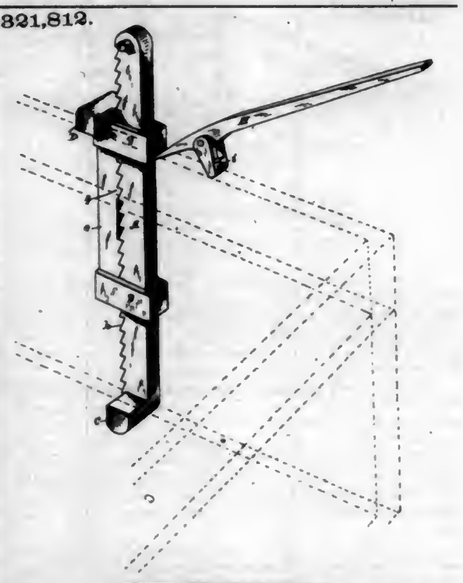
Claim.—The herein-described art or method of manufacturing over socks or stockings, consisting, first, in forming a leg in any approved way, then forming a heel of two flaps, each narrowed inward from the front for a portion of its length and rounded at the back or rear, then joining the two flaps at the rear and bottom, then picking the unjoined edges on the needles of the machine, then forming the foot by gradually knitting it rounding and narrowing at the instep, whereby the finished sock corresponds in the shape and position of its parts to those of a natural foot, substantially as and for the purpose specified.

321,812. FOUNDRYMAN'S CLAMP. THOMAS HARDING, Detroit, Mich. Filed Jan. 5, 1885. (No model.)

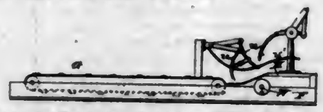
Claim.—1. A clamp composed of the bar A, provided with ratchet-teeth *b*, and laterally-projecting arm or jaw C, rigidly fixed to the extremity of said bar, combined with the bar *e*, provided with ratchet-teeth *f*, the jaw D, and clips *g g*, all as set forth and described.

2. A clamp composed of a bar, A, provided with ratchet-teeth *b*, a bar, *e*, provided with ratchet-teeth *f*, jaw D, and clips *g*, through which the bar is caused to slide, combined with the hinged lever H, provided with hinged fulcrum *i*, as set forth.

321,812.



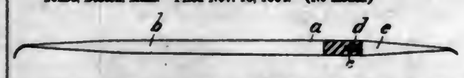
321,813. HARVESTING-MACHINE. PLINY F. HODGES, Davenport, Iowa. Filed Oct. 29, 1881. (No model.)



Claim.—1. The combination, substantially as before set forth, of the horizontal platform-carrier, the low-down binder-table, and independent alternately-thrusting packers, which take the grain delivered by the platform-carrier and pack it in a gavel on the binder-table.

2. The combination, substantially as before set forth, of the horizontal platform-carrier, the low-down binder-table, and overlying independent alternately-thrusting packers, which take the grain delivered by the platform-carrier and pack it in a gavel on the binder-table.

321,814. DENTAL INSTRUMENT. JOHN HOOD and STEPHEN H. REYNOLDS, Boston, Mass. Filed Nov. 18, 1884. (No model.)



Claim.—1. As an improvement in dental instruments, the pliers provided with a socket to receive a plugger or other implement, as and for the purpose hereinbefore set forth.

2. The pliers provided with a conical screw-threaded socket in the solid end, in combination with a plugger or other dental implement having a conical screw-threaded end for insertion in said socket, as set forth.

3. The pliers provided with a screw-threaded socket, *e*, in combination with the screw-plug *g*, for the purpose of closing said socket and giving an appropriate finish to the solid end of the pliers when not in use as a handle, substantially as specified.

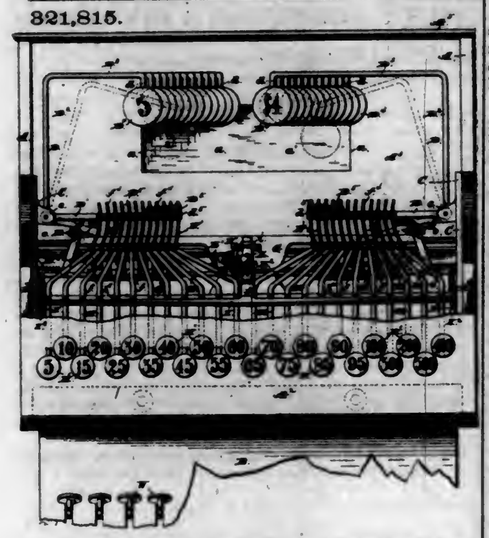
321,815. CASH REGISTER AND INDICATOR. CABEL B. HOPKINS, Payne's Depot, Ky. Filed Sept. 6, 1884. (No model.)

Claim.—1. In combination with a series of pivoted levers carrying suitably-marked drop-disks, means for supporting the levers with the disks raised, and means for allowing one or more of the levers to drop, as desired, substantially as shown and described.

2. The series of pivoted drop-levers carrying suitably-marked indicating-disks, in combination with means, substantially as described, for holding the levers in elevated position, means for causing one or more of the levers to be released and allowed to drop down, and means for raising them again, substantially as shown and described.

3. In an indicator, a pivoted lever carrying a suitably-marked indicating-disk, a pawl or stop adapted to engage the lever and hold it with its disk elevated above the display-opening in the casing, means for causing the pawl or stop to release the lever and allow it to drop down, and means for raising it again into position to be engaged by the pawl, substantially as and for the purpose described.

321,815.



4. In combination with the series of levers carrying the indicating-disks, the series of pawls or swinging stops engaging the levers and adapted to support them with their disks above the display-opening in the casing, means for causing the pawls or stops to release and allow to drop down one or more of the levers, as desired, and means for raising together into position to be engaged by the pawls or stops all the levers that have been dropped, substantially as and for the purpose described.

5. In combination with a pivoted drop-lever and the indicator-disk carried thereby, a pawl or stop engaging and supporting such lever, means for causing the pawl or stop to release the lever and let it drop, means for raising it again to be engaged by the pawl, a single sliding rod, and connecting means, substantially as described, whereby the pawl and the lever-raising mechanism are operated by the rod, substantially as and for the purpose described.

6. The series of pivoted drop-levers having the upright portions, the upper horizontal arms carrying the indicating-plates, and the lower horizontal arms of different lengths provided with slotted arms extending substantially at right angles to the ends of such lower horizontal arms, in combination with the series of swinging stop or pawl plates projecting at their upper ends up through the slots in the arms attached to the levers and provided near their upper ends with stop-shoulders to engage such arms, and means, substantially as set forth, for causing one or more of the pawls to release the levers as desired, substantially as and for the purpose described.

7. In an indicator, the series of drop-levers carrying indicating-disks, the pivot-bar on which the levers are pivoted, and the series of swinging stops adapted to engage portions of the drop-levers so as to hold such levers elevated, in combination with the elevating-wing pivoted below the levers, and means, substantially as described, adapted to cause one or more of the stops to release their respective drop-levers, and means, substantially as described, adapted to swing the wing up to raise the levers again, substantially as specified.

8. In combination with the series of pivoted drop-levers carrying the indicating plates or disks, and provided with horizontal arms, the series of swing-pawls or stop-plates adapted to support such arms in raised position, the elevating-wing pivoted below and extending under such arms, means for moving any desired pawl to release its respective lever, and means for swinging the wing up with its edge against the horizontal arms of the levers before the pawl is moved, keeping it so until after the pawl has been caused to release its lever, and then swinging it suddenly down again, substantially as and for the purpose described.

9. A series of drop-levers having the upright arms, the upper horizontal arms of different lengths carrying indicator disks or plates and the lower horizontal arms also of different lengths, in combination with the pivot-rod, upon which each lever is pivoted at the angle between its upright portion and lower horizontal arm, the series of slotted arms extending forward from the ends of the lower lever-arms, the series of pawls engaging such slotted arms, the elevating-wing pivoted below and extending under the lower lever-arms, means for causing any desired number of pawls to release the slotted arms, and means for swinging up the elevating-wing before the pawls are actuated and keeping it swung up until after said pawls have released their levers, all substantially as and for the purpose described.

10. In combination with the swinging pawl or stops for holding up a drop-lever, the sliding rod having its end turned up, the wire or rigid rod attached to the pawl or stop passing through a hole in the upturned end of the sliding rod and provided on its end with an enlargement or head, substantially as and for the purpose described.

11. As a means for connecting each pawl-operating rod with its pawl so as to allow some outward movement of the rod before the pawl is moved, the rod attached at one end to the pawl and at the other passing loosely through a hole in the upturned end of the pawl-operating rod, and provided with an enlargement or head at a distance beyond the rod end, all in combination, substantially as shown and described.

12. In combination with the series of pawl-actuating sliding rods provided with pins, the sliding bar extending across the series of pawl-rods in front of the pins thereon, means for retracting the bar when it has been pulled out and forward by the pulling out of one or more of the pawl-rods, and means actuated from such bar to raise such levers as have been dropped down, substantially as shown and described.

13. In combination with the series of lever-supporting pawls, the reciprocating rods connected with and adapted to actuate the pawls as they are reciprocated, the sliding bar extending across the series of rods, means for retracting such bar, means, substantially as described, for causing the bar to be drawn outward by the pulling out of one or more of the rods, the arm extending rearward from the bar, the lever-raising wings on each side, and connecting mechanism between the arm and wings, whereby as the bar is pulled forward and outward by the movement of one of the pawl-actuating rods the wings will be swung up before the pawl is moved by the rod and held up until such pawl has been moved by the rod.

14. In combination with the pawl, the reciprocating rod and connecting means between the pawl and rod, whereby the pawl is moved only after the rod has moved through a portion of its movement, the pin on the rod engaging the rear side of the sliding bar, an arm extending rearward from the bar provided with a pin, a pivoted lever beside such arm carrying a pawl adapted to be engaged by the pin on the arm to swing the lever on its pivot until the sliding rod has caused its pawl to release the respective drop-lever, connecting-rods between the swinging-lever ends and the drop-lever, raising wings, and springs for swinging the wings down as soon as the pin on the arm passes off the pawl on the swinging lever, substantially as shown and described.

15. In combination with the two series of drop-levers, the two elevating-wings swung below the two series of levers, springs tending to keep the wings swung down, means for swinging up the wings, consisting of rods connecting an arm on each wing with one end of a pivoted bar, a pawl on such bar, and a sliding arm provided with a pin adapted to engage the pawl and swing the pivoted bar on its pivot as the arm is slid outward and forward until its pin passes off the pawl, substantially as and for the purpose set forth.

16. In combination with the lever-raising wings, the pivoted bar, the rods connecting its opposite ends with the wings, the pawl on the bar consisting of the straight arm pivoted at its forward end upon the pivoted bar, and the curved arm extending from the end of the straight arm over the bar and provided with a slot engaging the pivot-pin of the bar, a spring tending to keep the pawl swung out beyond the side of the bar, and a sliding arm or piece provided with a pin adapted to engage the pawl as the arm slides forward and outward, substantially as and for the purpose described.

17. In combination with the lever-raising wings, the pivoted bar provided with a striker, suitable connecting mechanism between the bar and wings whereby the wings are swung up by the movement of the bar and said bar is swung back by the fall of the wings, and a bell adapted to be struck by the striker on the bar as said bar is swung by the fall of the wings, substantially as specified.

18. The series of drop-levers and the lever-elevating wings hung below the series of levers, in combination with a spring for swinging it downward, a pivoted bar, a connecting-rod between such bar and the wing, means, substantially as described, for causing any desired drop-lever to drop down, and connecting mechanism between such means and the pivot-bar adapted to cause the bar to swing so as to raise the wing and hold it raised until the lever has dropped upon and is supported by its upturned edge, and then to allow the wing and lever to fall, an alarm-bell, and a striker on the bar adapted to strike the bell as the bar is swung by the falling of the wing, substantially as and for the purpose described.

19. In a cash register and indicator, in combination with the indicating mechanism and a registering device, a sliding rod adapted to actuate the indicating mechanism as the rod is pulled out, means, substantially as described, whereby the rod is caused to actuate the registering device as the rod is returned, and a spring for returning the rod, substantially as and for the purpose described.

20. In a cash register and indicator, the series of sliding rods, the series of indicators, means, substantially as described, whereby the rods actuate their respective indicators as they are pulled out, the series of registering devices, means carried by each rod whereby it actuates its respective registering device upon the return or inward movement of the rod, and the series of springs for returning the rods when they have been pulled out, substantially as and for the purpose described.

21. In a register and indicator, a series of reciprocating bars, a series of indicators, and means whereby each bar operates its respective indicator as it is drawn out, in combination with the series of ratchet-toothed wheels journaled above the rods carrying graduated register-bands, springs for retracting the bars, and pawls adapted to engage the teeth on the band-wheels during the return movement of the bars, substantially as shown and described.

22. In a register and indicator, a sliding bar for actuating an indicating device, in combination with a band-wheel provided with ratchet-teeth at one side, a band passing around the wheel and moved thereby, graduated and marked with numbers, each successive one of which represents a sum greater than the preceding by an amount equal to that shown by the indicating device operated by the bar, and a pawl on the bar adapted to engage a tooth on the wheel at each return movement of the bar, substantially as and for the purpose described.

23. In combination with a series of indicating devices, the series of sliding rods, suitable connecting means between the rods and indicating devices, the pawls on the rods, the series of band-wheels journaled over these rods and provided on their peripheral surfaces with pins, and at their sides with ratchet-teeth projecting beyond their peripheries and adapted to be engaged by the pawls on the bars, a fixed bar, and the graduated numbered bands or belts passing around the wheels and around said cylindrical fixed bar, and provided with holes for engagement with the pins on the wheels, substantially as and for the purpose described.

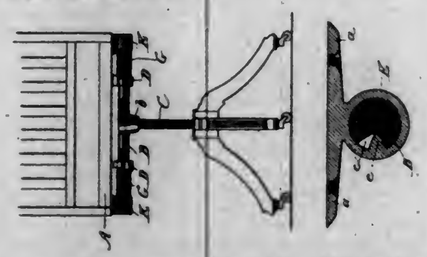
24. In a combined cash register, indicator, and money-changer, in combination with the mechanism for making change and the registering and indicating mechanism, means for automatically locking the money-changing mechanism from operation until the register and indicator mechanisms are operated, substantially as and for the purpose described.

25. In combination with the cash register and indicator and the money-changer, means, substantially as described, for automatically locking the money-changing mechanism after each operation thereof, and means, substantially as described, actuated by the register and indicator mechanism to unlock the money-changing mechanism, substantially as and for the purpose described.

26. In a combined cash register and indicator and money-changer, in combination with the registering and indicating and money-changing mechanism, means, substantially as described, for automatically locking the money-changer from operation until the registering and indicating mechanism has been operated, substantially as and for the purpose described.

27. In a combined cash register and indicator and money-changer, the combination with the money-changing mechanism, and the register and indicator mechanism, of means, substantially as described, for automatically locking the money-changing mechanism, and means, substantially as described, actuated by the register and indicator mechanism to unlock the money-changer, substantially as and for the purpose described.

321,816. TILTING CHAIR. DANIEL W. HOOKLEY, Chicago, Ill. Filed Aug. 16, 1884. (No model.)



Claim.—1. The combination of the axial shaft B, having the V-formed grooves c in the side of each end thereof, and the tubular bearings E, provided with the V-formed projections *e* in their interiors, substantially as and for the purpose described.

2. The combination of the tubular bearings E, provided with inclined inner ends and notches for the ends of the springs, the said springs themselves, the nuts D, provided with inclined outer ends and notches for said springs, and the axial shaft B, substantially as and for the purpose described.

3. The combination of the shaft B, provided with the longitudinal grooves *b'*, key *b'*, and the nuts D, provided in their interiors with series of longitudinal grooves *f*, and having their outer ends inclined and notched to accommodate the springs, substantially as and for the purpose described.

4. The combination of the tubular bearings E, having their projections *e* extended inwardly, so as to afford supports to hold the springs up from the ends of the shaft B, so that they will not interfere with the tilting action of the shaft, with the said shaft having V-formed grooves *c*, substantially as described.

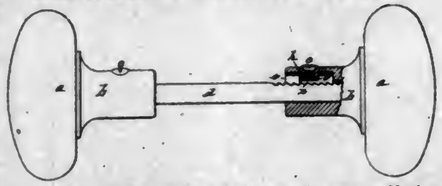
321,817. ATTACHMENT-HOLDER OR MEANS FOR SECURING SEWING-MACHINE ATTACHMENTS. ALLEN JOHNSTON, Ottumwa, Iowa. Filed Oct. 8, 1883. (No model.)



Claim.—1. The attachment-holder in the form of a presser-foot having a transverse groove therein behind the needle-hole, in combination with the series of attachments having each a flat attaching-plate of a shape and size to fit in said groove, and the holding-screw tapped through that part of the holder which lies behind the groove, and arranged to bear at the point against the rear edge of the attaching-plate, substantially as described.

2. The attachment-holder in the form of a presser-foot having a transverse groove behind the needle-hole, and the holding-screw for securing an attaching-plate in said groove, in combination with the series of folding attachments, each having a flat attaching-plate of a shape and size to fit in said groove, and a scroll or folding-guide fastened to an arm projecting forward from said attaching-plate, so that when secured in the holder said scroll or guide is in front of the presser-foot, said holding-screw being arranged to bear against the edge of said attaching-plates, substantially as described.

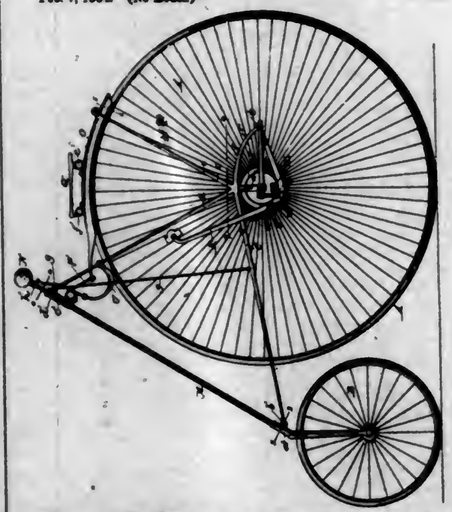
321,818. ATTACHING DOOR-KNOBS TO SPINDLES. ROBERT M. KEATING, Springfield, Mass. Filed Dec. 15, 1884. (No model.)



Claim.—1. The spindle *d*, having serrations on one side thereof, the knob-shank *b*, having the bar *h* projecting from one side of its spindle-socket, the shoe *e*, having serrations to engage with those on the spindle, and a groove to engage with said bar *h* and the screw *c*, combined and operating substantially as set forth.

2. The spindle *d*, having serrations on one side thereof whose faces are formed at an incline and at right angles to the serrated side of the spindle, the knob-shank *b*, having the bar *h* projecting from one side of its spindle-socket, the shoe *e*, having serrations thereon of like form to those on the spindle, and a groove to engage with said bar *h* and the screw *c*, combined and operating substantially as set forth.

321,819. BICYCLE. WILLIAM S. KELLEY, Smithville, N. J. Filed Feb. 7, 1884. (No model.)



Claim.—1. The frame-section for a bicycle, consisting of the arms *a*, *c*, *d*, *e*, and *f*, as described and shown.

2. In combination with the foot-lever, the main frame having the arm *f* doubled or returned in the manner described, whereby it is adapted to support the fulcrum of the lever at both ends.

3. In combination with the main frame and axle, the step and the bolt *i*, adapted to serve the twofold purpose of sustaining the step and of contracting the frame upon the axle.

4. In a bicycle, the combination, with the main frame, of the pendent screw or bolt *i*, and the step L, adjustably secured upon said bolt by means of nuts.

5. In combination with the rear driving-wheel and its axle, the main frame mounted on said axle and provided with the arms *c* and *d*, the bearings attached to the extremities of said arms, and the steering-shaft mounted in said bearings and fixed against end motion therein.

6. In a bicycle, the combination of the rigid main frame, the rear wheel mounted therein, the forward steering-wheel, and the inclined steering-shaft connected at its two extremities to the main frame, and serving in effect as a front bar for said frame to impart the requisite strength and rigidity thereto.

7. In combination with the rear driving-wheel, the main frame, the front steering-wheel, the steering bar or shaft mounted in fixed bearings on the main frame, and the seat-supporting bar mounted, substantially as described and shown, to move bodily forward with respect to the frame and to return automatically to its normal position.

8. In a machine comprising a main frame, and sustaining-wheels therefor, a seat-supporting bar connected to the frame at its forward end by means of a pendent link, and at its rear end by an upright yielding arm, as described and shown.

9. In a bicycle, two ground-wheels, in combination with a connecting-frame, whereby a fixed distance is maintained between the wheels, and a seat-supporting bar movable bodily forward and backward upon the frame, said bar being supported in substantially the manner described, whereby it is adapted to resume its normal position automatically.

10. In a bicycle or similar machine, a wheeled frame, and a seat or saddle supported at its two ends by yielding devices, adapted to permit the saddle to move freely forward and backward in relation to the frame and wheels.

11. In combination with the main frame, the rear driving-wheel, and the forward steering-wheel of relatively small size, the seat-supporting bar pivoted at its rear end to the arm of the frame, and connected at its forward end to the frame by means of a pendent link or support.

12. In combination with the main frame, the driving-wheel, and the steering-wheel, the seat-supporting bar *o*, jointed at its rear end to an arm of the main frame, and a spring, *p*, connecting the forward end of said bar with the main frame, substantially as described and shown.

13. In combination with the fixed axle, the driving-wheel revolving thereon, the rotary drum or pulley revolving independently on the axle, the connecting-pawls, and a frictional collar connected with the pawls, substantially as described, whereby the pawls are thrown positively into and out of action.

14. In a bicycle or similar machine, the combination of a driving-wheel, an independently-revolving drum, intermediate pawls connecting said parts, a spring to turn the drum in a backward direction, a strap and treadle to turn the same in a forward direction, and a collar having a frictional engagement with a support independent of the pawl-carrier, and arranged to act upon the pawls for the purpose of swinging the same into and out of engagement, substantially as described and shown.

15. In combination with the non-rotating axle, the driving-wheel provided with a toothed rim or flange, the independently-revolving drum provided with pawls to engage the rim, the divided collar confined by spring-pressure upon the axle, and a connection between said collar and the pawls.

16. In a bicycle, the combination of a foot-lever or pedal, a driving-wheel, a strap for operating said wheel, and intermediate devices connecting the strap and lever movable to and from the fulcrum of the latter, and devices adapted to be operated by the foot of the rider for changing the position of the connecting devices.

17. In a bicycle, the combination of the foot-lever and the wheel operating the strap with the connecting-link arranged to swing forward and backward, substantially as described.

18. In a bicycle, the combination, with a driving-wheel, of an operating-strap, a lever to actuate said strap, and a swinging connection between the strap and lever provided with a projection to be moved by the foot of the operator, whereby an instantaneous adjustment of the connection may be effected.

19. The drum and the spring tending to revolve the same in a backward direction, in combination with the operating-strap, the lever, and the swinging link *u*, whereby the point of connection between the lever and strap may be changed at will and the adjustment maintained by the tension of the strap.

20. In combination with the strap and lever, the swinging link *u*, the secondary link *w*, and arm *v*.

21. The axle and the revolving drum or pulley, in combination with the spring *g*, having a hooked inner end, and the stationary collet provided with a series of shoulders or notches to receive the end of the spring.

22. In combination with the axle and spring, the stationary collet H, made of hollow or tubular form, and the drum or pulley E, having its journal extended around the axle within the collet.

23. In combination with the drum having a plate or hook, *r*, in its interior, the spring *g*, having a hooked outer end to engage therewith.

24. In combination with the drum or pulley, the internal spring, and its holding-plate *r*, the external strap and its holding-plate *p*, and the screw or screws *q*, applied as described and shown.

25. In combination with the driving-wheel having the annular flange *h*, the drum or pulley provided with pawls to drive the wheel, and the internal shell or casing applied, as shown, to encircle the hub and flange, whereby the parts are concealed and protected.

26. In combination with the supporting-bar, the flexible seat or saddle and the independent supporting-springs *e'* and *f'*, each consisting of a coiled portion having one extremity secured to the bar, and the opposite extremity attached to the saddle.

27. In combination with the flexible seat or saddle, the supporting-springs *e'* and *f'*, each consisting of a continuous or endless wire having coils formed therein.

28. The improved rim for a bicycle-wheel, having in its outer surface the groove with the flat seat and outwardly-inclined sides.

29. The improved rim for a bicycle-wheel, having in the outer surface a groove with a flat bottom and flaring sides, and also having on the back the central rib, substantially as shown.

30. In an elastic tire for bicycle and other wheels, the combination of a central body of light and highly-elastic rubber and an exterior skin or coating of thin tough rubber, combining the qualities of pliability and of relatively-great tensile strength.

31. The combination, with a wheel, of an elastic tire consisting of an inner portion applied under tension to act with a contractile effect on the wheel, and an outer portion connected firmly to the inner portion and free from or under relatively low tension, whereby the tire is retained firmly in position upon the wheel, but prevented from opening in the event of its surface being cut or ruptured.

32. In combination with a wheel, an elastic tire consisting of inner and outer portions, the inner portion being under high tension and the outer portion free from tension or under relatively low tension.

33. In an elastic tire for road-wheels, the combination of a base portion of highly contractile rubber, an outer portion of light elastic rubber, and a thin covering or envelope of relatively-tough rubber, as described.

34. In combination with the steering-shaft and the main frame-sections, a divided box or bearing for said shaft, connected to the frame by means of a transverse bolt, substantially as described.

35. In a bicycle, the combination, with the main wheel, of a seat-supporting bar located directly thereover, said bar constructed of a ∩ form in cross-section, as and for the purpose described.

36. In combination with the main frame and the wheel fixed therein, the brake-shoe, the rotary steering-shaft and its handle, and the brake-operating lever pivoted to and swinging with the handle and united by a swinging connection with the brake.

37. In combination with a clutch mechanism for driving the same, a suspension-wheel having the inner ends of its spokes secured to the hub at a point outside of or beyond the periphery of the clutch mechanism, whereby access is afforded to the inner end of the spokes.

38. In combination with the clutch mechanism having pawls to engage the wheel, the wheel provided with the overhanging toothed flange, and also with the spoke-receiving flange outside of or beyond the first-named flange.

39. In combination with the wheel having the annular flange *a''*, with the spoke-retaining nuts applied to its inner surface, the shield or casing I, provided with a flange to cover and conceal the nuts.

40. In a bicycle, the combination of a main frame, a rear wheel mounted in fixed bearings in said frame, a steering shaft or rod with a forward and backward inclination, mounted in bearings in the front of said frame and fixed against end motion therein, a steering-wheel mounted in a substantially-vertical fork on the lower end of said shaft, a steering bar or handle applied to the upper rear end of the shaft, a brake mounted on the main frame, a brake-operating lever located adjacent to and arranged to turn with the steering-handle, whereby the brake and the steering-wheel may be controlled without interference with each other.

321,820. REED-ORGAN. GEO. B. KELLY, Boston, Mass. Filed Feb. 5, 1885. (No model.)

Claim.—1. The combination, with the reed and its chamber, of a tube arranged above the register or slide, and provided with one or more internal transverse perforated diaphragms or partitions, substantially as and for the purpose specified.

2. The combination, with the reed and its chamber, of a tube provided with one or more internal transverse perforated diaphragms or partitions, arranged to be adjusted therein, substantially as and for the purpose specified.

3. The combination, with a reed and its reed-chamber, of a tube provided with one or more internal transverse perforated diaphragms or partitions, and arranged to fit within a socket, T, in the block U, sub-

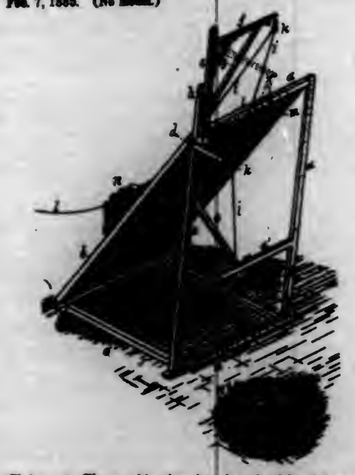
321,820.



stantially as and for the purpose specified.

4. In a reed musical instrument, the combination, with its reed and reed-chamber, of a tube made in two or more parts, one or more of which parts are adapted to slide on the other or others, and each provided with one or more internal transverse perforated diaphragms or partitions, V, substantially as and for the purpose specified.

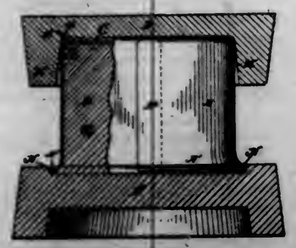
321,821. HAY-DERRICK. MARTIN V. B. KENNEY, Cushman, Ill. Filed Feb. 7, 1885. (No model.)



Claim.—1. The combination, in a hay-derrick, of frame *a*, inclined plane *b*, arm *d*, upright *h*, crane *e f*, pulleys *k k k*, and elevating-rope *i*, adapted to have connected thereto a hay-fork, as and for the purposes set forth.

2. The combination, in a hay-derrick, of detachable frame *a b e*, crane *e f*, pulleys *k k k*, elevating-rope *i*, and trip-cord *l*, adapted to operate the hay-fork and return the same over the incline *b* after a discharge has been effected.

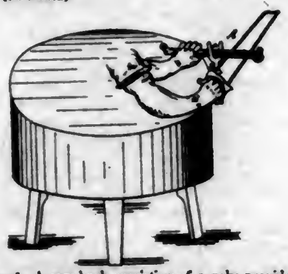
321,822. DIE FOR THE MANUFACTURE OF SHEET-METAL HOLLOW WARE. CLEMENT KIND, Addington, Canterbury, New Zealand, assignor to Charles B. Taylor, San Francisco, Cal. Filed Apr. 25, 1884. (No model.) Patented in New Zealand Apr. 22, 1881, No. 532; in Victoria July 31, 1883, No. 3,512; in New South Wales Dec. 21, 1883, No. 1,945, and in England May 5, 1884, No. 7,240.



Claim.—1. The combination, with a die, F, having a central portion, G, and groove B', of a die, D, having a groove, D', substantially as and for the purpose specified.

2. A die, D, provided with two or more parts, M Q, each provided with a groove, D', substantially as and for the purpose specified.

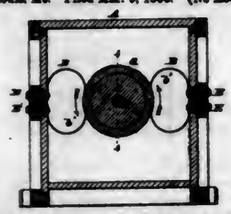
321,823. SAW-BUCK. CARL KLEIN, New York, N. Y. Filed May 7, 1885. (No model.)



Claim.—1. A saw-buck consisting of a yoke provided with a suitable shank, and fastenings constructed to receive the shank and to prevent it from turning, substantially as shown and described.

2. The combination, with the yoke and the taper shank thereof, of socketed fastenings adapted to receive the shank, substantially as shown and described.

321,824. COTTON-SEED LINTER. JULIUS J. KOCH and WALTER P. GRATH, St. Louis, Mo. Filed Mar. 9, 1885. (No model.)



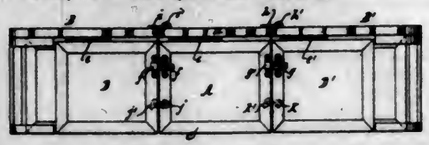
Claim.—1. A basket, composed of sheet metal, having a concavity bent into the side thereof and slots cut through it at said concave portion, substantially as and for the purpose set forth.

2. The combination, with a basket having a concavity in the side thereof and slots cut through it at said concave portion, of a cylinder having teeth adapted to work in said slots, as set forth.

3. The combination, in a linting-machine, of a cylinder having teeth arranged thereon, and a basket having slots in which said teeth work, and rounded parts *b'*, substantially as and for the purpose set forth.

4. The combination, in a linting-machine, of a toothed cylinder, a basket having slots through which said teeth project, and a rounded part, *b'*, on the side to which the material is carried by the action of the teeth, substantially as set forth.

321,825. COMBINED SOFA-BED AND CHAIR. GEORGE KOMBS, Jr., Brooklyn, N. Y. Filed Apr. 16, 1885. (No model.)

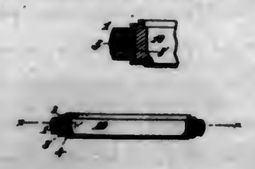


Claim.—1. The combination of two settees, each having separate legs, a hinged seat, and fastenings for joining the same together, end to end, to form a sofa and sofa-bed, substantially as shown and described.

2. The combination of two settees and a chair placed intermediate between the settees, each having a hinged seat, separate legs, and fastenings for joining the same together to form a sofa and sofa-bed, substantially as shown and described.

3. The combination of a chair and a settee, each having separate legs, a hinged seat, and fastenings for joining the same together, substantially as shown and described.

321,826. WATCH-CASE. JAMES LAMONT, Sag Harbor, N. Y., assignor to Fahys Watch Case Company, same place. Filed Feb. 25, 1885. (No model.)



Claim.—1. A case-center having recesses for receiving the free ends of the lifting and holding springs, posts or stops secured therein for preventing backward movement of the springs, and lugs for confining them in position, substantially as described.

2. A case-center having posts or stops across the interior of its hollow and lugs upon one base thereof, whereby the lifting and holding springs are secured in position, substantially as described.

3. In a watch-center, the combination of springs 5 6, posts or stops 7, and lugs 8, substantially as described.

4. In a watch-case, the combination of a case-center, posts, or stops extending across its hollow for the ends of the springs to abut against, and provided with screw-threaded semicircular recesses, and a ring having similar recesses, whereby, when the parts are arranged for the recesses to register, screw-holes for securing the ring to the center by means of the posts or stops are formed, substantially as described.

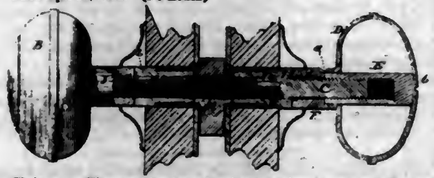
5. The combination, with a case-center, of a ring having flat 14 and shoulder 15, adapted to form a double joint with the back of the center and support the cap-flat of the center, substantially as described.

6. The combination of a watch-case center having posts 7, with recesses 9, and a ring having similar recesses, 22, substantially as described.

7. A watch-case center having posts 7 with interior recesses, 9, formed and finished as the halves of screw-holes, substantially as described.

8. The combination of the case-center, the posts 7, having recesses 9, the lugs 8, a spring or springs, 5 6, and the ring 10, having recesses 22, the recesses being finished and formed each as the half of a screw-hole, substantially as described.

321,827. DOOR-KNOB ATTACHMENT. BENJAMIN F. LIBBY, South Norwalk, Conn., assignor to the Norwalk Lock Company, same place. Filed Apr. 13, 1885. (No model.)

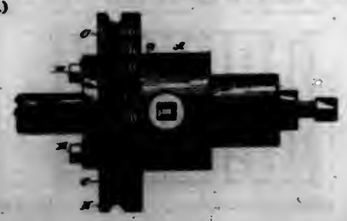


Claim.—1. The combination of a knob-latch, a knob-spindle extending through the hub of the latch, and a knob fixed to one end of the spindle, with an extension therefrom to take a bearing upon that end of the hub, the second knob made adjustable upon the opposite end of the spindle, with a sleeve interposed between the end of the neck of the knob and the hub, and so as to bear against that end of the hub, the said sleeve adapted to closely fit the spindle, substantially as described.

2. The combination of a knob-latch, a knob-spindle extending through the hub of the latch, and a knob fixed to one end of the spindle, with an extension therefrom to take a bearing upon that end of the hub, the second knob made adjustable upon the opposite end of the spindle, with a sleeve interposed between the end of the neck of the knob and the hub, and so as to bear against that end of the hub, the said sleeve adapted to closely fit the spindle, the sleeve and the neck of its knob constructed the one with a projection and the other with a corresponding recess, whereby the knob and sleeve are coupled together, substantially as described.

3. The combination of a knob-latch, the knob-spindle extending through the hub of the latch, with a spindle fixed at one end, and with an extension from the neck thereof to take a bearing upon that end of the hub, the opposite end of the spindle screw-threaded upon its angles, and a knob adapted to pass freely onto that end of the spindle, the nut within the knob free for rotation, but fixed as to longitudinal movement, the said nut internally screw-threaded to correspond to the thread on the angles of the spindle, and the said nut also extended through the face of the knob as a means whereby the said nut may be turned, the neck of the knob extended onto the spindle to take a bearing against its end of the hub, substantially as described.

321,828. CUTTER-HEAD. JAMES LOAR, Catlettsburg, Ky., assignor of one-half to John N. Smith, same place. Filed Dec. 10, 1884. (No model.)



321,828.



Claim.—The combination, with an arbor having a reduced end and a shoulder having threaded perforations in its face, with a cutter-head formed by a number of saw-blades arranged side by side, and having a central perforation fitting upon the arbor, and eccentric registering perforations registering with the perforations in the shoulder of the arbor, and screw-bolts fitting in the said perforations, as and for the purpose shown and set forth.

321,829. NON-SIPHONING ATTACHMENT FOR CLOSET AND OTHER TRAPS. HENRY MACKLEY and JOSEPH B. ROSS, Chicago, Ill. Filed Oct. 7, 1884. (No model.)



Claim.—In combination with the trap A, having the upwardly-extending inlet-pipe B, the horizontal plate C, having the vertical screw-threaded flange c and wall-flange *c'*, secured on the upper end of said pipe B, in such manner that the end of said pipe may pass through said plate, pipe E, secured at its lower end to said plate on its upper side in such manner that its lower and passes through said plate at one side from pipe B, and having the valve-guard *e*, secured to its upper end, ball-valve F, bell-glass D, having the annular flange *d*, and having its lower end screw-threaded to unite it with plate C, and washer *d''*, all arranged to operate as and for the purpose set forth.

321,830. RIDING-SADDLE. MALCOLM MACLEOD, West Hill, Malmesbury, County of Wilts, England. Filed Feb. 25, 1885. (No model.) Patented in England Feb. 15, 1883, No. 846.



Claim.—1. The combination, with a saddle-tree side piece, of a saddle-bar hinged thereto at *b'*, and means for supporting the rear end of the saddle-bar, substantially as set forth.

2. A saddle-bar, *a*, hinged at *b'*, and normally held in position by a hook, b^2, and catch b^3, substantially as herein shown and described, and for the purpose stated.

3. A saddle-bar, *a*, hinged at *b'*, and normally held in position by a hook, b^2, and catch b^3, and controlled by a hinged lever, in manner substantially as herein shown and described, and for the purpose stated.

4. A saddle-bar hinged at b', means by which the bar is normally held in position, and a hinged lever by which the bar is controlled, in manner substantially as herein shown and described, and for the purpose stated.

5. A saddle-tree side piece having a saddle-bar, a, hinged thereto, and a hinged lever, c, provided with a projection or pawl, c^3, substantially as herein shown and described, and for the purpose stated.

6. In combination with a saddle-bar, a, hinged at b', and normally held in position by a hook, b^2, and catch b^3, an arm, b^4, acting in manner substantially as herein shown and described, and for the purpose stated.

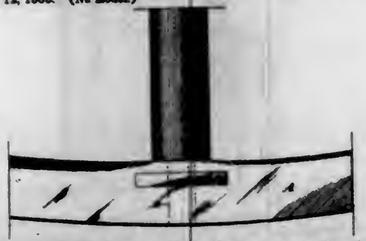
7. In combination with a saddle-bar, a, hinged at b', and normally held in position by a hook, b^2, and catch b^3, and controlled by a hinged lever, c, an arm, b^4, acting in manner substantially as herein shown and described, and for the purpose stated.

321,831. CHURN-DASHER. ALEXANDER MALONE and BETTIE A. MALONE, Franklin, assignors of three-fourths to John B. Montague and James T. Booker, Simpson County, Ky. Filed Mar. 16, 1885. (No model.)



Claim.—The combination of the dasher-rod with the dashers, said dashers consisting each of a central hub, thin radial spokes or blades projecting therefrom, the thin circular rim connecting the outer ends of the spokes, and concentric rings between the hub and the rim, the rims and spokes or blades being adapted to cut or whip the cream without materially displacing it, the dashers being so arranged and secured to the dasher-rod that the spokes and rings of one are out of line vertically with the spokes and rings of the other, substantially as described.

321,832. WHEEL-FELLY. JAMES MANN, Columbus, Ohio. Filed Feb. 12, 1885. (No model.)



Claim.—1. A wheel-rim provided with grooves or mortises therein, and strips of wood inserted in said grooves or mortises with their grain running in a different direction from the grain of the rim.

2. A wheel-rim provided with mortises therein, strips or blocks of material inserted in said mortises, and spoke-sockets passing through said strips or blocks and through or partly through the rim.

3. A wheel-rim provided with grooves or mortises therein and blocks of veneering inserted in said grooves or mortises, substantially as set forth.

4. A wheel-rim provided with grooves or mortises therein, blocks of veneering inserted in said mortises, and spoke-sockets passing through said blocks and through or partly through the rim.

5. A wheel-rim provided with a series of transverse mortises, blocks of veneering inserted in said mortises, and spoke-sockets passing through said blocks and through or partly through the rim.

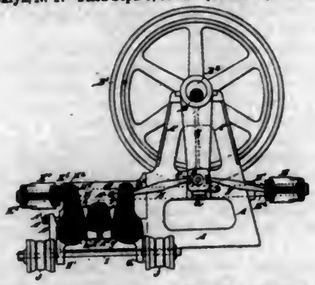
321,833. FIRE-CRACKER. CORNELIUS E. MASTEN, Boston, Mass. Filed June 16, 1884. (No model.)



Claim.—1. In a fire-cracker, the match B and fuse C, in combination with the solid plug D and body A, substantially as set forth.

2. The improved fire-cracker herein described, the same consisting of the body A, fuse C, match B, plug D, shell H, plug M, and filling or charge E, constructed, combined, and arranged to operate substantially as described.

321,834. ROCK AND ORE CRUSHER. FREDERICK H. MCDOWELL, Brooklyn, N. Y. Filed Sept. 8, 1884. (No model.)



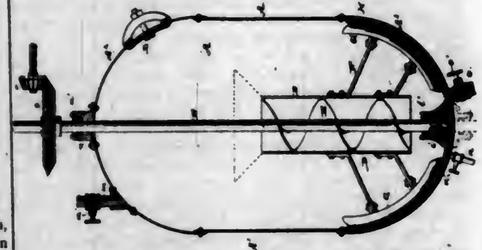
Claim.—1. In a rock and ore crusher, the combination, with a stationary jaw, as A^2, having beveled faces, of two movable jaws, as G H, arranged one upon either side of the stationary jaw, and means, as described, for operating said jaws simultaneously in opposite directions, as set forth.

2. In a rock and ore crusher, the pitman C, guided at its lower end, substantially as shown, in combination with the toggles M N, frame E E^2 E^4, jaws G H, and stationary jaw A^2, arranged for joint operation, substantially as herein specified.

3. In a rock and ore crusher, the jaws G H, with their respective arms G' H', operating means, as B C M N, and yoke E E^2 E^4, in combination with each other and with the tension-rods I and springs J, arranged for joint operation, as herein specified.

4. In a rock and ore crusher, the bearing-blocks G^2 H^2 and stationary jaw A^2, in combination with the jaws G H, their operating means, the stout framing A, binder A^5, bolts A^6, and nuts A^7, arranged for joint operation, substantially as herein specified.

321,835. APPARATUS FOR DISINTEGRATING ORES. HARRISON B. MEEK, Cleveland, Ohio. Filed Jan. 8, 1884. Renewed Nov. 25, 1884. (No model.)

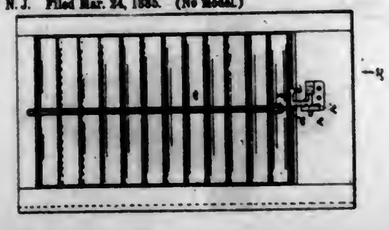


Claim.—1. In an apparatus for disintegrating ores, the combination, with a closed receptacle constructed with a hemispherical end having a grinding-surface removably secured thereto, of a rotary shaft provided with hinged mullers, substantially as set forth.

2. In an apparatus for disintegrating ores, the combination, with a closed receptacle, of the rotary shaft, the grinding-surfaces, and the spiral elevator and cylinder, substantially as set forth.

3. In an apparatus for disintegrating ore, the combination, with the closed receptacle having semicircular lower end provided with a detachable grinding-surface, a revolving shaft, an elevator secured to the shaft, and mullers or grinding-plates connected with said shaft, substantially as set forth.

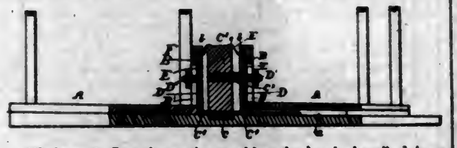
321,836. BLIND-SLAT FASTENER. PETER M. MELICK, Newark, N. J. Filed Mar. 24, 1885. (No model.)



Claim.—1. In a blind-adjuster, in combination, an adjustable arm, a plate provided with stops or detents thereon, a spring arranged and operating to cause said arm to engage with said stops, and a connecting-piece pivotally attached to said adjusting-arm and the slat-bar, for the purposes herein set forth.

2. In a blind-adjuster, in combination, a plate provided with a stop plate or portion, h, and a casing, a bar journaled in said stop-plate and casing, and provided with an arm adapted to engage with the detents on said stop-plate, an adjusting-arm having a finger-grasping portion, and a portion, d, a forked link pivotally attached to said portion d on the adjusting-arm and the slat-bar, and a spring arranged within the casing and operating upon the bar journaled in said casing, to cause the adjustable arm to engage with the detents on the stop-plate, substantially as and for the purpose set forth.

321,837. CUTTING APPARATUS FOR HARVESTERS. DENNIS MICHAELS, Hopedale, Ohio. Filed Sept. 2, 1884. (No model.)



Claim.—1. In a harvesting-machine, the herein-described inner shoe provided with upright supports on opposite sides of its cutter-bar way, and wear-plates held to the inner side of said supports and adjustable vertically, substantially as set forth.

2. The combination, with the shoe provided with upright supports B, having slots B', of the knife-bar provided with flanges C^4, the wear-plates D, having bolts D' extended through and adjustable vertically in slots B', and the retaining-nuts, substantially as set forth.

3. The combination, with the inner shoe and the knife-bar and its knuckle traversing thereon, of the upright supports arranged on opposite sides of the knife-bar and knuckle, and the flexible stripe E, extended outward from the upper ends of said supports toward each other, with their outer ends adapted to rest upon the head of the knuckle, substantially as shown, and for the purposes described.

4. The combination, substantially as set forth, of the shoe, the upright supports B, having slots B' and flanges b b', the packing E, the wear-plates D, having bolts D' and nuts F, and the knife-bar having flanges C^4 C^4, substantially as set forth.

321,838. HOLDBACK. REUBEN S. MORSE, Vienna, N. Y. Filed Jan. 5, 1885. (No model.)

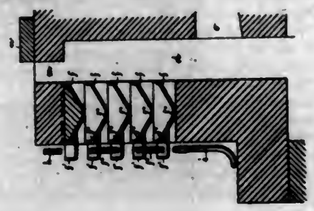


Claim.—As an improved article of manufacture, the holdback herein described, consisting of the concave metallic plate A, having the hook D, slot-bearing e, and recess-bearing m, the snap-tongue H, curved as described, and pivoted in the slot-bearing, the spiral spring seated in the recess-bearing and engaging the under side of the said snap-tongue, substantially as set forth.

321,839. MEDICAL COMPOUND. STANLEY W. NEUER, New York, N. Y. Filed Feb. 16, 1885. (No specimens.)

Claim.—The herein-described medical compound, consisting of thymol, boracic acid, chlorate of potash, chloride of sodium, and oil of wintergreen in about the proportions above set forth.

321,840. LIQUID-FUEL FURNACE. LUDVIG NOBEL, St. Petersburg, Russia. Filed Sept. 8, 1884. (No model.) Patented in Russia Dec. 28, 1883, No. 10,111.



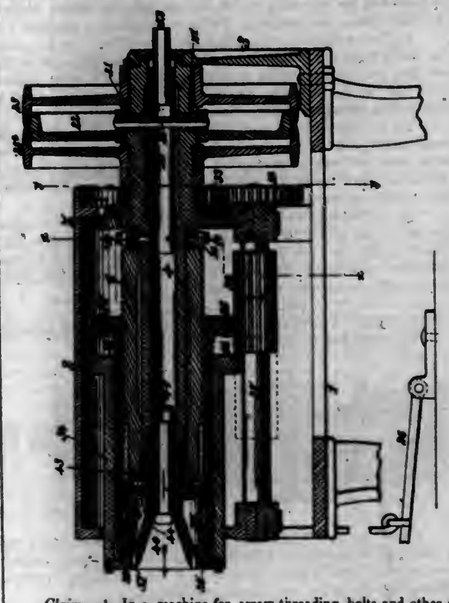
Claim.—1. A liquid-fuel furnace having a fire-box provided with an aperture in the front, containing horizontal trough-like fire-bars arranged one immediately over the other, and adapted to receive and maintain the liquid fuel at uniform depths, substantially as set forth.

2. A liquid-fuel furnace having a fire-box provided with an aperture in the front, containing horizontal trough-like fire-bars arranged one immediately over the other, a supply-pipe for the liquid fuel, and overflow-communications between the superposed troughs, substantially as described.

3. A liquid-fuel furnace having a fire-box provided with horizontal trough-like fire-bars, one over the other, to receive the liquid, air-inlet, a mixing-chamber, and narrow passages leading from the mixing-chamber to the body of the furnace, substantially as specified.

4. A fire-bar for a liquid-fuel furnace, said fire-bar consisting of a horizontal trough provided with a pan, f'', communicating perforation f'^3, and overflow, substantially as set forth.

321,841. MACHINE FOR SCREW-THREADING BOLTS, &c. JOHN NORTH, Middletown, Conn. Filed June 24, 1884. (No model.)



Claim.—1. In a machine for screw-threading bolts and other objects, the combination of a rotary and sliding blank-carrier, a group of circular dies or roller-disks through which the bolt-blank is fed, and a sliding and rotary device for forcing the dies or disks to their work, substantially as described.

2. In a machine for screw-threading bolts and other objects, the combination of the concentric screw-threaded shells or sleeves, a blank-carrier and a die-pressing ring carried by said sleeves, and a holder for a series of roller-disks or circular dies, arranged in co-operative relation to said blank-carrier and die-pressing ring, with mechanism for imparting a sliding and rotary movement to said screw-threaded sleeves, substantially as described.

3. In a machine for screw-threading bolts and other objects, the combination of the stationary screw-threaded shell and the concentric screw-threaded sleeves fitted on said shell, and having spur-disks, the long spur-wheels and their shafts co-operating with said concentric sleeves, a rotary driving-shaft, friction-pulleys, and shifting mechanism for effecting an alternate movement of the concentric sleeves in opposite directions, with a blank-carrier, a die-holder carrying circular dies or roller-disks, and a device for forcing the latter to their work, substantially as described.

4. In a machine for screw-threading bolts and other objects, the combination of the hollow shaft, means for admitting water to the same, a stationary shell carrying a holder, a group of circular dies or roller-disks mounted in the latter, mechanism for drawing a blank through said group of dies or disks, and mechanism for forcing the latter to their work, substantially as described.

5. In a machine for screw-threading bolts or other objects, the combination of the hollow rotary main shaft having two drive-pulleys and an intermediate shifting-pulley or friction-disk, the internal longitudinally-movable shaft carrying said shifting-pulley and the clutch or shifting mechanism, with the longitudinally-movable sleeves or blank-carrier and

die-operating device adapted to engage with said shifting device, substantially as described.

6. In a machine for screw-threading bolts and other objects, the combination of the stationary shell having an exterior screw-thread, an end screw-socket for a die-holder, and an inner unthreaded portion provided with flat surfaces, a forked lever mounted on said unthreaded portion, and treadle and connecting mechanism, with a rotary shaft fitted in said stationary shell, a supplementary and longitudinally-movable shaft arranged inside said rotary shaft, and connected with the forked shifting-lever, the driving-pulleys mounted on the aforesaid rotary shaft, and a friction-disk connected with the supplementary shaft, substantially as described.

7. The combination of the blank-holder having a cone-shaped socket, the die-holder having circular dies or roller-disks arranged in rear of said cone-shaped socket, the shell for pressing the dies upon the blank, and means for drawing the latter through the dies, substantially as described.

8. In a machine for screw-threading bolts and other objects, the combination of the shifting or clutch device having adjustable stop pins or arms with the supporting device and the traveling sleeves carrying the blank-carrier and die-closing devices, substantially as described.

9. The combination of the die-holder, the radially-movable circular dies or roller-disks mounted therein, and the encircling-shell having its inner portion made flaring or otherwise shaped for exerting pressure upon the peripheries of the dies, with means for drawing the blank to be threaded through said dies, substantially as described.

10. In a machine for screw-threading bolts or other objects, the combination of the blank-holder having a funnel-shaped mouth provided with water and scale outlet openings, the die-holder having water-passages, and the die closing or pressing shell surrounding said die-holder, substantially as described.

11. A die-holder having a cylindrical extension or pocket closed at its rear end and open at its front end, the circular dies or roller-disks fitted in said holder, means for closing said dies and drawing the blank between the same, and a hollow shaft carrying the die-holder for applying water to the same, substantially as described.

321,842. VALVELESS ENGINE. MICHAEL J. O'CONNOR, Louisville, Ky. Filed May 2, 1885. (No model.)



Claim.—1. In a valveless engine, the combination of a cylinder and a piston having a series of independent steam-ports arranged in succession, whereby the cylinder is given steam at intervals during its stroke, substantially as and for the purposes specified.

2. The combination of a cylinder and piston provided with a steam port or ports arranged to give the piston additional steam near the close of its stroke, substantially as and for the purposes specified.

3. In a valveless engine, the combination, with a cylinder having steam and exhaust ports, of a piston having series of spirally-arranged steam-ports and similar exhaust-ports, arranged alternately, substantially as and for the purposes specified.

4. In a valveless engine, the combination, with a cylinder having steam and exhaust ports, of a piston having independent steam and exhaust ports spirally arranged and crossing each other, substantially as and for the purposes specified.

5. The combination, with the cylinder and piston having spirally-arranged ports, of the slotted guide-tube attached to the head of the cylinder, and the collar and guide-pin, substantially as and for the purposes specified.

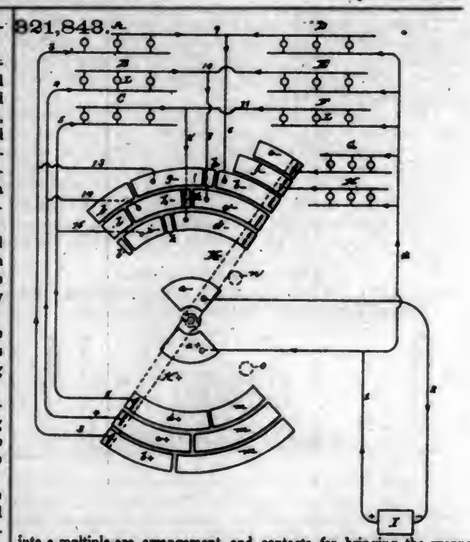
321,843. REGULATOR FOR ELECTRIC LIGHTS. WALTER J. PAINE, Boston, Mass., assignor of one-half to Sidney B. Paine, same place. Filed Jan. 12, 1885. (No model.)

Claim.—1. The combination, with two or more groups of lamps, of a regulating-switch having contacts with which said groups are connected, and contacts for connecting and disconnecting the group-contacts on the switch for throwing the groups into and out of series, and multiple-arc arrangements, substantially as set forth.

2. The combination, with a current-supplying circuit, of a regulating-switch and two or more groups of lamps connected directly with said supply-circuit, and also connected with the supply-circuit through the switch, and contacts on the switch for throwing the groups into and out of series, and multiple-arc arrangements, substantially as set forth.

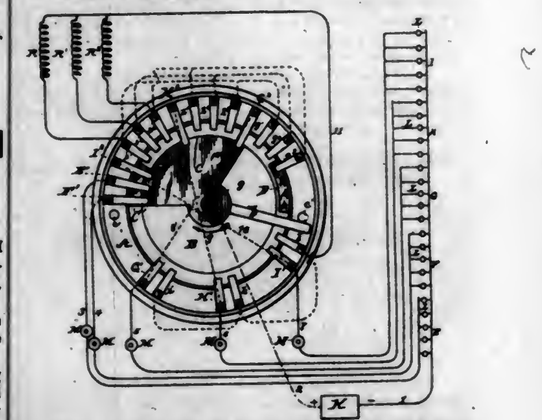
3. The combination, with a supply-circuit and a number of groups of lamps, of a regulating-switch having contacts for bringing the groups

321,848. APPARATUS FOR REGULATING ELECTRIC LIGHTS. WALTER J. PAINE, Boston, Mass., assignor of one-half to Sidney B. Paine, same place. Filed Jan. 12, 1885. (No model.)



into a multiple-arc arrangement, and contacts for bringing the groups into a series arrangement, such contacts being arranged in succession to act upon the groups successively, substantially as set forth.

321,844. REGULATOR FOR ELECTRIC LIGHTS. WALTER J. PAINE, Boston, Mass., assignor of one-half to Sidney B. Paine, same place. Filed Jan. 12, 1885. (No model.)



Claim.—1. In apparatus for lowering and raising the candle-power of incandescing electric lamps, the combination of two or more groups of such lamps, a regulating-switch, with which all of said groups are connected, acting to throw the groups into and out of circuit successively and to vary their candle-power while in circuit, and separate circuit making and breaking switches for the groups, whereby any one or more groups can be removed from the action of the regulating-switch, substantially as set forth.

2. The combination, with groups of incandescing electric lamps, of a regulating-switch connected with said lamps for throwing the groups into and out of circuit successively, and a resistance introduced by said switch into the circuit of each group on throwing it out of or into circuit, substantially as set forth.

3. The combination, with groups of incandescing electric lamps, of a regulating-switch connected with said lamps for throwing the groups into and out of circuit successively, a resistance introduced by said switch into the circuit of each group on throwing it out of or into circuit, and other groups of lamps thrown by said switch into and out of circuit at full candle-power, substantially as set forth.

4. The combination, with groups of incandescing electric lamps, of a switch having a moving contact connected with one pole of the source of supply, the other pole of such source being connected with the lamps, and stationary contacts in such switch separately connected with the groups, said stationary contacts being all bridged by the moving contact to bring all the groups into circuit, and being successively left or

met by such moving contact to throw the groups out of or into circuit, substantially as set forth.

5. The combination, with groups of incandescing electric lamps, of a switch having a moving contact connected with one pole of the source of supply, the other pole of such source being connected with the lamps, stationary contacts on such switch separately connected with the groups, said stationary contacts being all bridged by the moving contact to bring all the groups into circuit at full candle-power, and being successively left or met by such moving contact to throw the groups out of or into circuit, and other stationary contacts connected with resistances and following the main contacts, for throwing the resistances into and out of circuit with the groups separately, substantially as set forth.

6. In a regulating-switch, the combination of a turning-disk having concentric contacts the surfaces of which are in more than one plane, such planes being parallel, and stationary contacts bearing on the different planes of the disk, substantially as set forth.

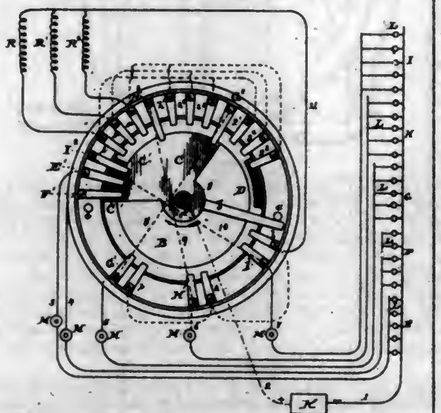
7. In a regulating-switch, the combination of a turning-disk having concentric contacts the surfaces of which are in more than one plane, such planes being parallel, the surrounding stationary ring, and the long and short spring-fingers, substantially as set forth.

8. In a regulating-switch, the combination, with disk B, of plate C on the upper plane of said disk, the extension C' thereof on the lower plane of the disk, and the long and short stationary contacts, substantially as set forth.

9. In a regulating-switch, the combination, with disk B, having contacts C, C', and D, of the double sets of lamp-contacts and the resistance-contacts, substantially as set forth.

10. In a regulating-switch, the combination, with the turning-disk carrying bridging-contact C', of the sets of stationary resistance-contacts and connections between such sets of resistance-contacts reversed in order for the alternate sets, substantially as set forth.

321,845. METHOD OF REGULATING ELECTRIC LIGHTS. WALTER J. PAINE, Boston, Mass., assignor of one-half to Sidney B. Paine, same place. Filed May 23, 1885. (No model.)

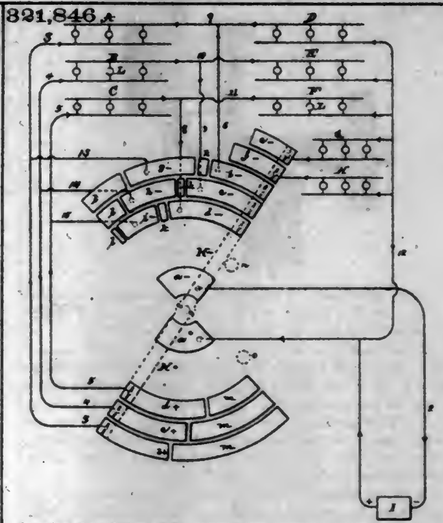


Claim.—1. The method herein described of lowering and raising the candle-power of incandescing electric lamps, consisting in throwing groups of lamps into and out of circuit successively, raising gradually (through two or more intermediate stages between no light and full light) the candle-power of the lamps after throwing them into circuit, and lowering gradually their candle-power before throwing them out of circuit.

2. The method herein described of lowering and raising the candle-power of incandescing electric lamps, consisting in throwing groups of lamps into and out of circuit successively, each group being thrown into circuit at low candle-power in connection with external resistance, which is gradually reduced until the lamps reach full candle-power, and before thrown out of circuit being reduced in candle-power by the introduction and gradual increase of external resistance.

3. The method herein described of lowering and raising the candle-power of incandescing electric lamps, consisting in throwing groups of lamps into and out of circuit successively, raising gradually the candle-power of the lamps after throwing them into circuit, and lowering gradually the candle-power before throwing them out of circuit, and throwing into and out of circuit other groups of lamps at full candle-power.

321,846. METHOD OF REGULATING ELECTRIC LIGHTS. WALTER J. PAINE, Boston, Mass., assignor of one-half to Sidney B. Paine, same place. Filed May 23, 1885. (No model.)



changing the relation of the groups from multiple arc to series, and vice versa.

2. The method herein described of lowering and raising the candle-power of incandescing electric lamps, consisting in throwing groups of lamps into and out of circuit successively, raising the candle-power of the groups after throwing them into circuit, and lowering the candle-power before throwing them out of circuit.

3. The method herein described of lowering and raising the candle-power of incandescing electric lamps, consisting in throwing groups of lamps into and out of circuit successively, raising the candle-power of the groups after throwing them into circuit, and lowering the candle-power before throwing them out of circuit, and throwing into and out of circuit other groups of lamps at full candle-power.

4. The method herein described of lowering and raising the candle-power of incandescing electric lamps, consisting in throwing groups of lamps into and out of circuit successively, each group being thrown into circuit at low candle-power in a series arrangement, and then raised to full candle-power in a multiple-arc arrangement, and before thrown out of circuit being reduced in candle-power by changing it from a multiple-arc to a series arrangement.

321,847. DENTAL PLATE. WILLIAM H. PRINCE and JOSEPH A. RUSSELL, Centreville, Mich. Filed May 15, 1885. (No model.)



Claim.—1. In combination with a dental plate, one or more strips of absorbent material for holding perfumed or medicated substances, situated in a recess or in recesses formed in the plate, and means for securing said strips in place, substantially as described.

2. In combination with a dental plate, one or more strips of absorbent material for holding perfumed or medicated substances, situated in a recess or in recesses formed in the plate, cross-bars for holding the said strip or strips in position, and a suitable covering for the said strip or strips, and cross-bars constructed as may be desired, substantially as described.

321,848. MANUFACTURE OF CARTRIDGE-SHELLS AND OTHER RECEPTACLES FROM PAPER-PULP. G. MOORE PEIRCE, Xenia, Ohio. Filed Dec. 29, 1884. (No model.)

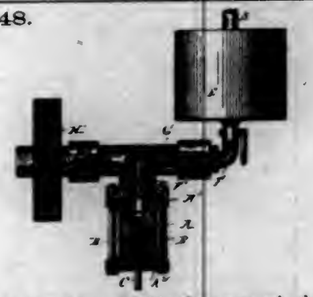
Brief.—Improvement on Patent No. 297,712, dated April 29, 1884.

Claim.—1. In the manufacture of cartridge-shells from paper-pulp, a mold provided with a base having drainage-openings, substantially as and for the purpose set forth.

2. In the manufacture of cartridge-shells from paper-pulp, a mold provided with an internal flange for forming the base of the shell, the interior of the mold tapering from said flange to the opposite end of the mold, thereby causing the shell to taper on its outer surface, substantially as and for the purpose set forth.

3. In the manufacture of cartridge-shells from paper-pulp, the combination, with a mold having a tapering opening, of a former, C', also made tapering, substantially as and for the purpose set forth.

321,848.



4. In the manufacture of articles from paper-pulp, the combination, with a mold, of a tubular former provided with openings therein to carry off the water from the pulp, substantially as set forth.

5. In the manufacture of articles from paper-pulp, a mold, one end of which is open for the reception of the pulp, and a compressing-piston, the opposite end or base having an opening therein to receive a device for forming the article to be molded, substantially as set forth.

6. In the manufacture of articles from paper-pulp, a mold, one end of which is open for the reception of the pulp, the opposite end having an opening therein for the reception of a former, and openings for the drainage of the mold, substantially as set forth.

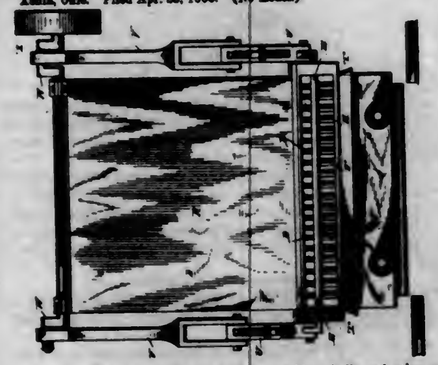
7. In the manufacture of cartridge-shells, the combination, with the mold and former, of a compressing-piston provided with means for forming the seat for the primer, and an opening in the base of the shell, substantially as and for the purpose set forth.

8. In the manufacture of articles from paper-pulp, the combination of a pulp and oil reservoir, a hollow shaft and means for turning it, the shaft being connected with said reservoirs, and one or more molds secured to the shaft and turning with it, said molds communicating with the opening in the shaft, substantially as and for the purpose set forth.

9. In the manufacture of cartridge-shells and other articles from paper-pulp, the combination of a hollow shaft suitably actuated and connected with the pulp-reservoir, a revolving frame provided with drum-heads secured to said shaft, one or more carriages containing molds secured to the frame or drum-heads, a conductor for conveying the pulp from the shaft to the molds, means, as described, for preventing leakage of said molds, and means for raising and lowering the mold-carriage, substantially as and for the purpose set forth.

10. In the manufacture of cartridge-shells from paper-pulp, the combination of one or more molds and apparatus for filling and draining them by centrifugal force, a piston for forming the base of the shell and primer-seat, and means for drying and removing the shells from the molds, substantially as and for the purpose set forth.

321,849. MANUFACTURE OF CARTRIDGE-SHELLS AND OTHER RECEPTACLES FROM PAPER OR WOOD PULP. G. MOORE PETERS, Xenia, Ohio. Filed Apr. 23, 1885. (No model.)



Claim.—1. In a machine for forming cartridge-shells and other receptacles from paper or wood pulp, a pulp-tank having a perforated bottom, said perforations being alternately opened and closed by a sliding perforated plate, a series of tubes leading to the molds, the formers having drainage-outlets, a series of tabular rammers, and means for operating said rammers, as set forth.

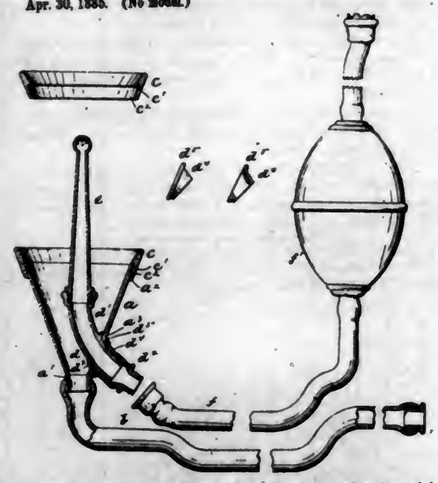
2. In a machine for making cartridges from paper or wood pulp, the combination, with the mold and rammer, of a former provided with drainage-holes communicating with the surface by means of slots, also a stem with grooves, said grooves leading to the drainage-openings, as set forth.

3. In a machine for making cartridges from paper or wood pulp, the combination, with the pulp-tank having a perforated bottom, of a perforated sliding plate for opening and closing the perforations in the tank, a stationary plate below the tank provided with inlet-tubes leading to the mold, and a movable plate, E, having a series of tubes which serve as rammers for compressing the pulp, substantially as and for the purpose set forth.

4. In a cartridge-making machine, as described, a tubular rammer, F, having the flated or serrated ends *f*, whereby the pulp in the mold is prevented from forming into smooth layers and the fiber compressed and interlocked, substantially as and for the purpose set forth.

5. In a machine for manufacturing cartridge-shells from paper or wood pulp, the combination, with the pulp-tank, of a series of pulp-tubes, a series of tubular rammers, as described, mechanism for actuating said rammers, and a series of sliding molds with formers having drainage-outlets, substantially as and for the purpose set forth.

321,850. SYRINGE. GEORGE E. PHILBRICK, Manchester, N.H. Filed Apr. 30, 1885. (No model.)

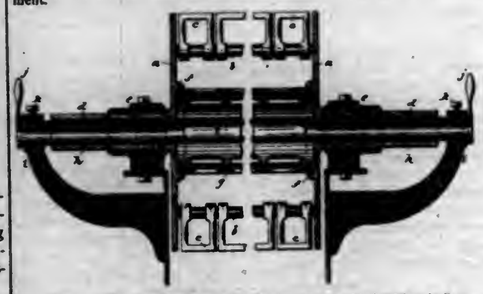


Claim.—1. The combination, with the funnel-shaped back receiving-reservoir, of the inner curved pipe, *d*, pipe provided with annular flanges d^2, the outer pipe, d^3, threaded onto the outer projecting end of the pipe d^2, and the tapered washer or boss d^5, substantially as set forth.

2. The combination, with the funnel-shaped or tapered back receiving-reservoir, of the annular cushion provided with an inwardly-projected shoulder covering the upper edge of the reservoir and having the depending annular tapered flap or wing to be sprung over the outer side of the upper end of the said reservoir, and the annular sustaining-ring d^3, projecting from the reservoir, substantially as set forth.

321,851. MACHINE FOR OPENING AND CLEANING COTTON AND OTHER FIBERS. JAMES C. POTTER, Lowell, Mass., assignor to the Atherton Machine Company, same place. Filed Mar. 31, 1885. (No model.)

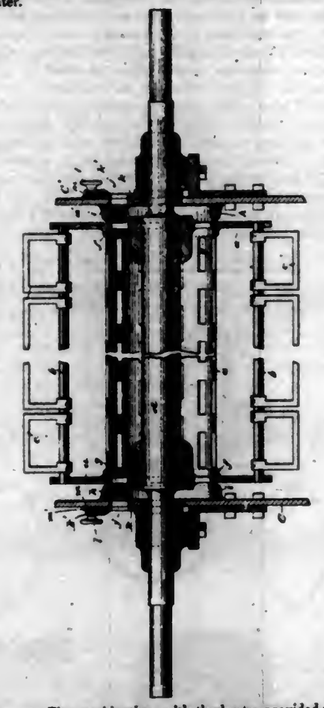
Brief.—The beater is provided with a hollow perforated cylinder and hollow trunnions, through which extends a slotted air-supply pipe so supported in end bearings that it can be rotated for purposes of adjustment.



Claim.—The combination, with the beater provided with a hollow perforated cylinder or shell and hollow trunnions, of the slotted air-supply pipe extending through said cylinder and trunnions, and supported in end bearings in which it can be rotated or turned for purposes of adjustment, substantially as hereinbefore set forth.

321,852. MACHINE FOR OPENING AND CLEANING COTTON AND OTHER FIBERS. JAMES C. POTTER, Lowell, Mass., assignor to the Atherton Machine Company, same place. Filed Apr. 1, 1885. (No model.)

Brief.—A register or means to regulate the supply of air is applied to the inlet-holes, which admit air to the hollow perforated center of the beater.



Claim.—1. The combination, with the beater provided with a perforated hollow center and an inlet through which the external air is admitted to the interior of the perforated center, of means, substantially as described, whereby said inlet may be opened or closed more or less, as desired, substantially as and for the purposes hereinbefore set forth.

2. The combination, with the beater having a perforated hollow center, of an air-inlet at each end of the beater through which external air is admitted to the hollow center, and an independent register, or its equivalent, for each of said inlets, substantially as and for the purposes hereinbefore set forth.

321,853. MORTISE-CUTTER. SILAS G. RANDALL, Greene, N. Y., assignor to Amelia A. Randall, same place. Filed Apr. 11, 1885. (No model.)

Claim.—1. The combination of the reciprocating non-rotating hollow cutter and the anchoring-rod passing through the cutter and adapted to be secured to the material being cut, substantially as and for the purpose set forth.

2. The combination of the reciprocating non-rotating hollow cutter, the cutter-tube, and the anchoring-rod passing through the cutter-tube, and with which the cutter has reciprocating connection, substantially as and for the purpose set forth.

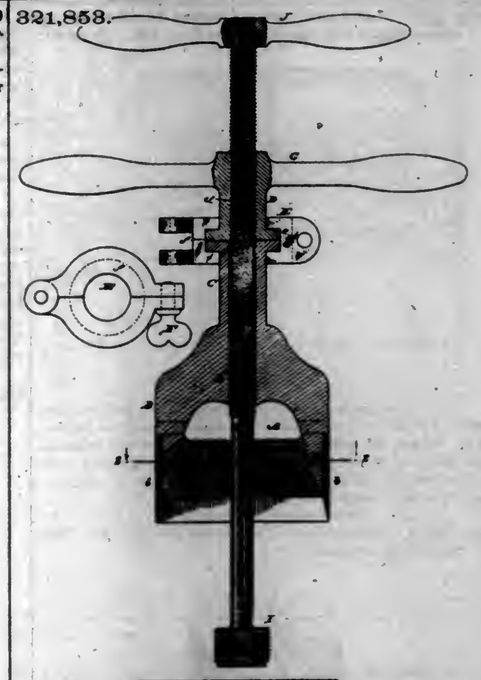
3. The combination of the reciprocating non-rotating cutter, the sectional cutter-tube, the feeding and anchoring rod, and the handle secured to the threaded section of the cutter-tube, substantially as and for the purpose set forth.

4. The combination of the hollow cutter, its sectional tube, the threaded feeding and anchoring rod engaging with the threaded section of the cutter-tube, the anchoring-screw, the handle secured to the threaded section of the cutter-tube, and the handle of the feeding and anchoring rod, substantially as and for the purpose set forth.

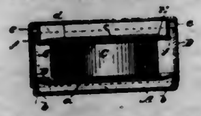
5. The combination of the reciprocating non-rotating hollow cutter-head, having the bridge portion at top, and the cutters detachably secured to and around the head below its bridge portion, and arranged as described, to form a polygonal cutter, for the purpose set forth.



321,858.



321,854. WATCH-MOVEMENT BOX. NORMAN V. RANDOLPH, Richmond, Va. Filed May 1, 1885. (No model.)



Claim.—1. The combination of the external case, provided with a spring-head or support raised from the bottom, a cup within said case, and secured to said spring-support, and the cover provided with an internal spring head or support, which, when the case is closed, rests by its edges upon the top of the cup or the article contained therein, as hereinbefore set forth.

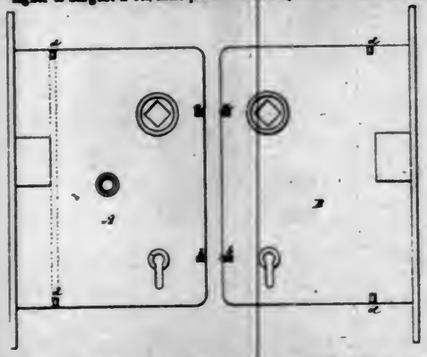
2. The case A, provided with the raised spring support or false bottom B, and cup C, secured to said support out of direct contact with the case, in combination with the cover D and spring-head E, these parts being constructed and fitted together substantially as hereinbefore described, and illustrated in the accompanying drawings.

321,855. UMBRELLA-RIB-TIP SHIELD. WILLIAM P. RICHARDS, Orange, N. J. Filed May 2, 1884. (No model.)



Claim.—As a new article of manufacture, a shield for attachment to the rib-tips of umbrellas, consisting of a conical tube closed at one end, and having the other end bisected to form a V-shaped notch on each side, and provided with a prolongation adapted to extend up over the stitches that confine the cover to the tip of the rib, substantially as set forth.

321,856. LATCH-CASE. HENRY B. SARGENT, New Haven, Conn., assignor to Sargent & Co., same place. Filed May 4, 1885. (No model.)



Claim.—The herein-described improvement in latch and lock cases, consisting in the case constructed with an indicating-point in a horizontal line through the openings in the case, combined with a projection upon the side of the case distant from said point corresponding to the distance from the face-plate of the case to the center of the said opening, substantially as described.

321,857. CHEESE-PRESS. GEO. SCHLOTTE, Manitowoc, Wis. Filed Mar. 20, 1885. (No model.)

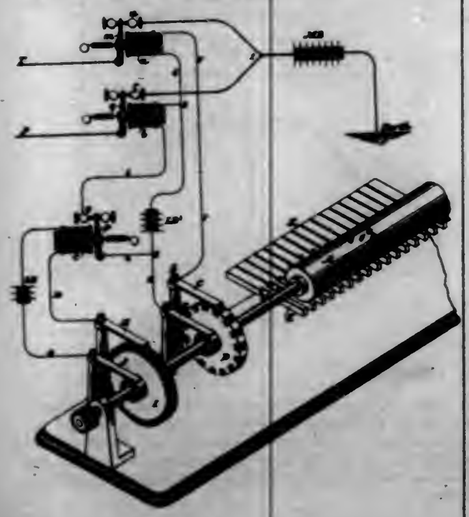


Claim.—1. A cheese-press cylinder formed interiorly with ribs or projections, substantially as and for the purposes set forth.

2. A follower for cheese-press cylinders or molds, said follower having a series of radial ribs formed on its under side, substantially as set forth.

3. The combination, with a cheese-press cylinder or mold formed interiorly with a series of vertical ribs or projections, of a follower, whose under surface is formed with a series of radially-arranged ribs registering with the vertical ribs of the cylinder, substantially as set forth.

321,858. PRINTING-TELEGRAPH TRANSMITTER. GEO. B. SCOTT, Brooklyn, assignor to the Western Union Telegraph Company, New York, N. Y. Filed Sept. 20, 1884. (No model.)



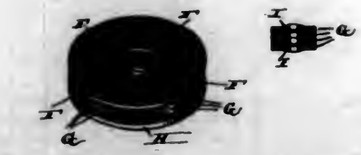
Claim.—1. In a transmitter for a printing-telegraph, the combination of two main lines, a circuit-breaker for the type-wheel circuit, a circuit-breaking wheel having as many narrow conducting-spaces as there are characters on the type-wheel, and a series of key-stops, substantially as described.

2. The combination of two main wires—one to control the type-wheels and the other the press mechanism—a circuit-closer and relay for controlling the type-wheel wire, a second rotating circuit-closer having broad insulating and narrow conducting-spaces for controlling the press-wire, and a series of stop-keys, substantially as described.

3. In a printing-telegraph transmitter, the combination of a circuit-breaking wheel, I, having broad insulating and very narrow conducting-spaces, alternately arranged substantially as described, there being as many conducting-spaces as there are characters upon the type-wheel of the printing-instrument in circuit, and a main line, P, whereby, owing to said arrangement of conducting and insulating spaces, the main line will remain open during the rotation of said transmitter, and will be closed only upon arresting said transmitter from rotation, a main line, T, for controlling rotation of the type-wheels, and a circuit-breaking wheel, D.

321,859. CASTER. JAMES W. SEE, Hamilton, assignor to C. E. Jones & Bro., Cincinnati, Ohio. Filed Jan. 5, 1885. (Model.)

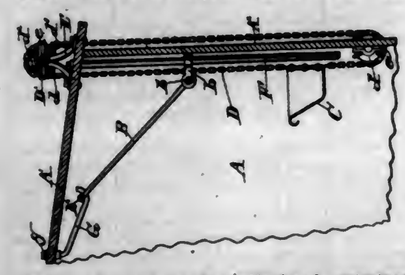




Claim.—1. In a caster, the anti-friction wheels formed by the combination of the metallic disks G into piles, each disk of a pile being independent of its fellow disks, substantially as and for the purpose set forth.

2. In a caster, the anti-friction rollers formed by the combination of the disks G into piles, the outer disk of each pile being provided with the struck-up hub I, substantially as and for the purpose set forth.

321,860. STOCK-CAR. FRED SELL, Milwaukee, Wis., assignor of one-half to William Klasser, same place. Filed Oct. 14, 1884. (No model.)

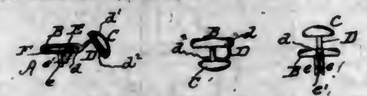


Claim.—1. In a cattle-car, the combination of a water-trough suspended on endless chains mounted, substantially as herein described, in the roof and sides of the car-box, mechanism, substantially as described, to raise or lower the same as desired, a folding hay-rack adapted to slide in guide-rods of the car-box, and supporting-brackets depending from the car-roof, substantially as and for the purpose set forth.

2. In a cattle-car, the combination of the endless chains D, carrying the water-trough C, with the car-roof A', provided with bearing-brackets E, shafts D', carrying sprocket-wheels d d, pawl-ratchet d^2, and hand-crank d^3, and box sides A^2, provided with bearings e' e', and sprocket-wheels d' d', substantially as shown and described, and for the purpose set forth.

3. In a cattle-car, the hay-rack B, having sliding hinge-pieces b b, in combination with the roof and bottom of car-box having guide-rods F F, brackets G, and chains D, provided with hoisting mechanism and carrying the trough C, substantially as shown and described, and for the purpose set forth.

321,861. COLLAR-BUTTON. CHARLES M. SHARPS, Philadelphia, Pa. Filed Oct. 20, 1884. (No model.)



Claim.—1. The combination, with plates B and C, of a hinged side bar, D, having an extension or cross-bar, d^2, and a separate divided or split stem, e, substantially as and for the purpose specified.

2. The combination, with plates B and C, of a hinged side bar, D, and a divided or split stem, e, provided with a locking-bar, substantially as set forth.

3. The combination of plates B and C, hinged side bar, D, cross-bar d^2, and spring E, having vertically-projecting contiguous ends forming a split stem, e, with notches e', substantially as shown and described.

4. The combination of plates B C, hinged side bar, D, having cross-bar or extension d^2, divided spring-stem, e, and retaining-plate F, perforated at f, substantially as shown and described.

321,862. DOOR-KNOB. JOHN H. SHAW, New Haven, Conn., assignor to Sargent & Co., same place. Filed Apr. 27, 1885. (No model.)



Claim.—The herein-described door-knob, consisting of the neck A, adapted to receive the spindle, and constructed with an extension, D, at its outer end, forming a shoulder, a, around the neck, the part E of the knob, of concavo-convex shape, having a central opening to set on over the extension of the neck and so as to come to a bearing upon the shoulder a, and the part G of the knob, of similar concavo-convex shape and corresponding to the part E, the said parts constructed the one with a projection and the other with a corresponding notch, so that the two parts may interlock each other, the part G and the neck constructed the one with a male and the other with a female screw concentric with the axis of the neck, and whereby said two parts interlocked are clamped to the neck, substantially as described.

321,863. FIBER-DECORTICATING MACHINE. T. ALBEE SMITH, St. Louis, Mo., assignor of one-half to L. T. Woods, same place. Filed May 13, 1882. (No model.)

Claim.—1. In a fiber-decorticating machine, the combination of the flattening-rolls B B', the sectional breaking-rolls C C', and the decorticating-rolls D D', substantially as described.

2. In a fiber-decorticating machine, the pair of rolls D D', having the spirally-arranged yielding knives d^5 d^5, substantially as described.

3. In a fiber-decorticating machine, the rolls D D', having the spirally-arranged knives d^5 d^5 and the spirally-arranged combs d^6 d^6, substantially as described.

4. In a fiber-decorticating machine, the roll D, having the chamber d^{11}, the perforated shell d^8, and the knives d^5 d^5, substantially as described.

5. In a fiber-decorticating machine, the roll D, having the chamber d^{11}, the perforated shell d^8, and the valve d^{12}, substantially as described.

6. In a fiber-decorticating machine, the combination of the flattening-rolls B B', the breaking-rolls C C', the decorticating-rolls D D', and the endless brush-belts E E', substantially as described.

7. In a fiber-decorticating machine, the combination of the decorticating-rolls D D' and the brush-belts E E', substantially as described.

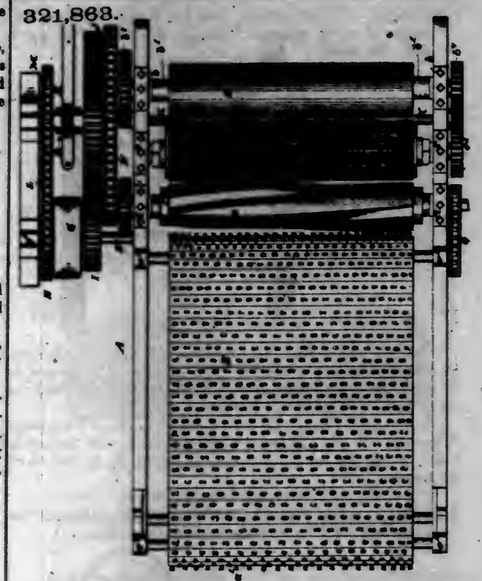
8. A fiber-decorticating machine having the endless brush-belts E E', for the purpose described.

9. In a fiber-decorticating-machine, the diverging brush-belts E E', substantially as described.

10. In a fiber-decorticating machine, the combination of the apron U and the platform V, substantially as described.

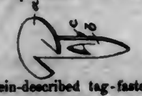
11. In a fiber-decorticating machine, the combination of the apron U, the platform V, and the trackway W, substantially as described.

321,863.



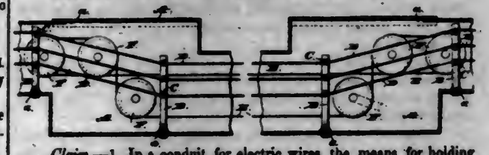
12. In a fiber-decorticating-machine, a pair of decorticating-rolls, both of said rolls having a series of spirally-arranged knives, d^5 d^5, substantially as described.

321,864. TAG-FASTENER. EUGENE H. TAYLOR, Lynn, assignor of two-thirds to George W. Hollis, Boston, and Lloyd W. Pennell, Watertown, Mass. Filed Aug. 18, 1884. (No model.)



Claim.—The herein-described tag-fastener, cut from metal and composed of the head portion and shank, the shank being cut into and bent down from within the periphery of the head, and being provided with a barb struck through from and made integral with the shank and pointed toward the head, as shown and described.

321,865. CONDUIT FOR UNDERGROUND ELECTRIC WIRES. JOHN TROGART, San Francisco, Cal. Filed Nov. 21, 1884. (No model.)

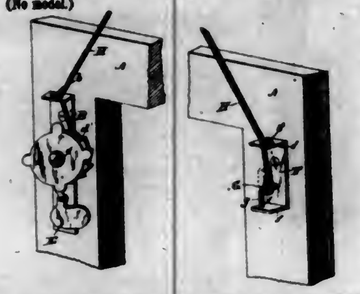


Claim.—1. In a conduit for electric wires, the means for holding the wires separate from each other, consisting of the standards provided with one or more transverse openings and one or more transverse arms passing through such opening or openings, each provided with a notch adapted to receive and embrace a portion of the standard, and near its ends with notches to receive and hold the wires, substantially as and for the purpose described.

2. In combination with the conduit for electric wires having the depressed portion, one or more standards projecting up from the bottom of the conduit just beyond the ends of such depressed portion, having cross-arms notched on their upper sides, and of such length as to leave spaces between their ends and the sides of the conduits, and one or more standards within the depressed portion at or near each end thereof, having cross-arms of such length as to leave spaces between their ends and the conduit sides, and provided with wire-receiving notches on their lower sides, substantially as and for the purpose described.

3. In combination with the conduit for wires provided with suitable supports for the wires, the means for carrying the wires along through the depressed portions of the conduits under street and other crossings, consisting of the two pulleys at each end of the depressed portion, substantially on a level with the elevated or main portion of the conduit, a pulley within the depressed portion near each end thereof, and an endless rope or cable passing under and over the elevated pairs of pulleys and having the part so passing over these pulleys running down under the lower pulleys, substantially as and for the purpose described.

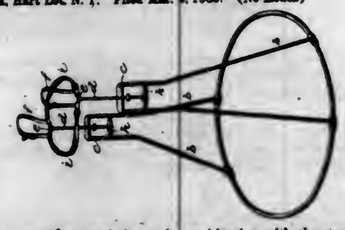
321,866. PICTURE-HANGER. JOHN V. R. TOWERS, Washington, D.C., assignor of one-half to Lemuel Towers, Jr., same place. Filed Apr. 2, 1885. (No model.)



Claim.—1. In a picture-hanger, the plate B, having the guiding-eye *b* and spindle C, in combination with the windlass D, mounted on the spindle C, and provided with a pawl and ratchet, substantially as and for the purpose shown and described.

2. In a picture-hanger, the plate F, having the flange *f* and flange *f'*, provided with the guiding-eye b^2, in combination with the swivel-hook G, having the end *g*, substantially as and for the purpose shown and described.

321,867. SAFETY APPARATUS FOR SKATERS. ALEXANDER VAN VLEET, Hart Lot, N. Y. Filed Mar. 9, 1885. (No model.)



Claim.—1. The guard-ring *a*, in combination with the standards *b* and adjustable crutch *c*, substantially as and for the purposes specified.

2. The adjustable crutch *c*, in combination with the standards *b* and ring *a*, as specified.

3. In combination with the crutch *c*, the shoulder-straps *f*, for supporting the apparatus from the shoulders, as specified.

4. The combination of the shoulder-supports, and body-band *i*, and guard-ring *a*, and standards *b*, as specified.

321,868. APPARATUS FOR MANUFACTURING GAS FROM SAW-DUST. GEORGE WALKER, Deseronto, Canada. Filed Feb. 13, 1884. (No model.)

Brief.—Wood sawdust is fed to and conveyed through retorts by spiral-screw conveyers, and the granular charcoal is conducted from the retorts, to a tight movable chamber by a screw-conveyer. The gas resulting from the distillation is conducted to a condenser.

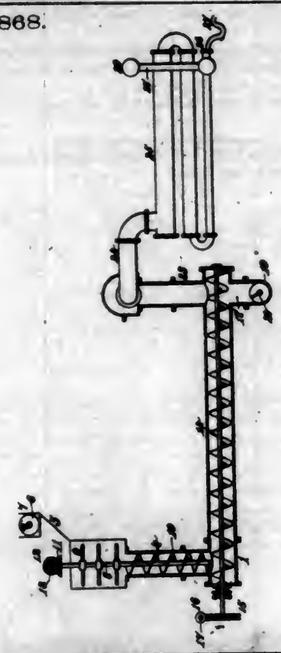
Claim.—1. In an apparatus for producing illuminating-gas, the combination of a charcoal or spent-material main, a screw-conveyer operating therein, a bottom valve-controlled neck formed on said main, and communicating with a discharge-opening therein, and a car or spent-material receiver having means to connect it in an air-tight manner with said neck, with a furnace, a retort set therein containing a rotary conveyer, a feed-hopper, devices for automatically delivering the material to the same, and devices operating in said feed-hopper for forcing the material into the retort-chamber, substantially as herein set forth.

2. An apparatus for producing illuminating-gas from sawdust, consisting, essentially, of a feeding-hopper having a forcing device for the material, a retort having a conveyer for carrying the material to the rear, and a second conveyer and an air-tight valve-controlled passage for the discharge of the spent material, a gas-main communicating with a condenser, substantially as herein set forth.

3. The combination, with the carbonizing-retort, of the charcoal-main having a discharge-opening in the form of a pendent neck, a conveyer for moving the carbonized material along the main, a valve controlling the discharge-opening, and a closed car or vehicle having means to connect it air-tight, with the tubular neck, substantially as described.

4. The combination, with the carbonizing retort, of the charcoal-main having a discharge-opening in the form of a pendent neck, a conveyer for moving the carbonized material to the discharge-opening, a valve controlling the latter, a closed vehicle or car having means to connect it air-tight, with the tubular neck, and devices to raise the vehicle or car, substantially as described.

321,868.



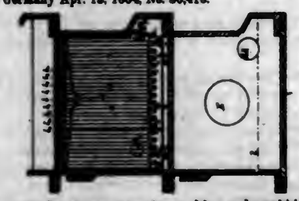
321,869. BOOT OR SHOE HEEL. WILLIAM W. WALLACE, Fleetville, Pa. Filed Dec. 30, 1884. (No model.)



Claim.—1. The adjustable heel constructed of an upper plate to be made fast to the sole of a boot or shoe, a separate frame fitted upon the upper plate, and a transversely-slotted bottom or bearing plate fitting upon the frame, in combination with one or more wide-headed screws passing through the slot or slots in the lower bearing-plate to enter and engage the upper plate and unite the whole, all substantially in the manner and for the purpose herein set forth.

2. The combination, in an adjustable heel for boots or shoes, of a plate, B, curved and hollowed on its inner face to be fitted to the boot or shoe, and transversely convexed on its outer face, a detached transversely-slotted outer bearing-plate, C, transversely convexed on its inner side and recessed on its outer face, an intermediate frame, D, whose opposite edges are beveled inwardly to conform to the opposite curves of the plates B C, and a central clamping device, H, extending through the slot in the lower plate to engage the upper plate and unite the two, all substantially in the manner and for the purpose herein set forth.

321,870. APPARATUS FOR WASHING AND SCRUBBING COAL-GAS. FREDERICK WEBB, Lillieshall, County of Salop, England. Filed Aug. 14, 1884. (No model.) Patented in England Jan. 26, 1884, No. 2,229, and in Germany Apr. 13, 1884, No. 30,416.



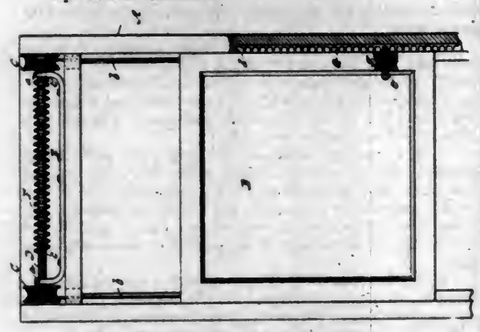
Claim.—1. In an apparatus for washing and scrubbing gas, in combination with an upper and a lower series of geared rollers, a pliable endless band arranged to pass up and down over such rollers, as set forth, and serving to bring extended wetted surfaces in contact with the gas or other fluid, and also serving as absorbents for solid particles, substantially in the manner and for the purposes described.

2. In an apparatus for washing and scrubbing coal-gas, in combination with pliable bands, serving as absorbents, and to carry off solid deposits, combs or scrapers, serving to clean such deposits from the bands, and to prevent such deposits from attaining too great a thickness, as hereinbefore described.

3. The improved washer-scrubber for coal-gas, consisting of the combination of the following elements, namely: chamber C, upper rollers *b b' b²*, &c., endless bands, shaft *f*, spur-wheels f^3 f^4, lower chamber, D, its rollers and endless band, cranks, coupling-rod *d*, shaft *f*, and shafts *g*, these parts being arranged and operating substantially as described, and the chambers having suitable gas inlet and outlet, and a water-outlet.

4. In an apparatus for washing and scrubbing gas, endless bands composed of flexible or pliable material, the bands passing over a series of upper rollers and a series of lower rollers, as set forth, and carrying a system of parallel rods or projecting material for absorbing and carrying off solid deposits, all as shown and described.

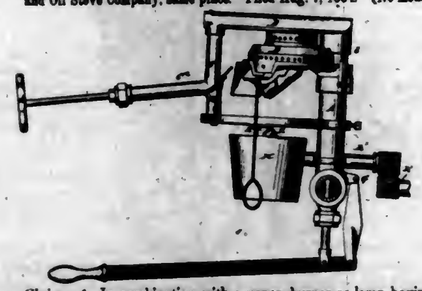
321,871. SASH-BALANCE. AUGUST WERNER, New York, N. Y. Filed Apr. 30, 1885. (No model.)



Claim.—1. The combination of a window-frame, A, a sash, B, the bearings *c c'*, the shaft D, mounted in the bearings, and the cords connected with the sash and shaft, with the spring F, wound spirally along the length of the shaft and having one end secured thereto adjacent to the bearing *c* and the opposite end secured directly to the bearing *c'* which supports the shaft, substantially as described.

2. The combination, substantially as hereinbefore described, with the window-frame and sash, of the shaft having bearings in a suitable hanger, the pulleys mounted on the shaft, the cords attached to the pulleys and the sash, the spring surrounding the shaft and attached at one end to the same, its other end being attached to the hanger, the rack G, and the spring-pressed pin *e*, constructed to engage the rack.

321,872. VAPOR-BURNER. CHARLES WHITTINGHAM, JOSEPH WHITTINGHAM, and RALPH A. JONES, Detroit, Mich., assignors to the Home Gas and Oil Stove Company, same place. Filed Aug. 7, 1884. (No model.)



Claim.—1. In combination with a vapor-burner or lamp having a chamber in which a liquid hydrocarbon or fuel is vaporized by heat applied to such chamber, an atomizer for spraying or vaporizing a liquid fluid, such atomizer constituting a burner for producing a flame from said spray or atomized fuel to heat the vapor-generating chamber, substantially as described.

2. In combination with a vapor-burner or lamp having a chamber in which a liquid hydrocarbon or fuel is vaporized by heat applied to such chamber, an atomizer for spraying or vaporizing a liquid fuel, such atomizer constituting a burner for producing a flame from said spray or atomized fuel to heat the vapor-generating chamber, and a movable or shiftable support for said atomizer, whereby the latter can be moved beneath or brought in line with the burner or be turned or moved away from the latter, substantially as described.

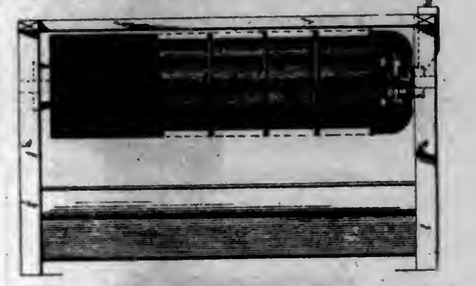
321,873. ROLLER FOR SKATES. ALBERT G. WICKER, Cincinnati, Ohio. Filed Mar. 5, 1885. (Model.)



Claim.—A composite roller composed of a wooden body, A, having undercut rabbets *a a'* in its salient angles and elastic bands B cemented in the rabbets, substantially as set forth.

321,874. WITHDRAWN.

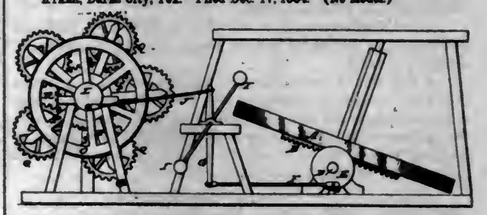
321,875. BOLTING-REEL. ABRAHAM N. WOLF, Allentown, Pa. Filed Apr. 1, 1885. (No model.)



Claim.—1. The combination of the reel, the fluted cylinder placed therein, the ribs placed inside of the reel, the hollow arms and knockers which are placed in the hollow arms, substantially as shown and described.

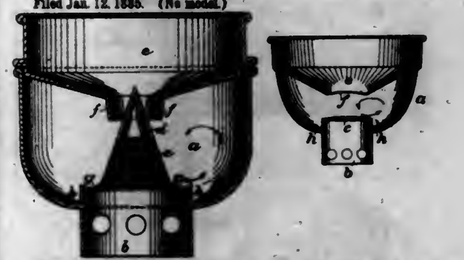
2. The combination of the reel, the reel-shaft, and the outer metallic head, which has a perforation through its center so as to receive the inlet-pipe, and which head acts as a receiver for the material before it passes into the hopper, with the inner head, F, which is secured to the reel-shaft at its center, has a series of perforations through its outer edge for the material to pass through into the reel, and which head F is secured inside of the one E, substantially as shown.

321,876. ANIMAL-POWER. EZEKIEL J. YARBROUGH and JOHN M. KYKER, Burns City, Tex. Filed Dec. 17, 1884. (No model.)



Claim.—The combination of a driving wheel or power, the horizontal shaft B, provided with a crank-wheel upon one end, two connecting-rods which are attached to opposite ends of the rocking lever placed upon a semi-rotating shaft, a driving-shaft, a fly-wheel, a series of planet-wheels, and a stationary wheel, all being combined and arranged to operate, substantially as shown and described.

321,877. STRAINER FOR LIQUIDS. JOSHUA L. ABELL, Chicago, Ill. Filed Jan. 12, 1885. (No model.)



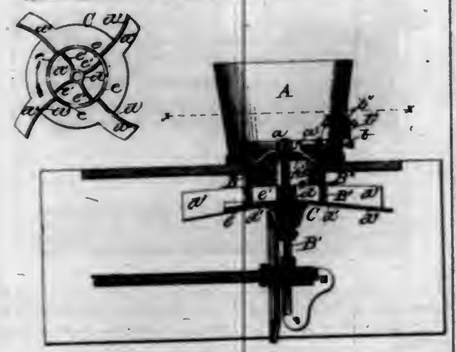
Claim.—1. A device for straining liquids, consisting of the bowl *a*, cylinder *b*, and strainer *c*, said cylinder, covered by the strainer *c*, projecting into the bowl, to form the pool *h* upon the outside of said cylinder, substantially as specified.

2. The bowl *a* and cylinder *b*, projecting into said bowl, so as to form a pool, *h*, around the outside of said cylinder, said cylinder being covered by a strainer, *c*, in combination with the funnel *e*, substantially as specified.

3. The bowl *a* and cylinder *b*, projecting into said bowl, so as to form a pool, *h*, around the outside of said cylinder, said cylinder being covered by a strainer, *c*, in combination with the funnel *e*, provided with pipe *f*, substantially as specified.

4. The bowl *a* and cylinder *b*, projecting into said bowl, so as to form a pool, *h*, around the outside of said cylinder, said cylinder being covered by a conical and upward-pointing strainer, *c*, having depressions *g* at its base, in combination with a funnel, *e*, having discharge-pipe *f*, substantially as specified.

321,878. FORCE-FEED SEED-SOWER. HANS AMUNDSON and FREDERICK J. HENRICHSEN, Racine, Wis. Filed Feb. 9, 1885. (No model.)



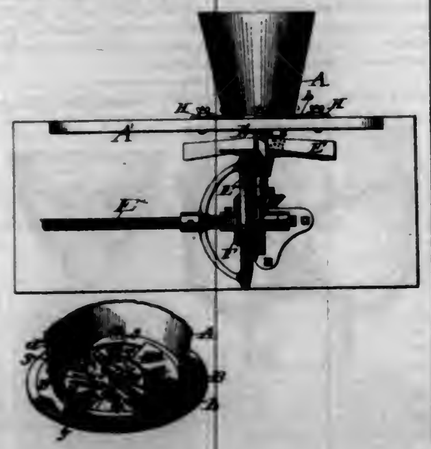
Claim.—1. In a seed-sower, a hopper projecting below the floor of the machine, said lower part having an exit-opening for the seed or fertilizer, in combination with a vertically-moving gate suspended by a link from the outer end of an arm on a horizontal, shaft mounted within the upper portion of the hopper above the floor, said shaft extending outside of the hopper and having another arm turning on a sealed quadrant on the outside of said hopper, as set forth.

2. The hopper having exit-opening, in combination with the distributer having an interior and exterior set of flanges, the flanges in the two sets breaking joints, as described.

3. The distributer having convex plate, flanges breaking joints, and casting-arms, in combination with the hopper separating the two sets of flanges, as set forth.

4. In a seed or fertilizer sower, a hopper that projects below the floor of the machine, in combination with a distributer having compartments on its upper side formed by curved radial flanges, and radial arms having flanges that break joints with the said compartment-flanges for receiving the seed, &c., as it passes from these compartments through an opening in the hopper, as set forth.

321,879. SEED-SOWER. HANS AMUNDSON and FREDERICK J. HENRICHSEN, Racine, Wis. Filed Feb. 9, 1885. (No model.)



Claim.—1. In a seed-sower, a cup forming the bottom of the hopper and having an upper plane horizontal surface and outlet for the seed or fertilizer, in combination with a horizontal force-wheel, having flanged arms, the lower surfaces of which are everywhere above the horizontal upper face of the cup, said force-wheel being adapted to revolve in said cup and carry the seed or fertilizer to the exit-opening in determined quantities, substantially as described.

2. The combination, with the cup, of a force-wheel, its flanged arms, and a gage-plate having flanges, one of which projects down between each pair of the arms of the force-wheel, the lower edges of all parts of said force-wheel and gage being everywhere above the plane horizontal upper face of said cup, as set forth.

3. The cup having an exit, 1 2 3, in combination with the force-wheel and a partition dividing the space between each pair of arms into two compartments, as set forth.

4. In a sower, the combination, with the force-wheel, of a cup, M', adapted to be revolved with it, as set forth.

5. The cup M', having tangential flange or flanges N, in combination with a gage-plate, force-wheel, shaft *a*, and hopper, as set forth.

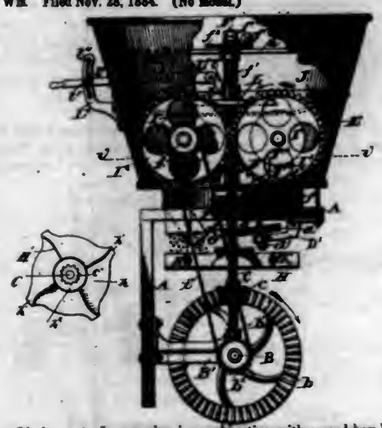
6. The combination, in a seed-sower, of the cap M', its gate or gates, and crank-arm I², with a lever and connections for adjusting the gate or gates.

7. In a sower, the combination of hopper A and cup B', having seed-outlet, with force-wheel C', having central rim, *c*, and radiating arms C², and the gage-plate D, having outer rim, D', and slots conforming in outline to the said arms C² of the force-wheel, and flanges projecting down from one edge of each slot, in advance of it, between each of the arms C², substantially as set forth.

8. In a sower, the combination of hopper A and cup B', having seed-outlet, with force-wheel C', having central rim, *c*, and radiating arms C², connected by vertical partitions *g*, and the gage-plate D, having slots conforming in outline to the said arms C², and flanges *d'*, projecting down from one edge of each slot, said flanges having vertical slits or slots for the reception of the partitions *g*, substantially as set forth.

9. In a sower, the combination of the shaft *a*, carrying distributer E, cup B', and hopper A, and force-wheel C', the hub of the latter being keyed to said shaft, and the hub of the distributer having beveled teeth meshing with corresponding beveled teeth on wheel E' of power-shaft E², the spokes of said wheel E' being concaved, with which concavity moves a bevel-pinion, F, keyed on said power-shaft, and which meshes with a horizontal bevel-pinion on shaft *a*, substantially as set forth.

321,880. SEEDER. HANS AMUNDSON and MARTIN S. FIELD, Racine, Wis. Filed Nov. 28, 1884. (No model.)



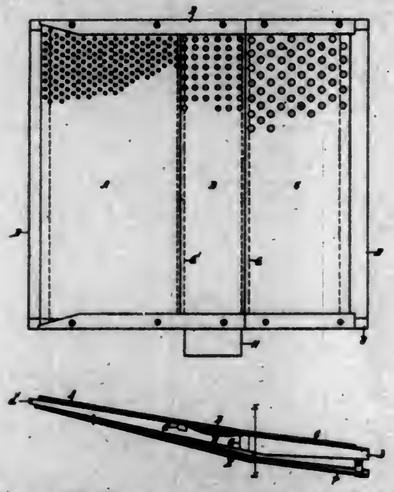
Claim.—1. In a seeder, in combination with a seed-box having a slot in its bottom and a flange above and opposite the said slot, a rotating feed-wheel mounted between the slotted bottom and the flange of the box and having a series of slots coinciding in turn with the bottom slot, a disk interposed between the said bottom and the feed-wheel and having extensions formed in its rim, and means, substantially as described, to connect the feed-wheel and the disk so that more or less of the surface of the disk-extensions is brought opposite the slots of the feed-wheel, and to rotate the same so connected, substantially as and for the purpose set forth.

2. In a seeder, in combination with a seed-box and a feed-wheel revolving in the bottom of the same through suitable driving connections, substantially as described, a pair of feed-rollers mounted in the said seed-box above the feed-wheel and suitably connected to the driving mechanism, a dish-shaped plate fastened in the periphery of the seed-box above the rollers and having a central opening, the edges of which are adapted to close the space at the rear and ends of the said rollers, and a feed-regulating plate adapted to be held in various adjustments above the central opening of the dish-shaped plate, substantially as and for the purpose set forth.

3. In a seeder, in combination with a seed-box having a slotted bottom and a spout depending therefrom, a horizontal fan suitably mounted below the said seed-box, and adapted to be rotated so as to produce an upward draft against the descending seed, substantially as and for the purpose set forth.

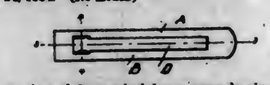
4. In a seeder, in combination with a feed-box, a feed-wheel having a series of slots cut close to its outer rim, and having spirally-arranged lugs and horn-shaped lugs in its upper face adapted to direct the seed toward the slots, substantially as set forth.

321,881. RIDDLE FOR EXTRACTING COCKLE AND WILD PEAS FROM GRAIN. WILLIAM ATWELL and ROBERT FLOATER, Chatham, Ontario, Canada, assignors of one-third to Manson Campbell, same place. Filed Apr. 11, 1884. (No model.) Patented in Canada Feb. 4, 1884, No. 13,614.



Claim.—The combination of the frame D, screens A B C, close bottom E, chute F, cross-bars G G', and slide H, substantially as shown and described, and for the purpose specified.

321,882. MUSICAL REED. CHARLES E. BRAINARD, Boston, Mass. Filed Mar. 24, 1884. (No model.)



Claim.—1. A reed for musical instruments having its block provided with slots or openings *g* in its heel portion, and its tongue provided with extensions or prongs *a* and bent at an angle to its surface, which extensions or prongs are inserted and secured in their respective slots or openings in said block, for the purpose specified.

2. A reed for musical instruments having its block provided with slots or openings *g* in its heel portion, and its tongue provided with extensions or prongs *a* and bent at an angle to its surface, which extensions or prongs are inserted and riveted in their respective slots or openings in said block, for the purpose specified.

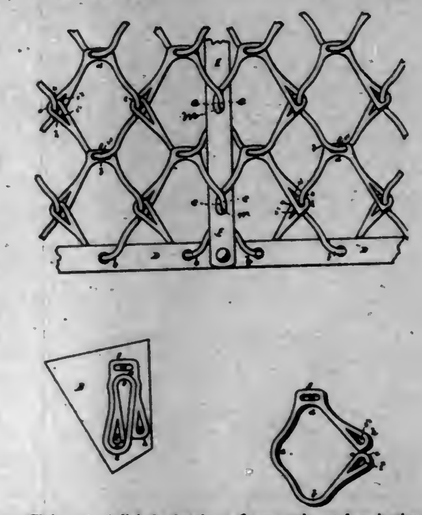
321,883. BROOM-HOLDER. HOMER B. BROWN, Waltham, Mass. Filed Aug. 15, 1884. (No model.)



Claim.—1. The improved broom-holder composed of a single piece of wire bent to form the loop 2, broom-holding arms 3 3, and braces 4 4, as set forth.

2. The improved broom-holder composed of a single piece of wire bent to form the loop 2, arms 3 3, braces 4 4, and hooks 5 5, as set forth.

321,884. FLY-NET FOR HORSES. RALPH BROWNSON, St. Paul, Minn., assignor of one-half to Peter R. L. Hardenbergh, same place. Filed Nov. 25, 1884. (No model.)

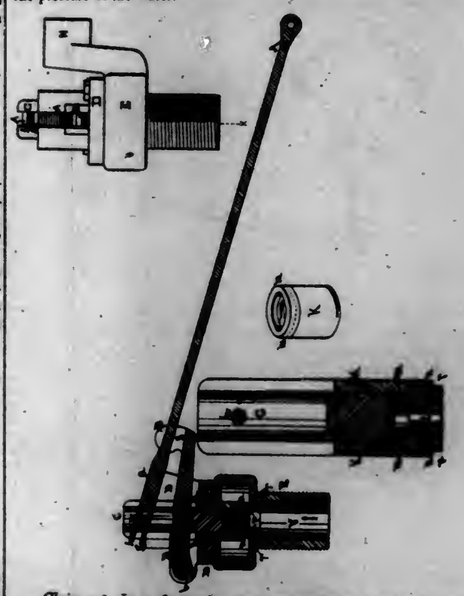


Claim.—1. A link for forming a fly-net web, cut from leather in a single piece, with curved and doubled parts *b d e*, and with parts *c h g*, respectively provided with slots i' i^2 i^3, substantially as herein shown and described.

2. As an improved article of manufacture, a fly-net for horses having its web formed of links cut from leather in single pieces, each with curved parts *b d e* and slotted parts *c h g*, substantially as shown and described, the said links being interwoven, substantially as herein shown and specified.

321,885. VALVE. DAVID D. BURK, Detroit, Mich. Filed Dec. 5, 1884. (No model.)

Brief.—The water acts upon the small piston K, raises lever B, which in turn acts on lever A, and thus assists in closing the valve against the pressure of the water.



Claim.—1. In a float-valve, the combination of a hollow valve-stem, a pivoted float-lever connected with the valve-stem, and a balance-piston located within the hollow valve-stem adapted to operate a lever which tends to close the valve, substantially as and for the purposes set forth.

2. In combination with a hollow valve-stem adapted to close a valve against the pressure of the water, a piston located within said valve-stem and adapted to receive the water-pressure through said valve-stem, and a pivoted lever actuated by said piston and connected with the valve-closing mechanism, substantially as and for the purposes set forth.

3. In combination with a valve-stem adapted to close a valve against a pressure of water, and actuating mechanism connected therewith, a piston sliding in a cylinder and actuated by the water-pressure confined by said valve, and a pivoted lever connected both with said piston and with the valve-actuating mechanism, whereby pressure on the said piston is transmitted through the said lever and tends to close the valve, substantially as described.

4. The combination of the valve-case E, hollow valve-stem C, pivoted float-lever A, piston K, and pivoted lever B, substantially as shown and described.

5. The combination of the hollow valve-stem C, having in its lower end the reduced opening *t*, the piston K, having thereon the cup-leather *m*, the pivoted lever B, working through a slot in the valve-stem, and the pivoted lever A, connected with the valve-stem, substantially as shown and described.

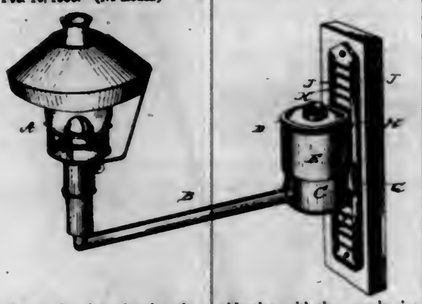
321,886. WATCH-CASE BEZEL. William Burns, Jr., Coshocton, Ohio. Filed Jan. 29, 1885. (Model.)



Claim.—1. In a watch-case bezel, the main portion A, having an annular ring or shoulder, B, formed with a perpendicular outer face, which is threaded, as shown, and a beveled inner edge, *b*, at the outer edge of the portion A, in combination with the glass having its outer edge beveled at a greater angle than the edge *b*, and the ring or follower D, having its outer edge or periphery provided with a series of threads to screw into the threaded wall of the shoulder B, the concaved or beveled inner face, *f*, of the ring, and the concaved outer edge or face, *h*, meeting the inner face at the point *i*, for the purpose set forth.

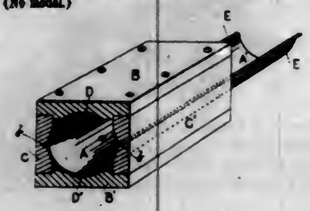
2. In a watch-case bezel, the main portion A and the threaded ring or shoulder B, in combination with the clamping-ring or follower D, provided with a threaded periphery to screw into the shoulder, and beveled or concaved to a pointed edge forward of the threads, whereby said edge will bear against the inner face of the glass and form a chamber for the accumulation of foreign matter between the shoulder and the glass, as set forth.

321,887. LAMP-BRACKET. Flavius J. Cross, Kersey, Pa. Filed Feb. 16, 1885. (No model.)



Claim.—In a lamp-bracket, the combination, with the ways having the inwardly-bent flanges J J and transverse slots K, of the reservoir-supporting sleeve having spring G, provided with the lip L, and the slide H, having transverse slot M at its lower end for the lip of the spring, the said slide sliding in the flanged way, as and for the purpose shown and set forth.

321,888. MILLING-SPOUT FOR CONDUCTING GRANULAR PULVERIZED MATERIAL. Henry Crow, Grand Rapids, Mich. Filed Feb. 5, 1885. (No model.)

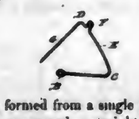


Claim.—1. In a spout for conducting granular, pulverulent, or similar substances, the lining A A', having the flanges E inserted in the slits *b*, substantially as and for the purpose described.

2. In a spout for conducting granular, pulverulent, or similar substances, the bottom B', having its inner surface, D', concave, and the sides C and C' cut away to receive and hold the lining A A', substantially as described.

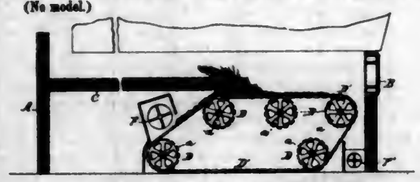
3. In a spout for conducting granular, pulverulent, or similar substances, the combination of the bottom B', having the inner concave surface, D', the sides C and C', having their inner surfaces cut away and provided with the slits *b*, and the lining A A', having the flanges E, all inclosed by cover B, having concave inner surface, D, substantially as described, and for the purpose set forth.

321,889. NOSE-RING. Lawson Drain, Washington Court-House, Ohio, assignor of one-half to Peter Drain, same place. Filed Nov. 28, 1884. (No model.)



Claim.—A ring formed from a single piece of wire which is provided with an eye, B, at one end, a straight portion between the eye and the bend C, a curved portion, E, between the bends C and D, a bend or projection, F, formed near the bend D, and extending at right angles to the straight portions of the ring, and a straight portion, G, for entering the eye, substantially as described.

321,890. FURNACE-GRATE. Joseph M. Duncan, Warsaw, N. Y., assignor to himself and Eben C. McNair, same place. Filed Mar. 16, 1885. (No model.)



Claim.—1. The combination, in a furnace, of a traveling grate, a conveyer for feeding the coal, and a conveyer for receiving the ashes, substantially as described.

2. The combination, in a furnace, of a traveling grate, and a conveyer for receiving the ashes at the front end, substantially as described.

3. The combination, in a furnace, of a traveling grate, a conveyer for feeding coal from the rear of the fire, and a conveyer for receiving the ashes at the front end, substantially as described.

4. The combination, with a furnace, of a traveling grate arranged to carry the fuel upward on an incline from the rear of the fire, and thence on a level to the front of the furnace, substantially as and for the purposes set forth.

5. The combination, in a furnace, of a traveling grate moving on an incline and on a level, and a conveyer for feeding the coal, arranged below the top level of said grate, substantially as described.

6. The combination, in a furnace, of a set of sprocket wheels and chains, a series of perforated grate-bars secured to said chains, and another set of sprocket wheels and chains on the outside of the furnace, substantially as and for the purposes set forth.

321,891. END-GATE FOR WAGONS. Fred P. Everett, Weeping Water, Nebr. Filed Apr. 23, 1885. (No model.)



Claim.—1. The improved end-gate for wagons herein described, consisting of a bottom board having side pieces attached thereto, and transverse battens *a a'*, the lower corner of said end-gate having projecting pins *g'*, the upper batten having hooks *f'*, in combination with a wagon-body having vertical battens *a a* and independent chains B B, each adapted to engage one of the hooks *f'*, to support the end-gate in an inclined position, so as to engage each other to maintain said gate in a vertical position, substantially as shown, and for the purpose set forth.

2. In combination with a wagon-body having vertical stripes *a a*, attached to the inner sides of the side-board, and chains attached to the upper corner thereof, said chains being provided with connecting means, an end-gate having bottom boards and side pieces, the lower corners of said end-gate having attached thereto angle-plates with projecting pins *g'*, the transverse battens *a*, with hooks *f'*, and a lower transverse batten, *c'*, the parts being organized so that the gate may be held in either a vertical or inclined position by means of said chains, substantially as set forth.

321,892. CURTAIN-SUPPORTER. Andrew H. Gerdon, Albany, N. Y. Filed Oct. 28, 1884. (No model.)



Claim.—1. In a lambrequin or curtain supporter, the hollow bar B, provided on its under side with a longitudinal opening, and with inwardly extending wings or flanges E E', parallel to each other, the edges of said wings forming a trackway for the suspension attachments, substantially as shown and described.

2. The combination, with the hollow bar B, provided on its under side with a longitudinal opening, and with inwardly-extending wings or flanges E E', of the supporting-brackets C D, one of said brackets having a stud, *g*, engaging between the said wings E E', substantially as shown and described.

3. The combination, with the hollow bar B, provided on its under side with a longitudinal opening, and with inwardly-extending wings or flanges E E', of a retractile spring located above said wings, and a cord, P, attached to one end of said spring and passing out at the opposite end thereof, substantially as shown and described.

321,893. TIME-LOCK. Henry Gross, Chicago, Ill. Filed Feb. 5, 1885. (No model.)



Claim.—1. In a time-lock, the combination, with a notched inclosing-casing and a pivoted spring-detent connected thereto for obstructing the operation of a lock in substantially the manner shown, of one or more time-movements provided with stops to engage with said detent, substantially as described.

2. A supplemental tumbler for a permutation-lock having a notch therein to receive the lock-dog, a suitable detent for obstructing said notch, and clock-work for controlling the movement of said detent, inclosed within said tumbler, substantially as described.

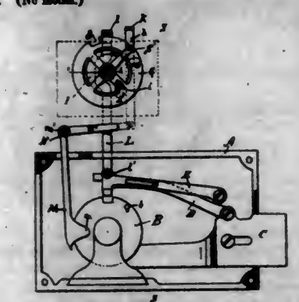
3. A time attachment for permutation-locks having a circular disk-shaped case provided with a central hub, a peripheral notch, and driving-pins located on its sides, in combination with a movable spring-detent to automatically obstruct the peripheral notch in the case, and clock-work for operating said detent, located within the case, substantially as described.

4. In a time attachment for permutation-locks, the combination of the clock-work, a circular inclosing case, A, provided with hub *a*, peripheral notch *a'*, and driving-pin a^2, and a pivoted detent, B, journaled on the hub of the case, and a spring, C, substantially as described.

5. In a time attachment for locks, the combination, with the circular disk-shaped casing provided with the peripheral notch and central hub, of a pivoted detent and two independent time-movements for engaging with said detent, located within the case, and having their corresponding parts diametrically opposite each other through the center of the case and at equal distances therefrom, substantially as described.

6. In a time-lock, the combination, with a shifting or movable detent, of the clock-work adapted to engage therewith, and the casing inclosing said clock-work, and provided with a notch extending across its periphery, and adapted to be obstructed by said shifting detent, substantially as described.

321,894. TIME-LOCK. Henry Gross, Chicago, Ill. Filed Feb. 5, 1885. (No model.)



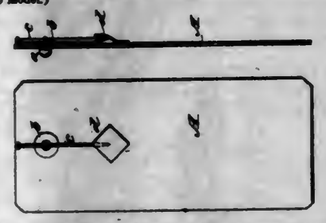
Claim.—1. In time-locks, the combination, with the clock mechanism and the permutation-lock, of a lifting-rod for holding the angle-bar of the lock out of engagement with the tumblers, a movable dog for sustaining said lifting-rod, and suitable levers for retracting said dog, substantially as described.

2. In time-locks, the combination, with the clock mechanism and the permutation-lock, of a lifting-rod connected with the angle-bar of the permutation-lock, a movable dog for sustaining said lifting-rod, connected with the clock mechanism, and suitable lever mechanism located in position to be moved by the lock-tumblers, and to operate the movable dog, substantially as described.

3. In time-locks, the combination, with the clock mechanism and the permutation-lock, of a lifting-rod for holding the angle-bar out of engagement with the tumblers, a movable dog sustained by the main casing, a friction-plate loosely journaled upon the shaft of the clock mechanism and connected with the movable dog, and suitable lever mechanism located in position to be moved by the lock-tumblers and to operate the movable dog, substantially as described.

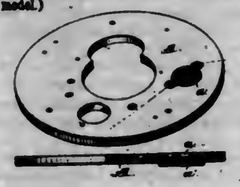
4. In time-locks, the combination, with the clock mechanism and the permutation-lock, of a lifting-rod for holding the angle-bar out of engagement with the tumblers, a movable dog for sustaining said lifting-bar, journaled upon the main casing, a friction-plate journaled on a shaft of the clock-work, and suitable lever mechanism having an end in position to engage with the movable dog, and a portion in position to be operated by the tumbler, substantially as described.

321,895. TAG. Samuel M. Gum, Reading, Pa. Filed Sept. 8, 1884. (No model.)



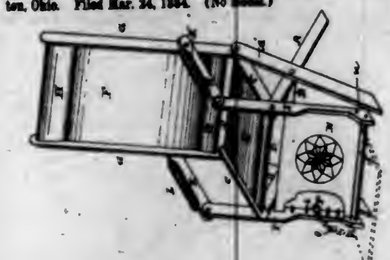
Claim.—As an improved article of manufacture, the tag or label A, provided with the pin *c*, secured thereto by the button *a*, having its eye passed through the label, and a washer, *b*, and with the guard *d* for the point of the pin, as set forth.

321,896. WATCH-PLATE. George E. Hart, Waterbury, Conn., assignor to the Waterbury Watch Company, same place. Filed June 2, 1884. (No model.)



Claim.—As an improvement in the construction of watch-plates, the method of forming recesses by first stamping or pressing the required depression into one face of a plate, and then removing the corresponding protuberant metal from the opposite side of the same, substantially as and for the purpose specified.

321,897. CHAIR. BENJAMIN F. HOBBS and WILLIAM Y. STOATE, Canton, Ohio. Filed Mar. 24, 1884. (No model.)



Claim.—1. The combination, with a chair, of the swinging foot-support frame pivoted to the front of the chair, a writing-board supported upon said foot-support frame, and a set-screw, M, by which the said swinging frame is locked in various vertical positions in order to adjust the height of the writing-board, substantially as set forth.

2. The combination, with a chair, of the swinging foot-support frame pivoted to the front of the chair, a writing-board pivotally supported upon said swinging frame, a set-screw, M, by means of which the writing-board and its supporting frame may be held in an elevated position, and the segments O, by means of which the inclination of the writing-board may be adjusted, substantially as set forth.

321,898. DITCHING-PLOW. JAMES W. HUMPHREYS, Iroquois, Ill. Filed Feb. 12, 1885. (No model.)

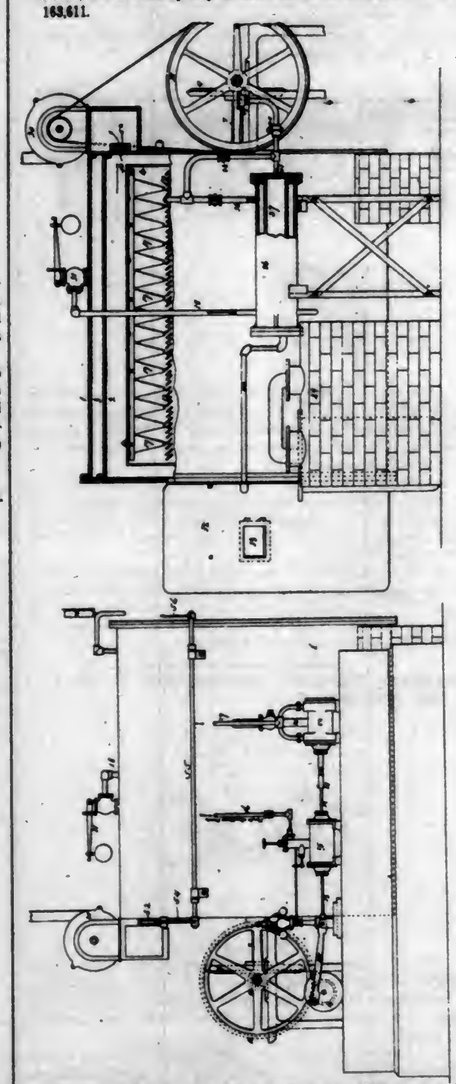


Claim.—1. The combination, in a ditching-plow, of a rigid beam provided at its forward end with an adjustable and pivotally attached shoe, plows with diverging mold-boards and vertical cutters, as shown, a rolling colter journaled adjacent to the cutter of the forward plow and above the point of the same, and a sole pivoted to the under side of the rear plow and provided with a lever for adjusting the same, the parts being constructed and organized substantially as shown and described.

2. In a ditching-plow, the hinged horizontal plates L' adjustably attached to the frame and rear wings, said plates being provided with means for adjusting the same, substantially as shown, and for the purpose set forth.

3. In a ditching-plow, constructed as described, the combination of the mold-boards D, wings or extensions L, and an adjustable shoe, plates L', hinged near the extensions L, and a bar which extends upwardly from said plate and is adjustably connected to the frame, the parts being organized substantially as shown, and for the purpose set forth.

321,899. APPARATUS FOR REMOVING VEGETABLE FIBER FROM WOOL. JOHN ILLINGWORTH, Batley, County of York, England. Filed Dec. 15, 1884. (No model.) Patented in Belgium July 31, 1884, No. 65,919; in Germany July 31, 1884, and in France Aug. 2, 1884, No. 163,611.



Claim.—1. In an apparatus for treating animal-fiber, or materials made therefrom, for the carbonization and removal of the vegetable matter mixed therewith, the combination of the flue 2, the boiler 1, constructed, as shown, to surround flue 2 and form a steam-jacket, 3, around the same, the foraminous cage 4, rotatively mounted in flue 2, the blower 20, connected with flue 2, the mechanism, substantially as described, for rotating the cage and driving the blower, the gas-generating apparatus 28, connected with flue 2 by a pipe, and the apparatus for forcing a mixture of ammonia and steam into the flue 2, comprising the jacketed ammonia-receptacle 37, its feed-pipe 41, provided with cock 40, its outlet-pipe 43, and the steam-pipe controlled by cock 42, said flue 2 being provided with a door, 32, and all constructed and arranged to operate substantially as set forth.

2. The combination, with the jacketed flue 2, the blower 20, the foraminous cage 4, mounted rotatively in the flue, the mechanism, substantially as described, for rotating the cage and driving the blower, and the gas-generating apparatus, of the rollers 44, mounted in the cage 4, the beams 46 and 47, mounted in the cage 4, and bearing on their projecting axles the spur-wheels 49 and 51, constructed to be readily detached therefrom, and the pinion 50, mounted on and fixed to the flue concentric with the axis of the cage, substantially as described.

321,900. FISHING-REEL. HIRAM L. JOSLIN, Mankato, Minn., assignor of one-half to George A. Clark, same place. Filed June 16, 1884. (No model.)



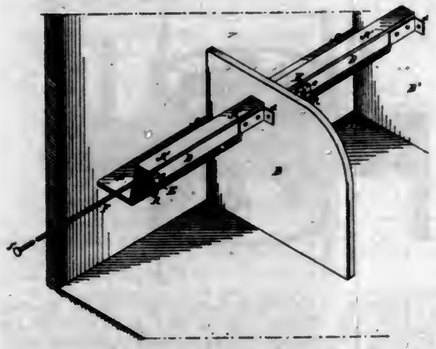
Claim.—1. In a fishing-reel, the combination, with a suitable casing, of a gear-wheel mounted on a shaft within said casing, a coil-spring secured to the inner side of said casing and to the gear-wheel shaft, a pinion adapted to mesh with said gear-wheel, a nib or pin on the pinion-shaft, a reel provided with a slot to receive said pin, whereby it is made to turn therewith, and a brake adapted to bear with its end upon the said gear-wheel, substantially as set forth.

2. The combination, with the spring-actuated gear-wheel, of a brake pivoted to the side of the casing, and provided with one or more teeth, said brake or catch lever extending through an opening in the side of the casing, a coil-spring mounted on the shaft upon which said brake is pivoted, and a reel, substantially as set forth.

3. A fishing-reel the body portion G' of which is constructed of a single piece of metal, and arms bent outwardly from opposite sides to form guides for the passage of the line, substantially as set forth.

4. A fishing-reel the body portion G' of which is constructed of a single piece of metal, and arms bent outwardly from opposite sides to form guides for the passage of the line, and wire bands secured to and encircling said arms, substantially as set forth.

321,901. DEVICE FOR RELEASING CATTLE FROM STALLS. REUBEN H. KLINE, Spring City, and HARVEY E. KLINE, Royer's Ford, Pa. Filed Mar. 9, 1885. (No model.)



Claim.—1. The combination of a series of stalls, having transverse bars D secured at the ends to the said stalls, and top boards, A', with securing-rings, and a retaining and releasing rod below said top boards and behind the bars, substantially as described.

2. The combination of a stall, having a transverse bar notched at its edge, with a T-headed securing-ring, and a sliding plate adapted to close the edge of the notch of the bar to retain the ring, the said transverse bar receiving all the pulling strain, substantially as set forth.

3. The combination of a stall, having a transverse bar, D, notched at its edge, with a T-headed securing-ring, the sliding rod F, and an arm carrying the retaining-plate N, to close the edge of the notch, and adjustable on said rod, substantially as described.

4. A stall having a notched transverse bar and a band with flanged ends, in combination with a T-headed securing-ring and a sliding retaining-plate adapted to said flange to close the notch, substantially as specified.

321,902. HAND-TRUCK. GEORGE A. KOLLENBERG, Owensborough, Ky. Filed Apr. 21, 1885. (No model.)

Claim.—1. In a truck, the combination of the main body having side pieces in which are formed serrations or indentations, and the main floor having slots *a a* and *b*, the lever pivoted in slot *b*, having groove *e*, the supplemental floor having channels *f* and friction-roller *i*, the braces

321,902.



A, the elevating-rods *g*, and the pawl *m*, all operating substantially as shown and described.

2. In a merchant-truck, the combination, with the main floor having side parallel slots in which are pivoted elevating-arms, of the adjustable floor, also provided with side parallel slots, said adjustable floor having dependent forward arms, the sides of the main platform being provided with pins to support the arms *h* when the upper platform is lowered, substantially as shown, and for the purposes specified.

321,903. NECKSCARF-EXHIBITOR. MAX KRUMBEIN, Marion, Mo. Filed Oct. 18, 1884. (No model.)

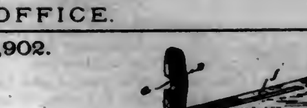


Claim.—1. In combination with a box, a number of stands formed to hold a scarf each, and arranged in the box in rows, those of each row increasing in length backward, substantially as and for the purpose set forth.

2. In combination with a box, the stands and strips, the stands having folding legs and projections, the projections fitting beneath the strips, substantially as shown and described, for the purpose set forth.

3. In combination with a box and strips secured to the sides thereof but not extending the entire length of the box, the stands having projections that fit beneath the strips on the box, and flexible legs, substantially as and for the purpose set forth.

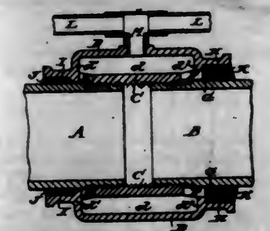
321,904. INHALER. AMOS M. LOWE, Monroe, Mich. Filed Apr. 23, 1885. (No model.)



Claim.—1. In an inhaler, the combination of a valve having a stem and actuating-spring thereon, and supported by suitable cross-bars, with a spring-lever pivoted to a lug within the tube, said lever having a claw to engage with and hold said valve-stem, whereby the valve when so held acts as a cut-off, and as an inhaling-valve when released from said claw, substantially as set forth and described.

2. The combination of valve H, having stem K and spring 3, and supported by cross-bars 5 and 6, with lever F, having claw 10 and spring G, guide-socket E, and pressure-bar D, substantially as set forth and described.

321,905. PIPE SYSTEM HAVING AUXILIARY LEAKAGE-CONDUIT. CONRAD LUTOMSKI, Pittsburg, Pa. Filed Feb. 4, 1885. (No model.)



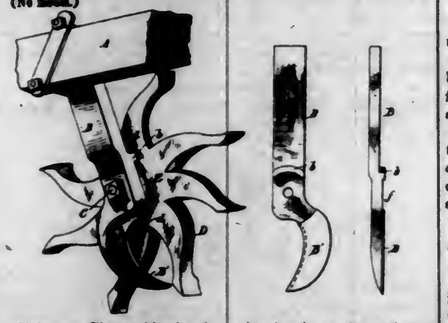
Claim.—1. In a system of pipes for conveying gases or other fluids, the combination, with the main pipe-joints or couplings, of casings inclosing the joints and provided with chambers which receive the leakage from said joints, an auxiliary pipe or conduit ranging along the main pipes and connected with the chambers of the casings to carry off the leakage from the main pipe-joints to a point of use or discharge, and said

casings provided with lugs or projections which center them lengthwise around the main pipe-joints, substantially as herein set forth.

2. In a system of pipes for conveying gases or other fluids, the combination of the pipes A B, coupling-sleeve C, a casing, D, surrounding the pipe-joint and chambered at *d*, the pipe L, communicating with the chamber *d*, and the lugs E F, held to or by the casing D, and abutting the opposite ends of sleeve C, substantially as herein set forth.

3. In a system of pipes for conveying gases or other fluids, the combination of the pipes A B, coupling-sleeve C, a casing, D, formed in one piece and surrounding the pipe-joints and provided with a chamber, *d*, lugs E, fixed to one end flange of the casing, and the collar G, having attached lugs E, and inserted at the other end of the casing, and the packings J K, substantially as herein set forth.

321,906. **ATTACHMENT FOR PLOWS.** CHARLES W. MCCORMICK, Emporia, Kans., assignor of one-half to Albert Love. Filed Mar. 25, 1885. (No model.)

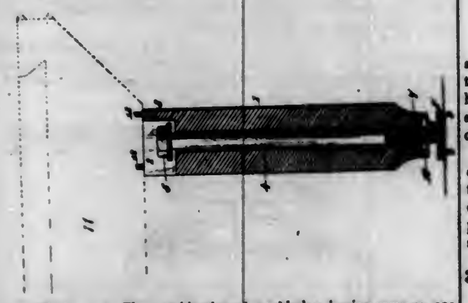


Claim.—1. The combination, in a colter for plows, of a stationary cutter perforated for the passage of the securing-bolt, a rotary cutter mounted on said bolt, a plate attached to the lower portion of said cutter and having its upper edge carved, as described, a carved rib or projection, *b*, formed above said perforation, substantially as set forth.

2. In a rotary colter for plows, a stationary cutter having a plate attached at its lower portion, and a rib or offset formed above its journal, in combination with a rotary cutter, having radial arms with cutting-edges, and one or more pins which project therefrom, substantially as shown, and for the purpose set forth.

3. In a colter for plows, a stationary cutter perforated for the passage of the bolt, a rotary cutter mounted on said bolt and having an annular flange projecting from its central portion, to form a recess for the reception of the head of said bolt, a plate, B', attached to the lower portion of said cutter and having its upper edge carved, as described, and a carved rib or shoulder, *b*, formed integral with said cutter above the perforation thereof, substantially as set forth.

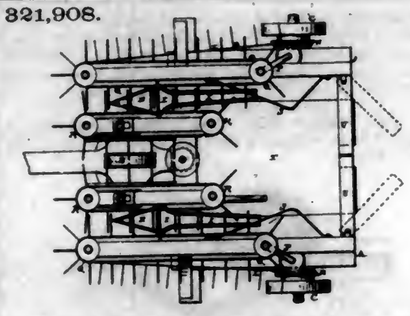
321,907. **TABLE-LEG.** OLIVER F. MITCHELL, Merrill, Wis., assignor of one-half to William H. Swinehart, same place. Filed Feb. 5, 1885. (No model.)



Claim.—1. The combination of a table-leg having recesses, one each at its top and bottom, the top recess opening at the side of the leg, an aperture connecting the recesses, a threaded bolt passing through said aperture, a nut applied to said bolt within the lower recesses of the leg, and a plate having projections on its lower face and a concavity in its upper face for the end of the bolt to rest in, substantially as described.

2. A table-leg consisting of the solid body 1, having recesses 2 6, connected by an aperture, the bolt 4, having head 5, and the nut 7, substantially as described.

321,908. **CORN-HARVESTER.** WILLIAM D. MURRAY, Hamilton, Mo. Filed May 13, 1884. (No model.)



Claim.—1. In a stalk-cutter, a cutting-knife having its edges turned upward at an angle, substantially as shown.

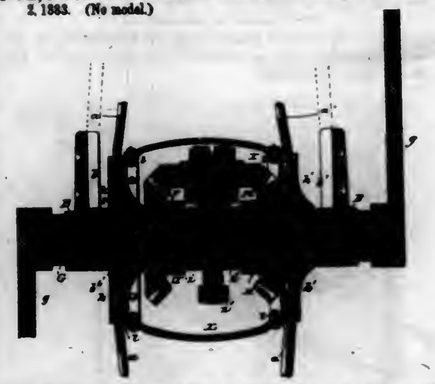
2. The combination of a single knife or cutter, a supporting cross-bar, guiding-rods upon which the cross-bar rises and falls, and springs for returning the cross-bar and knife to position, substantially as described.

3. In a corn-harvester, the combination of the tilting platform, the two doors which act as supports for its rear end, the operating-lever connected to the shaft Y, the sliding rack-bars W, and the segments V, connected to the doors, and operated by the rack-bars, substantially as set forth.

321,909. **PROCESS OF PREPARING FOOD FOR POULTRY.** SIMON S. MYERS, Philadelphia, Pa. Filed Jan. 31, 1885. (No specimens.)

Claim.—The process of preparing an egg-food for poultry, consisting in granulating oyster-shells, the same being then saturated with tincture of capsicum, and finally roasted, substantially as described.

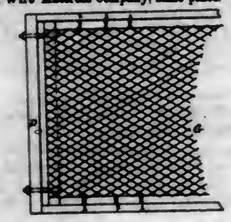
321,910. **VELOCIPEDE.** WILLIAM E. NYE, Monmouth Ill. Filed Feb. 2, 1883. (No model.)



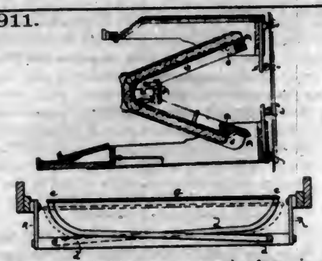
Claim.—1. In a velocipede, in combination with the drive-shaft and epicyclic train, the frame B, having boss *b''* on the drive-shaft, and to which one of the wheels of the train is directly attached, the hub K, having part *k* journaled on boss *b''* and part *k'* journaled on the drive-shaft, and a casing, L, connecting said parts *k* and *k'*, substantially as described.

2. In a velocipede, in combination with the drive-shaft and epicyclic train, the frame B, fixed to one of the wheels of the train, and the two-part hub, one part of which is journaled to the frame B and the other part of which is fixed to another wheel of the train, and the two parts *k* and *k'* connected by a casing, L, which is formed in two parts, substantially as described.

321,911. **FOLDING BED.** DAVID J. POWERS, Chicago, Ill., assignor to the Union Wire Mattress Company, same place. Filed May 11, 1883. (No model.)



321,911.



Claim.—1. In a bed-bottom, a supporting-frame, in combination with a continuous elastic fabric attached at its respective ends to the supporting-frame, but with its side edges free their whole length, or nearly so, and supports connected to said free edges to hold them out when moving down under pressure, substantially as described.

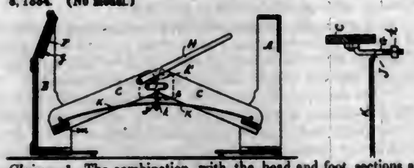
2. In a bed-bottom, a supporting-frame, in combination with a continuous elastic fabric attached at its ends to said frame, but with its side edges free, and yielding spreading supports connected to said free edges, substantially as and for the purposes set forth.

3. In a bed-bottom, suitable end supports for the bottom fabric, in combination with a continuous elastic fabric attached at its respective ends to said supports, but having its side edges free the whole length, or nearly so, of the bed, and cross braces or levers pivoted at one end to a support below the fabric, and at their opposite ends connected to the opposite side edges of said fabric, but otherwise free to vibrate on their pivots, substantially as and for the purposes set forth.

4. In a folding bed, suitable supports for the bottom fabric, in combination with a continuous elastic fabric attached at its respective ends to said supports, folding side rails, a cross-bar attached to said rails and arranged underneath the elastic fabric, and cross-braces or levers pivoted at one end to the cross-bar, and connected at their other ends to the opposite side edges of the fabric, but otherwise free to vibrate on their pivots, substantially as and for the purposes set forth.

5. In a bed-bottom, suitable end supports for the bottom fabric, in combination with a continuous elastic fabric attached at its respective ends to said supports, and side rails to which the fabric is connected at each edge for a short distance from each end support, substantially as and for the purposes set forth.

321,912. **FOLDING BED.** DAVID J. POWERS, Chicago, Ill. Filed Jan 8, 1884. (No model.)



Claim.—1. The combination, with the head and foot sections and jointed side rails connecting the same, of the pendants pivoted to the side rails, and the elastic fabric having its side edges connected to the pendants, substantially as and for the purposes specified.

2. The combination, with the head and foot sections and the jointed side rails connecting the same, of the pendants G, pivoted to the side rails and provided with nuts *k* on their threaded lower ends, and the elastic fabric K, provided with loops *j*, through which the pendants pass, substantially as and for the purposes specified.

3. The combination, with the head and foot sections and the jointed side rails connecting the same, of a lever attached to one of the side rails to aid in forcing them down into position, substantially as and for the purposes specified.

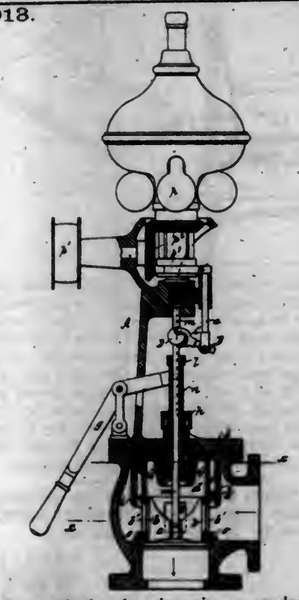
4. The combination, with the head and foot sections and the jointed side rails connecting the same, of the lever H, pivoted to one of the side rails, and the stop or projection *h'* on said side rail, substantially as and for the purposes specified.

321,913. **REGULATOR-VALVE.** CARL PRÜSMANN, Backau, Germany, assignor to Schaffer & Budenberg, same place. Filed May 7, 1885. (No model.)

Claim.—1. The combination of a valve-casing, an annular cut-off valve, *d*, in the case, and an annular throttle-valve in the cut-off valve, with a hollow spindle connecting with the cut-off valve and a valve-stem connecting with the throttle-valve and projecting through and beyond the hollow spindle, substantially as described.

2. The combination of a valve-casing and the concentric cut-off and throttle-valves with a hollow spindle connected with the cut-off valve, a valve-stem connecting with the throttle-valve and extending through and beyond the hollow spindle, and mechanism, substantially as described, connected with the hollow spindle and the valve-stem for actuating the valves, substantially as and for the purpose described.

321,913.

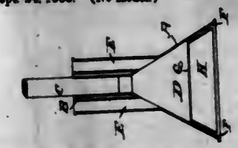


3. The combination of a valve-casing, an annular cut-off valve in the casing, a rotating throttle-valve within the cut-off valve, a spindle extending from the cut-off valve, and a pivoted lever connected with the spindle for reciprocating the cut-off valve, substantially as described.

4. The combination of a valve-casing, an annular cut-off valve in the casing, an annular throttle-valve within the cut-off valve, a hollow spindle connected with the cut-off valve, a pivoted lever for reciprocating the spindle, a valve-stem connected with the throttle-valve and extending through and beyond the spindle, and mechanism, substantially as described, for rotating the valve-stem and throttle-valve, substantially as described.

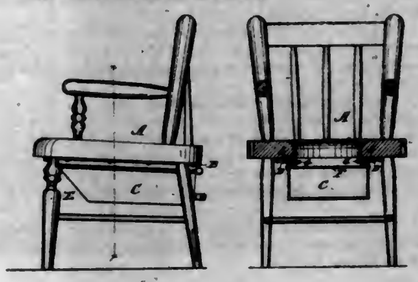
5. The combination of a valve-casing, the concentric cut-off and throttle valves, a valve-stem connecting with the throttle-valve, a protuberance on the valve-stem, a forked rod pivoted to the protuberance, a spindle loosely connected with the forked rod, and mechanism, substantially as described, for operating the spindle to turn the valve-stem and the throttle-valve, substantially as described.

321,914. **CLOTHES-POUNDER.** MOSES RHINGTON, Brownsville, Ind. Filed Sept. 24, 1883. (No model.)

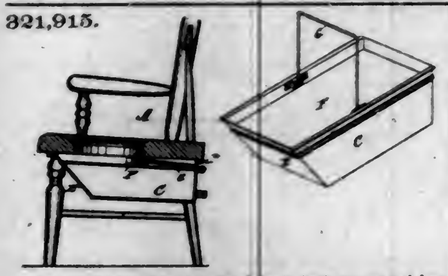


Claim.—The cone-shaped vessel A, provided with a handle-socket, a horizontal diaphragm, G, dividing the vessel into chambers D and H, conduits F, leading from the bottom of the vessel into the chamber D, and the conduits E, leading upward out of the chamber D, combined substantially as and for the purpose set forth.

321,915. **CHAIR-COMMODE.** BARNEY RUBENSTEIN, East Saginaw, Mich. Filed Oct. 20, 1884. (No model.)



321,915.



Claim.—The combination of a chair, A, having a seat and legs and a commode-hole through the seat, a pair of cleats or slideways, B, secured directly to the under side of the seat, a drawer, C, having parallel flanges D at its upper side edges fitted to slide on the said cleats and to touch the bottom of the chair at all sides of the hole, and having a slit in one side and grooves in two other sides, and a cover, F, fitted to enter the said slit and to slide across the drawer in the said grooves, substantially as described, whereby a chamber or drawer may fit closely to a chair-commode seat while in use, and a cover may be placed on the drawer, and the drawer may be removed from the chair while the patient or user of the commode still remains seated in the chair.

321,916. MARINE WAY AND CRADLE FOR TRANSFERRING BOATS THROUGH OR ABOVE THE SURF TO SMOOTH WATER. JOHN E. STAPLES, York, Me. Filed Feb. 26, 1885. (No model.)





Claim.—1. The cradle or car E, of substantially the shape shown, and made of open-work at its sides and bottom, substantially as and for the purpose above described.

2. The car or cradle E, of substantially the shape shown, and made of open-work at its sides and bottom, said cradle being open at its outer end and provided with a passage or entrance, F, substantially as and for the purpose set forth.

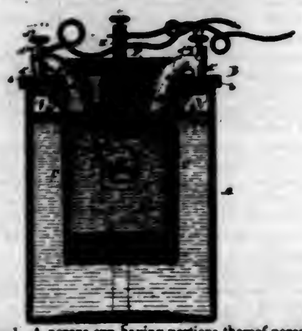
3. In an apparatus for transferring small boats from high land through the surf to comparatively smooth water, the combination with the car or cradle and the track, of safety-guards extending downward from said car and under flanges or projections which prevent said guards from rising, whereby the car or cradle is prevented from being lifted or washed off the track by the action of the water, substantially as set forth.

4. The combination of the car or cradle E, provided with the safety-wheels *g*, and the rails C, provided with the flanges C', substantially as and for the purpose described.

5. The combination of the car or cradle E, provided with the bent rods *g'*, braced hangers G, and safety-wheels *g*, and the rails C, provided with the flanges C', substantially as and for the purpose set forth.

6. The herein-described apparatus for transferring small boats from high land through the surf to comparatively smooth water, consisting of the following parts, namely: the supporting-piles B, trestle-work A, provided with the track C C' and longitudinal strips D, the open-work cradle E, provided with the wheels F and safety-wheels *g*, the windlass H and rope *h*, connected to the cradle as specified and passing over the rollers or pulleys *l* and *m*, all constructed substantially as and for the purpose described.

321,917. PRIMARY OR GALVANIC BATTERY. ELI T. STARR, Philadelphia, Pa., assignor to the S. S. White Dental Manufacturing Company, same place. Filed Jan. 9, 1885. (No model.)



Claim.—1. A porous cup having portions thereof porous and other portions non-porous, and provided with projections, shoulders, or ledges to prevent contact between said porous portions of said cup and the battery plates or elements facing said porous portions of the cup, substantially as described.

2. A substantially flat porous cup having its broad sides porous, and provided with projections, ledges, or shoulders to prevent contact between said porous sides of the cup and the battery plates or elements facing said porous sides, substantially as described.

3. A substantially flat porous cup provided with lugs or enlargements at its upper end at its narrow edges constituting the supporting portions of said cup, substantially as described.

4. A porous cup provided with lugs or enlargements at its upper end constituting the supporting portions of the cup, and with projections or ledges by which the cathode or carbon plates or their equivalent are held away from the sides of said cup, substantially as described.

5. The flat-bodied zinc electrode for galvanic batteries having opposite goose-necked or curved supporting-arms, circular in cross-section, and fitted with tubes or bands of insulating material at the line of junction of air and electrolyte or battery fluid, substantially as described.

6. The anode or zinc element of a galvanic battery having a binding-screw to secure the conducting-wire thereto, said wire being, where it is connected with the anode plate, provided with a coating of zinc or with a coating of the same metal as that of which the anode plate is composed, substantially as described.

7. The combination, in a galvanic battery, of the battery-vessel and its cover, the porous cup fitted in said vessel, a flat-bodied zinc electrode fitted in said porous cup and having supporting-arms rising therefrom and resting upon the cover of said vessel, so as to be suspended therein, while readily removable therefrom, the carbon electrode plates fitted on opposite sides of said porous cup and outside thereof, and suitable battery-fluid in which said electrodes are immersed, substantially as described.

8. The combination of the battery cell or vessel, the cover thereof, the porous cup supported by said cover, the cathode or carbon element supported by said porous cup, and the anode or zinc element immersed in said cup, and provided with curved arms or members which extend up outside the cup and rest upon the cover of the battery-vessel to support said anode plate above the bottom of the porous cup, substantially as described.

9. The cathode or carbon plates clamped to a single conducting-plate, and fitted to lie face to face with the porous sides of a porous cup containing the zinc or anode plate of the battery, said clamp-plate resting upon and being supported by the upper edge of said porous cup, substantially as described.

10. In a galvanic battery, the combination, with the electrodes and fluid thereof, of a battery cell or vessel and its cover, said cover having a raised rim or edge to prevent the escape of the battery-fluid that may find its way to the outside of the cell, and with an opening or channel in said cover to insure the return of said fluid to the cell, substantially as described.

321,918. CAR-COUPLING. DAVID J. STEVENSON, Minneapolis, Minn., assignor of one-half to Frederick G. Nott, same place. Filed May 5, 1885. (No model.)



Claim.—1. In an automatic coupler, the combination, with the draw-head A, having the inclined projections A' A' and the inclined wall a^6, of the slide B, and bar C, having beveled end *c*, projection C', and coupling-pin C^2, substantially as described.

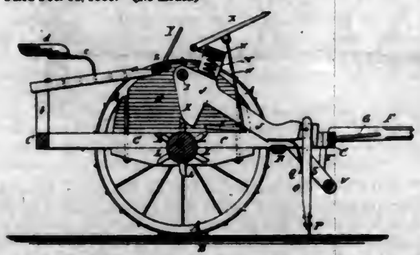
2. In an automatic car-coupler, the combination, with the draw-head A, of the bar C, having projection C' and pin C^2, and the slide B, having the inclined ends *b b*, vertical pieces b^2 b^2, and the spring b^3, all substantially as described.

3. The combination, with the draw-head A, having inclined projections A' A' and inclined wall a^6, of the slide B, having pieces b^2 b^2, spring b^3, the bar C, having coupling-pin C^2 and projections C', the lugs c^3 c^3, and the springs D D', all substantially as described.

4. The combination, with the draw-head A, of the bar C, having pin C^2 and projection C', the springs D D', the bolt E, and the levers F, all substantially as described.

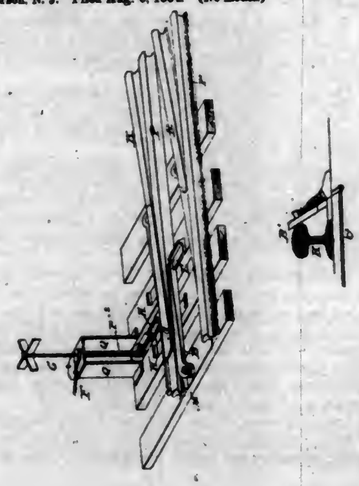
5. The combination, with the draw-head A, having cross-piece *a'* and openings a^3, the projections A', and the inclined wall a^6, of the slide B B, having inclined ends *b b* and vertical pieces b^2 b^2, the spring b^3, the bar C, having inclined projection C', beveled end *c*, lugs c^3 c^3, and the coupling-pin C^2, all substantially as described.

321,919. CORNSTALK-CUTTER. GEORGE A. STOWE, Richmond, Mo. Filed Feb. 11, 1885. (No model.)

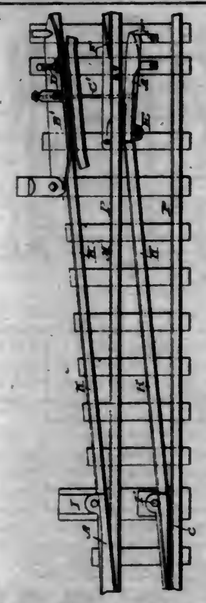


Claim.—In a cornstalk-chopper, the combination, with the frame having upon its side bars the upright plates or frames, of the axle having the radial arms, the levers with their upper ends pivoted to and between said upright plates or frame, said levers having contact with said arms and carrying at their forward ends pivoted chopper-bars, and the cross-bar secured upon the upper edges of said upright plates and having upon its under side recesses which contain springs acting upon said levers, substantially as and for the purpose set forth.

321,920. AUTOMATIC FROGLESS SWITCH. ALBERT E. STROUD, Paterson, N. J. Filed Aug. 6, 1884. (No model.)



321,920.



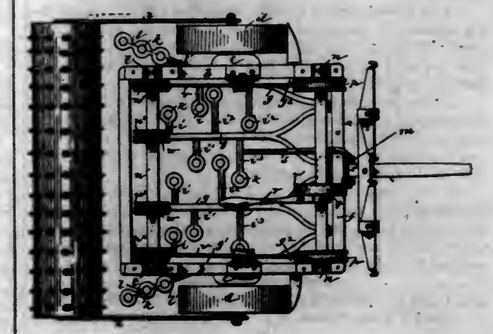
Claim.—The combination of the unbroken main rail M, siding-rail K, the flanged overlapping cheek-pieces A, and pointed piece C, connected by bridle-rod S, inclined piece B, with flange at loose end, compound lever E, rods D' and D^2, springs H, expanding and contracting inclined lever B', provided with springs D, and connected with overlapping piece A' by bridle C', all constructed substantially as shown and described, and for the purpose set forth.

321,921. ROLLING WINDOW-SCREEN. ADOR E. SWAIM, Cherryvale, Kans. Filed Mar. 11, 1885. (No model.)

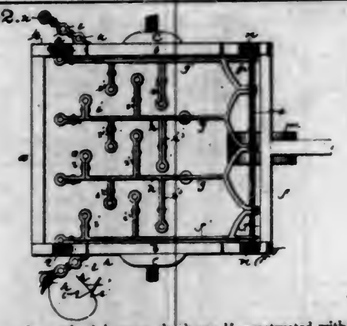


Claim.—In a rolling window-screen, the combination, with the dividing-bead of the window-casing and the window-casing, of a trough-shaped casing, a pair of semicircular brackets having each a securing and a retaining flange for fastening said casing in the angle between said bead and the window-casing, and a suitable screen secured to the sash and to a roller within said trough-shaped casing, substantially as and for the purpose set forth.

321,922. WHEEL-HARROW. THOMAS A. SWEET, Cambria, Cal. Filed Apr. 19, 1884. (No model.)



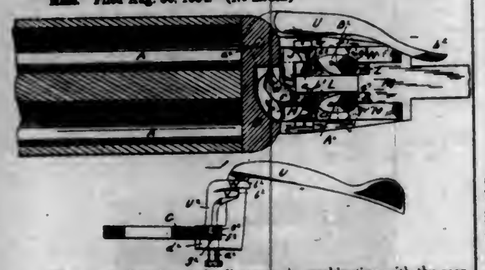
321,922.



Claim.—1. In a wheel-harrow, the beam A', constructed with inclined pivotal extension g', and having arms i, i', and i^2, which extend at right angles thereto, and a rearwardly and outwardly extending oblique arm, l, the said arms being formed integrally with the beam and bent in a horizontal plane, and having eyes that are adapted to receive the vertical harrow-teeth, substantially as described.

2. The combination, in a wheel-harrow, of the main frame, the beams A and A', having inclined pivotal extensions, the beams A being provided with arms, which are bent at right angles thereto, and having eyes adapted to receive the harrow-teeth, and the beams A', provided with similar arms, and having oblique arms l, for carrying teeth to work in rear of the supporting-wheels, the beams being pivoted to the frame and allowed vertical independent movement, and means for raising said beams simultaneously, substantially as described.

321,923. BREECH-LOADING FIRE-ARM. JOHN TURNER, Boston, Mass. Filed Aug. 30, 1884. (No model.)



Claim.—1. In a breech-loading gun, in combination with the sear, hammer, and barrel having a lug, F, a block, R, arranged to bear by one end against said lug, its other end being in position for it, as the barrel is swung down to be moved under the end of the sear when engaged with its hammer, for the purpose specified.

2. In a breech-loading gun, the barrel provided with a lug, F, having an incline-bearing, i, in combination with a block, R, provided with an arm or rod, S, arranged to engage with said incline for the barrel when it is swung down by such engagement to move said block under the sear to secure its interlock with the hammer when it is cocked, substantially as described.

3. In a breech-loading gun, in combination with a block, R, adapted to be moved under the end of the sear, engaging with its hammer, a thumb-piece, T, arranged on the outside of the gun, and provided with an arm, w, passing through a slot in the tang and engaging with an arm, u, of said block for operation thereof, substantially as and for the purpose specified.

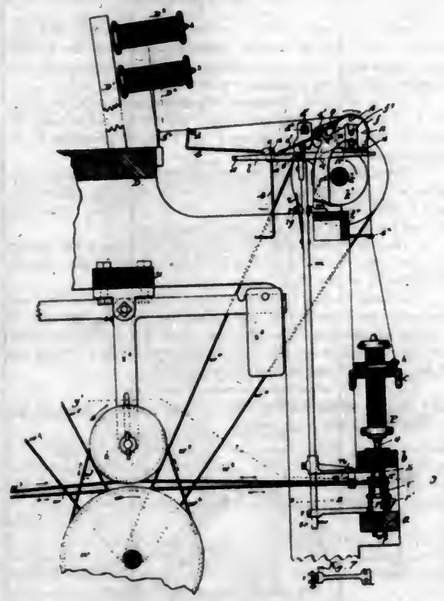
4. In a breech-loading gun, in combination with the hammer, the top snap-lever, U, pivoted to the breech and provided with horizontal arms V W, one above the other, in position to bear and act directly upon their respective hammers as the lever is moved to unbolt the gun, substantially as specified.

5. In a breech-loading gun, in combination with the hammer, an indicator-pin, Y or Z, arranged to turn in a suitable socket, s^2, in the tang, provided with a spring, a^2, and a cam, b^2, in position for the hammer to bear and act thereon as it is moved into position of cock, substantially as and for the purpose specified.

6. In a breech-loading gun, a pin, Y or Z, arranged to turn in a suitable socket in the tag, provided with a spiral spring, a, and a cam, b^2, in position for the hammer to bear and act thereon as it is swung into position of cock, said pin having on its outer or exposed end a mark, d^2, substantially as and for the purpose specified.

321,924. MACHINE FOR DOUBLING AND TWISTING THREAD. JOSEPH E. TYLER, Paterson, N. J. Filed Oct. 10, 1883. (No model.)

Brief.—The faller-wires and detector are arranged in such relation to the feed-roll and spinning and winding mechanism that, upon the breaking of a thread before passing to the feed-roll, or upon the doubled thread after passing the feed-roll becoming slack, they drop upon a horizontal beam pivoted to the upper end of the shipper-rod, tilting the same upon its fulcrum and bringing its forward end in contact with pins upon the feed-roll, which cause the said lever to be moved rearward, unhooking the shipper-rod and stop the machine.



Claim.—1. The combination, with the drop-bar m, belt-shifter, spindle, and pulleys, of the T head or frame at the upper end of the drop-bar, the beam pivoted upon the same, having a tooth, the feed-roller having pins or stops, means for revolving the feed-roller, and the pivoted fallers for the threads, substantially as set forth.

2. The combination, with the drop-bar, belt-shifter, brake or finger, spindle, and pulleys, of the T head or frame at the upper end of the drop-bar, the fallers pivoted upon said frame, and the beam pivoted upon such T head or frame and provided with tooth 17 and the lifter 16, and the feeding-roller and mechanism for rotating the same, substantially as set forth.

3. The combination, with the feed-roller f, having a stop or pin, 18, the driving-roller k', and means for rotating the same, of the pivoted beam l, having the tooth 17 and lifter 16, the drop-bar and its T head or frame supporting the beam, the fallers, and the fulcrum 19, substantially as set forth.

4. The detector o, in combination with the feed-roller f, having pins 18, means for rotating said roller f, the pivoted beam provided with a tooth and lifter, the fulcrum 19 and drop-bar, the spindle, and the ring and traveler, substantially as set forth.

5. The combination, with the drop-bar, belt-shifter, spindle, and pulleys, of the T head or frame, the pivoted beam, the fallers, the detector o, the fulcrum 19, the feed-roller f, and means for rotating the same, substantially as set forth.

6. In combination with the detector o and pivoted beam, the detector-lifter o^2 and the feeding-roller, substantially as set forth.

7. The combination, with the removable drop-bar m and the belt-shifter, spindle, and pulleys, of the forks 7 and 8 and the pins passing across the forks to retain the drop-bar, but allow of its removal, substantially as set forth.

8. The combination, with the creel-pins for supporting the spools and the mechanism for doubling and feeding the thread, of the winding-spindle and its spool, the former provided with a fast and loose pulley, a belt for rotating the same, a shipping device for said belt, a detector acting against the doubled thread, fallers, and mechanism, substantially as set forth, whereby the feed, the spinning, and the winding mechanism are simultaneously stopped through the intervention of the detector or the dropping of a faller, substantially as specified.

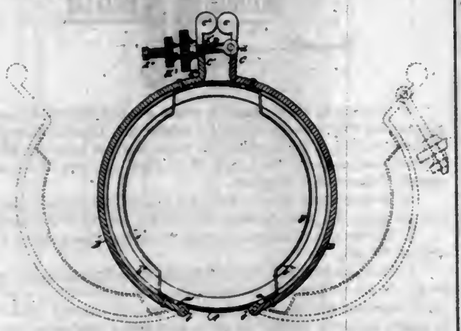
9. The combination, with the feeding and winding mechanism, of a pivoted beam, a detector, a drop-bar, and stops acting upon the feeding and winding mechanism and brought into operation by either the breaking of the thread or the accumulation of the thread on the spool or bobbin, substantially as specified.

321,925. PROCESS OF DISTILLING LACTIC ACID. CHARLES N. WAITE, Medford, Mass. Filed May 16, 1884. (No specimens.)

Claim.—1. The process of distilling and purifying lactic acid by the aid of free steam, substantially as set forth.

2. The process of distilling and purifying lactic acid, the same consisting in subjecting the crude lactic acid to contact with steam in a suitable still or vessel, thereby causing the steam to take up the pure lactic acid, and then condensing the steam, as set forth.

321,926. SHADE-HOLDER. WILLIAM H. WIBLE, Philadelphia, Pa. Filed Apr. 20, 1885. (No model.)

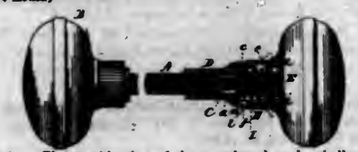


Claim.—1. In a shade-holder, the combination, with the ring or body A, having slots or openings in its sides, of the hinged clamping-jaws B B', opening outwardly and having ribs or projections on their inner sides, which pass through the slots or openings in the body, substantially as shown and described.

2. The combination, with the body A of a shade-holder, of hinged clamping-jaws B B' and a hinged fastening screw or bolt, D, and nut d^2, said screw or bolt being hinged to one of the jaws, and passing through an opening in the other, substantially as shown and described.

3. The combination, with the body A of a shade-holder, of hinged clamping-jaws B B', having radial flaring ears or lugs C C', and a fastening screw or bolt, D, having a nut, d^2, said screw being hinged on one of said lugs, and the other being slotted for its reception, substantially as shown and described.

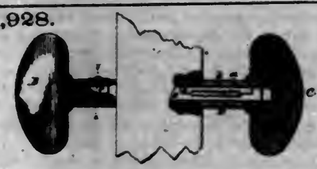
321,927. KNOB ATTACHMENT. HENRY J. P. WHIPPLE, Cleveland, Ohio, assignor to Victoria C. Whipple, same place. Filed July 18, 1884. (No model.)



Claim.—The combination of the angular-shaped spindle A, constructed with a longitudinally-projecting screw, C, at its end, the sleeve D, constructed to fit upon the angular spindle, its outer end constructed with a concentric recess having a longitudinal groove, m, in the wall of said recess, the knob E, constructed with a shank, F, internally screw-threaded, corresponding to the screw on the end of the shank, a collar arranged upon the shank of the knob and concentric therewith, the knob and the collar, the one constructed with a lug, i, and the other with corresponding notch, h, the rear end of the said collar recessed to pass onto the outer end of the sleeve, the said collar provided with a longitudinal rib, l, upon its inside, and the sleeve constructed with a corresponding groove, m, and a spring around the shank of the knob, one end arranged to take a bearing upon the shank, its other end against the collar, and so as to force the collar toward the knob, substantially as described.

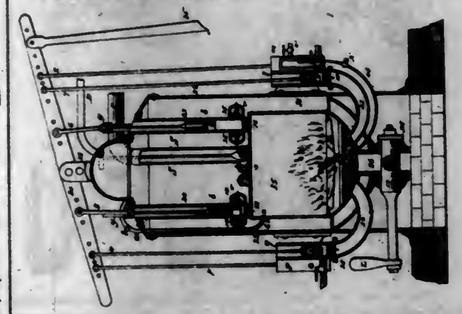
321,928. ATTACHING KNOBS TO SPINDLES. HENRY J. P. WHIPPLE, Cleveland, Ohio, assignor to Victoria C. Whipple, same place. Filed Nov. 24, 1884. (No model.)

Claim.—1. The herein-described improvement in attaching knobs to spindles, consisting in the spindle A, constructed with a transverse recess near one end, combined with a block, b, in said recess, the bottom of the recess and face of the block, one or both, transversely grooved, combined with a knob having a hole diametrically through its neck in a plane between the bottom of the recess and the said block b, with a pin, d, through said hole in the neck of the knob, and between said block and spindle, substantially as described, and whereby the spindle is wedged in the neck of the knob.



2. The neck of the knob and spindle constructed with a hole diametrically through them, combined with a pin, f, and spring e, attached to said pin, substantially as and for the purpose described.

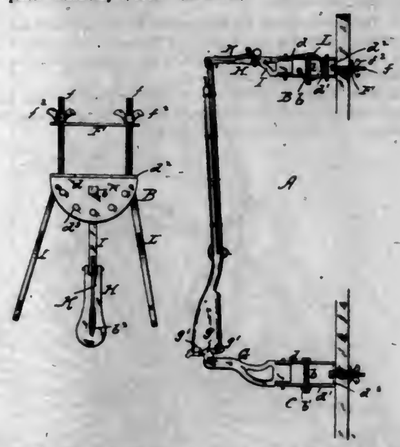
321,929. STEAM-BOILER. BENJAMIN F. WRIGHT, Oneida, Kans. Filed Mar. 7, 1885. (No model.)



Claim.—1. In combination with a steam-boiler, its furnace, and valves for permitting the products of combustion to pass into the boiler from the furnace, the air-pumps connecting with the furnace, and automatic escape-valves located between the pump and furnace for preventing an excessive admission of cold air to the furnace, substantially as shown and described.

2. In combination with a steam-boiler, its furnace, and valves for permitting the products of combustion to pass into the boiler from the furnace, a water-pump having its inlet-pipe communicating with the boiler below the water-line, and its outlet-pipe communicating with the furnace to increase the absorption of heat and promote the evaporation of the water and petroleum, substantially as shown and described.

321,930. PORTABLE MUSKET-RACK. GERHARD WUNDERLICH, Philadelphia, Pa., assignor of one-half to Charles A. Widmayer, same place. Filed July 7, 1884. (No model.)



Claim.—1. The combination, with bracket C, having swiveled arm G and pivoted seat g, of bracket B, having swiveled arm H, as and for the purpose set forth.

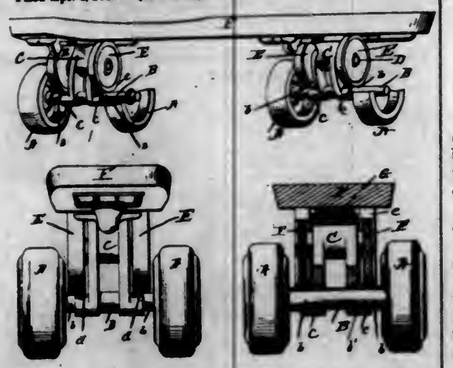
2. The combination of brackets B and C, having fastening-screws f and swiveled hooks L, the arm G, having pivoted seat g and swiveled in bracket C, and arm H, swiveled in bracket B, substantially as shown and described.

3. The bracket B, composed of plate d', having back d^2, with holes or openings d^3, plate d', with aligning apertures d^3, connecting screw or rod b', fastening-screws f and nuts f^2, and swiveled arm I, having hinged claw H, with reacting-spring K, substantially as shown and described.

4. The bracket B, comprising plates d d', with back d^2, aligning apertures d^3, fastening screw or rod b, swiveled arm I, having hinged claw H, with spring K, the screws f f, having adjustable nuts f^2, and plate F, substantially as and for the purpose set forth.

5. The bracket C, having fastening-screws and nuts f f^2, and swiveled arm G, having pivoted seat g, substantially as and for the purpose set forth.

321,931. ROLLER-SKATE. ISRAEL F. BROWN, New London, Conn. Filed Apr. 4, 1885. (No model.)



Claim.—1. The combination, with the bracket C, provided with elastic cushion, of the axle B and wheels E E, as and for the purpose set forth.

2. The combination, with the bracket C, provided with anti-friction wheels E E, of the axle B, mounted in the lower arms of said bracket, as set forth.

3. The combination, with the axle B, having journals b b, of the bracket C, having arms e e and cut-away portions d d, and the shaft D, provided with anti-friction wheels E E, as and for the purpose set forth.

321,932. BICYCLE. WILLIAM S. KELLEY, Smithville, N. J. Filed Mar. 24, 1884. (No model.)

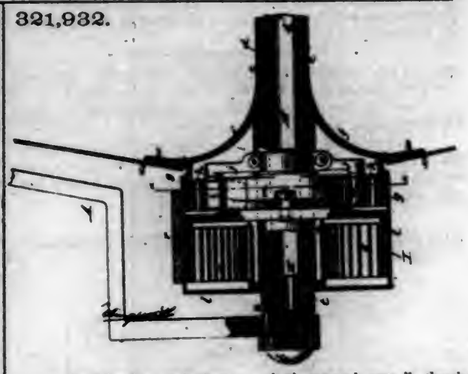
Claim.—1. In a bicycle of the general character herein described, the combination of the wheel having the double hub or axle, the main frame and the central non-rotating axle having its ends made of round form in cross-section and confined firmly but adjustably in the frame, as described, whereby the rotary adjustment of the axle is permitted to equalize the wear thereon.

2. The combination of the main wheel having a tubular hub, the non-rotating axle having round ends, and the main frame divided and drawn together upon the ends of the axle by contracting-screws, substantially as described and shown.

3. In a bicycle or similar vehicle, the combination of the wheel having a tubular hub, the fixed tubular shaft, and the main frame having the two ends of the shaft secured thereon.



321,932.



4. In a bicycle, a main frame, a wheel mounted centrally therein and provided with a tubular hub, and a tubular axle extended through the hub and fixed at its two ends in the frame, said axle being provided with oil-inlets passing to the outside of the frame and with oil-outlets opening to the exterior of the hub.

5. In combination with the frame, the axle, and the drum or pulley and the spring, the collet encircling the axle and secured to the frame.

6. The spring-retaining collet secured to the main frame independently of the axle,

7. In combination with the main wheel having the driving rim or flange, the non-rotating axle, the pawls, the pawl-carrier having a frictional connection with the axle, and the driving-pulley having the hub to engage the pawls, whereby the pawls are rendered noiseless and positive in their action.

8. In a bicycle or tricycle, a pawl-supporting device having a frictional connection with a non-rotating part, a driving-wheel with which the forward ends of the pawls engage, and a driving-drum arranged to turn independently and connected with the inner or heel ends of the pawls, substantially as described, whereby a forward motion of the drum is caused to throw the parts into engagement with the wheel, and vice versa.

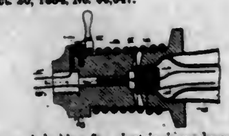
9. In a clutch-machine, substantially as described, the combination of a shaft or support, a rotary pawl-carrier divided and provided with means whereby it may be contracted for frictional engagement with its shaft, and pawls pivoted on and carried by said support.

10. In a bicycle or tricycle, a driving drum or pulley, a rotating frictionally-retained pawl-carrier wholly independent of the drum, pawls mounted on said carrier and connected with the drum, and a wheel driven by the active ends of the pawls, substantially as described and shown.

11. The combination of the main frame, the wheel having a tubular hub, the fixed hollow axle, and the screw located at the outside of the frame and affording access to the interior of the axle.

12. In combination with the wheel and the main frame, the fixed axle seated at its end in the frame, the nut applied on the end of the axle, and the screw applied to the axle to secure the nut, as shown.

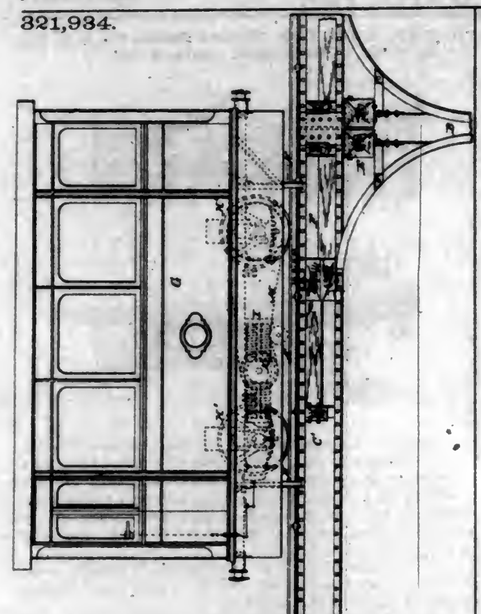
321,933. HOLDER FOR INCANDESCENT LAMPS. HENRI PIEPER, Liége, Belgium. Filed June 11, 1885. (No model.) Patented in Belgium Oct. 20, 1884, No. 66,647.



Claim.—A holder for electric incandescent lamps, comprising a plug, a, having screw-threads a', a wire spiral, b, fixed on the lamp-base e, and adapted to be screwed on the threads of the plug, contact-pieces f and m in connection respectively with the wires g and l, means of electric conduction from the wire k to the spiral, a binding-post, i, connected with the wire h, and a shoulder, n, on the spiral b, so arranged that, according as the spiral is turned on the plug a, the said shoulder will be in or out of contact with the post i, all combined substantially as and for the purpose set forth.

321,934. MEANS FOR CONVEYING PERSONS, &c., BY ELECTRO-MOTIVE FORCE. ERNST W. SIEMENS, Berlin, Germany. Filed June 23, 1882. (No model.) Patented in England Feb. 10, 1880, No. 583; in France Feb. 16, 1880, No. 134,765; in Belgium Feb. 16, 1880, No. 50,357; in Austria Apr. 24, 1880, No. 4,247, and June 11, 1881, No. 9,325; in Germany Jan. 31, 1881, No. 14,786, June 25, 1881, No. 15,099, and July 14, 1881, No. 15,057; in Hungary July 11, 1881, No. 19,896, and Oct. 22, 1881, No. 1,133, and in Italy Oct. 22, 1881, No. 13,392.

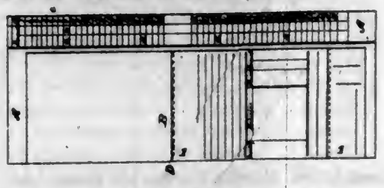
321,934.



Claim.—The combination, substantially as herein set forth, of a railway-car for the transportation of passengers or freight, an electro-dynamic motor having a revolving armature suspended beneath the floor of the car, a yielding mechanical connection between the revolving armature and the driving-wheels of the vehicle, a circuit of conductors in electrical connection with a stationary dynamo-electric machine, and conductors arranged entirely beneath the floor of the car connecting the poles of the motor with the said circuit of conductors.

REISSUES.

10,619. SALES-BOOK. CHARLES W. EARNSHAW, Boston, Mass. Filed Feb. 13, 1885. Original No. 283,872, dated Aug. 28, 1883.



Claim —1. The sales-book, substantially as described, consisting not only of the cover provided with amount and number columns, but of the transfer-sheet and the pack of sheets arranged together and with and connected to such cover in manner as explained, and having the pack folded near the middle thereof, so as to cause the fold of it that may be resting on the cover to be longer or extend beyond the other or overlapping fold, as set forth.

2. A sales-book having its cover extended at the margin, said marginal extension being divided into spaces corresponding to the number of sheets in the book.

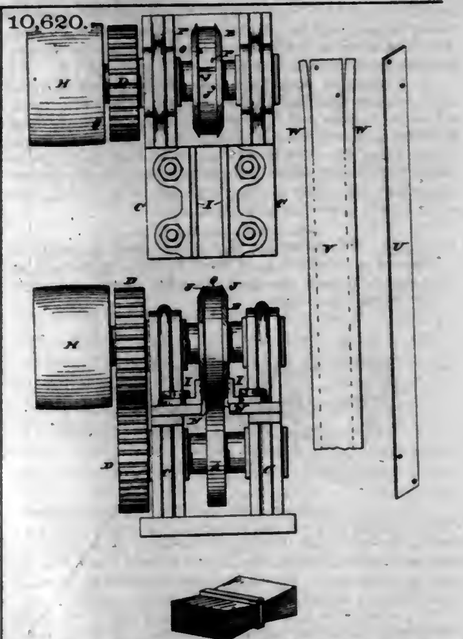
3. A sales-book having its sheets secured to the cover at one side of the center, and a transfer-sheet corresponding in size to the shorter leaf secured at the same place, so as to rest on top of the pile of sheets, substantially as described.

4. A sales-book having its pack of leaves folded near the middle thereof upon itself in such a way that the lower or bottom fold shall be longer than or extend beyond the other or overlapping fold, as set forth.

10,620. METHOD OF UTILIZING WASTE HOOP-IRON. WILLIAM E. HAREN, St. Louis, Mo. Filed Apr. 25, 1885. Original No. 314,378, dated Mar. 24, 1885.

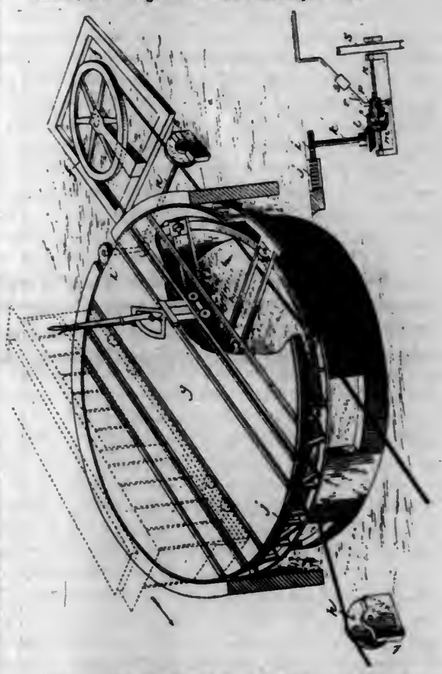
Claim.—1. The method herein described of utilizing waste or scrap hoop-iron, &c., which consists in passing it through rolls to reduce it, then perforating it and cutting it into proper lengths for binding shingles, as set forth.

10,620.



2. The method herein described of utilizing waste or scrap hoop-iron, &c., which consists in passing it in a hot condition through rolls to reduce it to the proper thickness and width, then perforating it and cutting it into proper length for binding shingles, as set forth.

10,621. CABLE RAILWAY. HENRY ROOT, San Francisco, Cal. Filed June 11, 1885. Original No. 315,992, dated Apr. 14, 1885.



Claim.—1. The combination of a turn-table, a traveling cable, and gearing operated by said cable, whereby the turn-table is rotated.

2. The means for turning cars and transferring them from one track to the other, consisting of a horizontal table with parallel tracks and

slots for the passage of the grip-shanks, and gears or frictional wheels, and a clutch or means by which they may be thrown out of or into contact, substantially as herein described.

3. A means for turning cars and transferring them from one track to another, consisting of a horizontal table with parallel tracks, and slots for the passage of the grip-shanks equidistant from the center of rotation, a peripheral gear or frictional surface, and a wheel running in contact therewith, and shafts and gearing by which motion may be transmitted thereto, a clutch mechanism to engage or disengage the driving-shaft, and a pulley upon said shaft upon which the main cable acts to drive it, substantially as herein described.

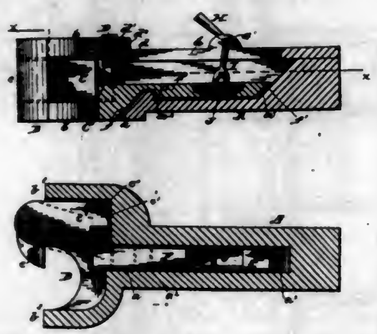
10,622. CAR-COUPLING. WILLIAM H. THURMOND, Forsyth, Ga., assignor of one-fourth to James M. Thurmond, Warren E. Thurmond, and George F. Thurmond, same place. Filed May 5, 1885. Original No. 289,729, dated Dec. 4, 1883.



Claim.—1. In a coupler of the class described, the combination, with the coupling-hook arranged to oscillate on a vertical pivot, and a thrust-bar having a combined vertical and horizontal gravital movement across the plane of oscillation of the shank of the hook, of a latch having a gravital movement in a plane at right angles to that of the movement of the thrust-bar, substantially as and for the purpose specified.

2. In combination with the pivoted coupling-hook H and thrust-bar J, having vertical and longitudinal movement, and having pin k, the rock-shaft G, having rigid bifurcated arm G', and crank-lever G^3, all arranged and operating as set forth.

10,623. CAR-COUPLING. WILLIAM H. THURMOND, Forsyth, Ga. Filed May 2, 1885. Original No. 306,576, dated Oct. 21, 1884.



Claim.—1. In a car-coupler of the class described, the combination, with a coupling-hook arranged to oscillate on a vertical pivot, and a thrust-bar having a combined vertical and horizontal gravital movement toward the shank of said hook, of a plug, D, having a gravital movement in the path of the shank of the coupling-hook, in a plane at right angles to the plane of motion of said hook and thrust-bar, substantially as and for the purpose specified.

2. The combination, with the thrust-bar and its operating means, of the locking-jaw C, having part *c*, tail *c'*, and bevel c^3, and the gravital plug D, having bevel *d*, as set forth.

3. In combination with the draw-bar A, having inclines *a a'* and shoulder a^3, and with the pivoted jaw C, having tail *c'*, with rabbet C" and bevel c^3, the thrust-bar F, having inclines *f f'* and shoulder f^3, and the gravital plug D, having bevel *d*, as set forth.

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M. M. Montgomery
Commissioner of Patents.

DECISIONS
OF THE
COMMISSIONER OF PATENTS
AND OF
UNITED STATES COURTS IN PATENT CASES.

DECISIONS OF THE U. S. COURTS.

U. S. Circuit Court—Southern District of New York.

HAYES *v.* BICKELHOUPT.

Decided March 7, 1885.

1. Claim 2 of Reissue No. 8,675, which is for a combination, is based on the first claim of the original, which was for an arrangement. It contains an element not mentioned in the original, and not used by the infringer. Construed to cover the infringement it would depart from the original, and construed to follow the original there is no infringement.
2. Claim 2 of Reissue No. 8,688 is held to be valid and to be infringed. The disclaimer reducing claim 3 of said reissue was properly filed after commencement of the suit, but there cannot be a decree for costs. The claim is held to be valid and to be infringed.
3. Claim 2 of No. 8,689 is not infringed, and claim 3 stands as at the former hearing.
4. It is not necessary that the manner of infringement be shown by expert testimony. It is enough if it is proved that the defendant has done what is plainly an infringement.

Mr. Livingston Gifford for the orator.
Mr. Arthur v. Briesen for the defendant.

WHEELER, *J.*:

This cause has been before heard and considered. (*Hayes* v. *Bickelhoupt*, 21 Fed. Rep., 567.) A rehearing has been granted and had as to the second claim of Reissue No. 8,675, the second and third claims of No. 8,688, and the second and third claims of No. 8,689, on account of mistakes of models of patent for those relied upon to show infringement, and of error in reference to former decisions upon the same patents. It was said by Judge Benedict, in *Hayes* v. *Seton*, (12 Fed. Rep., 120,) that the second claim of No. 8,675 appeared to be for the same invention described in the original patent. He states no comparison of this claim of the reissue with those of the original. Its basis must be the first claim of the original. That is for an arrangement, and this for a combination of parts. There are parts in each not mentioned in the other. They may be said to appear to be the same by considering the parts specified in the claim of the reissue and not mentioned in the claim of the original as implied from the specification of the original into the claim by the words "as specified" in the claim. What is said there as to infringement of this claim indicates this construction. A molding secured by rivets, bolts, &c., to form a brace is one of the elements of the combination of the reissue not specified as such in the arrangement of the original. The alleged infringement did not have that, and it was held not to be an infringement. The alleged infringement here does not appear to have that, and does not appear to be an infringement. Construed to cover the infringement, it would depart from the original, and construed to follow the original, it does not appear to be infringed. Claim 2 of No. 8,688 appears to be identical with claim 1 of the original, and has once been held valid, in view of the alleged anticipating devices. (*Hayes* v. *Borkel*, 11 Fed. Rep., 37.) It was held not to be infringed because the gutters were not under cover of the basis which supported the glass in *Hayes* v. *Seton*, (Supra,) and *Hayes* v. *Dayton*, (20 Fed. Rep., 690.) Here the alleged infringement has the gutter under those bases where they will not obstruct the light of themselves, according to the patent. Following these prior decisions, this claim is held by the court now to be valid and to be infringed. The disclaimer reduces claim 3 of No. 8,688 to the same as that of the original. Question is made about the propriety of the disclaimer now. It is in the case. No motion has been made to suppress it nor for leave to take testimony to meet it. It is said that the bill should have been amended to make it admissible or to adapt the case to it, but that does not appear to be necessary. The claim before the disclaimer was for alternatives, and the disclaimer dispenses with one of them. A bill that would cover both would cover the one left. The claim as it was in the original, and now is, is for a clip of sheet metal for supporting the ends of abutting glasses in a skylight by being bent to form a groove for the upper edge of the lower glass, a rabbet to support the lower edge of the upper glass, and a gutter for water from the inner surface of the upper glass. A prior patent to the plaintiff is relied upon as an anticipation, but it does not meet this clip. This claim appears to be valid.

The principal point in respect to infringement is made upon the fact that the defendant's clip is made of two pieces of sheet metal bent so as to join and form the clip, while the patent describes only a piece of sheet metal bent so as to form the clip. This difference does not, however, seem to be material. It pertains to the workmanship rather than to the structure, and when the two things are done they amount to the same thing. The defendant does not have the covering-strips of claim 2 of No. 8,689 arranged to straddle the posts, as specified in the patent, and consequently does not infringe that claim. Claim 3 of that patent appears to stand in respect to validity and infringement as at the former hearing.

It is urged that infringement has not been properly proved, because no expert has been called to show and explain how the defendant's structures infringe the different claims of the patents, and many cases in which it is held that infringement must be proved have been cited. There can be no question but that infringement, if not admitted, must be proved by com-

petent evidence. There does not appear to be any prescribed method of proof by experts, however. Explanations of matters not commonly or readily understood may be necessary; but when it is proved that the defendant has done what is plainly an infringement, further proof to establish the fact would not seem to be necessary. It is urged that the bill should be dismissed because it set forth that all the claims of all the patents were infringed in one structure to avoid multifariousness, and that this was denied in the answer and shown to be untrue by the proofs; but all the claims held to be valid and to be infringed are infringed by one structure, the Sherwood studio building. Therefore this position is not tenable.

The orator appears to be entitled to a decree that claims 2 and 3 of No. 8,688 and claim 3 of No. 8,689 are valid and have been infringed by the defendant, but not to costs, because he prevails on account of a disclaimer filed since the suit was brought, and also because he fails as to a large part of his case.

Let there be a decree for the orator for an injunction and an account without costs accordingly.

U. S. Circuit Court—Southern District of New York.

HAYES *v.* BICKELHOUPT *et al.*

Decided June 16, 1885.

1. A servant or agent, being sued separately, is not bound by an adjudication in a former suit against his principal upon the question of the validity of the patent.
2. By reason of the several considerations mentioned, there is sufficient doubt about the propriety of an injunction in this case to warrant continuing the motion to final hearing.

Mr. Livingston Gifford for the plaintiff.
Mr. Sanford H. Steele for the defendants.

WHEELER, *J.:*

This cause has been heard on a motion for a preliminary injunction. The defendants appear to have been servants or agents of George Bickelhoupt, Sr., in doing what was adjudged to be an infringement of the same claim of the same patent, claim 2 of Reissue No. 8,638, in controversy here. (21 Fed. Rep., 567; 23 Fed. Rep., 183.) It is urged that the adjudication there binds them here, and that they are not entitled to be heard here as to the validity or scope of the claim, nor as to whether what is the same as was there held to be an infringement is so. It is true, probably, that the decision there reached bound them as the servants or agents of that defendant as to what was then adjudged, and that they might have been proceeded with for contempt for any continuation in doing what was then enjoined without having become or been made parties to the suit any further than they were. They might have been made, or on their own motion have become parties to the suit, so that whatever was adjudged in it would have bound them. But they were not made actual parties to the suit, and were not called upon to litigate the questions involved in it, and did not voluntarily become parties to it so as to be bound by such adjudication as might be had in it as parties to suits are bound. They were bound only through their relation to their employer or principal, and the decree and injunction would only affect them through him, and could only be applied to them through him. This is a new suit against them acting in their own right for what is claimed to be a new infringement. They appear to be entitled to make any defense that any one charged with infringement would be. This claim was held to be valid upon the authority of *Hayes* v. *Borkel*, (11 Fed. Rep., 37.) It was intended to follow *Hayes* v. *Seton* (12 Fed. Rep., 120) and *Hayes* v. *Dayton* (20 Fed. Rep., 690,) as far as they went in determining the question of infringement. What was before the courts respectively in those cases was not shown, but has to some extent been shown now. It appears now that by mistake or otherwise the letters upon that part of plaintiff's Exhibit No. 5 referred to in *Hayes* v. *Borkel*, showing the patented invention were misplaced so as to make the invention appear to be different from what it really was, and more different from Douch's patent with which it was compared than it really was. It also appears that what was held not to be an infringement in *Hayes* v. *Seton*, and *Hayes* v. *Dayton* was very similar to what is now claimed to be an infringement; and it is suggested that some of these questions are likely to be reheard before the judge who rendered these decisions. These considerations throw sufficient doubt about the propriety of an injunction in this case to appear to warrant continuing this motion to final hearing.

Motion continued to hearing.

U. S. Circuit Court—Southern District of New York.

HOLT *et al. v.* MENENDEZ *et al.*

Decided March 13, 1885.

1. A junior partner retiring from a firm is held to have retained no interest in a trade-mark used by the firm and originated by its senior member, particularly when the weight of evidence indicates that he released all right to their brands.
2. A casual and fortuitous use of the trade-mark by another for a short time will not impair the right of one who subsequently adopted it and gave it celebrity.
3. The use of a trade-mark for flour by one who selects and sells flours manufactured by others is a valid use.
4. As the complainant here is in laches in bringing suit, (eleven years after knowledge of the infringement,) and as the circumstances justified the defendant in believing that he was licensed by silence, the relief granted must be limited to an injunction.

Mr. S. St. J. McCutchin and *Mr. Rowland Cox* for the complainants.
Mr. John Henry Hull for the defendants.

COXE, *J.:*

This is an action to restrain the infringement of a trade-mark. The complainants are engaged in the flour and commission business in the city of New York, under the firm-name of Holt & Company. The firm was organized forty years ago, and, with the inevitable changes wrought by time, has continued in the same business ever since. In 1861 they commenced to use, and have since continuously used, to distinguish a certain flour prepared by them, the trade-mark in question—"La Favorita." The trade-mark was registered in the Patent Office February 23, 1882.

The defendants, admitting the use of the name "La Favorita," contend that they are privileged to use it for the reason that the flour sold by them was procured from one S. Oscar Ryder, who from 1861 to 1869 was a member of the firm of Holt & Company, and thus acquired a right to the trade-mark, which, in the absence of an express relinquishment, he retained after his withdrawal from the firm. The defendants insist, also, that the use of the words "La Favorita" as a brand for flour did not originate with the complainants; that as they use it to distinguish flour manufactured by others and merely selected by them there can be nothing to support a trade-mark; and, finally, that whatever rights the complainants once had have been forfeited by inexcusable laches in asserting them.

The position that Ryder retained an interest in the trade-mark after his connection with the firm had been severed cannot be maintained. Holt & Company was a firm of character and influence. For years it had preserved its credit and good name unshaken and unimpaired. The trade-mark "La Favorita" was originated—so far, at least, as the New York market was concerned—by its senior member. The brand was inseparable from and almost synonymous with Holt & Company. Whatever value it had was due to the exertions and reputation of the members of the firm. Its meaning as a brand for flour had been imparted to it by them The moment its use became general it ceased to be valuable. Ryder had been a clerk, and from that position was promoted to a partnership. His retirement was an event of but little more importance than the change of a book-keeper or salesman. The firm still lived. It was the intention of the remaining partners to continue to transact the old business in the old way. That Holt & Company, desiring to retain the good-will of the firm unimpaired, should have permitted Ryder to despoil them of the distinguishing-brands upon which their success largely depended without a word of remonstrance is hardly creditable; but when to the presumption thus arising is added the positive testimony that at the time of his withdrawal Ryder expressly released all right to the copartnership brands, followed by his equivocal denial, it is very clear that the defense based upon his title must fail. Proof and probability unite in pointing to this conclusion.

Regarding the defense of want of originality, it must be said, in addition to the fact that it is not pleaded, that the evidence relied on is not free from uncertainty and doubt. But even should the finding be made that a few years before it was adopted by Holt & Company the name "La Favorita" was used at St. Louis as a brand for flour, it must also be said that the use was casual and fortuitous and continued for a short period only. As a distinguishing-brand for flour at St. Louis it was soon abandoned and forgotten. There is no merit in the proposition that the complainants' trade-mark cannot be sustained for the reason that the flour is not manufactured by them. The proof is uncontradicted that selection and classification require skill, judgment, and expert knowledge, and add value and reputation to the flour when made by those in whom purchasers have confidence. The case of *Godillot* v. *Harris* (81 N. Y., 267) seems conclusive upon this point. Upon the question of laches, however, I am constrained to say that the complainants' conduct has been such that the relief granted must be limited to an injunction. Ryder commenced using the brand in 1869, and has used it continuously since. That the complainants knew of this—certainly as early as 1871—is not disputed. That they protested at all is denied. Certainly there was no vigor or courage shown by them until just prior to the commencement of this suit, in 1882. That they did not consent is true; but it is equally true that, for men who believed their rights invaded, their course was inconsistent and misleading. Ryder might well have imagined that they did not intend to call him to an account. The circumstances were such as to justify the belief on his part that he was licensed by silence to use the trade-mark. It would be inequitable to compel him to pay for its use during the long years that the complainants slept upon their rights. In endeavoring to reach a just result the court should not overlook the fact that the delay in commencing the suit was unreasonable, and that some of the evils of which the complainants complain are attributable to their own laches in this regard. The facts seem to bring the case within the doctrine of *McLean* v. *Fleming*, (96 U. S., 245.)

There should be a decree in favor of the complainants for an injunction, with costs.

U. S. Circuit Court—Southern District of New York.

PARKER, Trustee, *v.* MCKEE, *et al.*

Decided June 17, 1885.

1. Following the decisions in Parker *v.* Stow and Parker *v.* Montpelier Carriage Company, the motion for a preliminary injunction is granted. On comparison of the second reissue with the first and with the original patent, its validity is sustained.
2. Where a member of a firm alleged to be infringing was formerly a part owner of the patent, he would be estopped from denying its validity unless it sufficiently appeared that the conveyance of his title to the plaintiff was wholly without consideration.

Messrs. Strawbridge and *Taylor* for complainants.
Mr. Walter D. Edmunds for defendants.

WHEELER, *J.:*

This motion for a preliminary injunction cannot be denied without overruling in effect *Parker* v. *Stow*, (23 Fed. Rep. 252,) and *Parker* v. *Montpelier Carriage Company*, which followed that decision. There are alleged anticipating devices put into this case, which were not in either of those cases, but none of them is any nearer like the patented invention than some that were in those cases and considered, nor any nearer like it than long and well known chaise and carriage tops are. A point is made that the first reissue narrowed the patent by making the locking device a necessary part of it, and that the second reissue, although it only restored the original, broadened the second reissue to cover this infringement, and that what was surrendered of the original to obtain the first reissue could not lawfully be so reclaimed in the second. A comparison of the claims of the original with those of the first reissue shows that there was nothing covered by the former which was not included in the latter. Therefore nothing appears to have been abandoned by surrendering the original and taking that reissue, and it is not necessary to consider in this view what the effect would have been if there had been such an abandonment.

There is a strong reason for maintaining the validity of the patent in this case that did not exist in either of those cases, and that is that one of the defendants, who are a firm doing the business that infringes, was once an owner in the patent, and his title has passed to the plaintiff as a title to a valid patent. It is admitted that such a conveyance upon a valuable consideration would estop him from denying the validity of the patent, but urged that this conveyance was

without consideration, and that, therefore, it does not work any estoppel. It does not appear, however, so far as has been noticed, that the conveyance of his interest was entirely without consideration, and the presumption would seem to be that it was upon consideration, and that the estoppel should follow; but the plaintiff appears to be entitled to an injunction independently of this ground.

Motion granted.

U. S. Circuit Court—Northern District of Illinois.

NEW YORK GRAPE SUGAR COMPANY *v.* PEORIA GRAPE SUGAR COMPANY. SAME *v.* PEORIA STARCH MANUFACTURING COMPANY.

Decided October 20, 1884.

Where a bill for an injunction and accounting for infringement of three patents was filed more than three months before the expiration of the earliest patent, and it does not appear that it was filed too late to render it impossible to obtain an injunction, and it does appear that it may be necessary to consider the value of all the patents in the common process in which the defendants are alleged to use them, the bill will not be dismissed as to earliest patent.

Messrs. Dent & Black and *Messrs. Crafty Bros.* for the complainant.

Messrs. Banning & Banning and *Mr. George F. Harding* for the defendants.

BLODGETT, *J.*:

This is a bill filed for an injunction and accounting against the defendant by reason of the alleged infringement of three patents. The first issued June 11, 1867, the second issued September 8, 1868, and the third on the 15th of April, 1873, all of said patents being issued to J. J. Gilbert for improvements in the manufacture of starch, and having been, as averred by the bill, duly assigned to complainant.

Defendants moved to dismiss the bill as to the first-mentioned patent on the ground of want of jurisdiction in equity, because this patent was so near its expiration that an injunction could not have been properly granted under it.

I think a demurrer to so much of the bill as relates to the first patent referred to would have been the better method of raising the question; but as the argument proceeded upon the right of complainant to relief in equity on this patent under the case made in the bill, I will consider only the merits of the question discussed by counsel, without reference to the mode of practice which was adopted in getting at it.

Since the decision of the Supreme Court in *Root* v. *Railway Company*, (105 U. S. R., 189,) that equity has no jurisdiction in a suit upon an expired patent when the only relief sought is an accounting for profits and damages, the decisions at the circuit have not been uniform as to such jurisdiction in cases where the patent expires after the commencement of the suit and before decree.

In the opinion in *Root* v. *Railway Company* the court cites approvingly *Betts* v. *Gallias*, (Law Rep., 10 Eq., 393,) in which Vice-Chancellor James held that he would not entertain a bill for the mere purpose of giving relief in damages for the infringement of a patent, where it had been filed so immediately before the expiration of the patent as to render it impossible to obtain an injunction.

The bill in this case, in addition to the usual charges of infringement of these three patents, states that "these several letters patent are applicable to the same process, and are so used by the defendants." It therefore seems to me that as there is no question made as to complainant's right to relief in equity as to the two latter patents, and as it is charged that all these patents are used in a common process, it may be impossible to award damages for the infringement of the two latter patents without also taking into consideration the value of the first patent.

I am therefore of opinion that upon the case made by the bill it may be necessary to co sider the value of all these patents to the complainant in the common process in which defendants are alleged to use them, and that it may be difficult, if not impossible, to determine their separate value or the separate profits made by defendants in their use.

The bills in these cases were filed more than three months before the expiration of the first patent, and the court cannot therefore say, as was said by Vice-Chancellor James, that it is impossible to have given complainant an injunction on the oldest patent, or even to have reached a final decree on the merits before the expiration of the patent. An answer was due at the first rule-day after the filing of the bill, and, for aught the court can say, the case might have been brought to a hearing upon the bill and answer, and decree rendered before the expiration of the earlier patents. There was certainly time to have given notice and argued the application for an injunction, which the court must assume from the language of Vice-Chancellor James there was not time to do in the case decided by him.

It seems to me, therefore, that the case made by this bill is exceptional to those which have been cited in support of the demurrer.

The motion to dismiss as to the patent of June, 1867, is overruled.

THE OFFICIAL GAZETTE OF THE United States Patent Office.

[BY AUTHORITY OF CONGRESS.]

VOL. 32—No. 2. TUESDAY, JULY 14, 1885. PRICE—$5 per year.

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The Official Gazette.

THE OFFICIAL GAZETTE is published every Tuesday, simultaneously with the weekly issue of patents. From January 1, 1872, (the commencement of its publication,) to June 30, 1883, it was published and bound in semi-annual volumes; since July 1, 1883, quarterly volumes. All subscriptions must commence with the beginning of a volume; none taken for less than three months. Terms: To all subscribers within the United States and Canada, $5 per annum; to foreign subscribers, $7; single copies, 10 cents; bound semi-annual volumes, (prior to June 30, 1883,) full sheep, $4 per volume; bound quarterly volumes, (subsequent to July 1, 1883,) full sheep, $2.75 per volume. No club rates. *Payment in advance.* All orders should be addressed to "The Commissioner of Patents, Washington, D. C."

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Order No. 267.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, July 7, 1885.

My attention has been called to an order of my predecessor, dated February 16, 1885, in which, among other things, it is directed that—

"After the completion of an application a drawing cannot be withdrawn for any purpose whatever unless a model has been filed and accepted by the Examiner as a part of the application; and no drawing can be withdrawn for the purpose of filing it with a divisional application. The drawings filed in an original application must remain with it, as they form a part of the record of the case."

I am advised that it is quite common in pending cases where no model has been furnished to permit the withdrawal of portions of the drawings, particularly in cases where, by reason of amendment, division, or elimination of part of the claims, such parts of drawings are not regarded as important to remain on file. I regard this practice as improper. Very many times it is important that the application and all its accompaniments as they reach the Office should be preserved in all their integrity, and that no portion of anything material to or part of the original application should be removed from the files.

It is therefore directed that the practice of permitting such withdrawals be discontinued.

M. V. MONTGOMERY,
Commissioner.

Attorneys.

DEPARTMENT OF THE INTERIOR,
OFFICE OF THE SECRETARY,
Washington, D. C., July 7, 1885.

SIR: I am directed by the Secretary to inform you that he has ordered that Charles Payne, Jr., of Millville, New Jersey, be not recognized from and after this date as attorney in the prosecution of any claim or other matter before the Department of the Interior or any bureau thereof.

I am, sir, very respectfully, your obedient servant,

GEO. M. LOCKWOOD,
Chief Clerk.

The Commissioner of Patents.

Issue of July 14, 1885.

Patents	470—No. 321,935 to No. 322,404,	inclusive.
Designs	14—No. 16,159 to No. 16,172,	inclusive.
Trade-Marks	16—No. 12,401 to No. 12,416,	inclusive.
Labels	8—No. 4,499 to No. 4,506,	inclusive.
Reissues of patents	2—No. 10,624 to No. 10,625,	inclusive.
Total issue	510	

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks and Labels.	States.	Patents and Designs.	Trade-Marks and Labels.
Alabama	3	....	Nebraska	3	....
Arizona Territory	....	....	Nevada	....	....
Arkansas	1	....	New Hampshire	5	....
California	12	1	New Jersey	17	....
Colorado	3	....	New Mexico Territ'y	....	....
Connecticut	25	....	New York	96	5
Dakota Territory	....	....	North Carolina	2	....
Delaware	....	....	Ohio	37	1
District of Columbia	3	....	Oregon	....	....
Florida	1	....	Pennsylvania	44	3
Georgia	4	....	Rhode Island	6	....
Idaho Territory	....	....	South Carolina	2	....
Illinois	34	....	Tennessee	1	1
Indiana	20	....	Texas	4	....
Iowa	14	....	Utah Territory	....	....
Kansas	8	....	Vermont	....	....
Kentucky	3	....	Virginia	3	1
Louisiana	3	2	Washington Territ'y	....	....
Maine	2	....	West Virginia	1	2
Maryland	8	1	Wisconsin	5	....
Massachusetts	41	3	Wyoming Territory	....	....
Michigan	14	....	United States Army	....	....
Minnesota	4	1	United States Navy	....	....
Mississippi	3	....			
Missouri	11	....	Total to citizens of the United States	443	21
Montana Territory	....	....			

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Labels.	Countries.	Patents and Designs.	Trade-Marks and Labels.
Australia			France	3	
Austria-Hungary	1		Germany	14	
Barbadoes			Holland		
Belgium	1		Italy		
Bermuda			Japan		
Brazil			Mexico		
Canada	7		New Zealand	1	
Cape of Good Hope			Scotland		
Colombia, U. S. of			Sweden		
Cuba			Switzerland	3	
Denmark					
Egypt			Total to citizens of foreign countries	41	3
England	11	3			

DESIGNS.

16,159.—BOTTLE.—*Thomas B. Atterbury*, Pittsburg, Pa., assignor to *The Harden Hand Fire Extinguisher Company*, Chicago, Ill. Application filed June 8, 1885. Term of patent 7 years.

16,160.—FLANGE-UNION.—*Richard T. Crane*, Chicago, Ill. Application filed May 15, 1885. Term of patent 14 years.

16,161.—RUG.—*Henry Finck*, New York, N. Y., assignor to *John Bromley & Sons*, Philadelphia, Pa. Application filed June 1, 1885. Term of patent 3½ years.

16,162.—(Withdrawn.)

16,163.—FABRIC.—*Bonham Galland*, New York, N. Y. Application filed April 28, 1885. Term of patent 14 years.

16,164.—RUG.—*Richard Paul Hemming*, Philadelphia, Pa., assignor to *George W. Ennis & Co.*, same place. Application filed June 1, 1885. Term of patent 3½ years.

16,165.—RUG.—*Richard Paul Hemming*, Philadelphia, Pa., assignor to *George W. Ennis & Co.*, same place. Application filed June 12, 1885. Term of patent 3½ years.

16,166.—VEGETABLE-DISH.—*Alfred Ernest Hills*, Burslem, county of Stafford, England, assignor to *John Hall*, Boston, Mass. Application filed May 27, 1885. Term of patent 3½ years.

16,167.—PEDESTAL OR STAND FOR A STATUE.—*Richard M. Hunt*, New York, N. Y., assignor to *Richard Butler*, Secretary of the American Committee of the Statue of Liberty, same place. Application filed May 21, 1885. Term of patent 7 years.

16,168.—SHELL-BAND FOR WHEEL-HUBS.—*Jared Maris*, Columbus, Ohio. Application filed May 20, 1885. Term of patent 14 years.

16,169.—FORK.—*Timothy Murray* and *Frederick W. Brittin*, Birmingham, Conn. Application filed June 1, 1885. Term of patent 3½ years.

16,170.—RUG.—*Adolph Petzold*, Philadelphia, Pa., assignor to *John Bromley & Sons*, same place. Application filed June 5, 1885. Term of patent 3½ years.

16,171.—TOY SAVINGS-BANK.—*Charles G. Shepard* and *Peter Adams, Jr.*, Buffalo, N. Y.; said *Adams* assignor to *Walter J. Shepard*, same place. Application filed June 12, 1885. Term of patent 7 years.

16,172.—GLASSWARE.—*Frederick S. Shirley*, New Bedford, Mass. Application filed May 14, 1885. Term of patent 7 years.

TRADE-MARKS.

[Certificates of registration of Trade-Marks numbered 8,191 and upward are registered under the act of March 3, 1881.]

12,401.—MALT LIQUORS.—*Samuel Allsopp & Sons*, Burton-on-Trent, county of Stafford, England. Application filed September 11, 1884.

"A representation of the palm and upwardly-extending fingers of an open hand."

12,402.—CATHARTIC CORDIAL.—*Beall & Steele*, Steubenville, Ohio. Application filed May 21, 1885.

"The words 'DR. PURVIANCE'S' and the fac-simile signature 'J. S. FOSTER.'"

12,403.—MEDICINES CONTAINING THE EXTRACT OF PINE NEEDLES OR SPROUTS.—*The Gardner Pine Needle Extract Company*, Sharon Springs, N. Y. Application filed June 15, 1885.

"A representation of a pine cone."

12,404.—LAUNDRY AND TOILET SOAP.—*The Gardner Pine Needle Extract Company*, Sharon Springs, N. Y. Application filed June 15, 1885.

"A representation of a pine cone or burr."

12,405.—REMEDY FOR CERTAIN NAMED DISEASES.—*Frank Rufus Hadley*, New Bedford, Mass. Application filed June 16, 1885.

"The arbitrary word-symbol 'EGYPTIAN BALSAM.'"

12,406.—VELOCIPEDES.—*Hillman, Herbert & Cooper*, Premier Works, Coventry, England. Application filed June 19, 1885.

"The word 'KANGAROO.'"

12,407.—REMEDY FOR DISEASES ARISING FROM DISORDERED CONDITION OF THE STOMACH, LIVER, AND BOWELS.—*Iler & Morris*, Shreveport, La. Application filed June 2, 1885.

"The arbitrary word 'CASCARINE.'"

12,408.—BARBED-WIRE FENCING.—*John Thewlis Johnson* and *James Clarkson Johnson*, Bradford Iron Works, Manchester, county of Lancaster, England. Application filed May 19, 1885.

"The word 'PORCUPINE.'"

12,409.—BLEACHED AND UNBLEACHED WOVEN COTTON GOODS.—*Massachusetts Cotton Mills*, Boston, Mass. Application filed April 30, 1885.

"The word 'MASSACHUSETTS,' printed in capital letters, arranged in a semicircle, and inclosing an ornamental figure."

12,410.—COTTON GOODS.—*Nashville Cotton Mills*, Nashville, Tenn. Application filed June 15, 1885.

"The representation of an equestrian statue of General Andrew Jackson placed upon a pedestal with the word 'JACKSON' marked on said pedestal and the words 'HERMITAGE FINE COTTONS' below it."

12,411.—COSMETIC FOR THE FACE AND HANDS.—*Henry B. Shaw*, San Francisco, Cal. Application filed May 2, 1884.

"The pictorial representation of a bust of a female with the right shoulder bare of covering, that portion of the garment which has been removed therefrom hanging loosely in front, the left arm also bare of covering, and one finger of the left hand pointing to the bare shoulder, while the right hand rests on a table or stand upon which is placed a package of the cosmetic."

12,412.—FLOUR.—*Sidle Fletcher Holmes Company*, Minneapolis, Minn. Application filed May 18, 1885.

"The words 'MURRAY HILL.'"

12,413.—PLOWS.—*Arabella G. Starke*, Richmond, Va. Application filed January 26, 1885.

"A cut of a plow accompanied by the name 'DIXIE.'"

12,414.—SECTIONS FOR HARVESTER-CUTTERS.—*Walter A. Wood Mowing and Reaping Machine Company*, Hoosick Falls, N. Y., and Chicago, Ill. Application filed June 11, 1885.

"The words 'TRADE, WOOD, MARK,' the word 'TRADE' in an arched form above, the word 'WOOD' in a direct line underneath the word 'TRADE,' and the word 'MARK' in an inverted arched line underneath the word 'WOOD,' inclosed in a diamond-shaped border."

12,415.—CONFECTIONERY MADE OF SUGAR, SIRUP, CHOCOLATE, AND NUTS.—*Philip Wunderle*, Philadelphia, Pa. Application filed September 12, 1884.

"A representation of the sun."

12,416.—REMEDY FOR RHEUMATISM.—*Jacob Stine*, Martinsburg, W. Va. Application filed June 18, 1885.

"A branch having acute leaves."

LABELS.

4,499.—Title: "T. J. ARMSTRONG'S DIPHTHERIA & QUINSY DROPS." *T. J. Armstrong*, Wellsburg, W. Va. Application filed May 29, 1885.

4,500.—Title: "DR. DAVIS'S COMPOUND SYRUP OF WILD CHERRY AND TAR."—*John H. Collins & Co.*, Philadelphia, Pa. Application filed June 3, 1885.

4,501.—Title: "FRESH CORN AND TOMATOES, C. C. LANG, BALTIMORE, MD."—*Charles C. Lang*, Baltimore, Md. Application filed October 29, 1884.

4,502.—Title: "EGG CRYSTAL" (A PREPARATION FOR CLEARING AND ENRICHING COFFEE.)—*M. Louise McKean*, Philadelphia, Pa. Application filed June 19, 1885.

4,503.—Title: "MORRIS' CASCARINE," (FOR A MEDICINE.)—*Iler & Morris*, Shreveport, La. Application filed June 2, 1885.

4,504.—Title: "THE MEXICAN RHEUMATIC CURE."—*Gilman M. Ryder*, Boston, Mass. Application filed June 23, 1885.

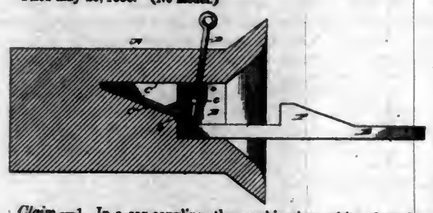
4,505.—Title: "TUTTI FRUTTI JUICE."—*Tarrant & Company*, New York, N. Y. Application filed May 12, 1885.

4,506.—Title: "DR. WADSWORTH'S TOOTH POWDER."—*E. Oliford Wadsworth*, Brooklyn, N. Y. Application filed May 28, 1885.

PATENTS

GRANTED JULY 14, 1885.

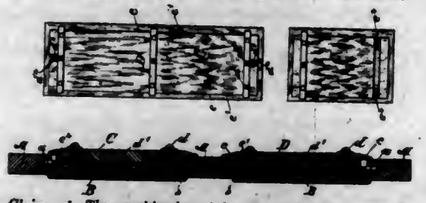
321,935. CAR-COUPLING. GEORGE M. ADAMS, Franklinton, Ky. Filed May 29, 1885. (No model.)



Claim.—1. In a car-coupling, the combination, with a draw-head, of a coupling link or yoke pivoted within the same at its rear end, the inclined grooves or channels C, located on the inner side of the draw-head and adapted to limit the downward movement of the link or yoke, a rod attached to the link and passing through an opening in the draw-head, and a spiral spring on said rod between the link and draw-head, substantially as set forth.

2. The combination, with a draw-head, of the pivoted coupling yoke or link, shoulders to limit the downward movement of the same, and a coupling-bar having the projections formed with inclined outer sides and perpendicular inner sides, and means, substantially as described, for holding the yoke or link in engagement with the coupling-bar, as set forth.

321,936. COMBINED SCREEN AND STORM DOOR. CHARLES ANDERSON, Downer's Grove, Ill., assignor to Charles Anderson and Eugene W. Farrar, both of same place. Filed May 16, 1885. (No model.)



Claim.—1. The combination of door-frame A with screens B, removable panels C, having the body portions thereof narrower than the panel-openings in said frame, and clamps D, immovably attached to said panels for securing said panels to said frame, substantially as specified.

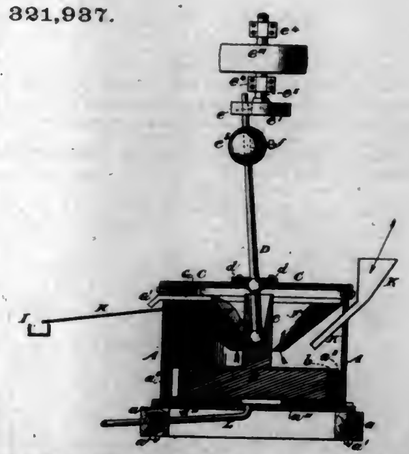
2. The combination of door-frame A with screens B, removable panels C, and clamp-bars D, extending across said panels and engaging in mortises or recesses in said frame, substantially as specified.

3. The combination of door-frame A, provided with mortises or recesses *a*, with screens B, removable panels C, and clamp-bars D, having clamp-screws *d*, substantially as specified.

4. The combination, with door-frame A, having recesses *a*, of screens B, clamp-bars D, extending across the panel-openings in said frame and engaging said recesses, removable panels C, having inclined or beveled surfaces near its edges under said clamp-bars, and clamp-screws *d*, substantially as specified.

5. The combination of frame A, having recesses *a*, with screens B, clamp-bars D, removable panels C, clamp-screws *d*, and revolving clamps d^2 d^2, substantially as specified.

321,937. ORE PULVERIZING AND AMALGAMATING MILL. JOHN W. BAILEY, Denver, Colo. Filed Sept. 15, 1884. (No model.)



Claim.—1. The combination, in an ore-pulverizing mill, of a cylindrical pan, a cylindrical muller, and means for rotating it about an eccentrically-shifting vertical axis and rolling it in a horizontal plane around and against the inner sides of the cylindrical pan, whereby the plane of the muller is at all times horizontal with relation to the axial line of the pan, and the axis of the muller during its rotation is ever changing its relation to the axial center of the pan, substantially as set forth.

2. In an ore-pulverizing mill, a cylindrical pan having vertical and horizontal bearing-plates at or near its lower portion, and a cylindrical muller having a hardened peripheral band adapted to impinge in a horizontal direction against the said vertical plate of the pan, combined with means for rotating the muller about an eccentrically-shifting vertical axis and rolling it in a horizontal plane around and against the inner sides of the pan, substantially as set forth.

3. In an ore-pulverizing mill, a cylindrical pan, a bar across the top of said pan having a spherical socket, a cylindrical muller within the said pan, a lever having its fulcrum in the cylindrical socket of the bar, and its short arm connected by a ball-and-socket joint with the muller, combined with a revoluble driving-shaft carrying a wheel united by a slotted connection with the long arm of the lever, substantially as set forth.

4. In an ore-pulverizing mill, a cylindrical pan having vertical and horizontal bearing-plates at or near its lower portion, a bar or support across the top of said pan having a spherical socket, a cylindrical muller within said pan, a lever having its fulcrum in the spherical socket of the bar, and its short arm connected by a ball-and-socket joint with the muller, combined with a revoluble driving-shaft carrying a wheel united by a slotted connection with the long arm of the lever, substantially as set forth.

5. In an ore pulverizing and amalgamating mill, a cylindrical pan, a cylindrical muller, mechanism for revolving said rolling said muller within the pan, and a dish-shaped amalgamated copper plate within the pan, open at its lower end, combined with an inlet-pipe discharging below said plate, and an outlet-pipe discharging above it, substantially as set forth.

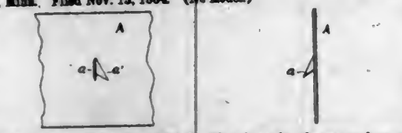
6. In an ore-pulverizing mill, a cylindrical pan, a cylindrical muller adapted to be rotated within and rolled around said pan, combined with a loose ring, or series of rings, surrounding said muller, and adapted to be removed from the pan, substantially as set forth.

7. The combination, in an ore-pulverizing mill, of a cylindrical pan, a cylindrical muller, a lever having a ball-and-socket fulcrum in a support attached to the pan, the short arm of said lever being united by a ball-and-socket joint with the muller, and the long arm with a revoluble driving-wheel, substantially as set forth.

8. The combination of a cylindrical pan, a cylindrical muller, a lever connected with said muller and having its fulcrum in a support attached to the pan, the short arm of the lever being connected to the muller, and the long arm of said lever being weighted and connected to a revoluble driving-shaft, substantially as set forth.

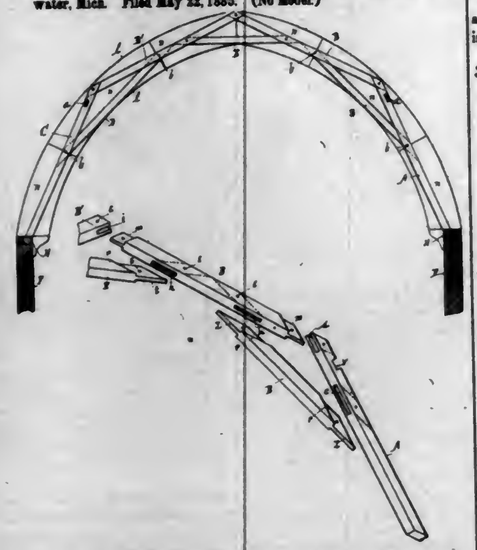
9. In an ore pulverizing and amalgamating mill, the combination of a pan having a lower discharge-pipe, a dish-shaped amalgamated copper plate, an inlet below said plate, vertical and horizontal bearing-plates, a discharge-pipe above said amalgamated copper plate, a cylindrical muller, and means for revolving said muller about a shifting vertical axis and rolling its periphery against the vertical bearing-surface of the pan, substantially as set forth.

321,938. CASK-HOOP FASTENING. CHARLES W. BAKNER, Crookston, Minn. Filed Nov. 13, 1884. (No model.)



Claim.—A metal hoop provided with triangular fasteners formed of portions of the hoop cut on intersecting lines and bent at right angles to the edges and surface of the hoop, substantially as described.

321,939. SELF-SUPPORTING STRUCTURE. DANIEL BATES, Coldwater, Mich. Filed May 22, 1885. (No model.)



Claim.—1. The combination, with the walls of a building and the plates supporting the rafters, of the rafters A C, said rafters joining at an angle the rafters B B', the girders D D and E, said rafters and girders mortised and tenoned together and bolted, substantially as specified.

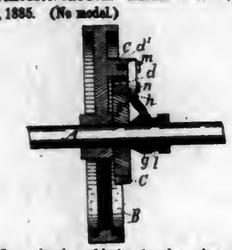
2. The combination, with the rafters A C, joining the rafters B B', the girders D D and E, said rafters and girders mortised and tenoned together, substantially as specified, of a series of concavo-convex sections, *n*, spiked or bolted to the face of the frame-work, as and for the purposes set forth.

321,940. FASTENING FOR GLOVES AND OTHER ARTICLES. HERBERT BAUER, Pforzheim, Baden, Germany. Filed Apr. 20, 1885. (No model.)



Claim.—A spring button-fastener for trousers, gloves, and other wearing-apparel, comprising in its construction a spring, *a*, having apertures *b*, stripe *c*, and guards *d*, spring-buttons *e*, held with their ends *e' e²* in the guards *d'*, and plates *g*, provided with aperture *i*, substantially as described.

321,941. FRICTION-CLUTCH. ALBERT B. BEAN, New Haven, Conn. Filed June 11, 1885. (No model.)



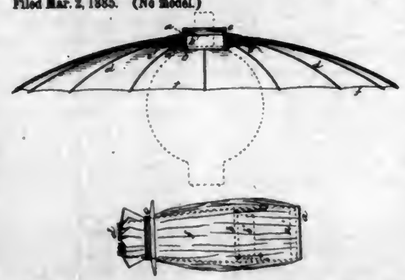
Claim.—1. In a clutch, a friction band or ring, C, having one end cast integral with the pulley, and the other end secured to and actuated by a lever, and adapted to clutch a disk or drum fastened on the shaft, substantially as described.

2. The combination, with the friction-disk F, of the friction band or ring C, having one end cast integral with the clutch-pulley, the lever A, pivoted to the band, the adjusting-stud *r* in the end of the lever, and the cone *g*, all arranged and operated substantially in the manner and for the purpose specified.

3. In a clutch, a friction band or ring cast or formed integral with a pulley, arm, or other revolving part and adapted to clasp and operate a friction disk or drum, substantially in the manner described.

4. In a clutch, the friction band or ring C, cast integral with an arm, *u*, secured to the pulley-shaft and adapted to clasp a friction-disk, in the manner specified.

321,942. LAMP-SHADE. WELLS H. BELKNAP, New York, N. Y. Filed Mar. 2, 1885. (No model.)



Claim.—1. As an article of manufacture, a lamp-shade consisting of two rings adapted to set over the lamp-chimney, ribs pivoted to one of the rings, supporting-bars pivoted to the ribs and the other ring, a connecting device for locking the two rings when they are brought together and the shade opened, and a fabric covering, substantially as and for the purpose set forth.

2. In a lamp-shade, in combination, two rings adapted to set over the lamp-chimney, radial ribs pivoted to one of the rings, supporting-bars pivoted to the other ring and to the ribs, a fabric covering, and a detachable ring secured by a screw-thread to the upper part of the lower ring which projects above the upper ring when the shade is open, and set over the ribs to hold them together when the shade is closed out of use, substantially as set forth.

3. In a lamp-shade, in combination, the ring *a*, the ribs *d d*, pivoted thereto, the ring *b*, with cylindrical part *b'*, the supporting-bars *a e*, pivoted to the ring *b* and to the ribs *d d*, the detachable cap-piece *c*, and the covering *f*, substantially as set forth.

321,943. CHECK-ROWER FOR CORN-PLANTERS. LORENZO D. BENNER, Peoria, Ill. Filed Feb. 10, 1885. (No model.)

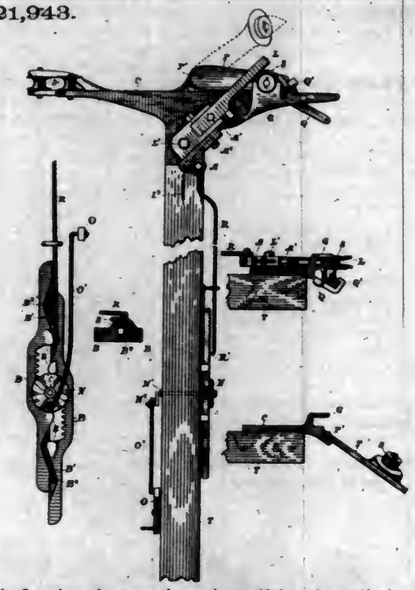
Claim.—1. In combination with the bifurcated lever of a check-rower and the connecting-rod which transmits the strokes of said lever to the center movement, means whereby the pivotal connection of said rod to said lever may be adjusted relative to the lever, for the purposes set forth.

2. In a check-rower, the combination, with the bifurcated lever, of the arm adjustably secured to said lever by means of a clamping-bolt passing through a slot in a projection of said arm, substantially as and for the purpose specified.

3. In a check-rower, the arm A, having the slotted elbow A' and a groove in a lateral face thereof, and the bifurcated lever L, having a tongue adapted to fit in said groove, in combination with the bolt A^2, for clamping said arm and lever together, as and for the purpose set forth.

4. In a throwing-off mechanism for check-rowers, the cross-head having notched lug G projecting from the upper edge thereof, in combination with the plate P, pivoted to said cross-head in an oblique plane, the single-flanged sheave S, carried by said plate, and adapted to

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have its flangeless edge enter the notch of said lug when said plate is locked to the cross-head, and means, substantially as set forth, for locking said plate to the cross-head, as and for the purpose specified.

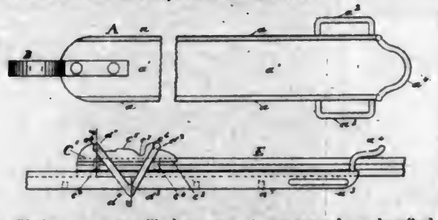
5. The herein-described means for guiding the hooked ends of the rods R into the holes B^2 in the bent channels B' of the parallel bars, adapted to be oppositely reciprocated, such means consisting of the ears E, projecting from the contiguous faces of said bars, as set forth.

6. In a check-rower, the parallel rock-bars having the channels B' therein and hooked rods connected to the lever-arms and entering said channels, in combination with the pinion meshing with said rack-bars and provided with a pitman engaging with the seeding device, substantially as and for the purpose described.

7. In a check-rower, the rack-bars B, having the ears E and the channels B', in which are the holes B^2, in combination with the hooked rods R, connected to the lever-arms, and adapted to have their hooks enter said holes in said channels, and the pinion N, meshing with both of said rack bars, and having a pitman, O', connecting it to the feed-slide-operating lever O, as set forth.

8. In a check-rower, the rack-bars B, having the bent channels B' therein, the holes B^2, and ears E, in combination with the hooked rods R, connected to the lever-arms and adapted to engage with the said channels, the pinion N, meshing with both of said rack-bars, and having a pitman, O', connecting it to the feed-slide-operating lever O, substantially as and for the purpose described.

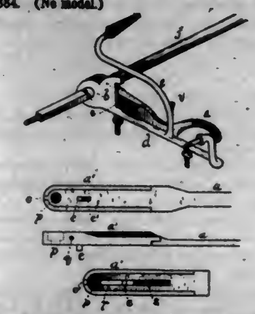
321,944. HAME TUG AND BUCKLE. HENRY J. BICKLE, Dungannon Ontario, Canada. Filed Apr. 29, 1885. (No model.)



Claim.—1. A metallic hame-tug, A, constructed, as described, with a flange, *a*, on each upper edge of its face *a'*, and provided with a clip, B, on its forward end, and at the rear end is provided with a back-band holder, a^2, and a belly-band holder, a^3, and a curved bar, a^4, also apertures a^5 in the under face thereof, substantially as shown and described, and for the purposes set forth.

2. In a metallic hame-tug constructed as shown and described, the combination of a buckle, C, with plate C', having a flange, c^3, on each edge of its under face, c^2, which face has two prongs, c^4, protruding therefrom to occupy two corresponding apertures, *e e*, in the trace E, and secure the buckle-plate and trace in position, the outer face of the buckle-plate, c^5, provided with two hooks, c^6, and a depression, c^7, therein, the compound angular loop D, with cross-bars d' d^2, and the under cross-bar, d^4, with prong d^5 projecting upwardly therefrom, the whole constructed, and arranged, and operating substantially as and for the purposes set forth.

321,945. BUGGY-TOP. ERASTUS L. BOOTH, Mount Zion, Ill. Filed Oct. 10, 1884. (No model.)



Claim.—The combination, with a shaft to which the braces of a buggy-top are rigidly attached, of a lever provided with a sliding bolt adapted to engage the said shaft, and an inclined plane adapted to disengage the bolt from the shaft by the action of the lever, as and for the purpose set forth.

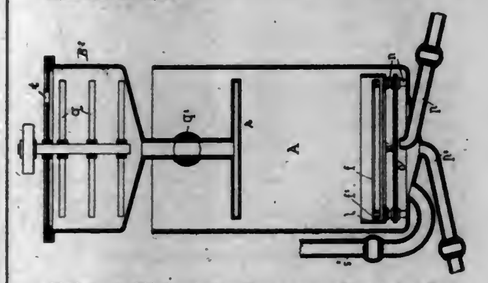
321,946. SPRING ATTACHMENT FOR CARRIAGE-BOWS. ERASTUS L. BOOTH, Mount Zion, Ill. Filed Mar. 7, 1885. (No model.)



Claim.—1. The combination, for the purposes herein set forth, of a segmental spring, a concave attachment formed on the lower end of the spring, an opening in the concave attachment sufficiently large to pass over the lower extremity of the carriage-bow, but small enough to prevent displacement when drawn up to the position shown, and suitable means for securing the upper end of the spring to the bow, substantially as specified.

2. The combination, for the purposes herein set forth, of a segmental spring, a concave attachment formed on the lower end of the spring, an opening in the concave attachment sufficiently large to pass over the lower extremity of the carriage-bow, but small enough to prevent displacement when drawn up to the position shown, springs formed of the terminations of the concave attachment, and suitable means for attaching the upper end of the spring to the bow, as set forth.

321,947. PROCESS OF PRODUCING FILTERING MEDIA. FRIEDRICH BREYER, Vienna, Austria-Hungary. Filed May 23, 1883. (No model.) Patented in Belgium Apr. 19, 1883, No. 61,164; in France Apr. 20, 1883, No. 154,994, and May 26, 1884, No. 162,364; in Germany Apr. 21, 1883, No. 25,709; in England Apr. 24, 1883, No. 2,087; in Italy Apr. 30, 1883, XVII, 15,373, XXX, 379, and in Austria-Hungary Aug. 29, 1884, No. 14,122 and No. 39,090.



Claim.—1. The herein-described process of producing filtering media, which consists in cementing one or more layers of a finely-divided inorganic or mineral fibrous substance upon a porous or permeable support by means of a soluble salt and converting said salt into an insoluble salt, for the purposes specified.

2. The herein-described process of producing filtering media, which consists in depositing upon a permeable or porous backing or support an inorganic or mineral fibrous substance, cementing or attaching the same thereto by means of a soluble silicate, and converting the soluble silicate

into an insoluble silicate by the reaction of a chloride, for the purpose specified.

3. The herein-described process of producing filtering media, which consists in forming a layer or layers of finely-divided calcium magnesium—such as asbestus, amianthus, bostonite—upon a porous backing or support, and cementing the calcium magnesium thereto by treatment, first, in a solution of a soluble silicate of soda or potash, and then converting the soluble silicate into an insoluble silicate by means of a chloride—such as chloride of calcium magnesium or barium—for the purpose specified.

4. The herein-described process of producing filtering media, which consists in electroplating a woven metallic fabric, and cementing thereto one or more layers of fibers of an inorganic or mineral fibrous substance, for the purpose set forth.

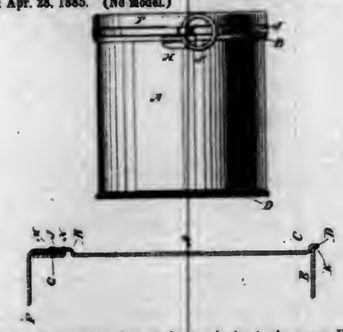
5. The herein-described filtering medium, composed of a porous backing and a layer or layers of a finely-divided inorganic or mineral fibrous substance cemented thereto.

6. The herein-described filtering medium, composed of a porous backing and a layer or layers of finely-divided calcium magnesium—such as asbestus or amianthus or bostonite—cemented or attached thereto by an inorganic cement.

7. The herein-described filtering medium, composed of a metallic gauze backing and a layer or layers of an inorganic or mineral substance cemented thereto by an inorganic cement.

8. The herein-described filtering medium, composed of an electroplated metallic gauze backing and a layer or layers of an inorganic or mineral fibrous substance, cemented thereto by means of an inorganic cement.

321,948. SELF-OPENING CAN. James C. Britton, Hartford, Conn. Filed Apr. 28, 1885. (No model.)



Claim.—The combination of the can-body A, the cover F, the paper strip G, and the metal strip I, the latter having its lower edge soldered to the body A and its upper edge soldered to the lower edge of the flange of the cover F, and the strip G being located under the flange of the cover F and also under the metal strip I, all substantially as described.

321,949. DOOR-SPRING. Arthur Carrier, Bay City, Mich. Filed Nov. 3, 1884. (No model.)



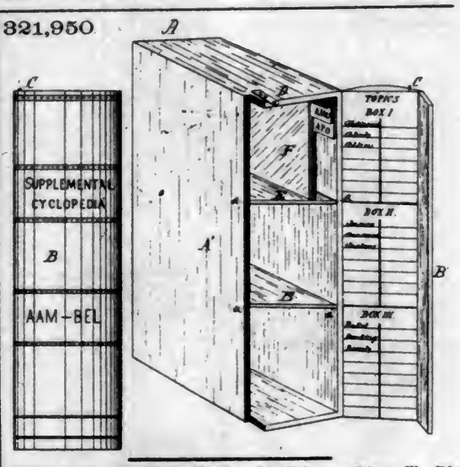
Claim.—1. In a door-spring, the combination of the plate *c*, provided with the extended parts *q* and notches *e*, the pin *v*, having on one end the square part *y* and pin *f*, the spring *h*, the arm *i*, and roller *j*, with the plate *k*, having the parts *s* and *s'*, and the bar *m*, provided with the notches *n*, the spring *l*, provided with the pawl *o* and the cam *w*, substantially as described, and for the purpose set forth.

2. In a door-spring, as described, the combination of the rigid plate *k*, having the projecting part *s*, with the spring *l*, provided with the notch *p*, and the spring-actuated arm *i*, provided with the roller *j*, substantially as set forth, and for the purpose specified.

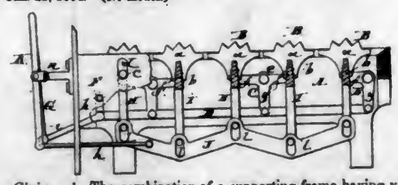
321,950. PAPER-FILE. Wilbur F. Crafts, New York, N. Y. Filed June 28, 1883. (No model.)

Claim.—A paper-file consisting of the box A, constructed in the form of a book, said box being divided into three compartments by the horizontal partitions E E, the front edges of said partitions being cut away diagonally at *a a*, as shown, and the cover B, hinged at one edge and provided with a rigid lip, B', at the other edge, the whole combined arranged to hold papers or envelopes placed upright in each compartment, substantially as and for the purpose shown and described.

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321,951. FURNACE-GRATE. Fitz E. Culver, Chicago, Ill. Filed Jan. 23, 1884. (No model.)



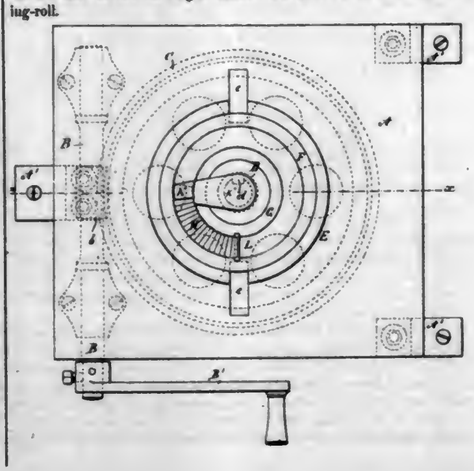
Claim.—1. The combination of a supporting-frame having vertical slots, and a series of rocking grate-bars having end journals arranged in the slots, with mechanism connected with the grate-bars for raising and lowering them in the vertical slots in a vertical plane, substantially as described.

2. A series of grate-bars journaled in the same horizontal plane and provided with depending arms of different lengths connected with a shaking bar or rod, whereby all the grate-bars can be simultaneously rocked, substantially as and for the purpose specified.

3. The combination of a supporting-frame having vertical slots, and a series of rocking bars journaled to rise and fall in the slots, with a lever and connections for raising and lowering the alternating bars and a lever and connections for rocking all the bars, substantially as described.

321,952. MACHINE FOR PREPARING THE COVERING FOR TOP ROLLS FOR DRAWING AND SPINNING MACHINES. Charles Courtland, Seymour, Conn. Filed Apr. 6, 1885. (No model.)

Brief.—A follower working between former-rings on a table is powerfully operated by screw-gear to compress sections of leather placed radially in a ring. The follower is keyed loosely with the operating-gear, so that the former-rings, with the ring of leather when complete, can be removed and the ring of leather secured to the shaft of the drawing-roll.



Claim.—1. The combination, with the shaft D and means, substantially as described, for revolving the same, of the former-ring F, ring G, follower K, having an arm that extends down between the rings F and G, and abutment L, substantially as set forth.

2. The bed A, tubular shaft D, gear-wheel C upon said shaft D, and the screw-pinion, shaft, and crank, in combination with the follower K, removably connected to the tubular shaft, the former-ring F, and the abutment L, substantially as set forth.

3. The combination, with the bed A and its guide-ring E, of the removable former-ring F, the shaft D, and means, substantially as specified, for operating the same, the follower K, and abutment L, substantially as set forth.

4. In a mechanism for compressing sections of leather into a ring, the combination, with the former-ring F, of a follower, a shaft, and means, substantially as specified, by which the same is partially revolved to compress the sections of leather, and a removable abutment against which the sections of leather are pressed, substantially as specified.

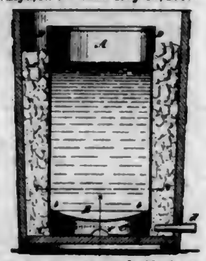
5. The combination, with the former-ring F and an abutment, of a follower, a tubular shaft to which the follower is connected, and a ring around the tubular shaft with which the lower end of the follower is connected, and means, substantially as set forth, for partially revolving the shaft.

321,953. BUTTON. John S. Dillon, Providence, R. I., assignor to Foster & Bailey, same place. Filed Feb. 9, 1885. (No model.)



Claim.—The combination, in a button, of the hollow head and post, consisting of two hooks having laterally-extending spring-seated shanks pivoted within the head and exterior straight portions, a spring therein bearing upon the said shanks, and a plain bottom plate having a central slot to admit of the passage of the hooks, said hooks bearing against each other at their lower ends or straight portions when closed and at their upper ends when opened, all substantially as described.

321,954. ICE-CREAM CAN. Michael J. Dixon, New York, and John W. Wallace, Brooklyn, N. Y. Filed May 26, 1885. (No model.)



Claim.—An ice-cream can composed of body A, bottom B, and the perforated or scalloped rim C, constructed and arranged substantially as and for the purposes herein set forth.

321,955. MACHINE FOR MAKING LEAD TRAPS. Frederick N. Du Bois, New York, N. Y. Filed Dec. 26, 1884. (No model.)



Claim.—1. In a machine for making lead traps, in combination with independent hydraulic presses and valve-gear for regulating the feed-water to each cylinder, variably and oppositely, so as to give the rams different speeds, adjustable constant overflow-openings on the feed-water pipes, substantially as set forth.

2. In a machine for making lead traps, in combination with independent hydraulic presses and valve-gear for operating them variably and oppositely, the chamber in stem E', plug F, adjustable valve G, and waste-water escape H, substantially as set forth.

321,956. COMPOSITION OF MATTER FOR THE PRESERVATION AND INSULATION OF WIRES. James W. Ellis, Brooklyn, N. Y., assignor of two-thirds to Josiah W. Parker, same place, and Henry D. Harris, New York, N. Y. Filed Mar. 9, 1885. (No specimens.)



Claim.—As a coating or insulating covering for paper tubing used to cover telegraph, &c., wires, the combination of roofing-pitch with sulphur, resin, and lime, substantially as described, and for the purpose specified.

321,957. HALTER. John Enoch, Chicago, Ill. Filed Feb. 12, 1885. (No model.)



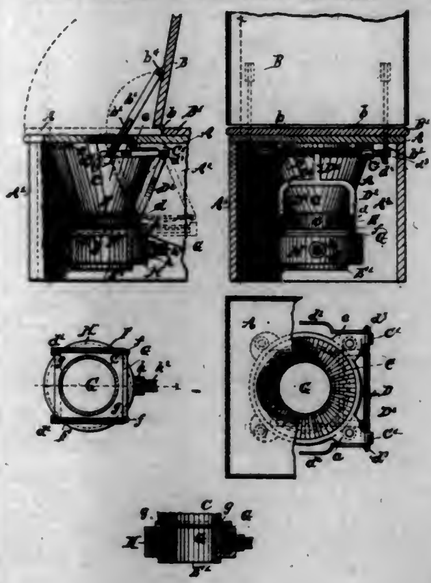
Claim.—1. A halter made of two pieces of rope, *a* and *b*, and in which the piece *a* constitutes the nose-piece B and the jaw-piece D', and the piece *b* constitutes the throat-latch, crown-piece, and jaw-piece D, the said pieces *a* and *b* being connected by means of metallic clips and the throat-latch and nose-piece being looped, substantially as specified, and for the purposes set forth.

2. A halter made of two pieces of rope, and in which are combined the piece *a*, constituting the nose-piece and one of the jaw-pieces, the piece *b*, constituting the throat-latch, crown-piece, and the other of the jaw-pieces, the nose-piece and throat-latch being looped, the clips *c c*, and a buckle or catch for adjusting the halter, substantially as and for the purposes specified.

3. A halter provided with a buckle or catch consisting of a plate having an opening, *e e'*, and a pivoted swinging tongue, substantially as and for the purposes specified.

4. A halter provided with a buckle or catch consisting of the plate *d*, having therein the opening *e e'*, and a pivoted tongue, *f*, attached thereon by means of a projecting pin, *f'*, as described.

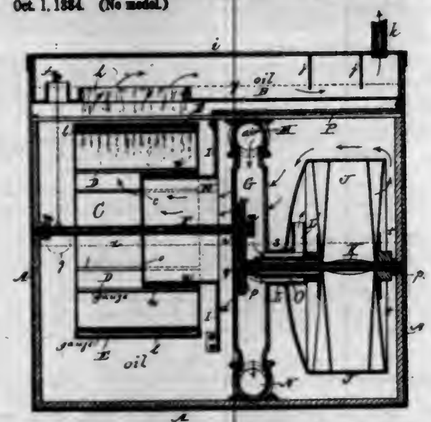
321,958. RAILWAY-CAR CLOSET. James D. Evans and Garrett Bogart, Scranton, Pa. Filed Mar. 25, 1885. (No model.)



Claim.—1. The combination of the receptacle C, sliding plate G, rods E F, levers D D' D² d² d³, arms b' b', and seat-cover B, all arranged to operate as and for the purpose set forth.

2. The cylinder E', provided with an annular recess, H, and opening *h*, in combination with the receptacle C, for the purpose of warming the seat A, as specified.

321,959. GAS-MACHINE. AARON W. FRAIL, Ashland, Mass. Filed Oct. 1, 1884. (No model.)



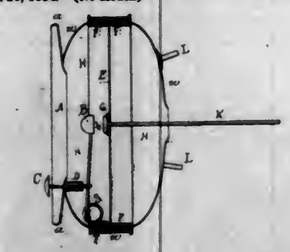
Claim.—1. The combination, with the case A, perforated generating-cylinders D and E, and the driving-wheel J, of the tubular part or pipe G, for the purpose stated, all constructed and operated substantially as shown and described.

2. The combination, with the case A, provided with a pan, B, the top part of the case A having the partitions or divisions *j*, of the perforated cylinders D and E, tubular part G, and driving-wheel J, all constructed and operated substantially as and for the purpose stated.

3. In a gas-machine, the part G, provided with an inlet-pipe, M, and an outlet-pipe, N, for the purpose stated, and constructed with bearings for one end of driving-shafts, as described, and made hollow to allow of the air passing through into the driving-wheel, for the purpose stated, in combination with the driving-wheel J and perforated cylinders D and E, substantially as shown, and for the purpose stated.

4. In a gas-machine, the generating-wheel C, made of two perforated or gauze cylinders, D and E, the outer one being provided with lifting troughs or buckets, for the purpose stated, and means for revolving said generating-wheel, substantially as described, in combination with the tubular part G and driving-wheel J, substantially as shown and described.

321,960. TELEPHONE. JAMES H. FREETO, Mechanicsburg, Ill. Filed Sept. 26, 1884. (No model.)

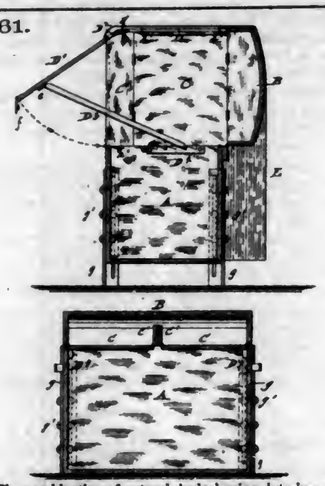


Claim.—The combination of the large curved receiving-disk A, the flattened hemispherical condensing-chamber H H, the metal transmitting-plate E, the rubber cushions F F F F, which hold it in place, the cushion G, between the button *b* on the end of the line-wire and the transmitting-plate E, the coil-wire spring S, and hammer B, operated by the button C, through the tube D in the disk A, all substantially as described, and for the purposes specified.

321,961. DESK ATTACHMENT FOR TRUNKS. LOUIS GANEK, Rockford, Ill. Filed Nov. 21, 1884. (No model.)

Claim.—1. The combination of a trunk-body having notched interior side strips, a lid having hinged bottom sections and auxiliary sections hinged to the inner ends of said bottom sections, and a desk attachment consisting of folding leaves and hinged stays, said leaves being supported on the bottom and auxiliary sections and on the stays, substantially as set forth.

321,961.

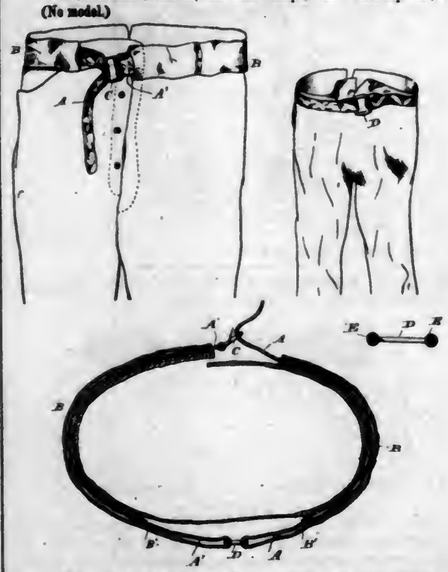


2. The combination of a trunk-body having interior notched side strips, a lid having hinged bottom sections and auxiliary sections pivoted to the inner ends of the bottom sections, folding leaves supported on the bottom and auxiliary sections, detachable stays bearing against rests of the front leaf and into the notched strips of the body, and a hasp attached to the front leaf, substantially as described.

3. A folding desk attachment for trunks, consisting of two folding leaves, an intermediate shorter piece hinged to one of said leaves, pivot-links connecting the ends of the intermediate piece with the other leaf, and detachable stays hinged to the front leaf, substantially as set forth.

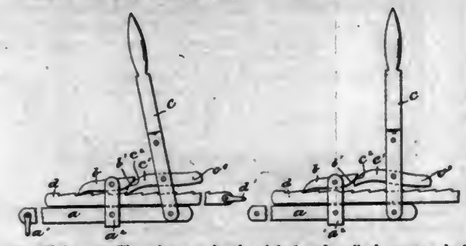
4. The combination of a trunk-body having fixed pins in the side walls, a lid having bottom section hinged to the side walls of the lid, and auxiliary sections hinged to the inner ends of the bottom sections, the bottom and auxiliary sections being connected by socket-holes to the fixed pins of the trunk-body, and a desk attachment consisting of a top leaf, an intermediate short piece, and hinged stays attached to the front leaf, said leaves being supported by the lid sections and stays, substantially as set forth.

321,962. COMBINED STRAP AND WAISTBAND FOR PANTALOONS. HENRI GOODMAN, San Luis Obispo, Cal. Filed Apr. 23, 1884. (No model.)



Claim.—In pantaloons and like garments, the combination, with the waistband, of the straps A A', buckle C, and loop D, a portion of each strap being doubled backward under another wider portion of itself, which is stitched to the waistband, and said straps being passed through the loop at the back and secured by the buckle in front, substantially as shown and described.

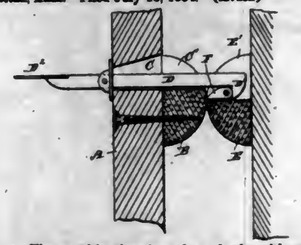
321,963. WIRE-STRETCHER. SANFORD GREEN, Marengo, Iowa. Filed Mar. 10, 1885. (No model.)



Claim.—1. The wire-stretcher hereinbefore described, composed of the bar *a*, provided with the lug a^2, pawl *b*, lever *c*, pawl *c'*, pivoted to the lever *c*, and constructed to engage the ratchet-bar and to slide under the rear end of the pawl *b* to force the point of the same downward, and the sliding ratchet-bar *d*, substantially as set forth.

2. In a wire-stretcher, the combination, with the main bar, of a sliding ratchet-bar, a retaining-pawl, a lever pivoted upon the main bar, and a pawl pivoted upon the lever and having its forward end constructed to engage the sliding bar and slide under the rear end of the retaining-pawl and actuate the same, substantially as set forth.

321,964. COMBINED DOOR CHECK AND BUFFER. CARRIE G. GRIFFIN, Manhattan, Kans. Filed July 15, 1884. (Model.)

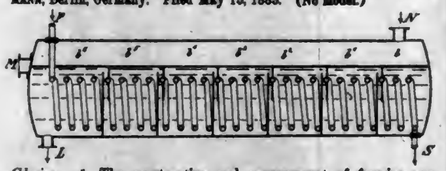


Claim.—1. The combination, in a door-check, with the pivoted hook, of a bumper provided with a pivoted latch or tumbler for engaging said hook, said tumbler being adapted to be turned in one direction to engage said hook and to allow said hook to pass when turned in the opposite direction, whereby, when attached to a door and wall, said door-check may be used as an ordinary bumper or a positive means of holding the door open, substantially as set forth.

2. The combination, with a bumper having a slit, of a tumbler pivoted in the slit at or near the middle of the bottom of the same, substantially as herein shown and described.

3. The combination, with a door having a vertical slot, of a slitted bumper secured on the door, and a latch arranged in the slot in the door and the slit in the bumper, substantially as herein shown and described.

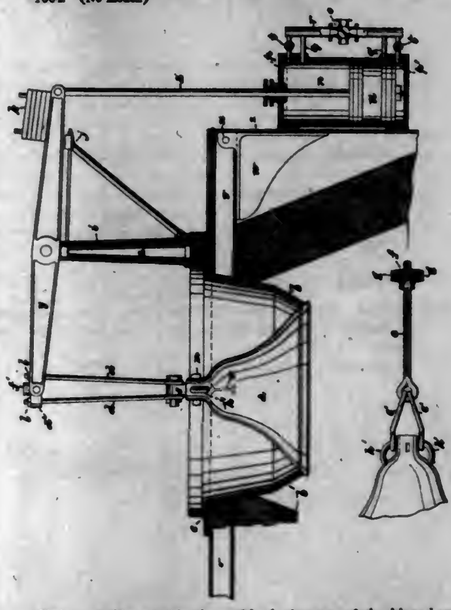
321,965. ABSORPTION FREEZING-MACHINE. RUDOLPH HABERMANN, Berlin, Germany. Filed May 15, 1885. (No model.)



Claim.—1. The construction and arrangement of freezing-machines, substantially in the manner set forth and illustrated in the accompanying drawings, for the purpose of so conducting the freezing process that the absorbing-liquid in being prepared for repeated use as an absorbing medium shall, where it contains the largest proportion of the freezing-body, come in contact with heating-surfaces of a lower temperature than where it contains the smallest or a smaller proportion of the freezing medium, and in such manner that the said absorbing-liquid shall be of different temperatures and degrees of concentration at different parts of its bulk.

2. The construction and arrangement of freezing-machines so that the gas, the absorbing-liquid, and the cooling-water are supplied to the absorbing-space in such manner that the gas enters at the place where the absorbing-liquid is the most highly concentrated and cooled by cooling-water of the coldest temperature, while where the absorbing-liquid is less or the least concentrated and of greater capability of absorption it is cooled by the cooling-water that has gradually increased in temperature, substantially as set forth.

321,966. BLAST-FURNACE BELL AND APPARATUS FOR WORKING THE SAME. JOHN M. HARTMAN, Philadelphia, Pa. Filed Aug. 20, 1884. (No model.)



Claim.—1. The combination, with the hopper, of the hinged supporting-beams *v* and subjacent brackets *w*, substantially as set forth.

2. The combination of the walking-beam *y*, having removable supports *d*, by which the bell is suspended, the socket *f''*, the screw *e*, passing freely through said socket and provided with a suitable attachment to the bell, and the nut *f*, engaging with said screw and supported upon said socket *f''* so as to turn freely thereon, substantially as set forth.

3. The combination of the flanged ring *c*, the hopper *b'*, having a flange adapted to rest upon said ring, the bell *a*, whose lower end is of greater diameter than the opening in the lower end of said hopper, the post *h*, the sleeve *i*, adapted to revolve upon said post, and the walking-beam *y*, pivoted to said sleeve, and provided with a device for suspending the bell *a* and with suitable actuating mechanism, substantially as set forth.

4. The combination, with the furnace, of the bell *a*, having concave or inwardly-curved inclined sides, whereby the deposit of the fine stock at the center of the furnace and the coarse stock around its sides is effected.

5. The combination, with the walking-beam *y*, having its fulcrum supported upon a vertical pivot, of the counter-weight *k* and bracket *j*, substantially as and for the purposes set forth.

321,967. DEVICE FOR MAKING DIES FOR FORMING AUGER-HEADS. FRANK W. HASTINGS, Wallingford, Conn., assignor to the Jennings & Griffin Manufacturing Company, same place. Filed Jan. 19, 1885. (No model.)

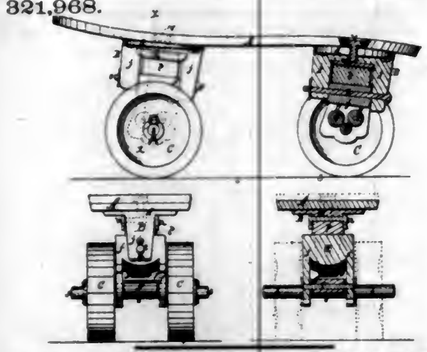


Claim.—The punch herein described, having its lower end or side cut away to form the plane surface B, one-half, *a*, of a turn or twist of an auger or bit, one-half, *b*, of a conical point, and the part *c*, the half turn or twist increasing in thickness from its outer edge and having the thick part *d* to form a cutting-lip, substantially as shown and described.

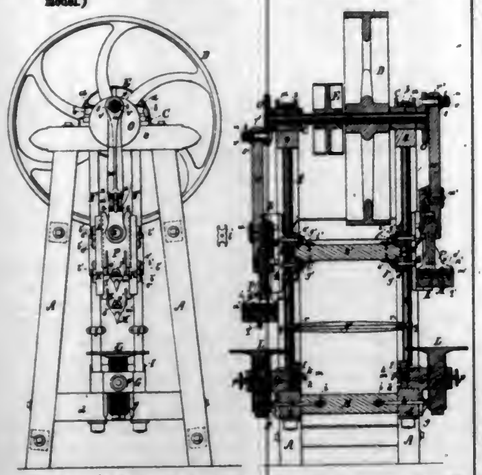
321,968. ROLLER-SKATE. JOHAN T. HENDERSON, Council Bluffs, Iowa. Filed Sept. 22, 1884. (No model.)

Claim.—In combination with a roller-skate, the rocking roller carrier or hanger *f*, bifurcated as shown, and having the wheel-axle *s* and rollers *g*, the latter bearing upon the said wheel-axle, substantially as described.

321,968.



321,969. MACHINE FOR SPLITTING WOOD. EDWIN A. HILDRETH and STANLEY B. HILDRETH, Harvard, Mass. Filed Apr. 3, 1885. (No model.)



Claim.—1. The combination of the braces or connecting-bars N, and their fastening clips or devices, with the four rods F, applied to the frame A, and provided with guides, and ax-carriers adapted to such guides, and with the rotary tables L, connected with said frame, and their supporting devices and locks, applied to such rods, all being substantially as represented.

2. The combination of the supporting-frame, driving-shaft, and pitman with the ax M, provided with a rib, *m'*, at its top, as represented, the ax-carrier P, socketed to receive such rib, and provided with the arched opening *p'*, and connected to the ax by screws *n'*, as described, and the locking-piece *o'*, applied to the heads of such screws and fastened to the said carrier, as set forth.

3. The combination of the screw projection or nut G, applied to the two rods F, and provided with the flange *g*, extending down from it, as represented, and resting against the girt *d* of the frame A, with the cap-plate I, applied to the said rods F, and connected to the said nut G by screws *k*, having a lock, *m*, arranged with them and fastened to the said cap-plate, substantially as set forth.

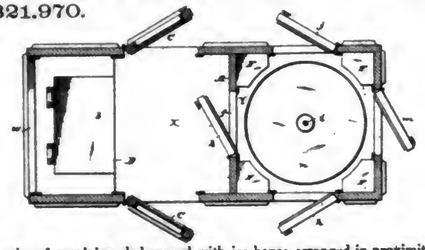
4. The combination of the frame A, provided with the two sets of rods F, applied to it and the driving-shaft boxes, as set forth, and with the cross-bars N, connecting said sets of rods and their fastenings or clips, with the two adjustable tables L, and their nuts G, supported and locked, and with the two axes and their carriers applied to each other and the rods F, as explained, and with the two pitmen jointed to such carriers and connected with the crank-wheels of the main driving-shaft, all being substantially as specified and represented.

321,970. REFRIGERATOR-WAGON. IRENAS M. HOFFMAN, Indianapolis, Ind. Filed May 9, 1885. (No model.)

Claim.—1. A sales-wagon provided with two compartments, X Y, separated by a transverse partition having a door therein, the rear compartment having shelves revolving upon a vertical axis, and provided at the corners with ice-boxes F, substantially as set forth.

2. A sales-wagon divided by a transverse partition provided with a door, and having doors at the sides and end, in combination with a

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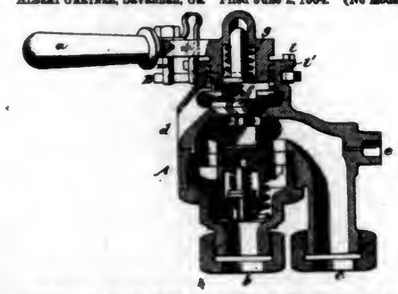


series of revolving shelves and with ice-boxes arranged in proximity to the shelves and between the doors, substantially as set forth.

3. A sales-wagon provided with a driver's compartment, X, and a refrigerating-compartment, Y, divided by a partition and containing shelves, and vertical ice-boxes F in the lower portion and an ice-box in the upper portion, substantially as set forth.

4. A sales-wagon provided with a refrigerating-compartment having an opening at the top and a detachable cover, H, a removable partition, *d*, and shelves and ice-boxes below said partition, substantially as and for the purpose set forth.

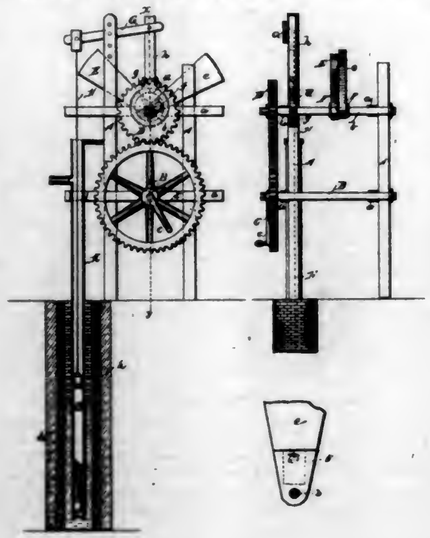
321,971. AUTOMATIC AIR-BRAKE. WILLIAM B. W. HOWE, Jr., and ALBERT GÄRTNER, Savannah, Ga. Filed June 2, 1884. (No model.)



Claim.—1. As an improvement in the Westinghouse automatic air-brake system, an engineer's brake-valve having a main valve capable of partial rotation, combined with a lever, and means, substantially as shown and described, for automatically giving a limited rotation to said lever and main valve, as set forth.

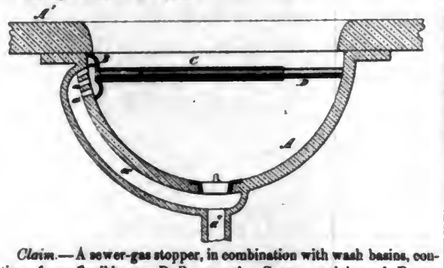
2. The engineer's brake-valve A and handle *a*, having the pin *m*, combined with the spring B, having one end secured to said valve, and its other end free, and adapted to engage with the pin *m*, substantially as and for the purpose set forth.

321,972. HAND WATER-PUMPING MILL. JOSEPH H. HUNTER, Adair, Ill. Filed Oct. 7, 1884. (No model.)



Claim.—The combination, with a pump and a lever, one end of which is connected to the pump-rod, of a shaft carrying an eccentric, a rod connecting the lever and eccentric, a rigid arm, and a longitudinally-adjustable arm secured to said shaft, and devices connected with said shaft for turning the same, substantially as set forth.

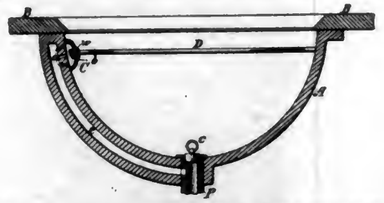
321,973. SEWER-GAS VALVE. FRANK G. JOHNSON, New York, N. Y. Filed Apr. 8, 1884. (No model.)



Claim.—A sewer-gas stopper, in combination with wash basins, consisting of one flexible cap, B B, one tube, C, one straight rod, D, one spiral spring, *d*, contained within the tube C and surrounding the rod D, all arranged and combined together in the manner and for the purpose substantially as set forth.

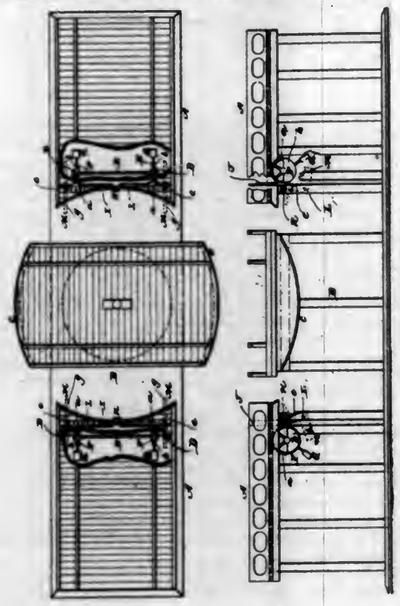
321,974. SEWER-GAS CUT-OFF FOR BASINS. FRANK G. JOHNSON, New York, N. Y. Filed Aug. 8, 1884. (No model.)

Brief.—The shank D has two right-angle and one semicircular bends, one of the angles being attached to cap C and the other rests against the basin.

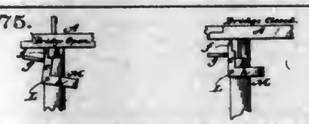


Claim.—A sewer-gas cut-off for wash-basins consisting of the combination of the cap C, and the shank D, having two right-angle and one semicircular bends, substantially in the manner and for the purposes set forth.

321,975. DRAW-BRIDGE GATE. WILLIAM JOHNSTON and WILLIAM J. TAYLOR, Menominee, Mich. Filed Dec. 1, 1884. (No model.)



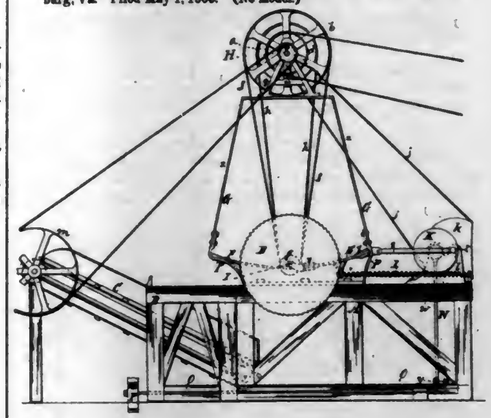
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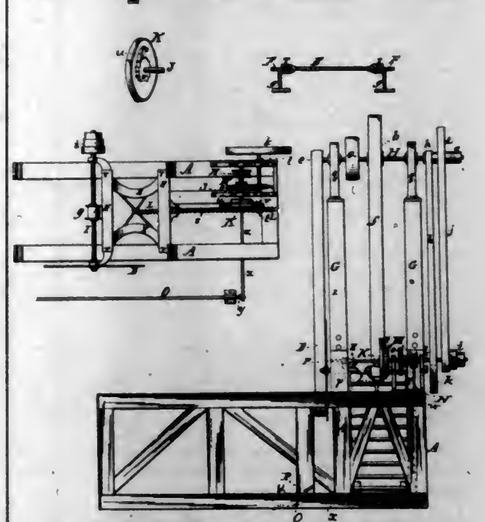


Claim.—1. In a draw-bridge gate, the combination, with the draw, of the gates working across the passage-way of the bridge, and automatic catches comprising the horizontal arm *h*, the vertical arm *e*, and the outwardly-extending arm *g*, as set forth.

2. In a draw-bridge gate, the combination, with the draw provided with a depending shoe at each end, of the gates working across the passage-way of the bridge and provided with a roller or projection to be acted upon by the shoe, means for automatically raising or elevating the gate as the action of the shoe ceases, and automatic catches provided with outwardly-extending arms to be operated by the shoes at the same time, as set forth.

321,976. CIRCULAR SAWING MACHINE. JOEL H. JONES, Lynchburg, Va. Filed May 1, 1885. (No model.)





Claim.—1. The combination, with the driving-shaft H, the saw D, and their connecting-belt and pulley-gear, of the curved guide-plates F F, concentric with the shaft, and sliding saw-frame E, having guide-bands *r r r r*, which clasp the said guide-plates, substantially as and for the purpose herein specified.

2 The combination, with the reciprocating saw-frame E, feed-shaft J, crank-disk K, pawl *u* on the crank-disk, and ratchet-wheel *v* on the feed-shaft, of the rod *s*, connecting the crank-disk directly with the saw-frame, and the counter-spring L, substantially as described, whereby not only is the saw fed forward slowly and drawn back quickly, but the back-moving force is made strong at the beginning and weak at the ending for the purpose herein specified.

3. The combination, with the reciprocating saw-frame E, driving-shaft H, feed-shaft J, and feed mechanism, as K L *s u v*, herein described, connecting the feed-shaft and saw-frame, of a separate transmitting-shaft, *l*, belt and pulleys connecting it with the driving-shaft, feed gear-wheels *n o*, connecting the transmitting and gear shafts, clutch M, for coupling and uncoupling the said connecting gear-wheels, and means, as the lever N, rock-shaft O, connecting-rod *x*, and treadle P, connected with the clutch, whereby the attendant may stop the saw-feed and start it from his position for feeding the material to the machine, substantially as herein specified.

321,977. TABLE-WAITER. JOHN H. KAMERER, Plainwell, Mich., assignor of one-half to William Oliver, same place. Filed Sept. 12, 1884. (No model.)



Claim.—1. A table-waiter consisting of the radial-armed base, the waiter-top, and the pivotally-connected bearing-plates secured on the under side of the waiter and on the upper side of the base, substantially as set forth.

2. A table-waiter consisting of the radial-armed base for detachable location on a dining-table, the adjustable buds on the under side of the free ends of the base-arms, the waiter-top, and the pivotally-connected bearing-plates between the top and base, substantially as set forth.

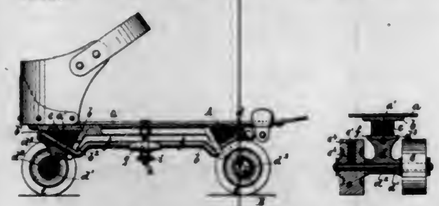
321,978. PORTABLE FENCE. WILLIAM KEMERY, Massillon, Ohio. Filed Feb. 24, 1885. (No model.)



Claim.—1. In a portable fence, the combination, with the base or sill C, provided with the shoulder c, of the wire D, attached at one end to the said base or sill C, the movable brace E, to which the other end of the wire is attached, and means for securing said brace to the sill, substantially as and for the purpose specified.

2. In a portable fence, the combination of the brace E, rounded at its top or upper end, the sill C, the wire D, attached to said brace E, and to the sill C, and means for securing the brace, substantially as and for the purpose specified.

321,979. ROLLER-SKATE. DANIEL E. KEMPSTER, Boston, assignor of one-half to Stiles Frost, Newton, Mass. Filed Jan. 24, 1885. (No model.)



Claim.—1. A roller-skate wherein the two trucks are adjustably held to the foot-plate by pivot-pin levers, combined with a single adjusting-screw, as set forth.

2. A roller-skate constructed with hangers having each a pivot-bearing and an open or slotted bearing, combined with elongated pivot-pins and a single adjusting-screw, substantially as and for the purpose set forth.

3. In a roller-skate constructed with springs for holding the roller-trucks level with the foot-plate, and having mechanism for adjusting the pressure of said springs, the two trucks and their mechanism combined with one screw and nut, whereby the springs in both trucks are adjusted at one and the same operation, as set forth.

4. In a roller-skate, and combined with a foot-plate, hanger, and a roller-carrier, the pivot-pin, its recessed or grooved nut or washer, and adjusting-screw, all arranged for conjoint operation, whereby the pivot-pin is adjustably and also releasably held, substantially as and for the purpose set forth.

5. In a roller-skate, the foot-plate *a*, hangers *b b*, roller-carriers *d d*, rolls *e e e e*, axles d^2 d^2, springs *c c*, pins *f f*, and screw *h*, substantially as and for the purpose set forth.

6. In a roller-skate, the foot-plate *a*, hangers *b b*, roller-carriers *d d*, axles d^2 d^2, rollers *e e e e*, pins *f f*, and screw *h*, substantially as and for the purpose set forth.

321,980. ROLLER-SKATE. ALVA L. KITSELMAN and DAVID M. KITSELMAN, Ridgeville, Ind. Filed Nov. 10, 1884. (No model.)

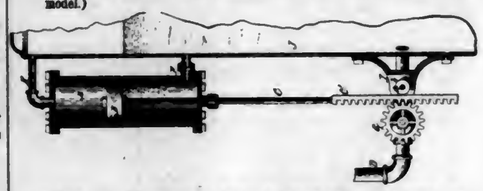


Claim.—1. In a roller-skate, the combination, with the casting B, having the downwardly-extending arm C, having an opening, and the downwardly-extending lugs D, of the plate F′, having the journals at its ends, and the slot F^2, the hanger-frame F^2, an elastic cushion bearing against the under side of plate F′, and a screw, I, having its end passing through the elastic cushion and engaging an opening in casting B, as set forth.

2. The combination, with the casting B, having the curved arm C and bearing-lugs D D, of the wheel-hanger having the transversely-slotted plate F′, the hanger-frame F^2, a rubber cushion, and a tension-screw passing through the opening in plate F′ and through the rubber cushion, and a metal disk or washer on the screw between the head of the same and the elastic cushion.

3. In a roller-skate, the combination, with the casting or spider having a downwardly-extending arm and a pair of lugs, of the hanger carrying the wheels or rollers and having one of its journals fitted in the arm and the other resting between the lugs, a rubber cushion, and means, substantially as described, for holding the latter against the under side of the hanger and for holding said hanger in its bearings, as and for the purpose set forth.

321,981. FEEDER FOR STEAM-BOILERS. FRIEDRICH KLEINE and WILLIAM F. AGETER, Cedar Rapids, Iowa. Filed Dec. 15, 1884. (No model.)



Claim.—1. An automatic feeder for steam-boilers, consisting in a vertical cylinder communicating with the boiler above and below the mean water-line, a piston or float in said cylinder adapted to rise with the water underneath and descend with the pressure of the steam above it, a piston-rod having a cog-rack thereon, and a supply-valve having a pinion meshing with said cog-rack, all constructed, combined, and operating substantially as and for the purpose set forth.

2. In an automatic feeder for steam-boilers, the combination of vertical cylinder A, communicating with the boiler above and below the mean water-line by pipes E and F, respectively, the piston or float B, piston-rod C having cog-rack C′, guide-bracket I, and supply-valve H, having pinion G, substantially as described.

3. In an automatic boiler-feeder, the float B, having an air-vent consisting of a small rod extending through one end of the float, and a stuffing-box adapted to retain the rod and render the aperture nearly air-tight, substantially as specified

321,982. CARTRIDGE-LOADING MACHINE. OTTO KONIGSLOW, Cleveland, Ohio. Filed Nov. 8, 1884. (No model.)

Claim.—1. In a cartridge-filling machine, the combination, with a stationary frame-work or table and a non-rotating shell-holder sustained thereby, of an intermittingly-rotating table and a series of shell-filling appliances carried by said rotating table, whereby said shell-filling appliances are adapted to pass successively over said shell-holder, substantially as set forth.

2. In a cartridge-filling machine, the combination, with a stationary frame-work or table and a vertically-reciprocating shell-holder sustained thereby, of an intermittingly-rotating table and a series of shell-filling appliances carried by the said rotating table, substantially as set forth.

3. In a cartridge-filling machine, the combination, with a stationary table having a central post or hub and a non-rotating shell-holder sustained by said table, of a rotary table pivoted on said post, and a series of shell-filling and cartridge-finishing devices carried by said rotary table, substantially as set forth.

4. In a cartridge-filling machine, the combination, with a stationary frame-work or table and a rotary table mounted thereon, of a vertically-reciprocating shaft, a plunger or pressing device connected with said shaft, and a series of shell-filling appliances carried by said rotary table, and thus coming successively beneath said plunger to be depressed thereby, substantially as set forth.

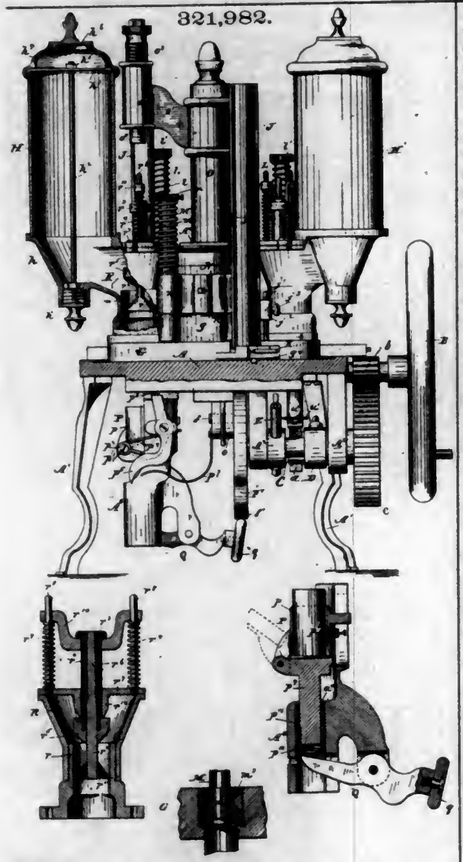
5. In a cartridge-filling machine, the combination, with a stationary frame-work or table and a rotary table mounted thereon, and provided with a series of shell-filling appliances, of a vertically-reciprocating shaft having an arm or pressure-head and a pressing-plunger adjustably secured to said arm or pressure-head, substantially as set forth.

6. In a cartridge-filling machine, the combination, with a stationary frame-work or table, a rotary table mounted thereon, and a series of shell-filling appliances carried by said rotary table, of a vertically-reciprocating shaft having an arm or pressure-head and a pressing-plunger having a yielding connection with said arm or pressure-head, substantially as set forth.

7. In a cartridge-filling machine, the combination, with a vertically-reciprocating shaft having an arm or pressure-head, of a pressing-plunger adjustably secured to said arm or pressure-head, said plunger having a graduated scale for convenience in setting the same, substantially as set forth.

8. In a cartridge-filling machine, the combination, with a vertically-reciprocating shaft carrying an arm or pressure-head having an internally-threaded socket or cylindrical portion at its outer end, of a hollow screw fitted to said socket, a plunger carried by said screw, and a spring forming a yielding connection between the plunger and screw, substantially as set forth.

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9. In a cartridge-filling machine, the combination, with a stationary frame-work or table and a rotary table mounted thereon and having a hub, of a spider secured to said hub and having a series of arms, and a series of wad-rammers and a crimping-plunger guided vertically by said arms, substantially as set forth.

10. In a cartridge-filling machine, the combination, with the stationary frame-work or table and a rotary table mounted thereon, and having a series of openings for the passage of the shell-filling material and the crimping-plunger, of a driving-shaft carrying a wiper-arm engaging said rotary table by said openings to move the same intermittingly forward, a crank-pin connected with said shaft, and a spring-actuated yoke having a pin engaging said rotary table to hold the same stationary after each forward movement thereof, substantially as set forth.

11. In a cartridge-filling machine, the combination, with a stationary and a rotary table, the former having a central hollow post on which the latter revolves, of a vertically-reciprocating shaft fitting in said hollow post, and having at its lower end a yoke and a driving-shaft having a crank-disk carrying a crank-pin working in said yoke to operate said shaft, substantially as set forth.

12. In a cartridge-filling machine, a tubular wad-holder formed in two parts, one of which is hinged to the other, combined with a spring-fastening device for holding said parts together when closed, substantially as set forth.

13. In a cartridge-filling machine, a wad-holder combined with a support, on which said holder is vertically adjustable, and a fastening device, as a set-screw, for securing said holder in any position to which it may be adjusted, substantially as set forth.

14. In a cartridge-filling machine, the combination, with a stationary table provided with a cam-track, a rotary table having a series of wad-rammers and wad-starters, and also a series of radially-projecting arms, of a series of wad-pushers guided in ways in said arms and having pins engaging said cam-track, substantially as set forth.

15. In a cartridge-filling machine, the combination, with a frame or table having a depending bracket or hanger, of a shell-holder guided vertically in said hanger, a spring and lever for operating said shell-holder, and a driving-shaft having a cam for operating said lever, substantially as set forth.

16. In a cartridge-filling machine, a vertically-reciprocating shell-holder having a shank or stock, combined with an adjustable nut or thimble for varying the working length of said stock, substantially as set forth.

17. In a cartridge-filling machine, a shell-holder formed in two parts, one of which is hinged to the other, combined with a spring for automatically closing the hinged part and with mechanism for automatically opening the same at the proper moment, substantially as set forth.

18. In a cartridge-filling machine, the combination, with a stationary and a rotary table, of a shell-holder supported by the former and constructed in two parts, one of which is hinged to the other, a spring for closing the hinged part or door, a crank for opening the same, a lever for operating said crank, and a cam-track on said rotary table for operating said lever, substantially as set forth.

19. In a cartridge-filling machine, the combination, with a shell-holder formed in two parts, one of which is hinged to the other, of one or more spring-acted pushers for ejecting the finished cartridge from the holder when the hinged part or door thereof is opened, substantially as set forth.

20. In a cartridge-filling machine, the combination, with a vertically-movable shell-holder, of a crimping-ring having an annular recess on its inside at its lower end, and a vertically-movable crimping-plunger reciprocating in said ring, substantially as set forth.

21. In a cartridge-filling machine, a reciprocating crimping-plunger provided on its lower face with marking-characters, whereby it is adapted to serve as a combined crimper and marker, substantially as set forth.

22. In a cartridge-filling machine, the combination, with a shell-holder, of a vertically-reciprocating crimping-ring, which is adjustable in the part by which it is carried toward or from said shell-holder, substantially as set forth.

23. In a cartridge-filling machine, the combination, with a shell-holder and an adjustable crimping-ring, of a crimping-plunger reciprocating in said ring, and a stock or rod to which said plunger is adjustably but rigidly connected, substantially as set forth.

24. In a cartridge-filling machine, an automatic measuring device, consisting of the combination, with a measuring-ring having an interior enlargement at its lower end on its inner side, of a reciprocating plunger fitting the smaller interior part of said ring and a reciprocating valve constructed to close the top thereof when said plunger descends into the enlarged interior part of said ring, substantially as set forth.

25. In a cartridge-filling machine, the combination, with a material-hopper and a measuring-ring having an interior enlargement at its lower end, of a plunger fitting the smaller interior part of said ring and a valve constructed to close the top thereof, said plunger being adjustable toward or from the said valve, for the purpose of varying the measuring-space between them, substantially as set forth.

26. In a cartridge-filling machine, the combination, with the meas-

uring-plunger and its stem, of a tube provided with a valve and an adjusting-nut attached to but turning in said tube, for varying the position of said plunger relative to said valve, substantially as set forth.

27. In a cartridge-filling machine, the combination, with the material-hopper and its cover and standards attached to the latter, of a plunger, valve, tube, and cross-head, these four parts being connected together, and springs for raising said cross-head and its connected parts after they have been depressed, substantially as set forth.

28. In a cartridge-filling machine, the combination, with the measuring-valve and its carrying-tube, the latter being provided on its exterior with a graduated scale, of a measuring-plunger which is adjustable toward or from said valve, said plunger having a stem provided with an index-pin, substantially as set forth.

29. In a cartridge-filling machine, the combination, with a reciprocating measuring-plunger and its stem, of a tube with which said stem is loosely connected, a measuring-valve carried by said tube, and a spring arranged in the interior of the tube and serving as a yielding connection between the latter and the plunger-stem, thus permitting the plunger to reciprocate independently of the valve, substantially as set forth.

30. In a cartridge-filling machine, the combination, with a reciprocating measuring-valve, of a reciprocating measuring-plunger having a yielding connection with the said valve, whereby said plunger is adapted to move independently of said valve, substantially as set forth.

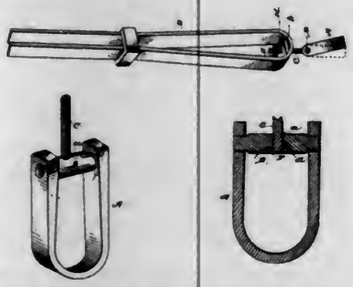
31. In a cartridge-filling machine, the combination, with the measuring-ring and the material-hopper, of a measuring-plunger having a stem provided with a flange, a tube carrying a measuring-valve, a spring arranged within said tube beneath said flange, a collar against which said flange abuts, a nut for holding said collar in said tube, a cross-head connected with the latter, and springs having lesser strength collectively than the said spring in said tube for raising said cross-head, substantially as set forth.

321,983. BABY-MATTRESS. LUDWIG KOSS, Brooklyn, N. Y. Filed Mar. 30, 1885. (No model.)



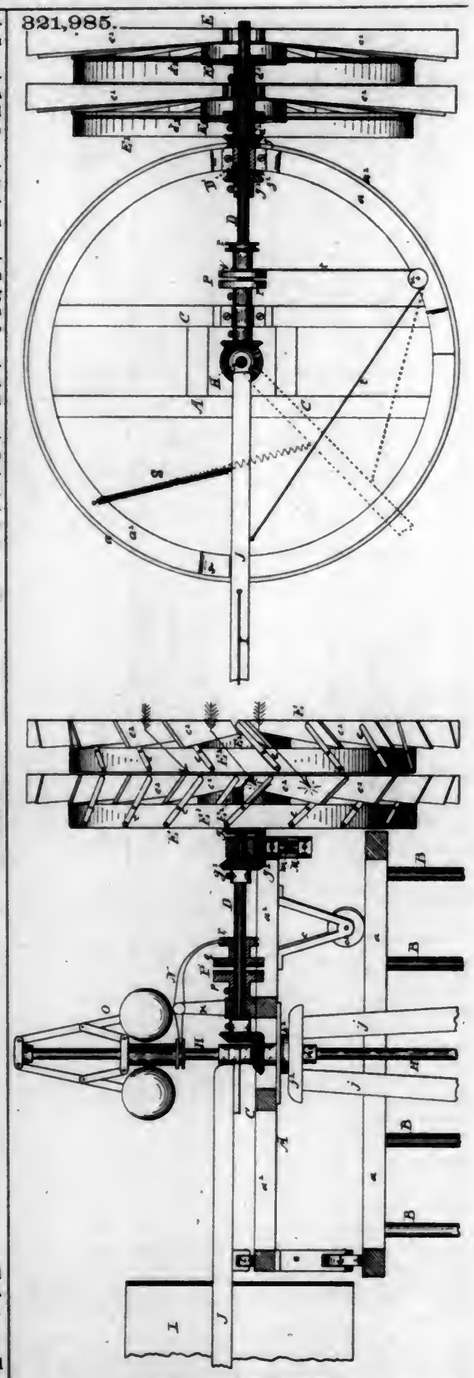
Claim.—The combination of a mattress having a vertical opening and a spiral spring arranged in the opening, a water-proof covering having a downwardly-extending tube passing through said opening, and a detachable bulb or other receptacle attached to the tube, substantially as set forth.

321,984. STIRRUP. HOMER LAUGHLIN, Eastonville, Colo. Filed Dec. 15, 1884. (No model.)



Claim.—The stirrup having a cross piece or bar at its upper end adapted to turn or roll, in combination with the stirrup-strap D and a swiveled bolt, C, connecting the latter to the cross-piece of the stirrup, as set forth.

321,985. WIND-ENGINE. CHARLES LEAVITT, Cleveland, Ohio. Filed Feb. 19, 1885. (No model.)

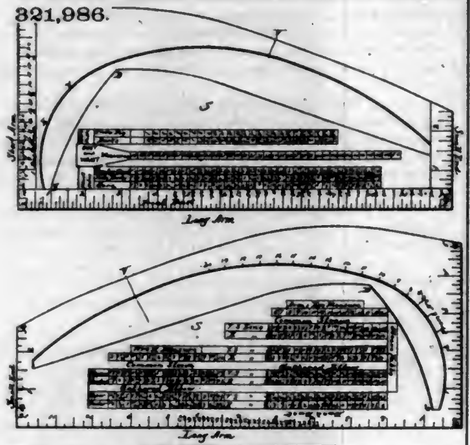


Claim.—The combination, with the vertical shaft H, of the governor O, connected by lever N to clutch P, consisting of friction-disks *p q*, said disk *q* constituting a loose spool on the shaft D, and provided with cord *t*, connected to the sheave *u* on turn-table A, the other end of said cord attached to the arm J of the vane I, having a spring, *s*, for counteracting the governor, the purpose of the governor being to regulate the speed of the wind-wheels, substantially as specified.

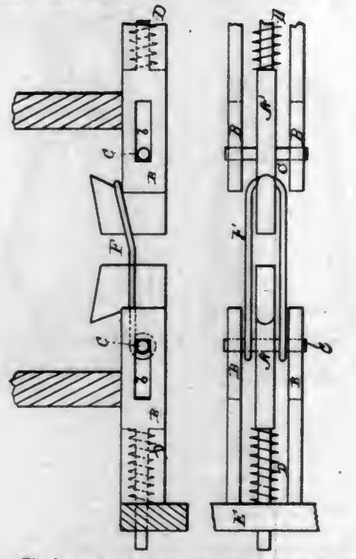
321,986. DRESS-CHART. SOPHRONIA T. LEWIS, Watertown, N. Y. Filed Apr. 5, 1884. (No model.)

Claim.—A pattern-chart having the curved slot V cut through the same, one wall of the slot having on one face the graduated scale 7 8 9, &c., and the corresponding face on the opposite side of the chart having points X Y 11, and the wall opposite thereto having the inclined line D F, as set forth.

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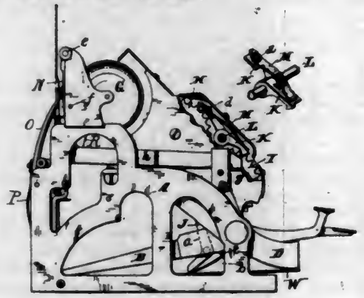


321,987. CAR-COUPLING. COURTLAND L. MACK, Perryville, Ind. Filed May 5, 1885. (No model.)



Claim.—The herein-described car-coupling, consisting of the sliding hooks A A', provided with the transverse bar or pin C, the bars B, having the longitudinal slots *b*, in which said bar or pin C slides, the link F, provided with the eyes engaging the transverse bar or pin, and bent upwardly at its forward end to engage the hooked ends of the hooks A A', as shown and described.

321,988. CASH REGISTER AND INDICATOR. CLINTON H. MALTBY, Dayton, Ohio, assignor to the National Cash Register Company, same place. Filed Jan. 2, 1885. (No model.)



Claim.—1. The combination, in a cash registering and indicating machine having a disk, I, provided with teeth, of keys B, arranged as described, and provided with slots, in which are pivoted the vertical portions of bell-crank dogs, having the horizontal portions, each of which depends below the key, and springs *b*, secured to the under-side of each key, and having their free ends bearing against said lower portion of the dog, thereby holding the same in engagement with the teeth of the disk I and preventing lateral play of the dog in said slot, substantially as set forth.

2. The combination, in a cash registering and indicating apparatus, having the disks H I, of the shaft L, the holding-dogs strung in pairs upon said single shaft L, and extending in different directions, as described, a spring for each pair of dogs secured to one of the same and having its free end bearing on the other dog, substantially as set forth.

3. The combination, in a cash registering and indicating apparatus, of a series of keys, a frame, D, adapted to be vibrated by any one of said keys, a gong and operating mechanism therefor, and wing mechanism, latch-arm S, provided at its outer end with a shoulder, *g*, and a plate, T, to guide and retain said latch, substantially as set forth.

321,989. TRIMMING AND EXTINGUISHING ATTACHMENT FOR LAMP-BURNERS. FRANK H. MARKER, Elkhart, Ind. Filed Feb. 20, 1885. (No model.)

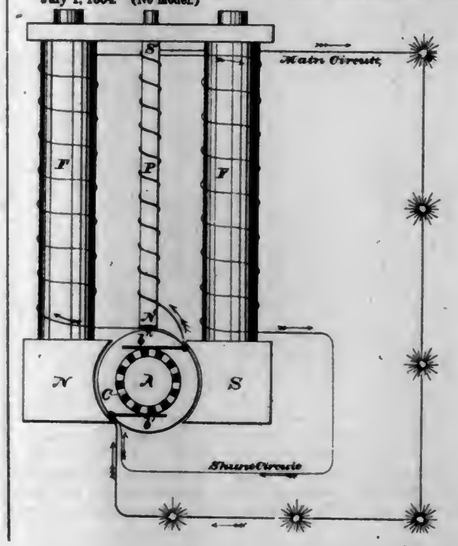


Claim.—1. The wick-tube, in combination with a vertically-sliding rod or bar arranged transversely across the tube and fitting at its ends around the sides thereof, a spring-pressed cap or cover hinged or pivoted to the rod, and an operating-rod connected to the cap or cover, to cause the latter to travel upward and work inward over the entire top of the wick-tube to extinguish the flame, the front edge of the cap severing the crust or charred part of the wick and pushing it over the opposite side of the tube, as set forth.

2. In a lamp-burner, the wick-tube, in combination with the vertically-sliding rod or bar extending transversely across the tube and formed with clasps at the ends to hold it on the tube, a cap or cover hinged or pivoted to the rod at one of its edges, a spring connected to the rod and bearing against the cap or cover, a projection or extension provided on the latter, and an operating-rod connected to the projection, to cause the swinging of the cap or cover and the sliding of the rod or bar at the same time, for the purpose set forth.

3. The herein-described attachment, comprising the rod G, having clasps at each end, the cover or cap hinged or pivoted to the rod, a spring coiled on said rod and having one end bearing against the cap or cover, and an operating-rod connected to the latter, as and for the purpose set forth.

321,990. DEVICE FOR PREVENTING SPARKING IN DYNAMO-ELECTRIC MACHINES. RICHARD H. MATHER, Windsor, Conn. Filed July 1, 1884. (No model.)



Claim.—1. A dynamo-electric machine provided with a magnet whose north or south pole is adjacent to the like pole of the armature, substantially as and for the purpose specified.

2. In a dynamo-electric machine, a spark-preventing device consisting of an electro-magnet whose helix is located in the main circuit of the machine, and one of whose poles is adjacent to the like pole of the armature, substantially as set forth.

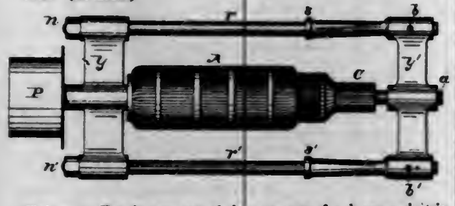
3. In a dynamo-electric machine, a spark-preventing device consisting of an electro-magnet which is attached to the field-magnet, is located in the main circuit, and has one of its poles adjacent to the like pole of the armature, substantially in the manner and for the purpose specified.

4. In a dynamo-electric machine, an electro-magnet in circuit with the armature and having one of its poles adjacent to the like pole of such armature, substantially in the manner and for the purpose specified.

5. In a dynamo-electric machine, a device to prevent sparking, consisting of one or more magnets so placed that the neutral point or points of the armature of such machine shall be within the magnetic field thereof, substantially as and for the purpose specified.

6. In a dynamo-electric machine, a device to prevent sparking, consisting of an electro-magnet in circuit with the armature and so placed relatively to the armature that one of the poles of such magnet and the like pole of the armature shall be next to each other, substantially as specified.

321,991. SUPPORT FOR THE ARMATURES OF DYNAMO-ELECTRIC MACHINES. RICHARD H. MATTER, Windsor, Conn. Filed Aug. 12, 1884. (No model.)

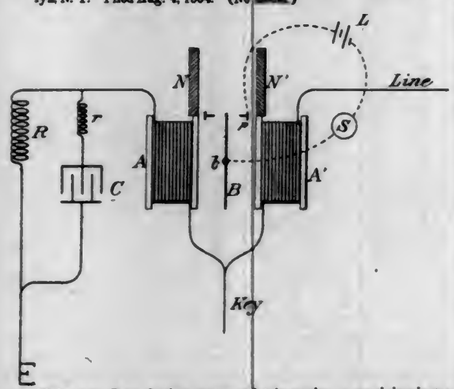


Claim.—1. For the support of the armature of a dynamo-electric machine, a quadrilateral frame or cradle, whose side rails, being parallel metallic bars, are held in immovable positions relatively to each other by means of two horizontal metallic yokes, each of which being formed in a single piece is firmly clamped upon both of said bars, and contains one of the journals of the armature-shaft, substantially in the manner and for the purpose specified.

2. In a dynamo-electric machine, a field-magnet whose core consists of a single piece of iron, in combination with a four-sided cradle or frame, consisting of the parallel rods *r r'* and the horizontal journal-bearing yokes Y Y', each of said yokes being formed of a single piece of metal, and clamped firmly upon one end of each of said rods, substantially in the manner and for the purpose specified.

3. A dynamo-electric machine, whether motor or generator, in which the field-magnet core is formed in a single piece, and in which the armature-shaft is journaled in two yokes, which are held in fixed positions relatively to the field-magnet and to each other by means of the parallel rods *r r'* which pass through said yokes and through said field-magnet, substantially in the manner and for the purpose specified.

321,992. DUPLEX TELEGRAPH. LAWRENCE A. MCCARTHY, Brooklyn, N. Y. Filed Aug. 4, 1884. (No model.)

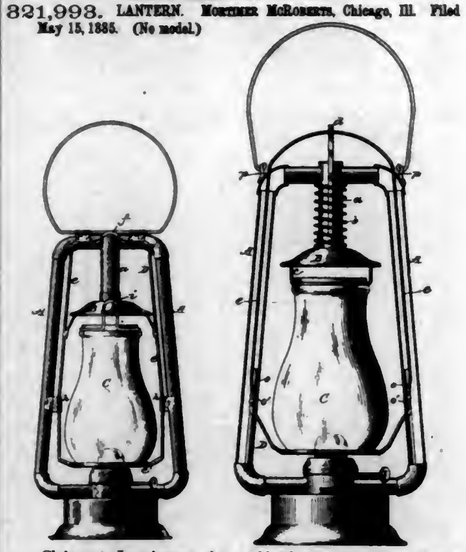


Claim.—1. In a duplex system of telegraphy, a receiving-instrument composed of hollow coils of wire, magnetized needles, and repeating-points, said needles arranged to vibrate before, between, or in said coils, and between the repeating-points, together with a local circuit, in combination with the resistance *r*, placed between the condenser and the artificial line, to vary the distance between the receiving-instrument and the condenser, all substantially as described, and for the purpose specified.

2. In a duplex system of telegraphy, the combination of a receiving-instrument composed of hollow coils of wire, magnetized needles, and repeating-points, said needles arranged to vibrate before, between, or in said coils, and between the repeating-points, with a rheostat forming an artificial line, all substantially as described, and for the purpose specified.

3. In a duplex system of telegraphy, the combination of a receiving-instrument composed of hollow coils of wire, magnetized needles, and repeating-points, said needles arranged to vibrate before, between, or in said coils, and between the repeating-points, together with a rheostat forming an artificial line, with condensers for neutralizing or compensating static discharge or induced currents of electricity, all substantially as described, and for the purpose specified.

321,993. LANTERN. MORTIMER MCROBERTS, Chicago, Ill. Filed May 15, 1885. (No model.)



Claim.—1. In a lantern, the combination, substantially as hereinbefore described, of the main frame and a sliding globe-frame having a globe-seat, and side wires extending from the base of the globe to the top of the main frame, and there provided with a thumb-piece, whereby, in lifting the globe, as for trimming and lighting, the portions of the lantern intervening between the bottom of the globe and the top of the main frame are wholly freed from lifting strains.

2. The combination, with the main frame and a globe-cap which controls the top of a globe but permits its vertical movement, of a sliding globe-frame provided with a globe-seat and extending from the lamp to the top of the main frame and separated from portions of the lantern intervening between the globe and the top of said main frame, substantially as described.

3. The combination of the main frame, the sliding globe-cap, and the sliding globe-frame having a globe-seat and extending from the base of the globe to the top of the main frame and independently of the cap, substantially as described.

4. The combination of the main frame having inclined sides, and the sliding globe-frame having a globe-seat and correspondingly-inclined side wires extending from the base of the globe to the top of the frame, and friction-guides on the main frame at or near its top and at its sides near the bottom, substantially as described.

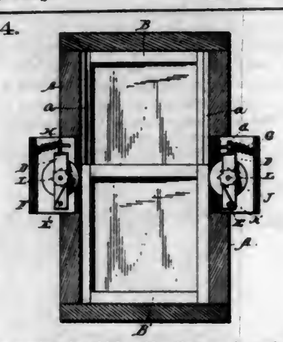
321,994. SASH-BALANCE. WILLIAM S. MICHAEL and DAVID W. GEIB, Lancaster, Pa., assignors of one-third to Jacob Hoover, same place. Filed May 8, 1885. (No model.)

Claim.—1. In combination with a roller arranged to be in contact with a window-sash, and a spring which turns said roller to sustain or raise said sash, a supplemental spring which holds said roller against said sash, substantially as set forth.

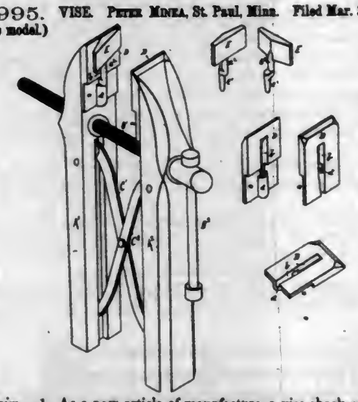
2. A pivoted bracket, a roller carried by said bracket, a spring which forces said roller against a window-sash, and a rod which guides the movement of said bracket, substantially as set forth.

3. In combination with a slotted window-frame, a removable casing having within it two rollers arranged to bear against the sashes, respectively, the brackets in which said rollers are journaled, the rod or shaft on which said brackets are mounted pivotally, the springs which turn said rollers, the supplemental springs which force them against the sashes, the guide-rods for the brackets, and the adjusting pawls and ratchets for the inclosed springs, all of the foregoing parts being removable with said casing, substantially as set forth.

321,994.



321,995. VISE. PETER MINEA, St. Paul, Minn. Filed Mar. 2, 1885. (No model.)



Claim.—1. As a new article of manufacture, a vise cheek-plate, D, having a depressed portion, *a*, slot *b*, and socket *d*, and adapted to support an auxiliary jaw, E, substantially as set forth.

2. In a vise, cheek plate or plates D, having depressed portions *a*, slot *b*, and socket *d*, and adapted to be attached to the jaw or jaws of a vise, in combination with auxiliary jaw or jaws E, having leg e^2 and pivotal point *e'*, substantially as set forth.

321,996. LUBRICATOR. JAMES C. MULBERRY, Cincinnati, Ohio, assignor of two-thirds to Frank A. Bachelor and Harry E. Langdon, same place. Filed May 23, 1885. (No model.)

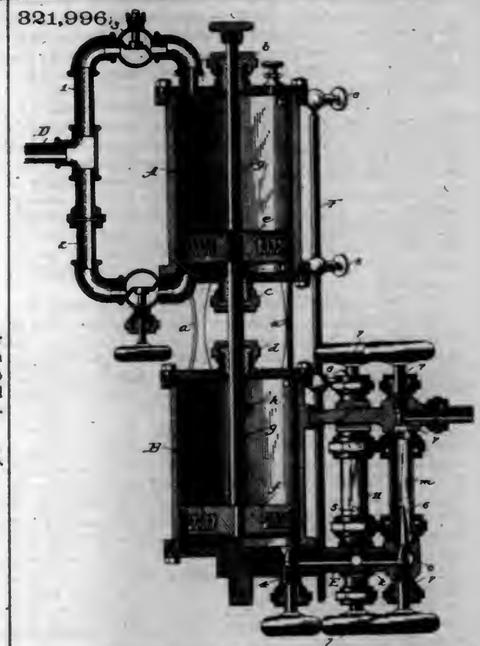
Claim.—1. A lubricator having an independent cylinder for the oil and a piston therein, a separate steam-cylinder having steam-connections at both ends, also provided with a piston, the latter piston being connected to and adapted to operate the piston of the oil-cylinder, steam-pipe connections with the steam-cylinder only, a vent to the outside from the oil-cylinder, and oil-pipe connections with the oil-cylinder, all substantially as described.

2. A lubricator having an independent oil-cylinder provided with a piston, a separate cylinder for the steam having a piston connected with the piston of the oil-cylinder, and means outside of said oil-cylinder for applying pressure to the piston thereof, in combination with three or more oil-delivering nozzles and sight-feed tubes and regulating-valves for each tube, all arranged to operate substantially as described.

3. A lubricator having an independent oil-cylinder provided with a piston, a separate cylinder for the steam having a piston connected with the piston of the oil-cylinder, in combination with an oil-delivery pipe, E, having a transverse pipe forming branches diverging therefrom laterally, and supporting sight-feed tubes and their regulating-valves, substantially as described.

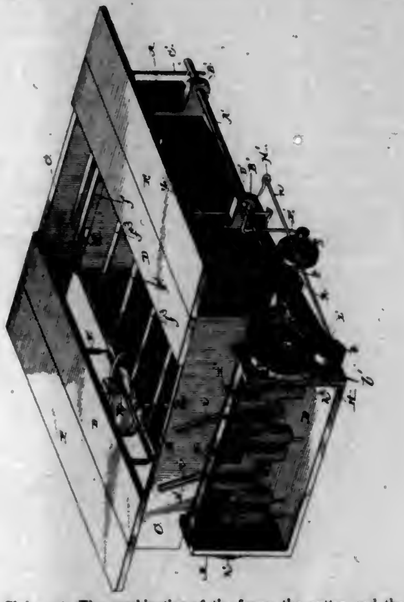
4. A lubricator having an independent oil-cylinder provided with a piston, a separate cylinder for the steam having a piston connected with the piston of the oil-cylinder, in combination with an oil-delivery pipe, E, having a transverse pipe forming branches diverging therefrom laterally, sight-feed tubes with regulating-valves supported thereon, and a forward extension supporting a sight-feed tube in advance of those on the lateral branches, and an independent regulating-valve for the said tube, substantially as described.

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5. An oil-cylinder provided with a piston, *f*, and piston-rod *g*, and devices, substantially as described, for applying to the said piston a constant pressure, pipes leading from the oil-cylinder to nozzles 5 and 6, regulating-valves for each of said nozzles, sight-feed tubes, and pipes leading from said tubes to the parts to be lubricated, all as set forth.

321,997. BAND-CUTTER AND SELF-FEEDER FOR THRASHING-MACHINES. JOHN N. NALY, Greensburg, Pa. Filed Mar. 18, 1885. (No model.)



Claim.—1. The combination of the frame, the cutter, and the reciprocating frame having the yielding tines for receiving the sheaves and presenting them to the cutter, gearing for actuating the frame and the cutter, and mechanism for throwing the gearing into operation when the tines yield and for disconnecting the same when the tines resume their normal position, substantially as described.

2. The combination of the frame, the reciprocating frame having the yielding tines, the rotating crank-disk, the cutter fulcrumed thereto and having the extended arm, and the rod connecting said arm to a fixed point, whereby the point of the cutter will be caused to describe an ellipse, substantially as described.

3. The combination of the frame, the vertical shaft journaled therein and having the cutter at its upper end and the miter-pinion at its lower end, the horizontal shaft journaled below the frame, the loose pulley and ratchet-wheel and the fixed pinion U on said shaft, and the crank-wheel, the pawl pivoted to the pinion U, the rod X, for disengaging the pawl, the reciprocating frame having the yielding tines, the rock-shaft having the arms connected with the crank-wheel of the horizontal shaft and with the reciprocating frame for moving the latter, and the bell-crank lever for moving the rod X out of the path of the pawl and permitting it to engage the ratchet-wheel when the tines yield, substantially as described.

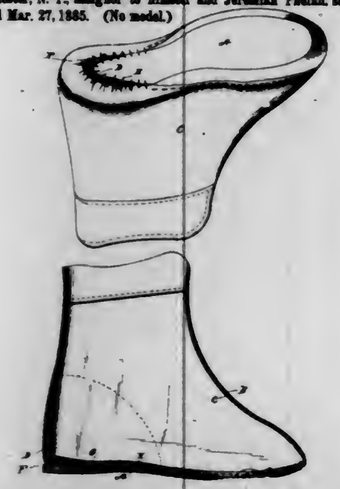
4. The combination of the frame, the cutter, the reciprocating frame having the yielding tines, the devices for feeding the straw from the frame, mechanism for actuating the reciprocating frame, cutter, and feeder, and means whereby the mechanism for actuating the cutter and reciprocating frame is thrown into gear with the mechanism for actuating the feeder when the tines of the reciprocating frame yield, substantially as described.

5. The combination of the frame, the cutter, the vertical shaft for actuating the cutter, having the miter-pinion at its lower end, the horizontal shaft having the loose pulley and ratchet-wheel, the miter-pinion U, meshing with the miter-pinion of the vertical shaft, and the crank-wheel, the pawl pivoted to the pinion U, the rod X, for disengaging the pawl, the reciprocating frame having the yielding tines, the rock-shaft having the arms connected with the crank-wheel of the horizontal shaft and with the reciprocating frame, the bell-crank lever for moving the rod X out of the path of the pawl when the tines yield, and the feeder comprising the crank-shaft, the feeding-teeth fulcrumed to the wrists of the cranks and having the slots, the fixed rod extending through the slots, and the pulley connected with the loose pulley of the horizontal shaft, substantially as described.

6. The combination of the frame, the cutter, and the reciprocating frame for holding the sheaves to the cutter, with the crank-shaft journaled in the discharge end of the frame, the feeding-teeth fulcrumed to the wrists of the cranks and having the slots, and the fixed rod passed through the slots of the teeth, substantially as described.

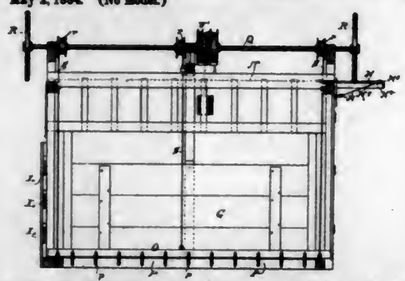
7. The combination of the frame, the vertical shaft, the cutter at its upper end, the miter-pinion at its lower end, the horizontal shaft, the loose pulley and ratchet-wheel thereon, the miter-pinion U, fixed on the horizontal shaft and meshing with the pinion of the vertical shaft, and the crank-wheel S, the pawl pivoted to the pinion U, the rod X, bearing under the pawl, the reciprocating frame having the yielding tines, the rock-shaft having the arms connected with the crank-wheel S and with the reciprocating frame, the bell-crank lever for moving the rod X out of the path of the pawl when the tines yield, the crank-shaft journaled in the discharge end of the frame, the feeding-teeth fulcrumed to the wrists of the cranks and operated thereby, the reciprocating straw-spreader in the bottom of the frame, the bell-crank lever M', for operating the straw-spreader, the driving crank-pulley, the rod connecting the crank-pulley with the free end of the bell-crank lever M', and gearing for connecting and operating the parts, substantially as described.

321,998. MANUFACTURE OF TURNED SHOES. THOMAS O'BOLAHER, Rochester, N. Y., assignor to himself and Jeremiah Phelan, same place. Filed Mar. 27, 1885. (No model.)



Claim.—An improvement in the process of manufacturing turned shoes, which consists in first lasting the parts wrong side out, stitching the forward portion of the upper to the sole, and then seaming the rear portion, together with an inturned portion of the heel-stiffener, to the sole by stitches or otherwise, then turning the shoe and securing the shank piece or stiffener to the sole, all substantially as set forth.

321,999. ANIMAL-STOCK. CLAWSON PARKER, Cowland, Kans. Filed May 2, 1884. (No model.)



Claim.—1. The combination, substantially as set forth, of the chute, the crate through which the animal's legs project, the weights that raise the crate to the animal's body, and the windlass for elevating the crate.

2. The combination, substantially as set forth, of the chute, the crate, the weights that raise the crate to the animal's body, the windlass for elevating the crate, and the brake for locking the windlass.

3. The combination, substantially as set forth, of the chute, the front bars, the normally-closed rear doors, and the cords for holding the doors open.

4. The combination, substantially as set forth, of the chute and the hinged bars arranged in the top of the chute, that rest on the animal's back.

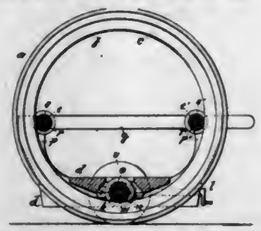
5. The combination, substantially as set forth, of the chute, the hinged sides, the uprights F, and the beams H, hinged to the uprights, that normally hold the sides closed.

322,000. GATE. JAMES F. PEEK, Carrollton, Ind., assignor of one-half to John W. Lucas, same place. Filed May 19, 1884. (No model.)



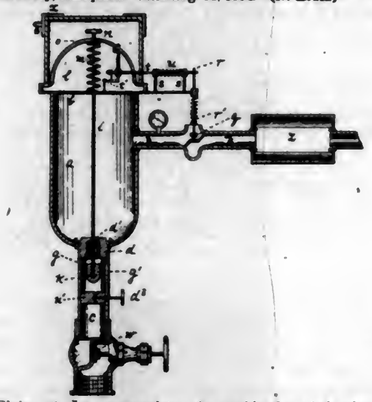
Claim.—The oppositely-opening gates A, having hinges provided with eyes or sockets C, the pintles or rods b', and pin b^2, in combination with the levers F, crank-arms G', and rods G, substantially as shown and described.

322,001. HARVESTER. JAMES A. PEEK, North Manchester, Ind., assignor of one-half to Charles F. Noftzger and John S. Andrews, same place. Filed Aug. 14, 1883. Renewed Dec. 19, 1884. (No model.)



Claim.—In a harvester, the combination of the frame *d*, the frame *i*, secured to said frame, the curved arms *p p'*, rising from the frame *i*, the bar *q*, connecting the upper ends of said arms, the friction-rollers *t t'*, journaled in the upper ends of said arms, the drive-wheel *a*, provided with the internal rounded flange, *c*, the shaft *k*, located centrally of the frame *i* and journaled beneath the same, the friction-roller *o*, fixed to said shaft and engaging with flange *c*, the beveled pinion *m*, also fixed to said shaft, the crank-shaft *l*, also journaled beneath the frame *i*, and provided with the bevel-pinion *n*, meshing with the pinion *m*, and having a crank for driving the cutter-bar, substantially as specified.

322,002. GAS-REGULATOR. CHARLES L. PHILLIPS and JAMES J. RICKETTS, Pittsburg, Pa.; said Ricketts assignor of one-third to John R. McGinley, same place. Filed Aug. 11, 1884. (No model.)



Claim.—1. In a gas-regulator, the combination of the chamber *a*, diaphragm *b*, having a spring or weight, the cylindrical valve-chamber *d*, having a seat at its inner end, and the cylindrical valve *g*, capable of fitting within the valve-chamber *d* and connected with the diaphragm *b*, substantially as and for the purpose specified.

2. In a gas-regulator, the combination of the chamber *a*, diaphragm *b*, valve *g*, and the needle d^2, arranged in a V-shaped port or passage *u'*, substantially as and for the purpose specified.

3. In a gas-regulator, the combination of the diaphragm *b*, spring cut-off valve *q*, and the connecting-rods *t* and *r*, and the lever *t'*, substantially as and for the purpose specified.

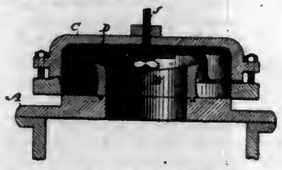
4. In a gas-regulator, the combination of the valve-chamber *d*, cylindrical in form and having a seat at its inner end, and the cylindrical valve-button *g*, substantially as and for the purpose specified.

322,003. ANTIPHONE. JOHANN M. PLESSNER, Stuttgart, Germany. Filed Dec. 2, 1884. (No model.) Patented in England Feb. 20, 1884 No. 3,657.



Claim.—In an antiphone or apparatus for excluding sound from the ear, the stoppers A A', with shanks *s s'*, each having balls *b b'* at the lower end and half-disk *d d'* at the upper end, substantially as and for the purpose set forth.

322,004. APPARATUS FOR CURLING AND SETTING SILK, FELT, AND OTHER HAT-BRIMS. HENRI POLAK and HENRY LOWE, Hyde, County of Chester, England. Filed July 11, 1884. (No model.) Patented in England Feb. 26, 1884, No. 3,938.



Claim.—1. In a hydraulic hat-brim press, a frame shaped to exactly correspond with the required curl and set of brim and supported upon a correspondingly-arched base-frame, in combination with an india-rubber bag having an internal surface of corresponding shape provided with a setting-plate conformed to said frame, and a brow adapted to fit within the band and preserve its size and shape, substantially as hereinbefore described, for simultaneously curling and setting hat-brims in the manner set forth.

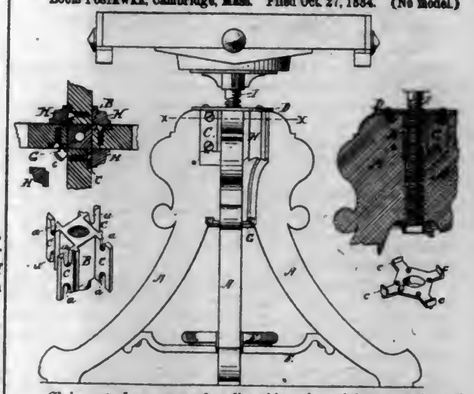
2. The improved india-rubber bag *c*, with its central portion *c'*, shaped internally to conform to the arch of the hat-brim, substantially as and for the purpose hereinbefore described.

3. The combination of the improved india-rubber bag *c*, having an internally-arched central portion, *c'*, the metallic setting-plate *d*, affixed to said arched portion of said bag, and the brow *e*, attached to said plate, substantially as and for the purpose hereinbefore described.

4. The combination of the improved india-rubber bag *c*, having an internally-arched central portion, *c'*, the metallic setting-plate *d*, affixed to said arched portion of said bag, the hollow brow *e*, attached to said plate, and the metallic plate *e'*, covering the opening of said brow, substantially as and for the purpose hereinbefore described.

5. The combination of the improved india-rubber bag *c*, having an internally-arched thick central portion, *c'*, the metallic setting-plate *d*, affixed to said arched portion of said bag, and the lifting-bolt *f*, having its hold in said thick central portion above said plate, substantially as and for the purpose hereinbefore described.

322,005. SUPPORT FOR ADJUSTABLE AND REVOLVING SEATS. LOUIS POSTAWKA, Cambridge, Mass. Filed Oct. 27, 1884. (No model.)



Claim.—1. In a support for adjustable and revolving seats, the combination of three or more legs secured at the top to a nut or socket by means of flanges projecting from its sides in planes parallel to the axis of the screw or pivot working in such nut or socket, and adjustable slotted braces E E', all constructed in the manner and for the purpose substantially as described.

2. In a support for an adjustable or revolving seat, the combination of three or more legs with a nut or socket having for each leg to be used a single flange projecting from the side of said nut or socket in a plane parallel to the axis of the screw or pivot working therein, and each of said flanges secured to its corresponding leg by fastenings passing through the flange and into the side of the leg, substantially as described and shown.

3. An adjustable brace for the legs of seat-supports made of two or more bars, each having a slot, *s*, across the middle point of its length, through which a belt or screw may be inserted for the purpose of securing the bars together after they have been fastened to the legs of such supports.

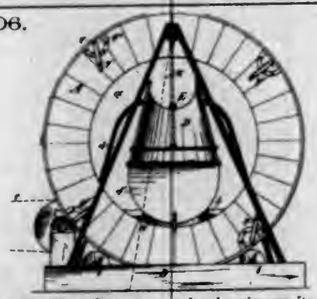
322,006. CONCRETE-MIXING MACHINE. ERNEST L. RANSOME, San Francisco, Cal. Filed May 15, 1885. (No model.)

Claim.—1. In a concrete-mixing machine, a hollow rotating drum having upon the inner surface of its periphery directing guides or flanges by which the materials are thrown together and mixed, substantially as herein described.

2. In a concrete-mixing machine, a rotating drum having upon the inner surface of its periphery a number or series of angular or approxi-



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mately V-shaped guides or flanges arranged or bent in opposite directions in pairs or sets, substantially as herein described.

3. In a concrete-mixing machine, the rotating drum A, provided on the inner surface of its periphery with the angular or V-shaped oppositely-arranged and sloping-sided flanges F, adapted to direct the materials to the center and to the sides of the drum, substantially as herein described.

4. In a concrete-mixing machine, a hollow rotating drum, in combination with hinged or swinging transverse lifting flanges or shelves on the inner surface of its periphery, adapted to be moved inwardly to a suitable angle to lift the material or to be turned back to let it slip by, substantially as herein described.

5. In a concrete-mixing machine, a hollow rotating drum, in combination with hinged or swinging transverse flanges or shelves upon the inner surface of its periphery and a mechanism on the exterior of the drum, connected with the swinging flanges within, whereby they are moved to a different plane, substantially as herein described.

6. In a concrete-mixing machine, the hollow rotating drum A, in combination with the sets or series of oppositely-arranged directing guides or flanges F and the series of swinging lifting flanges or shelves G, both flanges and shelves being upon the inner surface of the periphery of the drum, substantially as herein described.

7. In a concrete-mixing machine, a hollow rotating drum provided with suitable lifting devices upon its inner surface, in combination with a transverse inclined discharge chute or spout within the circumference of the drum, substantially as herein described.

8. In a concrete-mixing machine, a hollow rotating drum having on the inner surface of its periphery suitable lifting devices for elevating the material, in combination with a fixed or stationary inclined discharge chute or spout lying transversely within the circumference of the drum, substantially as herein described.

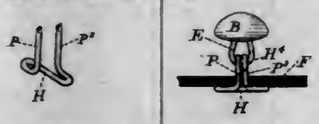
9. In a concrete-mixing machine, the hollow rotating drum A, having side apertures, *a*, forming heads, and provided on the inner surface of its periphery with suitable lifting devices, in combination with the transverse inclined chute or spout D, within the drum, and supported independently thereof, said spout being adapted to discharge through the side of the drum, substantially as herein described.

10. In a concrete-mixing machine, the combination of the rotating drum A, the inclined and transverse chute or spout D within the drum, and the swinging lifting flanges or shelves G on the inner surface of the periphery of the drum, operated from without, substantially as herein described.

11. In a concrete-mixing machine, the combination of the rotating drum A, the oscillating or movable lifting flanges or shelves G, the oppositely-arranged angular or V-shaped directing-flanges F upon the inner surface of the periphery of the drum, and the transverse inclined chute or spout D within the drum, substantially as herein described.

12. In a concrete-mixing machine, the combination of the drum A, having suitable lifting and directing flanges upon the inner surface of its periphery, as described, the transverse inclined chute or spout D within the drum, and the perforated water-pipe E, secured to the under surface of the spout, substantially as herein described.

322,007. BUTTON-FASTENER. FRANCIS H. RICHARDS, Springfield, Mass., assignor to the American Button Fastener Company, New Britain, Conn. Filed Oct. 22, 1884. (No model.)



Claim.—1. An improved article of manufacture, consisting of a button-fastener blank formed from a single piece of plain wire bent to form a head having two comparatively short side bearings, and a central longer bearing, as shown and described, and two upright prongs, arising from said side bearings, all substantially as set forth.

2. The improved button-fastening herein described, consisting of the combination, with a perforated fabric or material, and with a button having a shank or eye, of a button-fastener formed from a single piece of plain wire bent to form a head having two comparatively short side bearings and a central longer bearing, as shown and described, and two upright prongs arising from said side bearings, passing through said fabric or material and terminating in hooks passing through said shank or eye, all substantially as set forth.

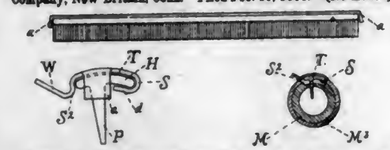
322,008. BUTTON-FASTENER. FRANCIS H. RICHARDS, Springfield Mass., assignor to the American Button Fastener Company, New Britain Conn. Filed Dec. 11, 1884. (No model.)



Claim.—1. As an improved article of manufacture, the button-fastener herein described, consisting of a single piece of wire bent to form a head and prong, said head having short part C, and the longer part B parallel thereto, said prong being connected to said short part by a bend underneath said longer part, substantially as set forth.

2. As an improved article of manufacture, the button-fastener herein described, consisting of a single piece of wire bent to form a head and prong, said head having the short part C, and the longer part B parallel thereto, said prong being connected to said short part by a bend, 3, underneath said longer part, and said longer part having an upward bend over said bend 3, substantially as set forth.

322,009. PACKING-CASE FOR BUTTON-FASTENERS. FRANCIS H. RICHARDS, Springfield, Mass., assignor to the American Button Fastener Company, New Britain, Conn. Filed Feb. 19, 1885. (No model.)

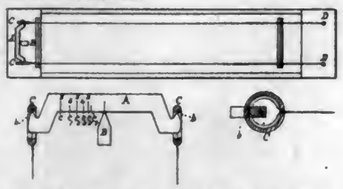


Claim.—1. The improved button-fastener packing-case herein described, comprising a top portion, T, a clasp, *d*, formed to close over one end of the fastener-head, and hook S^2, formed to close against but not over said head, substantially as described.

2. The improved button-fastener packing-case herein described, comprising the top portion, T, clasp *d*, and hook S^2, formed as specified, and lips *a*, extending from the end of the case and adapted to be turned up over the end of said case, substantially as described.

3. The improved button-fastener packing-case herein described, comprising the top portion, T, clasp *d*, and hook S^2, both formed as specified, and wing W extending from said wing S^2, substantially as described.

322,010. SONOMETER. EDWARD S. RITCHIE, Boston, Mass. Filed Mar. 14, 1884. (No model.)



Claim.—1. In a sonometer, a lever for sustaining the tension of the strings, provided with grooves for a fulcrum at intervals such that the different grooves produce such proportionate tension on the two strings that they shall in vibration sound in chords according to the groove in which the fulcrum is placed, substantially as described.

2. The combination, in a sonometer, of a lever for sustaining the tension of the strings, provided with grooves for the fulcrum at such specified intervals as will produce the different musical chords, and grooved rings attached to the strings and resting against the knife-edges of said lever, substantially as described.

322,011. MANUFACTURE OF CHROMIC ACID. WILLIAM A. ROWELL, Jesmond Gardens, Newcastle-upon-Tyne, England. Filed Oct. 24, 1884. (No specimens.)

Claim.—1. The manufacture of chromic acid or trioxide of chromium by producing, in a solution of a chromate, a precipitate of chromate of strontium and afterward decomposing the chromate of strontium with sulphuric acid, substantially as described.

2. The manufacture of chromic acid or trioxide of chromium by producing, in a solution of a chromate, a precipitate of chromate of strontium, then completing the precipitation of the chromate solution by means of barium, afterward decomposing this chromate of barium with excess of sulphuric acid, and finally applying the same acid to decompose chromate of strontium, substantially as described.

3. The manufacture of chromic acid or trioxide of chromium by producing, in a solution of a chromate, a precipitate of chromate of barium, and then treating the said precipitate methodically with successive quantities of sulphuric acid in such manner as on the one hand to liberate the whole of the chromic acid, and on the other to remove the whole of the sulphuric acid from the solution, substantially as described.

4. In the manufacture of chromic acid or trioxide of chromium, separating sulphuric acid from chromic acid by precipitating the former acid by means of chromate of strontium, substantially as described.

322,012. SAFETY-BRIDLE. OTTO SCHRADER, Alameda, Cal. Filed Sept. 21, 1883. (No model.)



Claim.—The combination, with the blinders of a bridle, of the draw-cords and the elastic draw-straps having attachments with the bit and with the drive-rein, substantially as herein described.

322,013. SHEET-MUSIC. WALTER SHAW, Boston, Mass. Filed May 9, 1884. (No model.)

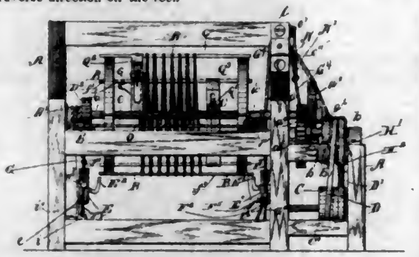


Claim.—1. The herein-described sheet-music publication, consisting of two or more detached unfolded sheets, each sheet being paged alternately—that is to say, with two succeeding odd-page numbers or two succeeding even-page numbers, as the case may be—and having the consecutive portions of the music to be performed printed upon the consecutively-numbered sides of the said sheets, all substantially as herein set forth, and for the purposes herein specified.

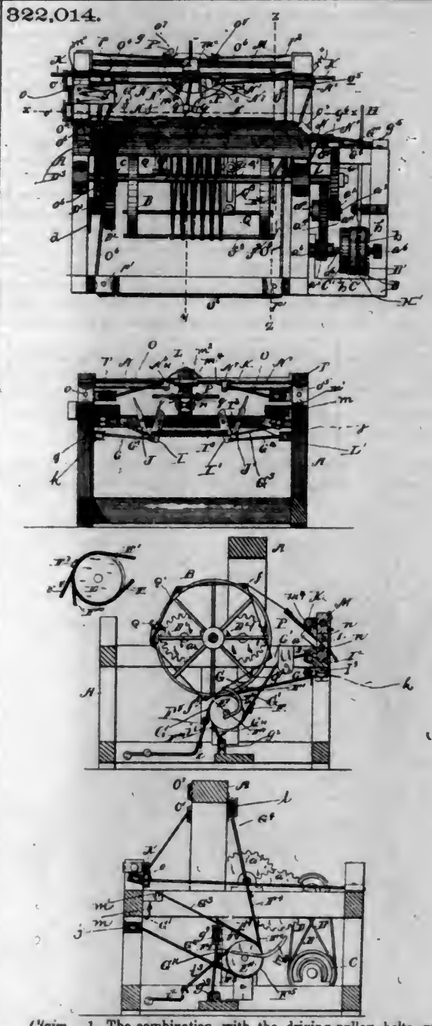
2. The herein-described improved sheet-music publication, consisting of an outside inclosing folio-sheet, A C, and one or more interior detached sheets, B, the musical composition commencing upon the left-hand interior page, A, of the folio-sheet, and the subsequent sheets, including the right-hand inner side, C, of the folio-sheet being paged alternately—that is to say, with two succeeding odd numbers or two succeeding even numbers, as the case may be—and having the consecutive portions of the music to be performed printed upon the consecutively-numbered sides of the said sheets, all substantially as and for the purposes hereinbefore set forth.

322,014. WARPING-MACHINE. OWEN SHEEHAN, New Bedford, Mass. Filed Dec. 29, 1883. (Model.)

Brief.—By means of cords or lines made fast at one end to pulleys below the reel, said pulleys having cam-arms in the path of a projection on the reel, and at the other to a belt-shipper and hammer bars or levers, the direction of rotation of the reel is reversed at the proper time, as is also the travel of the yarn-guide, whereby the yarn is laid in a reverse direction on the reel.



322,014.



Claim.—1. The combination, with the driving-pulley, belts, gearing mechanism, and belt-shipper, of the reel having end projecting arms, the pulleys having the arms or projections, and levers connected to said pulleys, the lines connecting said pulleys to the belt-shipper, of the cords or lines of the sliding check-rod, substantially as and for the purpose set forth.

2. The combination, with the reel having projecting end arms and its shaft, gearing driving the latter and gearing driven thereby, and windlasses or drums affixed to said latter gearing, of the guide-carriage, the guide connected to arms of the latter, the line connecting the guide-carriage to the windlasses, the pulleys, the hammer bars or levers, the lines connecting the said hammer bars or levers to said pulleys, and the levers disposed in the line of travel of the carriage and connected to said pulleys, substantially as and for the purpose set forth.

3. The combination, with the reel having peripheral hooks and projecting end arms and its shaft, the gearing driving said shaft and the gearing driven thereby with driving-belts, windlasses or drums affixed to the latter gearing and the belt-shipper, of the horizontally and vertically movable guide-carriage, the guide connected to arms of the latter, the lines connecting the carriage to the windlasses, the pulleys, the lines connecting the latter to the belt-shipper, the hammer bars or levers, the lines connecting said hammer bars or levers to said pulleys, the guide-arresting levers, and the lines connecting said levers to said pulleys, substantially as and for the purpose set forth.

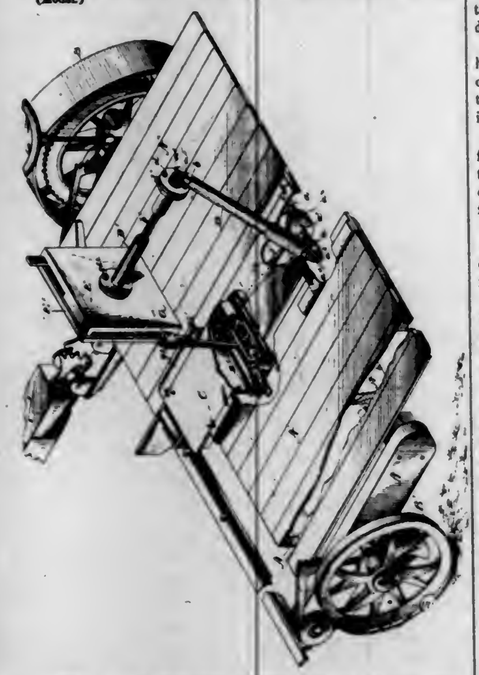
4. The combination, with the reel having peripheral hooks and projecting end arms and its shaft, the gearing driven by said shaft with driving-belts, windlasses or drums affixed to the latter gearing and the belt-shipper, of the guide-carriage, the guide connected to arms of said

carriage, the lines connecting the said carriage to the windlasses, the pulleys, the lines connecting the pulleys to the belt-shipper, the pivoted hammer bars or levers, the lines connecting said hammer bars or levers to said pulleys, the guide-carriage arresting-levers, the lines connecting said levers to said pulleys, the check-rod, and the lines connecting the latter to the belt-shipper lines, substantially as and for the purpose set forth.

5. The combination, with the reel having peripheral hooks and projecting end arms and its shaft, the gearing driving said shaft, the gearing driven by said shaft, with driving belts and windlasses or drums affixed to the latter gearing, of the guide-carriage, the guide connected to arms of said carriage, the line connecting said carriage to the windlasses, the pulleys, the springs, the lines connecting said springs to said pulleys, the lines connecting said pulleys to the belt-shipper, the spring for connecting the hammer bars or levers, the lines connecting said bars or levers to said pulleys, the guide-carriage arresting-levers, the lines connecting said levers to said pulleys, the check-rod, and the lines connecting said latter rod to the belt-shipper lines, substantially as and for the purpose set forth.

6. The combination, with the reel having peripheral oppositely-projecting hooks secured to the slotted plates or bars attached to the reel, of the guide pivotally connected to arms of the guide-carriage, the hammer bars or levers, and the lines connecting said bars or levers to the pulleys, substantially as shown, and for the purpose set forth.

322,015. GRAIN-BINDER. SYLVANDER C. SHEPARD, Akron, Ohio, assignor of one-half to Lewis Miller, same place. Filed Aug. 23, 1883. (Model.)



Claim.—1. The binder-table, in combination with the grain-receiving and bundle-carrying platforms arranged upon opposite sides of and in the same horizontal plane with said table, and the needle moving in a rectangular path for taking the grain from the inner end of the grain-receiving platform and delivering it bound upon the bundle-carrying platform.

2. The grain-receiving and bundle-carrying platforms located on opposite sides of and in combination with an interposed adjustable binder-table arranged in the same horizontal plane with said platforms, the rectangular moving needle, and the reciprocating knotting mechanism adjustable fore and aft with said table for binding the grain thereon.

3. The binder-arm or needle and its carrying-arm, in combination with and sliding upon the slotted reciprocating yoke or plate, and the crank actuating said yoke and needle-carrying arm, substantially as described.

4. The needle or binder arm, in combination with mechanism for imparting a movement in a rectangular path to said needle, and a case inclosing said mechanism secured to and upheld by the sleeve in which the needle-actuating shaft has its bearings, substantially as described.

5. The frame or case inclosing the mechanism for moving the needle in a rectangular path, in combination with a supporting-sleeve and sleeve-standard, in which the shafts for actuating said needle-moving mechanism have their bearings, substantially as described.

6. The reciprocating knotter-carriage moving in right lines in a path underneath the binder-table, in combination with a non-rotating knotter-head rigidly secured thereto and provided with the fixed and movable jaws, and the revolving looper for carrying the ends of the band around the knotter-head, substantially as described.

7. The combination, with the non-rotating knotter-head, of the rotating looper, the head having a fixed relation to the reciprocating carriage, and provided with the fixed and movable jaws for grasping the band between the looper and the bundle, substantially as described.

8. The fixed or non-rotating knotter-head attached to a reciprocating carriage and provided with the fixed and movable jaws, in combination with the revolving looper for carrying the ends of the band around said head and forming the loop thereon, and the barbed sliding rod for grasping the ends of the band and drawing the same through the loop, substantially as described.

9. The combination, with the reciprocating carriage, of the fixed knotter-head provided with the fixed and movable jaws, the revolving looper, the band-holder, and the band-cutter attached to and moving with said carriage, substantially as described.

10. The non-rotating knotter-head rigidly attached to the reciprocating carriage and provided with the fixed and movable jaws, in combination with the revolving looper, the barbed sliding rod operating through said head, and means, substantially as described, for vibrating said barbed rod during the outward movement only of the carriage, for causing it to grasp the ends of the cord and draw them through the loop, substantially as described.

11. The combination, with the reciprocating non-rotating knotter-head, of the fixed and movable jaws for grasping and holding the ends of the band in close proximity to the bundle, the traveling looper, and the barbed curved sliding rod for seizing the ends of the band and drawing the same through the loop, substantially as described.

12. The combination, with the reciprocating knotter-carriage, of the fixed or non-rotating knotter-head provided with the jaws for holding the band, and the barbed curved sliding rod and the rotating loop arm or hook for carrying the ends of the band around the knotter-hook and forming the loop thereon.

13. The combination, with the knotter-carriage, of the fixed knotter-head provided with the jaws for holding the band, and the barbed curved sliding rod, the rotating looper, the band-holder, and the knife for severing the band material, substantially as described.

14. The combination, in a grain-binder, of a needle and mechanism for moving the same in a rectangular path at right angles to the surface of the binder-table, a reciprocating knotter-carriage, and a non-rotating knotter-head having a fixed relation to said carriage, and provided with the fixed and movable jaws, substantially as described.

15. The combination, in a grain-binder, of a needle moving in a rectangular path at right angles to the surface of the binder-table, a reciprocating non-rotating knotter-head, and a looper arm or jaw revolving around said knotter-head, substantially as described, and for the purpose specified.

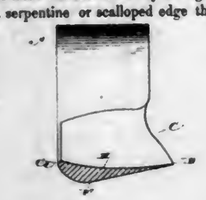
16. The combination, in the grain-binder, of the needle and mechanism for moving the same in a rectangular path, the reciprocating knotter-carriage provided with the stationary knotter-head, and having the band-holding jaws and the barbed vibrating curved sliding rod, the rotating looper-arm, the cord-holder, and the cord-cutter, all substantially as and for the purpose set forth.

322,016. VARNISH. HENRY T. SMITH, Cooke County, Tex. Filed May 27, 1884. (No specimens.)

Claim.—The herein-described composition of matter to be used as a water-proof varnish, consisting of copal varnish, coach varnish, Japan varnish, alcohol, boiled linseed oil, nitric acid, gum-shellac, antimonial wine, aqua-ammonia, English rosin, and oil of turpentine, in the proportions specified.

322,017. KNIFE FOR CUTTING DISH-BLANKS. SETH H. SMITH, Delta, Ohio, assignor of six hundred and five one-thousandths to Jacob M. Longnecker and Henry S. Hull, same place. Filed May 4, 1885. (Model.)

Claim.—1. A rotating or oscillating curved knife adapted for cutting dishes or plates from wooden blocks by a single pass of the knife, said knife having a serpentine or scalloped edge throughout its cutting



322,017



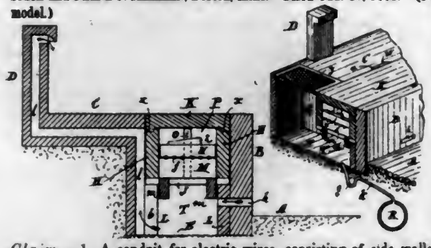
length, the central portion of the same being curved inwardly, substantially as described.

2. A rotating or oscillating curved knife that is beveled or rounded on its outer side from near its rear edge to the cutting-edge, and concaved or hollowed on its inner side from the cutting-edge to the rear edge, substantially as described.

3. A rotating or oscillating curved knife adapted for cutting dishes or plates from wooden blocks by a single pass of the knife, said knife having the cutting-edge curved outwardly near its ends, and curved or indented inwardly at the center, the knife being, further, beveled or rounded on its outer side from near the rear edge to the cutting-edge, and concaved or hollowed on the inner side from the cutting-edge to the rear edge, substantially as described.

4. A rotating or oscillating curved knife adapted for cutting dishes or plates from wooden blocks by a single pass of the knife, said knife having its cutting-edge formed on curved or indented lines, whereby a portion or portions of the cutting-edge will operate in advance of the inwardly curved or indented portions thereof, for the purpose set forth, substantially as described.

322,018. CONDUIT FOR UNDERGROUND WIRES. WARREN D'B. SMITH and FRANK J. MILLIKEN, Boston, Mass. Filed Jan. 17, 1885. (No model.)



Claim.—1. A conduit for electric wires, consisting of side walls, transverse bars at suitable intervals supported on said walls, longitudinal flanges connected to said bars, longitudinal side pieces above said walls and resting thereon, wire-holding devices supported on said bars between said side pieces, and a cover supported by said side pieces, substantially as described.

2. A conduit for electric wires, consisting of side walls, transverse bars at suitable intervals supported on said walls, longitudinal flanges connected to said bars, longitudinal side pieces above said walls and resting thereon, wire-holding devices supported on said bars between said side pieces, means for detachably securing said wire-holding devices to said transverse bars, and a cover supported by said side pieces, substantially as described.

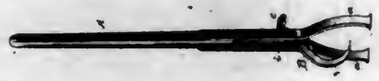
3. A conduit for electric wires, consisting of side walls, transverse bars at suitable intervals supported on said walls, longitudinal flanges connected to said bars, longitudinal side pieces above said walls and resting thereon, wire-holding devices supported on said bars between said side pieces, a cover supported by said side pieces, and means for locking said cover thereon, substantially as described.

4. A conduit for electric wires, consisting of side walls, transverse bars at suitable intervals supported on said walls, longitudinal flanges connected to said bars, longitudinal side pieces above said walls and resting thereon, wire-holding devices supported on said bars between said side pieces, means for detachably securing said wire-holding devices to said transverse bars, a cover supported by said side pieces, and means for locking said cover thereon, substantially as described.

5. The combination of an underground conduit, cross-bars J, supported therein, the wire-holding blocks M N, supported on said bars, the L-shaped arms O, secured to said bars and extending upward therefrom, and the wedges *z*, interposed between said arms and said wire-holding blocks, substantially as described.

6. The improved conduit for telegraph, telephone, and electric-light wires herein described, the same consisting of the conduit proper, H J K *m*, walls L, curbstone B, flues *l h b*, pipe D, and man-hole G, constructed, combined, and arranged to operate substantially as described.

322,019. GRAPPLE. GEORGE H. SPENCER, Chicago, Ill. Filed Dec. 15, 1884. (No model.)



Claim.—1. A grapple consisting of a shank having terminal prongs and a dog hung to the shank and curved at the end, substantially as set forth.

2. The combination of the shank having terminal prongs and a bearing, *i*, and a dog hooked and hung to the shank and arranged to swing back against the bearing, substantially as specified.

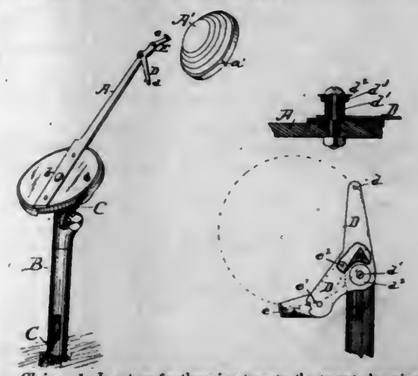
3. The combination, with a shank having terminal prongs, of a dog hung to the shank and hooked at the opposite ends, substantially as set forth.

4. The combination of the shank and dog hung thereto, having a hook, *b*, at one end and divided hook or claw, *c*, at the opposite end, substantially as described.

5. The shank consisting of a handle and metallic straps prolonged to form prongs *a a*, in combination with a dog hung to the shank and provided with hooked ends, substantially as specified.

6. The grapple consisting of a shank having prongs at one end, with terminal projections *s*, and a dog hung to the shank, substantially as described.

322,020. TRAP FOR THROWING TARGETS. CHARLES F. STOCK, Peoria, Ill.; N. Grier Moore, administrator of said Charles F. Stock, deceased, assignor, by mesne assignments, to the Peoria Target Company, same place. Filed Oct. 13, 1884. (No model.)

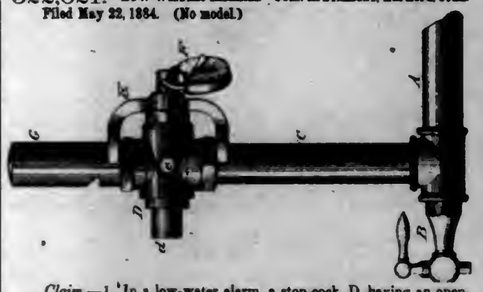


Claim.—1. In a trap for throwing targets, the target-clamping device herein shown and described, pivoted at or near the end of the throwing-arm of a trap, in combination with a double or two faced cam formed on the end of said arm, and a depending projection or pin on the clamping device, which bears against the cam during the swing of the clamping device, releasing the same by its escape from the cam, and thereby allowing the target to escape, substantially as set forth.

2. In a trap for throwing targets, the clamping device shown, consisting of the arm D, pivoted near the end of the throwing-arm of the trap, having pin *d* on one end, and the arm E, provided with pin *e* and roller e^3, pivoted at *d'* to the arm D, substantially as specified.

3. In a trap for sending targets, the clamping device consisting of the arm D, pivotally secured at or near the end of the throwing-arm of the trap, provided at one end with the engaging pin *d*, and at the other end with the pivoted arm E, having a target-engaging pin, *e*, in combination with the frictional washer d^3, secured by the pin or pivot *d'* to the arm A, whereby, with the pins *d* and *e*, the targets are held in place, substantially as specified.

322,021. LOW-WATER ALARM. JOHN A. STRAIGHT, Hartford, Conn. Filed May 22, 1884. (No model.)



Claim.—1. In a low-water alarm, a stop-cock, D, having an opening, *e*, and a fusible plug, *f*, constructed substantially as shown and described.

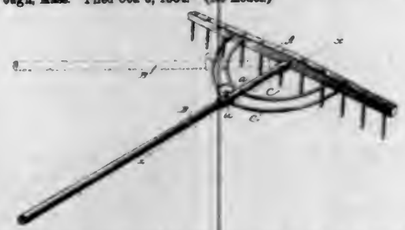
2. In a low-water alarm, the stop-cock D, constructed substantially as shown and described, and fusible plug *f*, in combination with the pipe C, as and for the purpose specified.

3. In a low-water alarm, the stop-cock D, constructed substantially as shown and described, and fusible plug *f*, in combination with the whistle G, as set forth, and for the purpose specified.

4. In a low-water alarm, the stop-cock D, constructed substantially as shown and described, and fusible plug *f*, in combination with the whistle G, and the pipe C, as set forth.

5. In a low-water alarm, the combination and arrangement of the hasp E, lock F, and the accompanying devices, substantially as shown and described, and for the purpose set forth.

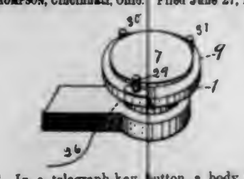
322,022. RAKE. MARION F. THAYER and JOHN S. SMITH, Westborough, Mass. Filed Oct. 8, 1884. (No model.)



Claim.—1. In a rake of the class described, the head A, the handle B, pivoted thereto, and the braces C C, serving as guides and supports, substantially as described.

2. In a rake of the class described, the head A, the handle B, pivoted by eyebolts to each other, the guide-braces C C, and the set-screw, substantially as described.

322,023. AUTOMATIC CIRCUIT-CLOSER FOR TELEGRAPH-KEYS. HOMER P. THOMPSON, Cincinnati, Ohio. Filed June 27, 1884. (No model.)



Claim.—1. In a telegraph-key button, a body fixed to the key-lever and having a recess within which a circuit-closing top is guided and an interposed spring which supports the said top is secured and incased, in combination with the said spring and top, the top being in communication with one end of the line and the body with the other, and the two having suitable intervening apparatus for breaking and closing the circuit.

2. The combination, with the lever of a telegraph-key, of a button-body, 1, suitably attached thereto, of a central conductor, 22, terminating in a cross projection, of a loop, 17, embracing the projection 22 and attached to the cap 7 and communicating with the cap-supporting spring 4, of the cap 7, intervening conductor 10, and the said spring, and of the conductors 19 and 26, whereby a circuit through the line and the said parts may be broken and closed within the button.

3. The button top or cap 7, adapted to the recessed button-body and having a metallic device, 10, attached thereto, and provided with projections 12 and 13 for holding the cap in place, and the projection 14, extending across the groove 5 and vibrating within the hole 18 in the button-wall.

4. The combination, with the recessed button-body 1, having a groove, 5, and side openings, 18 and 23, and slot 32, of the cap 7 and piece 10, having a projection, 14, adapted to vibrate and be locked within the opening 18, of a plug, 24, and screw 25 for closing the gap 23, and of the wedge-ended slide 28, having a stud, 29, and sliding in the groove 5 and adapted to press down the projection 14, and consequently the cap 7 and the loop 17, and hence maintain a broken circuit.

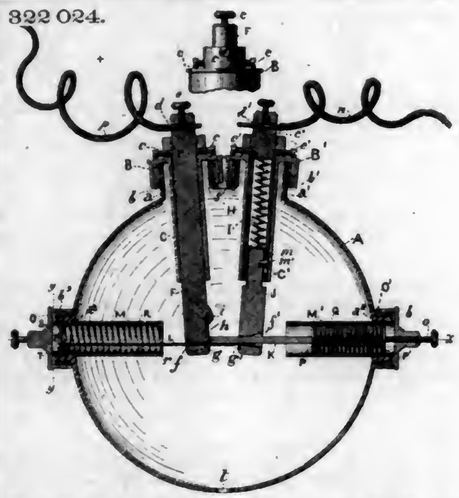
5. The combination, with the recessed body 1, of projections for protecting the cap 7.

322,024. INCANDESCENT ELECTRIC LAMP. JEAN VAN GESTEL and CHARLES F. BECK, Paris, France; said Beck assignor to said Van Gestel, and said Van Gestel assignor of one-third to Thomas S. Harrison, Philadelphia, Pa. Filed Nov. 24, 1884. (No model.) Patented in France Nov. 6, 1884, No. 152,605.

Claim.—1. In an electric lamp operating by the contact of a piece of kaolin or equivalent material with a piece of carbon heated by the passage of the current, the combination of a carbon-holder, a kaolin-holder, both constructed of metal, and a pressing device arranged to constantly maintain the end of the carbon against the metal of the kaolin holder.

2. In an electric lamp operating by the contact of a piece of kaolin or equivalent material with a piece of carbon heated by the passage of

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the current, the combination, with said carbon and said kaolin, of a pressing device, arranged to constantly press the kaolin longitudinally in a plane parallel to that of the carbon's surface.

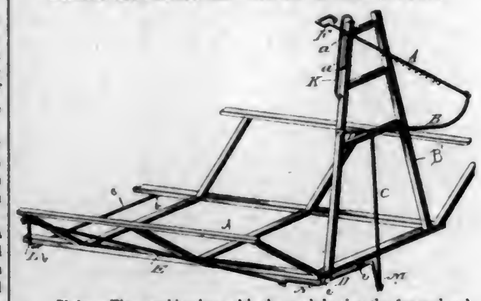
3. In an electric lamp operating by the contact of a piece of kaolin or equivalent material with a piece of carbon heated by the passage of the current, the combination, with said carbon and said kaolin, of a pressing device arranged to constantly press the kaolin laterally in a direction transverse to the plane of the carbon.

4. The holder F, having an opening, *f*, near its lower end to receive the carbon strip, and provided with set-screws, whereby it may be adjusted vertically.

5. The combination of the hollow cylinder H, inclosed spring I, and solid cylinder J, whose upper end fits snugly in the cylinder H, and whose lower end is provided with a transverse opening to receive the kaolin strip.

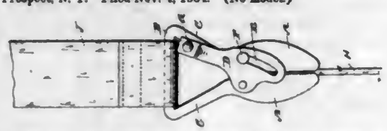
6. The combination of the tube M, the spring R, inclosed therein, and the cap S, attached to said spring, and provided with a swivel-door, T.

322,025. HAY-WAGON BRAKE. OLIVER C. WALKER and L. B. ALTAFFER, East Palestine, Ohio. Filed Mar. 18, 1885. (No model.)



Claim.—The combination, with the rack having the forward end, B', and the crank-shafts c D, connected by the rod E, of the rod C, pivoted to the crank-shaft D, a rod pivoted to the front end of the rack and pivotally connected with rod C, the toothed bar A, pivoted to rod B, a guide, K, and plates *a a'*, substantially as set forth.

322,026. CLASP. CHARLES F. WALTERS and WILLIAM J. WALTERS, Prospect, N. Y. Filed Nov. 4, 1884. (No model.)

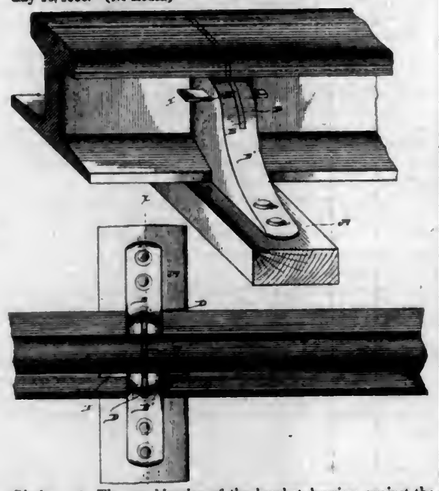


Claim.—1. In a clasp, the combination, with two united jaws, substantially as described, the edges of which face each other, of a latch-lever for moving the jaws toward or from each other, substantially as herein shown and described.

2. In a clasp, the combination, with two united jaws the edges of which face each other, of a latch pivoted on one jaw and provided with a slot, and of a pin projecting from the other through the slot, substantially as herein shown and described.

3. In a clasp, the combination, with two jaws, A, stems C, and cross-piece B, made integral, of the latch-lever D, pivoted on one jaw and provided with a curved slot, and of a pin projecting from the other jaw into the slot, substantially as herein shown and described.

322,027. RAIL-JOINT. JAMES S. WARREN, Burlingame, Kans. Filed May 16, 1885. (No model.)



Claim.—1. The combination of the bracket bearing against the meeting ends of the rails on opposite sides thereof, and the plate E, secured in slots in the upper ends of the brackets and bearing between the ends of the rails, the brackets being bolted or otherwise secured to the cross-tie, substantially as described.

2. The combination of the brackets B and B', bolted or otherwise secured to the cross-tie and bearing against opposite sides of the meeting ends of the rails, the opposing faces of said brackets being cut away and adapted to fit over the bases of the rails and against the shanks thereof, and having central vertical slots, D, in their upper ends, and the plate E, secured to one of the brackets by a bolt or pin, F, a slot, G, made in the opposite end of the plate, a slot, H, in the opposite bracket registering with the slot G, and a wedge-shaped key, I, passing through the slots H and G, substantially as described.

322,028. WATER-WHEEL. JOHN W. WESSON, Attalla, Ala. Filed Apr. 30, 1885. (No model.)

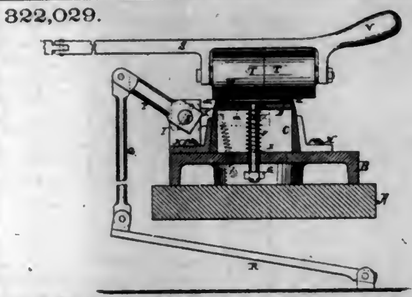


Claim.—A water-wheel having buckets provided with inclined straight faces *a*, said buckets or blades being thickened near their lower ends at the point *b*, and narrowed or reduced to their lower ends at the point *c*, whereby the water ways or passages between the buckets or blades are widened at the upper side of the wheel, and narrowed near the lower side thereof, the blades presenting flared openings below the point *b*, substantially as described.

322,029. MACHINE FOR CUTTING WRAPPERS OR BINDERS FOR CIGARS AND CIGARETTES. JOHN R. WILLIAMS, Newark, N. J. Filed Nov. 12, 1884. (No model.)

Claim.—1. A machine for cutting wrappers for cigars or cigarettes, consisting, essentially, of a stationary die, C, having the outline of a wrapper, a vertically-yielding platen, D, located within the walls of said stationary die, a clamping-frame fitting within the upper edges of the die and adapted to hold the wrapper against the platen and die, suitable devices for depressing the platen and frame and cutting the wrapper and means, substantially as described, for raising said frame, all combined and arranged substantially as set forth.

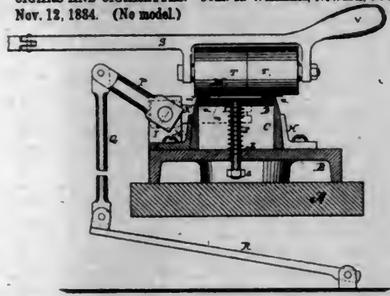
322,029.



2. In a machine for cutting wrappers for cigars or cigarettes, the combination, with a suitable base and a die, C, rigidly secured thereto, the latter having the outline of a wrapper, of a vertically-adjustable platen, D, located within the walls of the die, a clamping-frame movably held against the platen, suitable devices for depressing said platen and frame for cutting the wrapper, and means, substantially as described, for raising said frame, substantially as set forth.

3. A machine for cutting cigar-wrappers, consisting of the stationary die C, the yielding platen D, located within the die, a clamping-frame held against the platen and connected to the rock-shaft J, a foot-treadle for operating the rock-shaft to move the said frame, springs F, and means for depressing said platen and frame and cutting the wrapper, all combined and arranged substantially as set forth.

322,030. MACHINE FOR CUTTING WRAPPERS OR BINDERS FOR CIGARS AND CIGARETTES. JOHN R. WILLIAMS, Newark, N. J. Filed Nov. 12, 1884. (No model.)

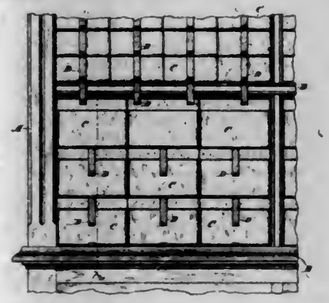


Claim.—1. An apparatus for cutting wrappers or binders for cigars or cigarettes, consisting of the die C, yielding platen D, clamping-frame M, and means for depressing the frame and platen between the cutting-edges of the die, said platen and frame being oppositely magnetized, substantially as set forth.

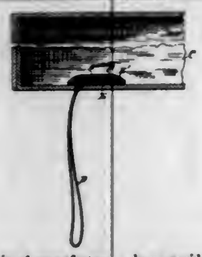
2. An apparatus for cutting wrappers or binders for cigars and cigarettes, consisting of a magnetic clamp for holding the leaf, a die in the outline of a wrapper or binder, and means for pressing the leaf while held by the clamp against the edges of the die and cutting it, substantially as set forth.

322,031. BOX-PULLING ATTACHMENT. HOWARD WIXOM and GEORGE MENARD, Chicago, Ill. Filed Aug. 11, 1884. (No model.)

Claim.—1. The combination, with a shelf-box, of the tape or cord D and plate E, attached to the bottom of the box and near one end thereof, whereby in using the same as a pull to remove said box from the shelf a longitudinal strain may be exerted from said bottom, substantially as described.



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2. As a new article of manufacture, a box provided with a tape or cord, D, and plate E, the latter being upon the bottom and within the box, and said tape protruding from beneath and being of sufficient length to extend beyond the edge of the box, substantially in the manner and for the purpose set forth.

322,032. JOURNAL-BOX. WILLIAM W. WORSWICK, Cleveland, Ohio. Filed June 5, 1885. (No model.)



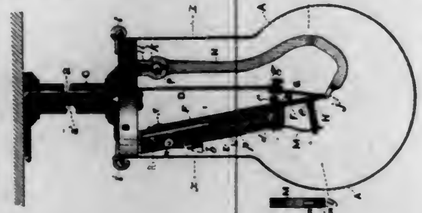
Claim.—1. The combination, with a journal-box having an end cam and an axle-journal, of loose anti-friction rollers surrounding said journal within said box, said rollers being of uniform diametrical size throughout their entire length, and having rounded ends, substantially as set forth.

2. The combination, with a journal-box, a journal, and anti-friction rollers surrounding said journal in said box, of an end plate fitted to said box, said plate provided on its inner face with a cam, the maximum swell of which is at the bottom of said plate, said cam controlling the position of said rollers when they are at the bottom of the journal-box, substantially as set forth.

3. The combination, with a journal-box, an axle-journal, and anti-friction rollers surrounding said journal, of an end plate on each end of said box, said plates each provided with a cam on its inner face, substantially as set forth.

4. The combination, with a journal-box having an end cam, of an axle surrounded by anti-friction rollers, said rollers adapted to have an end bearing upon said cam, substantially as set forth.

322,033. ELECTRIC LIGHT. CHARLES F. BECK, Paris, France, assignor to Thomas S. Harrison, Philadelphia, Pa. Filed Sept. 10, 1884. (No model.)



Claim.—1. In an incandescent electric lamp, the combination of a permanent electrode, a carbon electrode arranged to rest thereon, a plate of porcelain or other equivalent material arranged in contact with said electrodes, and means whereby, after the establishment of a current sufficient to develop the conducting-power of said plate by heat, the said carbon electrode is maintained in contact with said plate at a substantially constant distance from said permanent electrode, the whole operating in the manner set forth.

2. In an electric lamp operating by the incandescence of a piece of porcelain or equivalent material, the combination of a holder for said piece, a permanent electrode, a carbon-holder, and a pressure device for said holder against said piece at a substantially constant distance from said permanent electrode, the whole operating substantially as set forth.

3. The combination of the swinging arm N, the holder D, having a clamping device at its lower end, the inclined strip L, having a way or groove on its edge for retaining the carbon, the adjustable finger H, and suitable devices for pressing said finger laterally against the carbon and depressing the carbon longitudinally, substantially as and for the purposes set forth.

322,034. DECORATING WALL-PAPER. FREDERICK BECK, New York, N. Y. Filed May 9, 1885. (No specimens.)

Claim.—1. The described improvement in the manufacture of paper, consisting in admixing with the pulp finely-divided mica, talc, glass, sand, or like body, substantially as and for the purposes set forth.

2. As a new manufacture, paper composed of pulp having admixed therewith finely-divided mineral bodies which have a glittering or lustrous appearance, whereby a glistening appearance is given to the surface of the paper, substantially as and for the purposes set forth.

3. As a new manufacture, paper composed of two or more sheets of paper united to each other, one of which sheets has mineral bodies incorporated therewith and embedded therein, substantially as and for the purposes set forth.

4. As a new manufacture, paper composed of a colored pulp having incorporated therein colored or stained and finely-divided metallic or mineral bodies, substantially as and for the purposes set forth.

5. The described process of manufacturing paper, consisting in first preparing the paper-pulp as usual in such manufacture, then admixing therewith finely-divided mineral bodies having a lustrous appearance, and then forming the mass thus produced into sheets, substantially as specified.

6. The described process of manufacturing paper, consisting in first preparing the paper-pulp as usual in such manufacture, then dyeing the pulp, then admixing therewith finely-divided and colored or dyed metallic or mineral bodies, and then forming the same into sheets, substantially as specified.

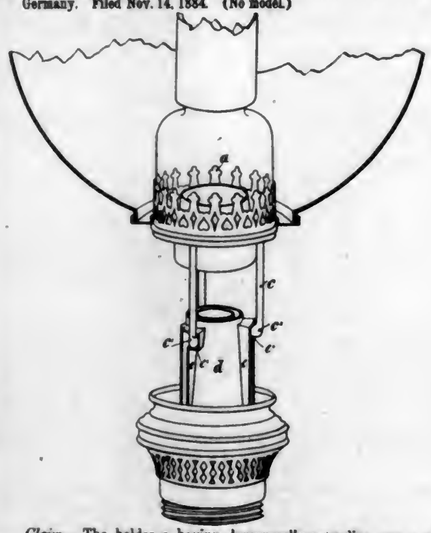
7. The described improvement in the manufacture of paper, consisting in the employment of finely-divided metallic and mineral bodies as a "filler," so called, in the place of clays, terra-alba, wood pulp, &c., as now employed.

8. As a new manufacture, paper composed of pulp having admixed therewith finely-divided metallic bodies, the said paper, after being formed in sheets, having the surface thereof coated with a protecting material, whereby the atmosphere is prevented from coming in contact therewith.

9. As a new manufacture, paper composed of pulp admixed with metallic particles which have been treated with acids, heat, or other suitable agent, whereby they acquire a permanent fixed color, substantially as and for the purposes set forth.

10. The described process of manufacturing papers, consisting in first preparing the paper-pulp, then admixing therewith finely-divided mineral or metallic bodies, then pressing the paper into sheets, then varnishing or otherwise protecting the surface of the sheet from contact with the atmosphere, substantially as set forth.

322,035. LAMP-BURNER. WILHELM BERTRAM, Lauban, Silesia, Germany. Filed Nov. 14, 1884. (No model.)

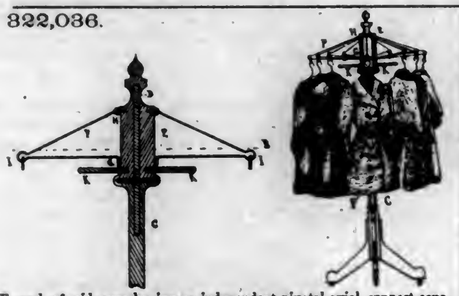


Claim.—The holder *a*, having downwardly-extending arm *c*, provided with the inwardly-projecting end *c'*, in combination with the wick-tube *d*, having the grooves *e*, provided with a lateral recess, *e'*, substantially as described, and for the purpose set forth.

322,036. GARMENT-HANGING STAND. JULIUS BLACK, Toledo, Ohio. Filed Dec. 29, 1884. (No model.)

Claim.—1. The combination, in a garment-hanging stand, of the central supporting-post, C, pivotal head E, and bracing trestles or arms

322,036.



F, each of said arms having an independent pivotal axial support separate from and parallel to the axis of the pivoted head E, substantially as shown, and for the purpose described.

2. In a garment-hanging stand, the combination, with the central supporting-post, C, and pivotal head E, of the bracket-shaped bracing trestle or arms F, and having hanging mechanism I at or near its outer extremity, each of the said arms having an independent elongated axial support adjacent and parallel to the axis of the post C, substantially as shown, and for the purpose set forth.

3. In a garment-hanging stand having the supporting-post C, pivotal head E, and bracket-shaped bracing trestle or arms F, the handle or handles K, attached to the pivotal head E, substantially as shown, and for the purpose set forth.

322,037. DEVICE FOR HANGING DOORS. FRANCIS B. BOALT, Binghamton, N. Y. Filed June 6, 1885. (No model.)



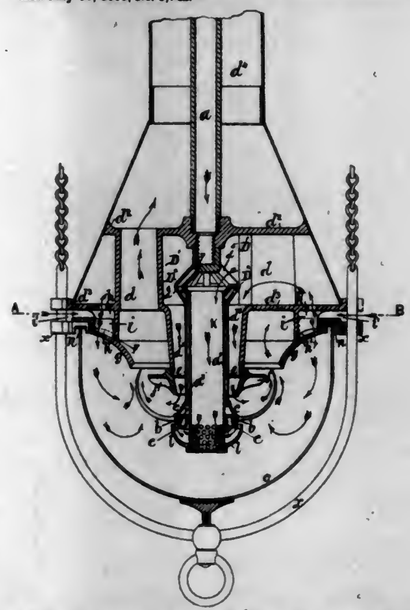
Claim.—1. In hanging doors, the combination of the casing having the chambers on the side of the doorway, and the horizontal rails above the same, the door adapted to slide into said chambers, and provided on its edge with the longitudinal dovetailed strip, the block provided with a longitudinal dovetailed groove fitting and movable on said strip, the inclined rods connected to the ends of the block by vertically-moving joints, and the rollers moving on the rails of the casing and having the outer ends of the inclined rods journaled in the shafts, substantially as specified.

2. In hanging doors, the combination of the door provided on its upper edge with a longitudinal dovetailed strip, the block provided with a dovetailed groove fitting on said strip, the inclined rods connected by a vertically-moving joint to the ends of the block and having their outer ends journaled in the shafts, and rollers adapted to move in horizontal ways on the casing, and the screw turning in bearings secured to the door and engaging a threaded opening in a bracket secured to the block, and thereby making the latter longitudinally adjustable on the door, substantially as specified.

3. In hanging doors, the combination, with the casing and ways secured thereto, of the door, the block made longitudinally adjustable thereon by means substantially as described, the inclined rods having their inner ends connected to the block by vertically-moving joints, and their outer ends journaled in the shafts of rollers traveling on the ways of the casing, and the guide-blocks for the inclined rods secured to the upper edge of the door, substantially as specified.

4. In hanging doors, the combination, with the casing provided with the rails E, and door F, provided with the dovetailed strip K, of the block J, inclined rods I, rollers G, turning on the shafts H, guide-blocks M, and screw L, turning in the bearing *l*, secured to the door, and engaging in a threaded opening in the bracket *l'*, secured to the block J, substantially as specified.

322,038. REGENERATIVE GAS-BURNER. ANTHONY S. BOWER, St. Neots, County of Huntingdon, and THOMAS THORP, Whitefield, County of Lancaster, England. Filed Feb. 6, 1884. (No model.) Patented in England July 31, 1883, No. 3,742.



Claim.—1. In a regenerative gas-burner, the combination of the air-pipe and gas-pipe, arranged the one within the other, with the burner, a regenerator or heating-chamber, D', which surrounds said pipes, a secondary regenerator or heating-chamber, *i*, which communicates with said chamber D', and an outlet-passage for the products of combustion, which consists of a part in contact with said secondary heating-chamber *i*, and of tubes *d* extending up through said heating-chamber D', substantially as set forth.

2. The air-supply pipe *k* and the surrounding gas-supply pipe *a'*, in combination with a burner at the lower ends of said pipes, and a drom to which the upper ends of said pipes are secured, and which is provided with a passage for the inlet of gas and an opening for the inlet of air, substantially as set forth.

3. A burner consisting of a perforated refractory ring held in place by two circular plates, *c*, one of which is screwed on the other, substantially as set forth.

4. A heating-chamber, D', having tubes *d* extending up through it for the passage of products of combustion, in combination with a gas-tube and an air-tube which pass down through said heating-chamber, a tube, *d'*, forming a downward extension of said chamber around pipe *a'*, and a supplemental heating-chamber, *i*, below said chamber D' and exterior to said tube *d'*, substantially as set forth.

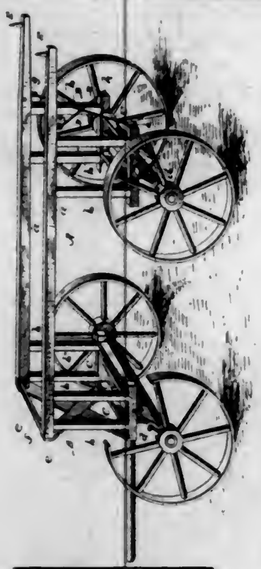
5. A heating-chamber or regenerator, *i*, provided with internal projections or plates, *h h'*, in combination with the burner whereby said chamber is heated, devices which supply air to said heating-chamber, and passages conducting the same from said chamber to said burner, substantially as set forth.

322,039. WAGON-FRAME FOR MOVING TOBACCO. LEWIS N. CASH, near Eddyville, Ky. Filed Feb. 12, 1885. (No model.)

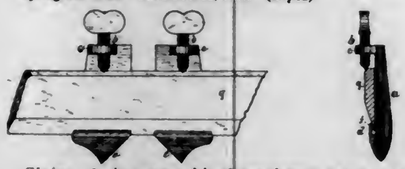
Claim.—1. The frame for removing tobacco, consisting of the longitudinal lateral rails, the front and rear upright frames supporting the said rails, and the detachable brace-rods connecting the rear portions of the said longitudinal rails with the lower portion of the supporting upright frame, substantially as specified.

2. The combination of the front and rear vertical frames, B B, adapted to engage the front and rear axles, the longitudinal rails *a a*, having an inclination or taper on their upper sides, as shown, and the stops E, substantially as and for the purposes specified.

322,039.



322,040. GAGE FOR DRAWING-KNIVES. PLINY F. CHANDLER, Springfield, Mass. Filed Feb. 11, 1884. (Model.)

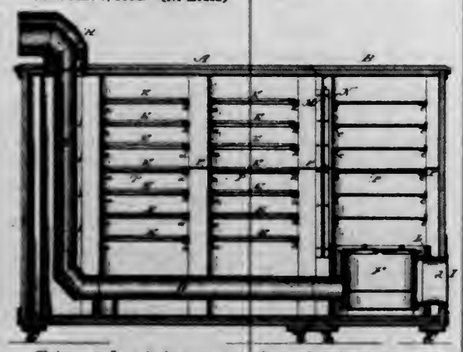


Claim.—1. As a new article of manufacture, a gage or guide for drawing-knives, consisting of a body portion, *a*, of sufficient width to give a good bearing-surface and of a length to extend across the blade, the same being provided with an edge-receiving groove, as shown, and having a part, *e*, which projects beyond the edge of the blade as a guide, and a set-screw at the opposite end to hold the device in place on the blade, substantially as shown.

2. A side gage for drawing-knife blades consisting of a body, *a*, having an offset or lip, *d*, forming an edge-receiving recess, *f*, between the body and the offset, and having a part, *e*, formed integral with the body portion and projecting beyond the edge-receiving recess, and a means to secure the body to the blade, substantially as shown.

3. A side gage for drawing-knives consisting of a body, *a*, adapted to be secured to the blade, and having a part, *e*, projecting beyond the cutting-edge of the blade to act as a stop, and a means (as a set-screw) to secure the whole in place, all in combination, substantially as shown.

322,041. DRYING APPARATUS. ABNER COLEMAN, Newark, N. J. Filed June 7, 1884. (No model.)



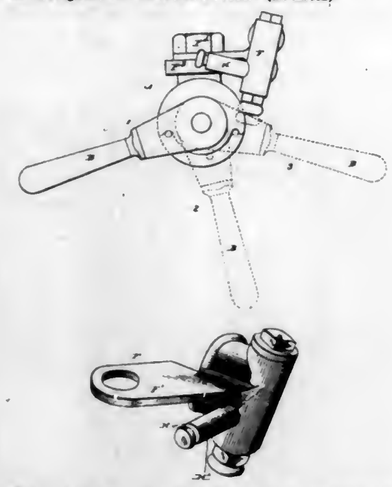
Claim.—1. In a drying apparatus, the combination of two sections, one of which forms the drying-chamber, and the other the furnace-room or oven, which is provided with double sliding plates, having transverse slats and openings in one of its sides, and a smoke-pipe extending from the stove into and along the drying-chamber and thence upward through an opening, and an elbow to create a suction-draft, said sections being provided with removable deflecting-plates, substantially as and for the purpose set forth.

2. A furnace-room or oven constructed with one open side, whereby it is adapted for attachment to a drying-chamber, said room or oven having a series of double sliding plates in the open side provided with a series of transverse slats and openings to control the escape of the heated air into the chamber, as and for the purpose specified.

3. A furnace-room or oven adapted for attachment to a drying-chamber and provided with a smoke and hot air-pipe communicating with the stove and with the interior of the room, at or near its top, to carry off the fumes in cooking, and a plate surrounding the stove to form an air-space, and one or more openings provided with valves for supplying air to the air-space, substantially as and for the purpose specified.

4. In a drying apparatus, the combination of two sections having their inner ends provided with removable doors and removably connected together to form, respectively, a drying-chamber and a furnace-room, said room having means for attaching suitable pipe for converting it into a furnace for baking and cooking purposes, and the drying-chamber having a series of cleats arranged in vertical rows for receiving drawers, and ice-box, and racks to form shelves when the section is in use as a safe, substantially as and for the purpose set forth.

322,042. AUTOMATIC AIR OR STEAM BRAKE. EDWARD J. COSGROVE, Augusta, Ga. Filed Jan. 26, 1885. (No model.)



Claim.—1. In an automatic or direct air or steam braking apparatus, the combination, with a supply-pipe and an engineer's valve for controlling the passage of air or steam to the same, of a regulator arranged in such manner and so constructed that the brakes of the tender and the remainder of the train may be applied independent of those of the locomotive, said brakes of the locomotive being applied by the same arm or lever which opens the valve to apply the brakes of the tender and train, and the brakes of said locomotive being adapted to be removed independent of those of the tender and train, substantially as set forth.

2. In an automatic or direct air or steam braking apparatus, the combination, with a supply-pipe and an engineer's valve for controlling the passage of air or steam to the same, of a regulator connected with said supply-pipe, and intermediate pipe-connections between said regulator and the locomotive brake-cylinders, said regulator being provided with a secondary or auxiliary valve, whereby the charge of air or steam in the locomotive brake-cylinders may be allowed to escape after the brakes have been removed, as set forth.

3. In an automatic or direct air or steam braking apparatus, the combination, with a supply-pipe and an engineer's valve for controlling the passage of air or steam to the same, and a lever for operating the engineer's valve, of a regulator connected with the supply-pipe and the locomotive brake-cylinders, and having a stem adapted to be operated by said arm or lever to establish communication between the supply-pipe and the locomotive brake-cylinders, substantially as set forth.

4. In an automatic or direct air or steam braking apparatus, the combination, with a supply-pipe, an engineer's valve for controlling the passage of air or steam to the same, and a regulator connected with said supply-pipe and the locomotive brake-cylinders, said regulator being provided with a stem adapted to

be operated by said lever, said regulator being provided with a valve for releasing the air or steam in the locomotive brake-cylinders, substantially as set forth.

5. In an automatic or direct air or steam braking apparatus, the combination, with a supply-pipe and an engineer's valve for controlling the passage of air or steam to the same, of a regulator having an inlet and outlet opening, said inlet-opening being connected with the supply-pipe and the outlet-opening with the locomotive brake-cylinders, and a valve-stem in said regulator adapted to cut off communication between the inlet and outlet pipes, substantially as set forth.

6. In an automatic or direct air or steam braking apparatus, the combination, with a supply-pipe, an engineer's valve for controlling the passage of air or steam to the same, and an arm for operating said valve, of a regulator having an inlet and outlet opening, said inlet-opening being connected with the supply-pipe and the outlet-opening with the locomotive brake-cylinders, and a valve-stem in said regulator adapted to cut off communication between the inlet and outlet pipes and be automatically held in place by the force of the air or steam in said inlet-pipe, and to be removed to establish communication between said pipes to apply the locomotive-driving-wheel brakes by the arm or lever for operating the valve A, substantially as set forth.

7. In an automatic or direct air or steam braking apparatus, the combination, with a supply-pipe and an engineer's valve for controlling the passage of air or steam to the same, of a regulator having an outwardly-extending wing by which it is attached to valve A, and connected with the supply-pipe and the pipe connecting the regulator with the locomotive brake-cylinders, substantially as set forth.

8. In an automatic or direct air or steam braking apparatus, the combination, with a supply-pipe and an engineer's valve for controlling the passage of air or steam to the same, of a regulator connected with the supply-pipe and the cylinders of the locomotive-brakes, said valve being divided into two compartments, a seat in said valve, and a valve-stem adapted to fit said seat, as set forth.

9. The combination, with the regulator F, having inlet and outlet openings, of a pipe connected to said regulator adjacent to the inlet-opening, said pipe having a conical seat, a stem having a conical head, and a spring on said stem, as set forth.

10. The combination, with the regulator F, having inlet and outlet openings, and a valve-stem adapted to close communication between the same, of a pipe communicating with said regulator near the inlet-opening, said pipe having a seat, a stem working in said pipe having a head and extended beyond the pipe, and a spiral spring on said stem, as set forth.

11. The combination, with the regulator F, of a secondary or supplemental valve consisting of a pipe having a seat near its inner end and an opening in its side wall, a stem having a head to fit said seat, the end of said stem extending beyond the pipe, and a spiral spring on said stem, said spring bearing against a shoulder on the inner side of the pipe at one end and against the headed outer end of the stem at its other end, substantially as set forth.

12. In an automatic or direct air or steam braking apparatus, the combination, with a supply-pipe, of an engineer's valve and a regulator for supplying air or steam to the locomotive brake-cylinders, said regulator being secured to the valve and adapted to be operated by the arm B of the same, as set forth.

13. In an automatic or direct air or steam braking apparatus, the combination, with a regulator for controlling the passage of air or steam to the locomotive brake-cylinders, of a valve having communication with said regulator for allowing the air or steam remaining in the brake-cylinders of the locomotive after the brakes have been removed to be released, substantially as set forth.

14. The combination, with the engineer's valve A, of the supply-pipes E^3 E^4, arranged as described, a regulator, F, communicating with the pipes E^3 E^4, and a valve communicating with the regulator for allowing the air or steam remaining in the locomotive brake-cylinders after the brakes have been removed to be released, substantially as set forth.

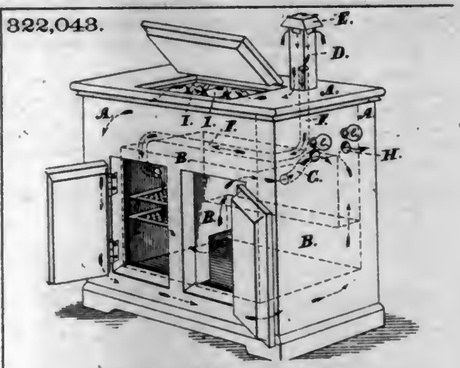
15. The combination, with the engineer's valve A, of the pipes E^3 E^4, a pipe connecting the main valve and pipe E^3, and pipes communicating with pipes E^3 E^4 and with the regulator F, substantially as set forth.

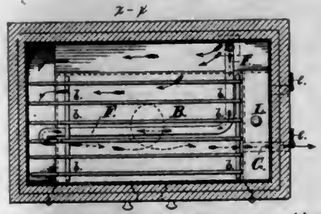
322,043. REFRIGERATOR. JOB A. DAVIS, New York, N. Y. Filed Mar. 14, 1885. (No model.)

Claim.—1. In a refrigerating structure, the combination, with the ice-chamber, of a pipe or conduit communicating directly from the external air to the ice in the ice-chamber, for ventilating said chamber, and for a pipe or conduit communicating with the external air and extending from the ice in the ice-chamber into the preserving-chamber, to supply the same with cold air which has not been brought in contact with the ice, substantially as described.

2. In a refrigerating structure, a cold-air pipe communicating with the external air by an air-injecting device, and extending into the ice-chamber and through it into the preserving-chamber, to supply the same

322,043.

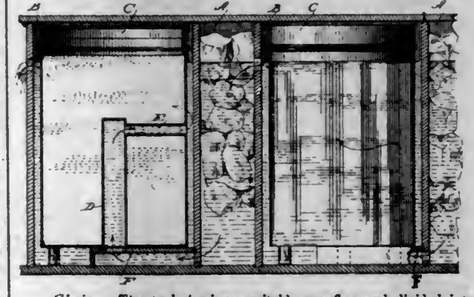




with cold air which has not been brought in contact with the ice, substantially as described.

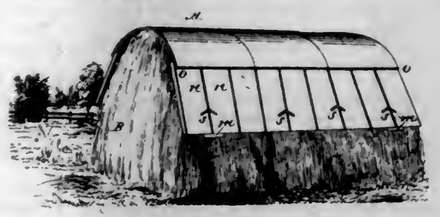
3. In a refrigerating structure, the combination, with the ice-chamber, of one or more pipes communicating with the external air, and extending through the ice-chamber from side to side under the ice and into the preserving-chamber, substantially as described.

322,044. MILK-COOLER. GEORGE B. DAWSON, O'Neill, Nebr. Filed July 31, 1884. (No model.)



Claim.—The tank having a suitable overflow and divided into compartments, each provided with a perforated channel-board, and having an ice-chamber between each compartment and connected therewith, as shown and described, in combination with milk-cans, one for each compartment, each provided with a vertical tube closed at the top and a lateral connecting-pipe, each can being so located in its compartment that the open end of the vertical tube is directly over the perforation in the top of the channel-board, substantially as described.

322,045. STACK-COVER. FRANK DEAN, Wahoo, Nebr. Filed Sept 13, 1884. (No model.)

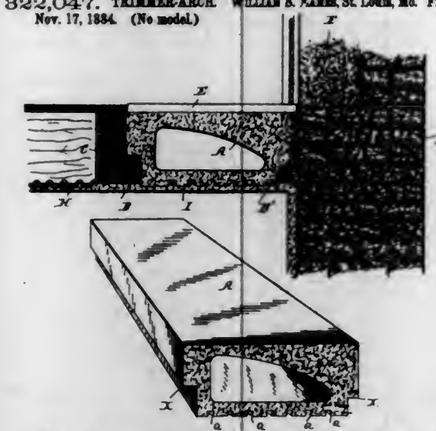


Claim.—In a stack-cover, the combination, with the cover proper, of hangers *n n*, secured thereto and arranged with spaces between them, and cleats *m m*, and pins *s s*, substantially as described.

322,046. METHOD OF PRODUCING PHOTO-MECHANICAL PRINTING-PLATES. LOUIS DE ROUX, Begles, near Bordeaux, France. Filed May 12, 1884. (No specimens.)

Claim.—The herein-described method of producing a photo-mechanical printing-plate which consists in forming a composition of mercury, lead, tin, dercet, and magnesia in or about the proportion specified, then impressing a plate bearing a photographic image in relief upon the surface of the composition while it is in a liquid and impressible state, substantially as described.

322,047. TRIMMER-ARCH. WILLIAM S. RAMEY, St. Louis, Mo. Filed Nov. 17, 1884. (No model.)



Claim.—In a trimmer-arch, the combination of one or more hollow sections, A, formed of fire-proof material, and having shoulders X X, the projecting header D, and the projection B', extending from the wall B, substantially as and for the purpose specified.

322,048. MANUFACTURE OF EYE-LINKS. ALBERT H. EMERY, Stamford, Conn. Filed Apr. 2, 1883. (No model.)



Claim.—1. The process of strengthening eye-bars and like tension members of bridges and other structures, which consists in compressing the body of the bar while cold, or nearly so, between dies formed as herein described, to confine the metal subjected to maximum pressure by the application of reduced pressure to the metal on either side of it, as explained.

2. The process of treating eye links or bars to increase their strength, which consists in compressing the eyes while in a cold state, or nearly so, between dies formed as herein described, preventing the flow of metal from the part subjected to maximum pressure by the application of reduced pressure to the adjacent parts.

3. The process of treating eye links or bars to increase their strength, which consists in compressing the eyes subsequently to forming them by the ordinary method, and when in a cold or moderately-heated state, between dies extending partly over the body of the link.

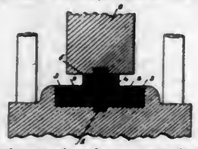
4. The process of treating eye links or bars to increase their strength and limit of elasticity, which consists in pressing the eye from the interior outward subsequently to forming it by the ordinary method, and while in a cold or moderately-heated state, so as to put the metal under an initial strain of compression on the interior and tension on the exterior.

5. The mode or process of increasing the strength and limit of elasticity of eye links or bars, and like members, which are required to endure tensional strains in bridges and other similar structures, the same consisting in stretching each separate link or bar permanently to a considerably-increased length, while in a cold or moderately-heated state, subsequently to forging.

6. The mode or process of increasing the strength and limit of elasticity of eye links and bars, and like members, which are required to endure tensional strains in bridges and other similar structures, the same consisting in stretching each separate link or bar and holding it for a considerable period under tension sufficient to impart a considerable permanent increase in length.

7. The process of manufacturing and treating eye links or bars, which consists in forging the bar and eyes in any customary or suitable manner, and after the same is completed for use, as ordinarily made, and when cold, or nearly so, compressing the links or bars or part thereof between dies or rolls, compressing the eyes from the interior outward, and stretching the links or bars beyond the limit of elasticity, so as to impart a permanent set with considerable increase of length.

322,049. METHOD OF MANUFACTURING GIRDERS. ALBERT H EMERY, Stamford, Conn. Filed Apr. 2, 1883. (No model.)



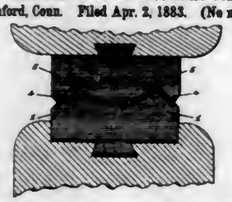
Claim.—1. The improved mode or process for increasing the rigidity and strength of a beam or girder designed to bear a transverse load, which consists in compressing the material between dies having receding faces, as described, while in a cold or moderately-heated state, so as to permanently coldense the same.

2. The improved mode or process for increasing the rigidity and strength of a beam or girder designed to bear a transverse load, which consists in bending it downward while in a cold or moderately-heated state to the shape it is to have in use, thereby putting a permanent set of tension on the lower part, which is to bear a strain of tension, and a permanent set of compression on the upper part, which will be subjected to compression when the beam or girder is loaded.

3. The improved mode or process for increasing the strength and rigidity of a beam or girder which is to bear a transverse load, the same consisting in compressing the material while in a cold or moderately-heated state, so as to permanently condense the same, and bending the structure downward to the shape it is to bear when loaded, so as to apply a permanent set of tension to the lower part and a permanent set of compression to the upper part, as explained.

4. The improved mode or process for increasing the strength of a beam or girder which is to bear a transverse load, which consists in forging or bending the same while in a heated state, or constructing it, if compound, with a permanent upward curvature, and subsequently, while cold or in a moderately-heated state, bending it downward, so as to apply a permanent set of tension to the lower part and a permanent set of compression to the upper part, substantially as and for the purposes set forth.

322,050. MANUFACTURE OF METALLIC COLUMNS. ALBERT H. EMERY, Stamford, Conn. Filed Apr. 2, 1883. (No model.)



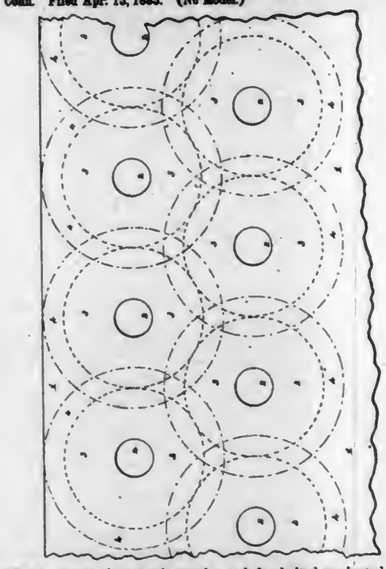
Claim.—1. The mode or process of increasing the strength and rigidity of a column, brace, or other compression member, which consists in compressing it longitudinally while in a cold or moderately-heated state with sufficient force and for a sufficient time to reduce its length and impart a considerable permanent set to the material.

2. The mode or process of increasing the strength and rigidity of a column, brace, or other compression member of a bridge or other structure, which consists in compressing it longitudinally in a cold or moderately-heated state, while stayed against flexure, with sufficient force and for a sufficient time to reduce its length and impart a considerable permanent set to the material.

3. The improved mode or process of increasing the strength and rigidity of columns, braces, or other compression members of bridges or other structures, which consists in condensing the metal by pressure while it is in a cold or moderately-heated state, and subsequently compressing the column longitudinally with sufficient force and for a sufficient period of time to impart a considerable permanent set, reducing its length without flexure.

4. The improvement in the mode or process of manufacturing compound columns, braces, or other compression members of bridges and other structures, which consists in compressing the separate parts or members thereof while in a cold or moderately-heated state, so as to condense the metal, assembling and connecting the parts in any customary or suitable manner, and subjecting the whole to a longitudinal strain, permanently compressing the structure in the direction of its length.

322,051. PLATE FOR BOILERS. ALBERT H. EMERY, Stamford, Conn. Filed Apr. 13, 1883. (No model.)



Claim.—1. A plate or plates of metal for bolted or riveted work, having a greater density, strength, or limit of elasticity in the metal in the parts through which bolts or rivets are passed or to be passed, the said increased density, strength, and limit of elasticity being produced by compressing the said parts of the plates while in a cold or moderately-heated state to a sufficient degree to impart a permanent set, as herein set forth.

2. A plate for the manufacture of boilers, ships, or bridges, or for other like purposes, compressed, while in a cold or moderately-heated state, around the bolt or rivet holes, or the places where such holes are to be made, to a sufficient distance to extend beyond the heads of the bolts or rivets.

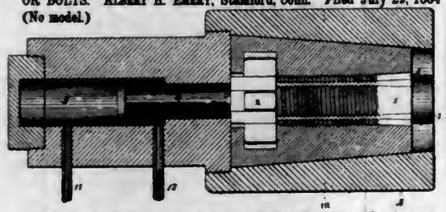
3. A plate for the manufacture of boilers, ships, or bridges, or for other like purposes, compressed, while in a cold or moderately-heated state, around the bolt or rivet holes to a sufficient radial distance to cause said compressed portions to overlap each other, or nearly so.

4. A plate for the manufacture of boilers, ships, or bridges, or for other like purposes, compressed, while in a cold or moderately-heated state, immediately around the parts where bolt or rivet holes are made or to be made, and to a less degree around such compressed portion, so as to arrest or prevent the radial or outward flow of metal in the act of compressing the parts immediately around the holes.

5. A plate or plates for the manufacture of boilers, ships, or bridges, or for like purposes, having punched or drilled holes, and with the metal compressed in a cold or moderately-heated state around the bolt or rivet holes to a sufficient extent to produce radial pressure against a punch, drill, bolt, or rivet therein contained, substantially as set forth.

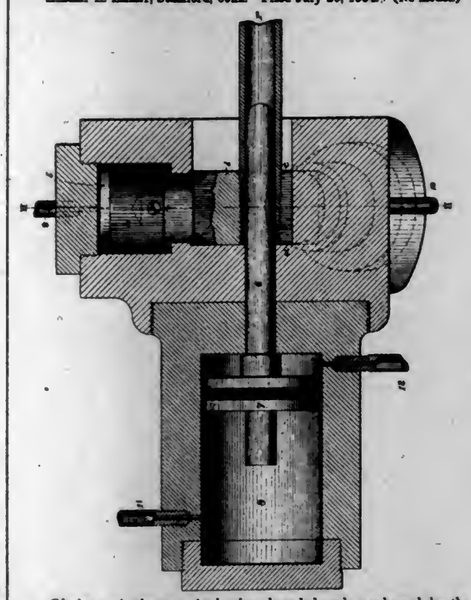
6. A boiler plate or plates connected by bolting or riveting and subsequently stretched, so as to impart a permanent set and greater rigidity and strength to the body.

322,052. CONSTRUCTION OF SCREW-THREADED LINKS, BARS, OR BOLTS. ALBERT H. EMERY, Stamford, Conn. Filed July 29, 1884. (No model.)



Claim.—The mode or process of increasing the strength of screw-rods, bars, or bolts, the same consisting in compressing the metal while cold, or nearly so, so as to condense it to a maximum extent throughout the length of the screw-thread and beyond this into the body of the bar or rod, and thence in a gradually-reduced degree to a point where the normal tensile strength is reached in the untreated portion or body of the bar or bolt.

322,053. CONSTRUCTION OF WROUGHT-METAL PIPES OR TUBES. ALBERT H. EMERY, Stamford, Conn. Filed July 29, 1884. (No model.)



Claim.—A pipe or tube having threaded ends condensed by the compression of the metal while in a cold or moderately heated state, the said condensation extending throughout and beyond the length of the threaded portion, and gradually decreasing to a point where the normal density and tensile strength of the metal in the untreated body or main portion of the pipe are reached.

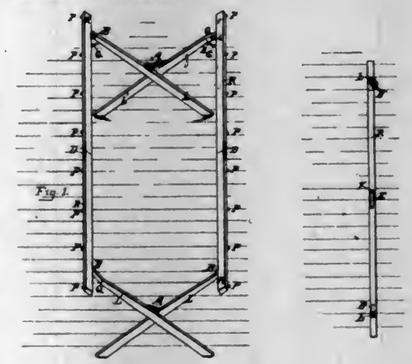
322,054. PEG-SUPPORTING DEVICE FOR BANJOS. ALBERT C. FAIRBANKS and WILLIAM A. COLE, Boston, Mass. Filed Oct. 13, 1884. (No model.)



Claim.—1. In a banjo or similar instrument, the combination of a peg, a standard, A, and a clamping device, substantially such as herein described, for clamping the peg to the standard with a regulated degree of friction, all substantially as and for the purposes herein set forth.

2. In a banjo or similar instrument, the combination, with the body or neck thereof, of the peg B, the washer *a*, secured against rotation thereon, the nut *c*, screw-threaded upon the peg and adapted to be held against rotation, and the standard A, all substantially as described, and for the purposes set forth.

322,055. COT-BED. ORVILLE C. FISK, San Bernardino, Cal. Filed Nov. 28, 1884. (No model.)

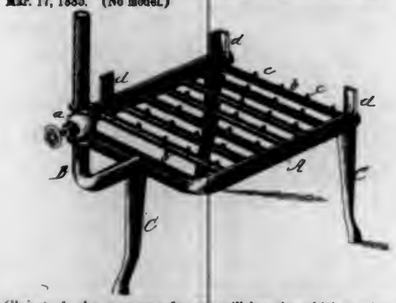


Claim.—1. The combination, in a cot-bed frame, of the bent legs L' L', straight legs L L, side rails, R R, and braces G, the legs being hinged to each other and to the rails, substantially as set forth.

2. In a cot-bed, side rails divided in the middle and having the hinge D and hasp E, whereby the rails are adapted to be folded upon themselves, and are also adapted to be made rigid when extended for use, substantially as set forth.

3. In a cot-bed, the combination, substantially as shown, of the legs L L', hinged together, as shown, the side rails, R, divided in the middle and provided with the hinges D, hasps E, studs F, and pegs P, the braces G, and the web *x*, with its eyelets S, the legs being hinged to the rails, substantially as set forth.

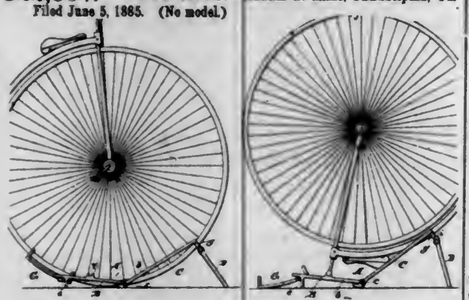
322,056. APPARATUS FOR CRYSTALLIZING TIN-PLATE. JOHN L. GUER, Chicago, Ill., assignor to Hermann Rendtorff, same place. Filed Mar. 17, 1885. (No model.)



Claim.—1. An apparatus for crystallizing tin, which consists of a suitable frame and an open-work bottom formed of pipes provided on their upper faces with suitable nipples, as set forth.

2. In a tin-crystallizing apparatus, U-shaped pipe A, cross-pipes *b*, nipples *c*, mounted on the latter, and suitable means for supplying water to the pipes, as set forth.

322,057. BICYCLE-STAND. HARRIE B. HART, Philadelphia, Pa. Filed June 5, 1885. (No model.)



Claim.—1. A bicycle-stand consisting of two approximately U-shaped frames hinged together for folding one upon the other, stops upon one of said frames adapted to engage with the other frame to limit the spread of the stand, and a bar pivoted to one of said frames and provided with notched ends, and a notch in the other of said frames in line with the notches in said bar, substantially as and for the purpose set forth.

2. A bicycle-stand consisting of two frames hinged together for folding one upon the other, and provided with notches for supporting a bicycle in either an upright or inverted position when the stand is unfolded, stops for limiting the spread of the stand, a bar pivoted to one of said frames and provided with notched ends, and a support hinged to the other of said frames, and shoulders upon said support to limit its outward movement, substantially as and for the purpose set forth.

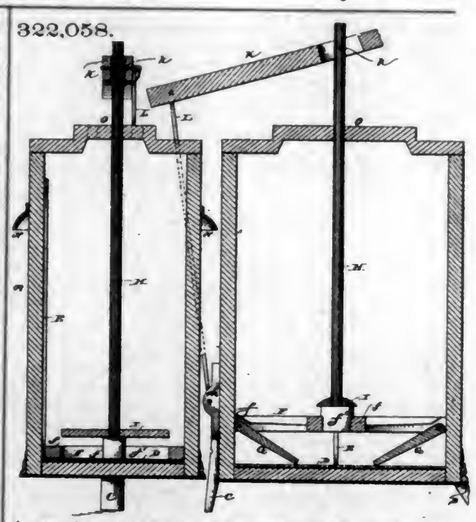
3. The combination, in a bicycle-stand, of the frames B C, hinged together, stops for limiting the spread of the frames, bar G, pivoted to the frame B and provided with notched ends, notched ears *p* and legs *e* upon the frame B, and a forked leg having shoulders and pivoted to a lip, *g*, upon the under side of the frame C, substantially as and for the purpose set forth.

322,058. CHURN. JOSEPH W. HILDRETH, Pattonsburg, Mo., assignor of one-half to N. G. Dillon, same place. Filed Mar. 24, 1885. (No model.)

Claim.—1. The dasher having the central opening, the wing above the central opening, and the downwardly-opening valves, substantially as described.

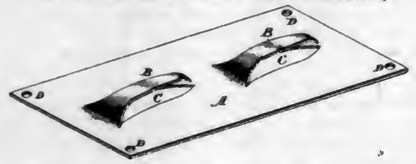
2. The churn-dasher consisting of the frame *f*, having the central opening, *f'*, the downwardly-opening valves G, hinged at their outer edges in the outer sides of the frame *f* for forcing the cream up through

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the central opening as the dasher descends, and the extended wing I, secured to the dasher-rod in the center of the opening *f'*, said wing extending over said opening above the frame for deflecting the cream as it rushes through the opening *f'*, the upper side of said wing being rounded, for the purpose set forth, substantially as described.

322,059. PLATE FOR SECURING TRACES TO BACK-BANDS. B. F. JONES, Beauregard, Miss. Filed Dec. 12, 1884. (No model.)



Claim.—The plate A, provided with openings C and integral hooks B, arranged one above the other, and holes D, all as described, and for the purpose set forth.

322,060. HEADING-MACHINE. EDMUND JORDAN, Brooklyn, N. Y., assignor, by mesne assignments, to Edwin Norton and Oliver W. Norton, Chicago, Ill. Filed Nov. 26, 1884. (No model.)

Brief.—The can bodies and heads being in separate chutes, a can-body is seized by the conveyer and lowered into position to be clamped by the reciprocating part-molds. When the molds have closed on the body, the heads are lifted into position by slides and are then struck by plungers, which force them onto the body. As the molds open the completed can drops out.

Claim.—1. In a can-heading machine, the combination, with two reciprocating part-molds, of a reciprocating device for conveying the can-body to a position between said part-molds and holding it there while said molds move forward to clamp the can-body, substantially as stantially as specified.

2. The combination, with two part-molds, of a reciprocating device for conveying the can-body to a position between said part-molds and holding it there until clamped thereby, substantially as specified.

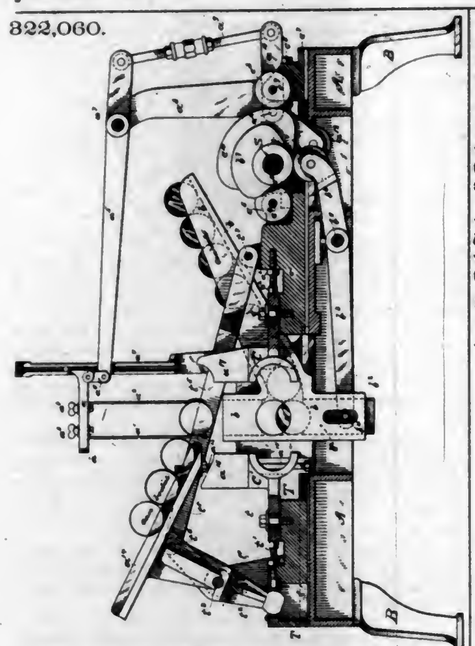
3. The combination, with two reciprocating part-molds provided with a rest or support for the can-body above them when closed, of a reciprocating conveyer provided with spring fingers or arms for holding the can body and suspending it between said part-molds when they open, substantially as specified.

4. The combination, with two reciprocating part-molds provided with a can-body rest or support when closed, a chute for delivering the can-bodies to said rest, and a reciprocating conveyer having spring-arms to grasp the can-body and suspend it between said part-molds, substantially as specified.

5. The combination, with a pair of part-molds, of a device for suspending the can-body between said part-molds as they close to clamp the can-body, said part-molds being provided with slots or openings to admit said can-body-suspending device, substantially as specified.

6. The combination, with a pair of molds for clamping the can-body, of a plunger-head and a slide to adjust the can-head opposite the mold, substantially as specified.

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7. The combination, with a pair of can-body-clamping molds, of a plunger-head, a reciprocating slide to move the can-head opposite the mold, and a chute for delivering the can-heads to said slide, substantially as specified.

8. The combination, with two reciprocating part-molds, C C', of slides *c'* and T, upon which said part-molds are mounted, pivoted lever l^2 and link l^3, connecting said slides, and a cam for operating them, substantially as specified.

9. The combination of reciprocating part-molds C C' with slides T and *c' c²*, cam c^{16}, and pivoted lever l^2 and link l^3, substantially as specified.

10. The combination, with a pair of molds for clamping the can-body, of a pair of plungers and plunger-heads and a pair of levers, b^{10}, and cams b^{12}, for operating said plungers, substantially as specified.

11. The combination, with a pair of can-body-clamping molds, of a chute for the can-heads, a slide for moving the can-head opposite said molds, and a lever and cam for operating said slide, substantially as specified.

12. The combination, with two part-molds, of a can-head chute, a slide to move the can-head opposite the mold, a lever and cam for operating said slide, a plunger and plunger-head, and a cam and lever for operating said plunger, substantially as specified.

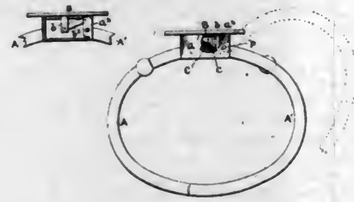
13. The combination, with two part-molds, of a reciprocating conveyer to convey to and hold the can-body between said molds and a cam and lever for reciprocating said conveyer, substantially as specified.

14. The combination, with two part-molds, of reciprocating conveyer *a*, provided with spring-fingers *a'* and a^2, said spring a^2 having a curved end, substantially as specified.

15. The combination, with two part-molds, of a reciprocating conveyer, *a*, having adjustable spring-fingers *a'* and a^2, substantially as specified.

16. In a can-heading machine, the two reciprocating part-molds C and C', provided with rests or supports a^{16} and a^{17} for the can-body when said part-molds are closed, substantially as specified.

322,061. BRACELET. HUGO LIEBEL, North Attleborough, Mass. Filed May 22, 1885. (No model.)

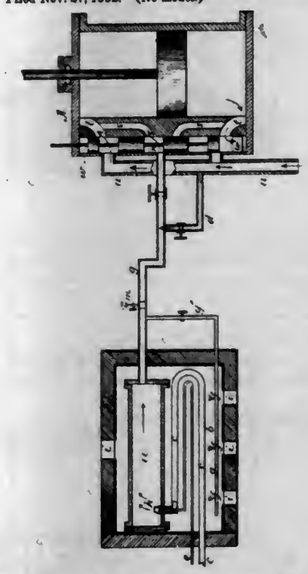


Claim.—1. The combination, with the hinged wings A A' and the movable head member B, arranged, as described, to be slid under the action of the wings when they are opened, substantially as and for the purposes described.

2. The combination of the hinged wings A A', one of which is provided with a lip or lever, a^2, the movable head-member B, furnished with a lug, *b*, which is acted upon by the said lever to slide the head when the wings are opened, as described, and a spring, C, for closing the wings and returning the head member to its normal position, substantially as set forth.

3. The combination of the hinged wings A A', one of which is provided with a lip or lever, a^2, the sliding head member B, having a lug, *b*, feathered to the other wing, as described, the spring C, for closing the wings and returning the head member to its normal position, and the tube *c*, surrounding said spring, substantially as set forth.

322,062. COMBINED FUEL-CONVERTER AND GAS-ENGINE. L. H. NASH, Brooklyn, assignor to the National Meter Company, New York, N. Y. Filed Nov. 27, 1882. (No model.)



Claim.—1. The combination, with a gas-engine, of a gas-generator consisting of an air-tight reducing-chamber having oil and steam supply-pipe connections heated within an inclosing-chamber, and having a direct communication with the valve system of the engine, whereby the gas is produced, decarbonized, and supplied direct from the producing and mixing chamber under pressure sufficient to enter the engine-cylinder, substantially as described, for the purpose specified.

2. In combination with the valve system of a gas-engine, a gas-generator consisting of a heated air-tight chamber, into which oil is introduced under pressure with steam, and means for introducing air under compression into said mixing-chamber or its gas-discharging connection, substantially as described, for the purpose specified.

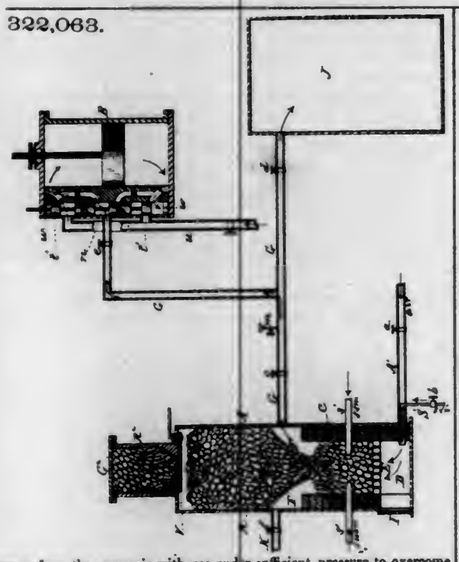
3. In combination with the valve system of a gas-engine, a gas-generator consisting of an air-tight cylinder, *a*, suitable pipes for supplying hydrocarbon oil and air under pressure with steam to said cylinder, an inclosing heating-chamber for said cylinder, and means, substantially such as described, for heating said air-tight gas producing and mixing cylinder and its oil-supplying pipe.

4. The combination, with the valve system of a gas-engine, of a gas-generator therefor, consisting of a heated reducing-cylinder, *a*, having pipe-connections with the working-cylinder, a pipe for introducing hydrocarbon oil under pressure into said cylinder, a steam-jet to spray the oil therein, a chamber inclosing said generator, and gas-burners placed within said inclosing-chamber supplied from the producer and heating the oil before its introduction into the generator, substantially as described.

322,063. COMBINED GAS-PRODUCER AND GAS-ENGINE. L. H. NASH, Brooklyn, assignor to the National Meter Company, New York, N. Y. Filed Dec. 5, 1882. (No model.)

Claim.—1. The combination, with the valves of a gas-engine, of a gas-generator having a combustion-chamber and pipes for supplying air and steam thereto under pressure, the reservoir J, the pipe G, and the cocks *a b c d e*, whereby the engine may be supplied from the genera-

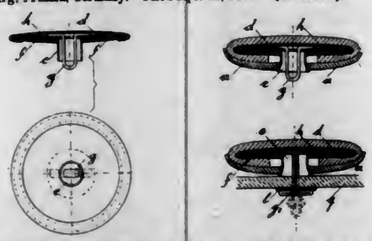
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tor or from the reservoir with gas under sufficient pressure to overcome the pressure in the working-cylinder, substantially as herein set forth,

2. The gas-generator for supplying a gas-engine, and herein described, having the pipes G, S', A', and K, provided with cocks *a b c d e f*, in combination with the reservoir J, into which said pipe G terminates and has communication with the inlet-valves of the engine, substantially as herein set forth.

322,064. BUTTON. F. LOUIS NIEDERMEYER, Schönebeck, near Magdeburg, Prussia, Germany. Filed Apr. 10, 1884. (No model.)



Claim.—1. In clothes-buttons, the combination of an upper part having two plates joined together so as to form a flat space between them, with an intermediate disk fitting into the said space, a dish-shaped lower part adapted to receive the upper part, and a staple or shank secured to the intermediate disk and projecting through a central opening in the lower part of the button, substantially as described.

2. In clothes-buttons, the combination of an upper part having two plates, *d* and *f*, joined together so as to form a flat space between them, with an intermediate disk, *h*, fitting between the plates *d* and *f*, a dish-shaped lower part, *a*, adapted to receive the upper part, a sleeve, *c*, connecting the center of the upper with the center of the lower part, and a shank or staple secured to the intermediate disk and projecting through a central opening in the lower part of the button, substantially as described.

322,065. SOLDERING-MACHINE. EDWIN NORTON, Chicago, Ill., assignor to himself and Oliver W. Norton, same place. Filed Feb. 27, 1885. (No model.)

Claim.—1. In a soldering-machine, the combination of an acid or flux bath with a track, E, inclined at a slight angle, substantially as shown, to adapt the cans to roll thereon, fixed guides E' and E², adapted to permit the cans to roll between them upon said track, and an endless chain or belt provided with can-pusher arms at intervals for rolling the cans upon said track, substantially as specified.



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2. The combination, with a solder bath, of a track, F, inclined at a slight angle, substantially as shown, to adapt the cans to roll thereon, fixed guides E' and E², adapted to permit the cans to roll between them upon said track, and an endless chain or belt provided with can-pusher arms for rolling the cans upon said track, substantially as specified.

3. The combination of an inclined track and a solder bath with an endless chain or belt provided with can-pusher arms at intervals slightly in excess of the diameter of the cans operated upon, substantially as shown, and a chute for delivering the cans thereto, whereby the cans are automatically fed to the machine one by one, substantially as specified.

4. The combination of an inclined track and a solder bath with an endless chain or belt provided with can-pusher arms at intervals slightly in excess of the diameter of the cans operated upon, substantially as shown, wheels upon which said endless chain or belt is carried, and a curved supply-chute whereby the cans are automatically fed to the machine one by one, substantially as specified.

5. The combination of a solder bath and a track inclined at a slight angle, to adapt the cans to roll thereon, with an endless chain or belt provided with can-pusher arms, and a guide or way for supporting said chain or belt, substantially as specified.

6. The combination of a solder bath and an inclined track with an endless chain or belt provided with can-pusher arms, and a vertically-adjustable guide or way for supporting said chain or belt, substantially as specified.

7. The combination of solder bath C with track E, endless chain or belt D, provided with arms *d*, and grooved guide D², provided with slot *d*², substantially as specified.

8. The combination of solder bath C with track E, endless chain D, provided with arms *d*, and adjustable slotted grooved guide D², substantially as specified.

9. The combination of a track with an endless chain or belt, D, provided with can-pusher arms *d*, and a slotted guide or support for said chain or belt, substantially as specified.

322,066. SUSPENSION DEVICE FOR MOSQUITO-CANOPIES. ISAAC E. PALMER, Middletown, Conn. Filed Feb. 19, 1884. (No model.)



Claim.—1. The combination, with a mosquito-canopy, and a frame for holding the same extended, and a fabric rosette, E, placed outside the top thereof, of a suspension hook or device, D, having at its inner end flexible prongs *a*, on which the canopy and rosette are impaled and secured by the clinched ends of the prongs, substantially as herein described.

2. The combination, with a mosquito canopy and frame, the canopy having a central opening, of a suspension hook or device having a shank, a^3, extending through said opening, and outwardly and upwardly extending prongs *a* at its inner or lower end, which are inserted through the canopy and clinched above the canopy, substantially as herein described.

3. The combination, with a mosquito canopy and frame and a fabric rosette, the canopy and rosette having central openings, of a hook or suspension device having a shank, a^3, extending through the openings in the rosette and canopy, and having outwardly and upwardly extending prongs at the inner end inserted through the canopy and rosette and clinched above the rosette, substantially as herein described.

4. The combination, with a mosquito-canopy having a central opening and a frame, and a washer also having a similar opening, of a suspension hook or device having a shank, a^3, extending through the opening in said canopy and washer, and having at its inner end outwardly and upwardly extending prongs on which said washer rests, and which are inserted through the canopy outside the washer and clinched above the canopy, substantially as herein described.

5. The combination, with a mosquito canopy and frame, a fabric rosette, E, and a washer, *b*, all having central openings, of a suspension hook or device having a shank, a^3, extending through said openings, and at the inner end prongs *a* on which the said washer rests, and which are inserted through the canopy and rosette outside the washer and clinched above the rosette, substantially as herein described.

6. The suspension-hook D for a mosquito-canopy, consisting of wires doubled, twisted together, and bent to form the beak *a'* and shank a^3 of the hook, and the end portions of which form outwardly-extending prongs *a*, substantially as herein described.

322,067. RAILWAY-SWITCH. JOHN T. RICHARDSON, Harrisburg, assignor of one-half to Alexander H. Ege, Mechanicsburg, Pa. Filed June 12, 1884. (No model.)

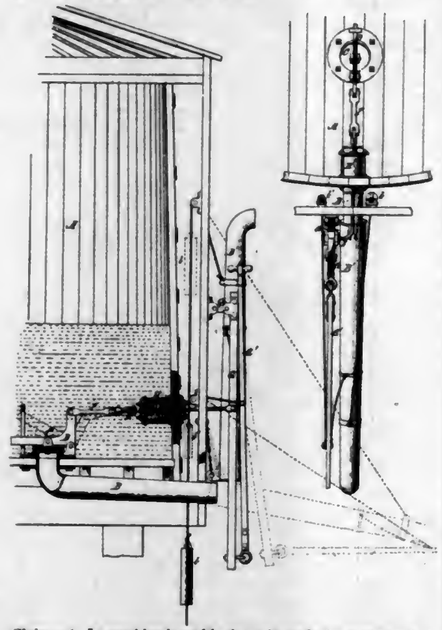
Brief.—Switch brace-bars consisting each of two parallel bars, one or both being bent away from the other near their ends, forming slots, into which are inserted the rods which are attached to the switch-rails. The meeting central portions of the rods lie upon each other, and are secured rigidly together.



Claim.—1. A railway-switch having a central transverse brace formed with slots extending from each end centrally, but limited in length by a vertical bend in one or both the plates, with connecting-bars rigidly attached at one end to the point-rails and extending into the said slots and pivoted to the ends of the brace, substantially as and for the purposes set forth.

2. The parallel braces A A, consisting each of two plates, one or both of which are bent centrally toward each other and riveted fast each to each at the points *a a a* to form terminal slots *b b*, in combination with the connecting-bars B B, attached at one end to the point-rails and pivoted to the ends of the braces, substantially as set forth.

322,068. RAILWAY WATER-TANK. ALBERT ROBERTS, Marion, Iowa. Filed May 8, 1885. (No model.)



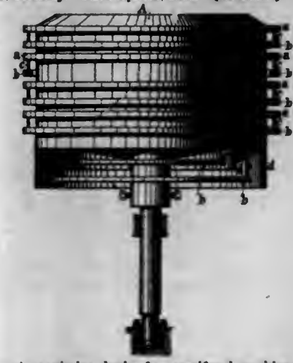
Claim.—1. In combination with the valve-rod of a water-tank, a chamber or cylinder attached to the inside of the tank, and having a stuffing-box at each end for preventing leakage around the valve-stem, and filled with oil, spirits, or other non-freezing substance to prevent the accumulation of ice about the valve-rod, as set forth.

2. In combination with the valve-rod of a water-tank and the actuating-lever thereof, a handle-bar pivoted to said lever below the pivotal point of the sway-spout, and attached to the sway-spout by a cord or chain, by means of which construction and arrangement the spout and handle-bar rise to a vertical position together, and the handle-bar is free to move back and forth when horizontal, substantially as set forth.

3. In a water-tank, the combination of valve C, bell-crank D, valve-rod E, lever G, and non-conducting chamber H, adapted to contain oil, spirits, or other non-freezing substance, and prevent the freezing fast of the valve-rod, substantially as specified.

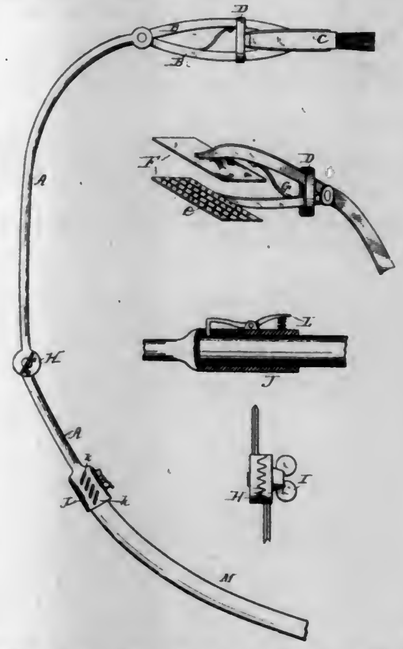
4. In a water-tank, the combination of valve C, bell-crank D, valve-rod E, chamber H, lever G, pivoted above the valve-rod, and having handle-bar G' pivoted to it below the pivotal point of the sway-spout, and connected to said sway-spout by a cord or chain, all constructed, arranged, and adapted to operate substantially as and for the purpose set forth.

322,069. CENTRIFUGAL MACHINE. EMIL ROTHE, Breitenau, near Oederan, Germany. Filed Apr. 22, 1885. (No model.)



Claim.—A regulating device for centrifugal machines, consisting of the rings *b*, surrounding at some distance the vessel A, and suspended either from or laid upon the hoops *a*, as described, and for the purpose set forth.

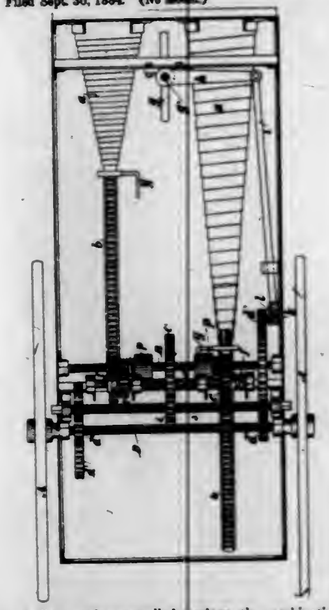
322,070. WINDOW-CLEANER. JENNIE S. RUTAN, Philadelphia, Pa. Filed Sept. 26, 1884. (No model.)



Claim.—1. In a window-cleaner, the combination, with the head-piece, of a handle consisting of two portions united by an adjustable lock-joint, each portion of the handle being curved, substantially as described.

2. In a window-cleaner, the combination, with the head-piece, of the curved and jointed metallic handle A A, the lower portion of which is provided with a socket, J, to receive an additional wooden handle, substantially as described.

322,071. SPRING-PROPELLED CARRIAGE. AUGUST SCHWICKERT, WILHELM SCHWICKERT, and EDUARD SCHWICKERT, Höchst-on-the-Main, Germany. Filed Sept. 30, 1884. (No model.)



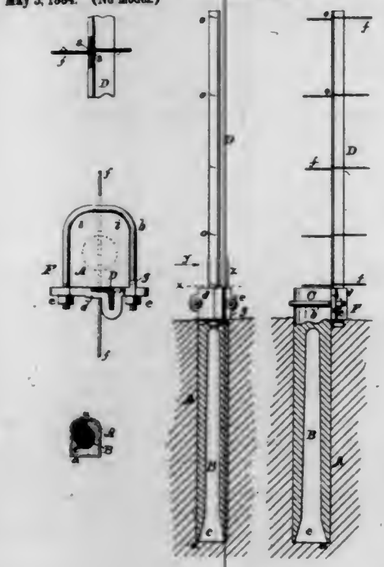
Claim.—1. In a spring-propelled carriage, the combination of one or more conical spiral springs, wound of flat steel in the shape of the buffer-springs and united with the rack *b*, with the pinion *d*, which transmits by a gearing the movement produced by the compressed springs *a* to the driving-wheels of the carriage, as described.

2. The combination of the coupling-sleeve *p*, with coupling-socket *z*, of pinion *d*, spring *q*, slider *n*, with bole *o*, spring *v*, catch *w*, spring *x*, and the arm *y*, attached to rack *b*, as and for the purposes specified

3. The combination of lever *r*, links *s s*, nut *z*, and screw *u*, as described, and for the purpose set forth.

4. The combination of the gearing toothed wheels *s s' s²* with the gearing-pinions *s² s³*, sliding on their common shaft and provided with central sockets, *f*, with annular recesses into which enter the forked levers *m*, as described, and for the purpose set forth.

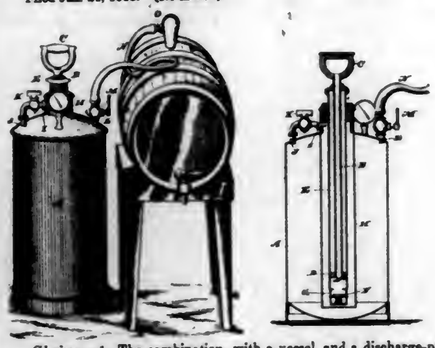
322,072. FENCE-POST. DANIEL SCHWEINHAUD, Batavia, N. Y. Filed May 5, 1884. (No model.)



Claim.—1. The combination of the stub A, having head C, post D, plate *d*, having angular cavity *n*, for the reception of the post D, and rod *b*, having nuts *e*, substantially as described.

2. The combination of the stub A, having head C, post D, plate *d*, having angular cavity *n* for the reception of the post D, and rib *g*, for bearing against the stub, and rod *b*, having nuts *e*, substantially as described.

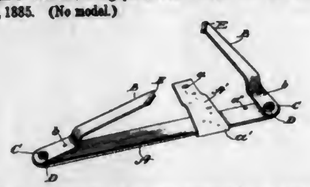
322,073. BEER-FORCING PUMP. FRANK E. SNYDER, Massillon, Ohio. Filed Jan. 21, 1885. (No model.)



Claim.—1. The combination, with a vessel and a discharge-pipe connected therewith, of an air-chamber closed at its lower end and located partly within said vessel and terminating above the same, a pipe located outside of the vessel and connecting it with the air-chamber, a stop-cock for closing communication between the vessel and air-chamber, and an air-pump, the barrel of which extends downwardly into the air-chamber, substantially as set forth.

2. The combination, with a vessel having a discharge-pipe and an air-chamber located within said vessel and extending upwardly above the same, and a pipe connecting the air-chamber and vessel and provided with a stop-cock, of a pump-barrel removably secured within said chamber, and a hollow piston-rod through, which air is forced into the interior of the chamber, substantially as set forth.

322,074. RIGHT AND LEFT CORDER FOR SEWING-MACHINES. WILLIAM R. SOMERS, Bridgeport, Conn. Filed Mar. 23, 1883. Renewed May 8, 1885. (No model.)



Claim.—1. In corders for sewing-machines, two independent movable arms, each of which is provided with a cord-guide and means whereby said arms may be adjusted on opposite sides of the needle, whereby alternate cords may be stitched in opposite directions and on opposite sides of the needle to prevent drawing of the upper fabric.

2. The arms having cord-guides at their inner ends and downwardly-projecting pins near their outer ends, in combination with the base-plate having perforations, as shown, the headed bolts, and the springs, substantially as and for the purposes set forth.

3. A presser-foot having a groove each side of the needle-hole, in combination with a cord-guide adapted for adjustment either side of the needle, substantially as and for the purposes set forth.

4. The arms B B, in combination with the presser-foot F, having grooves *f f*, for the purpose set forth.

5. Base-plate A, arms B B, and bolts C C, in combination with volute springs D, for the purpose set forth.

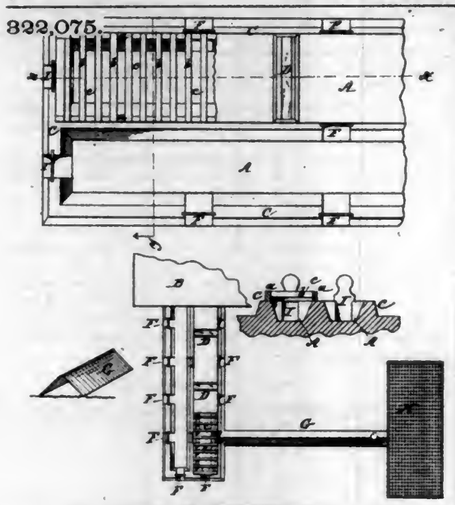
6. Base-plate A *a''* and cross-plate A' *a'*, in combination with arms B, screws C C, springs D, and lugs *b*, all as described, and for the purposes set forth.

322,075. RUNWAY FOR POULTRY-HOUSES. J. GALUSHA STAUNTON. Ellicottville, N. Y. Filed May 19, 1884. (No model.)

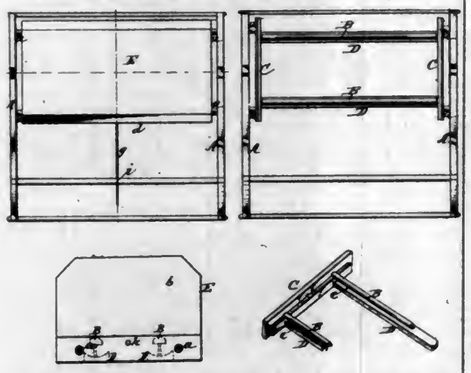
Claim.—1. A runway for fowls, consisting of a ditch with earthen side banks, a lattice covering, and a roofing of turf having the grass down, substantially as described.

2. A runway for fowls, composed of longitudinal side strips, *a*, and an open covering, substantially as described, a covering of inverted turf, E, sashed lights D at intervals, slide-gates F, for the egress of fowls, and the ditch A, having earth side banks, C, substantially as described.

322,075.



322,076. PERCH FOR FOWLS. J. GALUSHA STAUNTON, Ellicottville, N. Y. Filed May 19, 1884. (No model.)



Claim.—1. In combination with the frame or walls A of a chicken or poultry house, the frame C, bolt-pins *a*, perch or perches B, troughs D, and supports for said perches B, substantially as and for the purpose described.

2. The combination, with the walls A of a poultry-house and a perch supported in separated relation with said house-walls, of a removable hood separated from the perch and from said house-walls, as described, for the purpose specified.

3. The combination, with the perch B and walls A of a poultry-house, of the separating-frames C, bolt-pins *a*, and a hood or cap, E, provided with a hinged drop-lid, *d*, adapted to be raised as desired, substantially as set forth, and for the purpose specified.

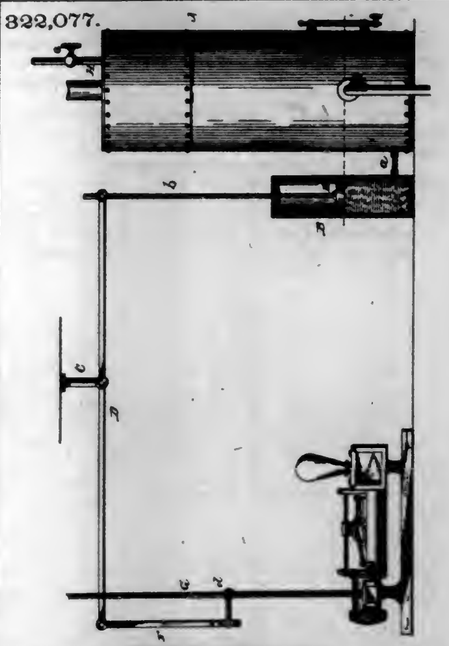
4. The combination of the supporting-walls A of a chicken-perch with a frame, C, and the perches or roosts B, separated from said frame, substantially as herein set forth.

5. The perches or roosts and the supporting-pins, combined with a frame separated from the walls of the coop and supported by screws or bolt-pins, and subjacent troughs for said perches, substantially as herein set forth.

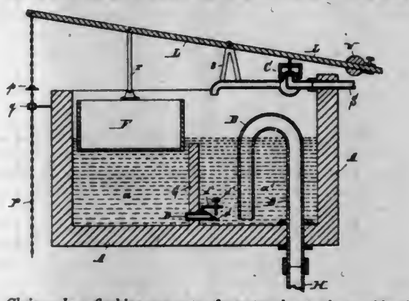
322,077. REGULATOR FOR STEAM-PUMPS. DAVID R. STILES, Ottawa, Kans. Filed Apr. 24, 1885. (No model.)

Claim.—The combination, with a steam-pump, of the vertical heater A, the vessel B, arranged on the same plane as the said heater, the pipe *a*, connecting the lower portion of the heater with the lower portion of the said vessel, the float E', arranged therein, its vertical stem *b*, the horizontal pivoted beam D, connected at one end to the upper end of the vertical float-stem, the vertical arm F, pivoted at its upper end to the opposite end of the horizontal vibratory beam, and its lower end having perforations and connected with the valve *d*, and the pipe connecting the heater with the pump, substantially as specified.

322,077.



322,078. CISTERN AND FLUSHING APPARATUS FOR WATER-CLOSETS. WILLIAM STRONG, Indianapolis, Ind., assignor of one-half to Charles Aneshaensel, Jr., same place. Filed May 9, 1885. (No model.)



Claim.—In a flushing apparatus for water-closets, the combination, with the cistern A, the flush-pipe H, the supply-pipe S, and the chain-pull P, check *p q*, lever L, bar *r*, float F, fulcrum-support *s*, compression-ball cock C, adjustable weight W, forming means to turn the water-supply onto and shut it off from the cistern, of the partition G, dividing the cistern into the two compartments *a* and *a'*, the pipe D, forming an outlet from the compartment *a* into the compartment *a'*, and being provided with the valve-lid *d* and the adjusting device d^2 d^3, and the siphon-pipe B, located in the compartment *a'*, having its inlet near the bottom of the cistern and its neck above the top of the partition G, and connecting with the flush-pipe H, all arranged as described, and for the purpose specified.

322,079. MANUFACTURE OF SUGAR. KONRAD THORACH, Berlin, Germany. Filed Feb. 17, 1885. (No specimens.)

Claim.—1. The process of transforming impure saccharine solutions—such as molasses, starch-sugar solutions, and sweet-mash—into a solid sacchariferous substance by mixing the same with sawdust or other reduced vegetable matter which absorbs the solution into the pores and cells, for the purpose of obtaining sugar.

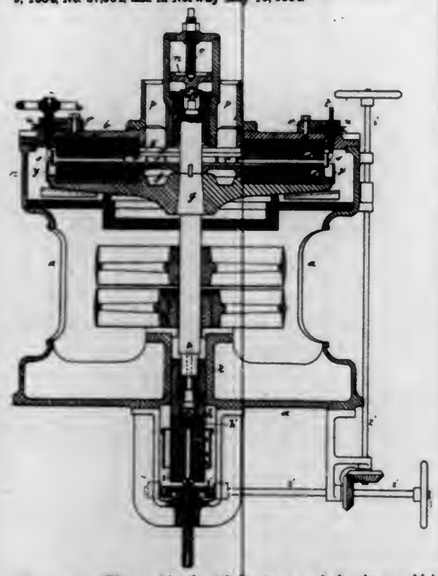
2. The preparation of the sawdust or other reduced vegetable matter for the absorption of impure saccharine solutions with a view to extracting sugar from them, and consisting in separating, by means of hot alcohol, the elements which are soluble in alcohol.

3. The lixiviation of the sugar by means of hot strong alcohol from the solid sacchariferous vegetable substance transformed by mixing impure saccharine solutions—such as molasses, starch-sugar solutions, or sweet-mash—with reduced wood or other fibrous substance, the non-saccharine elements remaining behind.

4. In Marguerite's process for the separation of sulphates from the molasses, the improvement thereon obtained by treating thinned molasses with a mixture of alcohol and water of 50° to 60°, instead of inspissating the molasses to 47° to 48° Baumé, and employing alcohol of eighty-five per cent.

5. The employment of chamois-leather as a filtering medium for saccharine solutions in which solid bodies are suspended in very fine particles or in the form of slime.

322,080. MILL FOR HULLING GRAIN. DIEDRICH UHLHORN, Jr., Grevenbrvich, Germany. Filed Jan. 2, 1885. (No model.) Patented in France Jan. 10, 1884, No. 159,644; in Belgium Jan. 31, 1884, No. 63,780; in England Feb. 4, 1884, No. 2,694; in Sweden Mar. 20, 1884; in Austria-Hungary Apr. 24, 1884, No. 2,176 and No. 18,206; in Germany May 9, 1884, No. 27,984, and in Norway May 16, 1884.

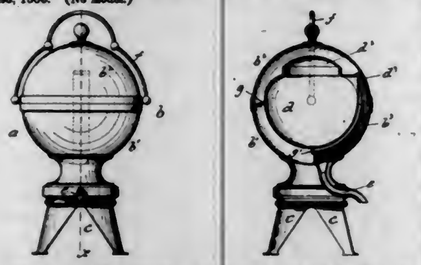


Claim.—1. The combination of the stones and the ring *s*, which regulates the discharge of grain, with a series of adjusting-screws attached thereto, a series of nuts whereby said screws are operated, and means for actuating said nuts simultaneously to adjust said ring at all points, substantially as set forth.

2. The combination of the stones and regulating-ring *s* with the screws *t*, attached thereto, the gear-wheels *u*, provided with nuts which fit on said screws, the chain *w*, in contact with said gear-wheels, and the hand-wheel for operating said chain, substantially as set forth.

3. The combination of ring *y*, attached to one of the millstones, with ring *s*, in proximity to the other millstone, and devices for adjusting the latter ring, substantially as set forth.

322,081. FLUID-COOLER. NEWELL S. VALENTINE, Hartford, Conn., assignor to the Hartford Silver Plate Company, same place. Filed Feb 23, 1885. (No model.)



Claim.—1. In combination, a tilting vessel inclosed within a stationary shell having a discharge-spout, and movable within the shell by means of a handle attached to a projecting part of the inner vessel, all substantially as described.

2. In combination, a stationary shell inclosing a rocking or tilting vessel, the vessel having an outlet and the shell bearing an inside channel, whereby the liquid poured from the vessel is conducted to a faucet or outlet through the shell, all substantially as described.

3. In combination, a stationary vessel or shell having a discharge-outlet, *d*, a tilting vessel, *d*, supported within the shell and having a spout, d^2, and a spring or counterpoise, whereby the vessel is returned to its upright position after tilting, all substantially as described.

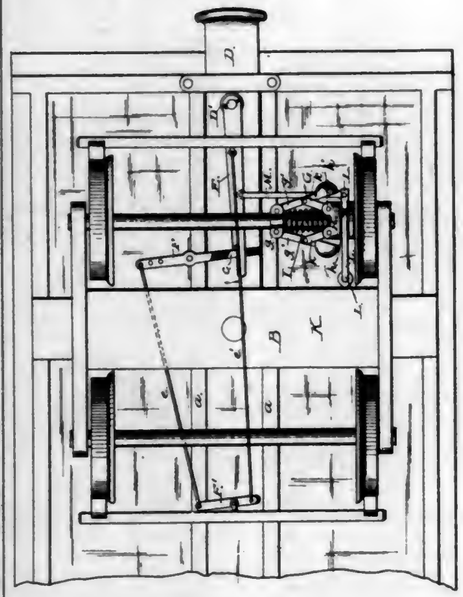
4. In combination, a stationary shell, a tilting vessel supported within the shell having a discharge-spout, and hooks or like means for fastening the vessel to the shell, all substantially as described.

5. In combination, an inclosing-shell, *b*, composed of parts *b'* and *b²*, and having channel b^3, with outlet *e* through the shell, a tilting vessel, *d*, outlet or spout d^2, supported within the shell, and hooks *i*, all substantially as described.

6. In combination, the inclosing-shell *b*, removable and tilting vessel *d*, supported within the shell, with outlets d^2 and *e* through the shell and vessel, respectively, the hooks *i*, grasping the trunnions of the vessel, and the bail *f*, fast to the latter, all substantially as described.

7. In combination, the inclosing-shell *b*, with standard or feet and outlet *e*, hooks *i*, spring *j*, a removable and tilting vessel, *d*, supported and inclosed within the shell, with spout or outlet d^2, and bail *f*, all substantially as described.

322,082. AUTOMATIC CAR-BRAKE. ROBERT B. VANDERBURG, Iowa Falls, Iowa. Filed May 4, 1885. (No model.)



Claim.—1. As an improvement in automatic railway-brakes, a draw-head provided with a projection, D', to which is pivoted the notched bar E, in combination with a governor and a swinging bar pivoted to the truck-frame, operated by the governor to change the position of the notched bar, substantially as and for the purpose described.

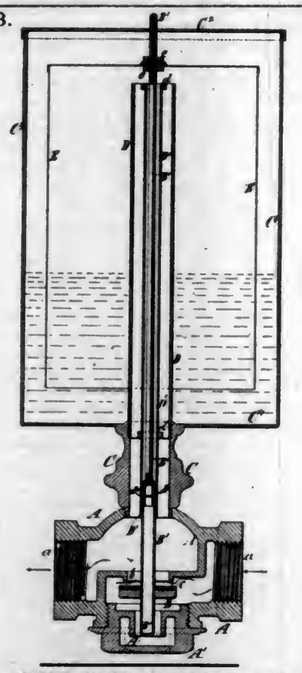
2. The combination, with a sliding draw-head and a projecting lug, D', to which is pivoted a notched bar, E, a slotted lever, F, a connecting-rod, M, a swinging bar, L, a governor, and a clutch mechanism which oscillates with the governor, and which is connected with the governor and swinging bar, substantially as and for the purpose described.

3. An improved railway-car brake, comprising a sliding draw-head, D, a pivoted bar, E, a connecting-rod, M, a swinging bar, L, a governor, a spring upon the governor, a clutch mechanism connected with the governor and swinging bar, a lever, F, and suitable rods, *e e'*, and lever F', all constructed and arranged to operate as herein described.

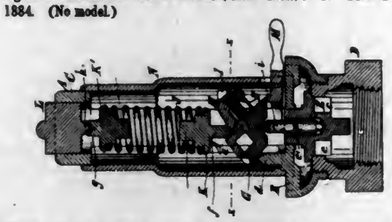
322,083. GAS-GOVERNOR. SETH J. WAKELEY, New York, N. Y. Filed Feb. 25, 1885. (No model.)

Claim.—The combination with the valve-shell A, having the downwardly-presented seat *b*, of the neck or socket C, shell or casing C', and pipe D, surmounting the shell A, the valve B, and its stem B', made tubular at the lower portion and having the side opening, d^2, whereby there is formed a by-pass for gas independent of the valve, substantially as herein described.

322,083.



322,084. SAFETY-VALVE. HENRY C. WILDER, Ashby, Mass., assignor of one-half to Joel G. Willard, New York, N. Y. Filed Dec. 10, 1884. (No model.)



Claim.—1. In a safety-valve, the combination of a valve, a lever having an adjustable section, a connection between the valve and the lever, and a spring exerting force at one end against the adjustable section of the lever for operating the lever in one direction, substantially as specified.

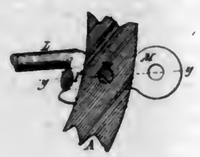
2. In a safety-valve, the combination of a valve, a lever having an adjustable section, a connection between the lever and the valve, a spring exerting force at one end upon the adjustable section of the lever, and at the other end upon an adjustable bearing-point, substantially as specified.

3. In a safety-valve, the combination of a valve, E, a pin, F, a lever, G, fulcrumed upon a fixed portion of the frame of the valve, and having an obliquely-adjustable section, H, the spring J, and the plug L, substantially as specified.

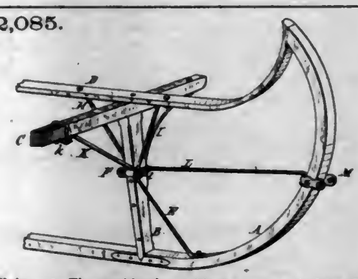
4. In a safety-valve, the combination of a valve, E, a pin, F, a lever, G, fulcrumed upon a fixed portion of the frame of the valve, and having an obliquely-adjustable section, H, the spring J, and the trip M, substantially as specified.

5. In a safety-valve, the combination of a frame, A, having the base-piece B, extending beyond the main or upper portion of the case or shell, apertures *b* in the base-piece B, the valve E, the pin F, the lever G, and the spring J, substantially as specified.

322,085. SLEIGH. JAS. M. BARNES, Cuba, N. Y. Filed Apr. 8, 1885. (No model.)



322,085.



Claim.—1. The combination, with the runner A, knee B, bolster C, and top piece, D, of the angle-brace E, arranged on the front side of the knee and secured thereto by the clip F, and having its forwardly-projecting lower end secured to the runner A and its forwardly-projecting upper end secured to the top piece, D, substantially as set forth.

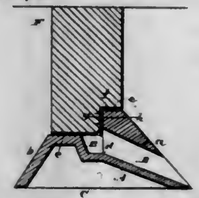
2. The combination, with the runner A, knee B, bolster C, and top piece, D, of the diagonal brace H, arranged on the rear side of the knee and having its lower end secured thereto by the clip F, substantially as set forth.

3. The combination, with the runner A, knee B, bolster C, and top piece, D, of the draft-rod L, provided with bent ends, a draft-shackle, M, whereby the front end of the draft-rod is secured to the runner, and a clip, F, whereby the rear end of the draft-rod is secured to the knee, substantially as set forth.

4. The combination, with the runner A, knee B, bolster C, and top piece, D, of the bent braces E and K, diagonal braces H and I, and a clip, F, embracing all of said braces and securing the same to the knee, substantially as set forth.

322,086. THRESHOLD. DANIEL BARTHOLOMEW, Red Cloud, Nebr. Filed July 5, 1884. (No model.)

Brief.—The lower edge of the door is cut away, forming an angular recess. The threshold has a raised portion fitting the recess in the door, and has a central longitudinal trough connected with the lower front of the threshold by a spout.



Claim.—1. The combination, with a door having its lower outer edge cut away, of a threshold the upper surface of which is constructed to fit the cut-away portion of the door, the threshold being provided with a centrally-located longitudinally-extending trough, and a spout connecting the trough with the lower front of the threshold, substantially as set forth.

2. The combination, with a door having its lower outer edge cut away, forming an angular recess, of a threshold the front portion of which projects upward and fits into said angular recess, a rubber strip secured to one of the surfaces of the cut-away portion of the door, and a trough extending along the upper central portion of the threshold, said trough being connected with the outer lower portion of the threshold, substantially as set forth.

3. The combination, with a door having the outer edge of its lower end cut away, and a rubber strip secured to one of the faces of the cut-away portion, of an iron threshold cast in one piece having a front upwardly-projecting portion adapted to fit the said cut-away portion of the door, a trough centrally located in the threshold, and a spout connecting the trough with the outer lower portion of the threshold, substantially as set forth.

322,087. HARNESS-BUCKLE. JAMES M. BASINGER, Buffalo, N. Y., assignor of one-half to Pratt & Letchworth, same place. Filed Oct. 23, 1884. (No model.)



Claim.—A buckle composed of the reversely-curved side bars, A A, connecting end bars, *b b*, central cross-bar, C, provided with tongues *e f*, arranged on opposite sides of the central cross-bar, C, and interme-

diate cross-bars, D D, arranged on a plane below the central bar, and between the central cross-bar, C, and bars *b b*, substantially as set forth.

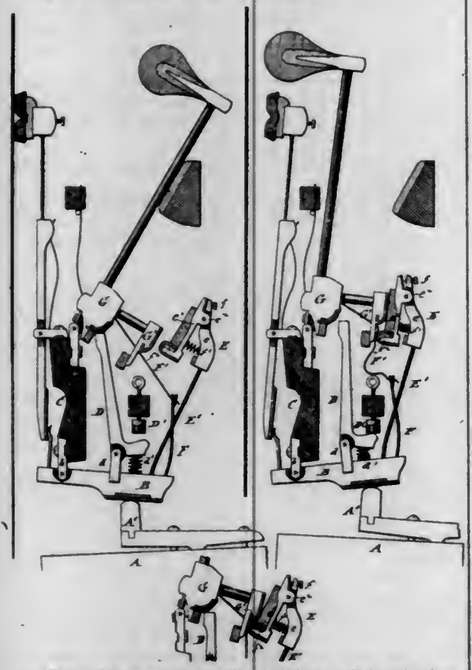
322,088. FISHING-LINE FLOAT. HENRY C. BEHRENS, Baltimore, Md. Filed Feb. 26, 1885. (No model.)



Claim.—1. In a fishing-line float, the float A, the central hollow stem, *b*, rigidly secured to the float A, and provided with the slots *d*, whereby the clamping-fingers *e* are formed thereon, in combination with the clamping-cap *f*, by which the line may be clamped to the stem by pressing the cap *f* thereon

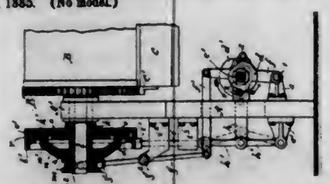
2. In a fishing-line float, the body A, the hollow stem *b*, provided with the slots *d*, and the openings *i*, in combination with the cap *f*, as herein set forth.

322,089. UPRIGHT-PIANO ACTION. STEPHAN BRAMBACH, New York, N. Y. Filed Oct. 23, 1884. (No model.)



Claim.—The combination, with a jack-lever, a jack, and a hammer-butt having a backwardly-extending shoe, of a back-check supported on the jack-lever, said back-check consisting of a main part having a stop-screw at its upper end and a fulcrumed and spring-cushioned catch-piece having a shoulder at the lower end, substantially as set forth.

322,090. PRINTING-MACHINE. JNO. BROOKS, Plainfield, N. J. Filed Mar. 2, 1885. (No model.)



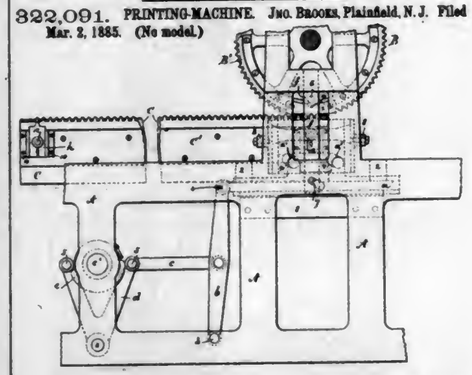
Claim.—1. In a printing-press, the combination, with the impression-cylinder B, toothed wheel B', bed C, and rack C', of the sleeve *k* and disk *k'*, the disk *l'* and hub *l²*, the collar *m*, links *n*, lugs *n'*, slides *o*, rollers *o'*, the cam-shaft *c'*, cams *d d'*, rocking lever *f*, link *f'*, lever *g* and yoke *g'*, the slide-bar *h*, toggle-arms *h'*, brake-bar *i*, shoe *i'*, and mechanism, substantially as specified, for imparting motion to the parts, as set forth.

2. In a printing-press, the combination, with the impression-cylinder B, toothed wheel B', bed C, and rack C', of the sleeve *k* and disk *k'*, with a notched rim, the disk *l'* and hub *l²*, the collar *m*, links *n*, lugs *n'*, slides *o*, and rollers *o'*, and mechanism, substantially as specified, for operating the parts in locking the cylinder B and disks *l'* and *k'* together during the movement of the bed in one direction and disconnecting the impression-cylinder, so that it remains stationary during the movement in the other direction, substantially as set forth.

3. In a printing-press, the combination, with the impression-cylinder B, toothed wheel B', bed C, and rack C', and mechanism, substantially as described, for moving the bed, of the bevel-wheel *c*, cam-shaft *c'*, cams *d d'*, rocking lever *f*, links *f'*, lever *g*, and yoke *g'*, the slide-bar *h*, toggle-arms *h'*, brake-bar *i*, brake-shoe *i'*, and mechanism, substantially as specified, for locking the toothed wheel and impression-cylinder together or disconnecting them, substantially as set forth.

4. In a printing-press, the combination, with the impression-cylinder B, toothed wheel B', bed C, and rack C', of the sleeve *k*, connected to the toothed wheel B, the disk *k'*, keyed to said sleeve, the shaft *l*, the hub *l²*, and disk *l'*, secured to the shaft, the slides *o* and rollers *o'*, and mechanism, substantially as specified, for moving the slides to lock or unlock the shaft or impression-cylinder and the gear-wheel, as set forth.

322,091. PRINTING-MACHINE. JNO. BROOKS, Plainfield, N. J. Filed Mar. 2, 1885. (No model.)



Claim.—1. In a printing-press, the combination, with the impression-cylinder B, toothed wheel B', reciprocating bed C, and rack C', of the toothed plate *i* upon the wheel B', the toothed blocks *h h'* and their rollers 12, the sliding bar *a*, the lugs and rollers *a'* and slotted plate *a²*, the locking-bar *f*, its pin 6 and roller 7, the slotted plate *g*, the slide-ways for the respective parts, and mechanism, substantially as set forth. for imparting movement to the bar *a*, substantially as specified.

2. In a printing-press, the combination, with the shaft *c'*, cam *e*, V-shaped rocker *d*, rollers 5, link *c*, and lever *b*, of the sliding bar *a*, its lugs and rollers *a'*, and slotted plate *a²*, the locking-bar *f*, its pin 6, and roller 7, the slotted plate *g*, and mechanism, substantially as specified, for stopping and holding the cylinder during the movement of the bed in one direction, substantially as set forth.

3. In a printing-press, the combination, with the impression-cylinder B, wheel B', bed C, and rack C' of the toothed plate *i*, the toothed blocks *h h'*, the locking-bar *f*, and pin 6, and mechanism, substantially as specified, for operating the parts and stopping and locking the cylinder at the end of the bed movement in one direction, and connecting the gear of the impression-cylinder with the rack and unlocking such cylinder at the end of the movement of the bed *m* in the other direction, substantially as set forth.

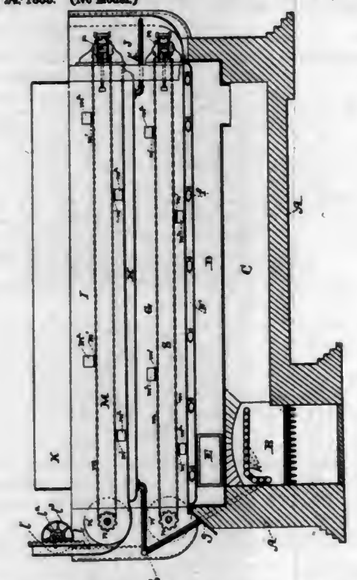
4. In a printing-press, the combination, with the impression-cylinder B, wheel B', bed C, and rack C', of the toothed plate *i*, having two teeth, the sliding toothed blocks *h h'*, and the tooth 13, and mechanism, substantially as specified, for operating the parts, whereby the tooth on *h'* and the tooth 13 act against the teeth on plate *i*, to stop and steady the cylinder until it is locked, substantially as set forth.

5. In a printing-press, the combination, with the impression-cylinder B and bed C, of the toothed wheel B', a portion of the teeth of which are removed to form a flat bearing-surface, and the rack C', having a plain bearing-surface at one end, substantially as specified.

6. In a printing-press, the combination, with the impression-cylinder B and bed C, of the toothed wheel B', a portion of the teeth of which are removed to form a flat bearing-surface, the toothed plate *i* upon the wheel B', the rack C', having a plain bearing-surface upon one end, the toothed blocks *h h'*, and means, substantially as specified, for operating the parts and stopping and locking the cylinder, substantially as set forth.

7. In a printing-press, the combination, with the impression-cylinder B, wheel B', bed C, and rack C', of the toothed plate *i*, the toothed block *h*, the roller 12, the slotted plate *g*, and mechanism, substantially as specified, for moving the parts and elevating the tooth and block *h* into mesh with the teeth on the plate *i*, whereby the same can be utilized to start the movement of the cylinder B, substantially as set forth.

322,092. GRAIN-DRIER. GEO. COTTRELL, San Francisco, Cal. Filed Jan. 24, 1885. (No model.)



Claim.—1. In an oat-drying kiln, the chamber or hearth I, having a suitable rake for stirring and advancing the oats, in combination with the steam-pan H under the hearth, and the steam-pipe *h*, coiled in the fire-chamber and connecting with the steam-pan by which superheated steam is admitted to the pan, substantially as herein described.

2. In an oat-drying kiln, the chamber or hearth I, having a suitable endless traveling rake for stirring and advancing the oats, and the steam-pan H under said hearth, in combination with the underlying chamber or hearth G, communicating with hearth I and having an endless traveling rake for stirring and advancing the oats, and the hot-air pan F, under the lower hearth, substantially as herein described.

3. In an oat-drying kiln, the chamber or hearth G, having an endless traveling rake for stirring and advancing the oats, in combination with the hot-air pan F under said hearth, substantially as herein described.

4. In an oat-drying kiln, the chamber or hearth G, having a rake for stirring and advancing the oats, in combination with underlying hot-air pan F and the flue D under the pan, substantially as herein described.

5. In an oat-drying kiln, the endless traveling rakes M S, having cross-strips *m'*, with spaced flanges or teeth m^2, the flanges of one strip being set at an opposite angle to those of the succeeding strip, substantially as and for the purpose herein described.

6. In an oat-drying kiln, the endless traveling rakes M S, consisting of endless side chains *m* and transverse strips *m'*, with spaced flanges or teeth m^2, the flanges of one strip being set at an opposite angle to those of the succeeding strip, substantially as and for the purpose herein described.

7. In an oat-drying kiln, a chamber or hearth in which the oats lie, in combination with an endless traveling rake, consisting of side chains mounted on pulleys in the chamber, and cross-strips having spaced flanges or teeth moving over the bottom or floor of the chamber, the flanges on one strip being set at an opposite angle to those of the succeeding strip, substantially as and for the purpose herein described.

8. In an oat-drying kiln, the rake M in a chamber or hearth, said rake having cross-strips *m'* with spaced flanges or teeth m^2, set at an opposite angle on contiguous strips, for the purpose described, in combination with the brackets P on the inner walls of the chamber, the longitudinal support-bars Q, carried by the brackets and bearing under the cross-strips, and the screws *q*, by which the bars are vertically adjusted to adjust the rake, substantially as herein described.

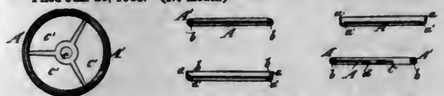
9. In an oat-drying kiln, the endless traveling rake M, mounted on suitable pulleys in a chamber or hearth, said rake consisting of side chains *m*, cross-strips *m'*, having spaced flanges or teeth m^2, set at an opposite angle on contiguous strips, for the purpose described, in combination with the vertically-adjustable support-bars Q, bearing under the strips of the lower fold, and the support-bars O, bearing under the strips of the upper fold, substantially as and for the purpose herein described.

10. In an oat-drying kiln, a chamber or hearth in which the oats lie and a vertically-adjustable heating-pan forming the bottom or floor of the hearth, in combination with a vertically-adjustable rake consisting of side chains *m* and cross-strips *m'*, having spaced flanges or teeth m^2, set at an opposite angle on contiguous strips, substantially as and for the purpose herein described.

11. In an oat-drying kiln, a chamber or hearth in which the oats lie having a heating-pan for a floor, and an endless rake within the hearth, consisting of side chains *m*, cross-strips *m'*, with angled flanges or teeth m^2, as described, in combination with the brackets P in the walls of the hearth, the vertically-adjustable support-bars Q, carried by the brackets and adapted to adjust the rake, and the set-screws *q'* in the brackets adapted to adjust the heating-pan, substantially as herein described.

12. In an oat-drying kiln, the upper chamber or hearth, I, and the endless rake M therein, in combination with the feed-hopper L, having a vertically-adjustable gate, *l*, a rack, *l'*, a pinion, l^3, and a crank-wheel, l^2, substantially as herein described.

322,093. BALANCE-WHEEL FOR WATCHES. WALTER D. DAVIES, Brooklyn, N. Y., assignor to the Ansonia Clock Company, Ansonia, Conn. Filed Jan. 20, 1885. (No model.)

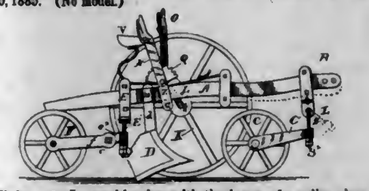


Claim.—1. A balance-wheel consisting of a disk of sheet metal, having its edge or margin rolled or turned inward to form a rim, substantially as and for the purpose herein described.

2. A balance-wheel consisting of a disk of sheet metal, having its edge or margin rolled or turned inward to form a rim, and having an annular filling piece or ring within the rim to add weight thereto, substantially as herein described.

3. A balance-wheel consisting of a disk, A, having its edge or margin rolled or turned inward to form a rim, A', and having a collet or bush secured at its center to form a hub, substantially as herein described.

322,094. SULKY-PLOW. JAS. R. ERVIN, Marshall, Mo. Filed Apr. 30, 1885. (No model.)



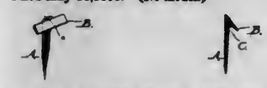
Claim.—1. In combination with the beam of a sulky-plow, a front caster-wheel, a bell-crank lever mounted on the beam to which said caster-wheel is swiveled, a landside-wheel, a lever on the axis thereof, and a connection from said lever to the bell-crank lever on which the caster-wheel is swiveled, substantially as described.

2. In a sulky-plow, the combination of the triangular frame with the beam by means of shackles, and the axle having one bearing in the frame and another in a shackle on the beam, whereby the beam may be moved longitudinally with relation to the frame and axle, as set forth.

3. In combination with the beam of a sulky-plow, a shackle adjustable relatively thereto, a pivot on the shackle, an arm swiveled on said pivot and having ribbed faces, and a wheel-frame having ribbed faces adjustably secured to said arm, as set forth.

4. In combination with the plow-beam of a sulky-plow, a swiveled front wheel and connections, as described, whereby the same may be raised and lowered, and a swiveled furrow-wheel having arms by which the vertical adjustment of the same relatively to the beam may be effected, as set forth.

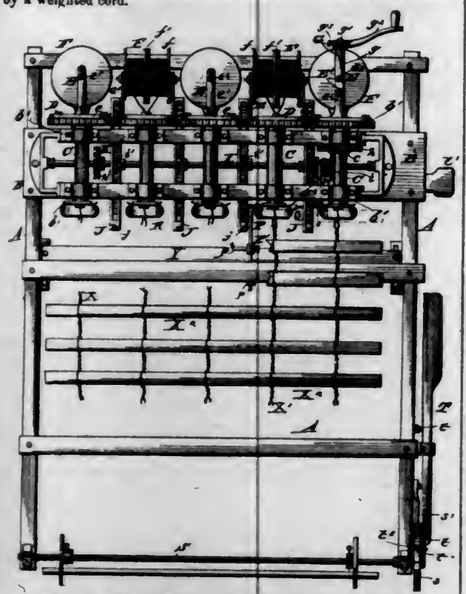
322,095. CARPET-FASTENER. BENJAMIN F. ESHELMAN, Harlan, Iowa. Filed May 18, 1885. (No model.)



Claim.—A carpet-fastener having a shank and a head elongated at right angles to the line of the shank and slanting toward the point thereof, substantially and for the purpose described.

322,096. MACHINE FOR MAKING WIRE FENCES. LUTHER W. FILLEBROWN and JABUS A. FILLEBROWN, Piqua, Ohio. Filed Apr. 25, 1885. (No model.)

Brief.—The picket is fed between the plates on the heads of the twisters, and is pushed forward by beater-arms carried by racks moved by gears on a counter-shaft which is rotated by a cord and treadle. Pressure on the treadle also draws down a catch, allowing a spring-pressed clutch to clutch the counter-shaft to the twisters, so that when the twisters are rotated the picket will be automatically pushed forward as the twisting goes on. On completion of the stroke of the beaters the counter-shaft is automatically unclutched and held by the catch. The counter-shaft is rotated to bring the beaters back to their original position by a weighted cord.



Claim.—1. The combination, with the main frame and transverse frame B, bolted thereto, of the hollow shafts C, journaled in the frame B, the gear-wheels D on the ends of said shafts intermeshing, and thereby rotating adjacent shafts in opposite directions, the frames attached to the outer sides of the gear-wheels D, the double spools supported by and turning on said frames, and the blocks R, having secured thereto the guide and twister plates R′ and R², substantially as specified.

2. The combination, with the rotating block R, of the plate R′, provided with the projections or ears r^4 r^5 r^6 r^7 and the openings r^1 r^2, and the plate R², provided with the ears r^{10} r^{11} and openings r^{12} r^{13}, the said plates being adapted to receive a slat between them and wires above and below the same from any proper source of supply, substantially as specified.

3. The combination, with the frame B, shaft C, gear-wheels D, and tension-frame E, of the bolt E′, nuts e^3, spools F, retaining-frame G, and crank-handle g^3, substantially as specified.

4. The combination of the shaft I, provided with the sprocket-wheels i^7 and pulleys K K′, the sprocket rack-bars J, and weight K′, attached by a chain to the pulley K, with the spring *n*, lever O, spring Q, rod P, provided with the pin p^2, treadle l^7, link-rods L L′ M, and chains k k^2, substantially as specified.

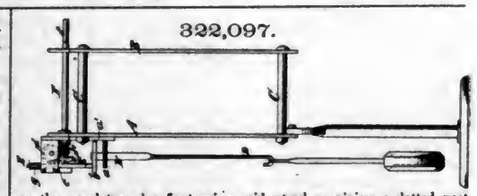
5. The combination, with the sprocket rack-bars J, actuated by wheels on the shaft I, the clutch N, springs *n* and Q, and lever O, of a pin so connected with the lever O that one of the rack-bars will impinge upon it, and thereby open the clutch and cause the spring Q to prevent the same closing, substantially as specified.

322,097. PENDULUM-REGULATOR. JACOB GANSS, Brooklyn, N. Y., assignor to the Ansonia Clock Company, Ansonia, Conn. Filed Apr. 23, 1885. (No model.)

Claim.—1. The combination, with a pendulum-rod and a regulator arbor or spindle, of a rack-bar from which the pendulum-rod is suspended, a wheel or pinion engaging with the teeth of the rack-bar, and a worm or screw on the regulator arbor or spindle for turning said wheel or pinion, substantially as herein described.

2. The combination, with a pendulum-rod and a regulator arbor or spindle, of a rack-bar from which the pendulum-rod is suspended, a wheel or pinion engaging with the teeth of the rack, a worm or screw

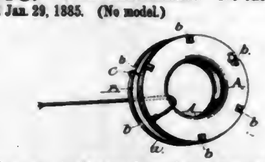
322,097.



on the regulator-arbor for turning said wheel or pinion, a slotted post forming the axis of oscillation for the pendulum-rod, and a slideway for the rack-bar, the length of the rack being so proportioned that it will give a range of movement to the rack-bar less than the distance allowed between the slotted post and slideway, substantially as herein described.

3. The combination, with a pendulum-rod and regulator arbor or spindle, of a rack-bar from which the pendulum-rod is suspended, a wheel or pinion engaging with the teeth of the rack, a worm or screw on the regulator-arbor for turning said wheel or pinion, the rack being so proportioned that it may be raised and lowered out of engagement with said wheel or pinion, and a spring for sustaining the weight of the rack-bar and pendulum when the rack is lowered out of engagement with the teeth of the wheel or pinion, substantially as herein described.

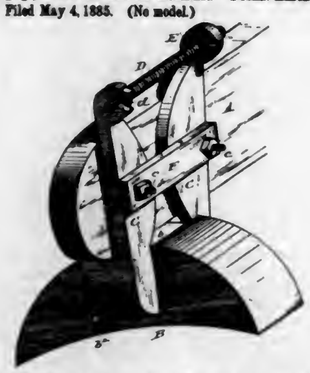
322,098. VIOLIN ATTACHMENT. IVY JAY HART, Chandler, Ind. Filed Jan. 29, 1885. (No model.)



Claim.—1. An improved attachment for violins consisting, essentially, of grooved and transversely slotted rollers, and elastic retaining-band engaging the grooves, substantially as and for the purpose described.

2. The roller A, having an annular groove, *a*, and transverse notches *b*, in combination with an elastic retaining-band provided with a loop, C, substantially as herein described.

322,099. BRAKE-BLOCK HOLDER. DUSKIN HEDRICK, Greenville, Cal. Filed May 4, 1885. (No model.)



Claim.—1. The jaws pivoted to the brake-bar and adapted to receive the block between their forward ends, in combination with a power mechanism on their rear ends behind their pivot-centers, and adapted to force said rear ends in opposite directions, to cause their forward ends to grip the block, substantially as herein described.

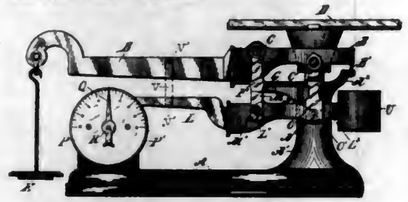
2. In combination with a brake-bar and a brake-block, oppositely-working jaws pivoted on the bar, and adapted to receive the block between their forward ends, a screw mounted between and in their rear ends behind their pivot-centers, and a nut on the screw adapted to force said rear ends in opposite directions, to cause their forward ends to grip the block, substantially as herein described.

3. The brake-bar A and the brake-block B, in combination with the jaws C, pivoted on the bar and adapted to receive the block between their forward ends, the screw D, extending between the rear ends of the jaws, the fixed collar *d* on the screw bearing against the inner surface of one jaw, and the nut E on said screw bearing against the inner surface of the other jaw, all arranged and adapted to operate substantially as herein described.

4. The brake-bar A and brake-block B, having a shoulder, *b*, on its back, and depressions or sockets *b′* in its sides, in combination with the jaws C, pivoted by bolts *c* to the bar, and adapted to fit their forward ends in the side sockets, *b′*, of the block and under the shoulder *b*, the screw D, mounted within and between the rear ends of the jaws, and a nut on the screw adapted to move said rear ends oppositely, to force their forward ends to grip the block, substantially as herein described.

5. The combination of the bar A, block B, jaws C, pivoted by bolts *c* to the bar, and receiving the block between their forward ends, the link F between the jaws, the screw D between the rear ends of the jaws, the fixed collar *d*, and nut E on the screw, all arranged and adapted to operate substantially as herein described.

322,100. WEIGHING-SCALE. FRANK I. HITCHCOCK, Bridgeport, Conn. Filed Apr. 17, 1885. (No model.)



Claim.—1. The combination, with the beam, weight-holder, and dial of a scale, of a secondary beam, a connection between said beams, means—for example, a spring and weight acting against each other—for returning the secondary beam to its normal position, and a pointer actuated by the secondary beam for indicating upon the dial excess or deficiency of an article being weighed relatively to a weight upon the weight-holder.

2. The combination, with a scale-beam, a secondary beam with bearings in the same vertical plane, and a loose connection between said beams, of a weight at the outer end of the secondary beam, a spring near the inner end acting against the weight, a dial, and a pointer, actuated by the secondary beam, for indicating the difference in weight between an article at one end and a weight at the other end of the scale-beam.

3. The beam, knife-edges, uprights F, and cross-piece H, in combination with the secondary beam having double knife-edges, parts M, connections O, having openings for knife-edges N, weight U, spring T, and pointers Q.

4. The standard, carrier, beam, dial, and weight-holder, in combination with a secondary beam having arms which encircle the standard and carry a weight, a spring acting against said weight, and a pointer actuated by the secondary beam, substantially as described.

5. The beam, secondary beam, weight, dial, and spring, in combination with a shaft having a pinion and carrying a pointer or pointers, and a rack pivoted to the secondary beam and engaging the pinion, whereby the pointers may be turned in either direction to indicate difference in weight.

6. In a scale, a beam, and a secondary beam with bearings in the same vertical plane, and a connection between said beam and secondary beam, in combination with a pointer operated in connection with said secondary beam, and a dial having two series of numerals running in opposite directions, as and for the purpose set forth.

322,101. WATER-CLOSET. JAMES L. HOWARD and CHARLES P. HOWARD, Hartford, Conn. Filed July 19, 1884. (No model.)

Claim.—1. In a water-closet, in combination, the bowl *b*, the swinging service-pan *e*, and the pan-operating mechanism *f*, having the arm *f′*, bearing a bolt-socket and pivotally connected to the lid *d*, bearing a bolt, *k*, all substantially as described.

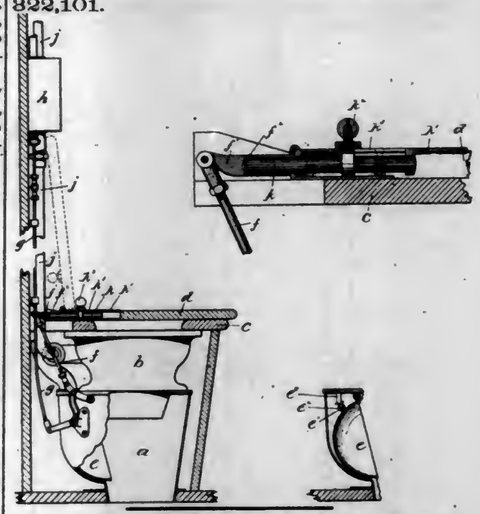
2. In a water-closet, in combination, a bowl, a swinging service-pan, a lid covering the bowl, the pan-operating mechanism connecting the lid and the pan, and a catch for detachably connecting the lid with the arm *f′* of said mechanism, all substantially as described.

3. In a water-closet, in combination, a bowl, *b*, swinging pan *e*, lid *d*, service-measure *h*, mechanism, substantially as described, connecting the lid with the valves in the service-chamber, and the valves *i* and *i′*, rod i^3, sleeve i^3, springs i^4 and i^5, and arm *g′*, fast to the sliding rod *g*, all substantially as described.

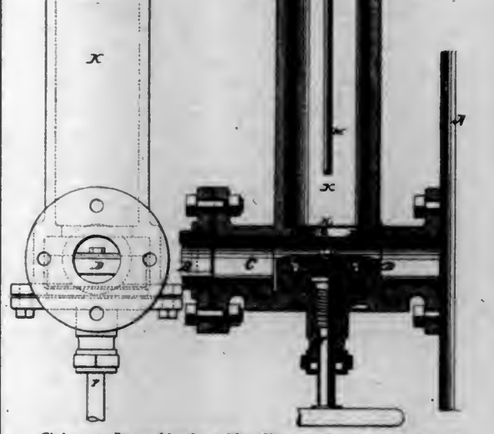
4. In a water-closet, in combination, the service-measure A, sliding rod *g*, with arm *g′*, having a forked end engaging the sleeve i^3, held between the spiral springs i^4 i^5 on the rod i^3, bearing the loosely-attached valves *i* and *i′*, and the valve-seats on the inlet and outlet pipes of the service-chamber, all substantially as described.

5. In a service-measure, the inlet and outlet valve seats and the rod i^3, bearing the loosely-connected valves *i* and *i′*, and the sleeve i^3, movable on the rod and held between the springs i^4 and i^5, with means for moving the sleeve, all substantially as described.

322,101.



322,102. FILTERING APPARATUS. JOHN W. HYATT, Newark, N. J. Filed Apr. 26, 1884. (No model.)



Claim.—1. In combination with a filter supply-pipe, a regulating-valve arranged in said pipe, a receptacle containing a substance to be acted upon by the flowing water and supported over said valve, substantially as set forth.

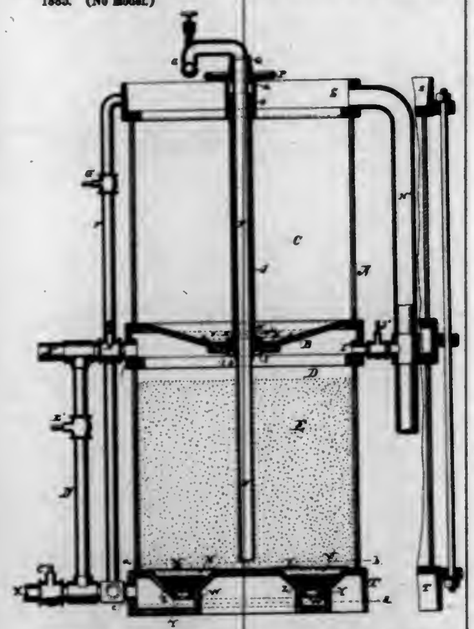
2. In combination with a filter supply-pipe, a receptacle connected with said pipe and inclosing a substance to be acted upon by the flowing water, and a valve whereby the quantity of the substance taken up by the water may be regulated, substantially as set forth.

3. A supply-pipe to a filter, in combination with the valve D, arranged therein, the receptacle K, located over the valve, a gate leading into said receptacle, and an open support, H, which will permit the water flowing through the supply-pipe to enter the receptacle, substantially as set forth,

4. In combination with a filter and a supply-pipe for leading the water thereto, a receptacle, K, connected with said pipe and containing a solidified coagulating agent, and a regulating-valve, D, whereby the quantity of said agent taken up by the flowing water may be regulated, substantially as set forth.

5. In combination with a filter, a supply-pipe for unfiltered water leading thereto, a receptacle opening into the supply, and a coagulant, the latter being held by the receptacle and exposed at the said opening to the action of the inflowing water, substantially as and for the purposes set forth.

322,103. FILTER. JOHN W. HYATT, Newark, N. J. Filed Jan. 7 1885. (No model.)



Claim.—1. A filter consisting of compartments having suitable inlets and outlets for water and connected by a transfer washer-pipe, one of the compartments containing a bed of filtering material and having at the base of the bed numerous inlets for the water used in transferring the filtering material through the washer-pipe into the adjacent compartment, substantially as and for the purpose set forth.

2. A filter consisting of compartments having suitable inlets and outlets for water and connected by a transfer washer-pipe, one of the compartments containing a bed of filtering material and having distributed over its base a series of funnel-shaped openings protected by perforated metal or wire-cloth, substantially as and for the purpose set forth.

3. A filter consisting of compartments having suitable inlets and outlets for water and connected by a transfer washer-pipe, one of the compartments containing a bed of filtering material and having at the base of the bed a series of openings protected above and below by perforated metal or wire-cloth, and inclosing a quantity of spherical or granular bodies, substantially as set forth.

4. A filter consisting of compartments C D, connected by a transfer washer-pipe, F, and having suitable inlets and outlets for water, the base of the compartment D having openings V, protected above and below by perforated metal or wire-cloth Y, and inclosing spherical bodies Z, and leading into a passage, W, connected with the delivery-pipe, substantially as set forth.

5. A filter consisting of compartments C D, separated by a diaphragm, B, and having suitable inlets and outlets for water, combined with a transfer washer-pipe, F, passing from one compartment to the other, a valve-seat at the center of said diaphragm, and a valve secured on the lower end of the cylinder J, inclosing the pipe F, and adapted to be operated by a screw, O, substantially as set forth.

6. A filter subdivided by a diaphragm into compartments connected by a transfer washer-pipe and having suitable inlets and outlets for water, combined with a valve-seat in the diaphragm encircling the washer-pipe, a corresponding elastic valve, the cylinder inclosing the upper portion of said pipe and carrying said valve, and a hand-wheel engaging a thread on said cylinder, and being collared on the upper end of the transfer-pipe, substantially as and for the purposes set forth.

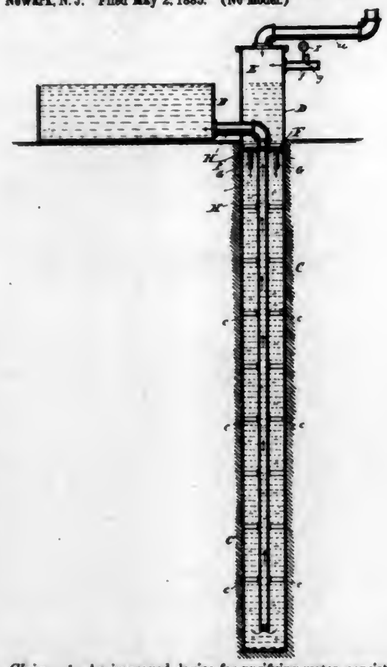
7. A filter consisting of compartments C D, connected by a transfer washer-pipe, F, the base of the lower compartment containing protected openings V, in combination with the pipes A', D', X, F', H', and I', with valves, substantially as and for the purpose set forth.

8. In combination with a filter containing a bed of filtering material, the base having a series of funnel-shaped openings protected by perforated metal, the passage W, connecting said openings, and a delivery-pipe leading from said passage, substantially as set forth.

9. A filter having suitable inlets and outlets for the water and containing a bed of filtering material, combined with a base having a series of funnel-shaped openings protected above and below by wire-cloth and inclosing a quantity of spherical bodies, and a passage connecting said openings with a delivery, substantially as set forth.

10. A filter having suitable inlets and outlets for the water and inclosing a bed of filtering material in granular form, in combination with a series of openings, V, at the base of the filter protected by perforated metal, and a ball-valve, S', substantially as and for the purposes set forth.

322,104. APPARATUS FOR PURIFYING WATER. JOHN W. HYATT, Newark, N. J. Filed May 2, 1885. (No model.)



Claim.—1. An improved device for purifying water, consisting, essentially, of a pipe, D, closed at both ends and sunk below the surface of the ground, and provided with an air-inlet, a supply pipe leading therein, and a pipe extending down within said pipe D, and leading to the outside thereof, substantially as and for the purpose described.

2. An improved device for purifying water, consisting, essentially, of a pipe, D, closed at both ends, sunk below the surface of the ground, and provided with a supply-pipe leading therein, a pipe extending downwardly within the pipe D, and connected on the outer side of said pipe D with a reservoir or service pipe, an air-inlet pipe connected with said pipe D, and a meter connected to said air-inlet pipe for the purpose of registering the quantity of air commingled with the water, substantially as set forth.

3. An improved device for purifying water, consisting, essentially, of a pipe, D, closed at both ends and sunk below the surface of the ground and provided with an air-inlet, a supply-pipe leading therein, an exit-pipe extending down within the pipe D and leading to the outside thereof, and means contained in the pipe D for agitating the water in its passage through the same, substantially as set forth.

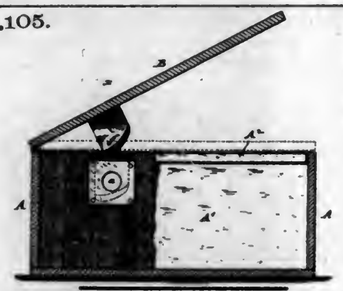
4. An improved device for purifying water, consisting, essentially, of a pipe, D, sunk below the surface of the ground, and having a chamber, E, formed in its upper end by means of the partition F, a supply-pipe leading into the chamber, an exit-pipe leading from the lower end of the pipe D up through and to the outer side thereof, an air-inlet pipe for supplying air to the chamber, and suitable means for agitating the water within the pipe D, substantially as described.

5. An improved device for purifying water, consisting, essentially, of pipes D H *a*, of the partition F, pipes G, arms *c*, and the air-inlet pipe *f*, the above parts combined and adapted to operate in the manner and for the purpose substantially as set forth.

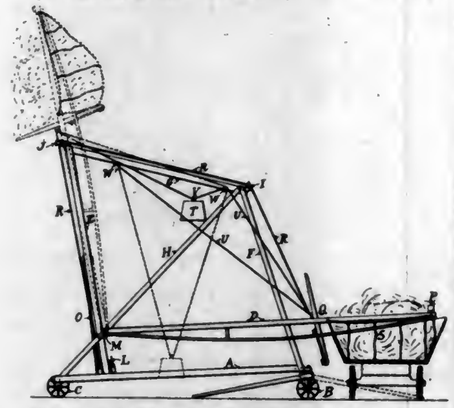
322,105. TIP-CUTTING ATTACHMENT FOR CIGAR-BOXES. ISIDOR C. ISTEL, New York, N. Y. Filed Feb. 17, 1885. (No model.)

Claim.—The combination of a cigar-box having a conical perforation in one of its walls, a perforated cutting-plate attached to the inside of said wall, a cutter attached to the lid, a partition parallel to the side wall on which the cutting attachment is arranged, and a top strip having a recess at the point where the cutter passes through the same, substantially as set forth.

322,105.



322,106. STACKING-MACHINE. BYRON JACKSON, San Francisco, Cal. Filed Aug. 26, 1884. (No model.)

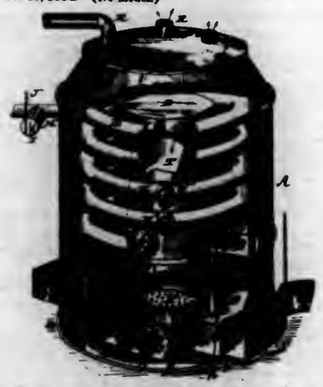


Claim.—1. In a portable stacking-machine, the triangularly-arranged rear uprights and the single front upright, with the uniting beam or ridge, in combination with the triangularly-arranged diagonal braces H, and the brackets whereby the meeting angles are united and the whole frame supported without separate braces, substantially as herein described.

2. In a stacking-machine, the combination of the triangular base with the uprights arranged as shown, the hinged swinging arms journaled at the rear, transverse beams P and Q, detachable wagon-net, and means for raising the arms, substantially as herein described.

3. In a stacking-machine, the combination of a frame, arms D, hinged thereto, fastenings upon said arms, a detachable lifting-net, and mechanism by which the loaded net may be carried up over the frame to discharge its contents upon the stack and returned to its place in the wagon, substantially as herein described.

322,107. HOT-AIR FURNACE. MIRON H. JACOBS, Syracuse, N. Y. Filed Nov. 10, 1884. (No model.)



Claim.—The combination, with a heating-furnace having a dome above the fire-pot and an interior shield, of the tubular spiral radiator opening into the lower part of the dome within the shield, substantially as and for the purpose set forth.

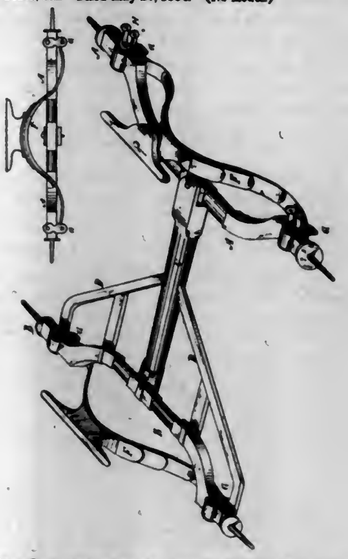
322,108. BARBED-WIRE FENCE. MICHAEL KELLY, New York, N. Y., assignor of one-half to Thomas Rosevear, same place. Filed Jan. 7, 1885. (No model.)



Claim.—1. The barbed fence-wire comprising a main stringer provided with dependent loops A', in combination with barbs loosely mounted in said loops and adapted to turn and wabble freely in all directions, as herein specified.

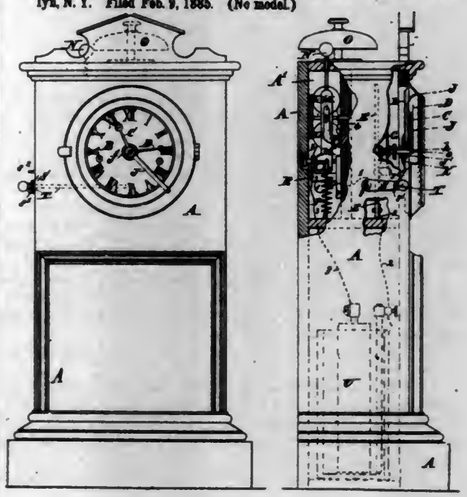
2. The barbed wire-fence described, consisting of a stringer having dependent loops A', strengthened by solder, and wabbling barbs mounted in said loops, substantially as herein specified.

322,109. RUNNING-GEAR FOR VEHICLES. ROBERT T. KELLEY, Tres Pinos, Cal. Filed May 27, 1884. (No model.)

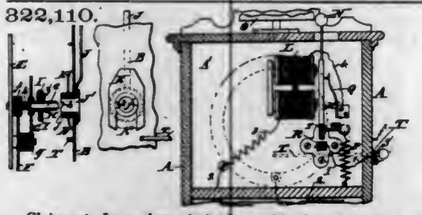


Claim.—In a running-gear for vehicles, horizontally-cranked axles, links pivoted to the said axles at their upper ends and supporting the springs at their lower ends, combined with the thill-couplings H, secured to the front axle by the same bolt which holds the links G in place, substantially as described.

322,110. ELECTRIC ALARM-CLOCK. CHARLES KORPHAGE, Brooklyn, N. Y. Filed Feb. 9, 1885. (No model.)



322,110.



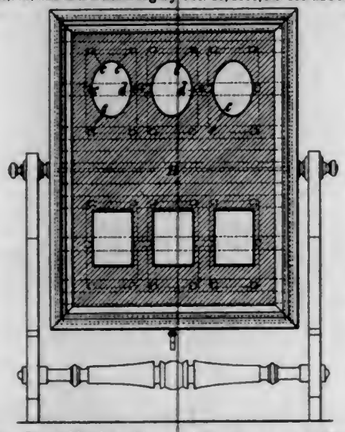
Claim.—1. In an alarm-clock, the combination of a setting-arm, a bell, a bell-hammer connected to the armature of an electro-magnet, a switch, an electric source and suitable circuit-connections, and means, substantially as described, for automatically closing the circuit when the hour-hand and the setting-arm both indicate the same point on the dial, for the purpose set forth.

2. The combination, in an electric alarm-clock, of the setting-arm J, having a notch, *k*, and connected with the dial B, and the insulated stud *i*, connected to the hour-hand wheel G of the clock-movement, the said wheel G and stud *i* being arranged to slide along the hand-spindle *e*, substantially as and for the purpose set forth.

3. The combination, with the dial B and the setting-arm J, notched at *k*, of the insulated stud *i*, fitted to slide along the post *e*, with the hour-hand wheel G, the said wheel having a sleeve, H, provided with a contact-piece, I, carrying the said stud *i*, and the spring *h*, acting to force the stud against the setting-arm, substantially as shown and described.

4. In a clock, the combination, with the dial B, the setting-arm J, notched at *k*, and the insulated stud *i*, connected to the hour-hand wheel G and arranged to slide along the hand-spindle *e*, of the electric alarm devices L M N O P Q, the arm T on the dial, the switch S, the wires 1 2 3 4, and the battery U, substantially as shown and described.

322,111. PHOTOGRAPH-EXHIBITOR. EDUARD KÜRSCHNER, Liegnitz Silesia, Prussia, Germany, assignor to Carl Gustav Schwabe, same place. Filed Feb. 8, 1884. (No model.) Patented in Germany June 22, 1882, No. 20,798, and in Austria-Hungary Feb. 15, 1883, No. 139 and No. 5,583



Claim.—In combination with a revolving photograph-exhibitor, the holder consisting of the rods *b b*, with transversal laths *a*, the strips of sheet metal *c*, and the button *d*.

322,112. BARB-WIRE MACHINE. GODFREY H. LASSAR, St. Louis, Mo. Filed May 6, 1884. (No model.)

Claim.—1. The combination of the arms S S', pivoted to the center S^2, and provided, respectively, with the formers T T', with the cams S^3 S^4, spring S^5, the shaft N, the head J, the barrel K, the core F and the slide R, as described.

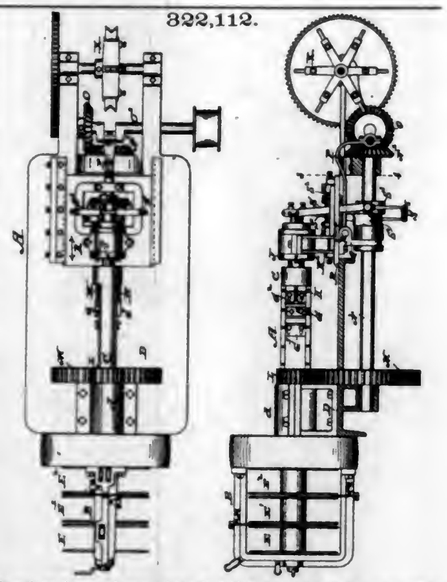
2. A barb-wire machine having the barb-formers T T' attached to a pair of arms, S S', constructed as described, and pivoted to the same center, S^2, and thereby adapted to swing the barb-formers in arcs and past each other in forming the barb, as described.

3. The barb-former T, having the detachable part *t*, as and for the purpose described.

4. The combination of the stock C, the frame D, the gears L M N' O, the core F, the barrel K, the head J, the shafts N O', the pitman P, the bracket Q, the sleeve carrying the cams S^3 S^4, the slide R, the standard R', and the arms S S', pivoted to the bearing S^2 and carrying the formers T T', as described.

5. In a barb-wire machine, the arms S S', pivoted to the bearing

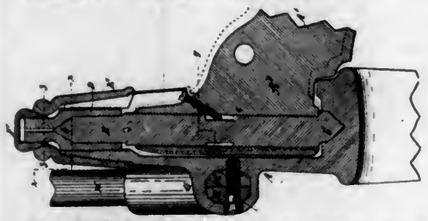
322,112.



S^2, and made one longer than the other, as and for the purpose described.

6. In a barb-wire machine, the combination of the pivoted arms S S', of different lengths, the bearing N, and the cams S^3 S^4, said cams having different throws to cause the upper ends of the arms to move equally.

322,113. VELOCIPEDE. EMMIT G. LATTA and ADRIAN C. LATTA, Friendship, N. Y. Filed Mar. 13, 1885. (No model.)



Claim.—1. The combination, with the steering-head and neck, of a spindle removably secured in the neck and held therein against turning, substantially as set forth.

2. The combination, with the steering-head, of a neck provided with a screw-threaded socket and a screw-threaded spindle seated therein, substantially as set forth.

3. The combination, with the steering-head and neck, of a spindle made vertically adjustable in the neck, substantially as set forth.

4. The combination, with the steering-head and neck, of a reversible spindle seated in the neck and having its centers arranged out of line with its seat, substantially as set forth.

5. The combination, with the steering-head and the neck provided with a screw-threaded socket, of a spindle provided with a screw-threaded portion engaging in said socket, and centers arranged out of line with said screw-threaded portion, substantially as set forth.

6. The combination, with the spindle and upper adjustable center bearing, of a split steering-head having an external screw-thread, and a clamp-nut inclosing the split head, substantially as set forth.

7. The combination, with the spindle, of the screw-bearing D, the steering-head A, provided with an upper split portion, and a tapering screw-nut, E, substantially as set forth.

8. The combination, with the steering-head, of a handle-bar lug composed of two sockets arranged at an angle to each other, substantially as set forth.

9. The combination, with the steering-head, of a V-shaped handle-bar lug arranged with its point downward in front of the steering-head, substantially as set forth.

10. The combination, with the steering-head, of a handle-bar lug composed of two sockets joined at their lower ends and projecting upwardly and outwardly from their junction, and handle-bars having their inclined inner ends seated in said sockets, substantially as set forth.

11. The combination, with the steering-head, of a handle-bar lug composed of two sockets arranged at an angle to each other, and two handle-bars seated in said sockets and having their inner ends in contact with each other, whereby the bars are held from turning, substantially as set forth.

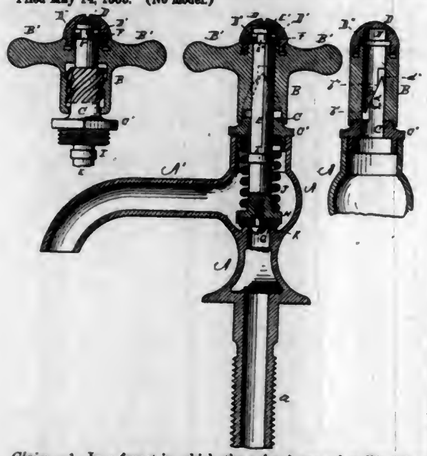
12. The combination, with the steering-head A, of the lug G, composed of connected inclined sockets *g g*, handle-bars H, and fastening-screw *h*, substantially as set forth.

13. The combination, with the handle-bar, of a handle having its socket for the reception of the handle-bar arranged outside of its center line, substantially as set forth.

14. The combination, with the handle-bar, of a handle adjustably secured to the bar, and having its socket for the reception of the handle-bar arranged outside of its center line, substantially as set forth.

15. The combination, with the handle-bar provided with a screw-threaded tang, *i*, of a handle, I, provided with a screw-threaded ferrule, J, having a tapering portion, j^2, and a clamping-sleeve, K, substantially as set forth.

322,114. SELF-CLOSING FAUCET. HENRY B. LEACH, Boston, Mass. Filed May 14, 1885. (No model.)

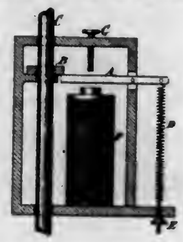


Claim.—1. In a faucet in which the valve is moved or lifted from its seat by means of an incline or set of inclines mounting another incline or set of inclines in the direction from bottom to top of the latter, the relative construction of said inclines, the same consisting of arranging the point or outer extremity of each incline to extend beyond the base or inner end of the opposite incline during the entire relative motion of the same, substantially as and for the purpose set forth.

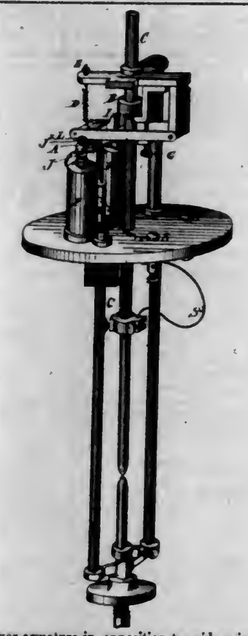
2. In a self-closing faucet the valve of which is moved from its seat by the motion of an incline or set of inclines upon a corresponding incline or set of inclines and returned to its seat by the pressure of a spring, the inclines *b d*, arranged as described, whereby when the valve is closed the points *b'* of the turning inclines *b* shall extend below or beyond the points *d'* on the inclines *d*, and the points *d''* of the inclines *d* extend above or beyond the points *b''* on the inclines *b*, in combination with a suitable stop, spring, handle, and valve-stem, substantially as and for the purpose described.

322,115. ELECTRIC-ARC LIGHT. CHARLES LEVER, Bowdon, County of Chester, England. Filed Dec. 12, 1882. (No model.) Patented in England May 3, 1882, No. 2,092; in France Nov. 3, 1882, No. 151,896; in Belgium Nov. 4, 1882, No. 59,473, and in Canada Oct. 26, 1883, No. 17,984.

Claim.—1. In an electric-arc lamp, the combination of a tube holding the movable carbon, a clutch surrounding said carbon-tube, a pivoted lever-armature adapted to bear against said clutch, a spring to lift up the pivoted lever-armature to form the arc, and a shunt electro-magnet



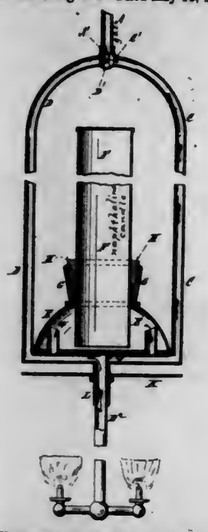
322,115.



to attract the lever-armature in opposition to said spring and serving to regulate the arc, substantially as set forth.

2. In an electric-arc lamp, the cut-out device or switch consisting of projection P on carbon-holder C, in combination with the arm *m*, rod M, bracket N, having a slot, *n*, the spring M', metallic piece M^2, insulated metallic piece O, and bar Q, connected with the carbon-holder C' or the negative binding-screw of the lamp, substantially as described.

322,116. GAS-CARBURETOR. WILLIAM G. LETTLE, The Priory, Conisboro, County of York, England. Filed May 18, 1885. (No model.)

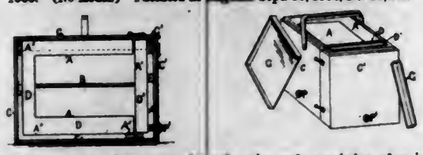


Claim.—1. The combination, in a carburetor, E, of a tube, F, closed at the top, inclosing a solid hydrocarbon candle and held firmly by a conical plug, H, and brass socket G, about one-eighth of an inch above the bottom of vessel E, all substantially as set forth.

2. The combination, in a carbureting apparatus, of the vessel E, pierced with pipes C and D above the level of the bottom of the vessel, with the tube F, fastened above and near the bottom of E, containing a solid candle of hydrocarbon resting by gravity upon the bottom of the vessel E, whereby the naphthaline is allowed to melt by the heat from the gas-burners and spread over the bottom of the vessel E in a thin film

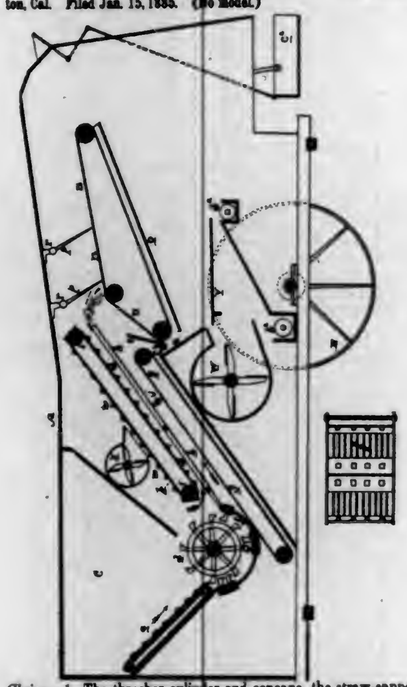
and seal the bottom of the tube F, and when sufficient naphthaline has evaporated to unseal the bottom of tube F more melted naphthaline is allowed to run out until the bottom of tube F is again sealed, as before.

322,117. ICE-CAVE OR APPARATUS FOR FREEZING SOUFFLÉS AND MOLDING ICE-PUDDINGS, &c. ALFRED W. MARSHALL, Mortimer Street, Cavendish Square, County of Middlesex, England. Filed Apr. 17, 1885. (No model.) Patented in England Sept. 30, 1884, No. 13,007.



Claim.—A freezing-cave or ice-safe or hot safe, consisting of an inner cupboard with hollow walls A $A^{\times}$, and door with hollow walls A' A^{2}, the intermediate spaces, D and D', containing freezing mixture, (or hot water,) and being accessible by lids G and G', the said cupboard and door being provided with outer wall, C and C', and intermediate air-spaces, E and E', all substantially as set forth.

322,118. THRASHER AND SEPARATOR. DON C. MATTESON, Stockton, Cal. Filed Jan. 15, 1885. (No model.)



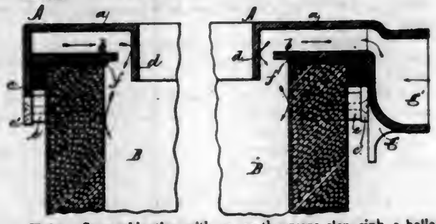
Claim.—1. The thrasher cylinder and concave, the straw-supporting screen-frame extending upward and backward therefrom, the superposed traveling belt-rake, and a grain-carrying belt below the screen, in combination with the blast apparatus or fan X, placed above the traveling belt-rake so as to discharge through it and the screen upon the upper end of the grain-belt, substantially as herein described.

2. The combination, with the hinge-rod, of the straw-supporting frame or screen composed of longitudinal strips and having the open-ended spring-loops *i*, whereby it may be connected to the hinge-rod or removed therefrom without withdrawing the rod, substantially as herein described.

3. The straw-carrier *n*, in combination with rakes *p*, hinged to swing longitudinally of the carrier and arranged to drop toward the carrier with their ends in proximity thereto, and a mechanism for causing the rakes to reciprocate laterally across the carrier, substantially as described.

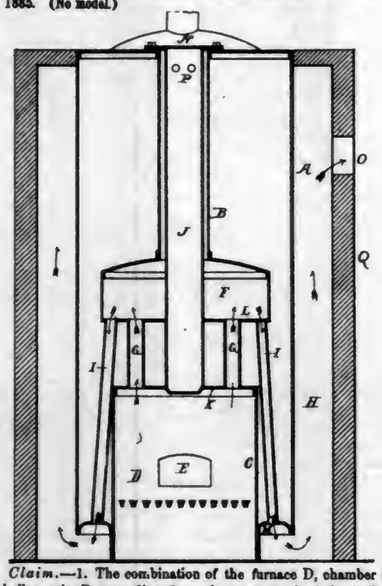
4. The combination of the thrasher-cylinder and concave, means for carrying the straw upward and backward therefrom, the primary cleaning-shoe, a grain-belt below by which the grain is carried upward and backward and delivered over the upper end of the primary cleaning-shoe, and the transverse perforated blast-pipe placed below the upper end of the grain-belt, substantially as herein described.

322,119. SLOP-SINK. SAMUEL G. MCFARLAND, New York, N. Y., assignor to the J. L. Mott Iron Works, same place. Filed Sept. 1, 1884. (No model.)



Claim.—In combination with an earthenware slop-sink, a hollow metallic rim having an opening or mouth between the bottom and the internal flange, *d*, and a connection for the supply-water pipe and lugs, and attaching-screws for connecting the metallic rim to the slop-sink, such screws passing into plugged holes in the sink, and putty or cement between the top of the earthenware and the hollow rim, substantially as set forth.

322,120. BOILER. ROBERT MUNROE, Allegheny, Pa. Filed Apr. 3, 1885. (No model.)

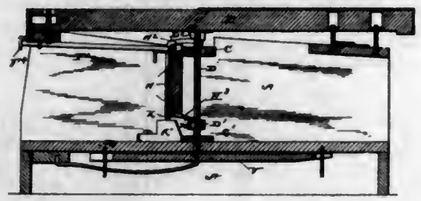


Claim.—1. The combination of the furnace D, chamber F, flues G, shell or tube B, extending from the upper end of the boiler to the top of the chamber F, and the detachable magazine, whereby access is afforded to the chamber F, substantially as described.

2. The combination of the furnace D, chamber F, flues G, tube or shell B, between the upper end of the boiler and the chamber F, the magazine J, perforated near its upper end, and the return-passage to the chamber F, formed by the walls of the tube and the magazine, substantially as described.

3. The combination of the furnace D, chamber F, flues G, tube B, magazine J, perforated near its upper end, the return-passage to the chamber F, the flues I, and the heat-chamber H, surrounding the boiler, substantially as described.

322,121. OCTAVE-COUPLER FOR ORGANS. WILLIAM MURPHY, St. John, New Brunswick, Canada. Filed Dec. 8, 1884. (No model.)

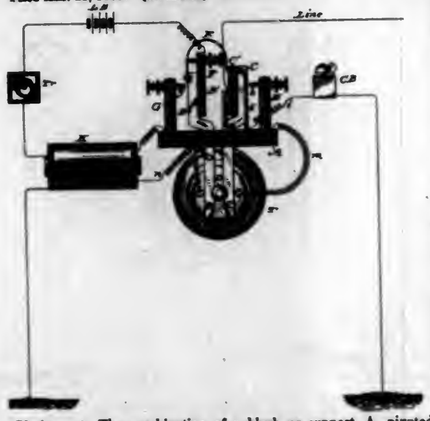


Claim.—1. The combination of the tracker-pins having the buttons near their lower ends, the keys having the buttons D^{3} on their under sides, said buttons being provided with openings to receive the upper ends of the tracker-pins, the hinged board F, and the tracker-pin rods journaled thereon, and having arms bearing against the buttons on the keys and tracker-pins, substantially as described.

2. The combination of the tracker-pins having the buttons near their lower ends, the keys having the buttons on their under sides, the hinged board F, the arm F^{2}, secured to the free edge of the board F, for inclining said board, and the tracker-pin rods journaled on the hinged board, and having arms bearing against the buttons on the keys and tracker-pins, substantially as described.

3. The combination of the tracker-pins having the buttons near their lower ends, the keys having the buttons on their under sides, the hinged board F, the sliding arm F^{2}, secured thereto, the bent pivoted pin F^{4} for locking the outer end of the arm F^{2}, and the tracker-pin rods journaled on the hinged board, and bearing against the buttons on the keys and tracker-pins, substantially as described.

322,122. TELEPHONE-SWITCH. THOS. J. PERRIN, New York, N. Y., assignor to the National Improved Telephone Company, New Orleans, La. Filed Mar. 23, 1885. (No model.)



Claim.—1. The combination of a block or support, A, pivoted jaws, a spring which nominally presses the jaws apart at their rear ends, a contact-stop, *g*, against which one of said jaws works, a primary transmitting-circuit, one end of which is connected with said contact, and a terminal for the other end of said circuit carried by the jaw B.

2. The combination, substantially as set forth, of the block or support A, the pivoted telephone-supporting jaws, a spring which normally presses the jaws apart at their rear ends, contacts *g h*, against which the jaws are pressed when the telephone is withdrawn therefrom, the primary transmitting-circuit, which is completed at the contact *g*, the call-bell, a conductor, I, through which the main-line circuit through the call-bell is normally completed, but is electrically disconnected when the rear ends of the jaws are pressed apart by the spring, a telephone connected with the contact *h*, and a main-line connection with the jaw C.

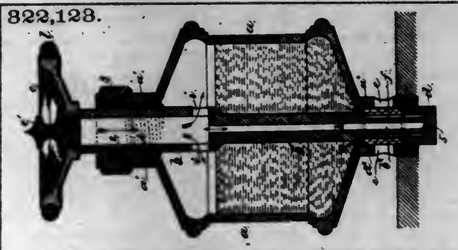
3. The combination of the block or support A, telephone-supporting jaws pivoted therein, a main-line connection with the jaw C, the insulating material C', carried by said jaw, means for pressing the rear ends of the jaws apart when the telephone is withdrawn from the jaws, a conductor, I, electrically connected through the call-bell to the earth, which alternately makes contact with the jaw C and with the insulating material carried thereby, a contact, *h*, against which the jaw C is pressed when the telephone is withdrawn from the jaws, and a conductor leading from the contact *h* through the telephone and induction-coil to earth.

4. The combination of the block or support A, the telephone-supporting jaws pivoted therein, a spring carried by one of said jaws, which normally presses them apart at their rear ends, an insulated contact-screw carried by the spring-supporting jaw, a primary transmitting-circuit, one end of which is connected with said contact, and another contact, *g*, against which the said jaw works, and with which the other end of the primary transmitting-circuit is connected.

322,123. LUBRICATOR. LOUIS PFINGST, New York, N. Y., assignor to himself and John Pfingst, same place. Filed May 25, 1885. (No model.)

Claim.—1. The combination, in a lubricator, with an oil-vessel, *a*, of the neck *a'*, having a packing-gland, the neck A^{2}, having sight-holes *e*, glass tube *f*, and bridged plug *d*, a hollow central stem, *b*, having a wheel, *c*, screw-plug *c'*, oil-holes *i*, and valves that rest against the inner surface of the oil-vessel and bridged plug, respectively, substantially as set forth.

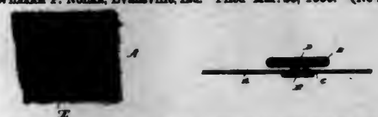
322,128.



2. The combination, with the oil-vessel *a*, of a hollow stem, *b*, reduced at *b'* and *b²*, and having oil-holes *i* and steam-hole *k*, the bridged plug *d*, and the seats 4 5, for said stem, substantially as set forth.

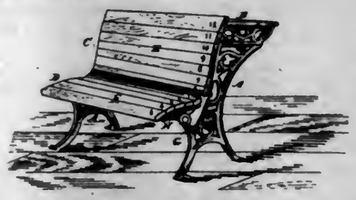
3. The combination, with an oil-vessel, of a central hollow stem adapted to be raised and lowered, means for filling the oil-vessel through the stem, a hole in said stem to admit steam, and two valves near the lower end of said stem to shut-off the oil and steam, respectively, substantially as specified.

322,124. FASTENING FOR BUTTONS. RICHARD J. POWELL and WILLIAM F. NOLAN, Evansville, Ind. Filed Mar. 25, 1885. (No model.)



Claim.—The combination, with a button proper having four holes extended through the same, of the wire fastening-staple having its base bent substantially into the form of the letter S, the outer portions of which extend beyond the center and terminate in points which stand diagonally to each other and pass through diagonally-disposed holes in the button, and are, respectively, bent over and passed through the adjacent remaining holes and rest between the button and the material to which the button is attached.

322,125. DESK. CHARLES A. PRIEST, Fitchburg, Mass. Filed Mar. 5, 1884. (No model.)



Claim.—1. In a desk substantially such as described, a seat consisting of a hinged bracket provided with a rib having a series of locking-flanges disposed at intervals thereon, and a series of slats provided with transverse slots and holes into which the rib or rib and flanges are inserted in securing the slats to the bracket, some of said slats having concaved edges *d* and rounded edges *f*, all combined and arranged to operate substantially as set forth.

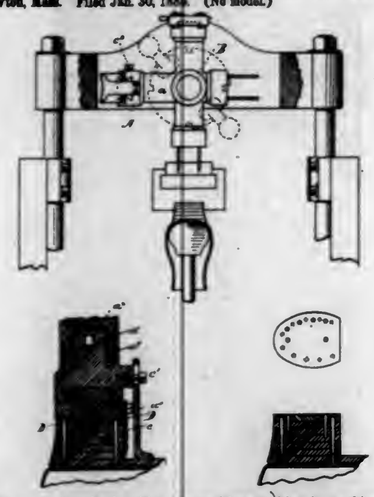
2. In a desk substantially such as described, a back or side composed of a series of slats, every alternate slat of which is secured to its support by means of locking-flanges on said support and transverse slots in the seats, the intermediate slats being secured in lateral position by the adjoining slats, and in longitudinal position by projections or ribs on the support, said projections or ribs entering slots in the lower or under sides of said intermediate slats without being interlocked therewith, substantially as described.

3. In a desk substantially such as described, a back or seat composed of a series of slats, every alternate slat of which is secured to its support by means of locking-flanges, the intermediate slats being secured in position by the adjoining slats, and by projections or ribs on their support, said projections or ribs entering the lower or inner sides of said intermediate slats without being interlocked therewith, substantially as described.

4. In a desk substantially such as described, the friction-plate N, provided with the projections *r*, in combination with the arm G, having the groove or socket *t*, and with means for forcing said plate against the bracket H to produce friction thereon, substantially as specified.

5. In a desk substantially such as described, a slat provided at either end with a transverse hole, *m*, which is oval in cross-section, and with a slot opening into said hole, each slat having a rounded edge, *f*, and a concave edge, *d*, substantially as and for the purpose set forth.

322,126. HEEL-ATTACHING MACHINE. FREEBORN P. RAYMOND, 2d, Newton, Mass. Filed Jan. 30, 1885. (No model.)



Claim.—1. In a heel nailing or attaching machine, in combination with nail-driving devices for driving the attaching-nails by which the heel is secured to the boot or shoe, the reciprocating block C, carrying the supplemental awls D, and breasting-knife c, adapted to be brought into operation after the driving of the attaching-nails, all substantially as and for the purposes described.

2. The combination in a heel nailing or attaching machine of a gang or group of awls, a gang or group of drivers and the block C, carrying the supplemental awls D and the breasting-knife c, adapted to be brought successively into operative position and reciprocated, and the work-support or jack, all substantially as and for the purposes described.

3. In a heel-nailing machine, the combination of suitable nail-driving devices for driving the nails used in attaching the heel-blanks, the top-lift attaching devices, and a supplemental gang or group of awls operated after the top lift has been attached to form holes in the heel for the reception of additional nails, all substantially as and for the purposes described.

322,127. CAR-BRAKE. JOHN W. RICE, Springfield, Mass. Filed Mar. 16, 1885. (No model.)

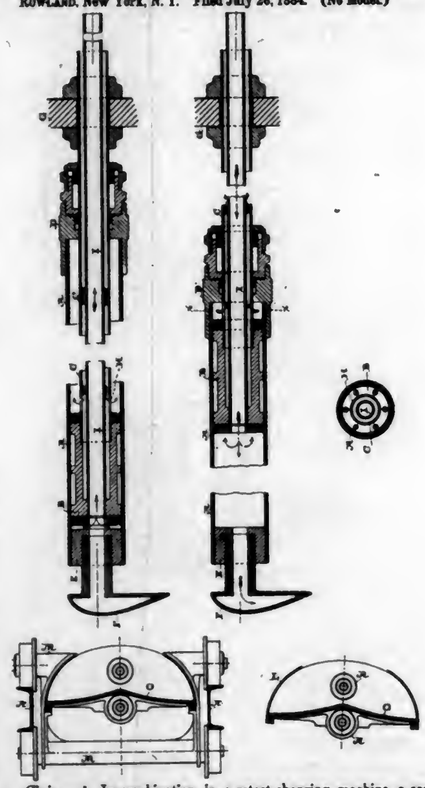


Claim.—1. In a railway-car brake, an equalizing-lever provided with an elongated hole, in combination with a shaft secured in the truck-frame and extending through said elongated hole, and upon which shaft said equalizing-lever is hung, and connecting-rods extending from said equalizing-lever to the brake mechanism of each pair of wheels, whereby the pressure of the brakes against all the wheels of the truck is made equal and uniform by the movement of said lever, substantially as described.

2. In an improved railway-car brake, a double equalizing-lever pivoted in a hanger beneath the car and with its pivot extending through an elongated hole, so that said lever may have an independent movement in the direction of the length of the car, in combination with the connecting-rods extending from said double equalizing-lever to the brake-staff or mechanism for moving said lever, and also to the operating or equalizing lever pivoted to the truck-frame and connected with the brakes, substantially as and for the purpose described.

3. In an improved railway-car brake, a double equalizing-lever pivoted in a hanger beneath the car, and with its pivot extending through an elongated hole so that said lever may have an independent movement in the direction of the length of the car, an equalizing-lever pivoted to the truck and provided with an elongated hole through which its pivot-shaft extends, a brake-bar adapted to be moved vertically at one end above each car-wheel, a rocking or tilting cam-shaft secured in bearings and adapted to engage with and move the free end of each brake-bar in a vertical direction against the car-wheel, and connecting-rods for connecting said brake-bars with said equalizing-lever and the latter with the double equalizing-lever, for operating all the brakes simultaneously, substantially as described.

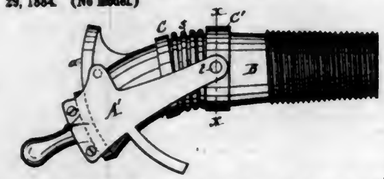
322,128. MACHINERY FOR CHARGING RETORTS. THOMAS ROWLAND, New York, N. Y. Filed July 26, 1884. (No model.)



Claim.—1. In combination, in a retort-charging machine, a scoop provided with a sliding bottom, a hydraulic apparatus for projecting and withdrawing the scoop, consisting of a cylinder attached to the scoop and moving on a fixed piston, and a like hydraulic apparatus for projecting and withdrawing the bottom of the scoop, substantially as set forth.

2. In combination, the scoop L, provided with the sliding bottom O, and mounted upon a truck, N, the cylinder and piston A for operating the scoop, and the cylinder and piston A for operating the bottom O, said pistons being fixed to the frame of the machine, and said cylinders being attached to the movable parts that they operate, substantially as set forth.

322,129. FAUCET. ELIJAH U. SCOVILLE, Manlius, N. Y. Filed Apr. 29, 1884. (No model.)



Claim.—The combination, with the barrel B, having its discharge at the end thereof, and provided with a convex face, *a*, of the collar C, affixed to the barrel, the ring C', arranged to slide on the barrel back of the collar C, the spring *s*, interposed between said collar and ring, and the gate A, pivoted on the sliding ring at opposite sides of the barrel, and provided with a concave face, *a'*, substantially as described and shown.

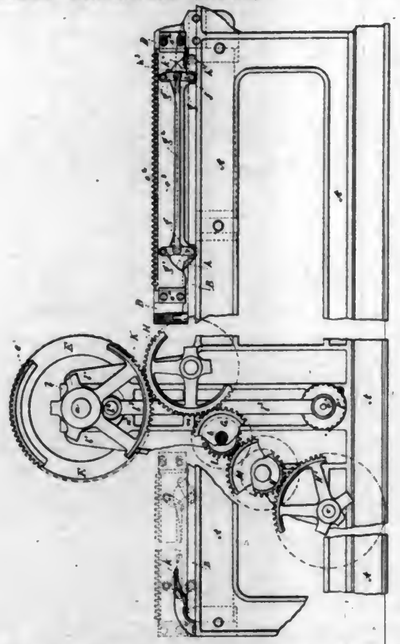
322,130. PROCESS OF MANUFACTURING SAFETY-PAPER FOR CHECKS, &c. GERHARD SCHREIBER, Chemnitz, Saxony, Germany, assignor to Die Direction der Patentpapierfabrik zu Penig, Penig, Saxony. Filed Mar. 16, 1885. (No specimens.)

Claim.—The process of producing safety-paper, wherein the paper material, after being colored with indigo, is treated with chromates insoluble in water, but soluble in alcohol.

322,131. PROCESS OF MANUFACTURING SAFETY-PAPER FOR CHECKS, &c. GERHARD SCHREIBER, Chemnitz, Saxony, Germany, assignor to Die Direction der Patentpapierfabrik zu Penig, Penig, Saxony. Filed Mar. 18, 1885. (No specimens.)

Claim.—The process of producing safety-paper, wherein the paper material or the finished paper is treated with ferric-oxide salts and with ferro-cyanides insoluble in water but soluble in acids—such as ferro-cyanide of lead or the like on the one hand, or ferric-oxide saccharate and ferro-cyanides soluble in water on the other hand—the paper being afterward treated with indigo or acid fuchsine.

322,132. CYLINDER PRINTING-MACHINE. WALTER SCOTT, Plainfield, N. J. Filed June 2, 1884. (No model.)



Claim.—1. The combination, with the reciprocating bed, the impression-cylinder and its gear-wheel, of the rack and rack-plate, guides secured upon the bed and in which said rack and plate can be moved vertically, and mechanism, substantially as set forth, for elevating the rack in its relation to the bed at or near the termination of the movement of the bed in one direction, and for depressing it at or near the termination of the movement in the other direction, substantially as set forth.

2. The combination, with the printing-press bed, an impression-cylinder and its gear-wheel, of a rack upon the bed, slides supporting the rack, toggle-bars pivoted together and to the bed and rack, respectively, and means, substantially as specified, for moving the toggle-bars at the ends of the reciprocations of the bed to raise and lower the rack, substantially as set forth.

3. The combination, with the bed and the rack, of the slides for the same, the toggle-bars connected together and to the bed and rack, and the arms and stationary cams for moving the same, substantially as set forth.

4. The combination, with the impression cylinder and mechanism, substantially as specified, for raising and lowering the same, of adjusting-screws *n* passing vertically through the frame *m*, and by which the downward movement of the journal-boxes of the impression-cylinder is arrested, the adjustable springs n^4, the sleeve n^2 passing through the frame n^3, and disks n^5 around the screws to adjust the springs for partially counterpoising the impression-cylinder, substantially as set forth.

5. The combination, with the impression-cylinder and its shaft and journal-boxes fitted to slide vertically in the frame, of a pin passing through the lower part of each journal-box, links connected at their upper ends by such pin at the outer and inner sides of such journal-boxes, pins passing through and supported by the frame with eccentric ends to which the links are connected at their lower ends, and cams, arms, and levers for partially rotating the pins and moving said links and raising and lowering the impression-cylinder, substantially as set forth.

6. The combination, with the impression-cylinder, journal-boxes, links l^5 l^6, eccentric-pins o', and the joint-bolts l^7, of the crank-arms o^3, notched links *s*, the rocker-arms *r* r' r^2, and the cams *p*, and cam-shaft *o* for actuating the same, substantially as set forth.

7. The combination, with the impression-cylinder, and the eccentric pins and links for raising and lowering the same, of the crank-arms o^3 and links *s*, the three-armed rocker-levers *r* r' r^2, the cams *p* for moving the same, the cross-shaft *s'*, the arms and connection to the foot-piece, the link *t'*, between the arm s^3 and the notched link *s*, and the spring s^5 acting upon the arm and cross-shaft, substantially as set forth.

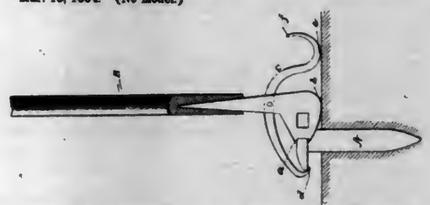
8. The combination, with the notched link *s* and the foot-piece, links and arms for disconnecting the same from the stud 15^a, of the impression-cylinder, the links l^3 l^4, the pins with their crank-arms, and the stud 55 for holding the notched link when the impression is thrown off, substantially as set forth.

9. The combination, with the foot-piece and levers for throwing off the impression, of the shell-cam to determine the time when the foot-piece and levers are allowed to operate, and the impression-cylinder and the eccentric pins and links for raising and lowering the same, substantially as set forth.

10. The combination, with the impression-cylinder and its journal boxes, of the links connected to the journal-boxes, the pins with eccentric ends, and the adjustable eccentric sleeves that receive such pins and by which the impression-cylinder is adjusted, substantially as set forth.

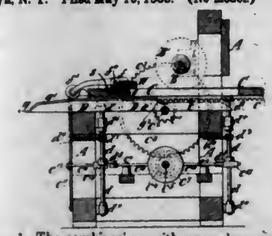
11. The combination, in a printing-machine, with the impression-cylinder and its grippers, and the eccentric pins and links for raising and lower the cylinder, of a cam, 30, a shaft, 31, for the same, a gear-wheel, N^2, upon said shaft, and a gear-wheel, W^2, upon the shaft of the impression-cylinder, whereby the cam 30 is revolved once for every two revolutions of the impression-cylinder, a cam, 23, operated by the cam 30, a sector and pinion for moving the grippers, the same being acted upon by the cam 23 every second revolution of the impression-cylinder, substantially as set forth.

322,133. SPIKE-EXTRACTOR. JACOB SLOOP, Canton, Kans. Filed Mar. 18, 1884. (No model.)



Claim.—The combination, in an extractor, of the horizontal perforated implement proper, provided with claws *a*, and with bearing portions *b*, and an arm, *c*, pivoted in the perforation of said implement proper, bent downward at its front end, as described, to operate in connection with said claws to secure a primary extraction of the spike, and carved, as described, at its rear end to form the extended fulcrum and bearing portions *e* and *f*, co-operating with the claws and bent portion *d*, to secure final extraction, substantially as set forth.

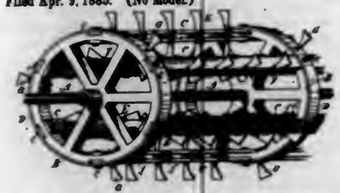
322,134. CIRCULAR SAWING MACHINE. PEREZ B. H. SMITH, Brooklyn, N. Y. Filed May 16, 1885. (No model.)



Claim.—1. The combination, with saw-arbors and saws, and a reciprocating saw-table, of lever-clamps pivoted to said table and serving to clamp the work upon the top of the table, and tracks or ways arranged below the table and extending parallel with the direction of movement of the table, the said tracks or ways having cam-like or inclined upper surfaces whereby the lever-clamps are automatically operated to clamp the work as the saw-table is reciprocated, substantially as herein described.

2. The combination, with saw-arbors and saws and a reciprocating saw-table provided with a projecting lug or tappet, of gearing for operating the table, a clutch whereby the direction of movement of the table may be reversed, levers for shifting said clutch, and rock-shafts arranged at the front and back of the machine, and having arms which are acted upon alternately by the projection or tappet on the table, and other arms which act upon the clutch-levers for shifting them, substantially as herein described.

322,135. THRASHING-CYLINDER. EDWARD C. SOUNEY, Sacramento, Cal. Filed Apr. 9, 1885. (No model.)



Claim.—1. In a thrashing-cylinder, the combination of the heads formed with rims, the two-part tooth-carrying bars C, one part lying inside and the other outside of the rims of the heads, and bolts passing through said rims and said bars, substantially as herein described.

2. In a thrashing-cylinder, the combination of the heads formed with rims, the two-part bars C, one part lying inside and one outside of the rims of the heads and bolted thereto, and teeth seated and secured on the forward edges of the bars at right angles thereto and radially to the heads, substantially as herein described.

3. In a thrashing-cylinder, the combination of the heads, the two-part bars C, secured to the heads, teeth seated in said bars at right angles thereto and radially to the heads, eye-bolts embracing the teeth and passing between the parts of the double bar, yoke-plates receiving the bolts and bearing against the edge of the bars, and nuts on the bolts bearing on the yoke-plates, substantially as herein described.

4. In a thrashing-cylinder, the heads B, and double or two-part bars C, bolted to the rims of the heads, as described, in combination with the double-ender or reversible teeth E, seated in the bars at right angles thereto and radially to the heads, the eye-bolts F, embracing the bodies of the teeth and passing between the parts of the double bars, the yoke-plates *f*, receiving the bolts and bearing against the edges of the bars, and the securing-nuts *f'*, all arranged and adapted to operate substantially as herein described.

5. In a thrashing-cylinder, the cylinder-heads, and the two-part bars C, secured to the rims of the heads, as described, and having V-shaped notches or recesses *c'* on their forward edges, in combination with the teeth E, having bodies *e'*, diamond-shaped in cross-section and adapted to fit in the notches *c'*, the eyebolts F, embracing the bodies of the teeth and passing back between the parts of the bars, the yoke-plates *f* on the bolts and bearing against the back edges of the bars, and the securing-nuts *f'*, substantially as herein described.

6. In a thrashing-cylinder, the cylinder-heads and the two-part bars C, secured to the rims of the heads, as described, and having approximately V-shaped notches or recesses *c'* on their forward edges, in combination with the teeth E, having diamond-shaped bodies *e'*, adapted to fit the notches, and shoulders *e²*, bearing against the inner edges of their bases, the eyebolts F, embracing the bodies of the teeth and passing back between the parts of the bars, the yoke-plates *f* on the bolts and bearing against the back edges of the bars, and the securing-nuts *f'*, substantially as herein described.

7. In a thrashing-cylinder, the heads B, having the radial lugs H on the inner surface of their rims and the bands D on their peripheries, in combination with the band-teeth G, having stems passing through the bands and rims of the heads, and the means for securing said teeth, consisting of the eyebolts F, embracing the stems and passing through the lugs and the nuts *f'*, substantially as herein described.

8. In a thrashing-cylinder, the heads B, double or two-part tooth-carrying bars C, and the bolts *c*, securing the parts of said bars to the heads, in combination with the bands D, encircling the heads, and the band-teeth G, secured in said bands and heads between the points at which the bars are bolted to the heads, substantially as and for the purpose herein described.

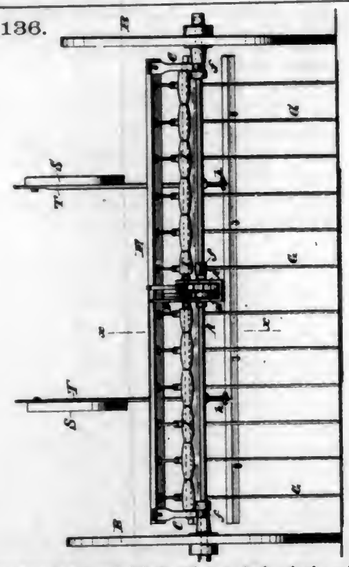
322,136. COMBINED HORSE RAKE AND TEDDER. E. FOWLER STODDARD, Dayton, Ohio. Filed Aug. 22, 1884. (No model.)

Claim.—1. In a combined rake and tedder, the combination of a single set of teeth for both raking and tedding, a rake-head, and an axle continuously revolving by power applied from either or both wheels, with mechanism whereby the rake-head may be locked to the axle at the will of the operator, to cause the elevation of the teeth for dumping under one condition of adjustment and for tedding under another condition of adjustment.

2. In a combined rake and tedder, the combination of a single set of teeth for both raking and tedding, a rake-head, and an axle continuously revolving by power applied from either or both wheels, with mechanism at or near its middle, whereby the rake-head may be locked to the axle at the will of the operator, to cause the elevation of the teeth for dumping under one condition of adjustment and for tedding under another condition of adjustment.

3. In a combined rake and tedder, the combination of a single set of teeth for both raking and tedding, a rake-head, an axle continuously

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revolving by power applied from either or both wheels and provided with a lifting-wheel, and mechanism for connecting the rake-head to said lifting-wheel at the will of the operator, to cause the elevation of the teeth for dumping under one condition of adjustment and for tedding under another condition of adjustment.

4. In a combined rake and tedder, the combination of a single set of teeth for both raking and tedding, a rake-head, a centrally arranged lifting-wheel continuously revolving by power applied from either or both wheels, and mechanism for connecting the rake-head to said lifting-wheel at the will of the operator, to cause the elevation of the teeth for dumping under one condition of adjustment and for tedding under another condition of adjustment.

5. In a combined rake and tedder having a single set of teeth for both raking and tedding, an axle continuously revolving by power applied from either or both wheels, two lifting-wheels revolving with said axle, and two independent lock mechanisms connected to the rake-head, either of which may be operated at the will of the driver, the one for causing the elevation of the teeth in raking and the other the partial and automatic elevation of the teeth at regular intervals for tedding.

6. In a combined rake and tedder having a single set of teeth for both raking and tedding, the combination, with a lifting-wheel continuously revolving by power applied from either or both wheels, of a locking-dog held under constant engaging-pressure for tedding.

7. In a combined rake and tedder having a single set of teeth for both raking and tedding, the combination, with the continuously-revolving axle, of a rigid rake-head oscillating and journaled thereon and concentric therewith.

8. The combination, with the continuously-revolving axle and the rake-head journaled thereon, of a transverse shaft parallel with the axle, upon which is strung the eye-bearings which hold the teeth.

9. The combination, with the teeth, of an adjustable vibrating stripper-bar and an independently-adjustable guard-bar, whereby the teeth are prevented from springing over the strip-bar.

10. The combination and arrangement of the supports S, arms T, adjustable guard-bar U, and adjustable stripper-bar V, substantially as and for the purpose specified.

11. The combination, with the teeth supported and adjustably held between the front and rear bars of a rocker-frame, of forward adjustable spring-guides whereby the tension of the springs can be regulated as desired.

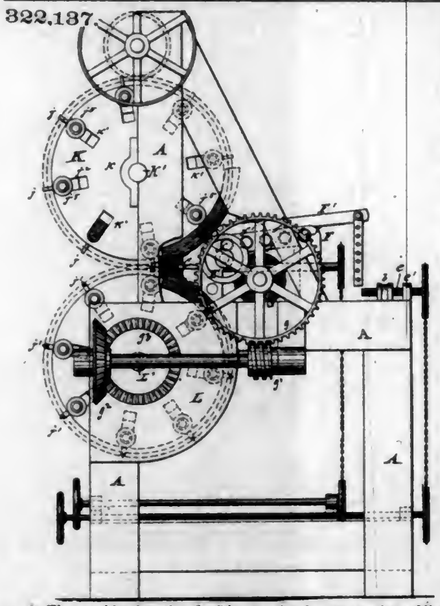
12. The combination, with the rocking frame or rake-head and the forwardly and backwardly adjustable teeth secured thereto, of the spring-guides composed of the bolt *a*, spring *c*, recessed shell *d*, and nut *e*, the parts being constructed and applied in the manner and for the purpose specified.

13. The combination and arrangement of the axle A, hood D, lifting-wheels A' B', and locking-dogs C' E', substantially as set forth.

322,137. MACHINE FOR PLUCKING PELTS. JOHN W. SUTTON, New York, N. Y. Filed Jan. 17, 1885. (No model.)

Claim.—1. The combination of a flexible stretcher-bar, means for feeding the pelt over the stretcher-bar, and rotating jaw-frames having radially-guided and spring-actuated plucking-jaws, substantially as set forth.

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2. The combination of a flexible stretcher-bar, means for guiding and feeding the pelt over the same, and rotating jaw-frames having radially-guided and spring-actuated plucking-jaws, the upper jaw-frame being provided with brushes between the jaws, substantially as set forth.

3. The combination of a flexible stretcher-bar, means for feeding the pelt over the same, and rotating jaw-frames having radially-guided and spring-actuated plucking-jaws, said jaws being adapted to close in front of the stretcher-bar, so as to grip and pluck the master-hairs, substantially as set forth.

4. The combination of a flexible stretcher-bar, means for adjusting the curvature of the stretcher-bar, an adjustable carriage supporting the stretcher-bar, means to feed the pelt over the stretcher-bar, and rotating jaw-frames having radially-guided and spring-actuated plucking-jaws, substantially as set forth.

5. The combination of a flexible stretcher-bar, means to guide and feed the pelt over the same, rotating jaw-frames located respectively above and below the stretcher-bar, and provided with radially-guided and spring-actuated plucking jaws or blades, the upper jaw-frame being provided with intermediate brushes, substantially as set forth.

6. The combination of a flexible stretcher-bar, means to actuate and feed the pelt over the edge of the same, rotating jaw-frames located respectively above and below the stretcher-bar and provided with radially-guided and spring-actuated plucking-jaws, and fixed cam-segments located eccentrically to the rotating jaw-frames above and below the stretcher-bar, whereby the plucking-jaws are moved back when approaching the stretcher-bar and released when arriving in front of the same, substantially as set forth.

7. The combination of a flexible stretcher-bar, means to guide and feed the pelt over the edge of the same, rotating jaw-frames located above and below the stretcher-bar and provided with radially-guided and spring-actuated plucking-jaws, the jaws of the upper frame being formed of a thin blade, while the jaws of the lower frame are formed of a wider blade with a facing of rubber, substantially as set forth.

8. The combination of a flexible stretcher-bar, means to adjust the curvature of the stretcher-bar, a carriage supporting the stretcher-bar, means for adjusting the carriage and stretcher-bar, and rotating jaw-frames having radially-guided and spring-actuated plucking-jaws, substantially as set forth.

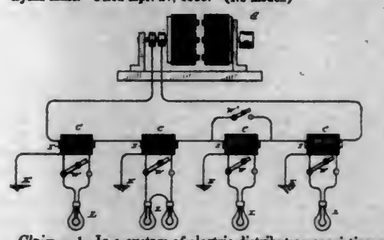
9. In a machine for plucking pelts, the combination of a pelt-supporting carriage, a flexible stretcher-bar supported on the front end of the same, laterally-adjustable stays, a transverse lever, a pivot-link connecting the stretcher-bar with said lever, and means to adjust the transverse lever and vary the curvature of the stretcher-bar, substantially as set forth.

10. In a machine for plucking pelts, the combination of the supporting-carriage, a flexible stretcher-bar supported on the same, a transverse lever pivoted at one end and connected adjustably at the other end to a screw, a pivot-link connecting the stretcher-bar and transverse lever, a fixed transverse guide-bar, stays bearing on the back of the stretcher-bar, and means for laterally adjusting said stays, substantially as set forth.

11. In a machine for plucking pelts, the combination of the supporting-carriage having transverse friction-bars, a flexible stretcher-bar at one end of the same, means for adjusting the curvature of the stretcher-bar, and means for feeding the pelt over the stretcher-bar, substantially as set forth.

12. In a machine for plucking pelts, a rotating jaw-frame, consisting of end disks having radial guide-slots, transverse plucking-jaws, supporting-heads sliding in said guide-slots, and springs acting on said guide-heads, substantially as set forth.

322,138. SYSTEM OF ELECTRIC DISTRIBUTION. ELIHU THOMSON, Lynn, Mass. Filed Apr. 27, 1885. (No model.)



Claim.—1. In a system of electric distribution consisting of a high-potential circuit and local low-potential circuits, one or more out of actual contact with the high-potential circuit, ground-connections of low resistance connected to or located adjacent to the said local or secondary circuit, but normally insulated from the primary or feeding main-line circuit.

2. In a system of electrical distribution, a low-resistance ground-connection for carrying to earth any current that may leak or tend to leak from the primary main line to a secondary local line operated by energy abstracted from the main line without actual contact.

3. In a system of electric distribution, the combination of a generator of electric currents, two or more primary coils in circuit therewith, two or more induction or secondary generating-coils in operative inductive relation or energy-transferring relation to the said primary coils, electric lamps or other translating devices in circuit with said secondaries, and an earth-connection of low resistance to said secondaries applied in the manner described to short-circuit current leaking from the main or primary coils.

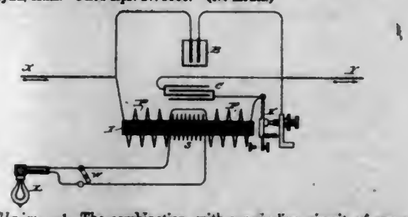
4. In a system of electric distribution, a generator of electric currents, two or more primary coils in circuit therewith, two or more induction or secondary generating coils in operative inductive or energy-transferring relation to the said primary coils, in combination with earth-connections of low resistance applied to the said secondaries, so as to intercept leakage, and switch devices for short-circuiting said secondary coil and, when desired, for cutting out the circuit of one or more of the primary coils.

5. The combination, with the induction-coil, of a conductor intervening between the primary and secondary coils and connected to earth, as and for the purpose described.

6. The combination, with the main circuit carrying high-tension currents, and local-circuit apparatus operated by inductive transfer of energy, of short-circuit ground-connections, as and for the purpose described.

7. The combination, with the main line carrying currents of high tension, and local apparatus normally insulated from but liable to accidental connection with said line, of low-resistance ground-connections to said apparatus, as and for the purpose described.

322,139. SYSTEM OF ELECTRIC DISTRIBUTION. ELIHU THOMSON, Lynn, Mass. Filed Apr. 27, 1885. (No model.)



Claim.—1. The combination, with a main-line circuit, of one or more devices consisting, substantially, of a branch containing a secondary battery, B, and another branch containing a primary coil, P, and circuit-interrupting contacts, whereby induction discharges are obtained in a secondary coil, S, connected to a separate circuit, substantially as described.

2. A main or supplying line for electric currents, having a derivation into two branches, one containing a secondary battery, and the other a primary coil and circuit-breaking contact, as set forth, in combination

with a secondary coil connected to a local independent circuit containing electric lamps or other translating devices.

3. The combination, with the main line and induction coil, of a branch around the induction apparatus, in which branch is placed one or more cells of a battery consisting simply of polarizable surfaces immersed in conducting liquid, and of a secondary coil connected to a local circuit.

4. In a system of electric distribution, a main or charging line, and a local independent line containing translating devices, in combination with an induction-coil having a divided secondary coil, and switch appliances, whereby any desired connection of sections of such coil may be effected.

5. In a system of electric distribution, a main-line circuit divided into two branches, one containing a contact-operating magnet and secondary battery, and the other containing the primary coil of an induction-coil, and a set of contacts operated by said magnet.

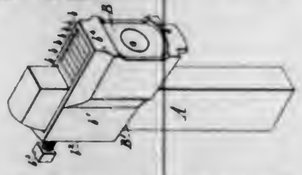
6. In a system of electric distribution, a polarized armature kept polarized by the current of a main line, in combination with an actuating-magnet for said armature in a branch with a secondary battery, a set of contacts operated by said armature in its movements, and a second branch including the primary coil of an induction-coil, the secondary coil of which delivers electric energy to electric lamps or other devices.

7. The combination, with a secondary coil, S, supplying current to the lamp L, or other device, of a shunting-switch, W, for short-circuiting the secondary, thereby saving energy of the primary and relieving strain upon the main line.

8. In a system of electric distribution, the combination, with the main line, of a secondary battery, the primary of an induction-coil, a rheotome or circuit-controller, whereby the battery is alternately polarized from the main-line current and discharged through the primary of the induction-coil, and a secondary coil connected with a local or sub circuit containing electric lamps, motors, or other translating devices.

9. The combination, with the secondary circuit and an electric lamp, or other apparatus connected therewith, of an adjustable reactionary coil, for the purpose described.

322,140. LOOM-PICKER. WILLIAM R. THRASH, Selma, Ala. Filed May 28, 1884. (No model.)



Claim.—1. The combination of the picker material B, having the shoulders b^3, with the housing B', open at top and bottom, and having closed side walls, partly open front wall, a perforated rear wall, and vertical shoulders b^4, and horizontal shoulders b^7, and the clamp-screw b^7, substantially as and for the purpose described.

2. The combination of the picker material B, having shoulders b^3, with the clamping-housing B', having closed side walls and shoulders b^6 b^7, substantially as described.

322,141. FLOUR-SIFTER. AUGUSTUS F. TRIPP and IGNATZ WOEPPEL, Buffalo, N. Y., assignors to Sidney Shepard & Co., same place. Filed Oct 29, 1884. (No model.)

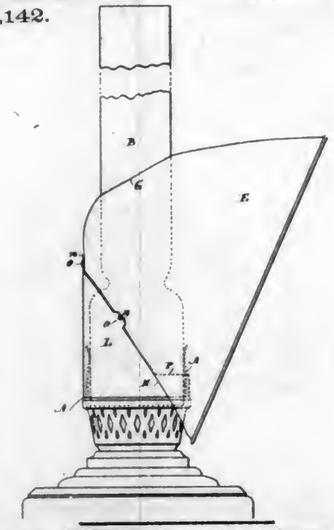


Claim.—The combination, with the body A, provided with an inwardly-projecting bead, *e*, of the bottom C, provided with a downwardly-turned flange, *f*, a ring, G, placed against the inner side of said flange and provided with a top flange, *g*, and a bottom flange, *g'*, the parts being secured together by a bead, *h*, formed through the ring G, flange *f*, and body A in the upper portion of the ring G, and by the lower flange, *g'*, being turned up against the outer side of the body A, substantially as set forth.

322,142. REFLECTOR FOR LAMPS. JAMES H. WHITE, New York, N. Y., assignor to the Manhattan Brass Company, same place. Filed Mar. 5, 1885. (No model.)

Claim.—The parabolic reflector having openings through it a shield of sheet metal with ear-pieces extending out from the shield and attached to the reflector, and spring-arms projecting from the lower part of the shield and adapted to grasp the chimney-holder of an Argand lamp, substantially as set forth.

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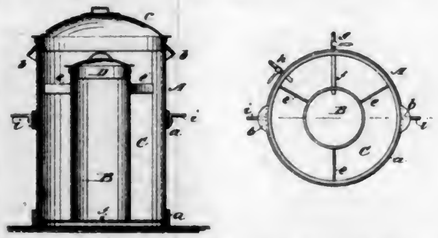


322,143. SAFETY-PIN. EDWARD WILLIAMS, Brooklyn, N. Y. Filed Aug. 6, 1884. (No model.)



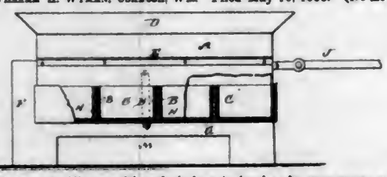
Claim.—A safety-pin having a fixed point at one end and a spring-controlled point at the other, and a hook having its spring end above the top of the stem, substantially as and for the purpose described.

322,144. MILK AND WATER COOLER. EDWARD WILLIAMS, Lynn, Mass. Filed Apr. 7, 1885. (No model.)



Claim.—As an improved article of manufacture, a cooler consisting of the can A, having two compartments, B C, separate faucets and covers, handles *b*, and trunnions *i* on the outer side of the said can, substantially as set forth

322,145. MACHINE FOR STRAIGHTENING MATCH-SPLINTS. WILLIAM H. WYMAN, Oshkosh, Wis. Filed May 16, 1885. (No model.)



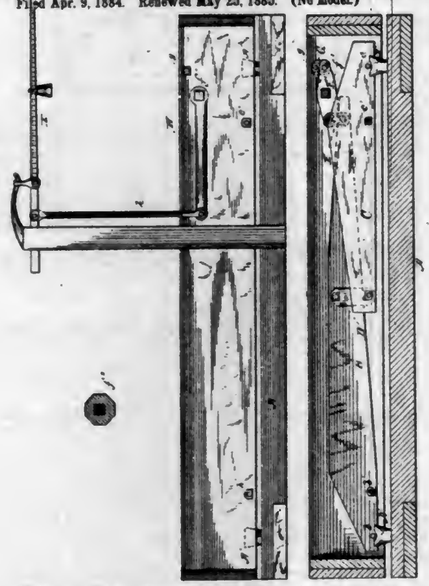
Claim.—1. The partitioned shaker A, having its transverse partitions made double, substantially as herein shown and described.

2. The combination, with the shaker A, having double transverse partitions, of a box for receiving the lower part of the shaker, and which has transverse partitions fitting in between the double partitions of the shaker, substantially as herein shown and described.

3. The combination, with a partitioned shaker without a bottom, of a partitioned box held on the bottom of the shaker, substantially as herein shown and described.

4. The combination, with a partitioned shaker without a bottom, of a partitioned box held by catches on the bottom of the shaker, substantially as herein shown and described.

322,146. PLATFORM-SCALE. HORACE R. ALLEN, Indianapolis, Ind. Filed Apr. 9, 1884. Renewed May 25, 1885. (No model.)



Claim.—1. In a platform-scale, the platform-frame formed of boxes M and end pieces, N, bolted together, the said boxes M furnishing permanent bearings and housing for the operating and distributing levers, as set forth.

2. In combination with the boxes M, as set forth, and having apertures, the rock-shaft made in sections and secured together by rectangular joints, as set forth.

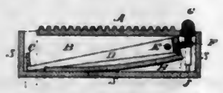
3. The boxes M, having knife-bearings for the distributing-levers, and bearings at *g* for the levers F', combined with the rock-shaft F and distributing-levers and connecting devices, as set forth.

4. In a scale, substantially as described, the combination, with the fulcrum-posts, of the long levers B, the short double levers arranged to distribute the weight to the centers of said long levers, the rock-shaft having levers F', and arm H, connecting with the scale-beam, the several levers and arm being upon the same parallel plane, as set forth.

5. In combination with the levers, the suspending-bearing G, and the scale-beam, the rock-shaft having rigid levers F', and rigid arm H, the levers C being shorter than the arm H to throw the weight from the operating-levers between the points of suspension upon the links G *h*, as and for the purposes set forth.

6 The combination of the fulcrum-posts A', the levers B and C, arranged as described, the beam I, and the links E, G, and *h*, with the rock-shaft F, having levers F', and arm H, the whole arranged and operating as and for the purposes set forth.

322,147. CHROMATIC PRINTING APPARATUS. HORACE R. ALLEN, Indianapolis, Ind. Filed Sept. 4, 1883. Renewed May 25, 1885. (No model.)



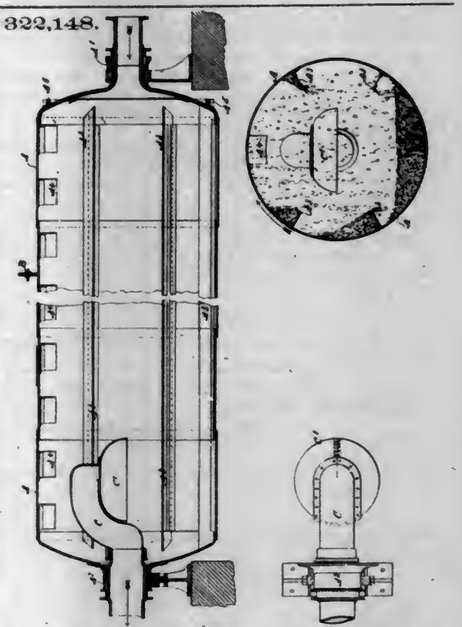
Claim.—1. In a printing device, the combination of a box, an electroplate secured thereto, a lever fulcrumed in such box, carrying a marker, and a plunger acting upon such lever, substantially as set forth.

2. In combination with an ink-holding box or reservoir and an electroplate secured thereto above the surface of the ink, a lever fulcrumed in such box and carrying a marker, and a plunger acting upon such lever to throw the marker against the paper being printed, as herein described.

3. In combination with an ink reservoir or box and attached electroplate, as described, a lever pivoted in such reservoir or box and carrying a marker, a spring to hold the marker end of the lever to the ink, and a plunger acting upon such lever to overcome the action of the spring and throw the marker against the paper being printed, as set forth.

322,148. FILTERING APPARATUS. WILLIAM ANDERSON, Westminster, England. Filed Oct. 24, 1884. (No model.) Patented in England Nov. 23, 1883, No. 5,496; in France Sept. 13, 1884, No. 164,261, and in Belgium Oct. 6, 1884, No. 66,507.

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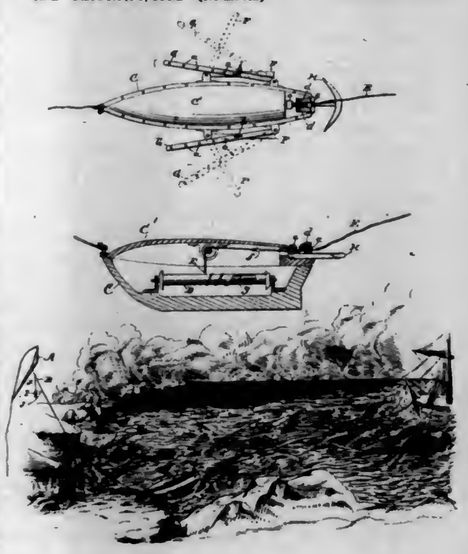


Brief.—The hollow cylinder has a number of horizontal shelves, which, when the cylinder is revolved, scoop up the filtering material (spongy iron) and keep it continually dropping through the incoming water, and thereby purifying the same. The continual rubbing together of the filtering material in its agitation serves to cleanse the particles thereof.

Claim.—1. The apparatus for the purification of water by means of iron, consisting of a cylinder revolving upon trunnions, which form the inlet and outlet passages, and with shelves lifting the iron and then allowing it to descend through the water, substantially as described.

2. The combination, with a rotary apparatus for the purification of water, of a trunk projecting through the hollow axis into the interior of the rotating vessel and terminating in a mouth of large area, through which the water in passing out of the apparatus has to descend, substantially as described.

322,149. LIFE-SAVING APPARATUS. OLNEY ARNOLD, Pawtucket, R. I. Filed Nov. 8, 1884. (No model.)



Claim.—1. The combination of a kite, its flying-cord, and a boat attached thereto and provided with a spool or reel, with a life-line for attachment to the vessel, as and for the purpose described.

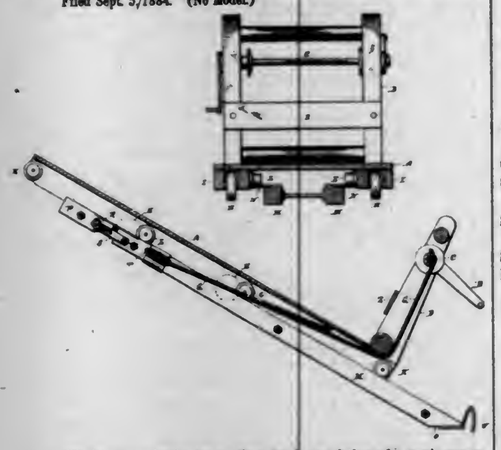
2. The combination of a kite, its flying-cord, a boat attached thereto and provided with a spool or reel, with a life-line for attachment to the vessel, and means for varying the resistance of the boat to the kite, substantially as shown and described.

3. The combination of a kite, its flying-cord, a boat attached thereto and provided with a spool or reel, with life-line for attachment to the vessel, an anchor through which the life-line reeves, and tripping device attached to the boat for disconnecting the anchor from the boat and automatically securing the shore end of the life-line, as described.

4. The combination, with the kite, its cord, and the boat, of the lateral wings hinged about a vertical axis to the sides of the boat, and hinged and perforated braces, with set-screws for adjusting the position of the wings, as described.

5. The combination, with the kite, its cord, the boat having hook-lugs *d d*, and the spool and life-line, of the anchor having eye *c*, the block *e*, and the blocks *f* and *g*, fixed on the end of the life-line, as shown and described.

322,150. PIANO-TRUCK. J. FRANK BARROWS, Springfield, Ill. Filed Sept. 5, 1884. (No model.)



Claim.—1. A piano or other truck consisting of a truck proper having at one end a rigid upright frame and provided with flanged rollers, in combination with a track having flanges on a level with its upper surface, the rollers traveling on or resting under the said flanges, substantially as and for the purpose specified.

2. A piano or other truck consisting of a platform with an abutting frame raised on it at one end, said frame carrying a windlass, in combination with a track on which the said truck travels, a rope or cable passing from the windlass to the corresponding other end of the track.

3. In combination with a movable truck, a brace to rest under the lower end of said truck when on an incline, and consisting of a strip having one end rounded and the other enlarged, and provided with a concavity and a right-angle extension on the side under the said enlargement, substantially as and for the purpose specified.

4. A truck consisting of a carrying-platform having raised at one end a frame against which the object carried abuts, said frame forming the means of support for a windlass or other actuating means, substantially as and for the purpose specified.

5. A truck having comparatively large rollers for moving it from place to place and a series of smaller rollers on a different vertical plane for moving it on a track.

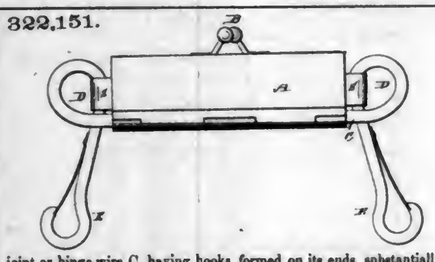
6. A truck having a windlass at one end and resting on rollers, in combination with a movable track having on each side a longitudinal flange level with its upper side, and at one end a section of similar construction hinged to it and adjustable perpendicularly to the plane of said track by means of slotted strips pivoted to the track proper, and secured to the section by thumb or set screws passing through the said slots, the device being operated by a rope or cable, substantially as and for the purpose specified.

322,151. STRAP-HOLDER. ROBERT L. BEAUMONT, St. Joseph, Mo., assignor to himself and John J. Sheridan, same place. Filed Feb. 17, 1885. (No model.)

Claim.—1. In a strap-holder, the combination, with two sections, A, hinged together, of hooks on the ends of the holder thus formed, substantially as herein shown and described.

2. In a strap-holder, the combination, with the sections A, of the

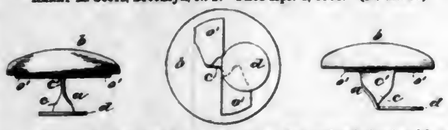
322,151.



joint or hinge wire C, having hooks formed on its ends, substantially as herein shown and described.

3. In a strap-holder, the combination, with the sections A, of the joint or hinge wire C, bent to form loops D, and having snap-hooks formed on its ends, substantially as herein shown and described.

322,152. BUTTON OR STUD. READ BENEDICT, New Brighton, and HARRY M. SCOTT, Brooklyn, N. Y. Filed Apr. 4, 1885. (No model.)



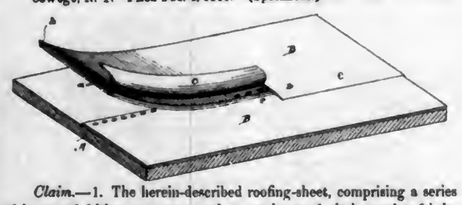
Claim.—1. A button or stud having a flat twisted shank with attached bottom plate, *d*, substantially as described.

2. The shank *a*, made flat and twisted at *c*, in combination with the top portion, *b*, and bottom plate, *d*, offset from the shank, substantially as described.

3. A button provided with the shank *a* and plate *d*, made of a single piece of sheet metal, with twist *c*, substantially as described.

4. A button provided with the shank *a* and plate *d*, made of a single piece of sheet metal, with twist *c* above the plate *d*, and with the plates *o' o'* at the top of the shank, substantially as described.

322,153. FELT ROOFING. LEWIS F. BLAIR and JOHN W. ROCHE, Oswego, N. Y. Filed Feb. 4, 1885. (Specimens.)



Claim.—1. The herein-described roofing-sheet, comprising a series of layers of felting or paper, and a top layer of cloth or other fabric, said top layer being of a greater width than the bottom layers, so as to project beyond the same at *c*, and capable of being rolled or turned back to admit of nailing the bottom layers to the roof-boards, when the projecting edge *c* may be smoothed down in place over the bottom layers and upon the adjoining sheet, thereby covering the joint, for the purpose set forth.

2. The herein-described method or mode of forming the joints for the meeting edges of roofing-sheets, consisting in making the top fabric layer of each sheet of a greater width than the bottom layers, so as to project beyond the same at one side or edge, and proceeding as follows: first, overlapping the edge of the second sheet over the top layer of the first sheet; second, turning or rolling back the projecting edge of the top layer for the second sheet to admit of nailing the bottom layers to the first sheet; and, finally, smoothing the projecting edge of the top layer down over the bottom layers and upon the first sheet, thereby completely covering the joint, as set forth.

322,154. PIANO-FRAME. JEAN BOURRY, Zurich, Switzerland. Filed Oct. 20, 1884. (No model.) Patented in France Jan. 21, 1884, No. 159,840, and in Germany Jan. 25, 1884, No. 28,492.

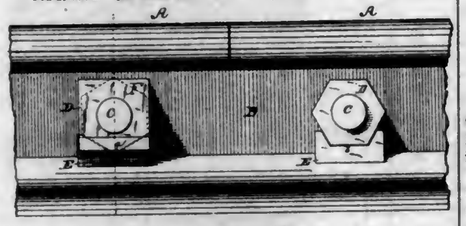


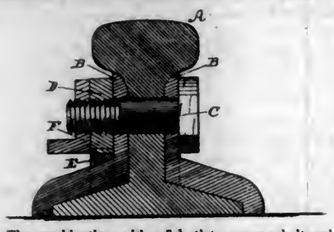
Claim.—1. A piano-forte frame having the stays *c*, with the projections or lugs on the back thereof at or near their ends and in line therewith, together with the truss-wires stretched between said projections or lugs, and one or more saddles interposed between the truss-wires and the stays, substantially as and for the purpose set forth.

2. A piano-forte frame consisting of a skeleton cast-iron frame having cross ribs or stays and perforated lugs or projections on the back side of the frame at the ends of the ribs, together with truss-wires

stretched between the lugs, and one or more saddles interposed between the ribs and truss-wires, substantially as and for the purpose set forth.

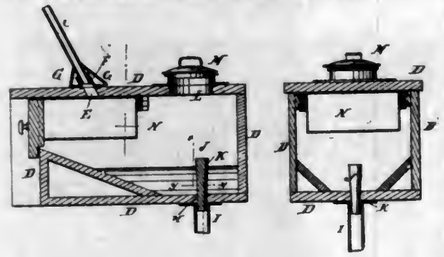
322,155. NUT-LOCK. LOUIS BRANDT, Sabina, Ohio, assignor to himself, Mrs. David Edwards, and B. Frank. Darbyshire, same place. Filed Oct. 1, 1884. (No model.)





Claim.—The combination, with a fish-plate, a screw-bolt and a nut fitted thereon against the face of the plate, and a solid projection forward of the face of the plate, of a block fitted to an angle of the nut and filling the space between the nut and the said projection, and another screw-nut weighted at one side and projecting beyond the periphery of the first-named nut over the face of the said block, substantially as shown and described, whereby the weighted nut retains the block between the nut proper and the said projections, as set forth.

322,156. SAND-FEEDER FOR LOCOMOTIVES. HAMPTON R. CAMPFIELD, Susquehanna, Pa. Filed Feb. 6, 1885. (No model.)



Claim.—1. In a sand-feeder, the combination, with the sand-box B and its discharge-pipe, of the feed-box D, having inlet and outlet openings, and provided with a hand-hole, L, having cover M, and a plug, J, having side groove, K, substantially as herein shown and described, whereby the sand will be delivered regularly and in uniform quantities, as set forth.

2. In a sand-feeder, the combination, with the feed-box D, the inlet-tube F, and the discharge-pipe C, of the cap-flange G, substantially as herein shown and described, whereby the inward movement of the discharge-pipe is limited and the joint is protected, as set forth.

322,157. PROCESS OF RECOVERING TIN FROM TIN-SCRAP. CHARLES A. CATLIN, Providence, R. I. Filed Mar. 23, 1885. (No specimens.)

Claim.—1. The process of recovering tin from tinned metal, scrap-tin, and the like by dissolving the tin in an alkaline bath and precipitating it therefrom in the form of an insoluble stannate, substantially as described.

2. The process of recovering both the tin and alkali from a solution of alkaline stannate by precipitating the tin from the solution in the form of insoluble stannate, leaving the alkali in solution, substantially as described.

3. In the process of recovering waste tin, the improvement consisting in dissolving the tin in an alkaline bath and adding to the solution a suitable oxide or salt, (such as oxide of lime,) whereby the tin is precipitated in the form of an insoluble stannate, substantially as described.

322,158. HOLDBACK. DANIEL T. CHAMBERS, Mechanicsburg, Ohio, assignor of one-third to Embury P. Clark, Holyoke, Mass. Filed Apr. 30, 1885. (No model.)

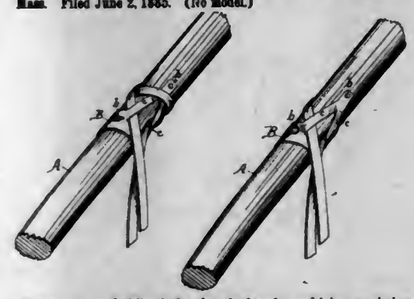


Claim.—1. The combination of a carriage-shaft, A, a cover, B, therefor, the ring D, interposed between the shaft and cover, and the flanged ferrule C, placed upon the shaft around the cover B, and close in front of the ring D, substantially as shown and described.

2. The combination of a carriage-shaft, A, a ferrule, C, secured thereon, provided with a flange, J, a shaft-tug, F, attached to a girth and to a saddle-strap of the harness, a tang, L, secured to the tug, and a holdback-strap, K, connecting the tang L with the breeching of the harness, the said flange J being at the rear end of the ferrule, and that portion of the ferrule forward of the flange being as wide as the tug F, which is shaped to fit thereon, substantially as shown and described.

3. The combination of a carriage-shaft, a ferrule secured thereon provided with a flange at its rear end, a tug fitted around and to rest wholly upon that portion of the ferrule forward of the flange, and a tang projecting rearward from the tug and perforated near its rear edge to receive a holdback-strap, and means for securing the tug to a girth of the harness, substantially as shown and described, for the purpose specified.

322,159. HOLDBACK FOR VEHICLE-SHAFTS. DANIEL T. CHAMBERS, Mechanicsburg, Ohio, assignor to himself and Embury P. Clark, Holyoke Mass. Filed June 2, 1885. (No model.)

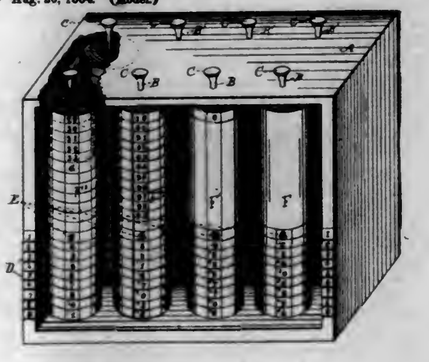


Claim.—1. A holdback for the shafts of a vehicle, consisting of a triangular piece of material having a hole in the middle, as and for the purpose described.

2. A holdback for the shafts of a vehicle, consisting of a triangular piece of material having a hole in the middle of it, and a projecting tongue at one of the sides of the triangle, substantially as shown and described.

3. The combination, with the shaft of a vehicle, of a holdback made in a triangular form of one or more pieces with a hole in the middle, and a projecting tongue, *a*, the said tongue being screwed or nailed around the shaft, and the triangular portion being disposed on the inside of the shaft and secured thereto at its corners, substantially as shown and described.

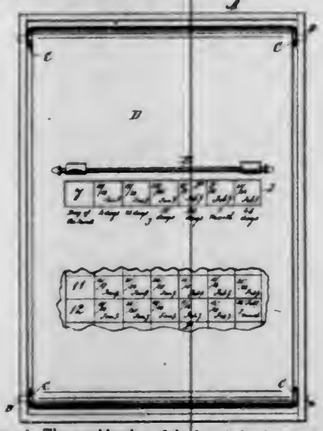
322,160. APPARATUS FOR FACILITATING THE MULTIPLICATION OF NUMBERS. JULES V. CHARPANTIER, New Orleans, La. Filed Aug. 26, 1884. (Model.)



Claim.—1. A table for facilitating multiplication, composed of a series of movable independent sections inscribed with numerals, arranged as shown and described, the first or unit section having a line of figures representing units with their multiples arranged under them in regular numerical succession, as described, the second or tens section having a line of figures representing tens, and above them figures indicating units, and below them figures representing multiples of said tens plus the respective amounts carried in the multiplication of such units, the succeeding (hundreds, thousands, &c.) sections having figures arranged upon the same principle, as set forth.

2. In an apparatus for facilitating multiplication, the combination, with a box or case having a vertical row of multiplying numerals, from 1 to 9 inclusive, arranged upon its margin, of a table of figures formed in sections and arranged upon revolving rods or rollers within said box, said table having a multiplicand or registration line on which any numbers can be arranged for multiplication, figures arranged upon the several sections (with the exception of the first) above the multiplicand line, which figures represent the numbers registered on the preceding sections and serve as guides in the registration of the multiplicand, and a series of rows of figures representing the result of the multiplication of any number registered arranged opposite the respective multiplying numerals 2 to 9 on the margin of the box, substantially as shown and described.

322,161. CALCULATOR. JULES V. CHARPANTIER, New Orleans, La. Filed Feb. 11, 1885. (No model.)



Claim.—1. The combination of the box A, having the holes B, the two rollers C, journaled in the said holes, the screen D, mounted as a belt on the said rollers, and having the transverse aperture J, spaced along its edge, and the spaces marked indicating different units of time, and the tabulated cards F, spaced to correspond with the spaces on the screen D, substantially as shown and described.

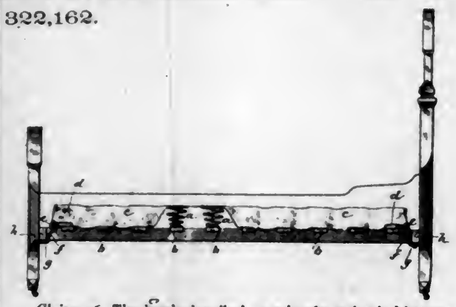
2. The combination of the box A, having the holes B in its side edges, and the slit G in the edge in a plane tangent to the front sides of the said rollers, the screen D, fitted around the rollers, and the tabulated cards F, of a length to be held between the screen and rollers, substantially as shown and described.

3. The combination of the box A, the rollers C, journaled therein, the screen D, mounted as a belt on the rollers and having the transverse aperture J, and the cards F, placed behind the screen, each card having dates marked in columns and horizontal lines on it, and the screen marked at the edge of the said aperture in column with the dates 11 on the cards, the markings on the screen and on the card behind it bearing an arbitrary ratio to each other, substantially as shown and described, whereby any number on the screen being added to a date in the left-hand column of the card, the sum of the addition is indicated on the card on the same horizontal line and in the column of the added number on the screen.

322,162. COVERING FOR SPRING BED-BOTTOMS. ALFRED S. CLARK, Brodhead, Wis. Filed Apr. 15, 1885. (No model.)



322,162.



Claim.—1. The herein-described covering for spring bed-bottoms, consisting of the canvas *c*, having the corner binding-straps, *d*, and rings retained thereby, substantially as shown and described.

2. In a spring bed-bottom, the combination, with the canvas cover *c*, having the corner binding-straps, *d*, and the rings *e*, of the attaching spring-snaps and strap-loops, substantially as shown and described.

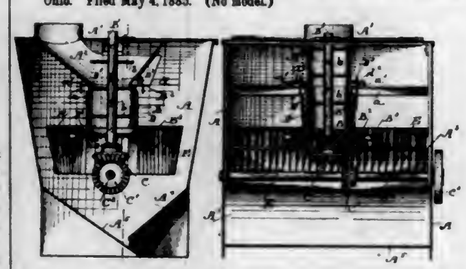
3. The combination, in a spring bed-bottom, of the canvas cover *c*, having the corner binding-straps, *d*, and the rings *e*, looped thereby with the bed-bottom springs, and the spring-snaps attached to the bedstead-frame by loops *g*, substantially as shown and described.

322,163. WHIFFLETREE-HOOK. HIRAM B. DAVIS, St. Paris, Ohio. Filed May 21, 1885. (No model.)



Claim.—The casting B, having barbed-shaped end *b b'* and adjacent circular formation *b²* for trace-bearing, all made hollow and provided with an inside spring, C, having an inclined head, C', projecting through a slot in the barbed end *b b'*, in combination with a whiffletree, as set forth.

322,164. MILL-FEED REGULATOR. HENRY R. DESLER, Freeburg, Ohio. Filed May 4, 1885. (No model.)



Claim.—1. In a mill-feed regulator, the hopper A^2, tube B, shaft B', provided with pins *b*, a disk, B^2, provided with wings B^2, in combination with the sliding sleeve D, provided with perforated lugs D', bent rods D^2, rod *d*, and regulator-plate D^2, hinged substantially as and for the purpose described.

2. In a mill-feed regulator, the disk B^2, and sliding sleeve D, provided with perforated lugs D', in combination with the supporting-frame *a a'*, the rod *d*, coiled-wire rods D^2, bent at each end, and the regulator-plate D^2, hinged substantially as and for the purpose described.

3. In a mill-feed regulator, the vertical tube B, shaft B', provided with radial pins *b*, and revolving disk B^2, provided with wings B^2, in combination with the corrugated shields E, substantially as and for the purpose described.

4. The combination of the supporting-frame *a a'*, the disk B^2, the feed-tube B, and the sleeve D with the regulator-plate D^2, fulcrumed to said frame, and the hinge-rods D^2, supporting the feed-regulating sleeve, substantially as and for the purpose described.

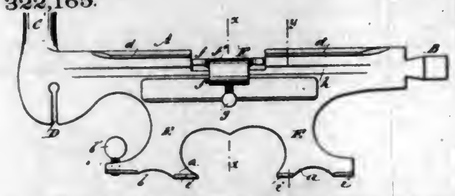
322,165. DEVICE FOR FITTING CROSSCUT-SAWS. WILLIAM H. DESBUREAU, Otsego Lake, Mich. Filed Mar. 13, 1885. (No model.)

Claim.—1. The combination, with the body A of the tool, of the adjustable plate F, formed with the slot *k*, substantially as and for the purposes set forth.

2. The combination, with the body A, of the plate F, adjustably attached to the body A, and formed with the loop f^6, for holding a file, substantially as and for the purposes set forth.

3. The body A, formed with side flanges, *d*, in combination with the plate F having slot *k*, substantially as set forth.

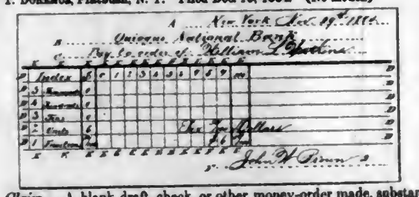
322,165.



4. The body A, formed with flange *i c'*, in combination with plate F, formed with loop f^6, for holding a file, substantially as and for the purposes set forth.

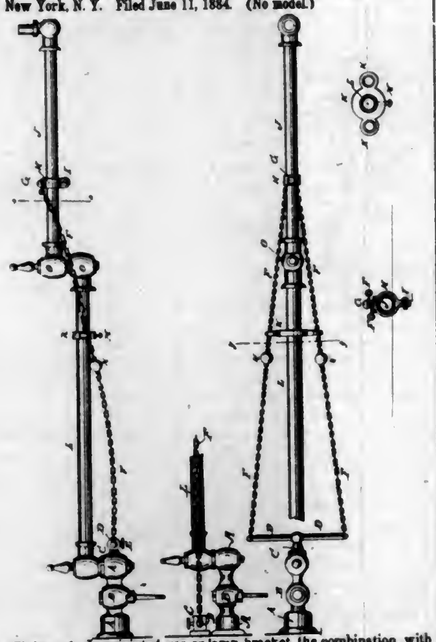
5. The combination-tool herein shown and described, consisting of the body A and adjusting-plate F, the body formed with flanges *d*, screw-driver B, hammer C, slot D, graduations *c d*, recess *f*, projections *a b*, the latter having set-screw *b'*, the plate F being formed with the slot *k* and loop f^6, substantially as and for the purposes set forth.

322,166. DRAFT, CHECK, AND OTHER MONEY-ORDERS. WILLIAM T. DORRNUS, Flatbush, N. Y. Filed Dec. 15, 1884. (No model.)



Claim.—A blank draft, check, or other money-order made, substantially as herein shown described, with spaces A B C, to receive the name of the place and the date, the name of the drawee, and the order and the name of the payee, and with spaces D E, containing the dollar-sign $, the numerals 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, and the fraction-sign, and the numbers and denominational names of the spaces D, as and for the purpose set forth.

322,167. JOINTED GAS AND LAMP BRACKET. HENRY P. DREW, New York, N. Y. Filed June 11, 1884. (No model.)



Claim.—1. In a jointed gas or lamp bracket, the combination, with the chains F and the swinging arms I J of the bracket, of the adjustable guide-bar K, substantially as herein shown and described, whereby the said chains will be held from sagging below the connecting-joint of the said arms, as set forth.

2. In a jointed gas or lamp bracket, the combination, with the chains F and the adjustable guide-bar K, of the stops N, substantially as herein shown and described, whereby the swing of the outer arm of the bracket will be limited independently of the position of the inner arm, as set forth.

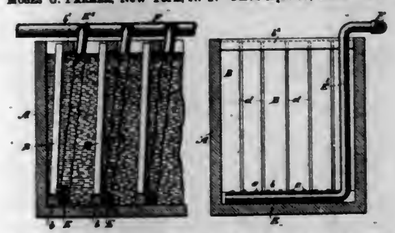
322,168. LAMP FOR ILLUMINATING, HEATING, AND VENTILATING ROOMS. BENJAMIN F. ENOCH, Bergen Point, N. J. Filed Sept. 11, 1884. (No model.)



Claim.—1. The combination, with a central air-passage in a coal-oil lamp, and with wick-tubes fitted within said passage to be supplied with air therefrom, of a cap-plate covering said air-passage and provided with a separate slitted dome for each wick-tube, and with an independent air-passage between the domes, substantially in the manner and for the purpose herein set forth.

2. The combination, with a central air-pipe in a coal-oil lamp, and with detachable wick-tubes fitted in radial recesses in a fixed ring upon the upper open end of the pipe, of a movable ring encircling said fixed ring and provided with radial recesses adapted to register with those in the fixed ring, substantially in the manner and for the purpose herein set forth.

322,169. APPARATUS FOR REFINING COPPER BY ELECTRICITY. MOSES G. FARMER, New York, N. Y. Filed Apr. 18, 1885. (No model.)



Claim.—1. In an apparatus for refining metal by electrolysis, the combination, substantially as hereinbefore set forth, of an electrolytic vat, and one or more slats of non-conducting material within the vat and lying against the cathode surfaces, substantially as described.

2. In an apparatus for refining copper by electrolysis, the combination, substantially as hereinbefore set forth, of an electrolytic vat, and a reticulated frame of wooden or equivalent bars or slats within the vat adapted to rest against the cathode surface of each plate.

3. In an apparatus for refining copper by electrolysis, the combination, substantially as hereinbefore set forth, of an electrolytic vat, a reticulated frame of laths or slats of non-conducting material, and means for holding the same in an inclined position against the cathode surfaces.

4. In a vat for refining copper by electricity, the combination, substantially as hereinbefore set forth, of a series of bars at the bottom of the vat, for supporting the plates, and a corresponding series of bars at the top of the vat respectively located out of the vertical planes of the first-named bars, against which the plates may lean in inclined positions, substantially as described.

322,170. APPARATUS FOR REFINING COPPER BY ELECTRICITY. MOSES G. FARMER, New York, N. Y. Filed Apr. 18, 1885. (No model.)

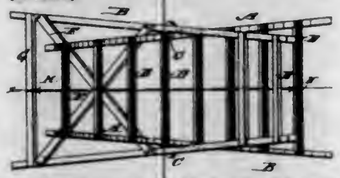


Claim.—1. The hereinbefore-described process of refining copper by electrolysis, which consists in placing plates of the impure metal in inclined positions, constituting the under surfaces anodes and the upper surfaces cathodes, and dissolving the pure metal from the anode surfaces and depositing it upon the cathode surfaces by electrolysis.

2. The hereinbefore described method of refining copper, which consists in placing plates of the impure metal in inclined positions, constituting the upper surfaces cathodes and the under surfaces anodes,

dissolving from the anodes and depositing upon the cathodes pure metal by electrolytic action, and washing the anode surfaces by forcing jets of air, gas, or steam upward against the same.

322,171. LADDER. ROBERT FURLONG, Sancelito, Cal. Filed Apr. 16, 1885. (No model.)



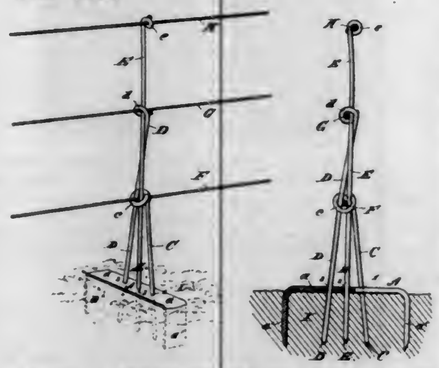
Claim.—1. The combination, with the bars A and B, pivoted at or near their middles, of the rungs D, uniting the bars A, and bars and braces uniting the bars B, substantially as herein shown and described.

2. The combination, with the bars A B, pivoted together at or near their middles, of the rungs D, uniting the bars A, the braces F and the cross-bars E, uniting the bars B, and the platform J, substantially as herein shown and described

3. The combination, with the pivoted bars A and B, pivoted at or near their middles, of the rungs D, uniting the bars A, cross-bars and braces uniting the bars B, the bars A and the bars B being inclined toward each other from their lower to their upper ends, substantially as herein shown and described.

4. The combination, with the bars A and B, pivoted at or near their middles, of the rungs D, uniting the bars A, cross-bars and braces uniting the bars B, and of the strap or rope H, substantially as herein shown and described.

322,172. FENCE-POST. WILLIAM H. GATES, Josup, Iowa. Filed Mar. 5, 1885. (Model.)



Claim.—1. A fence-post constructed with a series of rods having eyes formed at their upper ends to inclose the fence wires or rails, and the higher post-rods being passed through the wire or rail supporting eyes of the lower post-rods, in combination with a base-plate or ground-anchor having a series of holes through which the post-rods are driven into the ground, substantially as herein set forth.

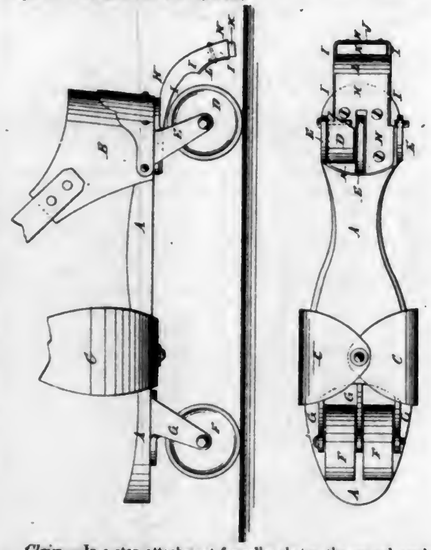
2. A fence-post constructed with a series of rods having eyes formed at their upper ends to inclose the fence wires or rails, and the higher post-rods being passed through the wire or rail supporting eyes of the lower post-rods, in combination with a base or ground anchor having its ends bent downward to enter the ground, and provided with a series of holes in its upper part through which the posts-rods are driven into the ground, substantially as herein set forth.

3. The combination, in a fence, of the fence-posts consisting of rods C D E, having eyes *c d e*, respectively, and driven into the ground at their spread lower ends, and the higher post-rods being passed through the eyes of the lower post-rods, and the wires F G H or rails passed through the eyes of the post-rods, substantially as herein set forth.

4. The combination, in a fence, of the fence-posts consisting of rods C D E, having eyes *c d e*, respectively, and the higher post-rods being passed through the eyes of the lower post-rods, the horizontal wires F G H, or rails passed through the eyes of the post-rods, and the bases or ground-anchors A, having holes through which the ends of the fence-post rods are driven into the ground, substantially as herein set forth.

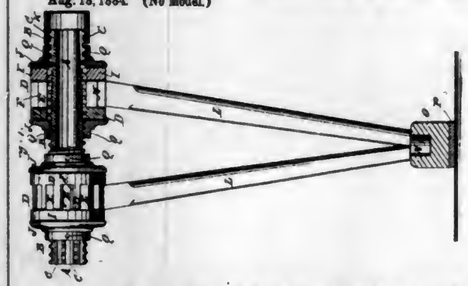
5. The combination, in a fence, of the fence-posts consisting of rods C D E, having eyes *c d e*, respectively, and the higher post-rods being passed through the eyes of the lower post-rods, the horizontal wires F G H, or rails passed through the eyes of the post-rods, and the bases or ground-anchors A, having bent ends entering the ground, and provided with a series of holes through which the fence-post rods are driven into the ground, substantially as herein set forth.

322,173. STOP ATTACHMENT FOR ROLLER-SKATES. JOSIAH P. GERAN, Brooklyn, N. Y., assignor to himself and Garret Bergen, same place. Filed Mar. 27, 1885. (Model.)



Claim.—In a stop attachment for roller-skates, the curved pendent plate having at its under side edges inwardly-projecting flanges, to the lower edges of which flanges, near their lower ends, is secured an underneath plate, which pendent plate flanges and underneath plate form a socket holding a flexible block, substantially as and for the purpose set forth.

322,174. VEHICLE-WHEEL. WILLIAM GIBBY, Rahway, N. J. Filed Aug. 13, 1884. (No model.)

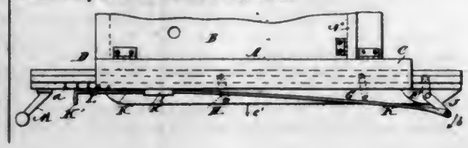


Claim.—1. In a vehicle-wheel, the hub-box A, made, substantially as herein shown and described, with exterior screw-thread and tapered longitudinal grooves, whereby the said hub-box is adapted to receive the spoke-holding sections and their nuts, as set forth.

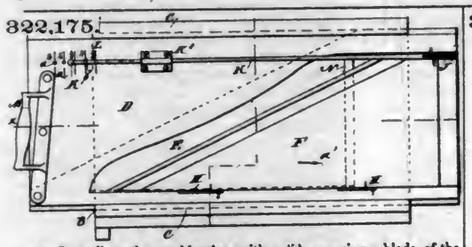
2. In a vehicle-wheel, the combination, with the hub-box A, having exterior screw-thread and tapered longitudinal grooves, of the adjustable hub-sections D, having radial slots in their outer parts, the washers I, and the adjusting-nuts J, substantially as herein shown and described, whereby the inner ends of the spokes will be firmly supported and can be readily adjusted, as set forth.

322,175. SLICER. DANIEL J. GILCHRIST, Newark, N. J. Filed Feb. 28, 1885. (No model.)

Claim.—1. In a slicer, the combination, with a slide carrying a blade, of a board held by links on the said slide, an angle-lever connected with the slide and board, and a rod connected with the said angle-lever, substantially as herein shown and described.



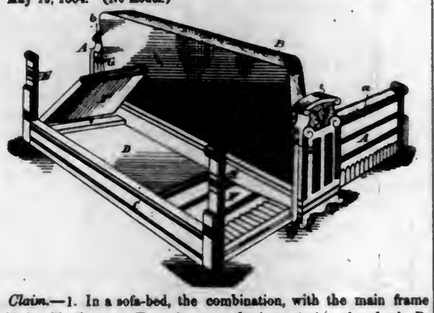
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2. In a slicer, the combination, with a slide carrying a blade, of the board F, the links H, the angle-lever J, and the rod K, secured to the angle-lever resting against the outer surface of the slide and guided by the piece K^4, secured on the said slide, substantially as herein shown and described.

3. In a slicer, the combination, with the slide D, having graduations and apertures *a*, of the blade E, the board F, held by links on the slide, the angle-lever J, and the rod K, provided with a pin, *b*, substantially as herein shown and described.

322,176. SOFA-BED. CARL F. GLAGGEN, New York, N. Y. Filed May 19, 1884. (No model.)



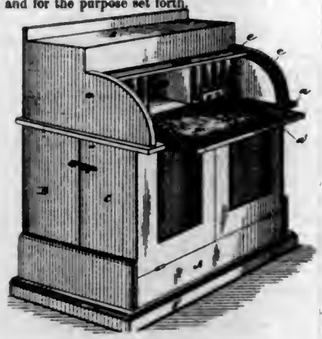
Claim.—1. In a sofa-bed, the combination, with the main frame provided with the seat E, stationary end pieces A A, and a back, B, hinged to swing down between said end pieces to a level with the seat, of a drawer, D, made to slide out to support the back when it is dropped and provided with end pieces F F, hinged thereto to swing up into line with the stationary ends A A of the frame when the drawer is opened, substantially in the manner and for the purpose herein set forth.

2. In a sofa-bed, the combination, with a main frame provided with the seat E, stationary end pieces A A, back B, hinged to swing down between said end pieces to a level with the seat, and a drawer, D, provided with the hinged end pieces F F, of spring-catches G G, projecting from said stationary end pieces A A, to engage and support the back B when elevated, and to be retracted therefrom to release the back by the turning up of the hinged end pieces F F on the open drawer, all substantially in the manner and for the purpose herein set forth.

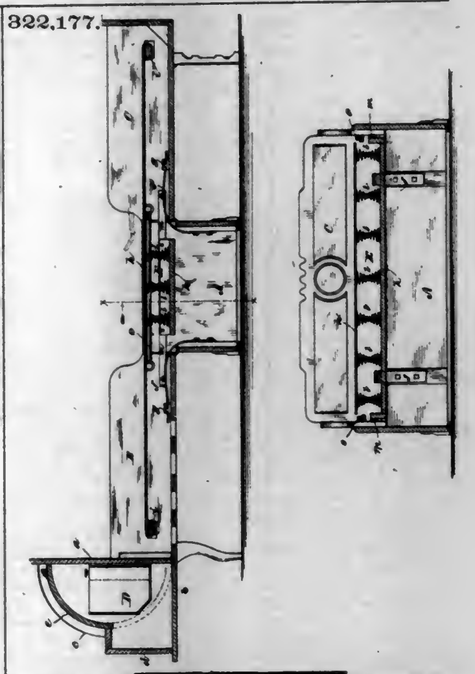
322,177. CABINET-BED. SARAH E. GOODE, Chicago, Ill. Filed Nov. 12, 1883. (No model.)

Claim.—1. The combination, with the stationary section A and the folding sections B C, hinged on opposite sides of said stationary section, of a suspended bedding-support, A, secured at each end to the respective folding sections B C, the automatic auxiliary support E, and the jointed braces *e*, substantially as and for the purpose set forth.

2. The combination, with the stationary section A, folding sections B C, and head-board *a*, of end pieces, *c c*, top board, *d*, and cover *e*, substantially as and for the purpose set forth.



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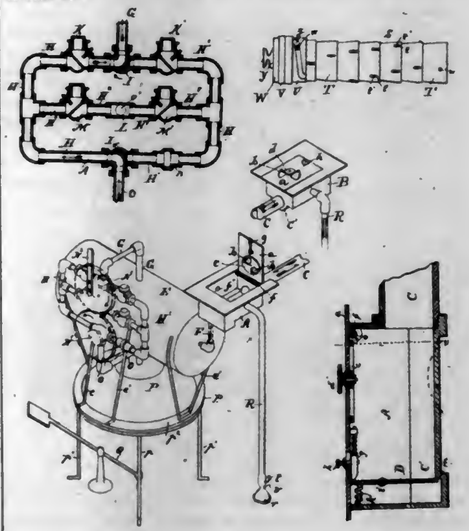


322,178. PNEUMATIC DISPATCH AND SPEAKING TUBE SYSTEM. RICHARD J. P. GOODWIN, Manchester, N. H. Filed Sept. 4, 1884. (No model.)

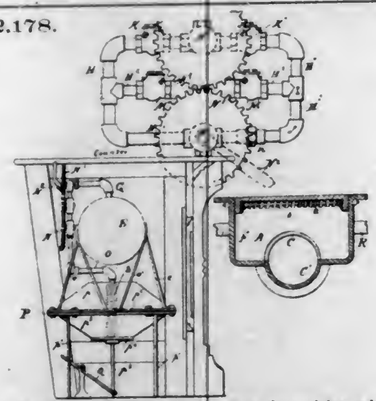
Claim.—1. In a pneumatic store-service apparatus, a quadrilateral system of pipes communicating with the atmosphere and provided with check-valves and three-way cocks, whereby it is adapted to control the circulation between a pneumatic tube and an air-pump, substantially as described.

2. In a pneumatic store-service apparatus, a receiving and transmitting box communicating with a pneumatic tube and provided with a pivoted partition or buffer-plate, and a lid having a spring-hinge and a spring bolt or fastening, said bolt being arranged on the inner side of the lid in position to be unfastened by the impact of a cash or parcel carrier against the pivoted partition or buffer-plate, substantially as described.

3. In a pneumatic store-service apparatus, a receiving and transmitting box, as A or B, having a lid provided with valve *c*, substantially as described.



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4. In a pneumatic store-service apparatus, the receiving and transmitting box A or B, provided at the bottom with a groove or trough, C', that is continuous with a pneumatic tube, a partition or buffer-plate, D, pivoted in the end of the box opposite to its connection with the pneumatic tube and at the end of said trough, and a lid, *a*, having a spring-hinge and a spring bolt or fastening on its inner side in contact with the buffer-plate, substantially as described.

5. In a pneumatic store-service apparatus, a receiving and transmitting box having an outward-opening spring-hinged lid, in combination with devices for automatically opening said lid by the entrance into the box of a carrier, and means for holding said lid in an erect position till closed by the operator, substantially as described.

6. In a pneumatic store-service apparatus, the combination, with air-tight receiving and transmitting boxes located at the cashier's desk and salesman's station, respectively, and a pneumatic tube for connecting said boxes, of a speaking-tube attached to each box and provided with a mouth-piece, a cock, and a whistle, substantially as described.

7. In a pneumatic store-service apparatus, the combination, with receiving and transmitting boxes located at the cashier's desk and salesman's station, respectively, and connected by a pneumatic tube, of an air-reservoir, an air-pump, and means, as specified, for controlling a circulation of air, whereby a cash or parcel carrier may be propelled in one direction by a current of compressed air and returned in the opposite direction by means of an exhaust, substantially as described.

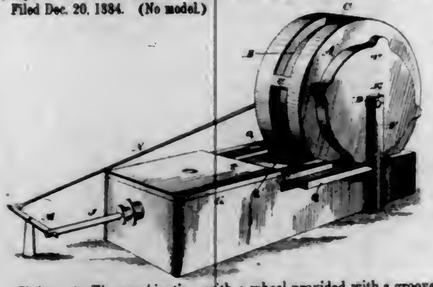
8. In a pneumatic store-service apparatus, the reservoir or accumulator E, connected to a transmitting-box by means of a pipe, F, in combination with an air-pump and a system of valved pipes for inducing and controlling a current of compressed or exhaust air, as required, substantially as described.

9. In a pneumatic store-service apparatus, a quadrilateral system of pipes, H H' H² H³, connected by T's and bends and provided with a box-coupling, L, that communicates with the atmosphere, three-way cocks I I, and check-valves K K' M M', substantially as and for the purpose described.

10. In a pneumatic store service apparatus, the combination of the boxes A B, pneumatic tube C, pipe F, reservoir E, quadrilateral valved circulation H H', pipes G O, and diaphragm-pump P, substantially as and for the purpose described.

11. In a pneumatic store-service apparatus, a cash or parcel carrier composed of tapering rings T T, having a flexible connection, said carrier being provided at each end with a detachable cap, U, having washers V, substantially as and for the purpose described.

322,179. ROTARY ENGINE. CHARLES R. HARVIN, Manning, S. C. Filed Dec. 20, 1884. (No model.)



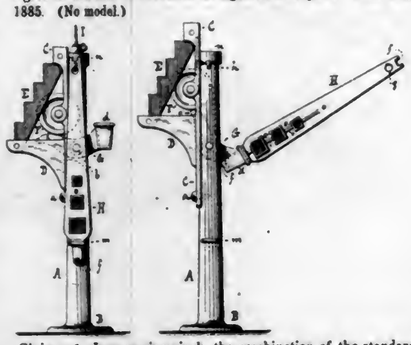
Claim.—1. The combination, with a wheel provided with a groove on its face, and heads located at intervals in said groove, and an abutment for holding the live steam on the wheel, of devices located on the side or sides of the drive-wheel, by means of which the abutment is moved away from the heads, substantially as set forth.

2. The combination, with a drive-wheel provided with a groove on its periphery, and heads located in said groove, and an abutment for holding the live steam on the wheel, of cam-wheels operated by the drive-wheel, by means of which the abutment is moved away from the heads, substantially as set forth.

3. The combination, with a wheel provided with a groove on its periphery, and heads located in said groove, and a steam-chest situated conveniently near the wheel, and a port-opening on said groove, of a valve located in the chest, and means for reciprocating the valve, whereby steam is admitted to the groove as one of the heads passes the port, substantially as set forth.

4. The combination, with a wheel provided with a groove on its periphery, and heads located therein, a steam-chest situated near the wheel, a port-opening in said chest, of a spring-actuated abutment adapted to hold the live steam on the wheel, and cam-wheels operated by the shaft, by means of which the abutment is pushed out of the way of the heads, substantially as set forth.

322,180. CARRIAGE-JACK. JOSHUA HUNT, Providence, R. I., assignor of one-half to Frederick A. Ingerson, same place. Filed May 18, 1885. (No model.)



Claim.—1. In a carriage-jack, the combination of the standard A, having the lever G mounted therein, the vertically-movable bar C, having the bracket D, rack E, and friction-wheel F, all operating substantially as and for the purpose specified.

2. In a carriage-jack, the combination of the standard A, the hook *h*, the staple *m*, and the wrench H, having nut-holders *e* and hole *g*, substantially as specified.

3. The improved carriage-jack herein described, consisting of the standard A, base B, slotted bar C, screws *a*, bracket D, rack E, wheel F, lever G, having a cam-face, *c*, and socket *d*, the handle J, hook *h*, staple *m*, ledge *n*, and the wrench H, furnished with hole *g* and nut-holders *e f*, substantially as specified.

322,181. HORSE FOR SUSPENDING CARCASSES. JOHN HURSH, Orrville, Ohio. Filed Mar. 16, 1885. (No model.)

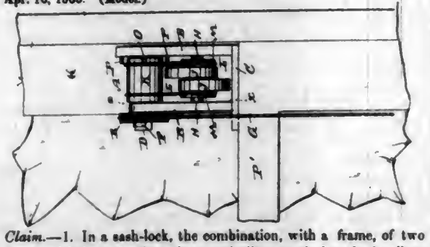


Claim.—1. A horse for hoisting and suspending carcasses, having in combination a beam suitably supported, suspension-hooks *r*, attached to and pendent below the beam, a windlass mounted below one end of the beam, a movable plate on the beam having two projecting rope-supports, a rope having one end made fast, as described, and passed over the two rope-supports, sagging down between said supports, and its other end fixed to the windlass, and a hoisting-hook, *q*, riding on the down-sagging part of the rope, as set forth.

2. A horse for hoisting and suspending carcasses, having in combination a beam suitably supported, suspension-hooks *r*, attached to the beam, parallel bars constituting a slide fixed on the beam, a movable plate fitting in said slide and provided with two rope-supports, *e*, a rope having one end made fast to the beam passed over the said two supports and sagging down between them, and a hoisting-hook, *q*, riding on the down-sagging part of the rope, as set forth.

3. A horse for hoisting and suspending carcasses, having in combination a beam suitably supported, suspension-hooks *r*, attached to the beam, parallel bars constituting a slide fixed on the beam, a movable plate fitting in said slide and provided with rope-supports, a rope passed over the said supports and having a hoisting-hook, and a retaining device, substantially as described, to retain the movable plate in position, as set forth.

322,182. SASH-HOLDER. WILLIAM D. ISETT, Altoona, Pa. Filed Apr. 10, 1885. (Model.)



Claim.—1. In a sash-lock, the combination, with a frame, of two disks mounted independently and eccentrically on a shaft and of pulleys and cords for turning the disks in opposite directions, the said pulleys being connected with the disks, substantially as herein shown and described.

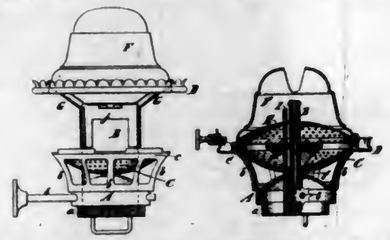
2. In a sash-lock, the combination, with a frame, of two disks mounted eccentrically and independently on a shaft, of a pulley formed on each disk, a drum journaled in the frame, and of a plain and a crossed cord passed over the drum and the pulleys on the disks, substantially as herein shown and described.

3. In a sash-lock, the combination, with a frame, of the disks J, mounted independently and eccentrically on a shaft, the pulleys M on the disks, the drum K, the cords L, and a cord and pulley for turning the drum, the latter pulley being secured on the drum, substantially as herein shown and described.

4. In a sash-lock, the combination, with a frame, of the drum K, the detachable pulley E, the disks J, the pulleys M, and the cords L, substantially as herein shown and described.

5. In a sash-holder, the combination, with a frame, of the drum K, the stop-pins O and P, the disks J, the cords L, and a cord and pulley for turning the drum K, substantially as herein shown and described.

322,183. LAMP-BURNER. NICHOLAS JENKINS, Waterbury, Conn., assignor to Holmes, Booth & Haydens, same place. Filed Mar. 7, 1884. (No model.)



Claim.—The combination, with a wick-tube, of a slide fitting directly thereon and capable of sliding vertically on the same, stops for limiting the upward movement of the slide, arms extending upwardly and outwardly from the slide, and a chimney-gallery, air-distributer, and deflector connected together and supported on the said arms so far above the slide that a space will be left between the same and the slide, said air-distributer extending into close proximity with the plane of the wall of the wick-tube, substantially as specified.

322,184. WAGON-BOX FASTENER. JOHN A. JONAS, Reserve, Kans. Filed May 16, 1885. (No model.)

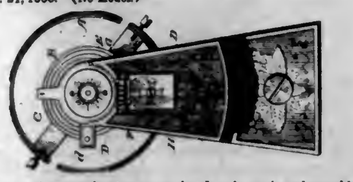


Claim.—1. The combination, with a wagon-box having bars provided with heads on the upper end on the inner surface, of the box, and of a false box having spring-straps provided at their lower ends with hooks which can catch on the heads on the rods of the box, substantially as herein shown and described.

2. The combination, with the wagon-box L and the false box A, of the heads or projections E on the box L, the spring-strap F, having a hook, G, and secured on the false box, and of the pin H, projecting from the spring-strap F through an aperture in the false box, substantially as herein shown and described.

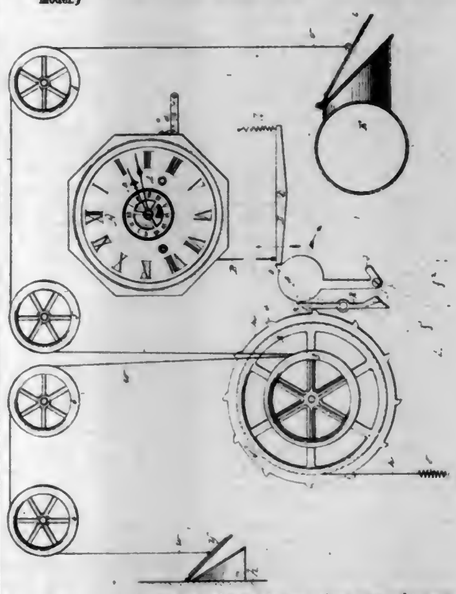
3. The combination, with the wagon-box L and the false box A, of the staples C, the stakes B, the bar D, having a head, E, the spring-strap F, having a hook, G, and of the pin H, projecting from the strap F through an aperture in the false box A, substantially as herein shown and described.

322,185. WATCH-REGULATOR. PIUS KAUL and CHARLES KAUL, Lancaster, Pa., assignors of one-third to Ernest Zeitz, same place. Filed Mar. 21, 1885. (No model.)



Claim.—A worm having screw-heads *g* in each end provided with slots *g'*, in combination with a toothed segment formed in the periphery of a regulating-disk, C, and a hair-spring, B, regulated thereby, substantially as set forth.

322,186. DAMPER-OPERATING MECHANISM FOR HEATING APPARATUS. JAMES A. LAKIN, Westfield, Mass. Filed Jan. 21, 1884. (No model.)



Claim.—1. A damper, a weight or its equivalent arranged to move the same when free to do so, a series of levers and connections (as cords or chains) for controlling said weight, and a clock mechanism engaging one of the levers, all in combination, substantially as described.

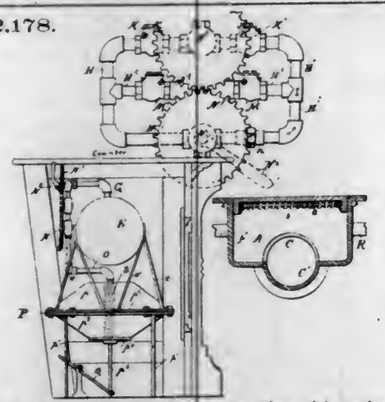
2. The combination, with a clock, a pivoted lever actuated thereby, and a shifting bar, whereby the clock may operate the lever after a period of more than twelve hours, of a trip-lever arranged to engage said bar and a train of mechanism leading therefrom to the damper to be operated, substantially as set forth.

3. In a clock, the combination, with the dial *d*, the cam *c*, and a trip-lever adapted to engage with said cam, of a sliding bar arranged, as described, to be moved by the clock and to control the trip-lever, so that said bar is capable of being adjusted to permit said cam to rotate one or more times before acting on said lever, substantially as set forth.

4. In combination with the clock A, its train of wheels 16 17 18, lever 12, and cam *c*, the hour-wheel 10, having arm 15 thereon, the bar *a*, having means thereon, substantially as described, for the engagement of said hour-wheel therewith, and the out-of-line space 8 in said bar, and the pin 13 in lever 12, arranged to move into said space at the proper time, substantially as set forth.

5. In combination, the trip-lever 12, having pin 13 thereon, the sliding bar *a*, having the space 8 therein, into which the pin 13 is allowed to swing by the movement of the bar, the clock A, and means, substantially as described, for moving said bar periodically, substantially as set forth.

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4. In a pneumatic store-service apparatus, the receiving and transmitting box A or B, provided at the bottom with a groove or trough, C', that is continuous with a pneumatic tube, a partition or buffer-plate, D, pivoted to the end of the box opposite to its connection with the pneumatic tube and at the end of said trough, and a lid, *a*, having a spring-hinge and a spring bolt or fastening on its inner side in contact with the buffer-plate, substantially as described.

5. In a pneumatic store-service apparatus, a receiving and transmitting box having an outward-opening spring-hinged lid, in combination with devices for automatically opening said lid by the entrance into the box of a carrier, and means for holding said lid in an erect position till closed by the operator, substantially as described.

6. In a pneumatic store-service apparatus, the combination, with air-tight receiving and transmitting boxes located at the cashier's desk and salesman's station, respectively, and a pneumatic tube for connecting said boxes, of a speaking-tube attached to each box and provided with a mouth-piece, a cock, and a whistle, substantially as described.

7. In a pneumatic store-service apparatus, the combination, with receiving and transmitting boxes located at the cashier's desk and salesman's station, respectively, and connected by a pneumatic tube, of an air-reservoir, an air-pump, and means, as specified, for controlling a circulation of air, whereby a cash or parcel carrier may be propelled in one direction by a current of compressed air and returned in the opposite direction by means of an exhaust, substantially as described.

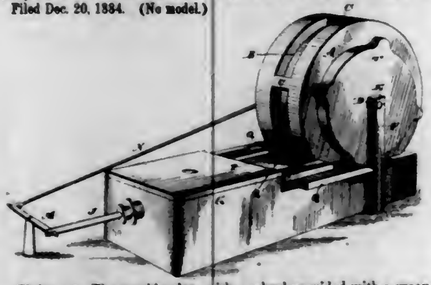
8. In a pneumatic store-service apparatus, the reservoir or accumulator E, connected to a transmitting-box by means of a pipe, F, in combination with an air-pump and a system of valved pipes for inducing and controlling a current of compressed or exhaust air, as required, substantially as described.

9. In a pneumatic store-service apparatus, a quadrilateral system of pipes, H H' H² H³, connected by T's and bends and provided with a box-coupling, L, that communicates with the atmosphere, three-way cocks I I, and check-valves K K' M M', substantially as and for the purpose described.

10. In a pneumatic store-service apparatus, the combination of the boxes A B, pneumatic tube C, pipe F, reservoir E, quadrilateral valved circulation H H', pipes G O, and diaphragm-pump P, substantially as and for the purpose described.

11. In a pneumatic store-service apparatus, a cash or parcel carrier composed of tapering rings T T, having a flexible connection, said carrier being provided at each end with a detachable cap, U, having washers V, substantially as and for the purpose described.

322,179. ROTARY ENGINE. CHARLES R. HARVIN, Manning, S. C. Filed Dec. 20, 1884. (No model.)



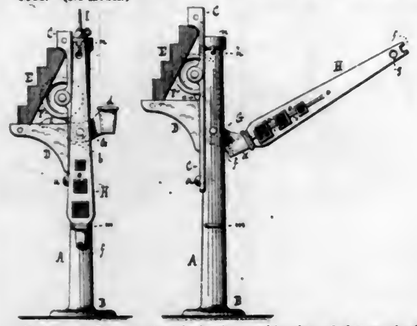
Claim.—1. The combination, with a wheel provided with a groove on its face, and heads located at intervals in said groove, and an abutment for holding the live steam on the wheel, of devices located on the side or sides of the drive-wheel, by means of which the abutment is moved away from the heads, substantially as set forth.

2. The combination, with a drive-wheel provided with a groove on its periphery, and heads located in said groove, and an abutment for holding the live steam on the wheel, of cam-wheels operated by the drive-wheel, by means of which the abutment is moved away from the heads, substantially as set forth.

3. The combination, with a wheel provided with a groove on its periphery, and heads located in said groove, and a steam-chest situated conveniently near the wheel, and a port-opening on said groove, of a valve located in the chest, and means for reciprocating the valve, whereby steam is admitted to the groove as one of the heads passes the port, substantially as set forth.

4. The combination, with a wheel provided with a groove on its periphery, and heads located therein, a steam-chest situated near the wheel, a port-opening in said chest, of a spring-actuated abutment adapted to hold the live steam on the wheel, and cam-wheels operated by the shaft, by means of which the abutment is pushed out of the way of the heads, substantially as set forth.

322,180. CARRIAGE-JACK. JOSHUA HUNT, Providence, R. I., assignor of one-half to Frederick A. Ingerson, same place. Filed May 18, 1885. (No model.)



Claim.—1. In a carriage-jack, the combination of the standard A, having the lever G mounted therein, the vertically-movable bar C, having the bracket D, rack E, and friction-wheel F, all operating substantially as and for the purpose specified.

2. In a carriage-jack, the combination of the standard A, the hook *h*, the staple *m*, and the wrench H, having nut-holders *e* and hole *g*, substantially as specified.

3. The improved carriage-jack herein described, consisting of the standard A, base B, slotted bar C, screws *a*, bracket D, rack E, wheel F, lever G, having a cam-face, *c*, and socket *d*, the handle J, hook *h*, staple *m*, ledge *n*, and the wrench H, furnished with hole *g* and nut-holders *e f*, substantially as specified.

322,181. HORSE FOR SUSPENDING CARCASSES. JOHN HURSH, Orrville, Ohio. Filed Mar. 16, 1885. (No model.)

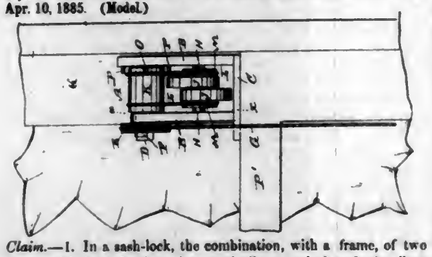


Claim.—1. A horse for hoisting and suspending carcasses, having in combination a beam suitably supported, suspension-hooks *r*, attached to and pendent below the beam, a windlass mounted below one end of the beam, a movable plate on the beam having two projecting rope-supports, a rope having one end made fast, as described, and passed over the two rope-supports, sagging down between said supports, and its other end fixed to the windlass, and a hoisting-hook, *q*, riding on the down-sagging part of the rope, as set forth.

2. A horse for hoisting and suspending carcasses, having in combination a beam suitably supported, suspension-hooks *r*, attached to the beam, parallel bars constituting a slide fixed on the beam, a movable plate fitting in said slide and provided with two rope-supports, *e*, a rope having one end made fast to the beam passed over the said two supports and sagging down between them, and a hoisting-hook, *q*, riding on the down-sagging part of the rope, as set forth.

3. A horse for hoisting and suspending carcasses, having in combination a beam suitably supported, suspension-hooks *r*, attached to the beam, parallel bars constituting a slide fixed on the beam, a movable plate fitting in said slide and provided with rope-supports, a rope passed over the said supports and having a hoisting-hook, and a retaining device, substantially as described, to retain the movable plate in position, as set forth.

322,182. SASH-HOLDER. WILLIAM D. ISETT, Altoona, Pa. Filed Apr. 10, 1885. (Model.)



Claim.—1. In a sash-lock, the combination, with a frame, of two disks mounted independently and eccentrically on a shaft and of pulleys and cords for turning the disks in opposite directions, the said pulleys being connected with the disks, substantially as herein shown and described.

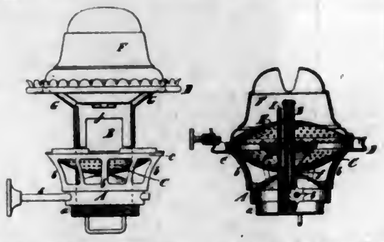
2. In a sash-lock, the combination, with a frame, of two disks mounted eccentrically and independently on a shaft, of a pulley formed on each disk, a drum journaled in the frame, and of a plain and a crossed cord passed over the drum and the pulleys on the disks, substantially as herein shown and described.

3. In a sash-lock, the combination, with a frame, of the disks J, mounted independently and eccentrically on a shaft, the pulleys M on the disks, the drum K, the cords L, and a cord and pulley for turning the drum, the latter pulley being secured on the drum, substantially as herein shown and described.

4. In a sash-lock, the combination, with a frame, of the drum K, the detachable pulley E, the disks J, the pulleys M, and the cords L, substantially as herein shown and described.

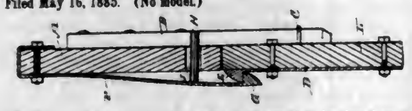
5. In a sash-holder, the combination, with a frame, of the drum K, the stop-pins O and P, the disks J, the cords L, and a cord and pulley for turning the drum K, substantially as herein shown and described.

322,183. LAMP-BURNER. NICHOLAS JENKINS, Waterbury, Conn., assignor to Holmes, Booth & Haydens, same place. Filed Mar. 7, 1884. (No model.)



Claim.—The combination, with a wick-tube, of a slide fitting directly thereon and capable of sliding vertically on the same, stops for limiting the upward movement of the slide, arms extending upwardly and outwardly from the slide, and a chimney-gallery, air-distributer, and deflector connected together and supported on the said arms so far above the slide that a space will be left between the same and the slide, said air-distributer extending into close proximity with the plane of the wall of the wick-tube, substantially as specified.

322,184. WAGON-BOX FASTENER. JOHN A. JONAS, Reserve, Kans. Filed May 16, 1885. (No model.)

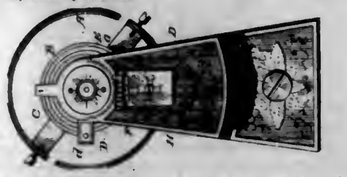


Claim.—1. The combination, with a wagon-box having bars provided with heads on the upper end on the inner surface, of the box, and of a false box having spring-straps provided at their lower ends with hooks which can catch on the heads on the rods of the box, substantially as herein shown and described.

2. The combination, with the wagon-box L and the false box A, of the heads or projections E on the box L, the spring-strap F, having a hook, G, and secured on the false box, and of the pin H, projecting from the spring-strap F through an aperture in the false box, substantially as herein shown and described.

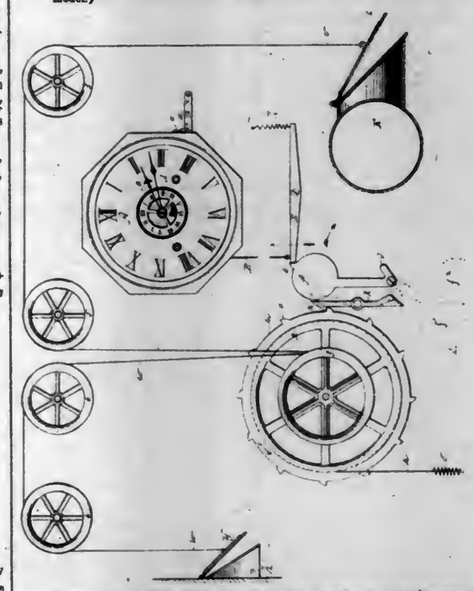
3. The combination, with the wagon-box L and the false box A, of the staples C, the stakes B, the bar D, having a head, E, the spring-strap F, having a hook, G, and of the pin H, projecting from the strap F through an aperture in the false box A, substantially as herein shown and described.

322,185. WATCH-REGULATOR. PIUS KAUL and CHARLES KAUL, Lancaster, Pa., assignors of one-third to Ernest Zeitz, same place. Filed Mar. 21, 1885. (No model.)



Claim.—A worm having screw-heads *g* in each end provided with slots *g'*, in combination with a toothed segment formed in the periphery of a regulating-disk, C, and a hair-spring, B, regulated thereby, substantially as set forth.

322,186. DAMPER-OPERATING MECHANISM FOR HEATING APPARATUS. JAMES A. LAKIN, Westfield, Mass. Filed Jan. 21, 1884. (No model.)



Claim.—1. A damper, a weight or its equivalent arranged to move the same when free to do so, a series of levers and connections (as cords or chains) for controlling said weight, and a clock mechanism engaging one of the levers, all in combination, substantially as described.

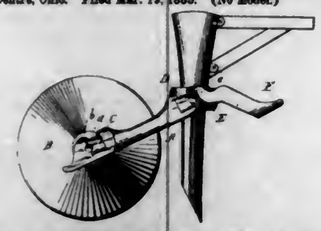
2. The combination, with a clock, a pivoted lever actuated thereby, and a shifting bar, whereby the clock may operate the lever after a period of more than twelve hours, of a trip-lever arranged to engage said bar and a train of mechanism leading therefrom to the damper to be operated, substantially as set forth.

3. In a clock, the combination, with the dial *d*, the cam *c*, and a trip-lever adapted to engage with said cam, of a sliding bar arranged, as described, to be moved by the clock and to control the trip-lever, so that said bar is capable of being adjusted to permit said cam to rotate one or more times before acting on said lever, substantially as set forth.

4. In combination with the clock A, its train of wheels 16 17 18, lever 12, and cam *c*, the hour-wheel 10, having arm 15 thereon, the bar *a*, having means thereon, substantially as described, for the engagement of said hour-wheel therewith, and the out-of-line space 8 in said bar, and the pin 13 in lever 12, arranged to move into said space at the proper time, substantially as set forth.

5. In combination, the trip-lever 12, having pin 13 thereon, the sliding bar *a*, having the space 8 therein, into which the pin 13 is allowed to swing by the movement of the bar, the clock A, and means, substantially as described, for moving said bar periodically, substantially as set forth.

322,187. GRAIN-DRILL ATTACHMENT. WILLIAM C. LATHROP, Milton Centre, Ohio. Filed Mar. 19, 1885. (No model.)



Claim.—1. An attachment for grain-drills, comprising a roller-supporting frame provided near its rear end with bearings for such roller, and a collar adapted to embrace the drill-tooth and supported in the frame in advance of such bearing, substantially as set forth.

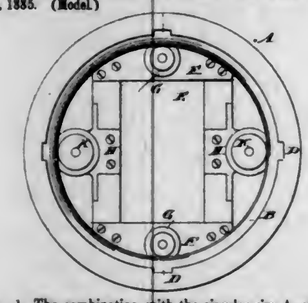
2. In an attachment for grain-drills, a roller-supporting frame provided near its rear end with bearings for the roller, a collar journaled in the frame in advance of the bearings and fitted to embrace the drill-tooth, the frame being projected in advance of such collar to form a stop-extension, substantially as set forth.

3. The combination of a drill-tooth, a collar embracing such tooth, and provided with a set-screw by which it may be held at any desired point thereto, and a roller journaled in the said frame in the rear of the collar, substantially as set forth.

4. In a roller attachment for grain-drills, the combination, with the frame provided with bearings for the roller, of a collar fitted to embrace the drill-tooth and provided with an internal binding-point, and having opposite said point a threaded opening fitted to receive a clamping-screw, substantially as set forth.

5. The combination of the drill-tooth, the roller-supporting frame pivotally connected therewith and provided with an extension forward of the pivotal support, and a roller journaled in said frame in the rear of the tooth, substantially as set forth.

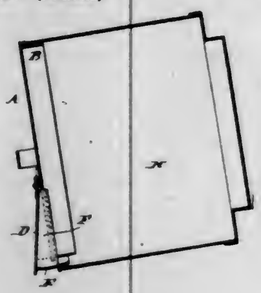
322,188. VEHICLE-WHEEL. CHARLES W. LOWE, Eaton, Ohio. Filed May 20, 1885. (Model.)



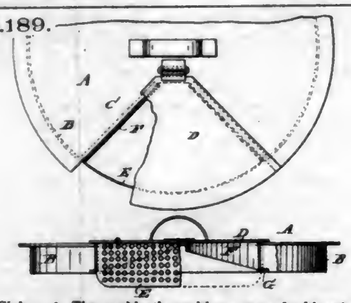
Claim.—1. The combination, with the circular rim A, of the tracks B, having lugs D, fitting in recesses in the inner surface of the rim, and of a frame within the circular rim, which frame is provided with rollers running on the above-mentioned tracks, substantially as herein shown and described.

2. The combination, with the circular rim, of tracks secured on the inner side of the same, a frame within the rim, formed of side pieces united by plates F, rollers mounted on shafts in the plates, and of forked pieces on the side pieces, in which forked pieces shafts are mounted having rollers on the ends, substantially as herein shown and described.

322,189. COVER FOR POTS. ISABELLA A. LYON, Boston, Mass. Filed Aug. 26, 1884. (No model.)



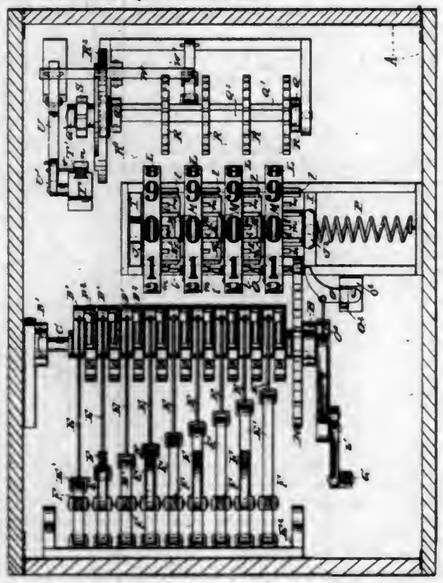
322,189.



Claim.—1. The combination, with a cover, of a hinged piece covering an opening in the cover, strips projecting downward from the hinged piece, and provided along their bottom edges with outwardly-projecting flanges, and of a downwardly-projecting perforated strip along the swinging outer edge of the hinged piece, substantially as herein shown and described.

2. The cover having the sector-shaped opening, and the sector-shaped hinged piece covering said opening of cover, and having upon its under side downwardly-projecting side strips, and a perforated plate or strip at its forward swinging end, said side strips having outwardly-projecting flanges at their lower edges, substantially as and for the purpose set forth.

322,190. ADDING-MACHINE. WILLIAM J. MACNIDER, Greensborough, Ga.; Quintin Macnider, administrator of said William J. Macnider, deceased. Filed Sept. 6, 1884. (Model.)



Claim.—1. In an adding-machine, the combination, with a series of counting-wheels having numbers on their rims, of a toothed wheel for operating the counting-wheels, a series of ratchet-wheels on the shaft of the toothed wheel, swinging arms on the said shaft, pawls on the swinging arms, operating-levers, wires or rods connecting said levers with the pawls, and of push-pins connected with the said levers and projecting from the top of the box containing the mechanism, the said operating-levers and the wires connecting them with the swinging arms carrying the pawls being of different lengths, substantially as herein shown and described.

2. In an adding-machine, the combination, with a transversely-sliding carriage carrying a shaft and the counting-wheels mounted thereon, of a toothed wheel adapted to engage with the counting-wheels, a series of ratchet-wheels on the shaft of the toothed wheel, swinging arms mounted on the said shaft, pawls on the swinging arms, vertically-swinging levers, wires or rods connecting said levers with the pawls, and a series of push-pins connected with the said levers and projecting from the top of the box containing the mechanism, whereby the toothed wheel can be revolved, substantially as herein shown and described.

3. In an adding-machine, the combination, with a transversely-sliding carriage carrying a shaft on which counting-wheels are mounted, of a toothed wheel adapted to engage with the several counting-wheels and revolve them, ratchet-wheels, pawls, and levers for operating the toothed wheels from a series of push-pins projecting from the top of the box containing the mechanism, and of a handle-piece projecting upward from the sliding carriage through a transverse slot in the top of the box, substantially as herein shown and described.

4. In an adding-machine, the combination, with a series of counting-wheels, of a toothed wheel adapted to engage with the counting-wheels and mounted on a shaft, a rocking standard in which one end of the shaft is journaled, an elbow-lever connected with the rocking standard, and a push pin or rod projecting from the elbow-lever upward through the top of the box containing the mechanism, substantially as herein shown and described.

5. In an adding-machine, the combination, with a series of counting-wheels, of a toothed wheel adapted to engage with the counting-wheels, a shaft on which the toothed wheel is mounted, a rocking standard in which one end of the shaft is journaled, and of devices for swinging the said standard from the shaft carrying the counting-wheels, substantially as herein shown and described.

6. In an adding-machine, the combination, with a transversely-sliding carriage carrying a shaft on which counting-wheels are mounted, and on which carriage a rack is formed, of a pawl pressed against the rack, a toothed wheel for revolving the counting-wheels, a shaft on which the toothed wheel is mounted, a rocking standard in which one end of the shaft is journaled, a push-pin connected by suitable levers to the rocking standard, a pawl resting against the rack formed on the above-mentioned transversely-sliding carriage, and a wire connecting the rocking standard with said pawl, substantially as herein shown and described.

7. In an adding-machine, the combination, with a transversely-sliding carriage carrying a shaft on which counting-wheels are mounted, of a spring for drawing the carriage toward one side of the box containing the mechanism, a rack formed on the base of the carriage, a pawl pressed against the said rack, a swinging standard in which one end of a shaft is journaled, the said shaft carrying a toothed wheel for operating the counting-wheels, levers connected with the swinging standard, a push-pin connected to said levers, and a wire connecting the swinging standard with the pawl pressed against the rack formed on the base of the carriage, substantially as herein shown and described.

8. In an adding-machine, the combination, with a shaft, of a series of hubs, K, mounted rigidly on the shaft and each provided in one side with a recess, K', a series of wheels, L, mounted loosely on the shaft adjacent to the hubs K, which wheels are each provided with a series of laterally-projecting pins, *l*, which project over the adjacent hub, the pawl-plates M, hinged on those sides of the wheel L opposite the ones from which the pins *l* project, and the springs M', fastened to the side of the loose wheels and acting on the free end of the pawl-plates M, substantially as herein shown and described.

9. In an adding-machine, the combination, with a series of counting-wheels mounted on a shaft, each counting-wheel being provided on one side with ten long pins and with nine short pins between them, of a swinging shaft, a series of cog-wheels mounted on said shaft and adapted to be engaged with the pins on the counting-wheels, and of devices for revolving the cog-wheels, thereby turning all the counting-wheels back into their original positions, substantially as herein shown and described.

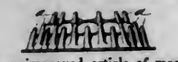
10. In an adding-machine, the combination, with a series of counting-wheels mounted on a shaft, each counting-wheel being provided on one side with ten long pins and with nine short pins between them, of the wheels R, the shaft Q^2, on which said wheels are mounted, the swinging standards Q, in which said shaft is pivoted, the rod T', the lever U, the lever W, and the toggle-lever W', substantially as herein shown and described.

11. In an adding-machine, the combination, with a series of counting-wheels mounted on a shaft, each counting-wheel being provided on one side with ten long pins and with nine short pins between them, of the wheels R, the shaft Q^2, on which said wheels are mounted, the swinging standards Q, in which said shaft is journaled, the pinion R' on one end of the shaft Q^2, the internally-cogged wheel R^2, engaging with the pinion R', and the pinion S, united with the cog-wheel R^2, the vertically-sliding rod T', having the rack *n*, the levers U and W, and the toggle-lever W', substantially as herein shown and described.

12. In an adding-machine, the combination, with a series of counting-wheels mounted on a shaft, each counting-wheel being provided on one side with ten long pins and with nine short pins between them, of the wheels R, the shaft Q^2, on which said wheels are mounted, the swinging standards Q, in which said shaft is journaled, the pinion R' on one end of the shaft Q^2, the internally-cogged wheel R^2, engaging with the pinion R', the pinion S, united with the cog-wheel R^2, the vertically-sliding rod T', having the rack *n*, the levers U and W, the toggle-lever W', the pin *o*, the pivoted arm U', and the wire *r*, connecting the lever U with the swinging arm U', substantially as herein shown and described.

13. In an adding-machine, the combination, with a series of counting-wheels mounted on a shaft, each counting-wheel being provided on one side with ten long pins and with nine short pins between them, of a series of cog-wheels, a shaft on which said wheels are mounted, swinging standards in which the shaft is journaled, whereby the cog-wheels can be swung against the pins on the counting-wheels, and of a vertically-movable rod adapted to revolve the shaft carrying the cog-wheels, and at the same time to swing the said shaft toward the shaft carrying the counting-wheels, substantially as herein shown and described.

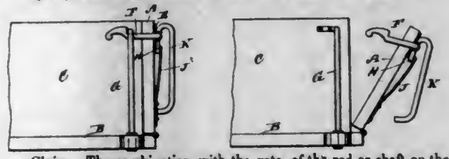
322,191. SETTING REAL AND ARTIFICIAL STONES. JOHANN F. MAHLA, Pforzheim, Germany. Filed May 29, 1885. (Model.)



Claim.—1. As an improved article of manufacture, a setting for real or artificial gems provided with hollow claws or jaws for holding the gem, substantially as herein shown and described.

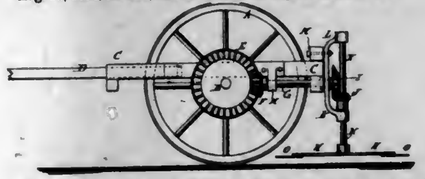
2. As an improved article of manufacture, a setting for real or artificial gems, consisting of a metal ring or piece in which hollow heads are formed, the said heads terminating in hollow jaws or claws for holding the gem or jewel, substantially as herein shown and described.

322,192. END-GATE FASTENING. DUNCAN W. MCKINNON, North Sydney, Nova Scotia, Canada. Filed Mar. 5, 1885. (No model.)



Claim.—The combination, with the gate, of the rod or shaft on the same, and having lateral hooks engaging with the braces on the sides of the wagon-body, said shaft having a lug acted upon by a spring of the gate, and the handle connected to said shaft and having its lower end formed with a hook bearing against said gate, substantially as and for the purposes set forth.

322,193. HEDGE-TRIMMER. WILLIAM MCLAUGHLIN, Auckland, New Zealand. Filed Nov. 11, 1884. (No model.) Patented in New Zealand Aug. 15, 1884, No. 888, and in Queensland Sept. 6, 1884, No. 23.



Claim.—In a machine for cutting brush and trimming hedges, the combination of the frame C, wheels A, axle B, provided with the gear-wheel E, the longitudinal shaft G, mounted in bearings on one side of the frame and provided with the pinion F and gear-wheel I, the bracket L, mounted on the shaft G, the shaft K, mounted in bearings in said bracket outside of said gear-wheel I, and provided inside of said bracket with the pinion J, meshing with said wheel I, the cutting-disk N O, fixed to the shaft K, and the adjusting-bolt M, passing through the bracket L and a hole in the frame C, to adjust the cutter in different positions, substantially as described.

322,194. MANUFACTURE OF CHLOROFORM AND OF PURIFIED ACETATES. GUSTAVUS MICHAELIS, Albany, N. Y., assignor of one-half to William T. Mayer, same place. Filed Nov. 18, 1884. (No model.)

Claim.—1. The process of producing chloroform and valuable residual products, consisting in subjecting crude acetates to dry distillation at high temperatures to remove the fluid products therefrom, then subjecting such fluid products to the action of a hypochlorite, condensing the chloroform obtained therefrom, and purifying the residual products of the dry distillation, substantially as described.

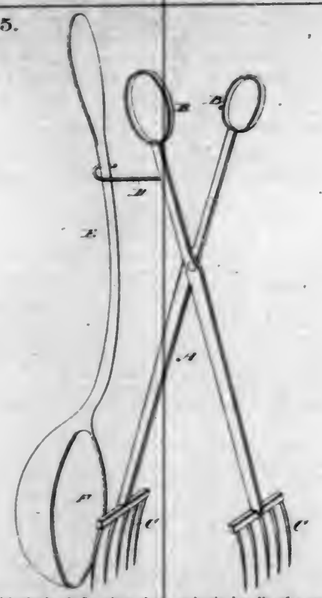
2. The production of chloroform from the liquid products resulting from the decomposition of crude acetates at high temperatures by subjecting said liquid products to the action of a hypochlorite and removing the chloroform therefrom by distillation, substantially as described.

3. The process of treating crude acetates, said process consisting in separating out the chloroform-yielding agents by distilling the crude acetate at a high temperature and leaving a residue suitable for conversion into acetic acid or purified acetates, substantially as described.

322,195. NAIL-TONGS. WOODSON MOSLEY, Kingsland, Ark. Filed Jan. 23, 1885. (No model.)

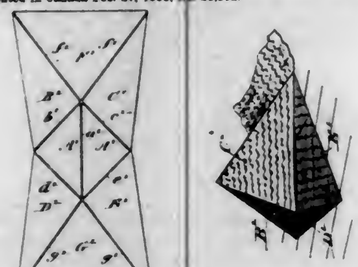
Claim.—As an improved article of manufacture, a pair of pivoted hand nail-tongs, A B C, one of the levers of which is provided on its

322,195.



under side with the hook D, adapted to retain the handle of a scoop, substantially as set forth.

322,196. FORM FOR DISPLAYING DRESS-GOODS, &c. ALEXANDER A. MURPHY, Montreal, Quebec, Canada. Filed Feb. 25, 1885. (No model.) Patented in Canada Feb. 27, 1885, No. 21,182.

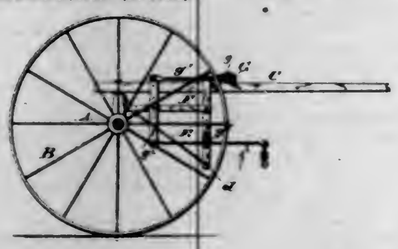


Claim.—1. A form or puff for displaying dress-goods or other fabrics, consisting of several triangular pieces hinged together and adapted to be folded into shape, together with the fabric covering the same, substantially as described and shown.

2. A form for displaying dress-goods and other fabrics, consisting of two triangular pieces folded vertically in upon each other, four triangular pieces forming the sides, and two triangular pieces forming the top and bottom, all secured together substantially as herein described.

3. A blank for a dress-puff or form having a central square divided diagonally, triangular pieces, the bases of which are secured to the sides of such square, and end triangles, the sides of which are attached to the side triangles, and the apices touch angles of the square, substantially as herein shown and set forth.

322,197. DRAFT-EQUALIZER. MICHAEL S. O'NEIL, Rock Island, Ill. Filed Mar. 27, 1885. (No model.)



Claim.—1. A double-team draft-equalizer consisting of a double-tree swiveled at its center by a short link or immediately to a cross-beam upon the tongue, rearwardly-extending links at its ends, swiveled to the upper ends of vertical bars pivoted to horizontal braces between the axle and the pendent ends of the cross-bar, and having forwardly-extending draft-rods at their forward ends.

2. A double-team draft-equalizer consisting of a double-tree connected by a link at its center or immediately to a cross-beam upon the tongue, rearwardly-extending links at its ends swiveled to the upper ends of vertical bars pivoted to horizontal braces between the axle and the pendent ends of the cross-beam, and having forwardly-extending draft-bars, which pass through roller-casings secured to the pendent ends of the cross-bar, each having a roller, and adapted to be placed below or on top of such roller, substantially as described, for the purpose set forth.

3. A double-team draft-equalizer consisting of a horizontal double-tree swiveled to the tongue or a cross-bar thereon, vertical double-trees or bars pivoted between their ends to braces from the cross-bar to the axle or other suitable part, and connected at their upper ends to the ends of the horizontal double-tree by rearwardly-extending links, and having attached to their lower ends forwardly-extending draft-rods.

4. A double-team draft-equalizer consisting of a horizontal double-tree swiveled to the tongue or a cross-bar thereon, vertical double-trees or bars pivoted between their ends to braces from the cross-bar to the axle or other suitable part, and connected at their upper ends to the ends of the horizontal double-tree by rearwardly-extending links, and having attached to their lower ends forwardly-extending draft-rods which pass through roller-casings, having rollers secured to the pendent ends of the cross-beam.

5. In a cultivator or other like tongued and wheeled implement, the combination of the cross-bar D with pendent ends *d*, braces E and F, links g', vertical bars g^2, draw-bars g^3, roller-casing g^4, and roller, substantially as described.

6. A draft-equalizer consisting of a pivoted double-tree, levers in rear of the double-tree pivoted to the frame of the machine, links connecting the upper ends of the pivoted levers to the ends of the double-tree, and draft chains or rods secured to the lower ends of the pivoted levers, as shown.

322,198. SURGICAL INSTRUMENT. JOHN S. POYNOR, Walnut Springs, Tex. Filed Mar. 20, 1885. (No model.)

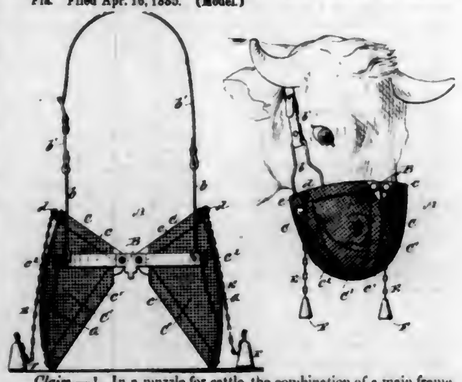


Claim.—1. In a surgical instrument, the combination, with the rod *L*, of the head *B*, the springs D, and the sliding sleeve H, substantially as herein shown and described.

2. In a surgical instrument, the combination, with the rod A, of the head B, the springs D, the shell G, the sleeve H, and the pin K, substantially as herein shown and described.

3. In a surgical instrument, the combination, with a rod, A, having the stepped head B, provided with grooves C, of the springs D, the pin E, the stepped shell G, having offsets J, the sliding sleeve H, and the pin K, substantially as herein shown and described.

322,199. MUZZLE FOR CATTLE. PHILIP PRIOLEAU, Jr., Melrose, Fla. Filed Apr. 16, 1885. (Model.)



Claim.—1. In a muzzle for cattle, the combination of a main frame, provided with two hinged spherically-shaped frames covered with wire-netting, and a weight attached to each of the said hinged frames, and of springs secured to the main frame and having the tendency to throw the said two hinged frames apart, substantially as shown and described.

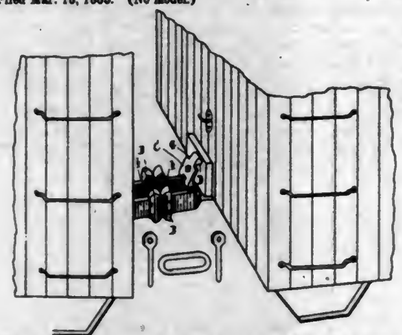
2. In a muzzle for cattle, the band B, provided with the loops *b b*, in combination with the hinged frames C C and the chains E, carrying the weights F, substantially as herein shown and described.

3. In a muzzle for cattle, the band B, provided with the loops *b b* and the springs G, in combination with the hinged frames C C, covered with wire-netting C′ C′, substantially as shown and described.

4. In a muzzle for cattle, the band B, provided with the loops *b b* and the springs G G, in combination with the hinged frames C C, covered with the wire-netting C′ C′, the chains E E, and the weights F F, substantially as shown and described.

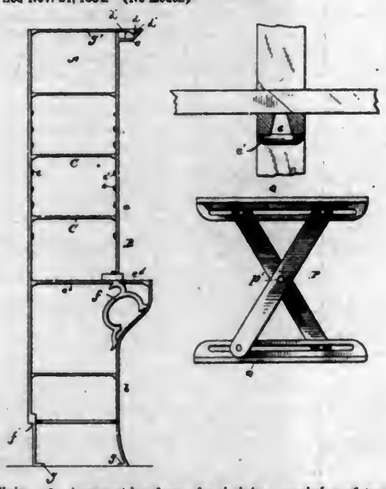
5. In a muzzle for cattle, the band B, provided with the loops *b b*, the straps *b′ b′*, and the springs G, in combination with the hinged frames C C, consisting of the bands *c*, *c′*, and c^2, and covered with the wire-netting C′ C′, the loops *d d*, the chains E E, and the weights F F, substantially as shown and described.

322,200. DRAW-BAR. WILLIAM RAPER, Windsor, Ontario, Canada. Filed Mar. 18, 1885. (No model.)



Claim.—In a car-coupling, the draw-heads B, having open tops and inclines *b*, combined with hinged covers C, with shoulders *a* and intervening tongue, D, all arranged to allow a link to be passed into place from the top and have the covers bear tightly between the points *a b*, to relieve the hinge from strain, as set forth.

322,201. SHELVING. FREDERICK O. RESSMEYER, West Point, Iowa. Filed Nov. 21, 1884. (No model.)



Claim.—1. A supporting-frame for shelving, consisting of two uprights or standards having dovetailed flanges upon their inner sides, and ledges *c′* at the lower ends of said flanges, and cross-bars having slots to receive the flanges, and resting on the ledges *c′*, shelves adapted to be supported on said cross-bars, and adjustable supports for the shelves, as set forth.

2. A supporting-frame for shelving, consisting of two uprights or standards, the front standard being of two pieces, the lower piece being curved outwardly beyond the upper piece, as shown, a bar connecting the outwardly-extending portion of the lower piece of the front upright with the rear upright, the upper piece, *a*, being secured to the bar c^3, and the arm *f*, substantially as set forth.

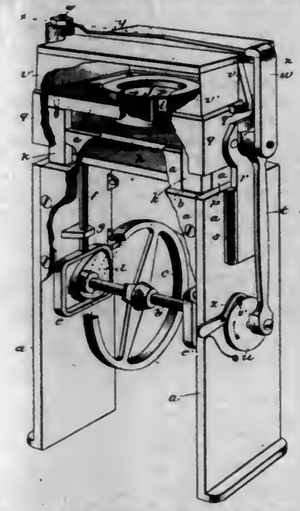
3. A supporting-frame for shelving, consisting of two uprights or standards having dovetailed flanges on their inner sides, and ledges adjacent to the lower ends of said flanges, cross-bars connecting the flanges, a shelf, and an arm extending inwardly from piece *b* of the front standard, and bearing against the under side of bar c^2, substantially as set forth.

4. The combination, in portable shelving, with the pivoted arms, of plates having central longitudinal slotted ribs upon their under sides, and a set-screw for clamping said arms, said arms being pivotally connected to the plates, as set forth.

5. The combination, in portable shelving, of pivoted arms having inwardly-extending flanges, with plates having central longitudinal slotted ribs upon their under sides, and pins connecting the arms pivotally with the slots of the plates, as set forth.

322,202. SAND-MOLDING MACHINE. ARTHUR RICE, New Albany, Ind., assignor, by mesne assignments, to the Peerless Manufacturing Company, Louisville, Ky. Filed May 26, 1884. (Model.)

Brief.—The parts being in position of Figs. 2 and 3, the flask is applied, filled with tempered sand, and the binder swung in place. The shaft *b* is then rotated in the direction of the arrow to full limit of down-stroke, Fig. 4, thus drawing half-flask, binder, and box down over the stationary pattern and compressing the sand. By further revolution of the shaft the templet rises synchronously with the box and half-flask containing the sand, thus stripping the mold from the pattern. Next the templet moves slower than the half-flask, thus separating it from the sand. (See Fig. 5.) The finished mold is now removed. By further revolution of the shaft the templet drops suddenly to its place on the frame of the machine, the box following more slowly, until, at the end of a complete revolution of the shaft, the position of Figs. 2 and 3 is again reached, and the machine is ready for another flask.



Claim.—1. In a sand-molding machine of substantially the construction set forth, having a moving flask and templet, a stationary pattern, in relation to which the flask and templet are moved to make and clear the mold, substantially as described.

2. In a sand-molding machine having a stationary pattern and a movable flask, a templet resting solidly upon the bed of such pattern during the formation of the mold, and means to move it relatively to the pattern and synchronously with the flask, as set forth, to gradually separate the flask or mold from the pattern, substantially as described.

3. In a sand-molding machine, the combination of the stationary pattern *m*, rigidly attached to its bed-plate, with a templet, both the pattern and the templet being supported upon the frame of the machine during the time the sand is being compressed into the flask and about the pattern, and with the box *q*, flask *v*, and binder *y*, and means for moving box, flask, and binder downward to compress the sand, whereby is insured uniformity in the depth of the mold and the weight of the finished castings, substantially as and for the purpose set forth.

4. The combination of the stationary pattern *m* with the box *q*, the half-flask *v′*, and binder *y*, and with a movable templet, *j l*, acting synchronously in an upward direction to support the sand in the finished mold during its separation from the pattern, substantially as and for the purpose set forth.

5. The combination, with the rotary shaft having cams *d d′* and disks *u*, of the pitmen *t*, the yokes *e e′*, and carrier-plate *h*, which impart a simultaneous upward movement to the box *q*, flask *v′*, and binder *y*, and templet *j l*, and cause the templet to move in a downward direction faster than the box, thereby setting the machine ready for

another mold, substantially as herein described, and for the purpose set forth.

6. The combination, with the stationary pattern, of a templet acting as a follower, a carrier for the latter, and a shaft and cams thereon, acting positively by connecting yokes to raise and lower said templet, a box supporting the flask, and pitmen actuated from the cam-shaft to raise and lower the box and flask harmoniously with the templet, substantially as set forth.

7. The combination, with the frame-work, of a pattern rigidly secured thereto, a templet acting as a follower with respect to the mold made by the pattern, and supported firmly and solidly by the frame-work while the mold is being formed, a flask and binder therefor, and means to raise the templet and flask to gradually separate the mold from the pattern, permitting the templet to support it during its movement from the pattern, and to cause said templet to suddenly drop at the termination of the upward movement of separation, substantially as set forth.

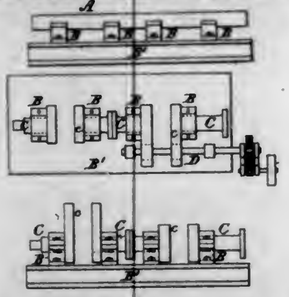
322,203. **MOLDING-MACHINE FOR MAKING MOLDS IN SAND.** ARTHUR REX, New Albany, Ind., assignor to the Pearlass Manufacturing Company, Louisville, Ky. Filed May 20, 1885. (No model.)



Claim.—1. The sprue-stick having a recessed or hollow member co-operating with the movable binder of a molding-machine, and a fixed member secured to a fixed pattern and telescoping in said hollow member as the latter is moved toward it, combined with the said pattern, the templet through which the fixed member projects, and the binder, substantially as and for the purpose described.

2. A binder having an opening and adjacent lugs, combined with a movable member of a sprue-stick having a turn-button to co-operate with said opening and lugs, and a fixed member, templet, pattern, and operating mechanism therefor, substantially as described.

322,204. **MANUFACTURE OF CRANK-SHAFTS.** HORACE SEE, Philadelphia, Pa., assignor of one-half to the William Cramp & Sons Ship and Engine Building Company, same place. Filed Aug. 6, 1883. (No model.)



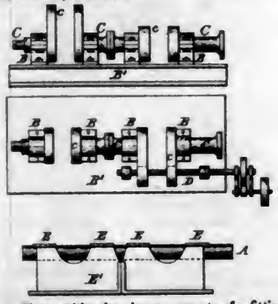
Claim.—1. As an improvement in the art of manufacturing crank-shafts, the method of insuring the correspondence of the journals and bearings which consists in testing a set of special adjusting-bearings by the application of a cylindrical truing-mandrel, correcting deficiencies thereby found in said special adjusting-bearings, testing the crank-shaft by applying it to said trued adjusting-bearings, correcting irregularities in the shaft, testing the permanent bearings of the crank-shaft by the application of the truing-mandrel thereto, and correcting deficiencies thereby found in said permanent bearings, substantially as set forth.

2. As an improvement in the art of manufacturing crank-shafts, the method of insuring the parallelism of the shaft and crank-pins which consists in testing a set of special adjusting-bearings by the application of a cylindrical truing-mandrel, correcting deficiencies thereby found in said special adjusting-bearings, testing the crank-shaft by applying it to said trued adjusting-bearings, correcting deficiencies thereby found in said shaft, and boring out the crank-eyes by a boring-bar adjusted to rotate parallel to the axis of said adjusting-bearings, substantially as set forth.

3. As an improvement in the art of manufacturing crank-shafts, the method of insuring the truth of the shaft-couplings which consists in testing a set of special adjusting-bearings by the application of a cylindrical truing-mandrel, correcting deficiencies thereby found in said special adjusting-bearings, testing the crank-shaft by applying it to said trued adjusting-bearings, correcting deficiencies thereby found in said shaft, testing the permanent bearings of the shaft by the application of the truing-mandrel thereto, correcting deficiencies thereby found in said permanent bearings, and facing off the shaft-couplings during the rotation of the shaft in said trued permanent bearings, substantially as set forth.

4. As an improvement in the art of manufacturing crank-shafts, the method of perfecting the alignment and truth of the shaft and its bearings which consists in testing a set of special adjusting-bearings by the application of a cylindrical truing-mandrel, correcting deficiencies thereby found in said special adjusting-bearings, testing the crank-shaft by applying it to said trued adjusting-bearings, testing the permanent bearings of the shaft by the application of the truing-mandrel thereto, correcting deficiencies thereby found in said permanent bearings, testing the crank-shaft by applying to said trued permanent bearings, correcting irregularities in the shaft, again testing the permanent bearings by the application of the truing-mandrel after the bearings have been fastened to the foundation which they occupy when in service and before finally locating the shaft in said bearings, and correcting deficiencies thereby found in said permanent bearings, substantially as set forth.

322,205. **APPARATUS FOR FITTING AND FINISHING CRANK-SHAFTS.** HORACE SEE, Philadelphia, Pa., assignor of one-half to the William Cramp & Sons Ship and Engine Building Company, same place. Filed Dec. 29, 1884. (No model.)



Claim.—1. The combination, in an apparatus for fitting and finishing crank-shafts and their bearings, of a series of special adjusting-bearings, and a cylindrical truing-mandrel, each corresponding in diameter with the journals of the shaft to be operated on, substantially as set forth.

2. The combination, with a series of permanent bearings adapted to support a crank-shaft when in service, of a cylindrical truing-mandrel corresponding in diameter with the journals of the shaft, and of a length substantially equal to the distance between the outer faces of the end bearings of the series, substantially as set forth.

3. The combination, with a series of permanent bearings adapted to support a crank-shaft when in service, of mechanism for rotating a crank-shaft in said bearing, and a facing-cutter supported adjacent to the bearings in position to face off a coupling of the shaft while the latter is rotated in the bearings, substantially as set forth.

322,206. **FIRE-ESCAPE.** ISAAC S. SMELTZER, Columbus, Ohio. Filed May 6, 1885. (No model.)



Claim.—1. The combination, with the pulleys A, of the pulleys C, having brake-rims J, the standards F, the shaft N, the brake-cams O, one of which has a handle, O', and of the endless cables H, substantially as herein shown and described.

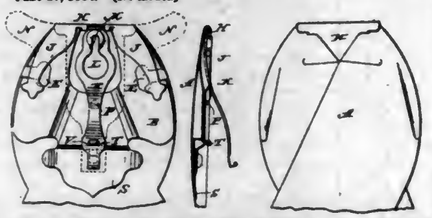
2. The combination, with the pulleys A, of the pulleys C, having brake-rims J, one of which has cogs on its inner surface, of the pinion K, engaging with the teeth on the rim, the shaft L, and the crank M, together with the cables H, substantially as herein shown and described.

3. The combination, with the pulleys A, of the standards F, the sliding boxes E, the shaft D on the same, the pulleys C on the said shaft, the cams O, one having a lever or handle, O', the lugs P on the standards, the lugs Q on the boxes, and the key R, together with the cables H, substantially as herein shown and described.

4. The combination, with a cable, of the bracket S, held on the cable by the screw S', and having a fork, S², at its lower end, substantially as herein shown and described.

5. The pulley C, having a groove, C', the flange J', and the brake-rim J, combined with the rubber G in the grooves C', substantially as herein shown and described.

322,207. **NECK-WEAR.** EDWIN D. SMITH, New York, N. Y. Filed June 17, 1884. (No model.)



Claim.—1. As an improved article of manufacture, an embossed bow, scarf, or cravat, on which ornaments or designs are produced in one or more colors different from the background, substantially as herein shown and described.

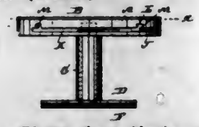
2. As an improved article of manufacture, a bow, scarf, or cravat, made of paper, on which ornaments or designs are produced in one or more colors different from the background, substantially as herein shown and described.

3. The combination, with a paper scarf provided with the wings E on the side edges, of the flap or wing B, formed on the scarf and provided with recesses F for receiving the wings E, substantially as herein shown and described.

4. The combination, with a paper scarf having an aperture, D, and provided with a wing or flap, B, having an aperture, C, of a metal frame or plate held in the top of the scarf, the upper part of the frame showing through the aperture D at the top of the front of the scarf, substantially as herein shown and described.

5. The combination, with the paper scarf A, having the flap or wing B, provided with an aperture, Q, of the metal plate H, provided with a tongue, P, which is passed through the aperture Q when the plate H is held between the back of the scarf and the flap B, substantially as herein shown and described.

322,208. **CUFF-BUTTON.** ELIAS M. STEWART, Richmond, Canada. Filed Apr. 30, 1885. (No model.)

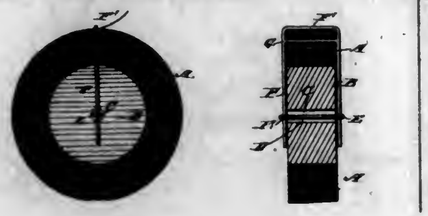


Claim.—1. In a cuff-button, the combination, with a hollow head and hollow shank having a cross-piece on its lower end, of a pin fitted to turn in the button-shank and a cross-piece on the lower end of the pin, a sliding rod held in the upper end of the pin, and a sliding head on the rod projecting through a slot in the head, substantially as herein shown and described.

2. In a cuff-button, the combination, with the hollow head A and button-shank C, having a cross-piece, D, of the pin E in the shank, the cross-piece F on the lower end of the same, the sliding rod G in the top of the pin E, the sliding head on the rod G, projecting through a slot in the side of the button, and of a spring for pressing the head outward, substantially as herein shown and described.

3. In a cuff-button, the combination, with the head A, having the slot K and notches M in its side, of the tubular shank C, the cross-piece D, the pin E, the cross-piece F, the sliding rod G on the top of the pin E, the sliding head J, having a rib, L, and of the spring O, substantially as herein shown and described.

322,209. **RIBBON AND BRAID HOLDER.** CHARLES M. STONE, Belton, Tex. Filed Apr. 21, 1885. (No model.)



Claim.—1. The herein-described ribbon and braid holder, consisting of the V-shaped wire F, having the cross-piece G, and the pin D, having eyes E at its ends, through which eyes the shanks of the V-shaped wire pass freely, as specified.

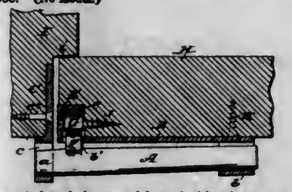
2. The combination, with the roll B, having the central aperture, C, of the pin D, having eyes in its ends, and of the V-shaped wire F, having a cross-piece, G, substantially as herein shown and described.

322,210. **ALPHABET-BLOCK.** DE WITT C. TAYLOR, New York, N. Y. Filed Feb. 27, 1885. (No model.)



Claim.—As a new article of manufacture, an alphabet-block having open-face plate *a* and backwardly-extending flange *c*, adapted to receive a piece of card-board, and means for holding the block to a rack, substantially as specified

322,211. **DOOR-BOLT.** JOHN F. TAYLOR, West Park, N. Y. Filed Apr. 1, 1885. (No model.)



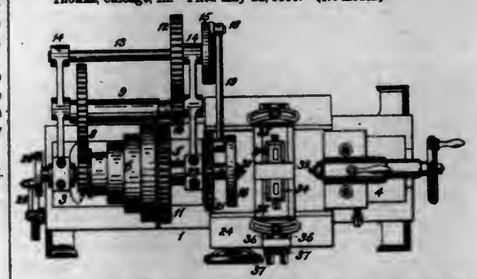
Claim.—1. A door-bolt comprising a locking-bar supported to slide in an eye adapted for attachment to the door, and said bar provided with a lever or equivalent means for turning it axially, and also with a cam-lug adapted to lock behind a stop or shoulder on the door to hold the bolt projected, and a spring arranged to offer resistance to the cam-lug as the bolt is turned axially, substantially as herein set forth.

2. The combination, in a door-bolt, of a bar, A, provided with a lever, D, or equivalent means for turning it axially, and having a cam-lug, F, a plate, B, having an eye, *b*, to support bar A, and a slot at *b'* for the passage of lug F, and a spring supported by and back of the plate B, so as to offer resistance to the cam when the bar A is entered into the catch-plate and turned, substantially as herein set forth.

3. The combination, in a door-bolt, of a bar, A, provided with a lever, D, or equivalent means for turning it axially, and having a cam-lug, F, a plate, B, having an eye, *b*, to support bar A, and a slot, *b'*, for the passage of lug F, and said plate having a case, E, at its outer end, and a spring, G, made in ∩ form and held within case E, so as to offer resistance to the lug F when the bar A is entered into the catch-plate and turned, substantially as herein set forth.

4. As an improved article of manufacture, a catch for a door-bolt made with its bolt-bar-receiving eye formed on a dovetail-shaped plate adapted to be let into the casing, substantially as herein set forth.

322,212. **LATHE FOR TURNING CROSS-HEAD PINS.** NICHOLAS THOMAS, Chicago, Ill. Filed May 22, 1885. (No model.)



Claim.—1. The combination of a lathe-spindle, a crank-shaft fitted to rotate in bearings in the head-stock or supporting-head of said spindle, and an intermediate connection whereby vibratory movement is imparted to the spindle from the crank-shaft, substantially as and for the purpose set forth.

2. The combination of a lathe-spindle, a crank-shaft mounted on the head-stock or supporting-head of said spindle, a gear adapted to vibrate

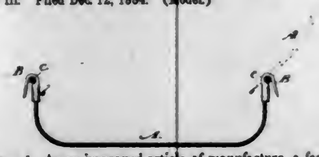
about an axis on the head-stock, a connecting-rod coupled to a pin on the crank-shaft and to said gear, and a pinion secured upon the spindle and meshing with said gear, substantially as set forth.

3. The combination of a lathe-spindle, a cone-pulley fitting freely thereon, a crank-shaft mounted in bearings in the head-stock or supporting-head of the spindle, gearing for rotating said shaft from the cone-pulley, a gear adapted to vibrate about an axis on the head-stock, a connecting-rod coupled to a pin on the crank-shaft and to said gear, and a pinion secured upon the spindle and meshing with said gear, substantially as set forth.

4. The combination of a lathe-spindle, a cone-pulley fitting freely thereon, a back gear-shaft and a supplemental crank-shaft, each mounted in bearings on the head-stock or supporting-head of the spindle, gearing for rotating the back gear-shaft from the cone-pulley, a pinion fitted to slide longitudinally on the back gear-shaft and to engage either a gear on the crank-shaft or a gear fixed upon the spindle, a gear adapted to vibrate about an axis on the head-stock, a connecting-rod coupled to a pin on the crank-shaft and to said gear, and a pinion secured upon the spindle and meshing with said gear, substantially as set forth.

5. The combination of a lathe-spindle, a lathe carriage or saddle, two tools or cutters, each mounted in an independent slide-block on the carriage, two feed-screws, each governing the movement of one of said slide-blocks toward and from the center line of the spindle, and two pinions, each mounted upon one of said feed-screws, either of said pinions being fitted to slide longitudinally upon its feed-screw, so that said pinions may be engaged or disengaged to enable either coincident or independent movement of the slide-blocks and tools to be effected, substantially as set forth.

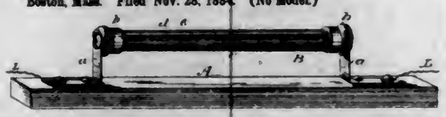
322,213. HAT AND BONNET FASTENER. JAMES L. UDELLAR, Kankakee, Ill. Filed Dec. 12, 1884. (Model.)



Claim.—1. As an improved article of manufacture, a fastener-hook for elastics for hats and bonnets, the same consisting of the tubular eye or socket *b* and the penetrating hook B, bent outward over one open end of said eye or socket and having a sharp or needle point, substantially as set forth.

2. The combination, with an elastic, A, knotted at its opposite ends, of the tubular eyes or sockets *b*, and the hooks B, bent outward to cover one open end of said eyes, and the knot *c* therein, whereby when in place on a hat the fastener is free from projections for the hair of the wearer to catch on and be held by, substantially as set forth.

322,214. ELECTRIC-APPARATUS PROTECTOR. THEODORE N. VAIL, Boston, Mass. Filed Nov. 28, 1884. (No model.)



Claim.—1. A protector for electrical circuits, comprising a fusible safety-strip of metal foil or wire, a non-conducting case inclosing said strip and supporting it for its entire length, the whole or a portion of said case being transparent, and metal end pieces or caps for the said case, mechanically attached thereto and in electrical contact with the fusible conductor, whereby the said fusible conductor may be connected with an electric circuit, substantially as specified.

2. The combination, in a circuit-protector substantially of the character specified, of an easily-fusible conductor—such as a thin strip of metal foil or fine wires—and case therefor, of hard rubber or like material, inclosing and supporting said conductor, a plate or strip of glass or mica constituting one side of said case, and metal end pieces or caps adapted to secure the said conductor and the transparent medium to the case, and also constituting the terminals of said conductor.

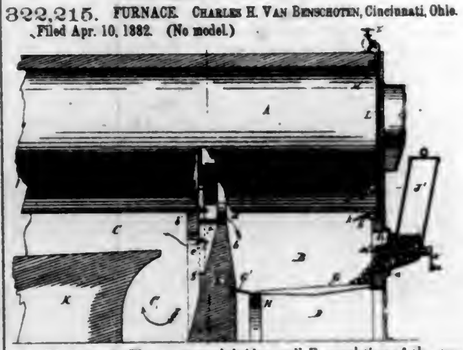
3. The combination, in a circuit-protector, of a rod of hard rubber or like non-conducting material, longitudinally grooved or channeled on one side thereof, the said groove being shouldered, as specified, a strip of tin-foil resting in the said groove, a strip or plate of mica or glass placed over the said tin-foil, on the shoulder of the said groove, and forming with the sides of the grooves an inclosing-chamber for the said tin-foil, and terminal pieces or caps adapted to screw on the ends of the hard-rubber rod, whereby the said plate of glass or mica is fastened thereto for the purpose of constituting an electric connection for the tin-foil strip, substantially as described.

4. In a circuit-protector, the combination of a rod of hard rubber or similar non-conductor, longitudinally grooved, as specified, so as to form a shoulder-cavity throughout its length, a fusible strip of metal foil of equal length resting in the said cavity, a metal plate at each end provided with a lug or nipple, the said lug being adapted to overlap the end of the tin-foil strip in electrical contact therewith, a strip of transparent non-conducting material—such as glass or mica—adapted to rest upon the shoulder of the longitudinal cavity, and constituting one of the sides of the said cavity, and terminal pieces or caps internally threaded and adapted to be screwed upon the ends of the non-conducting rod, and to form an electrical connection by means of the metal plate with the fusible conductor, and also to hold in place the several elements of the protector, as specified.

5. The combination, in a circuit-protector, substantially as hereinbefore described, of a fusible safety-strip of metal foil or wire, an inclosing-case of hard rubber or similar non-conducting material, a plate or strip of glass or mica constituting one side of said case, and metal end pieces or caps adapted to be screwed to the end of the inclosing-case, thereby connecting with the fusible conductor and securing the same, together with its transparent cover, the said caps also being provided externally with binding-screw terminals for attachment to the main line, for the purposes specified.

6. The combination, with a circuit-protector constructed, as described, of a grooved non-conducting rod, a fusible metal strip or wire placed in said groove, and conducting terminal caps for the said rod connecting with the fusible strip and having binding-screws attached thereto, of an electric circuit and standards carrying projecting wires or rods mounted on a suitable base and permanently connected with the said circuit, the said projecting wires being adapted for connection with the protector binding-screws, whereby the said protector is included in the circuit, substantially as and for the purposes set forth.

322,215. FURNACE. CHARLES H. VAN BENSCHOTEN, Cincinnati, Ohio. Filed Apr. 10, 1882. (No model.)



Claim.—1. The compound bridge-wall E, consisting of the two portions *b b'* and provided with the flues *e e²*, in combination with the dampers F F', sliding between the walls *b b'*, and resting on a ledge between them, substantially as and for the purpose specified.

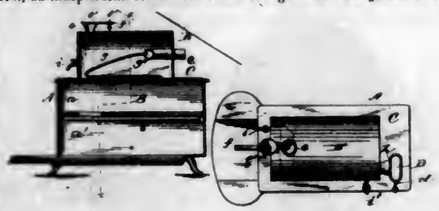
2. The compound bridge-wall E, consisting of the two portions *b b'* and provided with the flues *e e' e²*, the rear face of the portion *b* being inclined substantially as shown, and provided with the ledges *g*, in combination with the dampers F F', substantially as and for the purpose specified.

3. The combination of the fire-chamber B, the bridge-wall E, having a diving-flue and provided with an opening at its upper end for the passage of the flame from the fire-chamber, the flue C, and the reverberatory chamber C', located in rear of the bridge-wall below the opening at the upper end of the wall, and bounded at the rear by a forwardly-projecting or overhanging abutment, K, substantially as described.

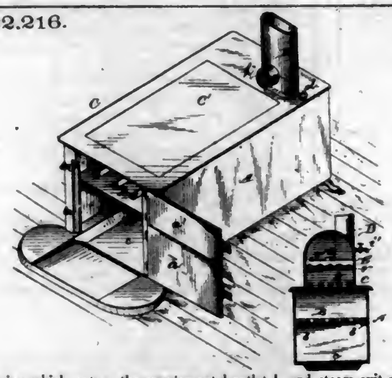
4. The combination of the fire-chamber B, provided with the grate-bars G and the dumping-grate G', the support H, and bridge-wall E, provided with the flues *e e' e²*, and the chamber or flue C, substantially as and for the purpose specified.

322,216. STOVE AND BOILER. ISAAC P. VANCE, West Stockholm, N. Y. Filed Dec. 31, 1884. (No model.)

Claim.—In combination with a stove constructed substantially as described, and provided with a smoke-outlet, D, and supplemental outlet *h*, an independent removable boiler having return-flues *g*, connected

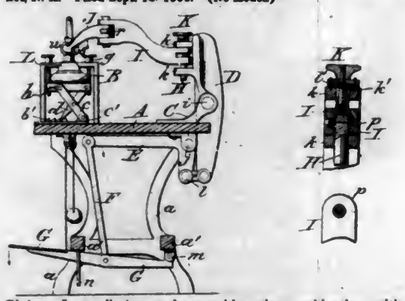


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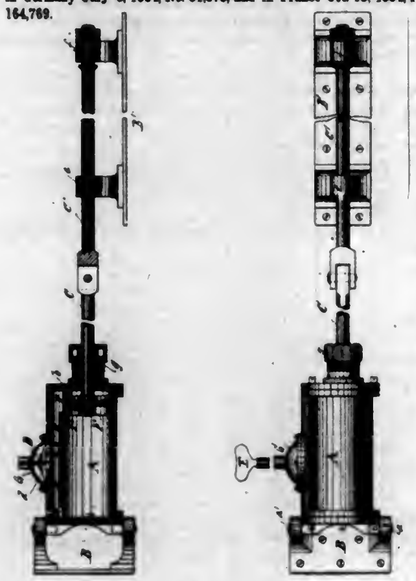
to a pipe which enters the supplemental outlet A, and steam-exit opening *i'*, the parts being constructed substantially as shown, and for the purpose set forth.

322,217. TAILOR'S PRESSING-MACHINE. AI VARNEY, New Market, N. H. Filed Sept. 13, 1880. (No model.)



Claim.—In a tailor's pressing-machine, the combination, with the rocking lever D, having lugs *k k* at its upper end, and the goose-arm I having attaching lugs, of the vertically-adjustable pivot-shaft H, having a smooth external surface and provided at its upper end with internal screw-threads, the washer *p*, secured to the external surface of said shaft between the lugs on arm I, and the thumb-screw K, having collar *k'* and yoke *l'*, as and for the purpose described.

322,218. HYDRAULIC DOOR-CHECK. LEO WADACK and ALOIS GRAFFY, Berlin, Germany. Filed Dec. 29, 1884. (No model.) Patented in Germany July 6, 1884, No. 31,578, and in France Oct. 13, 1884, No. 164,769.

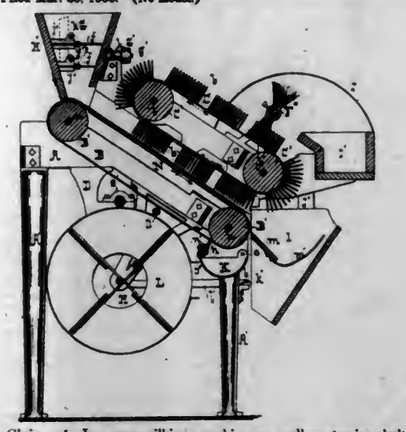


Claim.—A door-check consisting of the following elements, to wit: a block, B, a swinging cylinder, A, for a fluid, hinged to the block and provided at the ends with ports S S', connected by a longitudinal channel, *k*, formed in the cylinder, and having an opening, *d*, extending through the side of the cylinder intermediate of the ends of the latter, a closed cover, G, secured to the cylinder and surrounding the said opening, an adjustable regulating-valve, D, arranged in and guided by the cover to control the opening, the valved piston F, the piston-rod C, and a block, B', connected with the piston-rod, substantially as and for the purpose described.

322,219. ORNAMENTING SURFACES OF WOOD, &c. JOSEPH M. WADE, New York, N. Y. Filed Dec. 22, 1884. (Specimens.)

Claim.—The process or method of ornamenting surfaces, as of wood or other similar substances, by first applying a non-absorbing agent, as varnish; second, applying the pattern as a stencil-sheet, and then applying the color or mordant by a rolling action, as hereinbefore set forth.

322,220. CORN-SILKER. SOLOMON D. WARFIELD, Baltimore, Md. Filed Mar. 28, 1885. (No model.)



Claim.—1. In a corn-silking machine, an endless moving belt for conveying corn and rollers for supporting said belt, combined with a series of silking-fingers situated over the said belt, through which the corn is forced, substantially as specified.

2. In a corn-silking machine, an endless moving belt for conveying corn and rollers for supporting the said belt, combined with a series of silking-fingers situated over the said belt, and a hopper containing distributing devices, substantially as specified.

3. In a corn-silking machine, an endless moving belt for conveying corn and rollers for supporting the said belt, combined with a series of silking-fingers situated over the said belt, and a fan arranged to force air through the corn, substantially as specified.

4. In a corn-silking machine, an endless moving belt to convey corn and rollers for supporting the said belt, combined with an endless moving belt on rollers carrying silking-fingers situated over the conveyer-belt, substantially as specified.

5. In a corn-silking machine, an endless moving belt to convey corn and rollers to support the said belt, combined with an endless moving belt on rollers carrying silking-fingers situated over the conveyer-belt, and means to move the fingers in a direction opposite to that of the conveyer-belt, substantially as specified.

6. In a corn-silking machine, an endless moving belt for conveying corn and rollers to support the said belt, combined with silking-fingers situated over the said conveyer-belt, a perforate shaking hopper located at the discharge end of the conveyer-belt, and a fan adapted to force air through the said perforate hopper, substantially as and for the purpose specified.

7. In a corn-silking machine, an endless moving belt for conveying corn and rollers to support the said belt, combined with a wiper in contact with the said belt, a tray to receive the material wiped from the said belt, and a series of silking-fingers arranged over the said conveyer-belt, substantially as specified.

8. In a corn-silking machine, an endless moving belt to convey corn and rollers to support the said belt, combined with a wiper in contact with the said belt, a tray to receive the material wiped from the said belt, and a series of silking-fingers arranged over the said conveyer-belt, substantially as specified.

9. In a corn-silking machine, a hopper to receive corn, combined with distributing-bars arranged one above another, and means to reciprocate the said bars in opposite directions, substantially as specified.

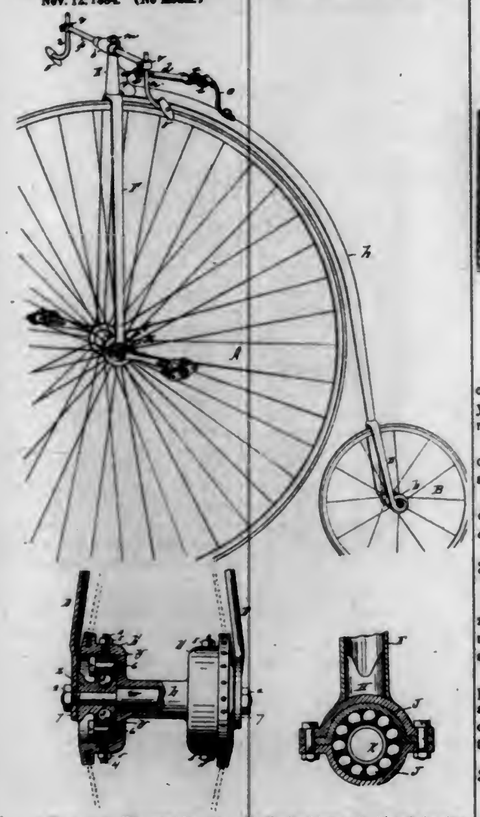
10. In a corn-silking machine, a hopper to receive corn, combined with removable distributing-bars arranged one above another, and means to reciprocate the said bars in opposite directions, substantially as specified.

11. In a corn-silking machine, an endless moving belt to convey corn and rollers to support the said belt, combined with an endless moving belt carrying silking-fingers, and a shaking perforate hopper situate at the discharge end of the said conveyer-belt, substantially as specified.

12. In a corn-silking machine, an endless moving belt for conveying corn and rollers to support the said belt, combined with an endless moving belt carrying silking-fingers, and a fan to force air through the corn falling from the said conveyer-belt, substantially as specified.

13. In a corn-silking machine, an endless moving belt to convey corn and silking-fingers situated over the said belt, combined with a shaking perforate hopper situated at the discharge end of the said belt and adapted to receive corn falling therefrom, substantially as specified.

322,221. BICYCLE. GEORGE T. WARWICK, Springfield, Mass. Filed Nov. 12, 1884. (No model.)



Claim.—1. The combination, with the backbone of a bicycle having fork D, of the ball-bearings consisting of the axle *w*, having grooved journals thereon rigidly secured between the branches of fork D and a suitable shoulder on the axle, the hub *b*, having secured thereto the grooved casings *y* opposite the journal, and the series of balls 3, combined and operating substantially as set forth.

2. In combination with the frame of a bicycle having a fork, D, the improved ball-bearings, consisting of the following elements, viz: an axle having a grooved journal thereon, a hub having a chambered end extending over said journal, grooved casings adjustably secured in the end of the hub opposite the journal, and a series of balls interposed between said casings and journal, combined and operating substantially as set forth.

3. The combination, with the main fork F, of the separate forged bearing-piece H, the ball-casings J J, removably attached thereto, the balls bearing against said casing, and the inclosed axle, all relatively arranged substantially as stated.

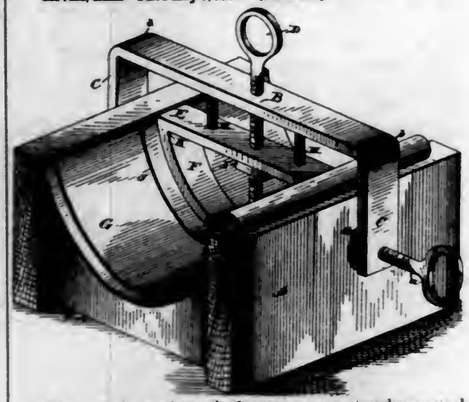
4. The movable handle-bar connection with post E, consisting of a sleeve to receive the said bar, having a collar thereon to fit the fork-post and a lip thereon one side of said collar, and the fork-post having its upper end adapted to receive said collar, and an offset thereon to receive said lip, and suitable means for securing the sleeve and collar to the post, combined and operating substantially as set forth.

5. In a bicycle, the within-described improved saddle-support, consisting of a spring-bar secured to the backbone of the machine, and of a bar, *d*, adapted to have the saddle secured thereto suspended between said spring-bar and the stem of the backbone by spiral springs connecting the ends of the bar with the spring-bar and said stem, combined and operating substantially as set forth.

6. In combination, the backbone *h*, the stem *x*, spring-bar *c*, bar *d*, and the springs *e* and *e'*, substantially as set forth.

7. As a spring saddle-support for bicycles and tricycles, the spring-bar *c* and spring *e'*, suitably secured to the machine, the bar *d*, and the springs *e e*, combined and operating substantially as described.

322,222. CLAMP FOR EAVES-TROUGHS. GEORGE D. WATERS, Cedarvale, Kans. Filed May 9, 1885. (No model.)



Claim.—1. A clamping device for gutters or eaves-troughs composed of a semicircular-shaped clamp, K, in combination with the eyebolt D, yoke B, thumb-screws *a a*, plates *d d*, box A, and guiding-pins H, arranged to operate substantially as set forth and described.

2. A clamping device for gutters and eaves-troughs composed of a circular-shaped clamp, K, in combination with eyebolt D, yoke B, thumb-screws *a a*, plates *d d*, and box A, substantially as set forth.

3. A gutter-clamp composed of a semicircular clamp, K, as before described, operated by the eyebolt D, nut I, yoke B, and thumb-screws *a a*, substantially as described.

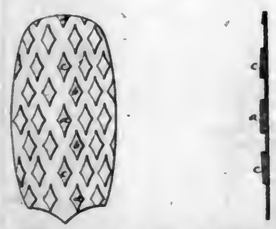
322,223. WELDING COMPOUND. ELISHA WATKINS, Eagleville, Cal. Filed July 16, 1884. (No specimens.)

Claim.—1. The dry-welding compound composed of borax and zinc filings and iron filings that have been prepared by treatment with muriatic acid, sal-ammoniac, borax, and zinc, in about the proportions as specified.

2. The hereinbefore-described process for preparing a welding compound, which consists in first dissolving zinc and borax in muriatic acid and sal-ammoniac, treating iron filings with the resultant liquid, then drying the filings and adding pulverized borax and zinc filings thereto, in the proportions substantially as specified.

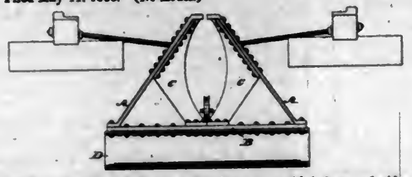
322,224. RUBBER BOOT OR SHOE. GEORGE WATKINSON, New Haven, Conn., assignor to the L. Candee & Co., same place. Filed May 18, 1885. (No model.)

Brief.—Improvement on Patent No. 282,423, dated July 31, 1883.



Claim.—The herein-described tap-sole for india-rubber boots and shoes, consisting in the tap-sole, having projections on its wearing-surface, diminishing in extent of projection from the ball of the foot toward the toe and shank, substantially as described.

322,225. CABLE-CONDUIT. HENRY D. WELSH, Philadelphia, Pa. Filed May 11, 1885. (No model.)



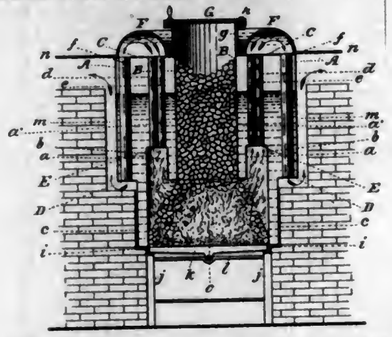
Claim.—1. A conduit constructed in pyramidal form of sides A and bottom B, substantially as and for the purpose set forth.

2. A conduit having braces which are connected with the sides and bottom of the conduit, substantially as and for the purpose set forth.

3. A conduit having braces which are connected at the sides and bottom of the conduit and sustain the slot-irons, substantially as and for the purpose set forth.

4. A conduit formed of sides A, bottom B, braces C, and irons or beams D, all constructed and operating substantially as and for the purpose set forth.

322,226. STEAM-BOILER. CYRENUS WHEELER, Jr., Auburn, N. Y. Filed June 19, 1884. (No model.)



Claim.—1. In a boiler for generating steam, the combination of a vertical central coal-magazine extending down into the fire-chamber and having a protecting water-space formed in its projecting end, an inner set of flues communicating with the fire-chamber for carrying the products of combustion upward, and an outer set of flues for carrying the same downward, all arranged within the outer shell of the boiler, substantially as and for the purpose set forth.

2. In a boiler for generating steam, a vertical central coal-magazine extending down into the fire-chamber and having a protecting water-space formed in its projecting end, and with inner flues communicating with the fire-chamber, in combination with a water-protected fire-chamber formed by the downward extension of the boiler outside the magazine and the outer flues arranged inside of the outer shell of the boiler, substantially as set forth.

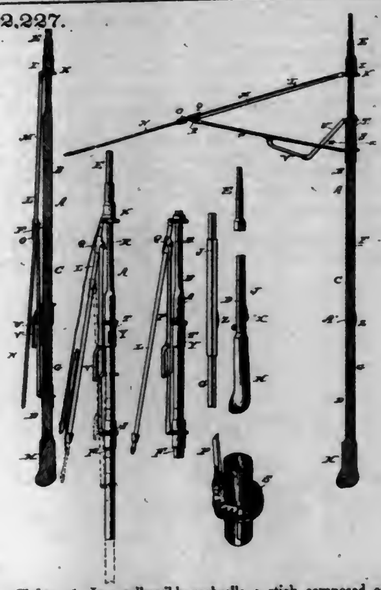
3. In combination with a vertical central coal-magazine projecting down into the fire-chamber, having its walls protected by a water-space, the series of vertical flues, arranged substantially as described, whereby the products of combustion are caused to ascend through the inner set of flues and descend through the outer set of flues, and ascend from thence outside of the boiler, substantially as and for the purpose set forth.

4. In a vertical steam-generating boiler, a central coal-magazine extending into the fire-chamber formed by the inner wall connecting with the outer rim of an inner flue-sheet, and its outer wall with the inner rim of an outer flue-sheet, united at their lower edges so as to form water-spaces around the coal-magazine and around said fire-chamber, substantially as described.

5. The combination, in a vertical steam-generating boiler, of the flues to carry the products of combustion upward from the fire-chamber and downward inside the outer shell, and the flue-case arranged on top of the boiler, having the curved outer wall for deflecting the products of combustion downward toward the outer flues, substantially as described.

6. In a boiler for generating steam, the combination of a central coal-reservoir, the outer and inner set of flues, and a cap or case arranged over the flues and forming a chamber through which the products of combustion pass from the inner to the outer flues, said cap or case having openings over the flues and removable covers for closing said openings, substantially as set forth.

322,227. UMBRELLA. EDWIN V. WHITAKER, Gloversville, N. Y. Filed Nov. 3, 1884. (No model.)



Claim.—1. In a collapsible umbrella, a stick composed of several pieces or sections having sockets, whereby they may be connected, and provided with a longitudinal groove extending through the said sockets, whereby the said pieces may be brought to register properly, substantially as and for the purpose set forth.

2. In a collapsible umbrella, the combination, with a stick composed of several sections and having a longitudinal groove, of the runners having inwardly-extending studs registering with and guided by the said groove, substantially as and for the purpose herein set forth.

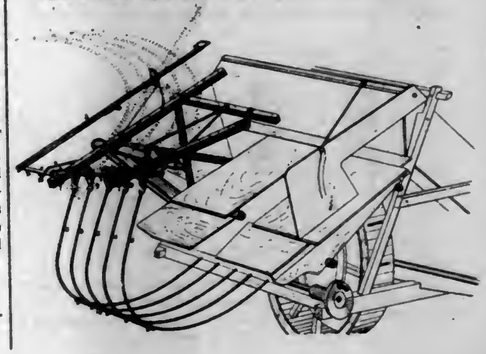
3. In a collapsible umbrella, the combination of a separable stick, the telescopic ribs, the stretchers connecting the main runner pivotally with a sleeve embracing the upper sections of the ribs and connected pivotally with the lower sliding sections of the same, and a supplemental runner connected with the stretchers by pivoted folding braces, the inner sections of which straddle the said stretchers, substantially as and for the purpose set forth.

4. In a collapsible umbrella, the stretchers connected pivotally with the lower sliding sections of the telescopic ribs and having bifurcated lower ends connected pivotally with the main runner, substantially as and for the purpose set forth.

5. In a collapsible umbrella, the combination, with a supplemental runner connected pivotally with the stretchers by folding braces, and having a slot, Y, of a bulged spring, Z, forming a friction stop or catch, located upon the umbrella-stick, substantially as and for the purpose set forth.

6. In a collapsible umbrella constructed, substantially as described, with telescopic ribs, the combination, with the said ribs having square shoulders at their upper ends, of the ferrule having a corresponding shoulder or offset, substantially as and for the purpose set forth.

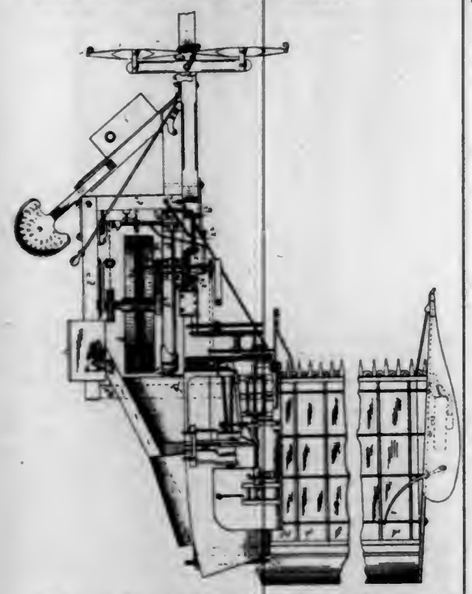
322,228. BUNDLE-CARRIER FOR HARVESTERS. WILLIAM N. WHITELEY, Springfield, Ohio. Filed Apr. 16, 1884. (No model.) Patented in Canada Sept. 26, 1884, No. 20,274.



Claim —1. The shaft 1, having an angular cross-section, and the tooth 5, provided with a screw-nut at one end, combined with the clip 9, having an angular seat fitted to the angular surface of the shaft, and provided with openings for the passage of the tooth, whereby, when applied to the shaft, clip 9 occupies one side and the tooth passes on the other side, and the screw-nut firmly clamps the angular shaft between the clip and tooth.

2. A bundle-carrier provided with curved depending teeth 5 and with a horizontal shaft, 1, resting in boxes supported above the operative parts of the machine and provided with a crank, 2, and hand-rod 3, arranged to permit the carrier to be turned over on its back on top of the binder, as and for the purpose set forth.

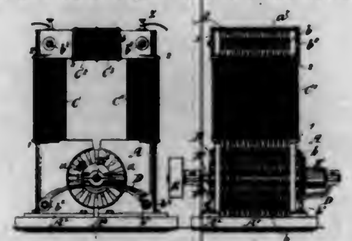
322,229. HARVESTER. WILLIAM H. WHITELEY and WILLIAM BAYLEY, Springfield, Ohio. Filed July 25, 1884. (No model.)



Claim.—1. In a rear-cut harvesting-machine, the sickle-actuating mechanism consisting of a main wheel and a main frame surrounding and mounted thereon, a pinion, g', bevel-gear y', crank-wheel b^2, pitman c^2, rocking crank-shaft f, provided with cranks e^2 f^2, and pitman g^2, all located on the frame at the inner side of the wheel, as and for the purpose set forth.

2. The combination, with a main frame surrounding and supported by a main wheel, of a pinion-shaft, g^2, supported by said main frame, actuated by said main wheel, and provided with a bevel-wheel, y', at its outer end, a counter-shaft, z^2, actuated by said bevel-wheel and provided with the crank-wheel b^2 at the front end of said frame, the rock-shaft f, having the cranks e^2 f^2 at each end, respectively, the connecting-rod c^2, and pitman g^2, whereby motion may be transmitted forward from the driving-wheel and then backward at the same side of said driving-wheel, for the purpose set forth.

322,230. DYNAMO-ELECTRIC MACHINE. EDWIN R. WHITNEY, Manchester, N. H., assignor to Samuel Caldwell Forsaith and William Ellery Drew, both of same place. Filed Mar. 31, 1885. (No model.)

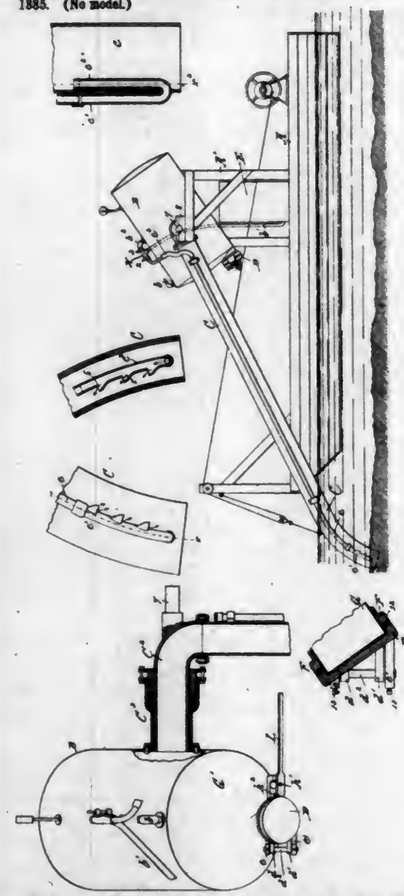


Claim.—1. In a dynamo-electric machine, the poles and cores of the field-magnets formed from a number of integral plates or sections secured together with blocks or washers of non-conducting material so arranged as to insulate each plate from its neighboring plates and leave air-spaces between them, substantially as and for the purposes described.

2. An armature for a dynamo-electric machine, made up of an iron cylinder having a number of separate rings arranged on its periphery, with spaces between said rings and bobbins of insulated wire wound lengthwise with said cylinder and across said rings, in combination with a shaft and means for holding said armature thereon, substantially as described.

3. An armature for a dynamo-electric machine, made up of cylinder G, having separate peripheral rings H H arranged thereon, with spaces between said rings, bobbins K K, and separating-bars L, having slots P, in combination with a shaft and means for holding said armature thereon, substantially as and for the purpose specified.

322,231. DREDGE. ABEL C. WHITTIER, Boston, Mass. Filed Feb. 2, 1885. (No model.)



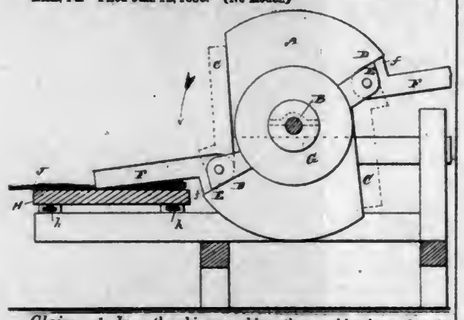
Claim.—1. The combination and arrangement, substantially as shown and described, of the vacuum-chamber B and the packed sleeve C^3, rigidly attached to the side thereof and opening directly thereinto, with the draft-pipe C, the right-angled extension C^2, secured to said draft-pipe and rotatable within said sleeve, and the journal 7, projecting from said extension and borne in boxes 8 of the supporting-frame, whereby the dredged material has an unobstructed, free, and direct inlet into said chamber, and an additional support for the chamber provided, as set forth.

2. The vacuum-chamber and draft-pipe, combined with a pressure-pipe, a sprinkler within the chamber, and a U-shaped nozzle opening inside and outside of the draft-pipe, a T-fitting, N, provided with cocks, and a water-supply to control the supply to the sprinkler and nozzle, substantially as shown and described.

3. The draft-pipe provided with the pressure-pipe c, terminating in a U-shaped nozzle, having one leg outside the draft-pipe with downward openings, and the other leg passed through an opening into said draft-pipe and having upward openings, substantially as shown and described.

4. The vacuum-chamber and the door-frame having long and short ears, and the door having long and short ears, and the pintle, combined with adjustable boxes for the pintle, substantially as described.

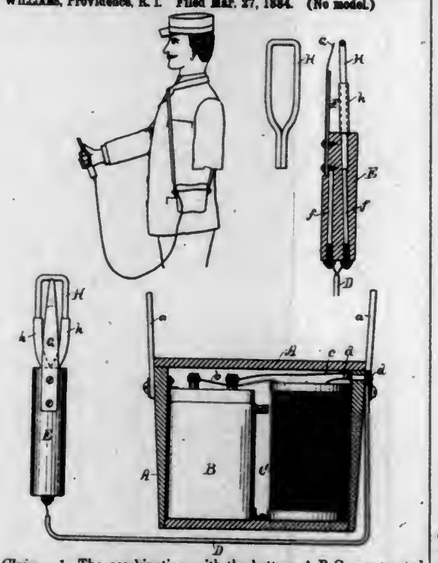
322,232. THRASHING-MACHINE. THOMAS J. WIDEMIRE, Grampian Hills, Pa. Filed Jan. 12, 1885. (No model.)



Claim.—1. In a thrashing-machine, the combination, with the wheel A, having the recesses C, shoulders D, and lugs E, of the flails F, having heads f pivoted between the said lugs, substantially as herein shown and described.

2. In a thrashing-machine, the wheel A, having the recesses C, the shoulders D, and lugs E, and the flails F, having heads f pivoted between the said lugs, in combination with the transversely-moving table H in front of the wheel, substantially as herein shown and described.

322,233. ELECTRIC GAS-LIGHTING APPARATUS. HORATIO N. WILLIAMS, Providence, R. I. Filed Mar. 27, 1884. (No model.)



Claim.—1. The combination, with the battery A B C, constructed and arranged as described, and the wires b c d D, of the hand-piece E, the wires f, the plates F G, and the bent bar H, provided with the insulators h, substantially as and for the purposes set forth.

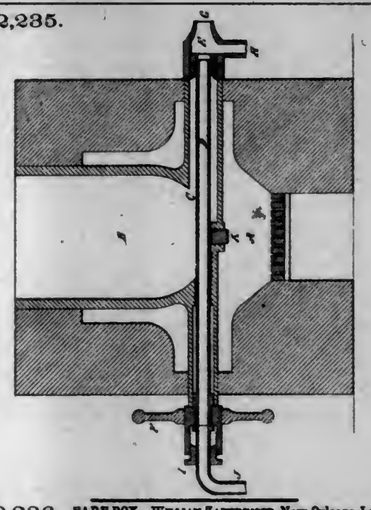
2. The hand-piece E, in combination with the wires f, the plates F G, and the bent bar H, substantially as set forth.

322,234. WITHDRAWN.

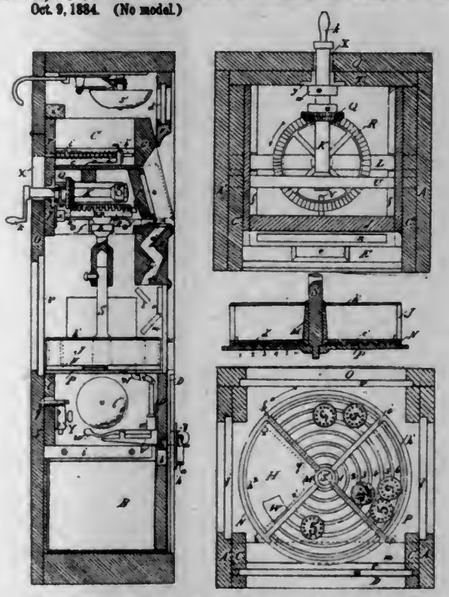
322,235. APPARATUS FOR THE MANUFACTURE OF WHITE LEAD. WILLIAM V. WILSON, London, England. Filed Nov. 17, 1884. (No model.) Patented in England Sept. 8, 1882, No. 4,275.

Claim.—In an apparatus for granulating metallic lead, the furnace A, melting-pot B, discharge pipe and nozzle or granulating-orifice E, and adjustable steam or air supply pipe D, projecting centrally within the nozzle E, to form a convenient discharge-opening for the molten lead and emit a blast of steam or hot air within the nozzle E, all combined and operating substantially in the manner and for the purpose herein set forth.

322,235.



322,236. FARE-BOX. WILLIAM ZAEHRINGER, New Orleans, La. Filed Oct. 9, 1884. (No model.)

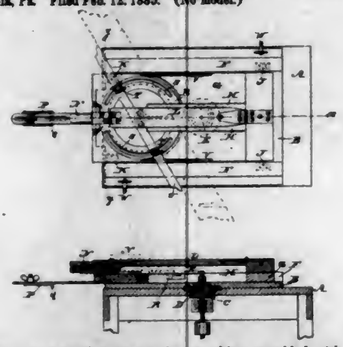


Claim.—1. In combination with a horizontal stationary fare-receiving plate, P, having a series of grooves in its upper surface, a partitioned frame consisting of a hub, M, having wall-supporting and serrated arms a' b' c' d', brace N, hoop J, and guard k', adapted to revolve horizontally in the grooves of the said plate P, and conjointly keeping a number of fares separated and in view for inspection until they are pushed or swept into the hatchway H, dropping out of sight into the money-drawer below.

2. In combination with the horizontal stationary fare-receiving plate P and horizontal revolving frame, (hub M, arms a' b' c' d', brace N, hoop J, and guard k',) a vertical shaft, S, keyed to said frame, supported by a brace, L, carrying a flanged and slotted gear-wheel, R, operated by the gear-wheel Q, keyed to shaft K, supported by the brace U and bearing y, and operating-crank k on said shaft K, substantially as set forth.

3. In combination with the flanged and slotted gear-wheel R, and gear-wheel Q, journaled and having a crank, a sliding drawer, I, having a fixed blade, V, which, when fitting into the slots z of said gear-wheel R, prevents the crank k from being turned, and which, when freed from said slots z, prevents the drawer I from being pushed inward, so that no payment can be made through the opening s while the crank k is being operated by the driver, substantially as set forth.

322,237. TABLE FOR GAINING-MACHINES. DANIEL ADAMS, Philadelphia, Pa. Filed Feb. 12, 1885. (No model.)



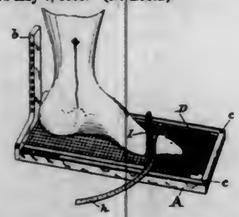
Claim.—1. A cutting or grooving machine provided with the rotary table B, mounted on the bed of the machine, and the sliding table G, fitted in guides on said rotary table, substantially as and for the purpose set forth.

2. In a cutting or grooving machine, the sliding table G, having the clamp L, in combination with the bar N and catches M, said bar N being secured to the clamp L, and said catches M being secured to the said table G, substantially as and for the purpose set forth.

3. The bed A, in combination with rotary table B, having collar C and guides F, sliding table G, provided with slotted annulus R and clamps D, and guide U, substantially as and for the purpose set forth

4. In a cutting and grooving machine, a rotary table mounted on the bed of the machine, a sliding table fitted to said rotary table, a guide pivoted to said sliding table, a clamp extending across said sliding table and secured by a clamp at one end thereof, and clamps connecting the rotary and sliding tables, all of said parts being arranged and combined substantially as and for the purpose set forth.

322,238. SHOE-MAKER'S MEASURE. ABRAHAM S. ADLER, Baltimore, Md. Filed May 7, 1885. (No model.)



Claim.—1. A foot-measuring diagram laid off by intersecting lines, and having on each of two opposite sides a row, *e*, of figures to designate the standard foot-lengths, and a second row, *f*, to designate the points or locations whereat the cross-measurements are taken, and provided across the end with a row, *g*, of figures, as and for the purpose set forth.

2. A foot-measure having in combination a diagram, D, laid off by intersecting lines, a diagram-marker provided with a suitable point, and a tape-measure having one end attached to the said marker, as set forth.

3. A foot-measure having in combination a diagram, D, laid off by intersecting lines, a diagram-marker provided with a suitable point, and having a block with a set-screw to move or slide along the marker, and a tape-measure having one end attached to the said movable block, as set forth

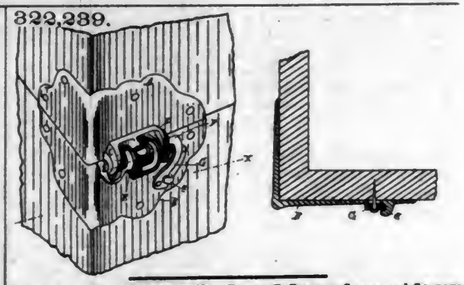
4. A foot-measure having in combination a base, A, provided with a heel-piece, *b*, a diagram, D, laid off by intersecting lines, to lay on the base, and pins or other equivalent device to keep the said diagram from moving on the base, as set forth.

322,239. HINGE. FRANK W. BERKWITH, Detroit, Mich., assignor of one-half to Henry W. Fairbank, same place. Filed Mar. 5, 1885. (No model.)

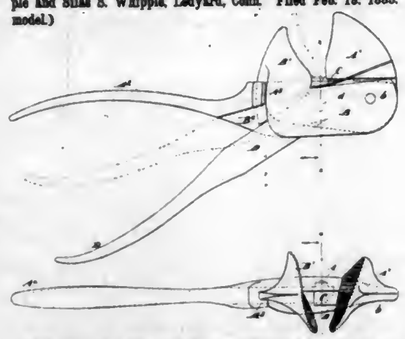
Claim.—1. A hinge consisting of the leaves A B, provided with suitable knuckles, C E, in combination with a removable pin, F, provided with an arm, G, and stop *a*, substantially as and for the purposes described.

2. A hinge consisting of the plates A B, provided with the knuckles C E and stud-hook D, in combination with a removable pin, F, adapted to be locked upon one of the leaves, substantially as and for the purposes specified.

322,239.



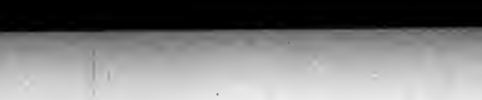
322,240. NUT-CRACKER. ELIJAH B. BENHAM, Groton, and CHARLES R. WATROUS, Ledyard, Conn.; said Benham assignor to Samuel A. Whipple and Silas S. Whipple, Ledyard, Conn. Filed Feb. 18, 1885. (No model.)



Claim.—1. In a nut-cracker, the combination, with the jaw A A' A^2 and the lever B, pivoted at *b* and carrying jaw B', of the operating-lever D, all arranged to serve as set forth.

2. In a nut-cracker, the jaws A' B, having working-faces inclined and corrugated in two directions, and the lever B, pivoted at *b* to the body, and having shoulder B^2 and the handle D, all combined and operating as and for the purposes set forth.

322,241. HARROW. EDWARD R. BERNHAMER, Indianapolis, Ind. Filed Feb. 16, 1885. (No model.)

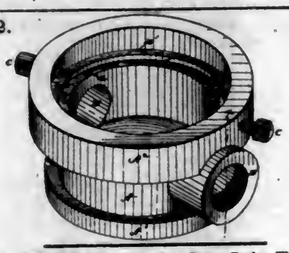


Claim.—In a harrow, the combination of the harrow-beams and the coupling-plates formed with longitudinal vertical slots in their forward ends having two pairs of transverse perforations, formed with the bearings at their middles, and formed with two segmental perforated clevis-plates—one behind the other—at their rear ends, and the bolts fitting in the perforations of the bifurcated ends and in the perforations of the clevises, as and for the purpose shown and set forth.

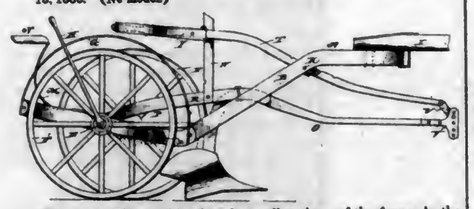
322,242. CASING-HEAD FOR OIL, GAS, AND OTHER DEEP BORED WELLS. DAVID BERRY, Balltown, Pa. Filed Aug. 23, 1884. (No model.)

Claim.—In a casing-head for oil or other deep bored wells, the combination, with the seat *a*, of the undercut groove D and the packing D', secured in said groove, substantially as and for the purposes set forth.

322,242.



322,243. SULKY-PLOW. ALONZO A. BETTY, Butler, Ill. Filed May 13, 1885. (No model.)

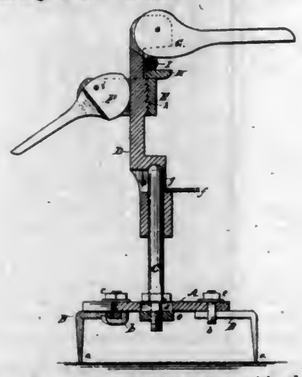


Claim.—1. The combination, in a sulky-plow, of the frame A, the plow-frame P, fulcrumed on the axle and laterally adjustable thereon, and the laterally-movable lever T, fulcrumed to the frame A and connected to the plow-frame, substantially as described.

2. The combination, in a sulky-plow, of the frame A and plow-frame fulcrumed on the axle, the plow-frame being laterally adjustable thereon, the laterally-movable lever T, fulcrumed to the frame A and connected to the plow-frame, and the tongue secured to and laterally adjustable on the frame A, substantially as described.

3. The combination, in a sulky-plow, of the frame A, the plow-frame fulcrumed on the axle and laterally adjustable thereon, the laterally-movable lever T, fulcrumed to the frame A and connected to the plow-frame, the tongue secured to and laterally adjustable on the frame A, and the laterally-adjustable seat, whereby the plow, the tongue, and the seat may be kept in line with each other at any desired adjustment, substantially as described.

322,244. TOBACCO-STICK HOLDER. GEORGE BLYTHE, Chillicothe, Mo. Filed Aug. 16, 1884. (No model.)



Claim.—1. In a device for holding tobacco-sticks, the base-plate or support, in combination with the horizontally-adjustable legs and the angular clamping-bolts and clamping-nuts, substantially as and for the purposes specified.

2. In a device for holding tobacco-sticks, a bracket-holder pivotally supported on a standard the lower end of which passes through a slot in a suitable base-plate, in combination with the clamping devices, whereby said bracket-holder may be adjusted horizontally, substantially as and for the purposes specified.

3. In a device for holding tobacco-sticks, a bracket-holder pivotally supported on an adjustable standard and provided on one side with notches or serrations, a bracket provided with similar notches adapted to engage with the notches in the bracket-holder, and an eccentric or cam lever adapted to hold the bracket in contact with the bracket-holder, the parts being combined as set forth, and for the purposes described.

4. In a device for holding tobacco-sticks, the combination of a vertically-adjustable bracket for supporting the sticks, mounted upon an adjustable support, and a cam-lever pivoted to the bracket-holder and adapted to impinge on the stick and hold it against the bracket, substantially as specified.

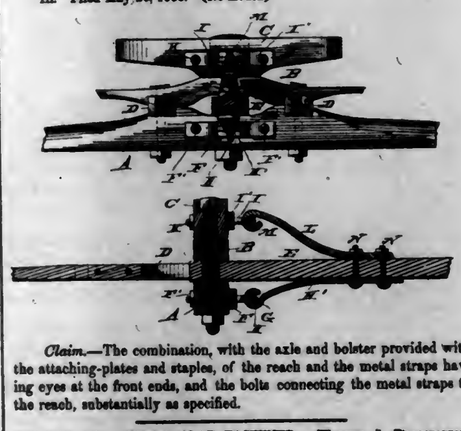
5. In a device for holding tobacco-sticks, the swiveled bracket-holder D, mounted on a suitable support, and the adjustable bracket E and adjusting cam F, in combination with the cam-lever G, whereby sticks of varying size may be clamped and held in position, substantially as set forth.

322,245. SEWING-MACHINE. ADAM BORNER, New York, N. Y. Filed Aug. 14, 1884. (No model.)



Claim.—The combination, substantially as hereinbefore described, of the reciprocating needle, the bobbin, the hook, mechanism, substantially as herein described, for imparting to the hook an oscillating motion, and the shoulder r^3, for retaining the bobbin-thread out of the path of the needle.

322,246. WAGON RUNNING-GEAR. WILLIAM C. BOYLE, Arcola, Ill. Filed May 20, 1885. (No model.)



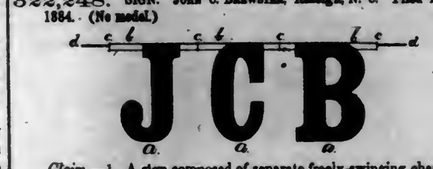
Claim.—The combination, with the axle and bolster provided with the attaching-plates and staples, of the reach and the metal straps having eyes at the front ends, and the bolts connecting the metal straps to the reach, substantially as specified.

322,247. BLIND-SLAT FASTENER. WALTER J. BRASSINGTON, Brooklyn, N. Y. Filed Sept. 5, 1884. (Model.)



Claim.—In a device for locking the movable slats of a blind, the combination, with a spring fastened to the inner frame of the blind, so as to bear against the end of one of the slats when opened and to spring outwardly over its edge when closed, of a pin fixed to the frame above the upper edge of the closed slat in line parallel therewith to enter an eye in the free end of the spring, substantially in the manner and for the purpose herein set forth.

322,248. SIGN. JOHN C. BREWSTER, Raleigh, N. C. Filed Mar. 3, 1884. (No model.)

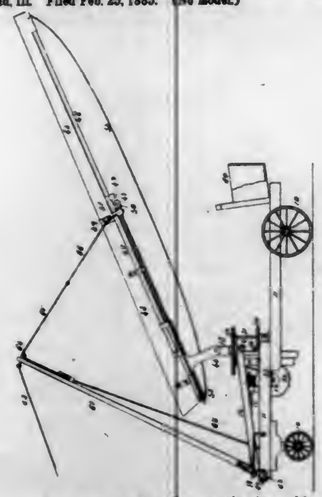


Claim.—1. A sign composed of separate freely-swinging characters attached to and suspended from a rod or wire and spaced thereon by abutting tubes, substantially as described.

2. A character for a sign, provided with a continuous round tube fastened to the upper part of the character and projecting beyond it on both sides for attaching the same to a supporting rod or wire, substantially as described.

3. A sign composed of separate characters suspended on a rod or wire on which they can be turned by spacing and suspension tubes, which are fastened to the upper part of the character and form a practically-continuous sheath or envelope to said rod or wire, substantially as described.

322,249. STRAW-STACKER. ISAAC BROKAW and WESLEY BUTLER, Litchfield, Ill. Filed Feb. 25, 1885. (No model.)



Claim.—1. In a straw-stacker, the combination, with the main frame and the carrier, of a lifting frame or sash upon which said carrier is supported, and a brace-frame, substantially as described, hinged to the said sash for bracing it, as set forth.

2. The combination, with the main frame, the brace-frame, the lifting frame or sash, and the straw-carrier supported thereby, of a winding mechanism for moving said sash, and connection between said winding mechanism and the brace-frame whereby said sash and brace-frame are moved synchronously, as explained.

3. The combination, with the main frame, the lifting frame or sash, the brace-frame, and the straw-carrier supported thereby, of a winding-shaft having connection with said sash, an operating-shaft connected to the winding-shaft by gearing, and having a screw-threaded portion, and a nut on the brace-frame.

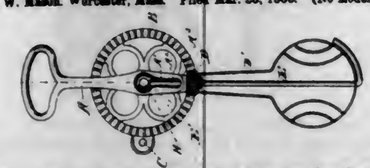
4. The combination, with the main frame 11, the standard 12, the pulley 26, the lifting frame or sash 13, and the straw-carrier supported thereby, of the brace-frame 14, hinged to the sash 13, the winding-shaft 23, having the worm-wheel 22, the cord 25, the operating-shaft 17, having the worm-thread 21 and screw-threads 19, and the nut 20 on the brace-frame, all constructed and arranged to operate substantially in the manner and for the purpose set forth.

5. The combination, with the sash, a shaft journaled vertically therein, the circular rack secured to said shaft, and the carrier, of the second vertical shaft, having the pin projecting laterally therefrom, and the pinion mounted loosely upon said shaft and adapted to be engaged thereby, substantially as set forth.

6. In a sectional carrier-frame having a tight floor, the combination, with the inner section, of the outer section overlapping the outer end and resting upon the upper surface of the said inner section, substantially in the manner and for the purpose set forth.

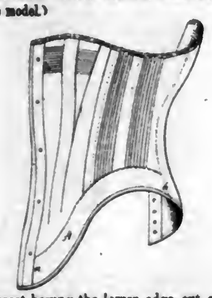
7. The combination, with the two-part carrier-frame, of a two-part floor, the outer end of the inner section of which is beveled off on its upper side, and the contiguous end of the outer section correspondingly beveled on its under side, substantially as set forth.

322,250. EGG-BEATER. THOMAS W. BROWN, Belmont, assignor to H. W. Mason, Worcester, Mass. Filed Mar. 28, 1885. (No model.)



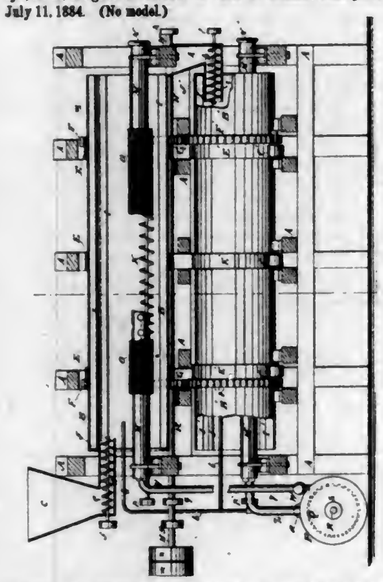
Claim.—In an egg-beater, the combination of the handle A, provided with a recess, A', the rivet H, and axis-wire E, with the gears B D and the beater D', all operating together substantially as described, and for the purpose set forth.

322,251. CORSET. SOLON BRYANT, Worcester, Mass. Filed Mar. 16, 1885. (No model.)



Claim.—A corset having the lower edge cut away over the hips, producing a curve of S shape from the front up over the hips to the rear, the body constructed with bones or stays substantially vertical, extending to the said lower S-shaped edge of the corset, combined with a band cut in S shape, corresponding to the shape of the lower edge of the corset, extending from the front up over the hip and rearward, overlying the lower stayed portion of the corset, and stitched thereto, substantially as described.

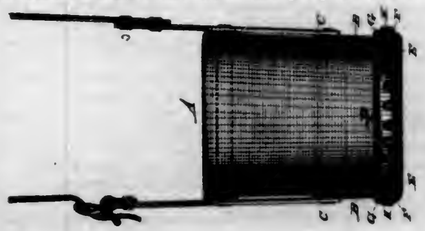
322,252. METHOD OF DRYING GRAIN. DAVID M. BUNNELL, Brooklyn, N. Y., assignor of one-half to Jesse H. Bunnell, same place. Filed July 11, 1884. (No model.)



Claim.—The herein-described method of drying malt or other grain, consisting in delivering a blast of heated air into the interior of a mass of malt or grain while in movement and driving off the moisture arising therefrom by a blast of air admitted above the grain, as set forth.

322,253. FEED-BAG. FREDK. BURKHARD, Trinidad, Colo. Filed Apr. 25, 1885. (No model.)

Claim.—As an improvement in feed-bags, the combination of a body formed of textile or other suitable material, a re-enforcing band of leather secured around the lower edge of the same, a bottom disk having a downturned or crimped rim or edge, a binding-strip secured by stitch-



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ing at some distance from the lower edge and turned over the latter and over the inside of the bottom rim, and suitable fastening-rivets, all constructed, arranged, and operating substantially as and for the purpose herein set forth.

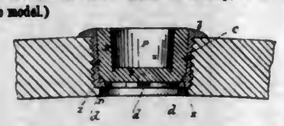
322,254. COMBINED RAKE AND HOE. JOSEPH W. CALEF, North Easton, Mass. Filed Aug. 29, 1884. (No model.)



Claim.—1. As an improvement in combined rakes and hoes, the combination, with a cross-bar having a pointed shank for attachment to the handle, of a series of downwardly-extending teeth having blades at their lower ends extending outwardly in opposite directions from the center, substantially as and for the purpose set forth.

2. An improved combined rake and hoe comprising a cross-bar having a pointed shank, and provided with a series of downwardly-extending teeth, the lower ends of which are equipped with blades extending outwardly from the center of the cross-bar, substantially as and for the purpose set forth.

322,255. METALLIC BUNG-BUSH. WALTER CALHOUN, West Troy, assignor of one-half to John Pennie, Jr., Albany, N. Y. Filed Feb. 5, 1884. (No model.)



Claim.—1. A bung-bush having two or more inwardly-projecting studs situated within the lower end of the bore, the upper ends of said studs being in substantially the same plane, and the studs being of such size as to permit the bung to be driven partially past them while forming an equalized basal support for the bung, substantially as described.

2. A bung-bush having two or more inwardly-extending projections situated within the lower end of the bore, the upper ends of said projections inclining toward the wall of the bush, substantially as described.

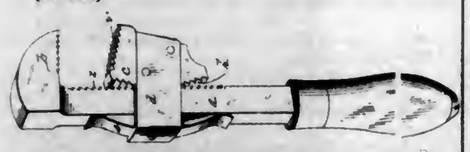
3. A bung-bush having two or more inwardly-extending projections situated within the lower end of the bore, the upper ends of said projections inclining toward the wall of the bush, and being wedge-shaped, substantially as described.

4. A bung-bush having at the lower end of its bore a projection with a wedge-shaped upper end, substantially as described.

5. A bung-bush having at the lower end of its bore a projection whose upper end inclines toward the wall of the bush, substantially as described.

6. A bung-bush having at the lower end of its bore a projection whose upper end inclines toward the wall of the bush, and is wedge-shaped, substantially as described.

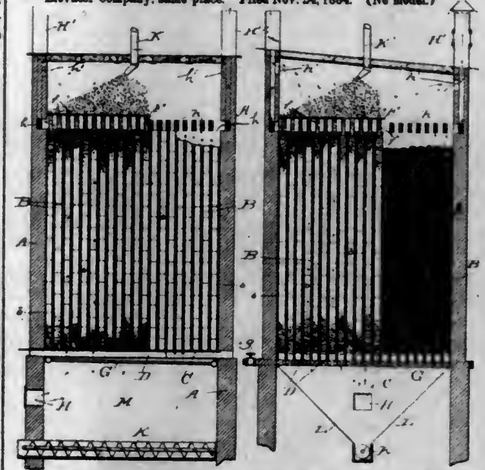
322,256. WRENCH. THOMAS J. CAMPBELL, Westfield, Mass., assignor of one-half to Moses P. Breckenridge, same place. Filed Apr. 20, 1885. (No model.)



Claim.—1. In a wrench, the combination, with the bar *a*, having serrations *z* thereon, and the fixed head *b*, of the movable jaw *c*, having its side *h* curved and serrated to engage with said serrations on the bar and rock thereon, and a suitable yoke attaching said movable jaw to the latter, substantially as set forth.

2. In a wrench, the combination, with the bar *a*, having serrations *z* thereon, and the fixed head *b*, of the movable jaw *c*, having its side *h* curved and serrated to engage with said serrations on the bar and rock thereon, a suitable yoke attaching said movable jaw to the latter, and the spring *e*, substantially as set forth.

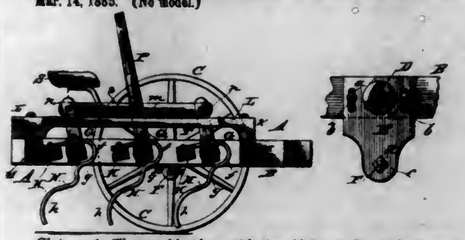
322,257. PROCESS OF DRYING GRAIN. HENRY L. CHASE, PHILANDER F. CHASE, and HENRY G. CHASE, Chicago, Ill., assignors to the Chase Elevator Company, same place. Filed Nov. 24, 1884. (No model.)



Claim.—1. The process or method of drying grain, consisting in first absorbing the moisture from the grain by placing it in contiguity with dry absorbent material for the requisite length of time, then separating the grain from the absorbent material, and finally drying the absorbent material, substantially as specified.

2. The process or method of drying grain, consisting in first absorbing the moisture from the grain by dry burned-clay tiling, then removing the dried grain from the tiling, and finally drying the tiling by exposing the surface of the same with which the moist grain was in contact to a current of dry heated air, substantially as specified.

322,258. WHEEL-HARROW. GEORGE J. CLINE, Goshen, Ind. Filed Mar. 14, 1885. (No model.)

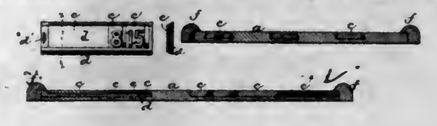


Claim.—1. The combination, with the side bars, B, of the slotted spindle-plates E, and their downward extensions, the bolts which secure said plates in the side bars, and the transverse tie-rod connecting the downward extensions, substantially as specified.

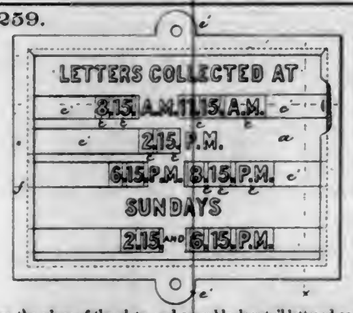
2. The combination, with the pivoted tooth-bar G and the parallel rear bar, K, of the spring-tooth pivoted to said tooth-bar, having its upper portion extending rearward and pivoted to the rear bar, and having its upper bend in front and under the bar followed by a reverse bend connecting the said upper bend to the main curve of the lower portion of the tooth, substantially as specified.

322,259. INDICATING-PLATE. WILLIAM A. CONNELLY, Boston, Mass. Filed Sept. 23, 1884. (No model.)

Claim.—1. The improved indicating-plate *a*, having dovetail grooves *b* in its front surface extending to the edges of the plate, so as to enable suitably-formed blocks to slide into the grooves endwise of the



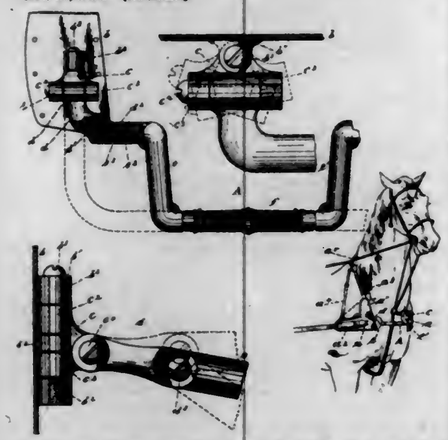
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latter from the edges of the plate, and movable dovetail lettered or figured blocks adapted to slide in said grooves, and held in place by the sides thereof.

2. The combination of the plate *a*, having dovetail grooves *b* in its front surface, extending to the edges of the plate, movable dovetail lettered or figured blocks adapted to slide in said grooves, and a frame, *c*, formed to cover the edges of the plate and the ends of the grooves, and thereby prevent the removal of the blocks, as set forth.

322,260. HORSE-COLLAR. SHADRUN J. M. COX, Johnston, S. C. Filed June 27, 1884. (No model.)



Claim.—1. The combination, with the draft-pads, of a breast-iron made in two sections, each section secured to one of the pads, and an adjusting-coupling uniting the free ends of the sections to increase or diminish the distance between them and the pads, substantially as and for the purposes described.

2. The combination, with the draft-pads of a horse-collar, of a breast-iron attached to and uniting the pads, said iron being made in sections the proximate ends of which are provided with right-hand and left-hand threads, and a sleeve-nut adapted to work upon the threaded portions of said proximate ends, substantially as set forth.

3. The combination of the draft-pads of a horse-collar, brackets riveted to the pads, arms pivoted to the brackets, and having threaded sockets in their outer ends, elbow-irons threaded into the sockets in the arms and held by set-screws, and having their proximate ends provided with right-hand and left-hand threads, and a sleeve-nut working upon the said proximate ends, substantially as set forth.

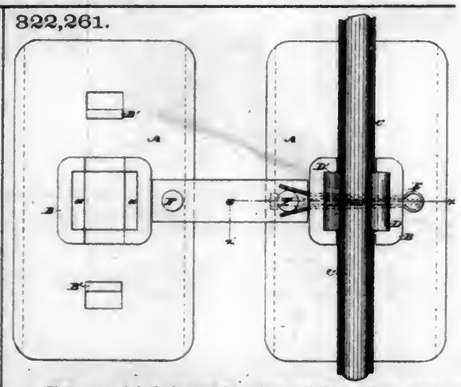
4. The horse-collar hereinbefore described, consisting of draft-pads, hangers secured to the draft-pads, and having their upper ends united and secured to the sweat-pad, and a breast-iron pivotally connected to the lower ends of the draft-pads, substantially as set forth.

322,261. RAILROAD CHAIR, TIE AND BREAK-JOINT. PETER REX DAVEY, Philadelphia, Pa. Filed Aug. 20, 1884. (No model.)

Brief.—The rail rests upon a boss and struck-up lugs on the rail-supports, and is held by clamps passing down through the supports, and held in place by a wedge passing through openings therein and having a fastening device for its end.



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Claim.—1. A bed-plate having a boss and clamps fitted therein on opposite sides of the rails, a securing pin or key passed through said clamps and the bed-plates or boss, and a fastening for said key or pin, substantially as and for the purpose set forth.

2. A bed-plate having a boss, clamps, and a key or pin, in combination with a stud or post on the bed for securing said key or pin, substantially as and for the purpose set forth.

3. A bed-plate having a boss with clamps therein on opposite sides of the rails, and lugs on the sides of the boss, said boss and lugs sustaining the rails, substantially as and for the purpose set forth.

4. A bed-plate, a post or stud rising therefrom, clamps for holding the rail, and a fastening key or pin, in combination with a connecting-bar joined to said post, and secured by said key or pin, substantially as and for the purpose set forth.

322,262. QUILTING-FRAME FOR SEWING-MACHINES. HENRY T. DAVIS, New York, N. Y., assignor to the Davis Quilting Frame Company, same place. Filed June 5, 1884. (No model.)

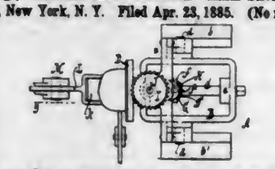
Brief.—One of the winding-bars is suspended beneath the frame in pendent lugs.



Claim.—1. In a quilting-frame, the combination, with the end bars, A A', of the winding-bar E, the depression-bar D', under which the quilt passes, the tension-bar D, journaled in the extremities of the bars A A', and the winding-bar C, journaled at an intermediate point in the bars A A', as and for the purpose set forth.

2. In a quilting-frame, the combination of the end bars, A A', the winding-bar E, and the tension-bar D, mounted in the respective extremities of said bars A A', the lugs B B', projecting downward from said bars A A' at an intermediate point, and the winding-bar C, journaled therein, as and for the purpose set forth.

322,263. HAT-IRONING MACHINE. MARK DAVIS and THOMAS W. G. COOK, New York, N. Y. Filed Apr. 23, 1885. (No model.)

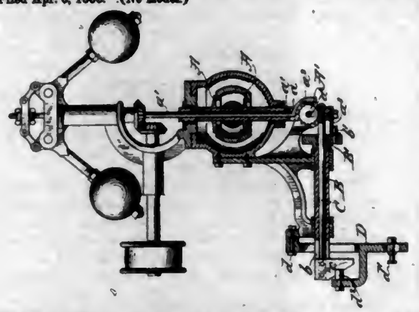


Claim.—1. The combination, in a hat-ironing machine, of a swinging frame, a rotating shaft carried thereby, and a hat-block on the shaft, with a screw connected with the said frame, a cam on the shaft, and connections between the cam and screw for rotating the latter, substantially as described.

2. The combination, in a hat-ironing machine, of an iron for ironing the hat, with a swinging frame, a shaft journaled in the frame, a hat-block on the shaft, and a feed-screw connected with the frame, and by its turning movement acting to swing the frame on its pivotal bearings, substantially as described.

3. In a hat-ironing machine, the combination, with the swinging frame, of the rotary shaft having bearings in the swinging frame, the hat-block mounted on the shaft, the weighted irons K K', the lever G, the eccentric or cam on the shaft constructed to engage the said lever, the ratchet-wheel, the screw attached to the shaft and adapted to be engaged by threads in the ratchet-wheel, and the reversible pawl on the lever, which engages the ratchet-wheel, substantially as shown and described.

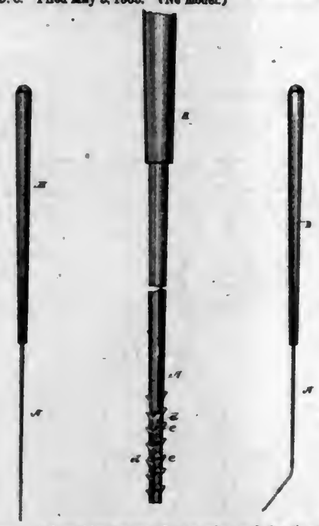
322,264. CUT-OFF-VALVE GEAR. ELMER C. DIGBY, Chicago, Ill. Filed Apr. 6, 1885. (No model.)



Claim.—1. The combination, in a steam-engine governor, of the vibrating yoke D, wiper d^2, tappet *c*, crank-disk B', and lifter-plate a^3, substantially as described, and for the purpose set forth.

2. The combination, in a steam-engine governor, of the double puppet-valve A, rod *a'*, having rack a^2, the spur-gear A', rod C, carrying tappet *c*, the wiper d^2, crank-disk B', having pin *b'*, and the lifter-plate a^3, substantially as shown and described.

322,265. DENTAL INSTRUMENT. ROBERT B. DONALDSON, Washington, D. C. Filed May 5, 1885. (No model.)



Claim.—1. A dental instrument for scraping and cleaning the nerve-canal in the root of a tooth, consisting of a substantially rigid shaft, A, provided on all sides with a series of inclined cuts, *d*, and projecting scrapers *e*, substantially as set forth.

2. A dental instrument for scraping and cleaning the nerve-canal in the root of a tooth, consisting of a substantially rigid shaft, A, provided with a series of cuts, *d*, and resultant scrapers *e*, inclined to the axis of said shaft and arranged on a spiral line around the same.

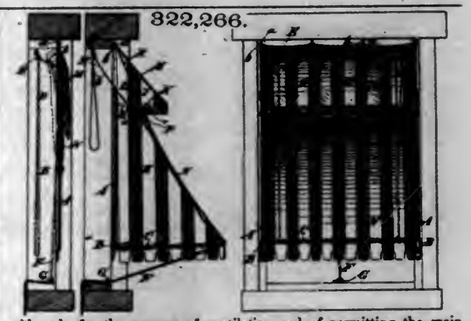
3. A dental instrument for scraping and cleaning the nerve-canal of a tooth, consisting of a substantially rigid shaft, A, of steel piano-wire, reduced to the desired attenuation toward the point, and provided with a series of inclined cuts, *d*, and projecting scrapers *e*, substantially as set forth.

322,266. AWNING. WILLIAM DOWNEY, New York, N. Y. Filed Apr. 8, 1885. (No model.)

Claim.—1. An awning consisting of a hood or supplemental part adapted to be suspended from the window-casing, and a main part connected to said supplemental part by side pieces common to both, the former extending outward over the latter, so as to provide ventilation and allow the main part to be folded up under the supplemental part, substantially as described.

2. An awning consisting of an overhanging hood or supplemental part provided with means for suspension, and with a stiffening-frame unattached to the window-casing, and a main part connected to said supplemental part, the frame of the latter being connected with the

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guide-rods, for the purpose of ventilation and of permitting the main part to be folded under the hood and the latter over the former, so as to reduce the obstruction to light to a minimum, substantially as described.

3. In an awning, the overhanging hood or supplemental part connected with the main part and provided with a frame, the side bars of which consist of two pieces pivoted to each other, for the purpose of keeping the covering of said hood taut, substantially as described.

4. An awning consisting of a main part and a hood or supplemental part, in combination with cords connected with the front covering of the main part and with the said hood, for preventing the front covering from sagging, substantially as described.

322,267. RESHIPPING BUTTER-PAIL. DAVID H. EATON and AMBROSE C. EATON, Waverly, N. Y. Filed May 23, 1885. (No model.)

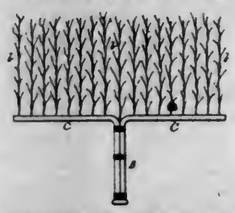


Claim.—1. A reshipping-pail consisting of an interior receptacle and an exterior jacket perforated at the top and bottom, and provided with an interior perforated non-conducting lining, substantially as and for the purpose set forth.

2. In a reshipping-pail, the combination, with a receptacle, C, of the exterior jacket lined on the inside with non-conducting material, the jacket and lining having perforations at top and bottom for the circulation of air, said jacket being of greater length than the interior receptacle, substantially as and for the purpose set forth.

3. In a reshipping-pail, a cover provided with a top plate, D, and a bail made in three pieces, the pieces E' being confined in grooves on the under side of the plate, the inner hooked ends of said pieces engaging with the hand-piece of the bail, the outer ends engaging with ears on the jacket, substantially as and for the purpose set forth.

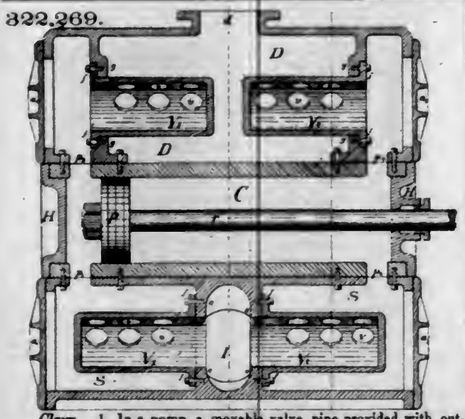
322,268. IMPLEMENT FOR CATCHING FLIES, &c. ISAIAH J. EDGE, Minneapolis, Minn. Filed Aug. 16, 1884. (No model.)



Claim.—As a new article of manufacture, an implement for catching flies or other insects, consisting of a series of fibers coated with a sticky or glutinous substance, and placed a sufficient distance apart to permit the air to freely pass between them, but close enough to each other to prevent the passage of flies, &c., substantially as and for the purpose set forth.

322,269. PUMP. LOUIS G. ENGEL, Tilly Foster, N. Y. Filed May 6, 1884. (No model.)

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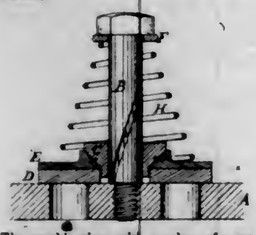
Claim.—1. In a pump, a movable valve-pipe provided with outwardly-opening valves on its periphery closed at one end, connected directly at its open end with the suction-main and extending into the suction chamber, substantially as shown and described.

2. The combination, in a pump, of a suction-chamber having a removable bonnet, a removable valve-pipe provided with outwardly-opening valves on its periphery closed at one end, connected directly at its open end with the suction-main and extending into the suction-chamber, substantially as shown and described.

3. The combination, in a pump, of a cylinder and piston, suction and discharge chambers provided with removable bonnets and communicating with the cylinder, a removable valve-pipe closed at one end and provided with outwardly-opening valves on its periphery, said pipe communicating at its open end with the suction-main and extending into the suction-chamber, and a removable valve-pipe closed at one end and provided with outwardly-opening valves on its periphery, said valve-pipe communicating at its open end with the cylinder and extending into the discharge-chamber, all arranged and operating substantially as shown and described.

4. The combination, in a pump, of a suction-chamber, S, having removable bonnets a' a^2, removable valve-pipes V' V^2, closed at one end and provided with valves v on their peripheries, said valve-pipes communicating at their open ends with the suction-main and extending into the suction-chamber, a cylinder, C, having a piston, P, and communicating at its opposite ends with the suction-chamber, a discharge-chamber, D, communicating with opposite ends of the cylinder C, and provided with removable bonnets a^3 a^4, removable valve-pipes V^3 V^4, closed at one end and provided with valves v on their peripheries, said valve-pipes communicating at their open ends with the cylinder C and extending into the discharge-chamber, all arranged and operating substantially as shown and described.

322,270. VALVE. LOUIS G. ENGEL, Tilly Foster, N. Y. Filed May 6, 1884. (No model.)



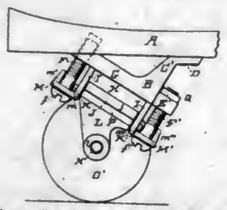
Claim.—1. The combination, with a valve, of a nut or disk having spiral guides, said nut being free to move vertically along said spiral guides and placed above and resting on said valve, substantially as and for the purposes described.

2. The combination, with a valve, of a fixed valve-stem provided with spiral guides, and a nut placed above said valve engaging with said spiral guides, along which it is free to move vertically, substantially as and for the purpose described.

3. The combination, with the valve-stem B, having spiral groove b, of a conical nut, C, having internal thread, b', valve D E, and spring H, substantially as and for the purpose specified.

322,271. ROLLER-SKATE. MORDECAI H. FLETCHER. Cincinnati, Ohio. Filed Mar. 5, 1885. (Model.)

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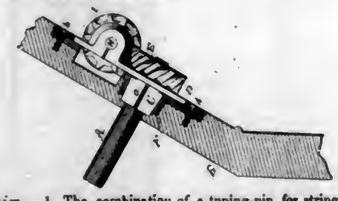
Claim.—1. In a roller-skate, the combination, with an elastic cushion and flat plate or cap, of the truck-frame having gudgeons and a crown, the flat plate or cap being in contact with the under surface of the cushion, and the crown being formed with a flat top bearing in contact with the flat plate or cap and flanked by declivities eccentric to the gudgeons, the gudgeons constituting the axis of oscillation, substantially as set forth.

2. In a roller-skate, the combination of a superstructure and roller system comprising a truck-frame having a crown, an elastic cushion, a flat plate or cover, the fastenings and the gudgeons, the fastenings and the gudgeons holding the superstructure to the roller system while permitting relative oscillations, the crown having a flat top bearing flanked by declivities eccentric to the axis of oscillation and bearing upward against the flat plate or cover of the under side of the elastic cushion, substantially as and for the purposes set forth.

3. In a roller-skate, the combination, with the foot-rest, hanger, and yokes, of the truck-frame having gudgeons K K', a spring interposed between the frame and rest attachments, adjustable retaining-screws F F', and the collars M M', having lips m m' and ears m'' m''', substantially as set forth.

4. In a roller-skate, the combination, with the foot-rest, hanger, and yokes, of the truck-frame having gudgeons, and a crown formed with flat top bearing flanked by declivities, a plate and spring interposed between the crown and hanger, adjustable retaining-screws F F', and the collars M M', having lips m m' and ears m'' and m''', substantially as set forth.

322,272. TUNING-PIN FOR MUSICAL INSTRUMENTS. HAMLET E. FORBERT, New Haven, Conn., assignor of two-thirds to William H. Beecher and Edwd. G. Mansfield, same place. Filed Oct. 23, 1882. Renewed Jan. 6, 1885. (No model.)



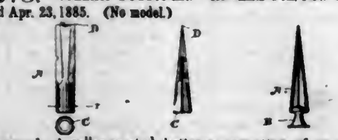
Claim.—1. The combination of a tuning-pin for stringed instruments with a split bearing, and mechanism, substantially such as described, for clamping the parts of the bearing upon the pin to produce the required friction to hold the pin, substantially as described.

2. The combination of a tuning-pin for stringed instruments with a split bearing for the pin, a transverse shaft and gearing between said transverse shaft and pin, whereby the turning of the transverse shaft correspondingly turns the pin, the said transverse shaft arranged in a split bearing, and mechanism, substantially such as described, to clamp the bearing upon the shaft and upon the pin, substantially as described.

3. The combination of the pin A, arranged in wedge-shaped split bearing C, attached to the plate D, and the socket F to receive said wedge-shaped bearing, and means for adjusting the bearings, substantially as described.

4. The combination of the tuning-pin A, arranged through the head in plate D, pinion E, fixed to said pin, transverse shaft H, arranged in a bearing in said plate split from the shaft through the plate toward the head and carrying a corresponding pinion, I, the said plate secured to the head of the instrument, and whereby friction is applied to the transverse shaft, substantially as described.

322,273. COLLAR-BUTTONER. ROWLAND FOX, New York, N. Y. Filed Apr. 23, 1885. (No model.)

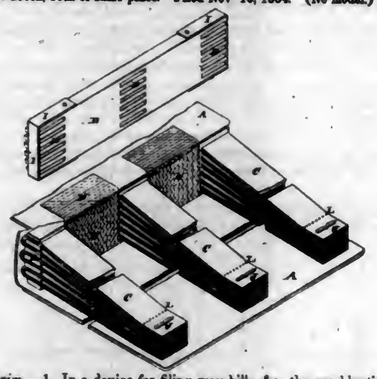


Claim.—1. A collar or stud buttoner consisting of an expansible casing for holding the stud or button and a point to introduce casing into one or more button-holes.

2. A collar or stud buttoner having a casing, A, apertured at the side, as shown, and a retaining rim or flange, for the purpose described.

3. A collar or stud buttoner, pointed at one end, having one or more apertures at the sides, an opening at the end, and a rim or flange to hold and retain the stud or button.

322,274. DEVICE FOR FILING WAY-BILLS, &c. WILLIAM H. FOX, St. Louis, Mo., assignor of ten-sixteenths to Philip E. Green and Robert W. Green, both of same place. Filed Nov 10, 1884. (No model.)



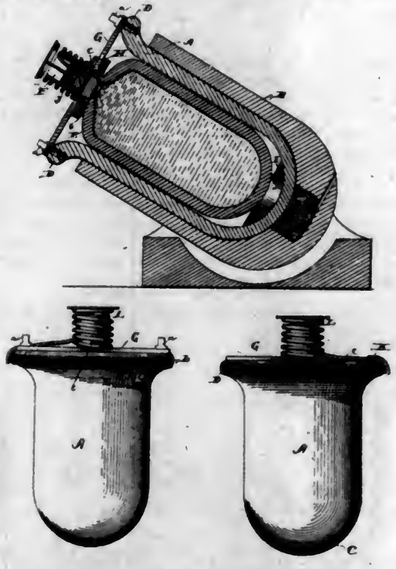
Claim.—1. In a device for filing way-bills, &c., the combination of the back-piece and the sets of strips C, connected endwise thereto, and operating substantially as set forth.

2. In a device for filing way-bills, &c., the combination of the cover, back-piece, and strips, the strips being secured to the back-piece at their inner ends and connected together at their outer ends.

3. In a device for filing way-bills, &c., the combination of the cover, back-piece, and strips secured to the back-piece and to the cover, substantially as and for the purpose set forth.

4. In a device for filing way-bills, &c., the combination of the cover, back-piece having series of slots, strips secured to the back-piece by passing through said slots, and fastenings to secure the ends of the strips to the cover, the strips being perforated at L, all substantially as and for the purpose set forth.

322,275. SHELL. JOSEPH GARNER, Michigan City, Ind. Filed May 22, 1885. (Model.)



Claim.—1. In a projectile, the combination of the outer and inner shells, the outer shell being provided at its open mouth with a curved annular flange, and the inner shell fitting within the outer one and provided with a central elongated tube provided with an inward circular projection around its cylindrical interior near its end to act as a seat for the percussion-cartridge and time-fuse, as set forth.

2. A projectile for mortars, composed of an outer and an inner shell, the inner shell being provided with an elastic tubular sabot at its base formed with a circular space in the center thereof to admit the inner shell to sit therein, a central elongated tube at its outer end having a circular strip upon its inward surface to act as a seat for the sealing device and the percussion-cartridge, an elastic washer interposed between the inner shell and the device for holding it within the outer one, as set forth.

3. A projectile for mortars, composed of an outer and inner shell, the inner shell being provided with a central elongated tube having a narrow strip or projection upon its inner circular surface to act as a seat for the percussion-cartridge holding time-fuse, substantially as set forth.

4. A projectile for mortars, composed of an outer and an inner shell, the inner shell being provided with an elongated central tube having a narrow strip or projection upon its inner circular surface to act as a seat for the percussion-cartridge, and a spring and cutter for said cartridge arranged on said tube at or near the end thereof near the cross-plate which holds the inner and outer shells centrally together, said spring engaging a small pin upon the tube, and also serving to hold the cutter-plate which carries the cutter proper, substantially as set forth.

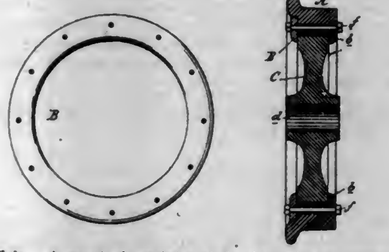
5. A projectile for mortars, composed of an outer and an inner shell, the inner shell being provided with an elongated tube, a pin or catch properly situated thereon near the cross-plate and upon its outward surface, and a spring carrying the cutter-plate and cutter engaging said pin or catch and situated at or near the end of the tube, as set forth.

6. A projectile for mortars, composed of an outer and inner shell, the outer shell being provided with a curved annular flange and a device for holding the inner shell within the outer one, consisting of a metallic brace or plate with an aperture in its central surface and secured to the said shell by bolts and screw-threads therein, substantially as set forth.

7. A projectile for mortars, composed of an outer and inner shell, the outer shell being provided with a curved annular flange, and a guide-loop or holder for the time-fuse upon the surface of the said flange, substantially as set forth.

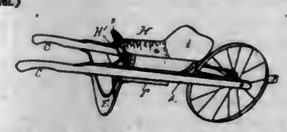
8. A projectile for mortars, composed of an outer shell and the inner shell, having a tubular cushion interposed between their bases, the inner shell having a neck provided with a narrow strip or projection upon its inner circular surface for the reception of the seal and cartridge and on its outer side the automatic firing mechanism, substantially as set forth.

322,276. CAR-WHEEL. PETER GENDRON, Toledo, Ohio. Filed Nov. 26, 1884. (No model.)



Claim.—A car-wheel consisting of the tire A, having outwardly-projecting flange a and inwardly-projecting flange b formed integral therewith, and provided with annular offset c, the inner wheel, C, having a flat periphery, an elastic filling between said tire and inner wheel, the independent confining-ring B, inserted in said tire and resting on said offset c, and the bolts f, passing through said ring, filling, and flange b, and securing the parts rigidly together, substantially as and for the purposes specified.

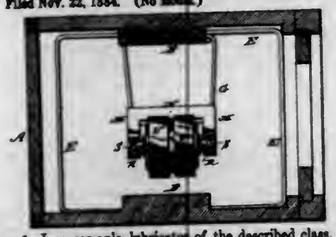
322,277. WHEELBARROW. PETER GENDRON, Toledo, Ohio, assignor to the Gendron Iron Wheel Company, same place. Filed Nov. 26, 1884. (No model.)



Claim.—1. In a wheelbarrow, and in combination with the side rails thereof, a bottom, F, rigidly secured to the under sides or edges of the side rails and provided with the means described for securing an end board thereto, substantially as specified.

2. In combination, the side rails, A A, wheel B, legs E, bottom board, F, metallic dirt-box H, composed of the three pieces a b c, and braces H', the parts being constructed, combined, and operating substantially as and for the purposes set forth.

322,278. CAR-AXLE LUBRICATOR. NATHAN M. GEORGE, Danbury, Conn. Filed Nov. 22, 1884. (No model.)



Claim.—1. In a car-axle lubricator of the described class, a roller consisting of disks of fibrous material having a disk of metal interposed between them, as and for the purpose shown and set forth.

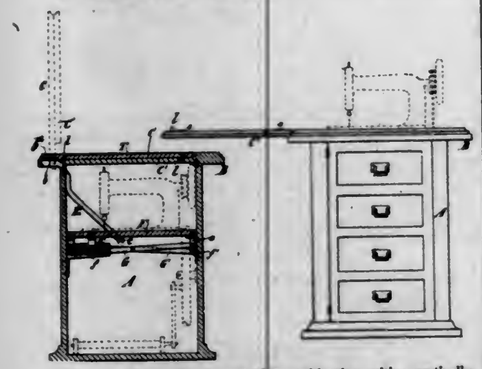
2. In a car-axle lubricator of the described class, a roller consisting of an axle, disks of fibrous material secured upon the said axle, a disk of metal interposed between the disks of fibrous material, and washers clamping the disks together, as and for the purpose shown and set forth.

3. The combination, with a journal-box having a rib extending downward from the upper edge of one of its sides for a portion of the length of the side, of a rectangular wire frame having portions of the outer ends of the wire placed parallel with each other, and thereupon bent inward and upward at right angles, and a wrapping-wire wrapped around the parallel portions of the frame-wire and bent upward at its ends, forming a longer and a shorter end, bearing, respectively, against the rear edge of the rib and against the lower end of the rib, as and for the purpose shown and set forth.

4. The combination, in a journal-lubricator having a lubricant-carrying roller and roller-supporting springs, of a yoke formed by parallel arms having the roller-bearings at their outer ends, and having transversely-perforated lugs at the outer ends of their under sides, and downwardly-projecting flanges upon the inner edges of their under sides, and by a cross-piece connecting the inner ends of the arms with the supporting-springs, having their outer ends passed through the perforated lugs and wrapped around the same, and having their outer portions bearing against the flanges of the arms before passing through the perforations in the lugs, as and for the purpose shown and set forth.

5. In a journal-lubricator having a lubricant-carrying roller and roller-supporting springs, the combination, with the roller-axle, of a yoke secured upon the ends of the supporting-springs and formed with bearings upon the upper sides of its ends, the said bearings being open upon their upper sides, and provided at one side of each bearing with a malleable lip adapted to be forced over the open tops of the bearings, as and for the purpose shown and set forth.

322,279. SEWING-MACHINE CABINET. AMOS F. GERALD, Fairfield, Me. Filed Mar. 7, 1884. (No model.)



Claim.—1. In a cabinet-stand, the combination, with a vertically-movable top section, of levers fulcrumed near one of their ends to a fixed portion of the cabinet-stand and having their other ends extending beneath said top section, lugs or projections on said levers near the ends at which they are fulcrumed, and a movable leaf pivotally connected near one end to the stand near the point where said levers are fulcrumed, substantially as described, whereby when said leaf is raised from over the cabinet-stand and folded backwardly it will engage with said levers and form a compound lever.

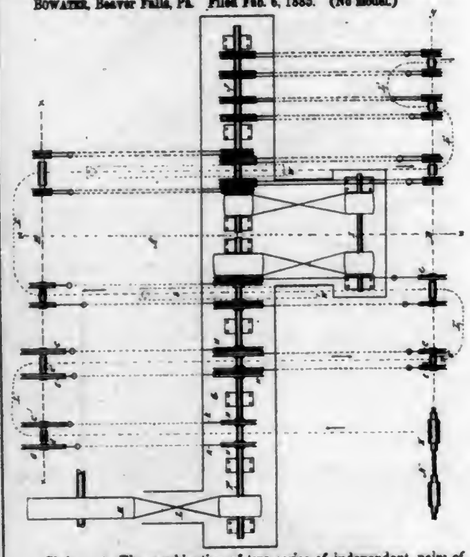
2. In a cabinet-stand, the combination of the movable top section, F, the levers E E', having lugs *d d'*, and the leaf C, having the recesses *b'*, for engaging with said lugs, substantially as specified.

3. In a cabinet-stand, the combination, with a vertically-movable top section, of levers fulcrumed near one of their ends to a fixed portion of the cabinet-stand and having their other ends extending beneath said top section, lugs or projections on said levers near the points at which they are fulcrumed, a movable leaf pivotally connected near one end to the stand near the point where said levers are fulcrumed, brackets on the vertically-movable top section, slotted brackets on the case below said top section, and crossed levers arranged beneath said top section and having a connection with said brackets, substantially as specified.

322,280. FIREPROOFING COMPOUND. JOHN T. GREENWOOD, Jr. Beloit, Wis. Filed Mar. 28, 1885. (Specimens.)

Claim.—The paint composition herein described, consisting of coal tar, silicate of soda, asbestus, plaster-of-paris, salt, red lead, litharge, asphaltum, and Venetian red or other pigment or coloring-matter, substantially as specified.

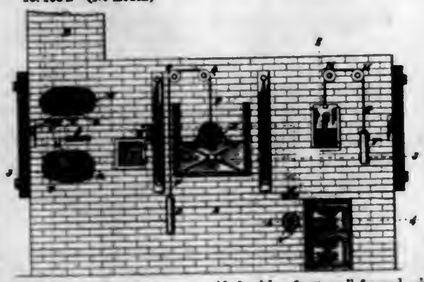
322,281. WIRE-ROD-ROLLING MILL. HENRY GREY and RICHARD BOWATER, Beaver Falls, Pa. Filed Feb. 6, 1885. (No model.)



Claim.—1. The combination of two series of independent pairs of rolling-mill rollers journaled in two parallel lines upon a floor, pulleys on the roller-shafts, a counter-shaft journaled beneath the floor between the lines of rollers, pulleys in pairs on the shaft so proportioned as to gradually increase the speed of delivery of each successive pair of rollers, and belts connecting the pairs of pulleys on the shaft with the roller-pulleys in pairs, substantially as shown and described.

2. The combination of a series of rolling-mill rollers and pulleys thereon journaled above the floor, a counter-shaft below the floor, pulleys on the counter-shaft, belts connecting the pulleys above the floor with those below the floor, and a series of binding-pulleys journaled in bearings fitted to slide in their housings, and hand-screws therefor, substantially as shown and described.

322,282. BAKER'S OVEN. SAMUEL L. HALL, Chicago, Ill. Filed Oct. 18, 1884. (No model.)



Claim.—1. A bake-oven provided with a front wall formed with a furnace at one corner, an uptake at the opposite corner, partition U in the uptake, forming vertical continuation T', and direct flue R, indirect flue T, extending from the rear of the oven-chamber to the continuation,

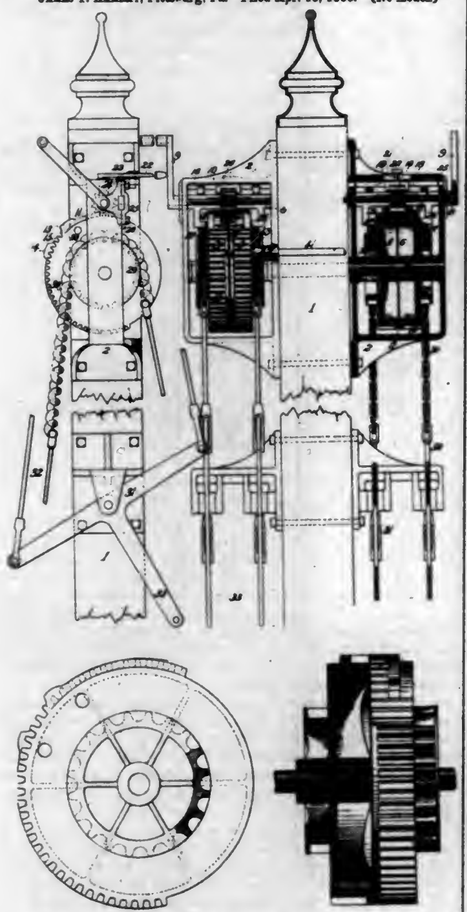
an air-flue, V, alongside the sifting-box, a dust-flue extending upwardly from the air-flue, horizontally over the oven-door, and upwardly into the uptake over the direct flue, and dampers for controlling the flues and continuation, substantially as set forth.

2. A bake-oven provided with a front wall formed with a furnace at one corner, an uptake at the opposite corner, dust-flue, air-flue, direct flue, continuation, openings, doors, and dampers, all located therein, and a side wall having a single indirect flue extending from the rear of the oven-chamber to the continuation, substantially as set forth.

3. A bake-oven provided with a front wall formed with a furnace at one corner, an uptake at the other corner, a dust-flue, W, extending across the wall from the furnace to the uptake, and having an opening, X, into the oven-chamber, and dampers to control the flue, substantially as set forth.

4. A bake-oven provided with a front wall formed with a furnace at one corner, an uptake at the other corner, an air-flue alongside the sifting-box, a dust-flue, W, extending upwardly from the air-flue, horizontally over the oven-door, and upwardly to the uptake, and dampers to control the dust-flue and air-flue, substantially as set forth.

322,283. INTERLOCKING SWITCH AND SIGNAL APPARATUS. JAMES T. HAMRAY, Pittsburg, Pa. Filed Apr. 15, 1885. (No model.)



Claim.—1. In an interlocking switch and signal system for railroad-crossings, interlocking switch and signal operating mechanisms located at or in convenient proximity to the derailing-switches of the intersecting roads, and operated from a centrally-located station to effect the orderly movement of the switches and signals governing the movements of the approaching train, in combination with a hand-actuated interlocking mechanism located at the central station for actuating the switches and signals for said approaching train and simultaneously locking the switch and signals for conflicting trains, substantially as set forth.

2. In a railroad grade crossing, a system of apparatus having in combination a derailing-switch in each track on each side of the crossing, an interlocking switch and signal shifting mechanism at or in convenient proximity to each switch, and each arranged for the orderly movement of the switch or switch and signals in succession and the proper locking of the same when moved, a central station, and mechanism for operating the switches and signals on or along the track over which a train is expected and simultaneously locking the protecting signals and switches on the crossing line, substantially as set forth.

3. In an interlocking switch and signal system, interlocking switch and signal operating mechanism located at or in convenient proximity to the switches included in such system and operated from a centrally-located station, to effect the orderly movement of the switches or switches and signals governing the movement of the approaching train, in combination with a pair of suitably-actuated wheels constructed to be partially rotated in unison, and mechanism for locking one of said wheels after said partial rotation, thereby permitting the independent rotation of the other wheel, substantially as set forth.

4. In an interlocking switch and signal system, the pinion 10, in combination with two wheels constructed to simultaneously engage the pinion and to be partially rotated thereby, and mechanism for shifting the pinion into engagement with only one of the wheels to be independently rotated by such pinion, substantially as set forth.

5. In an interlocking switch and signal system, a pinion, 10, in combination with a pair of loosely-rotating wheels having a portion of their peripheries toothed along their inner edges for simultaneous engagement with the pinion, the toothed portions 15, extending entirely across the peripheries, for the shifting of the pinion, and the toothed portions 16 along the outer edges of their peripheries, for the independent engagement of the pinion, substantially as set forth.

6. In an interlocking switch and signal system, a pinion, 10, in combination with a pair of loosely-rotating wheels having a portion of their peripheries toothed along their inner meeting edges for simultaneous engagement with pinion, the toothed portions 15, extending entirely across the face of the peripheries, for the shifting of the pinion, the stops 14 at the front ends of the toothed portions 15, the toothed portions 16, formed on the outer edges of their peripheries, for the independent engagement of the pinion, and the stops 13, located at the front ends of the toothed portions 11, substantially as set forth.

7. In an interlocking switch and signal system, a pinion, in combination with a pair of loosely-mounted wheels having their peripheries toothed, as described, for simultaneous and independent engagement with the pinion, a lever for shifting the pinion from engagement with both wheels to engagement with only one, and a locking mechanism operated simultaneously with the shifting of the pinion for the wheel from which the pinion is shifted, substantially as set forth.

8. In an interlocking switch and signal system, two pairs of loosely-mounted wheels arranged for independent rotation, in combination with locking mechanism arranged to lock one pair of wheels by the rotation of the other pair, substantially as set forth.

9. In an interlocking switch and signal system, the combination of two pairs of wheels, the wheels of each pair being constructed and arranged for simultaneous engagement with the pinions 10, and a locking mechanism arranged to lock one pair of wheels by the rotation of the other pair, substantially as set forth.

10. In an interlocking switch and signal system, the combination of a pinion, a pair of loosely-mounted wheels having their peripheries toothed, as described, for simultaneous engagement with the pinion, slides 35, suitably connected to said wheels, wrists or rollers 44 on said slides, and switch-shifting levers 36, having arms 45, suitably arranged and proportioned, whereby, when the switches are shifted, they will be retained or locked in their position by the wrists or rollers 44 engaging the arms 45, substantially as set forth.

11. In an interlocking switch and signal system, the combination of a pinion, a pair of loosely-mounted wheels having their peripheries toothed, as described, for simultaneous and independent engagement with the pinion, slides 35, suitably connected to said wheels, wrists or rollers 44 on said slides, switch-shifting levers 36, having arms 45, suitably arranged and proportioned, whereby, after the switches have been shifted, they will be retained or locked in their new positions by the wrists or rollers 44 engaging the arms 45, and signal-shifting mechanisms, also taking motions from said slides 35, and operative in shifting one or more signals while the wrists or rollers 44 are moving along in engagement with the arms 45, substantially as set forth.

322,284. SHOE OR GLOVE BUTTONER. GEORGE HAVELL, Newark, N.J. Filed Apr. 21, 1885. (No model.)



Claim.—A button-hook formed of a handle bent into shape and having its contiguous ends concaved and each provided with a perforation, a hook proper consisting of a wire bent into shape and having contiguous ends with oppositely-projecting right-angle extensions, and a slotted piece receiving the ends of the hook proper and normally resting between the concaved ends of the handle, substantially as and for the purpose specified.

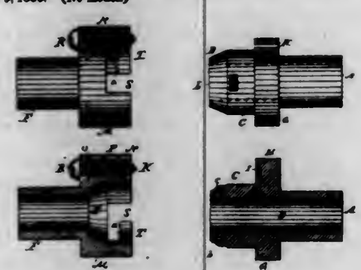
322,285. ART OF MANUFACTURING FOOT-WEAR MADE OF COMBINED TEXTILE AND FELTING MATERIAL. ALFRED A. HAWLEY, Baltimore, Md., assignor to the Maine Shoe Company, Kennebunk, Me. Filed May 11, 1885. (No model.)



Claim.—1. As an improvement in the art of manufacturing foot-wear of combined textile and felting material, a bat consisting of a section or piece of tubular textile material, with a layer of wool combined therewith.

2. As an improvement in the art of manufacturing foot-wear of combined textile and felting material, the method which consists in placing a layer of wool about a section or piece of tubular textile material, hardening the two together, and closing up the foot, fulling, lasting, drying, and finishing, as set forth.

322,286. HOSE-COUPLING. CHAS. HERUR, Washington, D. C. Filed May 5, 1885. (No model.)



Claim.—1. A hose-coupling consisting of two sections, one section being ground tapering or cone-shaped at its end and provided with lugs to fit a seat correspondingly ground and engage with recesses formed in the other section, said tapering or cone-shaped end being provided with an annular groove to receive a packing-ring which is concave on its inner side and convex on its outside, in combination with a suitable catch for holding the sections from lateral displacement.

2. In a hose-coupling, a rubber packing-ring having its inside concave and its outside convex, and adapted to fit in an annular groove or recess formed in the tapering or cone-shaped end of the male portion of the coupling, as set forth.

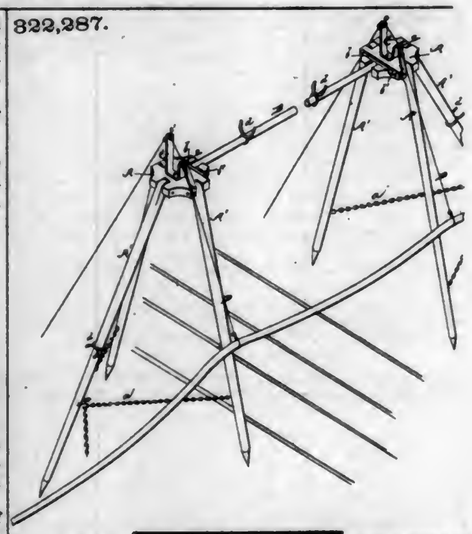
322,287. STREET-BRIDGE FOR FIRE-HOSE. HENRY HERRMANN and WILLIAM B. DOOLITTLE, Chicago, Ill. Filed Mar. 9, 1885. (No model.)

Claim.—1. In a device for elevating hose across a street, a pair of supporting-frames, in combination with a connecting-bar adapted to span the street or track, and means for elevating the hose to the top of the supports, substantially as and for the purpose set forth.

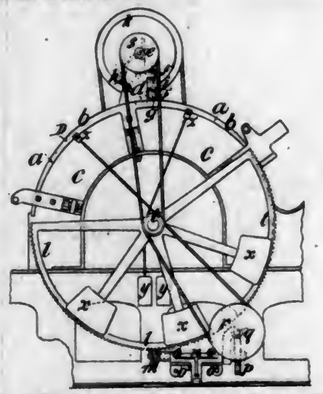
2. A pair of heads provided with hinged legs or supports and having a yoke or fork for receiving the hose, in combination with a detachable connecting-bar provided with similar forks, and ropes running over pulleys at the top of the device for lifting the hose to position, substantially as and for the purpose set forth.

3. The heads A, having hinged legs A', connected by chains *a a*, and the forks C, having one arm provided with a pulley, in combination with the cross-bar B, detachably connected to the heads, and provided with the forks *d*, and the ropes D, for lifting the hose upon the frame, all constructed and arranged to operate substantially as and for the purpose set forth.

322,287.



322,288. APPARATUS FOR TRUING THE FLEXIBLE BENDS OF CARDING-ENGINES. JOHN M. HETHERINGTON, Manchester, County of Lancaster, England. Filed Sept. 18, 1883. (No model.) Patented in England Jan. 29, 1883, No. 471.



Claim.—1. The herein-described apparatus for truing the flexible bends of carding-engines, said apparatus consisting of a frame adapted to be applied to the cylinder and carrying an adjustable rotating shaft with a cutter at each end to dress the bends as the truing apparatus revolves, all substantially as described.

2. The herein-described apparatus for truing the flexible bends of carding-engines, said apparatus consisting of a bracket, D, adapted to be secured to the cylinder, in combination with a shaft, *g*, having cutters *i i* to dress the flexible bends, the shaft being adapted to adjustable bearings in said bracket, and with a shaft, *e*, geared to the shaft *g*, and adapted to receive motion from a pulley on the axle of the carding-engine.

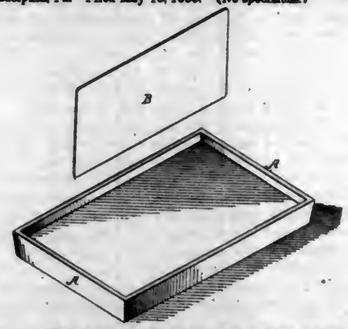
3. The bracket D, adapted to be mounted on the cylinder of the carding-machine, and provided with a shaft, *g*, having rotary cutters to true the bends, in combination with the sector *l*, and worm *m*, and the bracket *o*, adapted to be secured to the frame, band-pulleys *s*, *t*, and *r*, and the shaft *e*, to transmit motion to the cylinder and cutters, all substantially as set forth.

322,289. FIRE-POT. WEBSTER C. HIGGINS, Norwich, Conn. Filed Jan. 2, 1885. (No model.)



Claim.—The combination, with the pot A, having the fingers *a* and lugs *a'*, of the grate B, having the lugs *b' b²* and the groove *b*, and the bar C, having the enlargement *c*, as specified.

322,290. PROCESS OF MAKING ENAMELED GOODS. JOHN HINES, Philadelphia, Pa. Filed May 18, 1885. (No specimens.)



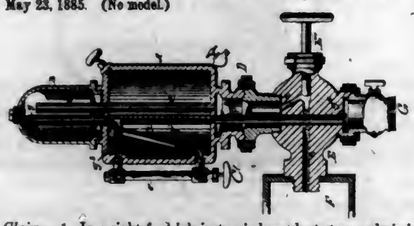
Claim.—1. The herein-described process of making enameled articles, the said process consisting in applying to the edges of the articles a flux or glaze after firing and then refiring the articles so coated, substantially as set forth.

2. As an improvement in the manufacture of enameled articles, the mode herein described of protecting the edges of the article, said mode consisting in dipping the edges of the same into a flux or glaze previous to the last firing.

3. As an improvement in the manufacture of enameled articles, the mode herein described of protecting the edges and making an ornamental border, said mode consisting in applying to the edges of the articles a flux or glaze ground in a suitable vehicle and then firing the coated articles, substantially as specified.

4. As a new article of manufacture, enameled goods having their edges coated with a flux or glaze in addition to the body of the enamel, as and for the purpose set forth.

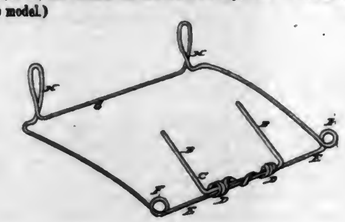
322,291. LUBRICATOR. CLARENCE B. HODGES, Detroit, Mich. Filed May 23, 1885. (No model.)



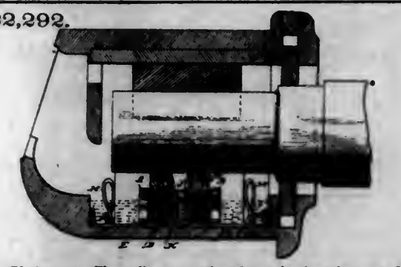
Claim.—1. In a sight-feed lubricator, independent steam-admission and oil-exit conduits passing through a common stem below the oil-reservoir, the latter conduit communicating with the top of the sight-feed chamber and having an extension projecting into the steam-space at the top of the condenser above the steam-pipe, the construction being such that the incoming steam and outgoing oil do not come in contact with each other, substantially as described.

2. The combination, in a lubricator, of the following elements: an oil-reservoir, a sight-feed chamber, and a condenser adapted to feed the oil through the sight-feed chamber by feeding condense-water into the oil-reservoir, and in connection therewith a steam-conduit leading to a point within and near to the top of the condenser, adapted to drain back through this conduit condense-water rising above its discharge end, an oil-discharge condnit leading from the discharge end of the sight-feed chamber down through the lubricator and out at its base, and a conduit communicating from the latter with the steam-space at the top of the condenser above the steam-pipe, whereby an equalizing-pressure is communicated back against the outflowing oil, substantially as and for the purpose set forth.

322,292. CAR-AXLE LUBRICATOR. CHARLES P. HOLMES, Gouverneur, N. Y., and NATHAN M. GEORGE, Danbury, Conn. Filed Jan. 12, 1885. (No model.)



322,292.



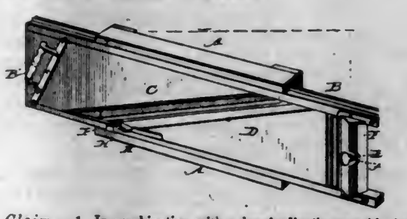
Claim.—1. The roller-supporting frame having the curved end pieces formed with the coils F at one end, as and for the purpose shown and set forth.

2. In a lubricator of the described construction, the rectangular frame having one side piece opposite to the side piece having the roller-supporting arms provided with upwardly-projecting twisted loops integral with the side piece, as and for the purpose shown and set forth.

3. In a lubricator of the described class, the rectangular frame having one side formed by two parallel portions bent upward at an angle to form the roller-supporting arms, and connected by a wire sleeve, as described, having end pieces curved upward and formed with coils at the ends nearest to the side piece having the parallel portions, and having the opposite side piece formed into upright twisted loops, as and for the purpose shown and set forth.

4. In a lubricator of the described class, the rectangular frame having one side piece formed by two parallel portions, connected by means of a wire sleeve twisted around them, and having their ends bent to form the roller-supporting arms, and having the upwardly curved end pieces formed with coils at the ends near the aforesaid side piece, as and for the purpose shown and set forth.

322,293. MEAT AND VEGETABLE SLICER. ALBERT ISER, Lancaster, Pa. Filed Jan. 22, 1885. (No model.)



Claim.—1. In combination with a longitudinally-movable knife-frame, an inclined plate or casting fixed to one end of it, and provided with a slot, *f*, a gage-board movable within said knife-frame, a screw-tapped inclined plate or casting, G, which is attached to one end of said gage-board, and an adjusting-screw, forming both a handle and clamping device for said gage-board, which passes through said slot *f* and into said casting G in order that the said gage-board may be conveniently adjusted by turning said screw to loosen it, moving it along said slot to the desired point, and tightening it again, substantially as set forth.

2. The plate H, provided with inclined raised bead H', in combination with the gage-board to which it is attached, the knife-frame, and a hook, I, which is attached to the latter, overhangs flange H', and engages with flange A' to guide the gage-board in its adjustment, substantially as set forth.

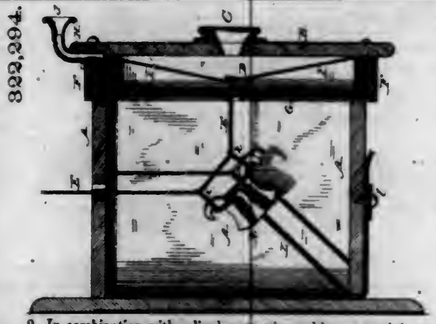
3. The vertical side wall, K, provided with a raised stud, *k*, and hinged to the guide-frame, in combination with the cutting-table, independently hinged to the guide-frame, and provided with a recess, *j*, which fits upon said stud, locking said side wall and cutting-table together when they are extended and ready for use, substantially as set forth.

4. The plate H, provided with raised inclined bead H', in combination with the gage-board to one end of which it is attached, the knife-frame, a hook, I, which is attached to the latter and engages the said bead, an inclined plate or casting, G, attached to the other end of said gage-board, a corresponding inclined plate or casting attached to the knife-frame, and an adjusting-screw which is screw-tapped into one of these latter plates and passes through a slot in the other, the action of said screw, aided by the guiding devices H I, serving to adjust all parts of the gage-board simultaneously and equally, substantially as set forth.

322,294. ACOUSTIC TELEPHONE. ANTHONY ISER, Lancaster, Pa. Filed Jan. 24, 1885. (No model.)

Claim.—1. The diaphragm, telephone-box, and sound-transmitting wire of an acoustic telephone, in combination with a tension device applied obliquely to said wire within said box, and cord L and screw *l*, for varying said tension, for the purpose set forth.

322,294.



2. In combination with a diaphragm wire and box, a receiving-tube arranged with its inner end across the edge of the diaphragm, and rotatable to present the ear-piece in any direction desired.

3. A combined receiving and transmitting instrument having a partition behind the diaphragm and a receiving-tube located at the edge of the latter, substantially as set forth.

4. A tension device for a telephone-wire, consisting of a leaden weight hung to said wire, in combination with a cord whereby it is anchored to a fixed device, said weight serving to insulate said wire and also to hold it taut and bent, as described.

5. The tabular leaden anchor K, provided on each side with hooks or horns, substantially as and for the purpose set forth.

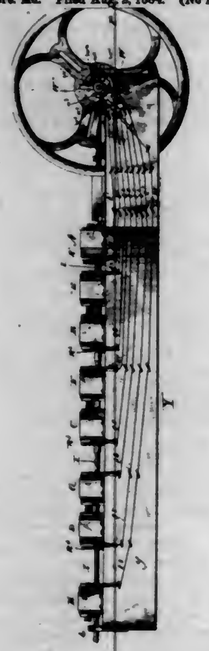
322,295. ACOUSTIC DIAPHRAGM. WILLIAM JONES and WARREN W. REYNOLDS, Canopolis, Mich. Filed Dec. 13, 1884. (No model.)



Claim.—1. An acoustic diaphragm composed of layers of wood, paper, and a strengthening membrane or fabric compacted together, substantially as and for the purpose described.

2. The acoustic diaphragm composed of a front layer of wood, two back layers of paper, two layers of a strengthening fabric or membrane arranged, respectively, between the wood and the paper and between the two layers of paper, and a cementing material, substantially as and for the purpose described.

322,296. RECIPROCATING ELECTRO-MAGNETIC MOTOR. ERNEST KNABE, Jr., Baltimore, Md. Filed Aug. 2, 1884. (No model.)

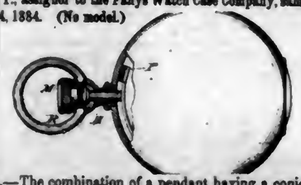


Claim.—1. The combination, with the reciprocating rod, the fixed armature, and the loose armatures through which the rod has different distances of play, of the groups of oppositely-arranged magnets having their poles facing each other and toward the armatures, respectively, the said groups with facing poles being at successively-different distances apart, and an automatic commutator and connections arranged to change a battery-current from the magnets facing in one direction to those facing in the opposite direction, substantially as described.

2. The combination, with the suitably-supported series of magnets A B C D, having their poles facing in one direction, the series of electro-magnets E F G H, having their poles facing those of the said magnets A B C D, and separated therefrom by uniformly-differing spaces, of the reciprocating rod I, provided with the loose armatures R' R^2 R^3 and the fixed armature R^4, the play of the rod through said loose armatures being limited in accordance with their positions with respect to their magnets, suitable circuit-connections, substantially as described, and automatic means operated by said rod for directing an electric current through the respective groups of magnets in each series successively for causing the armatures to be attracted alternately in opposite directions.

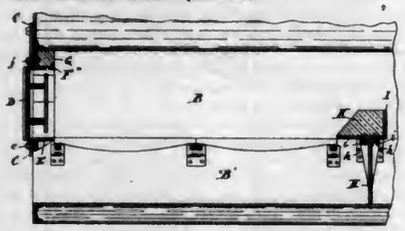
3. The combination, with the series of electro-magnets A B C D, having their poles facing in one direction, the series of magnets E F G H, having their poles facing in the opposite direction and separated by uniformly-differing distances in series from the poles of the first-named magnets, the reciprocating rod I, having the loose armatures and one fixed armature, the fly-wheel having a metallic shaft provided with a crank, the pitman connecting the reciprocating rod with said crank, the commutator having the contact-buttons insulated from each other, the metallic commutator-arm carried by said shaft and arranged to strike said buttons successively, the metallic brush or wiper bearing on said shaft, and the conductors including the coils of the magnets and arranged for circuit-connection, essentially as set forth.

322,297. WATCH KEY AND PENDANT. JAMES LAMONT, Sag Harbor, N. Y., assignor to the Fahys Watch Case Company, same place. Filed Nov. 24, 1884. (No model.)



Claim.—The combination of a pendant having a conical or beveled head and an opening threaded on the interior at the outer end, a removable key having an enlarged portion formed integral therewith provided with a screw-thread to engage the pendant-thread, a cap to seat on the head and close the opening, and an intermediate sliding portion.

322,298. STEAM-BOILER FURNACE. RICHARD LAVERY, Boston, Mass. Filed Dec. 23, 1884. (No model.)



Claim.—1. The combination of the bridge-wall or base-plate H and the removable metallic independent boxed frames or sections I, as shown and described.

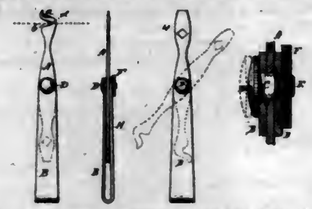
2. The combination of a furnace-lining and the aperture or mouth composed of boxed frames or sections (into which are partially embedded fire-brick or other non-combustible material) that can be separately detached and replaced by new ones, substantially as shown and specified.

3. In a marine or other boiler furnace, the combination of the front plate, C, the sections F F' F'', the fire-brick or other non-combustible material G, and the dead-plate E, substantially as and for the purpose shown and specified.

4. The combination of the sections I of the fire-bridge and the filling of fire-brick or other non-combustible material, substantially as set forth.

5. In a marine or other boiler furnace, the independent boxed frames or sections F F' F'', holding fire-brick or other suitable non-combustible material, said sections being secured to the front plate, C, by means of bolts and nuts, and when in position serving in the dual capacity of furnace-lining and aperture or mouth for admission to the interior of the furnace, substantially as and for the purpose specified.

322,299. RIPPING DEVICE. JOSEPH P. LAVINE, New Haven, Conn., assignor to Samuel Halliwell, same place. Filed Mar. 2, 1885. (No model.)



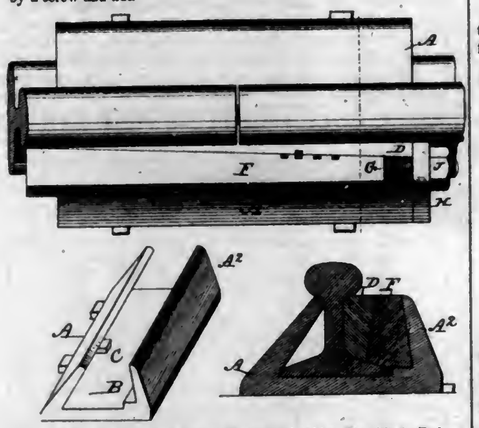
Claim.—1. A ripping implement consisting of the blade A, terminating in the hook-shaped cutting-edge *a*, and constructed with the V-shaped transverse notch *b*, the apex of the V having a cutting-edge extending onto the sides of the notch, substantially as described.

2. The combination of the blade A, terminating in the hook-shaped cutting-edge *a*, and constructed with the V-shaped notch *b*, the apex of the V having a cutting-edge extending onto the sides of the notch, with a U-shaped handle, B, between the ends of which the said blade is pivoted, and so that the blade may be turned between the two sides of the handle, substantially as described.

3. The herein-described implement, consisting of the ripping-blade A, terminating at one end in a ripper and the other end as a screw-driver, combined with a U-shaped handle, the said blade hung between the sides of said handle at the open end, a pivot extending transversely through the handle and blade, the body of the pivot angular-shaped through one side of the handle and the blade, and constructed with a head to bear upon one side of the handle, the opposite end of the pivot screw-threaded and provided with a nut, F, to bear upon the side of the handle opposite the head, substantially as described.

322,300. RAILWAY-RAIL JOINT. JOHN C. LEFLER and ANDREW SWIVEL, Des Moines, Iowa. Filed Apr. 11, 1884. (No model.)

Brief.—A railway-chair provided with a shoulder upon one side at its base, and in which the meeting ends of the rails are held by two wedges tapered longitudinally and transversely, and locked therein and together by a screw and nut.



Claim.—1. A railway-chair having a shoulder, B, a block, D, having a longitudinal and also a transverse taper, and a wedge, F, having a longitudinal and also a transverse taper, arranged and combined, relative to each other and the ends of two rails having flanges at their bottoms and balls at their tops, to operate in the manner set forth, for the purposes stated.

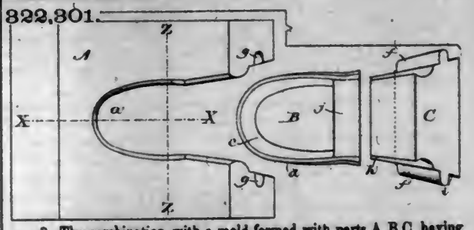
2. The improved railway-rail joint composed of the chair A B, the block D, the wedge F, having a screw-threaded end, G, the washer H, the nut J, and two rails, substantially as shown and described.

322,301. MOLD FOR FORMING BOOT OR SHOE HEELS. EDWARD J. LE GAY, Boston, Mass. Filed May 2, 1885. (No model.)

Claim.—1. A heel-mold formed with part A, having a recess, *a*, corresponding to the rear and side walls of the heel, part B, having portion *e* of a size and form corresponding to the cavity in the heel-shell when it is inserted in cavity *a*, and follower C, formed with part A, corresponding to the front of part B, substantially as specified.

2. The combination, with parts A C of a heel-mold formed as specified, of cap D, having portion 7, adapted to fit and form the concave upper face of the heel-filling when molding the filling-block and cement therein, substantially as specified.

322,301.

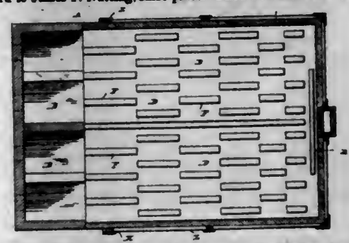


3. The combination, with a mold formed with parts A B C, having form and adaptation to mold and set to form the shell or wall of boot and shoe heels, and with parts A and C, having oblique outer ends, as specified, of band or clamp E, having corresponding internally-oblique ends, and adapted to force together the respective parts of the mold and compress the heel-shell therein, substantially as specified.

4. The combination of parts A C of the mold respectively provided with the lugs *f* and grooves *g*, adapted and arranged to interlock and secure said parts in proper relative position, substantially as specified.

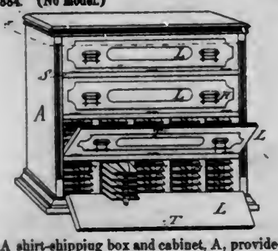
5. The combination, with parts A B C of the heel-mold, clamp E, and plunger *p*, with its cap *n*, of sliding stem 8, its foot 10, and extending spring 11, all substantially as specified.

322,302. DRIER. JAMES S. LESTER, Atlanta, Ga., assignor of one-third to James F. Nutting, same place. Filed Feb. 24, 1885. (No model.)



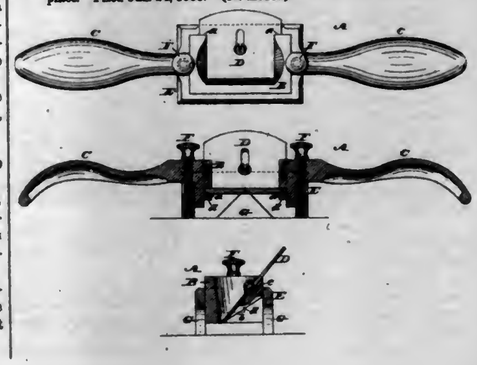
Claim.—A dry-house having flues provided with longitudinal partitions of gradually-diminishing length, and placed alternately in the said flue, substantially as and for the purpose specified.

322,303. SHIRT-CABINET. JAMES L. LIBBY, New York, N. Y. Filed Aug. 29, 1884. (No model.)



Claim.—A shirt-shipping box and cabinet, A, provided with shelves S, horizontal and vertical series of compartments C, and drop leaves or shelves L, as shown and described.

322,304. SPOKESHAVE AND CHAMFER-CUTTER. JAMES MANDER, Philadelphia, Pa., assignor of one-half to Maurice R. Dillin, same place. Filed Jan. 24, 1885. (No model.)

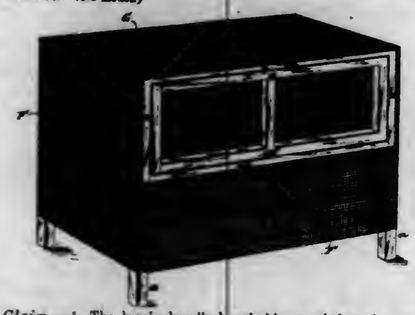


Claim.—1. In a combined chamfer-cutter and spokeshave, the spokeshave having a recessed stock, in combination with a blade seated in said stock and supported by a cross-bar of the shave, and a case having recesses in both the front and rear walls of an inverted-V shape, substantially as and for the purpose set forth.

2. The stock B, having a cross-bar, *c*, and side lugs, *d*, connected therewith, in combination with a blade secured to said cross-bar *c*, and supported by said lugs, substantially as and for the purpose set forth.

3. In a combined chamfer-cutter and spokeshave, the stock B of the latter, in combination with the blade D, secured to a cross-bar, *c*, of said stock, and a case, E, having recesses of inverted-V shape in both the front and rear walls thereof, and screws connected with the spokeshave and engaging with said case, substantially as and for the purpose set forth.

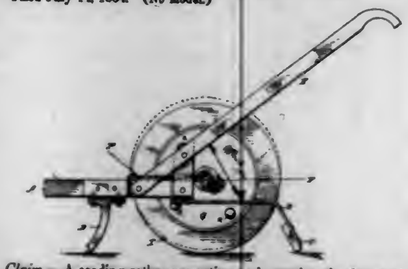
322,305. GRAIN-BIN. JOHN MASON, Francesville, Ind. Filed Apr. 16, 1885. (No model.)



Claim.—1. The herein-described grain-bin, consisting of a rectangular frame having an elevated wooden floor and covered on the sides and top with wire-gauze, said bin being provided with a drop-door, substantially as described.

2. In a grain-bin, the combination of the uprights A A, girts B B, wire-gauze covering F G, wooden floor C, and a wire-gauze covered door, H, adapted to swing downward, substantially as described.

322,306. SEED-PLANTER AND FERTILIZER-DISTRIBUTER. ELIJAH W. MCLENDON and JOSEPH W. MCLENDON, Martin's Station, Ala. Filed July 14, 1884. (No model.)



Claim.—A seeding-roller supporting and carrying the frame of the machine, the shafts of said roller playing in bearings in the free ends of springs, which springs have their other ends rigidly confined to the frame, substantially as described.

322,307. PLASTIC COMPOUND FOR WALLS, &c. HENRY W. MERRITT, Boston, Mass., assignor to William H. Ireland, same place. Filed May 4, 1885. (No specimens.)

Claim.—1. A plastic compound containing as ingredients silica and a solid silicate, each in comminuted or pulverized condition, and fixed caustic alkali dissolved in water, the whole being intermixed and incorporated substantially as described.

2. A plastic compound consisting of silica and a solid silicate, each in comminuted or pulverized condition, fixed caustic alkali dissolved in water, and a soluble alkaline silicate, the whole being intermixed and incorporated substantially in the manner and for the purpose set forth.

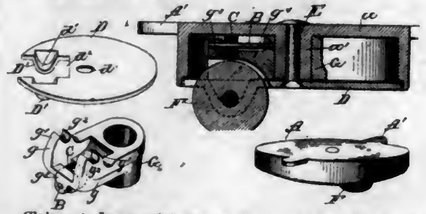
3. A plastic compound containing as ingredients comminuted silica, a solid silicate of magnesium in pulverized state, and fixed caustic alkali dissolved in water, substantially as described.

4. A plastic compound consisting of quartz-sand, pulverized asbestine, and caustic soda or caustic potash, with water to dissolve the alkali and give plasticity to the mass.

5. A plastic compound consisting of quartz-sand, pulverized asbestine, caustic soda or caustic potash, and a soluble alkaline silicate, with water to dissolve the soluble ingredients and render the mass suitably plastic.

6. A mixture of pulverized solid silicate, fixed alkali, and water, either with or without a proportion of soluble alkaline silicate, ready for subsequent addition of sand to form a plastic compound, substantially as described.

322,308. CASTER. SIGISMUND M. MICHELSON, Milwaukee, Wis. Filed Mar. 30, 1885. (Model.)



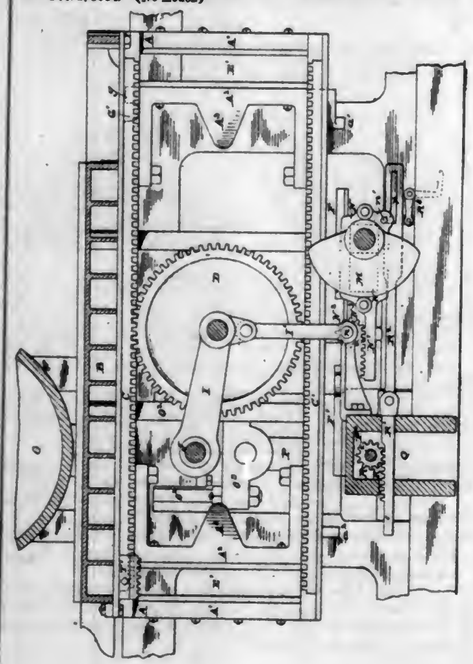
Claim.—1. In a revolving caster, the combination of an inclosing-shell with a revolving perforated protecting-plate pivoted thereto, and a roller-bearing frame revolving on a central vertical axle within said shell, the pivot of said plate passing through said axle, and said frame carrying the caster-roller, which projects downward through the perforation in said protecting-plate, and an anti-friction roller carried by the frame and bearing against the under surface of the top plate of the shell, substantially as set forth.

2. In a revolving caster, the combination, with the shell A and the roller-bearing frame G g g' g^3, of the journal B, and anti-friction roller C, and the caster-roller F, mounted on a journal secured to the frame G, substantially as set forth.

3. In a revolving caster, the combination of the shell A, with axle a', perforated protecting-plate D, with bearings D' D', hollowed out, as at d' d', on their upper surfaces, journal f, roller F, roller-bearing frame having sleeve G, and arms g g, with notched projections g' g^3, resting on the journal f, within the bearings D' D', and carrying an anti-friction roller bearing against the under side of the top plate of the shell, and the pivot E, substantially as set forth.

4. In a revolving caster, the combination of an inclosing-shell with a rigid central vertical axle, a roller-bearing frame having a vertically-perforated hub revolving on said rigid vertical axle carrying a roller projecting beneath said shell, with an anti-friction roller journaled in said frame above the journal of the caster-roller, and bearing upon the under surface of the top plate of said shell, the axle of the anti-friction roller being independent of the central axle of the device, and the roller-frame revolving around a fixed axis, substantially as set forth.

322,309. PRINTING-MACHINE. ROBT. MIEHLE, Chicago, Ill. Filed Feb. 2, 1884. (No model.)



Claim.—1. In a bed-motion for printing-presses, as herein described, in which the bed is operated by a pinion that engages alternately with top and bottom racks attached to the press-bed, the combination of the operating-pinion provided with a wrist-pin, E, with the rack-frame provided with a vertical guide-slot, E', at each end for the purpose of properly guiding the pinion into gear with the racks, essentially as set forth.

2. The combination, with the reciprocating bed of a printing-press, of a rack-frame having racks C C' and vertical end slots E' E', driving-pinion D, provided with a wrist-pin, E, and mechanism, substantially as herein described, for alternately engaging the pinion D with the upper and lower racks, C C', essentially as set forth.

3. In a bed-motion for printing-presses, essentially as herein described, the racks C C', inner end shoes, A^2 A^2, hinged to the rack-frame, mechanism, substantially as herein described, for automatically moving said shoes into and out of the path of the wrist-pin E upon the driving-pinion of the bed-racks C C', all combined essentially for the purpose set forth.

4. The combination, with the reciprocating bed of a printing-press, of a rack-frame having racks C C' and vertical slots E' E', driving-pinion D, carrying the wrist-pin E, said pinion being journaled at the end of a rock-arm, I, and receiving a continuous rotary motion through gears K K', and an intermittent rising and falling motion from cam M, all combined essentially as set forth.

5. In a bed-motion for printing-presses, essentially as set forth, the fixed vertical shoes A' and movable shoes A^2, provided with pins a' a^2, in combination with the grooved cam-plates F F', driving-pinion D, wrist-pin E, racks C C', and bed B of a printing-press, essentially as set forth.

6. In a bed-motion for printing-presses, essentially as set forth, the movable shoes A^2, provided with an inclined-faced offset, in combination with driving-pinion D, wrist-pin E, racks C C', and bed B of a printing-press, essentially as set forth.

7. In a bed-motion for printing-presses, essentially as set forth, the fixed shoes A', movable shoes A^2, provided with pins a' a^2, and springs G, in combination with the grooved cam-plates F F', driving-pinion D, wrist-pin E, racks C C', and bed B of a printing-press, essentially as set forth.

8. In a bed-motion for printing-presses, essentially as set forth, the wrist-pin E and shoes A' A^2, forming the vertical slots E', having their faces formed with offsets e, in combination with the racks C C', pinion D, and bed B of a printing-press, for the purpose set forth.

9. In a printing-press, the combination of the impression-cylinder journal-boxes and vertically-moving guide-rods with connecting-links and rock-shaft, to which is imparted an intermittent movement for raising and lowering the cylinder, essentially as herein described.

10. In a bed-motion for printing-presses, essentially as set forth, the movable shoes A^2, provided with stop-lugs g, in combination with the rack-frame A, provided with abutment-lugs G', driving-pinion D, wrist-pin E, racks C C', and bed B of a printing-press, essentially as set forth.

11. In a bed-motion for printing-presses, essentially as set forth, the combination of the bed B of a printing-press, rack-frame A, having racks C C' and vertical slots E', pinion D, wrist-pin E, rock-arm I, link I', crank-shaft N^2, pinion N^3, rack N', cam-yoke N, and cam M, essentially as set forth.

12. The combination, with the impression-cylinder O of a printing-press, of the boxes O', lifting and guide rods O^2, cross-heads O^3, links P, shaft P', eccentrics p, pinion R, rack R', link R^2, and cam and yoke M and N, essentially as set forth.

13. The combination, with the impression-cylinder O of a printing-press, of the boxes O', lifting and guide rods O^2, cross-head O^3, cushion-springs O^4, links P, shaft P', eccentrics p, pinion R, rack R', link R^2, and cam and yoke M and N, essentially as set forth.

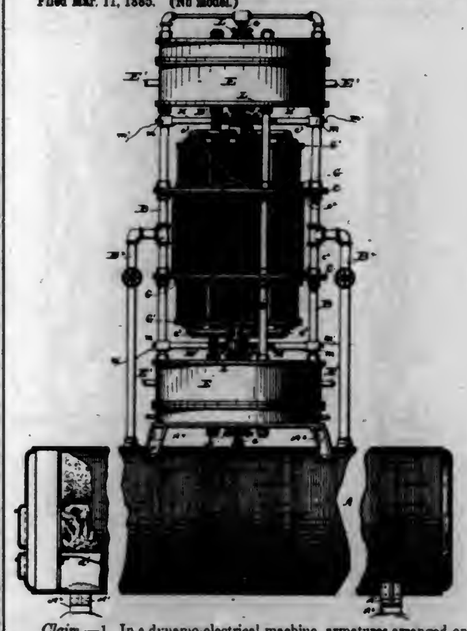
14. In a cylinder raising and lowering mechanism, essentially as set forth, the link R^2, provided with an L-shaped slot, r, in combination with the cam-yoke N, provided with a pin, n', and bell-crank lever R^3, essentially as set forth.

15. In a printing-press, the combination of the bed having a rack secured thereon which moves with the bed, for imparting motion to the inking-rollers, and the slider provided with a rack, and reduced gearing for imparting motion to said slider, the parts being arranged so that both the sliders and inking-rollers are operated by the same rack which moves with the bed, substantially as described.

16. In a printing-press, essentially as herein described, the counter-shaft U, carrying the gearing between the bed and the anti-friction sliders, in combination with the gears U' U^3 U^3 and inking-rollers V, essentially as described.

17. In a printing-press, the combination of the bed having a rack secured to its under side for imparting motion to a shaft (which is independent of the shaft for imparting motion to the bed) by a pinion engaging said rack, the said shaft having a gear connected to its outer end for imparting motion to the inking-rollers, substantially as described.

322,310. DYNAMO-ELECTRIC MACHINE. PETER L. MILES, Cleveland, Ohio, (administrator of Charles F. Rasst, deceased,) assignor to Martin Keiper, Henry J. Myers, William F. Backhelt, Jacob Kahn, Simon R. Thurman, and the estate of Charles F. Rasst, deceased, all of same place. Filed Mar. 11, 1885. (No model.)



Claim.—1. In a dynamo-electrical machine, armatures arranged on vertical spindles, and respectively on opposite sides of the field-magnets, rotary engines connected respectively with said spindles and arranged to revolve the armatures in opposite directions, substantially as set forth.

2. The combination, with two sets of armatures arranged on vertical spindles, of field-magnets located between said series, rotary engines connected directly with the armature-spindles, and steps located outside of or beyond the outer ends of the armature-spindles.

322,311. BUTTON. FRED. A. NICKERSON, Springfield, Mass., assignor to the Dickinson Hard Rubber Company, same place. Filed Feb. 16, 1884. (No model.)



Claim.—In a button, the perforated front and back parts, *c a*, the latter recessed near the perforation, in combination with a split or slotted eyelet passing through said front and back parts and secured thereto, and a transverse cross-bar passing through said eyelet, and having its ends inclosed between the front and back parts of the button, substantially as set forth.

322,312. WORK-HOLDER. SAML. L. OTIS, Birmingham, Conn. Filed May 13, 1885. (No model.)

Claim.—1. In a work-holder, the combination, with a supporting-frame, of a pair of interlocking jaws provided with funnel-shaped or beveled faces, and with an opening or recess for the passage of a drill and adapted to retain disks of different diameters, substantially as set forth.

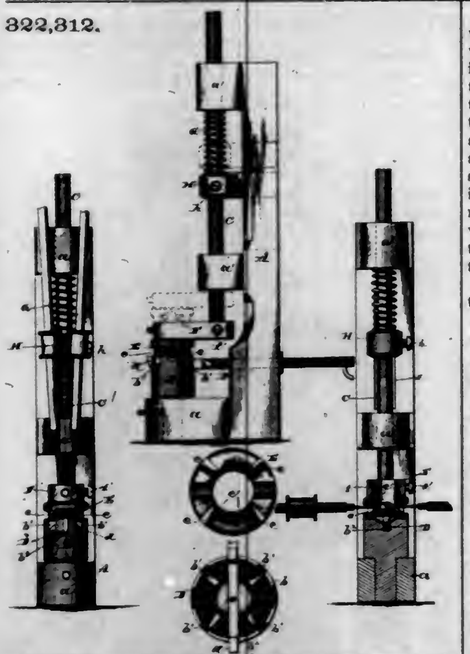
2. The combination, with the interlocking jaws adapted to hold a disk in a rigid position for being operated upon by a drill or the like and provided with recesses for the passage of a drill, of a disk-extractor located in one of the jaws, substantially as set forth.

3. The combination, with the supporting-frame, of a pair of interlocking jaws adapted to hold a disk and provided with end and side recesses which expose the sides and bottom of the disk to the action of drills, substantially as set forth.

4. The combination, with a stationary lower jaw having a funnel-shaped face and recesses for the passage of a drill, of a vertically-movable spring-actuated upper jaw provided with teeth beveled on the inner faces and with recesses for the passage of a drill, substantially as set forth.

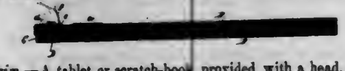
5. A disk or button holder consisting, essentially, of a pair of interlocking jaws provided with beveled faces, one of the jaws being cen-

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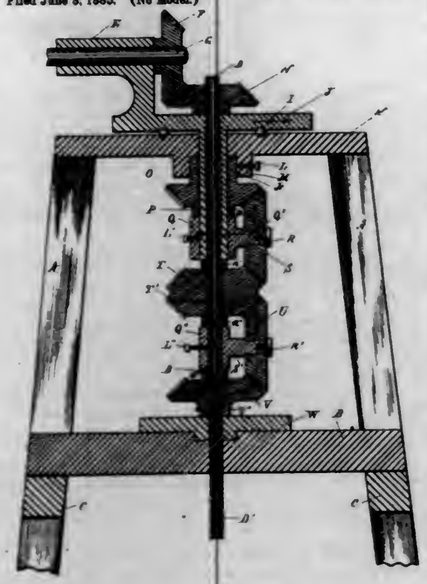
trally bored to receive bottom drills and both jaws being recessed at the sides to admit side drills, substantially as set forth.

322,313. WRITING-TABLET. WILLIAM W. PATTESON, Staunton, Va., assignor of one-half to Edward I. Jones, same place. Filed Jan. 24, 1885. (No model.)



Claim.—A tablet or scratch-book provided with a head, C, which head is made to embrace the stub ends of the leaves of the tablet, and which is provided with a box or receptacle and a cover, *e*, held normally in place and returned to same after displacement by a band, *d*, substantially as and for the purpose set forth.

322,314. WINDMILL-GEARING. GEORGE H. PATTISON, Freeport, Ill. Filed June 3, 1885. (No model.)



Claim.—1. In a windmill of the class described, the combination, with the tower of the mill, of a turn-table rotating freely thereon, a wind-wheel shaft journaled in the turn-table, a vertical shaft journaled in and extending downward through the turn-table and connected with the wind-wheel shaft by suitable gears, a gear-wheel attached rigidly to the tower and concentric with the vertical shaft journaled in the turn-table, a second vertical shaft journaled in suitable bearings in the tower and adapted to transmit the power of the mill to mechanism to be operated thereby, a loosely-mounted gear rotating bodily with the vertical shaft journaled in the turn-table and having an independent rotation on its own axis, and gearing, substantially as shown and described, connecting said loosely-mounted gear with the power-transmitting shaft and with the turn-table and the gear attached to the tower, whereby the rotation of the turn-table rotates the upper but not the lower of said vertical shafts.

2. In a windmill of the class described, the combination, with the tower of the mill, of a turn-table rotating freely thereon, a wind-wheel shaft journaled in said turn-table, a suitably-journaled vertical shaft connected by suitable gears with the wind-wheel shaft, a gear-wheel attached rigidly to the tower and concentric with the vertical shaft, a gear-wheel mounted loosely on said vertical shaft, a gear-wheel mounted loosely on a shaft connected rigidly with said vertical shaft at a point below the loosely-mounted gear on said vertical shaft, a second vertical shaft adapted to transmit the power of the mill to other mechanism, and gearing connecting said loosely-mounted gears with the turn-table and the gear attached to the tower, and also with said power-transmitting vertical shaft, whereby the rotation of the wind-wheel shaft in its bearing does not tend to rotate the turn-table and the rotation of the turn-table does not tend to rotate the wind-wheel shaft in its bearing.

3. In a windmill of the class described, the combination, with the tower of the mill, of a turn-table rotating freely thereon, a wind-wheel shaft journaled in the turn-table, a vertical shaft coincident with the axis of the turn-table and connected by suitable gears with the wind-wheel shaft, a gear-wheel attached rigidly to the tower and concentric with said vertical shaft, a gear-wheel mounted loosely on said vertical shaft above the lower end thereof, a shaft connected rigidly with said vertical shaft at a point below said loosely-mounted gear, and a second gear mounted loosely on the shaft so connected with the vertical shaft, a second vertical shaft adapted to transmit the power of the mill to other mechanism, and gearing connecting said loosely-mounted gears, said power-transmitting shaft, said turn-table, and the gear attached to the tower, whereby the resistance of the work performed by the mill tends to retard the rotation of the wind-wheel shaft in its bearing, but not to rotate the turn-table.

4. In a windmill of the class described, the combination, with the tower of the mill, of a turn-table rotating freely thereon, a wind-wheel shaft journaled in the turn-table, a suitably-journaled vertical shaft coincident with the axis of the turn-table and connected by suitable gears with the wind-wheel shaft, a gear-wheel attached rigidly to the tower of the mill and concentric with said vertical shaft, a second vertical shaft adapted to transmit the power of the mill to other mechanism, a gear-wheel mounted loosely on said vertical shaft first mentioned, and gearing connecting said loosely-mounted gear with the turn-table, with the gear attached to the tower, and with the gear attached to the power-transmitting shaft, whereby the rotation of said loosely-mounted gear when the power-transmitting shaft is held stationary rotates the turn-table and said first-mentioned vertical shaft at the same speed and in the same direction.

5. In a windmill of the class described, the combination, with the tower of the mill and a gear-wheel rigidly attached thereto, of a turn-table rotating freely on the tower and concentric with said gear, a wind-wheel shaft journaled in the turn-table, two independent vertical shafts standing in the same straight line but rotating independently, one of said shafts being connected with the wind-wheel shaft by suitable gears and the other being the power-transmitting shaft of the mill, a loosely-mounted gear encircling the upper of said vertical shafts, and gearing, substantially as shown and described, connecting said loosely-mounted gear with said lower vertical shaft and with the gear attached to the tower.

6. The combination, with the tower and turn-table of the mill and the gear O, rigidly attached to the tower, of the wind-wheel shaft G, journaled in the turn-table, the upper and lower vertical shafts, D D', the gears F H, connecting the upper shaft with the wind-wheel shaft, the loosely-mounted gear T T', rotating freely about the shaft D, the gear V, rigidly attached to the shaft D', the gear-wheel S, connecting the gears O T, and the gear-wheel U, connecting the gears T V, the gear S, having a rotation on its own axis and a bodily rotation about the vertical axis of the mill, and the gear U, having a rotation on its own axis and a bodily rotation in unison with the rotation of the shaft D, substantially as shown and described, and for the purpose set forth.

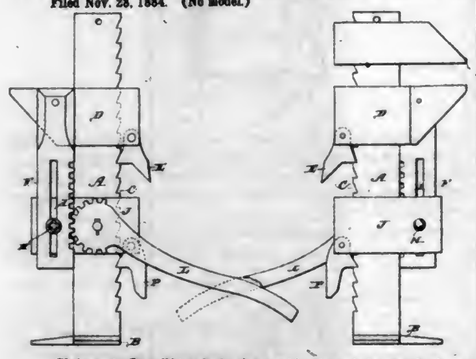
7. In a windmill of the class described, the combination, with the tower and turn-table of the mill, of a wind-wheel shaft journaled in the turn-table, a gear rigidly attached to the tower and concentric with the turn-table, two independently-journaled vertical shafts standing in the same straight line, the upper shaft being connected with the wind-wheel shaft by suitable gearing and the lower being the power-transmitting shaft of the mill, a loosely-mounted gear rotating freely on the upper of said shafts, and gearing connecting said loosely-mounted gear with the lower vertical shaft with the gear attached to the tower and with the turn-table, whereby the turn-table and said loosely-mounted gear rotate at different rates of speed.

8. The combination, of the top plate, K, of the tower, the turn-table J, having the tubular neck P, the wind-wheel shaft G, vertical shafts D D', and gears F H O S T T' U V, the double-faced gear T T' being loosely mounted on the shaft D.

9. The combination of the tower-plate K, the turn-table J, the gear O, attached to the tower, a vertical shaft, D, connected, substantially as described, with the other elements of the mechanism, the gears S U V and the gear T T', encircling the shaft D.

10. In a windmill of the class described, the combination, with the tower and turn-table of the mill, of a wind-wheel shaft journaled in the turn-table, a gear rigidly attached to the tower and concentric with the turn-table, two independently-journaled vertical shafts, one connected with the wind-wheel shaft by a suitable gearing and the other being the power-transmitting shaft of the mill, a loosely-mounted gear rotating freely on the shaft connected with the wind-wheel shaft, and gearing connecting said loosely-mounted gear with the power-transmitting shaft with the gear attached to the tower and with the turn-table, whereby the turn-table rotates at a slower rate of speed than said loosely-mounted gear.

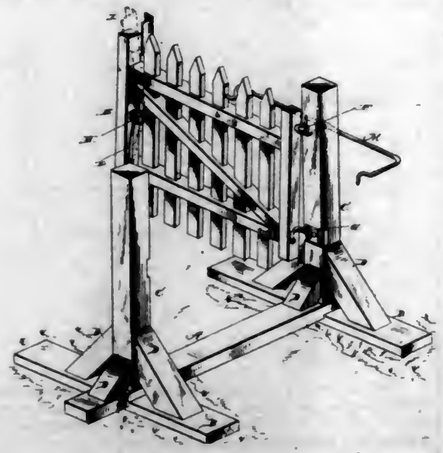
322,315. LIFTING-JACK. EDWARD A. PEASLEY, Pancoastburg, Ohio. Filed Nov. 28, 1884. (No model.)



Claim.—1. In a lifting-jack, the combination of the standard provided with ratchet-teeth with two slides, each one of which is provided with a pawl, the slotted toothed hanger, and the operating-lever provided with teeth, substantially as shown.

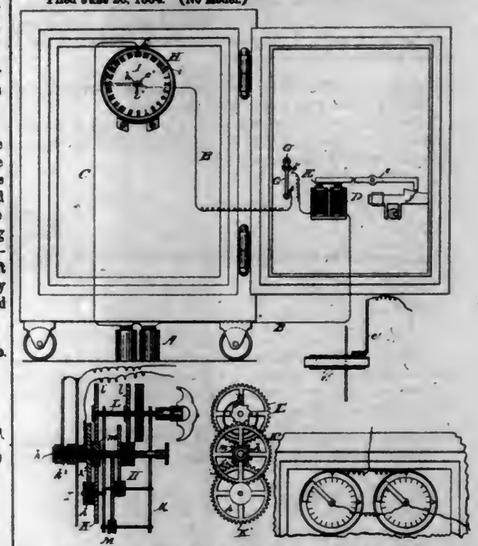
2. The combination of the standard, the upper slide provided with a pawl, the slotted toothed hanger which is secured rigidly thereon, the lower slide which is connected to the hanger by means of a bolt, and which is provided with a pawl, with the toothed operating-lever which is pivoted upon the lower slide, substantially as set forth.

322,316. GATE. WILLIAM A. PEEPLES, Walthall, Miss. Filed Aug. 22, 1884. (No model.)



Claim.—The combination, with the gate hinged to the gate-post, as described, of the bent lever fulcrumed to the gate-post and extending to each side of the same, whereby the gate may be held in an open position and released from either side to close it, substantially as specified.

322,317. ELECTRIC TIME-LOCK. WILLIAM E. PIERCE, Newark, N. J. Filed June 20, 1884. (No model.)



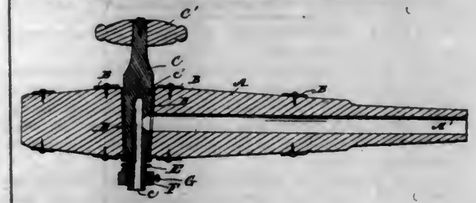
Claim.—1. In a time-lock having a movable numbered dial for setting the period during which the mechanism is to run before making an electric contact, the combination therewith and with the winding-arbor of the clock-work of an intermediate wheel whereby the act of winding will set the dial, or, conversely, the setting of the dial will cause the clock-work to be wound, substantially as set forth.

2. In a time-lock mechanism comprising a rotary or movable electrode, and a fixed or stationary electrode adapted and designed to form contact and close an electric circuit at a predetermined time, the combination therewith of a hand connected with the clock mechanism and movable therewith, said hand being in a shunt of the main circuit, and adapted and designed to form a temporary contact with the fixed or stationary electrode, whereby the circuit may be closed at starting for a temporary or brief period, and automatically opened, substantially as hereinbefore set forth.

3. In time-lock mechanism comprising a rotary numbered dial carrying an electrode or terminal, and a fixed electrode or terminal with which said dial electrode or terminal makes contact at a predetermined time, the combination therewith of a hand in a shunt of the circuit and movable with said dial, and adapted and designed to form contact with said fixed electrode, whereby the circuit may be closed at starting for a period, and be opened automatically at the expiration of such period by the movement of the shunt-hand away from the fixed electrode, substantially as shown and described.

4. In time-lock mechanism in which an electric circuit is closed at a predetermined period by the contact of two electrodes, one stationary and the other movable, the combination, with the fixed electrode, of an adjustable movable hand in a shunt of the circuit and movable along with the moving electrode in the main circuit, said movable hand having a numbered segment adapted and designed to form temporary contact with said fixed electrode, the duration of such temporary contact being indicated by the numbers on the segment, substantially as shown and described.

322,318. BEER-FAUCET. FRIEDERICH W. POLLE, Greenville, Miss. Filed Aug. 14, 1883. Renewed June 5, 1885. (No model.)



Claim.—1. The faucet A, provided with a packing, D, and plate H, secured to the under side of the faucet, and the spigot C, with a threaded end, in combination with the spiral spring E and nut F, fitted to the threaded end of the spigot, and held in a fixed position by the set-screw G, substantially as and for the purpose set forth.

2. The faucet A, provided with a packing, D, and plate H, secured to the under side of the faucet, and the spigot C, having the threaded end provided with a threaded nut, F, with set-screw G, in combination with the spiral spring E and wearing-washer H′, substantially as described, and for the purpose set forth.

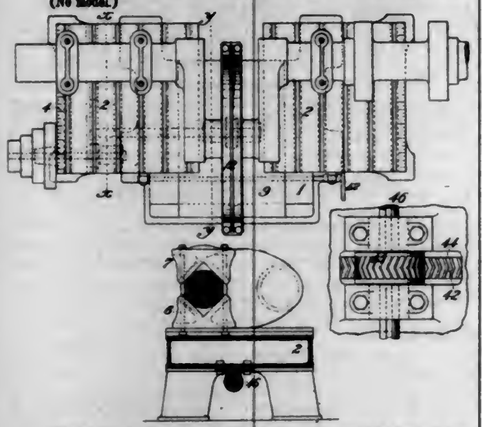
322,319. EXCAVATOR. BENJAMIN K. REED and BARTLEY L. BURRIS, Wichita, Kans. Filed June 9, 1884. (No model.)

Brief.—A plow with a mold-board to connect with an elevator is hung at rear by links and at front by a pivoted draw-bar having an adjusting arc rack and engaging segment-lever.



Claim.—The plow with its beam suspended in the rear from links, and with its front end attached to a pivoted draw-bar provided with rack-arms and segment, the mold-board extending back to and connected with the main elevator, substantially as described.

322,320. MACHINE FOR TURNING CRANK-PINS. HUGH A. REED, Pittsburg, and WILLIAM H. MADDOCK, Allegheny, Pa. Filed Feb. 24, 1885. (No model.)



Claim.—1. In a machine for turning crank and other shafts, a central bed having mounted thereon a reciprocating tool-carriage, in combination with two side beds having their upper surfaces raised above the upper surface of the central bed, substantially as set forth.

2. In a machine for turning crank-shafts, a central bed having mounted thereon a reciprocating carriage, in combination with two shaft-supporting beds, arranged at the sides of the central bed, projecting in front of the side beds, substantially as set forth.

3. A revolving head, in combination with tool-carrier, mounted therein and automatically adjustable transversely of the head, and a vertically-adjustable cutter mounted in a recess in the tool-carrier, substantially as set forth.

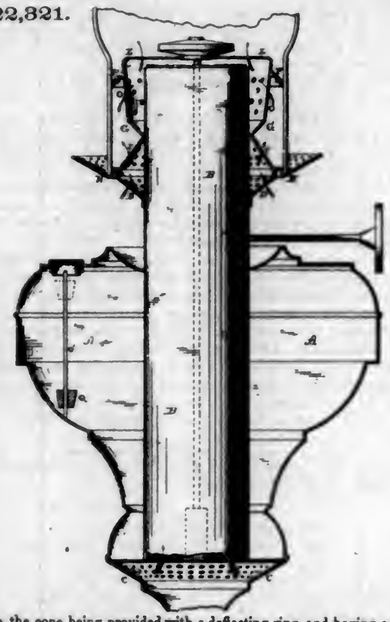
4. In a machine for turning crank and other shafts, two beds arranged to support the shaft on each side of the portion to be operated on, and provided with index lines or marks along their faces, in combination with clamp-blocks having V-shaped jaws and adapted to be secured to the shaft and to the supporting-beds, substantially as set forth.

322,321. ARGAND BURNER. FRANK REDD, Brooklyn, N. Y. Filed Feb. 12, 1885. (No model.)

Claim.—1. In an Argand burner, the combination of the wick-tube, the spreader, a deflecting-ring which conducts the air to the flame, and which is provided on its outer side with a slitted flange forming wings which adjust themselves to the chimney, a support for the deflecting-ring, and a support for the chimney below the slitted flange, substantially as shown.

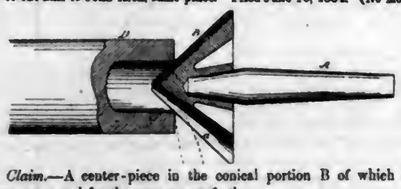
2. In an Argand burner, the combination of the wick-tube, the spreader, and a cone which is supplied to the outer side of the wick-

322,321.



tube, the cone being provided with a deflecting-ring, and having a slitted flange on its outer side forming wings which are adjustable to the size of the chimney on its top, and a support for the chimney on its lower end, the cone being perforated and contracted at or near its center, substantially as described.

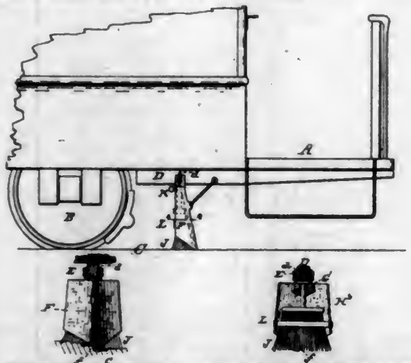
322,322. LATHE-CENTER. GEORGE RICH, Philadelphia, Pa., assignor of one-half to John Rich, same place. Filed June 16, 1884. (No model.)



Claim.—A center-piece in the conical portion B of which is a groove, *a*, as and for the purpose set forth.

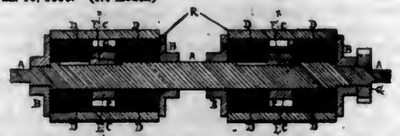
322,323. SNOW-CUTTING AND TRACK-SWEEPING ATTACHMENT FOR RAILWAY-CARS. JACOB RING, Cincinnati, Ohio, assignor, by mesne assignments, to Rosalie Ring and Hattie Lee Powell, both of same place. Filed Sept. 22, 1884. (No model.)

Brief.—An angular cutter-plate is adjustably secured in front of the front car-wheels, and in the angle of the same is adjustably secured a broom or besom, held in place therein by a keeper.



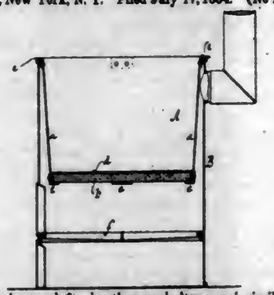
Claim.—The track-clearing attachment for street and other railway vehicles, consisting of the plow or cutter F *f*, having the socket G, the clamp K, and one or more keepers, L, in combination with the broom or besom H J, substantially as set forth.

322,324. FEED-ROLL. JAMES A. ROBERTS, Detroit, Mich., assignor to the Roberts Duplex Planing Machine Tool Company, same place. Filed Jan. 10, 1885. (No model.)



Claim.—A feed-roll for tonguing and grooving machines, consisting of a single shaft carrying two separate cylinders supported thereon by any elastic or yielding material, said shaft and cylinders being provided with teeth, whereby the rotation of the shaft is communicated to the cylinders, substantially as and for the purposes set forth.

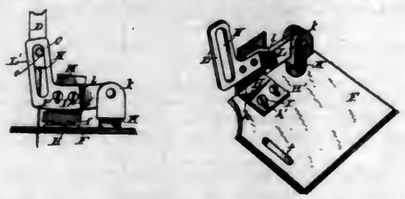
322,325. APPARATUS FOR HEATING ASPHALTUM, &c. JOHN J. SCHILLINGER, New York, N. Y. Filed July 17, 1884. (No model.)



Claim.—1. A vessel for heating asphaltum and similar material, consisting of a furnace having a grate in its lower portion, a metallic jacket suspended above the grate, a bottom of a fire-clay disk arranged within the jacket, and a luting of fire-clay interposed between the circumference of the said disk and the inner surface of the jacket, substantially as and for the purpose described.

2. An apparatus for heating asphaltum and similar material, consisting of a furnace having a grate in its lower portion, a jacket suspended in the furnace and having an inwardly-projecting flange at its lower edge, a bottom of a fire-clay disk supported upon said flange, and a luting of fire-clay interposed between the circumference of the bottom and the inner surface of the jacket, substantially as and for the purpose described.

322,326. TRIMMING ATTACHMENT FOR SEWING-MACHINES. GEORG SCHOEN, New York, N. Y. Filed Feb. 9, 1885. (No model.)



Claim.—1. In a trimming attachment for a sewing-machine, the combination of a plate, F, a stationary knife attached thereto, a standard, K, a lever pivoted near one end in said standard, and near the opposite end attached to the needle-bar, and a knife detachably secured to said lever, substantially as set forth.

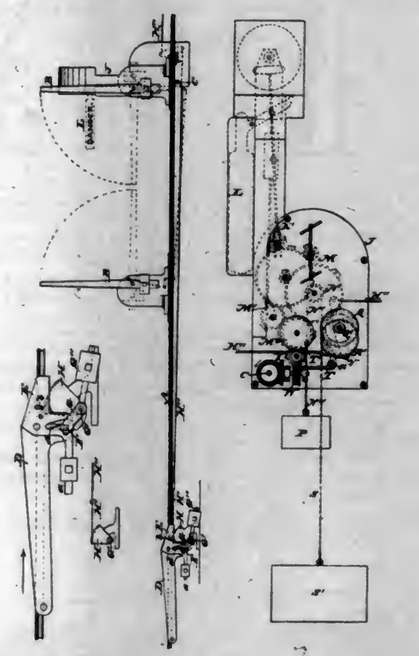
2. In a trimming attachment for a sewing-machine, the combination of a plate, F, a stationary knife attached thereto, a standard, K, a lever pivoted near one end to said standard and attached near the opposite end to the needle, and the knife M, detachably and adjustably secured to the lever, substantially as set forth.

3. In a trimming attachment for a sewing-machine, the combination of a plate, F, a stationary knife attached thereto, a standard or post, K, rising from the plate, a lever pivoted to said standard or post and consisting of the arm L, having the offset *l*, and the upwardly-projecting arm L′, having the slot N, and the knife M, carried by the arm L of the lever, substantially as set forth.

4. In a trimming attachment for sewing-machines, the combination of the plate F, having a recess, F′, along its outer edge, the stationary knife seated in said recess, it consisting of the beveled part H, having the cutting-edge *h*, and the part H′, having its upper face in a plane parallel with plate F, the screws I, and a knife movable toward and from knife H H′, substantially as set forth.

5. In a trimming attachment for sewing-machines, the combination, with a sewing-machine, of a stationary knife, a movable knife, a lever carrying the movable knife, a pin or screw carried by the needle-bar and passing through the lever, and a collar, *o*, surrounding said pin or screw, substantially as set forth.

322,327. AUTOMATICALLY OPERATING GATES AND SIGNALS. JOHN F. SHARP, Philadelphia, Pa., assignor to the United States Automatic Railroad Gate and Signal Company, New York, N. Y. Filed Aug. 5, 1884. (No model.)



Claim.—1. The rails, in combination with two pivoted levers, one of which is weighted and slotted, the other having a pin operating in a slot of the first, a crank having a pin operating in a slot of the weighted lever, an oscillating shaft to which said crank is fastened, a reciprocating rod, and means for converting the oscillating motion of the shaft to the reciprocating motion of the rod, substantially as described.

2. The rails, in combination with pivoted lever D, having pin *c*, the pivoted lever having slots *b* and *d*, crank G, having pin F, oscillating shaft G′, to which said crank G is fastened, rod H″, and means connecting said rod and shaft whereby the oscillating motion of the shaft is converted into the reciprocating motion of the rod, substantially as described.

3. The pivoted levers D E, crank G, with pin F, the shaft G′, and connection H″, in combination with the weighted arm G″, substantially as and for the purpose set forth.

4. The lever D, in combination with the lever E, crank G, and shaft G′, and weighted arm G″, said lever E having an angular slot in which is fitted a pin on the crank G, substantially as and for the purpose set forth.

5. The bell-hammer, in combination with a slotted arm, K′, crank K″, the connection H″, and intermediate gearing, substantially as and for the purpose set forth.

6. The weighted arm, in combination with the crank-wheel M′, mutilated crank-wheel M″, the connection H″, and intermediate gearing, substantially as and for the purpose set forth.

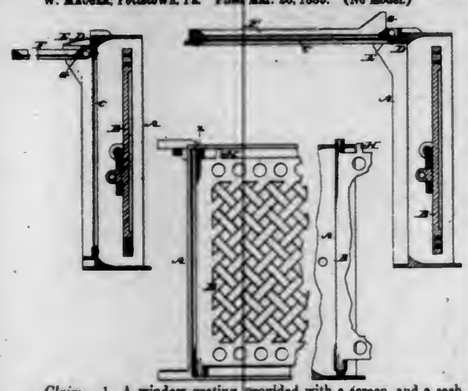
7. The drum N of the gearing M, chain N′, weight P, and drum Q, in combination with the ratchet R, pawl T, and stop T′, substantially as and for the purpose set forth.

8. The drum N of the gearing M, chain N′, weight P, drum Q, mutilated ratchet R, eccentric R′, chain S, weight S′, pawl T, and stop T′, combined and operating substantially as and for the purpose set forth.

9. The drum N, eccentric R′, and ratchet R and pawl, gearing M, the bell, and the signal-arm, in combination with the crank-arm V and connection H″, substantially as and for the purpose set forth.

10. The drum N, eccentric R′, ratchet R and pawl, crank-arm V, connection H″, gearing W and X, and intermediate gearing, in combination with the gate-operating shaft, substantially as and for the purpose set forth.

322,328. WINDOW-GRATING. JOHN W. SHOWALTER and GEORGE W. MAUGER, Pottstown, Pa. Filed Mar. 20, 1885. (No model.)



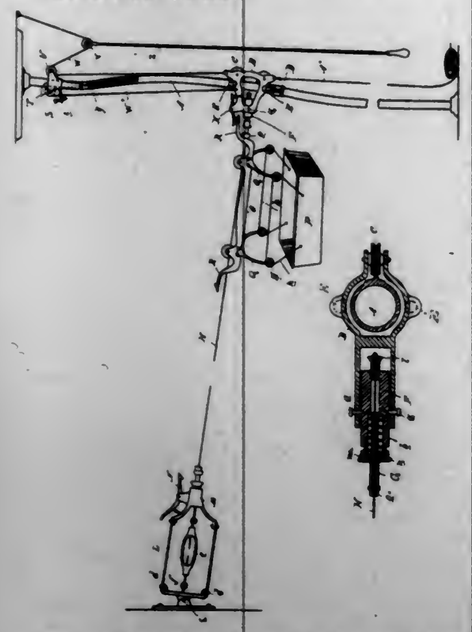
Claim.—1. A window-grating provided with a screen and a sash, both having horizontal and laterally-moving axes, substantially as and for the purpose set forth.

2. In a window-grating, a screen pivoted to the frame of the window, and a sash pivoted to the screen, both screen and sash opening upward, in combination with the frame having a side ledge to support said screen, and the frame of the screen having a side ledge to support said sash, substantially as described.

3. The frame A, screen, and sash, in combination with the shoulders or ledges E G, substantially as and for the purpose set forth.

4. In a window-grating, a swinging door having pivots, substantially as described, in combination with a lug or stop for preventing the displacement of the door within the frame, as stated.

322,329. PARCEL-CARRIER. LUCIEN A. SMITH, Detroit, Mich. Filed Feb. 18, 1885. (No model.)



Claim.—1. In a parcel-carrier between two stations, and in combination with a curved standard, a sliding bracket embracing said standard, and having a buffer-box and a spring-buffer and an anchor-screw between the two ends of the connecting-wire between the two stations constructed and arranged to tighten the same without changing the position of the support, substantially as described.

2. In a parcel-carrier between two stations, the curved standard and the lifting-bracket, in combination with a counterbalance-weight, and the means, substantially as described, for elevating and lowering said sliding bracket, substantially as and for the purposes specified.

3. The combination, with the standard A, having a rib formed integral therewith, of the vertical sliding bracket B, embracing said standard, and provided with grooved rollers C, running on said rib, substantially as and for the purposes specified.

4. In a parcel-carrier between two stations, a standard and a sliding bracket embracing said standard and adapted to slide thereon, and provided with buffers E, as shown, in combination with stops or collars on said standard, to limit the travel of said sliding bracket, substantially as described.

5. In a parcel-carrier between two stations, a carrier-frame provided with travelers adapted to run upon a wire connecting said stations, said frame having hangers Q, carrying rollers *g*, in combination with the basket P and the flexible cords *h*, passing over said rollers, and having both their ends attached to said basket, substantially as described.

6. In a parcel-carrier, the combination, with a standard and a sliding bracket, of a collar, S, carrying rollers T and U, of the cord W', one end secured to said bracket, and the other passing over said roller T and carrying a weight, and the cord W, one end attached to the bracket and passing over the roller U and connected with the hoisting-cord, substantially as and for the purpose specified.

7. In a parcel-carrier between two stations, a curved hollow standard, in combination with a sliding bracket, and the means, substantially as described, for elevating and lowering said bracket, in combination with an articulated counter-weight traveling within the bore of the standard and connected with such sliding bracket, substantially as and for the purposes described.

8. In a parcel-carrier between two stations, a curved standard and sliding bracket, in combination with an adjustable bracket embracing and secured to said standard near its upper end, and having a stop for the purpose of tripping the spring-latch of said sliding bracket, substantially as and for the purposes specified.

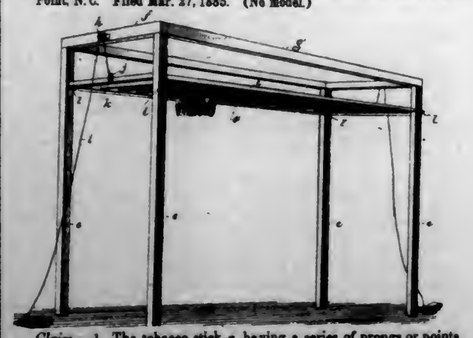
9. In a parcel-carrier between two stations, a frame, L, constructed substantially as described, and pivotally secured to a proper support, and having a buffer-box, spring-buffer, spring-latch, and a suitable swivel for the purpose of securing the end of the wire connection between such stations, the opposite end of the wire being secured to a sliding bracket traversing a curved standard, substantially as and for the purposes described.

10. In a parcel-carrier between two stations, a post or standard, A, a sliding bracket, B, having anti-friction rollers C, rubber buffers E, and buffer-box F, buffer G, buffer-spring *b*, and wire track H, one end of which is secured to an anchor-screw, I, spring-latch K, frame L, spring-buffer M, spring-latch N, and a turn-buckle, *c*, by means of which the opposite end of the wire track is secured, in combination with a carrier-frame, O, provided with travelers, and carrying a basket, P, such carrier-frame having hooks at either end thereof, the adjustable collar-bracket S, and adjustable stop-collar D, the parts being constructed, combined, and operating substantially as and for the purposes set forth.

11. In a parcel-carrier between two stations, and in combination with a curved standard having a sliding bracket traveling thereon, and the stops to limit the travel of such bracket, the pulleys U V, cord W, hoisting-cord Z, and lowering-cord A', substantially as and for the purposes set forth.

12. In a parcel-carrier between two stations, a vertical hollow standard and a lifting-bracket, in combination with a counterbalance-weight traveling within said standard, and the means, substantially as described, for elevating and lowering said bracket, as and for the purpose specified.

322,330. DEVICE FOR CURING TOBACCO. WILLIAM H SNOW, High Point, N. C. Filed Mar. 27, 1885. (No model.)



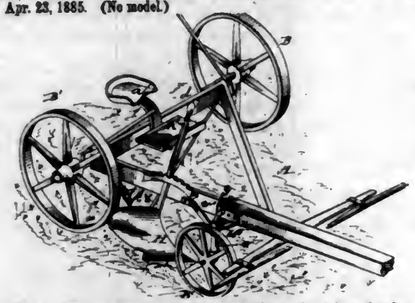
Claim.—1. The tobacco-stick *a*, having a series of prongs or points driven through it and projecting from its opposite sides at right angles to the same, combined with a supporting-rack adapted to receive it and permit its removal at pleasure, substantially as set forth.

2. A tobacco-stick rack composed of a rectangular frame having opposite notches or sockets in its longitudinal members to receive the sticks, and provided with means for facilitating its raising and lowering in position in a barn, substantially as described.

3. A tobacco-stick rack composed of a rectangular frame having opposite notches or sockets in its longitudinal members to receive the sticks, and provided with means for facilitating its raising and lowering in position in a barn, combined with stanchions adapted to receive said racks and pulleys and ropes to engage the racks, substantially as described.

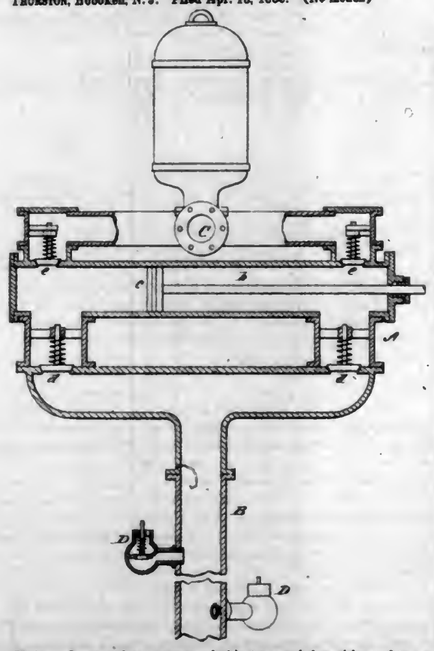
4. The rectangular frame *c*, having its longitudinal timbers notched or socketed at opposite points, combined with the sticks *a*, having the wire prongs *b*, projecting at right angles from opposite sides of the stick, substantially as described.

322,331. SULKY-PLOW. ROBERT A. THOMPSON, Montrose, Mo. Filed Apr. 23, 1885. (No model.)



Claim.—The combination, in a wheel-plow, of a triangular frame, rear wheels, B B', one of said wheels being mounted on the crank-axle, a lever connected to said crank-axle for adjusting the same vertically, the other wheel being connected to the curved axle, and a lever for adjusting the same laterally, a plow pivoted to a standard which depends from the frame, and a lever for holding said plow in position, and a wheel located at one side of the front portion of the triangular frame and adjustable, as specified, substantially as set forth.

322,332. APPARATUS FOR PURIFYING WATER. ROBERT H. THURSTON, Hoboken, N. J. Filed Apr. 18, 1885. (No model.)



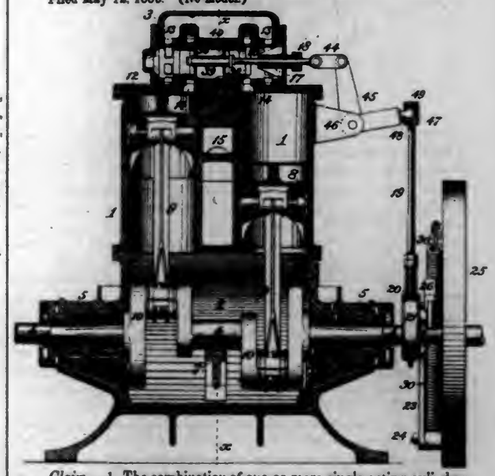
Claim.—In pumping systems suitable for supplying cities and towns with potable water under head or pressure, the combination, with the pumping apparatus, of one or more valves arranged on the suction side of the pump and constructed to admit air by the action of the pump into the water on said suction side for subsequent expulsion along with the water by the pump, substantially as and for the purpose herein set forth.

322,333. MEANS FOR PREVENTING INTERFERENCE IN COMBINED TELEGRAPHIC AND TELEPHONIC SYSTEMS. FRANCOIS VAN RYSSELBERGHE, Schaarbeek, Belgium. Filed June 6, 1885. (No model.) Patented in Germany June 9, 1882, No. 22,633; in Belgium Nov. 16, 1883; in France Nov. 16, 1883; in England Nov. 23, 1883; in Luxemburg Dec. 8, 1883; in Italy Dec. 31, 1883; in Portugal Jan. 18, 1884; in Canada Jan. 24, 1884; in India Jan. 29, 1884; in Sweden Feb. 12, 1884; in Spain Apr. 23, 1884; in Denmark June 18, 1884; in Brazil July 5, 1884; in Argentine Republic July 19, 1884; in Austria Sept. 13, 1884, and in Uruguay Dec. 12, 1884.



Claim.—In a system for the transmission of telegraphic and telephonic messages over adjacent wires or the same line wire or wires, the combination, with the manipulator at each transmitting-station, of two electro-magnets arranged, respectively, between the battery and line, and a condenser placed between the two electro-magnets in derivation on the line, substantially as described.

322,334. STEAM-ENGINE. H. HERMAN WESTINGHOUSE, New York N. Y., assignor to the Westinghouse Machine Company, Pittsburg, Pa. Filed May 12, 1885. (No model.)



Claim.—1. The combination of one or more single-acting cylinders, each having its piston coupled to a crank-pin upon a shaft fitted to rotate in a closed crank case or receptacle, a main or distribution valve adapted to reciprocate longitudinally to the cylinders in a valve-chest communicating therewith by ports opening into their upper ends, an eccentric located upon the shaft exterior to the crank-case, and a bell-crank or angle lever having one of its arms connected to the valve-stem and the other coupled by a universal joint to the rod of the eccentric, substantially as set forth.

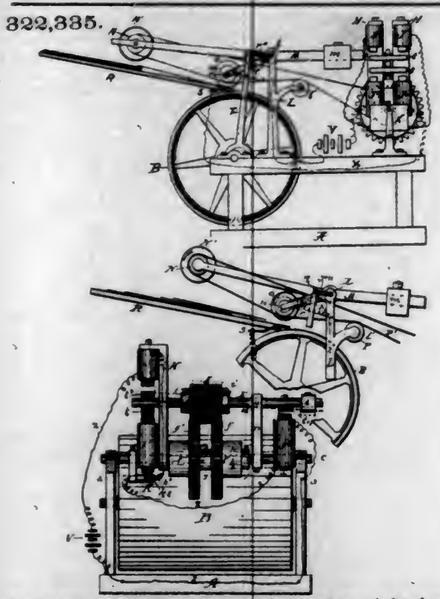
2. The combination of a pair of single-acting cylinders, each having its piston coupled to a crank-pin upon a shaft fitted to rotate in a closed crank case or receptacle, a main or distribution valve reciprocating longitudinally to the cylinders in a valve-chest communicating therewith by ports opening into their upper ends, a centrifugal governor or regulator fixed upon the crank-shaft exterior to the crank-case, an eccentric mounted freely on the shaft and coupled to said governor, and a bell-crank or angle lever having one of its arms connected to the valve-stem and the other coupled by a universal joint to the rod of the eccentric, substantially as set forth.

322,335. ELECTRICAL PRINTING-PRESS FEEDER. JEAN A. WETMORE, Brooklyn, N. Y. Filed Jan. 28, 1884. (No model.)

Claim.—1. The combination, with the driving mechanism of an automatic feeder for printing-presses, of one or more electro-magnets adapted, when excited, to hold said driving mechanism in gear, situated in an electrical circuit which crosses the path of the advancing paper, whereby said circuit is broken by each sheet of paper in its advance to the impression-cylinder.

2. The combination, with the driving mechanism of a printing-press feeder, of one or more electro-magnets adapted, when excited, to hold said driving mechanism in gear, situated in an electrical circuit which crosses the path of the paper on its way to the impression-cylin-

322,335.

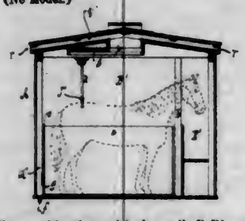


der, whereby said circuit is broken by each sheet of paper in its advance to the impression-cylinder, and of one or more electro-magnets adapted, when excited, to throw and hold said driving mechanism out of gear, situated in an electrical circuit containing a switch controlled by an electro-magnet in said first or main electrical circuit, whereby said switch is held open as long as a current is passing through said main circuit, and closes by gravity or the action of a spring when said main circuit is broken, and of an electrical generator connected in said circuits.

3. In combination with the driving mechanism of a feeder for a printing-press, the electrical generator V, the electrical circuit X, passing through one or more electro-magnets adapted, when excited, to hold said driving mechanism in gear, and completed by two contact-points between which each sheet of paper passes on its way to the impression-cylinder, thereby breaking said circuit, and of the auxiliary circuit Z, passing through one or more electro-magnets adapted, when excited, to throw and hold said driving mechanism out of gear, and completed by a switch, k' k^2, controlled by an electro-magnet in circuit X, substantially as shown and described.

4. In a printing-press feeder, the combination of the electrical contact-piece S, contact-wheel O, the point of mutual contact being on the line of the advancing paper, the rock-shaft *l*, carrying arms *n n*, lever *r''*, eccentric-rod T, and an eccentric on the impression-cylinder, whereby when contact between S and O is temporarily broken by a sheet of paper the wheel O is raised to permit free removal of said paper, substantially as shown and described.

322,336. STOCK-CAR. JAMES H. WICKES, New York, N. Y. Filed June 4, 1885. (No model.)



Claim.—1. The combination, with the stalls B B' and the entrance-compartment D, intermediate between said stalls, of the water-tank H in one end of the car, and the feed-tank I in the opposite end of the car, substantially as shown and described.

2. In a stock-car, the combination, with the stalls for receiving the animals, of clearing-compartments G, substantially as shown and described.

3. In a stock-car, the combination, with the stalls for receiving the animals, of the clearing-compartments G, one for each stall, the doors *g*, forming a communication between the clearing-compartments and the corresponding stalls, and the discharge-pipe *f*, substantially as shown and described.

4. In a stock-car, the combination, with the stalls for receiving the animals, of the ventilating-shutters S in the roof, and the air-channels *q*, substantially as shown and described.

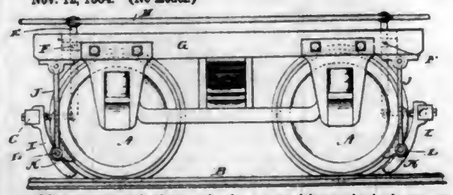
5. In a stock-car, the combination, with the stalls B B', the clearing-compartments G G', the discharge-pipes *f*, and the doors *g*, of ventilating-shutters in the roof and the air-channels *q*, substantially as shown and described.

6. The combination, with the stalls receiving the animals, of the hangers *j k*, the kicking-rope J, secured to said hangers, and a tightening mechanism secured to one of the hangers and connected with one end of the rope for straining said rope and keeping it taut, substantially as shown and described.

7. The combination, with the stalls B B' and the entrance-compartment intermediate between said stalls, of the hinged hangers *j* in the entrance-compartment, the rigid hangers *k* in the end compartments, and the kicking-ropes J J', secured to said hangers, substantially as shown and described.

8. The combination, with the stalls for receiving the animals, of the hangers *j k*, the notches formed in the edges of the hangers, the kicking-rope secured in these notches, and a tightening mechanism secured to one of the hangers, substantially as shown and described.

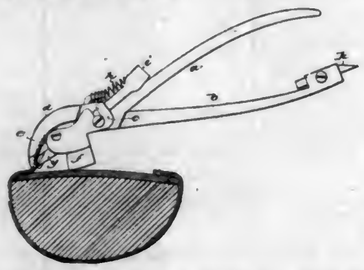
322,337. CAR-BRAKE. SAMUEL T. WILLIAMS, Red Bank, N. J. Filed Nov. 12, 1884. (No model.)



Claim.—1. A brake mechanism comprising a brake-beam suspended from the car by radius-bars, a heel-piece attached to said beam to engage the rail, a shoe pivoted to said heel-piece to engage the tread of the wheel, and a lever pivoted to the car-frame and jointed to the brake-beam, and means to operate said lever to tilt the brake-beam and heel-piece, substantially as described.

2. The combination of the brake-beam jointed to a lever pivoted in the car-frame, a heel-piece rigidly affixed to said beam, a radius-bar jointed to the heel-piece and car-frame, and a brake-shoe pivoted to said heel-piece, substantially as set forth.

322,338. LASTING-PINCHERS. HOSEA P. ALDRICH, Boston, Mass. Filed Oct. 27, 1884. (No model.)



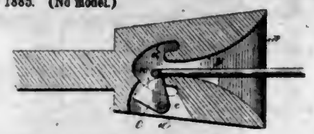
Claim.—1. The combination of the jaws of a pair of pinchers to grasp and hold leather, with a cutting device mounted thereon and having an independent movement with relation to the jaws, to cut the material while held by the jaws, substantially as described.

2. The pivoted members, *e a* and *d b*, constituting the jaws and handles of a pair of pinchers, combined with a cutting device, *g*, having its cutting-edge arranged to act on the material while held by the jaws, and a handled portion adapted to be engaged and operated by a portion of the hand of the operator grasping the handles of the pinchers, substantially as described.

3. The lasting-pinchers having handles to be grasped by the hand and jaws to grip the edge of a boot or shoe upper, combined with the cutting device, substantially as described, connected with the said pinchers and adapted to be operated by the hand grasping them, the edge of the said cutting device being inclined with relation to the jaws, whereby it acts on the material held by them with a drawing cut, substantially as described.

4. The lasting-pinchers combined with a cutting device, substantially as described, and retracting-spring therefor, whereby it is normally held retracted from the space between the jaws, substantially as described.

322,339. CAR-COUPLING. ELIAS W. ALLEN, Lynnville, Iowa. Filed Apr. 20, 1885. (No model.)



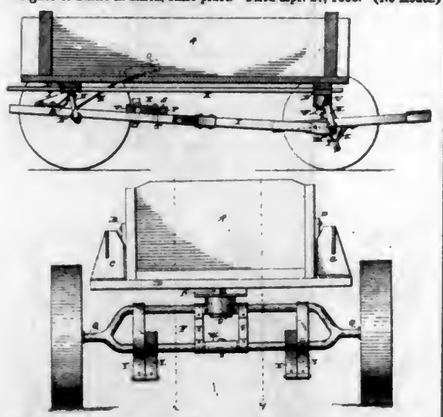
Claim.—1. The combination of the draw-head having the interior coupling-hook and the cam-piece arranged at the bottom of the draw-head in rear of the hook, for the purpose set forth.

2. The combination of the draw-head having the interior rearwardly-extending coupling-hook integral therewith and the cam-piece secured upon a transverse shaft at the bottom of the draw-head in rear of the hook, as set forth.

3. The combination of the draw-head having the interior coupling-hook, the transverse shaft arranged at the rear of said hook, and the cam-piece secured centrally upon the transverse shaft, for the purpose set forth.

4. The reversible draw-head having at both its upper and lower sides the interior rearwardly-extending coupling-hook, the vertical slot for the cam-piece, and the horizontal opening for the transverse shaft upon which the said cam-piece is secured, in combination with the cam-piece and its operating-shaft, as set forth.

322,340. WAGON-BRAKE. EDWARD M. ALLEN, Stafford, Md., assignor to Sallie E. Allen, same place. Filed Apr. 27, 1885. (No model.)



Claim.—1. In a wagon-brake, an oscillating or rocking axle connected to and operating the brake, substantially as and for the purpose specified.

2. In a wagon-brake, an oscillating or rocking axle connected to the wagon-body and to the brake, and automatically operating the same, substantially as and for the purpose specified.

3. In a wagon-brake, an axle having one section or portion three times as far above the axis thereof as the other section or portion is below the said axis, substantially as and for the purpose specified.

4. In a wagon-brake, a divided front and rear oscillating or rocking axle, in combination with the bolsters secured by suitable bearings to the upper sections of the axles and hounds and perch secured by suitable bearings to the lower sections, the rear hounds supporting the brake-bar, substantially as and for the purpose specified.

5. In a wagon-brake, an oscillating or rocking front axle pivotally connected and swiveled to the perch and front bolster, substantially as and for the purpose specified.

6. In a wagon-brake, in combination with oscillating or rocking axles connected by perch and hounds, fixed bolsters to which the axles are connected, said bolsters being held in position by an additional or supplementary perch, substantially as and for the purpose specified.

7. In a wagon-brake, a brake or lock bar adjustably held to the rear hounds relative to the wheels by means of pins passing through perforated plates on cross-pieces secured to said hounds and engaging with said bar, substantially as and for the purpose specified.

8. In a wagon-brake, an oscillating or rocking axle, in combination with hounds pivoted thereto and provided with stops to the rear thereof, substantially as and for the purpose specified.

9. In a wagon-brake, an oscillating or rocking axle, in combination with hounds pivoted thereto and provided with stops to the rear thereof, said stops having spring-buffers, substantially as and for the purpose specified.

10. In a wagon-brake, a front oscillating or rocking axle pivoted to a swivel, turn-plate, or fifth-wheel, which is pivoted to the bolster, substantially as and for the purpose specified.

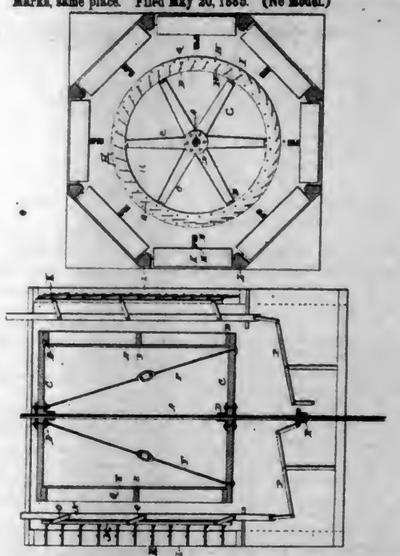
11. In a wagon-brake, a divided axle having stirrups or struts supporting and strengthening the said axle, substantially as and for the purpose specified.

12. In a wagon-brake, in combination with a divided axle, extended struts or stirrups on the said axle, and hounds having hangers which are pivoted to the said struts, substantially as and for the purpose specified.

13. In a wagon-brake, a divided axle pivoted to the hounds and bolsters and having collars shrunk or formed on it to prevent lateral motion in the pivotal bearings, substantially as and for the purpose specified.

14. In a wagon-brake, in combination with a divided axle, a hook secured to the axial portion of said axle and engaging adjustably with the body, substantially as and for the purpose specified.

322,341. WINDMILL. WILLIAM R. ALLEN, Cape Vincent, N. Y., assignor of three-fourths to Philip Marks, Lewis C. Marks, and Henry W. Marks, same place. Filed May 20, 1885. (No model.)



Claim.—1. In a windmill, a wheel or motor with a series of vertical sails or wings pivoted at one edge and a double series of stops, one series interior to and the other series exterior to the pivotal points of the sails and arranged relative thereto, substantially as and for the purpose specified.

2. In a windmill, a wheel or motor with a series of vertical sails pivoted at one corner and a double series of stops, one series exterior to and the other series interior to the pivotal points of the said sails, the said stops being so arranged relative to the sails that they will present a greater angle to the plane of the direction of the wind when against one series than when against the other series, substantially as and for the purpose specified.

3. In a windmill, a series of shutters exterior to the wheel or motor, said shutters being pivoted horizontally and connected to a central bar operating all simultaneously, and a bar having a guided movement in the mill-frame and parallel to and connected to the shutter-bar by links, substantially as and for the purpose specified.

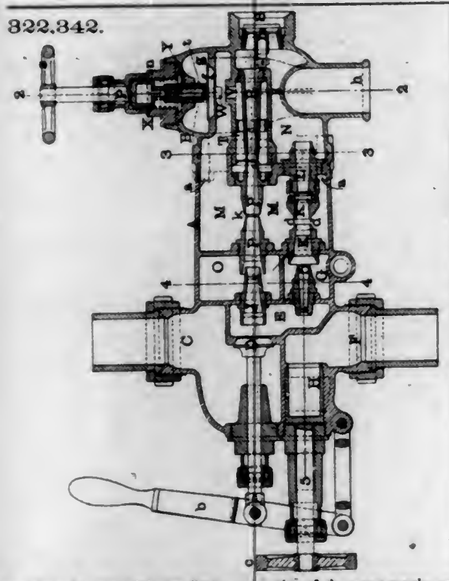
4. In a windmill, one or more series of shutters exterior to the wind-wheel or motor pivoted horizontally and connected to a central bar operating all simultaneously, a bar guided in the frame of the mill and parallel to and connected to the shutter-bar by links, a counterbalancing-weight on the wheel-shaft, and connecting levers and links from the guide-bar to the said weight, substantially as and for the purpose specified.

322,342. INJECTOR. J. SELLERS BANCROFT, Philadelphia, Pa., assignor to William Sellers, same place. Filed Feb. 24, 1885. (Model.)

Claim.—1. In a double jet-injector, a first set of jet apparatus provided with overflow-space in the combining-tube at a point in the rear of that where the cross-sectional area of this converging tube contracts to less than four times the area of the smallest cross-section of the steam-nozzle, substantially as and for the purposes set forth.

2. In combination with overflow-space in the first set of jet apparatus, located in the combining-tube at a point in the rear of that where the cross-sectional area of this converging tube contracts to less than

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four times the area of the smallest cross-section of the steam-nozzle, an additional overflow-opening in this combining-tube nearer the smallest diameter of the delivery-tube, the combination being and operating substantially as described.

3. In a double jet-injector, a second set of jet apparatus provided with overflow-space in the combining-tube at a point in the rear of that where the cross-sectional area of this converging tube contracts to an area equal to that of the smallest cross-sectional area of the steam-nozzle, substantially as and for the purposes set forth.

4. In combination with overflow-space in the second set of jet apparatus, located in the combining-tube at a point in the rear of that where the cross-sectional area of this converging tube contracts to an area equal to that of the smallest cross-sectional area of the steam-nozzle, an additional overflow-opening in this combining-tube nearer the smallest diameter of the delivery-tube, the combination being and operating substantially as described.

5. In combination with the first set, constructed and operating substantially as described, the second set correspondingly provided with two overflow-openings respectively located and arranged therein, as set forth, the two sets being combined and operating in combination, substantially as described, so that the instrument will automatically establish and re-establish its own jet, as set forth.

6. An overflow-chamber common to one or more of the overflow-openings located in each set of jet apparatus, substantially as described, and for the purposes set forth.

7. In combination with an overflow-chamber common to one or more of the overflow-openings of each set of jet apparatus, an overflow check-valve so arranged that all the overflow-openings which are connected with the overflow-chamber shall be submerged before any water can escape through the overflow check-valve, the combination being and operating substantially as described.

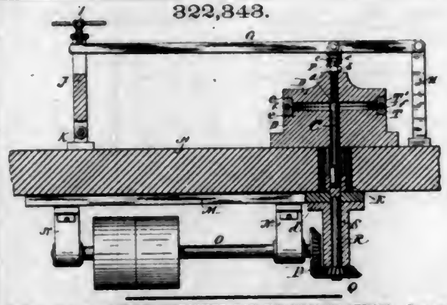
8. An overflow-chamber common to one or more of the overflow-openings of each set of jet apparatus and an overflow-chamber which receives the final overflow of the second set, in combination with a valve which controls the communication between the two overflow-chambers, substantially as and for the purpose described.

322,343. MACHINE FOR ROLL-FINISHING SEAMLESS BALLS. ALBERT BEBEE and JOSEPH T. BACON, Plainville, Mass. Filed Apr. 3, 1884. (No model.)

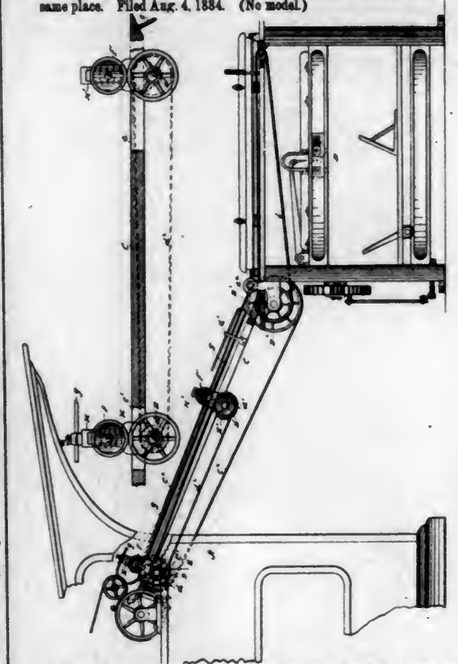
Claim.—1. The combination of the shaft R, provided at its upper end with a socket, E, with a stationary bed-piece, B, to which is secured a die, T, having an annular groove, *f*, made semicircular in its cross-section, the shaft C, and wheel D, provided with the die T′, having an annular groove, *f*, also semicircular in its cross-section, and means for raising and lowering the wheel D, substantially as and for the purpose specified.

2. In a machine for roll-finishing seamless balls, the combination of the wheel D, provided with the annular die T′, and shaft C, with the stationary bed-piece B, provided with the annular die T, and forming a bearing for the shaft C, and means for raising and lowering the wheel D, substantially as described.

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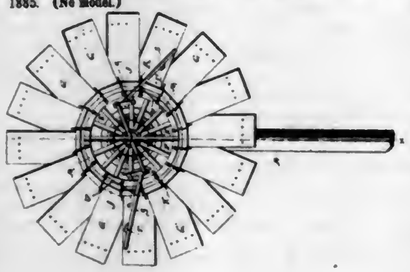
322,344. SHEET-CONVEYER FOR FOLDING-MACHINES. RICHARD T. BROWN, Erie, Pa., assignor to the Brown Folding Machine Company, same place. Filed Aug. 4, 1884. (No model.)



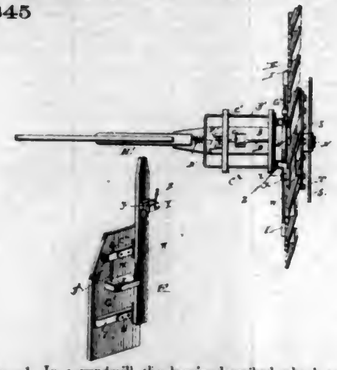
Claim.—1. In a sheet-conveyer for connecting a printing-press and a folding-machine, the combination, substantially as described, of a table which spans the space between said machines, and two sets of conveyer-rolls, between which the sheets pass, connected with said table, and arranged relatively as set forth, the second of which sets is operated at a slower speed than the first, for the purposes mentioned.

2. In a sheet-conveyer for connecting a printing-press with a folding-machine, the combination, substantially as described, of the table C, having notches and slots, as described, the shafts D and D′ with rollers E and E′, the shafts F and F′ with the rollers *f* and *f*″, and the bridges G and G′, holding the guides *g g g*, &c.

322,345. WINDMILL. JOSEPH BURRY, Gridley, Ill. Filed Apr. 22, 1885. (No model.)



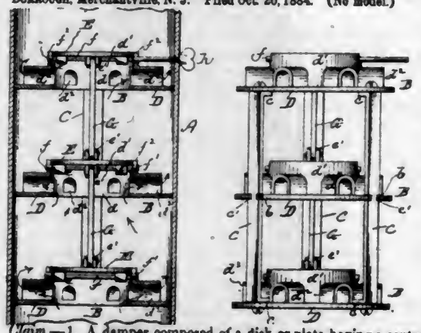
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Claim.—1. In a windmill, the herein-described wheel, consisting of a hub having radial arms, the vanes hinged to the said arms, a pair of blocks secured to the front sides of the said arms on diametrically-opposite sides, a cross-bar connecting the said blocks and having a center pin or pivot, a ring having a cross-bar by which it is mounted to turn and to slide upon the said center pin, swiveled cranks connecting the said ring with the free corners of the vanes, and a pair of centrifugal arms pivoted in the blocks upon the face of the wheel, and connected with the adjusting-rings by pivoted rods, substantially as and for the purpose herein set forth.

2. The combination of the crank-shaft, the hub having radial arms or spokes, the vanes hinged to the latter, the adjusting-ring connected with the free corners of the vanes by swiveled cranks, the centrifugal arms connected with the adjusting-ring by pivoted rods, the spring-rods attached to the rear sides of several of the vanes and having cranks at their inner ends, and a ring mounted upon a longitudinally-sliding bail and adapted to bear against the said cranks, substantially as and for the purpose herein set forth.

322,346. DAMPER FOR STOVE AND OTHER PIPES. MARK S. BURROUGH, Merchantville, N. J. Filed Oct. 20, 1884. (No model.)



Claim.—1. A damper composed of a disk or plate having a central aperture bounded by a vertical annular flange from which radiates a series of openings or flues, and a rotary valve or cut-off placed in said flanged aperture and located beyond the plane of said flues or openings, substantially as shown and described.

2. The combination of a series of dampers, B, having central flanged openings or vertical flues, *d*′, radial flues *d*², rotary valves E, located in flues *d*′ beyond the plane of flues *d*², and link-connections for said valves, substantially as and for the purpose set forth.

3. The damper B, composed of a plate or disk, D, having central flanged opening or flue, *d*′, radial openings or flues above and below plate D, and communicating with flue *d*′, and a rotating valve at each end of the latter, substantially as shown and described.

4. A damper composed of disk D, having central aperture, *d*, and flanges *d*′, radial openings *d*² in said flanges, and double valves E, linked together and arranged for operation substantially as shown and described.

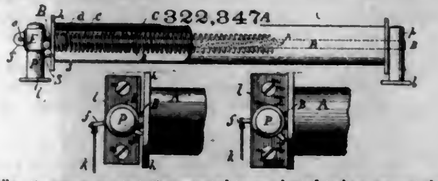
5. In combination with dampers B, the supporting-rods C, having bent ends *c*, and notches *c*′, substantially as and for the purpose set forth.

322,347. SPRING-ROLLER CURTAIN-FIXTURE. ELIAS R. CAREY, Philadelphia, Pa. Filed Aug. 19, 1884. (No model.)

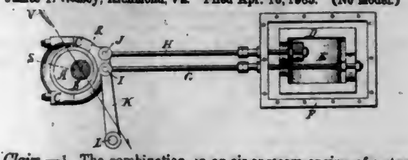
Claim.—1. The combination of the roller or barrel provided with inclined recesses, the rod upon which the same is mounted, the longitudinal and rotary actuating-spring, the teeth or holes on the end of the roller, the engaging stud, the mounted lever adapted to bear against the face of the roller-head, and a cord attached to the other end of said lever, together with the end supporting-posts, all constructed and adapted to operate substantially in the manner and for the purposes set forth.

2. The combination of the rotatable barrel, the fixed rod B, posts P *p*, spring C, recesses *t*, cams *g*, stud *s* on one of the posts *p*, and the rotatable slotted sleeve provided with the arms J and *f*, all constructed and adapted to operate substantially as and for the purpose specified.

322,347.



322,348. VALVE-MOTION FOR STEAM-ENGINES. WILLIAM G. CHAPIN, Brooklyn, N. Y., assignor, by direct and mesne assignments, to James T. Halsey, Richmond, Va. Filed Apr. 16, 1883. (No model.)



Claim.—1. The combination, in an air or steam engine, of a steam-chest, a main valve operating in connection therewith, a cut-off valve sliding upon said main valve, a valve-operating eccentric, an eccentric-strap surrounding and actuated by said eccentric, a valve rod or stem pivoted to said eccentric-strap and connected direct with the main valve, and a valve rod or stem likewise pivoted to said eccentric-strap and connected direct with the cut-off valve, the arrangement and operation being substantially such as are hereinbefore set forth.

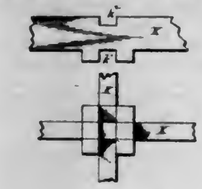
2. The combination, in an air or steam engine, of a steam-chest, a main valve operating in connection therewith, a cut-off valve sliding upon said main valve, a valve-operating eccentric, an eccentric-strap surrounding and actuated by said eccentric, a valve rod or stem pivoted to said eccentric-strap and connected direct with the main valve, a valve rod or stem likewise pivoted to said eccentric-strap and connected direct with the cut-off valve, and a rocking arm pivoted to a fixed point exterior to the eccentric-strap and also pivoted to said eccentric-strap, substantially as and for the purposes specified.

3. The combination, in an air or steam engine, of a steam-chest, a main valve operating in connection therewith, a cut-off valve sliding upon said main valve, a valve-operating eccentric, an eccentric-strap surrounding and actuated by said eccentric, a valve rod or stem pivoted to said eccentric-strap and connected direct with the main valve, a valve rod or stem likewise pivoted to said eccentric-strap and connected direct with the cut-off valve, and a rocking arm pivoted to a fixed point exterior to the eccentric-strap and also pivoted to said eccentric-strap at a point coincident with the pivot of the main valve-stem, substantially as and for the purposes specified.

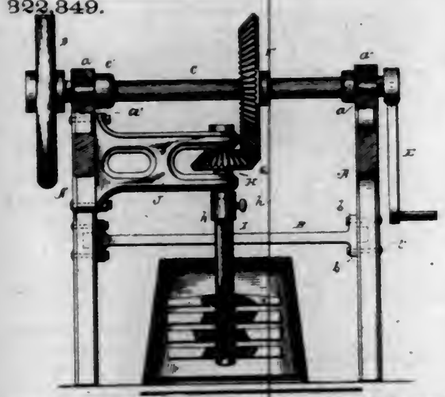
4. The combination, to form a valve-gearing for an air or steam engine, of a steam-chest, a main valve operating in connection therewith, a cut-off valve sliding upon the main valve, a valve-operating eccentric, an eccentric-strap connected with and actuated by said eccentric, a valve-rod pivoted to the eccentric and connected direct with the main valve, a second valve-rod pivoted to the eccentric in line above the valve-rod last mentioned and connected direct with the cut-off valve, and a strap-controlling arm pivoted to a fixed point exterior to said arm and also pivoted to said strap at a point on a line joining the pivots of the valve-stems, substantially as set forth.

322,349. CHURN. NORMAN E. COFFIN, Elm Hall, Mich. Filed Mar. 25, 1885. (No model.)

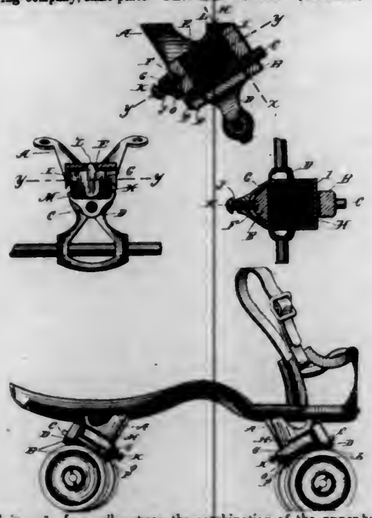
Claim.—The combination, with a dasher-shaft having kerfs formed at right angles therein, of dasher-arms alternately seated within said kerfs, each arm, except the top one, having a projection formed on one edge only and centrally notched, and a corresponding notch formed in its upper edge, as and for the purposes specified.



322,849.



322,850. ROLLER-SKATE. THOMPSON M. CONNER and THEODORE M. CONNER, Richmond, Ind., assignors to the Conner and Mather Manufacturing Company, same place. Filed Mar. 20, 1885. (No model.)



Claim.—1. In a roller-skate, the combination of the upper bracket having the lips confining the elastic block endwise, the elastic block, the lower bracket confining the elastic block from below, and a stirrup-shaped frame surrounding the elastic block bearing against one end and the sides of the same, and having means, substantially as shown, for tightening its inner end piece against the end of the block, as and for the purpose shown and set forth.

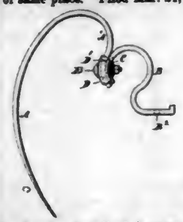
2. In a roller-skate, the combination of the elastic block, the upper bracket having the downwardly-projecting lips, the lower bracket pivoted with its upper flat end between the said lips, a stirrup-shaped frame bearing with its inner end and with its side pieces against the end and sides of the block, and a screw passing through the outer end piece of the frame and bearing with its inner end against the lip of the upper bracket, as and for the purpose shown and set forth.

3. The combination of the upper bracket, A, having the lips B B and formed with the longitudinal slot E, the elastic block, the lower bracket pivoted between the lips of the upper bracket, and the stirrup-shaped frame having the upwardly-projecting lug L and the set-screw K, as and for the purpose shown and set forth.

4. The combination, in a roller-skate, of the upper bracket, A, having the lips B B, the longest one of which is provided with the recess F, the elastic block, the lower bracket fitting between the lips B, the pivotal pin C, passing through the perforated lips B and having head P, and the stirrup-shaped frame G, having its inner end piece bearing against the elastic block, and having the lip O, projecting downward from its outer end piece, and the screw K, passing through the said end piece and fitting into the recess F, as and for the purpose shown and set forth.

5. In a roller-skate, the combination of the upper bracket having the perforated lips B B, the longer one of which has the recess F above the perforation, the elastic block, the lower bracket pivoted between the perforated lips, the pivotal pin C, having head P and passing through the perforated lips and through the upper end of the lower bracket, and the stirrup-shaped frame formed with the downwardly-projecting lip M upon its inner end piece and with the downwardly-projecting lip O upon its outer end piece, and having the set-screw K, fitting with its inner end into the recess F, as and for the purpose shown and set forth.

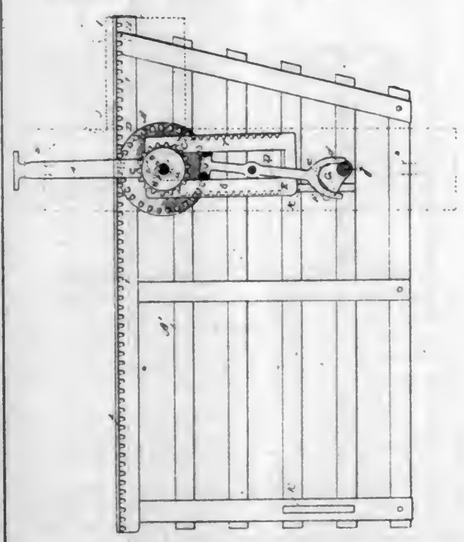
322,851. SPRING HARROW-TOOTH. THOMAS G. COOK, Brockville, Ontario, Canada, assignor of one-half to Vanranselier Marshall and James A. Publow, both of same place. Filed Mar. 21, 1885. (No model.)



Claim.—1. The herein-described harrow-tooth, consisting of a spring-tooth-holder section, B, of flat steel bent circularly at one end and oppositely turned at the other end, a spring-tooth section, A, curved at the heel to coincide with the circular bend or section B, and a bolt or clamp holding both sections together at the meeting parts, whereby the holder-section will straighten and lift the tooth-section when excessively strained and the pitch and depth of penetration of the tooth-section may be adjusted at one operation, as set forth.

2. The combination, with the curved spring-tooth section A, having an arc curve at the heel slotted longitudinally, of the flat spring-tooth-holder section B, circularly curved and slotted at one end and turned outwardly at the opposite end, block C, curved flange-plate D, and nutted bolt E, whereby both sections are re-enforced at the slotted curves, as set forth.

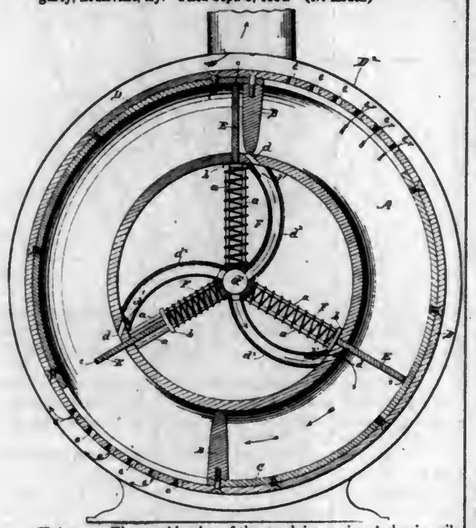
322,852. GATE. WILLIAM H. COX, Virden, Ill. Filed Nov. 12, 1884. (No model.)



Claim.—1. A suspended gate resting upon a cogged wheel, a supporting-shaft for said wheel, clutch-gears on the hub of said wheel adapted to act in opposite directions, a slotted plate or bar straddling the said hub between the clutch-gears, rack-teeth on diagonally-opposite sides thereof adapted to mesh with the clutch-gears, and a pivoted bar fitted to the opening in the plate D and adapted to move said plate into gear with one clutch-gear or the other, and the operating-levers connected with the plate D, the parts being combined substantially as described.

2. The combination, in a gate having a track resting upon a cogged wheel, A, of the plate or frame D, the gears *c c'*, adapted to the racks of the said frame D, the lever E, shifting cam-plate G, weighted lever F, and projections on the gate, all operating substantially as described.

322,353. ROTARY ENGINE. FREDERICK H. CRASS, Murfreesborough, Tenn., assignor of one-fourth to William P. Fogarty and Charles F. Fogarty, Louisville, Ky. Filed Sept. 3, 1884. (No model.)



Claim.—1. The combination of the revolving casing A, having rib or slide C, piston B, and exhaust-ports *e*, in combination with the annular steam-chamber made in two parts, A A, and the sliding gates, as and for the purpose described.

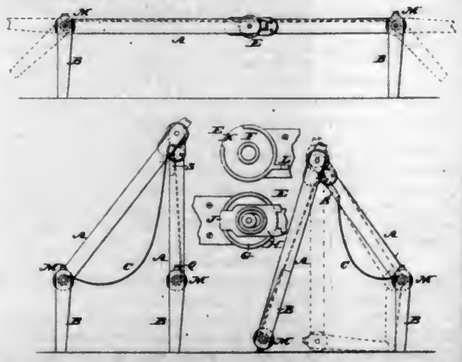
2. The combination of the revolving casing having a piston attached thereto and projecting inwardly, an annular steam-chamber made in two parts, having a space between them at the middle peripheral line, the inwardly-sliding spring, seated radial gates having cross-heads *b*, and arms *f*, with pins *g*, and cams arranged upon the flanges of the outer casing, as and for the purpose described.

3. The combination, with the steam-chamber A, of the sliding gates E, having cross-heads *b* and arms *f*, the parallel bars *a a*, and the spring F, surrounding said bars and bearing against the cross-head of the sliding gate, as and for the purpose described.

4. The combination, in a rotary engine, of the steam-chamber, its rotary piston, the sliding gate, and a concentric flange, h^3, for holding the sliding gate tightly to its place across the steam-space.

5. The combination, with an annular steam-chamber having a slot or space communicating with the steam-space throughout its entire middle peripheral line, of the revolving casing having a piston projecting inwardly into the steam-space, and a rib or slide, C, extending a part of the distance between the pistons and filling the middle slot of the steam-space, and outlet-openings or exhaust-ports in the said casing between the end of the rib or slide and the next adjacent piston, as described.

322,354. CONVERTIBLE COT, CHAIR, &c. PETHERICK DAVEY, Philadelphia, Pa., assignor of one-half to William Cilla, same place. Filed Mar. 20, 1885. (No model.)

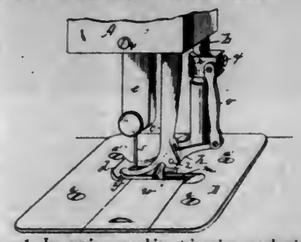


Claim.—1. A combined cot and chair formed of sectional side rails, the adjacent ends of said rails being pivoted together and provided on the contiguous surfaces with plates or disks, one of the said disks being provided with a sliding catch and the other having a recess and a lug, said disks with said catch, recess, and lug forming a lock, substantially as described.

2. In a combined chair and cot, the frame A, formed of sectional side rails, in combination with the disk G, having the sliding catch H, and the disk F, having the recess K, adapted to receive the catch H, the said disk F having also the lug L, said parts being arranged and combined substantially as set forth.

3. In a cot having side rails and pivoted legs, the rounds of the cot, having elliptical shaped tenons, and disks connected with the legs, having mortises to receive said tenons, substantially as and for the purposes set forth.

322,355. TRIMMING ATTACHMENT FOR SEWING-MACHINES. FRED B. DILLINGHAM, Freeport, Me., assignor of one-half to John E. Abbott, Watertown, Mass. Filed May 11, 1885. (No model.)



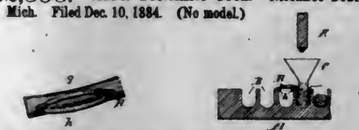
Claim.—1. In sewing-machine trimming mechanism, the combination of the following elements, viz: a presser-bar having reciprocating vertical movements, a feed-bar located above the cloth-plate, having reciprocating vertical and vibratory movements, a cutting-blade pivoted on said feed-bar near its foot, having its cutting end extending toward the toe thereof and its opposite end pivotally connected with said presser-bar, and a cloth-plate having a slot therein under the cutting-blade, one of whose edges is parallel with the side of the latter, substantially as set forth.

2. In sewing-machine trimming mechanism, the combination of a presser-bar having reciprocating vertical movements, a feed-bar located above the cloth-plate, having reciprocating vertical and vibratory movements, a cutting-blade having a downwardly-projecting heel thereon, pivoted on said feed-bar near its foot, having its cutting end extending toward the toe thereof and its opposite end pivotally connected with said presser-bar, and a cloth-plate having a slot therein under the cutting-blade, one of whose edges is parallel with the side of the latter, substantially as set forth.

3. In a sewing-machine provided with a presser-bar having normally reciprocating vertical motions, and with a feed-bar above the cloth-plate, having normally reciprocating vertical and vibratory motions, the combination, with said two bars, of a cutter-blade, substantially as described, pivoted to the feed-bar, and having a pivotal connection with the presser-bar, whereby said blade is given a vibratory motion in a plane at right angles to the cloth-plate, substantially as set forth.

4. In a sewing-machine provided with a presser-bar having normally reciprocating vertical motions, and with a feed-bar above the cloth-plate, having its foot slotted in the direction of its length, and having normally reciprocating vertical and vibratory motions, the combination, with said two bars, of a cutter-blade, substantially as described, pivoted to the feed-bar, and having its free end extending between the sides of the slot in said foot and its opposite end pivotally connected to said presser-bar, and the cloth-plate having a slot therein, one of whose edges is adjustable to and from said cutter-blade, substantially as set forth.

322,356. CIGAR-BUNCHING TOOL. NICOLAUS DOETSCH, Detroit, Mich. Filed Dec. 10, 1884. (No model.)



Claim.—1. The combination, with a mold-board provided with molds B, of a funnel, C, and the plate H, provided with means for preventing its lateral displacement, and having one of its sides constructed to fit against the side of said funnel, substantially as and for the purposes specified.

2. The plate H, having the curved edge *g*, and a projecting flange, A, upon its under side, which latter fits into a cigar-mold, and keeps the plate H in position when used as a cover for such mold.

322,357. CIGAR-BUNCHING TOOL. NICOLAUS DOETSCH, Detroit, Mich., assignor of one-half to John B. Klee, same place. Filed Dec. 10, 1884. (No model.)

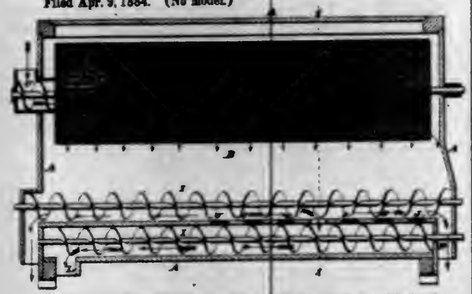
Claim.—The combination, with a mold-board provided with molds B, of the funnel C, having a flaring mouth, and an oval spout, *b*, hav-

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ing vertical sides, and rings *a*, attached to opposite ends of said flaring mouth, and a follower, as E, conforming in cross-section to the outline of the funnel-spout, and having its under face slightly curved, substantially as and for the purpose specified.

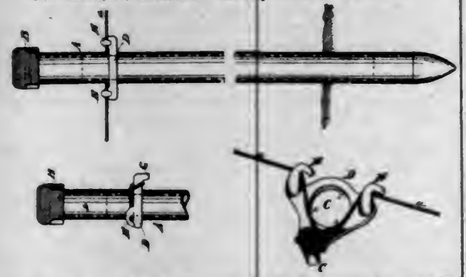
322,358. BOLTING-REEL. ROBERT L. DOWNTON, St. Louis, Mo. Filed Apr. 9, 1884. (No model.)



Claim.—1. A bolting-reel covered with fine cloth suitable for dressing flour at its head part or portion, and covered at its tail or rear portion with cloth of progressive degrees of coarseness suitable for allowing the passage through the meshes of the cloth of material not sufficiently reduced, in combination with a conveyer having a right-and-left screw, one part of the screw being beneath the part of the reel that is covered with fine cloth, to move the fine flour toward the head of the reel, and the other part of the screw being beneath the portion of the reel that is covered with cloth of progressive degrees of coarseness, to move the coarse flour toward the tail of the reel, substantially as set forth.

2. A bolting-reel covered with fine cloth at its head part or portion, and covered at its tail or rear portion with cloth of progressive degrees of coarseness, in combination with a conveyer having a right-and-left screw, one part of the screw being beneath the part of the reel that is covered with fine cloth, to move the fine flour toward the head of the reel, and the other part of the screw being beneath the portion of the reel that is covered with cloth of progressive degrees of coarseness, to move the coarse flour toward the tail of the reel, and a second conveyer beneath and separated therefrom by a partition provided with valves or slides beneath the part of the upper screw that conveys toward the tail of the reel, said valves permitting a discharge of the coarse flour from the upper conveyer to the lower, at any desired point, from where it is moved by the lower conveyer toward the head of the reel, substantially as set forth.

322,359. WIRE-FASTENING DEVICE FOR FENCE-POSTS. IGNATIUS DROEGE, Jr., Toledo, Ohio. Filed Apr. 17, 1885. (No model.)



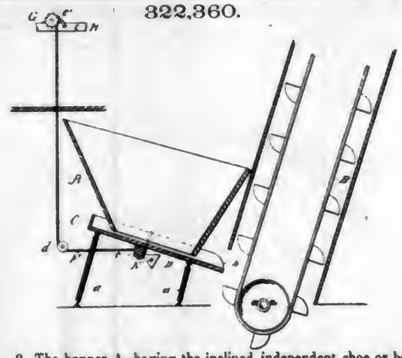
Claim.—1. A collar, D, provided with the eye C of a size sufficient to pass freely over the post, and also provided with hooks E E and G of sufficient size and shape to receive and hold the fence-wire, substantially as specified.

2. A collar, D, provided with an eye, C, with hooks E E G and lugs 1 2 3 formed on the eye of the collar, substantially as specified.

322,360. SALT-HOPPER. JOSEPH M. DUNCAN, Warsaw, N. Y., assignor to himself and Eben O. McNair, same place. Filed Mar. 16, 1885. (No model.)

Claim.—1. The combination, with a hopper, of an elastically-supported bottom, a set of angular knocking devices, and a pawl-and-ratchet mechanism having intermediate connections with said bottom for regulating the blow of the knockers, substantially as described.

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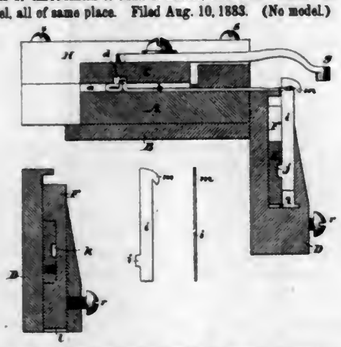


2. The hopper A, having the inclined independent shoe or bottom C, and the springs *a a*, secured to the floor or other support, and to the under side of said shoe or bottom at its front and rear ends, substantially as described and shown.

3. The hopper A, having the inclined independent shoe or bottom C, with vertically-extended sides *b* and iron *c*, the bottom-supporting springs *a a*, the angular knockers D, and their shaft E, all combined substantially as described and shown.

4. The combination, with the hopper A, of the inclined independent shoe or bottom C, supported upon springs *a a*, the shaft E and its angular knockers D, and pawl-and-ratchet mechanism having intermediate connections with the shoe or bottom C, substantially as and for the purposes set forth.

322,361. KNITTING-MACHINE. WILLIAM ESTY, Laconia, N. H., assignor of three-sixths to John T. Busiel, Charles A. Busiel, and Frank E. Busiel, all of same place. Filed Aug. 10, 1883. (No model.)



Claim.—1. A series of vertical sliding sinkers, in combination with the reciprocating bar E, provided with the path *k*, having throws *o o* and *p*, all arranged and adapted to operate substantially as and for the purposes described.

2. The combination of the bar C, provided with the cam-path *d*, having the throws *h h* and *f*, the needles *b*, provided with the lugs *c*, the bar E, provided with the cam-path *k*, having the throws *o o* and *p*, arranged with respect to each other as set forth, and the sinkers *i*, provided with the lugs *j* and the hooks *m*, substantially as described.

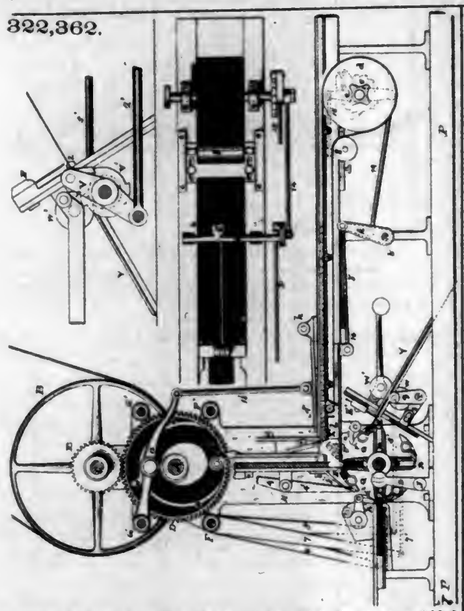
3. In combination with the needles *b b* and the bars C and E, provided, respectively, with the cam-paths *d* and *k* and suitable supports for said bars, a series of sinkers, *i i*, each provided at its upper end with a hook, the back or under side of which presents a straight edge and forms an acute angle with the breast or front vertical edge of the body of the sinker, all arranged and adapted to operate to form the loop upon the body of the sinker in front of or below said hook and draw said loop into the angle of and above the point of said hook without straining the yarn or changing the length of the loop after it has been once determined, substantially as described.

322,362. CIGARETTE-MACHINE. ALEXANDER EWING, New York, N. Y. Filed Oct. 16, 1884. (No model.)

Claim.—1. In a cigarette-machine, the combination, with the feed-belt, pivoted and reciprocating feed-plate, and the forming-wheel and plunger, of the sliding collector, the vertical plate R, and the horizontal plate U', provided in its front with an opening, substantially as and for the purpose described.

2. In a cigarette-machine, the combination, with a forming-wheel and formers, constructed as described, of the plunger, the pivoted paper-

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grippers, the lever 4', and the fingers *j'*, by which the paper is folded around the tobacco, substantially as described.

3. In a cigarette-machine, the combination of a main frame mounted on a bed-plate, cross-rods, and a center plate connecting the same, shafts bearing therein, the tobacco-feed belt and pivoted and reciprocating plate, the vertical and horizontal knives, the paper-feed devices, the paper-grippers, the forming-wheel and plunger, the pasting trough and rolls, the pasting-knife, the dischargers for discharging the finished cigarette into a suitable receptacle, and levers and rods connecting the several parts whereby they are operated, substantially as and in the manner described.

4. In a cigarette-machine, the combination of a wheel having hollow radial arms or wings, formers working in said arms formed on their outer faces with a semi-cylindric cavity, and a vertically-moving plunger having its lower end constructed of corresponding contour, pivoted and reciprocating feed-plate, sliding collector, vertical plate R, horizontal plate U', and suitable connecting and operating mechanism, as set forth.

5. In a cigarette-machine, the combination, with the main shaft carrying the double cam-wheel O, of the lever and connecting-rod 7 7', rock-shaft J, bearing an arm, the dischargers I', mounted on said rock-shaft, and the wheel Q, having forming-blocks provided with outwardly-projecting lugs, substantially as described.

6. In a cigarette-machine, the combination of the vertically-sliding piece 9, carrying a vertical knife, the pivoted and horizontal knife and its restoring spring, and the vertically-sliding piece 10 for operating said latter knife, the same having at its lower end a wedge, substantially as described.

7. In a cigarette-machine, the combination of the vertically-sliding piece 10, provided with a wedge, the horizontal pivoted knife, and a spring for returning the knife when forced backward by the descent of said sliding piece, substantially as described.

8. In a cigarette-machine, the combination, with the main shaft bearing double cam-wheel N, of the lever 4', rock-shaft H, the plunger D', and the forming-wheel provided with the gripping devices *p*, all operating substantially as described.

9. In a cigarette-machine, the combination, with the forming-wheel, feed-belt, and pivoted and reciprocating feed-plate, the collector, the plunger, and the paper-feed devices, of devices on the forming-wheel for gripping the paper until carried up to the plunger, and a rock-shaft and lever for automatically releasing the paper, the pasting trough and rolls, the paster G^2, and the plates L' and M', forming between them a space for the reception of the finished cigarettes, as described.

10. In a cigarette-machine, the combination, with the main shaft bearing double cam-wheel M, of the lever 5, connecting-rod 5', the rock-shaft *r*, bearing the arm *q*, the arm 8, attached to said arm *q*, the knife E', and the paper feed-rolls, the whole operating to feed the paper and sever therefrom amounts sufficient for the wrapper of a single cigarette, substantially as herein described and shown.

11. In a cigarette-machine, the combination, with the plunger, forming-wheel, and forming devices, the paper and tobacco feed mechanism, all constructed and operating in the manner herein described, of the pasting-trough bearing upper and lower pasting-rolls, the frame F^2, revolving to and fro over said trough, and the curved paster carried by said frame and operating therewith to receive the paste from said upper roll and apply it to the inside edge of the paper, all substantially as set forth.

12. In a cigarette-machine, the combination of a rotating wheel formed with radial arms, each of which is provided with a former conforming in shape to the longitudinal half of a cigarette, a plunger constructed at its lower end of like contour, means for operating said plunger to successively meet said arms, a collector for supplying material to the space between the plunger and arms, and the feed-belt and pivoted and reciprocating plate, the paper-feeding devices, and grippers, all arranged to operate substantially as herein described.

13. The combination of the main shaft having a cog-wheel provided on its side with a cam, the rock-shaft *n*, having arm *m*, arm *o*, and sliding piece 11, the forming-wheel provided with the pivoted paper-grippers, the sliding piece 9, and the vertical knife, substantially as described.

14. In a cigarette-machine, the combination, with the main shaft bearing a cam-wheel, and the cross-rod bearing lever 3, of the rock-shaft *b*, bearing an arm, the drum having on its shaft a loose pawl and a fixed ratchet-wheel, the feed-belt and its rollers, the sliding frame and feed-plate, rods connecting the lever and rock-shaft arm, the latter and the pawl on the drum-shaft, and the sliding frame and pawl, and the means, substantially as described, whereby the feed-plate is operated from the main shaft.

15. In a cigarette-machine, the combination, with main shaft bearing the cam-wheel L, cross-rod F, and the paper feed-rolls, of a lever pivoted on rod F, a rod, pawl, wheel, and weight, conjointly operating the feed-rolls, causing them to partially revolve at each whole revolution of the main shaft, and in feeding to the machine a quantity of paper sufficient for the wrapper of a single cigarette, substantially as described.

16. In a cigarette-machine, the combination of a feed-belt and pivoted and reciprocating feed-plate, a movable horizontal knife and a movable vertical knife, a receiving-plate having an opening therein, and a collector for delivering the material when cut to the forming-wheel, substantially as described.

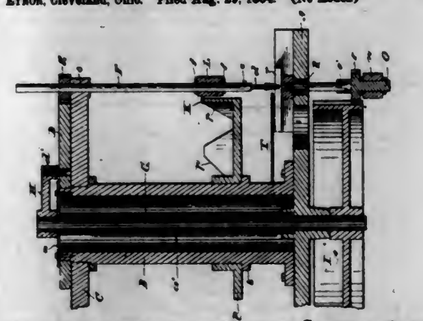
17. In a cigarette-machine, the combination of a supporting-frame, a main driving or operating shaft bearing a cam-wheel, a traveling feed-belt, a sliding frame adapted to move forward with the belt, a feed-plate pivoted to such frame above the feed-belt, a pivoted lever resting on the hub of the cam-wheel, and a rod connecting said lever with the feed-plate, substantially as and for the purpose described.

18. In a cigarette-machine, the combination of the forming-wheel, reciprocating formers, a plunger, a paper-feeding device, paper-grippers located on the forming-wheel, plates L' M', having a space between them and carrying an oscillating paster, G^2, and paste-trough K', having paste-rollers, with suitable connecting and operating mechanism.

19. In a cigarette-machine, the combination of the feed-belt, pivoted and reciprocating feed-plate, a cutter, a forming-wheel carrying reciprocating formers, a suitable plunger, the plates L' M', having a space, N', between them and carrying an oscillating paster, G^2, and paste-trough K', provided with rollers, with suitable connecting and operating mechanism.

20. In a cigarette-machine, the combination of a forming-wheel, Q, carrying reciprocating formers and paper-grippers, a suitable plunger, receiving-plates L' M', having space N' between them and carrying an oscillating paster G^2, and a paste-trough having two rollers, J' I', and the paper-feeding rollers W W', the forming-wheel being arranged between the plates and paper-feed, as described and shown, with suitable connecting and operating mechanism, as set forth.

322,363. NUT-TAPPING MACHINE. WILLIAM R. ETNOR and THOMAS ETNOR, Cleveland, Ohio. Filed Aug. 29, 1884. (No model.)



Claim.—1. In a nut-tapping machine, a spindle carrying the tap and supported by a suitable guide-head, in combination with a spindle arranged in alignment with the tap-spindle, supported by a suitable sliding bracket and provided with a tap-carrier, both spindles being adapted

to revolve in the same direction and at the same rate of speed and alternately to approach and recede from each other, all arranged and operating substantially as and for the purpose shown and described.

2. In a nut-tapping machine, the combination of a base-plate provided with guides for holding the nut-blanks and having a hole in said plate under the tap and of sufficient size to permit the passage of the tap through the same, a vertical tap-spindle mounted in suitable bearings supported by a sliding guide-head and carrying a detachable tap, a vertical spindle under the base-plate in alignment with the tap-spindle, supported by a sliding bracket and provided on its upper end with a tap-carrier for receiving and holding the tap when detached from its spindle, said spindles being adapted to revolve in the same direction and at the same speed and alternately to approach and recede from each other, all arranged and operating substantially as shown.

3. In a nut-tapping machine, the combination, as set forth, of a base-plate provided with guides and flanges for holding the nut-blanks in place, and a hole of sufficient size in said base-plate to permit the passage of the tap through the same, a vertical tap-spindle arranged immediately above the hole in the base-plate, mounted in a suitable bearing, supported by a sliding guide-head and carrying a detachable tap, a vertical spindle arranged immediately under the hole in the base-plate in alignment with the tap-spindle supported by a sliding bracket, and provided with a tap-carrier, a rope or chain connecting the bracket and guide-head and passing over a pulley, a disk adapted to be rotated at a variable speed, and provided with cams which engage with the guide-head, alternately raising and lowering the same, all arranged and operating substantially as and for the purpose set forth.

4. The combination of the base-plate A, having the guides r, flanges r', and hole R, the tap-spindle F, supported by the sliding guide-head L, the detachable tap *a*, the spindle O, supported by the sliding bracket N, and provided with the tap-carrier o', the guide-rods M, the chain or rope *m*, connecting the guide-head L and bracket N and passing over the pulley *k*, and the disk P, provided with cams *p*, all arranged and operating substantially as shown and described.

5. The combination of the base-plate A, provided with the guides *r* and flanges r' and hole R, the hollow column B, upper plate, C, gear-wheels D and I, connected by the shaft G, the tap-spindle F, mounted in a bearing in plate C, supported by a sliding guide-head, L, and having a pinion, E, mounted loosely on and feathered to said spindle, and carrying the detachable tap *d*, the spindle O, mounted in and supported by the sliding bracket N, provided with the tap-carrier o', and having the pinion o keyed to the same, all arranged and operating substantially as and for the purpose set forth.

6. The combination of the base-plate A, provided with the guides *r*, flanges r', and hole R, the hollow column B, upper plate, C, gear-wheels D and I, connected by the shaft G, the tap-spindle F, mounted in a bearing in plate C, supported by a sliding guide-head, L, provided with a pin, *k*, on one side, a pinion, E, mounted loosely on and feathered to said spindle F, a detachable top, *d*, spindle O, provided with the tap-carrier o', and having the pinion o keyed to the same and supported by and mounted in the sliding bracket N, the guide-rods M, the rope *m*, passing over the pulley *k* and connecting the brackets N and guide-head L, and the disk P, provided with cams *p*, all arranged and operating substantially as shown and described.

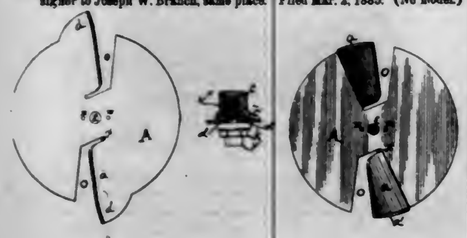
7. In a nut-tapping machine, the base-plate A, upper plate, C, hollow column B, pipe a', and pipe T, in combination with the gear-wheel D, pinion E, tap-spindle F, and detachable tap *d*, substantially as shown and described.

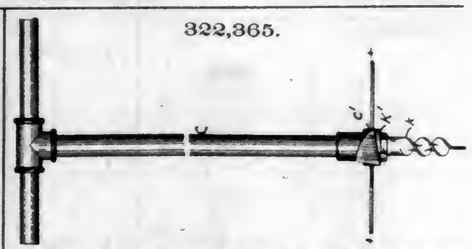
322,364. JEWELRY-PIN. HENRY FLETCHER, Providence, R. I., assignor to Sweet, Fletcher & Co., same place. Filed May 4, 1885. (No model.)



Claim.—In a jewelry-pin, the combination of the ornamental body A, sliding pin D, connecting-chain E, pin-guiding tube C, and pin-point support B, substantially as described.

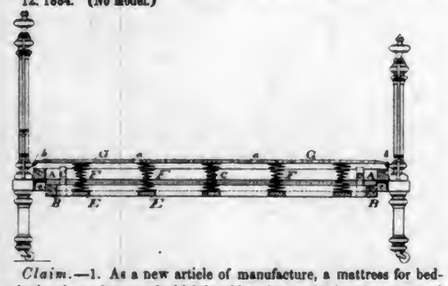
322,365. EARTH-AUGER. ROBERT L. FOSBURGH, St. Louis, Mo., assignor to Joseph W. Branch, same place. Filed Mar. 2, 1885. (No model.)





Claim.—In an earth-auger, the combination of the blade A, having circular opening e and holes *z z*, the shaft c, having shoulders c', lugs *d d*, and threaded end, and spiral-feed end piece, *k*, having shoulder *k'* and screw end *k''*, substantially as described.

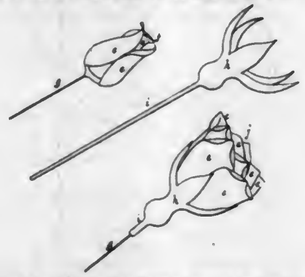
322,366. MATTRESS. SAMUEL FULTON, Brooklyn, N. Y. Filed May 12, 1884. (No model.)



Claim.—1. As a new article of manufacture, a mattress for bedsteads the circumference of which is rabbeted to enable it to be supported at its upper part by the rails of the bedstead with its lower part suspended between said rails, all substantially as and for the purpose herein set forth.

2. The combination of the upper frame, A, the lower frame, B, of smaller dimensions, suspensory hangers C, bars E, and springs F, the frames B and A being arranged in relation with each other to provide a circumferential rabbet *f*, to the mattress, and to enable the lower part of the mattress to be suspended from the upper, all substantially as and for the purpose herein set forth.

322,367. ARTIFICIAL FLOWER. RUDOLF GEORGI, New York, assignor to George H. Lages and Martha Georgi, both of Brooklyn, N. Y. Filed Nov. 10, 1884. (No model.) Patented in Germany Feb. 28, 1880 No. 12,205, and in France Mar. 18, 1880, No. 135,640.



Claim.—An artificial glass flower consisting of the calyx *h*, with its hollow stem *i*, and the head *f*, with its stem *g*, substantially as described.

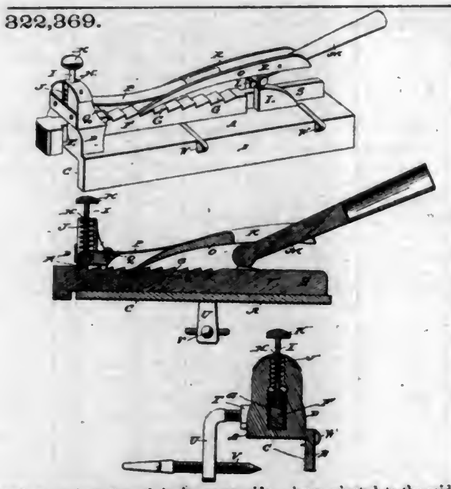
322,368. PRODUCTION OF CHLOROPHTHALIC ACID. ROBERT GNEHM, Basle, Switzerland, assignor to the Society of Chemical Industry, same place. Filed Feb. 26, 1885. (No model.)

Claim.—The production of tetrachlorophthalic acid (or its anhydride) by the action of chlorine upon anhydrous phthalic acid in presence of antimony pentachloride, as set forth.

322,369. FLOOR-CLAMP. JACOB M. GROCE, Ravenswood, W. Va., assignor of one-fourth to Abraham Hertje, same place. Filed Apr. 20, 1885. (No model.)

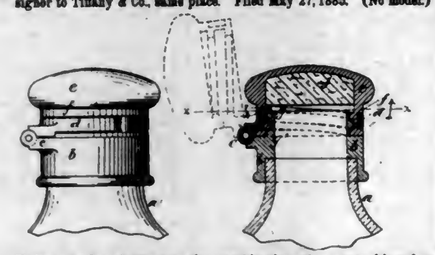
Claim.—In a flooring-clamp, the combination of a base having a downwardly-extending flange at one edge, and provided at its front edge with a head having a longitudinal slot or perforation, and near its rear end with a pair of lugs, a bar arranged to slide longitudinally in the said perforation and between the said lugs, and having a series of

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teeth or ratchets formed in its upper side, a lever pivoted to the said lugs, and having a dog or pawl adapted to engage and operate the said sliding bar, a spring secured to a flange upon the rear side of the head and holding the said pawl in engagement with the sliding bar, a spring-actuated bolt arranged in a vertical recess in the head and engaging the sliding bar, and means for attaching the device and retaining it in position upon a joist, substantially as herein described, for the purpose set forth.

322,370. BOTTLE-TOP. CHARLES T. GROSJEAN, New York, N. Y., assignor to Tiffany & Co., same place. Filed May 27, 1885. (No model.)

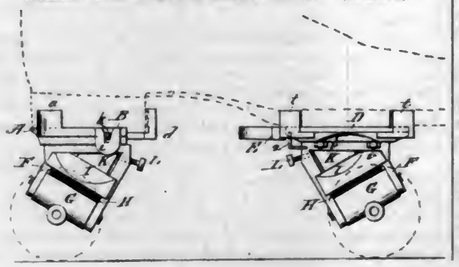


Claim.—1. In a bottle-top, the combination of a cover hinged to the neck of the bottle with a stop for determining the point at which the screw-thread in said cover shall engage with the screw-thread on the neck of the bottle, substantially as described.

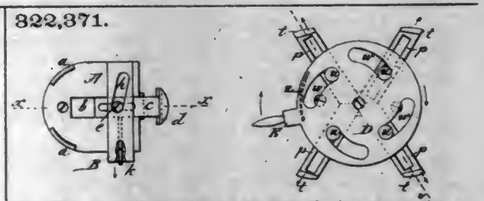
2. In a bottle-top, the combination of a cover hinged to the neck of the bottle with a stop for determining the point at which the screw-thread in said cover shall engage with the screw-thread on the neck of the bottle, and a groove by means of which the extent of screwing down of the cover on said neck is permitted so as to allow of the taking up of any space between the rubber or cork and the top of the wall of the neck which may be left by the wear of such rubber or cork, substantially as described.

3. In a bottle-top, the combination of a flange, *b*, to which is hinged a ring, *d*, said ring containing a projection or stop, *h*, and operating within a groove, *i*, placed in the wall of the cover *e* to secure said cover to the top, substantially as described.

322,371. ROLLER-SKATE. THOMAS W. GROSVENOR, Herkimer, and WILLIAM B. GRAY, Utica, N. Y. Filed Feb. 17, 1885. (No model.)



322,371.

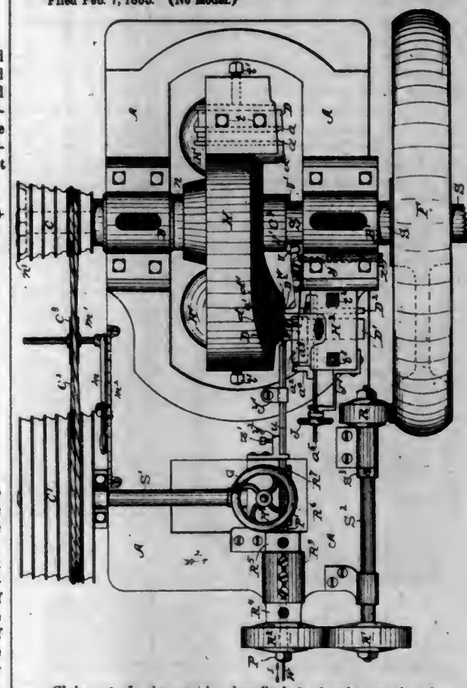


Claim.—1. In a sectional roller-skate, the heel-plate A, having fixed lugs *a a*, an adjustable clamping-lug, *d*, provided with a slotted shank, c, the screw *e*, nut *f*, and slide B, having cam-slot *h* and spring *k*, substantially as described.

2. In a sectional roller-skate, the radially-slotted sole-plate C, having adjustable clamps *t t*, substantially as described.

3. In a sectional roller-skate, the radially-slotted sole-plate C, having adjustable clamps *t t*, provided with slotted shanks *p p*, screws *u u*, nuts *v v*, rotary plate D, provided with cam-slots *w w*, and spring *z*, substantially as described.

322,372. MACHINE FOR MAKING STAPLES. JOSHUA F. HANSCOM, Joliet, Ill., assignor of one-half to the Ashley Wire Company, same place. Filed Feb. 7, 1885. (No model.)



Claim.—1. In the machine described, for forming staples, the cutter-head H, having the projections *d d'* and weights H', and having the cutting-dies D D and bending-pins *a a'*, in combination with the cutting-die D', bending-pin D^2, discharger Z, cam C^4, and the means, substantially as shown and described, for adjusting the wire W between the cutters, and for straightening and feeding in the wire W, as and for the purpose set forth.

2. In a machine for making staples, the revolving head R^2, having straightening sheave-rolls *b* adjustably set therein, in combination with the bushings P and P', feed-rolls R^4, grooved wire-guides U, and the means, substantially as shown and described, for rotating said head and feed-rolls, as and for the purpose set forth.

3. In the machine described, for making staples, the cone-pulleys C and C', formed in separate graduated sections, presenting one concave and one convex belt-surface, and arranged to carry the belt in the manner substantially as and for the purpose set forth.

4. In combination with the drive-shaft S, counter-shaft S', feed-rolls R^4, and belt C^2, the cone-pulleys C and C', formed in separate graduated sections, as and for the purpose set forth.

5. In a staple-machine described, the combination of the die *o* with the means, substantially as shown and described, for adjusting said die, as and for the purpose set forth.

6. In a machine for making staples, the die *o*, arranged, substantially as shown and described, to momentarily adjust the wire W between the dies D D, in combination with the cutting-dies D and D' and bending-pins D^2 *a a'*, as and for the purpose set forth.

7. In combination with the cutting and bending mechanism of the machine described, the cam C^4 and discharger Z, constructed and arranged substantially as and for the purpose set forth.

8. In the machine described, the balance-wheel F, in combination with lever F', having the friction-block F^3, supported by standard F^2 and connected with spring F^4, as and for the purpose set forth.

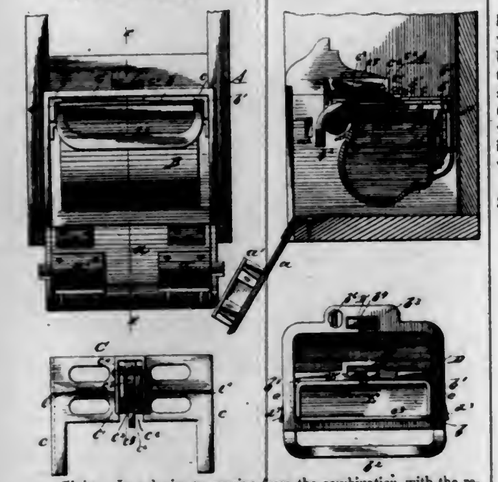
9. In the machine described, for making staples, the cone-pulleys C and C', formed in separate graduated sections, as shown, in combination with the lever *m*, having a spring-pawl and means for operating the same, extending spindle *m'* of said lever, notched segment m^2, sheave-wheel C^2, and belt C^3, as and for the purpose set forth.

10. In a machine for making staples, the combination and arrangement of the mechanism, substantially as shown and described, for adjusting the wire W between the cutters D and D', consisting of the stationary head-block H^2, sliding head-block a^2, wedge-shaped plate a^4, guide-plate a^3, forked arm J', hand-wheel J, and die *o*, with the cutting-dies D and D' and bending-pins *a*, *a'*, and D^2, as set forth.

11. In a machine for making staples, the combination and arrangement of the mechanism, substantially as shown and described, for straightening the wire W as it is being fed in the machine, consisting of the revolving head R^3, having straightening-rolls *b* adjustably set therein, and having the bushings P and P' placed within the journals of said head, friction-wheels R R^3, shaft S^2, and friction-wheel R, arranged to be rotated to impart a rotary motion to said head R^3 by its frictional contact with balance-wheel F, as and for the purpose set forth.

12. In a machine for making staples, the combination and arrangement of the mechanism, substantially as shown and described, for discharging the finished staples, consisting of the discharger Z, having the friction-roller V or its equivalent, cam C^4, having the lugs V' V', and spring-plunger *y*, or its equivalent, with the cutting-dies D D', bending-pins *a*, *a'*, and D^2, and die *o*, as set forth.

322,373. MONEY-DRAWER. WILLIAM H. HARRISON, Louisville, Ky., assignor to the Street Car Money Drawer Company, same place. Filed Aug. 2, 1884. (Model.)

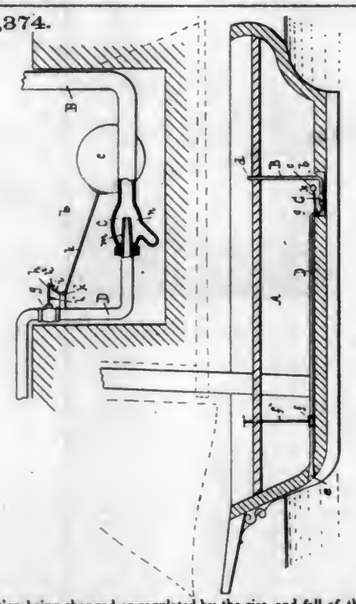


Claim.—In a device to receive fares, the combination, with the receptacle A, bracket C, provided with ways *c c* and detent c^4, frame *b*, provided with spring-controlled bolt b^2 and spring-catch b^3, and fare-box B, of the fixed half-cover D, having attached thereto the latch-bars d^2 d^3 and spring-controlled lever *d' d'*, spring-controlled detent-bar c^3, provided with detent-point c^5, and movable half-cover E, provided with projections e^2, e^3, and e^4 and opening *e'*, substantially as described.

322,374. BILGE-WATER EJECTOR. GEORGE HAYDN, Baltimore, Md. Filed July 18, 1884. (No model.)

Claim.—1. In a bilge-water-ejecting device, the combination of the vessel A, the ejector C, arranged in the bilge-well, and adapted to receive the water therefrom, the discharge-pipe B, arranged to deliver the water from the bilge-well above the water-line of the vessel, the pressure-pipe D, arranged with the inlet-opening below the water-line of the vessel, by which, as the vessel moves through the water, a pressure is generated in the said pipe, and the automatic valve *g*, placed in the pipe D, and adapted to cut off and open communication between the ejector C and the pipe D by the float *c*, secured to the end of the pivoted lever *k*,

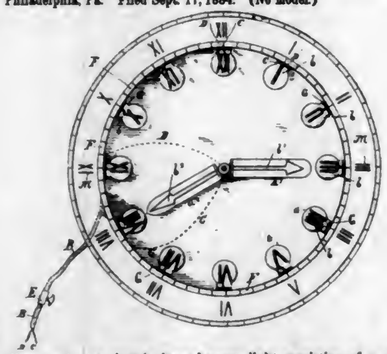
322,374.



its position being changed or regulated by the rise and fall of the bilge-water, whereby when the water in the bilge-well accumulates in sufficient quantity the valve *g* is opened, and the pressure generated in the pipe D by the movement of the vessel is permitted to act on the ejector C, by which the water is taken from the bilge-well through the ejector C and pipe D, and delivered above the water-line of the vessel.

2. The vessel A, the ejector C, the discharge-pipe B, with its outlet-opening above the water-line of the vessel, the pressure-pipe D, with its inlet-opening below the said water-line, the valve *g*, the stem *h*, by which the valve is operated, and the projections *h'* and h^2, secured to the stem *h*, and placed sufficiently apart thereon to permit the short end *i* of the lever *k* to move either way a certain distance without operating the valve, in combination with the pivoted lever *k*, provided with a float, whereby the bilge-well is permitted to fill with water before the ejector is put in operation, and when in operation to remain so until all the bilge-water is ejected.

322,375. ELECTRIC INCANDESCENT SIGN. ISAAC W. HEYSINGER, Philadelphia, Pa. Filed Sept. 17, 1884. (No model.)



Claim.—1. An electric incandescent light consisting of a series of transparent vacuum-chambers, *a a a a*, provided with detachable stoppers G G G G, transmitting electric conductors C D, connected with a series of incandescent filaments, *b b b b*, within the said bulbs or chambers, said filaments being formed into various letters or numerals so adapted to each other that the series shall form, when illuminated, a word or phrase, substantially as described.

2. In combination with the supporting-rod F, provided with the conducting-wires C and D, the vacuum-chamber a^2, into or through which the said rod F extends, the bracket or brackets A, which support the same, together with the incandescent electric filaments *b b b*, in the form of letters, &c., connected with the conductors C and D and supported by the said rod F, and extending upward or downward therefrom within

the said chamber so as to exhibit a complete word, phrase, or design when viewed from the front, and to have the light thereof unobstructed when emitted to the rear, substantially as described.

3. In combination with the vacuum-chamber a^2 or chambers *a a a a*, the conducting-wires C and D, the switch E, and supporting-rod F, a series of incandescent electric filaments, *b b b b*, extending along above the rod F, and an opposite series extending along beneath the said rod F, the upper series having their connections with the conductors C and D at the lower parts of said letters and the lower series at the upper parts thereof, as shown in Figs. 3 and 4, substantially as described.

4. In an incandescent electric light consisting of a series of filaments formed into a word, phrase, or ornamental design, the combination of the various filaments with independent electric conductors controlled by duplicate switches, by means of which one portion of the design is kept at a low red heat and the other in a stage of brilliant incandescence, whereby various ornamental or useful effects are produced, substantially as described.

5. In a clock-dial, in combination with the ordinary numerals I, II, III, &c., and the rotating hands or pointers, the concentric and parallel series of incandescent electric filaments formed into numerals corresponding thereto, inclosed in vacuum-chambers *b b b*, connected with the conducting-wires C and D and controlled by the switch E, by means of which the said dial may be illuminated and the duplicate numerals rendered incandescent, substantially as and for the purposes set forth.

6. A clock for chamber or other use having a dial provided with concentric numerals and an hour and minute hand, in combination with one or more electric incandescent lights forming an integral part of said dial and controlled by the local switch E, to illuminate the said dial momentarily or continuously, substantially as described.

7. In a clock or other time-piece, the hands *b'* and b^2, provided with incandescent electric filaments contained within the vacuum-chambers *a'* and a^2, electrically connected, through the arbors or journals upon which said hands rotate, with the conductors C and D, or their equivalents, through which, when a current of electricity is transmitted, resistance thereof will be encountered in the said filaments *b'* and b^2 and the same be raised to a state of incandescence, substantially as and for the purpose set forth.

8. The combination, in a time-piece, of the concentric series of incandescent electric filaments *b b b b*, formed into numerals, one or more transparent vacuum-chambers, *a a a*, inclosing said numerals and provided with electric conductors C and D, by means of which a current of electricity is transmitted through the said filaments, the main conductor B, and switch E, together with the rotating hour and minute hands having electric incandescent filaments *b'* and b^2, contained within the vacuum-chambers *a'* and a^2, and provided with electric conductors connecting the said hands with the said main conductor, through the centers of rotation thereof, the whole constructed to operate substantially as and for the purposes shown and described.

9. In combination with the filament *b* of an electric incandescent light, the opaque shield I, adapted to cover and conceal, without touching, such parts of the filament as are not to appear illuminated, substantially as and for the purpose described.

10. A carbon or other filament or filaments adapted for use in an incandescent electric light, said filament or filaments being formed into the shape of a word, letter, phrase, or ornamental design, in a plane surface or curve, or a series of such planes or curves, one line or the other of each filament at the points *d d d d*, where they cross or overlie each other, being bent to the front or rear in an arc, or its equivalent, to prevent contact and deflection of the current without interference with the general plane or surface upon which such letter or design is formed, substantially as described.

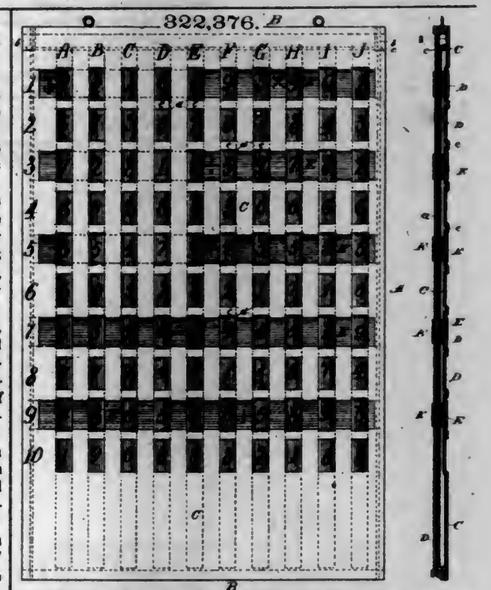
11. A letter, numeral, word, or ornamental design, formed of carbon or its equivalent and adapted to be used as the incandescent filament of an electric light, said letter, word, or design consisting of a double filament, or a series of double filaments, following the outlines of the said letter, &c., so that when rendered incandescent each letter, numeral, word, or design will be shown in a double outline, and produce a more broad, solid, and brilliant effect, and may be read at a greater distance or with a lower power of incandescence than could be otherwise done, substantially as described.

12. An electric incandescent sign consisting of a series of transparent vacuum-bulbs containing a series of incandescent electric filaments connected with electric conductors, said filaments being constructed in the forms of words, letters, or ornamental designs, erected upon or depending from a supporting-rod above, beneath, or at the sides of said letters, &c., so that when viewed from the front a complete connected word, phrase, or design is exhibited, while the emission of light from the said incandescent filaments is unobstructed to the rear, substantially as described.

322,376. ARITHMETICAL CHART. THOMAS HOOLEY, Davenport, Iowa. Filed Apr. 4, 1885. (No model.)

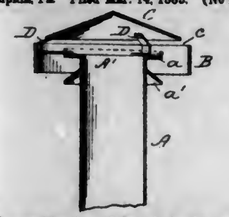
Claim.—1. The combination, with a frame having the slitted strip C, of a series of vertically-disposed endless bands having numbers thereon and passing through said slits, and a series of horizontally-arranged endless bands passing under the vertical bands, and marked, substantially as and for the purpose set forth.

322,376.



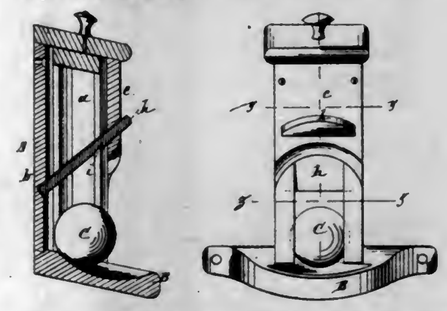
2. The frame comprising the end strips, connected by vertical rods, depending plates on the upper strip, and a rods secured to said upper strip, said frame having a slitted strip or fabric secured thereto, in combination with the vertical bands passing through said slits and the horizontal bands passing under the vertical bands, as set forth.

322,377. VENTILATING-CAP. JOHN A. HUGHES and CHARLES S. MENGEL, Philadelphia, Pa. Filed Mar. 14, 1885. (No model.)



Claim.—The combination of flue A, having upper edge flange, *a*, and conical flanges *a'*, belt or band B, projecting above and below the flange *a*, and conical top C, of a less diameter than that of the band and elevated above it, substantially as shown and described.

322,378. STOCK-SALTER. SAMUEL C. JOHNSON, Kenosha, Wis. Filed Sept. 1, 1884. (No model.)



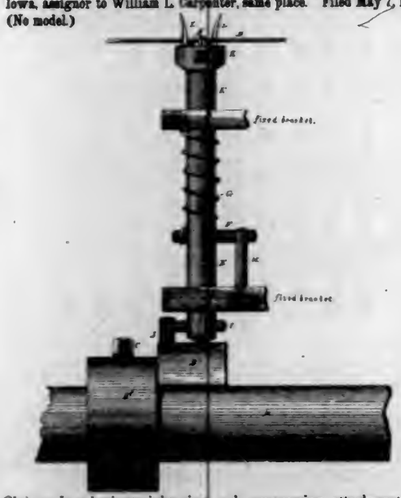
Claim.—1. In a stock-salter, a loose ball located in a case or ball-holder which is open upon one side, in combination with a salt-receiver from which salt can flow to the chamber containing the ball, substantially as and for the purpose specified.

2. In a stock-salter, a receptacle for salt provided with a slide, *h*,

in combination with a loose ball located in a case or ball-holder open upon one side, substantially as and for the purposes specified.

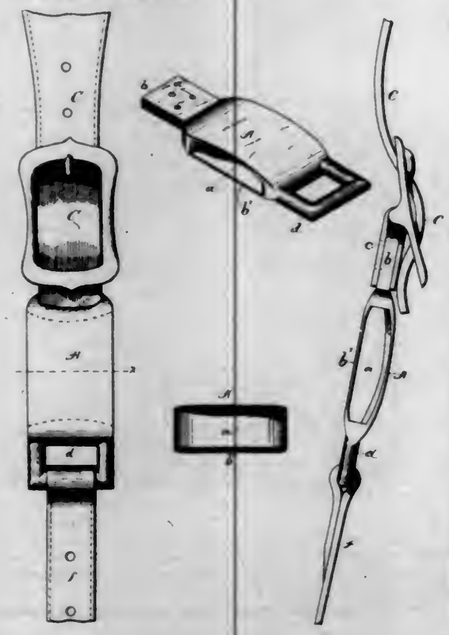
3. In a stock-salter, a salt-receptacle and ball-holder, A, in combination with a base, B, a slide, *h*, and a loose ball, C, exposed upon one side, substantially as and for the purposes specified.

322,379. BARB STRAIGHTENING AND COMPRESSING ATTACHMENT FOR WIRE-BARBING MACHINES. AXEL JORGENSEN, Des Moines, Iowa, assignor to William L. Carpenter, same place. Filed May 7, 1885. (No model.)



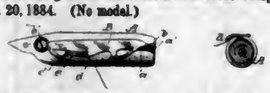
Claim.—In a barb straightening and compressing attachment for wire-barbing machines, the combination, with a vertical sliding stem movably secured in fixed brackets, of a head secured to one end thereof, provided with two forwardly-projecting jaws or pins, a transverse pin through said stem near its central part, a spring engaging with one end of said pin and with one of said brackets, a pin in one of said brackets engaging with the other end of said transverse pin, a second transverse pin through said stem near one end, and an adjustable cam secured upon a revolving shaft and provided with a pin, said cam and pin engaging with the lower end of said stem and second transverse pin, all arranged and operating as described, for the purpose set forth.

322,380. TRACE-CARRIER. ALFRED C. JUDSON, Floyd, Iowa. Filed Apr. 17, 1885. (No model.)



Claim.—The trace-carrier having the opening *a* flared outward from the center, and provided on its upper portion with the perforated neck-piece *b*, adapted to be fastened to the buckle-loop *c*, and having the lower strap-eye, *d*, and the inner thin flat side, *b'*, extended inwardly beyond the surface of the neck-piece and strap-eye, substantially as and for the purposes described.

322,381. SEWING-MACHINE SHUTTLE. JEREMIAH KEITH, Northampton, Mass., assignor to the Florence Machine Company, same place. Filed Feb. 20, 1884. (No model.)



Claim.—1. The self-threading open-end cylindrical shuttle having on its upper side a wide-mouthed open-end straight thread-slot extending from the heel to the middle of the shuttle, and an adjustable tension-spring secured at both ends to the shuttle-case, overlying said thread-slot, and provided with a curved thread-guard, *d*, and also with a slender forwardly-projecting spring-finger located between the spring and guard and having its tip housed in a recess in the shuttle-case, substantially as shown and described.

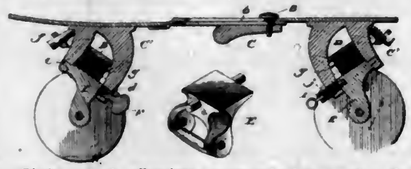
2. The combination, with a cylindrical shuttle-case having a portion of its body at its rear open end cut away on a curve at each side of an open-end thread-slot, of a non-pivoted adjustable tension-spring secured at both ends to the shuttle-case and overlying said thread-slot, and having a spring-finger housed at its tip in a recess in the shuttle-case, substantially as described.

322,382. SLAT-FASTENING. STEPHEN P. KEITH, Alexander, Tex., assignor of one-half to John J. Eargle, same place. Filed Nov. 18, 1884. (No model.)



Claim.—The combination, with the eyes *d*, of the notched slats adapted to receive said eyes in the end notches and the hooks pivoted to the slats and adapted to engage the eyes, substantially as specified.

322,383. ROLLER-SKATE. ALVA L. KITSELMAN, Ridgeville, Ind. Filed Nov. 8, 1884. (No model.)



Claim.—1. A roller-skate constructed of two sections, the foot-rests of which are each provided with an elongated slot, a downwardly-extending T-shaped lug formed integral with the foot-rest of one of the sections and engaging the slot of the other section, a screw passing through the slots of the sections, and a nut to engage said screw, substantially as set forth.

2. A roller-skate constructed of two sections, the foot-rests of which are each provided with an elongated slot, a T-shaped lug formed integral with one of the sections, said sections being lapped and the T-shaped lug engaged with the slot of the adjacent section, a screw having rectangular shoulders and engaging the slots of the sections, and a lever-nut to engage said screw, substantially as set forth.

3. The combination, with a spider having downwardly-extending arms having openings near their lower ends, one of which openings is threaded, of a hanger having trunnions, and a hollow thumb or set screw exteriorly threaded, said screw engaging the threaded opening in the spider and affording a bearing for one of the trunnions of the hanger, substantially as set forth.

4. The combination, with the spider having the inclined shoulders, of the tension-plate having the upwardly-inclined lugs to bear against said shoulders, a feed-screw located at the same angle as the lugs on the tension-plate and bearing loosely against the under side of the spider a hanger journaled in the spider, and an elastic cushion interposed between the hanger and tension-plate, substantially as set forth.

5. The combination, with the spider having the downwardly-extending arms, the forward one of which is provided with a hole or opening, while the rear one is provided with a screw-threaded opening and a recess or channel communicating therewith, of the hanger having

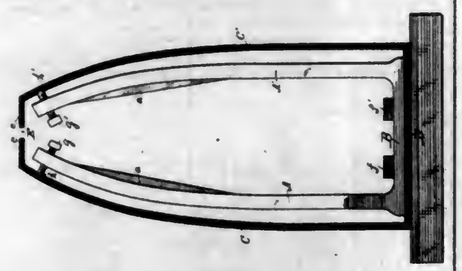
trunnions, and a thumb-screw having a hole or opening to afford a bearing for one of said trunnions, as set forth.

6. The combination, with the spider having the downwardly-extending long and short arms, as shown, said long arm having shoulders, a screw-threaded opening at its lower end, and a recess or channel communicating therewith, an opening in the lower end of the short arm, of a tension-plate having lugs to bear against said shoulders, and an opening to receive the short arm of the spider, a screw-threaded opening in said tension-plate, a feed-screw fitting therein, a hanger swiveled in the lower end of the spider, one of its ends being supported by a hollow thumb-screw, and an elastic cushion interposed between the tension-plate and hanger, as set forth.

7. In a roller-skate, the herein-described tension-plate, having the upwardly-inclined lugs, a rectangular opening, flanges, and a screw-threaded opening, as set forth.

8. The spider for roller-skates herein described, having a downwardly-extending long and short arm, said short arm having an opening, while the other is provided with a screw-threaded opening and recess or channel on its inner side communicating therewith, substantially as set forth.

322,384. CABLE-CONDUIT FOR UNDERGROUND CABLES. DANIEL KORNBAU, Philadelphia, Pa., assignor of one-half to H. R. Shock, same place. Filed Feb. 9, 1885. (No model.)



Claim.—1. An internal stiffening-brace for a metal conduit or tunnel, consisting of a cross-head adapted to be fixedly secured within the conduit, and of two arms erected from said cross-head, serving as braces to the walls thereof, and provided with bolts or kindred contrivances for engagement with recesses, indentations, ribs, notches, or holes formed at suitable points within the walls of the conduit, substantially as set forth.

2. As a new article of manufacture, an internal brace for a conduit, consisting of a cross-head and of two arms, being a part thereof, or secured thereto and sprung therefrom, substantially as described.

3. As an article of manufacture, an internal stiffening-brace for a conduit, consisting of a cross-head, B, and curved or bow-shaped arms A A', substantially as set forth.

4. As an article of manufacture, an internal stiffening-brace for a conduit, consisting of a cross-head, B, and curved or bow-shaped arms A A', provided with strengthening-ribs *a a'*, substantially as described.

5. As an article of manufacture, an internal stiffening-brace for a conduit, consisting of a cross-head, B, and curved or bow-shaped arms provided with holes in the cross-head for bolts, and with threaded holes and set-bolts near the upper extremities of the arms, substantially as described.

322,385. ELECTRICAL CONDUCTING SYSTEM. JNO. KRUESI, Brooklyn, N. Y. Filed Nov. 20, 1884. (No model.)

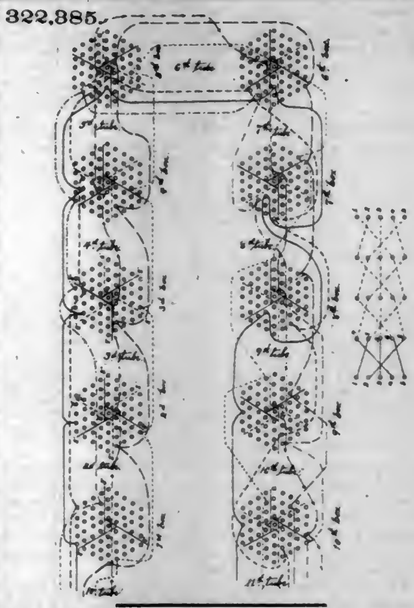
Claim.—1. The combination of separate sections of tubing, each inclosing a group of wires, coupling-boxes joining said sections, within which boxes the wires are bent laterally and caused to diverge, and separating-supports for holding the ends of said laterally-bent wires apart, substantially as set forth.

2. The combination of sections of tubing, each inclosing a group of wires, coupling-boxes joining such sections, within which the wires are bent laterally for connection, separating-supports for the wires where they enter the box, and separating-supports for the laterally-bent ends, substantially as set forth.

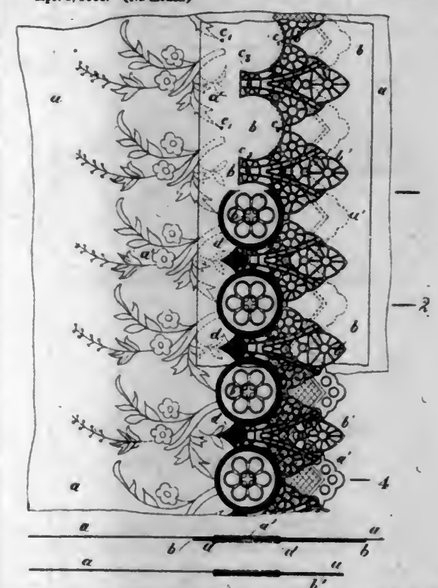
3. In an underground electrical conducting system, a series of tubes, each inclosing a number of wires massed closely together in regular hexagonal form, in combination with coupling-boxes connecting said tubes, within which the wires are interwoven, substantially in the manner described, and the wires of the two tubes are connected together, substantially as set forth.

4. The combination of the hexagonal mass of wires and the supports, each having a hexagonal group of apertures, said wires being interwoven from row to row of the hexagons, and each succeeding hexagon being given a sixth-turn, as described, substantially as set forth.

322,385.



322,386. EMBROIDERY. JOHN KRÜSI, St. Gall, Switzerland. Filed Apr. 1, 1885. (No model.)

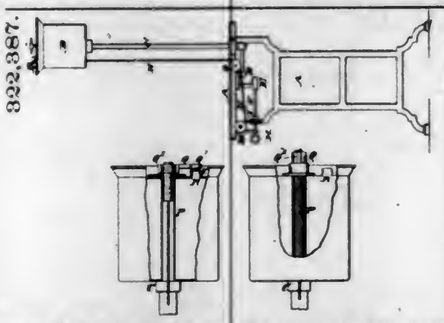


Claim.—The improved method of manufacturing embroideries, consisting in arranging pieces of embroidered fabric upon other embroidered pieces of fabric so that the design of the several separate pieces form a harmonious design as a whole, and thereupon securing the several layers of embroidered fabric by means of embroidery stitches upon the face of the material, the said stitches entering into the composition of and forming part of the entire embroidery, as and for the purpose shown and set forth.

322,387. GASOLINE-STOVE. STAFFORD LIGHTBURNE, Jr., St. Louis, Mo. Filed Jan. 19, 1885. (No model.)

Claim.—1. The combination, with a frame, a burner, a reservoir having a filling-orifice and a device guarding said orifice, a supply-pipe leading from said reservoir to said burner, and a valve in said pipe, of a cord or chain connected to said valve, a cord or chain connected to said

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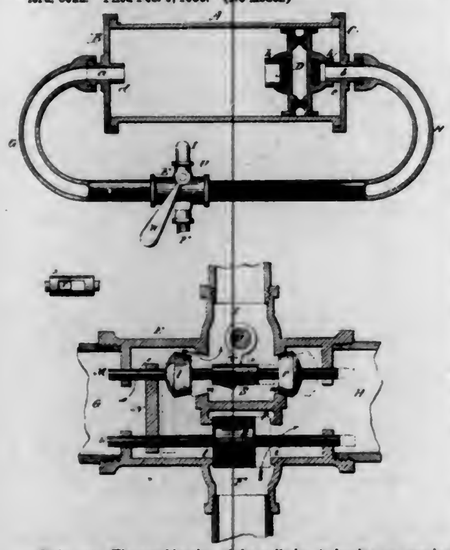
guarding device, and a hand-shaft to which said cords or chains of said valve and said guarding device are connected, substantially as set forth.

2. The combination, with a frame, a burner, a reservoir having a filling-orifice and a device guarding said orifice, a supply-pipe leading from said reservoir to said burner, and a valve in said pipe, of hand-shaft connections between said hand-shaft and said guarding device, pulley upon said valve, pulley upon said hand-shaft, and a cord or chain connecting said pulleys, substantially as set forth.

3. The combination, with a frame, a burner, a reservoir having a filling-orifice, a supply-pipe leading from said reservoir to said burner, and a valve in said pipe, of a guarding-button for said orifice in said reservoir, a hand-shaft having pulleys, a pulley upon said valve, cord or chain connecting said button to a pulley upon said hand-shaft, and a cord or chain connecting said pulley upon said valve to another pulley upon said hand-shaft, substantially as set forth.

4. The combination, with a frame, a burner, a supply-pipe leading to said burner, and a valve in said pipe, of a reservoir having a filling-orifice, a tube formed with notches, and a button engaging said notches and guarding said orifice, a hand-shaft connection between said button and said hand-shaft, and connection between said valve and said hand-shaft, substantially as set forth.

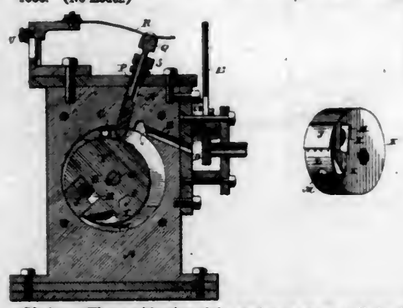
322,388. WATER-CLOSET SUPPLY-VALVE. HENRY S. LORD, Hartford, Conn. Filed Feb. 9, 1885. (No model.)



Claim.—1. The combination of the cylinder A, having an opening, *a*, at one end and *b* at the opposite end, the piston D, arranged in said cylinder, free to travel from end to end, the valve-shell E, tubes or pipes connecting the respective ends of the cylinder with the corresponding ends of the said shell, the said valve-shell constructed with an inlet-chamber, P, having valve-seats *i l* at the opposite ends of the said chamber, and also constructed with the outlet-chamber S, having valve-seats *m n* at the opposite ends of that chamber, the valve-seats in the two chambers being in parallel planes, the valve-rod L, extending through the inlet-chamber P, the double-ended valve R, arranged on said valve-rod L, adapted to close either of said seats *i l*, the valve-rod M, extending through the outlet-chamber S, carrying valves *r t*, corresponding, respectively, to the valve-seats *m n* in the outlet-chamber and adapted to alternately close their respective seats, the said two valve-rods connected so that a movement imparted to the one will be imparted to the other, and whereby the flow of water to and from the cylinder may be alternately changed to or from the opposite sides of the piston, substantially as described.

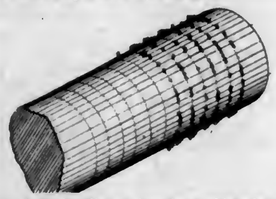
2. The combination of the cylinder A, having an opening, *a*, at one end and *b* at the opposite end, the piston D, arranged in said cylinder, free to travel from end to end, the valve-shell E, tubes or pipes connecting the respective ends of the cylinder with the corresponding ends of the said shell, the said valve-shell constructed with an inlet-chamber, P, having valve-seats *i l* at the opposite ends of the said chamber, and also constructed with the outlet-chamber S, having valve-seats *m n* at the opposite ends of that chamber, the valve-seats in the two chambers being in parallel planes, the valve-rod L, extending through the inlet-chamber P, the double-ended valve R, arranged on said valve-rod L, adapted to close either of said seats *i l*, the valve-rod M, extending through the outlet-chamber S, carrying valves *r t*, corresponding, respectively, to the valve-seats *m n* in the outlet-chamber and adapted to alternately close their respective seats, the said two valve-rods connected so that a movement imparted to the one will be imparted to the other, the valve-rod M constructed with a stirrup, 2, a shaft, U, carrying the arm T, the said arm extending into the said stirrup, the opening in the stirrup being greater than the width of the arm, the said shaft adapted to be turned to throw the said valves toward and from their respective seats, substantially as described.

322,389. ROTARY STEAM-ENGINE. HERMON MOON, Grove City, Pa., assignor of one-half to William Mellor, same place. Filed May 20, 1885. (No model.)



Claim.—The combination of the stationary steam-cylinder having the oblique recess N in its upper part, the rotary piston-wheel constructed as described, the sliding latch or cut-off having a rod working through a stuffing-box in the upper part of the frame, the cross-head at the upper end of said rod, and the spring bearing with its free end against said cross-head, substantially as and for the purpose shown and set forth.

322,390. BARREL FOR MECHANICAL MUSICAL INSTRUMENTS. HENRY B. MOERS, Ithaca, N. Y., assignor to the Autophone Company, same place. Filed May 1, 1884. (No model.)



Claim.—1. A music-roller or barrel on which the short notes are represented by separated single pins and the longer notes by a succession of like but closely adjoining pins, substantially as before set forth.

2. A music-roller or barrel on which the pins for playing a piece of music are arranged along the convolutions of a spiral line, the shortest notes being represented by separated single pins and the longer notes by a succession of like but closely adjoining pins, substantially as before set forth.

322,391. MANUFACTURE AND APPLICATION OF INDIA-RUBBER TIRES, HOOPS, AND BANDS TO WHEELS, &c. CHARLES MOSELEY and BENJAMIN BLUNDSTONE, Manchester, County of Lancaster, England; said Blundstone assignor to said Moseley. Filed June 16, 1885. (No model.) Patented in England May 21, 1885, No. 6,251.

Claim.—1. The method, substantially as hereinbefore described, of securing rubber tires, bands, or hoops to wheels, pulleys, or rollers, said method consisting, first, in heating the rubber tire, band, or hoop until it becomes pliable and extensible, and, secondly, in stretching the said rubber band, tire, or hoop upon the said wheel, roller, or pulley while still in a pliable and extensible condition, substantially as and for the purpose set forth in the annexed specification.

2. The method of manufacturing tires, hoops, or bands composed of india-rubber compounds, said method consisting in employing for the rubber such a mixture or compound as will be capable of being rendered temporarily pliable and extensible, substantially as and for the purpose described.

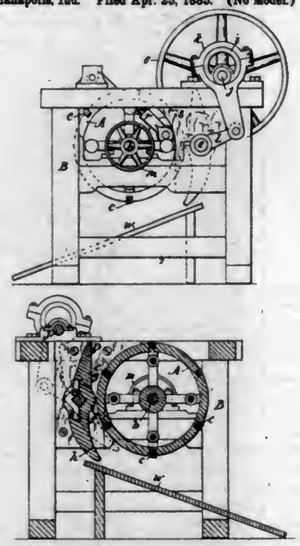
322,392. TELEPHER. SIDNEY H. OWENS, Churchland, Va. Filed Dec. 22, 1884. (No model.)



Claim.—1. The combination of a rectangular frame, grooved wheels secured upon the top thereof, transverse bar *u v*, secured to the sides of said frame, and flat metal springs 1 2 3 4, with the sliding plate *x*, having end bar, *z z'*, and coiled spring 5, adapted to elevate one end of said sliding plate, substantially as and for the purpose described.

2. The combination of a rectangular frame, grooved wheels secured upon the top thereof, and springs secured at one end to said frame, with the sliding plate *x*, having laterally-projecting bar *z z'*, the slotted trap hinged upon said plate, the coiled spring 5, secured to the sliding plate and to the top plate of frame, and the standard B, having hooks I thereon pointing downward, substantially as and for the purpose described.

322,393. CLAY-DISINTEGRATOR. CLAYTON POTTS and ALBERT POTTS, Indianapolis, Ind. Filed Apr. 25, 1885. (No model.)



Claim.—1. In a clay-disintegrator, a supporting-frame, a cylinder arranged to revolve, and a swinging plate, both mounted in said frame, and forming opposite sides of a trough for the reception of clay, and means for swinging said plate alternately toward and from said cylinder, all combined substantially as specified.

2. In a clay-disintegrator, a supporting-frame, a cylinder arranged to revolve, and having scraper-bars attached to its periphery, and a swinging plate, both mounted in said frame, and forming opposite sides of a trough for the reception of clay, and means for swinging said plate alternately toward and from said cylinder, all combined substantially as specified.

3. In a clay-disintegrator, a supporting-frame, a cylinder arranged to revolve, and having scraping-bars attached to its periphery, and an inclined plate, both mounted in said frame, and forming opposite sides of a trough for the reception of clay, all combined substantially as specified.

4. In a clay-disintegrator, the combination, with the revolving cylinder, of the swinging plate consisting of a central cylindrical portion, an upper straight portion, and a lower curved portion, all substantially as specified.

5. The combination, with the supporting-frame, the revolving cylinder, and the swinging plate, of the shaft *j*, eccentric *i*, yoke *k*, arm *l*, and wheels *n*, *o*, and *p*, substantially as and for the purpose specified.

6. In a clay-disintegrator, the combination, with cylinder A, having a series of longitudinal grooves, of the scraping-bars *c*, adjustably secured in said grooves, for the purpose specified.

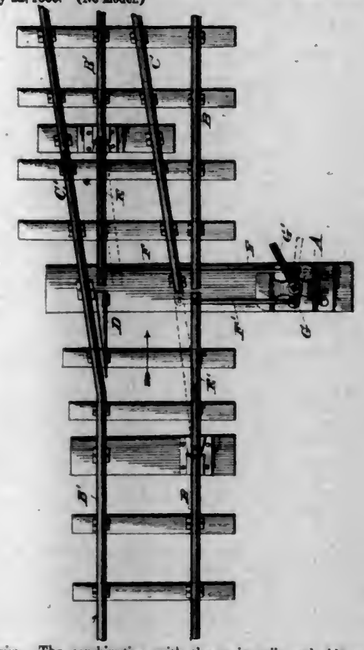
322,394. HINGE FOR STOVES, &c. HUGO PRETSCHOLD, Pittsburg, Pa., assignor to James G. Weldon and John Kelly, same place. Filed Jan. 19, 1885. (No model.)



Claim.—1. The combination, with a stove and a downwardly opening door thereon, of a hinge connecting the door to the stove, a pivoted supporting-arm attached to said hinge, and a spring which acts to press the arm against the door, thereby sustaining the same, substantially as shown and described.

2. The combination, with a stove having a hinged downwardly-opening door, of a pivoted supporting-arm attached to the hinge of said door and bearing against the door, said arm being provided with a shoulder near its pivotal point, and said hinge having a stop, *g*, against which said shoulder abuts, whereby the downward movement of the door is limited, substantially as shown and described.

322,395. AUTOMATIC RAILROAD-SWITCH. BENJAMIN F. PURVIANCE, Keokuk, Iowa, assignor of one-half to C. Hills, same place. Filed May 22, 1885. (No model.)



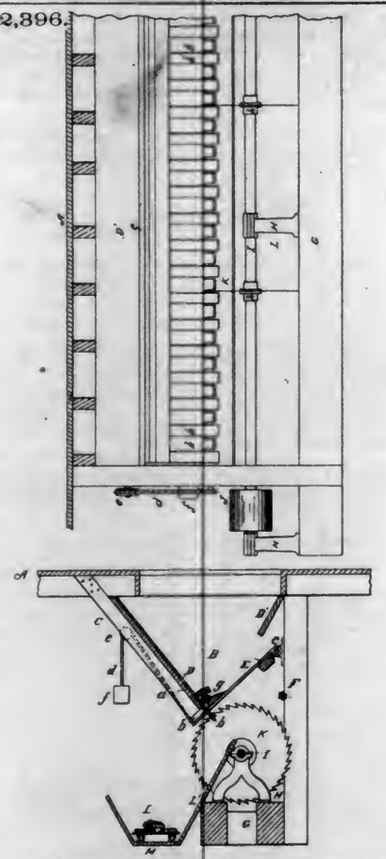
Claim.—The combination, with the main rails and side track, of the short movable rails, arranged as described, and adapted to be operated automatically by the wheels of the locomotive, the frog, and the draw-bars and bell-crank, having the operating lever or handle, all arranged to operate in the manner and for the purpose shown and set forth.

322,396. CIRCULAR SAWING MACHINE. ALEXANDER RODGERS, Muskegon, Mich. Filed Oct. 30, 1884. (No model.)

Claim.—1. As an improvement in sawing-machines, a hopper which receives the material to be divided directly from the mill-floor, one side of said hopper consisting of a swinging table, which closes the opening in the bottom of the hopper automatically when released from the weight of the material, in combination with a series of circular saws placed upon a revolving arbor beneath said hopper, and upon which saws the material falls when the table descends, substantially as set forth.

2. As an improvement in sawing-machines, a hopper provided with a counterbalanced swinging table having a notched or serrated edge, which closes the opening in the bottom of said hopper, and a lining for one side of said hopper having a serrated or notched edge, which notches alternate with those of the swinging table, in combination with the series

322,396.

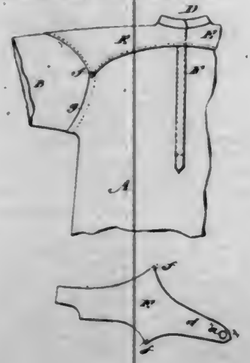


of saws mounted upon an arbor and placed beneath said hopper, as specified.

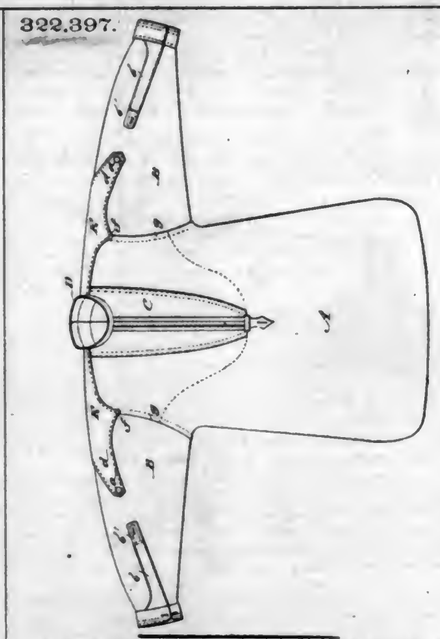
3. As an improvement in sawing-machines, a hopper provided with a swinging table which forms one side of the hopper and is operated by a counter-weight to close the bottom of said hopper, in combination with a series of circular saws placed upon a revolving arbor beneath the hopper, which saws divide the material as it falls upon them when the table swings downward, and a conveyer beneath the saws to carry away the divided edgings or refuse materials, all arranged for joint operation in the manner specified.

322,397. SHIRT. NATHAN ROGGEN and TOBA EISENSTEIN, New York, N. Y. Filed Apr. 6, 1885. (No model.)

Claim.—In a shirt, the yokes E, formed with points *f f* and extension *d*, and reaching from the neckband over the shoulder-seam and down upon the shirt-sleeve, substantially as described.



322,397.



322,398. DETACHABLE HORSESHOE. GEO. G. SCHROEDER, Washington, D. C., assignor of one-half to Emanuel Steinem, same place. Filed Mar. 27, 1885. (No model.)



Claim.—1. In a supplementary horseshoe having removable calks C, the inward projections b^2, provided with screw-threaded apertures, in combination with clamps having screw-threaded shanks to take into the apertures of said projections, said clamps being provided with cams at one end and being countersunk at the opposite end, as and for the purpose intended, substantially as described.

2. The combination of an ordinary horseshoe, A, with a supplementary detachable shoe having toe and heel flanges to prevent lateral displacement, and provided with inward projections supplied with cam-headed clamps having screw-threaded shanks inserted within screw-threaded apertures of said inward projections, as and for the purpose intended, substantially as described.

3. In a supplementary horseshoe, the clamping devices D, cam-shaped at one end and having a screw-threaded shank countersunk at its opposite end, as and for the purpose intended, substantially as described.

322,399. GAS-BURNER. ORREN M. SMITH, Philadelphia, Pa. Filed Sept. 25, 1883. (No model.)



Claim.—A gas-burner consisting of an outer shell having inlet and outlet openings at opposite ends, and provided with a flat centrally-perforated diaphragm to direct the current upward, and an inverted mixing-cup permanently fixed above the same, together with the exit slots or corrugations *d*, substantially as described.

322,400. GRINDING-MILL. AMBROSE W. STRAUB, Philadelphia, Pa. Filed June 13, 1883. (No model.)

Claim.—1. The grinding-mill casing A, composed of sections *a a'*, having lateral and bottom exit openings, a^3 a^4, shaft-bearings *c c'*, the base-

322,400.

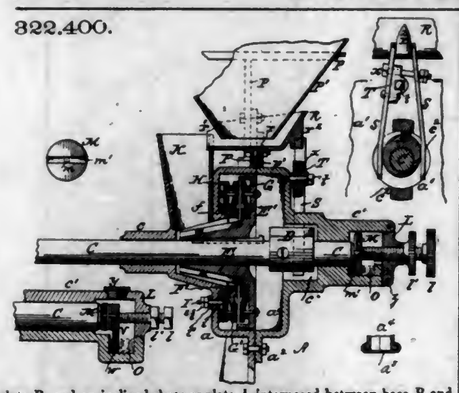


plate B, and an inclined chute or plate, *b*, interposed between base B and opening a^4, substantially as shown and described.

2. A grinding-mill casing composed of sections *a a'*, having shaft-bearings *c c'*, exit-openings a^3 a^4, slip or removable covers a^5 for said openings, base-plate B, and inclined chute *b*, substantially as shown and described.

3. In a grinding-mill, the combination of casing-section *a*, having central spindle-opening, with inwardly-projecting annular flange F and seat *f*, ring H, having beaded eye-edge *h*, bed-stone G', and tramming-screws I, secured to plate H and extending through the wall of section *a*, substantially as shown and described.

4. The combination of casing A, composed of sections *a a'*, having bearings *c c'*, spindle C, conical sleeve E, and cutters *e*, and the rearwardly inclining feed-trough K, having laterally-inclining side *k*, substantially as shown and described.

5. The combination of casing A, having shaft-bearings *c c'*, bed-stone G', the feed-tube K, the spindle C, conical sleeve E, provided with cutters *e* and flange or plate E', and attached running-stone G, substantially as shown and described.

6. The combination of casing A, having feed-tube K, journal-bearings *c c'*, and exit-openings, the axially-yielding non-rotating bed-stone G', the spindle C, sleeve E, provided with cutters *e* and plate E', and the running-stone G, substantially as shown and described.

7. The combination, with casing A, grinding-disks G G', shaft C, and eccentric D, of a pivoted feed-shoe having a stud, r^3, a pivoted damsel between said stud and eccentric, and an adjustable device for clamping the damsel tightly to said stud and loosely to said eccentric, substantially as shown and described.

8. In a grinding-mill, the combination of a feed-shoe, a spindle having an eccentric or cam, a pivoted damsel composed of two bars having open or separated ends, and an adjusting-screw for clamping one of said ends to the feed-shoe and the other to the spindle cam or eccentric, substantially as shown and described.

9. The combination of casing A, bail P, having socket *p'*, the feed-shoe R, having pivot *r* and stud r^3, the bearing *c'*, cut away at c^2 c^3, spindle C, eccentric D, and pivoted clamping-bars S S, substantially as shown and described.

10. In a grinding-mill, the combination of spindle C and bearing *c'*, having hinged or pivoted bridge-tree L, provided with temper-screw *l*, jam-nut *l'*, spring N, and tension devices *n* and *n'*, substantially as shown and described.

11. In a grinding-mill, the combination of a casing, A, having a fixed grinding-disk and a bearing, *c'*, provided with temper-screw *l* and oil-well O, spindle C, having rotary grinding-disk, and an oiling-button, M, having aperture *m* and groove *m'* in oil-well O, and adapted to the end of spindle C, as and for the purpose set forth.

12. In a grinding-mill, a damsel composed of a pivoted block, a fixed and a loose bar, and an adjusting device for moving the loose bar to and from the fixed bar, substantially as and for the purpose set forth.

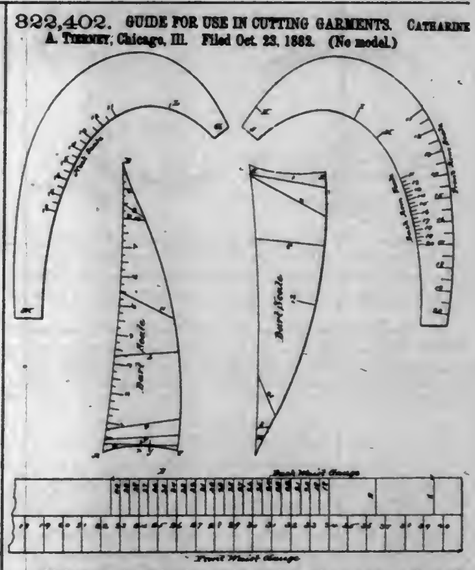
322,401. ADJUSTABLE REED FOR WARPING-MACHINES. HERMAN F. STRAW, Manchester, N. H. Filed Feb. 2, 1885. (No model.)

Brief.—The dent has a shoulder on which the thread rests, above which is a finger or spring to retain the thread in the space of the dent.



Claim.—As an improved article of manufacture, a dent having a shoulder, 2, and a finger located above the shoulder, the shoulder and finger co-operating to retain the warp-thread in the space of the dent, substantially as described.

322,402. GUIDE FOR USE IN CUTTING GARMENTS. CATHARINE A. TIERNEY, Chicago, Ill. Filed Oct. 23, 1882. (No model.)



Claim.—1. As an implement for use in cutting garments, the scale or pattern, Figs. 1 and 2, suitably formed on its inner and outer edges to give the required outline for cutting the front and back arm lines and also the neck-line, and provided on the inner edge of one side with the graduations marked "back-arm scale" and marks at H I, on the outer side with the graduations marked "front-arm scale" and mark at K, and on the inner edge of the opposite side with the graduations marked "neck-scale" and the mark at L, substantially as described.

2. The triangular dart-scale, Figs. 3 and 4, having its opposite sides curved to the required lines of the dart and its broader end concaved to afford a guide to the cut to be made at the neck in a back-waist piece of the garment, and provided on the inwardly-curved longer side with graduations and on its several faces with transverse lines, substantially as shown, and for the purposes set forth.

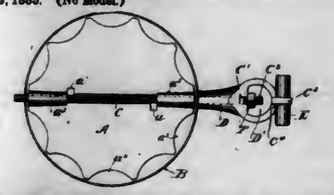
3. A rule provided with the dart-gage described, consisting of the marks 3 and 4, and also of the four series of graduations *a'*, *b'*, *c'*, and *d'*, respectively numbered as shown, and for the purposes set forth.

4. A rule provided with the front-waist gage, consisting of the mark 5 and the graduations 18 to 40, the latter being placed at a distance of one-third of an inch apart, as set forth, and for the purposes specified.

5. A rule provided with the back-waist gage, consisting of the marks 1 and 2 and the graduations 18 to 40, separated by spaces of one-sixth of an inch each, as and for the purposes set forth.

6. As an implement for cutting patterns or garments, the rule described, having upon one end the dart-gage, consisting of the marks 3 and 4, and the several series of graduations *a' b' c' d'*, severally numbered as shown, and upon the opposite end the front-waist gage composed of the mark 5 and uniformly-spaced graduations 18 to 40, and also upon the opposite edge of the rule the back-waist gage composed of the marks 1 and 2, together with the uniformly-spaced graduations 18 to 40, all substantially as and for the purposes set forth.

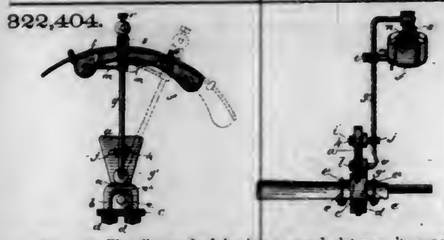
322,403. DAMPER. HENRY H. B. VINCENT, Minneapolis, Minn. Filed Feb. 9, 1885. (No model.)



Claim.—The combination, with the damper-rod C, having polygonal portion C' and the threaded end C^2, of the handle D, having an opening adapted to fit the portion C' of rod C and to permit the handle to slide thereon, and having the opening D' and the nut F, all substantially as described.

322,404. CARRIAGE-FENDER. LEWIS H. WOODEN, Hampstead, Md., assignor of one-third to William Wesley Warbasin, same place. Filed May 13, 1885. (No model.)

822,404.



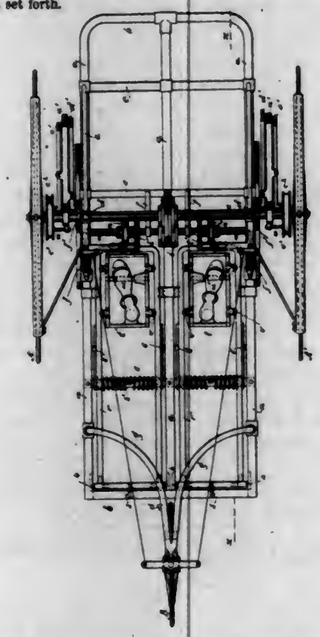
Claim.—1. The clip-standard having a curved slot near its upper end, in combination with a fender and a carrier-rod therefor pivotally connected to said clip-standard, and adjustably clamped by a fastening through said slot above the pivotal connection, substantially as herein set forth.

2. The combination of a fender or wheel-guard with a carrier-rod therefor and a clip-standard, the said carrier-rod being secured to the said clip-standard at two points, and having an integral spring formation between these points, substantially as described, for the purpose specified.

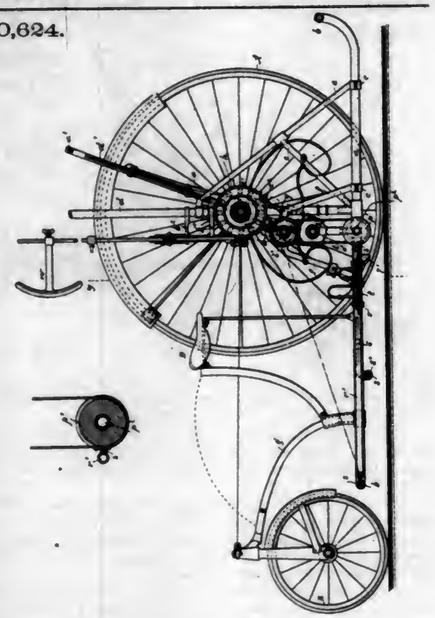
REISSUES.

10,624. TRICYCLE. FRANZ BARON VON PALSTERN, Kolitz, near Coswig, Saxony, Germany. Filed May 2, 1885. Original No. 301,307, dated July 1, 1884.

Claim.—1. The combination, in a vehicle to be propelled by the occupant, of foot-pieces, slides for supporting the same, and upon which the foot-pieces can be moved back and forth and raised and lowered, whereby the motions of the body in propelling the vehicle resemble those of walking, as set forth.



10,624.



2. The combination, in a vehicle to be propelled by the occupant, of foot-pieces adapted to be tipped into contact with the ground at the forward ends, slides for supporting the same, and upon which the foot-pieces can be moved back and forth and raised and lowered, whereby the motions of the body in propelling the vehicle resemble those of walking, as set forth.

3. In a vehicle to be propelled by the occupant, foot-rests adapted to slide back and forth and to rise and fall, and mechanism connecting such foot-rests with the wheels, whereby the movements of the body in propelling the vehicle are similar to those in walking, as set forth.

4. In a tricycle, the combination, with the driving-wheels, their chain-wheels and chains, of the shaft *k*, toothed wheels *l l'*, shafts *m m'*, straps, wheels, and clutches *n n'*, straps *o o'*, strap-wheels *p p'*, and mechanism, substantially as described, for operating these parts, as and for the purposes set forth.

5. The combination, in a tricycle, with the frame *a b c*, slotted at 4, of the tubular frames *r r'* and springs 5, the springs *s'*, the sliding frames *t t'*, and rollers *v* and the foot-pieces *u u'*, the connection at 3 between the frames *r r'* and straps *o o'*, and mechanism, substantially as described, for operating the main driving-wheels, as and for the purposes set forth.

6. The combination, with the frames *a b c*, of the tubular frames *r r'*, the sliding frames *t t'*, the pivoted foot-pieces *u u'*, straps for the feet upon said foot-pieces, and blocks 7 upon the under side of the toe portions, as and for the purposes set forth.

7. In a tricycle, the combination, with the rear steering-wheel, a cross-bar upon its head, and guiding-cords, of the pivoted arms *b'* and arm-rests *w w'*, as and for the purposes set forth.

8. In a tricycle, the combination, with the driving-wheels A A' and axle C, the drum *c'*, strap c^2, and rods 9 10, of the brake-rods *a'*, arms *d' e'*, toothed sectors *f'*, and lever 11, the parts being constructed and operating substantially in the manner and for the purposes set forth.

PHOTO LITH NORRIS PETERS WASHINGTON D.C.

DECISIONS
OF THE
COMMISSIONER OF PATENTS
AND OF UNITED STATES COURTS IN PATENT CASES.

DECISIONS OF THE U. S. COURTS.

U. S. Circuit Court—Southern District of New York.

GLEN COVE MANUFACTURING COMPANY *v.* LUDEMAN.

Decided January 2, 1885

1. The complainant registered in December, 1881, as a trade-mark for corn-flour, the word "Maizena," and an allegorical picture representing the cultivation of corn and the preparation of flour. In December, 1882, the defendant registered for the same purpose the word "Maizharina," accompanied with a pictorial representation of a man carrying a quantity of maize under his arm. Prior to the last-mentioned date the complainant had acquired a good common-law title to his trade-marks. *Held*, that as to the picture there is not, but that as to the word there is, infringement.
2. To entitle to relief, it is not necessary that the imitation should be so close as to deceive persons seeing the two marks side by side. It is sufficient if there is such a degree of resemblance as would deceive ordinary purchasers using ordinary caution.
3. A word used as a trade-mark is addressed to the eye as well as to the ear, and cannot be disassociated from its surroundings when the inquiry is whether it is a colorable imitation.
4. Registration of a trade-mark is only *prima facia* evidence of ownership, and the validity of the title so evidenced is always open to judicial inquiry.

Mr. Francis Forbes for the complainant.
Mr. Fred. Ingraham for the defendant.

WALLACE, *J.*:

The complainant moves for a preliminary injunction restraining the defendant from violating its right to the exclusive use of two trade-marks used by it in commerce with foreign nations and applied to a preparation of corn-flour for food, both of which it procured to be registered in the Patent Office December 6, 1881, under the provision of the act of Congress of March 3, 1881. The first consists of the word "Maizena," and the second is an allegorical picture representing the cultivation of the corn and the preparation and cooking of the flour by Indians. Both are applied by printing upon the packages in which the corn-flour is put up for sale.

The defendant is the registered owner of a trade-mark for corn-starch, which consists of the word "Maizharina," accompanied with a pictorial representation of a man carrying a quantity of maize in his arm, registered in the Patent Office December 5, 1882.

Both parties are manufacturers here of the corn-flour, and put it up here for sale in foreign countries, and both use their respective trade-mark upon the packages containing the flour or starch in the same way. The complainant or its predecessor in business was the originator of the trade-marks it has registered, had used them for many years to designate its corn-flour, and had acquired a good common-law title to them before the defendant undertook to employ either the word or the picture registered by him.

It is quite obvious that the defendant's word and picture as applied by him to the packages of his corn-flour put up for exportation to Germany and Cuba in connection with the similarity of his packages in form, size, color-printing, and other characteristics to the complainant's are well calculated to lead purchasers to confuse the identity of the products of the respective parties. As thus used by him, it would seem clear that he has purposely simulated the complainant's devices for distinguishing its product from those of others, and if the case turned on the principles which obtain ordinarily in equity when the use of a common-law right of property in a trade-mark is the subject of controversy it would be the duty of the court to order an injunction. Granting that the word and picture of the defendant are different from those of the complainant, a court of equity would enjoin the defendant from using them with such accessories as would lead purchasers to confound the one with the other, not because of the infringement of complainant's trade-mark, but because the defendant would not be allowed by any deceitful practice to impose upon the public to the prejudice and injury of the complainant.

But both parties are citizens of this State, and the jurisdiction invoked is therefore founded solely on the act of Congress for the protection of trade-marks, and can only be exercised according to the statute which invests the court with authority to hear the controversy. The complainant is here upon his statutory title to enforce his statutory rights in the enjoyment of his trade-marks, and the single question is, therefore, whether these have been invaded. If the defendant has appropriated either of these trade-marks, the complainant, as the party aggrieved, by the language of the act (section 7) "shall have his remedy according to the course of equity to enjoin the wrongful use of such trade-mark."

The complainant's trade-mark in the picture has not been infringed. There is such a substantial dissimilarity between this picture and that used by the defendant as to eliminate from the case any theory of a colorable imitation. Whether its trade-mark in the word "Maizena" has been appropriated by defendant's use of the word "Maizharina" is a more doubtful question. Although the defendant uses the word "Maizharina" upon packages of his corn-flour put up for the German market, it does not follow that the article will be sold exclusively in that market, and the tendency of the word to mislead purchasers of the article into the belief that it is the complainant's product does not depend solely upon the inquiry whether

it may mislead German purchasers. The defendant's act is committed here, and whether it is a wrong or is justifiable must be ascertained upon the principles of our jurisprudence, and not upon those of the law of Germany. Unless the complainant's trade-mark is used on goods intended to be transported to a foreign country, by the terms of the act of Congress the court can take no cognizance of the wrong in a suit between citizens of the same State. (Section 11.) If it is so used, the court will not be concluded by the result of an inquiry whether it is used with an intent to mislead purchasers in the country where the goods are to be ultimately sold, because the goods may be sold here or in some country other than the one where they are to be ultimately sold, and the act of Congress contemplates a complete protection to the right which it creates.

If the decision were to depend solely upon the question of a substantial similarity in the sonorous properties between the word used by the complainant and that used by the defendant, decisions in analogous cases furnish sufficient authority for granting an injunction. Thus the word "Cocoine" has been held to be an infringement of a trade-mark in the word "Cocaine," (*Burnet* v. *Phalen*, 3 Keys, 594;) "Bovina" of the word "Boviline," (2 Daly, 521;) the word "Appolinis" of the word "Appolinaris," (14 Blatch., 380;) "Hostetler" of the word "Hostetter," (1 Dillon, 329.)

The rule is well settled, that to entitle the proprietor of a trade-mark to relief against an illegal appropriation it is not necessary that the imitation should be so close as to deceive persons seeing the two marks side by side. It is sufficient if there is such a degree of resemblance that ordinary purchasers using ordinary caution are likely to be deceived.

But the question whether the defendant has colorably imitated the complainant's trade-mark is not to be solved merely by considering the resemblance between the words themselves. If the defendant has dressed his word in such accessories that it may be mistaken for the complainant's word, that circumstance is not to be overlooked. A word used as a trade-mark is addressed to the eyes as well as to the ears of purchasers of the article to which it is applied. It cannot be disassociated from its surroundings when the inquiry is whether as used it is a colorable imitation of another's trade-mark. The defendant has artfully garbed and draped a word used by him bearing a close resemblance to the complainant's word, so that its identity is rendered more indistinguishable from that of the complainant's than it is intrinsically.

The defendant insists that his certificate of registry is a decision of the Commissioner of Patents that he is entitled to the word "Maizharina" in connection with his picture as a trade-mark, notwithstanding the complainant's trade-mark in the word "Maizena," which is a judicial determination, and is conclusive as between the parties. The sufficient answer to this proposition is that the act of Congress makes the registration of a trade-mark only *prima facia* evidence of ownership. (Section 7.) The inquiry is therefore always open as to the validity of the title to a trade-mark evidenced by the registration. The registration could not confer a title to the trade-mark upon the complainant if some other corporation or individual had acquired a prior right by adoption and use, nor could it vest defendant with a title as against the complainant's common-law title. In this view the only office of a registration is to confer jurisdiction upon the court to protect a trade-mark when the proprietor has obtained the statutory evidence of title, and the only function of the Commissioner of Patents is to determine whether an applicant has a presumptive right to the trade-mark.

An order is granted for an injunction in conformity with this opinion.

U. S. Circuit Court—Southern District of New York.

ARNHEIM *v.* FINSTER *et al.*

Decided July 1, 1885.

Application for patent for an improvement in caps covered a combination of the body of a cap and a neck-protector. This was rejected on references, with the suggestion that the forward band be included, and the claim being so amended patent issued. The patent was afterward reissued for the original combination, on the ground of a mistake by his solicitor, of which the patentee first learned shortly before the reissue. *Held*, that the validity of the patent is too doubtful to support a motion for injunction because of alleged infringement, for the reason that this does not appear to be such a mistake as would allow him to resume what the record of the Patent Office would show he had for so long a time left surrendered.

Mr. C. Wyllys Betts and *Mr. Frederic H. Betts* for the plaintiff.

Mr. Gilbert M. Plympton for the defendant.

WHEELER, *J.:*

Marks v. *Fox*, (18 Blatchf., 502; 6 Fed. Rep., 727,) upon this same patent, Reissue No. 7,807, Division A, and No. 7,808, Division B, granted to Marcus Marks July 24, 1877, on surrender of original, No. 166,395, dated August 3, 1875, for an improvement in caps, would be ample authority for granting this motion for a preliminary injunction if that decision were to be followed now. It would of course be implicitly followed but for the decisions of the Supreme Court upon reissued patents made since. That such a case might have been decided differently in the light of those decisions is recognized in *Coon* v. *Wilson*, (113 U. S., 268.) This motion must be passed upon in view of these latter cases. The original patent was for a head-covering as a whole, consisting of a crown, a forward band, and rearward neck-protector moving up and down at pleasure. The original application was for a patent for the combination of the neck-protector with the body of the cap, without including the forward band. The application was rejected on references to anticipating devices, with a suggestion that the forward band be included. Thereupon the claim was amended according to the suggestion by the solicitor of the applicant, and the patent was issued. The alleged infringement does not have the forward band, which the patentee, under the direction of the Patent Office, made material in the original patent and would not infringe that (*Fay* v. *Cordesman*, 109 U. S., 408.) If it infringes the reissue, the infringement must be of the combination without the forward band, which was applied for and rejected, and the rejection acquiesced in. What was so given up by the applicant was effectually disclaimed and surrendered to the public, (*Mahn* v. *Harwood*, 112 U. S., 354,) unless there is something to distinguish this case in this respect from that. The patentee appears to have been ignorant of the rejection and change of claim until shortly before the reissue. Had he known of the rejection he might and probably would have pursued a different course from what the solicitor took for him. It is argued that therein was a sufficient mistake to allow of a restoration of the original claim by a reissue as a correction; but there was no mistake in the presentation of the original claim. No part was left out or varied by any misunderstanding between the inventor and the draftsman of his application. He succeeded in applying for exactly what he wanted. The Patent Office acted upon his application understandingly and in due course. The mistake, if any, lay between him and the solicitor in not prosecuting the application in the direction of an appeal. This does not appear to be such a mistake as would allow him to resume what the records of the Patent Office would show he had for so long a time left surrendered. These considerations make the validity of the reissue in respect to this infringement too doubtful to warrant a preliminary injunction.

Motion denied, and provisional stay of proceedings vacated.

U. S. Circuit Court—Southern District of New York.

Decided March 7, 1885.

RAILWAY REGISTER MANUFACTURING COMPANY *v.* BROADWAY AND SEVENTH AVENUE RAILROAD COMPANY. SAME *v.* CENTRAL PARK, NORTH AND EAST RIVER RAILROAD COMPANY.

1. Petition for rehearing held sufficient and demurrer thereto overruled, although the petition failed to show newly-discovered evidence which might have entitled petitioners *as a matter of right* to have the cases reopened.
2. Cases reopened and rehearing granted upon facts disclosed by file-wrapper and contents, showing that claims formerly embraced in a prior application upon which a patent was granted were abandoned and afterward patented to same applicant in a subsequent patent.
3. The five claims upon which a decree was directed for plaintiff were pending with the application of the same inventor for Patent No. 226,626, and disallowed. Applicant thereupon notified the Commissioner of Patents that he acquiesced in the decision and waived all right of an appeal. He afterward applied for and obtained these claims in the patent sued upon. In view of the decisions of the Supreme Court as to the effect of such proceedings, the evidence disclosed may be quite important and decisive.
4. That in the interest of the litigants and the public as well, considering the newness of the patent, it is desirable that the cases should be as full as may be in respect to the validity of the claims sued upon.
5. The right to reopen cases rests largely in the discretion of the court, and in the exercise of such it is proper that these cases should be opened for the admission of such evidence.

Mr. John Dane, Jr., and *Mr. John F. Dillon* for the petitioners.

Mr. E. N. Dickerson, Jr., for the petitionee.

WHEELER, *J.:*

These causes have been before the court on final hearing, (22 Fed. Rep., 655.) They have now been heard on demurrer to petitions of defendants to reopen the cases for further proofs and for rehearing.

The defendants do not show by their petitions that there is further material evidence which they did not know of and could not by reasonable diligence find to put into the cases, so as to entitle them as a matter of right to have the cases reopened to receive such evidence.

They do show that the five claims of Patent No. 265,145, dated September 26, 1882, on which a decree was directed for the plaintiffs were pending with the application of the same inventor for Patent No. 226,626, and disallowed, and that he thereupon notified the Commissioner that he acquiesced in the decision and waived all right of appeal from it, and took that patent without them and afterward applied for and obtained them in this patent, and that these facts appear in the file-wrapper and contents of that patent. In view of the decisions of the Supreme Court as to the effect of such proceedings, which need not be here enumerated, this evidence may be quite important and decisive. How much so is not now passed upon further than to hold that it is material to the making up of a complete case upon these claims.

And this patent is so recent that it is desirable in the interests of the public as well as of the parties that this case should be as full as may be, so that it may be as decisive as it can be in respect to the validity of the patent as to these claims. This matter is understood to rest largely in the discretion of the court, and in the exercise of such discretion it would seem proper that the case should, upon some just terms, be opened for the admission of this evidence. The petition is therefore thought to be sufficient for this purpose. The other evidence is mostly cumulative, and not so directly material as to call for the exercise of discretion in favor of its admission into the case. A rehearing will follow the admission of the evidence as of course.

The demurrers are overruled, the petitioners to answer over by March 20.

U. S. Circuit Court—Southern District of New York.

CARY *et al. v.* WOLFF *et al.*

Decided February 7, 1885.

1. Letters Patent No. 116,266, for a method of tempering furniture and other coiled springs by subjecting them to a "spring-temper heat," whereby the strength and elasticity lost in coiling are restored, are valid, because, though the process is old, the result is new and useful.
2. The defendants, who use the same process for the same purpose and with the same result, although with a higher degree of heat, are held to infringe.

Mr. Robert H. Duncan and *Mr. Samuel A. Duncan* for the orators.

Mr. Charles D. Adams and *Mr. Frederic H. Betts* for the defendants.

WHEELER, *J.:*

This suit is brought upon Letters Patent No. 116,266, dated June 27, 1871, and granted to the orator Cary for an improvement in mode of tempering springs. The specification sets forth that the invention relates to spiral springs, usually made in conical form of steel wire, used in upholstering chairs, sofas, and for bed-bottoms; describes the manner of making them by coiling and forcing hard-drawn steel wire to the proper shape, whereby the outer portion of the wire is stretched and the inner portion crushed, and its strength, elasticity, and durability greatly reduced; states the discovery that subjecting them to a degree of heat known as "spring temper heat"—about 600°, more or less—for about eight minutes will restore the wire to its normal condition by producing a complete homogeneity of the metal, and greatly increases their value. The

claim is for the method of tempering furniture or other coiled springs, substantially as described. The defendants subject such springs, after being coiled, to a degree of heat beyond the range of what is known among artisans in tempering steel as "spring-temper heat," and beyond 600°, for the purpose of restoring the elasticity and strength of the wire to its normal condition. They set up want of patentable novelty in the invention and deny infringement of the patent as defenses to the suit.

If the patent was for the process merely of tempering steel by merely subjecting it to heat, it would apparently be anticipated in several ways. That process was known to experts and artisans, and described with particularity in books before the date of this invention. The process of the patent does not merely add temper as a quality to steel which did not have it before; it restores the lost strength and elasticity of the wire consequent to the displacement of the particles of which it is composed by the process of making it into springs. The discovery was that the application of heat would effect that restoration, which is a different thing from tempering. Subjection to heat for casting and tempering, and to produce malleability, and for various other purposes was well enough known; but it was not known for this purpose until it was applied to this kind of springs in their peculiarly-weakened state. The discovery was of a new application of an old process, which produces a new and highly useful result. Wire bells for clocks were made to have sonorous properties by the same process in kind, but for a different purpose, and with a different result. What seems to be the nearest to this is the method of shaping and spacing the coils of hair balance-springs for marine clocks by coiling the wire into a mold of the required shape, called a "snail," and subjecting it to heat while there in shape to make it retain its place; but there was no displacement of the particles of which the wire was composed by distortion, and the process was not a restoration of any lost quality, but a mere shaping of the wire into the article desired. That the discovery of this effect of restoration by this mode was new hardly admits of question upon the evidence. Experts called by the defendants admit that they did not believe the result would be produced until they saw the process tried in connection with this litigation; and that this production of a new and useful result by a new application of a process, although old, is patentable seems to be clear. (*Crane* v. *Price*, 1 Webst. Pat. Cas., 393; *Smith* v. *Goodyear Co.*, 93 U. S., 486; *Loom Co.* v. *Higgins*, 105 U. S., 580.)

It is claimed that the application of this process to the very purpose of restoring this kind of springs was known to and made by J. Joseph Eagleton prior to the invention by Cary, upon which knowledge the application for Letters Patent No. 122,001, as involved in *Eagleton Manufacturing Company* v. *West, Bradley & Cary Manufacturing Company*, (111 U. S., 490,) was founded. Eagleton, however, appears to have done nothing in this direction to such springs but to japan them and bake on the japan at a degree of heat lower than will produce good results in restoring strength and elasticity, and neither he nor those who followed up his application appear to have known of the benefits of the subjection of the strained spring to heat until after Cary's invention. What they knew and did would not bring the knowledge of Cary's discovery to others any more than to themselves, nor affect the validity of his patent. (*Colgate* v. *Western Union Telegraph Company*, 15 Blatchf., 365; *Tilghman* v. *Proctor*, 102 U. S., 707.) The patentee was the meritorious discoverer of this application and effect of the process, and his patent for it appears to be valid.

The defendants use Cary's process for the same purpose and with the same result, although they use a higher degree of heat. The patent does not limit the process to any precise heat. The substance of the patented invention is taken, and the use of more heat does not make the process different in principle from the patented process. (*Tilghman* v. *Proctor*, supra.) The extent of the infringement is not important now. Any infringement entitles the orator to a decree.

Let a decree be entered for an injunction and account according to the prayer of the bill, with costs.

THE OFFICIAL GAZETTE OF THE United States Patent Office.

[*BY AUTHORITY OF CONGRESS.*]

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The Official Gazette.

The OFFICIAL GAZETTE is published every Tuesday, simultaneously with the weekly issue of patents. From January 1, 1872, (the commencement of its publication,) to June 30, 1883, it was published and bound in semi-annual volumes; since July 1, 1883, in quarterly volumes. All subscriptions must commence with the beginning of a volume; none taken for less than three months. Terms: To all subscribers within the United States and Canada, $5 per annum; to foreign subscribers, $7; single copies, 10 cents; bound semi-annual volumes, (prior to June 30, 1883,) full sheep, $4 per volume; bound quarterly volumes, (subsequent to July 1, 1883,) full sheep, $2.75 per volume. No club rates. *Payment in advance.* All orders should be addressed to "The Commissioner of Patents, Washington, D. C."

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Appendix No. 2 to the index to patents relating to electricity, covering the period of time from July 1, 1882, to June 30, 1883, has been issued, and is now for sale. These indexes, arranged alphabetically, numerically, and by classes, are completed to June 30, 1883, and comprise the following volumes:

Vol. 1. Index to patents relating to electricity granted by the United States prior to June 30, 1881, with an appendix, July 1, 1881, to June 30, 1882. One volume, 250 pages. In paper covers, $3; bound, $5.

Vol. 2. Appendix No. 2, July 1, 1882, to June 30, 1883. One volume, 50 pages. In paper covers, $1.50.

Vol. 3. Appendix No. 3, July 1, 1883, to June 30, 1884. One volume, 60 pages. In paper covers, $1.50.

Issue of July 21, 1885.

Patents	481	No. 322,405 to No. 322,885, inclusive.
Designs	7	No. 16,173 to No. 16,179, inclusive.
Trade-Marks	23	No. 12,417 to No. 12,439, inclusive.
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Total issue	538	

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States.	Patents and Designs.	Trade-Marks and Labels.	States.	Patents and Designs.	Trade-Marks and Labels.
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Arizona Territory	.....	.....	Nevada	.....	.....
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California	11	.....	New Jersey	14	1
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Connecticut	19	16	New York	99	7
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Idaho Territory	.....	.....	South Carolina	1	.....
Illinois	40	1	Tennessee	8	.....
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Indian Territory	.....	.....	Utah Territory	.....	.....
Iowa	11	6	Vermont	3	.....
Kansas	4	1	Virginia	3	2
Kentucky	7	1	Washington Territ'y	.....	.....
Louisiana	2	.....	West Virginia	2	.....
Maine	1	.....	Wisconsin	13	.....
Maryland	8	1	Wyoming Territory	.....	.....
Massachusetts	39	2	United States Army	.....	.....
Michigan	21	.....	United States Navy	.....	.....
Minnesota	7	.....			
Mississippi	3	.....	Total to citizens of the United States	456	44
Missouri	16	1			
Montana Territory	1	.....			

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Bermuda	.....	.....	Russia	.....	.....
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Canada	5	.....	Spain	.....	.....
Chili	.....	.....	Sweden	1	.....
Colombia, U. S. of	.....	.....	Switzerland	.....	.....
Cuba	.....	.....	West Indies	.....	.....
Denmark	2	.....			
Ecuador	.....	.....	Total to citizens of foreign countries	32	3
England	11	2			
France	4	.....			

DESIGNS.

16,173.—CATALOGUE-COVER.—*John De Yough*, New York, N. Y. Application filed March 7, 1885. Term of patent 14 years.

16,174.—MOLD FOR JELLY, &c.—*Alfred Joyce*, Montreal, Quebec, Canada. Application filed June 8, 1885. Term of patent 7 years.

16,175 and 16,176.—QUILTING-PATTERN FOR SKIRTS.—*William Koch*, New York, N. Y., assignor of one-half to *Charles Hyams*, same place. Applications filed June 30, 1885. Term of patents 7 years.

16,177 and 16,178.—RUG.—*Adolph Petzold*, Philadelphia, Pa. Applications filed April 11, 1885. Term of patents 3½ years.

16,179.—DOOR-HANGER.—*John S. Buhrer*, Chicago, Ill. Application filed April 13, 1885. Term of patent 14 years.

TRADE-MARKS.

[Certificates of registration of Trade-Marks numbered 8,191 and upward are registered under the act of March 3, 1881.]

12,417.—RAZORS, RAZOR-GUARDS, RAZOR-STROPS, AND SHAVING-CREAM.—*Alfred Victor Brokhahne*, New York, N. Y. Application filed April 20, 1885.
"The word 'VICTOR.'"

12,418.—FOOD FOR INFANTS.—*Fairchild Bros. & Foster*, New York, N. Y. Application filed June 13, 1885.
"The word 'PEPTOGENIC.'"

12,419.—RUBBER, LEATHER, AND CANVAS BOOTS AND SHOES.—*Goodyear Boot and Shoe Company*, New York, N. Y. Application filed June 25, 1885.
"The figure of a horseshoe."

12,420.—PERFUMERY AND PERFUMED PREPARATIONS FOR THE TOILET.—*Charles Augustus Gosnell* and *Charles Percy Gosnell*, London, England. Application filed May 19, 1885.
"The words 'CHERRY BLOSSOM.'"

12,421.—SHOE AND GARMENT CLASPS.—*Joseph C. Hammond, Jr.*, Rockville, Conn. Application filed June 17, 1885.
"The arbitrary letter-symbol 'H' stamped, printed, or otherwise marked upon a clasp or buckle tongue or its pictorial representation."

12,422.—HERBAL REMEDIES.—*S. Andral Kilmer* and *Jonas M. Kilmer*, Binghamton, N. Y. Application filed March 7, 1885.
"The outline of a bottle bearing upon its face a diagram of a portion of the human body obliquely severed below, with some of the various organs lettered."

12,423.—SNUFF.—*P. Lorillard & Co.*, Jersey City, N. J. Application filed June 20, 1885.
"Three parallel bands—two of silver and one of blue, the latter being the central band."

12,424.—WORSTED.—*Tittle & Krüger*, Leipsic, Germany. Application filed June 24, 1885.
"The representation of a swan."

12,425.—HATS, CAPS, AND BONNETS.—*Cooper Tress*, London, England. Application filed June 23, 1885.
"A group of prize-medals surmounted by the British coat of arms."

12,426.—VELVETS.—*A. Wimpfheimer & Bro.*, New York, N. Y. Application filed June 26, 1885.
"A representation of the statue of Columbus at Genoa."

12,427.—CHEWING AND SMOKING TOBACCO.—*Joseph G. Dill*, Richmond, Va. Application filed June 22, 1885.
"The word-symbol 'GONDOLA.'"

12,428.—CHEWING AND SMOKING TOBACCO.—*Joseph G. Dill*, Richmond, Va. Application filed June 22, 1885.
"The word-symbol 'BALD EAGLE.'"

12,429.—VARNISHES AND JAPANS.—*Theodore T. Lines*, Philadelphia, Pa. Application filed June 20, 1885.
"The designation 'KEYSTONE.'"

12,430.—CERTAIN SPECTACLE AND EYEGLASS FRAMES.—*Morgan & Headly Optical Manufacturing Company*, Philadelphia, Pa. Application filed June 22, 1885.
"The representation of the word 'ROYAL.'"

12,431.—LAUNDRY-SOAP.—*Oberne, Hosick & Co.*, Chicago, Ill. Application filed June 3, 1885.
"The arbitrarily-selected words 'OLD GERMAN FAMILY' and a pictorial representation with figures grouped."

12,432.—ALL KINDS OF FINE-CUT CHEWING-TOBACCO.—*J. Schriber & Co.*, Cleveland, Ohio. Application filed May 18, 1885.
"The design of the bust, head, and part of the figure of an Indian woman with the face turned looking over the left shoulder, blanket thrown over left shoulder and hanging loosely around the body, fur collar over both shoulders, hair hanging down loose, and ear-ring showing in right ear, a bunch of feathers fastened on the forehead covering the top, right arm hanging down, partly covered, and hand holding blanket, left arm across the waist with hand holding blanket, and a tobacco-plant lying back along the arm, to the left and in the rear are two tents, two Indians, and papoose, to the right and in the rear is prairie and river scene, the whole inclosed in an oblong circle, and the words 'PRAIRIE FLOWER.'"

12,433.—WHEAT-FLOUR.—*Steelton Flouring Mill Company*, Steelton, Pa. Application filed June 11, 1885.
"The word or title 'BONITA.'"

12,434.—CIGARS.—*J. P. Wallace*, *James Purnell*, and *James A. Wallace*, Maysville, Ky. Application filed June 17, 1885.
"A picture of the old market-house at Maysville, Kentucky, and the words 'MARKET BOY.'"

12,435.—DRESS-SHIELDS.—*Augustus H. Brinkmann*, Baltimore, Md. Application filed June 24, 1885.
"The words 'THE PERFECTION,' inclosed in an ellipse."

12,436.—MAPLE-SIRUP AND MAPLE-SUGAR.—*Daniel M. Hazen*, Cambridge, Mass. Application filed March 27, 1885.
"The word 'HAZEN'S,' associated with the picture of a wood or forest scene, showing a grove of maple-trees with a man gathering sap in the foreground and a man engaged in boiling the same in a kettle suspended over a fire."

12,437.—SPECTACLES AND EYEGLASSES.—*Henry Hirschberg*, St. Louis, Mo. Application filed June 23, 1885.
"The arbitrary words 'NON CHANGEABLE.'"

12,438.—LAUNDRY AND TOILET SOAP.—*Stephen Strunz*, Pittsburg, Pa. Application filed June 30, 1885.
"The word-symbol 'CAMPHORINE.'"

12,439.—CERTAIN NAMED DRAWING MATERIALS AND INSTRUMENTS. *E. G. Soltmann*, New York, N. Y. Application filed June 16, 1885.
"The word 'VICTOR,' inclosed in quotation marks."

LABELS.

4,507.—Title: "THE COLLINS CLIPPER" (FOR EDGE TOOLS, &c.)—*The Collins Company*, Collinsville, Conn. Application filed December 15, 1882.

4,508.—Title: "THE NEW SPANISH—LARGE." (FOR EDGE TOOLS, &c.)—*The Collins Company*, Collinsville, Conn. Application filed December 15, 1882.

4,509.—Title: "THE NEW SMALL COLLINS AXE."—*The Collins Company*, Collinsville, Conn. Application filed December 15, 1885.

4,510.—Title: "THE B X SWIFT" (FOR EDGE TOOLS, &c.)—*The Collins Company*, Collinsville, Conn. Application filed December 15, 1882.

4,511.—Title: "THE NEW LARGE COLLINS AXE."—*The Collins Company*, Collinsville, Conn. Application filed December 15, 1882.

4,512.—Title: "THE LARGE KING." (FOR EDGE TOOLS, &c.)—*The Collins Company*, Collinsville, Conn. Application filed December 15, 1882.

4,513.—Title: "THE OLD COLLINS AXE."—*The Collins Company*, Collinsville, Conn. Application filed December 15, 1882.

4,514.—Title: "THE OLD SPANISH—SMALL." (FOR EDGE TOOLS, &c.)—*The Collins Company*, Collinsville, Conn. Application filed December 15, 1882.

4,515.—Title: "THE COLLINS PLOW."—*The Collins Company*, Collinsville, Conn. Application filed December 15, 1882.

4,516.—Title: "THE SMALL KING" (FOR CAST STEEL TOOLS.)—*The Collins Company*, Collinsville, Conn. Application filed December 15, 1882.

4,517.—Title: "THE COLLINS WRENCH."—*The Collins Company*, Collinsville, Conn. Application filed December 15, 1882.

4,518.—Title: "THE B V WISE" (FOR EDGE TOOLS, &c.)—*The Collins Company*, Collinsville, Conn. Application filed December 15, 1882.

4,519.—Title: "THE CHALLENGE CLIPPER" (FOR EDGE TOOLS.)—*The Collins Company*, Collinsville, Conn. Application filed December 15, 1882.

4,520.—Title: "THE NEW SPANISH—SMALL" (FOR EDGE TOOLS, &c.)—*The Collins Company*, Collinsville, Conn. Application filed December 15, 1882.

4,521.—Title: "THE COLLINS SPANISH MACHETE."—*The Collins Company*, Collinsville, Conn. Application filed December 15, 1882.

4,522.—Title: "EGYPTIAN BALSAM."—*Frank Rufus Hadley*, New Bedford, Mass. Application filed February 24, 1885.

4,523.—Title: "DR. GRAY'S DETERGENT PERSPIRATION POWDER." *Charles Lawrence*, Wichita, Kans. Application filed June 29, 1885.

4,524.—Title: "D. A. SAWYERS' PAIN SPECIFIC."—*David Allen Sawyers*, Macksburg, Iowa. Application filed May 15, 1885.

4,525.—Title: "D. A. SAWYERS' REMEDY FOR KIDNEY, BLADDER, AND URINARY ORGANS."—*David Allen Sawyers*, Macksburg, Iowa. Application filed May 15, 1885.

4,526.—Title: "D. A. SAWYERS' TONIC BITTERS."—*David Allen Sawyers*, Macksburg, Iowa. Application filed May 15, 1885.

4,527.—Title: "D. A. SAWYERS' SPECIFIC FOR CROUP."—*David Allen Sawyers*, Macksburg, Iowa. Application filed May 15, 1885.

4,528.—Title: "D. A. SAWYERS' COMPOUND CATHARTIC AND VEGETABLE BLOOD PURIFIER."—*David Allen Sawyers*, Macksburg, Iowa. Application filed April 23, 1885.

4,529.—Title: "FARMER'S" (FOR HORSE AND CATTLE POWDER.)—*C. H. Vanauken*, Newark, N. J. Application filed April 4, 1885.

4,530.—Title: "D. A. SAWYERS' COUGH SYRUP."—*David Allen Sawyers*, Macksburg, Iowa. Application filed May 15, 1885.

PATENTS

GRANTED JULY 21, 1885.

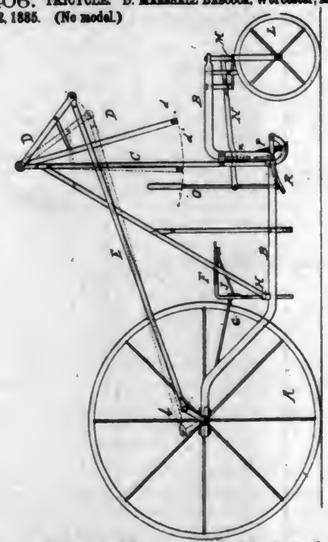
322,405. DRIVE-CHAIN. CHARLES E. ALDEN, Philadelphia, Pa., assignor, by direct and mesne assignments, of five-eighths to David Buist and John Caldwell, both of same place. Filed Oct. 31, 1884. (Model.)



Claim.—1. The combination, in a chain, of links having internal projections with couplers having V-shaped slots or openings, substantially as shown and described.

2. The combination, with the chain-links A A, each of which has four internal beveled projections, of the C-shaped couplers having beveled edges, substantially as shown and described.

322,406. TRICYCLE. D. MARSHALL BABCOCK, Worcester, Mass. Filed Feb. 2, 1885. (No model.)



Claim.—1. In a tricycle, the combination of the frame, the driving-wheel, the two steering-wheels operated by cranks whose pins are acted on by a pivoted slotted bar simultaneously in opposite directions, and the means, substantially as described, for operating and holding the bar and wheels in position, as set forth.

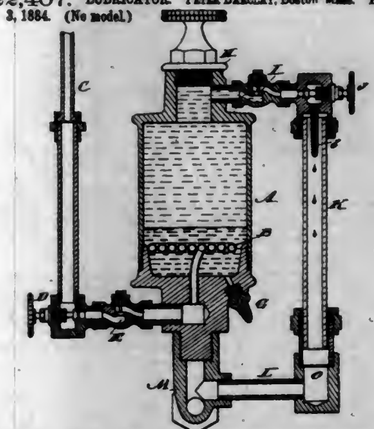
2. The pivoted slotted bar arranged to move the two steering-wheels simultaneously by moving the cranks in opposite directions, in combination with the connecting-rod and steering-lever, substantially as specified.

3. The double-curved connecting bar or rod, as and for the purposes set forth.

4. The automatically-locking holder consisting of the spring-operated wedge S, with the slide and frame embracing the rod N, in combination with the steering mechanism, as above set forth.

5. The spring-seat resting on brackets sliding in a bar of the frame and supported on springs, in the manner and for the purposes above set forth and described.

322,407. LUBRICATOR. PETER BARCLAY, Boston Mass. Filed Dec. 3, 1884. (No model.)



Claim.—1. In a steam-pressure engine-lubricator constructed to operate by drop-feed, and in which the oil in the cup is indirectly discharged by water of condensation derived from the steam, the combination, with the oil-cup having an oil-discharge outlet at or near its top, of the lower perforated steam-condensing coil, and an inlet for the steam to said coil, substantially as specified.

2. In a steam-pressure engine-lubricator constructed to operate by a downward drop-feed, substantially as described, the combination, with the glass or glazed indicator-tube, of a perforated diaphragm arranged near or below the lower end of said tube, essentially as and for the purpose herein set forth.

3. The combination of the feed-nozzle *b* with the indicator-tube K and the perforated diaphragm O, arranged near or below said tube, essentially as described.

4. The combination, with the lubricator-cup A, of the steam-condensing perforated coil B, having a lower central tubular extension forming a support and inlet to the coil, and an outer closed end, substantially as shown and described.

322,408. HOLDER FOR BAGS, &c. ANDREW N. BARNES, Rondout, N. Y., assignor of one-half to Charles L. Edmonds, same place. Filed Dec. 18, 1884. (No model.)



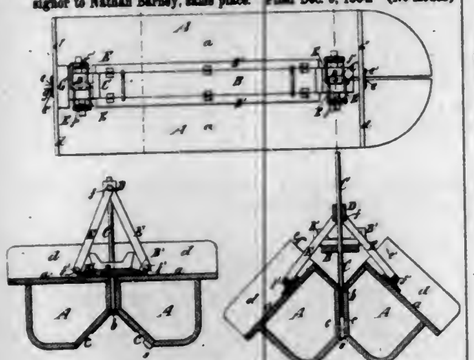
Claim.—1. The combination, with a hollow bag-holder formed with an external inclined periphery, of a correspondingly-formed hollow grip having an internally-inclined gripping-surface, and a pivoted hinged link provided with a stop, and adapted to lock the gripping-surface upon the overlapped portion of the mouth of the bag or receiver, substantially as shown and described.

2. The combination, with the grip F, of the forked extension F',

link f^2, bearing-piece G, having arms g g, and holder E, substantially as shown and described.

3. The combination, with the grip F, of the forked extension F', link-piece f^3, having extension f^4, bearing-piece G, formed with arms g g, holder E, and the vertically-adjustable brackets B, substantially as shown and described.

322,409. DUMPING-SCOW. GEORGE D. BARNEY, Brooklyn, N. Y., assignor to Nathan Barney, same place. Filed Dec. 6, 1884. (No model.)



Claim.—1. In a dumping-boat, the combination of two floats or pontons having approximately flat deck portions hinged at their inner sides between their top and bottom, and adapted to swing downward and inward toward each other at their lower portions, substantially as and for the purpose herein described.

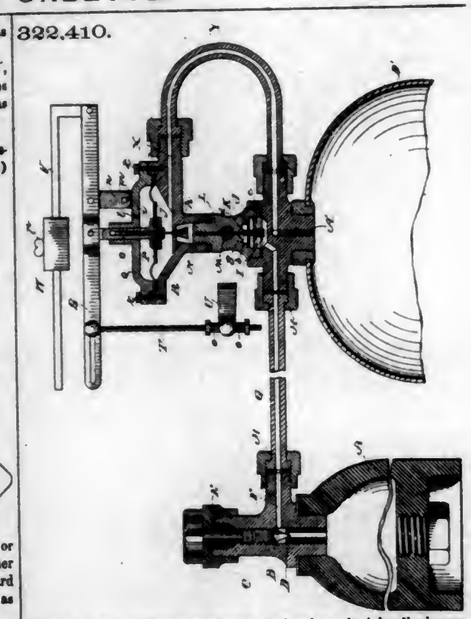
2. In a dumping-boat, the combination of two floats or pontons hinged together at their inner sides at a point about half their depth, and having their inner sides inclined outward in opposite directions below their hinges, substantially as and for the purpose herein described.

3. In a dumping-boat, the combination, with two floats or pontons hinged together at their inner sides so as to swing downward and inward toward each other at their lower portions in dumping, of uprights or standards having their lower ends hinged in line with the hinges which connect the floats or pontons, and a fixed deck erected upon and supported by said uprights or standards, substantially as and for the purpose herein described.

4. In a dumping-boat, the combination, with two floats or pontons hinged together at their inner sides, as described, of uprights or standards C, hinged at their lower ends, the deck B, erected upon and supported by said uprights or standards, and the sliding blocks or collars D, and rods or bars E, whereby the uprights or standards are maintained in vertical position, substantially as herein described.

5. In a dumping-boat, the combination, with two floats or pontons hinged together on their inner sides, as described, of the uprights or standards C, and the deck B, fixed to said uprights or standards and provided with the hinged sides or wings B', substantially as herein described.

322,410. APPARATUS FOR SUPPLYING AND REGULATING THE PRESSURE OF CARBONIC-ACID GAS IN BEER-KEGS. LEOPOLD BAUMEISTER and CHARLES A. BARTSCH, Bridgeport, Conn. Filed Apr. 28, 1884. (No model.)



Claim.—1. In apparatus for applying and regulating pressure within beer-kegs and the like, a diaphragm connected to a balance-lever adapted to operate a cock which regulates the flow of gas between the supply and keg, in combination with a swimmer having a piston adapted to be raised by the action of the high-pressure gas and a valve which regulates the escape of said gas from the swimmer-chamber to the diaphragm-chamber, substantially as specified.

2. In an apparatus as described, the diaphragm-chamber composed of two compartments separated by the diaphragm which actuates the balance-lever to open and close the cock for regulating the flow of gas between the supply and keg, said diaphragm having suspended therefrom the valve h, in combination with the swimmer composed of a piston and valve and having a central passage terminating in two openings, one above and the other below the partition K, for the purpose specified.

3. In an apparatus as described, a diaphragm connected to a balance-lever adapted to operate a cock for regulating the flow of gas between the supply and keg, in combination with a swimmer or secondary regulator composed of a valve and piston adapted to receive and modify the high-pressure gas before passing to the diaphragm, as described.

4. In an apparatus for applying and regulating pressure within beer-kegs, the body of the regulator having formed therein chambers I N, the former containing the swimmer-valve J, constructed as described, and the latter the valve A, suspended as set forth, in combination with the stem O, attached to the balance-lever S, cap Q, secured to the upper portion of the regulator and forming a chamber, air-tight diaphragm P, extending across said chamber, connecting-rod T, stop-cock M, lever U, and means for varying the resistance of the diaphragm, substantially as shown and specified.

5. The diaphragm which divides the chamber formed by the cap Q and body R into two compartments, in combination with the stem O, having arranged therein the threaded wire provided at its lower extremity with conically-shaped valve h, balance-lever S, arm V, having thereon sliding weight W, rod T, lever U, and cock M, substantially as set forth.

322,411. RUNNING-GEAR FOR CULTIVATORS. FERGUSON G. BRIGHT, Greenwich, Kans. Filed Mar. 21, 1885. (No model.)



Claim.—1. The combination, with the axle-seat frame comprising folding sections hinged together, the whole being hinged to the axle, of chains secured to the said seat-frame, and bars having a series of pins adapted to engage the ends of said chains, all substantially as shown, and for the purpose described.

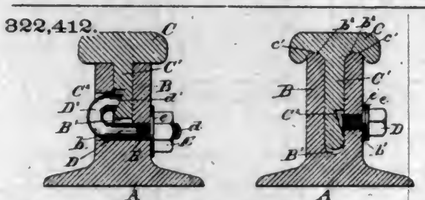
2. The combination, with the axle and tongue, of the bars or rods I I, connected with the sides of the tongue and with the axle near its spindle, and the bracing-rods i i, connecting the lower portion of said rods with the axle, substantially as shown and described.

3. The combination, with the axle, of the seat-frame hinged thereto, and comprising the sectional side plates hinged together and connected at their ends by a plate carrying a seat, chains secured to said side plates, a cross-beam connected with the axle by bars having hooks or pins, and loops secured to the under side of the axle, substantially as set forth.

322,412. RAILROAD-RAIL. FREDERICK W. BROOKS, Oak Grove, Wis. Filed Jan. 12, 1885. (No model.)

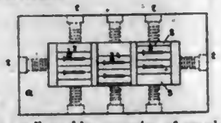
Claim.—1. In a railroad-rail, the combination of the foot and web section A B, having longitudinal vertical groove B', and side perforations, b b', communicating therewith, with the tread-section C, having depending longitudinal flange C', provided with an inclined-faced side groove, C^3, and bolt D, adapted to bear against the inclined side of the groove C^3, substantially as set forth.

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2. In a railroad-rail, the combination of the foot and web section A B, having longitudinal vertical groove B', and side perforations, b b', communicating therewith, with the tread-section C, having depending longitudinal flange C', provided with an inclined-faced side groove, C^3, and the hook-bolt D D', adapted to bear against the inclined side of the said groove C^3, and nut E, substantially as set forth.

322,413. NAIL-MACHINE. MOSES B. BROWN, Waltham, Mass. Filed Apr. 17, 1884. (No model.)



Claim.—1. In a nail-machine, a series of punches arranged in groups, as described, each group being separated from the next by a distance equal to the length of a punch and occupying a different position laterally from the other group or groups, combined with a correspondingly-arranged series of dies, as set forth.

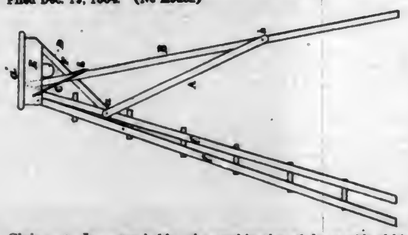
2. In a nail-machine, the combination of a series of punches arranged in groups, as specified, each group being separated from the rest by a distance equal to the length of a punch and occupying a different lateral position from the other groups, a correspondingly-arranged series of dies, and intermittently-operating feed mechanism, substantially as described, whereby the nail-plate is fed a distance equal to the length of a nail at each movement of the feed mechanism, as set forth.

3. In a nail-machine, the combination of a series of punches arranged in groups, as described, a corresponding series of dies, and a spring-backed plate having groups of orifices coinciding with and receiving the punches when they enter the nail-plate and bearing with a yielding pressure on said nail-plate, whereby the latter is prevented from adhering to the punches, as set forth.

4. In a nail-machine, the combination of a series of punches arranged in groups, as described, a corresponding series of dies, a spring-backed plate having groups of orifices coinciding with said punches and dies and bearing on the nail-plate when the punches are in the same, and a corresponding series of plungers in said dies, whereby the punched-out nails are returned to the plate when the punches recede therefrom, as set forth.

5. In a nail-machine, the combination of a series of punches arranged in groups, as described, a corresponding series of dies, a fixed guide for one edge of said plate, a spring guide or guides for the other edge, and a series of plungers in said dies, whereby the punched-out nails are returned to the plate when the punches recede therefrom, and the spring-guide is prevented from displacing the plate, as set forth.

322,414. STEP-LADDER. CHAUNCY E. BROWNSON, Lansing, Mich. Filed Dec. 19, 1884. (No model.)



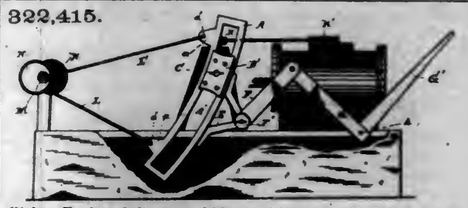
Claim.—1. In a step-ladder, the combination of the combined hinge and tie-bar A with the prop-frame B, having the upper ends of standards adapted to and bearing in gains formed on the inside of brackets E, all substantially as shown, described, and for the purpose specified.

2. In a step-ladder, the combination of brackets E, bail C, attached, and prop-frame B, provided with lugs or catches S, all substantially as set forth, and for the purpose specified.

322,415. LINK FOR STEAM-ENGINES. SAMUEL T. BRYANT, Shelburn, Ind. Filed Mar. 31, 1885. (Model.)

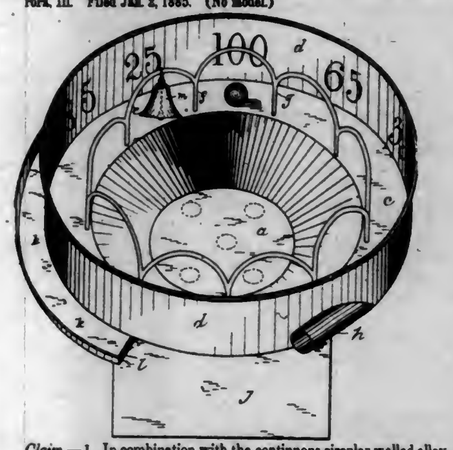
Claim.—The curved link A, having slot A' and bracket E, the block B, having guide-plates B', and wrist-pin C, in combination with

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lift-bars F, pivoted thereto, and bifurcated lever G, as described, and for the purposes set forth.

322,416. CIRCULAR TOY BOWLING-ALLEY. PETER BURKEL, Aurora, Ill. Filed Jan. 2, 1885. (No model.)



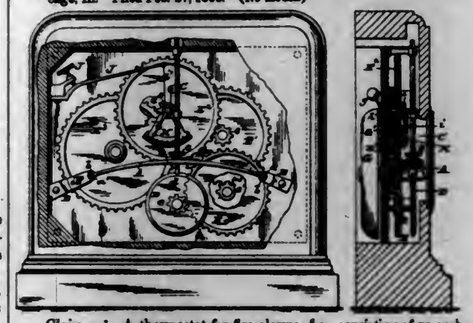
Claim.—1. In combination with the continuous circular walled alley c d, the cup a, the circular system of posts or arches e f in said alley, and the ball-receiving tube h, open at both ends and adapted for the insertion of the ball at its outer mouth, and for propelling the ball through it by means of a stick or cue, as set forth.

2. In combination, the alley made with a wall completely circular, the circular system of posts or arches e f in such alley, pins b, non-partitioned cup a, tube h, adapted to receive a ball at its outer mouth, and platform j, substantially as set forth.

3. In combination with a toy circular bowling-alley provided with a stationary or fixed platform, j, for holding balls, the curved and inclined gutter k, extending partly around the outside of the circular alley and leading to said platform, and provided with a stop, l, all substantially as set forth.

4. In combination with the central cup and with the circular alley surrounding the same, the series of posts or arches e f, located as described, and a bell, m, hung in the space between two of the posts, all as and for the purposes set forth.

322,417. THERMOSTAT FOR FIRE-ALARMS. JOHN J. BYRNE, Chicago, Ill. Filed Feb. 27, 1885. (No model.)



Claim.—1. A thermostat for fire-alarms, &c., consisting of an arch-shaped bar, A, provided with eyes a', and arranged between fixed abutments B, provided with pivot-pins b for the eyes a', substantially as set forth.

2. A thermostat for fire-alarms, &c., consisting of a bar, A, thickened at its center and tapering toward its ends, in combination with fixed

abutments B B for confining the ends of said bar, substantially as set forth.

3. A thermostat for fire-alarms, &c., consisting of an arch-shaped bar, A, of hard rubber or other analogous material, provided with eyes *a'*, in combination with fixed abutments B B, provided with journal-pins *b*, substantially as set forth.

4. The combination, in a fire-alarm, of a train of gears provided with a striking mechanism, and an escapement-disk, D, with the arched thermostat A, fixed abutments B B, and escapement-releasing bar C, substantially as set forth.

5. The combination, in a fire-alarm, of the arch-bar A, abutments B B, rod C, adjustable thumb-nut *e*, and the escapement-disk D of a train of alarm-gear, essentially as and for the purpose set forth.

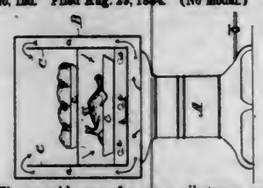
6. The combination of the arched thermostat A, fixed abutments B B, and bar C with cord or wire *i*, spindle I, spring J, pointer *i*, and dial H, substantially as and for the purpose set forth.

7. The combination of the arched thermostat A, having fixed abutments B B, with the bar C, cord *i'*, spindle I, spring J, temper-screw J', pointer *i*, and dial H, substantially as and for the purpose set forth.

8. In a fire-alarm apparatus, essentially as set forth, the fixed stud A, forming a journal for the gear and pinion E^2 e^2, and provided with an axial recess for the spindle I, in combination with the pointer *i*, dial H, secured to said stud, and means, essentially as herein described, for operating said pointer.

9. In a fire-alarm apparatus, essentially as set forth, the combination of a train of driving-gear, an alarm-bell striker, and an escapement device, in combination with a mutilated driven pinion, *e'*, inserted between the alarm-striker and the escapement device, essentially as described.

322,418. OVEN FOR GAS, OIL, OR VAPOR STOVES. ROBERT M. CAIN, Kokomo, Ind. Filed Aug. 29, 1884. (No model.)



Claim.—The portable oven for gas or oil stoves, consisting of an outer casing, B, containing an inner casing or oven, C, open at the top within the outer casing, and attached to and opening through one side thereof by a suitable door, said inner casing being provided at the bottom with an opening, *b*, and closing register, and at the side near the bottom with openings *a* through the outer casing.

322,419. GATE. WILLIAM W. CARPENTER and ADOLPHUS S. DUDLEY, Granville, Ohio. Filed Mar. 15, 1883. (No model.)



Claim.—1. The combination, in a fence-gate, of top and bottom horizontal bars, vertical uprights at each end thereof composed of two strips each, secured one on each side of the top and bottom bars, and longitudinal braces having their inner ends set close together at the inner lower corner, and secured between the strips forming the upright at that end, and flaring thence regularly toward the outer upright and the top bar, with their ends secured between said outer upright and set into notches in the top bar, respectively.

2. The combination, in a fence-gate, of top and bottom horizontal bars, end uprights connecting said bars and composed each of two strips embracing opposite sides of the bars, longitudinal braces flaring from the inner lower corner of the gate, where the ends are set close together and secured between the strips of the upright toward the outer upright and top bar, and vertical stays set alternately on each side of the structure and secured to top and bottom bars, and the intermediate braces.

3. The combination, in a fence-gate, of horizontal top and bottom bars, end uprights connecting said bars and consisting of two strips each, secured on opposite sides of the bars and separated by their thickness, longitudinal braces flaring toward the outer upright and top bar from the inner lower corner of the structure, and central uprights, one on each side, opposing each other and secured to top and bottom bars, and the intermediate braces at that point.

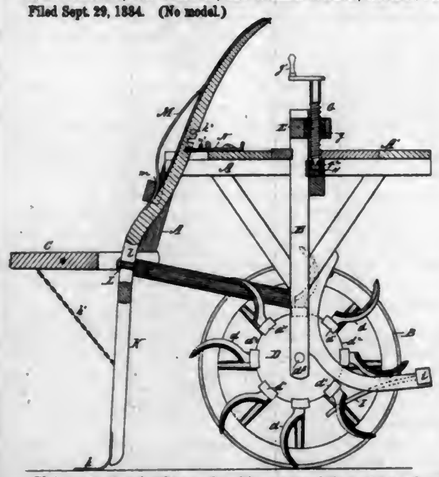
4. The combination, in a fence-gate, of horizontal top and bottom bars, end uprights connecting said bars, longitudinal braces flaring toward the outer upright and top bar from the inner lower corner of the structure to the central uprights, one on each side, rising above the top bar and having secured between them thereabove a block of hard wood, and a truss stretched from the inner end of the top bar over said block to the outer end.

5. The combination, in a fence-gate, of top and bottom bars, end uprights connecting said bars, longitudinal braces flaring toward the outer upright and top bar from the lower inner corner of the structure, central uprights bearing between them above the top bar a block of hard wood, and a barbed wire stretched from the inner end of the top bar over said block to the outer end to form a truss and cattle-guard.

6. A fence-gate constructed, substantially as described, of strips of wood of uniform width and thickness arranged in the manner set forth—that is to say, with top and bottom bars, end uprights, flaring braces diverging from the inner lower corner of the structure, and vertical stays intermediate between the end uprights.

7. The combination, substantially as hereinbefore set forth, in a fence-gate, of the end upright composed of two strips between which the longitudinal bars are embraced, the grooved and shouldered block held between the strips of said upright and having a socket on its under side, the series of notches in the strips of the upright, and the pintle on the gate-post.

322,420. PULVERIZER AND CULTIVATOR. JOHN R. CHAMBERS, SILAS CHAMBERS, ASA CHAMBERS, and WILLIAM J. DAVIS, Cleburne, Tex. Filed Sept. 29, 1884. (No model.)



Claim.—1. A pulverizer and cultivator consisting of two drums provided with curved teeth and adapted to rotate when drawn along in contact with the ground, in combination with a forked lever provided with two plows situated toward the front between the said revolving drums, and pivoted to the frame-work of the machine, so that an oscillating movement may be given to the said lever and plows, substantially as described and shown, and for the purpose set forth.

2. The combination of the teeth *d*, provided with shanks d^1, with the drums D, provided with heads d^2, and a series of inner and outer cross-bars, *d'*, and with springs *f*, substantially as described and shown, and for the purpose set forth.

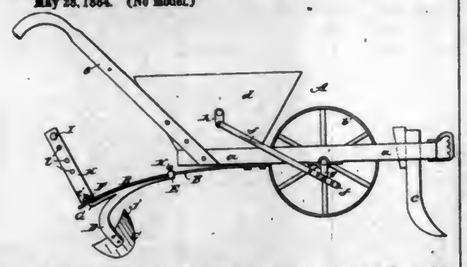
3. The combination of the revolving drums D, working in sliding frames G, with the forked lever K, provided with two plows, *k*, the chains *k'*, for adjusting said plows, pivot L, working in slot *l* of lever K, and a catch attached to the platform of the machine for engaging with teeth k^2 on the back of lever K, substantially as shown and specified.

4. The combination of the revolving drums D, working in sliding frames E, forked lever K, provided with plows *k*, chains *k'*, for adjusting said plows, pivot L, working in slot *l* of lever K, and sliding catch N, attached to the platform of the machine by bolts *n*, and provided with a guard, *n'*, so that said catch may be kept from rising and engage with the teeth k^2 on the back of lever K, substantially as shown and specified.

5. The combination of forked lever K, provided with plows *k*, chains *k'* for adjusting said plows, pivot L, working in slot *l* of lever K, spring M, engaging with notch *m* for holding lever K in a central position, sliding catch N, attached to the platform of the machine and engaging with teeth k^2 on the back of lever K, revolving drums D, working in sliding frames E, and screws G for adjusting said sliding frames, substantially as shown and described.

6. The combination of forked lever K, provided with plow-teeth, pivot L, working in slot *l*, chains *k'*, and sliding catch N, engaging with teeth k^2, substantially as described and shown, and for the purpose specified.

322,421. SEED-PLANTER. AUGUSTUS E. CHOATE, Cochran, Ga. Filed May 28, 1884. (No model.)



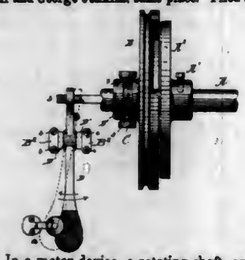
Claim.—1. A coverer for seed-planters, consisting of the spring-bars B, connected arms D, carrying the coverer-plates C, and bars H, rising from the back ends of bars B, and connected by a bolt, I, substantially as shown and described.

2. The combination, with the spring-bars B, carrying the coverer-arms D and plates C, and the rear tie-bars, H, of the springs J at the inner faces of the tie-bars, substantially as shown and described.

3. The combination, with the bars B and the arms D of the coverers, secured at their back ends by bolt ends *i* and nuts F, of the laterally-elongated loops or eyes E and set-screws K, substantially as shown and described.

4. The combination, in a coverer for seed-planters, of the spring-bars B B, arms D D, carrying coverer-plates C C, and connected to bars B B by the bolt ends *i i* and nuts F F, loops E E, and bolts K K, and the rising convergent bars H H, springs J J, and bolt I, substantially as shown and described.

322,422. SEWING-MACHINE OR OTHER MOTOR. CHARLES W. COLLYER and WILLIAM C. COLLYER, Lynn, Mass., assignors of one-half to Paige B. Ball and George Jenkins, same place. Filed June 1, 1885. (No model.)



Claim.—1. In a motor device, a rotating shaft, an attached disk, a belt-pulley on the said shaft, and a lever to operate the belt-pulley to engage the disk, combined with a treadle, and the stop to hold the same depressed, substantially as described.

2. In a motor device, a rotating shaft, an attached disk, a belt-pulley on the said shaft, and a lever to operate the belt-pulley to engage the disk, combined with a treadle and an adjustable stop to hold the same depressed, substantially as described.

322,423. CLUTCH OR LOOSE-PULLEY DEVICE. JASPER W. COREY, Cincinnati, Ohio, assignor to Henry Muhlhauser, same place. Filed June 18, 1885. (No model.)



Claim.—1. The combination, with a shaft and a loose pulley the hub of which is provided with a recess, of a hand or fly wheel attached to said shaft and having two holes or recesses in its hub, a cap or disk having stop and plunger pins, the latter carrying a plunger, and a spring surrounding said plunger-pin and serving to project said plunger into the recess of the pulley and to hold said cap or disk in place, substantially as set forth.

2. The combination, with the shaft A, of the fast hand or fly wheel B, having in its hubs two holes or recesses and the slot *b'*, the loose pulley C, having recess *c*, the cap or disk D, having plunger and stop pins *d* and *d'*, the plunger d^3 on the former pin, and the spring d^3, whereby the said loose pulley may be connected with or disconnected from its shaft, and the said cap or disk, when removed from the hub of the fly-wheel, may be turned on the plunger-pin to permit the parts to be retained in disconnected position by the said spring, substantially as set forth.

322,424. BURIAL-CASE. PATRICK T. CREGAN, Troy, N. Y. Filed Feb. 25, 1885. (No model.)

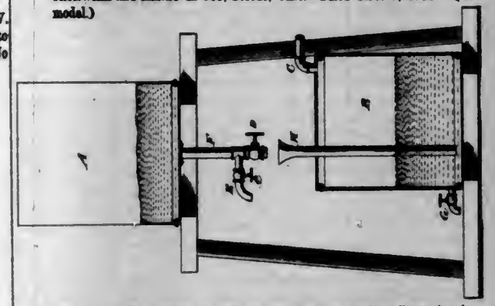


Claim.—1. In a metallic burial-case, the combination of the cylindrical body C, formed with horizontal flanges L^2, the closed end E^2, consisting of a metal plate bolted within the case, and formed with a horizontal bottom flange, the bottom plate, B, having turned-up edges L to receive the bottom-edge flanges of the body and closed end, the interior flange, F, and the door E', hinged to the bottom plate and arranged to close with the end of the body and bottom plate projecting beyond its outer face, substantially as described.

2. In combination with the body C, provided with an interior flange, F, set within the open end, and having a closed end, E^2, and the bottom plate, B, secured to the body C, of the door E', formed with an exterior rim-flange, *n*, and hinged within the end of the case, and secured in vertical position by bolts through the rim-flange of the door, substantially as described.

3. The combination of the body C, having a closed end, and the bottom B, secured to the body, with the interior flange, F, formed with an outward-projecting flange, *r*, and bottom rib, *d*, and provided with a packing, *p*, arranged about the flange and against the rib, and the door E', hinged to the bottom plate within the body, and formed with an interior rib, *m*, and an outward-projecting rim-flange, *n*, having rivets to seal the door to the case, substantially as described, and for the purpose stated.

322,425. PROCESS OF AND APPARATUS FOR RECLAIMING OIL PREVIOUSLY USED IN MECHANICAL OPERATIONS. GEORGE O. CROMWELL and HENRY E. COY, Toledo, Ohio. Filed Nov. 7, 1884. (No model.)

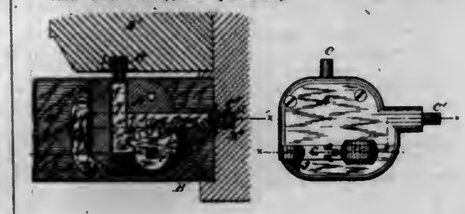


Claim.—1. The within-described process of reclaiming oil previously used in mechanical operations, which consists in separating the oil from the alkali, water, and other refuse by mixing with the oil and refuse an acid, either pure or diluted with water, substantially as set forth.

2. The within-described process of reclaiming oil previously used in mechanical operations, which consists in separating the oil from the alkali and water and from the greater part of the metallic particles by mixing with the oil, alkali, metallic particles, and other refuse an acid, either diluted with water or pure, and thereafter further separating the oil from the remaining metallic particles by lifting the oil upon a body of water above said particles, substantially as set forth.

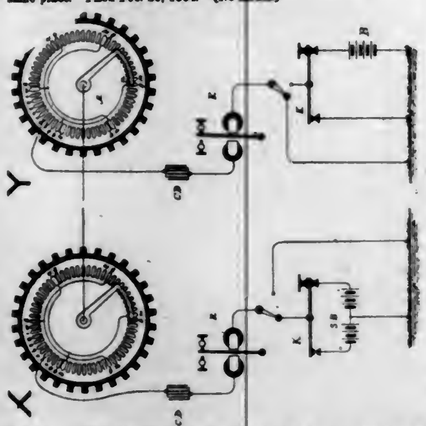
3. In an apparatus for reclaiming oil previously used in mechanical operations, the upper tank, A, having the pipe F, cock D, branch E, and cock *e*, combined with the lower tank, B, having the tube H, outlet C, and cock G, substantially as set forth.

322,426. SASH-FASTENER. WINFIELD S. CUNNINGHAM, Springfield, Ohio. Filed June 9, 1884. (No model.)



Claim.—The combination, in a sash-fastener provided with a casing of the shape herein shown, of the bolts C C', adapted to slide over one another, as described, and the toothed pinion E, provided with the projecting flange H to bear upon the bolts C C', to prevent displacement, and the hinged lever G to operate the bolts, all constructed and operating substantially as shown and described.

322,427. SYNCHRONOUS TELEGRAPHY. PATRICK B. DELANY, New York, N. Y., assignor to the Standard Multiplex Telegraph Company, same place. Filed Feb. 23, 1884. (No model.)



Claim.—1. The combination of an electric circuit, a condenser or condensers therein, a source of electric energy, means, substantially such as described, for rapidly interrupting the circuit or subdividing the transmitting-current into a number of distinct impulses, transmitting devices, and receiving devices consisting of a magnet or magnets and a rocking or vibrating armature, each actuation of which constitutes a distinct signal or determinate portion thereof, the arrangement being such that each of said unitary signaling movements occurs while a group of said distinct electrical impulses is sent into the line.

2. The combination, with a system of telegraphy in which during the formation of each signal a number or group of distinct impulses are sent into the line, of one or more condensers in the circuit, transmitting-instruments, and a receiving-instrument consisting of a magnet or magnets and a rocking or vibrating armature which makes one unitary movement in response to each group of impulses sent into the line.

3. The combination, in a system of telegraphy in which the transmitting-current is divided into a number of distinct impulses, of an electric circuit, one or more condensers therein, transmitting devices, and means whereby a number or group of said distinct impulses are sent into the line for the transmission of a unitary signal, and receiving devices consisting of a magnet or magnets and a rocking or vibrating armature which makes one unitary movement in response to each group of impulses sent into the line.

4. The combination, in a system of telegraphy in which the transmitting-current is divided into a number of distinct rapid impulses, of an electric circuit, one or more condensers therein, telegraphic transmitting-instruments, and receiving polarized relays.

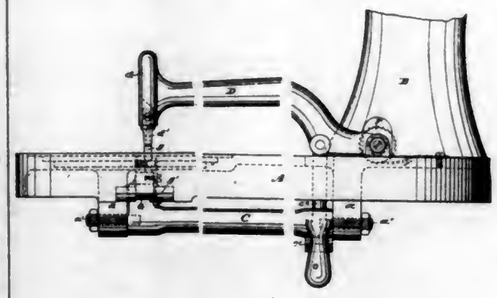
5. The combination, in a system of telegraphy in which the transmitting-current is divided into a number of distinct rapid impulses, of an electric circuit, telegraphic transmitting-instruments and polarized relays at each end of the line, and a condenser at each end of the line interposed between said relays and the main line.

6. The combination, substantially as set forth, of a main line, synchronously-actuated apparatus at each end of the main line, a table of contacts with which the line is successively momentarily connected by the rotation of said synchronous apparatus at each end of the line, telegraphic transmitting-instruments at one station connected with one or more of said independent contacts, receiving-instruments at the other station connected with the corresponding one or more contacts at that station, and one or more condensers in the circuit of said transmitting and receiving instruments.

7. The combination, substantially as set forth, of a main line, synchronously-actuated apparatus at each end of the main line, a series of independent contacts with which the main line is successively momentarily connected by the rotation of the synchronous apparatus at each station, telegraphic transmitting apparatus at one station connected with one or more of said contacts, a condenser in circuit with said transmitting-instruments and polarized receiving-relay at the other station connected with the one or more corresponding contacts at that station, and a condenser in circuit with said receiving-relay.

322,428. BUTTON-HOLE SEWING-MACHINE. PHILIP DIEHL, Elizabeth, N. J., assignor to the Singer Manufacturing Company of New Jersey. Filed Feb. 11, 1885. (No model.)

Brief.—Means are provided for bringing the cloth-clamp into proper adjustment relative to the cutting-knife when the button-hole is to be cut. The guide-button for sustaining and guiding the cloth-clamp is readily removable, so that when worn a new one may be substituted. The feeding mechanism for the cloth-clamp is essentially the same as that shown in Patent No. 272,126, granted to the same party, excepting



that the cramping feeding-block that works in the feeding-groove is made adjustable to take up wear. The cutter-blade-carrying lever is weighted, so that it may be operated to forcibly strike the cutting-block.

Claim.—1. In a button-hole sewing-machine, the combination, with the work-table, of a weighted cutting-lever above said table, a cutter carried by said lever, a cutting-block, a pivoted arm beneath said table by which said block is carried, a rock-shaft having a handle and an arm, a link connecting said arm with the said cutting-lever, and a cam for forcing said cutting-block upward when the said cutting-lever descends, substantially as set forth.

2. The combination of the work-table A, rock-shaft C, having handle *e*, arm *c'*, and cam c^2, link c^3, cutting-lever D, cutter *d*, cutting-block *g*, its carrying-arm G, rock-shaft d^2, spring E, ratchet-wheel F, and pawl *f*, substantially as set forth.

3. In a button-hole sewing-machine, the combination, with the work-table, the button-hole-cutting mechanism, the cloth-clamp, and a pin projecting below the under side of the latter, of an adjustable device, as a screw-pin, provided with a recess for the engagement of the pin of the cloth-clamp, whereby the position of the latter, when the button-hole is to be cut, may be varied to locate the button-hole properly, substantially as set forth.

4. In a button-hole sewing-machine, the combination, with the grooved feeding-wheel and the link or arm by which said wheel is operated, of a cramping-block adjustable in said link or arm having a rib or flange adapted to work in a groove in said wheel, substantially as set forth.

5. In a button-hole sewing-machine, the combination, with the grooved feeding-wheel and the link or arm for operating the same, of an axially-adjustable cramping-block having a rib or flange loosely fitting a groove in said wheel, and adjusting-screw for changing the position of said block in said link or arm, and a set-screw for securing said block after adjustment, substantially as set forth.

6. In a button-hole sewing-machine, the combination, with a work-plate having a guiding-slot for the cloth-clamp pin, of a guiding-button detachably secured to said work-plate and provided with an outwardly-projecting flange or lip for holding down the cloth-clamp, substantially as set forth.

7. In a button-hole sewing-machine, a work-plate having a guiding-slot for the cloth-clamp pin, and a guiding-button having near its top an outwardly-projecting flange or lip and provided at its base with an annular flange recessed into said work-plate, combined with means, as screws passing through said flange, for detachably securing said button to said work-plate, substantially as set forth.

322,429. VEGETABLE-WASHER. JOHN S. DODGE, Mayersville, Miss. Filed Oct. 15, 1883. (No model.)

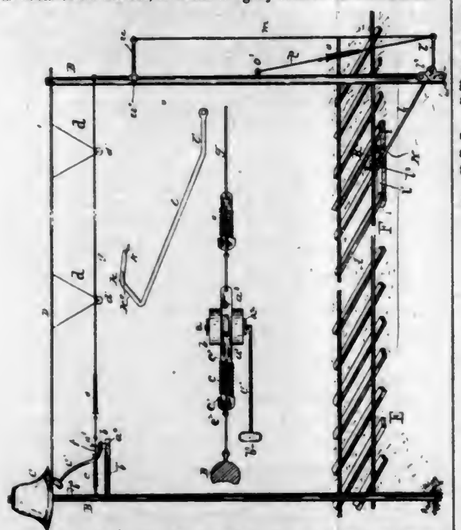
Claim.—In a vegetable-washer, the combination, with a grated cage and a vertical rotatable shaft within the same, of both a disk secured to the lower end of the shaft and ribs or strips secured to the top of the said disk to rotate therewith, whereby both the disk and strips move and agitate the article to be cleansed, while the disk prevents the article from passing under the strips and being injured by the latter, substantially as described.

322,429.



322,430. RAILROAD-ALARM. ELIJAH L. EDMONDS, Daysville, Ill. Filed Apr. 21, 1884. (No model.)

Brief.—Consisting of two or more standards connected by a rod, which is made to support the operating rod or chain. A rocking shaft operated by a passing train, connected by a series of rods and levers to a slotted plate and through the plate, is made to rotate a pulley by a pin which enters the slot, to which is rigidly secured the bell-hammer.



Claim.—1. The combination, with the rocking shaft *l*, with its arms *l'* K^3, the latter provided with the wrist K', of the staple *i* and the bearings l^2 l^2, substantially as described.

2. The combination, with the short rock-shaft *a*, furnished with the hammer C', of the fast pulley *b*, provided with the pin *a'*, the elongated plate *f*, slotted at a^3, the spiral spring *c*, and the U-shaped wire c^3, substantially as set forth.

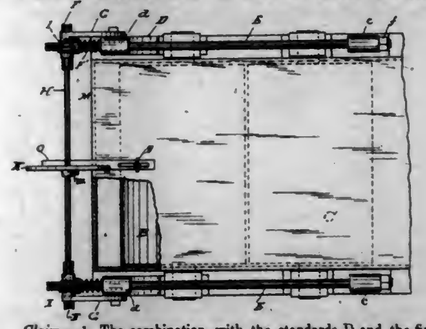
3. The combination, with the rocking shaft *l*, with its arms *l'* K^3, the latter provided with the wrist K', of the bearings l^2 l^2, the staple *i*, the spring *o*, the connecting-wires *p m g*, the belt-crank *u*, the hangers *d*, pulleys *d'*, the rock-shaft *a*, furnished with the hammer *c'*, the fast pulley *b*, provided with the pin *a'*, the elongated plate *f*, with its slot a^3, the spiral springs *c e*, and the U-shaped wire c^3, substantially as described.

322,431. DRIVE-CHAIN. CHARLES H. EGGLESTON, Marshall, Mich. Filed July 18, 1884. (No model.)



Claim.—In a drive-chain, the rectangular link E, provided with flattened locking-bars B' B' D' D', and having projecting end portions, *k' k'*, in combination with the double hook A' A', having shoulders *h' h'*, all constructed and arranged substantially as described, and for the purpose specified.

322,432. ADJUSTING DEVICE FOR FLOURING-MILL ROLLS. ISRAEL H. EISENBERG, New York, N. Y. Filed Mar. 12, 1885. (No model.)

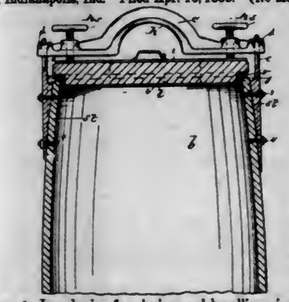


Claim.—1. The combination, with the standards D and the fixed roll C, journaled therein, of the pivoted rocker-arms D', the roll B, journaled therein, the standards G, secured to said rocker-arms, the shaft H, journaled in said standards, the rods E, gears F, and worms I, all constructed and arranged substantially as and for the purpose specified.

2. The combination, with the standards D, having the fixed roll C journaled therein and provided with sleeves *c*, of the pivoted rocker-arms D', the roll B, journaled therein, sleeves *d* on said rocker-arms, the rods E, passing through the sleeves *c d* and provided with nuts *f*, worm-gears F on said rods, springs F' on said rods between the collars *d* and gears F, the shaft H, worms I, and hand-wheel K, all substantially as and for the purpose specified.

3. The combination, with the adjustable graduated rod O, of the shaft H, the graduated hand-wheel K, and means, substantially as described, for adjustably securing said hand-wheel to the shaft, substantially as and for the purpose specified.

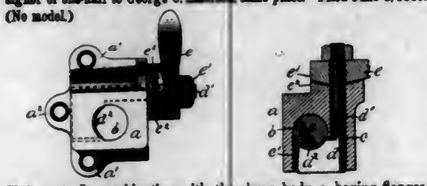
322,433. DEVICE FOR CLOSING AIR-TIGHT VESSELS. ANDREW EVANS, Indianapolis, Ind. Filed Apr. 10, 1885. (No model.)



Claim.—1. In a device for closing and handling air-tight vessels for emptying privy-vaults, sinks, and cesspools, the combination of ears *e*, cask *b*, cast or malleable bar C, with lid *l*, having iron straps 1 and 2, and rubber *v*, forming joint *j*, for hermetically closing air-tight vessels, substantially in the manner and for the purpose set forth.

2. In a device for closing and handling air-tight vessels for emptying privy-vaults, sinks, and cesspools, the combination of the cross-bar C, having handle *h*, hand-screws *h s*, and saddle-shaped notches *d*, with ears *e*, lid *l*, and cask *b*, substantially in the manner and for the purpose set forth.

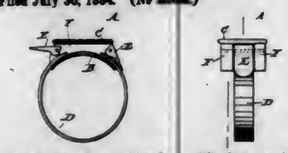
322,434. BENCH-CLAMP. HIRAM C. FENTON, Hartford, Conn., assignor of one-half to George C. Emerson, same place. Filed June 1, 1885. (No model.)



Claim.—1. In combination with the clamp-body *a*, having flanges a' a^2, vertical socket *b*, and transverse clamp-socket *c* and the cams, all cast in one piece, the hook-shaped clamp *d*, located within the clamp-socket *c*, with its broader part bearing the grasping-face d^2 and its stem d' bearing the cam-lever *e*, all substantially as described.

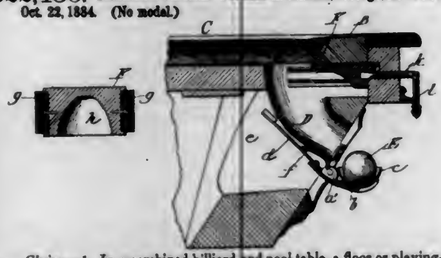
2. In combination with the clamp-body *a*, having the vertical socket *b*, the transverse clamp-socket *c*, opening into the other and bearing on an outer side the cams c^2, the hook-shaped clamp *d*, located within the clamp-socket, with its broader part having the grasping-face d^2 and its stem d' bearing the cam-lever *e*, all substantially as described.

322,435. ADJUSTABLE FINGER-RING. FRANK N. FOSTER, Duluth, Minn. Filed July 30, 1884. (No model.)



Claim.—In a ring, the combination, with the gem-frame or center piece, A, having a concave back, B, of the bow or circular band D, having the ends passed into the ends of the frame A, and of the cams E, pivoted between the side pieces of the gem-frame at the ends, substantially as herein shown and described.

322,436. BILLIARD-TABLE. NICHLAS H. GASSER, Chicago, Ill. Filed Oct. 22, 1884. (No model.)



Claim.—1. In a combined billiard and pool table, a floor or playing-surface provided with a series of openings, in combination with a series of sliding blocks and broken rods secured thereto, as set forth.

2. In a combined billiard and pool table, a floor or playing-surface provided with a series of openings, in combination with a series of spouts communicating with such openings and receptacles pivoted at the lower end of such spouts, as set forth.

3. In a combined billiard and pool table, a floor or playing-surface provided with a series of openings, in combination with a series of spouts communicating with such openings, and weighted receptacles pivoted at the lower ends of such spouts, as described.

322,437. ADJUSTABLE EMBALMING-TABLE. GEORGE P. GASTON, Silver Creek, N. Y. Filed May 7, 1885. (No model.)



Claim.—1. In an embalming-table, the combination, substantially as shown, of an adjustable table-top, vertically-adjustable folding legs or standards under each end of said table-top attached thereto by subetantially gimbal-joints, and adjustable feet on said legs or standards, substantially as and for the purpose set forth.

2. The combination, in an embalming-table, of the following elements: a folding table-top, a movable head-rest which is adjustable both vertically and laterally, vertically-adjustable legs or standards under each end of said table-top attached thereto by substantially gimbal-joints, and adjustable feet on said legs or standards, substantially as and for the purpose set forth.

3. In combination with an adjustable embalming-table top, straps provided with hooks *b'*, adapted to be hooked under the lower edges of the table-top frame and buckled over a body placed thereon, substantially as and for the purpose set forth.

4. In combination with an adjustable embalming-table, a laterally and vertically adjustable head-rest, substantially as shown, provided with a head-retaining strap, substantially as shown, adapted to retain and adjust the head of a body, substantially as and for the purpose set forth.

5. In combination with an embalming-table, an interchangeable head-rest, one portion of which may be used for retaining and adjusting the head of a body in any required position while being treated, and the other portion as a pillow for supporting the head after treatment, substantially as shown and set forth.

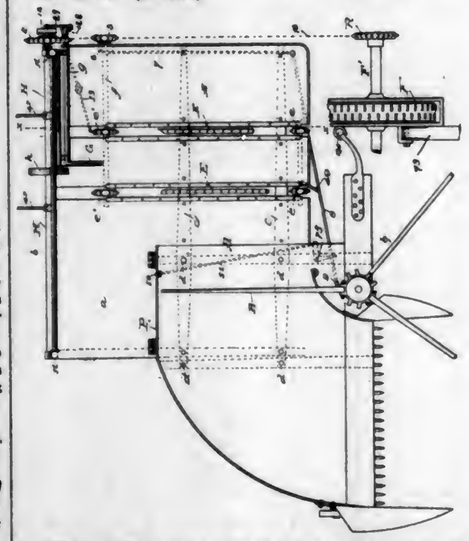
6. In combination with an adjustable embalming-table top, folding legs or standards therefor provided both with laterally-sliding and with pivoted feet, substantially as and for the purpose set forth.

322,438. HARNESS-SNAP. JOHN GIBSON, West Troy, N. Y., assignor to the Mansely Hardware Company, same place. Filed Sept. 12, 1884. (No model.)



Claim.—The improved harness-snap herein described, composed of the body B, formed with the longitudinal groove G, having cross-partitions c' c^2, forming the recess R, provided with the clearing-hole *d* in the bottom thereof, the rear cut-away portion, O, and bearings *b b*, and the snap-latch L, formed with rounded end E, provided with journals *A h*, the recess N, having the projecting pin *p*, and the interposed spiral spring S, all combined and arranged to operate substantially as described, and for the purposes set forth.

322,439. GRAIN-BINDER. JOEL E. GILES, Jackson, Mich. Filed Oct. 13, 1883. (No model.)



Claim.—1. In combination with the platform of a reaper and its sweep-rake, a rigidly-attached binder-platform having a grain-conveyer, and having, also, a binding and tying mechanism on the rear of said binder-platform, a gate located on the reaper-platform, and the described mechanism for opening said gate when the gavel is removed to the rear, substantially as described.

2. In combination with a conveyer and binding mechanism, the sprocket-wheel R on the main drive-wheel axle F', the sprocket-wheels 5 and *k*, the idle-wheel *l*, and the driving-chain 10, arranged in relation to the specified parts in the machine, all substantially as set forth.

3. In combination with a binding mechanism, the shaft H, carrying the knotter mechanism, and devices to operate the same, the clutch connecting said shaft with a constantly-running driving-wheel, the conveyer, and actuating mechanism between the clutch and conveyer, whereby the conveyer when delivering the gavel sets the binding mechanism in operation, substantially as described.

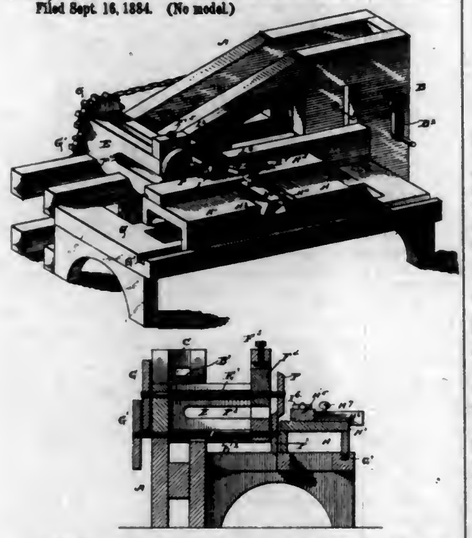
4. In combination with a conveyer-clutch and shifting-lever, the rod connected to said lever and having an inclined arm, and the tine of the conveyer, whereby the tine is made to throw the clutch out of engagement, substantially as described.

5. The knotter N, having a horizontal arm with a notch in the end, the swell or overhang at the angle, the shaft with finger 23 covering the notch, and the fingers 24 25, in combination with devices, substantially as described, for rotating the knotter and for rocking the finger-shaft.

6. The combination of the knotter containing the shaft provided with fingers and the stripper having the knife 35 and the flange 36, the latter being adapted to operate the finger of the knotter, substantially as described.

7. In combination with the conveyer, the needle and the tying mechanism, the compressor-plate 40, pivoted above the needle-shaft, the rod 41, bearing against the under side of the plate, the upper plates, 42 and 43, constructed and arranged as described, the knotter-driving wheel having a cam-groove, 44, and the rod with its end traveling in said cam-groove, all as set forth.

322,440. ROTARY SHEARS. GEORGE O. GILMER, Clarksville, Tenn. Filed Sept. 16, 1884. (No model.)



Claim.—1. The combination, with the main frame provided with the driving-shaft having a pinion and sprocket-wheel, the shaft D', having gear-wheel D and double sprocket-wheel D^2 D^2, the shaft C', having gear-wheel C and sprocket-wheel C^2, of the auxiliary frame having slot F^2, the adjustable rotary shaft E, provided with the cutter F at one end and the sprocket-wheel G at the other end, and the shaft E^2, having the cutter F' and the sprocket-wheel G^2, and the chains connecting the sprocket-wheels, substantially as described.

2. The combination, with the main frame and auxiliary frame carrying the rotary cutters, and mechanism, substantially as described, for operating the rotary cutters, of the smoothing-rollers, and mechanism, substantially as described, for operating them, as specified.

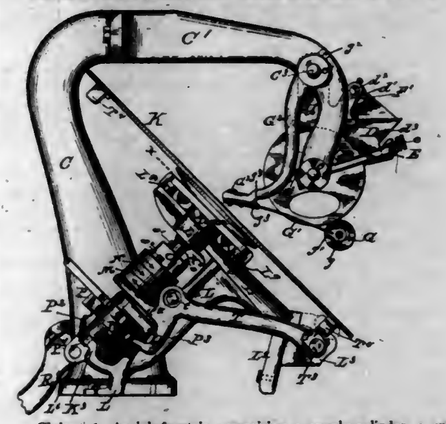
3. The combination, with the main frame provided with the driving-shaft having a pinion, sprocket-wheel, and crank-handle, the shaft D', having gear-wheel D and double sprocket-wheel D^2 D^2, the shaft C', having gear-wheel C and sprocket-wheel C^2, of the auxiliary frame, rotary shears, and smoothing-rollers, and the rolling table H, provided with groove H^2, the scale H^4, the sliding tongue, the straight edge, and the clamp, its threaded stem and thumb-nut, substantially as specified.

4. The combination, with the auxiliary frame secured upon the main frame, and provided with the bevel-edge rotary cutters, and the smoothing-rolls, of mechanism, substantially as described, for operating the cutters and rolls, substantially as specified.

5. The combination of the frame E, the rotary cutters having the beveled edges, the shaft of one of said cutters being journaled in the frame, the vertically-adjustable block F^4 in the frame, one end of the shaft of one of the cutters being journaled in said block, and the set-screw bearing on the upper side of the block, substantially as described.

6. The combination of the main frame, the frame E, the rotary cutters journaled in said frame E, the rolling or sliding table on the bed of the main frame, the straight edge having the tongue extending at right angles therefrom, said tongue being dovetailed in the sliding or rolling table, and the set-screw for clamping the tongue to the table, substantially as described.

322,441. CHROMATIC ATTACHMENT FOR PRINTING-MACHINES. WILLIAM H. GOLDING, Boston, Mass. Filed Feb. 23, 1884. (No model.)



Claim.—1. An ink-fountain comprising a supply-cylinder, a suspended well, and a swinging clamp, substantially as specified.

2. An ink-fountain comprising a supply-cylinder, a suspended bottomless well, a swinging clamp, and yieldingly-depressed removable partitions, substantially as specified.

3. A bottomless ink-well having a doctor secured to its lower edge, end walls perforated for suspension, a yielding partition-holding device, and removable partitions bearing partly upon the doctor and partly on a wall of the well, substantially as specified.

4. An ink-well having end walls interiorly finished to snugly embrace a supply-cylinder, and perforated for suspension or pivotal support, and having at a lower edge a doctor, and an exterior bearing-surface for a clamping device, in combination with a swinging clamp-bail, substantially as specified.

5. An ink-well having removable partitions, a cross bar or rod arranged above said partitions, and intermediate yielding partition-holding devices adjustably mounted on said bar or rod, substantially as specified.

6. A partition-holding device slotted to embrace a partition apertured to embrace a fixed portion of a well, and provided with a securing device for its removable attachment to said fixed portion, substantially as specified.

7. The combination, with a fixed portion of a press, of a standard or bracket projecting over the ink-disk and having depending arms provided with bearings for the support of an ink-fountain and a mechanical brayer, and devices for oscillating the brayer against and beneath the cylinder of the fountain and upon the disk, substantially as specified.

8. The combination, with a fixed portion of a press, of a standard or bracket projecting over and above the ink-disk thereof, a rock-shaft mounted in said bracket, a mechanical brayer secured to said rock-shaft, an ink-well suspended therefrom, a supply-cylinder mounted below said rock-shaft, and a swinging clamp, substantially as specified.

9. A brayer or transfer-roll mounted upon non-pivoted spring-arms, substantially as specified.

10. A brayer or transfer-roll mounted upon non-pivoted spring-arms secured to arms of a rock-shaft, substantially as specified.

11. A transfer-roll mounted on spring-arms and for oscillatory motion, in combination with a supply-cylinder and an ink-disk, both of which project into the path of the roll, the former being located above and the latter below the normal path of the roll, substantially as specified.

12. The combination of a supply-cylinder and a transfer-roll mounted on spring-arms non-pivotally secured to rigid arms of a rock-shaft, and for oscillatory motion in a path which includes or passes beneath the cylinder, substantially as specified.

13. The combination of a transfer-roll mounted on non-pivoted spring-arms and for oscillatory motion, with an ink-disk located and arranged partially within the path of the transfer-roll, substantially as specified.

14. An ink-disk the hub or spindle of which is provided with a flat bearing-surface, in combination with a clamp-spring pressed against said surface, substantially as specified.

15. An ink-disk having a hub or spindle provided with opposite bearing-surfaces, in combination with oppositely-pivoted clamps connected by springs, substantially as specified.

16. The combination of an ink-disk provided with opposite bearing-surfaces, spring-pressed clamps, and disk-semi-rotating mechanism, substantially as specified.

17. The combination of an ink-disk mounted on a shaft, a clutch having semi-circumferential steps, and clutch-semi-rotating mechanism, substantially as specified.

18. The combination of a shaft supporting an ink-disk, and provided with a clutch having two diametrically-opposite steps and a pinion, with a segmental gear having a cam and a cam-lever for operating the gear, substantially as specified.

19. The combination, with a disk-bearing shaft, of clutch mechanism comprising two members having diametrically-opposite steps, one of which members also having a ratchet, the teeth of which are arranged at a less distance apart than said steps, and a third member provided with a pawl and a removable device for connecting either two of the three members with each other, substantially as specified.

20. The combination of an ink-disk having two diametrically-opposite stops, a lever provided at its free end with a cushion, means, substantially as specified, for giving semi-rotation to the disk-bearing shaft and for intermittently projecting the free end of the lever into the path of the stops, substantially as specified.

21. The combination, with an ink-disk having stops, of a combined air and spring cushion, substantially as specified.

22. The combination, with an ink-disk having stops, and its supporting-shaft provided with a clutch having a pinion, of a lever carrying a cushion, and a segmental gear having a cam, and means for operating the same, substantially as specified.

23. In an inking attachment, in combination with an ink-disk, a combined clutch and ratchet comprising a shaft, clutch-collars, one of which is provided with a ratchet, a spline-seated collar carrying a pawl, and a bolt or bolts for securing two of the collars to each other, substantially as specified.

24. The combination, with a semi-rotating ink-disk, of an ink-supplying apparatus extending over one-half of the disk, substantially as specified.

25. The combination of the arms C', shaft C^2, well D, having perforated risers *d*, cylinder C^3, and clamp E, mounted on the shaft of the cylinder, and provided with the binding-screws *e*, substantially as shown and described.

26. The combination of the arms C', rock-shaft C^2, rock-arms G^2, springs G', rigidly connected to said rock-arms, and roll G, with rod J, bracket H, and roller-frame B, substantially as shown and described.

27. The combination of disk K, roll G, spring-arms G', auxiliary or re-enforcing spring-plates g^3, and arms G^2, with rock-shaft C^2 and devices for operating said shaft, substantially as shown and described.

28. The combination of the roller-frame B, bracket H, rods I J, pawl-lever and pawl *i i'*, ratchet i^2, and cylinder C^3, with the roll G, arms G^2 j^2, shaft C^2, and arms C', secured to standard C, substantially as shown and described.

29. The combination of the disk K, having hub K', provided with flat surfaces *k*, clamps S, springs S', and bracket L, having bars or lugs L^2 L^3, substantially as shown and described.

30. The combination of the shaft K^2, the clutch-collars M N, spline-seated collar O, pawl-pin *o*, ratchet *n'*, segmental gear P, cam P^2, and cam-lever R, substantially as shown and described.

31. The combination of cam P^2 and lever T, having arm T^2, with the disk K, having stops T^4, substantially as shown and described.

32. The combination, with a disk having stops, of lever T, cylinder T', piston T^2, and rubber spring T^3, substantially as shown and described.

33. The combination of lever R, segmental gear P, having cams P^2 P^3, shaft P', and disk K, having stops T^4, clutch M N, and lever T, substantially as shown and described.

34. The combination of frame B, rollers B', and plate U with lever V', adjustable button V^6, cam V, shaft B^4, gear B^2, and rod B^3, constructed and timed substantially as specified.

35. The combination of plate U, provided with an adjustable button, V^6, with the lever V' and cam V, substantially as shown and described.

36. The combination of the lever R with the cross-bar *b*, slotted plate R^2, set-nut *r'*, and adjustable cam R', substantially as shown and described.

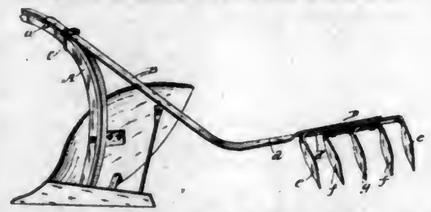
322,442. BALE-TIE. FRANK B. GRISWOLD, Troy, N. Y. Filed May 22, 1885. (No model.)



Claim.—1. A bale-tie having an eye, E, that is produced in the tie-wire at a short distance back from one of its ends, and the end P prolonged beyond said eye for connection with the other end of the tie and said eye, E, substantially in manner as and for the purposes set forth.

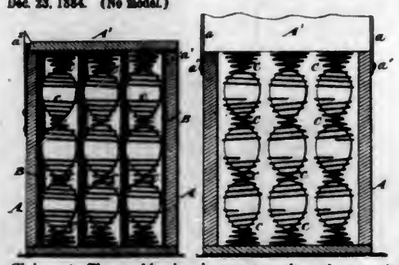
2. A bale-tie having an eye, E, that is produced in the tie-wire a short distance back from one of its ends, the end P prolonged beyond said eye, and a loop or eye on the other end of the wire, said parts being constructed and arranged to connect substantially in the manner set forth.

322,443. PLOW ATTACHMENT. ORANGE R. HANCHETT and GEORGE B. HANCHETT, Wichita, Kans. Filed May 14, 1885. (No model.)



Claim.—The combination of the right-angular harrow-beam B, having lips *a*, the clip C, and the teeth D, substantially as shown, and for the purpose described.

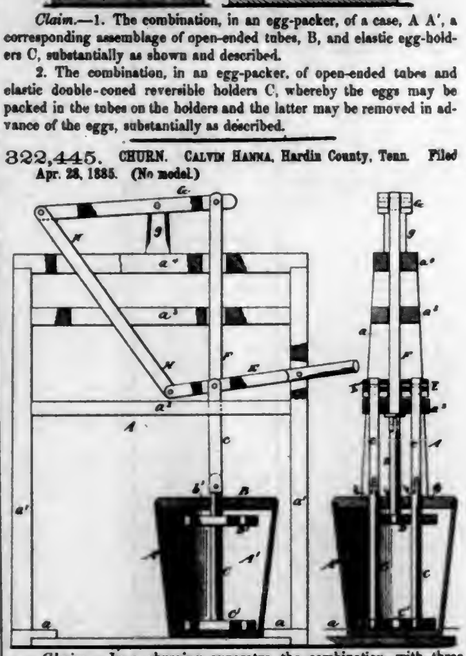
322,444. EGG-PACKER. HENRY HANDY, Fitzwilliam, N. H. Filed Dec. 23, 1884. (No model.)



Claim.—1. The combination, in an egg-packer, of a case, A A', a corresponding assemblage of open-ended tubes, B, and elastic egg-holders C, substantially as shown and described.

2. The combination, in an egg-packer, of open-ended tubes and elastic double-coned reversible holders C, whereby the eggs may be packed in the tubes on the holders and the latter may be removed in advance of the eggs, substantially as described.

322,445. CHURN. CALVIN HANNA, Hardin County, Tenn. Filed Apr. 28, 1885. (No model.)

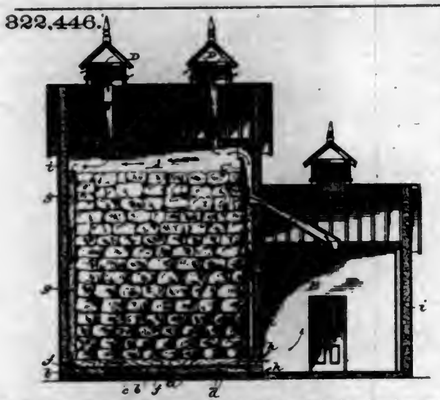


Claim.—In a churning apparatus, the combination, with three dasher stem rods, of the two levers E G, connected at their ends by a diagonal pivoted rod, the lower lever connected at its front with the two outside rods and the higher lever with the middle rod, as and for the purpose described.

322,446. REFRIGERATOR-BUILDING. JOSEPH F. HANRAHAN, Ottawa, Ontario, Canada, assignor of one-fourth to James Gordon, same place. Filed Apr. 29, 1885. (No model.)

Claim.—1. In a refrigerator, the combination of an ice-chamber, a cooling-chamber communicating therewith at the top and bottom, and

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an air-inlet, and an air-discharge pipe in the top of the ice-chamber communicating with the atmosphere, as and for the purpose described.

2. In a refrigerator, the combination of an ice-chamber and a cooling-chamber communicating therewith, an air-inlet pipe, and an air-discharge pipe in the top of the ice-chamber and communicating with the atmosphere, said air-inlet pipe extending downward to a point below the air-discharge pipe, for the purpose set forth.

3. In a refrigerator, the combination, with an ice-chamber and a cooling-chamber communicating therewith, of the two sets of flues or passages *d*, arranged one above the other and communicating with the ice and cooling chambers.

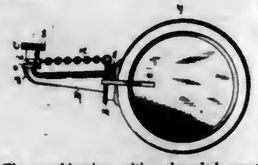
4. In a refrigerator, the combination, with an ice-chamber and a cooling-chamber communicating therewith, of the two sets of flues or passages *d*, arranged one above the other and provided with valves or shutters *h*, as and for the purpose set forth.

5. In a refrigerator, the combination of an ice-chamber, a cooling-chamber, an air-duct extending from the top of the cooling-chamber to the upper side of the ice-chamber, vertical flues at one or more sides of the ice-chamber, on the interior thereof, and horizontal flues beneath the ice and communicating with the vertical flues and with the cooling-chamber, as described and shown.

6. In a refrigerator, the combination of an ice-chamber and a cooling-chamber communicating therewith, vertical flues *g*, open at their ends and one side, and horizontal flues *d*, communicating with the flues *g* and with the cooling-chamber, and also open at one side, whereby the air in passing through said flues is in contact with the mass of ice.

7. The herein-described refrigerator, consisting of ice-chamber A, provided with air-inlet and air-discharge pipes E F, and with ducts *g* and *d*, chamber B, and pipe C, connecting the chambers A B, as and for the purpose set forth.

322,447. OIL-CAN. HARRIE B. HART, Philadelphia, Pa. Filed Apr. 1, 1885. (No model.)



Claim.—1. The combination, with a threaded spout and threaded cap, of a spring arranged to bear upon the cap and permitting its rotation by hand in either direction, but preventing it from turning without manipulation, substantially as described.

2. The combination, with the vertical spout of an oil-can bent at the upper end and threaded, of a cap threaded and adapted to the said bent end, a chain connecting the cap to the base of the spout, and a spring arranged to bear frictionally upon the cap when in place, but permitting its rotation in both directions, substantially as described.

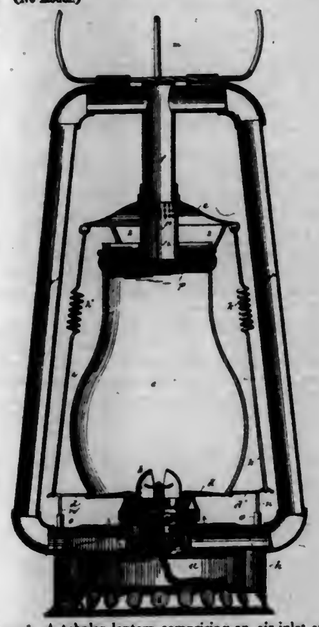
3. The combination, with the spout threaded at the end, of a cap or stopper adapted to said threaded end and provided with a corrugated face, and a spring carried by the spout and bearing upon said face, substantially as described.

4. The combination of the screw-spout having a bent end, a screw-cap adapted thereto and provided with a flange having a beveled corrugated edge, a chain connecting the cap and the base of the spout, and a spring bearing against the corrugated and beveled face of the cap when in position, substantially as described.

5. The combination of the can, vertical spout bent laterally and threaded at the end, a socketed screw-cap adapted to said threaded end and provided with a flange, *u*, and with a groove near the end opposite the flange, and a chain attached to the base of the spout, and a spring-ring fitting the groove and connected to the chain, substantially as described.

6. The combination, with an oil-can, of a vertical spout and the spring-catch attached to the body of the can and bearing frictionally against the flange or base of the spout, as described.

322,448. LANTERN. EDGAR K. HAYNES, Boston, Mass. Filed Feb. 1, 1884. (No model.)



Claim.—1. A tubular lantern comprising an air-inlet at its base surrounding the oil-reservoir, the chimney-cap *e*, having the air-inlets 2 at the top of the chimney, and the tubular portion f^2 of the chimney-cap, forming an extension of the air-tube and projecting down into the chimney, substantially as shown and described.

2. In a tubular lantern, the combination, substantially as shown and described, of the air-jacket surrounding the oil-reservoir and opening into a clear space below the perforated air-distributing plate, the chimney-cap *e*, and the tubular extension f^2 of the air-tube *f*, projecting from said cap into the chimney below its upper end when in burning position, and the air-inlets 2 in the chimney-cap, forming an air-supply between the mouth of the chimney and its cap, as and for the purpose set forth.

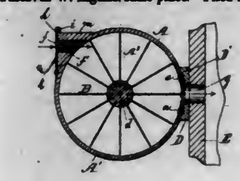
3. In a tubular lantern, the tube *f* and its downward extension, combined with the annular deflector *p*, projecting laterally at the lower end of the said extension.

322,449. WATCH-CASE. EDWARD P. HEFFERNAN, Lockport, N. Y., assignor to Robert John Quigley, Toronto, Canada. Filed Feb. 6, 1885. (No model.) Patented in Canada Jan. 31, 1885, No. 21,019.



Claim.—The combination, with the ring A, having peripheral grooves *a*, with partition *d* between them, of the back B and bezel C, each having lip *c* and square abutting edges *c'*, the parts being so arranged that when the said back and bezel are closed the seam will be centrally over the partition, as set forth.

322,450. FAN-TREMOLO. JEROME A. HEDREEN, Worcester, Mass., assignor to Gustavus W. Ingalls, same place. Filed Sept. 29, 1884. (No model.)



Claim.—1. The combination, with the strip D, provided with the recess D', of the motor-head A, consisting of the bent part A', circular ends or disks A^2 A^2, and provided with the projection *m*, air-inlet *f*, bushing *f'*, and outlet *g*, substantially as described.

2. The combination of the circular motor-head A, consisting of the bent circular part A', and disks or heads A^2 A^2, and means for supporting said motor-head, with the motor-wheel B, fan C, and means for supporting and operating said wheel and fan, substantially as shown and described.

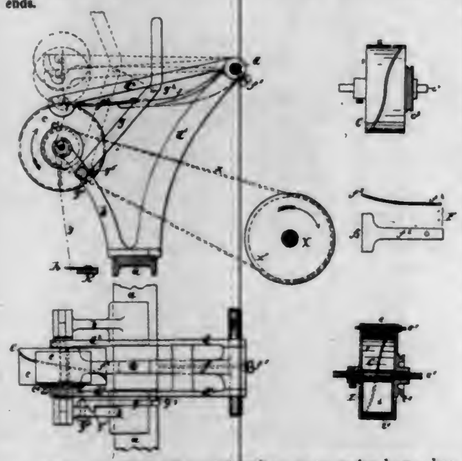
3. The combination of the strip D, provided with the recess D', and the circular motor-head A, constructed substantially as described, with the motor-wheel B, bushing *c*, fan C, pivot-wires *d d'*, and bearing *e*, substantially as and for the purpose set forth.

4. The combination, with the part *m* of the motor-head A, of the bushing *f'*, placed in the opening *f*, between the valve *h* and chamber containing the motor-wheel B, substantially as and for the purpose set forth.

5. The combination, with the motor-head, of a fan-tremolo provided with the projection *m* and air-inlet *f*, of the bushing *f'*, flexible valve *h*, wire *i*, hinged lever *j*, and hinged connecting-rod *k*, substantially as and for the purpose set forth.

322,451. MACHINERY FOR WINDING YARN OR THREAD ONTO SPOOLS OR BOBBINS. HENRY C. HILL and HENRY H. BROWN, Stalybridge, County of Chester, England. Filed Mar. 10, 1884. (No model.) Patented in England May 10, 1882, No. 2,196, and Nov. 27, 1883, No. 5,532.

Brief.—The driving-drum has a helical slot in its periphery, through which the thread passes. A guard-plate loosely suspended on the shaft of said drum prevents the thread from winding on said shaft when breakage occurs. A yarn or thread guide, consisting of a thin plate mounted on a cross-rod of the frame, is interposed between the driving-drum and the bobbin being wound when it is desired to wind a bobbin with square ends.



Claim.—1. The driving and thread or yarn traversing drum *c*, having a peripheral slot, C, and a roughened surface, substantially as and for the purpose specified.

2. The combination, with the driving and yarn or thread traversing drum *c* and the spool or bobbin support provided with a peripheral slot, C, of a thread-guide interposed between said drum and support, as described, for the purpose specified.

3. The combination, with the driving and thread or yarn traversing drum *c*, having a peripheral slot, C, of the shield or guard I.

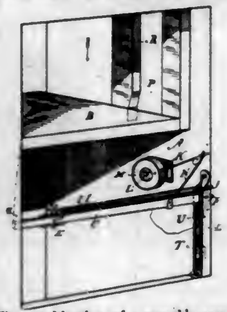
4. The combination, with the driving and thread or yarn traversing drum having a peripheral slot, C, and a pivoted support for the spindle of the spool or bobbin, of a thread-guide interposed between the drum and bearings for said spindle, substantially as and for the purpose specified.

5. The combination, with the driving and yarn or thread traversing drum *c*, having a peripheral slot, C, and a pivoted support for the spindle of a spool or bobbin, of a thread-guide interposed between the drum and spindle of the spool or bobbin rotated by said drum, and rotating said spindle, as described, for the purpose specified.

6. The combination, with the driving and thread or yarn traversing drum *c*, having a peripheral slot, C, a shield or guard, I, suspended from the axis of and within the drum, and a pivoted support for the spindle of a spool or bobbin, of a roller interposed between the drum and spindle, and a pivoted lever, *g*, for supporting said roller, as described, for the purposes specified.

7. The combination, with the driving and thread or yarn traversing drum *c*, having a peripheral slot, C, and the pivoted support for the spindle of a spool or bobbin, composed of the parts d^2 d^2, swiveled together, of the lever *g*, substantially as and for the purpose described.

322,452. AUTOMATIC SAFETY-GUARD FOR ELEVATORS. FRANKLIN P. HINDS, Boston, Mass. Filed May 23, 1885. (No model.)



Claim.—1. The combination of a movable guard, adapted to extend, when closed, across the passage-way to an elevator-car, with a combined friction-wheel and drum mounted upon a fixed axis, a car provided with means for actuating said wheel by direct frictional contact, and a cord directly connecting the wheel and drum with the guard, whereby the movement of the car causes the rotation of the wheel, the winding and unwinding of the cord, and the raising and lowering of the guard, substantially as described.

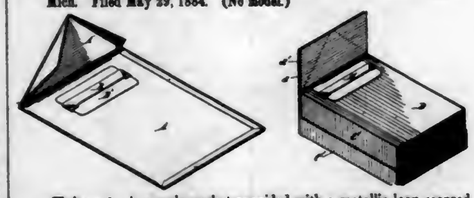
2. The combination of a movable guard, C, a friction pulley or drum, M, mounted upon a fixed spindle, a connecting cord or chain, N, suitably guided, and a car constructed with a groove, P, arranged to actuate the friction-pulley as the car moves up and down the elevator-well, and thereby to raise and release the guard, all substantially as and for the purposes specified.

3. The combination of car B, provided with a groove, P, pulley M, mounted upon a fixed axis arranged to project into the path of said groove, and spring S, secured to the car and arranged to engage the front face of said pulley in the manner and for the purpose specified.

4. A guard, C, jointed, as at E, and pivoted, as at F, and provided with rods I, pivoted to the short arm of the guard, as at H, and to a fixed standard, as at J, whereby the guard, when raised to its vertical position, will have its short arm turned to a horizontal position, as and for the purpose specified.

5. In combination with the tilting guard C, operated as described, the counter-weight T, suspended from the end of the guard by a connecting-chain, which acts alternately on pulleys U and V, as and for the purposes specified.

322,453. SAMPLE-PACKAGE WRAPPER. SOLON G. HOWE, Detroit, Mich. Filed May 29, 1884. (No model.)



Claim.—1. A sample-packet provided with a metallic loop secured thereto by a fabric engaging the ends of the loop upon the packet, said packet having extended end flaps, the construction being such that the flaps may lie upon each other and the corners thereof folded inward under the loop, substantially as described.

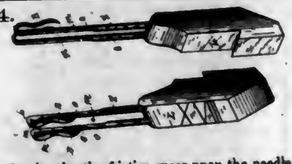
2. The fastening-band provided with a loop near one end, the construction being such that the band may be attached to a package passed round the same, its ends folded together and inserted under the loop, substantially as described.

3. The herein-described sample-package wrapping, consisting of a box with its cover, a wrapping-band, and a loop secured thereto, said band adapted to be passed round the box, its ends folded together, and inserted under the loop, substantially as described.

322,454. KNITTING-MACHINE NEEDLE. GEORGE E. JONES, Cohoes, N. Y. Filed May 22, 1884. (No model.)

Brief.—The needle is constructed with a flat milled exterior surface on the outer face of that portion of the needle which is opposite the beard and in which the bend is made to form the beard, as well as on the outer face of the latter, and with a laterally-convex interior surface on that part of the needle which is within the bend that

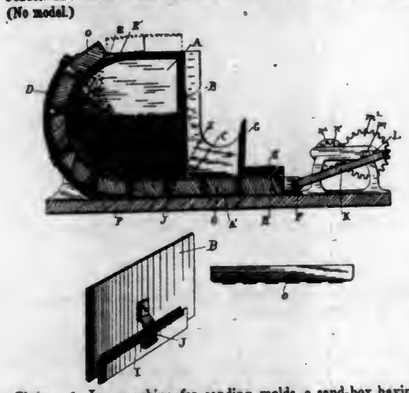
322,454.



forms the beard, whereby the friction wear upon the needle is sustained by a broader surface than when the rounded surface is exteriorly placed, and the rounded interior surface gives less friction to the movement of the yarn in the formation of the loops than a flat one.

Claim.—The knitting-machine needle herein described, formed with a flattened exterior surface, *m*, extended from a point on the back of the stem to the point of the beard, and a rounded interior surface, *o*, within the loop of the needle, substantially as described.

322,455. MACHINE FOR SANDING BRICK-MOLDS. ROSWELL S. JUDSON and CYRUS J. HANCOCK, Matteawan, N. Y. Filed Nov. 13, 1884. (No model.)



Claim.—1. In a machine for sanding molds, a sand-box having a front board, B, and provided near its lower forward end with an inlet-opening, substantially as set forth.

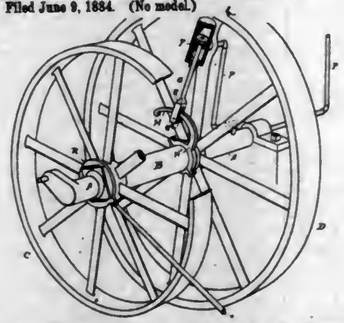
2. In a machine for sanding molds, a box having an inlet-opening fitted to permit the insertion of the molds and provided with a valve controlling said opening, substantially as set forth.

3. In a machine for sanding molds, a sand-box having on its opposite sides guides fitted to receive the ends of the molds and adapted to guide said molds upward and invert them over the box, substantially as set forth.

4. In a machine for sanding molds, a box formed with inlet and outlet openings and having guides on its opposite sides fitted to receive the ends of the molds, and provided on its bottom with rails, substantially as set forth.

5. In a machine for sanding molds, the box herein described, having an inlet-opening controlled by a suitable valve and provided with rails fitted to support the molds, and provided with guides adapted to direct the molds upward and invert them over the box, substantially as set forth.

322,456. GOVERNOR FOR STEAM-ENGINES. JOHN KELLY, Peoria, Ill. Filed June 9, 1884. (No model.)



Claim.—1. In a variable eccentric, the slotted eccentric R and slotted disk S, having parallel bars W, and means for adjustably securing together said disk and eccentric, in combination with the box T and eccentric V, as set forth.

2. In a governing device for engines, the shaft A, sleeve B, and curved arm H, in combination with the cylinder F, piston-rod G, having stirrup *g* and friction-wheel *g'*, fly-wheel D, keyed to said shaft and having bearings in an arm thereof for said cylinder F, and the pipe P, substantially as and for the purpose specified.

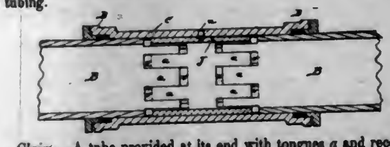
3. In a governing device for engines, the combination, with the shaft of an engine, a sleeve thereon, a cylinder having rigid connection between its bearings and said shaft, and a piston-rod in said cylinder, of means whereby said cylinder and piston-rod can control in any necessary proportion the relative angular movement of said shaft and sleeve, for the purpose set forth

4. In a governing device for engines, a sleeve mounted upon the main shaft of the engine, in combination with a cylinder, a piston-rod therein, an arm or other means for rigidly joining the bearings of said cylinder to said shaft, means for supplying said cylinder with a motive fluid, and a connection between said piston-rod and sleeve adapted to resist the backward turning of said sleeve relative to the shaft, for the purpose specified.

5. In a governing device for engines, a sleeve mounted upon the main shaft of the engine, a drive-pulley fast on said sleeve, and a variable eccentric governing the engine's supply of motive force and adapted to have its throw changed by the relative angular displacement of said shaft and sleeve, in combination with an arm projecting rigidly from said sleeve, a cylinder whose piston is connected with said arm, means for rigidly connecting said cylinder with said shaft, and means whereby to supply said cylinder with a motive fluid, substantially as set forth.

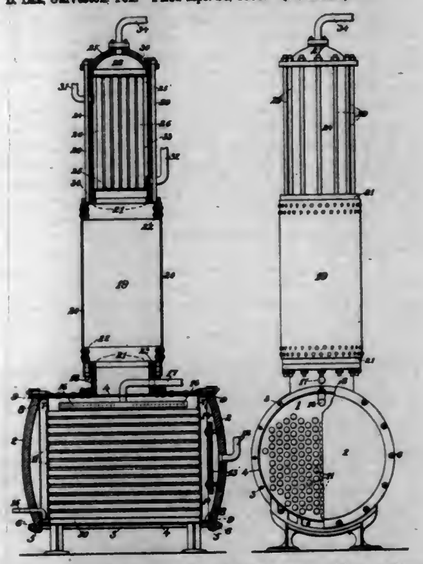
322,457. EXPANSION-JOINT. PHILIPP KOCH, New York, N. Y. Filed Apr. 26, 1884. (No model.)

Brief.—Tube ends are provided with parallel tongues and intermediate recesses, which intermesh. A tube or cap provided with stuffing-boxes surrounds the joint, permitting contraction and expansion of the tubing.



Claim.—A tube provided at its end with tongues *a* and recesses *v*, fitting into corresponding recesses and tongues on an adjoining pipe, in combination with a surrounding cap, C, arranged to operate in the manner and for the purpose substantially as described.

322,458. APPARATUS FOR PRODUCING AMMONIACAL GAS. C. B. LEE, Galveston, Tex. Filed Apr. 24, 1885. (No model.)



Claim.—1. The combination of the generator with a perforated ammonia induction-pipe arranged therein, substantially as and for the purposes described.

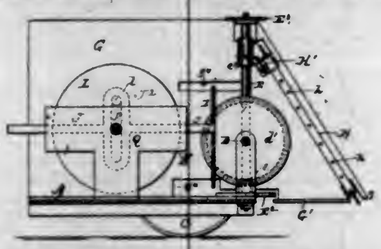
2. The combination, in an ice-machine, of the shell of a vessel containing tubes, with the flanged tube-sheets inserted in the ends, having

their flanges terminating flush with the ends of the shell, and grooved heads for receiving the ends of the shell and the flanges, substantially as and for the purposes described.

3. The combination, in an ice-machine, of a tubular shell having flanged heads secured to the ends of the shell by means of longitudinal bolts and nuts, substantially as and for the purposes described.

4. The combination of a generator, I, provided with tube-sheets and tubes, with a steam-pipe, and a steam-dispersing plate arranged in the end of the generator in front of the steam-pipe, substantially as and for the purposes described.

322,459. CORN-HARVESTING MACHINE. LEDYARD V. LEWIS and STEPHEN S. ALLEN, San Prairie, Wis. Filed Mar. 26, 1884. (No model.)



Claim.—1. The boards or guide-frames G G, extending rearwardly from the knife parallel or approximately parallel with each other and having the horizontal slots g^a g^a, one at mid-height and the other near the bottom, and in front of the knife having inclined edges flared outwardly with the sprocket-wheels at top and bottom, and chains or belts with projecting fingers run over said wheels, and the stalk-conveying forks projecting through the slots g^a, as set forth.

2. The combination, with the boards G G, having the slots g^a g^a, of the arms or hooks I, and bar J, to which they are secured, said bar being slotted at the rear end, as described, and with the plates L, having the eccentric-pin *l*, working in the slot in the bar J, as set forth.

3. In a corn-harvesting machine, the combination of the arms I, bar J, cam-plates L, and means for operating it, whereby the arms or hooks I are given an inward and backward movement and an outward and forward movement, substantially as set forth.

4. The combination of the cam-plates L, united by the eccentric-pin *l*, means for rotating said cam-plates, the bar J, having the cross-slot J', and provided with arms I I, and the horizontally-slotted bracket K, substantially as described, and for the purpose set forth.

5. The combination of the drive-wheel B, cog-wheel B', pinion *a*, gearing into wheel B', shaft D, upon which said pinion is placed, bevel-wheel *d'*, pinion *e*, shafts E E, and cutting devices, and the pinion *q*, shaft Q, on which it is placed, cam-plates L, secured on shaft Q, eccentric-pin *l*, uniting said plates, slotted bar J, and arms I I, substantially as set forth.

6. The herein-described corn-harvesting machine, consisting of the frame A, drive-wheel B, and cogged wheel B', the wheel C, the shafts D and Q and their pinions *d q*, gearing into wheel B', the bevel-wheel D', the pinion *e*, shafts E, and gear-connection, the rotating reels or cutters E^2, reels E^2, knife F, guides G G, having inclined and flared extensions in front of the cutting devices, as described, belts or chains H H, placed in an inclined position along the inclined edges of the boards G G, and means for operating them, cam-plates L, bar J, and arms I, all arranged and combined to operate substantially as set forth.

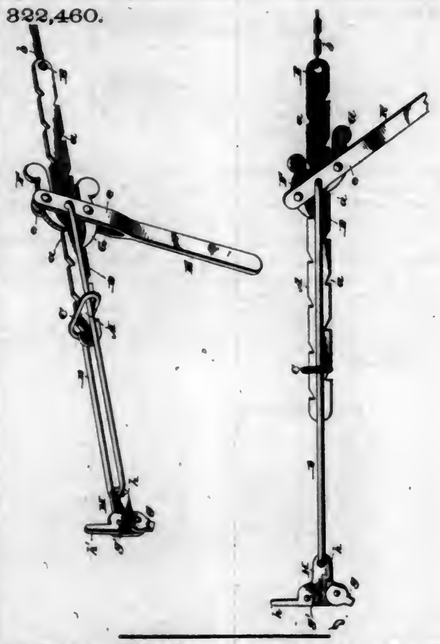
7. The cam-plates L, and eccentric-pin *l*, by which they are united, bar J, mounted on said eccentric-pin, and the slotted bracket for guiding the bar J, all constructed and combined, substantially as set forth.

322,460. WIRE-STRETCHER. EDWIN LONG, Iowa City, Iowa, assignor to Edmund Shepard and William B. Carpenter, same place, and Reuben Ellwood and Abram Ellwood, Sycamore, Ill. Filed Mar. 3, 1884. (No model.)

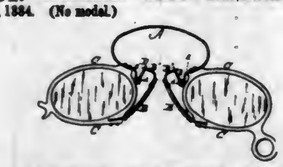
Claim.—1. In a wire-stretcher, the combination, with a rack-bar having teeth on its opposite edges and provided with guides, of connecting-rods provided on their outer or free ends with devices for grasping and releasing the wire, a lever pivoted upon the opposite ends of the connecting-rods, and pawls pivoted to the lever and adapted to engage the teeth on opposite sides of the rack-bar, substantially as set forth.

2. In a wire-stretcher, the combination, with a rack-bar having teeth on its opposite edges and provided with guides, of connecting-rods passing through the guides, an operating-lever pivoted to the connecting-rods and provided with pawls for engaging the teeth of the rack-bar, and a plate secured to the outer ends of the connecting-rods and provided with a cam-grip for holding the wire, substantially as set forth.

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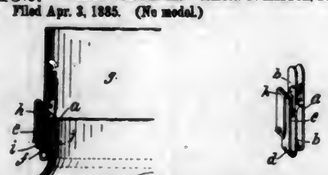


322,461. EYEGLASSES. ALBERT C. LORD, Northfield, N. H. Filed Nov. 3, 1884. (No model.)



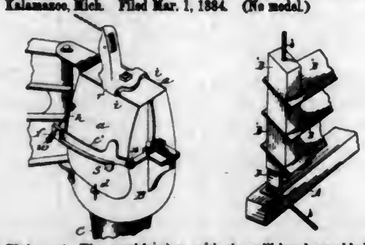
Claim.—In eyeglasses, the combination, with the eyes or bows C, provided with the nose-pieces B B', perforated at *b*, of the guide-pins D, extending through said perforations and pivoted at *d* to the brackets E, substantially as and for the purpose set forth.

322,462. COLLAR-FASTENER. MILTON F. MADDOX, Bloomingdale, Ind. Filed Apr. 3, 1885. (No model.)



Claim.—The herein-described spring-hinged clasp, consisting of the two members *a* and *b*, the member *a* bent at right angles at one of its ends and provided with teeth, and the other member, *b*, having the loops *d* and *h* and teeth *c* formed integral therewith, substantially as described.

322,463. WINDMILL. HOMER MANVEL and MALCOLM B. WILLIAMS, Kalamazoo, Mich. Filed Mar. 1, 1884. (No model.)



Claim.—1. The combination, with the mill-head provided with the front, rear, and top walls to the urn, and with the side perforated lugs

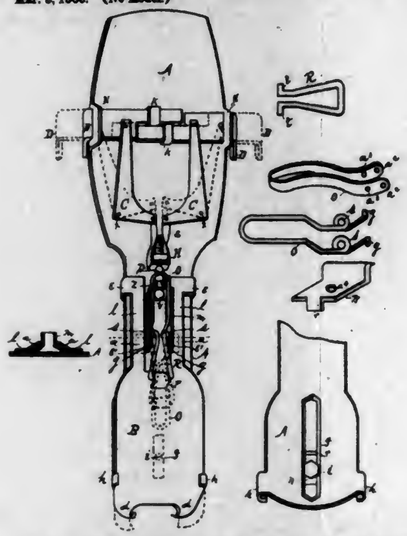
at the base, and the hooked lugs at the top of the side-wall castings provided with the upper lock-lug and the securing-pins, substantially as set forth.

2. The combination of the sail-arms provided with the loop-irons or equivalents, the sails, the blocks having the beveled ends between the sails, and the tension-rods passing through the sails, and blocks adjustably connecting with the loop-irons, whereby the action which tensions the sail-arms and wheel-sections also compresses the beveled ends of the blocks against the faces of the sails, substantially as set forth.

3. The combination, with the crank-disk and vane, of the brake having the arm pivoted at one end, the other end perforated and provided with the loosely-playing connecting-rod, said rod provided with the rubber tube back of the brake-arm, and pivotally connected with an extension of the vane forward of the vane-pivot, all substantially as set forth.

4. The combination of a crank-disk, a brake to engage said disk, and an urn covering said disk and brake, and provided with a perforation to admit the brake, substantially as set forth.

322,464. SKATE-CLAMP. THEODORE C. MEES, Detroit, Mich. Filed Mar. 3, 1885. (No model.)



Claim.—1. The combination of the body-plate provided with the ears and clamps formed integrally therewith, the sliding plate provided with ears *e e*, clamping-points *d d*, the yoke having wings *a a*, located between said body and sliding plate, as and for the purposes set forth.

2. The combination of the body-plate, the sliding plate attached thereto, as specified, the elbow-levers C C, pivoted to the body and to the jaws D D, said jaws working through the ears and loops formed integral with the body-plate, said levers pivoted to the yoke S, said yoke adjustably attached to the sliding yoke *m* by means of the bolt P, substantially as set forth.

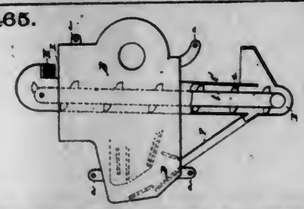
3. The combination of the plates A B, the sliding yoke secured between said plates, substantially as shown, the adjusting-bolt pivoted within the yoke *m*, having the thumb-wheel *z*, said bolt engaging with the nut H of the yoke S, the lever O, pivoted to the yoke *m*, the bale R, pivoted to said lever and to the plate B, substantially as shown and described.

4. In combination with the plate A, having the channel *f*, the clamp *n*, mounted thereon, with the arm *r*, fitting within said channel and adapted to be adjusted to or from the penetrating-points *d d* of the plate B.

322,465. RECLEANER FOR GRAIN AND SEED SEPARATORS. ABRAHAM MILLER, Newark, Ohio, assignor to the Newark Machine Company, same place. Filed May 15, 1884. (No model.)

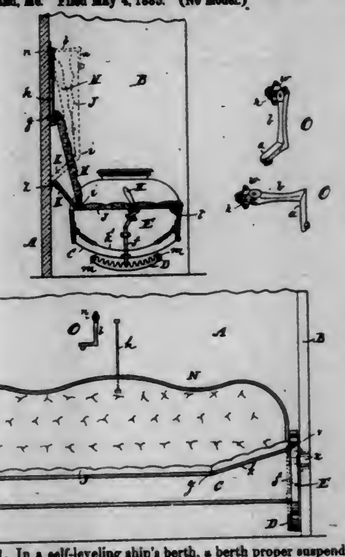
Claim.—1. A recleaning attachment for grain-separators, consisting, essentially, of a hopper, a screen for receiving the grain from the hopper, an elevator having a chamber at its lower end, and its upper end arranged to deliver the grain to the hopper, and an inclined conductor having one end connected directly with the chamber of the elevator and its upper end formed into a mouth arranged under the discharge-mouth of the screen to convey the tailings to the chamber of the elevator, substantially as set forth.

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2. The combination, with a separator, of a recleaning device consisting, essentially, of a screen, an elevator for elevating the tailings to the screen, and spout arranged directly between the screen and elevator for receiving the tailings from the screen and discharging them into the elevator frame or casing.

322,466. SHIP'S BERTH. CHARLES A. MILLIMAN, Boston, Mass., assignor to the Excelsior Self Leveling Berth and Automatic Ladder Company, Portland, Me. Filed May 4, 1885. (No model.)



Claim.—1. In a self-leveling ship's berth, a berth proper suspended in the state-room and adapted to swing laterally, a device for locking said berth to prevent it from swinging, a cover to the berth adapted to form the seat when the berth is converted into a sofa or lounge, and a board or frame-work hinged to said cover and sliding vertically against the rear wall of the state-room as the cover is raised and lowered, and to form the back of the sofa or lounge, substantially as described.

2. The sliding back N and hinged cover J, in combination with the wall A, a swinging ship's berth, and means for locking said berth to prevent it from swinging, substantially as set forth.

3. The cover J, hinged to the wall A, and provided with the inclined flange K, in combination with the swinging berth C and means for locking said berth, substantially as described.

4. The wall A, provided with the rod *h*, in combination with the sliding back N, hinged cover J, swinging berth C, and a hasp or means for securing said cover in an elevated position, substantially as set forth.

5. The swinging berth C, provided with the bar *f* and lever H, the wall B, provided with the rack D, the wall A, provided with the rod *h*, the hinged cover J, sliding back N, hinged to said cover, and a hasp or means for securing said cover in an elevated position, combined and arranged to operate substantially as set forth.

6. The hasp O, consisting of the body *b*, provided with the arm *a*, and hinged to the revoluble bolt *r*, in combination with the wall A, hinged cover J, sliding back N, and swinging berth C, substantially as described.

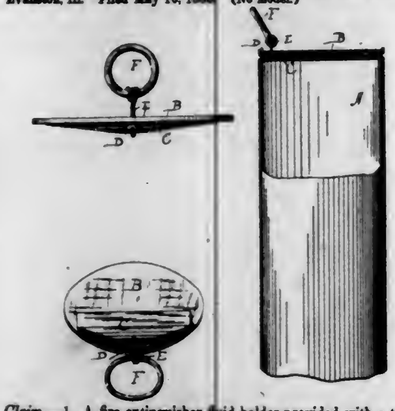
322,467. BOOT OR SHOE. TOBIAS P. MITCHELL, Haverhill, Mass. Filed Mar. 24, 1884. (No model.)

Claim.—As an improved article of manufacture, a side-fastened boot or shoe having front and hind quarters, B and C, one of which is provided with buttons or studs, and an intermediate quarter or piece, E, secured to the vamp between the two quarters at their junction with the vamp, and adapted to be buttoned to the front quarter, substantially as and for the purpose specified.

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322,468. FIRE-EXTINGUISHER HOLDER. ERASTUS C. NELSON, Evanston, Ill. Filed May 16, 1885. (No model.)



Claim.—1. A fire-extinguisher-fluid holder provided with a top or cover proper, and a supplemental piece on its under side having a point or edge turned up against the top proper to admit of being pulled or jerked through the same, substantially as described.

2. A fire-extinguisher-fluid holder provided with a top proper, a supplemental piece on its under side having a point or edge turned up against the top proper to admit of being pulled or jerked through the same, and a staple passed down through the top proper and the supplemental piece, and fastened under or to such supplemental piece, substantially as described, and for the purpose set forth.

322,469. REED FOR ORGANS. AUGUSTUS NEWELL, Chicago, Ill. Filed Apr. 2, 1884. (No model.)



Claim.—A reed-frame, A, provided with tapering openings *a*, in combination with reed-tongue B, provided with straight openings, and pins *c*, provided with rivet-heads and upset ends, substantially as described.

322,470. MACHINE FOR MAKING MATCH-BOXES. FREDERICK P. NEWTON, Woodbridge, and EDWARD B. BEECHER, Westville, Conn. Filed Sept. 6, 1883. (No model.)

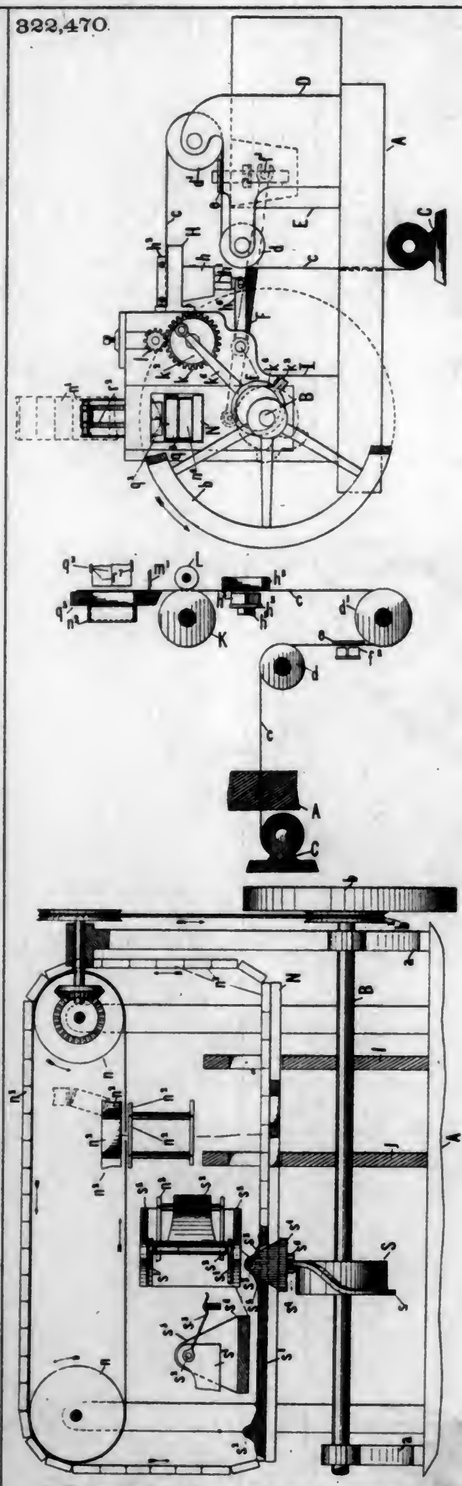
Claim.—1. In combination with mechanism, substantially as described, for depressing the box-blank into the link, mechanism, substantially as described, for pressing down the corner-pieces of the blank and holding the box as the plunger ascends.

2. The combination of the following elements: mechanism, substantially as described, for gluing the pasteboard strip; mechanism, substantially as described, for cutting out the excess corner portions; mechanism, substantially as described, for feeding and scoring the box-blank; mechanism, substantially as described, for depressing the box-blank into the link; and mechanism, substantially as described, for pressing down the corner-pieces of the blank and holding the box as the plunger ascends.

3. In combination with the fixed bed-plate q^3, having a proper opening, and the plunger q^3, mechanism, substantially as described, for turning the corner-pieces *x* into position before the end pieces, *x'*, are folded to place.

4. The gluing mechanism described, consisting of the cam f^6, lever F, with slotted end, the bar f^3, with stud f', and the finger f^5, as described.

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5. The combination of the plunger q^3 and its actuating mechanism, with the blades r^7 and their actuating mechanism.

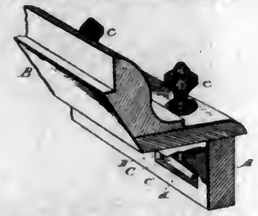
6. In combination with the plunger q^3, the corner-turners P q, and the mechanism O o o' o^3 o^3 for adjusting and holding the link.

7. In combination with the endless chain *n'*, the disk S with camflange *s*, bars *s'*, shafts s^2, pawls s^3, blocks s^4, arms s^5, and studs s^6.

8. The combination of the following elements: mechanism, substantially as described, for giving vertical movement to a type-bed; mechanism, substantially as described, for giving vertical movement to a blanket-pad; and an endless chain adapted to hold the box in position to be acted upon by the pad and type-bed.

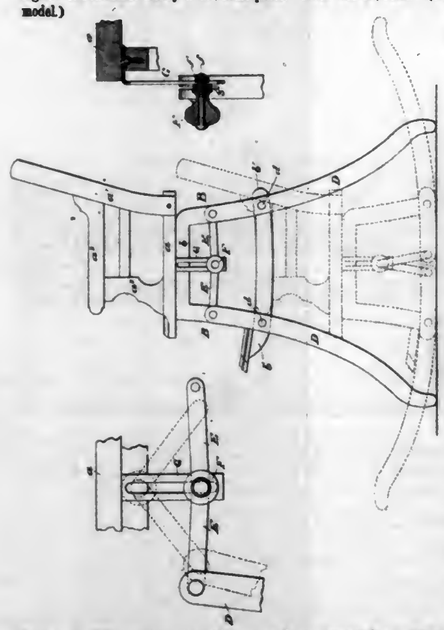
9. The combination of the following elements: an endless chain and mechanism for giving it an intermittent movement; box-forming mechanism, substantially as described, and printing mechanism, substantially as described, the printing mechanism being located in relation to the chain at the farthest possible point from the box-forming mechanism.

322,471. DEVICE FOR SECURING LIDS TO BURIAL-CASKETS. R. OTTO, Owego, N. Y. Filed May 9, 1885. (No model.)



Claim.—The pointed barbed shank provided with a suitable head, in combination with a spring located in a slot made in the inner side of the coffin, whereby the hooked end of said shank is adapted to engage with said spring and be rotated out of contact therewith, as shown and described, to operate as specified.

322,472. CHILD'S CHAIR. FRANK F. PARKER, Gardner, Mass., assignor to Philander Derby & Co., same place. Filed Oct. 10, 1884. (No model.)

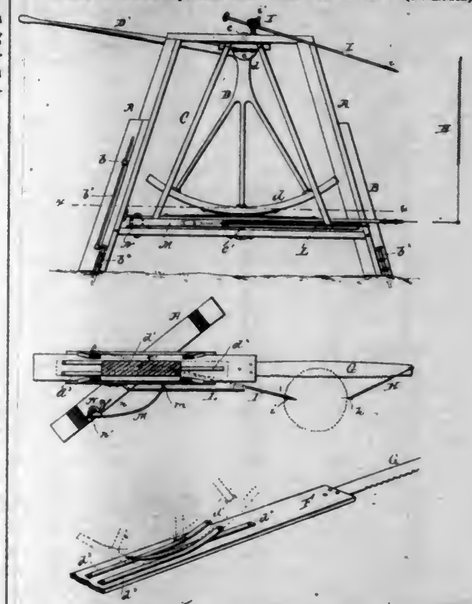


Claim.—1. The combination, with a seat-frame supporting a chair-seat and provided at each side with a guide-plate, of curved legs D D, pivoted between their ends to the seat-frame, and provided each with a link, E, pivoted to the upper end thereof, and fastening devices, substantially as described, for locking the free ends of the said links at different heights to the slotted plates, as and for the purpose set forth.

2. The combination, with the seat-frame B, supporting a chair-body and provided at each side with the curved side pieces and the guide-plates, of curved legs pivoted between their ends to the bottom of the seat-frame, and provided each with a link pivoted to the upper end thereof, and fastening devices for locking the free ends of said links at different heights to the guide-plates, substantially as set forth.

3. The seat-frame B, to support the seat and provided with the slotted guide-plates, the legs pivoted to the seat-frame and having the links, as specified, combined with the screw-knobs passing through the links and slotted guide-plate, and provided with a nut having a reduced portion to enter the slotted plates, substantially as and for the purpose set forth.

322,473. DRAG-SAW. JOHN J. PARKER, Aitkin, Minn., assignor to William W. Parker, Spearfish, Dak. Filed Feb. 14, 1885. (No model.)



Claim.—1. In a sawing-machine, substantially as described, the combination, with a main frame comprising two standards, as A, with extension-legs, as B, of a clamp, as I', carried upon the upper cross-bar of said frame, and a rod having an end to be engaged with the tree and a shank to be engaged by the clamp, whereby the proper position of the machine may be obtained and the tree used as a support, as set forth.

2. The combination, with a main frame, and an inner frame, as C, centrally pivoted therein, of a reciprocating carrier supported on the inner frame, and a swing-frame pivoted within the frame C, having connections with the saw, whereby horizontal and vertical movements are obtained by lever D', as set forth.

3. In a sawing-machine, substantially as described, a swinging segment, as D *d'*, pivoted in a horizontally-oscillating frame, as C, and supported over and in close proximity to a reciprocating saw-carrier working in guides in said frame C, in combination with such carrier, and with elastic straps securing the segment to the carrier and running in opposite directions from their points of attachment to the carrier to opposite sides of the segment, as set forth.

4. The combination, with the carrier F, supported in an oscillating frame, as C, of a swinging frame pivoted centrally in said frame C over the path of the carrier, and having a segment supported against the carrier, an operating-lever for moving the frame D upon its pivots in a vertical direction and the frame C upon its pivots in a horizontal direction, and flexible straps securing the segment to the carrier, as set forth.

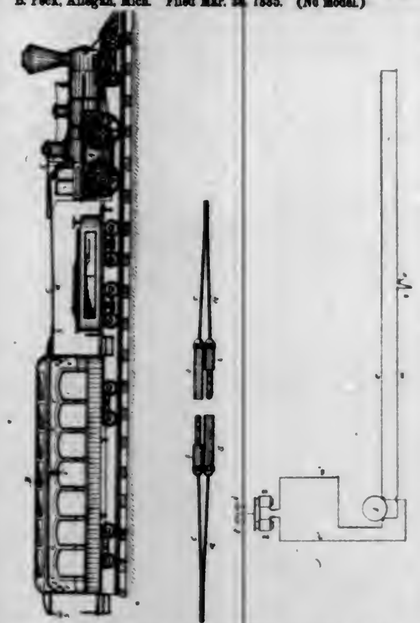
5. The combination, with the carrier F and the saw, of the pivoted oscillating frame D, having segment *d'*, the straps d^2, arranged near the outer edges of the carrier, and connecting its rear portion with the opposite side of the segment, and the strap d^3, arranged reversely between the straps d^2 to apply uniform central force to the carrier in each direction of its stroke, as set forth.

6. The combination, with the frame A B, supported upon one side of the tree being operated upon by an adjustable bar, as I, and with a felling-saw and its carrier reciprocating in said frame, of a spiral spring, H, having a fastening device, as *h*, secured at one end to the free end of the felling-saw and at the other end to the side of the tree opposite the frame, as set forth.

7. In a sawing-machine, substantially as described, the combination, with a saw-carrier having a longitudinal track, as L, of a spring-arm M, attached to the supporting-frame of the saw and having a friction-roller, *m*, engaged with said track, and a dog for holding the arm in a strained position in the direction of the work, as set forth.

8. The combination, with the frame A B and brace-rod for connecting said frame to the tree being operated upon, a horizontally-oscillating frame, as C, supporting the saw-carrier, a vertically-swinging frame having a segment connected to the carrier, and a spring-arm for holding the saw to the work, as and for the purposes set forth.

322,474. ELECTRIC SIGNAL APPARATUS. MYRON W. PARRISH, Detroit, and MARCUS F. PARRISH, Niles, assignors of one-third to Horace B. Peck, Allegan, Mich. Filed Mar. 28, 1885. (No model.)

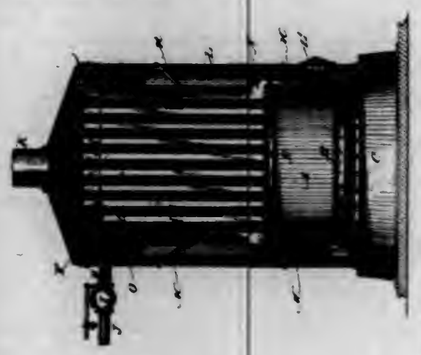


Claim.—1. An electric signal apparatus consisting of two circuits, one of a higher resistance than the other, the circuit of higher resistance being located at the place where the signal is to be sounded, a generator or battery in the circuits, a signal or alarm in the higher-resistance circuit, and a signaling circuit-breaker in the lower-resistance circuit at a point from whence the signal is to be sent, substantially as set forth.

2. The combination, with a train of cars, of a high-resistance circuit located in the engine, a lower-resistance circuit running through the train, a generator or battery in the circuits, an alarm or signal in the higher-resistance circuit, and one or more signaling circuit-breakers in the lower-resistance circuit in the cars, substantially as set forth.

3. The combination, with a train of cars, of a high-resistance circuit located in the engine, a lower-resistance circuit running through the train, a generator or battery in the circuits, and a signal or alarm in the high-resistance circuit, whereby an alarm would be sounded in the engine by an accidental breaking or separation of the lower-resistance circuit, substantially as set forth.

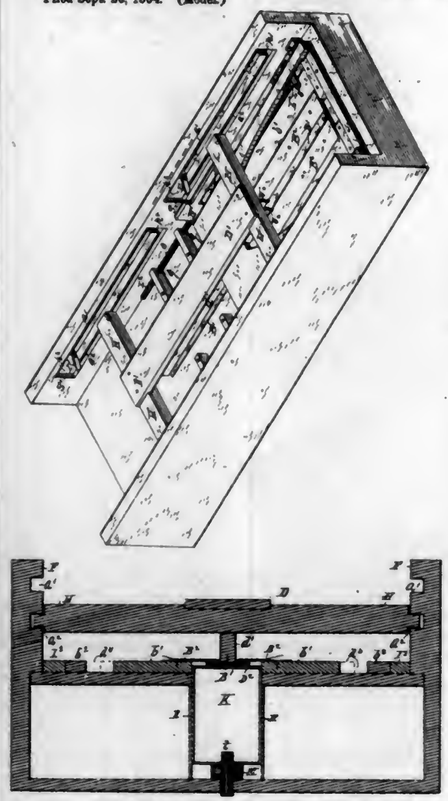
322,475. STEAM-BOILER. BENJAMIN N. PAYNE, Elmira, N. Y. Filed Apr. 18, 1885. (No model.)



Claim.—1. In a boiler of the class described, the combination, with its outer shell, fire-box, and tubes, of a continuous cylindrical diaphragm extending from near the bottom of the fire-box upwardly to near the top of the same, and a depending secondary diaphragm or its described equivalent arranged between the main diaphragm and the shell, substantially as specified.

2. In a steam-boiler of the class described, the combination, with the fire-box A, the fire-tubes D, the head F, and shell L, of a continuous cylindrical diaphragm, N, extending from near the bottom of the fire-box and around the fire-tubes to near the head F, the supports M, and devices, substantially as described, for directing water from the inside of said diaphragm over its upper edge and downwardly between it and the shell to the base of the boiler, substantially as shown and described.

322,476. BOSOM-PLAITING MACHINE. GEORGE W. PINE, Troy, N. Y. Filed Sept. 26, 1884. (Model.)



Claim.—1. In a bosom-plaiting machine, the combination of the fold-blades B^2 B^3, actuated as shown, the spring-pins P, and the central plait-blade, B', the said parts being constructed and arranged to operate substantially in the manner as and for the purposes set forth.

2. In a bosom-plaiting machine, the combination of the fold-blades B^2 B^3, the spring-pins P, the springs *m m*, the turn-levers L, pivotally connected at each side to one of the aforesaid fold-blades, the draw-bars I^2, pivotally connected to said turn-levers, the central plait-blade, B', and its frame D', the said parts being constructed and arranged to operate in the manner substantially as and for the purposes set forth.

3. In a bosom-plaiting machine, the combination of the fold-blades B^2 B^3, the turn-levers L, and the draw-bar I^2, the said parts being constructed and arranged to operate in the manner and for the purposes set forth.

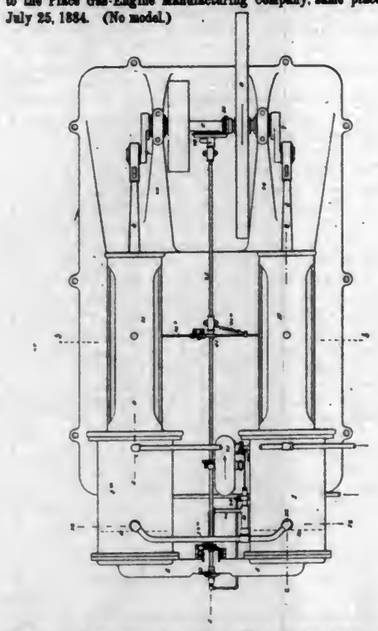
4. In a bosom-plaiting machine, the combination of the central plait-blade frame, D', the plait-blades B', arranged on the under side thereof, the cross-heads H, made with groove-fitting ends, as shown, the slideways S, made with the upper track, a', the lower track, a^2, the end passage-ways, p' p^2, connecting said upper and lower tracks, and the inclined switches I', the said parts being arranged and constructed to operate in the manner as and for the purposes set forth.

5. In a bosom-plaiting machine, the combination of the plait-blades B^2 B^3, the spring-pins P, the central plait-blade, B', and the creasing-fingers U, said parts being constructed and arranged to operate substantially in the manner as and for the purposes set forth.

6. In a bosom-plaiting machine, the combination of the fold-blades B^2 B^3, the spring-pins P, the central plait-blade, B', and the steam-chest K, the said parts being constructed and arranged to operate substantially in the manner as and for the purposes set forth.

7. In a bosom-plaiting machine, the combination of the fold-blades B^2 B^3, the spring-pins P, the central plait-blade, B', and the bed D^2, arranged to operate in the manner as and for the purposes set forth.

322,477. GAS-ENGINE. JAMES F. PLACE, New York, N. Y., assignor to the Place Gas-Engine Manufacturing Company, same place. Filed July 25, 1884. (No model.)



Claim.—1. A gas-engine provided with a tubular piston-rod constructed to admit air through said piston-rod for the purpose of expelling the burned gases from the explosion-chamber.

2. In a double-cylinder gas-engine, the means, substantially as described, whereby the piston of one engine compresses a charge of fresh air in an air-chamber, and the piston of the other cylinder compresses air from this chamber into a second chamber, whence said air is taken to expel the burned gases from the explosion-chambers of the cylinder, as set forth.

3. In a gas-engine, the herein-described method of heating the air to be mixed with the gas to form the explosive charge, which consists in passing the said air, on its way from the air-inlet to the mixer, through a jacket around the valves and igniting-chambers, substantially as and for the purposes set forth.

4. A gas-engine provided with an air jacket or passage around the valve-chambers and igniting-chambers, and a mixer, substantially as set forth, and with an air-inlet connected at one end with said passage or jacket, and the other end of said passage or jacket connected with the mixer, whereby the air employed in forming the explosive charge is heated by waste heat, as set forth.

5. In a gas-engine, the means, substantially as herein described, for admitting a portion of the explosive charge through the igniting-chamber and the remainder of the charge through lateral openings in the cylinder, for the purposes set forth.

6. In a gas-engine, the combination of a mixer for the explosive charge, an igniting-chamber, a pipe or passage connecting said mixing and igniting chambers, a valve and its operative mechanism for controlling the passage, a cylinder provided with one or more lateral valve-controlled passages arranged substantially as shown and connected with the mixer, a piston and piston-rod, a connecting-rod, a crank, and a power-shaft, substantially as and for the purposes set forth.

7. The herein-described method of supplying an explosive mixture of gas and air to the cylinder and igniting-chamber of a gas-engine, which consists in first supplying a rich charge to the igniting-chamber, and then supplying a charge to the cylinder which is richest next the piston and more diluted toward the outer end of the cylinder, for the purposes set forth.

8. The combination, with a gas-engine, of an automatic cut-off governor adapted to open the gas-inlet valve fully at the commencement of the instroke of the piston, and to completely close the gas-inlet valve at varying points in the stroke of the piston, as required by the varying load on the engine, substantially as and for the purposes set forth.

9. The combination, with a gas-engine, of an automatic cut-off governor arranged to control the admission of gas to form the explosive charge, said governor being provided with means, substantially as described, for gradually cutting off the gas supply, whereby the explosive charge is richest at the first moment of admission and more diluted, uniformly, during the time of admission, for the purpose set forth.

10. In a gas-engine, means, substantially as described, for supplying to the cylinder of the engine an explosive charge that varies in richness, whereby the said charge is made richest next the piston and more diluted toward the outer end of the cylinder, for the purposes set forth.

11. The herein-described method of introducing an explosive charge composed of inflammable gas and air to the cylinder of a gas-engine, which consists in first introducing a rich portion of the charge to the igniting-chamber, then a rich portion of the charge next to the piston, and then a more diluted portion of the charge intermediate between these richer portions, whereby an explosion is assured when the proportion of gas in the charge, as a whole, is less than the proportion to form an explosive charge, as set forth.

12. The herein-described method of introducing the gas to the mixing-chamber of a gas-engine for making the explosive charge, which consists in first admitting the gas in larger quantity in order that the first portion of the charge may be rich, and then gradually reducing the quantity of the gas admitted in order to dilute the charge more and more, for the purposes set forth.

13. The combination, in a gas-engine, of the cylinder provided with induction and eduction air-valves in their closed inner or crank ends, the air-chambers 15 and 15^a, the air-passages 63, leading from chamber 15^a to the cross-head guides, the recessed cross-heads 10, provided with air passages or ports, which connect with the tubular piston-rods, the said rods, the pistons provided with valves 68, to admit air from the tubular rods to the explosion-chamber, and valves and their operative mechanism, substantially as described, for controlling the admission of air from chamber 15^a to the tubular piston-rods, substantially as and for the purposes set forth.

14. The combination, with the tubular piston-rod, the piston, and the valve in the piston for admitting air to the explosion-chamber, of the deflecting-plate 74, mounted on the piston over the said valve to deflect the air laterally, substantially as and for the purposes set forth.

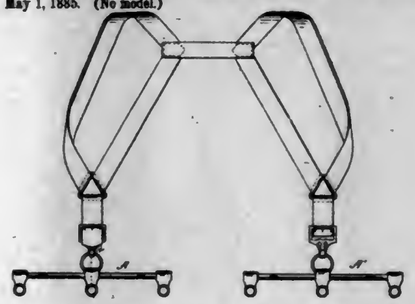
15. In a gas-engine, the combination, with the cylinders, their pistons, and tubular piston-rods, of the chambers 15 and 15^a, the air-passage leading from 15^a to the cross-heads, and the exhaust-pipe for the products of combustion, arranged within said air-passage, whereby the heat of said products is utilized to heat the air employed for expelling the products of combustion from the cylinder, substantially as set forth.

16. In a gas-engine, the combination of the cylinder, the piston, the tubular piston-rod, the valve 68 in the piston, the cross-head provided with ports 43, the air-chamber 15^a and air-passages 63, and the valve 40 and its operative mechanism, all constructed and arranged to operate substantially as set forth.

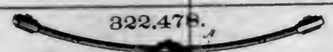
17. In a double-cylinder gas-engine, the combination, with the cylinders, pistons, tubular piston-rods, ported cross-heads and their guides, connecting-rods, cranks, and power-shafts, of the valves 75 and 76 in cylinder 1, and valves 77 and 78 in cylinder 1^a, the air-chambers 15 and 15^a, the air-passage 63, and the valves 40 and their operative mechanism, all arranged to operate substantially as set forth.

18. In a double-cylinder gas-engine, the combination of the two cylinders, the igniting-chambers 5, the induction-valve, constructed substantially as shown, and its operative mechanism, the eduction-valve and its operative mechanism, and the igniting-valve and its operative mechanism, all arranged to operate substantially as shown, whereby the explosive charge is admitted to the cylinders and ignited, and the burned gases removed in alternate order, as described.

322,478. SUSPENDERS. THOMAS O. POTTER, Boston, Mass. Filed May 1, 1885. (No model.)



322,478.



Claim.—1. The combination of the bar, rod, or support A with the plate *a* and the hook *a'*, all substantially as and for the purposes described.

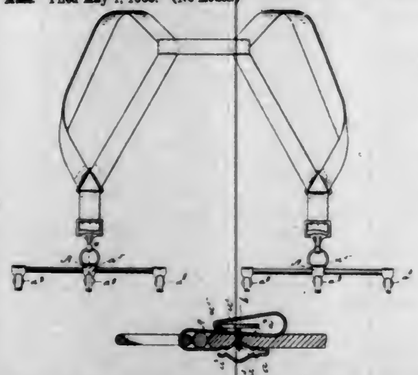
2. The combination of the bar or support A, the plate *a*, hook *a'*, and the movable hook-point covering-plate a^3, all substantially as and for the purposes described.

3. The combination of the rod or support A, the plate *a*, supporting the hook *a'*, with the movable plate a^3, having the notch a^6, all substantially as and for the purposes described.

4. The combination of the plate *a*, having the hook *a'*, with the movable plate a^3, having the notch a^6 and the inclines a^7, all substantially as and for the purposes described.

5. The combination of the rod or support A, the plate *a*, having the hook *a'*, plate a^3, and the hook-point covering-plate a^3, attached or secured thereto, all substantially as and for the purposes described.

322,479. SUSPENDER ATTACHMENT. THOMAS O. POTTER, Boston, Mass. Filed May 1, 1885. (No model.)



Claim.—1. The combination, in a device for suspending pantaloons or other articles, of a rod or support with arms having screw-holes *a a'* and the screw a^2, all substantially as and for the purposes described.

2. The combination of the arm having the screw-hole *a'*, and the spring screw-head-holding flange, with the screw a^2, all substantially as and for the purposes described.

3. The combination of the arm supporting the screw a^2 with the arm having the inward projection a^4 and screw-hole formed therein, all substantially as and for the purposes described.

4. The combination of the arm having the screw-hole *a*, and the cap a^5, formed by dishing the end of the arm and turning it back upon itself, all substantially as and for the purposes described.

5. The combination of the arms having the screw-holes *a a'*, and screw a^2, having the groove *b*, all substantially as and for the purposes described.

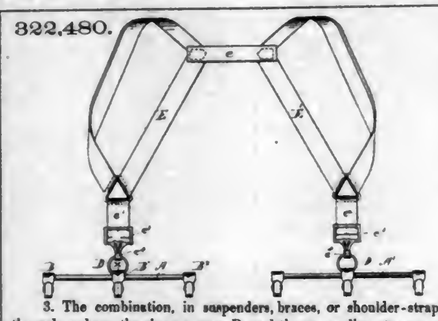
322,480. SUSPENDERS. THOMAS O. POTTER, Boston, Mass. Filed May 1, 1885. (No model.)

Claim.—1. The suspenders, braces, or other similar article having the waistband bars or rods secured to the waistband, as set forth, and to the ends of the suspenders in a manner to be removable therefrom, all substantially as and for the purposes described.

2. As a means for supporting pantaloons or other articles of wearing-apparel, the bars or rods connected with, attached to, or held within the waistband of the pantaloons or other articles, and having means of attachment to suspending-straps of suspenders, braces, or shoulder-straps, all substantially as and for the purposes described.



322,480.



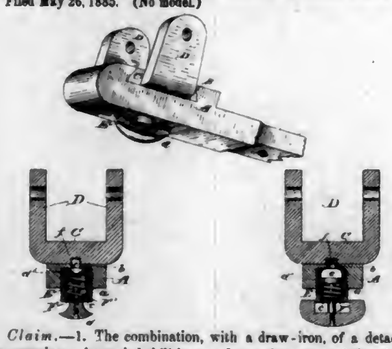
3. The combination, in suspenders, braces, or shoulder-straps, of the rods or bars, the rings or eyes D, and the suspending straps or ends *e e'* of the suspenders, braces, or shoulder-straps, all substantially as and for the purposes described.

4. The waistband bar or rod of suspenders or braces constructed to have a horizontal adjustment or movement to vary the degree of its curve, all substantially as and for the purposes described.

5. The suspenders or braces comprising waistband rods or bars sustaining or carrying waistband-attaching devices, and shoulder-straps for suspending the same, all substantially as and for the purposes described.

6. The combination, in suspenders or braces, of the shoulder or supporting straps having the ends *e e'* arranged in relation to the straps, as shown, the waistband-supporting bars or rods A A', having the loops or rings D arranged in relation thereto, as described, and the devices e^4, for attaching the loops, rings, or eyes to the suspender-ends, all substantially as and for the purposes described.

322,481. THILL-COUPLING. TIMOTHY P. RANDALL, Adrian, Mich. Filed May 26, 1885. (No model.)

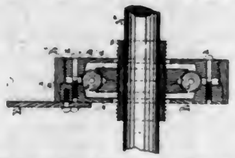


Claim.—1. The combination, with a draw-iron, of a detachable plate carrying a journaled thill-iron and a spring-actuated thumb-piece to engage openings in the draw-iron and plate, and adapted to be turned, substantially as described, to hold the parts in an unlocked position, as set forth.

2. The combination, in a thill-coupling, with the draw-iron and a detachable plate located thereon, of a bushing located in an opening in the draw-iron, a thumb-piece working in said bushing, and a spring located on the thumb-piece, as set forth.

3. The combination, with the draw-iron and the detachable plate carrying the journaled thill-iron, of a bushing located in an opening in the draw-iron, a thumb-piece having the head and an elongated lug, and adapted to engage openings, substantially as described, in the draw-iron and a recess in the detachable plate, and a spring on the thumb-piece, as set forth.

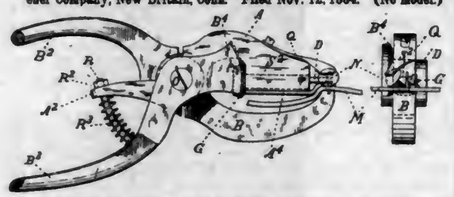
322,482. BALL AND ROLLER BEARING FOR SHAFTS. DAVID H. RICE, Lowell, Mass. Filed June 17, 1885. (No model.)



Claim.—1. The combination, with the rollers *c c*, presenting beveled or inclined surfaces to the bearing-surfaces of the shaft and surrounding box of inner shaft roller-bearing surfaces and outer box roller-bearing surfaces, embracing said rollers, having said embracing bearing-surfaces divided radially on one side of the rollers into two divisions, *b* B', and one of these divisions subdivided into outer and inner annular subdivisions, *b' b²*, adjustably connected together, one of which carries the roller-bearing surface and the other of which carries the bearing-surface which presses against the division opposite thereto, substantially as described.

2. The combination of the rollers *c c* with the shaft-bearing surfaces *a'* and the radially-divided box bearing-surfaces, *b* B', the latter being subdivided into annular divisions *b' b²*, adjustably connected together, one of which carries the roller-bearing surface and the other the surface pressing against the opposite part, *b*, substantially as described.

322,483. BUTTON-FASTENER-SETTING INSTRUMENT. FRANCIS H. RICHARDS, Springfield, Mass., assignor to the American Button Fastener Company, New Britain, Conn. Filed Nov. 12, 1884. (No model.)



Claim.—1. In a button-fastener-setting instrument, the combination of a lower jaw adapted to press against the head of a malleable fastener, an upper jaw adapted to press on the fabric or goods near to the prong of said fastener, and the prong-bending presser-finger adapted to have a curvilinear motion, substantially as described, and for the purpose specified.

2. In the hereinbefore-described instrument, in combination, the upper jaw, A, provided with a bearing for shaft S^2, shaft S^2, provided with a presser-finger, substantially as described, handle B^2, and gearing, substantially as described, between said handle and shaft, substantially as described.

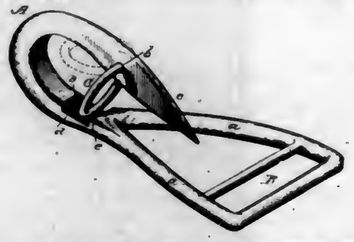
3. In a button-fastener-setting instrument, in combination, the upper jaw, A, provided with a bearing for shaft S^2, and with arm A^2, shaft S^2, handle B^2, gearing, substantially as described, between said handle and said shaft, and an elastic connection, substantially as described, between said handle and said arm, substantially as and for the purpose set forth.

4. The jaw B, the jaw A, having a thin end, as plate A^4, and a movable finger, substantially as described, in combination, substantially as set forth.

5. The hereinbefore-described hand-instrument for setting button-fasteners, consisting of the member B, having a suitable handle, as B^2, and adapted to press against the head of a button-fastener, the member A, formed to admit the prong of a button-fastener and to carry the movable presser-finger D, the handle B^2, and connecting mechanism, substantially as described, from said handle to said member A, and to said presser-finger, in combination, substantially as set forth.

6. In a button-fastener-setting instrument, in combination, the member A, having the reduced end A^4, which is provided with the slot or opening S for the fastener-prong, the seat E, formed on said end A^4, to support the button in an oblique position, with its shank or eye near to one side of said slot S, and a spring, as Q, for holding said button onto said seat in said oblique position, substantially as described.

322,484. HOOK. ALFRED B. ROBINSON, Lebanon, Mo. Filed Apr. 27, 1885. (No model.)

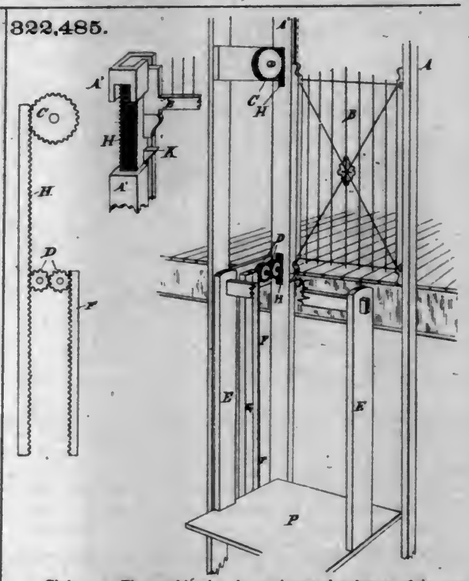


Claim.—1. In a harness-hook, the combination, with the pivoted ring thereof, of an elastic cushion inserted in the shank of the hook to form a seat for the ring when in a closed position, substantially as and for the purpose set forth.

2. A harness provided with a pivoted ring, an elastic cushion inserted in the shank of the hook for the ring to rest upon, and a shoulder to act as a stop therefor, substantially as and for the purpose specified.

322,485. ELEVATOR-HATCH GATE. CHARLES T. SCHULER, Cincinnati, Ohio. Filed Jan. 3, 1885. (No model.)

322,485.

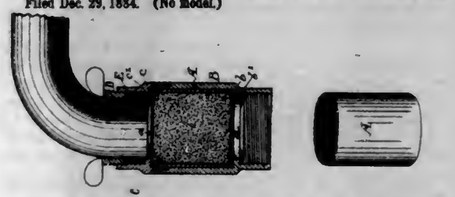


Claim.—1. The combination, in an elevator-hatchway, of the gate B, with its rack H, the elevator-cage with its rack F, and the idlers C and D D, substantially as set forth.

2. In an elevator-hatchway, in combination with the gate, its rack, and the actuating-idlers, a pivoted rack upon the cage, provided with means, substantially such as described, for throwing the cage-rack into and out of gear, as set forth.

3. The combination, in an elevator-hatchway, of the vertically-moving gate, its attached rack, the cage-rack, the idlers arranged in the path of the cage-rack, and the foot mechanism for throwing the cage-rack out of gear, substantially as set forth.

322,486. HYDRANT-FILTER. GEORGE W. SHAWK, Cleveland, Ohio. Filed Dec. 29, 1884. (No model.)

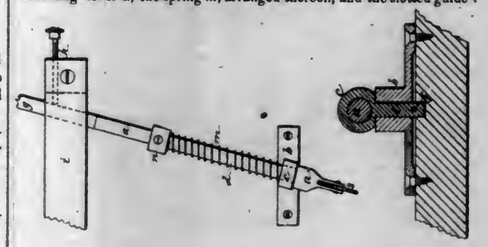


Claim.—The tubular part C, having its lower end externally screw-threaded and its upper part internally screw-threaded, in combination with case B, which engages with said lower external screw-threads, a cylindrical filter, A, located within said case and part C, a tubular nut, D, which engages with said upper screw-threads, and an annular packing, E, which is compressed by said nut to clamp part C to the pipe, substantially as set forth.

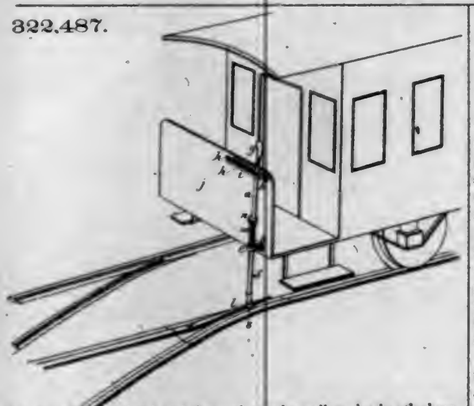
322,487. DEVICE FOR OPERATING TRAMWAY-SWITCHES. W. F. SHORET, Baltimore, Md. Filed Sept. 2, 1884. (No model.)

Claim.—1. In a tramway-switch-actuating device, the combination, with the actuating-lever *a*, pivoted as described, and provided with the spring *m*, of the slotted bracket, and the gaging-screws arranged at each end thereof, as and for the purpose specified.

2. In a tramway-switch-actuating device, the combination, with the actuating-lever *a*, the spring *m*, arranged thereon, and the slotted guide *i*



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therein, of the bracket *b*, and the eyed pivoting-collar *c*, having the bearing-arm *e* secured within said bracket, as shown and described.

3. The tramway-switch-actuating device herein described, consisting of the actuating-lever *a*, the bracket *b*, the pivoting-collar *c*, the spring *m*, placed upon the lever between the pivoting-collar *c* and the adjustable collar *n*, and the slotted guide *i*, having the gage-screws *k k*, all constructed and arranged upon the car, as shown and described.

322,488. DOOR-HANGER. SAMUEL SHREFFLER, Jr., Joliet, Ill. Filed Dec. 29, 1884. (No model.)

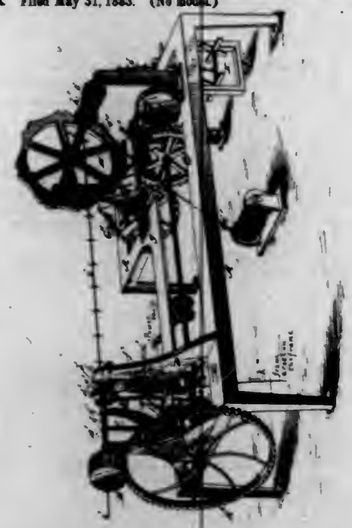


Claim.—1. In the door-hanger described, the combination of the double-tread wheel A, saddle-box C, rider-yoke R, and hanger B B' B', as and for the purpose set forth.

2. In the door-hanger described, the saddle-box C, having a recess for the reception of the removable bearing *r*, for the purpose set forth.

3. A door-hanger, constructed substantially as shown and described, consisting of the double-tread wheel A, having the axle *a*, hanger B, having the arms B' B', and yoke R, pivotally mounted on said axle to permit said wheel to accommodate itself to the lateral inclinations of the track and permit the door to swing outward at the bottom, as set forth.

322,489. BARB-WIRE MACHINE. COURTLAND SKINNER, Grinnell, Iowa. Filed May 31, 1883. (No model.)



Claim.—1. In a barb-wire machine, a gripping-jaw provided with a grooved or perforated plate in which the barb-wire is held, in combination with a set-screw adapted to shift this plate to expose a longer or shorter portion of wire to the action of the cutter, substantially as and for the purpose set forth.

2. In a barb-wire machine, a gripping-jaw having a grooved plate in which the barb-wire is held, and an adjustable gripping-die located upon it, in combination with a second jaw carrying a cutting-die, which passes closely across the face of the grooved plate as the jaws close to sever the barb, and having its end indented or adapted to receive and hold the barb during the operation of applying it, substantially as shown and described.

3. In a barb-wire machine, a main shaft provided with an eccentric, a feeding-arm having a shouldered point provided with a spring dog or pawl, and a cam upon said shaft, in combination with hinged gripping-jaws operated by said cam and provided with means for cutting and holding the barb, and a guide having a spring-actuated dog for holding the barb-wire during the retraction of the feeding-arm, substantially as and for the purpose set forth.

4. In a barb-wire machine, the combination, with the gripping-jaws D D' and their devices for holding the barb, of the main shaft A', carrying the gear A^2 and cam-segment C', the hollow shaft B', broad pinion B, actuating-lever C, and retracting-spring *b'*, substantially as and for the purpose set forth.

5. In a barb-wire machine, the combination, with the gripping-jaws D D', of the main shaft A', eccentric E, feeding-arm E', having the shoulder f^2, and the spring-pawl f^4, substantially as and for the purpose set forth.

6. In a barb-wire machine, the stationary jaw D, having an adjustable holder and cutter, *f*, in combination with the hinged jaw D', provided with the barb-holding plates *d' e e'*, the spring *d*, main shaft A', and cam D^2, substantially as and for the purpose set forth.

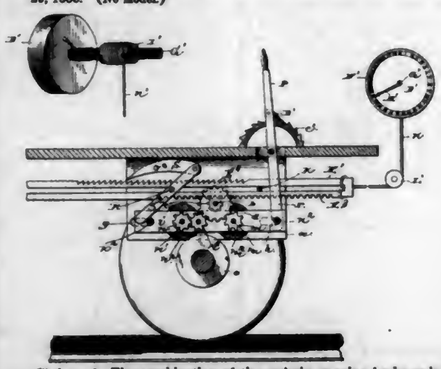
7. In a barb-wire machine, the combination, with the jaw D, carrying the cutter *f*, of the jaw D', provided with a plate, *d'*, having an inclined groove or guide, d^3, for holding the barb-wire, and a set-screw, d^4, adapted to move said plate in or out to lengthen or shorten the barb, substantially as and for the purpose set forth.

8. In a barb-wire machine, the jaw D, having the cutter *f*, rendered adjustable by means of the set-screw *f'*, in combination with the jaw D', provided with the flanged and grooved adjustable plate *d'*, the adjustable holding-plate *e*, and adjustable die *e'*, all constructed and arranged to operate substantially as and for the purpose set forth.

9. In a barb-wire machine, the combination, with mechanism, substantially as described, for applying the barb, of a reel-shaft, A, provided with a notched wheel, H, and an actuating-drum, G^2, provided with a feather, *g'*, passing one half around the drum at right angles and the other half upon a spiral, whereby the main wire is given an intermittent motion, substantially as and for the purpose set forth.

10. In a barb-wire machine, the single combination, with the barb-holding jaws D D', of a constantly-revolving hollow shaft, B', through which the main wire passes, provided at one end with a radial depression, b^3, to engage the free end of the barb, substantially as and for the purpose set forth.

322,490. CAR-BRAKE. CLARENCE L. SLEDGE, Kyle, Tex. Filed May 29, 1885. (No model.)



Claim.—1. The combination of the endwise-moving brake-rods E^2 with heads M', as adjusted and adapted, brackets M, with pins or shafts through their jaws adapted to revolve, fulcrum E, yoke *o*, having slot P, fulcrumed lever F, rod G, slotted at one of its ends to prevent interference with the application of the brakes by hand apparatus, the connection of levers F and H by rod G, the spring-actuated slab V, working over lever F, adapted and tending to hold lever F in direct line across the car, the adaptation of the endwise-moving brake-rods E^2 to strike against each other at heads M' when the cars come together and push each other, and thus apply the brakes from one car to another by the inertia of the train or otherwise, and release them by the spring-actuated slab V when the applying and applied power is withdrawn, substantially as described.

2. The combination of the endwise-moving brake-rod E', having its head adjusted and adapted to strike against the head of rod E^2 of car in the rear of the tender, its fulcrum-lever F, with the end of its long arm working in a slot through rod E', rod G, having one of its ends slotted to prevent interference of the application of the brakes of the tender by the hand-working apparatus, the connections of levers F and H by rod G under the tender, friction-pulley *o* on one of the axles of the tender, the case *a*, secured to the bottom of the tender and having the slots *g h*, shaft *b*, journaled in the case *a*, having the pinion *c*, meshing with the rack-teeth of the brake-rod E', and the gear-wheel *d*, the frame *i*, arranged in the case *a*, the shaft *m*, journaled in frame *i*, having the pinion *m'*, adapted to gear with wheel *d*, and the pulley m^2, adapted to engage with pulley *o*, the shaft *n*, journaled in the frame *i*, having the pinion *n'* permanently geared into idler n^2, which idler n^3 is adapted to gear with wheel *d*, and the friction-pulley n^2, adapted to engage with pulley *o*, pins K, passing through the frame *i*, supporting the same in case *a* at slots *g h*, the transverse pins *k*, connecting sides of case *a* and guiding rod E' in its movement, lever *p*, connected to front pin K^2 in frame *i* by crooked rod *r*, pivoted pawl S, engaging with the ratchet-teeth of rod E', and having the arm S' and pivoted lever S^2, adapted to trip pawl S, the dial-plate having the shaft G', provided with pointer H', and as pring-actuated drum and cord connecting the drum with the rod E', together with the working and adaptation and operation of all the parts in connection and combination to apply and release the said ordinary braking apparatus, whereby all the brakes may be applied and taken off, substantially as described.

3. The combination, with a railway-car brake, of the endwise-moving rod, the fulcrumed lever F, engaging said rod, and the rod G, connecting the lever F with the brake mechanism, said rod being slotted at its connection with the lever F to permit free movement of the latter in one direction, for the purpose set forth, substantially as described.

4. The combination, with a railway-car brake, of the endwise-moving rod, having the rack-teeth and connected to the brake mechanism, a friction or gear wheel on one of the axles of the car or tender, a pinion engaging with the racked brake-rod, gearing for rotating said pinion, and means for moving said gearing in or out of engagement with the friction or gear wheel on the axle, substantially as described.

5. The combination, with a railway-car brake, of the endwise-moving brake-rod connected thereto, a friction or gear wheel on one of the axles, the wheel *c*, for moving the brake-rod, and the sliding frame *i* having gear or friction wheels adapted to alternately engage with the wheel on the axle, and gearing adapted to connect one of said wheels with the wheel *c* when the frame is moved in one direction, and the other of said wheels with the wheel *c* when the frame is moved in the reverse direction, and thereby apply or release the brake, substantially as described.

6. The combination, with a railway-car brake, of the endwise-moving brake-rods connected thereto, having the rack-teeth and the ratchet-teeth, a friction or gear wheel on one of the axles of the car or tender, a pinion engaging with the rack-teeth of the brake-rod, gearing for rotating said pinion, a lever for moving said gearing in or out of engagement with the friction or gear wheel on the axle, a pawl engaging with the ratchet-teeth of the brake-rod, and means for tripping the pawl when the lever is operated, substantially as described.

7. The combination of the endwise-moving brake-rod having the ratchet-teeth and rack-teeth, the brake-beams and shoes, levers connecting the brake-rods thereto, a friction or gear wheel on one of the axles of the car or tender, the case *a*, secured to the car or tender, shaft *b*, journaled in the case, having the pinion *c*, meshing with the rack-teeth of the brake-rod and the gear-wheel *d*, the sliding frame *i* in the case, idler n^3, pinion *m'*, engaging said idler, and friction or gear wheel m^2 on same shaft with pinion *m'* and pinion n^2, and friction or gear wheel *n'* on same shaft, lever *p*, connected to frame *i*, pivoted pawl S, engaging with the ratchet-teeth of the brake-rod, and fulcrumed arm S', connected to pawl S, for tripping the pawl when the frame *i* is moved, substantially as described.

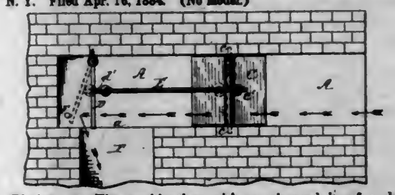
8. The combination, with a railway-car brake, of the endwise-moving brake-rod connected thereto, means for moving the rod and applying the brake, and the dial-plate having the indicating hand or pointer, connected with the endwise-moving brake-rod, for the purpose set forth, substantially as described.

322,491. AUTOMATIC DRAFT-REGULATOR. MOSES H. SMITH, South Chicago, Ill., assignor of one-half to William Brown, same place. Filed Mar. 7, 1885. (No model.)

Claim.—1. In combination with the exit-pipe of a stove or furnace, a damper in said pipe having its shaft provided with a pinion, the guide-rods D, attached to said pipe, the vessel E, loosely mounted between said guides, the bellows F, connected with the vessel E, and a rack mounted upon the bellows and engaging the pinion on the damper-shaft, substantially as described.

2. In combination with the exit-pipe of a stove or furnace, a damper in said pipe having its shaft provided with a pinion, the guide-rods D, attached to said pipe, the vessel E, loosely mounted between said guides, the same being provided with a set-screw, H, by which it may be adjusted, the bellows F, connected with the vessel E, and a rack mounted upon the bellows and engaging with the pinion on the damper-shaft, substantially as described.

322,492. AUTOMATIC DAMPER. SOLOMON P. SMITH, Waterford, N. Y. Filed Apr. 16, 1884. (No model.)



Claim.—1. The combination, with an air-conduit, of a damper mounted upon vertical pivots centrally therein, and a vertically-hinged deflecting-plate hung to the roof of said conduit in rear of the damper and connected with the latter, so as to receive the pressure of the wind after it has passed the damper and to control the position of the same, substantially as described, for the purpose specified.

2. The combination, with a cold-air duct of a hot-air furnace, having a horizontal branch and a diving branch, of a damper device for regulating the supply of air to the furnace heating-chamber, consisting of the damper C, mounted upon vertically-central pivots, a pivoted plate, D, depending from horizontal pivots across the roof of said conduit behind the damper, and a loosely-connected coupling-rod, the said hanging plate being arranged behind the damper in the same conduit to receive the pressure of the wind and deflect it into the diving branch, and to maintain the damper in its normal open position, substantially as described.

3. The hanging plate D, arranged across the inner closed end of the horizontal conduit A, from the roof thereof, over a diving branch, B, of said conduit, combined with a damper, C, arranged upon vertical central pivots between said diving branch and the entrance of said conduit, a rod, E, connecting the damper and hanging plate, and a stop, F, arranged to limit the rearward swinging movement of said plate, substantially as described, for the purpose specified.

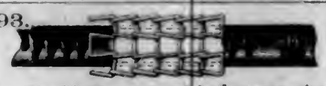
4. An automatic damper device for regulating the volume of air passing through a flue, consisting of a damper, C, maintained in its normal open position by means of a hanging plate, D, placed in rear of and in the same conduit branch with and connected to said damper, said damper and hanging plate being of equal area to each other and to the cross-section of the air-conduit, and the said plate hanging in said conduit in position to receive and deflect the air-currents from the entrance-conduit, substantially as herein set forth.

5. The damper C, mounted upon vertical central pivots, *c c*, having the eye *c'* at one side of its axis, combined with the damper-plate D, hung upon horizontal pivots *d d* at its top edge, having the center eye, *d'*, and the rod E, joined to the said eyes, as described.

322,493. ELASTIC TUBULAR CABLE. PHILIPPE SURGUE, Paris, France. Filed Aug. 5, 1884. (No model.) Patented in France Feb. 26, 1884, No. 160,570, and in England June 16, 1884, No. 9,000.

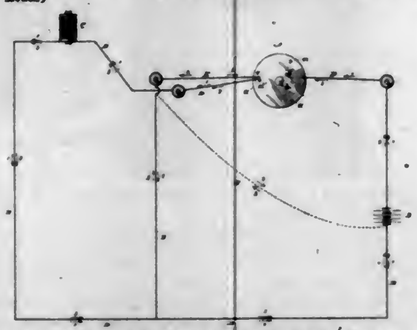
Claim.—An elastic tubular cable composed of the external metal gauze-tube, B, the gutta-percha or leather tube C, the spiral spring A, and leather or india-rubber lining-tube D, all of which are placed and occupy the respective positions shown by the drawings, such elastic tubular

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cables to be employed in the manner and for the purposes hereinbefore mentioned.

322,494. SPARKLESS CIRCUIT-BREAKER. LOUIS H. SPELLIER, Philadelphia, Pa. Filed Jan. 9, 1884. Renewed Nov. 20, 1884. (No model.)



Claim.—1. The combination, with a device capable of rotatory or circular motion and placed in an electro-magnetic circuit, of a conductor connecting with a point of effluence upon such device at the moment of interruption of or break in the current of the line, and disconnecting therewith just after the make of the current thereof, substantially as and for the purpose described.

2. A spark-arrester consisting of a commutator rotating between a series of terminals of an electric generator, two or more of which terminals are arranged to have one electrically-communicating contact-surface in common, in combination with two separate short circuits, one for the electric generator and the other connecting directly the wire terminals of an electro-magnet to establish an unbroken circuit for the induced current by keeping the short circuit of the extra current closed, substantially as described.

3. The combination, with a generator of electricity, B, of an electro-magnet, C, located within the main circuit, a rotating circuit-breaker located between the terminals of the main circuit, and a short circuit, E, connected with the generator at a point between the generator and the electro-magnet and having an additional terminal, *c*, resting normally out of contact with the main-circuit terminal and adapted, as described, to close simultaneously (by the action of the circuit-breaker) both a short circuit for the generator and a circuit for the extra current of the electro-magnet just before the breakage of the main circuit, and to retain the short circuits closed until the main circuit is broken, as and for the purpose described.

322,495. TYPE-WRITING MACHINE. CHARLES SPIRO, New York, N. Y. Filed Jan. 6, 1885. (No model.)

Claim.—1. In a type-writing machine, the combination, with a reciprocating type-sleeve having a stop, of a system of key-levers arranged across the path of the same, and connections, substantially as described for operating the sleeve.

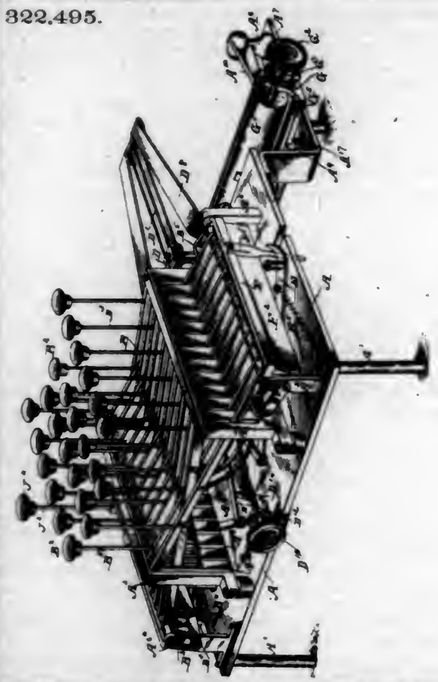
2. In a type-writing machine, the combination, with a reciprocating type-sleeve having a stop and with type-sleeve reciprocating levers, of a system of key-levers arranged across the path of the sleeve, each of which levers is provided with a key bearing an indication of the type or character which is brought to the printing-point when said lever is depressed, and a connecting device which is partly rigid and partly resilient, substantially as specified.

3. In a type-writing machine, the combination, with a reciprocating type-sleeve having a stop, of a system of key-levers, a portion of which are pivoted at each side of the sleeve and connected with duplicate type-sleeve operating-levers, substantially as specified.

4. In a type-writing machine, the combination, with a type-sleeve having a stop, of a series of key-levers arranged across the path of the sleeve, a bail arranged beneath the levers and connected with a rock-shaft, an arm of which is partly rigid and partly resilient, a pivoted platen connected with the yielding portion of said arm, a pivoted locking-pawl connected with the rigid portion of said arm, and a carriage mounted upon the platen, substantially as specified.

5. In a type-writing machine, the means shown and described for taking an impression from the printing-characters thereof, said means consisting of a pivoted or movable platen-frame, a carriage or paper-carrier, a lever operated by means of printing-character selecting-keys, and having a rigid and a resilient portion, the former connected with a

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stop for temporarily retaining the platen from rising to take the impression, substantially as specified.

6. In a type-writing machine, the combination, with platen-frame and paper-carrier, of a lever having rigid and resilient portions, a movable stop, and devices, substantially as described, for operating the lever, substantially as specified.

7. In a type-writing machine, the combination of a reciprocating type-sleeve and type-sleeve operating-levers with a system of key-levers having adjusting-screws, a bail having a spring-plate, and a type-sleeve lever-operating rod, substantially as specified.

8. In a type-writing machine, the combination of a pivoted platen-frame having a feed-pawl carrying standard, a paper-carrier provided with a rack, a feed-pawl lever having a bearing at its free end upon a fixed portion of the machine, and devices, substantially as described, for raising the platen-frame, substantially as specified, whereby the platen-frame in the act of falling operates the feed-pawl.

9. In a type-writing machine, a carriage and feed-rack, a rising and falling platen-frame provided with a feed-pawl and standard, a feed-pawl lever pivoted to the standard and projecting over a fixed part of the machine, in combination with adjustable devices, substantially as specified, for regulating the spacing.

10. In a type-writing machine, the combination, with a reciprocating type-sleeve having a front and rear stop, the latter being lower than the former, of a key-lever arranged across the path of the sleeve and constructed to enter and fill the space between the stops thereon, and connections for operating the sleeve, substantially as specified.

11. A type-sleeve for a type-writing machine provided with printing-characters and spacing-projections, substantially as specified.

12. A type-strip for a type-writing machine provided with printing-characters and spacing-projections arranged in transverse lines upon the same, substantially as specified.

13. In a type-writing machine, the combination of a reciprocating type-sleeve, its operating-levers, a rising and falling platen-frame and a paper-carrier thereon, feeding devices mounted upon the platen-frame, and devices, substantially as described, for varying the extent of the feed, mounted independently of the platen-frame, substantially as specified.

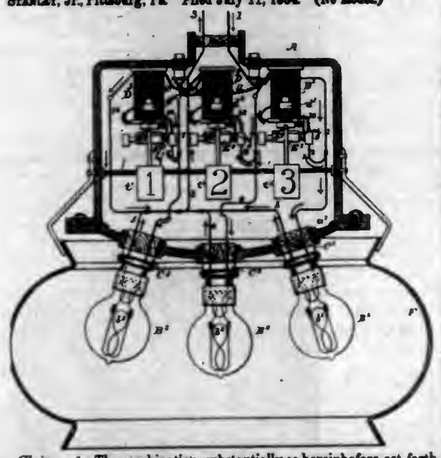
14. In a type-writing machine, a rising and falling platen-frame, a paper-carrier mounted thereon and provided with a rack, feed devices mounted on the platen-frame, and an independent lever mounted on the fixed part of the machine for independent operation of the feed devices, substantially as specified.

15. In a type-writing machine, the combination, with a carriage, a rising and falling platen-frame having a rack, and the feed-pawl, of a variable spacing-lever and devices, substantially as described, for regulating the action of the lever upon the pawl, substantially as specified.

16. In a type-writing machine, the combination of a feed-pawl pivotally mounted on a bell-crank lever, a pawl-operating spring, a detent, an independently-mounted variable spacing-lever projected above the pawl, devices, substantially as described, for regulating the operation of the spacing-lever, and an independent hand-spacing or feed lever, substantially as specified.

17. In a type-writing machine, the combination, with key-levers and a type-sleeve-operating device, of a partly-rigid and partly-resilient lever for absorbing a portion of the motion of the key-levers before the sleeve-operating devices are made to act, substantially as specified.

322,496. MULTIPLE INCANDESCENT ELECTRIC LAMP. WILLIAM STANLEY, Jr., Pittsburg, Pa. Filed July 11, 1884. (No model.)



Claim.—1. The combination, substantially as hereinbefore set forth, with a group of incandescent electric lamps, of an electric conductor normally connected through one of said lamps, normally-interrupted branch circuits in which the remaining lamps of said group are respectively included, a shunt-circuit around each of said lamps, and an electro-magnet included in each of said shunt-circuits, and a circuit-closing device, under the control of each of said electro-magnets, which serves to complete the connections of said main-line conductor through a succeeding lamp in said group when a preceding lamp becomes inoperative.

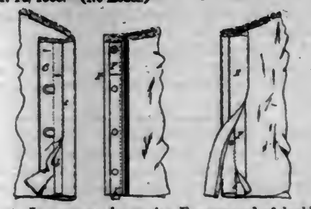
2. The combination, substantially as hereinbefore set forth, with a group of incandescent electric lamps and a main-line conductor normally connected through the first lamp of said group, of normally-interrupted branch conductors, respectively including the remaining lamps in said group, a shunt-circuit around each of said lamps, an electro-magnet included in each of said shunt-circuits, each of which electro-magnets becomes vitalized when the lamp to which it is applied becomes inoperative, a circuit-controlling device controlled by each of said electro-magnets, which device serves to complete the main-line connections through the branch conductor, including the succeeding lamp of the group when said electro-magnet is vitalized, and a second magnetizing-coil applied to each of said electro-magnets and included in the corresponding branch conductor, whereby the vitalization of said electro-magnet is maintained when once established.

3. The combination, substantially as hereinbefore set forth, with a group of incandescent electric lamps and a main-line conductor for supplying electricity thereto, of normally-interrupted branch conductors in which said lamps are respectively included, a circuit-controlling device included in each of said branch conductors, a shunt-circuit around each of said lamps, and an electro-magnet included in each of said shunt-circuits, which electro-magnet serves, when vitalized, to complete the circuit-connections of the main line through a succeeding lamp in said group, substantially as described.

4. The combination, substantially as hereinbefore set forth, with a series of incandescent electric lamps, and a magnet and switch mechanism for substituting for each lamp as it becomes exhausted a succeeding lamp, of an automatically-operated indicating device, whereby the number of lamps which have become exhausted is indicated.

5. The combination, substantially as hereinbefore set forth, with a group of incandescent electric lamps, of an electric conductor normally connected through one of said lamps, normally-interrupted branch circuits in which the remaining lamps of said group are respectively included, a shunt-circuit around each of said lamps, and an electro-magnet included in each of said shunt-circuits, and a circuit-closing device, under the control of each of said electro-magnets, which serves to complete the connections of the said main-line conductor through a succeeding lamp in said group when the difference of potential at the terminals of the preceding lamp exceeds a predetermined amount.

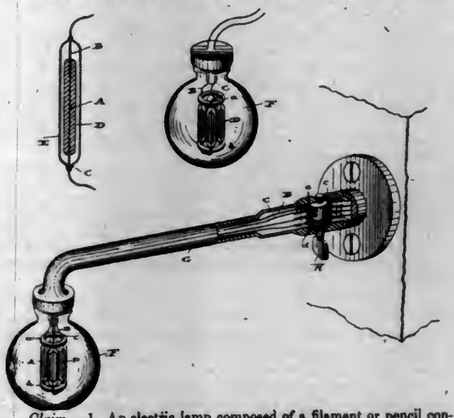
322,497. CORSET. JOSEPHINE M. ST. CLAIRE, Cedar Rapids, Iowa. Filed Apr. 14, 1885. (No model.)



Claim.—1. In a corset, the section F, composed of double material folded at the outer edge, with such folded edge turned back and whip-stitched to the body of the section to form a pocket for the busk *b'*, substantially as described.

2. In a corset, the section C, composed of double material folded at the outer edge, the double material being again turned back from the outer side and permanently stitched to the body of the section about midway of the lap, the part outside thereof forming a flap or "fly," and the inner folded edge being whipstitched to the body of the section to form a pocket for the busk *b*, substantially as shown and described.

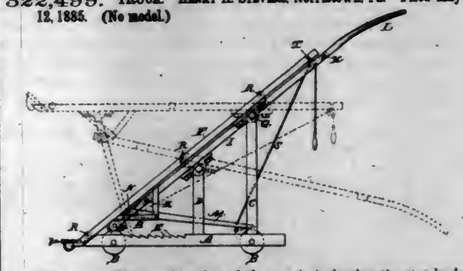
322,498. INCANDESCENT ELECTRIC LAMP. PHILIP K. STERN, Toronto, Ontario, Canada. Filed Nov. 15, 1884. (No model.)



Claim.—1. An electric lamp composed of a filament or pencil connected to a suitable source of electricity and embedded in solid glass surrounding and touching it at all points, in combination with a hermetically-sealed tube or globe surrounding the same to form a closed air-chamber inclosing the whole, whereby the pressure of the air contained between said glass and globe serves to compress the solid or inner glass upon the filament or pencil, substantially as described.

2. In an electric lamp, the globe F, the wires B C, the rings *a b*, suspended within said globe by said wires, and two or more lamps supported by said rings and connected with said wires, substantially as described.

322,499. TRUCK. HENRY A. STEVENS, Norristown, Pa. Filed May 12, 1885. (No model.)



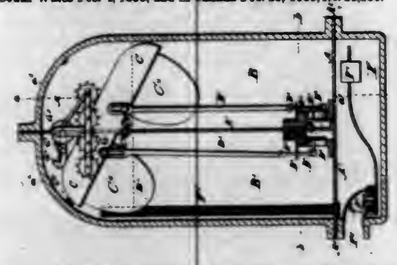
Claim.—1. The combination of the truck A, having the standards C and D and the rack-teeth E, with the inclined platform F, pivoted between the standards C, the levers I, pivoted between the standards D, for raising the free end of the platform, and the swinging legs M, pivoted to the platform for engaging with the racks E when the platform is raised, substantially as described.

2. The combination of the truck having the standards C and D and the rack-teeth E with the inclined platform F, pivoted between the stand-

ards C and having the slides H under its free end, the levers I, pivoted between the standards D and having the rollers P working on the slides H, and the swinging legs M, for engaging with the rack-teeth, substantially as described.

3. The combination of the truck A, having the standards C and D, with the platform F, pivoted between the standards C, and the levers I, pivoted between the standards D, for raising the free end of the platform, substantially as described.

322,500. OSCILLATING METER. EDWIN TATHAM, Balmain, New South Wales. Filed Jan. 17, 1885. (No model.) Patented in Victoria Nov. 25, 1884, No. 3,896; in England Jan. 12, 1885, No. 397; in New South Wales Feb. 4, 1885, and in Canada Feb. 28, 1885, No. 21,188.



Claim.—1. In a liquid-meter, the combination, with the casing A, having inlet-port D^4, divided into two chambers by a central diaphragm, and the valve-casings D and E, having each an inlet and discharge valve D' D^2 and E' E^2, respectively, of the water-balance C, having floats C^4, the connecting-rods D^3 and E^3, for operating the valves connected with the water-balance, and a registering mechanism controlled by the said water-balance, said parts being arranged for co-operation, substantially as and for the purpose specified.

2. In a liquid-meter, the meter-casing A, formed in two parts, which, when bolted together, form the inlet-port D^4, a delivery-chamber, F, adapted to be secured to the casing A, in combination with the T-shaped partition or diaphragm A', adapted to be clamped between the two parts of the casing and the delivery-chamber and divide the meter into three air-tight compartments, substantially as and for the purpose specified.

3. The combination with the meter-case, valved measuring-chambers B B', open at top, and the valved delivery-chamber, of the pipe F^6, whereby said measuring-chambers are placed in communication with the delivery-chamber independently of the valved communication between the two, substantially as described.

4. A liquid-meter divided into two air-tight measuring-chambers, inlet and discharge valves for said chambers, a registering mechanism, an oscillating lever controlled by the liquid to be measured, and controlling the inlet and discharge valves of the measuring-chambers, and the registering mechanism, in combination with an air-tight delivery-chamber in communication with the discharge-ports of the measuring-chambers, and with both said chambers at a point above the level to which the liquid rises therein, and a check-valve held to its seat by an adjustable pressure, substantially as and for the purpose specified.

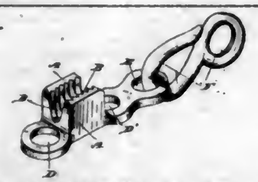
5. A liquid-meter divided into two air-tight measuring-chambers, inlet and discharge valves for said chambers, a registering mechanism, an oscillating lever controlled by the liquid to be measured, and controlling the inlet and discharge valves of the measuring-chambers, and the registering mechanism, in combination with an air-tight delivery-chamber in communication with the discharge-ports of the measuring-chambers, and with both said chambers at a point above the level to which the liquid rises therein, a check-valve, a lever for controlling the movements of the valve, and a float adapted for adjustment on and for controlling the lever through the liquid being discharged, substantially as and for the purpose specified.

322,501. ROPE-FASTENER. THEODORE TAYLOR, Mount Vernon, N. Y. Filed May 15, 1885. (No model.)

Claim.—1. In a rope-fastener, the combination of two holding-jaws and two rings or eyes situated one on each side of the jaws, whereby a rope may be caused to make a quarter-turn where it enters and also where it leaves the jaws, substantially as set forth.



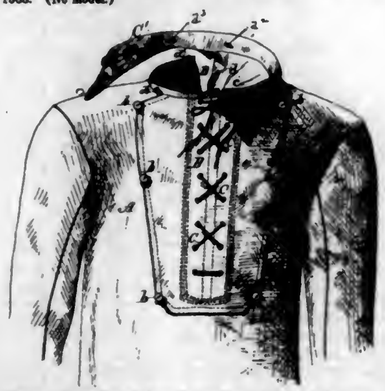
322,501.



2. In a rope-fastener, the combination of two transversely-corrugated holding-jaws adapted to engage a rope for a considerable portion of its length, and two rings or eyes situated one on each side of the jaws, whereby a rope may be caused to make a quarter-turn where it enters and also where it leaves the jaws, substantially as set forth.

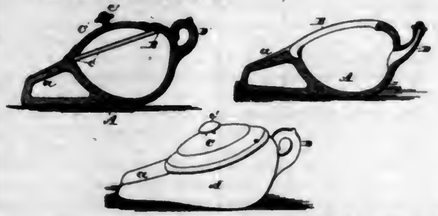
3. In a rope-fastener, the combination of two holding-jaws, two rings or eyes situated one on each side of the jaws, whereby a rope may be caused to make a quarter-turn where it enters and also where it leaves said jaws, and a third eye whereby the device may be held by a hook or other fastening, substantially as set forth.

322,502. SHIRT. SAMUEL THAL, Milwaukee, Wis. Filed July 17, 1883. (No model.)



Claim.—A woolen or flannel shirt having a vertical opening, as at D, at the back, but tightly closed at the front, shoulders, and sides, with dummy bosom B, and a neckband continuous from one side of the opening D to the other, but provided with a -shaped notch in front and buttons d' d' between said notch and the end of the neckband on one side, the other side of the neckband being formed integrally with the collar C or permanently secured thereto, said collar extending beyond the attached part for half its length, and having button-holes d^2 d^2, the latter to keep the flannel collar to the flannel band at that intermediate point, substantially as set forth.

322,503. BED-PAN. CASSIUS C. THOMPSON, East Liverpool, Ohio. Filed Dec. 19, 1884. (No model.)



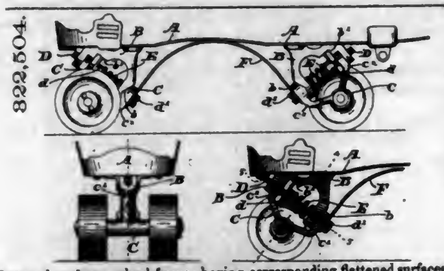
Claim.—1. A bed-pan consisting, essentially, of a body, a forwardly-extending projection, the latter being formed tapering in cross-section and forming an extended support for the body, a chamber located wholly within the body, and a separable or removable cover, substantially as set forth.

2. As a new article of manufacture, a bed-pan having a forwardly-extending projection, the latter forming an extended support for the body, and having its upper surface formed concave from side to side, a chamber located wholly within the main body of the pan, and a removable cover, substantially as set forth.

322,504. ROLLER-SKATE. JOHN H. THOMPSON, Indianapolis, Ind., assignor of one-half to the Gilliland Manufacturing Company, same place. Filed Apr. 4, 1885. (No model.)

Claim.—1. The combination, in a roller-skate, of hangers having

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flattened surfaces, wheel-frames having corresponding flattened surfaces, pivot-shafts passing through bearings on said hangers and wheel-frames, and thus secure them together, nuts on said pivot-shafts, and springs interposed between said hangers and said nuts.

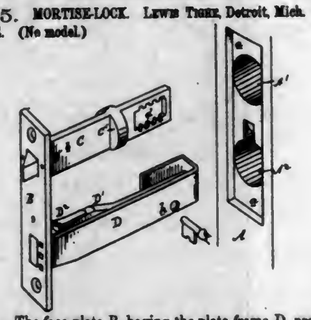
2. The combination, in a roller-skate, of hangers having flattened surfaces, wheel-frames having corresponding flattened surfaces, pivot-shafts screw-threaded for a portion of their length, and carrying nuts which pass through and secure said hangers and wheel-frames together, springs interposed between said hangers and nuts, and stationary washers interposed between the outer heads or nuts of the pivot-shafts and said wheel-frames.

3. The combination, in a roller-skate, of hangers B, having flattened surfaces *b* and *b'*, wheel-frames C, having flattened surfaces corresponding to the surfaces *b*, pivot-shafts D, screw-threaded for a portion of their length and carrying nuts *d*, having projections which rest against the flattened surfaces *b'*, being thus held from turning, spring surrounding said pivot-shafts, and interposed between said hangers and nuts, and thereby rendered adjustable by turning said pivot-shafts, substantially as set forth.

4. The combination of the foot-plate A, hangers B, having flattened surfaces *b* and *b'*, wheel-frames C, having correspondingly flattened surfaces and carrying the axles and rollers, pivot-shafts D, carrying nuts *d*, the springs E, and spring F, substantially as shown and specified.

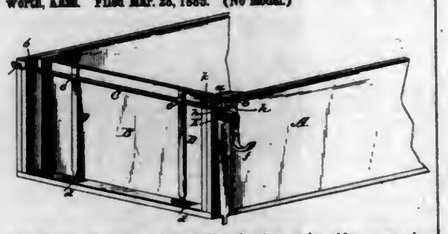
5. The combination, in a roller-skate, of hangers having bearing-surfaces surrounding the pivot-shafts A-shaped in one direction, wheel-frames having corresponding surfaces, and springs whereby said surfaces are held in contact.

322,505. MORTISE-LOCK. LEWIS TIBBE, Detroit, Mich. Filed Oct. 30, 1884. (No model.)



Claim.—The face-plate B, having the plate-frame D, provided with slotted key-bearings *h*, and stud *f*, in combination with tambler-bolt D', having notched slot *g*, and spring D^2, and operating by a flat-bitted key, all arranged and operating substantially as described, and for the purpose set forth.

322,506. END-GATE FOR WAGONS. SAMUEL G. TRAVIS, Leavenworth, Kans. Filed Mar. 28, 1885. (No model.)



Claim.—1. A wagon body or box having at its sides open slots and straps or plates provided with catches, and an end-gate having bolts, in combination with a horizontal rod adapted to rest in the slots and removable therefrom, an adjustable button engaging with the screw-threaded rod to act in connection with the catches, and a cam pivoted to the opposite end of the rod, substantially as and for the purpose set forth.

2. A wagon body or box having slots at its sides and catches, in combination with an end-gate provided with bolts to engage with perforations in the bottom of the box or body, and a horizontal rod screw-threaded at one end and provided with a button, and at the opposite end with a pivoted cam having a slot and hooked lever, substantially as and for the purpose set forth.

322,507. MANUFACTURE OF WALL-PAPER, &c. SILAS E. TROUT, Philadelphia, Pa., assignor to Horace S. Wendell, same place. Filed Apr. 2, 1885. (Specimens.)

Claim.—1. The process of manufacturing wall-paper by applying to the surface of the paper, together with the ground-color, silicate of soda, and sifting or throwing diamond-dust or ground glass on the silicate of soda before the same has dried, substantially as hereinbefore described.

2. In the manufacture of wall-paper, the combination of silicate of soda with diamond-dust or ground glass, for the purpose and in the manner hereinbefore set forth.

3. In the manufacture of wall-paper, the process of applying an adhesive liquid to the surface of the paper, together with the ground-color, and sifting or throwing small particles of a shining or glittering substance upon it before the patterns or figures are printed thereon, substantially in the manner and for the purposes hereinbefore described.

4. As an article of manufacture, wall-paper illuminated by having silicate of soda applied to it, together with the ground-color and having thrown or sifted upon such silicate of soda before the same is dry diamond-dust or ground glass, in the manner and for the purposes substantially as set forth.

5. As an article of manufacture, wall-paper containing an illuminated surface produced by the application of silicate of soda with ground glass or diamond-dust combined with or sprinkled upon it, substantially as set forth.

6. As an article of manufacture, wall-paper, which, before the figures or patterns are printed and the paper embossed, has been illuminated by having an adhesive liquid applied to its surface with the ground-color, and then having small particles of a shining or glittering substance sprinkled or sifted upon it, for the purpose and in the manner substantially as set forth.

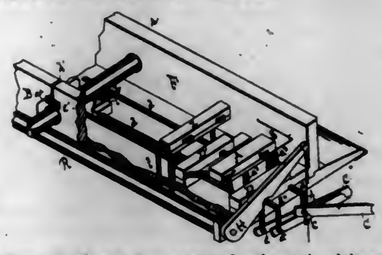
322,508. NIPPLE-PROTECTOR. CHARLES WARE, New York, N. Y., assignor to the Davidson Rubber Company, Boston, Mass. Filed May 13, 1885. (No model.)



Claim.—1. The nipple-protector composed of a cap or cover provided with two outlets, a^2 a^2, an attached nipple-piece to co-operate with the outlet a^2, and a tube to co-operate with the outlet a^3, the tube connected with the cap or cover between its ends and entering the mouth, to operate substantially as described.

2. The cap or cover for the nipple, and the flexible nipple-piece attached to it, combined with the india-rubber tube *c*, its mouth-piece, and a cut-off to prevent the flow of air from the tube into the cap or cover, substantially as described.

322,509. REED-ORGAN STOP-ACTION. JOSEPH A. WARREN, Detroit, Mich. Filed Nov. 1, 1884. (No model.)



Claim.—1. The stop-draws connected to the crank-rods by means of the pawls, pivotally attached to said stop-draws and fitting over the crank-rods, the fork of said pawls provided with adjustable bearings, for the purposes set forth.

2. The stop-draws connected to the cranks of the crank-rods by the

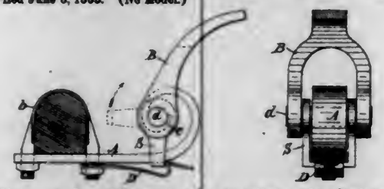
forked pivoted pawls fitting over said rods and the rubber ring *b*, said pawls provided with the adjusting-screws, as and for the purposes set forth.

3. The crank-rods provided with the heads or washers d^7 d^7, connected to the mutes by the reciprocating bars, having the hooked recess portion *e* cut from the under edge extending upward at an angle to the edges of said bars, forming a hook, substantially as set forth.

4. In a reed-organ, the combination of a series of crank-rods having the loop-cranks a^3 a^3, the double crank-rods *r r*, pivoted within suitable bearings, said rods pivoted to and supporting at an elevation the pressing-bars A A and the operating-bars *z z* of the shaft R, its arms engaging with the bars *z z*, the lever H, connected to the knee-action by the means, substantially as set forth.

5. In a reed-organ, the combination of a series of crank-rods having the cranks i d^4 and loop-cranks a^3, formed integral therewith, the pair of double crank-rods *r r*, pivoted within bearings, said double crank-rods pivoted to and supporting movably the pressing-bars A A and operating-bars *z z*, with the mechanism, substantially as set forth, for operating simultaneously said parts in duplicate, for the purposes specified.

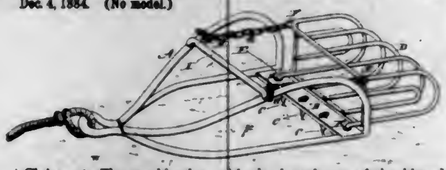
322,510. THILL-COUPLING. FRANCIS M. WATERS, Ashmore, Ill. Filed June 8, 1885. (No model.)



Claim.—1. In a thill-coupling, bar A, coiled, as described, to form the bearing *c*, and adapted to be secured to the axle, thill-iron B, having bolt *d*, and stirrup S, all combined and arranged to co-operate substantially as and for the purpose specified.

2. In a thill-coupling, bar A, coiled, as described, to form the bearing *c*, and adapted to be secured to the axle, thill-iron B, having bolt *d*, stirrup S, and spring D, all combined and arranged to co-operate substantially as and for the purpose specified.

322,511. OYSTER-DREDGE. ELIAS WATTS, Keyport, N. J. Filed Dec. 4, 1884. (No model.)



Claim.—1. The combination, with the bow-frame, of the hinged basket and chains attached to the basket and connected to the bow-frame, said chains being adapted to be automatically disconnected from the said frame to allow the dumping of the basket, as set forth.

2. The bow-frame provided with hooks, in combination with the hinged basket having chains to connect with the hooks, said chains being automatically disconnected in dumping the basket, as set forth.

3. The bow-frame having the rake-head and teeth, in combination with the hinged basket, hooks provided on the bow-frame, chains connected to the basket, and adapted to engage with the hooks, and the cross-bar I at the front end of the frame, as set forth.

322,512. CAR-COUPLING. IRVIN A. WHITMAN, Lyons, N. Y., assignor of one-half to Edwin K. Leonard, same place. Filed May 20, 1885. (No model.)



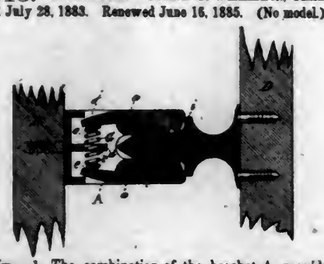
Claim.—1. The combination of the pin provided with a cross-bar extended transversely to the opening in the draw-head, and adapted to bear on the link, the link and the fulcrum-shoulder, substantially as described, and for the purposes set forth.

2. The combination of the draw-head, the pin-supporting block sliding in the draw-head, and the latch C, resting upon the pin-supporting block, substantially as and for the purposes set forth.

3. In a car-coupling, the coupling-pin hereinbefore described, provided with a cross-bar or lateral wings extended transversely to the opening in the draw-head, and beveled or cut away on its under outer side, substantially as and for the purposes set forth.

4. The combination of the block B, the latch C, the coupling-pin, the link, the lever E, and the operating-rod G, substantially as shown and described.

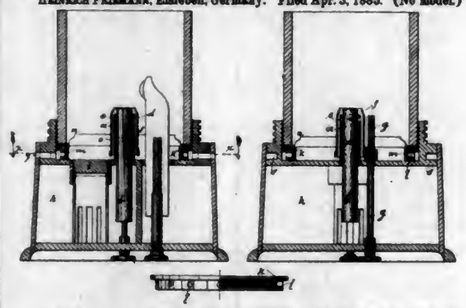
322,513. DOOR-CHECK. THOMAS G. WILLIAMSON, Philadelphia, Pa. Filed July 28, 1883. Renewed June 16, 1885. (No model.)



Claim.—1. The combination of the bracket A, provided with fulcrum-pins *a a*, and chamber *j*, having a division-plate, *d*, with an opening, *c*, the spring G, having a middle bearing in said opening, and the levers E E, having clasping-lips *h h* at one end and lugs *e e* at the other end, the latter being surrounded by the end coils of the spring G, substantially in the manner and for the purpose set forth.

2. The combination of a bracket, two levers pivoted thereto, each having a lip or jaw at one end and lug at the other, a spring supported upon the lugs and pressing against the levers, and a conical-headed bolt adapted to enter between the jaws of the levers, substantially as described.

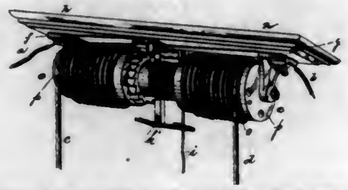
322,514. MINER'S SAFETY-LAMP. CARL WOLF, Zwickau, and HEINRICH FRIEMANN, Eisleben, Germany. Filed Apr. 3, 1885. (No model.)



Claim.—1. A burner-tube, *a*, provided with an annular inner recess, *e*, in combination with a wick-tube, *b*, provided with longitudinal slits *c* and with projections *d*, which engage said recess *e*, substantially as set forth.

2. A lamp-casing provided with an air-canal, *o*, which communicates with the open air by means of apertures *q*, and with the interior of the lamp by means of apertures *p*, said apertures *p* and *q* being in the same horizontal plane but not in line with each other, in combination with an annular ring, *k*, arranged within the lamp-casing and surrounding the burner, which ring is interposed between the apertures *p* and the interior of the lamp, and is provided with apertures *l* and wire-gauze *m*, through which apertures and gauze the air must pass to reach the burner, substantially as set forth.

322,515. APPARATUS FOR SUSPENDING ARC LAMPS. JOHN YOUNG, Chicago, Ill., assignor to the Western Electric Company, same place. Filed May 12, 1885. (No model.)

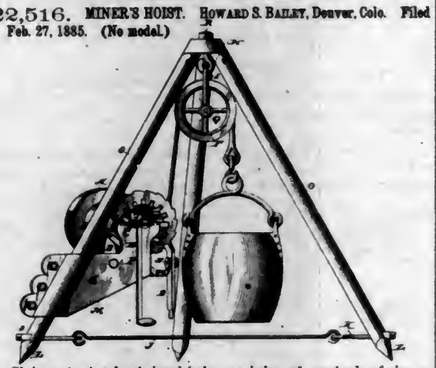


Claim.—1. In a device for suspending electric arc lamps, the combination of a drum around which the flexible conducting-cables which support the lamp are wound, the metallic caps through which current passes to the cables, and the cord and pawl-and-ratchet device for raising and lowering the lamp.

2. A support for electric arc lamps consisting of a drum upon which the cables are wound, the cables to which the lamp is attached, electrically connected with the main circuit through the metallic brackets *f g* and plates *p p*, the said brackets and plates, and the cord and pawl-and-ratchet device by which the lamp is raised and lowered or held in any desired position, substantially as and for the purpose specified.

3. In a support for electric arc lamps, the combination of a drum smaller in the center, where the cord for raising and lowering the lamp is wound, than at the ends, where the conducting-cables are wound, the said cord, and the pawl-and-ratchet device operated by the cord, whereby the lamp may be raised or lowered or held in any desired position.

322,516. MINER'S HOIST. HOWARD S. BAILEY, Denver, Colo. Filed Feb. 27, 1885. (No model.)



Claim.—1. A miner's hand-hoist consisting of standards of pipe or casing vertically inclined toward and meeting together, a cap having legs extended into and secured to the standards, points entering and extending from the lower ends of standards, adapted to secure them from slipping, and hooked bars embracing ringed threaded rods, passing through the points and standards, having washers and nuts, and operating to adjust the standards to equal strains, all substantially as herein set forth.

2. A miner's hand-hoist consisting of piping or casing for standards vertically inclined and meeting a cap having legs extending into and secured to them, bolt passing through the cap with head resting on the top thereof and its point forming a ring, and a yoke having collars formed on its ends, carrying a stud having upon it between the collars a rope-sheave, all substantially as set forth and described.

3. A miner's hand-hoist consisting of vertically-inclined standards meeting a cap extending into and secured to them, with points extending from their lower ends and secured one to the other by adjustable bracing-rods, a frame carrying a drum secured to one of the standards, adapted to wind rope between its flanges, the circumference of one of the flanges being formed into ratchet-teeth, an internal gear on one of the flanges, a pinion secured in the boxes on the frame, operated by a crank on the pinion-shaft, containing a square and round bearing for manipulating the crank, and a sheave upon a stud supported by a yoke held by a bolt passing through and resting upon a cap, all as herein set forth and described.

4. In a miner's hand-hoist, the combination of a drum for winding rope, operated by an internal gear and pinion having ratchet-teeth on the circumference of the flange, over the internal gear therein, a brake resting freely upon a rod passing through it and secured to the drum-frame close to it, a pawl bearing on the ratchet-teeth of the flange and connected with the brake-rod by a rod or bar attached to each, the ends of the brake-rod being turned up and forked, and having between the forks a lever hanging at right angles to the brake-rod, but free to swing until the short end bears on the top of the brake-rod, and operating to lengthen said rod, the weight of the lever holding the pawl against the ratchet on the drum-flange and operating to control the same, substantially as set forth.

322,517. ELECTRIC RAILWAY. EDWARD M. BENTLEY, Brooklyn, N. Y. Filed July 5, 1884. (No model.)

Claim.—1. The combination of sectional conductors extending along an electric railway, two opposite conductors in succeeding sections, being connected as described, electric locomotives in circuit between opposite sections and in series with one another, and an electric switch at the end of each section for breaking connection between two successive sections.

2. The combination of two sectional conductors extending along an electric railway, two opposite conductors in succeeding sections being connected as described, electric locomotives in series making connection therewith, and an electric switch at the end of each section for controlling the connection between successive sections of one conductor.

3. The combination of a vehicle, a propelling electric motor therefor in series with other motors on the same road, bared conductors adapted for conveying the main current extending along the said road,

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a constant connection between said conductors and the motors, and electrically-operated switches for shunting the main current through said motors.

4. The combination of a vehicle, a propelling electric motor therefor in series with other motors on the same road, bared conductors adapted for conveying the main current extending along said road, switches operated electrically for shunting the main current through said motor, and means for preserving the continuity of the main line during the operation of said switches.

5. The combination of a vehicle, a propelling motor in series with other motors on the same road, bared conductors extending along said road and adapted for carrying the main current, electric switches operated from a distance for directing the course of the main current over said conductors, and electrical devices for operating said switches controlled by the current which passes over said conductors between said motor and the adjacent switch.

6. The combination of two conductors parallel with the line of an electric railway, electric locomotives in electrical connection with said conductors, said conductors being divided into insulated sections, each section of one conductor being connected with the opposite succeeding section of the other conductor, and cross-connections containing electrical devices which control a connection between successive sections of the other conductor.

7. The combination of two or more electric motors in series, a vehicle supporting each motor and propelled thereby, a sectional electric conducting-path extending along the line of progress of said vehicles, conductors extending from each motor and making continuous connection with said conducting-path, the main current normally passing through the motors in succession, and an automatic circuit-closer for each motor acting to preserve the continuity of the main line in the case of rupture of any motor-circuit.

8. The combination, in an electric railway, of two conductors extending along the line of the road and divided into sections longer than the ordinary locomotives or trains on the road, electric locomotives having their motor-terminals constantly in connection with the two conductors, respectively, and switches operated by the progress of the train or locomotive for sending the main current through the motors in succession.

9. The combination, with the two main conductors of an electric railway, of an electric locomotive having its terminals in connection with said conductors, respectively, a connection between said conductors, and a circuit-breaker in said connection controlled by the progress of said locomotive.

10. The combination of two sectional conductors extending along an electric railway, each section of one conductor being electrically connected with the preceding section of the other conductor, locomotives in

series in traveling connection with said conductors, and circuit-controllers between the successive sections of one of the conductors.

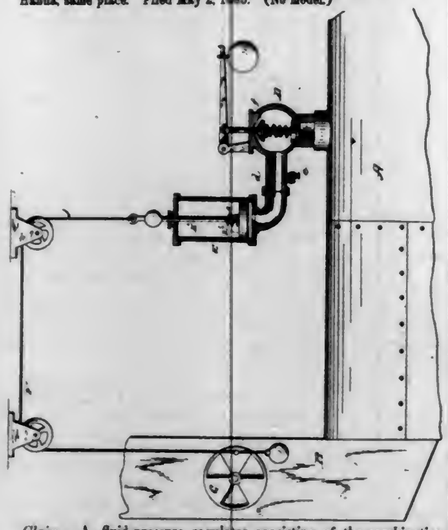
322,518. BUGGY-BOOT. DAVID BUCKLER, ROBERT D. CAIN, JULIUS TAUBERT, and EDWARD N. PELKER, Ionia, Mich. Filed Sept. 24, 1884. (No model.)



Claim.—1. A boot for buggies and the like attached to a rigid frame or support, which rests on the upper edges of the body, and spring-catches depending from the support or frame and automatically locking and releasing the boot, as set forth.

2. The combination, with the body, of the boot attached to a rigid frame or support, which is hinged substantially as described, and spring-catches depending from the support or frame and having their bearing-edges pressing against the inner face of the sides of the body, as and for the purpose set forth.

322,519. FLUID-PRESSURE REGULATOR. MILTON S. CABELL and WILLIAM W. AENEY, Quincy, Ill., assignors of one-third to Robert W. Hanna, same place. Filed May 2, 1885. (No model.)



Claim.—A fluid-pressure regulator consisting of the combination of the boiler or generator, a valve adjustable to open at a predetermined pressure and acted upon directly by the steam in the generator, a closed cylinder, a weighted piston, a weighted register or damper, and means for connecting the damper and piston, whereby the piston is operated and the valve or damper is open and held until pressure is reduced in the boiler by reason of change of temperature in the furnace, as described.

322,520. SASH-HOLDER. FRANK P. CATLIN, Clayton, Wis. Filed Apr. 17, 1885. (No model.)



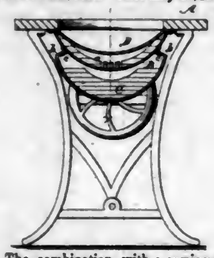
Claim.—1. In a sash-holder, the combination of a notched sash, a pivoted catch, a counter-balance upon the catch, a stop for catch or counter-balance, and a rest for the counter-balance, substantially as described.

2. In a sash-holder, the combination of a pivoted catch, a counter-balance loose upon the catch, a stop for catch or counter-balance, and a rest for the counter-balance, substantially as described.

322,521. GLAZED KID-LEATHER. THOMAS R. CLARK, New York, N. Y. Filed Mar. 19, 1885. (No specimens.)

Claim.—Glazed leather having a body ingrained with an oxidized or fixed oil, combined with a surface brilliantly polished.

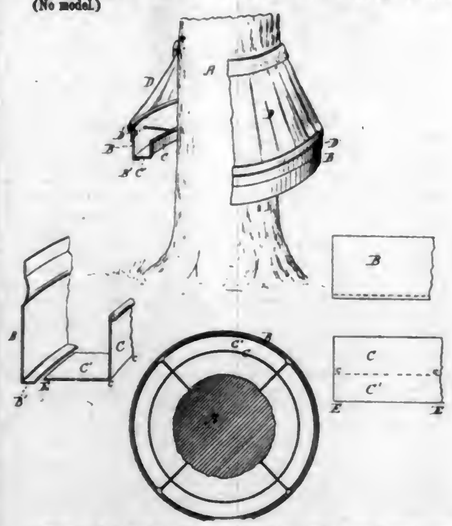
322,522. OIL-DRIP PAN FOR SEWING-MACHINES. WILLIAM CONNOLLY, South Norwalk, Conn. Filed May 21, 1884. (No model.)



Claim.—1. The combination, with a sewing-machine table, of a compound drip-pan consisting of an upper trough or pan having drainage outlets and a subjacent detachable pan, as and for the purpose described.

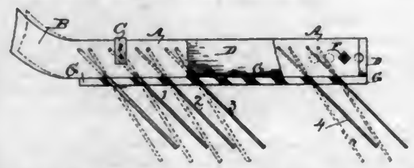
2. The combination, with a sewing-machine table and its drip-pan, of a perforated or open meshed strainer interposed between the machine and the lower detachable pan, as and for the purpose described.

322,523. METHOD OF CONSTRUCTING OIL-TROUGHS FOR TREE-PROTECTORS. ALBERT G. COOK, Boston, Mass. Filed Apr. 2, 1885. (No model.)



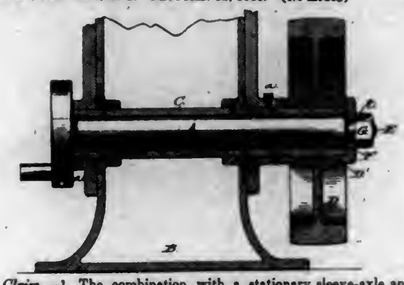
Claim.—The method of making an oil-trough for tree-protectors, consisting of the following steps: first, cutting a strip of sheet metal into a rectangular form; second, turning the lower edge of the same so as to form a narrow edge, B'; third, cutting a second piece of metal in a rectangular form and bending the same on line c c running lengthwise, so as to form a right angle, the part C forming the inner wall of the trough and the part C' the bottom of the same; fourth, rolling the part C' so as to expand it sufficiently to give the required curve, and, fifth, joining the part C C' to the part B by a soldered joint at B, substantially as described, and for the purpose set forth.

322,524. PLANT-SHIELD FOR CULTIVATORS. DON CRAMER, Walnut, Iowa. Filed May 15, 1885. (No model.)



Claim.—The improved plant-shield and cultivator attachment composed of the bar A, having an upward extension, B, the series of pivoted fenders 1 2 3 4, the sliding bar D, having a notched flange, G, the fixed loop C, and the detachable bolt F, substantially as shown and described, to operate in the manner set forth, for the purposes specified.

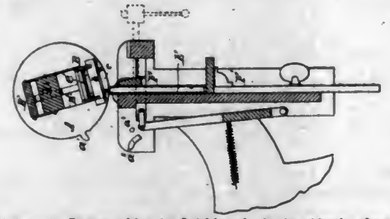
322,525. BEARING FOR SHAFTS AND PULLEYS. WILLIAM E. CREST, New York, N. Y. Filed Mar. 12, 1885. (No model.)



Claim.—1. The combination, with a stationary sleeve-axle and a loose pulley, crank, or fly wheel turning thereon, of a rotating shaft projecting through said axle and made fast to the pulley, crank, or wheel, so that the two shall turn together, substantially in the manner and for the purpose herein set forth.

2. The combination, with a cylindrical sleeve forming an extended journal-box and mounted to turn for adjustment about its axis in a suitable pillow-block or hanger, and with a shaft rotating in said sleeve, of a loose wheel, crank, or pulley turning upon the end of the sleeve and made fast to the projecting end of the shaft, substantially in the manner and for the purpose herein set forth.

322,526. BOOK-FINISHING MACHINE. FRANK W. DAVENPORT, Providence, R. I. Filed Aug. 3, 1883. Renewed Nov. 17, 1884. (No model.)



Claim.—1. In a machine for finishing the backs of books, the combination, substantially as herein set forth, of a clamp for securing the book, a revolving frame provided with stamps for impressing the back of the book, and connections, substantially as described, for rolling the same over the back of a book.

2. In a machine for finishing the backs of books, the combination of the following instrumentalities: a clamp for securing the book, a revolving frame provided with stamps for impressing the back of the book, a size-delivering device for automatically covering the stamps with size, and connections, substantially as described, for operating the machine, substantially as set forth.

3. In a machine for finishing the backs of books, the combination, with a revolving frame, of stamps constructed to be adjustably secured to said frame, and an adjustable weight arranged to counterbalance said stamps, the whole constructed to be rolled over the back of a book, substantially as set forth.

4. In a machine for finishing the backs of books, the combination, with the clamping device F and levers G G, of the revolving frame A, constructed to receive stamps for impressing the back of a book, and the weight A^3, arranged to counterbalance or partially counterbalance the frame A, the whole constructed to impress the back of a book, substantially as set forth.

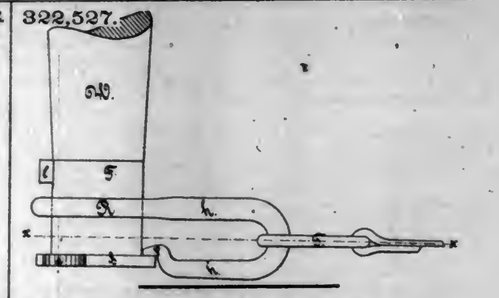
5. In a machine for finishing the backs of books, the combination, with the revolving frame A, and the levers G G, provided with arms g^2 g^3, of the links g^3, the levers g^4, the arms g, the distributing-table H, and connections, substantially as described, for supplying size to the stamps for impressing the back of a book, substantially as described.

6. In a machine for finishing the backs of books, the combination, substantially as herein set forth, of yielding stamps for impressing the book, a suitable support, as described, in which said stamps are mounted, and an adjustable stop or stops for regulating and limiting the rearward movement of said stamps.

322,527. WHIFFLETREE-HOOK. JOHN R. DAVIS, Bristol, Wis. Filed May 27, 1885. (No model.)

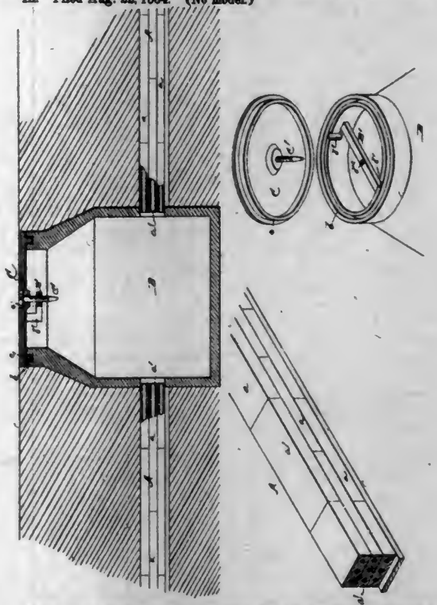
Claim.—The ferrule F, with the lug *l* and slotted shoulder S, in combination with the trace-hook R *h*, and applied to the whiffletree W or its equivalent, substantially as described, and for the uses and purposes mentioned.

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322,529. UNDERGROUND CONDUIT. DANIEL H. DORSETT, Chicago, Ill. Filed Aug. 22, 1884. (No model.)



Claim.—An asphaltum concrete man-hole for underground conduits for electrical wires, formed with a circumferential groove in its upper edge, and provided with a cross-bar secured in L-shaped recesses therein, in combination with a cover having a circumferential flange, and a locking-bolt passing through its center into the cross-bar, substantially as and for the purpose set forth.

322,530. FAN ATTACHMENT. CHARLES E. EATON, Chelsea, Mass. Filed May 26, 1884. (Model.)

Claim.—1. The fan-supporting standard formed with indentations *w w*, and the fan-bracket formed with a pivoted stem or shank, *i*, and fin *v*, to interlock in said indentations, whereby the fan may be arranged and secured to extend over the occupant of the chair or parallel with the side of the chair, substantially as specified.

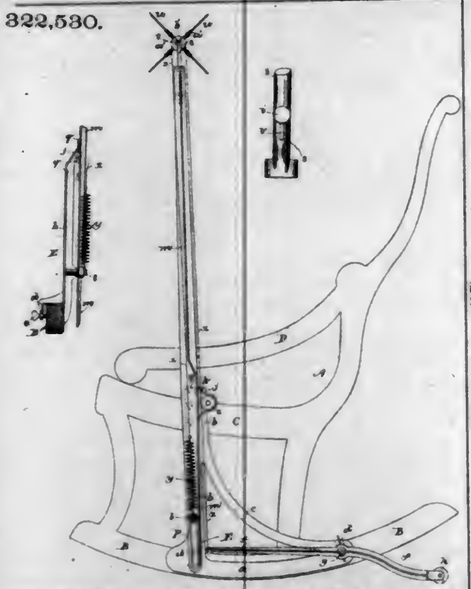
2. The fan-supporting standard *m*, formed with a series of hooks, *q*, arranged one above the other, in combination with a support adapted to be secured to the chair and to be engaged by said hooks, substantially as specified.

3. The combination, with angle-iron E, formed with arm *a*, having clamps *d* formed thereon, and also formed with vertical arm *b*, having indentations *k* arranged along the line of its upper end, of a fan-support formed and adapted to be engaged with said angle-iron, substantially as specified.

4. The combination, with the fan-supporting standard *m*, having a series of hooks, *q*, arranged one above the other, of angle-iron E, having arm *b*, formed with a series of indentations, *k*, arranged along the line of its upper end and respectively adapted to receive said hooks, substantially as specified.

5. The combination, with standard *m*, formed with hooks *q*, ar-

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ranged one above the other, and with a longitudinal slot, *p*, near its lower end, of angle-iron E, formed with arm *b*, having stud *l*, adapted to engage in said slot, and a series of indentations, *k*, arranged along the line of its upper end and adapted to be engaged by said hooks, substantially as specified.

6. The combination of standard *a*, having a series of hooks, *q*, arranged one above the other, angle-iron E, formed with arm *a*, having clamps *d*, and stud *g*, and arm *b*, having stud *l*, and a series of notches, *k*, arranged along the line of its top, lever *f*, having truck *h* and pivoted on stud *g*, spiral spring *y*, and cord *z*, secured at one end to the free arm of lever *f* and at the other to said spring, and engaging pulley *b'* on the fan-spindle, substantially as specified.

322,531. TOGGLE-JOINT. FREDERICK L. ELLER, New Haven, Conn. Filed Dec. 31, 1884. (No model.)



Claim.—1. In a toggle-link, circular grooves *d*, formed concentric with a bearing, *c*, at one end of the link, for the purpose described.

2. In a toggle-joint, a link formed with a circular bearing, *c*, at one end and grooves *d* concentric therewith, in the manner substantially as described.

3. In a toggle-joint, the hollow cylinder *f*, clamped in position by means of caps *g* and bolt *k* in the manner substantially as described.

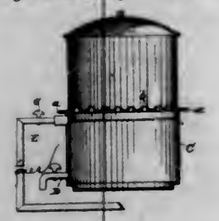
4. In a toggle-joint, the caps *g*, having rims *h*, adapted to fit the grooves *d* in the links, as and for the purpose specified.

5. The combination, with the toggle-links A, of the caps *g* and bolt *k*, for the purpose substantially as described.

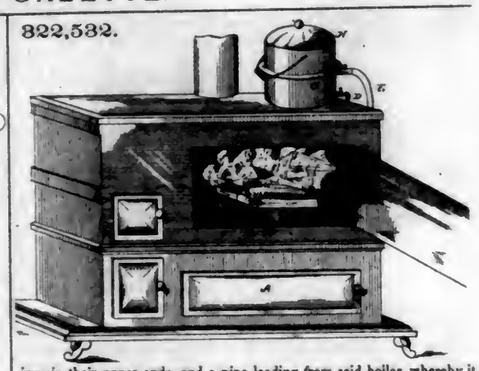
6. The combination, with the toggle-links A, of the cylinder *f*, caps *g*, and bolt *k*, in the manner and for the purpose set forth.

322,532. COOKING-UTENSIL. RICHARD H. EVERETT and ELIZA A. EVERETT, Vestal Centre, N. Y. Filed Sept. 22, 1884. (No model.)

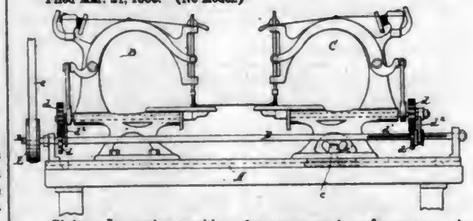
Claim.—The apparatus described, comprising the boiler, the steamer having an annular flange, *a*, the raised portions *b*, having holes or openings in their upper ends, and a pipe leading from said boiler, whereby it may be applied to the oven of a stove and connect therewith, substantially as set forth.



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322,533. SEWING-MACHINE. ALFRED FAULKNER, Jersey City, N. J. Filed Mar. 21, 1885. (No model.)



Claim.—In sewing-machines for ornamented or fancy work, the shaft D, having the pulley E, the groove *d'*, gear *d*, and links *d²*, in combination with the machines B and C, constructed and operated substantially as and for the purposes herein shown and set forth.

322,534. BOX AND PAD FOR CANCELING-STAMPS. JOEL A. FIFE, Chicago, Ill. Filed Feb. 21, 1884. (Model.)

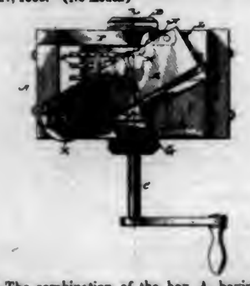


Claim.—1. An inking-pad consisting of a roller composition, an ink-absorbent surface, and a non-absorbent layer next to the composition between it and the ink-absorbent surface, substantially as described.

2. An inking-pad consisting of a roller composition, an ink-absorbent surface, and a non-absorbent layer interposed between the composition and absorbent surface and of a smaller area than said parts to permit them to adhere together, substantially as described.

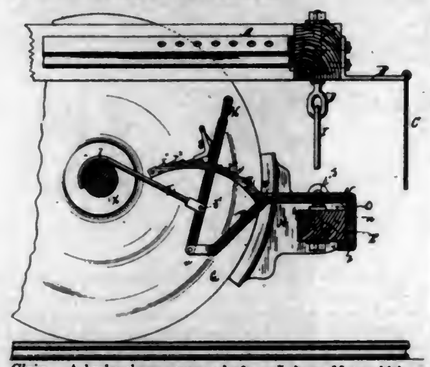
3. In a box and pad for canceling-stamps, the combination of the box having horizontal corner projections, depressed or lowered sides, and a bottom plate with the roller-composition filling, the non-absorbent layer, and the ink-absorbent surface, substantially as described.

322,535. CORN-SHELLER. ELBEN C. FISHER, Sissonville, W. Va. Filed Apr. 17, 1885. (No model.)



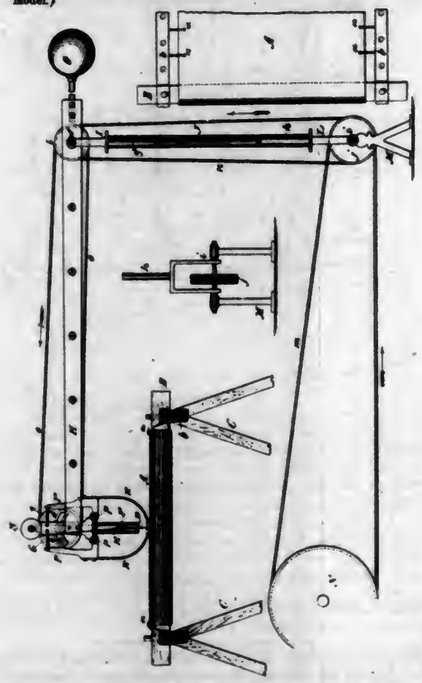
Claim.—The combination of the box A, having the openings F and G arranged in an oblique line, the cylinder D, journaled in the box and having the rows of teeth E arranged obliquely across its face opposite to the line drawn between F and G, the bearing-iron H across the box, the presser-lever K, having one end hinged to the box, the spring-bearing on the free end of the presser-bar, and the valve P, hinged to the presser-bar on the side adjacent to the opening G, for the purpose set forth, substantially as described.

322,536. CAR-BRAKE CLAMP. CHARLES A. FULLER, Boston, Mass., assignor to John S. Silver, New York, N. Y., and John W. Marden, Walden, Mass. Filed May 25, 1885. (No model.)



Claim.—A brake-clamp composed of arm L, lever M, to which arm L is hinged and on which it works, arms R, N, and P, either in one or separate pieces, riveted tightly together, the lever M with its pawl working in tooth *r* on arm R, substantially as described, and for the purpose specified.

322,537. MACHINE FOR FORMING RAISED ORNAMENTS BY THREADS ON FABRICS. RENÉ GUERRAND, New York, N. Y., assignor to Charles Joseph Prospère Barrez, same place. Filed Jan. 23, 1885. (No model.)



Claim.—1. The combination of the reciprocating needle D and needle-carrier E with the pivoted levers P, jaws R R, and frame F, and with mechanism, substantially as described, for moving said needle and needle-holder up and down and vibrating said jaws, so that the jaws will bite the thread on the ascent of the needle directly above the fabric, substantially as described.

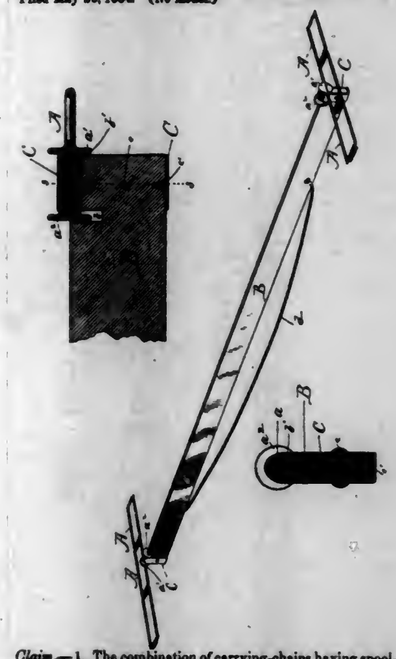
2. The combination of the frame F with the wheel G, having crank *e*, segment *d*, needle-holder E, needle D, levers P P, springs *q*, and jaws R R, substantially as herein shown and described.

3. The needle D, made with the two eyes *s* and *t*, combined with the reciprocating needle-holder E, having slotted segment *d*, and with the crank-pin *e*, and rotary disk G, all arranged to carry one eye of the needle beneath the fabric while the other eye remains above the fabric, while both eyes of the needle are threaded, substantially as herein shown and described.

4. The combination of the frame F with the reciprocating needle D, needle-holder E, levers P P, jaws R R, springs *q*, and crank-wheel G, with the jointed frame H I J L, and mechanism, substantially as described, for rotating the wheel G, as specified.

5. The combination of the frame F, which carries the needle-holder E, and the levers P, having the jaws R, with the tension device *w*, which is attached to the needle-holder E, substantially as herein shown and described.

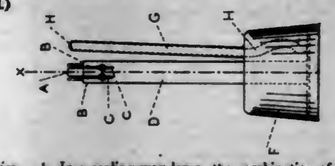
322,538. LAUNDRY-REEL. BENJAMIN R. HAWLEY, Chicago, Ill. Filed May 26, 1884. (No model.)



Claim.—1. The combination of carrying-chains having spool-shaped projections with slats B and straps C, the slats being journaled upon the projections and secured thereto by the straps, substantially as specified.

2. The combination of carrying-chains having spool-shaped projections *a a' a²* with slats B, recessed at *b b'*, and retaining-straps C, secured to the slats, substantially as set forth.

322,539. SEALING-WAX LAMP AND HOLDER. FREDERICK J. HOTT and ANDREW M. NICHOLS, Grand Rapids, Mich. Filed Sept. 27, 1884. (No model.)



Claim.—1. In a sealing-wax lamp, the combination of the lamp-body F, the wick-tube G, and wax-holder D, substantially as described.

2. The combination of the holder D, the spiral spring E, and the wire B, substantially as described.

3. The combination of the body F, wick-tube G, wax-holder D, spiral spring E, and wire loop B, all as described.

322,540. SHAFT-CASING. WILLIAM F. HUTCHINSON, Lynn, Mass. Filed Jan. 3, 1885. (No model.)

Claim.—1. A rigid shaft-casing composed of two half-sections and adapted to be fastened around a running shaft, substantially as described.

2. The shaft-casing B, having flanges *b*, substantially as shown, and for the purpose described.

322,540.

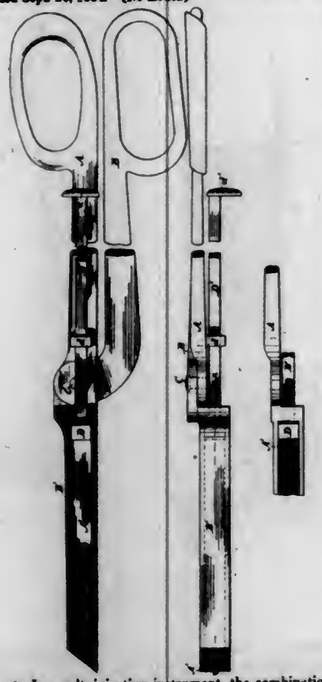


3. In a casing for shafting, the disk A, having flanges *a a'* and slots a^3, substantially as shown, and for the purpose specified.

4. In a casing for shafting, the combination of the disk A, having flanges *a a'* and slots a^3, with the shaft-casing B and flanges *b*, substantially as described.

5. The general arrangement of the casing B, flanges *b* and disks A, adapted to be slipped upon the casing B, all substantially as described, and for the purpose set forth.

322,541. DEVICE FOR EMBALMING. JAMES JACKSON, New York, N. Y. Filed Sept. 26, 1884. (No model.)



Claim.—1. In a salt-injecting instrument, the combination of the piston D and piston-rod D' with the hollow blade A', cover B', shanks or handles A B, and guide *d*, substantially as and for the purpose set forth.

2. In a salt-injecting instrument, the combination of the piston D, piston-rod D', and finger-button *d'* with the hollow blade A', cover B', shanks or handles A B, and guide *d*, substantially as and for the purpose set forth.

3. In a salt-injecting instrument, the combination of the piston D, piston-rod D', finger-button *d'*, and guide *d* with the hollow blade A', having a chisel-edge, cover B', and shanks or handles A B, substantially as shown and described.

4. The combination, with a scissors-shaped instrument having hollow blades forming a chamber or tunnel whose walls are of a form or shape along which a piston may play, of the piston D and piston-rod D', with means for securing said piston-rod to one of the shanks or handles A B, substantially as described.

322,542. HORSESHOE-NAIL. JOHN C. KRAENS, Maitland, Pa. Filed Aug. 12, 1884. (No model.)

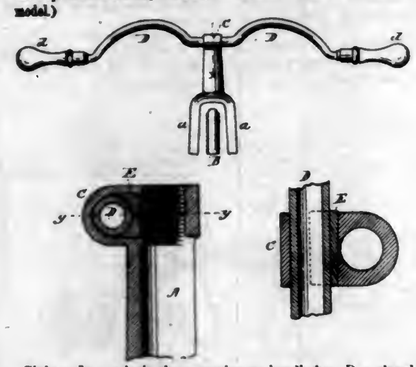


Claim.—1. A nail having two grooves formed upon one surface, and a single groove formed upon the opposite surface and placed thereon at a point between the double grooves of the reverse surface, substantially as described.

2. A nail having longitudinal grooves formed in its body and short head grooves parallel therewith, substantially as described.

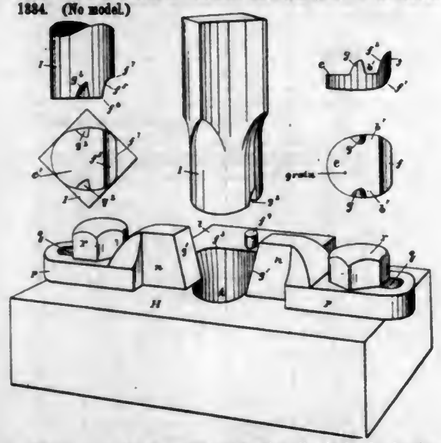
3. A nail having longitudinal grooves alternately arranged upon opposite surfaces thereof, substantially as described.

322,543. VELOCIPEDE. JOHN KNOX, Hartford, Conn., assignor to the Pope Manufacturing Company, same place. Filed Feb. 7, 1885. (No model.)



Claim.—In a velocipede, a continuous handle-bar, D, a closed lug, C, formed on one side of and solid with the steering-head, a mortise in the lug and substantially aside from the axial bore of the head for the reception of the bar, and conformed to the latter on one side and sufficiently larger on the opposite side to admit of the endwise insertion of the bar with all its curves, and a movable key, E, conformed to the bar on one side and to the excess of the mortise on the other side, all constructed and combined to operate substantially without interference with the adjusting-bolt or set-nut of the steering-centers, and essentially as set forth.

322,544. DIE AND PUNCH FOR MAKING CLIPS FOR HEADS OF CARRIAGE-SPRINGS. ANTHONY KRONENBITTER, Coshocton, Ohio, assignor of nine-twentieths to Ferdinand Horn, same place. Filed June 20, 1884. (No model.)



Claim.—1. A die for cutting and forming clips for heads of springs, consisting of a die-block, H, having an opening, *k*, a raised ledge, *l*, at one side of the opening, and a punch, I, having a curved hollow or bevel, f^3, extending across the side and adjoining the face, and provided in the edge with two notches, g^3, one opposite the other, as set forth.

2. A die for cutting and forming clips for heads of springs, consisting of a die-block, H, having an opening, *k*, a raised ledge, *l*, at one side of the opening, and in front of the ledge two guides adjoining the opening and opposite each other, each guide having a beveled side, *g'*, and a punch, I, having a curved hollow or bevel, f^3, extending across the side and adjoining the face, and provided in the edge with two notches, g^3, one opposite the other, as set forth.

322,545. EAR-PIECE FOR FORMING THE HEADS OF SPRINGS. ANTHONY KRONENBITTER, Coshocton, Ohio, assignor of nine-twentieths to Ferdinand Horn, same place. Filed May 26, 1885. (No model.)



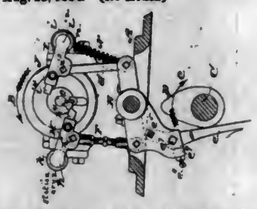
Claim.—1. As an article of manufacture, an ear-piece for heads of springs, consisting of an ear part, *c*, provided at a portion of its edge with a flange, *f*, which is beveled or tapered to form a knife-edge, f^*.

and also provided with two tangs, *g*, projecting on the same face as the flange, as set forth.

2. As an article of manufacture, an ear-piece for heads of springs, consisting of an ear part, *c*, provided at a portion of its edge with a flange, *f*, and also provided with two beveled or tapered tangs, *g*, projecting on the same face as the flange, each tang having a pointed extremity, g^4, as set forth.

3. As an article of manufacture, an ear-piece for heads of springs, consisting of an ear part, *c*, provided at a portion of its edge with a flange, *f*, which is beveled or tapered to form a knife-edge, f^*, and also provided with two beveled or tapered tangs, *g*, projecting on the same surface as the flange, each tang having a pointed extremity, g^4, as set forth.

322,546. BARBED-WIRE MACHINE. GODFREY H. LASAR, St. Louis, Mo. Filed Aug. 23, 1884. (No model.)



Claim.—1. In combination, the shaft C, the spring N, the cam D, the rock-lever constructed and arranged to be vibrated in bearings in the slide A, the links F G, the barb-formers H h^4 I i^3, and the twister B, substantially as described.

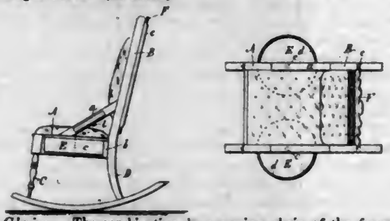
2. The combination of the twister B and the vibrating barb-former arms H I, said barb-former arms being pivoted at their outer ends on opposite sides, respectively, of the twister, and having at points between their ends connections leading to a vibrating rock-lever.

3. The combination of the twister B, the vibrating barb-former arms H I, the links F G, the slide A, and the vibrating rock-lever E, the bearing or bearings of said rock-lever being below said twister, and said links leading from the barb-former arms downward to said rock-lever on opposite sides of its bearing or bearings, substantially as described.

4. The combination of the slide A, the rock-lever E, the shaft C, and the cam D, the arm *e* of said rock-lever being adjustable therein, substantially as described.

5. The rock-lever E, adjustable longitudinally in the slide A, as and for the purpose specified.

322,547. SEWING-CHAIR. CHAS. G. LITTLE, Brooklyn, N. Y. Filed Aug. 27, 1883. (No model.)



Claim.—The combination, in a sewing-chair, of the frame, side pieces, *b*, of the body having openings therein, combined with the boxes having a straight side and a semicircular side, each box having a vertical pivot passing centrally through said straight side and bearing centrally in the upper and lower edges of the opening, so as to present, when closed, a plain or flush surface, and upon an inward pressure being applied to said straight side at either side of the pivot thereof to throw the curved side and receptacle out in a projected position, substantially as set forth.

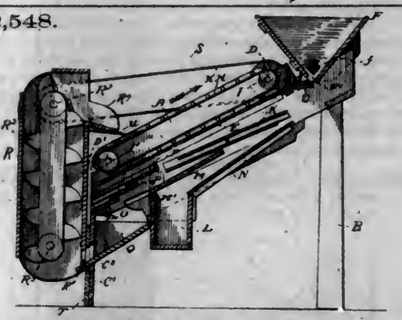
322,548. WHEAT, OAT, AND COCKLE SEPARATOR. JOHN LUCAS, Hastings, Minn. Filed Feb. 24, 1883. (No model.)

Claim.—1. In a grain-separator, the combination, with the main sieve and an endless carrying-apron, of an elevator arranged at the rear or discharge end of the sieve and adapted to receive the discharge of the machine and elevate such discharge onto the endless belt and operating mechanism, substantially as set forth.

2. The combination, in a grain-separator, of the stationary inclined sieve, the endless apron having cross-slats and moving down on the said sieve close thereto, and an elevator arranged at the rear end of the machine and adapted to receive the mixed grain and tailings and elevate and deliver the same onto the lower end of the slatted apron, whereby they are redelivered onto the inclined screen, substantially as set forth.

3. In a grain-separator, substantially as described and shown, the

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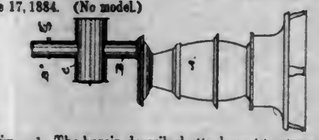
combination of the sieve E, the slatted apron, the hopper, the elevator arranged at the end of the machine and adapted to receive the mixed grain and tailings screened by the lower part of the sieve E, and deliver the same onto the slatted apron, and means whereby the discharge from the hopper may be regulated, substantially as described, and for the purposes specified.

4. In a grain-separator, the combination of the main sieve, the sieve K, the cut-offs P, the cut-off M, and the side and end spouts, substantially as set forth.

5. The combination of the main sieve, the sieves K and N, the spouts L and Q, and the cut-offs M and P, substantially as set forth.

6. The combination, with the main sieve, of the cut-offs P P, arranged below the lower end of the main sieve and adjustable one upon the other, substantially as set forth.

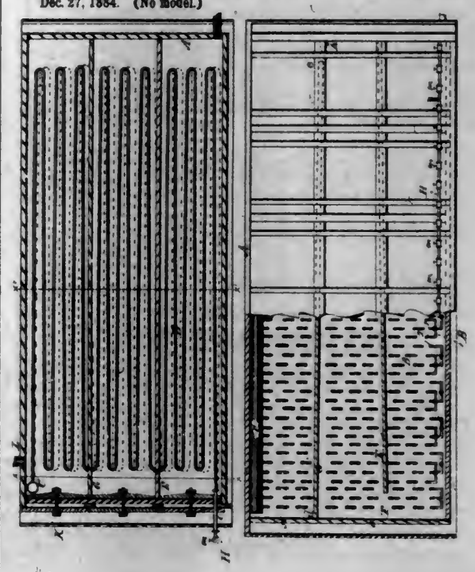
322,549. HEATING-DRUM. JAMES P. LYDON, Marysville, Cal. Filed June 17, 1884. (No model.)



Claim.—1. The herein-described attachment to stoves, consisting of the close chamber C, having a grate or perforated fire-supporting surface, which divides the interior into two parts, one of which is connected with the draft and smoke passages of a stove, and the other of which communicates with a chimney or suitable draft-outlet, and is controlled by a damper.

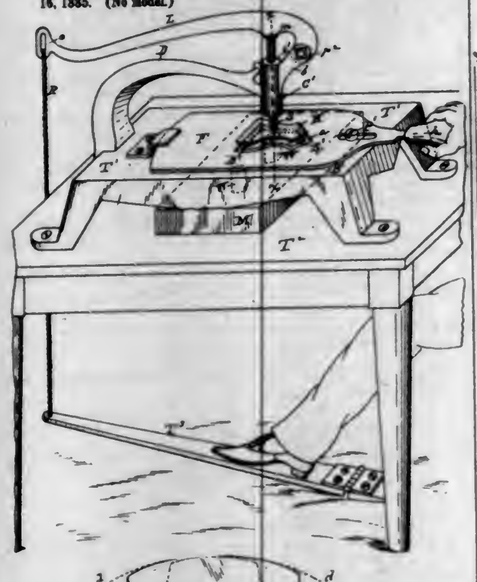
2. The combination, with the smoke-pipe of a stove, of a drum or chamber having a perforated fire-supporting surface, D, a door, *c'*, an outlet on one side of the fire-surface communicating with the smoke and draft passages of the stove, and the outlet on the other side of the fire-surface, from which the smoke-pipe leads to the chimney or other outlet.

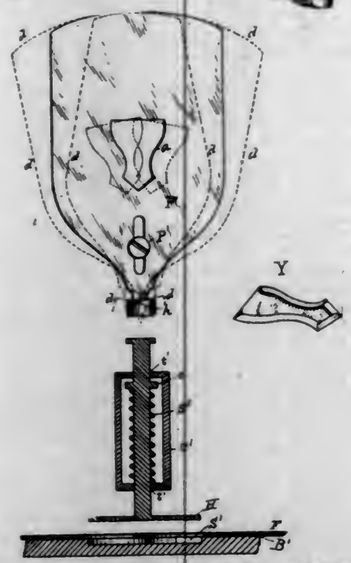
322,550. ICE-MACHINE. JAS. M. W. NEFF, Cincinnati, Ohio. Filed Dec. 27, 1884. (No model.)



Claim.—A tank for refrigerating purposes having series of vertically-arranged coils of pipe, and horizontally-inclined partitions arranged one above another and alternately inclined from a level line, each one having the higher end attached to the side of the tank and the lower end with an outlet for the passage of water to the one below, whereby the water will flow from the inlet-pipe at the top backward and forward over the several partitions in a thin sheet in contact with the pipes until it reaches the bottom of the tank.

322,551. BOSOM-TAB-FOLDING MACHINE. GEO. E. NORRIS, Troy, assignor of one-half to James K. P. Pitts, Lansingburg, N. Y. Filed Jan. 16, 1885. (No model.)



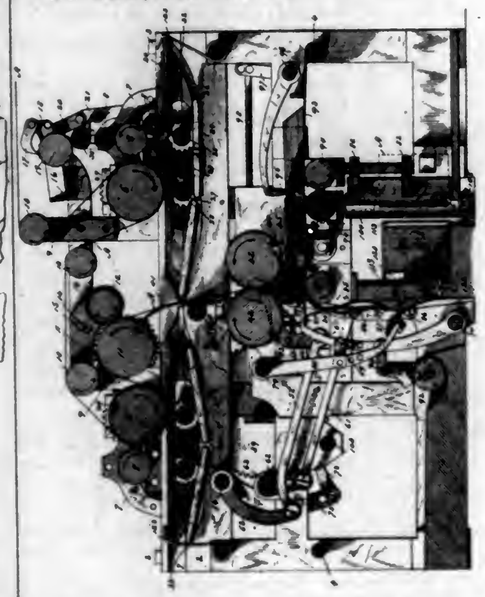


Claim.—1. In a machine for infolding the edges of bosom-tab blanks, the combination of the folding-bed B', made with the sink S', the folding-plate F, made with the cut-out area *a*, and the pivot P', and the holder-plate H, the said parts being arranged and constructed to operate substantially in the manner as and for the purposes set forth.

2. In a machine for infolding bosom-tab blanks, the combination of a bed made with a sink having laterally the form of the completed tab, a holder-plate adapted to descend into said sink and ascend therefrom, said holder-plate having the form of the sink, but smaller, and an intermediately arranged folder-plate having a cut-out area in form coincident to that of the holder and sink, but a little larger, and said folding-plate constructed with a pivot for lateral movement, substantially in the manner as and for the purposes set forth.

3. In a machine for infolding the edges of bosom-tab blanks, the combination of the folding-bed B', made with the sink S', the folding-plate F, made with the cut-out area *a*, and the pivot P', the holder-plate H, the stud S^2, spring S^3, the cylinder C, the lever L, and the treadle T^3, said parts being constructed and arranged to operate substantially in the manner as and for the purposes set forth.

322,552. FOLDING-MACHINE. JOEL G. NORTHRUP, Marcellus Falls, N. Y. Filed May 29, 1884. (No model.)



Claim.—1. The combination, with printing mechanism, substantially as described, of severing-rolls, as 42, an intermediate guiding-apron, as 41, folding-rolls, as 57, and an oscillating folding-blade, as 69, provided with depending spring-fingers, as 84, and a curved bed, as 85, substantially as shown and described.

2. The rolls 42, one of which is provided with a longitudinally-reciprocating perforating-blade, 43, the other of which is provided with two stationary plates, as 44, in combination with the pivoted lever 48, having the projection 49, the connecting-bar 52, the rock-arms 53 and 55, and the gear-cam 39 and gear 56, whereby the said projection 49 is brought into the path of the perforating-blade 43 once during every two revolutions of the said rolls to change the function of the perforating-blade to that of a severing-blade, substantially as specified.

3. The combination of the rolls 42, one of which is provided with a perforating-blade, as 43, with the folding-rolls 57, one of which is provided with a plain blade adapted for longitudinal movement, and with a lever, 59, connecting-rod 61, rock-arms 62 and 64, cam-gear 39, and gears 56 and 60, substantially as and for the purpose set forth.

4. The combination, with the rolls 42, having the blades 43 44, the rolls 57, one of them having the blade 58, the levers 48 and 59, the rotary brush 65, and means, constructed, arranged, and timed, substantially as shown and described, for operating the same, substantially as and for the purpose set forth.

5. The combination of the rolls 57, folding-blade 69, having depending fingers 84, the curved bed 85, the paster 86, mounted upon arms 88, the connecting-links 89 90, and the paste-roll 91, with means, substantially as shown and described, for their operation, substantially as and for the purpose set forth.

6. The combination of the vertical folding-rolls 104, folding-blade 83, and the packing-box 113, having a side spring, 120, a reciprocating packer, 114, and a spring-actuated compressing-plate, 121, substantially as shown and described.

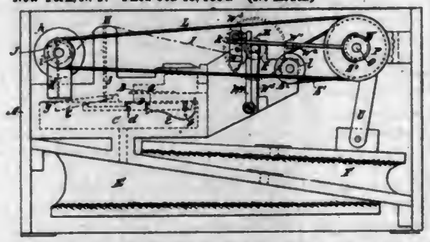
7. The combination, with the oppositely-arranged impression-cylinders 6 and their adjacent inking mechanism, of the oppositely-arranged series of forms and their operating devices, comprising the shafts 28 and gears 34, with gear 29, pinion 30, and cam-gear 39, provided with a single operating-point, 40, and with the rock-arms 55, 64, 75, and 99, and bell-crank lever 119, the feeding-rolls 42, and folding-rolls 57, 94, and 104, the folding-blades 69, 95, and 83, and pivoted levers 48 and 59, and the connecting-rods connecting said blades and levers with said arms, whereby the entire folding apparatus is operated by a single cam having connection with an impression-cylinder, substantially as specified.

322,553. SASH-FASTENER. JOSEPH PAILLET, Delaware, Ohio, assignor of one-half to Hermann Hies, same place. Filed Feb. 2, 1883. (No model.)



Claim.—In a sash-locking device, in combination with frame E, slotted lock-bolt D, loosely supported therein, and the lever F on a shaft, and suitable means for turning said shaft, the said lever extending through slot *a* in the lock-bolt, substantially as and for the purposes described.

322,554. MECHANICAL MUSICAL INSTRUMENT. ROBT. W. PAIN, New York, N. Y. Filed Oct. 13, 1884. (No model.)



Claim.—1. In a mechanical musical instrument, the combination of a music-roller, a take-up roller, a music-sheet, a driving-shaft whereby motion is conveyed to said take-up roller, an auxiliary shaft adapted to be engaged with and disengaged from the driving-shaft, and a pulley mounted loosely upon the auxiliary shaft, adapted to be engaged with and disengaged from the auxiliary shaft, substantially as specified.

2. In a mechanical musical instrument, the combination of a music-roller, a music-sheet, a take-up roller, a driving-shaft for imparting motion to said take-up roller, an auxiliary shaft adapted to be engaged with and disengaged from the driving-shaft, a pulley mounted on said auxiliary shaft, a pulley on the music-roller, a driving-belt, and a crank, substantially as specified, whereby when the auxiliary shaft is in engagement with the driving-shaft the crank may be rotated to unwind the music-sheet from the music-roller, and when the auxiliary shaft is out of engagement with the driving-shaft the crank may be rotated in the same direction to rewind the music-sheet on the music-roller.

3. The combination of a roller, J, a roller, M, a driving-shaft for imparting motion to the roller M, a sleeve, *l'*, on the driving-shaft having the notch *o*, a shaft, O, provided with a pin, *p*, a pulley, P, provided with pins *q q'*, an endless belt, L, and a pulley, K, substantially as specified.

4. In a mechanical musical instrument, the combination of a music-roller, a take-up roller, a shaft for imparting motion to said take-up roller and operating the bellows, and an auxiliary shaft adapted to be engaged with the driving-shaft for the purpose of operating the take-up roller and transmitting motion to the bellows, and disengaged from the bellows-operating shaft for the purpose of releasing the latter and operating the music-roller, substantially as specified.

322,555. CARRIAGE-SEAT. JOSEPH PARISEAU, Jr., St. Jean Baptiste, Quebec, Canada. Filed June 12, 1885. (No model.)



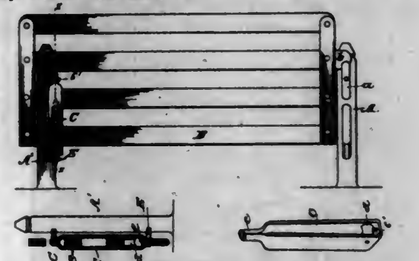
Claim.—1. In a carriage-seat, the combination of the stationary section A and the movable section B, and connecting-hinges C, D, and W, substantially as described, whereby the movable section B is permitted, first, to rise a certain height; secondly, to revolve back; and, thirdly, to rise open, as set forth.

2. In a carriage-seat, the combination of the stationary section A, the rising, revolving, and opening section B, and a locking device, X, substantially as shown, with which the movable section engages by a vertical motion.

3. In a carriage-seat, the combination of the movable section B with the mechanism O P *p* S U, as described and shown, whereby the curtain is automatically folded against the bottom of said movable section B when opened.

4. In combination with the movable section B of the carriage-seat, the spring N and curtain mechanism O P *p* S U, as and for the purpose described.

322,556. GATE-HANGER. JAS. S. PRINGLE, Richland, Iowa. Filed Apr. 19, 1884. (No model.)



Claim.—The combination, with a gate, of a hanger, C, consisting of a strip of spring metal bent at the center and provided thereat with a roller, and with a pivot-hole to receive a hook-bolt in the gate-post, the opposite end of said hanger forming a neck for insertion in an eyebolt, the hanger being removably seated in said bearings, whereby it may be placed underneath any bar of the gate, thereby rendering the gate vertically adjustable, substantially as and for the purpose set forth.

322,557. COMPOUND FOR PURIFYING IRON AND STEEL. WILLIAM H. PURDY, Brooklyn, assignor, by mesne assignments, to the United States Silvered Steel Company, Greenburg, N. Y. Filed Nov. 16, 1884. (Specimens.)

Claim.—1. A compound for the elimination of impurities from iron and steel, consisting of minium or red lead and cinnabar, with molding-sand and water, in substantially the proportions named.

2. A compound for eliminating the impurities from iron and steel, consisting of minim or red lead, litharge, and cinnabar mingled with molding-sand and water, in substantially the proportions specified.

322,558. PROCESS OF PURIFYING IRON AND STEEL. WILLIAM H. PURDY, Brooklyn, assignor, by mesne assignments, to the United States Silvered Steel Company, Greenburg, N. Y. Filed Nov. 16, 1884. (No specimens.)

Claim.—1. The process hereinbefore described for purifying iron and steel, said process consisting in melting such metal in intimate contact with a compound consisting of red lead or minium and cinnabar mingled with molding-sand and water, in substantially the proportions named.

2. The process hereinbefore described for purifying iron or steel, said process consisting in melting such metals in a ladle, crucible, or other vessel lined with a compound of red lead or minium and cinnabar mingled with molding-sand and water, in substantially the proportions named.

322,559. BRICKS, BUILDING-BLOCKS, &c., MADE OF PURIFIED ASHES AND LIME. ERNEST L. RANSOME, Oakland, Cal. Filed Sept. 19, 1884. (No specimens.)

Claim.—The herein-described improvement in the manufacture of bricks, building-blocks, and like molded articles, which consists in mixing purified ashes with lime and molding under heavy pressure, substantially as set forth.

322,560. HEEL-NAILING MACHINE. FREEBORN F. RAYMOND, 2d, Newton, Mass. Filed Aug. 4, 1884. (No model.)

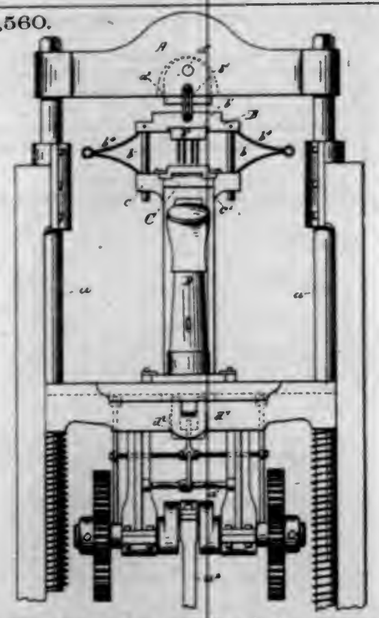
Claim.—1. The combination of the independent head B, carrying or supporting awls or drivers, the templet C, and an aditional reciprocating head or block for imparting motion to the head B, all substantially as and for the purposes described.

2. The combination of the independent plate or head B, carrying or supporting awls or drivers and adapted to have a reciprocating motion imparted to it, the stationary templet C, and the guides *b*, all substantially as for the purposes described.

3. The combination of the reciprocating head A, the swinging block a^3, the independent plate or head carrying or supporting awls or drivers, and the guides for directing the movement thereof in relation to the templet, all substantially as and for the purposes described.

4. The combination of the reciprocating head A with the independent plate or head B, carrying or supporting awls or drivers, and a device, substantially as described, connecting the head B with the head A, all substantially as and for the purposes described.

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5. The combination of the reciprocating head A with the non-rotating independent head B, adapted to have a vertical movement imparted to it, and carrying or supporting awls or drivers, all substantially as and for the purposes described.

6. The combination of the plate or head B, carrying or supporting awls or drivers, the table c', the templet C, and the guides b, either with or without the springs b^4, all substantially as described.

7. The combination of the plate or head B, carrying or supporting awls or drivers, the table c', the templet C, the guides b, and the nail-carrier E, all substantially as and for the purposes described.

8. The combination of the cross-head, the independent plate or head B, adapted to be reciprocated, as described, the pivoted arm or support F, adapted to be reciprocated thereby, and supporting a gang or group of drivers and a gang or group of awls, and the templet C, all substantially as and for the purposes set forth.

9. The combination of the templet C, the support for the boot or shoe below the templet and mounted on the post d, sleeve or post d', the said post d, a toggle for lifting the same, and a reciprocating gang or group of drivers, all substantially as and for the purposes described.

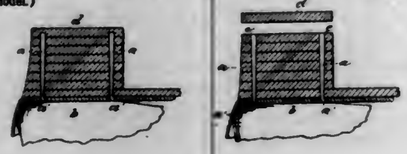
10. The combination of the templet, the heel-support, the post d, sleeve or post d', a toggle, and a cam for operating the same, all substantially as described.

11. The combination, in a heel-attaching machine, of the sliding jack having the heel-support and jack-post d with the reciprocating head d^9, adapted to be brought in contact with the lower end of the jack-post to lift the same when the said post has been moved into operative position therewith, all substantially as and for the purposes described.

12. The combination of the templet C, independent head B, supporting awls or drivers and adapted to have a vertical movement imparted to it by a reciprocating head, the heel-support, its post d, sleeve or post d', and a positively-actuated lifting device for moving the post upward to compress the heel-blank against the templet-plate, all substantially as and for the purposes described.

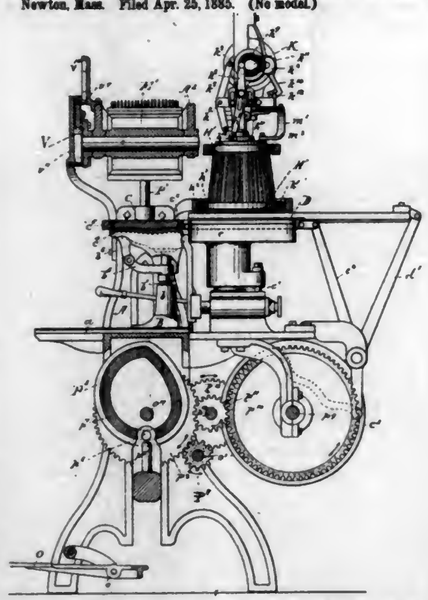
13. In a suitable frame or support carrying a reciprocating cross-head, in combination with the jack, the post supporting a bed or carriage carrying a templet, and the independent head supporting awls or drivers attached to said table or post by guide-rods, and in a manner to be movable vertically in relation to the same, and adapted to have a vertical movement imparted to it, all substantially as described.

322,561. PROCESS OF APPLYING TOP LIFTS TO HEEL-BLANKS. FREEBORN F. RAYMOND, 2d, Newton, Mass. Filed Jan. 17, 1885. (No model.)



Claim.—The process of attaching top lifts to heel-blanks, consisting, first, in moderately compressing the heel-blank and driving the attaching-nails while thus moderately compressed to an iron-surfaced support, and, second, in then applying the top lift upon the heel-blank, still further compressing the same and causing the ends of the attaching-nails to be uncovered and embedded in the top lift, all substantially as and for the purposes described.

322,562. SOLE-NAILING MACHINE. FREEBORN F. RAYMOND, 2d, Newton, Mass. Filed Apr. 25, 1885. (No model.)



Claim.—1. In a sole-nailing machine, in combination with the last or work-support, the sole molding or laying pressure-plate C, having the sole-forming cavity c^4 and the holes c^3, and means, substantially as specified, for moving the same automatically horizontally into and out of operative position, all substantially as and for the purposes described.

2. The combination of the jack, a work-support or last carried thereby, the sole molding or laying pressure-plate C, having the sole-shaping cavity c^4 and the holes c^3, with the reciprocating block G', adapted to be brought down automatically upon the pressure-plate and to move the same vertically to mold and compress the sole, and a lock for holding the said plate locked upon the sole, all substantially as and for the purposes described.

3. The combination of the last or work-support, the sole molding or laying pressure-plate C, having the sole-shaping cavity c^4 and the holes c^3, opening into the cavity, and arranged in the plate, as specified, the pressure-block, a gang or group of awls of varying lengths, arranged as described, and a gang or group of drivers of varying lengths, arranged as described, the said block, awls, and drivers being adapted to be brought successively into operative position and reciprocated, substantially as and for the purposes described.

4. The combination, in a sole-nailing machine, of the last or work-support, the sole molding or laying pressure-plate C, having the sole-shaping cavity c^4 and the holes c^3, opening into the cavity, and arranged in the plate, as specified, the sole-nail carrier D, and the presser-block G', and the gang or group of sole-nail drivers of variable lengths adapted to be brought successively into operative position and reciprocated, all substantially as and for the purposes described.

5. The combination, in a sole-nailing machine, of the last or work-support, the sole molding or laying pressure-plate C, having the sole-forming cavity c^4, the holes c^3, the sole-nail carrier-plate D, and a reciprocating gang or group of drivers of variable lengths, all substantially as and for the purposes described.

6. The combination, in a sole-nailing machine, of the last or work-support, the sole molding or laying pressure-plate C, having the sole-shaping cavity c^4 and the holes c^3, arranged to open into the cavity and arranged in relation to each other, as specified, the sole-nail carrier D, the reciprocating gang or group of sole-nail drivers of variable length, and the sole beating-out form or mold G, all substantially as and for the purposes described.

7. The combination, in a sole-nailing machine, of the last or work-support, the sole molding or laying pressure-plate C, having the sole-shaping cavity c^4, the holes c^3 opening therein, and arranged in relation thereto, as specified, means, substantially as described, for moving the same into and out of operative position, and a sole finishing or beating-out device adapted to be brought into operation after the removal of the sole molding or laying pressure-plate, all substantially as and for the purposes described.

8. The combination, in a sole-nailing machine, of the sole molding or laying pressure-plate C, having the sole-forming cavity c^4 and the holes c^3, arranged in relation to each other as specified, the sole-nail carrier-plate D, and the sole-nail holder H, all substantially as and for the purposes described.

9. The combination, in a sole-nailing machine, of a last or support for the work, the sole molding or laying pressure-plate C, having the sole-shaping cavity c^4 and the holes c^3, the sole-nail carrier D, the sole-nail holder H, and devices for automatically feeding nails thereto, substantially as specified, all substantially as and for the purposes set forth.

10. The combination, in a sole-nailing machine, of the last or work-support for the boot or shoe, the sole molding or laying pressure-plate C, having the sole-forming cavity c^4, and the holes c^3, arranged therein, as described, the sole-nail carrier D, the sole-nail holder H, and devices, substantially as specified, for making sole-nails and feeding them to the holder H, all substantially as and for the purposes described.

11. The combination of the last or support for the boot or shoe, the sole molding or laying pressure-plate C, the lock W, the cam w, and the lever w', all substantially as and for the purposes described.

12. The combination of the last or support for the boot or shoe, the sole molding or laying pressure-plate C, having the sole-holding cavity c^4, and the holes c^3, horizontally movable, as specified, the sole-nail holder D, also horizontally movable, and the presser-block, a gang or group of awls, a gang or group of drivers, and the beating-out form or mold adapted to be reciprocated, and means, substantially as specified, for bringing them successively into operative position, all substantially as and for the purposes described.

13. In a sole-nailing machine, the combination of a last or work-support, a sole molding and clamping plate, C, having the holes c^3, through which the uniting-nails are driven, devices, substantially as specified, for arranging the gang or group of sole-fastenings and feeding them automatically into position for driving, the nail-driving devices arranged to simultaneously drive all the fastenings used in securing the sole to the insole, and a beating-out mold or device adapted to be brought into operation after the nails have been driven, all substantially as and for the purposes described.

14. The combination, in a sole-nailing machine, of the last or work-support, the sole laying or molding presser-plate C, having the sole-shaping cavity c^4 and the holes c^3, the sole-nail carrier, and nail making and feeding devices, substantially as specified, and a cam for automatically varying the length of the nails which are made by the nail-making devices, all substantially as and for the purposes specified.

15. The combination of the reciprocating cross-head with pressure-block G', a gang or group of awls, a gang or group of drivers, and the beating-out form or block G, substantially as and for the purposes described.

16. The combination of the reciprocating cross-head with the pressure-block G', a gang or group of awls, a gang or group of drivers, and the beating-out form or block G, with the connecting-rods p^3, the lower cross-head, P^2, and the cam P^3, all substantially as and for the purposes described.

17. The combination of the cross-head A^2, the connecting-rods p^3, the lower cross-head, P^2, the pulley-shaft o^{11}, the pinions p^5, the gears p^6, shaft o^{17}, and the cam P^3, all substantially as and for the purposes described.

18. The combination of the cross-head A^2, the lower cross-head, P^2, the arms p^8, the cam-pins p^9, all substantially as and for the purposes described.

19. The combination of the cross-head carrying the beating-out block or form, with the driving-pulley and connecting devices, substantially as specified, whereby the machine is stopped at both its lowest and highest positions, all substantially as and for the purposes described.

20. The combination of the last or work-support, the sole molding or laying plate C, the sole-shaping cavity c^4, and the holes c^3, substantially as specified, the cross-head supporting the pressure-blocks, a gang or group of awls, a gang or group of drivers, and the beating-out block, the sole-nail carrier D, the pulley-shaft o^{11}, and connecting devices, substantially as specified, whereby the machine is stopped after every fourth reciprocation of the cross-head, all substantially as and for the purposes described.

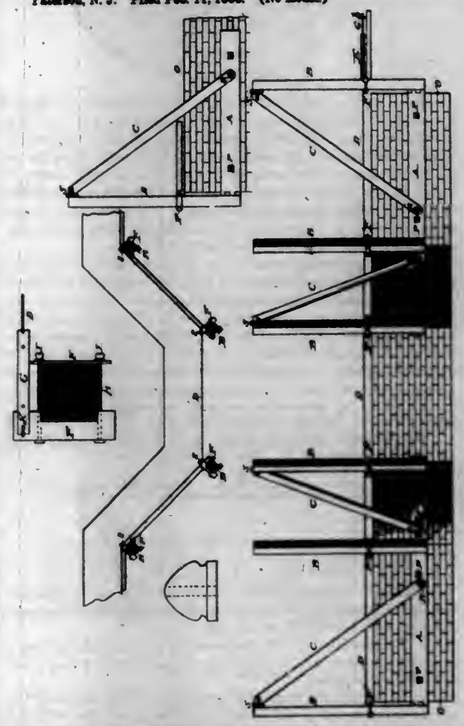
21. The combination of the reciprocating cross-head with a gang or group of drivers, and the yielding sole beating-out block or form, all substantially as and for the purposes described.

22. The combination of the sole molding or laying pressure-plate C, having the sole-forming cavity c^4 arranged to extend crosswise the end of the plate, as described, the holes c^3, the cross-head, and the revolving head having the awl holding block, driver-holding block, and beating-out block carried thereby, arranged to extend their length crosswise the shaft, all substantially as and for the purposes described.

23. The combination of the jack or work-support, arranged to present its side to the line of the horizontal movement of the sole molding or laying pressure-plate C, with the said pressure-plate having the sole-holding cavity c^4 arranged crosswise its end, all substantially as and for the purposes described.

24. The combination of the table c with the horizontally-movable sole molding or laying presser-plate C, having the sole holding and shaping cavity c^4 arranged crosswise therein and near the end thereof, all substantially as and for the purposes described.

322,563. APPLIANCE FOR LAYING BRICKS. MARTIN RAYMOND, Paterson, N. J. Filed Feb. 11, 1885. (No model.)



Claim.—1. The combination of the marked line D, the spiral spring E, and perforated plates G, all substantially as set forth.

2. In a building appliance, the combination of the marked line D, the spiral spring E, and perforated plates G with the marked uprights B and sliding frames F, all substantially as set forth.

3. The combination of the marked uprights B, lateral braces C, thumb screw and nut S, connecting the same, and base-board A, secured to said uprights and braces by the bolts P, as described, and substantially as set forth.

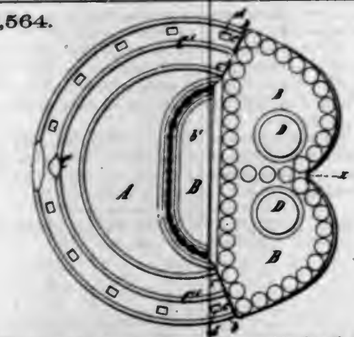
4. The combination, in a building appliance, of the marked line D, spiral spring E, and perforated plate G with marked uprights B, lateral braces C, thumb screw and nut S, connecting the lateral brace and upright, and the sliding frames F, provided with thumb-screws I, pulleys 2, and hook K, all substantially as set forth.

322,564. HORSESHOE. CHARLES SHEATHER, York Terrace, Regent's Park, County of Middlesex, England. Filed June 12, 1884. (No model.)

Claim.—1. In a shoe for horses or mules, the combination of a flexible sole-piece, A, covering the entire under surface of the hoof, a yielding or semi-elastic heel-pad, B, welted or otherwise secured to the sole-piece A, and a metal tip or lunette, C, having square-cut rear ends abutting against the heel-pad and flush therewith, as and for the purpose set forth.



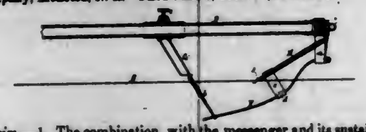
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2. In a shoe for horses and mules, the combination of a flexible sole-piece, A, covering the entire under surface of the foot, a yielding or elastic heel-pad, B, shaped to present a gripping edge or wall in front, the said pad being securely attached to the sole-piece and filling the entire space below the rear portion thereof, and a metal tip or lunette, C, having square-cut ends abutting against the said heel-pad, and adapted to hold the forward portion of the sole-piece A in place upon the hoof and to be flush with the surface of the heel-pad when the parts are properly fitted in place, as and for the purpose set forth.

3. In a shoe for horses and mules, the combination, with a tip or lunette, C, having square-cut heels or ends and holes for its attachment to the hoof by nailing, of an integral sole-piece, A, of durable and flexible material—such as leather—adapted to be interposed and securely held between the said tip and the hoof, and a yielding or semi-elastic heel-pad, B, shaped, as described, to prevent slipping, and welted or otherwise secured to the central and rear portions of the sole-piece, for supporting the rear part of the hoof, substantially as set forth.

322,565. PARCEL-TRANSMITTER FOR STORES. DANIEL M. SKINNER, Centre Sandwich, assignor to the Skinner Cash Transmitter Company, Littleton, N. H. Filed June 8, 1885. (No model.)



Claim.—1. The combination, with the messenger and its sustaining-wire, of the messenger-impelling spring and its supporting-rod, arranged with such wire, substantially as set forth.

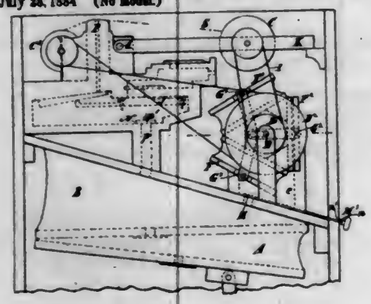
2. The combination, with the messenger and its sustaining-wire, of the impelling-spring and its supporting-rod and stirrap, all being substantially as represented.

3. The combination, with the messenger and its sustaining-wire, and the impelling spring and its supporting-stirrup, and their sustaining-rod, of the damper provided with legs to support it on the impelling-spring and pivoted to a bracket or head extending from such rod, all being substantially as set forth.

4. The combination of the messenger and its supporting-wire with the two rods over the wire at and near its termini, and with the impelling-springs and their supporting-stirrups extending from such rods, all being substantially as set forth.

5. The combination of the messenger and its supporting-wire with the two rods over the wire at near its ends, and with the impelling-springs, their supporting-stirrups, and the dampers extending from the rods, all being arranged and to operate substantially as represented.

322,566. MECHANICAL MUSICAL INSTRUMENT. LUCIUS T. STANLEY, New York, assignor to J. Stewart Morgan, Brooklyn, N. Y. Filed July 23, 1884. (No model.)



Claim.—1. The combination, with a mechanical musical instrument, of a wind-motor operated by a current of wind caused by the bellows or other wind-inducing apparatus and serving to propel the traveling music sheet, card, or tablet, substantially as specified.

2. The combination, with a mechanical musical instrument, of a motor operated by the wind-inducing apparatus and consisting of a number of collapsible and expansible chambers, a number of ports communicating therewith, valves for such ports, a shaft carrying said valves, a crank on said shaft, and links connecting the crank with the said chambers, substantially as specified.

3. The combination, with a mechanical musical instrument, of a wind-motor operated by a current of wind caused by the bellows or other wind-inducing apparatus and serving to propel the traveling music sheet, card, or tablet of the instrument, and a valve for varying the speed of the motor, substantially as specified.

4. The combination, with a mechanical musical instrument, of a wind-motor operated by a current of wind caused by the bellows or other wind-inducing apparatus and serving to propel the traveling music sheet, card, or tablet of the instrument, and a valve for varying the speed of the motor, having an index connected therewith for indicating the time of the music, substantially as specified.

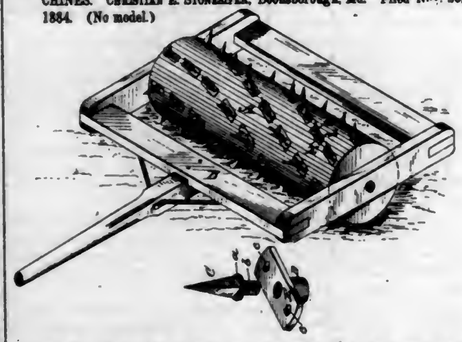
5. The combination, with a mechanical musical instrument, of a wind-motor operated by a current of wind caused by the bellows or other wind-inducing apparatus and serving to propel the traveling music sheet, card, or tablet of the instrument, and a valve adapted to prevent the passage of wind to the reed-cells during rewinding of the music-sheet, substantially as specified.

6. The combination, with a mechanical musical instrument, of the bellows A, the trunk E, ports a' a^2, &c., shaft D, chambers F' F^2, &c., links G' G^2, &c., and valves b e, substantially as specified.

7. The combination, with a mechanical musical instrument, of the bellows A, the trunk E, ports a' a^2, &c., shaft D, chambers F' F^2, &c., links G' G^2, &c., valve b, fixed to the shaft, valve e, loose on the shaft, substantially as specified.

8. The combination, with a mechanical musical instrument, of the bellows A, the trunk E, ports a' a^2, &c., shaft D, chambers F' F^2, &c., links G' G^2, &c., valve b, fixed to the shaft, spring b^2, and the valve e, loose on the shaft, substantially as specified.

322,567. TOOTH-SECURING DEVICE FOR AGRICULTURAL MACHINES. CHRISTIAN K. STONESIFER, Boonsborough, Md. Filed Nov. 20, 1884. (No model.)



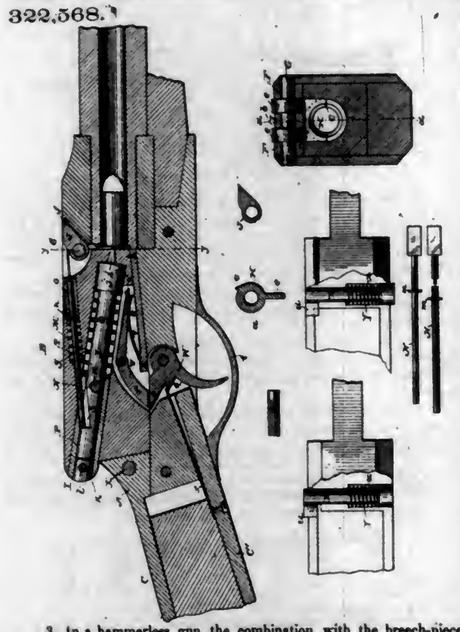
Claim.—In a roller or frame provided with teeth, the combination of interiorly-threaded sockets independent of said frame or roller, and seated in mortises therein, with teeth having threaded shanks to enter said sockets, and flanged to abut against the surface thereof, substantially as shown and described.

322,568. BREECH-LOADING FIRE-ARM. WILLIAM S. TEALL, Little Falls, N. Y. Filed Apr. 14, 1885. (No model.)

Claim.—1. In a hammerless gun, the breech-piece, in combination with the breech-block, the firing-pin, the trigger-lever pivoted intermediately of its length so as to provide two arms, the rear arm, p, of which extends downward and rearward at an angle to the other, and a trigger pivoted in the breech-piece and formed with an inclined arm, s, which extends upward and rearward to act against the rear arm of the trigger-lever, the meeting points of the arms p s being made straight or flat, as set forth.

2. In a hammerless gun, the combination, with the breech-piece, of the hinged breech-block, the firing-pin, the trigger-lever for retaining the latter in its set position, comprising the arms o p, the former having the nib or projection o', and the spring bearing against the arm, and the other arm, p, being set at an angle to the arm o and cut off straight at the end, and the trigger pivoted in the breech-piece, a spring bearing against the trigger, and an upwardly-inclined extending arm, s, provided on the latter and having its end fitting against the flattened end of the arm p, for the purpose set forth.

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3. In a hammerless gun, the combination, with the breech-piece, of the hinged breech-block, the latter being connected to the former by the breech-pin, an extractor mounted loosely on the said pin, and comprising the bifurcated or slotted upper portion, and the depending recessed finger portion, the bifurcated arms of the upper portion having a transverse rib or projection, the cam or eccentric also mounted on the breech-pin and held rigidly thereon by being secured to the breech-piece, the firing-pin or push-bar to set said pin, said push-bar being operated by contact with the eccentric or cam, and a trigger for retaining and releasing the firing-pin, as and for the purpose set forth.

4. In a hammerless gun, the combination, with the breech-piece, of the hinged breech-block, the intersecting chambers K M, formed therein, one above the other, a thimble or bushing, P, fitted in the rear end of the chamber K, and a corresponding thimble or bushing, O, arranged in the front end of the chamber M, a firing-pin working in the chamber K, and a push-bar working in the chamber M and held in engagement with the rear end of the firing-pin, as set forth.

5. In a hammerless gun, the combination, with the breech-piece, of the hinged breech-block, the firing-pin working in the latter, the trigger, a chamber provided in the breech-block, the push-bar working in this chamber and having its rear end held in engagement with the rear end of the firing-pin, and a thimble or bushing provided at the front end of the chamber, as and for the purpose set forth.

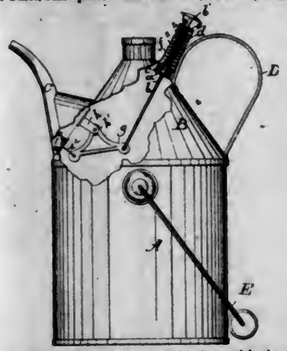
6. In a hammerless gun, the combination, with the breech-piece, of the hinged breech-block, the firing-pin working in the latter, the trigger, a chamber provided in the breech-block, and having a thimble or bushing fitted at its front or outer end, and the push-bar for the firing-pin working in this chamber, the front end of said push-bar being made flat or oblong in cross-section, as set forth.

7. In a hammerless gun, the breech-piece, in combination with the hinged breech-block, an inclined chamber provided in the same, the rear upper end of the chamber being open, a firing-pin working in the chamber, and a push-bar for setting the firing-pin, the latter being pushed back through the chamber, and having its rear end extended a short distance through and beyond the open end thereof, so as to indicate to the operator when the gun is properly set, as set forth.

8. In a hammerless gun, the breech-piece, in combination with the breech-block, a chamber provided in the latter, and having its rear upper end open, a thimble or bushing located at the open end of the chamber, a firing-pin working in the chamber, a push-bar for setting the firing-pin, the latter being pushed back through its chamber, and having its rear end extended a short distance beyond the open end thereof, so as to indicate to the operator when the gun is properly set, as set forth.

9. In a hammerless gun, the combination, with the breech-piece, of the hinged breech-block, an inclined chamber provided in the same, and having its rear upper end open, as described, a thimble or bushing located at the open end of the chamber, slots in the walls of the thimble or bushing, a firing-pin working in the chamber and having pins or studs to work in the slots and a push-bar for the firing-pin, as set forth.

322,569. OIL-CAN. AUGUSTUS TUFTS, Malden, Mass., assignor to Emily H. Tufts, same place. Filed Feb. 16, 1885. (No model.)

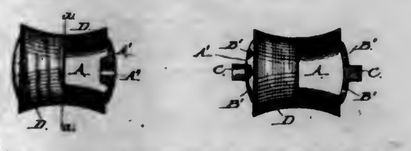


Claim.—1. In an oil-can, the combination, with the top portion, B, of a vent-valve comprising a valve-seat and valve-plate secured to a stem, to which also is attached a thumb-plate, a spiral spring surrounding the stem, and a tube, f, surrounding the spiral spring and being secured to the valve-seat, substantially as described.

2. In an oil-can, the combination, with the top portion, B, of a vent-valve comprising a valve-seat and valve-plate secured to a stem, to which also is attached a disk and thumb-plate, a spiral spring interposed between the disk and valve-seat surrounding the stem, and a tube, f, provided with air-inlets surrounding the spiral spring and being secured to the valve-seat, substantially as described.

3. In an oil-can, the combination, with the top portion, B, having the spout and the vent-valve, as described, of a discharge-valve comprising a cup-shaped seat secured to the top portion at the entrance to the said spout, a ball-valve co-operating therewith, valve-stem and bell-crank lever pivoted to a bracket connecting the said valve-stem with the rod or stem of the vent-valve, substantially as described.

322,570. ROLL FOR HARNESS LOOP-TUGS. JULIUS WAGNER, Reading, Pa. Filed May 21, 1885. (No model.)



Claim.—1. As an improved manufacture, a shell-roll with central bearings covered with rubber or its equivalent, and adapted for use with a harness loop-tug, as shown, described, and for the purpose set forth.

2. As an improved roll for harness loop-tugs, a metallic shell provided with end perforations and integral pivots or axles, in combination with an elastic cover, substantially as shown, and for the purpose set forth.

322,571. SEWING-MACHINE. SIMON W. WARDWELL, Jr., Providence, R. I. Filed June 9, 1884. (No model.)

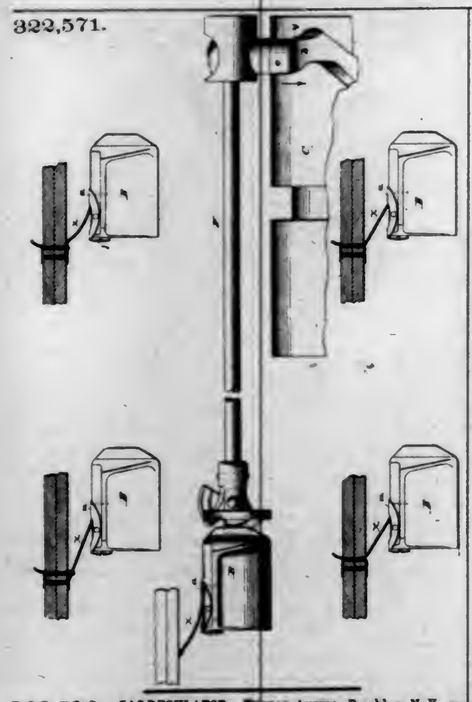
Claim.—1. The combination, with the shuttle and needle and operating appliances of a sewing-machine, of means, substantially as described—for example, a cam—for slackening the shuttle-thread after the shuttle has passed through the loop of needle-thread sufficient to allow its being drawn up and bent into the fabric without offering resistance to the needle-thread until it is bent into the fabric, substantially as described.

2. The combination, with the shuttle and needle and operating parts of a sewing-machine, of means, substantially as described—for example, a cam—for first slacking the shuttle-thread while it is being drawn up and bent into the fabric, and for then applying tension thereto to tighten the stitch, substantially as described.

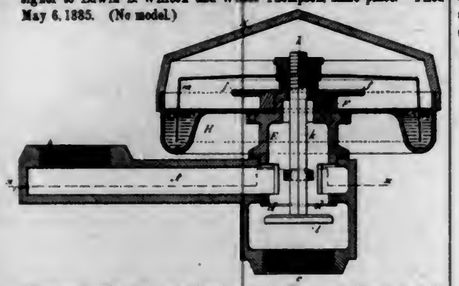
3. The combination, with the shuttle of a sewing-machine, of a shuttle-driver, as a cam having a recessed portion constructed to impart a slight backward motion to the shuttle after the shuttle-thread has been carried through the loop of the needle-thread, whereby the shuttle-thread may be drawn upward without tension until the loop occupies its proper position in the fabric, substantially as set forth.

4. The combination, with the shuttle of a sewing-machine, of a shuttle-driver, and a cam constructed to impart a short backward motion to the shuttle after it has passed through the loop of needle-thread, and to hold it while the slackened thread is drawn up and bent into the fabric and until the needle-thread completes its upward movement, substantially as described.

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322,572. GAS-REGULATOR. THOMAS ANGELL, Brooklyn, N. Y., assignor to Edwin B. Willcox and Wilbet Thompson, same place. Filed May 6, 1885. (No model.)



Claim.—1. The valve-seat having a tubular connection, in combination with the case extending from the inlet to the outlet, and having a partition into which the valve-seat is screwed, a mercury-holding bowl attached to the tubular connection, and an inverted cup attached to the valve-stem, substantially as specified.

2. In a gas-regulator, a separate mercury-holding bowl having an annular recess for the mercury and a central hub rising above the bottom of the bowl, in combination with the case that connects the gas-pipes and a tubular connection between the hub and the case, substantially as set forth.

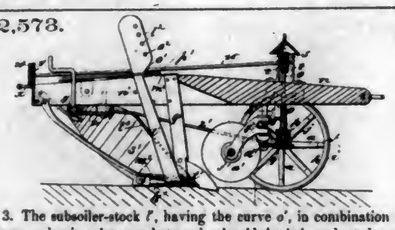
3. The inverted cup, the valve, and the stem to which the cup is attached, in combination with a mercury-holding bowl, and a tubular vertical connection passing through the case and screwed into the partition and having a valve-seat at the lower end, so that the valve and seat can be removed bodily by unscrewing the bowl and its tubular connection, substantially as specified.

322,573. PLOW. CHARLES ATKINSON, Chicago, Ill. Filed Oct. 7, 1884. (No model.)

Claim.—1. The beam *n*, mounted on the main axle by the vertical yoke *o* and bolster *p*, and geared to said yoke by pinion *s* and rack f^3, said pinion having a shaft extending to the rear of the beam and formed with shifting and locking devices, substantially as described.

2. The combination, with the revolving cutter *a'*, having hubs *b*, provided with flanges b^2 and *j'*, and pivot-bolt *f'*, passing through said hubs, of the yoke-plates *d'*, having sockets *e'* for said hubs, and flanges a^2, and annular recesses j^2 for said flanges *j'*, packing-washer *i'*, and spindle *h'*, substantially as set forth.

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3. The subsoiler-stock *l'*, having the curve *o'*, in combination with the beam *n*, having slot *m* and stop-pin *n'*, said slot being adapted to hold the subsoiler parallel to the plow when said curved portion *o'* of the stock descends into the slot, and also adapted to allow said stock to be shifted back to raise the point of the subsoiler, substantially as described.

4. The combination of spring-catch *p'* and pin *n'* with the beam *n* and subsoiler-stock, said stock having the curved section *o'*, substantially as described.

5. The flanges *j'* and packing-washers *i'*, combined with the cutter-hub *b'*, and the plates *d'* of the caster-stock, said plates having sockets *e'* for the hub and shoulders for said flanges, substantially as described.

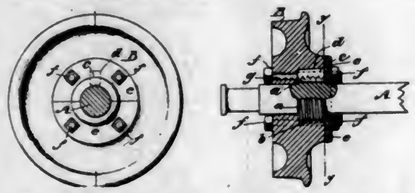
6. The combination of flanges a^3 on the cutter-stock, plates *d'*, and flanges b^3 on the collar-flanges *c'*, with the cutter-hub and the cutter-wheel stock, substantially as described.

322,574. VEHICLE-SPRING. JOHN A. BIRDNER, New Lexington, Ohio, assignor to himself, Albert Bringardner, and William Bringardner, all of same place. Filed Dec. 23, 1884. (No model.)



Claim.—The compound spring comprising the single upper spring widened at its mid-length and having narrowed outer portions or ends provided with eyes, in combination with the sectional elliptic lower springs bolted or connected directly to the widened surface of the upper single spring, substantially as shown and described, and for the purpose set forth.

322,575. CAR WHEEL AND AXLE. JOSEPH H. BLACK, Columbia, Pa. Filed May 9, 1885. (Model.)



Claim.—1. The axle A, formed with screw-threaded collar *a*, slotted at *a'*, in combination with wheel A, having screw-threaded recess *b*, and slotted at *d* to receive key *c*, substantially as described.

2. The wheel B, having screw-threaded recess *b*, and recess *d* for a key, and the axle A, having screw-threaded collar *a*, in combination with the washers *e e*, placed upon the axle and bolted to the wheel, substantially as and for the purposes set forth

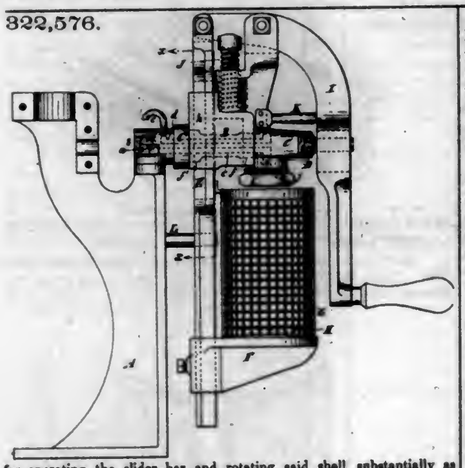
3. The wheel A, having screw-threaded recess *b*, and notched at *d*, and formed with the passage *g*, substantially as described.

322,576. BOTTLING-MACHINE. JOHN A. BROWN, Bloomfield, N. J., assignor of two-thirds to William F. Dorflinger, New York, N. Y. Filed Dec. 27, 1884. (No model.)

Claim.—1. In a bottling-machine, the combination of the plug of a cock provided with a socket, a rotary shell surrounding the plug, a slider-bar extending past said plug and having a connection with the shell, a cage or bottle-holder, an arm on the slider-bar for supporting a bottle, a lever fulcrumed on the shell or an appurtenance thereof for operating the slider-bar, and a bracket affording a common support to all said parts, and to which a pump may be connected at pleasure, substantially as specified.

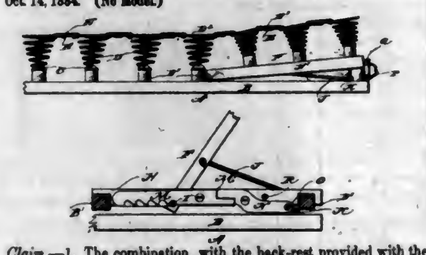
2. In a bottling-machine, the combination of the plug of a cock having an induction-port, a rotary shell mounted on the plug and containing a port terminating at one end in the same plane as one end of the said induction-port, a slider-bar extending past said plug and having a connection with the shell, a cage or bottle-holder, an arm on the slider-bar for supporting a bottle with its mouth in line with the said port in the shell, and a lever fulcrumed on the shell or an appurtenance thereof

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for operating the slider-bar and rotating said shell, substantially as specified.

322,577. BED-BOTTOM. JOHN H. BROWN, Oskaloosa, Iowa. Filed Oct. 14, 1884. (No model.)

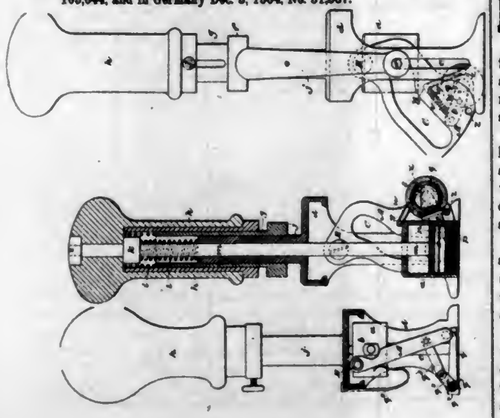


Claim.—1. The combination, with the back-rest provided with the transverse rod I, of the rack-levers M engaging therewith, the horizontal actuating-levers N, operating against the rack-levers to withdraw them out of engagement, the said actuating-levers extending forward to the front end of the bed-bottom so as to be in a convenient position for operation at the end of the bed, as set forth.

2. The combination, with the back-rest provided with the rod I, of the rack-levers M engaging therewith and having their front ends shouldered, the actuating-levers N, correspondingly shouldered at their rear ends to act upon the rack-levers and extending forward within the bed-bottom to the front end thereof, a rod, O, connecting the front ends of the actuating-levers, and a cord, P, attached to the rod O, and extending out from the front end of the back-rest, as set forth.

3. The combination, with the bed-springs, of the W-shaped links connecting the same, and the hook-rods connecting said links, as set forth.

322,578. APPARATUS FOR AFFIXING STAMPS. VICTORIA L. H. BUNDEEN, London, England. Filed Dec. 12, 1884. (No model.) Patented in England Apr. 19, 1884, No. 6,568; in France Nov. 28, 1884, No. 165,644, and in Germany Dec. 3, 1884, No. 31,587.



Claim.—1. An apparatus for holding and affixing stamps and labels, comprising a stamp-box constructed to move up and down in a frame, and provided with an operating-handle, a water-receptacle arranged below the stamp-box normally and designed to moisten the surface which is to receive the stamp, and the mechanism, substantially as described, whereby the descent of the stamp-box is made to actuate the water-receptacle and cause it to first moisten the surface and then move out of the way of the stamp-box, substantially as herein set forth.

2. In an apparatus for holding and affixing stamps and labels, the combination of the stamp-box open at the bottom and constructed to move up and down in a frame and provided with an operating-handle, the slotted pivoted side frames, A A, the slots in which are engaged by the arms *b b* on the stamp-box, said arms *b b* and the water-receptacle mounted on the pivoted side frames, substantially as described, whereby the vertical movement of the stamp-box imparts a swinging movement to the water-receptacle, substantially as and for the purposes set forth.

3. The combination, with the inclosed water-receptacle *q*, having perforations at the lower part and being covered with absorbent material, and having a charging-hole filled with a stopper, of the spring *w*, for returning said receptacle to its normal position after action, and the stop *z*, substantially as set forth and shown.

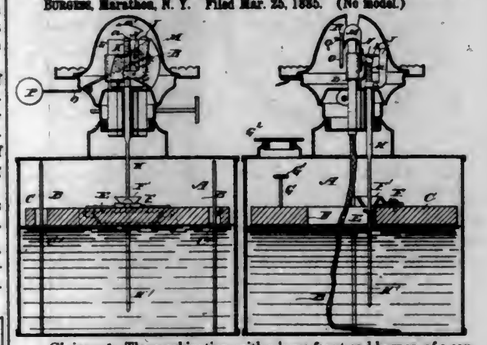
4. In an apparatus for affixing stamps and labels, the combination, with the inclosed water-receptacle *q*, constructed and covered as described, and the pivoted side frames provided with a stop, *z*, of the levers *t t*, in which said receptacle is mounted, the springs *v v*, to keep the receptacle properly pressed down, and the spring *w*, to hold the receptacle up to the stop, substantially as and for the purposes set forth.

5. The combination, in a label holder and affixer, of the following devices, namely: the stamp-box *a*, open at bottom, arms *b b*, fixed frame *d*, slots *c c*, legs *e e*, bracket *f*, sleeve *g*, handle *h*, spring *i*, water-receptacle *q*, and slotted pivoted side frames, A A, carrying said receptacle, substantially as set forth and shown.

6. The combination, in a label holder and affixer, of the following devices, namely: the stamp-box *a*, open at bottom, arms *b b* fixed frame *d*, slots *c c*, legs *e e*, bracket *f*, sleeve *g*, handle *h*, spring *i*, tube *j*, boss *k*, spring *l*, rod *m*, piston *n*, water-receptacle *q*, and slotted pivoted side frames, A A, carrying said receptacle, substantially as set forth and shown.

7. The combination, in a label holder and affixer, of the following devices, namely: the stamp-box *a*, open at bottom, arms *b b*, fixed frame *d*, slots *c c*, legs *e e*, bracket *f*, sleeve *g*, handle *h*, spring *i*, tube *j*, boss *k*, spring *l*, rod *m*, piston *n*, water-receptacle *q*, levers *t t*, springs *v v*, spring *w*, stop *z*, and slotted pivoted side frames, A A, substantially as set forth and shown.

322,579. AUTOMATIC LAMP-EXTINGUISHER. WINFIELD S. BURGESS, Marathon, N. Y. Filed Mar. 25, 1885. (No model.)



Claim.—1. The combination, with a lamp fount and burner, of a cap for covering the wick-tube, a rod for holding the cap from the wick-tube, a float through which said rod loosely passes, and devices for locking the rod on the float at any desired point of the rod, substantially as herein shown and described.

2. The combination, with a lamp fount and burner, of a cap covering the top of the wick-tube, a weight or spring acting on the said cap, a rod for holding the cap off of the wick-tube, a float in the fount, through which float the rod loosely passes, and of mechanism for locking the float on the rod at any desired point of the rod, substantially as herein shown and described.

3. The combination, with a lamp-burner, of a float in the fount and a rod projecting upward from said float, the cap M, pivoted on the wick-tube, the guide-lug K on the wick-tube, the lug N on the cap, and a weight or spring acting on the cap, substantially as herein shown and described.

4. The combination, with a lamp-fount, a burner, a pivoted cap provided with a lug, N, and a weight or spring for actuating the said cap, of the float C, provided with the aperture D, the spring E, rod H, and the handle J on the upper end of the said rod, substantially as herein shown and described.

5. The combination, with a lamp-fount, of a burner, the pivoted cap M, the rod H, having its lower part flattened, the float C, the spring E, and a spring or weight for actuating the cap, and projections or catches on the cap, which projections or catches can engage the rod H, substantially as herein shown and described.

6. The combination, with a lamp-fount, of a burner, the pivoted cap M, a weight or spring for actuating the same, the float C, having the aperture D, the funnel F, the spring E, the rod H, and catches or projections on the cap for engaging the rod H, substantially as herein shown and described.

7. The combination, with the fount A, of the rods B, the float C, a burner on the fount, the cap M, the rod H, a spring for locking the rod on the float, and projections on the cap M, which projections can engage the rod H when raised, substantially as herein shown and described.

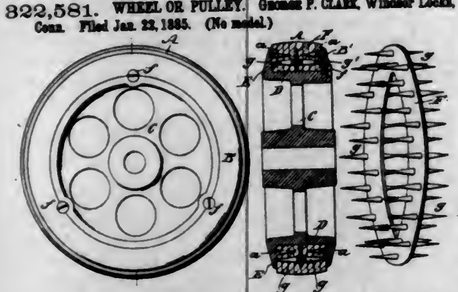
322,580. STOVE. THOMAS BURKHARD, Brooklyn, N. Y. Filed Feb. 19, 1885. (No model.)



Claim.—1. The combination, with the walls and grate of a stove, of a bottom composed of a cast-metal base-plate, D, having a downwardly-projecting rim, *e*, whereby it is supported, and the cast-metal upper plate, D′, supported upon the base-plate, and forming between them the air-space *h*, and passages *h′*, leading through the walls of the stove into the air-space, substantially as herein described.

2. The combination of the outer shell or casing, *a*, and grate C C′, the ribbed cast-metal base-plate D, having a downwardly-projecting rim, *e*, on which the shell or casing *a* is slipped and secured, the inner metal shell, *a′*, extending downward to the base-plate, and the filling a^2, between the shells *a a′*, the ribbed cast-metal upper plate, D′, having a downwardly-projecting rim, *g*, fitting within the inner shell, *a′*, and resting upon the base-plate D, whereby an air-space, *h*, is formed between the plates D and D′, and passages *h′*, leading through the shells *a a′* into said air-space, substantially as herein described.

322,581. WHEEL OR PULLEY. GEORGE P. CLARK, Windsor Locks, Conn. Filed Jan. 22, 1885. (No model.)



Claim.—1. As a new article of manufacture, a wheel or pulley composed of a body of paper, leather, rubber, or other similar material, compressed and held by penetrating points and side plates, substantially as described.

2. A wheel composed of the casting C, formed with plain surface D and flange E, in combination with body or tire A, of compressed material, side plate, B′, and penetrating points *a*, substantially as set forth.

3. The ring F, formed with penetrating points *g*, in combination with casting C, flange E, and plate B′, and compressed tire or body A, the flange and plate B being provided with penetrating points, substantially as described.

4. The method herein described of forming wheels of paper, leather, rubber, or other compressible material, which consists in compressing the paper, leather, rubber, or other material between side plates, inserting suitable penetrating points to hold the material in a compressed state and to hold the side plates, and, finally, in working down or turning the outer surface of the compressed material to the desired shape, as set forth.

322,582. IMITATION-BEAD EMBROIDERY. EMIL CORMELY, Paris, France. Filed Apr. 29, 1885. (No specimens.)

Claim.—1. An article of lace or other fabric ornamented by a flat twisted strip of shining material united thereto, substantially as described.

2. An article of lace or other fabric having secured thereon by stitches a strip of leather, metal, or other shining substance laid in successive spirals, substantially as and for the purpose set forth.

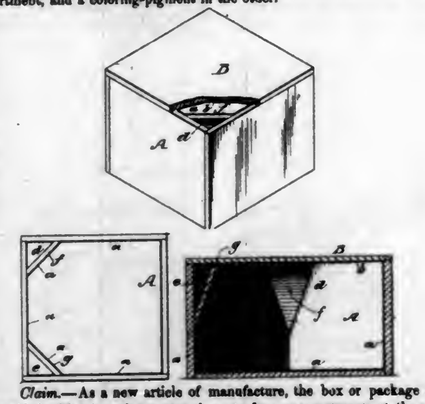


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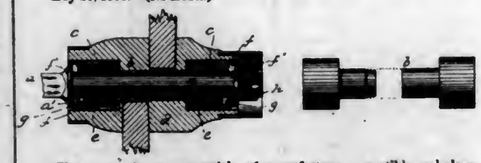
322,583. PACKAGE FOR WHITEWASH. CHARLES F. CROCKETT, Mount Vernon, N. Y. Filed May 16, 1885. (No model.)

Brief.—Covers inside of the box with a coating of beeswax and resin. Packs slaked lime in the box proper, glue in one corner compartment, and a coloring-pigment in the other.



Claim.—As a new article of manufacture, the box or package A, provided with triangular corner pieces to form compartments at the upper corners of the box, substantially as and for the purposes described.

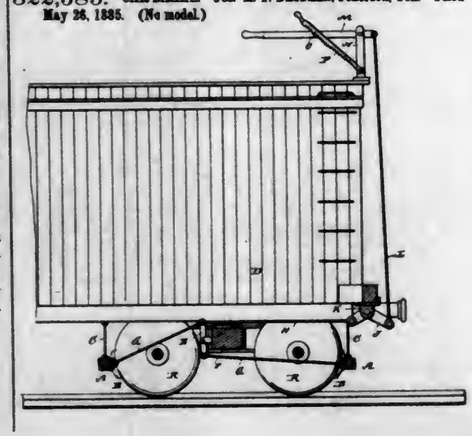
322,584. AXLE-BOX. EVERETT P. CURTISS, Hartford, Conn. Filed May 25, 1885. (No model.)



Claim.—1. As a new article of manufacture, a partible axle-box having on each end outward-opening sockets, which are larger in diameter than the central opening through the axle-box and form chambers adapted to contain anti-friction rollers, all substantially as described.

2. In combination, a partible axle-box having on each end outward-opening sockets, anti-friction bearings fitted in said sockets with their inner diameter less than the inner diameter of the axle-box, and an axle-arm, all substantially as described.

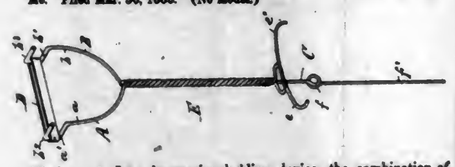
322,585. CAR-BRAKE. JOS. M. T. DAUDELIN, Jefferson, Tex. Filed May 26, 1885. (No model.)



Claim.—1. The combination, with a car, of an elbow-lever pivoted on the end of the car at the bottom, a lever pivoted on a standard on the roof of the car, a rod connecting the said lever with the elbow-lever on the bottom of the car, a rod for connecting the said elbow-lever with the brake, a toothed bar pivoted on the standard on the roof, and a pin projecting from the side of the lever pivoted on the standard, substantially as herein shown and described.

2. The combination, with a car, of a lever, E, pivoted on the truck, rods G, connecting the ends of the lever with the brake-bars A, the elbow-lever J, the rod H, connecting the upper end of the lever E with the inner end of the lever J, the standard N on the roof of the car, the lever M, pivoted on the same, the rod L, connecting the levers M and J, the pin O on the lever M, and the toothed bar P, pivoted to the standard N, substantially as herein shown and described.

322,586. HARMONICA-HOLDER. WILLIAM H. DAWLEY, St. Louis, Mo. Filed Mar. 30, 1885. (No model.)



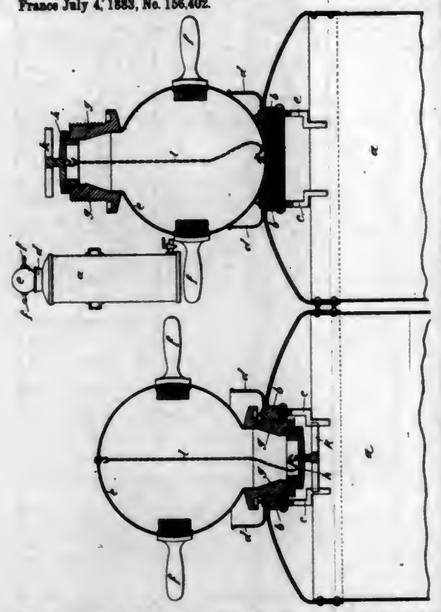
Claim.—1. In a harmonica-holding device, the combination of wire strands A B, bent outward at *a b*, and rebent to form the corner-brackets *a′ b′*, substantially as and for the purposes set forth.

2. In combination with the wires A B, forming the holder, consisting of the corner-brackets *a′ b′*, the wire C, twisted spirally with said wires A B, and forming a central stem, substantially as set forth.

3. The combination of the wires A B C, bent to form the brackets at *a′ b′*, the central stem, E, and branches *e e′*, as and for the purposes set forth.

4. The improved mouth-harmonica-holding device, consisting of the wires A B C, bent to form the corner-brackets at *a′ b′*, the spiral central stem, E, the side legs *e e′*, and the vertical leg C and fastening-cord G, substantially as and for the purposes set forth.

322,587. CHEMICAL FIRE-EXTINGUISHER. JOSEPH A. DE MAUCLERC, Paris, France. Filed May 14, 1885. (No model.) Patented in France July 4, 1883, No. 156,402.



Claim.—1. In a fire-extinguisher, the combination, with a vessel for holding the alkaline liquid, of a vessel for holding the acid, the two vessels being fitted for screw-threaded connection, and one of said vessels having an oppositely-screw-threaded stopper, together with stops on one vessel and arms on the stopper of the other vessel, said arms and stops being arranged for engagement to effect the removal of said stopper upon the last twin or two in one direction of one vessel upon the other vessel, substantially as and for the purpose set forth.

2. In a fire-extinguisher, the vessel for holding the alkaline liquid and having a depending collar provided also with depending stops or pendants, in combination with the vessel having a neck fitted for screw-threaded connection with the said collar, and the stopper having an opposite screw-threaded connection with said neck, and having arms adapted for engagement with the stops or pendants of said neck, substantially as and for the purpose set forth.

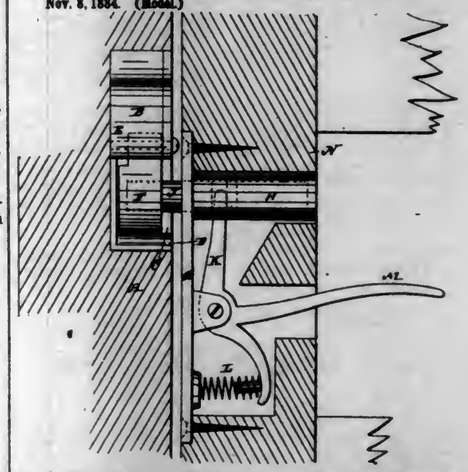
3. In a fire-extinguisher, the alkaline-containing vessel having fixed around the outside of its collar a funnel which serves as a seat to hold the spherical acid-containing vessel superposed thereon, substantially as and for the purpose set forth.

322,588. SHUTTER-WORKER. JOHN DIEHL, Harlan, Iowa. Filed Aug. 23, 1884. (Model.)



Claim.—In a shutter-worker, the spindle having a worm or screw thread upon one end, in combination with the hinge-leaf with its socket or eye provided with external teeth formed directly in the surface of said socket or eye, substantially as and for the purpose set forth.

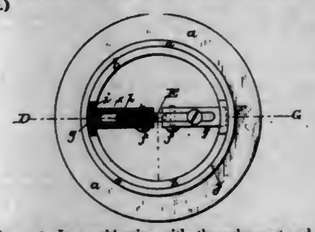
322,589. GATE-LATCH. SAMUEL B. ELSEY, Morrisville, Mo. Filed Nov. 8, 1884. (Model.)



Claim.—1. The casing B, having the opening C on the lower half of its outer edge and side, the curved part E, projecting over the open edge, and the bottom D, curved downward and outward toward the open edge, in combination with the latch F, pivoted in the projecting part, substantially as described, and for the purpose specified.

2. In a gate-latch, the face-plate G, having the tubular casing H, slotted on its under side, and the bolt J within the casing, in combination with the lever K, pivoted below the bolt J, and connected therewith through the slotted casing H at its upper end, the spring L, pressing the lower end of the lever outward, and the operating-handle M, substantially as set forth.

322,590. LOCK-VALVE. FRANK ENGELHARD, Springfield, Mass., assignor of one-half to D. S. Loomis, same place. Filed Apr. 7, 1884. (No model.)



Claim.—1. In combination with the valve-seat and the valve *b*, formed with an opening to receive a sliding block and provided with

openings in the lower part of its side wall, the sliding block *c*, formed with slots *e e*, and the locking-bolts *g g*, having their inward ends secured to slide within the slots of the sliding block, and their outward ends projected through the openings in the side wall of the valve, substantially as described.

2. In combination with the valve *b*, formed with an opening to receive a sliding block and provided with retaining bolts or pins *h h* in its under side, the sliding block *c*, formed with slots *e e*, and the locking-bolts *g g*, formed with slots *k k*, and having their inner ends secured to slide within the slots of the sliding block, and held in position by the retaining bolts or pins, substantially as described, and for the purposes stated.

3. The combination of the valve-seat *a* and valve *b*, formed with a slot to receive a sliding block and having perforated lugs *i i*, and provided with retaining-bolts *h h*, with the sliding block *c*, formed with slots *e e*, and the locking-bolts *g g*, having slots *k k*, and having their inner ends secured to slide within the slots of the sliding block and held in position by the bolts and lugs of the valve, substantially as described.

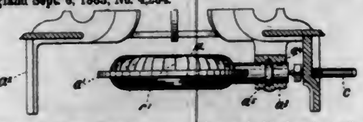
4. In combination with a lock-valve formed with a slot to receive a sliding block, and sliding bolts fitted to the under side of the valve, a sliding block within the slot of the valve, and having its lower end arranged to engage the inner ends of the sliding bolts, substantially as and for the purpose stated.

322,591. CAR-COUPLING. HENRY FIELD, Jr., New Bedford, Mass. Filed Apr. 23, 1885. (No model.)



Claim.—The improvement in car-couplings, substantially as herein described and shown, consisting of the draw-head having a slot, C, a lug, D, pivoted at one end in said slot, and provided near the upper edge of its opposite end with a transverse aperture, E, and a hook, F, pivoted at one end to the draw-head, and having its other end adjustable into the aperture E, whereby the lug D may be locked in coupled position, substantially as set forth.

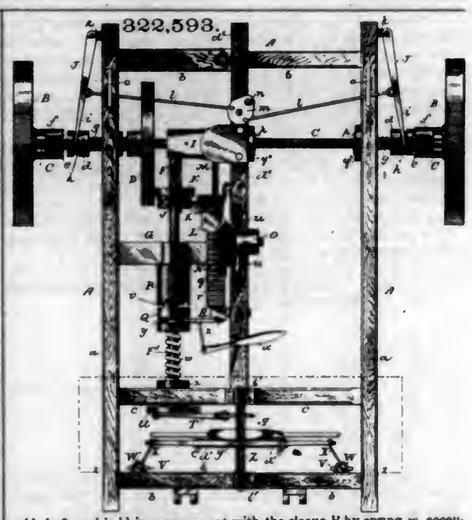
322,592. GAS-STOVE. THOMAS FLETCHER, Warrington, County of Lancaster, England. Filed May 15, 1884. (No model.) Patented in England Sept. 6, 1883, No. 4,284.



Claim.—1. A gas-burner mounted in a suitable bearing, a^3, on the table a^2, and adapted to be reversed, substantially as and for the purposes described.

2. The combination of a gas-burner mounted in a bearing, a^3, and provided with a projecting piece or handle, c^3, so as to be easily reversed, and a suitable table for supporting it, as and for the purposes specified.

322,593. SEED-PLANTER. JACOB FRIDAY, Bound Brook, N. J. Filed May 9, 1885. (No model.)



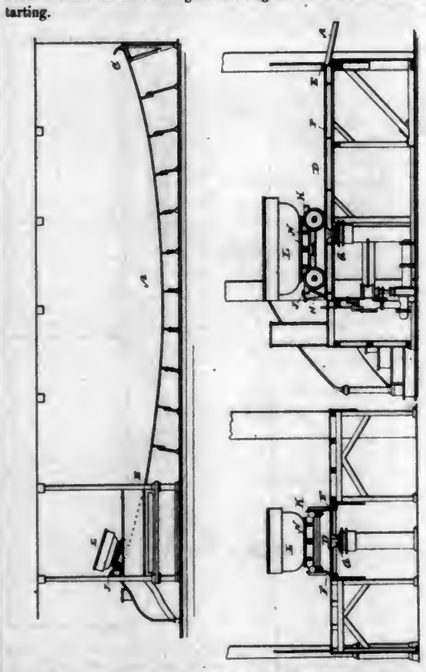
Claim.—1. In a seed-planter, the combination, with the frame A, axle C, and drive-wheels B, of toothed clutches *f*, attached to the inner face of the wheels, spring-held toothed clutches *d*, loosely mounted upon the axle C and having circumferential grooves *h*, forked levers *j*, pivoted to the frame and engaging said grooves *h*, disk *m*, mounted on the framing, and rods *l*, connecting said disk *m*, forked levers *j*, friction-disk D, mounted upon axle C, longitudinal shaft connecting at one end with the dropping mechanism, and friction-disk E, adjustably mounted upon the other end of said shaft to permit of said disk E engaging the disk D at different parts of the face thereof, substantially as and for the purpose set forth.

2. The combination, with the wheels B and axles C, of a friction-disk, D, mounted upon said axle, two-part shaft F F', friction-disk E, having a circumferential groove and loosely mounted upon said shaft with capability of sliding thereon and across the face of the disk D, to engage frictionally with the same in different positions, cross-bars G and *c*, toothed sliding block L, having forked arms K, adapted to engage the friction-wheel E, pivotal lever N, having in its lower end or under side teeth *r* and *s*, and spring-pawl *u*, substantially as and for the purpose set forth.

3. The combination, with the frame A, wheels B, and axle C, of the friction-disks D E, two-part shaft F F', notched block or sleeve P, grooved notched collar Q, loosely mounted upon the front end, F', of said shaft, and held in engagement with the sleeve P' by spring *w*, eccentric disk U, keyed upon said shaft F', dropper-arm S, shaft *d'*, and arm Y, connecting said disk U and shaft *e'*, forked bar R, pivotally connected to the longitudinal bar $d^{\times}$ and engaging the collar Q, and the pivoted lever *a'*, for operating said collar Q, substantially as and for the purpose set forth.

322,594. PARABOLIC RAILWAY AND CAR, &c. MORITZ GEBER, Berlin, Germany. Filed Nov. 12, 1884. (No model.) Patented in Belgium Sept. 22, 1882, No. 42,670; in Austria-Hungary Dec. 20, 1883, No. 37,274 and No. 51,506, and in Germany Apr. 9, 1884, No. 26,518.

Brief.—An inclined railway in which the hinged platform is provided with a hook for catching and holding the car until in readiness for tarting.

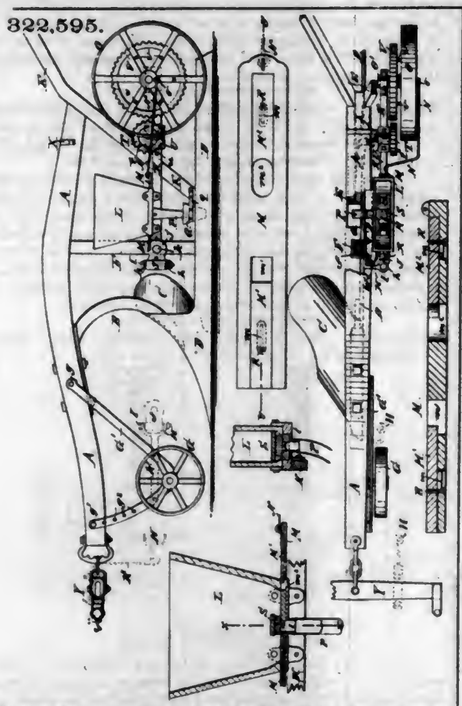


Claim.—The combination, with parabolic rails, of a hinged platform, a hook on the same, and a hoisting or lifting device for raising the free end of the platform, substantially as herein shown and described.

322,595. COMBINED PLOW AND SEEDER. ALLEN GLENN, Ree Heights, Dak. Filed Aug. 20, 1884. (No model.)

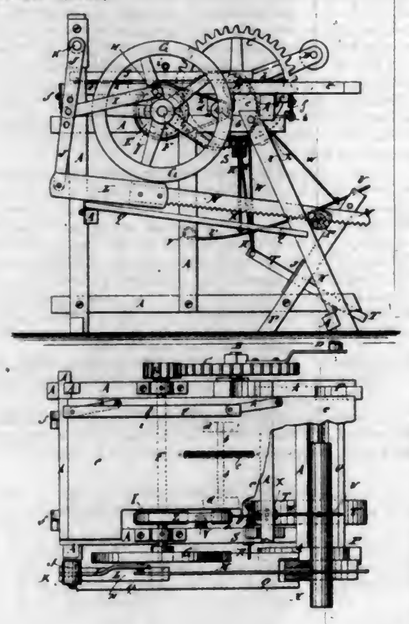
Claim.—In a seeding attachment, the bar K, the head J, and yoke

322,595.



H, pivotally connected to the forward end of said bar, the seed-hopper, its slide, the hopper-wheel O, having a wrist-pin, *o*, a connecting-rod, a gear-wheel, V, connected to the inner side of said hopper-wheel, and the gear-wheel T, adjustably mounted on the bar K between the gear V and the seed-slide, and provided with a wrist-pin, *t*, whereby, when it is desired to increase the number of hills, the wrist-pin *o* may be disconnected from the seed-slide and the same be operated from the gears T V, as described.

322,596. DRAG-SAW. ROBERT GURNEY, Kirkwood, Mo. Filed Jan. 20, 1885. (Model.)



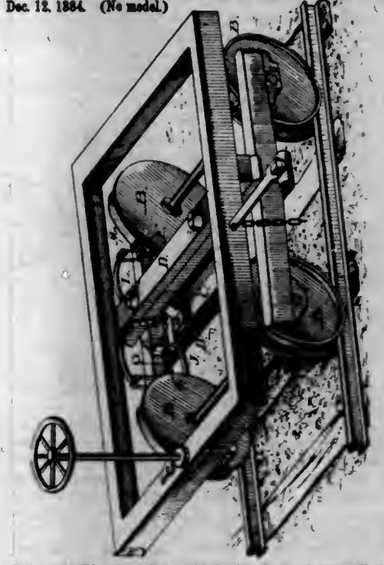
Claim.—1. In a sawing-machine, the frame A, the gears C E, shaft F, pulley Y thereon within the frame, fly-wheel G thereon outside of the frame, the bar J, pivoted at its upper end to the rear vertical side bar of the frame, the rod I, connecting the bar J with a pin on the fly-wheel, the heavy bar L, and the drag-saw secured to the forward end of the same outside of the frame, the table *e*, hinged at its rear end to the rear upper end of the frame, the mandrel *b*, mounted on the under side of the table and carrying the circular saw *c*, and the pulley *a* and the belt Z, connecting pulleys Y and *a*, whereby the table and the circular saw may be swung over behind the frame when not in use without interfering with the drag-saw and its mechanism, substantially as set forth.

2. In a sawing-machine of the character described, the frame A, the gears C E, shaft F, and pulley Y thereon, in combination with the table *e*, hinged at its rear end to the upper rear end of the frame and provided with the mandrel *b* on its under side, the saw *c* and pulley *a* thereon, the belt Z, connecting said pulleys, and the cross-bar j^2 on the under side of the table, near its forward end, in front of the front upper cross-bar of the frame A, whereby the table may be folded back, as described, and the strain on pulley *a* be relieved by the cross-bar j^2, substantially as set forth.

3. The combination, in a sawing-machine, with the saw-buck and the drag-saw, of the spring-rod U, exerting a downward pressure at its free end, secured at V to the frame A, and extending transversely across the saw-buck, the cord W, passing over the pulley X on the upper forward part of the frame, and the foot-lever T, pivoted to the lower front cross-bar of the frame and connected to the cord W at its free end, substantially as set forth.

4. The combination, in a sawing-machine, with the frame A, the saw-buck N P at the front thereof, and the drag-saw M, of the board Q, pivoted to the rear end of the frame below and independent of the saw, the spring-rod U, secured at V to the frame and extending transversely across the saw-buck, the foot-lever T, pivoted to the lower forward end of the frame below the saw-buck, and the cords R W, secured, respectively, to the free ends of the board Q and spring-bar U and to the foot-lever, whereby the said cords will be simultaneously operated to raise the board Q and the spring-rod, substantially as set forth.

322,597. CAR-BRAKE. CAMILLUS S. HART, Winchester, Va. Filed Dec. 12, 1884. (No model.)



Claim.—1. The shaft C, provided with the crank-lever H, in combination with the spiral springs G, placed between the wheels and in the horizontal plane of the axles, the spring-cores *e*, and brake-pads F, substantially as and for the purpose set forth.

2. The shaft C, provided with the crank H, in combination with the spiral springs G, yokes E, and spring-cores *e*, all constructed and arranged to operate substantially as and for the purpose set forth.

3. The shaft C, provided with the crank H, the spiral spring G, yokes E, spring-cores *e*, and brake-pads F, all constructed and arranged to operate substantially as and for the purpose set forth.

4. The brake-pads F, provided with the guides J, in combination with the brackets L and loops M, substantially as and for the purpose set forth.

5. The pads F, provided with the guides J, the brackets L, and

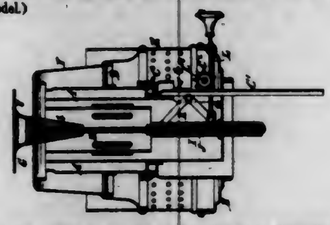
loops M, in combination with the springs G and spring-core *e*, all constructed to operate substantially as and for the purpose set forth.

322,598. SYRINGE. HARMANUS HART, New York, N. Y., assignor of one-half to Charles T. Moore, same place. Filed May 1, 1885. (No model.)



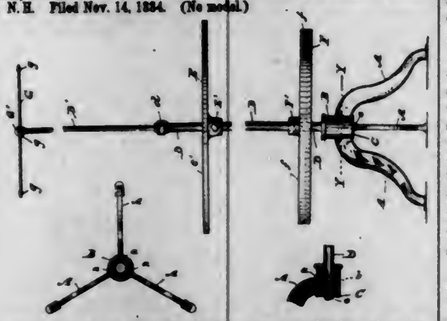
Claim.—The combination, with the discharge-pipe of an injecting apparatus and a flexible nozzle-section to be connected therewith, of a coupling consisting of a body-piece and sleeve connected by a screw-thread, the sleeve having a conical interior, and a central conical spreader or core which is inserted in the end of the flexible nozzle-section, and which by screwing the sleeve upon the body is brought to a bearing upon the said body, substantially as and for the purpose herein described.

322,599. LAMP-BURNER. HIRAM W. HAYDEN, Waterbury, Conn., assignor to Holmes, Booth & Haydens, same place. Filed Dec. 15, 1884. (No model.)



Claim.—In a lamp-burner, the combination of a wick-tube having an opening at the top, a deflector, and supporting-rod vertically movable to enable the deflector to be moved downward, so that its under side will impinge upon a flame and extinguish it, a counter-balance for elevating said deflector and supporting-rod, a stop on the supporting-rod for limiting the upward movement of the deflector and supporting-rod, and a hand-piece extending to the outside of the burner for lowering said supporting-rod and deflector, substantially as described.

322,600. UMBRELLA-DISPLAYER. FRANK R. HAZELTON, Concord, N. H. Filed Nov. 14, 1884. (No model.)



Claim.—1. In an umbrella-displayer, the combination of an upright rod or tube, D, supported by and revolving in a suitable iron base, a circular frame E, cast whole, and comprising a hub, E', radially-projecting arms *e*, connecting with rim *e'* and web *e²*, and provided with radial partitions *e³*, and a circular disk, F, upon which umbrellas may rest, said circular frame and disk being secured to and rendered capable of vertical adjustment upon said upright rod or tube by means of set-screws, all constructed and operating substantially in the manner and for the purpose described and set forth.

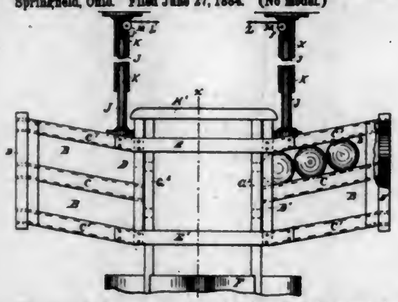
2. In an umbrella-displayer, the combination of an upright rod or tube, D, supported by and revolving in a suitable iron base, a circular disk, F, cast whole and comprising the hub F', rim *f*, and the circular and radial ribs, as shown, and the circular frame E, for supporting the upper parts of umbrellas, said frame and disk being secured to and rendered capable of vertical adjustment upon said upright rod or tube by means of set-screws, all constructed and operating substantially in the manner and for the purpose described and set forth.

3. The combination of an upright or tube, D, adapted to carry the circular frame E and disk F, and a suitable base in which said rod or tube is mounted, and adapted to revolve, as shown, said base consisting of a hub, B, cast whole and having in its cylindrical sides dovetail mortises *b*, extending from its bottom part way to the top thereof, the feet A, having a tenon, *a*, adapted to fit said mortises *b*, and a circular plate or washer, C, for holding said feet in place, and secured to the bottom of said hub B by a screw, *c*, all constructed and operating substantially as and for the purpose specified.

322,601. FIGURED FABRIC OR MATERIAL FOR FLOOR-CLOTH, WATER-PROOF CLOTH, &c. JAMES HEBBLEWHITE and EDWARD HOLT, Manchester, County of Lancaster, England. Filed May 6, 1885. (No specimens.) Patented in England Apr. 16, 1884, No. 6,399.

Claim.—The improved figured fabric or material produced by first coating a woven or other fabric or material with a solution of india-rubber or other suitable compound or solution of any desired color or colors, then while such compound or solution is in a more or less adhesive state overspreading the same with farina, powdered soapstone, or other suitable powder, (either white or colored,) and then embossing a pattern or design thereon by means of carved or engraved rollers, cylinders, or blocks, substantially as hereinbefore particularly described.

322,602. POOL-BALL RACK AND SPOTTER. GEORGE HEINEL, Springfield, Ohio. Filed June 27, 1884. (No model.)



Claim.—1. In a combined pool-ball rack and spotter, the rack-sections A A', inclined as shown, and so arranged as to leave a space between opposite inner ends, the said sections being each provided with a series of ball-holders, B, in combination with the triangle F, adjustably connected to the rack-sections by means of the vertical standards G G' G² G³, provided with the cross-braces I, adapted to extend across the ball-holders when the rack is in its normal position, as described, and apparatus, substantially as described, to suspend the rack and triangle adjustably above the pool-table, and mechanism, substantially as described, to raise and lower the same, substantially as and for the purpose described.

2. In a pool-ball rack and spotter, the inclined rack-sections A A', arranged relatively to one another, as shown, and the triangle F, adjustably connected therewith by means of the vertical standards G G' G² G³, provided with the cross-braces I and supporting-strips H H', which strips extend a short distance over the frame-work of the rack-sections to support the triangle with relation to the sections A A', in combination with the vertical supporting-rods J, connected to the rack, the tubular guides K therefor, said tubes being connected at their upper ends to the ceiling and having the sheave M, as shown, and the chain L, attached to the rod J, and extending over said sheave for the purpose of raising and lowering the rack and spotter relatively to the table, substantially as described.

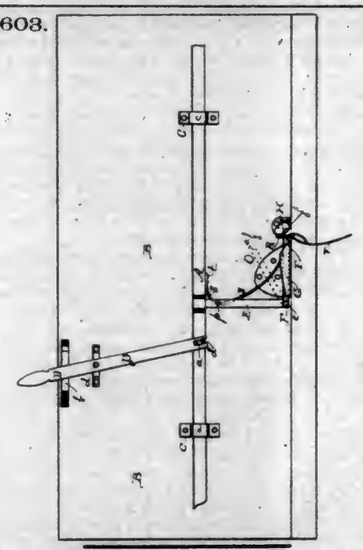
3. In a pool-ball rack and spotter, the combination of two inclined rack-sections, A A', connected together by strips E E', leaving a space between adjacent inner ends, as shown, the triangle F, located below said sections and loosely connected with the rack-sections by the vertical rods G G' G² G³, extending up between the inner ends of said sections and strips E E', their horizontal supporting-strips H H', and cross-braces I, the vertical supporting-rod J, the guide-tubes K therefor, and chain L, to raise and lower the rack, the said rack and triangle being constructed, arranged, and operating substantially as shown, and for the purpose described.

322,603. DEVICE FOR RELEASING ANIMALS FROM STALLS. BENJAMIN E. HERSTAND and AMOS W. SWADE, Mount Joy, Pa. Filed Nov. 18, 1884. (No model.)

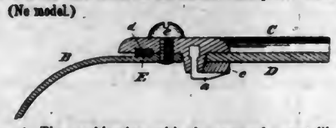
Claim.—The combination, with the sliding rod A, of the rigid arm E, the latch F, pivoted to said arm, the slotted lug G, the spring S, and the hasp H, constructed to operate substantially as specified.



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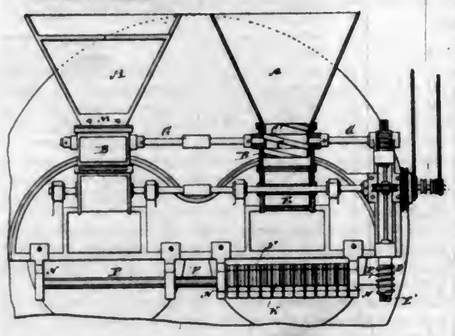
322,604. COFFIN. DANIEL B. HISER, Springfield, Ohio, assignor to Alonzo A. Baker and David R. Hosterman, same place. Filed Oct. 31, 1884. (No model.)



Claim.—1. The combination, with the cover of a metallic casket, of a removable cast-metal face-glass frame constructed in one piece, having a depending flange and an internally and externally projecting rim, and having a face-glass secured therein between the inner faces of the downwardly-projecting flange and the internally-projecting rim, in combination with the flexible gasket secured to the under side of the externally-projecting rim, all constructed substantially as and for the purpose described.

2. In a metallic casket, the combination of T-shaped metallic face-glass frame constructed in one piece, and having the groove *d* formed in the under side of its outer flange, as shown, the rubber strip E, cemented in said groove, for the purpose described, the face-glass D, set into the frame from the under side, the filling *c*, and the holding-pins *a*, to hold the glass in place, all constructed and arranged substantially as shown, and for the purpose described.

322,605. MECHANICAL STOKER. JAMES HODGKINSON, Manchester, England. Filed Mar. 6, 1885. (No model.) Patented in England Dec. 23, 1884, No. 16,830.

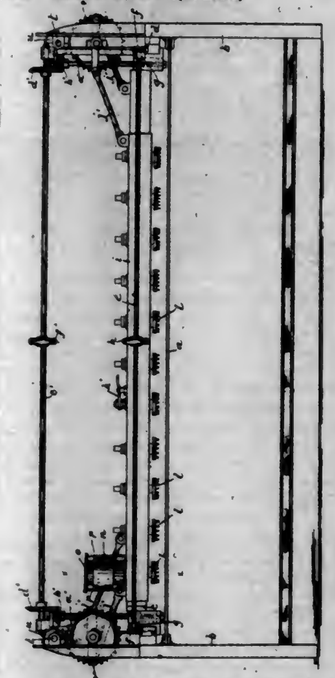


Claim.—1. The combination, with the helical crusher C, or other crusher, of the adjustable flexible spring-plate J, substantially as described and shown.

2. In a mechanical stoker, the bars H, provided with the lugs W², and the pivoted latch-levers F, having convex lower faces, N, in combination with the cams K and means for operating the same, substantially as herein shown and described.

3. In a mechanical stoker, the shaft P, the bars H, latch-levers F, having lip X, and means for revolving said shaft, in combination with the slide V' and the cams K, substantially as herein shown and described.

322,606. LEATHER-BLACKING MACHINE. JAMES HODGKINSON, Salem, Mass. Filed Oct. 23, 1884. (No model.)



Claim.—1. In a machine for applying blacking or other material, the combination of a supporting-bed having lateral guides, a carriage located over said bed and capable of lateral movement on said guides, a slide or slides supported by the carriage and capable of longitudinal movement thereon, a series of brushes supported by each slide, and mechanism, substantially as described, for reciprocating the slide or slides, as set forth.

2. The combination of a supporting-bed having guides, a carriage located over said bed and movable laterally in said guides, a slide or slides movable longitudinally in guides on the carriage, and provided with a series of brushes, and a reservoir or reservoirs for the material to be applied communicating with said brushes, as set forth.

3. The combination of the supporting-bed, the carriage, the slide or slides on the carriage, each provided with a series of brushes, and mechanism, substantially as described, whereby the slides and brushes may be simultaneously raised and lowered, as set forth.

4. The combination of the bed, the carriage, and the slide or slides on the carriage, and a series of brushes on each slide, each capable of an independent vertical movement, and provided with a holding-down spring, as set forth.

5. The combination of the bed, the carriage, the slide or slides on the carriage, and a series of brushes on each slide, each capable of an independent vertical movement, and provided with a lever, whereby it may be raised, as set forth.

6. The combination of a supporting-bed, a slide having a series of brushes located over said bed, and mechanism, substantially as described, for reciprocating said slides and brushes, as set forth.

7. The combination of the carriage, the slide or slides thereon, the brushes supported by the slides, and mechanism, substantially as described, for reciprocating the slides, and mechanism, substantially as described, whereby the brushes are rotated, as set forth.

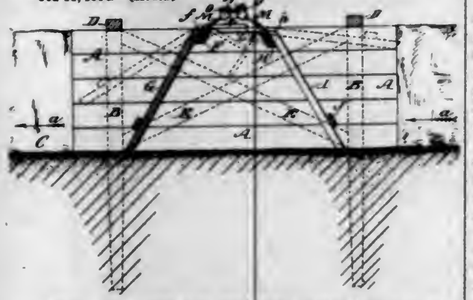
8. The combination of the carriage, the two slides thereon, each having a series of brushes, and mechanism, substantially as described, whereby the slides are reciprocated simultaneously in opposite directions, as set forth.

9. The combination of the carriage having the shaft *e* and pinions *f f*, the supporting-frame having the cogged tracks *d d*, the slide or slides on the carriage, having the brushes *l*, and mechanism, substantially as described, whereby said slides are reciprocated, as set forth.

10. The combination of the carriage having the racks *s s*, the slides

having the brushes *l l*, provided on their shanks with pinions *r*, meshing with said racks, and mechanism, substantially as described, for reciprocating said slides, and thereby rotating the brushes, as set forth.

322,607. WATER-GATE. DANL. T. HOPGOOD, Morganfield, Ky. Filed Oct. 11, 1884. (Model.)



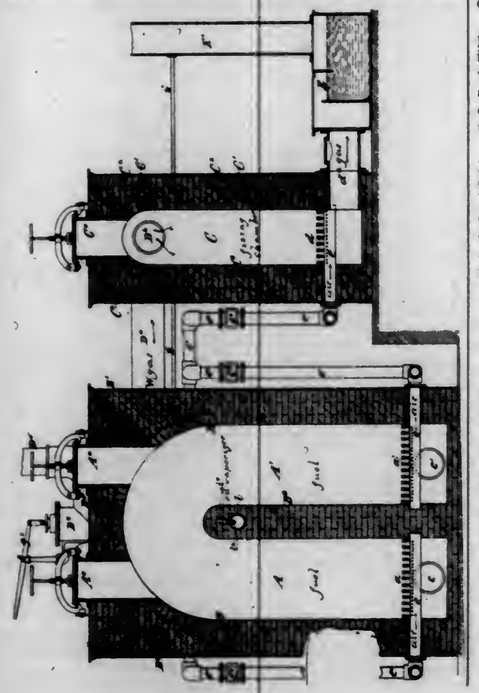
Claim.—1. A water-gate comprising a hinged float-gate and a horizontally-pivoted fender at the upstream side, and connections from said fender to the float-gate for opening the fender as the float-gate is opened by the rising water, substantially as herein set forth.

2. A water-gate comprising a horizontally-pivoted float-gate, a horizontally-pivoted fender at its upstream side, and a bar fixed to the float-gate and overlapping a bar fixed to the fender for lifting the fender as the float-gate opens, substantially as herein shown and described.

3. A water-gate comprising a horizontally-pivoted float-gate, a horizontally-pivoted fender at its upstream side, a bar fixed to the float-gate overlapping a bar fixed to the fender, and counterbalance-weights attached to the float-gate and fender, substantially as herein set forth.

322,608. METHOD OF AND APPARATUS FOR GENERATING GAS. CHARLES W. ISHELL and WILLIAM H. TAYLOR, New York, N. Y. Filed Aug. 12, 1884. (No model.)

Brief.—Water-gas is made, carbureted in the take-off pipe, and fixed in a separate body of incandescent fuel. Steam is passed up through one body of incandescent fuel, and the resulting products of decomposition down through another body of fuel in the same generator, and the resulting water-gas is carbureted by a volume of oil-vapor which has previously been made and stored at the time the air-blast is entering the fuel, the oil being vaporized by hot products of combustion brought into contact with a vaporizer in the take-off pipe. The carbureted water-gas is fixed by passage down through a separate body of incandescent fuel, which is blown up and heated independently of the body of fuel in which gas is generated.



Claim.—1. The improvement in the method of making gas, consisting in decomposing steam by passing it through incandescent fuel, in adding hydrocarbon vapor to the gas thus produced, in fixing the vapor by passing the commingled gas and vapor through incandescent fuel, and in maintaining the heat of the bodies of fuel by which the gas is generated and fixed by fires which are controlled independently of each other, and either of which may be blown up without affecting the heat of the other, substantially as herein described.

2. The combination, with a double-chambered generating-furnace containing separate grates and pipes for supplying air thereto for blowing up and steam for decomposition, the two chambers of the furnace being adapted to be blown up alternately, of a fixing-furnace and pipes for supplying air for blowing up the fixing-furnace independently of and without affecting the heat of the generating-furnace, and pipes whereby the gas generated by the decomposition of steam in either chamber of the generating-furnace, together with hydrocarbon vapor, may be conducted to and caused to pass through the fuel in the fixing-furnace, substantially as herein described.

3. The combination, with a double-chambered generating-furnace containing separate grates and pipes for supplying air thereto for blowing up and steam for decomposition, delivery connections each containing a valve and arranged between the generating-chambers and a main conduit or pipe, air-escape valve for the products of combustion when blowing up, a fixing-chamber provided with pipes to admit air for blowing up, and a pipe or conduit connecting said fixing-chamber with the main conduit below the escape-valve, substantially as herein described.

4. The combination, with a double-chambered generating-furnace provided with pipes to admit air for blowing up and steam for decomposition, and a fixing-furnace, also provided with pipes to supply air for blowing up, of the valve-boxes D D′ and their valves, the connection D^2, and pipe D^3, the escape-valve D^4, and a pipe, D^5, leading from the pipe D^3 below the escape-valve to the fixing-chamber, substantially as herein described.

5. The combination, with a double-chambered generating-furnace, and a fixing furnace and chamber independent of the generating-furnace, of the perforated pipes *e*, the air-supply pipes *e′*, provided with valves whereby air may be admitted to either chamber of the generating-furnace and the fixing-furnace, valves and pipes for controlling communication between the chambers of the generating-furnace and the fixing-furnace, and a valve common to both furnaces and serving for the escape of products of combustion, substantially as herein described.

6. The improvement in the method of making gas by the decomposition of steam and the addition thereto of hydrocarbon vapor, consisting in vaporizing hydrocarbon by the heat of the products of combustion while blowing up the fires, in storing or holding such vapor in reserve, and in supplying the volume of vapor so stored to the products of decomposition when the steam is first turned on after blowing up, substantially as herein described.

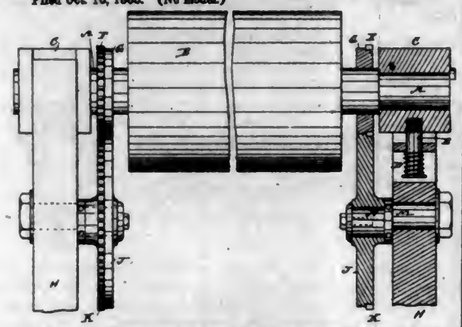
7. The combination, with a generating-furnace and pipes for supplying thereto air for blowing up and steam for decomposition, an escape-pipe, and a valve providing for the delivery of the products of combustion and decomposition, a carburetor exposed to the heat of the products of both combustion and decomposition, and a storage reservoir or chamber in which hydrocarbon vapor, produced while blowing up, is stored, and from which vapor is supplied during decomposition, substantially as herein described.

8. The combination, with a generating-furnace and pipes for supplying air for blowing up and steam for decomposition, of a pipe through which the products of decomposition pass from the furnace, and a carburetor arranged in said pipe, and consisting of a casing and a tier of chambers, *h*, contained therein for receiving liquid hydrocarbon, and connected by tubes *h′*, a pipe for supplying liquid to said chambers *h*, and a delivery-opening for discharging vapor into the first-mentioned pipe to mingle with the products of decomposition, substantially as herein described.

9. The combination, with a double-chambered generating-furnace and pipes for supplying air and steam thereto, of the pipe D^3, common to both generating-chambers, and valves controlling its communication with the generating-chambers, a carburetor arranged in said pipe, a valve for controlling the delivery of vapor from the carburetor into the pipe, and a storage-reservoir for vapor connected with the carburetor, substantially as herein described.

10. The combination, with the double-chambered generating-furnace containing two grates and a separating partition-wall, of a pipe common to both chambers for conducting away products of decomposition, and valves controlling the communication between said two chambers and said pipe, a carburetor arranged in said pipe, a supplemental carburetor arranged in the said partition-wall, and pipes for supplying naphtha to both said carburetors, substantially as herein described.

322,609. PRINTING-MACHINE. PHILIP JACKSON, Plainfield, N. J. Filed Oct. 10, 1883. (No model.)



Claim.—1. The combination, with an impression-cylinder and gearing at opposite sides of the same, of cam-disks journaled below the cylinder for raising the same, and gearing connected with said cam-disks and meshing with the cylinder-gearing, whereby, when the cylinder is rotated, the cam-disks will be rotated to raise the same automatically, substantially as set forth.

2. The combination of an impression-cylinder, the shaft of which on both sides of the said cylinder is provided with gear-wheels and plain disks with two gear-wheels mounted below said cylinder and provided with cam-disks, the said upper and lower gearing meshing, and plain and cam disks contacting, whereby the cylinder will be automatically lifted, substantially as set forth.

3. In a printing-press, the combination, with the cylinder B, of the wheels F G and the wheels J K, the latter mounted eccentrically on a pintle, M, substantially as herein shown and described.

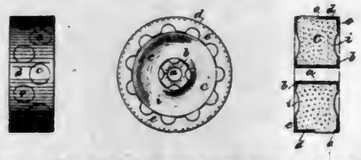
322,610. STOVE OR FURNACE REGULATING DEVICE. SAMUEL W. JACKSON, Chicago, Ill. Filed Dec. 26, 1883. (No model.)



Claim.—1. A stove or furnace provided with a tube, A, attached to and depending from its usual swinging door, said tube being open at its lower end to the outer air and communicating at its upper end through the door with the interior of the stove or furnace, substantially as and for the purpose set forth.

2. A stove or furnace provided with a tube, A, containing a valve and attached to and depending from the usual swinging door of the stove or furnace, said tube being open at its lower end to the outer air and communicating at its upper end through the door with the interior of the stove or furnace, substantially as described.

322,611. ROLLER FOR SKATES. JOHN T. JONES and CHARLES T. JONES, Utica, N. Y. Filed Jan. 20, 1885. (No model.)

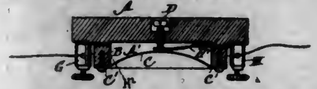


Claim.—1. The roller for skates or casters made of a body of india-rubber or other yielding material, a metal tube passing through the same for the axis, and a flat metal rim surrounding and of the same width as the rubber, and having inward flanges at the edges of the rubber, substantially as set forth.

2. The roller for skates and other articles, having a body of india-rubber or other yielding material, a metal rim with inward flanges, a metal tube for the axis and flanges at the ends of the tube, the flanges of the tube and rim not touching each other, so that the roller is elastic, substantially as set forth.

3. The roller for skates and other articles, having a body of india-rubber or other yielding material, a metal tube for the axis, and a metal rim around the rubber and having holes or recesses, into which holes or recesses the yielding material is received, so that the bearing-surface of the roller is partly of rubber and partly of metal, substantially as set forth.

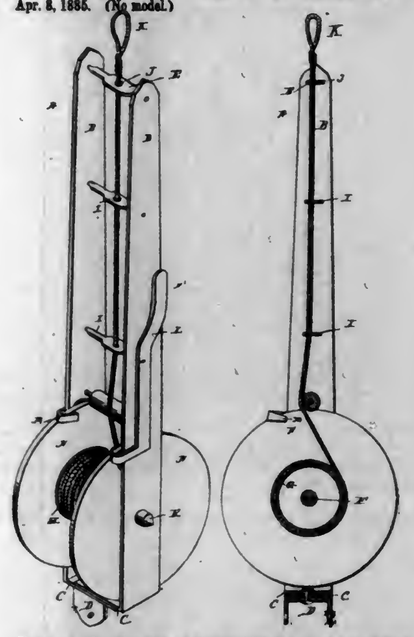
322,612. ELECTRIC THERMOSTAT. C. EDMUND KELLS, Jr., New Orleans, La. Filed Jan. 15, 1884. (No model.)



Claim.—1. The combination, substantially as herein set forth, of the unyielding non-conducting frame, the concavo-convex metallic diaphragm rigidly connected therewith near its edge, constituting one electrode of an electric circuit, and an adjustable contact-point constituting another electrode thereof, to complete the circuit by the direct expansion of the diaphragm when exposed to a high temperature.

2. The combination, substantially as herein set forth, of the unyielding non-conducting frame, the concavo-convex metallic diaphragm rigidly connected therewith near its edge, constituting one electrode of an electric circuit, an adjustable contact-point constituting the other electrode, a battery, an alarm-indicator, and electrical connections including the battery, alarm, contact-point, and diaphragm in the circuit, to give notice when the diaphragm expands into contact by the application of heat.

322,613. FIRE-ESCAPE. GEORGE W. KERR, Chillicothe, Ohio. Filed Apr. 8, 1885. (No model.)



Claim.—1. In a fire-escape, the combination of a frame constructed of metallic side pieces connected at their upper and lower ends, a drum mounted upon a shaft journaled between the lower ends of the said side pieces, and a wire rope coiled upon the said drum and passing over a pulley and through a series of eyes in the connecting-pieces of the sides of the frame, substantially as and for the purpose herein set forth.

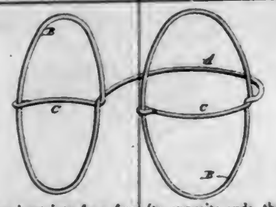
2. In a fire-escape, the combination of a pair of metallic side pieces, connected at their upper ends by a perforated cross-piece, and at their lower ends by a bail or holder connecting the overlapping lower ends of the said side pieces with a drum journaled between the said side pieces, and a wire rope coiled upon the said drum, and having its ends passed over a pulley and through guide-eyes upon the inner sides of the frame-pieces and through the perforation in the upper cross-piece, substantially as and for the purpose set forth.

3. In a fire-escape, the combination of the herein-described metallic frame, the drum journaled between the sides of the same, the wire rope coiled upon the said drum and passing through a series of suitable guide-eyes, and a brake-lever pivoted to one of the sides of the frame, and having a shoe adapted to bear against the periphery of the drum, and an operating-handle, substantially as herein described, for the purpose set forth.

322,614. COMBINED NECK AND EAR PROTECTOR. ISAAC B. KLEINERT, New York, N. Y. Filed Apr. 21, 1885. (No model.)

Claim.—1. A frame for ear-mufflers, consisting of a bow portion.

322,614.

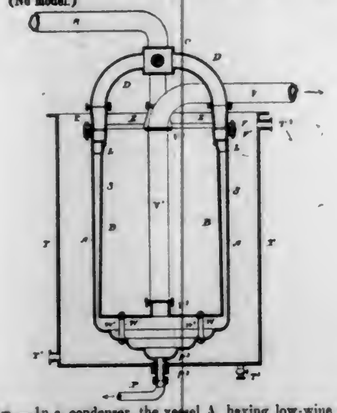


and ear-pad frames bent into form from its opposite ends, the bow and ear-pad frames being made of a single piece of spring metal, substantially as set forth.

2. The combination, with a pair of ear-pads connected by a spring-bow, of a neck-cape suspended from the bow, substantially as set forth.

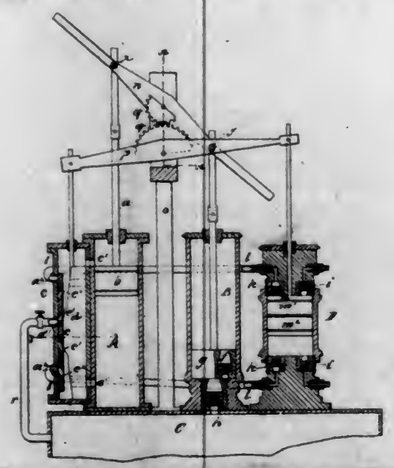
3. The combination, with a pair of ear-pads connected by a spring-bow provided with a soft covering, of a neck-cape removably attached to the bow, substantially as set forth.

322,615. CONDENSER. JOSEPH KLINGEL, Peoria, Ill. Filed Feb. 28, 1885. (No model.)



Claim.—In a condenser, the vessel A, having low-wine outlet P and flange F', the interposed vessel B, having contracted upper diameter and outwardly-projecting flange F, means for securing together said flanges, the stay-pipes W, in combination with the outlet vapor-pipe V, terminally-distorted branch pipes D, opening into the space between said vessels, and the drum C, joining said branch pipes to the vapor-supply, substantially as and for the purpose set forth.

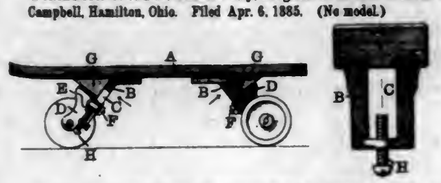
322,616. AIR-MOTOR. ALOIS M. KONIAKOWSKY, Ellington, Tex. Filed Nov. 10, 1884. (No model.)



Claim.—1. The air-motor consisting of engine A, single-acting air-pump B, air-receiver C, and the double-acting exhaust-pump D, with the valves and connections, as specified, all combined for operation as set forth.

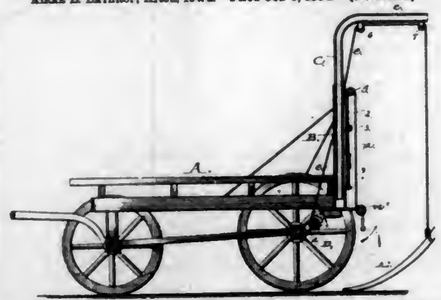
2. The combination of the levers *n p* and segments *q*, and with the air-engine A, air-pump B, and exhaust-pump D, for operation as specified.

322,617. ROLLER-SKATE. CHARLES P. KRAMER, Hamilton, and WORTHINGTON J. SNIDER, Madison City, assignors of one-half to James E. Campbell, Hamilton, Ohio. Filed Apr. 6, 1885. (No model.)



Claim.—In a roller-skate, the combination of hanger-plate B, provided with slot C and set-screw H, the housing D, provided with the boss E and bolt F, and the rubber block G, substantially as set forth.

322,618. APPARATUS FOR LOADING AND UNLOADING HAY. KIRKE E. LATHROP, Afton, Iowa. Filed Oct. 1, 1884. (No model.)

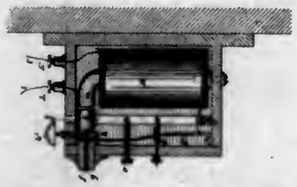


Claim.—1. The combination, with the frame of a wagon, of a derrick composed of tubular telescopic sections, the outer or stationary section having a slot extending nearly its entire length and the inner section moving in a vertical plane and adjusted to different heights by means of a cord or chain, *a*, and a winding mechanism, and a pin secured to the inner section and engaging the slot in the outer section, whereby the adjustable section is prevented from rotating, substantially as herein described.

2. In a hay-loader, and in combination with a wagon-body, the drum D, the sleeve 9, pinion 10, gear-wheel 11, the cords *e* and *a*, the drum *a'*, a suitable fork, and the telescopic sections of tubular material with their guide-pulleys, substantially as described.

322,619. INDICATOR FOR ELECTRIC-BELL CIRCUITS. WILLIAM A. LEIPNER and CHARLES BROTHERHOOD, Clifton, County of Bristol, England. Filed Dec. 2, 1884. (No model.) Patented in England July 1, 1884, No. 9,607, and in Belgium Dec. 31, 1884, No. 67,171.

Brief.—Circuit-closer (push-button type) with an electro-magnetic attachment to indicate to the eye or touch that a rheotomic bell at some distant part of circuit is ringing the makes and breaks of the rheotome energizing and de-energizing the electro-magnet and operating the indicator.

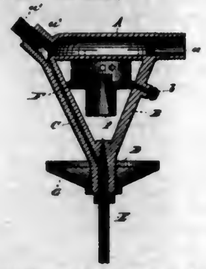


Claim.—1. The combination of the circuit of a vibrating electric bell or similar apparatus, a push-button or device for completing said circuit to actuate said apparatus, electro-magnetic devices included in said circuit at the push-button, and a pin or pointer actuated by said electro-magnetic devices and projecting through the push-button, for the purpose set forth.

2. The combination of the circuit of a vibrating electric bell or similar apparatus, a push-button and contacts for completing said circuit to operate the bell or apparatus, an electro-magnet included in said circuit at the push-button, its vibrating armature, and a pointer or pin carried by said armature and projecting through the push-button, for the purpose set forth.

3. The combination of a vibrating bell or similar apparatus, its circuit, a push-button or device for completing said circuit to operate the bell or other apparatus, electro-magnetic devices included in said circuit at the circuit-completer, and a vibrating device actuated by said electro-magnetic devices which strikes the hand of the operator and indicates to his touch while operating the circuit-completer that said apparatus is working.

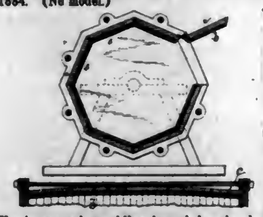
322,620. OIL-VAPOR BURNER. FRIEDRICH MARQUART, Cleveland, Ohio. Filed Sept. 6, 1883. (No model.)



Claim.—1. The combination of the parts A, B, and C, the plug a^2, and nozzle a', the removable chamber F, with its opening *f*, the screw *b*, the valve E, the boss D, and the generating-pan G, substantially as and for the purpose set forth.

2. The combination of the parts F and the parts A, C, and B, integral with each other, the part B being provided with the screw *b*, and adapted to support the part F, substantially as described.

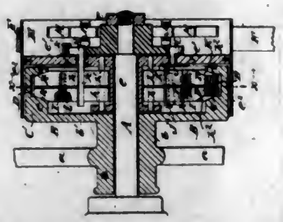
322,621. TUMBLING-BARREL. DAVID MCCANCE, Newark, N. J. Filed May 28, 1884. (No model.)



Claim.—1. The improved tumbling-barrel herein described, having the sides thereof provided with wooden plates or blocks, the grain of which runs or lies radially as respects the pivotal center of said barrel.

2. In a tumbling-barrel, the combination of the longitudinal outer pieces and wooden lining pieces arranged with the grain thereof running approximately at a right angle to said longitudinal pieces, substantially as set forth.

322,622. RATCHET-DRIVING MECHANISM. DANIEL H. MCCOY, Smithville, N. J. Filed Nov. 18, 1884. (No model.)



Claim.—1. The combination, in a ratchet-driving mechanism and with the clutch-sections B E fitted loosely on a relatively fixed shaft, A, of the flange C on section B, having an interior groove provided with inclined faces *c c*, converging toward the bottom teeth, D, and the pawls H, pivoted to section E, and consisting of two parts, *h h*, forced apart by a spring, and having inclined faces h^2 h^2, adapted to the faces *c c* of flange C, and end teeth, D', adapted to the teeth D of section B, substantially as herein set forth.

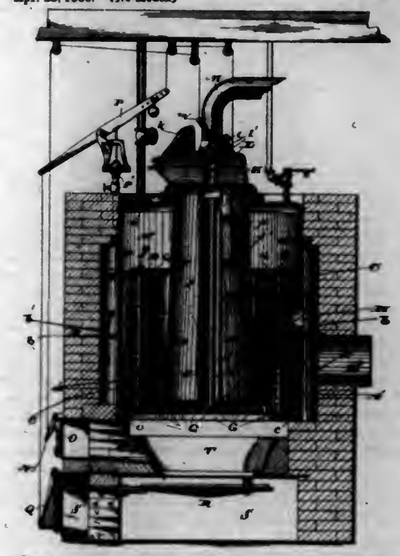
2. The combination, in a ratchet-driving mechanism and with the clutch-sections B E fitted loosely on a relatively fixed shaft, A, of the flange C on section B, having an interior groove provided with inclined faces *c c*, and the pawls H, pivoted to section E, and consisting of two parts, *h h*, forced apart by a spring, and having inclined faces h^2 h^2, adapted to the faces *c c* of flange C, substantially as herein set forth.

3. The combination, with two clutch-sections of a ratchet-driving mechanism fitted loosely on the same shaft, and the pawls of one section engaging the other section, of a tripper having arms standing in front of the pawls and means for throwing the tripper to hold the pawls out of engagement with the driven clutch-section, substantially as herein set forth.

4. The combination, in a ratchet-driving mechanism, of the clutch-sections B E, loose on shaft A, pawls pivoted to section E and engaging section B, the retracting-spring M, a collar, L, held rigidly to shaft A and having a toe, *l*, and the loose tripper K, having arms *k*, projecting in front of the pawls H, substantially as herein set forth.

5. The combination, in a ratchet-driving mechanism, of the clutch-sections B E, fitted loosely on shaft A, the pawls H, pivoted at *h'* to the hub *e* of the section E, and formed of two parts, *h h*, forced apart by a spring, and having beveled faces h^2 h^2, engaging the inclined faces *c c* of the section B, and teeth D', engaging teeth D of part B, the collar L, having a toe, *l*, the tripper K, having arms *k* standing in front of the pawls, means for turning the clutch-section E forward, and a retracting-spring, M, all constructed and arranged to operate substantially as herein set forth.

322,623. STEAM-BOILER. JAMES C. MCNEIL, Akron, Ohio. Filed Apr. 23, 1885. (No model.)



Claim.—1. In a magazine-boiler, the combination, with a water-leg surrounding the lower portion of the magazine, and drop-tubes depending from the crown-sheet, of a water-leg outside of the drop-tubes and in open relation above the water-space of the boiler, substantially as set forth.

2. In a magazine-boiler, the combination, with a water-leg surrounding the lower portion of the magazine, drop-tubes, a water-leg outside of the drop-tubes, of an annular hot-air chamber formed in the setting inclosing the boiler from or near the water-line downward, said chamber connected by tubes with the furnace-space, and connected with a flue leading to the chimney, substantially as set forth.

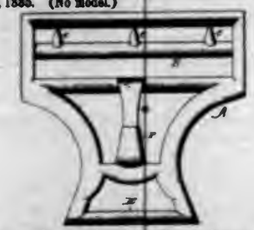
3. The combination, with the hot-air chamber B' and tubes leading from the furnace-space through the outer water-leg to the said chamber, a flue connecting said chamber with the chimney, of a plate or equivalent dividing the chamber circumferentially, said plate located below the tubes leading from the furnace-space and above the chimney-flue, an opening in the plate connecting the upper and lower portions of the hot-air chamber, and located at the opposite side of the boiler from the chimney-flue, substantially as set forth.

4. In a magazine-boiler, an air-pipe leading down through the magazine for discharging air into the furnace, an outer tube connected at the top and bottom with the air-tube, forming a water-space around said air-tube, tubes leading from the said water-space respectively to the steam and water spaces of the boiler, substantially as set forth.

5. In a magazine-boiler, the combination, with an air-tube leading through the magazine, a damper for admitting air to the tube and operated automatically and in unison with the damper admitting air below the grate, of a waste-pipe leading from the air-tube to the chimney, a damper operating in said waste-pipe, and mechanism, preferably as described, for automatically operating said damper from the furnace-door and so arranged that the said damper will be open when the furnace-

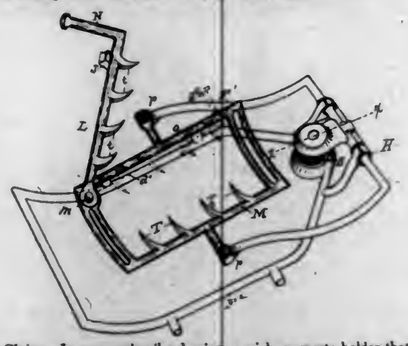
door is open and be closed when the furnace-door is closed, substantially as set forth.

322,624. BACK-BAND BUCKLE. FRANK MELLETT, Sumter, S. C. Filed Mar. 17, 1885. (No model.)



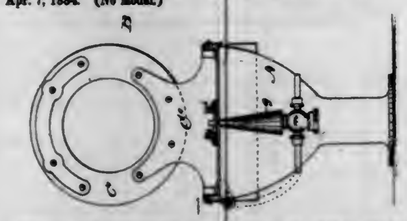
Claim.—As an improved article of manufacture, the buckle A, having a pivoted tongue, B, and loop E, and provided with integral hook F, and having the spring G, as and for the purpose set forth.

322,625. CAR-AXLE OILER. GEORGE R. MENEELY, Albany, and JOHN GIBSON, West Troy, assignors to Meneely Hardware Company, West Troy, N. Y. Filed Jan. 16, 1885. (No model.)



Claim.—In a car-axle oiler having a wick or waste holder that is constructed to contain wick or waste and arranged to press the latter up against the under side of the car-axle, the combination therewith of a latch arranged on the side of said holder, which latch is constructed to be moved out from and inwardly to the side of said holder where adjacent, substantially in the manner as and for the purposes set forth.

322,626. WATER-CLOSET. FRANK J. MERS, Newark, N. J. Filed Apr. 7, 1884. (No model.)



Claim.—1. In combination with the bowl, the annular portion C', web C'', pivoted upon the bowl, weight C, eccentric bearings *b b*, and pivoted valve-sections *d d*, having arms *c c*, all said parts being arranged and operating substantially as and for the purposes set forth.

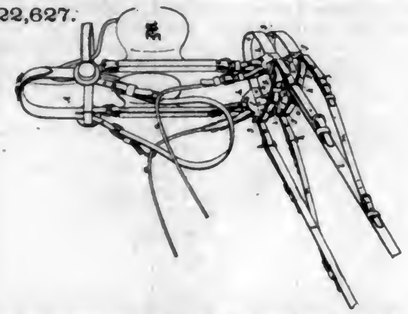
2. In a water-closet, the combination of a bowl, A, half-sections *d d*, pivoted at the rear thereof and provided with bearings *s s*, and a weighted seat, also pivoted on said bowl and furnished with bearings *b b*, connected to the bearings *s s* by arms *c c*, the weight on said seat acting to raise said seat from the said bowl and close the half-sections together automatically, substantially as herein set forth.

322,627. DRIVING-CHECK FOR HORSES. ERASTUS L. METCALF, Franklin, Mass. Filed Apr. 29, 1885. (No model.)

Claim.—1. The duplex driving-check, substantially as described, consisting of the two bows arranged one over the other and apart from each other, and having two eyes to each at their ends, and rigidly connected by bars or projections extending from one to the other, all essentially as set forth.

2. The combination of the two contracting-straps C, provided with buckles and rings, as represented, with the duplex driving-check, substantially as described, consisting of the two bows, having two pairs of

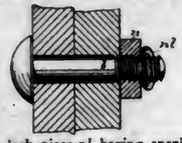
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eyes and arranged one over the other and apart from each other, and rigidly connected by bars, as described, one of the said straps being extended, as explained, through the eyes of one of the bows, and the other through those of the other bow, and both straps being for use with a rein or reins, as described.

3. The combination of the two contracting-straps C, and their four rings *k*, with reins applied to such rings, and with the duplex driving-check and its supporting headstall, such duplex driving-check consisting of the two elastic bows, their connections and eyes, and having the two straps extended through the said eyes and the rings, in manner substantially as set forth.

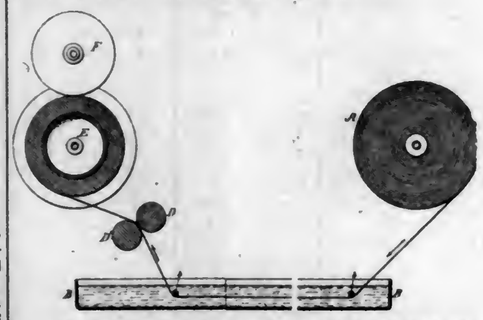
322,628. NUT-LOCK. FRANK L. MILLER, Indianapolis, Ind., assignor of one-half to Glenwood Preble, same place. Filed Dec. 29, 1884. (No model.)



Claim.—1. The lock-piece *nl*, having opening *o* and arms *p*, one of these arms being slightly longer than the other, and the distance between the points of the arms less than the central diameter of the opening, substantially as described.

2. A nut-lock composed of a flat circular segment-plate, one of whose ends is slightly longer than the other, and the distance between the two being slightly less than the diameter of the bolt measured inside the depth of the threads, substantially as described.

322,629. TREATMENT OF PAPER AND OTHER FIBROUS MATERIAL FOR JOURNAL-BEARINGS, BELTING, &c. HENRY W. MORROW, Wilmington, Del. Filed May 25, 1885. (No specimens.)



Claim.—1. The process herein described of treating paper and other vegetable fibrous substances, said process consisting in subjecting them in sheet form to the action of nitric acid or a salt thereof and uniting two or more layers so treated.

2. The process herein described of treating paper and other vegetable fibrous substances, said process consisting in passing them in sheet form through a bath of nitric acid or a salt thereof, and uniting them in layers as they pass from the bath, substantially as set forth.

3. The process herein described of treating sheets of paper or other vegetable fibrous substances, said process consisting in passing them through a bath of nitric acid or a salt thereof, and pressing the layers of treated sheets to cement them together, substantially as specified.

4. The process herein described of treating paper and other vegetable fibrous substances, said process consisting in subjecting them in sheet form to the action of nitric acid or a salt thereof, in connection

with another solvent or solvents of cellulose, and uniting layers of the sheets, substantially as set forth.

5. The process herein described of treating paper or other vegetable fibrous substances, said process consisting in subjecting them in sheet form to the action of nitric acid or a salt thereof, in connection with another acid, base, or salt, and then uniting the layers of the sheets by pressure, substantially as specified.

6. The process herein described of treating paper or other vegetable fibrous substances, said process consisting in subjecting them in sheet form to the action of nitrate of zinc, and then uniting layers of the sheets by pressure, substantially as specified.

7. The process herein described of treating sheets of paper and other fibrous vegetable substances, said process consisting in subjecting the sheets to the action of nitric acid or a salt thereof, and then uniting layers of the sheets by pressure and heat.

8. The process herein described of treating sheets of paper or other fibrous vegetable substances, said process consisting in subjecting the sheets to the action of a bath of nitric acid or a salt thereof, uniting layers of the sheets, and combining with the paper or other substance, before, during, or after treatment, starch, gum, mucilage, dextrine, or equivalent, as set forth.

9. The process herein described of treating sheets of paper or other fibrous vegetable substances, said process consisting in subjecting the sheets to the action of nitric acid or a salt thereof, uniting the sheets, and finally soaking out the chemical, as described.

10. As an improvement in the treatment of paper by nitric acid or a salt thereof, the process herein set forth of soaking the paper after treatment to remove the chemical and recovering the latter by evaporation or otherwise, substantially as specified.

11. As a new manufacture, articles made of sheets of paper or similar material treated with nitric acid or one of its salts, and united in layers, substantially as described.

12. As a new article of manufacture, a compound sheet composed of paper and woven material treated with nitric acid or a salt thereof, and united in layers, substantially as described.

13. As a new manufacture, articles made of sheets of paper or similar material treated with nitric acid or one of its salts, in connection with another solvent or other solvents of cellulose, and united in layers, substantially as set forth.

322,630. INSECTICIDE. ARMAND MÜLLER, Mount Vernon, assignor to John E. Brustlein and Paul Sury, New York, N. Y. Filed Dec. 11, 1883. (Specimens.)

Claim.—The mixture consisting of sulphoricinoleate of sodium, $C_nH_m \begin{cases} SO_2Na_2O \\ CO_2Na_2O \end{cases}$, and bisulphide of carbon, (CS_2) the whole forming an anti-parasitic for destroying insects, moss, and fungi.

322,631. PIN-TAG. JAMES J. MURPHY, New York, N. Y. Filed Nov. 22, 1884. (No model.)



Claim.—1. In a pin-tag, the combination, with the inflexible base A and its outside card or paper ticket, C, of the pin or wire fastening B, arranged to project through the base and secured thereto by an under bridge portion, *c*, and upper doubled bent-over portions, *b*, essentially as shown and described.

2. The combination, in a pin-tag, of an inflexible base chamfered at its side edges, as described, a paper card or ticket on the exterior of said base, and a pin or wire fastening secured to said base beneath the ticket, substantially as specified.

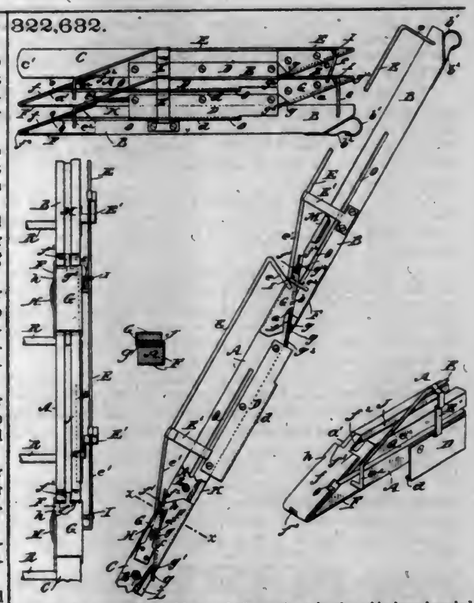
322,632. EXTENSIBLE LADDER. THOMAS R. PARK, Parkersburg, W. Va. Filed Mar. 10, 1885. (No model.)

Claim.—1. An extensible ladder made in sections, having side bars beveled at their joining ends, as at *a b*, and said beveled ends being provided with plates F G, bent, respectively, at opposite sides of the ladder-bars at the joints, and provided with interlocking tongues *f g*, substantially as herein set forth.

2. An extensible ladder made in sections, having side bars beveled at their joining ends, as at *a b*, and said beveled ends being provided with metal plates formed with interlocking tongues *f g*, and said tongues having lips f^3 g^3, adapted to enter holes g^3 f^3, respectively formed at the bases of the tongues, substantially as herein set forth.

3. An extensible ladder made in sections, having side bars beveled at the adjoining ends, as at *a b*, and said beveled ends being provided with plates F G, bent, respectively, at opposite sides of the ladder-bars at their joints, and provided with interlocking tongues *f g*, and said tongues having lips f^3 g^3, adapted to pass into holes g^3 f^3, respectively, at the bases of the tongues, substantially as herein set forth.

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4. An extensible ladder made in sections, having side bars beveled at their joining ends, as at *a b*, and said beveled ends being provided with metal plates formed with interlocking tongues *f g*, respectively, in combination with spring-catches H on one ladder-section locking into notches *h* on the adjacent section, substantially as herein set forth.

5. An extensible ladder made in sections, having side bars beveled at their adjoining ends, and said beveled ends being provided with metal plates formed with interlocking tongues *f g*, respectively, and said tongues having lips f^3 g^3, adapted to enter holes g^3 f^3 at the bases of the tongues, and the tongues being prolonged beyond the plane of the ladder-bars, which bars have grooves, as at J K L M, to accommodate the lips f^3 g^3, substantially as herein set forth.

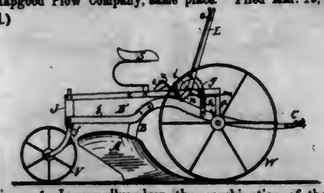
6. An extensible ladder made in sections, having side bars beveled at their joining ends, as at *a b*, and said beveled ends being provided with metal plates formed with interlocking tongues *f g*, respectively, in combination with guide-plates D, fixed to one ladder-section, and provided with bent flanges *d*, entering slots O, formed in the adjacent ladder-section, substantially as herein set forth.

7. An extensible ladder made in sections, having side bars beveled at their joining ends, as at *a b*, and said beveled ends being provided with metal plates formed with interlocking tongues *f g*, respectively, and the upper end of one ladder-section being provided with laterally-projecting pins I, in combination with bars E on the next upper ladder-section, which bars have inclined portions *e'*, compelling the coupling of the joint-tongues *f g*, substantially as herein set forth.

8. As an improved article of manufacture, a coupling for extensible ladders, consisting of plates F G, having an angular cross-sectional form and converging to a bend at one end, so as to provide interlocking tongues *f g* when applied to the ladder-sections, substantially as herein set forth.

9. As an improved article of manufacture, a coupling for extensible ladders, consisting of plates F G, having an angular cross-sectional form and converging to a bend at one end, so as to provide interlocking tongues *f g*, and said tongues being provided with lips f^3 g^3, respectively, at their free ends, and with apertures f^3 g^3 at their bases, substantially as herein set forth.

322,633. SULKY-PLOW. WILLIAM S. PATE, Alton, Ill., assignor to the Hapgood Plow Company, same place. Filed Mar. 19, 1885. (No model.)



Claim.—1. In a sulky-plow, the combination of the tongueless sulky consisting of the frame provided with the arched axle having two rearwardly-projecting bars rigidly attached thereto, the said arched axle with its supporting-wheels in advance of the plow, a caster-wheel di-

rectly in rear of the plow and connected to the rear end of the said bars, the plow pivotally connected to said frame in rear of the plow, and an operating-lever having an arm connected to the plow, all substantially as and for the purpose set forth.

2. In a sulky-plow, the tongueless sulky consisting of the frame F, provided with a rearwardly-projecting bars c c, rigidly attached to the axle, the wheels W W and axle *a* in advance of the plow, the caster-wheel V, directly in rear of the plow, in combination with a plow pivotally connected to the frame in rear of the plow, all substantially as and for the purpose set forth.

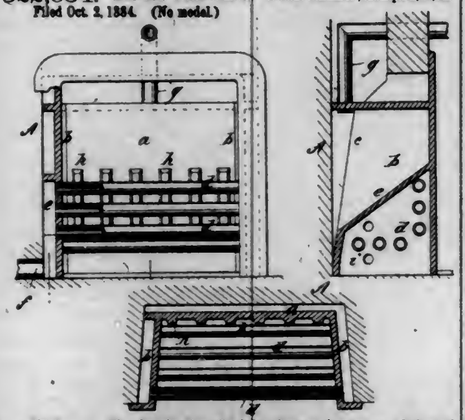
3. The combination of the frame F and caster-wheel V with the block J, consisting of the U-shaped bar *e*, with the bar *d'* rigidly attached thereto, and provided with the ears *d d*, substantially as and for the purpose set forth.

4. The frame F, provided with rearwardly-projecting bars, the plow provided with a beam having rearwardly-projecting arms, and the caster-wheel provided with a yoke, in combination with the block J, rigidly attached to the said bars, the said arms pivotally attached to the said block, and the yoke of the caster-wheel loosely seated in the said block, all substantially as and for the purpose set forth.

5. The lever L, provided with a long arm and two short arms, one of said short arms, *m*, connected to the plow by a link and adapted to elevate the plow in a movement of said long arm, the other said short arm, *n*, provided with a brake-shoe adapted to bear and brake upon the wheel at about the time the plow is elevated above the ground, substantially as and for the purpose set forth.

6. The sulky-plow clevis C, consisting of the platform-like draw-plate 2, provided with the rearwardly-projecting arms 1 1, the upwardly-projecting stops 3 3, and the perforated ears 4 4, with the rod 5, hammer-strap 6, and draw-pin 7, all substantially as and for the purpose set forth.

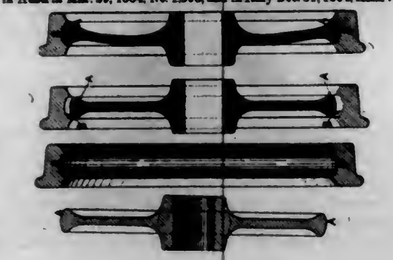
322,634. HOT-AIR FIRE-PLACE. DOTEL PEARSON, Memphis, Tenn. Filed Oct. 2, 1884. (No model.)



Claim.—1. The herein-described fire-box or heater, consisting of the forwardly-inclined back plate, *a*, having side flanges, *b*, and provided with the ribs *h*, and the inclined plate *e*, projecting from one side flange and forming a partition when the heater is in position, and the tubes *d*, having their ends passed through the side flanges and forming grate-bars, as set forth.

2. In a fire-place heater, the back plate, *a*, provided with the ribs *h*, the side plates, *b*, the tubular grate-bars *d*, and the partition *e*, in combination with the inlet *f* and outlet *g*, substantially as herein shown and described.

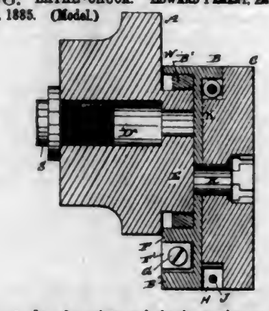
322,635. METHOD OF MAKING CAR-WHEELS. WILHELM PELS, Essen, Germany, assignor to Fried Krupp, same place. Filed Mar. 9, 1885. (No model.) Patented in England June 12, 1883, No. 2,914; in France Dec. 24, 1883, No. 159,362; in Belgium Dec. 31, 1883, No. 63,729; in Austria Mar. 29, 1884, No. 1,398, and in Italy Dec. 31, 1884, XXXV, 181.



Claim.—1. The method herein specified of manufacturing car-wheels, consisting in forming the malleable rim with a recessed or interlocking inner surface, and the malleable middle disk part or spokes with outward projections, and then bringing the two parts to welding heat and placing them in suitable dies, and then by blows or pressure expanding the middle disk part or spokes, so that the same is made to interlock with the inner surface of the rim, substantially as set forth.

2. The method herein specified of manufacturing car-wheels, consisting in forming the rim with a recessed inner surface and the spokes or disk separately out of malleable metal, and then spreading the metal of the disk or arms into the recessed inner surface of the rim and welding the parts together, substantially as specified.

322,636. LATHE-CHUCK. EDWARD PEMENT, Esmond, Dak. Filed Apr. 14, 1885. (Model.)



Claim.—1. In a face-plate and chuck attachment, the combination, with the section A, having a projection, E, which is screw-threaded on its rim, of a screw-collar, W, screwed on the said projection, and the section B, which is clamped on the collar W, substantially as herein shown and described.

2. In a face-plate and chuck attachment, the combination, with the section A, having the eccentric projection E, the rim of which is screw-threaded, of the screw-collar W and the section B, the said section B and the screw-collar being provided with apertures for receiving screws, and implements for turning the said collar, substantially as herein shown and described.

3. In a face-plate and chuck attachment, the sections A, B, and C, combined substantially as herein shown and described.

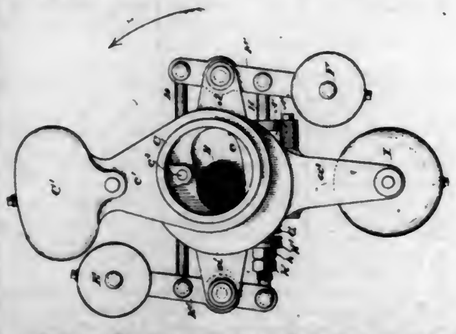
4. In a face-plate and chuck attachment, the combination, with the section A, having the eccentric projection E, of the sections B and C, substantially as herein shown and described.

5. In a face-plate and chuck attachment, the combination, with the section A, having the eccentric projection E, of the section B, having the split collar F, and of the screw G, substantially as herein shown and described.

6. In a face-plate and chuck attachment, the combination, with the section B, having the split collar H, of the screw J, the section C, having the projection K, and of the worm M on the spindle N, substantially as herein shown and described.

7. In a face-plate and chuck attachment, the combination, with the section A, having the eccentric projection E, of the section B, having the split collars F and H, the screws G and J, and of the section C, substantially as described.

322,637. SPEED-GOVERNOR. EDGAR PENNEY, Waynesborough, Pa. Filed Mar. 31, 1885. (No model.)



Claim.—1. The combination, substantially as before set forth, of the shifting eccentric, the centrifugal balls with their levers, the shifter-rod, the coupling-rod, and the spring around said coupling-rod.

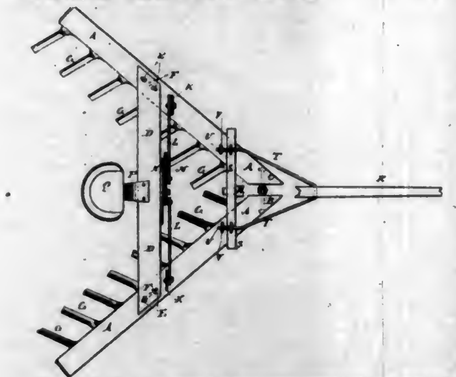
2. The combination, substantially as before set forth, of a centrifugal governor and a pivoted shifting eccentric provided with a counterbalance, the heft of which is adjustable.

3. In a centrifugal governor, the combination, substantially as before set forth, of the supporting-frame or spider having a spring-barrel, the spring, the reversible coupling-rod for the levers of the centrifugal balls, and the cap adapted to be applied to either end of said spring-barrel.

4. The combination, substantially as before set forth, of the pivoted and counterbalanced shifting eccentric, the centrifugal balls with their levers, the shifter-rod, the coupling-rod, and the spring around said coupling-rod.

5. The combination, substantially as before set forth, of the pivoted and counterbalanced shifting eccentric, the centrifugal balls with their levers, the shifter-rod, the coupling-rod, the spring around said coupling-rod, and the counter-weight for balancing the governor.

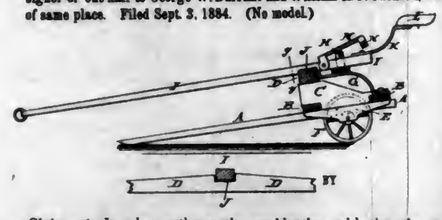
322,638. SOD CUTTER AND PULVERIZER. JAMES R. PHILLIPS, Webster, Dak. Filed Mar. 1, 1884. (No model.)



Claim.—1. A sod cutter and pulverizer, constructed substantially as herein shown and described, and consisting of inclined side bars and a cross-bar, hinged to each other and provided with bent and twisted knives, adjusting-bars, and levers, and a hinged tongue, as set forth.

2. The side bars A, loosely connected at their forward ends and provided with knives on their under sides, cross-bar D, hinged to said side bars at or near their centers, a pivoted lever, and bars pivoted thereto at their inner ends on opposite sides of its pivot, the outer ends of said bars being pivotally connected to the side bars, whereby the said side bars may be rocked or partially rotated to cause the knives to enter a greater or less depth into the ground, as set forth.

322,639. HAY-GATHERER. JAMES H. POAGE, Monroe, Mo., assignor of one-half to George W. Durrant and William R. P. Jackson, both of same place. Filed Sept. 3, 1884. (No model.)



Claim.—1. In a hay-gatherer, the combination, with the rake and its supporting-frame and pivoted tongue, also clutched to said frame, of a lever pivoted to said tongue and resting upon an upward extension of the tongue-pivot, substantially as and for the purpose set forth.

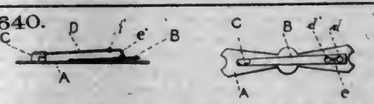
2. In a hay-gatherer, the combination, with the rakes A B C D, the bracket and pin G H, and the reversible tongue I and its clutch, of the foot-lever M, substantially as herein shown and described, whereby the said tongue can be readily thrown out of gear, as set forth.

322,640. BREASTPIN. HIRAM P. PRUIM, Grand Haven, Mich., assignor of one-half to George Stickney, same place. Filed Oct. 7, 1884. (No model.)

Claim.—1. In a breastpin, the part A, in combination with pin D, said pin being attached to the part A so that the wheel-pin D has a longitudinal movement and also a reciprocating turning movement, whereby the point of the pin may be carried to and from the catch C by either the longitudinal movement of the pin or by the turning motion, substantially as described.

2. The combination of the breastpin A, provided with the catch C,

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the pin D, provided with the head F, enlargement E, and neck *e'*, and the spring B, provided with the openings *d* and *d'*, and slot *e*, all substantially as described.

322,641. BARREL, KEG, OR SIMILAR ARTICLE. LEMON M. REED, Cleveland, Ohio. Filed Feb. 3, 1885. (No model.)



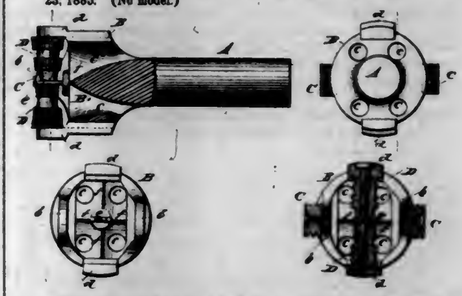
Claim.—1. In a barrel, keg, or similar package, inner and outer staves arranged to break joints, the inner staves arranged to support the heads from the inside, and an inside chine-hoop attached to the outer staves and arranged to support the heads from the outside, substantially as set forth.

2. A cylindrical package, barrel, or keg, as the case may be, consisting of inner and outer staves arranged to break joints, the inner staves arranged to support the heads from the inside, the staves secured to the hoops, and the hoops secured at the lapped ends by one set of nailing, substantially as set forth.

3. In a barrel, keg, or similar package, heads provided with an annular tongue, square or rectangular in cross-section, an annular corresponding space or crozing between the shoulder of the staves and the inside chine-hoop for receiving the said tongue, and an annular shoulder on the head arranged to extend inside the staves, substantially as set forth.

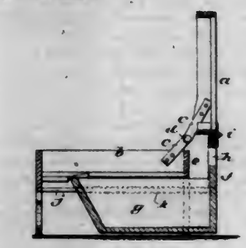
4. In a barrel, keg, or similar package, a detachable head consisting of three or more pieces, with the center piece arranged to engage the crozing at one end, and cut short of the crozing at the other end, and provided with a metal fastening secured to the center piece of the head and bent at about a right angle, and arranged to be fastened to the chine or chine-hoop, substantially as set forth.

322,642. ROCK-DRILL. ISAAC REESE, Nashville, Tenn. Filed Mar. 23, 1885. (No model.)



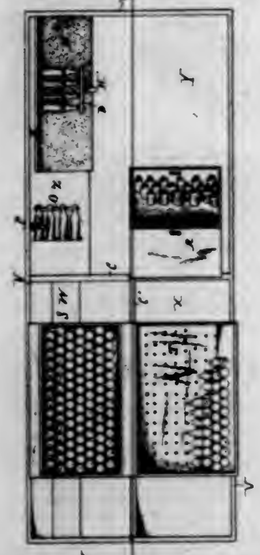
Claim.—In a rock or coal drill, the combination, with a shaft, A, having a chambered cylindrical head, B, provided with a central wedge-shaped bearing, *e*, side bearings, *b d*, and interior beveled ridges, *f*, leading to outwardly-curved longitudinal perforations *c*, of the cylindrical cutting-rollers C C, journaled in opposite bearings on the outer surface of the drill-head, and the conical rollers D, journaled centrally in the head of the drill, substantially as shown and described.

322,643. SOFA-BED. GEORGE W. ROBBINS, Los Angeles, Cal. Filed Mar. 28, 1884. (No model.)



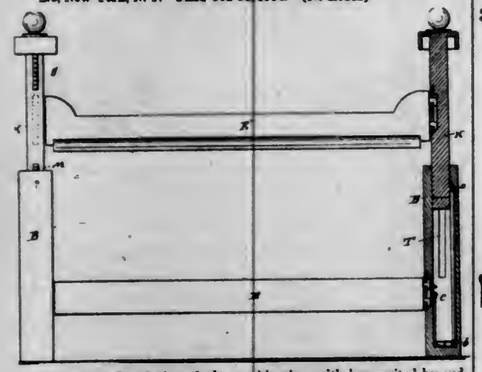
Claim.—The combination, with the main frame having cleats or rails projecting beyond the rear sides of said frame, of the back frame jointed to the main frame, and the auxiliary frame with its longitudinal bar hinged to the lower edge of the back frame, to permit its side bars to rest upon the projections or extensions of the said cleats or rails in supporting the back frame in an upright position, and to fold underneath the said back frame in lowering the latter into a horizontal position, substantially as and for the purpose set forth.

322,644. PROCESS OF CLEANING BOTTLES. ROBERT ROBINSON, Brooklyn, N. Y. Filed June 27, 1884. (No model.)



Claim.—The process herein described, which consists in immersing the unclean bottles in water, then inserting the blades therein, subsequently rotating the bottles by frictional contact between relatively stationary cleansing media, then removing the cleansed series to a rinsing apparatus, and, finally, draining them, for the purpose and in the manner set forth.

322,645. ADJUSTABLE DOUBLE BEDSTEAD. ALBERT T. SCHLICHTING, New York, N. Y. Filed Oct. 31, 1884. (No model.)



Claim.—1. In a bedstead, the combination, with legs united by end pieces and side rails, of sliding leg-sections within the legs, end bars uniting the sliding leg-sections, and side rails connecting the leg-sections at the and foot ends of the bedstead, substantially as herein shown and head described.

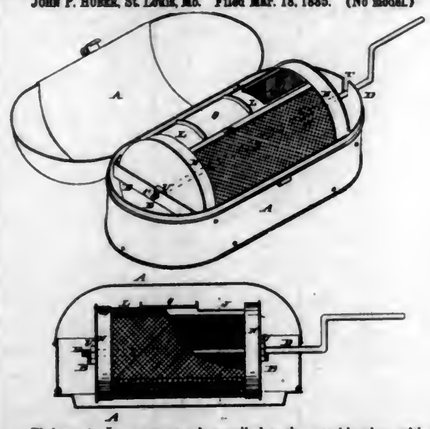
2. The combination, with a bedstead, of sliding legs in the bedstead-legs, a bed-supporting frame held on the sliding legs, latches for locking the sliding legs in place, cords or wires secured to the latches, and movable pieces to which all the cords are secured, whereby, by moving the said movable pieces, all the latches can be operated simultaneously and by a single movement, substantially as herein shown and described.

3. The combination, with a bedstead, of sliding legs in the bedstead-legs, a bed-supporting frame held in the sliding legs, latches for locking the sliding legs in place, wires, ropes, or chains secured to the sliding legs, and of a drum to which all the ropes or chains are secured, substantially as herein shown and described.

4. The combination, with the legs B, side rails, E, and head and foot pieces C D, of the sliding legs K, and a frame secured to the same, the ropes, chains, or wires L, the pulley F, the ratchet-wheel H, the pawl J, and the devices for locking the legs K in place in the legs B, substantially as herein shown and described.

5. The combination, with the legs B, side rails, E, and head and foot pieces C D, of the sliding legs K, having rack-teeth, ropes, and drum for raising the top frame, the spring-latches N, the cords O, and the slide P, to which they are secured, substantially as herein shown and described.

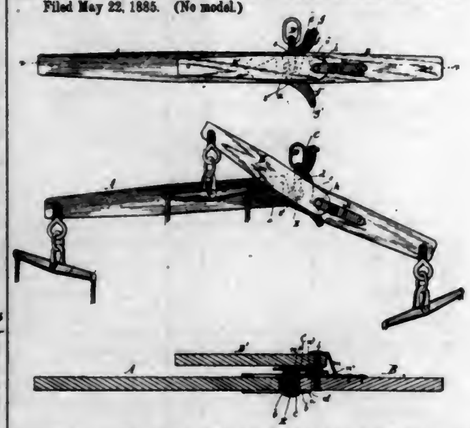
322,646. COFFEE ROASTER AND CLEANER. JOHN SCHMITT and JOHN P. HUBER, St. Louis, Mo. Filed Mar. 18, 1885. (No model.)



Claim.—1. In a nut-roasting cylinder, the combination, with the wire-gauze, the sheet-metal strip L, having the opening J, inserted between its meeting edges, and the sliding door O, of the S-shaped strips M, which secure the parts of the cylinder together and form guides for the sliding door, substantially as described.

2. In a nut-roasting cylinder, the combination, with the wire-gauze, the sheet-metal strip L, having the opening J, inserted between the edges of said gauze, and the door O, of the S-shaped strips M, for the purpose set forth, the sheet-metal heads having the interned flanges N, the axle D, and the nuts U, all arranged substantially as set forth.

322,647. DRAFT-EQUALIZER. ALBERT SELLERS, Littleton, Ill. Filed May 22, 1885. (No model.)



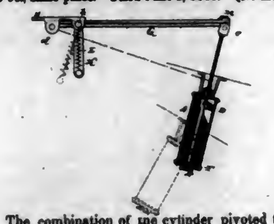
Claim.—1. The long lever-bar A and short lever-bar B, coupled to each other by joint-plates *a a'*, and a tube, *c*, confined on plate *a'*, in combination with the short lever-bar B', pivoted to the short lever B, and connected to the long lever-bar A by an arm, *f*, of the coupling-plate and a diagonal connecting-rod, C, which is pivoted to said arm *f* and to the lug of the lever-bar B, substantially as and for the purpose described.

2. The plate *a* of the long lever A, provided with two arms, *f f'*, in combination with the two lugs *s s'* of the short lever-bar B', and with the reversible connecting-rod C and short lever-bar B, substantially as described.

3. The plate *a* of the long lever-bar, having arms *f f'*, and a segment end, *d*, fitted under the lip n^3 of the plate *n'* of the short lever-bar, B, substantially as and for the purpose described.

4. The three levers A B B', combined with the oblique connecting-rod C, substantially as and for the purpose described.

322,648. DOOR-CHECK. JOHN H. SHAW, New Haven, Conn., assignor to Sargent & Co., same place. Filed June 1, 1885. (No model.)

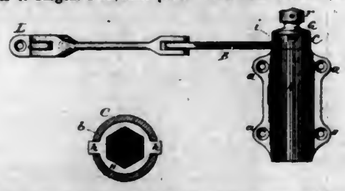


Claim.—1. The combination of the cylinder pivoted to a bracket adapted to be attached to the door, a piston within the cylinder, and a rod extending from the piston through the cylinder toward the door, a lever one end hung upon a fulcrum, adapted to be secured in a fixed position, the other end of the lever hinged to the end of the piston-rod, a spring adapted to force said lever toward the door-jamb, the said cylinder constructed for the free admission and exit of air back of the piston, but for slow exit upon the opposite side, substantially as described.

2. The combination of the cylinder A, hung in a pivot, B, forming part of a bracket, C, adapted to be secured to the door, piston D within said cylinder, its rod E extending longitudinally through the cylinder toward the door, the lever G, hung by one end to a fixed fulcrum, *d*, the other end hung to the piston-rod, an arm, K, extending from said lever, carrying a stud, *f*, a fixed stud, *h*, and a spring, L, between said two studs, the said cylinder constructed with openings for the free admission and exit of air on one side of the piston and for slow exit upon the opposite side, substantially as described.

3. The combination of the cylinder A, hung upon a bracket, C, adapted to be attached to the door, piston D, rod E, lever G, hinged by one end to said rod, the other end hung upon a fixed fulcrum, *d*, a spring adapted to bear said lever toward the door, and a stop, M, upon said lever, substantially as described.

322,649. DOOR-SPRING. JOHN H. SHAW, New Haven, Conn., assignor to Sargent & Co., same place. Filed June 1, 1885. (No model.)

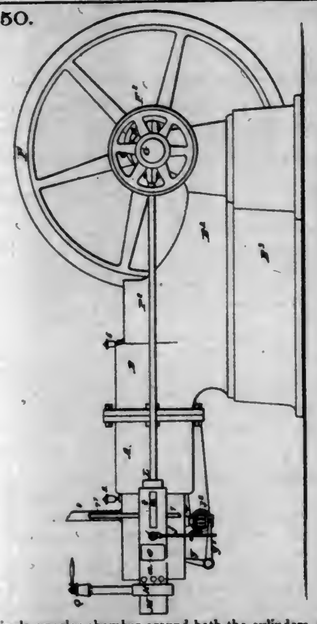


Claim.—The combination of the barrel A, adapted for fixed attachment, the spindle E, extended longitudinally through the said barrel free for rotation, but fixed against longitudinal movement, a helical spring in said barrel around said spindle, one end engaged with the barrel and the other with the spindle, a lever, B, constructed with a hub, C, surrounding said spindle, and constructed to be set into the end of the barrel, the hub of said lever constructed with a chamber, *b*, upon its upper surface, with one or more openings, *i*, through the walls of said chamber, a portion of the spindle within the said chamber being of irregular shape and the remainder of cylindrical shape of less diameter than the irregular shape, and a collar, H, within said chamber, having lugs extending radially therefrom through the openings in the walls of the chamber, the said collar constructed with an opening through it corresponding to the irregular shape of the spindle, so as to engage that portion of the spindle, but less in thickness than the depth of the chamber, and movable axially in said chamber from the irregular portion of the spindle to the cylindrical, or vice versa, with a lever, I, one end of which is hung to the said lever B and the other to a bracket, L, adapted to be secured in a fixed position, substantially as described.

322,650. GAS-ENGINE. CYPRAS SHELBURNE, Richmond, Va., assignor to James G. Pulling, Columbus, Ohio. Filed Jan. 3, 1885. (No model.)

Claim.—1. In a gas-motor engine, the power and exhaust cylinders cast separately and having surrounding annular chambers which communicate, when the cylinders are secured together, to form practically a single annular chamber around both the cylinders, and ports in the cylinders communicating with said surrounding chamber, substantially as described.

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2. In a gas-motor engine, the combination, with the power and exhaust cylinders having the surrounding chamber and the ports connecting said cylinders therewith of the slide-valve in a case connected with the exhaust-port of the exhaust-cylinder, substantially as described.

3. In a gas-motor engine, the combination of the power and exhaust cylinders having the surrounding chamber, and the ports connecting said cylinders therewith, the slide-valve in a case connected with the exhaust-port of the exhaust-cylinder, and the plate bearing against the outer face of the valve, substantially as described.

4. In a gas-motor engine, the slide L, made in the form of a hollow plunger with a central bore, T, passage *l*, chambers R, and ports *c c*, arranged in combination with the gas-chamber H, air-ports *a a*, and passage *e*, so as to perform all the functions of preparing and mixing the combustible mixture for the cylinder-charge, of admitting the same, cutting off the supply, of allowing the charge to be compressed and then fired in such a manner as to produce an explosion at every outstroke of the piston, substantially as herein specified.

5. In a gas-engine, the slide-cylinder M, having air-entry ports *a a*, surrounding the cylinder and opening to its inner face, in combination with an annular gas-chamber, H, surrounding the cylinder M and opening by ports *c' c'* to the inner face of the cylinder, the said ports *a a* and *c' c'* arranged to connect with the mixing-chambers R, substantially as and for the purpose specified.

6. In a gas-engine, the combination of the valve *u*, the valve-case, the pivoted bent lever attached to the governor and to the valve, the lever *r*, fulcrumed to the valve-case, the spring r^2, bearing against the inner end of the lever, and the stud r^3, bearing against one arm of the bent lever, substantially as described.

7. In a gas-motor engine, the slide L, having central bore, T, passage *l*, chambers R, ports *c*, and water-chambers *n*, arranged in combination with the gas-chamber H, air-ports *a*, and passage *e*, and jet *f*, for the purposes set forth, substantially as described.

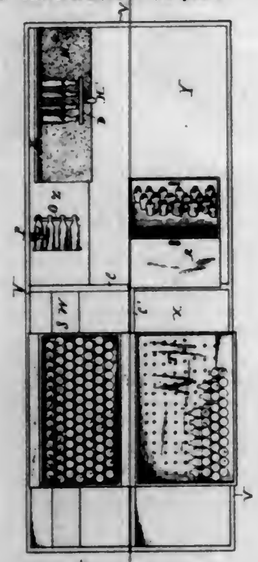
322,651. BALING-PRESS. CHARLES SMITH, Marquette, Mich. Filed Dec. 11, 1884. (No model.)

Claim.—1. In a baling-press, the combination, with the sills A and the follower L K, of the tubular shaft *f*, having ratchet-wheels *h*, the gear-wheel *j*, having spring-pawl *i*, the gear-segment and lever *k m*, the holding-pawl *o*, and the ropes *g*, substantially as herein shown and described, whereby the said follower can be readily drawn downward to press the material into a bale, as set forth.

2. In a baling-press, the combination, with the door Q, the upper cross-bar O of the end of the baling-box, and the double-jointed hinge Z, of the interposed plate *a*, and the bolt *b*, attached to the said door and passing through the said interposed plate, substantially as herein shown and described, whereby the sag of the door can be readily taken up, as set forth.

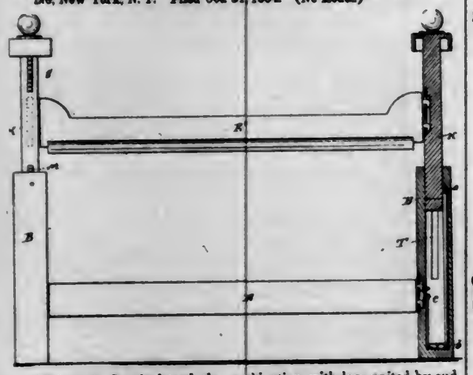
Claim.—The combination, with the main frame having cleats or rails projecting beyond the rear sides of said frame, of the back frame jointed to the main frame, and the auxiliary frame with its longitudinal bar hinged to the lower edge of the back frame, to permit its side bars to rest upon the projections or extensions of the said cleats or rails in supporting the back frame in an upright position, and to fold underneath the said back frame in lowering the latter into a horizontal position, substantially as and for the purpose set forth.

322,644. PROCESS OF CLEANING BOTTLES. ROBERT ROBINSON, Brooklyn, N. Y. Filed June 27, 1884. (No model.)



Claim.—The process herein described, which consists in immersing the unclean bottles in water, then inserting the blades therein, subsequently rotating the bottles by frictional contact between relatively stationary cleansing media, then removing the cleansed series to a rinsing apparatus, and, finally, draining them, for the purpose and in the manner set forth.

322,645. ADJUSTABLE DOUBLE BEDSTEAD. ALBERT T. SCHLICHTING, New York, N. Y. Filed Oct. 31, 1884. (No model.)



Claim.—1. In a bedstead, the combination, with legs united by end pieces and side rails, of sliding leg-sections within the legs, end bars uniting the sliding leg-sections, and side rails connecting the leg-sections at the and foot ends of the bedstead, substantially as herein shown and head described.

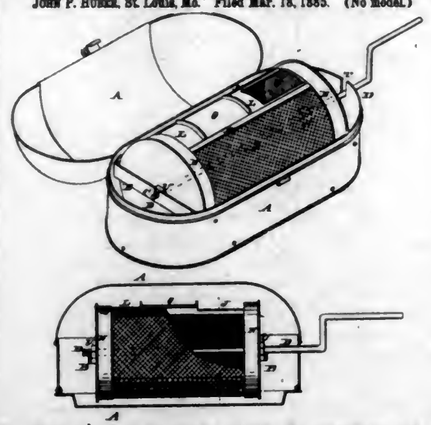
2. The combination, with a bedstead, of sliding legs in the bedstead-legs, a bed-supporting frame held on the sliding legs, latches for locking the sliding legs in place, cords or wires secured to the latches, and movable pieces to which all the cords are secured, whereby, by moving the said movable pieces, all the latches can be operated simultaneously and by a single movement, substantially as herein shown and described.

3. The combination, with a bedstead, of sliding legs in the bedstead-legs, a bed-supporting frame held in the sliding legs, latches for locking the sliding legs in place, wires, ropes, or chains secured to the sliding legs, and of a drum to which all the ropes or chains are secured, substantially as herein shown and described.

4. The combination, with the legs B, side rails, E, and head and foot pieces C D, of the sliding legs K, and a frame secured to the same, the ropes, chains, or wires L, the polley F, the ratchet-wheel H, the pawl J, and the devices for locking the legs K in place in the legs B, substantially as herein shown and described.

5. The combination, with the legs B, side rails, E, and head and foot pieces C D, of the sliding legs K, having rack-teeth, ropes, and drum for raising the top frame, the spring-latches N, the cords O, and the slide P, to which they are secured, substantially as herein shown and described.

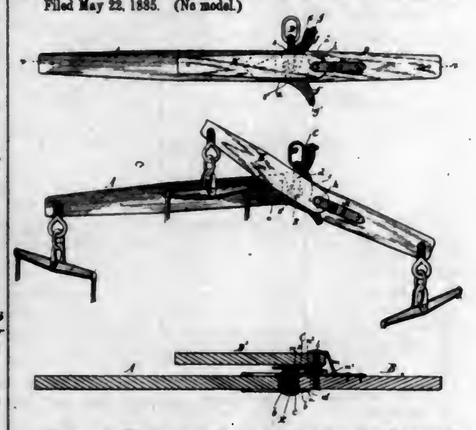
322,646. COFFEE ROASTER AND CLEANER. JOHN SCHMITT and JOHN P. HUBER, St. Louis, Mo. Filed Mar. 18, 1885. (No model.)



Claim.—1. In a nut-roasting cylinder, the combination, with the wire-gauze, the sheet-metal strip L, having the opening J, inserted between its meeting edges, and the sliding door O, of the S-shaped strips M, which secure the parts of the cylinder together and form guides for the sliding door, substantially as described.

2. In a nut-roasting cylinder, the combination, with the wire-gauze, the sheet-metal strip L, having the opening J, inserted between the edges of said gauze, and the door O, of the S-shaped strips M, for the purpose set forth, the sheet-metal heads having the interned flanges N, the axle D, and the nuts U, all arranged substantially as set forth.

322,647. DRAFT-EQUALIZER. ALBERT SELLERS, Littleton, Ill. Filed May 22, 1885. (No model.)



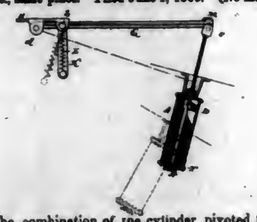
Claim.—1. The long lever-bar A and short lever-bar B, coupled to each other by joint-plates *a a'*, and a tube, c, confined on plate *a'*, in combination with the short lever-bar B', pivoted to the short lever B, and connected to the long lever-bar A by an arm, *f*, of the coupling-plate and a diagonal connecting-rod, C, which is pivoted to said arm *f* and to the lug of the lever-bar B, substantially as and for the purpose described.

2. The plate *a* of the long lever A, provided with two arms, *f f'*, in combination with the two lugs *s s'* of the short lever-bar B', and with the reversible connecting-rod C and short lever-bar B, substantially as described.

3. The plate *a* of the long lever-bar, having arms *f f'*, and a segment end, *d*, fitted under the lip n^2 of the plate *n'* of the short lever-bar, B, substantially as and for the purpose described.

4. The three levers A B B', combined with the oblique connecting-rod C, substantially as and for the purpose described.

322,648. DOOR-CHECK. JOHN H. SHAW, New Haven, Conn., assignor to Sargent & Co., same place. Filed June 1, 1885. (No model.)

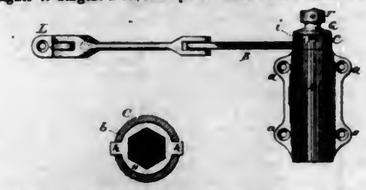


Claim.—1. The combination of the cylinder pivoted to a bracket adapted to be attached to the door, a piston within the cylinder, and a rod extending from the piston through the cylinder toward the door, a lever one end hung upon a fulcrum, adapted to be secured in a fixed position, the other end of the lever hinged to the end of the piston-rod, a spring adapted to force said lever toward the door-jamb, the said cylinder constructed for the free admission and exit of air back of the piston, but for slow exit upon the opposite side, substantially as described.

2. The combination of the cylinder A, hung in a pivot, B, forming part of a bracket, C, adapted to be secured to the door, piston D within said cylinder, its rod E extending longitudinally through the cylinder toward the door, the lever G, hung by one end to a fixed fulcrum, *d*, the other end hung to the piston-rod, an arm, K, extending from said lever, carrying a stud, *f*, a fixed stud, *h*, and a spring, L, between said two studs, the said cylinder constructed with openings for the free admission and exit of air on one side of the piston and for slow exit upon the opposite side, substantially as described.

3. The combination of the cylinder A, hung upon a bracket, C, adapted to be attached to the door, piston D, rod E, lever G, hinged by one end to said rod, the other end hung upon a fixed fulcrum, *d*, a spring adapted to bear said lever toward the door, and a stop, M, upon said lever, substantially as described.

322,649. DOOR-SPRING. JOHN H. SHAW, New Haven, Conn., assignor to Sargent & Co., same place. Filed June 1, 1885. (No model.)



Claim.—The combination of the barrel A, adapted for fixed attachment, the spindle E, extended longitudinally through the said barrel free for rotation, but fixed against longitudinal movement, a helical spring in said barrel around said spindle, one end engaged with the barrel and the other with the spindle, a lever, B, constructed with a hub, C, surrounding said spindle, and constructed to be set into the end of the barrel, the hub of said lever constructed with a chamber, *b*, upon its upper surface, with one or more openings, *i*, through the walls of said chamber, a portion of the spindle within the said chamber being of irregular shape and the remainder of cylindrical shape of less diameter than the irregular shape, and a collar, H, within said chamber, having lugs extending radially therefrom through the openings in the walls of the chamber, the said collar constructed with an opening through it corresponding to the irregular shape of the spindle, so as to engage that portion of the spindle, but less in thickness than the depth of the chamber, and movable axially in said chamber from the irregular portion of the spindle to the cylindrical, or vice versa, with a lever, I, one end of which is hung to the said lever B and the other to a bracket, L, adapted to be secured in a fixed position, substantially as described.

322,650. GAS-ENGINE. CEPHAS SHELBURNE, Richmond, Va., assignor to James G. Pulling, Columbus, Ohio. Filed Jan. 3, 1885. (No model.)

Claim.—1. In a gas-motor engine, the power and exhaust cylinders east separately and having surrounding annular chambers which communicate, when the cylinders are secured together, to form practically a single annular chamber around both the cylinders, and ports in the cylinders communicating with said surrounding chamber, substantially as described.

2. In a gas-motor engine, the combination, with the power and exhaust cylinders having the surrounding chamber and the ports connecting said cylinders therewith of the slide-valve in a case connected with the exhaust-port of the exhaust-cylinder, substantially as described.

3. In a gas-motor engine, the combination of the power and exhaust cylinders having the surrounding chamber, and the ports connecting said cylinders therewith, the slide-valve in a case connected with the exhaust-port of the exhaust-cylinder, and the plate bearing against the outer face of the valve, substantially as described.

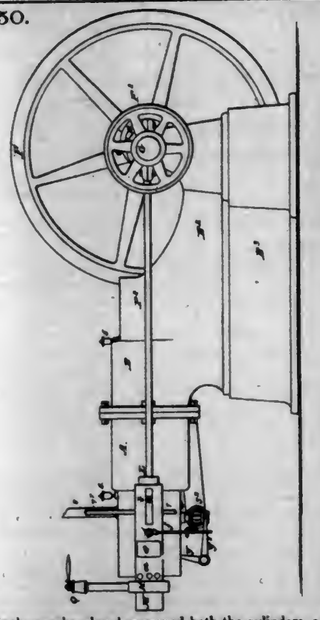
4. In a gas-motor engine, the slide L, made in the form of a hollow plunger with a central bore, T, passage *l*, chambers R, and ports *c c*, arranged in combination with the gas-chamber H, air-ports *a a*, and passage *e*, so as to perform all the functions of preparing and mixing the combustible mixture for the cylinder-charge, of admitting the same, cutting off the supply, of allowing the charge to be compressed and then fired in such a manner as to produce an explosion at every outstroke of the piston, substantially as herein specified.

5. In a gas-engine, the slide-cylinder M, having air-entry ports *a a*, surrounding the cylinder and opening to its inner face, in combination with an annular gas-chamber, H, surrounding the cylinder M and opening by ports *c' c'* to the inner face of the cylinder, the said ports *a a* and *c' c'* arranged to connect with the mixing-chambers R, substantially as and for the purpose specified.

6. In a gas-engine, the combination of the valve u, the valve-case, the pivoted bent lever attached to the governor and to the valve, the lever *r*, fulcrumed to the valve-case, the spring r^2, bearing against the inner end of the lever, and the stud r^3, bearing against one arm of the bent lever, substantially as described.

7. In a gas-motor engine, the slide L, having central bore, T, passage *l*, chambers R, ports *c*, and water-chambers *n*, arranged in combination with the gas-chamber H, air-ports *a*, and passage *e*, and jet *f*, for the purposes set forth, substantially as described.

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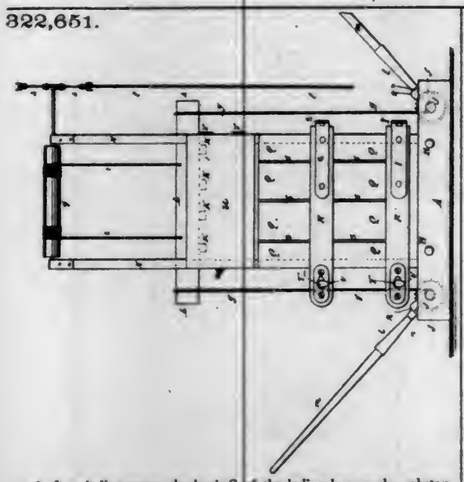


322,651. BALING-PRESS. CHARLES SMITH, Marquette, Mich. Filed Dec. 11, 1884. (No model.)

Claim.—1. In a baling-press, the combination, with the sills A and the follower L K, of the tubular shaft *f*, having ratchet-wheels *h*, the gear-wheel *j*, having spring-pawl *i*, the gear-segment and lever *k m*, the holding-pawl *o*, and the ropes *g*, substantially as herein shown and described, whereby the said follower can be readily drawn downward to press the material into a bale, as set forth.

2. In a baling-press, the combination, with the door Q, the upper cross-bar O of the end of the baling-box, and the double-jointed hinge Z, of the interposed plate *a*, and the bolt *b*, attached to the said door and passing through the said interposed plate, substantially as herein shown and described, whereby the sag of the door can be readily taken up, as set forth.

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3. In a baling-press, the back G of the baling-box, made, substantially as herein shown and described, with vertical slots I, to receive the bale-bands, dowel-pins M, to support the rear ends of the bale-bands, and hand-holes J, to allow the rear ends of the bale-bands to be grasped from the front of the press, as set forth.

4. In a baling-press, the combination, with the cross-bars H of the baling-box back G, and the cross-bars R of the hinged door Q, of the bolts T, having hooks U at one end and nuts V at the other end, and provided with handles X and the keepers W, to hold the said nut from turning, substantially as herein shown and described, whereby the said door can be readily fastened and unfastened, and will be securely held, as set forth.

322,652. HORSESHOE. WILLIAM SOMERVILLE, Sr., Buffalo, N. Y. Filed Feb. 19, 1885. (No model.)



Claim.—In a horseshoe, the combination, with an upper plate, A, provided with a dull toe-calk, B, having an opening, *b*, and dull heel-calks C C, provided with openings *c*, of a lower plate, D, provided with a tenon, *g*, entering the opening *b*, tenons *h h*, entering the opening *c*, fastening pins or rivets *i*, and sharp calks E F F, substantially as set forth.

322,653. DRIVE-CHAIN. WILLIAM STEPHENS, New Richmond, Wis. Filed Apr. 7, 1885. (No model.)

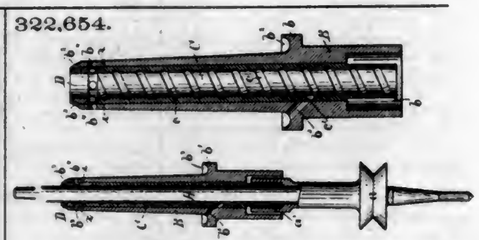


Claim.—The drive-chain link herein shown and described, formed at one end with the hook *a* and shoulders *d d*, undercut at d^2 to form lips d^2, and formed at the other end with the bar *b*, made concaved at its ends to form the locking-lips b^2, substantially as and for the purposes set forth.

322,654. SPINDLE AND BOLSTER FOR SPINNING AND TWISTING MACHINES. JAS. J. SUMNER, Providence, R. I. Filed Aug. 5, 1884. (No model.)

Brief.—Near the top of the bolster is a ring of holes, and above these the bolster is turned in to fit over a beveled ring tight upon the spindle. Below the holes is an internally spirally-grooved sleeve tight in the bolster. The bolster is provided with a channeled projection, from which an oil-hole leads to the spindle. An internal socket on the lower end of the bolster receives an annular socket on the stem of the spindle.

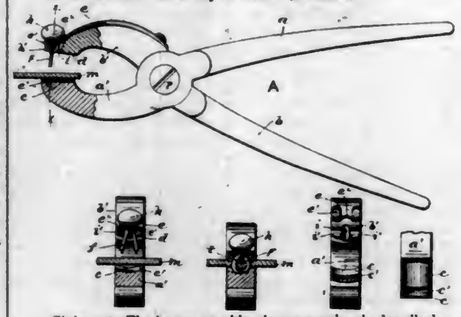
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Claim.—1. The combination, with the spindle proper, of the bolster, the sleeve, and the ring, constructed and arranged substantially as and for the purposes specified.

2. The combination, with the spindle proper, having the socket *a'*, of the bolster having the channeled projection *b'*, duct b^2, and holes b^4, the sleeve having the worm *c* and duct *c'*, and the ring D, substantially as and for the purposes set forth.

322,655. BUTTON-ATTACHING INSTRUMENT. JAMES F. THAYER, Providence, R. I. Filed May 25 1885. (No model.)



Claim.—1. The button-attaching instrument herein described, consisting of two jointed or fulcrumed handles having upper and lower jaws, the upper jaw being provided with means, substantially as shown, for retaining the button and fastener in position, and also having the convex-shaped face, the lower or opposite jaw having the concave-shaped face provided with the transversely-arranged U-shaped groove or clinching-die, substantially as and for the purpose set forth.

2. In a button-attaching instrument, the pivoted upper jaw, *b'*, having the convex under surface or face *d*, constructed to retain a button and fastening, in combination with the pivoted lower jaw, *a'*, having the concave face *c*, provided with the transversely-arranged clinching-die, substantially as shown, and hereinbefore set forth.

3. In a button-attaching instrument, the jaw *b'*, provided with the convex face *d*, slot *i*, having beveled walls *i' i'*, and retaining-spring, in combination with the lower or opposite jaw, *a'*, provided with the concave face *c*, and clinching-die *c'*, arranged transversely of said jaw, substantially as shown, and for the purpose hereinbefore set forth.

322,656. DITCHING-MACHINE. JOHN C. TITUS, JOHN MORRAL, and SAMUEL E. MORRAL, Marion, Ohio, assignors of one-half to said J. C. Titus, and one-fourth each to said J. Morral and S. E. Morral. Filed Jan. 30, 1885. (No model.)

Claim.—1. In a ditching-machine, the combination, with an excavator and elevating auger, as described, of a second auger at the rear and in open relation with the first auger and arranged to assist in elevating the dirt, substantially as set forth.

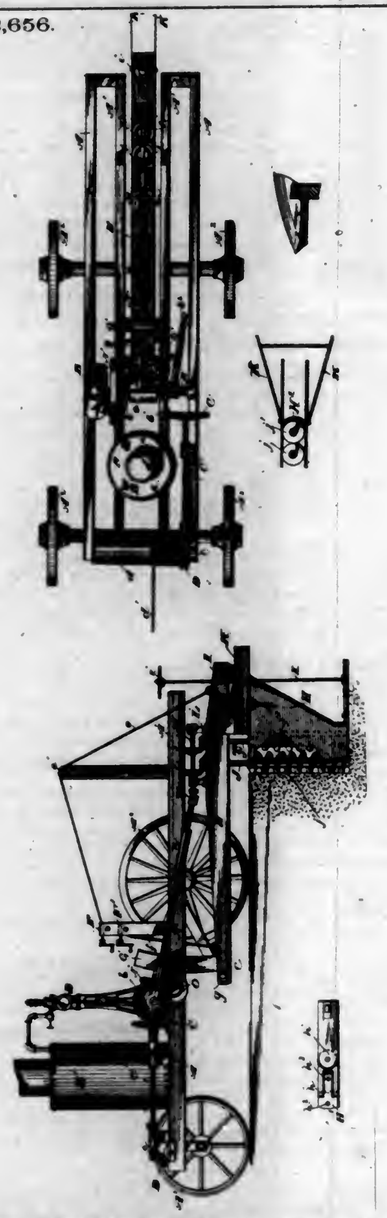
2. In a ditching-machine, the combination, with one or more augers, as described, of a shoe the forward part of which is provided with steppings to support such augers, and the shoe provided with two hinges or joints, the one operating laterally and the other vertically, substantially as set forth.

3. In a ditching-machine, the combination, with one or more upright augers for excavating and elevating the dirt, of a jointed shoe, and a casing for supporting said auger, a tilting beam with the casings attached, and cables and windlasses or equivalent devices for operating the beam, substantially as set forth.

4. In a ditching-machine, the combination, with a tilting beam, a casing, and shoe supporting upright augers, of laterally-projecting spindles and rollers mounted thereon, and upright draft-posts secured to the machine for engaging said rollers and propelling the excavating apparatus, substantially as set forth.

5. In a ditching-machine, the combination, with a tilting beam arranged to support one or more excavating and elevating augers, and the shaft M, intergeared with the spindles of said anger and supported from

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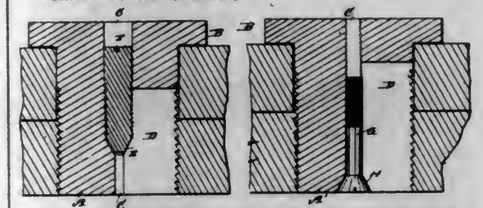
said beam, of a tumbling-rod provided with an extension or slip joint and connected to the shaft M by a universal joint, and journaled in boxes attached to the yoke, that in turn is journaled on the engine-shaft or other shaft from which motion is transmitted to the ditching apparatus, substantially as set forth.

6. In a ditching-machine, the combination, with a movable beam, a vertical auger journaled therein, and devices for imparting rotary motion to said auger, of mold-boards adjustably secured to the machine, and adapted to operate substantially as described.

7. In a ditching-machine, the combination, with a wheeled frame, a tilting beam suspended therefrom, and devices for tilting said beam, of a casing secured to the tilting beam, and two augers located within the casing and journaled to the beam, substantially as set forth.

8. In an excavating-machine, the combination, with a tilting beam and depending casing supported from the beam, of two upright augers, the rear auger for elevating and the forward auger for excavating and elevating the earth, substantially as set forth.

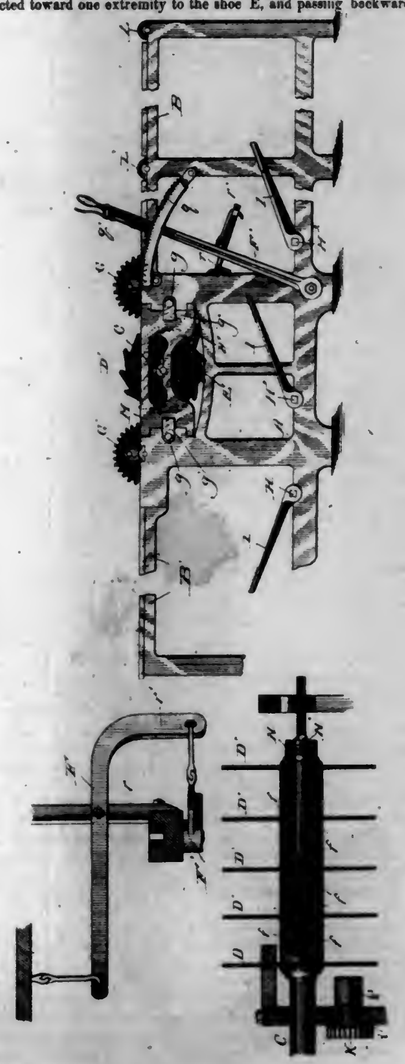
322,657. SCREW-BOLT LOCK. GAYGER D. TOLMAN, Shawano, Wis. Filed Feb. 2, 1885. (No model.)



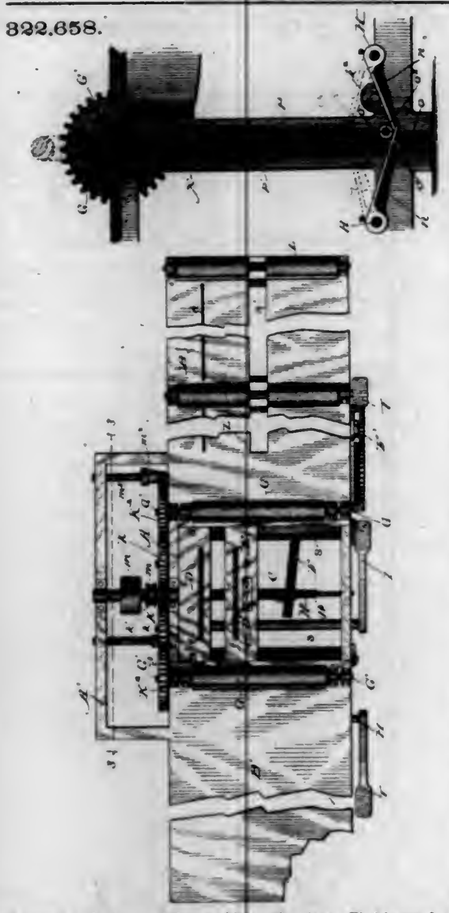
Claim.—A screw-bolt having a longitudinal screw-threaded aperture, having its lower end provided with a smooth inclined shoulder, in combination with a screw having a portion of it smooth and tapered to correspond with the inclined portion of the aperture, substantially as herein shown and described.

322,658. CIRCULAR SAWING MACHINE. CONRAD TRIER, Chicago, Ill. Filed May 5, 1885. (No model.)

Claim.—1. In a sawing-machine, the combination, with the rotary shaft carrying to rotate with it a stationary circular saw, of a saw, D', in a sliding shoe, E, laterally movable on the shaft, a lever, F, connected toward one extremity to the shoe E, and passing backward and



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fulcrumed to the frame of the machine, and a lever, F', fulcrumed to the frame toward its lower end, and extending upward and connected between its handle and fulcrum with the bent end of the lever F, as and for the purpose set forth.

2. In a sawing-machine, the combination, with the rotary shaft carrying to rotate with it a stationary circular saw, of a saw, D', in a sliding shoe, E, laterally movable on the shaft, a bent lever, F, connected toward one extremity to the shoe E, and passing backward and fulcrumed to the frame of the machine, a lever, F', fulcrumed to the frame toward its lower end and extending upward and connected between its handle and fulcrum with the bent end of the lever F, and provided with a spring-pawl, q', and a rack, q, for retaining the lever F' in locked position, the whole being constructed and arranged to operate substantially as described.

3. In a sawing-machine, the combination, with the frame A of the machine and the feed-roller G', of a roller, G, journaled in a frame, p, having a vertical movement within guides p', formed in the frame A, and the foot-lever mechanism, substantially as described, connected with the frame p to actuate it, as and for the purpose set forth.

4. In a sawing-machine, the combination, with the frame A of the machine and the feed-roller G', of a roller, G, journaled in a frame, p, having a vertical movement within guides p', formed in the frame A, one or more rock-shafts, H H' H², carrying each a finger, n, which projects through the frame p, and a foot-lever, I, for each rock-shaft, the whole being constructed and arranged to operate as and for the purpose set forth.

5. In a sawing-machine, the combination, with the frame A and the feed-rollers G', of the rollers G, journaled in frames p, having vertical movement within guides p', formed in the frame A, rock-shafts H, H', and H², carrying each a finger, n, projecting through the lower crosspiece of each frame p, provided with a roller, o^2, a foot-lever, I, upon each rock-shaft, H' and H², extending in parallel directions, and a foot-lever, I, upon the rock-shaft H, extending in a direction contrary to the levers I on the rock-shafts H' and H², as and for the purpose set forth

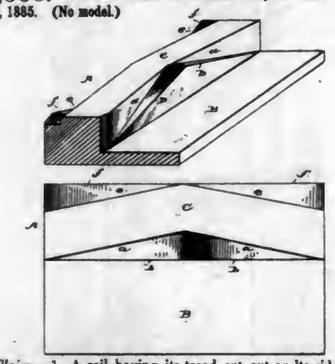
6. A sawing-machine having a frame, A, supporting a rotary shaft, C, carrying a stationary circular saw, D, and a movable circular saw, D', and a feed-table, B, supported by the frame A, and provided with a feed-roller, G', and a roller, G, and a guide-slot, h', parallel with the plane of motion of the saws, the whole being constructed and arranged to operate substantially as described.

7. A sawing-machine having a frame, A, supporting a rotary shaft, C, carrying a stationary circular saw, D, and a movable circular saw, D', and a feed-table, B, supported by the frame A, and provided with a feed-roller, G', and roller G, and with a slot, h, in line with the saw D, and a guide-slot, h', parallel with the plane of motion of the saws, the whole being constructed and arranged to operate substantially as described.

322,659. MIXED PAINT. WILLIAM H. VAN KEUREN, Winona, Minn. Filed June 9, 1884. (Specimens.)

Claim.—A paint-powder consisting of silica, alumina, oxide of iron, potassa, soda, and carbonate of lime, in about the proportions specified.

322,660. TRACK. PHILIP D. WAGNER, Dayton, Ohio. Filed Mar. 14, 1885. (No model.)



Claim.—1. A rail having its tread cut out on its side, which cut-out portion increases in size from the bottom to the top, so as to form ledges having their upper portions greater in width than their lower portions, for the purpose set forth.

2. A rail having inclined plane ledges formed with the tread and extending in the same line of direction, said ledges meeting the tread at their upper ends on a horizontal line therewith, as set forth.

3. A rail having its tread provided with inclined ledges, which increase in width from the bottom to the top of the tread, as set forth.

4. A rail having its tread provided at intervals with a pair of inclined plane ledges, which extend alongside of the tread from the bottom to the top, said ledges meeting each other at their upper ends on the same horizontal plane with the tread, as set forth.

5. A rail having its tread provided with projecting ledges, which extend in an inclined straight line alongside of the tread, as set forth.

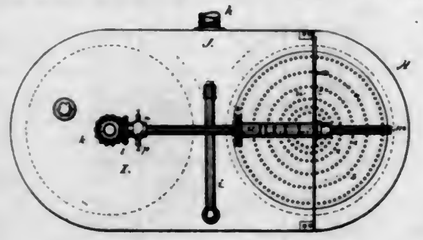
6. A rail having its tread provided with projecting ledges, which extend alongside of the tread on the inner and outer faces or sides thereof, and are inclined upwardly in straight lines, as shown, for the purpose set forth.

7. A rail having its tread provided with inclined plane ledges on the inner and outer sides or faces of the tread, said ledges increasing in width from the bottom to the top, as set forth.

8. A rail having its tread provided with ledges, which run alongside of the tread, and are inclined upward in straight lines in opposite directions, for the purpose set forth.

322,661. APPARATUS FOR MIXING AERIFORM FLUIDS. CALEB C. WALWORTH and HERMAN SEYTER, Boston, Mass. Filed Feb. 26, 1885. (No model.)

Claim.—1. The combination of generator A, air-pump E, meters H I, and mixer J, the same being respectively connected by conduits, substantially as described, and said meters being geared together, with means for adjusting and varying the same to produce the desired variation in their relative delivering movements, substantially as specified.



2. The combination, with the air-pump, generato, and requisite connecting-conduits of an air-gas apparatus, of two meters, one being connected with the gas and the other with the air-delivery conduits, and both connected with a mixer, and means whereby the relative delivering movements of said meters may be differentiated as the required relative delivery of gas and air therefrom to the mixer may render necessary, substantially as specified.

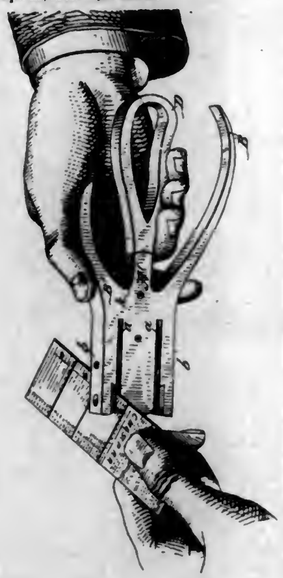
3. In an organized gas apparatus, the combination, with two meter-wheels, one of which is connected with the gas-conduit, and the other provided with an air-supply and arranged to be rotated by the fluid-pressure, of adjustable differential gearing connected with said wheels, whereby their relative rotation may be changed at will, for the purpose specified.

4. The combination, with arbor m, sleeve u, gears s v, and bracket w, of pivotal lever z, connected with said sleeve and arbor by a link or stirrup, pivotal bar 7, formed to alternately lock said gear s and sleeve u, and spring 11, arranged to actuate said bar, all substantially as specified.

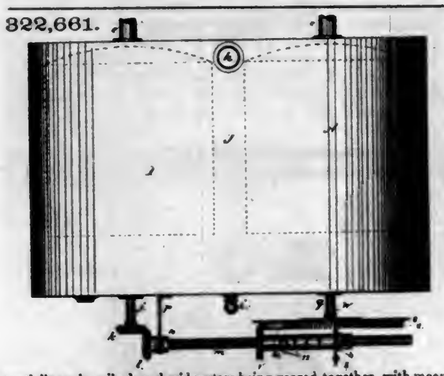
5. The combination, with meters H I, the one connected with the air-pump and the other with the generator, of arbor m, gears k l s v, and means whereby the relative rotations of said gears s v may be varied, as desired, and thereby the revolutions of meter H may be increased or retarded relatively to meter I, substantially as specified.

6. The combination of pump E, generator A, meters H I, mixers J, connection C D c e, gears k l, arbor m, gears s v, and sleeve u, lever z, bar 7, and spring 11, all arranged to operate substantially as specified.

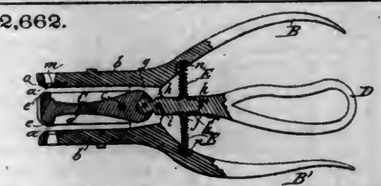
322,662. DUPLEX TICKET-PUNCH. MARSHALL M. WELCH, Atlanta, Ga. Filed Apr. 28, 1885. (No model.)



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Claim.—1. In a ticket-punch, the head A, provided with handles B B', forming an integral part of the same, said head being provided with fixed jaws in which are the female dies, in combination with a punch-lever provided with two male dies of different character, said dies adapted to coincide with the female dies, and a hand-lever located between the handles for operating said punch-lever, substantially as hereinbefore set forth.

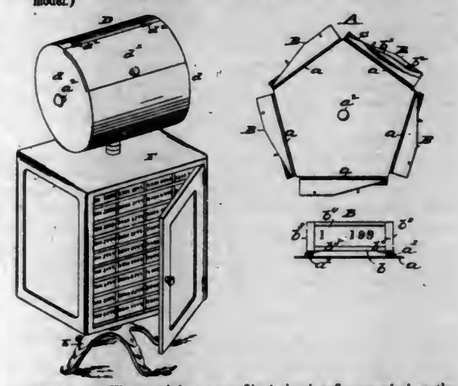
2. In a duplex ticket-punch, the combination of the head A, having extension A', handles B B', forming an integral part of said head, and the operating-lever pivoted to said extension A' and extending outwardly and vibrating between the handles, as set forth.

3. In a ticket-punch, the head A, provided with handles B B', forming an integral part of the same, in combination with the punch-lever C, carrying the male dies, and its operating-lever D, located between the handles, substantially as described.

4. In a ticket-punch, the springs E, provided with an annular base-plate, k, in combination with the spurs upon the operating-lever and recesses in the handles, as set forth.

5. In a ticket-punch, the combination of the slotted head A, carrying female dies and having handles B B', the punch-lever C, carrying male dies, the operating-lever D, pivoted in the head and having seats r r and spurs j j, and the springs E E, seated in recesses in the handles and adapted to engage said spurs, substantially as described.

322,663. PAPER-FILE. REUEL H. WELCH, St. Louis, Mo., assignor of two-thirds to George D. Barnard, same place. Filed May 17, 1884. (No model.)



Claim.—1. The revolving paper-file A, having flanges a' a' on the faces a thereof, combined with the sub-files B, having flanges b^2 b^2, substantially as set forth.

2. The main paper-file A, having faces a and flanges a' a' thereon, in combination with the removable sub-files B, having plate b, with the flanges b^2 thereon, and the sides b^3 and b^4 and springs b' b^2, all constructed as and for the purposes set forth.

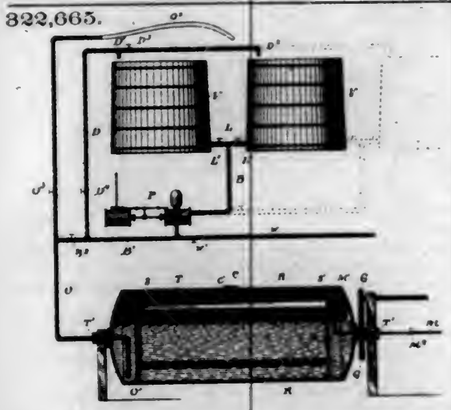
322,664. CARBONACEOUS ANTISEPTIC DRESSING. ARON F. WESTERLUND, Stockholm, Sweden. Filed June 6, 1884. (Specimens.) Patented in Sweden Apr. 21, 1880, No. 106; in Denmark Aug. 30, 1880; in England May 21, 1884, No. 8,020 and No. 11,322; in France May 21, 1884, No. 162,282; in Belgium May 23, 1884, No. 65,237, and in Germany May 30, 1884, No. 31,146.

Claim.—The herein-described method of producing carbonaceous antiseptic dressing, consisting in soaking vegetable matter in a mixture of water and phosphoric acid, then drying it, and finally partially carbonizing it, substantially as set forth.

322,665. APPARATUS FOR BLEACHING PAPER-STOCK. ALEXANDER W. WILSON, Elmwood, Ill., assignor of one-half to H. P. Tracy, same place. Filed May 25, 1885. (No model.)

Claim.—1. The combination, in a paper-stock apparatus, of two or more bleaching-vats united at their bottoms by the link-pipes provided with valves for closing their entrance into said vats, as and for the purpose specified.

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2. The combination, in a paper-stock apparatus, of two or more bleaching-vats united at their bottoms by the link-pipes provided with valves for closing their entrance into said vats, and having the branch pipes leading from said link-pipes to a pump provided with the discharge-pipe, whereby the contents of one vat can be conveyed to another, substantially as and for the purposes set forth.

3. In a paper-stock apparatus, a tank adapted to revolve upon horizontal axes and having means for rotating it, in combination with steam-inlet and liquor-outlet pipes, substantially as and for the purpose set forth.

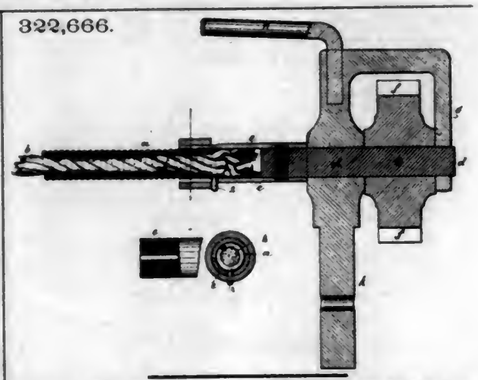
4. In a paper-stock apparatus, a tank having a man-hole through the side thereof and a man-hole plate, and adapted to be revolved upon a horizontal axis, in combination with the steam-inlet pipe passing through an axis of said tank and having the upwardly-projecting branch, and the liquor-outlet pipe passing through the other axis and having the downwardly-bent end, substantially as and for the purpose specified.

5. In a paper-stock apparatus, the tank adapted to be revolved upon suitable trunnions, and having the man-hole and man-hole plate, and provided with the longitudinal ribs and the transverse screen, in combination with the steam-inlet and liquor-outlet pipes, substantially as described, for the purposes specified.

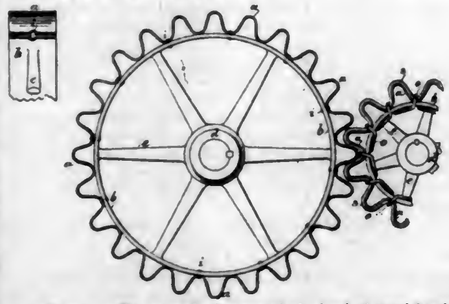
6. In a paper-stock apparatus, the combination, with the bleaching-vats V, the link-pipe L, joining said vats, valve L' for said link-pipe, the branch pipe B, communicating with the liquor-outlet pipe O, and the valves B^2 O^2, in combination with the tank T, adapted to be revolved upon its trunnions T', said pipe O passing through one of said trunnions and terminating in the depressed end O', and said tank being provided with the longitudinal ribs R, the screen S, the man-hole and man-hole plate, and having the terminally-elevated steam-pipe M passing through its other trunnion, substantially as set forth, for the purposes specified.

7. In a paper-stock apparatus, the tank T, adapted to be revolved upon its trunnions T', and having the man-hole C through its side, and a man-hole plate, C', therefor, and provided with the ribs R and the screens S, in combination with the terminally-elevated steam-pipe M, entering through one of said trunnions, the terminally-depressed liquor-outlet pipe O, passing out through the other of said trunnions, the bleaching-vats V, the link-pipe L, joining said vats and having valves L', the pump, the branch pipe B, uniting said link-pipe and pump, the pipe B', communicating from said pump to said pipe O, the pipe D, branching from said pipe B' and adapted to discharge into either of said vats, and the valves B^2, O^2, and D^4 for said pipes B', O, and D, as and for the purpose set forth.

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322,667. GEAR-WHEEL. JOHN C. WILSON, Sr., New York, N. Y., assignor to Francis T. Luqueer, Jr., and John C. Wilson, Jr., same place. Filed Dec. 27, 1884. (No model.)

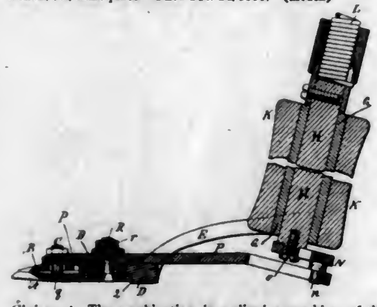


Claim.—1. The gear-wheel composed of a band of metal forming the rim, arms and a hub sustaining said rim, and a corrugated strip of metal surrounding and attached to said rim and forming the teeth, substantially as set forth.

2. The combination, in a gear-wheel, of a rim, a teeth-band around such rim, and a winding of wire around the teeth-strip and rim to connect them together, substantially as set forth.

3. The combination, in a gear-wheel, of a teeth-band of corrugated sheet metal and a covering to the surface of leather or similar material, and a pulley to which the teeth-band is attached, substantially as set forth.

322,668. MACHINE FOR CLIPPING HORSES, &c. JOHN C. WILSON, Sr., New York, N. Y., assignor to Francis T. Luqueer, Jr., and John C. Wilson, Jr., same place. Filed Feb. 24, 1885. (Model.)



Claim.—1. The combination, in a clipping-machine, of the cutters A B, stock D, arms E, and tubular handle, the shaft H, passing through the tubular handle, the crank N, and lever P, substantially as set forth.

2. The combination, with the stationary and reciprocating cutters in a clipping-machine, of a flexible shaft, a rigid shaft to which the flexible shaft is connected, a tubular handle surrounding such rigid shaft, a crank at the end of the rigid shaft, and a connection to the reciprocating cutters, the rigid shaft occupying a position nearly perpendicular to the plane of the cut, substantially as set forth.

3. The combination, with the stationary and reciprocating cutters in a clipping-machine, of the shaft H, the crank N, adjustably connected to the end of the shaft H, so as to vary the length of the said crank, and

322,666. FLEXIBLE SHAFT. JOHN C. WILSON, Sr., New York, N. Y., assignor to Francis T. Luqueer, Jr., and John C. Wilson, Jr., same place. Filed Dec. 27, 1884. (No model.)

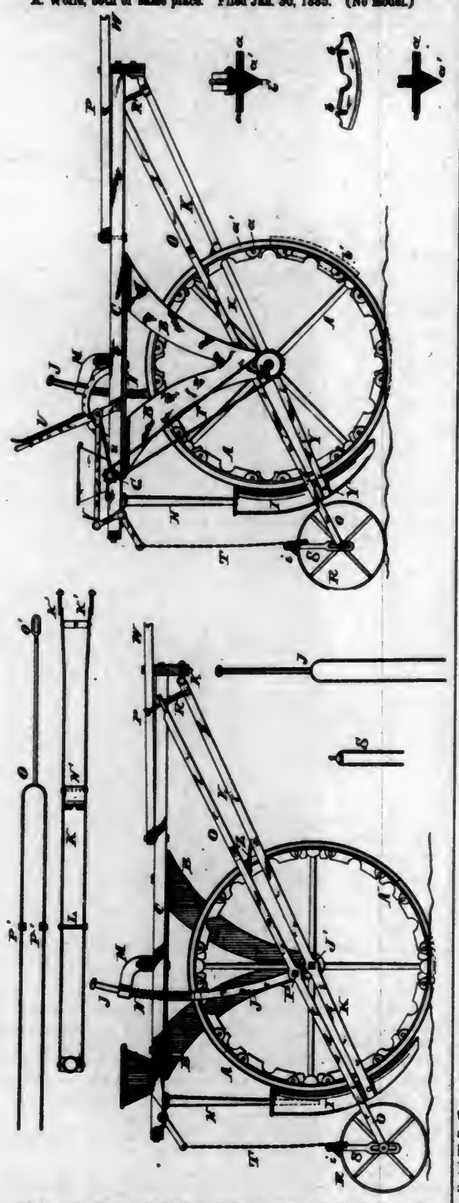
Claim.—1. The flexible shaft for machinery formed of a wire helix closely wound, and the rope within and filling such helix and knotted at the ends to prevent the helix stretching, and tubular sockets receiving the ends of the helix and the knots of the rope, substantially as set forth.

2. The flexible shaft formed of a closely-wound wire helix, a rope within the same, and the ends of the wire bent outwardly, in combination with the tubular socket slotted for the reception of the wire end, and the clamping-nut screwed upon the socket, substantially as set forth.

3. The combination, with the flexible shaft, of the socket for receiving the end of such shaft, the rigid motor-shaft, its supporting-frame, the spring-arm, and the yielding bearing *m* at the end of the arm, substantially as set forth.

the slotted lever P, acted upon by the crank and connected to the reciprocating cutters, substantially as set forth.

322,669. GRAIN-DRILL. HARVEY R. WOLFE, Louisville, Ky., assignor to Brennan & Co. South Western Agricultural Works and Charles A. Wolfe, both of same place. Filed Jan. 30, 1885. (No model.)



Claim.—1. In a grain-drill, a series or gang of wheels for rolling the ground and opening furrows for the grain, followed by a corresponding series of grain-spouts arranged to automatically move up or down with the wheels, in combination with an independent series of yokes, carrying covering or smoothing wheels held in line with the grain-spouts, substantially as described.

2. In a grain-drill, a series of wheels, A, with a V-shaped edge or rim for cutting a furrow in the ground, and lateral flanges for supporting the wheels on the ground and crushing the clods, in combination with a series of grain-spouts arranged to be automatically adjusted up or down with the wheels A, and spring devices operating to hold the said wheels and spouts in a normal position, substantially as described.

3. In a grain-drill, a series of wheels, A, constructed in two parts and held together by bolts, having adjustable segmental cutters clamped between the parts of the wheel, in combination with a series of grain-spouts and pressure-wheels arranged in line with the wheels A, substantially as described.

4. In a grain-drill, a series of wheels for rolling the ground and opening furrows for the grain, in combination with a series of independent hangers or yokes, K, hinged to the frame at their forward ends and carrying the pivots or axles of the wheels, and spring devices for maintaining said yoke in a normal position, but permitting a vertical yielding movement of the same, substantially as described.

5. In a grain-drill, a series of wheels provided with cutting-edges for opening furrows, in combination with a corresponding series of yokes hinged to the frame at their forward ends and connected between their ends to the axles of the cutting-wheels, and carrying at their rear ends a series of spouts, and spring devices for maintaining said yoke in a normal position, but permitting a vertical yielding movement of the same, substantially as described.

6. The combination, in a grain-drill, of a rigid main or supporting frame, a series of wheels for rolling the ground and opening the furrows and attached to the frame of the drill by independent yokes or hangers, yokes J, each having its bifurcated portion embracing its particular wheel to receive the ends of the wheel-axle, as described, the upper portion of each yoke playing in a bearing located on the frame independent of the bearings of the other yokes, and carrying a spring, N, arranged to exert a downward pressure on the wheels or an upward or supporting pressure on said frame, substantially as set forth.

7. In combination with the wheels A and the pressure-wheels R, the yokes O, pivoted to the yokes J, and pressed upward at their forward ends by springs, substantially as and for the purpose specified.

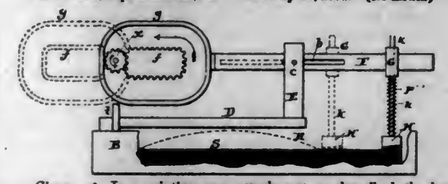
8. The yokes O, carrying the pressure-wheels R, in combination with the spiral springs R', substantially as and for the purpose specified.

9. The combination, in a grain-drill, of a vertical yoke, S, suspended from the main frame of the machine, vertically slotted at its lower portions, as described, and supported relative to the drill, a pressure-wheel, R, having its journal-bearing in said slots, substantially as set forth.

10. The combination, in a grain-drill, of a main or supporting frame, a series of inclined yokes or hangers pivoted at the front of said frame and extending rearward, as described, a vertical yoke, S, located adjacent to the end of each of said frames and suspended from the main frame and provided with vertical slots at its lower portions, a pressure-wheel, R, having its journal ends adjustable in said slots and bearing in the ends of the inclined frame, substantially as set forth.

11. The combination, in a grain-drill, of spring-supported wheels constructed to open the furrows in the ground, drills located in the rear of said wheels, spring-supported furrow-covering pressure-wheels arranged in the rear of said drills, and means for vertically-adjusting said furrow-covering wheels independent of the furrow-opening wheels, substantially as set forth.

322,670. FEEDING ATTACHMENT FOR PRINTING-PRESSES. EDGAR YATES, Cape Elizabeth, Me. Filed July 10, 1882. (No model.)



Claim.—1. In a printing-press attachment, as described, the box-frame B, the supporting-arm D, provided with standard E and the actuating-bar F, combined with the carrying-bar G, the presser-foot H, the rack *f*, and pinion *x*, substantially as described.

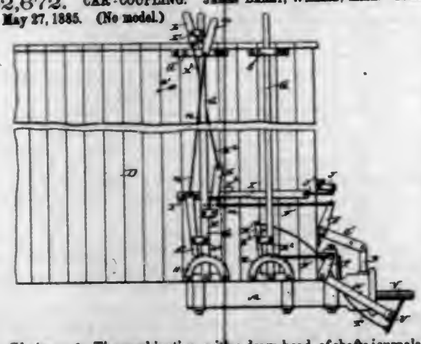
2. In a printing-press attachment organized for the purpose of automatically handling sheets of paper, the box-frame B, the supporting-arm D, provided with the standard E, the slotted actuating-bar F, with its oblong rack *f* and guideway *g*, the carrying-bar G, the presser-foot H, having rubber facing *m*, and spring *p*, in combination with the pinion *x*, shaft *w*, and pulley *a*, substantially as described.

322,671. EXPANDING HORSESHOE. CHARLES C. ALLEN, Salinas, Cal., assignor of one-half to N. A. Dorn, same place. Filed July 18, 1884. (No model.)



Claim.—The expanding horseshoe A, made in two equal parts, in combination with the toe-calk D under the shoe, and pivoted to each part, and the plate B on the upper surface of the toe of the shoe and pivoted to each part, substantially as and for the purpose herein described.

322,672. CAR-COUPLING. JAMES BARRY, Willmar, Minn. Filed May 27, 1885. (No model.)



Claim.—1. The combination, with a draw-head, of shafts journaled on the end of the car and provided with projecting parts to which the coupling-pin is pivoted, cranks on the ends of the shafts, a lever on each side of the car, and a rod connecting the crank of each shaft with the lever at the same side of the car at which the crank is located, substantially as herein shown and described.

2. The combination, with a draw-head, of shafts journaled on the end of the car, the levers G, pivoted to the sides of the car, the rods F', connecting said levers with cranks formed on the ends of the shafts, a coupling-pin held to a crank formed at the inner ends of the shafts, a semicircular rack at each lever G, and a dog engaging with said rack, substantially as herein shown and described.

3. The combination, with a draw-head, of shafts journaled on the end of the car, a pin held in the crank parts of said shafts, the levers G on the sides of the car, the rods F', connecting the said levers with the cranks on the ends of the shafts on the ends of the car, semicircular rack H at each lever G, the dog H', engaging with the rack, the link H^3, connecting the dog with the lever G, the lever M, pivoted to the lever G, and the rod *n*, connecting the dog H and the lever M, substantially as herein shown and described.

4. The combination, with a draw-head, of shafts journaled on the end of the car, a pin held in the crank parts of said shafts, the levers G on the sides of the car, the rod F', connecting said levers with the cranks on the shafts on the end of the car, a semicircular rack, H, at each lever G, the dog H', engaging with the rack, the link H^3, connecting the dog with the lever G, the lever M, pivoted to the lever G, and the rod *n*, connecting the dog H' and the lever M, the lever K, having a pin, *m*, the link K', connecting the lever K with the lever G, the lever L, the rod K^3, connecting the levers L and K, the bar I, having a rack, P, formed on its bottom edge, angle-pieces J on the corners of the car, the rod J^3, connecting the angle-pieces J' at the end of the car, and rods connecting the angle-pieces with the bars I, substantially as herein shown and described.

5. The combination, with a draw-head, of the shaft N, having a crank part, N', and arms P at the ends, the levers Q, the rods P', connecting the arms P with the levers Q, and the plate U, pivoted on the crank part N', substantially as herein shown and described.

6. The combination, with a draw-head, of the shaft N, having a crank part, N', the plate U, pivoted on the crank part, the levers Q, the rods P', connecting the levers Q with the arms P, of the shaft N, the semicircular racks R, the dogs R', connected with the levers Q, the springs R^3, acting on the dogs, and the spring T, secured to a dog, R', at each side of the car, passed over the shaft N, and secured to the lower part of the plate U, substantially as herein shown and described.

322,673. EYEGLASS. JOHN J. BAUSCH, Rochester, N. Y., assignor to the Bausch & Lomb Optical Company, same place. Filed Apr. 23, 1885. (No model.)

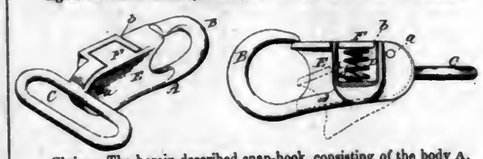


Claim.—1. The herein-described eyeglass-frame A, having an internal groove, *c*, adapted to receive the glass, said groove being provided with a recess, *d*, for the reception of the bent end of the staple or fastening device, substantially as described.

2. The combination, with the frame A and bow B, of the staple S, having its inner ends, *f f'*, bent over within the groove in the frame, substantially as described.

3. The combination, with the frame A, of the nose-piece I, attached to the frame by means of the staple T, provided with the tongues *k k*, having their inner ends bent over within the groove in the frame, substantially as described.

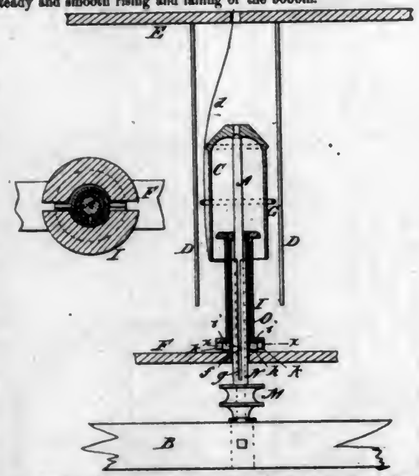
322,674. SNAP-HOOK. THOMAS BERGER, New Haven, Conn., assignor to John H. Kearney, same place. Filed Feb. 2, 1885. (No model.)



Claim.—The herein-described snap-hook, consisting of the body A, terminating at one end in a hook, B, and at the other in a device for attaching the hook, the said body constructed with a recess, D, open from one side of the hook, and up through its upper edge, combined with a tongue, E, of inverted-L shape in transverse section, hung to the body by a pivot, *a*, in rear of said recess, the horizontal part of the L constructed with a notch, *b*, to form a flange, F, the side of said tongue serving to close the side of the recess, and the flange F the upper end of the recess, and a spring, G, arranged in said recess to bear against said flange F, substantially as described.

322,675. MACHINE FOR SPINNING AND TWISTING. LEEDHAM BINNS, Philadelphia, Pa. Filed Sept. 16, 1884. (No model.)

Brief.—A tube is constructed to engage with the bobbin, and arranged around the whirl-tube, upon which it is fitted to slide, and is guided longitudinally, to enable a long bobbin to be used and to secure steady and smooth rising and falling of the bobbin.



Claim.—The combination, with the fixed spindle A and the rail B, which supports said spindle, of the whirl M, the longitudinally-slotted tube N, fast on said whirl, the tube O, constructed to drive the bobbin and to slide longitudinally upon or up and down the whirl-tube and spindle in guiding-connection with the slotted portion of the whirl-tube, and the traveling or lifting rail F, substantially as described.

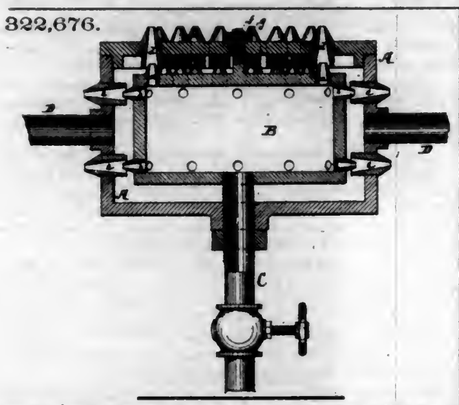
322,676. HYDROCARBON-BURNER. HENRY A. BRADLEY, New York, N. Y. Filed Dec. 8, 1884. (No model.)

Claim.—1. The combination of the oil-box A, having discharge-nipples, with the steam-box B, having discharge-nipples corresponding with those of the oil-box, and with the oil-supply pipe D and steam-supply pipe C, all arranged so that the oil-box shall be surrounded at the top and sides by oil in the oil-box for the purpose of heating the same, as specified.

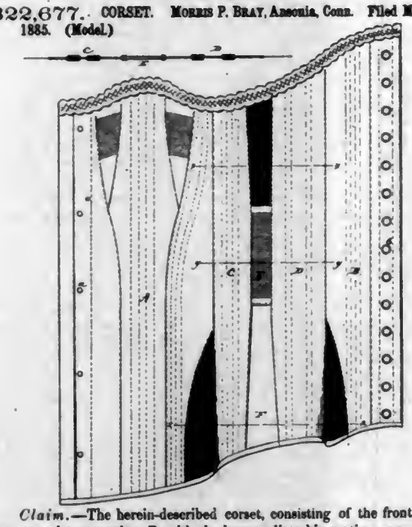
2. The combination of the oil-box A, its upper discharge-nipples, *d*, and side discharge-nipples, *c*, with the steam-box B, its upper discharge-nipples, *a*, and side discharge-nipples, *b*, and with the pipes C and D, substantially as herein shown and described.

3. The oil-box B, having series of nipples *a a*, combined with the steam-box A, having series of nipples *d d*, and with the single screw *f* and nut *g*, all arranged for permitting the vertical adjustment of the box B within the box A, as specified.

322,676.

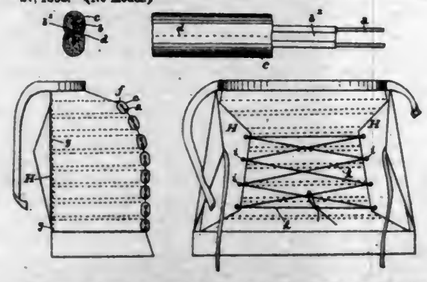


322,677. CORSET. MORRIS P. BRAY, Ansonia, Conn. Filed May 4, 1885. (Model.)



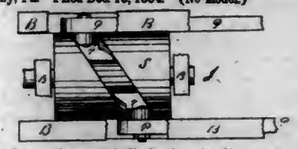
Claim.—The herein-described corset, consisting of the front section, A, and rear section, B, with the intermediate hip-section, composed of the two parts C D, said parts C D connected at the waist-line by a transverse stay, E, and having an inelastic gore, F, introduced between said parts C D below said stay E, and an elastic gore, G, between said parts C D above said stay E, the front section, A, and the rear section, B, cut away at their lower end at the hip-section, and elastic gores H I introduced into the said cut-away portions between the front and rear sections and the respective edges of the hip-section, substantially as described.

322,678. BUSTLE. EDWARD B. CADY, Jackson, Mich. Filed Feb. 27, 1885. (No model.)



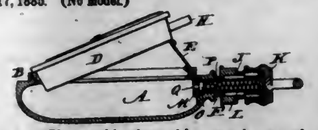
Claim.—A bustle, paunier, or like article having in combination a wire, a glue-stiffened cover firmly and solidly holding the wire and forming at one side thereof a flange or stitch-surface, and an envelope of light soft material—such as raw cotton—wound around the said covered wire and its glue-stiffened flange and secured thereto by stitches passed through both the soft envelope and stitch-surface, as set forth.

322,679. DEVICE FOR CONVERTING MOTION. ROBERT CAMPBELL, Allegheny, Pa. Filed Dec. 15, 1884. (No model.)



Claim.—In gearing, a spindle having the diameter of its operative groove or bearings equal to or greater than the stroke of the piston-rod, connecting-rod, or lever engaged and operating or operated, in combination with anti-friction rollers, substantially as set forth, and for the purposes described.

322,680. WATCH-CASE. WILLIAM CARPENTER, Salida, Colo. Filed Apr. 17, 1885. (No model.)



Claim.—1. The combination, with a watch-case, of a movement-holding band or ring connected with the case by a link hinged to the case and to the movement-holding ring or band, substantially as herein shown and described.

2. The combination, with a watch-case, of a movement-holding band or ring and a link hinged to the case and to the said ring or band at the bottom edge of the same, substantially as herein shown and described.

3. The combination, with a watch-case, of a movement-holding band or ring and a slotted link hinged to the said band or ring and to the case at the pendant, substantially as herein shown and described.

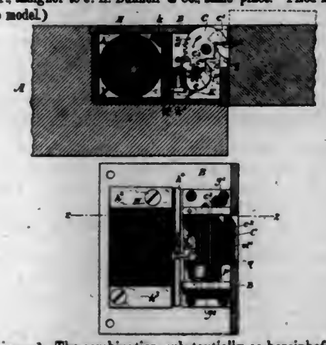
4. The combination, with the watch-case A and pendant F, of the tube L, secured to the crown K, and of the spring P in the tube L, substantially as herein shown and described.

5. The combination, with the watch-case A and pendant F, of the tube L, secured to the crown K, the plunger or piston O, and the spring P in the tube L, substantially as herein shown and described.

6. The combination, with the watch-case A and pendant F, of the tube L, the plunger or piston O, having the stem Q, and of the spring P in the said tube, substantially as herein shown and described.

7. The combination, with the watch-case A and the pendant F, having a screw-neck J, of the screw-crown K, the tube L, the plunger or piston O, and the spring P, substantially as herein shown and described.

322,681. ELECTRIC DOOR-OPENER. THOMAS A. CASEY, New York, N. Y., assignor to J. H. Bunnell & Co., same place. Filed May 14, 1884. (No model.)



Claim.—1. The combination, substantially as hereinbefore set forth, in a door-opener, with a revolving latch-plate, of a pinion geared thereto, a locking device normally holding said latch-plate in a given position, and an electro-magnet and its armature for actuating said locking device, substantially as described.

2. The combination, substantially as hereinbefore set forth, with a latch-plate in the form of a section of a cylinder, of a pinion geared thereto, a disk moving with said cylinder and having a notch formed in its periphery, a locking-lever normally engaging said disk, and an electro-magnet for withdrawing said lever, substantially as described.

3. In an automatic door-opener, the combination, substantially as hereinbefore set forth, of the pivoted latch-plate having a striking-face, *c'*, and the recess c^2, the pinion E, geared to said plate, the disk *e*, the electro-magnet H, its armature, and the connections, substantially as described, between said pinion and said armature.

4. In a door-opener, the combination, substantially as hereinbefore set forth, with an electro-magnet, of a latch-plate, a pinion geared thereto, a spring normally tending to move said plate into position to engage the door-latch, a locking device applied to said pinion, and means, substantially such as described, for permitting said plate to be moved outward by the pressure of the door-latch.

322,682. SCYTHE-SNATH FASTENER. DANIEL T. CHAMBERS, Mechanicsburg, Ohio, assignor, by mesne assignments, of one-third to E. P. Clark, Holyoke, Mass. Filed Sept. 11, 1884. (No model.)



Claim.—1. The combination, in a snath-fastener, with a plate having a ring thereon adapted to encircle the end of the snath, of a clamp provided at one end with a lip adapted to engage under a ledge in an opening in said plate, and provided at the other end with a screw for tightening the said clamp on the scythe-heel, substantially as set forth.

2. In a snath-fastener, a plate provided with a ring for encircling the end of the snath, and a clamp formed on the arc of a circle and placed at an angle to said plate and adapted to clamp the scythe-heel at the bend or corner, said clamp being secured at one end by a single screw, on which the clamp is adapted to turn, and at the other by means permitting of an adjustment of said clamp about said screw to conform to the position of the scythe, substantially as specified.

322,683. HAND FIRE-EXTINGUISHER. GEORGE L. CHAPIN, Chicago, Ill. Filed June 9, 1885. (No model.)



Claim.—A stopper for holding and liberating a fire-extinguishing liquid in the tube A, consisting of the ring D, permanently attached to the tube A, and cone E, in combination with the nipple B, inserted through the cone E, and an inner connecting-plate, C, at the lower part of the cone to hold the inner end of the nipple in a fixed position to facilitate the breaking off of the projecting end of the nipple, as specified.

322,684. VEHICLE-SEAT. FRANCIS W. COLEMAN, Rodney, Miss. Filed May 27, 1885. (No model.)



Claim.—1. The combination, with horizontally-fulcrumed end frames having horizontal upper edges and nuts below their fulcra, of a flexible seat or top, D, fastened to the horizontal edges of the end frames, and a right-and-left screw-rod arranged in the nuts below the fulcra of the end frames to adjust or tighten the flexible top, substantially as shown and described.

2. The combination, with the flexible seat and the horizontally-fulcrumed end frames, of the rocking nuts arranged in said end frames below their fulcra, and the right-and-left screw-rod arranged in said nuts, as and for the purpose described.

3. The combination of the base-frame A, having uprights *c*, the corner supports, B, the end frames, C C, fulcrumed therein, the seat D, of flexible material, and the screw-rod E, having right-and-left screws, substantially as and for the purpose described.

322,685. AUTOMATIC SPRINKLER. FRANK B. COMINS, New Bedford, Mass. Filed Sept. 17, 1884. (No model.)

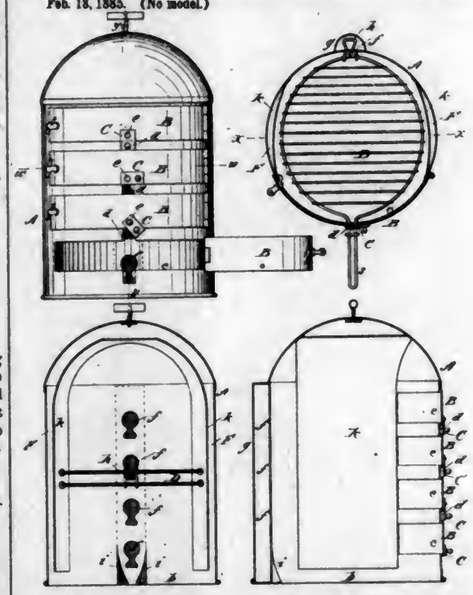


Claim.—1. In an automatic sprinkler, a valve-seat, a conical valve, and a fixed saucer-shaped disk secured to and located below the valve-seat and provided with radial grooves, in combination with a compound lever having a lower bent arm fulcrumed in a slot on the outer side of the fixed disk and provided with a fusible solder-joint on its upper arm above the valve-seat, all arranged and operating substantially as shown and described.

2. In an automatic sprinkler, the combination, with the case C and disk D, having a slot in its outer face, of a conical valve, *v*, bent lever L, mounted and fulcrumed in the slot in the disk D, and provided with the hook *h*, and the lever L', having a fusible solder-joint above the valve-seat and engaging with and holding the lever L in place, substantially as and for the purpose shown and described.

3. In an automatic sprinkler, the combination, with the disk D, having a slot on its outer side, and the conical valve *v*, of the bent lever L, mounted in the slot in the disk and having the hook end *h*, the lever L' engaging with the hook *h*, and having its upper end slit and adapted to be sprung together when secured with fusible solder to the projection F, located above the valve-seat, all arranged and operating substantially as and for the purpose shown and described.

322,686. GRIDIRON. CHARLES M. COOKE, Brooklyn, N. Y. Filed Feb. 18, 1885. (No model.)



Claim.—1. The open-bottomed cooking-case A, having a number of doorways, *c*, arranged one above the other and connected by central or intermediate contracted openings, *d*, with one another, in combination with the doors B, substantially as specified.

2. The doors B and covers C, attached thereto, in combination with the open-bottomed case A, having a number of doorways, *c*, arranged one above the other and connected by central or intermediate contracted openings, *d*, essentially as and for the purposes herein set forth.

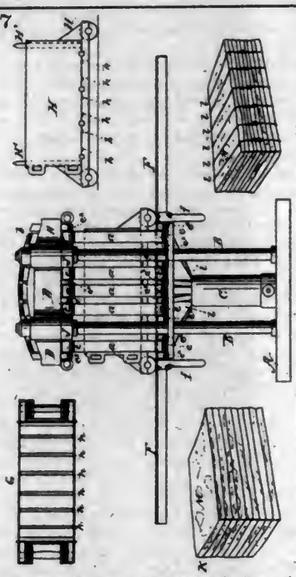
3. The open-bottomed case A of the cooking apparatus, provided with a series of doors and connected doorways arranged one above the other on the one side of the case, and having a series of inclosed openings, *f*, on its opposite side, of enlarged area above and contracted area below, for adjustment and support of a gridiron or frying-pan introduced within said doorways, substantially as specified.

4. The open-bottomed cooking-case A, with its series of doorways, *c*, connected by openings *d* on the one side of the case, and a corresponding series of inclosed openings, *f*, on the opposite side of the case, in combination with the separated doors B, the whole being constructed to admit of a gridiron through either of said doorways, and to support said utensil by its handle and at its opposite end, and to allow of the turning of it without opening the door, essentially as described.

5. The combination, with an open-bottomed cooking-case having an inclosed opening, *f*, in its rear of enlarged area above and contracted area below, of a cooking-utensil provided with a horizontally-tapering and elastic or jamming projection, *h*, substantially as and for the purpose herein set forth.

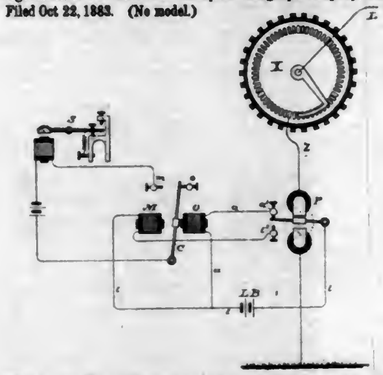
322,687. BARK-PRESS. JÉRÔME DAIGNEAU, Lowell, Mass. Filed May 15, 1883. Renewed Feb. 26, 1885. (No model.)

322,687.



Claim.—A hydraulic press for pressing bark, consisting of the piston E, the platform I, having projections e^3, through which runs a cam-bar, *e'*, having thereon cams *e*, and moved by levers *f*, the grooved end or floor J, fastened to the head of the press D, and having projections d^3, through which runs a cam-bar, *c'*, having thereon cams *c*, and moved by levers *f*, the side pieces, *a'*, secured to the platform I, and the side pieces, *a*, loosely attached to said platform by means of the pegs *g* entering sockets in said platform, the springs *c*, fastened to a cross-piece, *b*, in the head of the press, the springs *d*, arranged in said sockets about the pegs *g* and acting upon the side pieces, *a*, and the truck G, having end H' and braces H^3, and a bottom in which are grooves *h*, all parts being combined substantially in the manner and for the purpose shown and described.

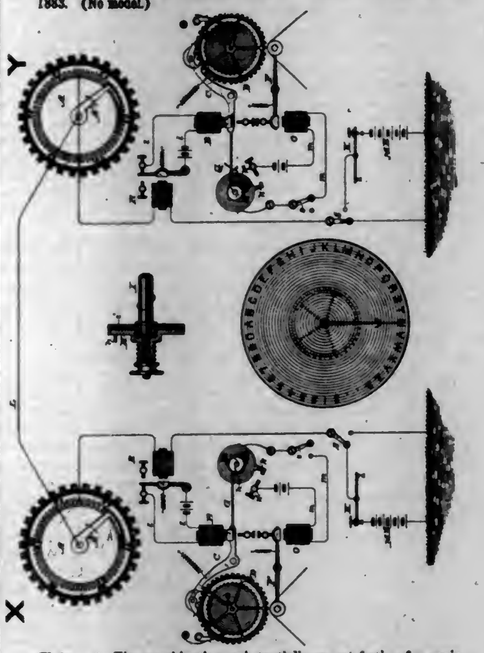
322,688. RECEIVING APPARATUS FOR SYNCHRONOUS TELEGRAPHS. PATRICK B. DELANY, New York, N. Y., assignor, by mesne assignments, to the Standard Multiplex Telegraph Company, same place. Filed Oct. 22, 1883. (No model.)



Claim.—1. The combination of a main line, a relay therein, its contact-stops, two independent electro-magnets, an electric circuit which is completed through the coils of one of said magnets when the relay-armature is on one of its contacts, a circuit which is completed through the coils of the other magnet when the relay-armature is on its opposite contact, an armature actuated by said independent magnets, the local circuit controlled by said armature, and the telegraphic sounder in said local circuit.

2. The combination, in a synchronous system of telegraphy, of a main-line mechanism, as described, for continuously rapidly interrupting said line, a relay in the line, its contact-stops, two independent electro-magnets, an electric circuit which is completed through the coils of one of said magnets when the relay-armature is on one of its contacts, a circuit which is completed through the coils of the other magnet when the relay-armature is on its opposite contact, an armature actuated by said independent magnets, the local circuit controlled by said armature, and the sounder in said local circuit.

322,689. PRINTING DEVICE FOR SYNCHRONOUS TELEGRAPHY. PATRICK B. DELANY, New York, N. Y., assignor, by mesne assignments, to the Standard Multiplex Telegraph Company, same place. Filed Oct. 24, 1883. (No model.)



Claim.—1. The combination, substantially as set forth, of a main line, synchronously-actuated apparatus at each end of the main line, a table of independent working-contacts connected with the synchronous apparatus at each station, and a step-by-step printing, dial, registering, or indicating apparatus connected in an independent line with one or more corresponding contacts at each station.

2. The combination, substantially as set forth, of a main line, synchronously-actuated apparatus at each end of the main line, a table of independent working-contacts connected with the synchronous apparatus at each station, a transmitting key or apparatus, and a battery connected in circuit with a contact or contacts at one station, and a step-by-step printing, dial, registering, or indicating apparatus connected in circuit with the corresponding contact or contacts at the other station.

3. The combination, substantially as set forth, of a main line, synchronous apparatus at each end of said line, a series of independent working-contacts at each synchronous apparatus, a number of independent private circuits common to the main line which are successively completed between the corresponding contacts at the two stations, and transmitting devices, and step-by-step printing or indicating instruments included in said independent circuits.

4. The combination, substantially as set forth, of a main line, synchronously-actuated apparatus at each end of the main line, a series of insulated contacts connected with the synchronous apparatus at each station, mechanism for successively placing the main line in electrical connection with each of said contacts, one or more step-by-step printing, dial, or indicating apparatus connected with one or more of the corresponding contacts at each station, and other of said contacts through which correcting impulses of electricity may be sent from one station to the other to insure the synchronous rotation of the two apparatus.

5. The combination, substantially as set forth, of a main line, synchronously-actuated apparatus at each end of the main line, a table of insulated contacts connected with the synchronous apparatus at each station, contacts placed at intervals around the table of contacts at each station through which correcting impulses of electricity may be sent from one station to the other to maintain a synchronous rotation of the two apparatus, transmitting apparatus, and a step-by-step printing, dial, or indicating apparatus connected with one or more of the corresponding contacts at each station, and mechanism for successively placing the corresponding contacts at each station in electrical communication with the main line.

6. The combination, substantially as set forth, of a main line, a table of independent contacts at each end of the main line, synchronously-

actuated circuit-completing fingers which traverse said contacts, a main battery, a receiving-instrument connected with one or more contacts at one end of the main line, said receiving-instrument consisting of the combination of signaling or printing devices, mechanism, circuits, and connections by which it is advanced or rotated step by step by periodic impulses of electricity received over the main line, and a lazy device or tardy circuit-completer which prevents the actuation of the printing or signaling devices as long as said impulses are regularly received, but permits the printing or signaling of a character when one or more of said impulses are prevented from passing over the line, and a transmitting device connected with the corresponding contacts at the other end of the main line, said transmitting device consisting of the combination of mechanism, as described, for sending periodic impulses into the line, transmitting devices for preventing one or more of said impulses from entering the line when a given character or signal is to be indicated or printed, and mechanism, circuits, and connections, whereby the printing or signaling devices of the transmitting-instrument are actuated step by step and maintained in the same relation to the printing or signaling devices at the receiving-station.

7. The combination, substantially as set forth, of the main line, the relay which is actuated by periodic impulses of electricity transmitted over the main line, the actuating-magnet, a local circuit in which it is included, which circuit is made and broken by said relay when said impulses are received over the line, the printing-magnet, and the lazy device or tardy circuit-completer for completing said circuit when a more than normal period of time has elapsed between said impulses.

8. The combination, substantially as set forth, of a main line, a table of independent contacts at each end of the main line, synchronously-actuated circuit-completing fingers which traverse said contacts, a main battery, a step-by-step instrument substantially such as described and operating as set forth, a relay at each station interposed between the table of contacts and said instrument, and the circuit and connections of said relay, whereby an impulse of electricity transmitted over the main line is rendered effective upon the instruments when the relay-armature leaves its back stop.

9. The combination, substantially as set forth, of the step-by-step mechanism of a printing-telegraph or receiving-instrument, an electric circuit over which periodic impulses of electricity are sent to advance said step-by-step mechanism, the printing-magnet, its circuit, a tardy circuit-completer consisting of devices which complete said printing-magnet circuit when there is a prolonged absence of current on the line, and devices actuated by said received periodic impulses which prevent the circuit-completer from completing the printing-magnet circuit as long as such impulses are regularly received.

10. The combination, substantially as set forth, of the driven disk *i*, the loose disk H, held in frictional contact with the disk *i*, the stud *h* on the disk H, the vibrating lever G, the local circuit in which the disk H is included, and the contacts of said circuit, one of which is carried on or operated by the disk H.

Claim.—1. The combination of a main line, synchronously-actuated apparatus at each end of the main line, mechanism, substantially such as described, at one station by which the speed of the apparatus at that station is corrected when a correcting impulse of electricity is received from the distant station, and mechanism, substantially such as described, at the distant station for correcting the speed of the apparatus at that station when the correcting impulse of electricity is transmitted to the other station.

2. The combination of a main line, synchronously actuated apparatus at each end of the main line, mechanism, substantially such as described, at each station for controlling the speed of the apparatus at that station when a correcting impulse of electricity is received from the distant station, and mechanism, substantially such as described, at each station for correcting the speed of the apparatus at that station when a correcting impulse of electricity is transmitted to the distant station.

3. The combination of a main line, synchronously-actuated apparatus at each end of the main line, an electric circuit for controlling or regulating said apparatus at one station, mechanism, substantially such as described, at said station for correcting the speed of said apparatus by varying the resistance of said circuit when a correcting impulse of electricity is received from the distant station, an electric circuit at the distant station for controlling or regulating the apparatus at that station, and mechanism, substantially such as described, for correcting the speed of that apparatus by varying the resistance of said circuit when a correcting impulse of electricity is sent to the other station.

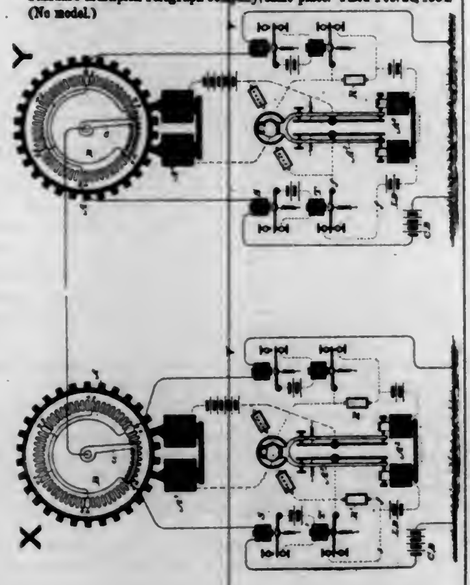
4. The combination of a main line, synchronously-actuated apparatus at each end of the main line, an electric circuit at each apparatus for controlling or actuating said apparatus, mechanism, substantially such as described, at each station for correcting the speed of the apparatus at said station by varying the resistance of the controlling-circuit whenever a correcting impulse of electricity is received from the distant station, and mechanism, substantially such as described, at each station for correcting the speed of the apparatus at that station by varying the resistance of the circuit at said station when a correcting impulse of electricity is sent out from said station to the distant station.

5. The combination of a main line, synchronously-actuated apparatus at each end of the main line, a battery from which correcting impulses are sent into the line, and mechanism, substantially such as described, by which the speed of the apparatus at the station where the correcting impulse is sent into the line is corrected by the action of said impulse to maintain its synchronous movement with the apparatus at the distant station.

6. The combination of a main line, synchronously-actuated apparatus at each end of the main line, batteries from which correcting impulses of electricity are sent into the line, and mechanism, substantially such as described, at each station by which the speed of the apparatus at that station only is corrected when a correcting impulse of electricity is sent into the line from that station.

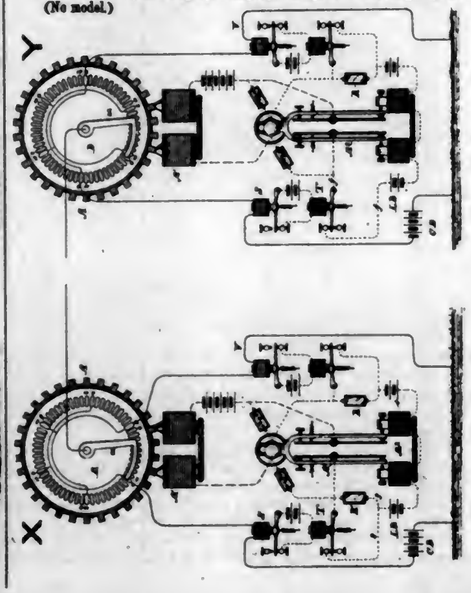
322,690. MEANS FOR EFFECTING ELECTRICAL SYNCHRONOUS MOVEMENTS.

PATRICK B. DELANY, New York, N. Y., assignor to the Standard Multiplex Telegraph Company, same place. Filed Feb. 26, 1884. (No model.)



322,691. METHOD OF EFFECTING ELECTRICAL SYNCHRONOUS MOVEMENTS.

PATRICK B. DELANY, New York, N. Y., assignor to the Standard Multiplex Telegraph Company, same place. Filed Aug. 21, 1884. (No model.)

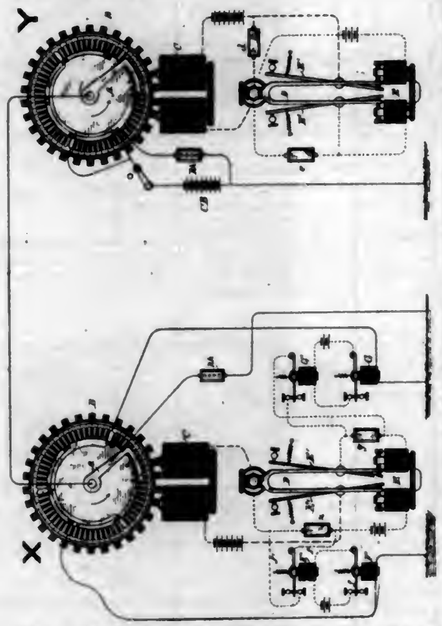


Claim.—1. The method of synchronizing apparatus, which consists in sending a correcting impulse of electricity from one station to a distant station whenever the apparatus run out of synchronism, utilizing said impulse at the distant station to correct the speed of the apparatus at that station and simultaneously utilizing the same impulse to correct the speed of the apparatus at the station from which the impulse is sent out.

2. The method of synchronizing electrically-connected apparatus, which consists in independently actuating such apparatus, and then, whenever either apparatus runs out of time with the other, simultaneously retarding the speed of one apparatus and accelerating that of the other to bring them together again.

322,692. MEANS FOR ELECTRICALLY MAINTAINING SYNCHRONOUS MOVEMENTS.

PATRICK B. DELANY, New York, N. Y., assignor to the Standard Multiplex Telegraph Company, same place. Filed Mar. 23, 1885. (No model.)



Claim.—1. The combination of a main line, synchronously-actuated apparatus connected with each end of the main line, correcting devices at one end of the main line for accelerating or retarding the apparatus by varying the resistance of its controlling-circuit, a correcting-battery from which impulses of electricity are sent to operate said correcting devices, and contacts or devices at the apparatus at the end of the main line for completing the circuit from the correcting-battery to said correcting devices whenever the apparatus at the station to be corrected runs too fast or too slow.

2. The combination of a main line, synchronously-actuated apparatus at each end of the main line, devices for correcting the speed of the apparatus at one end of the line by increasing or decreasing the resistance of its controlling-circuit, a correcting-battery at the other end of the main line from which impulses of electricity are sent over the line to said correcting devices, battery-connected contacts at the battery-station, and circuit-completing contacts at the receiving-station connected with the correcting devices, whereby correcting-impulses are sent from the battery-station whenever the apparatus at the station to be corrected runs too fast or too slow.

3. The combination of a main line, synchronously-actuated apparatus, a table of contacts, and a circuit-completer which traverses said table at each end of the main line, the alternate battery-connected 10's at the battery-station, the alternate battery-connected 9's at the battery-station farthest removed from the battery-connected 10's, the 10-contacts at the other station arranged alternately with reference to the battery-connected 10's at the battery-station and connected with one correcting device, and the 9-contacts arranged alternately with reference to the battery-connected 9's at the battery-station and connected with the other correcting device.

4. The combination of the main line, synchronously-actuated apparatus connected at each end of the main line, the 9 and 10 contacts at one station, the alternate 10's being connected with one set of correcting devices, and the alternate 9's farthest removed from said connected 10's being connected with the other set of correcting devices, a correcting-battery, and the 9 and 10 contacts at the distant station corresponding with the unconnected 9 and 10 contacts at the first station connected to earth, whereby the correcting battery-circuit is completed to actuate the correcting devices whenever the apparatus runs out of time, as set forth.

5. The combination of the main line, the synchronously-actuated apparatus connected with each end of the main line, the arrangement and connection of the correcting-contacts at the two stations, substantially as described, the correcting-battery at one station, and correcting devices at the other station for accelerating or retarding the apparatus at that station by means of impulses of electricity received from the battery-station whenever the apparatus at the station to be corrected runs too fast or too slow.

6. The combination of the main line, the table of contacts and traversing circuit-completer at each end of the main line, the 10-contacts on one table, the alternate contacts being extended toward the adjoining 9's and connected with the correcting-battery C B, the 9-contacts, those farthest removed from the extended 10's being also connected with the correcting-battery C B, the 10-contacts at the other station corresponding in position with the unconnected 10's at the battery-station and extended toward the adjoining 9's, and connected to devices for correcting the speed of the apparatus, and the 9-contacts corresponding with the unconnected 9's at the battery-station and connected with other devices for correcting the speed of the apparatus.

7. The combination of a main line, synchronously-actuated apparatus at each end of the main line, an uncontrolled vibrator or circuit-interrupter which is allowed to vibrate or act at its normal rate without correction for actuating the apparatus at one end of the main line, a correcting-battery and contacts for transmitting correcting-impulses of electricity, and correcting devices at the station to be corrected which correct the speed of the apparatus by acceleration or retardation by varying the resistance of the circuit of the controlling vibrator or circuit-interrupter at that station.

8. The combination of the main line, means for rapidly making and breaking the main-line circuit, a ground-line through which the main line is grounded after each completion of the circuit, and a resistance in the ground-line, for the purpose set forth.

9. The combination of a main line, synchronously-actuated apparatus connected with each end of the main line, a table of contacts and a rotating circuit-completer at each end of the line which traverses over the table of contacts and successively places the main line in connection with each of said contacts, static discharge-contacts arranged between the first-named contacts and connected together and to earth, and a resistance between the static discharge-contacts and the ground.

10. The combination of the table of contacts, the main contacts thereon, the ground or static discharge-contacts, the branch lines connected with the main contacts, and the trailing circuit-completer which bridges from the main contacts to the ground-contacts.

11. The combination of the branch line or lines, main and ground contacts, the bridging circuit-completer, and a resistance in the circuit or circuits completed by the bridging of the circuit-completer, substantially as set forth.

322,693. PRINTING-TELEGRAPH FOR SYNCHRONOUS TELEGRAPHY.

PATRICK B. DELANY, New York, and EDWARD A. CALAHAN, Brooklyn, assignors to the Standard Multiplex Telegraph Company, New York, N. Y. Filed Apr. 19, 1884. Renewed Mar. 31, 1885. (No model.)

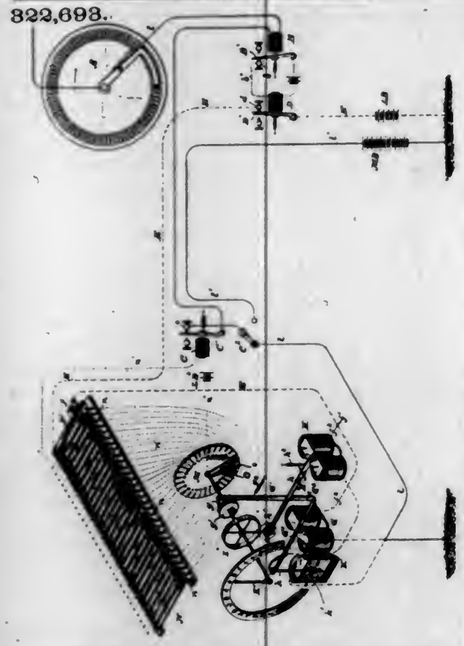
Claim.—1. The combination, substantially as set forth, of the transmitting-keys, their local circuits or branches of a circuit, the distributer or sunflower device, the actuating-magnet and actuating devices, the print-magnet and printing devices, a lazy device through which the circuit of of the print-magnet is completed, and electric circuits and connections.

2. The combination, substantially as set forth, of the local battery L B, its circuit, the branches of the circuit, the actuating-magnet included in one of said branches, the print-magnet included in the other of said branches, a lazy device or tardy circuit-completer included in the same branch with the print-magnet, a main line, and devices for making and breaking the circuit of the local battery in response to the periodic impulses of electricity received over the line.

3. The combination, substantially as set forth, of the local battery L B, its circuit, the unison key F and its contact, the actuating-magnet, its circuit, the print-magnet, its circuit, and a lazy device or tardy circuit-completer for completing the print-magnet circuit.

4. The combination, substantially as set forth, of the main line, the transmitting-keys, and sunflower, the local circuit of the keys, the magnet in the local circuit by which the main line is made and broken, local circuits or a split local circuit which is made and broken by the makes and breaks of the main line, the actuating-magnet included in one of said locals or branches, the print-magnet included in the other of said locals or branches, and a lazy device or tardy circuit-completer for completing the print-magnet circuit.

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5. The combination, substantially as set forth, of a main line, a table of insulated contacts at each end of the main line, synchronously-actuated circuit-completing devices which traverse said tables of contacts, a main battery, and printing devices connected with one or more corresponding contacts at the stations, said printers consisting of the combination of transmitting-keys, their local circuits or branches of a circuit, the sunflower device, a magnet in the local circuit for interrupting the main line when one of the keys is operated, local circuits or a split circuit which is made and broken by the interruptions of the main line, the actuating-magnet included in one of said local circuits or branches, a print-magnet included in the other of said circuits or branches, and a lazy device or tardy circuit-completer for completing the print-magnet circuit.

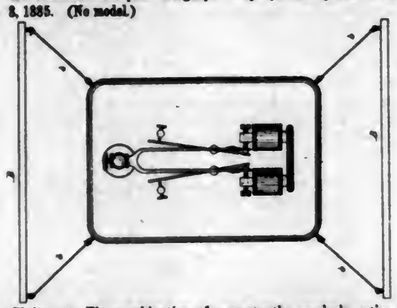
6. The combination, substantially as set forth, of a main line, a main battery, a table of insulated contacts at each end of the main line, synchronously-actuated circuit-completing devices which traverse said tables of contacts, printing-instruments connected with one or more corresponding contacts at the stations, a relay interposed between the tables of contacts and said printing-instruments, said printers consisting of the combination of transmitting-keys, their local circuits or branches of a circuit, the sunflower device, a magnet in the local circuit for interrupting the main line when one of the keys is operated, local circuits or a split local circuit which is made and broken by the interruptions of the main line, the actuating-magnet included in one of said local circuits or branches, a print-magnet included in the other of said local circuits or branches, a lazy device or tardy circuit-completer for completing the print-magnet circuit, and mechanism and connections, substantially such as described, whereby the impulses received over the line are made effective to energize the actuating devices when the relay-armature leaves its back-stop.

7. The combination, substantially as set forth, of a single main line, Morse instruments at each station connected in corresponding branches of the main line, step-by-step printing apparatus at each station, also connected in corresponding branch lines, and circuit apportioning or distributing devices at each end of the main line, by which the main-line circuit is successively completed between each pair of corresponding instruments, whereby combined Morse and step-by-step printing-transmission is accomplished over a single main line.

8. The combination, substantially as set forth, of the print-magnet circuit and the tardy circuit-completer, consisting of a cup containing mercury and some other suitable fluid, and a circuit-completing plunger carrying a float.

9. The combination, substantially as set forth, of the type-wheel, the print-magnet, its armature, the paper-carrying frame moving with the armature of the print-magnet, the paper-feeding devices, and a wiper carried by the armature of the print-magnet for drawing slack from the paper-roll at each actuation of the armature.

322,694. MEANS FOR REGULATING THE VIBRATIONS OF FORKS, REEDS, &c. PATRICK B. DELANY, New York, N. Y., assignor to the Standard Multiplex Telegraph Company, same place. Filed Apr. 8, 1885. (No model.)

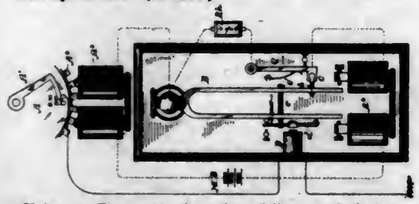


Claim.—1. The combination of a constantly regularly-acting automatic circuit-interrupting vibrator, its support, and flexible or elastic devices for supporting it, whereby a uniform rate and greater amplitude of vibration are obtained.

2. The combination of a vibrator, its base or support, adhesive material applied to the vibrator to regulate its normal rate of vibration, and flexible devices for supporting it.

3. The combination, with a vibrator, of some adhesive material applied thereto to regulate its normal rate of vibration.

322,695. MEANS FOR MECHANICALLY CORRECTING THE VIBRATIONS OF REEDS AND FORKS. PATRICK B. DELANY, New York, N. Y., assignor to the Standard Multiplex Telegraph Company, same place. Filed Apr. 23, 1885. (No model.)



Claim.—1. The combination, substantially as set forth, of a continuously-automatically-actuated vibrator, means for continuously actuating it, and a device for mechanically correcting or controlling its rate of vibration.

2. The combination, substantially as set forth, of the vibrator, the correcting-relay, its armature, and the elastic finger for mechanically correcting the vibrator.

3. The combination, substantially as set forth, of the table of contacts, the synchronously actuated circuit-completer, the correcting-contacts, a vibrator, and a device for mechanically correcting the speed of the vibrator.

322,696. MEANS FOR ACTUATING AND CORRECTING THE VIBRATIONS OF REEDS. PATRICK B. DELANY, New York, N. Y., assignor to the Standard Multiplex Telegraph Company, same place. Filed Apr. 23, 1885. (No model.)

Claim.—1. The combination of a vibrator, the vibrator-magnet, its circuit, magnetic correcting devices independent of the vibrator-magnet, the local circuit of said correcting devices, and a relay in the main line for effecting the correction.

2. The combination of the vibrating reed or bar, the vibrator-magnet, and the independent correcting-magnet having its poles arranged to envelop and act on both sides of the vibrator.

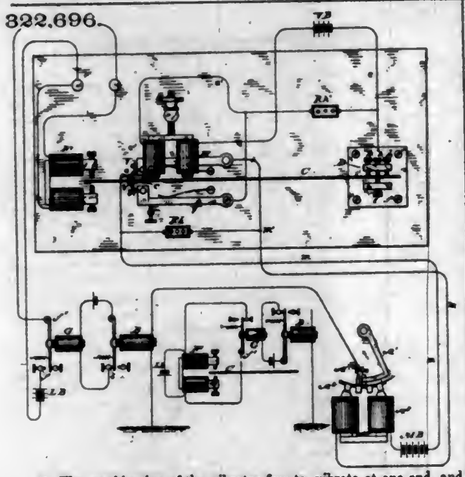
3. The combination of the vibrator, the vibrator-magnet, the independent correcting-magnet, its circuit and battery, the current from which normally does not flow through the coils of the correcting-magnet, and devices, substantially such as described, whereby the local battery of the correcting-magnet is caused to flow through its coils to correct the vibrator upon the passage of a correcting impulse over the line.

4. The combination of the vibrator, its local driving-circuit, which is automatically made and broken by the vibrator, the motor and its circuit arranged entirely independent of the vibrator-circuit, and also automatically made and broken by the vibrator.

5. The combination of the vibrator, devices for supporting or clamping it at two or more points, the vibrator-magnet, its circuit, and the independent magnetic correcting devices.

6. The combination of the vibrating reed, devices for adjusting it endwise in its support, the vibrator-magnet for automatically actuating the reed, and a supplementary correcting-magnet for correcting its rate of vibration.

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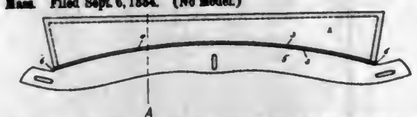
7. The combination of the vibrator free to vibrate at one end, and devices for supporting the vibrator which clamp it at two or more points at the other end, for the purpose set forth.

8. The combination of the endwise-adjustable vibrator, its support, and clamping-screws or holders, which clamp the vibrator at two or more points at one end only, for the purpose set forth.

9. The combination of the longitudinally-grooved vibrator, its support, and the pointed clamping-screws which enter the grooves in the vibrator.

10. The combination of the vibrator, means for clamping or supporting it at two or more points, the vibrator-magnet, and a correcting-magnet.

322,697. COLLAR OR CUFF. CHARLES H. DENISON, Springfield, Mass. Filed Sept. 6, 1884. (No model.)

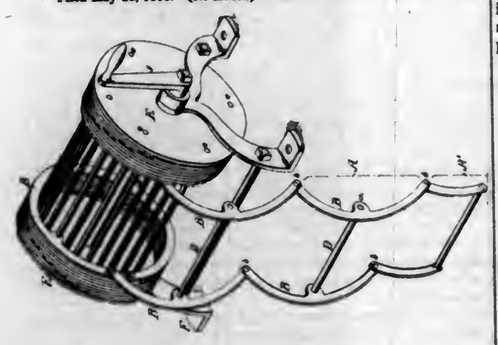


Claim.—A folding collar or cuff having its folding-line made and defined by two separate parallel indentations or creases in one side of the fabric, with a narrow space between them, and extending from one end of the turn-over portion to the other, substantially as described.

322,698. MANUFACTURE OF SUPERPHOSPHATE. FRANK DURRE, San Francisco, assignor of one-half to Edgar J. Dubbs, Alameda, Ca. Filed July 26, 1884. (No specimens.)

Claim.—The improvement in the manufacture of superphosphate or soluble phosphate of lime, consisting in dissolving one part of acid sulphate soda in about four parts of water at a temperature at 150° Fahrenheit, in allowing it to stand until the neutral sulphate is crystallized out of the mother-liquor, then in adding about three and a half pounds of the mother-liquor to one pound of the phosphate of lime, and in heating the solution until the surplus water is evaporated, substantially as herein described.

322,699. FOLDING LADDER. THOMAS S. DENTON, Philadelphia, Pa. Filed May 25, 1885. (No model.)



Claim.—1. A drum carrying a coiled sectional ladder having the side bars of all the coiled sections in the same annular plane, as set forth.

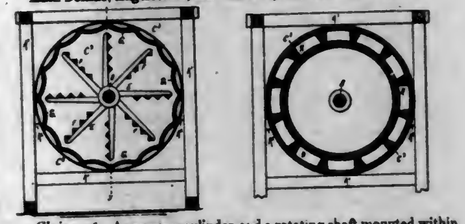
2. A folding-ladder section composed of side bars and a cross-bar or rung beyond the plane or line of the side bars, substantially as set forth.

3. A folding ladder having hinged sections, and each composed of side bars and a cross-bar or rung beyond the plane or line of the side bars, as and for the purpose set forth.

4. The combination of the winding-drum with a folding ladder adapted to be coiled thereon, said ladder being composed of hinged sections each consisting of curved side bars and a cross-bar or rung beyond the line or plane of the side bars, substantially as specified.

5. A folding-ladder section composed of curved side bars, A, having projection lugs *a* and a cross-bar secured to said lugs, substantially as described.

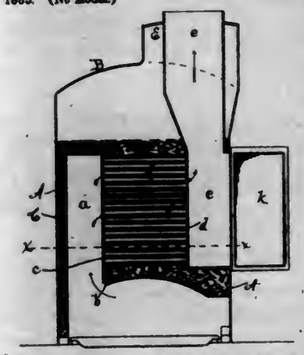
322,700. WHEAT SCOURING AND CLEANING MACHINE. FREDERICK DORSEY, Hagerstown, Md. Filed Apr. 1, 1885. (No model.)



Claim.—1. A scouring-cylinder and a rotating shaft mounted within the same, in combination with sets of radial arms secured to said shaft, and series of parallel beater-ribs secured to each set of radial arms, said ribs being parallel with said rotating shaft, each of said ribs being triangular in cross-section and set with its apex pointing in the direction of the rotation of the shaft, substantially as set forth.

2. A scouring-cylinder having its interior surface made up of convex strips having abrasive surfaces, in combination with beater-ribs arranged to rotate within said cylinder, each of said ribs being triangular in cross-section, with its apex set pointing in the direction of the rotation of the ribs, and having its working or forward surfaces abraded, substantially as set forth.

322,701. STEAM-BOILER. THOS. DRUMMOND, Norwich, Conn. Filed Apr. 2, 1885. (No model.)



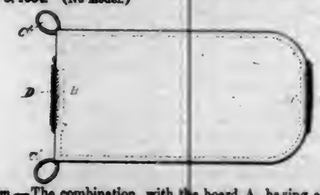
Claim.—The combination, in a steam-boiler, of the fire-box having a curved crown-sheet, the vertical flue at the rear, the smoke box and its escape-flues at the front, and the intermediate horizontal flues connecting the vertical flues and smoke-box, substantially as and for the purposes specified.

322,702. BOTTLE-STOPPER. LEO EHRLICH, St. Louis, Mo. Filed Nov. 11, 1884. (No model.)



Claim.—A bottle-stopper consisting of a flexible piece, of cylindrical or other shape, a disk provided with an annular shoulder on which is raised a smaller shoulder, said disk having a countersunk hole passing through it, an internally-screw-threaded piece with a disk formed on one end, and a headed screw-bolt, the whole combined substantially as and for the purpose specified.

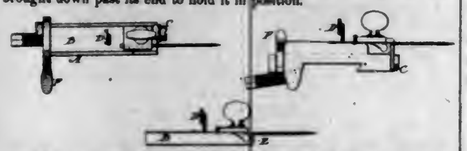
322,703. BOSOM-BOARD. JAMES A. EMERY, Montrose, Mo. Filed July 3, 1884. (No model.)



Claim.—The combination, with the board A, having edge groove, B, of the fastening-bail consisting of rods C, formed with spring-coils C' and arms C² C², extended from said coil at right angles to each other, and the springs D D', connecting the adjacent ends of rods C C, substantially as and for the purposes set forth.

322,704. DEVICE FOR SECURING THE NEEDLES IN EMBROIDERING-MACHINES. WILLIAM H. FARMER, Nottingham, England. Filed Jan. 8, 1885. (No model.) Patented in England Nov. 11, 1884, No. 14,824.

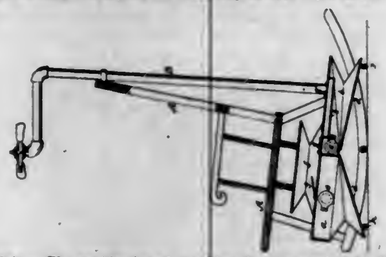
Brief.—A groove is cut in the upper face of a bracket to receive a sliding bit, in the front end of which bit the needle is clamped. The bit carrying the needle is slid into place and the hinged lever or stop plate brought down past its end to hold it in position.



Claim.—1. In an embroidering machine or attachment, the combination of a needle-bracket grooved longitudinally to receive a sliding bit, a bit adapted to slide therein and hold the needle, a pivoted stop-plate for preventing the sliding of the bit when desired, and a stop-plate bent over at its upper edge to retain the sliding bit in the groove, substantially as described.

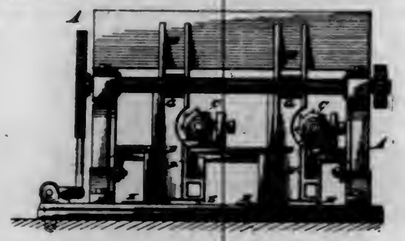
2. In an embroidering machine or attachment, the combination of a grooved needle-bracket, a needle-holding bit sliding therein, a stop attached to the bracket, and a stop-plate for clamping the bit in the bracket, substantially as described.

322,705. VENTILATING APPARATUS FOR ROCKING-CHAIRS. JOHN FERRIS, Philadelphia, Pa. Filed July 23, 1883. (No model.)



Claim.—The combination of a rocking-chair, two pairs of bellows connected thereto, so as to be operated alternately, a pressure-equalizing box, *f*, receiving the air from both pairs of bellows, a distributing-pipe, B, communicating with said equalizing-box *f* and extending to the top of the chair, and a reaction-wheel carried by the upper end of the pipe and provided with fan-blades, as set forth.

322,706. MATCH-SPLINT MACHINE. GILFORD FLEWWELLING and GILBERT J. HARRIS, Hampton, New Brunswick, Canada. Filed Apr. 15, 1885. (No model.)



322,706.



Claim.—1. The combination, with the stock-feeding guides and the grooving gang-saws, of the gang incisor-knives acting in the planes of the saws and at the ends of the said guide-strips, substantially as specified.

2. The combination, with the guides for the stock and the gang of grooving-saws arranged partially in the path thereof, of the guide-strips extending in the planes of the saws, and the transversely-reciprocating gang of incisors at the ends of said guide-strips, substantially as specified.

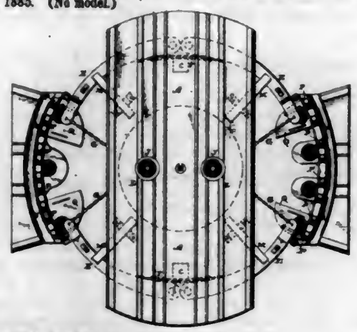
3. The combination, with the reciprocating plate F, of the incisors E, arranged transversely thereon, the V-shaped or jaw-shaped slicer-knife H, and the presser-tongue K, arranged beneath the said knife, the whole adapted to serve in a machine for making match-cards, substantially as shown and described.

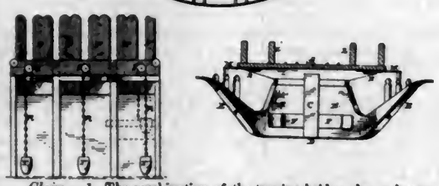
322,707. SASH-CORD FASTENER. GEORGE W. GRAVES, Norwalk, Ohio. Filed Dec. 8, 1884. (No model.)



Claim.—As a new article of manufacture, a hollow cylindrical cord-fastener constructed with a slot, *d'*, extending longitudinally through one side of it, and an opening in the side opposite said slot and a partition between the slot and said opening, as set forth.

322,708. DRAW-BRIDGE. JOSIAH GROVES, Pullman, Ill. Filed June 1, 1885. (No model.)





Claim.—1. The combination of the turning bridge, the spring-actuated arms E, pivoted to each end, the guides M, chains G, the drums H, and shafts I, substantially as shown.

2. The combination of a turning draw-bridge with pivoted arms, which are connected to opposite ends thereof, with automatically and vertically moving sections of a gate or fence, which are provided with projections for the arms to catch over and depress the sections as the gate is being closed.

3. The combination of the draw-bridge, pivoted spring-actuated arms having inclined edges attached to each end, the chains connected to the ends of the arms, the drum around which the chains are passed, the shaft connected to the drum, and the stop connected to the shaft for holding the arms in a closed position, substantially as set forth.

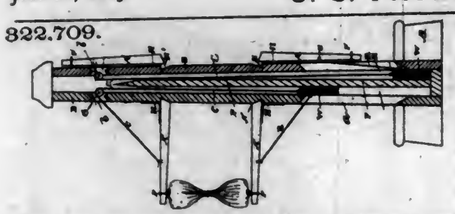
4. The combination of the bridge, the scrapers connected thereto, and the gutter, substantially as shown.

322,709. MAIL-CRANE. JAMES H. HARDEN, Towanda, Pa. Filed June 11, 1885. (No model.)

Claim.—1. In a mail-bag crane, a hollow support in which is located a sliding weight, and arms pivoted to the exterior thereof and connected to said sliding weight, substantially as shown, and for the purpose set forth.

2. In combination with a suitable vertical support, arms A', pivoted thereto, a flexible connection attached to the upper arm and to a

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sliding weight, and a rigid connection pivotally connected to the lower arm and weight, substantially as shown, and for the purpose set forth.

3. In a device for supporting mail-bags for the purpose set forth, a hollow support or column having a vertical partition, and pivoted arms attached to the opposite sides thereof, said arms being connected to sliding weights, whereby they will normally assume a vertical position, substantially as shown, and for the purpose set forth.

4. In a mail-bag support, a vertical column provided with a transverse partition, openings *a b* through the same, as shown, rollers located opposite the openings *b*, and arms A', hinged or pivotally connected to the column and provided with flexible connections C, attached to a sliding weight, substantially as shown, and for the purpose set forth.

5. In a mail-bag crane, the combination, with the column B, having a vertical partition, of an upper arm pivoted thereto and provided with a flexible connection, C, which passes over a roller, *c*, the lower end of said flexible connection being provided with a weight, W, and a lower arm having attached thereto a rod, R, which passes through an opening in the column and is pivotally connected to the weight W, the parts being organized substantially as set forth.

322,710. WASHING-MACHINE. GEORGE HARGREAVES, Detroit, Mich. Filed Feb. 26, 1884. (No model.)



Claim.—1. A steam washing-boiler, A, having an internal movable wire cage-holder for the goods, a fast faucet, a water-funnel in the top of the case having a spray-discharge, and means, substantially as described, to operate the cage-holder, as set forth.

2. The combination, with the outer case, A, of the reciprocating cage-holder, vibratory arms *g'*, pitman *g*, and pinion having a wrist-pin and engaging a gear, substantially as specified.

3. In a washing-machine, the combination, with the vibratory cage C, of the wire partitions J, of elongated flattened form, adapted to be placed between layers of clothes and serve substantially as set forth.

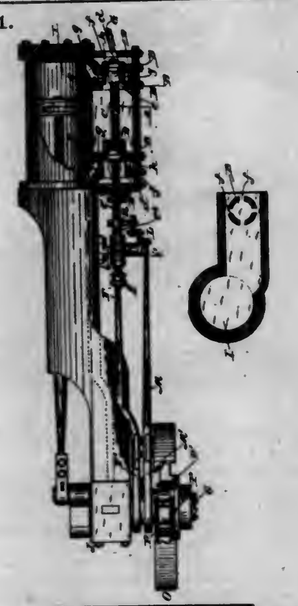
322,711. CUT-OFF VALVE. CHARLES HARMON, Tiffin, Ohio. Filed Apr. 29, 1885. (No model.)

Claim.—1. The combination, with the connected rotary valves fitted as feed and exhaust valves to piston-chamber and the bell-crank lever connected to the rotary valve-stem and to an eccentric-rod or pitman, of the governor-wheel fast to the driving-shaft, and comprising the spring heads or blocks connected by pivoted arms to a disk sleeved upon the driving-shaft, said sleeve also carrying the eccentric of the bell-crank lever, pitman, or rod, substantially as and for the purpose specified.

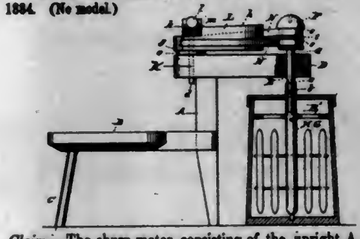
2. The bell-crank lever and its pitman or rod, in combination with the stem-actuating pitman or eccentric-rod, constructed and arranged, as shown, for imparting a reciprocating rotary and longitudinal movement to the valves, substantially as described.

3. The combination, with the connected circular valves, of the steam-chest, and the internal circular valve-chambers integral with said steam-chest, and the valve-stem, together with its eccentric-rod, a pitman or rod, and a bell-crank lever having one arm connected to said pitman or rod and the other to the valve-stem, arranged and adapted to operate substantially as shown and described.

322,711.



322,712. CHURN. JAMES G. HARRIS, Franklin, Ky., assignor of three-fourths to J. B. Montague and J. T. Booker, same place. Filed Dec. 4, 1884. (No model.)



Claim.—The churn-motor consisting of the upright A, having attached in rear the seat B, and in front the horizontal bar D, provided with front and rear bearings, the arc L, having the splash-board A and journal *d*, the sectional dasher-shaft provided with the pulley-head F at one end and the tenoned journal E at the opposite end of the upper section, the said pulley being formed with the grooves separated by the flange *t*, and the connecting cords or straps N, substantially as specified.

322,713. SHADE-ROLLER. STEWART HARTSHORN, Millburn, N. J. Filed Jan. 14, 1885. (No model.)



Claim.—1. A shell or end cap for shade-rollers, having a serrated cutting-edge, as and for the purposes set forth.

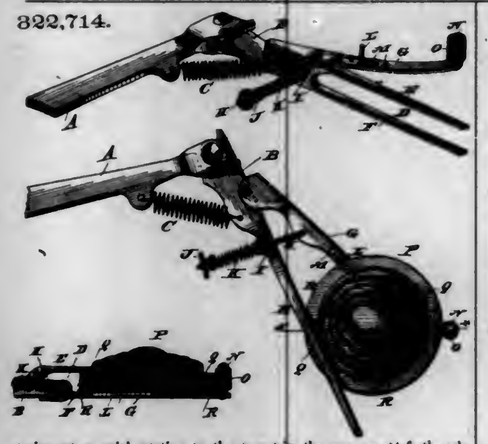
2. In a shell or end cap for shade-rollers, the teeth for attaching the same to the roller, as and for the purposes set forth.

3. In spring shade-rollers, a gudgeon, J, forming part of the bracket and provided with the serrated or notched end, substantially as described, and for the purposes set forth.

322,714. TARGET-TRAP. ALBERT H. HEBBARD, Knoxville, Tenn. Filed May 19, 1885. (No model.)

Claim.—1. As an improvement in target-traps, the combination of the hinged or swiveled main arm, the spring-actuated bifurcated arm hinged to the outer end of the said main arm, and the spring-actuated auxiliary arm pivoted upon the said bifurcated arm and provided with the adjustable pin, and the revolving pin or stud at its outer end adapted

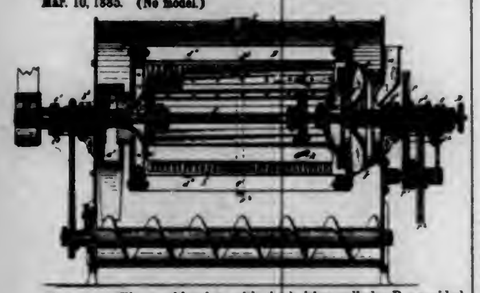
322,714.



to impart an axial rotation to the target in the manner set forth, substantially as described.

2. In an arm or carriage for target-traps, the combination, with the main arm, of the spring-actuated bifurcated arm hinged to the outer end of the said main arm, the auxiliary arm pivoted upon the said bifurcated arm and provided with the adjusting-pin, and the revolving pin or stud at its outer end, and the transverse rod passing through a transverse aperture in the bifurcated arm, pivotally secured at its inner end to the auxiliary arm and provided at its outer end with the encircling spiral spring and the adjusting-nut, all constructed and arranged to operate in the manner and for the purpose shown and set forth.

322,715. BRAN-DUSTER. AUGUST HEINE, Silver Creek, N. Y. Filed Mar. 10, 1885. (No model.)



Claim.—1. The combination, with the bolting-cylinder B, provided with a feed-opening, f', and an annular disintegrating-plate, h, surrounding the same, of the shaft C, the disked head H, provided with an annular disintegrating-plate, h', and the brushes I, secured to said shaft, substantially as set forth.

2. A bolting-cylinder composed of rigid end pieces, d d', rigid longitudinal ribs d^2, connecting the same, flexible cloth-supporting strips d^3, secured to the inner sides of the ribs, and the bolting-cloth d^4, attached to the inner side of the rigid frame and flexible supporting-strips, substantially as set forth.

3. The combination, with the casing A and bolting-cylinder B, of the ring g, provided on its outer side with an annular groove containing a woolly lining, g', and the hood f, secured to the bolting-cylinder and provided with a cylindrical front flange, f^2, which bears against the lining g', to form a tight joint, substantially as set forth.

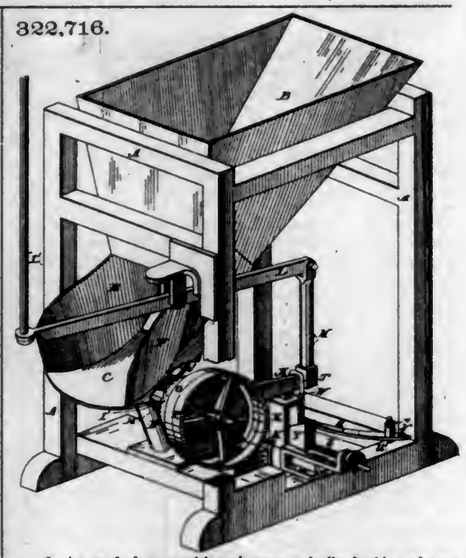
4. The combination, with the brushes I, provided with inclined slots k, of the spider L, provided with pins l', the hollow shaft C, the sliding screw-nut M, arranged in said shaft and connected with the spider L, and the adjusting-screw m, held against longitudinal movement in the shaft and engaging in the nut M, substantially as set forth.

322,716. ORE-FEEDER. JOSHUA HENDY, San Francisco, Cal. Filed Jan. 22, 1883. (No model.)

Claim.—1. In an ore-feeder, the inclined rotary table C, the shaft D, driving-gear clutch mechanism, levers L and N, and pitman M, in combination with the plate S, link T, and the elastic adjustable spring or buffer V, substantially as herein described.

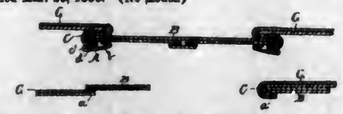
2. In an ore-feeder, the inclined table, clutch mechanism, levers L and N, and means for operating the same, in combination with the block W, box X, adjusting-wedge Y, and screw Z, substantially as herein described.

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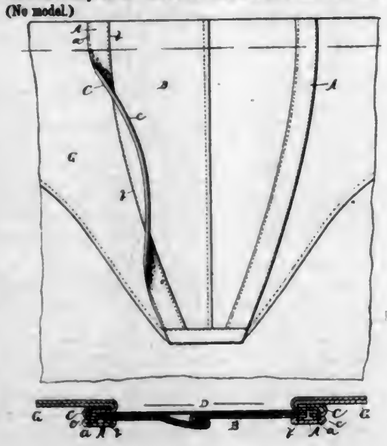
3. An ore-feeder comprising a hopper, an inclined table, and means for rotating the same, a clutch mechanism consisting of the loose and fast wheels O and P, a slotted hub, o, arms Q, springs q, and levers actuated by the stamp to operate the clutch and rotate the table, an adjusting-spring, S, and link T for retracting the levers, and an adjusting screw and wedge for regulating the movements of the feed apparatus, all substantially as and for the purpose herein described.

322,717. METHOD OF ATTACHING BOSOMS TO SHIRTS. MAX HERMANN, Troy, N. Y., assignor to Tim. Wallerstein & Co., same place. Filed Mar. 20, 1885. (No model.)



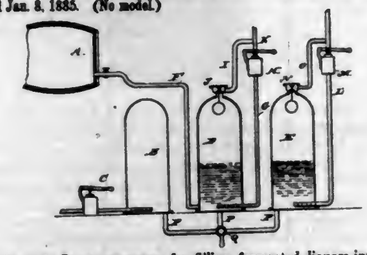
Claim.—The described method of attaching a bosom to a shirt, which consists, first, in stitching the edge of the shirt-body opening to the face side of the bosom edge; secondly, folding the shirt-body over upon the back of the bosom and securing the same to the bosom and to a folded strip placed upon the face side of the bosom, and overlapping both the bosom edge and the edge of the shirt-body opening by a double line of through-and-through stitches, the said stitches passing through all the plies and the folded edges of the said strip on opposite sides of the first line of stitches; and, thirdly, turning the shirt-body back from the opening, substantially as described.

322,718. METHOD OF ATTACHING BOSOMS TO SHIRTS. MAX HERMANN, Troy, N. Y. Filed Nov. 16, 1883. Renewed Mar. 20, 1885. (No model.)



Claim.—The described method of attaching bosoms to shirts, which consists, first, in securing one edge of an edge-folded strip to the edge of shirt-opening by a row of stitching; secondly, folding the shirt upon itself, so as to form a double fold and leave a vacant space between the shirt and unstitched edge of strip; thirdly, inserting the raw edge of bosom in said vacant space and securing it by a row of stitching which passes through and binds together the loose edge of strip, the raw edge of bosom, and one thickness of the shirt-front; and, fourthly, folding the shirt upon itself until the double fold is free from shirt on its folded edge, and forms a double-fold fly-edge, substantially as described.

322,719. APPARATUS TO PREVENT FROTHING WHEN FILLING BEER INTO SIPHONS, &c. FREDERIK HEYMAN, Copenhagen, Denmark. Filed Jan. 8, 1885. (No model.)



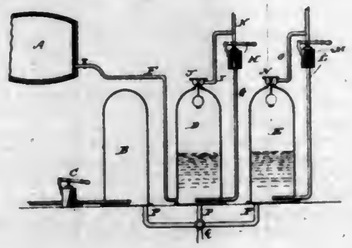
Claim.—1. In an apparatus for filling fermented liquors into siphons, the combination of a tank having a pump for creating a vacuum in the same, a tank for containing charged liquor and having pump for charging the same, a tank for containing an air not absorbed by the liquor and having a pump for forcing the said air into the tank, pipes leading from the bottoms of the said tanks, and a cock having the pipes opening into it, and having a plug provided with a bent bore, one arm of which registers successively with the apertures of the pipes, while the other arm opens into the siphon to be filled, as and for the purpose shown and set forth.

2. The apparatus for filling fermented liquors into siphons, consisting of a tank having a pump for creating a vacuum in the same, a tank having means for forcing an air not absorbed by the liquor into the same, a tank having a pipe admitting the liquor, and having a pump for forcing carbonic-acid gas into the same, a tank having a pipe provided with a safety-valve opening into the liquor-containing tank, a pump having pipes opening into it from the air-containing tank and from the liquor-containing tank, and having a pipe opening from it into the tank having the pipe opening into the liquor-containing tank, pipes opening from the bottoms of the vacuum-tank, from the air-containing tank, and from the tank having the pipe opening into the liquor-containing tank, and a cock having the pipes opening into its casing, and having a plug provided with a bore registering at one end with the openings of the pipes successively, and opening at its other end into the siphon to be filled, as and for the purpose shown and set forth.

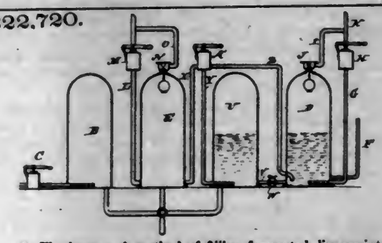
3. The combination, in an apparatus for filling fermented liquors into siphons, of the reservoir for containing the liquor, the tank for containing the charged liquor, the pipe passing from the reservoir into the bottom of the tank, the pump for forcing carbonic-acid gas into the tank having a perforated pipe opening in the bottom of the tank, a safety-valve at the top of the tank, and the pipe passing from the said safety-valve to the feed-pipe of the pump, as and for the purpose shown and set forth.

322,720. METHOD OF PREVENTING FROTHING WHEN BEER IS BEING FILLED INTO SIPHONS, &c. FREDERIK HEYMAN, Copenhagen, Denmark. Filed Apr. 15, 1885. (No model.)

Claim.—1. The improved method of filling fermented liquors into siphons, consisting in admitting into the siphon, together with the liquor charged with its desired quantity of carbonic-acid gas, an air, which will not be absorbed by the liquor, under a sufficient pressure to force all the contents out of the siphon, as and for the purpose shown and set forth.

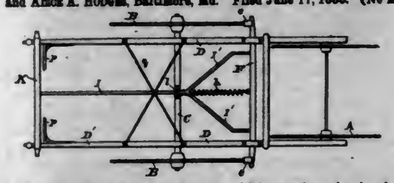


322,720.



2. The improved method of filling fermented liquors into siphons consisting in first producing a vacuum in the siphon, thereupon forcing an air, which will not be absorbed by the liquor, into the siphon under slight pressure, and thereupon forcing the liquor charged with carbonic-acid gas into the siphon under pressure of the aforesaid air sufficient to force all the contents out of the siphon, as and for the purpose shown and set forth.

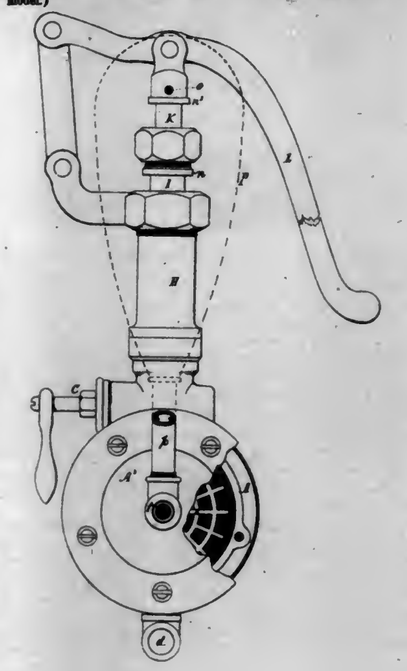
322,721. BRAKE FOR CHILD'S CARRIAGE. GEORGE W. HODGES and ALICE A. HODGES, Baltimore, Md. Filed June 17, 1885. (No model.)



Claim.—1. A pressure-brake for a child's carriage, having in combination the horizontal reaches D, the movable cross-bar F, provided with shoes e to bear against the wheel-rim, a spiral spring, A, having one end connected with the cross-bar and the other with the rear axle, a push-handle, K, and a rod, I, extending from the cross-bar to the push-handle, as set forth.

2. A pressure-brake for a child's carriage, having in combination a movable cross-bar, F, provided with shoes to bear against the wheel-rims, two side push-bars, D', each provided with a laterally-projecting hand-grasp, p, a push and brake-release handle, K, having two eyes, n, each of which is loosely occupied by one of said push-bars, and a rod, I, extending from the said cross-bar to the handle, as set forth.

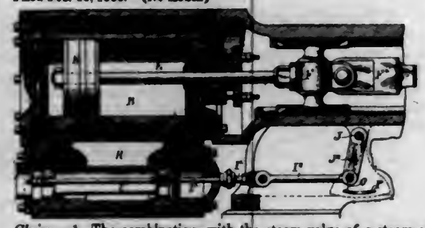
322,722. PURIFYING AND AERATING APPARATUS FOR WATER SERVICE. JOHN HOWES, Worcester, Mass. Filed Aug. 29, 1883. (No model.)



Claim.—1. The combination, with a filtering apparatus, of an air-pump mechanism for injecting air to the interior of said filter, and an air-reservoir into which said air can be compressed for imparting reactive movement when the filter-cleansing cock is opened, substantially as and for the purpose described.

2. The combination, with a filtering apparatus, of a combined air and water pump adapted for simultaneously injecting air to the interior of the filter and pulsating the liquid therein, and for forcing air and liquid through the filter plates or material for the purposes of cleansing substantially as hereinbefore set forth.

322,723. VALVE-INDICATOR. ALBERT L. IDE, Springfield, Ill. Filed Feb. 18, 1885. (No model.)

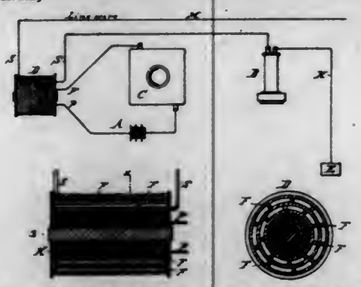


Claim.—1. The combination, with the steam-valve of a steam-engine, of an indicator operated by the movement of the valve, and constructed to show the number of inches of steam in the cylinder at the moment the steam-supply is cut off, substantially as described.

2. The combination, with the steam-valve of a steam-engine, of an indicator showing the number of inches of steam in the cylinder at the time the steam-supply is cut off, comprising a pointer or index-hand operated by the movement of the valve, and a stationary scale or dial having a central blank space showing the extent of the valve lap, and graduated parts at either side of the blank space indicating the number of inches of steam in the cylinder at the moment the steam is cut off, substantially as described.

3. The combination, with the steam-valve and eccentric-rod of a steam-engine, of a rock-shaft for transmitting motion from the said eccentric-rod to the valve provided with an index-hand and a stationary dial, substantially as and for the purpose set forth.

322,724. APPARATUS FOR SUPPRESSING INDUCTION DISTURBANCES. WILLIAM A. JACKSON and JOSEPHUS C. CHAMBERS, Detroit, Mich., assignors to George H. Lothrop, trustee, same place. Filed May 31, 1884. (No model.)



Claim.—1. The combination, with an electrical circuit, of one or more pieces of metal, F, arranged within but insulated from the convolutions of a coil forming part of said circuit and at an angle therewith, substantially as and for the purposes set forth.

2. An induction-coil having between the layers of its secondary coil one or more pieces of metal insulated from and not parallel with the wire composing said secondary coil.

3. The induction-coil D, consisting of a core, a primary coil, and a secondary coil having between the layers thereof the wires F, substantially as and for the purposes set forth.

4. The combination, with the line-wire, transmitter, and receiver of a telephone system, of an induction-coil and electrical conductors placed between the layers of the secondary coil of said induction-coil at an angle with the wire composing said secondary coil and insulated therefrom, substantially as shown and described.

5. The combination, with a telephonic circuit, and with the transmitting and receiving telephones thereof, of a neutralizing-coil comprising a helix of wire included in or adapted to be included in said telephonic circuit, and a metallic wire or series of wires interposed between the layers and crossing the convolutions of said helix, but insulated therefrom, substantially as and for the purposes described.

6. The combination, with a telephone-circuit, of an induction neutralizing-coil comprising a helix of insulated wire included in said circuit, and an electric conductor or series of said conductors interposed between the layers of wire composing said helix transversely to the convolutions thereof and insulated therefrom, substantially as described.

7. The combination, with a telephonic circuit, of the helix composed of the wire S S', wound on the core K, and having interposed between its layers one or more metallic wires F, substantially as shown and described.

322,725. NEUTRALIZING-COIL. WILLIAM A. JACKSON and JOSEPHUS C. CHAMBERS, Detroit, Mich., assignors to George H. Lothrop, trustee, same place. Filed Aug. 15, 1884. (No model.)



Claim.—1. A neutralizing-coil composed of two coils of wire insulated from each other and wound at an angle with each other, and each adapted to form a portion of a telephonic circuit.

2. In combination with two telephone-circuits, one or more neutralizing-coils, each having therein two separate conducting-wires insulated from and at an angle with each other, each of which forms a part of one of said telephone-circuits.

3. The combination, with the telephone-lines E F, of the neutralizing-coil A, formed by a portion of each line wound into a coil, said coils being wound at an angle with each other, substantially as shown and described.

322,726. MEANS FOR SUPPRESSING INDUCTION. WILLIAM A. JACKSON and JOSEPHUS C. CHAMBERS, Detroit, Mich., assignors to George H. Lothrop, trustee, same place. Filed Aug. 15, 1884. (No model.)



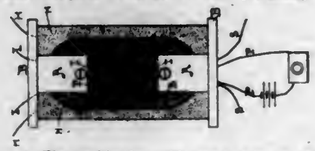
Claim.—1. An induction-coil inclosed within a helix, the windings of the coil and the helix being at an angle with each other, substantially as and for the purposes set forth.

2. The combination, with an electrical circuit, of an induction-coil consisting of a core carrying a primary and a secondary coil, the whole inclosed in a helix insulated therefrom, the inclosing helix being at an angle to the secondary coil, substantially as and for the purposes set forth.

3. An induction-coil having, in addition to the usual primary and secondary coils, a neutralizing-circuit independent of and insulated from said coils at an angle thereto, substantially as and for the purposes set forth.

4. The herein-described induction-coil, consisting of the core K, primary and secondary coils P S, wound thereon, and the helix composed of the wire 3, insulated from the rest of the coil and wound at an angle with the convolutions of the secondary coil, substantially as and for the purposes set forth.

322,727. INDUCTION NEUTRALIZING-COIL. WILLIAM A. JACKSON and JOSEPHUS C. CHAMBERS, Detroit, Mich., assignors to George H. Lothrop, trustee, same place. Filed Nov. 5, 1884. (No model.)



Claim.—1. The combination, with a core, primary, and secondary, of a supplemental core separating the primary from the core, each element being insulated from every other, substantially as and for the purposes described.

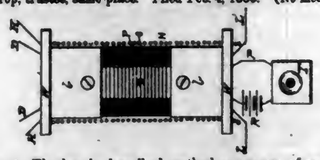
2. An induction-coil composed of a core having projecting pole-pieces, one or more electrical conductors partly or wholly inclosing said core, except said pole-pieces, a primary coil wound over said core and conductor or conductors, but insulated therefrom, and a secondary coil wound over the primary coil and in contact with said pole-pieces, each element being insulated from every other element, substantially as and for the purposes set forth.

3. The herein-described induction neutralizing-coil, consisting of the core K, having pole-pieces A, wire I, primary coil P, secondary coil S, and inclosing-helix H, substantially as shown and described.

4. The combination, with the core K A and insulated conductor I, of the insulated iron strips *a a*, arranged substantially as shown and described.

5. In combination with a telephone-circuit, an induction-coil whose secondary forms part of such circuit, consisting of a primary and secondary wound over a compound core, the parts of said compound core being insulated from each other and from the other elements of the coil, substantially as shown and described.

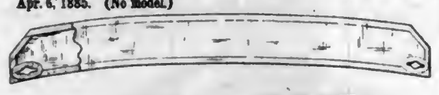
322,728. PROCESS OF NEUTRALIZING INDUCTION. WILLIAM A. JACKSON and JOSEPHUS C. CHAMBERS, Detroit, Mich., assignors to George H. Lothrop, trustee, same place. Filed Feb. 4, 1885. (No model.)



Claim.—1. The herein-described method or process of neutralizing induction disturbances in a telephone-circuit, consisting in opposing the disturbing currents by induced charges generated by said disturbing currents and reacting upon said disturbing currents.

2. The herein-described method or process of neutralizing disturbing currents in a telephone-circuit by establishing an equilibrium between said disturbing currents and electrical charges of opposite polarity inductively generated by said disturbing currents.

322,729. COLLAR OR CUFF. EMIL KIPPER, Adams, Mass. Filed Apr. 6, 1885. (No model.)



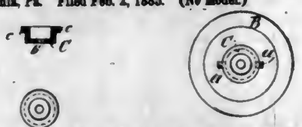
Claim.—1. A collar or cuff or other article of wearing-apparel composed of xylonite or a pyroxyline compound strengthened along its edges by a membranous substance secured thereto, substantially as described.

2. A collar or cuff or other article of wearing-apparel composed of xylonite or a pyroxyline compound having along its edge a membranous substance confined between pieces of the article, substantially as described.

3. A collar or cuff or other article of wearing-apparel composed of xylonite or other pyroxyline compound having its button-holes strengthened by an attached membranous substance, substantially as described.

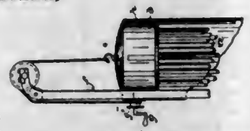
4. A collar or cuff or other article of wearing-apparel composed of xylonite or other pyroxyline compound having its button-holes strengthened by a membranous substance confined between pieces of the article, substantially as described.

322,730. CARTRIDGE-SHELL. FRANK C. KNIGHT and HARRY DOCKER, Philadelphia, Pa. Filed Feb. 2, 1885. (No model.)



Claim.—A cartridge-shell provided with an inwardly-extending circular depression in the base and a small central opening in the bottom thereof, a removable circular cap-receptacle having solid walls and a small central opening registering with the opening in the base of the shell, said cap-receptacle fitting snugly into the base of the shell with its bottom resting thereon and held in position by frictional contact with the walls of the base, substantially as shown.

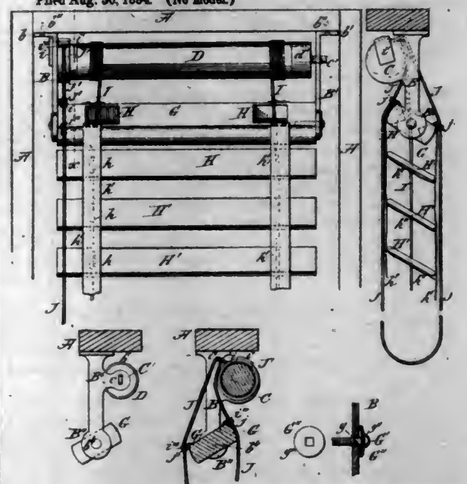
322,731. STOVE. CHARLES LANCASTER, Newark, N. J. Filed Jan. 24, 1885. (No model.)



Claim.—1. The combination, with a grate open on all sides, of an inclosing-drum consisting of a narrow stationary section, and a section inclosing the other part of the grate and loosely engaging the stationary section, the stationary section being provided with a smoke-pipe and extending above the grate, whereby the drum may be raised and a greater or less portion of the grate exposed, for the purposes set forth.

2. In a stove or heating apparatus, in combination, a grate open on all sides, an inclosing-drum consisting of a narrow stationary section and a section inclosing the other part of the grate and loosely engaging the stationary section, the stationary section or post provided with a smoke-pipe which passes therethrough and extending above the grate upon which the drum moves as it is raised and lowered, the base with which the post is cast integrally, and raising and lowering mechanism consisting of one or more pulleys arranged upon the post, and a reeling drum or cylinder upon which the cord or chain, which is secured to the top of the drum and passes over the pulleys, is wound, substantially as and for the purposes set forth.

322,732. VENETIAN BLIND. WILLIAM H. LANG, Burlington, Vt. Filed Aug. 30, 1884. (No model.)

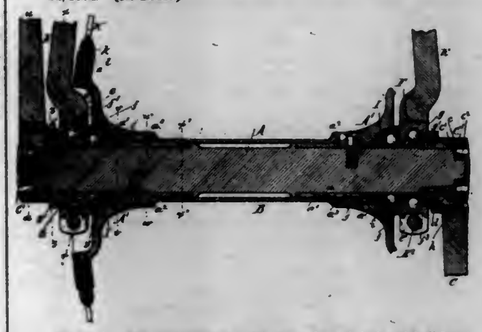


Claim.—1. In a folding Venetian blind, the hanger B, having the angular projection *b*, solid roller projection C, having attached thereto the slitted friction-spring J', the enlarged circular lower end, B'', having a round screw-hole, *b'*, therein, substantially as and for the purposes described.

2. In a folding Venetian blind, the hanger B', having the angular projection *b'*, circular lower end, B''', having a round hole, *b'*, and solid roller projection C', having a rectangular hole, *c*, centrally therein, in combination with the tenon *c'* on shaft E, to prevent said shaft from revolving, substantially as described.

3. The screw G', having a round body, *g*, and square part *g'*, the convex spring-washer G'', having a square hole, *g''*, centrally through it to fit upon the square part *g'* of screw G', the round part of which passes through the round hole *b'* of hanger B, in combination with an oscillating slat, G, substantially as described.

322,733. VELOCIPEDE. EMMIT G. LATTA, Friendship, N. Y., assignor to the Pope Manufacturing Company, Hartford, Conn. Filed Aug. 22, 1884. (No model.)



Claim.—1. The combination, with the axle and hub, of ball-bearings arranged on the axle on opposite sides of the hub, and each composed of an inner movable cone and an outer cone provided with an adjusting device and a sliding connection extending through the hub between the inner movable cones, whereby the adjustment of one outer cone is transmitted to the other ball-bearing, substantially as set forth.

2. The combination, with the axle and hub of the wheel, of ball-bearings arranged on the axle on opposite sides of the hub, and each provided with an outer adjustable cone, G, and sliding pins *j*, and a sliding sleeve, B, extending through the hub between the bearings, whereby the adjustment is transmitted from one bearing to the other, substantially as set forth.

3. The combination, with an axle, of a ball-bearing and bearing-box F, provided with a row of balls, *g*, interposed between the bearing and box and adapted to receive the strain, and a row of balls, *i*, arranged in a suitable bearing on one side of the bearing-box F, and adapted to retain the bearing-box in position, substantially as set forth.

4. The combination, with an axle and crank, of a ball-bearing provided with an annular rim, *g'*, and a screw-bolt, *h*, arranged in the crank and adapted to engage in a notch or groove, g^2, formed on the rim *g'*, and provided with a flat portion, *h'*, whereby the bolt is released from the notch in the bearing by a partial turn of the bolt, substantially as set forth.

5. The combination, with the fork provided at its lower end with curved jaws E', having concave inner faces and having their lower ends separated by an intervening opening, of an annular bearing-box, F, having an outer spherical surface and capable of being turned in the concave seat of the jaws E', and a fastening-bolt whereby the lower ends of the jaws are connected, substantially as set forth.

6. The combination, with the fork provided at its lower end with curved jaws E', having concave inner faces and having their lower ends separated by an intervening opening, of an annular bearing-box, F, having an outer spherical surface, *f'*, and provided with a flat portion, f^2, and a groove, f^3, formed in its surface, and a fastening-bolt connecting the ends of the jaws E' and entering the groove f^3, substantially as set forth.

7. The combination, with the axle and crank, of a screw-nut provided with differential screw-threads adapted to engage respectively with a screw-thread formed in the crank and a screw-thread formed on the end of the axle, whereby the crank is secured to the axle, substantially as set forth.

8. The combination, with the axle and crank, of a screw-nut, C', provided with an external screw-thread, *c*, adapted to engage with a screw-thread formed in the outer face of the crank, and an internal screw-thread, *c'*, adapted to engage with a screw-thread formed on the end of the axle and conceal the latter from view, substantially as set forth.

9. The combination, with the axle and crank, of a screw-nut, C', provided with screw-threads *c c'*, adapted to engage respectively with screw-threads formed on the axle and crank, and a key, *d*, arranged between the adjacent faces of the axle and crank and held in place by the inner face of the screw-nut C', substantially as set forth.

10. The combination, with the axle and crank, of a screw-nut, C', provided with screw-threads *c c'*, adapted to engage respectively with threads formed on the axle and crank and overlap the adjacent outer edges of the axle and crank, substantially as set forth.

11. The combination, with the axle and crank, of a screw-nut, C', provided with screw-threads *c c'*, adapted to engage respectively with threads formed on the axle and crank and overlap the adjacent outer edges of the axle and crank, and provided with one or more openings, c^2, for the insertion of the key *d*, substantially as set forth.

12. The combination, with the spoke of a wheel, of a split sleeve or nipple, *k*, provided with an internal screw-thread adapted to engage with a screw-thread on the end of a spoke, and having its outer surface tapered and provided with an external screw-thread and adapted to engage in a threaded opening in the wheel, whereby the spoke is firmly secured thereto, substantially as set forth.

13. The combination, with the hub A', provided with a threaded opening, *l*, in its rim, and the spoke K, of a threaded nipple, *k*, provided with a slotted opening, k^2, and tapered on its outer surface and adapted to engage in the opening *l* and clamp the inner end of the spoke, substantially as set forth.

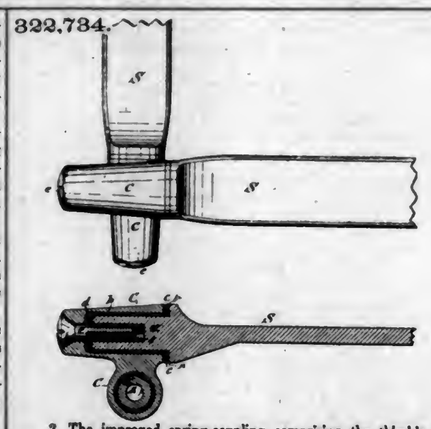
14. The combination, with the hub and spoke of a wheel, of a split sleeve or nipple, *k*, provided with a threaded portion, *k'*, adapted to engage in a threaded opening in the rim of the hub and grooves or notches k^2, whereby the nipple can be readily turned, substantially as set forth.

15. The combination, with the hub and spoke of a wheel, of a tapered split sleeve or nipple, *k*, provided with a screw-thread on its inner side adapted to engage with the threaded end of the spoke, and a screw-thread, *k'*, on its outer side adapted to engage in a threaded opening, *l*, in the hub of the wheel, whereby the end of the spoke is firmly secured to the hub, substantially as set forth.

322,734. SPRING-COUPLING. THOMAS D. LOHR, Syracuse, N. Y. Filed Mar. 23, 1885. (No model.)

Claim.—1. In a spring-coupling, the combination of a thimble, a stud projecting from the end of the spring and into the cavity of the thimble, a screw-threaded socket in the inner end of the stud, and a coupling-bolt inserted through the end of the thimble and engaging the socket of the stud, substantially as set forth.

322,784.



2. The improved spring-coupling, comprising the thimble C, the stud *a*, projecting from the end of the spring and into the thimble, and provided with the screw-threaded socket *a*, the bush *b*, end packings, c *d*, and the coupling-bolt *e*, inserted through the end of the thimble and engaging the screw-threaded socket of the stud *a*, substantially as described and shown.

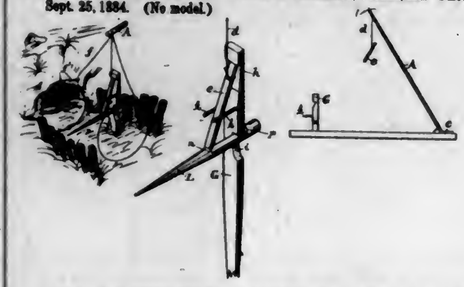
322,735. FILLING FOR BED QUILTS OR COMFORTS. MARTIN H. MARCUS, Baltimore, Md. Filed Apr. 13, 1885. (No model.)



Claim.—1. As a new article of manufacture, a filling for bed-quilts and other articles, consisting of a mixture of aeroline and short cotton or shoddy, substantially as described, and for the purpose set forth.

2. In a bed-quilt, the combination of an outer inclosing-envelope and a filling consisting of a mixture of aeroline and short cotton or shoddy secured in the said envelope by lines of stitching, substantially as and for the purpose set forth.

322,736. ANIMAL-TRAP. MAJOR B. MARSHALL, Vienna, Md. Filed Sept. 25, 1884. (No model.)

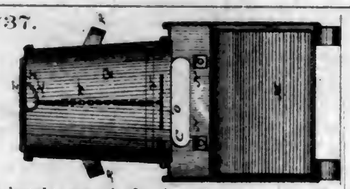


Claim.—An animal-trap having in combination a stake, G, provided near its upper end with a notch, *h*, and on the same side with said notch two laterally-projecting pins, *k*, a trigger-arm, L, provided with two notches or shoulders, *n* and *p*, a brace-rod, *e*, placed between the two lateral pins, and having one end set in the said notch of the stake and the other end in one of the notches or shoulders on the trigger-arm, a spring-bar, a wire or cord, *d*, connecting the brace-rod and spring-bar, and a slip-noose attached to the spring-bar, as set forth.

322,737. HAY AND STRAW BURNER. HAY W. MCCLURE, Inman, Nebr. Filed May 3, 1884. (No model.)

Claim.—1. In a straw-burning attachment for stoves, the combination of a rectangular casing having a pipe in the upper end of its

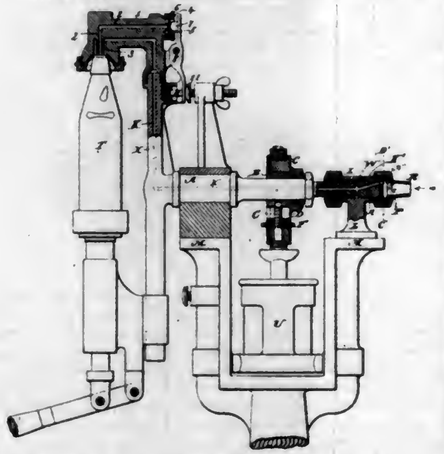
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rear side adapted to enter the fire-place of a stove, and having an aperture in its top provided with an upright flange, and provided upon one side with a tubular catch, with a door hinged at one edge of the open forward side of the casing, having a slotted plate hinged at its free end adapted to catch over the tubular catch, and provided with a series of perforations near its upper edge, and forming transverse ways near the said edge, a damper-plate sliding in the transverse ways and having perforations registering with the perforations in the door, an ash-pan fitting in the lower portion of the casing, grate-bars forming a shallow basket at the upper portion of the casing, a tapering receptacle fitting upon the flanged aperture of the casing, and having a perforation in its top and longitudinal ways upon the upper side of the same, a damper-plate sliding in the said ways, and a weight suspended by a chain from the top of the receptacle, as and for the purpose shown and set forth.

2. The combination, with a stove, of a straw-burning combustion-chamber having a grate in its upper portion, a wide pipe extending from above said grate into the fire-place of the stove, draft-apertures in its front side above the grate, and a large ash-receptacle, and a straw-receptacle opening into the top of the combustion-chamber, as and for the purpose shown and set forth.

322,738. APPARATUS FOR FILLING AND SIRUPING AERATED BEVERAGES. JAMES MCEWEN, Manchester, County of Lancaster, England. Filed Apr. 8, 1885. (No model.) Patented in England Feb. 10, 1885, No. 1,822.



Claim.—1. The combination with the pump and the horizontal hollow revolving shaft of a bottle-filling machine, of a sleeve, B, secured to the shaft, the eccentric C, having the vertical slot D on the sleeve, and provided with a transverse slot, E, below the vertical slot, the rotatable nut, F, arranged in the transverse slot, and the screw G, fixed to the sleeve and passing downward through the nut, substantially as and for the purpose described.

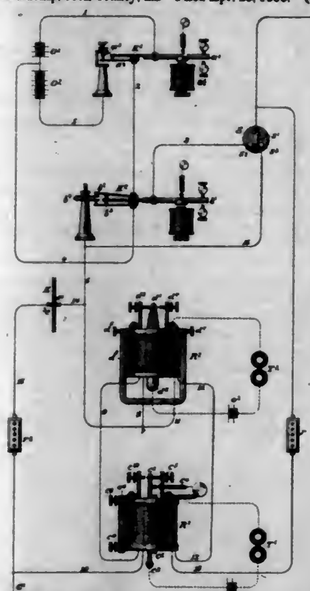
2. The combination, with the pump U and the horizontal hollow revolving shaft A of a bottle-filling machine, of the sleeve B, the slotted eccentric C, the non-rotating screw G, fixed to the sleeve, and the rotatable thumb-nut F on the screw, the rotation of the nut acting to raise or lower the screw and the sleeve, substantially as and for the purpose described.

3. The combination of the pump U, horizontal shaft A, having longitudinal opening K and recess W, the stuffing-box L, connection V, sleeve B, eccentric C, screw G, and nut F, substantially as described.

4. The combination of the shaft A, having longitudinal opening K, provided with a diagonal termination, K', the stuffing-box L, seat O, having opening S, the pipe R, having a hollow disk, P, and the coupling N, substantially as described.

5. The combination of the revolving arm X, head 1, having passages 2 3 and recessed facing 4, the stationary pliable disk 5, perforated cap 6, lever 8, having spindles or studs 7 10, the buffer 9, and stop 11, substantially as described.

322,739. QUADRUPLEX TELEGRAPH. LEON O. MCPHERSON, Jefferson Township, Cook County, Ill. Filed Apr. 23, 1885. (No model.)



Claim.—1. The combination, with a main line, of two sources of electricity, two transmitting-keys, one serving to vary the strength of a current transmitted to line, and the other to reverse its polarity, two receiving-instruments, the one responding to variations in strength, and the other to changes in polarity of the main-line currents, a conductor leading from one pole of the source of electricity at any time having its other pole connected with the line, which conductor leads through said instruments to the earth, a second conductor leading from the first conductor through said instruments in the opposite direction to the main line, and an artificial resistance included in the last-named conductor.

2. The combination, substantially as hereinbefore set forth, with a main line and means, substantially such as described, for transmitting currents of either of two strengths and of either polarity upon the main line, two differentially-wound receiving-instruments, means for transmitting currents through the coils of said instruments of the polarity opposite to that being transmitted upon the main line, a condenser having one plate connected with the conductor leading to the said instruments, and the other connected with the earth, whereby said condenser will receive a charge opposite to the static charge occasioned upon the main line.

3. The combination, substantially as hereinbefore set forth, of a main line, two batteries, means for connecting either pole of either battery with said main line, two receiving-instruments included between the said batteries and the earth, a magnetizing-helix applied to each receiving-instrument included between said batteries and the earth, a second magnetizing-helix applied to each of said receiving-instruments included between said batteries and main line, and means for determining the resistance included in the last-named circuit, substantially as described.

4. The combination, substantially as hereinbefore set forth, with a main line, of a receiving-instrument responding to incoming currents of a given polarity, and a second receiving-instrument responding to incoming currents of a given strength, which consists of a helix, a pivoted core-section within the same, a soft-iron stationary core-section within said coil upon one side of said pivoted section, a retractile spring tending to pull said pivoted section toward said stationary section, and a soft-iron plate exterior to said coil upon the side opposite to said pivoted section.

5. In a multiple telegraph system, a receiving-instrument consisting of a magnetizing-coil, a pivoted core-section, a stationary core-section, means tending to hold said pivoted section toward said stationary section, a soft-iron plate exterior to said coil, and a contact-step for said pivoted section, substantially as described.

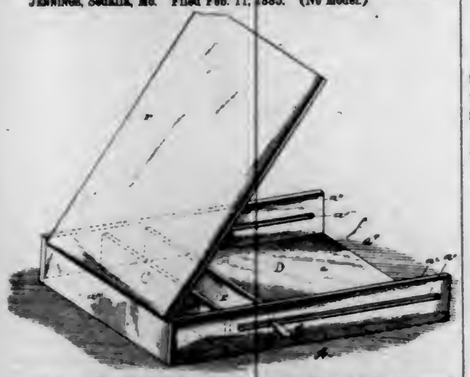
6. The combination, substantially as hereinbefore set forth, with a main line and two differentially-wound receiving-instruments, of means for transmitting currents to said main line from one pole of a battery, and through one coil of each of said instruments in one direction to the earth from the other pole of the battery, and means for transmitting currents from the last-named battery-pole through the remaining coil of each instrument in the opposite direction to the pole connected with the line, substantially as described.

7. The combination, substantially as hereinbefore set forth, with a main line and two differentially-wound receiving-instruments, of a battery located between the main line and the receiving-instruments, means for transmitting currents from one pole of the battery to the main line and from the other in opposite directions through the coils of said instruments, a condenser bridging from the pole of the battery connected with the earth round said receiving-instrument.

8. The combination, substantially as hereinbefore set forth, with a telegraphic receiving-instrument and a local circuit, the connections of which are controlled by said receiving-instrument, of a governing-relay, a circuit-controller included in the main-line circuit, consisting of an armature, a pivoted contact-arm, means for normally holding the arm against said armature, which contact-arm is caused to separate from said armature under the influence of the reversal in currents of given strength, and through which armature and arm the connections of said local battery are normally completed.

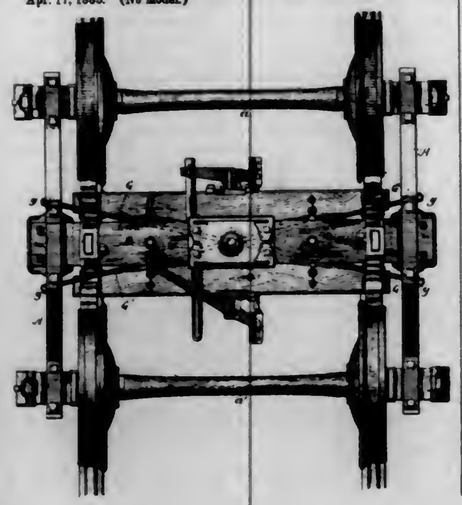
9. The combination, substantially as hereinbefore set forth, with a main line and a telegraphic receiving-instrument included therein, of an electro-magnet, also included in said main-line circuit, a reed-armature applied to said magnet, an arm resting upon said armature, a spring tending to hold said arm against said armature, and at the same time to press the latter toward its electro-magnet, a local circuit, the connections of which are normally completed through said arm and armature with the contact-point and armature-lever of said first-named instrument.

322,740. MATTRESS-MACHINE. JOHN M. MEARS and RUSSELL JENNINGS, Sedalia, Mo. Filed Feb. 11, 1885. (No model.)



Claim.—The improved portable mattress-filler herein described, consisting of the box having an open end, longitudinal slots in the sides of said box, a hinged cover combined with the plunger E, having handles *d*, projecting through the longitudinal slots, and the partition B, forming a separate compartment in said box, all substantially as shown, whereby a mattress-case to be filled can be placed over the box, in the manner set forth.

322,741. CAR-TRUCK. WILLIAM H. MONTS, Lehighton, Pa. Filed Apr. 17, 1885. (No model.)

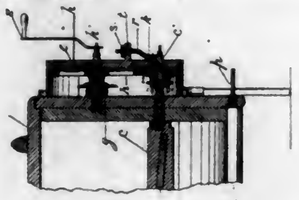


Claim.—1. The combination, in a railway-car truck having open ends, of side frames, a central connecting-bar or bolster, a pair of diagonal braces or rods crossing one another, and arranged in a plane parallel with the rails for bracing said frames together, and means for securing said braces or rods, substantially as set forth.

2. The combination, in a railway-car truck, of side frames, a central connecting bar or bolster, a pair of diagonal braces or rods, the vertical columns of the side frames having means to receive the ends of the diagonal rods, and securing devices, substantially as set forth.

3. The combination, in a railway-car truck, of the side frames, A, for carrying the axle-journal boxes, the bolster B, and channel-bar C, connecting the said side frames together, and the diagonal braces G, provided with nuts *g*, and arranged in a plane parallel with the rails for resisting the twisting strains, substantially as set forth.

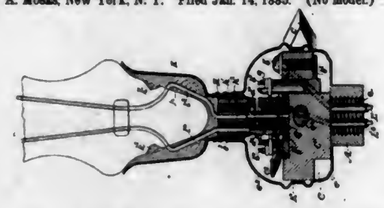
322,742. CHURN. JONATHAN C. MOODY, Johnson's Station, Ind. Filed May 6, 1885. (No model.)



Claim.—In a churn operated by a coiled spring and cog-wheels, the jacket-frame *a*, reservoir A, shaft *c*, wings *d d*, coiled spring *g*, wheels *h k*, lever *l*, and stop-arm *j*, combined and operating in the manner and for the purposes herein set forth and described.

322,743. WITHDRAWN

322,744. HOLDER FOR INCANDESCENT ELECTRIC LIGHTS. O. A. MOSES, New York, N. Y. Filed Jan. 14, 1885. (No model.)



Claim.—1. A holder for incandescent electric lamps, consisting of the combination, substantially as hereinbefore set forth, of a separable inclosing-case through which the main conductors are led and within which the attachments with the light-conductors are made, two contact-points contained within and respectively connected with conductors leading from said case, a second pair of contacts, a holder permanently secured to the lamp, in which the last-named contacts are supported, and a screw-coupling, substantially such as described, for binding said case and holder together, with the corresponding contacts pressing against each other, which contacts are separated by unscrewing said coupling.

2. The combination, substantially as hereinbefore set forth, of the non-conducting support, the yielding annular contacts consisting of a tube having its end partially separated, and the central contact supported upon said non-conducting support, the incandescent lamp, the holder secured to the neck of the same, the annular and the central contacts carried by said holder, and means, substantially such as described, for placing said annular contacts and said central contacts against each other, respectively.

3. The combination, substantially as hereinbefore set forth, of the plate G, the strip *g*, the inclosing-case E, formed in two sections, *e'* and *e²*, and means, substantially such as described, for securing electrical connections through the filament of an incandescent electric light.

4. In an incandescent electric-light holder, an annular contact-plate, a central contact-plate within the same, a second annular contact formed by a spiral strip of conducting material, and a second central contact-point, all organized substantially as described.

5. In an incandescent electric-light holder, the combination, substantially as hereinbefore set forth, with two annular contacts, of a rigid contact within the circle of one of said annular contacts, and a yielding contact within the circle of the other annular contact, consisting of a solid contact-surface carried upon a yielding spring, substantially as described.

6. In an incandescent electric-light holder, the combination, substantially as hereinbefore set forth, of means, substantially such as described, for connecting the main-line conductor with conductors leading to the light, an inclosing-case for shielding the points of attachment of the two sets of conductors, consisting of the section e^2 and the section e', having the screw-threaded neck e^3, and a non-conducting support to which the two sections are secured, substantially as described, and the holder K, having a screw-threaded neck, substantially as described.

7. The combination, substantially as hereinbefore set forth, of the inclosing-case formed in two sections, the non-conducting support to which they are secured, the supply-conductors, the contact-point to which one of said conductors leads, the annular contact to which the remaining conductor leads, the circuit-controller inserted in the last-named conductor, consisting of the two flexible springs, and the cam whereby the two springs may be placed in connection or separated from each other.

8. The combination, substantially as hereinbefore set forth, with the holder for an incandescent electric lamp, of the neck of the globe of the lamp, having one or more depressions formed in but not extending around the neck, a seal of plaster-of-paris or equivalent material surrounding the neck and filling the depressions and securing the globe to the holder.

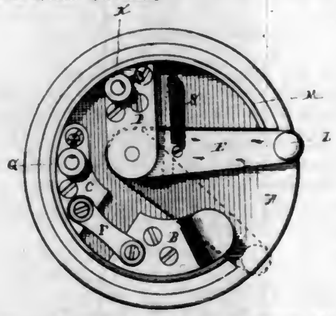
9. In an incandescent electric-lamp holder, the combination of the strip *g*, the removable cap b^4, having the eyelets b^2 b^3, and the posts b^2 and b^4.

10. In an incandescent electric-lamp holder, the combination of the cap b^4, having a groove formed in its surface, the fusible strip *g*, lying within said groove, and the eyelets b^2, with which the respective ends said strip are connected.

11. In an incandescent electric-lamp holder, an interchangeable safety-strip consisting of a non-conducting support, two annular conducting-surfaces supported thereby, and a fusible strip connecting said surfaces, substantially as described.

12. A globe for incandescent electric lights, having its neck integral therewith, and having one or more indentations formed in the sides of its neck, substantially as described.

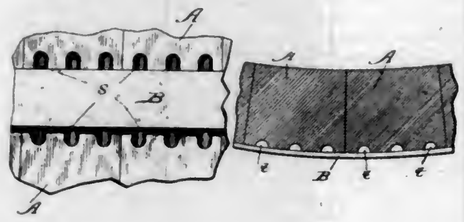
322,745. ELECTRIC SWITCH. EDMUND B. NICOLAUS, Cleveland, Ohio. Filed Jan. 6, 1885. (No model.)



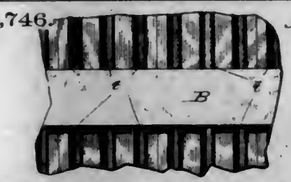
Claim.—1. In an electric switch, the combination, with the two terminals, of a switch-lever pivoted to one terminal and constructed and arranged to make a sliding frictional contact with the other terminal, and a retractile spring secured at one end to the switch-lever and at its opposite end to a fixed support, and arranged to have a tendency at all times to disrupt the contact and throw the switch-lever to its open position, substantially as set forth.

2. In an electric switch, the combination, with the two terminals and a fusible strip interposed in the circuit, of a switch-lever pivoted to one terminal and constructed and arranged to make a sliding frictional contact with the other terminal, and a retractile spring connected at one end to the switch-lever and at its opposite end to a fixed support, and arranged to have a tendency at all times to disrupt the contact and throw the switch-lever into its open position, substantially as set forth.

322,746. TANK. CHRISTIAN OLSEN, Chicago, Ill. Filed Apr. 15, 1885. (No model.)



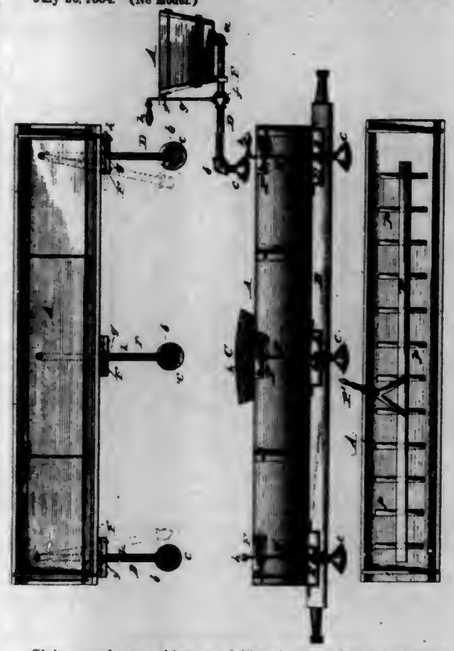
322,746.



Claim.—1. A stave for tanks having a portion of its surface cut away to afford one or more longitudinal grooves, as and for the purpose set forth.

2. In a tank, the combination of the hoops B and staves A, provided with vertical longitudinal grooves *t*, formed by cutting away from the surfaces of the staves, substantially as described, and for the purpose set forth.

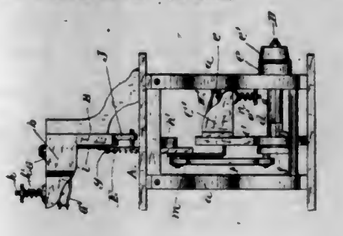
322,747. MACHINE FOR SPRINKLING POTATO-VINES WITH A POISONOUS SOLUTION. ALLEN O. PACKARD, Stevens Point, Wis. Filed July 26, 1884. (No model.)



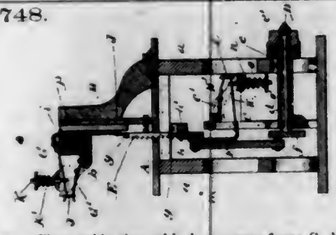
Claim.—1. In a machine to sprinkle poisonous solutions over vines, the combination of a horizontal laterally-swinging sprinkling-tube having the valve *f*, provided with the actuating-stem *g*, with the block F, provided with vertical holes which form bearings for the stem in different positions of the sprinkling-tube and hold the latter in place when set in any desired position, substantially as specified.

2. The combination, with the trough A, having a seat in a central position, and the sprinkling-tubes D, turning on the bottom of the trough by means of the joints *a*, and provided with the valves *f*, of the valve-stems *g*, provided with handles *h* within easy reach of the driver, and the blocks F, provided with vertical holes forming bearings for the stems in different positions of the same, substantially as specified.

322,748. SCROLL-SAWING MACHINE. DANIEL W. PERRY, Harrisburg, Pa. Filed Feb. 12, 1885. (No model.)

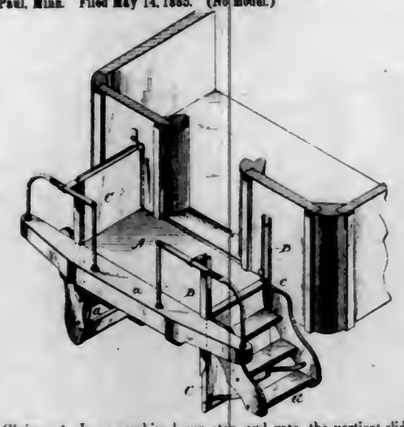


322,748.



Claim.—The combination, with the separate frame C, disposed below and independent of the work-table, supporting on its lower cross-pieces boxing for reception of the driving-shaft, of the bracket mounted upon one side of said table and having a hollow arm, the spring G', secured therein and connected to the spring G, and the spring H', secured in an open hollow arm, C', of the frame C, and the tension-regulating devices or contrivances for acting upon the springs G and H, constructed and arranged substantially as shown, and for the purpose herein set forth.

322,749. CAR-STEP. JOSEPH P. RACE and ELMER E. GUERNSEY, St. Paul, Minn. Filed May 14, 1885. (No model.)



Claim.—1. In a combined car step and gate, the vertical sliding gate attached at its lower end to the lower portion of the pivoted step, so that when the gate is raised the steps will be drawn inwardly, and the lifts thereof assume a nearly vertical position, substantially as shown, and for the purpose set forth.

2. In a railway-car, the combination of a vertical sliding gate having a spring-catch secured to one edge of the same, and the pivoted steps connected by a bar to the lower portion of the gate, so that when the gate is raised the steps will be drawn inwardly, so that the lifts thereof will assume a nearly vertical position, substantially as shown, and for the purpose set forth.

3. In combination with a sliding gate, the grooved side bars extending below the platform and provided with notches, bars F F, pivoted to the lower end of the gate and to the pivoted side pieces of the steps, substantially as shown, and for the purpose set forth.

322,750. JOINT-FERRULE FOR FISHING-RODS. WILLIAM H. REED, Chicago, Ill. Filed Dec. 5, 1884. (No model.)



Claim.—1. A ferrule provided with elastic serrated projections on its edge, substantially as and for the purpose set forth.

2. A serrated ferrule having its projections reduced in thickness, substantially as and for the purpose described.

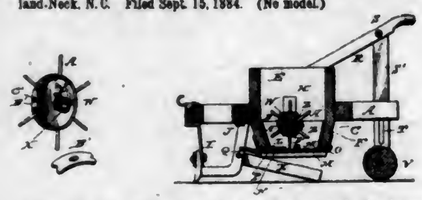
3. A serrated ferrule, in combination with a flexible rod, substantially as described.

4. A fishing-rod, in combination with a serrated ferrule and a wrapping of suitable material, substantially as described.

322,751. COMPOSITION FOR PLASTERING. JOHN W. REES, Uniontown, assignor of two-thirds to William L. Wallis and John Carley, Mercer County, Pa. Filed Mar. 13, 1885. (No specimens.)

Claim.—The herein-described composition of matter to be used in plastering, consisting of sand, lime, combed manila, sisal grass, jute, and water, in about the proportions specified.

322,752. PLANTER. ANDREW SAVAGE and JOHN Y. SAVAGE, Scotland Neck, N. C. Filed Sept. 15, 1884. (No model.)

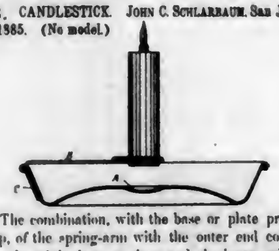


Claim.—1. In a seed-planter, the combination, with the frame, of the plow and coverer-standard secured to the front end of the same, and constructed of a single piece of metal, the rear leg of which is slit and bent so as to form the attaching-flanges, and the covering-blades connected pivotally to the rear leg of the said standard, substantially as and for the purpose set forth.

2. In a seed-planter, the combination, with the planter-frame, of the handles pivoted to the sides of the same, and having pivoted slotted arms working over studs upon the sides of the said frame, and the concave compressing-roller journaled between the lower ends of the said arms, substantially as and for the purpose set forth.

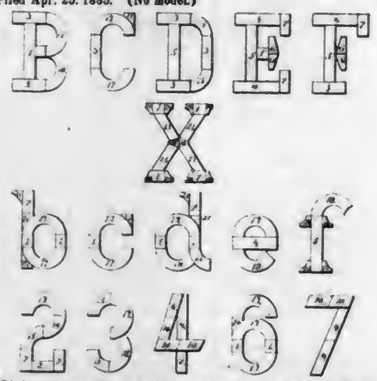
3. In a seed-planter, the herein-described seeding-wheel, consisting of a disk the periphery of which is provided with radial openings, in combination with the fingers adjustable in the said openings, and the clamping-plates adapted to retain the said fingers in position, substantially as and for the purpose set forth.

322,753. CANDLESTICK. JOHN C. SCHLARBAUM, San José, Cal. Filed Apr. 23, 1885. (No model.)



Claim.—The combination, with the base or plate provided with a center drip-cup, of the spring-arm with the outer end connecting with a socket in the rim of the base or plate, and the inner end bent over itself to form a shoulder, D, and a loop, and then bent at a right angle backward and parallel or nearly parallel with the spring-arm, as set forth, for the purpose specified.

322,754. EDUCATIONAL TOY. ERNST SCHUELLER, Columbus, Ohio. Filed Apr. 25, 1885. (No model.)



Claim.—As an improved educational toy, a series of rectangular, angular, and curved blocks, each block numbered, and adapted, when combined, to form designs, lettering, or numbers, substantially as herein shown and described.

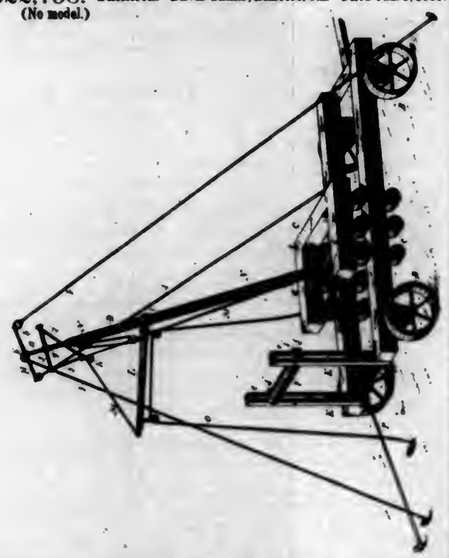
322,755. OIL-CLOTH KNIFE. ALFRED S. SEAMAN, Frackville, Pa. Filed Mar. 14, 1885. (Model.)



Claim.—1. A push-knife for cutting oil-cloth, having the transverse cutting-edge *h* at its point portion guarded above by a projecting lug, *k*, and guarded below by a projecting pointed lug, *g*, substantially as specified.

2. A knife for cutting oil-cloth, having its point portion curved upwardly on its lower edge and provided with a cutting-edge having an upper and lower guard, substantially as specified.

322,756. DERRICK. DAVID SHARP, Lemoore, Cal. Filed Jan. 5, 1885. (No model.)



Claim.—1. In a derrick, a sliding frame adapted to move upon the main frame or wagon, and carrying the pivoted mast, and an elevated rest or guide secured to the main frame and adapted to receive and direct the mast to raise or lower it as the sliding frame is moved, substantially as herein described.

2. In a derrick, a sliding frame adapted to move upon the main frame or wagon, and carrying the pivoted mast, and a roller supported by the main frame and adapted to receive and direct the mast to raise or lower it as the sliding frame is moved, substantially as herein described.

3. In a derrick, the main frame A, and the roller F, mounted at one end of the frame, in combination with the sliding frame C, adapted to travel on the main frame, and the mast D, pivoted to and carried by the sliding frame, substantially as herein described.

4. In a derrick, the main frame A, and the vertically-adjustable roller F, mounted at one end of the frame, in combination with the sliding frame C, adapted to travel on the main frame, and the mast D, pivoted to and carried by the sliding frame, substantially as herein described.

5. In a derrick, the main frame A, and the vertically-adjustable roller F at one end, in combination with the frame C, having hangers *c* and rollers *c'*, by which it is adapted to travel on the main frame, the block and tackle P, by which the sliding frame is operated, and the mast D, pivoted to and carried by said frame, substantially as herein described.

6. In a derrick, the mast D, having the spindle G in its top, the cross-rod H on top of the spindle, and the rings *h h'* for the guys, the bar J, pivoted on said spindle and supported by a collar, *g*, and the links *j*, in combination with the boom L, and suitable blocks and tackles for supporting the outer end of the boom from the links and the inner end from the mast, substantially as described.

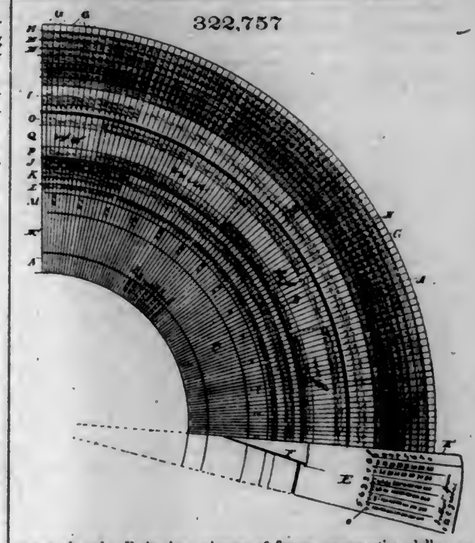
322,757. TIME AND INTEREST INDICATOR. REUBEN T. SITTERLEY, Carthage, Mo. Filed Jan. 14, 1884. (Model.)

Claim.—1. An interest and time calculating device consisting of the fixed disks A and C, the intermediate disk, B, and the movable rule E, having characters on them, as shown and described, in combination with the central spindle, substantially as specified.

2. The combination of the central spindle, D, the disks A and C, fixed thereto, the disk B, and rule E, movable thereon, and a spur, F, on rule E, all substantially as and for the purposes described.

3. A time and interest indicator comprising a disk, A, fixed on a spindle, D, and having radial lines representing twelve months of thirty days, concentric lines leaving space on which are figures representing dollars, and an inner circle having figures representing days from one to three hundred and sixty and interest time, and spaces indicating interest,

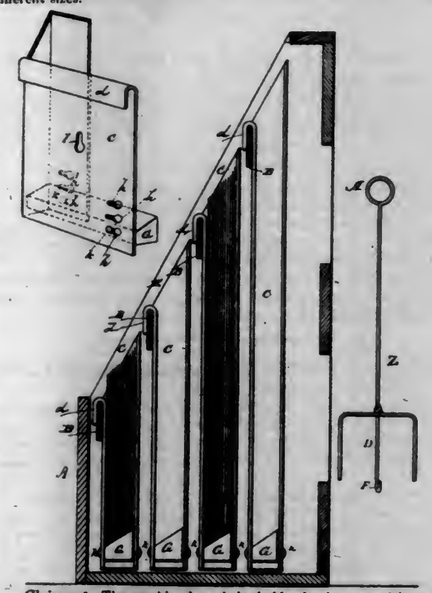
322,757



a movable rule, E, having columns of figures representing dollars on which interest is to be calculated, a fixed disk, C, having an outer circular space indicating days of the week, a space indicating true time, a circular space indicating the number of days of the week, a space giving the number of the week after or before a given time, also a space giving the successive years, and a middle movable disk, B, having three circular divisions, the outer division, O, showing interest-days of the month, an inner division, P, showing true number of days in each month, and an intermediate division showing the names of the month, all as herein described and shown.

322,758. HOLDER FOR LEGAL BLANKS. CHARLES R. SHEAD, St. Paul, Minn. Filed Nov. 18, 1884. (No model.)

Brief.—The holder is made in two parts, which are adjustable toward and from each other, and the parts are provided with vertically-adjustable bottoms, by which the whole may be adjusted for blanks of different sizes.



Claim.—1. The combination of the holder having one of its walls provided with a series of key-slots, and the removable bottom having a stud or studs to pass through the said slots and engage the same, substantially as specified.

2. The combination, with the frame or case having the horizontal holder-bars, of the blank-holder sections, suspended from the said holder-

bars and provided with a series of key-slots, and the inclined removable bottom having studs or tack-heads to pass through and engage the said slots, substantially as specified.

322,759. VEHICLE-HUB. PARKER P. SMITH, Pittsburg, Pa. Filed Feb. 12, 1885. (No model.)



Claim.—The combination, with a wooden hub, 1, and staggered spokes 2, mortised therein, of the two ring-plates 3, each constructed with the laterally-projecting spaced lugs 4, and two sets of radially-projecting flanges, 5 and 6, disconnected from each other at their outer ends, and formed, respectively, on the ends of the lugs and the inner edge of the ring-plate between the lugs, each flange extending outward along one of the spokes, and provided with a perforation for the passage of a fastening-screw or equivalent, substantially as shown and described.

322,760. HARROW ATTACHMENT FOR PLOWS. GEORGE W. SPENCER, St. James, Nebr. Filed June 1, 1885. (No model.)



Claim.—1. The combination, with a plow, of a supporting-frame standing laterally therefrom on the side opposite the landside, and a harrow-frame composed of two bars having their inner ends hinged on the supporting-frame and converging thence to their outer ends, which are secured together, the forward harrow-bar being provided with teeth inclining downward and outward to break clods and loosen stubble and refuse, and the rear harrow-bar being provided with wide triangular vertical teeth to level the ground and direct refuse into the open furrow adjacent to the plow, substantially as described.

2. The combination, with a plow, of the frame A', secured to the side of the plow-beam opposite the landside, and provided with the transverse stay-beam D, and the harrow-frame hinged to the outer end of the frame A, and composed of the bar C, provided with the rearward and outward projecting teeth *e*, and the plate E, provided with the wide vertical triangular teeth *f*, substantially as specified.

322,761. HEEL-MACHINE. JOHN TINGLEY, Philadelphia, Pa. Filed Nov. 8, 1884. (No model.)

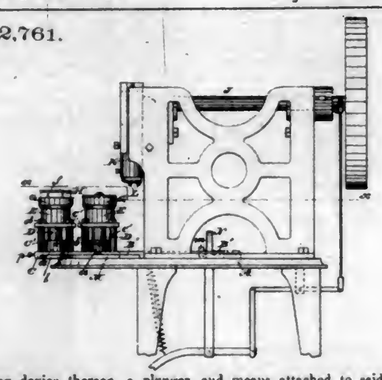
Claim.—1. In a machine or device for building up boot and shoe heels, a sliding plate having thereon two combined lift-holders and nail-drivers, one of which is adapted to contain but a single lift, in combination with a plunger having a prong, substantially as and for the purpose set forth.

2. In a machine for building up boot and shoe heels, a nailing device composed of a head, D, having a flange, an annulus, E, guided on said flange, springs C, supporting said annulus, and nail-driver F, secured to said head D, substantially as and for the purpose set forth.

3. A combined lift-holder and nailing device composed of the springs C, annulus E, head D, having flange, and provided with nail-drivers F, nail-block G, lift-mold H, having recess *g*, and curb O, all of said parts being arranged and combined substantially as and for the purpose set forth.

4. In a machine for building up boot and shoe heels, a table, in combination with a sliding plate, having two combined lift-holders and

322,761.



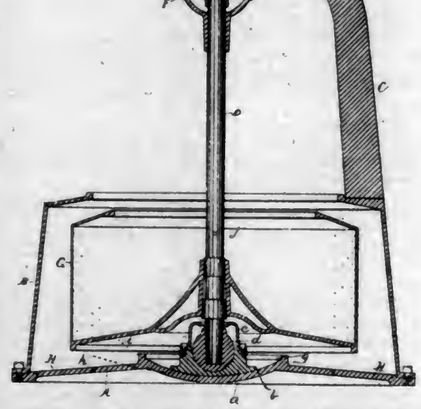
nailing device thereon, a plunger, and means attached to said table whereby the said combined lift-holders and nail-drivers may each be made to register with said plunger, substantially as and for the purpose set forth.

5. The bed A', in combination with the sliding plate C, carrying a combined lift-holder and nailing device, the plunger K, having prongs L, means for actuating said driver, the block N, having set-screw *n*, and a stop, M, substantially as and for the purpose set forth.

6. The sliding plate C, in combination with the nail-support D, annulus E, having flanges *e*, nail-drivers F, nail-block G, and lift-mold H, having recess *h*, said annulus G being loosely attached to said plate C by bolts having rubber springs thereon, substantially as and for the purpose set forth.

7. In a machine for forming boot and shoe heels, a detachable mold, in combination with a curb and an annulus having a recess, substantially as and for the purpose set forth.

322,762. CENTRIFUGAL MACHINE. WILLIAM H. TOLHURST, Troy, N. Y. Filed Dec. 26, 1884. (No model.)



Claim.—1. In a centrifugal machine, an oscillatory basket-shaft provided with a supporting-step free to travel upon a fixed supporting-surface, said step being angularly adjustable to the line of direction of said shaft, and said shaft being vertically adjustable to the conformation of said supporting-surface, substantially as described.

2. In a centrifugal machine, a vertically-adjustable basket-supporting shaft connected by a universal joint at or near its upper end with a supporting-frame, and adapted to rotate in a supporting-step which is free to revolve by a sliding rotary movement about the surface of a fixed support, substantially as described, in combination with said movable step and fixed support, for the purposes specified.

3. In a centrifugal machine having a vertically-adjustable basket-supporting shaft connected by a universal joint at or near one end with a supporting-frame, and at its other end with a movable supporting-step in which it rotates, a step-supporting base provided with an upper concave surface adapted to support the step in a central horizontal position when the said shaft is vertical, and to change the angular position of the step relative to the shaft when the stepped end of the shaft

oscillates to one side of a vertical line, the angle formed between the step and shaft constantly increasing on one side and diminishing on the opposite side as the step travels from the central part of the supporting surface outward, substantially as described, and for the purposes set forth.

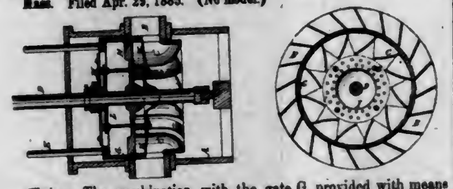
322,763. PNEUMATIC DOOR-CHECK. GEORGE VINCENT, Stockton Cal., assignor of one-half to George W. Haines, same place. Filed Apr. 13, 1885. (No model.)



Claim.—1. The cup-leathers G, having the central projection, J, clasping the piston-rod, in combination with the disk H, centrally perforated to allow the projection to pass through it, and the screws I, by which the body of the cup-leather is secured between the disk and the head of the cylinder, and which also furnish means for regulating the escape of air, substantially as herein described.

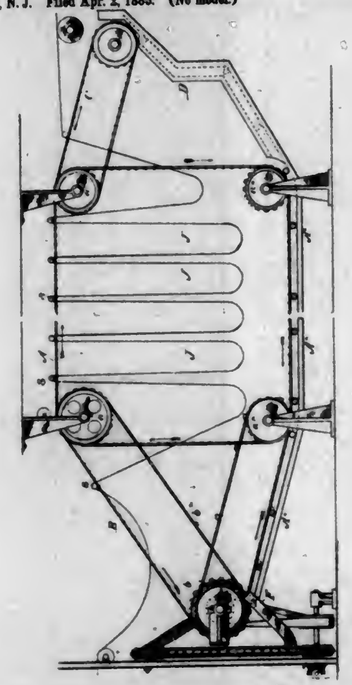
2. A door-check comprising a cylinder having an open and a perforated closed end, a bracket to which the open end is pivoted, a piston having a cup-leather, a piston-rod, a cup-leather having a central projection which clasps the piston-rod, a disk, and suitable screws in the closed end of the cylinder which regulate the escape of air, and also serve as stops against which the piston strikes, all constructed and arranged to operate as herein described.

322,764. TURBINE WATER-WHEEL. WILLIAM WADDELL, Orange, Mass. Filed Apr. 29, 1885. (No model.)



Claim.—The combination, with the gate G, provided with means for lowering same, as described, of the false head I, the diaphragm K, and flange L, provided with a neck, as described, to surround the main shaft of a turbine water-wheel, all arranged and secured substantially as and for the purpose set forth.

322,765. HANGING-UP AND CARRYING-OFF MACHINE FOR WALL-PAPER MANUFACTURERS' USE. JOHN WALDRON, New Brunswick, N. J. Filed Apr. 2, 1885. (No model.)



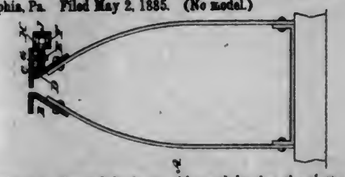
Claim.—1. In a hanging-up machine for drying paper or other fabric in festoons, the following elements in combination: lath or carrying-up belts, two parallel endless belts or equivalent carrying media forming the lines, and a lath-returning floor, in propinquity to the surface of which the under or inverted faces of the lines act for returning the delivered laths from the lines to the carrying-up belts, substantially as described.

2. In a hanging-up machine for drying paper or other fabric in festoons, the following elements in combination: lath or carrying-up belts, two parallel endless belts or equivalent carrying media forming the lines and operating as set forth, a lath-returning floor beneath the inverted faces of the lines, and suitable means for transporting the laths delivered from the returning-floor to the carrying-up belts, substantially as described, and for the purposes set forth.

3. In a hanging-up machine for drying paper or other fabric in festoons, the following elements in combination: lath or carrying-up belts, two parallel endless belts or equivalent carrying media forming the lines and disposed to travel over suitable sets of carrying wheels or pulleys, a returning-chute, a lath-returning floor, in conjunction with which the under inverted faces of the lines operate, and lifting-belts, substantially as set forth.

4. In a hanging-up machine for drying paper or other fabric in festoons, the following elements in combination: lath or carrying-up belts, two parallel endless belts or equivalent carrying media forming the lines and disposed to travel over suitable sets of carrying wheels or pulleys, carrying-off belts, a returning-chute, a lath-returning floor, in conjunction with which the under inverted faces of the lines operate, and lifting-belts, substantially as set forth.

322,766. CONDUIT FOR CABLE ROADS. JAMES WARNER, Philadelphia, Pa. Filed May 2, 1885. (No model.)



Claim.—1. A conduit for a cable road, having the slotted plate D, in combination with the movable iron C, having ears E, and resting on said slotted plate D, substantially as described.

2. In a conduit for a cable road, the slotted plate D, having flange H, in combination with movable iron C, having ears E, and bolts F, swiveled in said flange H, substantially as and for the purpose set forth.

3. In a conduit for a cable road, the slotted plate D, having slot G and depending flange H, in combination with movable iron C, having depending ear E, working in said slot G, and screw-bolt F, swiveled in the flange H, and playing or operating in a threaded opening in the ears E, substantially as and for the purpose set forth.

4. In a conduit for a cable road, a movable slot-iron, a supporting-plate therefor, bolts connected with said plate and engaging with the slot-iron, and keepers connected with the plate, inclosing the heads of the bolts, substantially as and for the purpose set forth.

322,767. FEED-WATER PURIFIER AND HEATER. JOHN P. WARNER, Philadelphia, Pa., assignor of five-eighths to Edward L. Lambie, Washington, D. C., and John F. Dezendorf, Norfolk, Va. Filed Apr. 2, 1885. (No model.)

Claim.—1. In a feed-water purifier and heater, a vessel, A, having the coupling-head B, provided with the nozzles *b'*, *d*, and *g*, for the attachment of the steam and water pipes, and the reduced part B', for attachment of the inner pipe, E, all arranged substantially as shown and set forth.

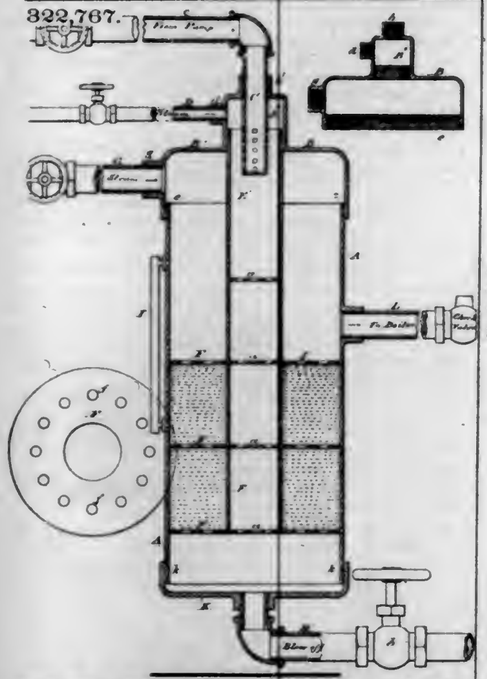
2. The vessel A, having the coupling-head B, provided with screw-threaded nozzles for attachment of the steam and water pipes, the removable head K, to which the blow-off pipe is connected, in combination with the steam-pipe G, arranged as and for the purpose set forth.

3. The combination of a vessel, A, having the coupling-head B, provided with nozzles and screw-threads, as shown, with the inner pipe, E, perforated diaphragms F, steam-pipe G, and blow-off pipe H, all substantially as and for the purpose specified.

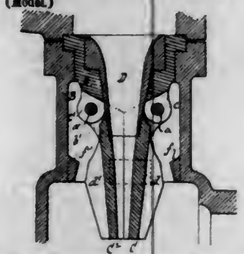
4. The feed-water purifier and heater herein described, consisting of the vessel A, having removable head B, provided with screw-threaded nozzles for attachment of the steam and water pipes and the jet-nozzle C, in combination with the inner pipe, E, the perforated screens or diaphragms *a* and F, the filtering material, the steam-pipes D and G, and the removable head K, having blow-pipe H connected to it, and all constructed and arranged substantially as specified.

5. In a feed-water heater, the coupling-head B, having the screw-threaded nozzles *b' d g*, reduced part B', for attachment of the pipe E, and having a screw-thread, *e*, for attaching the head to a vessel, A, all arranged substantially as set forth.

322,767.



322,768. INJECTOR AND INJECTOR-NOZZLE. OTTO WESTPHAL, Buckau, Germany, assignor to Schäffer & Budenberg, same place. Filed Dec. 4, 1884. (Model.)



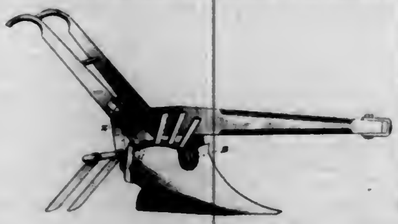
Claim.—1. The combination, substantially as hereinbefore described, with the two-part combining-nozzle, of a secondary nozzle, D, extending beyond the joint of the two-part combining-nozzle.

2. A two-part combining-nozzle provided with two hinged sections, C C², opening in opposite directions.

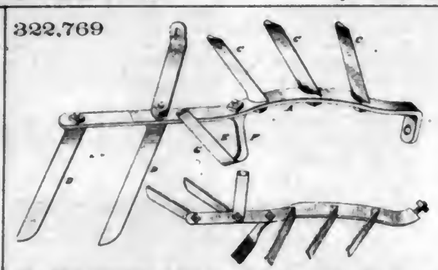
322,769. PLOW ATTACHMENT. SAMUEL B. WILLIAMS, Sailor's Rest, Tenn. Filed Apr. 27, 1885. (No model.)

Claim.—1. A clod-cutting plow attachment having an angular knife formed with a shank extending from the main bar of said attachment designed to pass behind the corner of the mold-board, and a cutting-blade extending from the lower end of said shank upward and outward, the plane of the blade being downward and inward, substantially as specified.

2. In a plow attachment, the combination, with an angular knife having a shank extending downward below the corner of the mold-board,

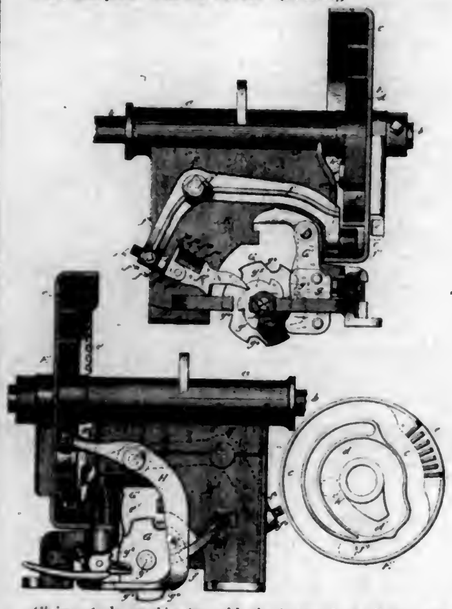


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and a blade extending upward and outward from the lower end of said shank, of oblique cutting-knives extending directly from the main bar, substantially as specified.

322,770. GRAIN-BINDER. CHARLES M. YOUNG, Milwaukee, Wis., assignor of one-half to the Dennett Harvesting Machine Company, (Limited,) same place. Filed Feb. 25, 1884. (No model.)



Claim.—1. In combination with the knotter-frame E, the bell-crank lever F, the carrier f^3, supported in the outer arm, f^5, of said lever, and having a threaded end and a groove, f^{14}, a set-screw, f^{13}, engaging said groove, the adjusting-nut f^{12}, and the spring-pawl f^7, pivoted in the bifurcated end of the carrier f^3, substantially as and for the purpose set forth.

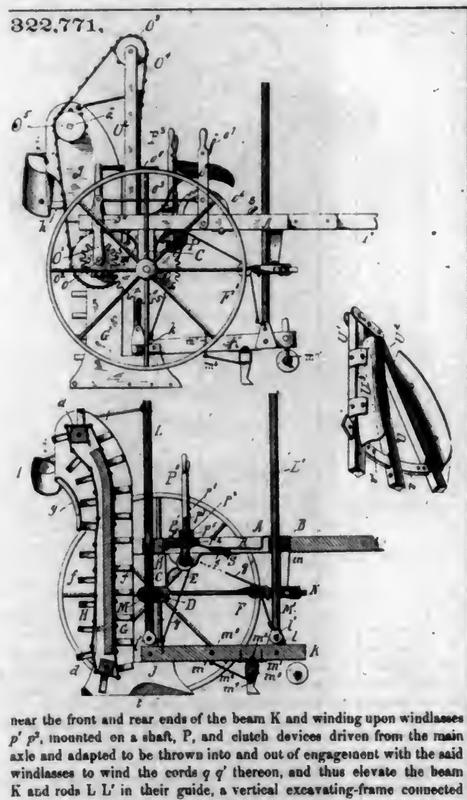
2. In a grain-binder, the combination of the cam-wheel E', provided with the cam-groove c, the knotter-frame E, having the curved flange e^2, and the bell-crank lever F, pivoted to said frame and provided with a hooked flange engaging the curved flange on the frame, and with a roller, f^3, engaging in said groove c, substantially as and for the purpose set forth.

3. In a grain-binder, the knotter-frame E, having a curved flange, h^3, in combination with the cord-guiding arm G', pivoted to said frame and provided with a flange, h^3, adapted to bear against and slide upon said curved flange, substantially as and for the purpose set forth.

322,771. DITCHING-MACHINE. PETER AHNLWND, West Unity, Ohio. Filed Apr. 7, 1884. (No model.)

Claim.—1. The combination, in a ditching-machine, of a supporting-frame, a shaft, D, having rigidly mounted on its projecting ends the main carrying-wheels of the machine, a collar, M, secured on said shaft and vertically perforated, a longitudinal beam, K, located beneath said machine, a vertical rod, L, pivotally connected to the rear end of the said beam and playing through the perforation in the collar M and through the supporting-frame, a block, M', suspended from the front of the frame and vertically perforated, a second rod, L', playing through said block and through the frame and pivotally connected at its lower end to the front of the beam K, cords or cables *q q'*, connected, respectively, at or

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near the front and rear ends of the beam K and winding upon windlasses $p' p^2$, mounted on a shaft, P, and clutch devices driven from the main axle and adapted to be thrown into and out of engagement with the said windlasses to wind the cords *q q'* thereon, and thus elevate the beam K and rods L L' in their guide, a vertical excavating-frame connected at its lower end to the rear of the beam and at its upper end to the top of the rod L, and an endless carrier carried thereby having a series of scoops or buckets, and connections, substantially as described, for driving said endless carrier from the main axle, as and for the purpose specified.

2. The combination, in a ditching-machine, of a supporting-frame and axle journaled therein, and having at its ends the carrying-wheels, an excavating-frame adapted to play and be guided vertically and be held against lateral play with respect to said supporting-frame by the means described, an endless belt or carrier mounted upon shafts located in said excavating-frame and provided with scoops or buckets, a sprocket-wheel, O^2, mounted on the end of one of said shafts, a drive-chain meshing with said sprocket-wheel, a gear-wheel, O, mounted on said shaft, a sprocket-wheel, O^3, journaled on the lower end of a centrally-pivoted lever, O', a gear-pinion, o', also carried by said lever, the said drive-chain also meshing with said sprocket-wheel o^2, and an operating-lever and connections for moving the lever O' to throw the said pinion o' into and out of engagement with the pinion O, substantially as set forth.

3. The combination, in a ditching-machine, of a supporting-frame and axle journaled therein, carrying-wheels mounted on the ends of the same, a beam, K, located below said carrying-frame, rods L L', pivotally connected to the front and rear of said beam and playing through guides, as described, a vertical excavator-frame connected to the rear of said beam and having an endless belt or carrier provided with scoops or buckets, devices, substantially as set forth, for driving said belt or carrier from the axle, windlasses $p' p^2$, mounted on a shaft, B, clutching devices adapted to be thrown into and out of engagement with the main axle K and to said windlasses, and a cutting device pivoted on the end of said beam and consisting of the depending blades $m^4 m^5$, turned inward at their lower ends, substantially as set forth.

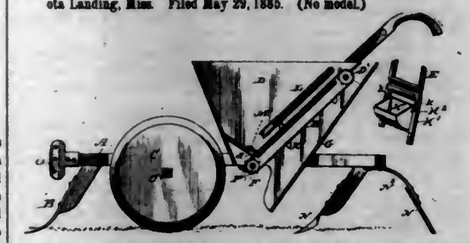
4. The combination, in a ditching-machine, of excavating devices, mechanism for rigidly supporting the same against lateral strain or play, mechanism, substantially as described, for elevating and driving the same, and means, as specified, adapted to be thrown into engagement with said driving mechanism for elevating the excavating devices, a beam, K, connected to the excavating devices and vertically guided, and a cutting device pivoted on the under side of said beam, and consisting of the bar M^3 and depending blades $m^4 m^5$, turned toward each other at their lower extremities, substantially as set forth.

5. The combination, in a ditching-machine, of a supporting-frame, a shaft journaled therein and having rigidly mounted on its ends the carrying-wheels, a beam, K, located beneath said supporting-frame, rods L L', pivotally connected to said beam and vertically playing through guides, as described, a shaft, P, driven from the axle, windlasses $p' p^2$, mounted on said shaft and carrying cords or cables connected to said beam K, a vertical excavator-frame connected to the end of the beam K and to the upper portion of the rod L, horizontal shaft journaled in said excavator-frame, an endless carrier passing around said shafts and provided with scoops or buckets, a sprocket-wheel located on one of said horizontal shafts and driven from the main axle by means of the sprocket-chain and sprocket and gear wheels, a chute connected to the upper end of the excavator-frame, and a rod, i, connecting the rear end of said chute with the crank *j* on one of said horizontal shafts to vibrate said chute, substantially as set forth.

6. The combination, in a ditching-machine, of a supporting-frame, a shaft journaled therein and having rigidly mounted on its ends the carrying-wheels of the machine, a beam, K, located beneath said frame, rods L L', pivotally connected to the beam and adapted to play vertically in guides, as described, a vertical excavating-frame, an excavating device located therein, connected to the rear end of the beam and to the upper end of the rod L, and driven from the said axle, a shaft, P, provided with the drums carrying cables attached to the beam K, a pinion, *p*, mounted on said drum-shaft, a gear-wheel located on the axle, and means for throwing said pinion into and out of engagement with said gear-wheel, substantially as set forth.

7. The combination, in a ditching-machine, of a device for moving the dirt into a ditch, the same being provided with wings U^3, secured to bars U' U^3, adjustable upon a plate, u', substantially as and for the purpose set forth.

322,772. COTTON AND CORN PLANTER. KEMP P. ALSTON, Jr., Leota Landing, Miss. Filed May 29, 1885. (No model.)



Claim.—1. As an improvement in planters, the combination, with the hopper and discharge or feed spout, arranged as described, of the elevator-chain having the longitudinal flanges formed on the links thereof, the removable buckets or teeth formed with the side flanges and adapted to be secured in operative position by the pins or set-screws, the drive-wheel, and intervening mechanism for operating the said elevator-chain from the drive-wheel, all constructed and arranged to operate in the manner and for the purpose shown and described.

2. The combination of the hopper having the shield or slide and provided with the bottom opening protected by the flexible brush or guard, the discharge-spout, the elevator-chain having the longitudinal flanges formed on the links thereof and arranged as described, the removable buckets or teeth formed with the side flanges and adapted to be secured in operative position by the pins or set-screws, the drive-wheel, and intervening mechanism for operating the said elevator-chain from the drive-wheel, all constructed and arranged to operate in the manner and for the purpose herein shown and described.

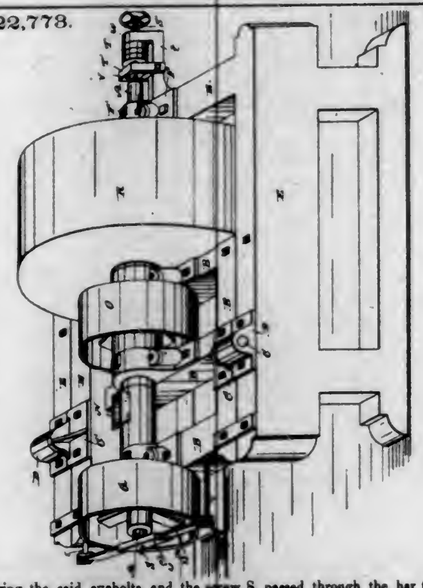
3. The combination, with the main frame, of the forward shovel adapted to open the furrow, the hopper and discharge or feed spout, arranged as described, the elevator-chain having the longitudinal flanges formed on the links thereof and arranged as described, the removable buckets or teeth formed with the side flanges and adapted to be secured in operative position by the pins or set-screws, the drive-wheel, and intervening mechanism for operating the said elevator-chain from the drive-wheel, the covering-shovels, and the auxiliary coverer consisting of a single board supported at the lower ends of the spring-supports, all constructed and arranged to operate in the manner and for the purpose shown and set forth.

322,773. GRINDING-MILL. ALPHONSO L. ANDERSON and WILLIAM T. ANDERSON, Tolland, Conn. Filed Jan. 21, 1885. (No model.)

Claim.—1. In a grinding-mill, the combination, with the shaft A, the stones, the frame, the bracket *t*, having an apertured arm, *w*, at right angles thereto, and the frame T', of the nut V within the frame, constructed to slide but not rotate therein, the screw S', passed through the apertured arm and through the nut, and the elastic washers on the screw between frame T' and arm *w*, substantially as set forth.

2. The combination, with the frame, the spindle, and the stones, of the eyebolts *s'*, secured to the frame, the bar S^2, having hooked ends en-

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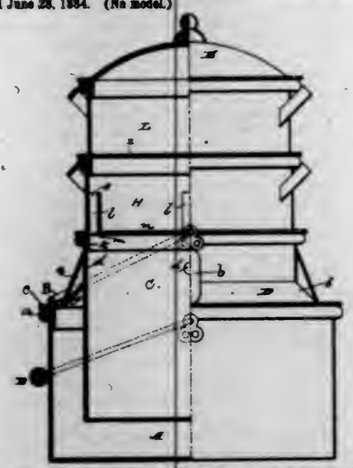


gaging the said eyebolts, and the screw S, passed through the bar to center the spindle, substantially as set forth.

3. The combination, with the frame, the spindle A, and the stones, of the spring-bar S^2, the centering-screw S, the bracket t, having an apertured arm, w, the frame T', the nut V, the screw S', and the elastic washers T', substantially as set forth.

4. The combination, with the frame, the spindle, and the stones, of the spring-bar S^2, held to the frame and provided with a strengthening-sleeve, S^2, and the screw S, passed through the sleeve and bar to center the spindle, substantially as set forth.

322,774. STEAM-COOKER. DAVID M. ARMSTRONG, Roanoke, Va. Filed June 28, 1884. (No model.)

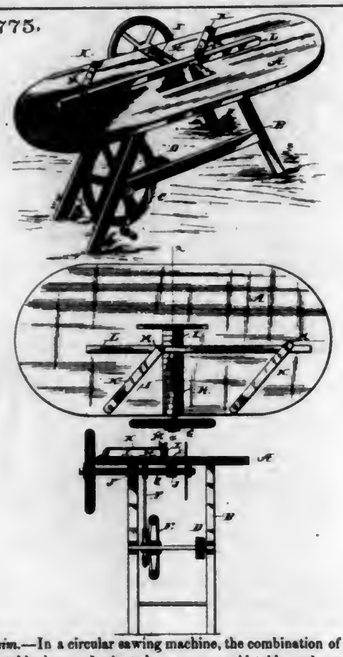


Claim.—1. The combination, with the broad and shallow boiler vessel A, of the deep vessel C, having the inclined waist-flange D, formed with exterior inclined passages, s, opening through the flange at f, and into the vessel C at d, and with a lip, e, adapted to engage the marginal portion of the vessel A, substantially as specified.

2. The steam-cooking utensil herein described, consisting of the broad and shallow boiler A, the deep vessel C, formed with a waist-flange, D, fitting thereon, and provided with exterior passages, e, the pan H, fitting the mouth of the vessel C, and having the internal passages, l, and the pan L, having the perforated bottom z, substantially as specified.

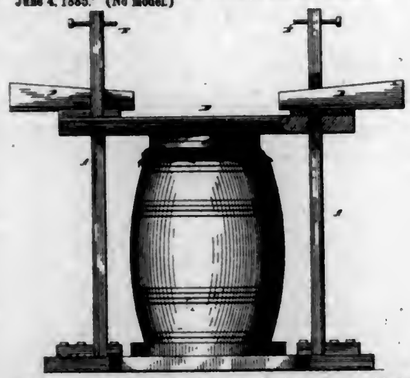
322,775. SAW-TABLE GAGE. MATHIAS B. BABCOCK, Brown's, Iowa. Filed May 25, 1885. (No model.)

322,775.



Claim.—In a circular sawing machine, the combination of the table, the adjustable bar and pivoted arms upon said table, and a metal gage or scale plate embedded in said table and provided with cup-shaped recesses apertured at their lower ends and registering with the boxes below the table, in which the saw-arbor is journaled, substantially as and for the purpose shown and set forth.

322,776. TOBACCO-PRESS. JACOB C. BARKLEY, Nevada, Ky. Filed June 4, 1885. (No model.)



Claim.—1. A tobacco or other press having a frame with slots or passages, and wedges which operate in said slots or passages, substantially as and for the purpose specified.

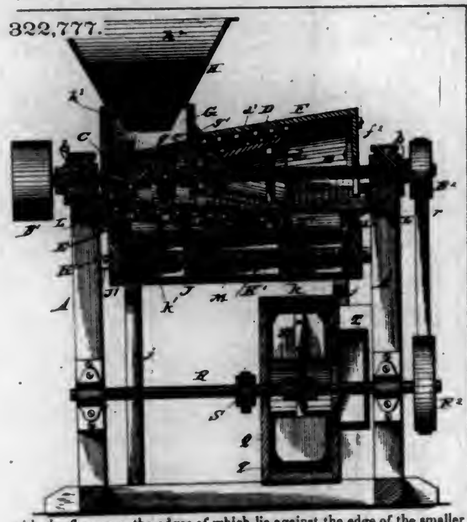
2. A tobacco or other press consisting of standards with slots at different heights thereon, a cross beam or beams traveling on said standards, and wedges operating through the slots to depress the cross-beam, substantially as and for the purpose specified.

322,777. CORN-SHELLER. HIRAM A. BARNARD and JOHN B. CORNWALL, Moline, Ill., assignors to Barnard & Leas Manufacturing Company, same place. Filed Apr. 16, 1885. (No model.)

Claim.—1. In a corn-shelling machine, the combination, with the shelling mechanism, substantially as described, the driving-shaft B, the collars C, provided with the conveyer-blades c, and adjustably secured to said shaft, of the reversible hopper H, having the flange h^2 arranged to lie over the conveyer-blades c on the side toward which the latter ascend, substantially as specified.

2. In a corn-shelling machine, the combination, with the shelling mechanism, substantially as described, the hopper H, and the casing F, of the casing G, to which the hopper is secured, and which is provided

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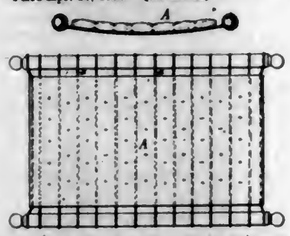
with the flanges g, the edges of which lie against the edge of the smaller end of the casing F, and the curved flange g', which overlies the smaller end of the casing F and keeps the same in place, substantially as specified.

3. In a corn-shelling machine, the combination of the reversible hopper H, shaft B, and reversible collars C, having the conveyer-blades c, cone-shaped sheller D, casing F, and semi-cone-shaped casting E, with the plates I and I', and reciprocating screen-frame J, provided with the screens K and K', substantially as specified.

4. In a corn-shelling machine, the combination of the hopper H, the main shaft B, and the shelling mechanism composed of the collars C, cone-shaped casting D, and semi-cone-shaped castings E and F, with the reciprocating screen-frame J, the screens K K, and carriers N O, all attached to and reciprocating with the said frame, the separator-box P, divided into the compartments P' and P^2, communicating only at their upper ends, the air-flue T, and the fan situated in the casing Q, and mounted on a shaft driven by a pulley on the driving-shaft, substantially as specified.

5. In a corn-shelling machine, the combination, with the shaft B, sheller D, casing E, casing F, and screen-frame J, having the screens K K' and carriers N O attached and moving therewith, of the separator-box P, air-flue T, provided with the reversible door T', casing Q, fan R', and fan-shaft R, driven from the shaft B, substantially as described.

322,778. PORTABLE FIRE-ESCAPE. WILLIAM H. BRENTEL, Brooklyn, N. Y. Filed Apr. 16, 1885. (No model.)



Claim.—1. As an improved article of manufacture, a life-saving apparatus consisting of a body, A, connected by cords, ropes, or wires a to side bars, B B, substantially as and for the purpose herein described.

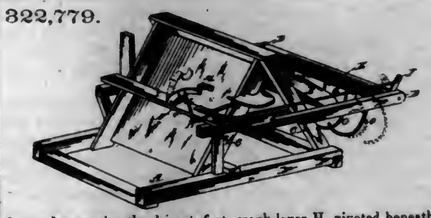
2. The combination of the body A, provided with eyelets e, the cords, ropes, or wires a, and the side bars, B B, substantially as and for the purpose herein described.

3. The combination of the body A, the ropes or cords a, passing under said body, and the side bars, B, provided with peripherical grooves b, substantially as and for the purpose herein described.

322,779. SHEAF-CARRIER. GEORGE BURGER and ALBERT M. HARER, Concordia, Mo. Filed Apr. 19, 1883. (No model.)

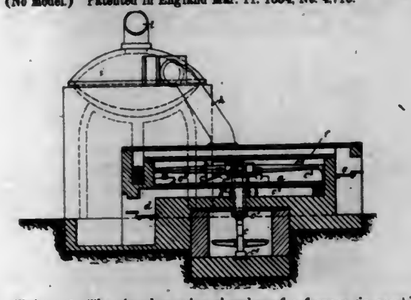
Claim.—The combination, with the binder-frame and the supporting sheaf-discharging platform, of the rocking bar E, suitably journaled and provided with the depending curved fingers O, which extend under the discharge-platform to form a cradle or receptacle for the sheaves, a treadle-lever pivoted near or below the driver's seat and curved at its

322,779.



free end to receive the driver's foot, crank-lever H, pivoted beneath the seat and having one end connected to said foot-lever by a link, L, and the other end extending to the other side of the frame, and a rod connected to said crank-lever and to an arm on the bar E, whereby the driver on his seat may operate the rock-bar and elevate the fingers to discharge the sheaves therefrom, and a spring, N, embracing the pivot of the treadle and adapted to operate the latter and cause the same to normally hold the said connecting device to maintain the said curved fingers under the discharge-platform, substantially as set forth.

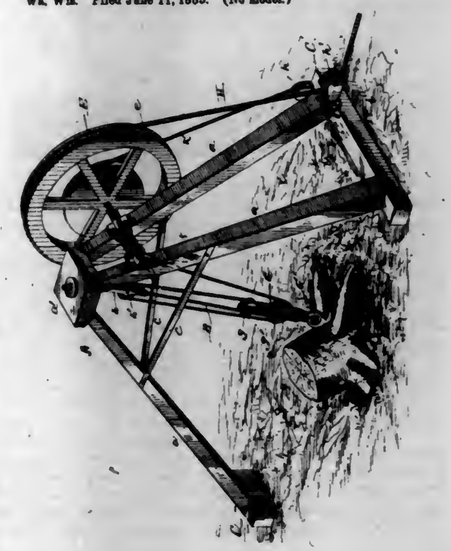
322,780. ROASTING-FURNACE. WILLIAM BLACK and THOMAS LARKIN, South Shields, County of Durham, England. Filed Nov. 13, 1884. (No model.) Patented in England Mar. 11, 1884, No. 4,718.



Claim.—1. The closed roasting-chamber of a furnace, in combination with an upper set of fire-places, c, at one end thereof, having their flues above the roasting-chamber, and a lower set of fire-places, d, at the other end, having their flues below said roasting-chamber, substantially as set forth.

2. The closed roasting-chamber of a furnace having rotary stirrers therein, in combination with an upper set of fire-places, c, at one end thereof, having their flues above the roasting-chamber, and a lower set of fire-places, d, at the other end, having their flues below the said chamber, substantially as described

322,781. STUMP-PULLER. FREDERIK BLAZIER, Royalton, assignor of two-thirds to Curtis H. TOWN, same place, and Rachel Blazier, Muckwa, Wis. Filed June 11, 1885. (No model.)



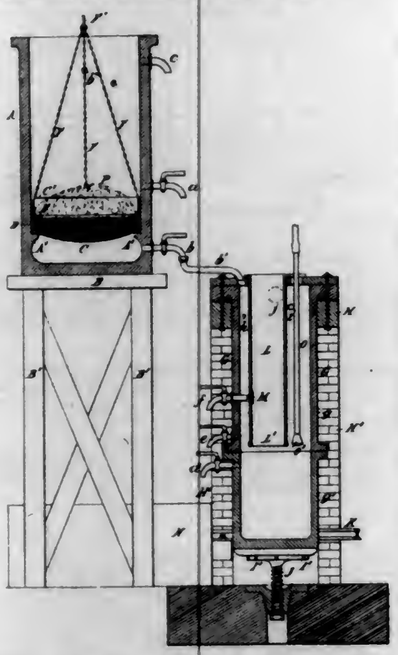
Claim.—1. In a stump-extractor, a tripod having attached to its apex a looped bail which carries a pulley, bearings *d d* supporting a horizontal shaft, to which is attached a wheel, D, in combination with the bail G, having pulleys *g g'*, the ropes B and H, and pulley *h'*, substantially as shown, and for the purpose set forth.

2. In a stump-extractor, a tripod suitably supported upon blocks, and provided with a cap-piece, *a'*, with a central perforation, to which cap-piece is attached a bail, *b*, which carries a pulley, *b'*, the bearings *d d*, within which is journaled the shaft D, having flanges *f f*, located within said bearings, the outer end of said shaft carrying a wheel, E, the periphery of which is grooved, a bail, G, having attached thereto pulleys *g g'*, and a hook, G', pulley *h'* attached at the base of the tripod, and ropes B H, the parts being organized and combined substantially as shown, and for the purpose set forth.

3. In a stump-extractor, a tripod carrying at its upper portion a wheel having its periphery recessed, as shown, a flange or projecting portion, K, secured thereto, said flange being adapted to receive an endless belt or rope, *k*, which passes through the pulley *h'*, secured to the frame, in combination with a rope, H, attached to the wheel E, the rope B, which passes over one or more pulleys, and a drum located on the shaft of the wheel E, the parts being constructed and organized substantially as shown, and for the purpose set forth.

322,782. APPARATUS FOR THE MANUFACTURE OF WHITE LEAD.

HENRY G. BLYTH, London, England. Filed Apr. 22, 1885. (No model.) Patented in England July 19, 1884, No. 10,375.



Claim.—1. The combination, with the vessel A for dissolving and filtering the oxide, of the vessel G, composed of an upper stationary section *g*, and a vertically movable and detachable bottom section *g'*, serving as a receiver for the white lead, substantially as described.

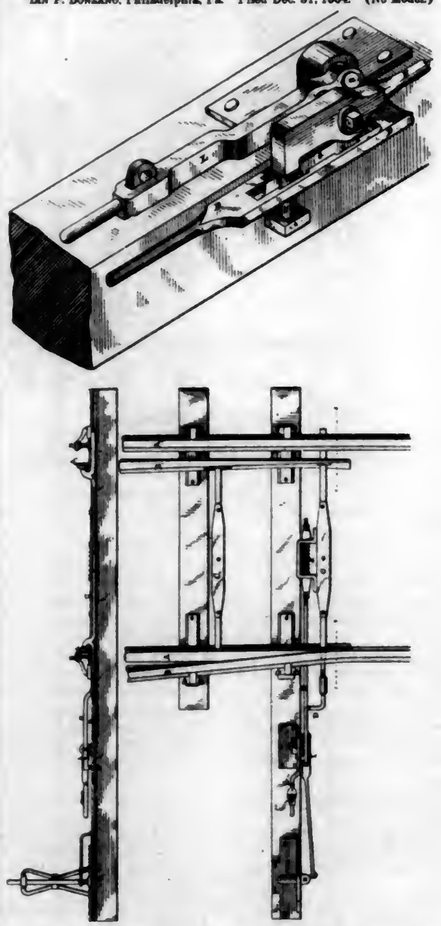
2. The combination, with the vessel G, of a tube, L, or equivalent chamber or space, separated from the interior of the said vessel by filtering material, as at L', whereby, during the precipitation of the white lead, the liquor above the same is filtered and can be continuously run off and collected, thus permitting the continuous introduction of fresh liquid containing the dissolved oxide, substantially as set forth.

3. The combination, with the vessel G, of the cocks *d* and *e* for running off the liquid remaining below the cock *f* in the said vessel when it is desired to remove the precipitated white lead from the part *g'*, substantially as set forth.

4. The combination of the vessel A, provided with the perforated plate C and the cocks *a b*, the vessel G, consisting of the parts *g g'*, and connected with the said vessel A by the pipe *b'*, the tube L, inserted in the said vessel G, and provided with the filtering material L', pipe M, and cock *f*, the tube O, extending downward into the said vessel G, and the cocks *d e*, all substantially as and for the purposes set forth.

322,783. SAFETY-GUARD FOR RAILWAY-SWITCHES.

MAXIMILIAN F. BOWLAND, Philadelphia, Pa. Filed Dec. 31, 1884. (No model.)



Claim.—1. The combination of a recessed bar, D, a railroad-switch, the guard-bolt *c*, and the lever L, substantially as specified.

2. The combination of a railroad-switch and a recessed and slotted bar connected thereto, and a guard-bolt, *c*, connected to the rod E, substantially as specified.

3. The combination of a railroad-switch, a recessed and slotted bar, D, the bolt *c*, connected to the lever L, and the lever L, substantially as specified.

4. The guard-bolt *c*, with a head and stem, in combination with the recessed bar D, the lever L, and a railroad-switch, substantially as described.

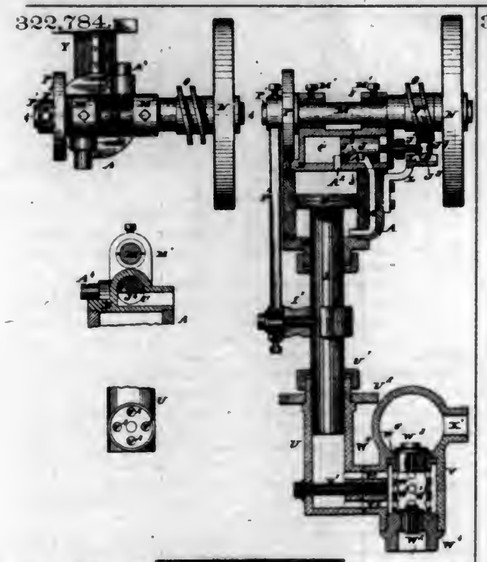
322,784. STEAM PUMPING-ENGINE.

JOHN C. BORN, Belleville, Ill. Filed Nov. 28, 1884. (No model.)

Claim.—1. The combination, with the cylinder A, having the reciprocating piston D, of the steam-chest C, located at the end of said cylinder and transversely thereto, a slide-valve, J, located in said chest and having a stem projecting therefrom, a rotary shaft, M, journaled externally to the cylinder and chest and parallel with the movement of the valve, a cam, O, carried by said shaft, and a lateral projection from the valve-stem with which said cam engages to move the valve, as set forth.

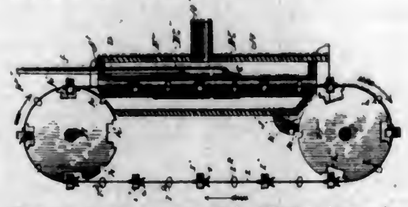
2. The combination, with the cylinder A, the reciprocating piston D, and the piston-rod I, of the steam-chest C, located transversely to and at the end of said cylinder, the slide-valve J, having the stem projecting from said chest and provided with lateral projections J^2 the rotary shaft M, journaled externally to said cylinder and chest and parallel to the latter, the cam O, carried thereby, the wrist-pin P, and connecting-link P^2, all constructed and arranged to operate substantially as set forth.

322,784.



322,785. WATER-MOTOR.

CHARLES P. BRADWAY, Stafford, Conn. Filed Oct. 31, 1884. (No model.)



Claim.—1. A motor consisting of the following elements in construction: a penstock, a straight tube stationarily arranged therein and passing through its bottom, ports formed in said tubes at different levels, valves controlling the ports, a chain or band operating downward through said tube, and a series of valvular buckets attached to the band and fitting closely the walls of the tube, the valves of said buckets being arranged to open in an inverse direction to the travel of the band, as and for the purposes set forth.

2. In a water-motor, the combination of a penstock, a tube placed therein and provided with a series of openings at different levels, and an endless chain provided with buckets operating through the tube, with a tubular valve sleeved on said tube and controlling its openings and a notched rod and catch for holding the valve in any desired position, substantially as described, and for the purposes set forth.

3. In an endless-chain water-motor, the combination of a penstock, a tube arranged therein and provided with a series of openings at different levels, a tubular valve sleeved thereon and controlling the openings, and means for adjusting said tubular valve, as and for the purposes described.

322,786. WITHDRAWN.

322,787. DRAW-BRIDGE.

WILLIAM D. BULLOCK, Providence, R. I. Filed May 26, 1885. (No model.)

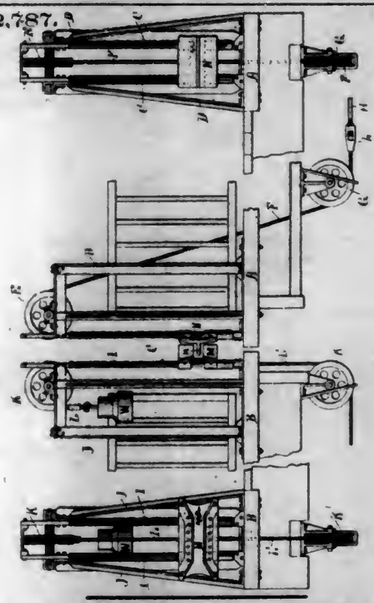
Claim.—1. An improved attachment for operating gates, &c., upon draw-bridges, consisting of two members engaging in the line of movement of the draw and operating together at right angles to the line of engagement to actuate the gate or signal, as described.

2. The combination of a slide moving vertically upon the draw, of a slide moving similarly upon the fixed span, and connections for operating said slides, substantially as set forth.

3. The combination, with the draw and fixed span, of the counterweighted grooved slide and the tongued slide, and the connections between the latter and a windlass, as specified.

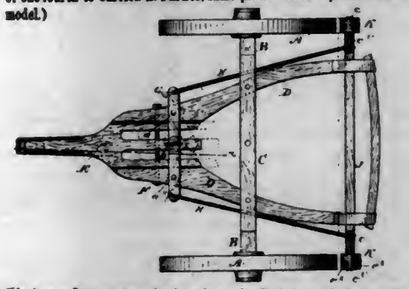
4. The combination, with the draw A, having the guides C and frame D, the pulleys E G, rope F, and slide N, having tongue *n*, of the shore-span B, having guides I, frame J, pulleys K K', ropes L L', counterweight W, and slide M, having groove *m*, as and for the purposes described.

322,787.



322,788. WAGON-BRAKE.

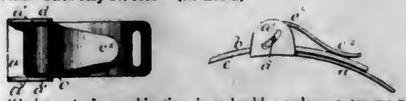
GEORGE P. CARD, Olean, N. Y., assignor of one-fourth to Carlton B. Parker, same place. Filed Apr. 30, 1885. (No model.)



Claim.—In a wagon-brake, the axle B, bolster C, hounds D D, provided with the stirrups *d d*, and having the transverse bolt F rigidly secured thereto, in combination with the pole E, having the slot E' and staple *b*, the brake-levers G G, pivoted to the hounds D D, with their inner ends passing through the staple *b* and pivoted to their outer ends to the spring-rods H H, the rods H H, brake-bar J, and brake-shoes K K, pivoted thereto, as set forth.

322,789. SHOE-CLASP.

SAMUEL A. CHAPMAN, Waterbury, assignor to Joseph C. Hammond, Jr., Rockville, and Theodore E. King, Westport, Conn. Filed May 20, 1885. (No model.)



Claim.—1. In combination, in a buckle or clasp, a tongue-plate having upturned arms, each provided with a diagonal slot for the pivot-bearings, and a tongue pivotally supported in such bearings, and having a lever-arm and also a short clamping-arm turned backward and adapted to bind the strap upon the plate, all substantially as described.

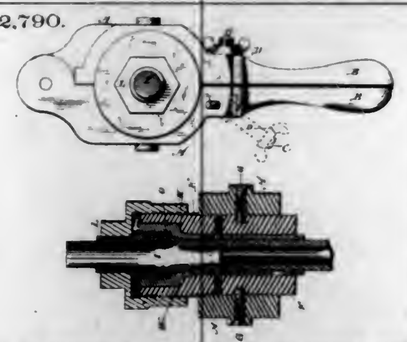
2. In combination, a tongue-plate having upturned tongue-supports with the notched or roughened diagonal slots for the tongue-pivots, and a tongue pivotally supported in said bearings and having a lever-arm and also a short clamping-arm turned backward and adapted to bind a strap upon the plate, all substantially as described.

322,790. MACHINE FOR FORMING FLANGES UPON SOFT PIPES.

MILTON CHASE, Haverhill, Mass. Filed June 23, 1884. (Model.)

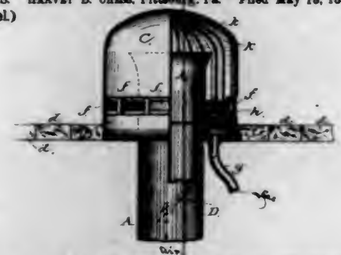
Claim.—1. The combination of the jaws provided with a means for clamping them together, the forms which are held between the jaws, a plug which is forced into the end of the soft-metal pipe to prevent it from collapsing, and a die for breaking down the end of the pipe and forming a flange, substantially as described.

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2. The combination of the jaws provided with a means for clamping them together, the form which is held between them, and provided with a shoulder or enlargement, a die which is to be forced into the form upon the top of the pipe, and a cap for forcing the die downward, substantially as specified.

322,791. HEATING-BURNER FOR GAS AND OTHER HYDROCARBONS. HARVEY B. CHESS, Pittsburg, Pa. Filed May 18, 1885. (No model.)



Claim.—1. In a heating-burner for gas, the combination of the tube A, the dome C, and flange B, forming the annular chamber G, and having the perforations *h h*, substantially as herein described.

2. In a heating-burner for gas, the tube A, having the bell-shaped nozzle, and the annular chamber G, provided with the orifices *h h*, in combination with the dome C, substantially as herein described.

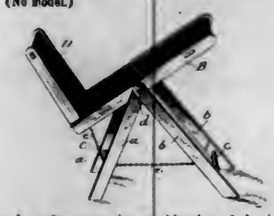
3. In a heating-burner for gas, the bell-shaped tube A, having the flange B, said flange provided with the projections *f f*, in combination with the dome C, substantially as herein described.

4. In a heating-burner for gas, the dome C, provided with ribs *k k*, in combination with the tube A, having the flange B, forming the annular and perforated chamber G, substantially as herein described.

5. In a heating-burner for gas, the tube A, having the valve D, and annular chamber G, provided with the perforations *h h*, in combination with the dome C, substantially as herein described.

6. In a heating-burner for gas, the tube A, having the annular chamber G, provided with openings *h h*, in combination with the dome C and the bricking *d d*, substantially as herein described.

322,792. FOOT-REST. JULIUS S. CLARK, Melrose, Mass. Filed Apr. 16, 1885. (No model.)



Claim.—1. In a foot-rest, the combination of the leg-support B, pivoted upon the folding base, and the foot-support D, pivoted to the said leg-rest, substantially as described.

2. The leg-support B, having a hinged foot-support, and pivoted near its center on a base composed of pairs of legs *b* and *a*, adapted to fold to each other, in combination with a chain or cord connection, all substantially as described.

322,793. COMBINED FOOT-TREADLE AND ROD. WILLIAM B. CLEVES and FRANCIS G. RYAN, Brattleborough, Vt. Filed Sept. 1, 1884. (No model.)



Claim.—1. In combination with a foot-power machine, a treadle and rod adapted to be held rigidly in proper position without collars, set-screws, or other movable devices.

2. The treadle c, provided with the guard c and angular grooves c^3, in combination with the treadle-rod, as herein described.

3. The treadle c, provided with the bracket c^2, its angle-bearing c^3, and angular grooves c^3, in combination with the treadle-rod, substantially as herein described.

4. The treadle c, provided with the recess c^4 and angular grooves c^3, in combination with the treadle-rod, substantially as herein described.

5. The treadle-rod *b*, provided with the vertical tongues *f* at their extreme ends, shoulders f', ears f^2, screws f^3, the shoulders b', scale or angle bearings b^2 integral with the T-shaped portion b^3, roller b^4 on the bottom of the shank of the T, in combination with a treadle of a foot-power machine, substantially as shown and described.

6. The treadle-rod *b*, provided with the vertical tongues *f* at their extreme ends, shoulders f', ears f^2, screws f^3, the shoulders b', scale or angle bearings b^2 integral with the bottom portion, b^3, recess b^5, in combination with a treadle, c, with angular grooves c^3, bracket c^2, with its angle-bearing c^3 resting against the rod *b* at its center in line with and in opposition to the bearings formed on the rod at b^2 and the treadle at c^3, substantially as shown and described.

7. The treadle-rod *b*, provided with scale or angle bearings b^2 integral with the bottom portion, b^3, in combination with a treadle, c, with its angular grooves c^3, recess c^4, and the T-bolt *g*, substantially as shown and described.

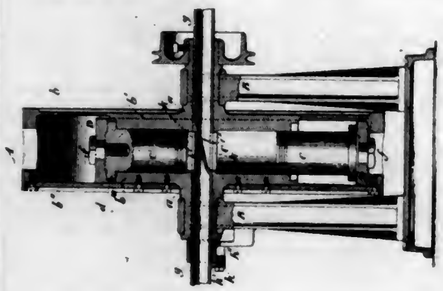
8. The brace-rod *d*, provided with a forked end adapted to fit over the vertical tongues *f* of the treadle-rod *b*, in combination with the recessed legs adapted to receive the ears f^2 of the treadle-rod, and adapted to be secured thereto by screws f^3, substantially as shown and described.

9. The combination, substantially as shown and described, consisting of the treadle c, with its angular grooves c^3, resting on the scale or angle bearings b^2, a portion of the treadle abutting against the shoulders b' of the treadle-rod, the shoulders adapted to prevent lateral motion, the guard c' of the treadle engaging with the roller b^4 in the treadle-rod, the guard adapted to prevent a vertical motion, the ends of the rod provided with means for attaching it to a sewing-machine and resting in recesses in the legs to prevent rolling motion or any departure from the vertical line.

10. A treadle having angular grooves at either end resting on scale or angle bearings in a rod or fixed support, and held thereto by means of a third bearing upward against the rod and downward upon the treadle, which bearing shall be intermediate between the terminal bearings.

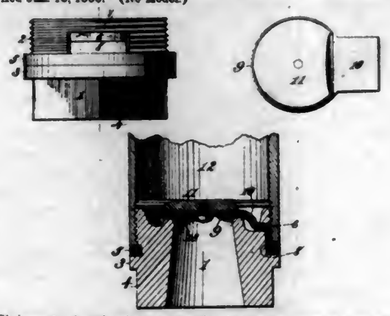
11. In a treadle having a rocking movement, two scale or angle bearings, in combination with a third bearing, a connecting-link intermediate between the terminal bearings, holding the treadle firmly to its fixed support while allowing it to rock freely.

322,794. MOTOR. JOHN W. CLOUD and AXEL VOGT, Altoona, Pa. Filed Dec. 9, 1884. (No model.)



Claim.—In a fluid-pressure motor, a casing or wheel mounted upon a tubular axis, and a tubular valve, which does not rotate, passing through the tubular axis, and having a partition-plate and supply and exhaust ports, combined with cylinders within the casing, each provided with a weighted piston and a port adapted to communicate, at the proper time or times, with the supply and exhaust ports of the tubular valve during the rotation of the casing or wheel around its axis, substantially as set forth.

322,795. PUMP-VALVE. PETER T. COFFIELD, New Carlisle, Ohio. Filed Jan. 15, 1885. (No model.)



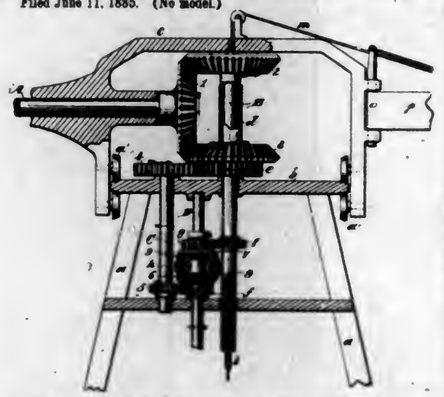
Claim.—1. A valve box or case having an aperture, 6, and bridge 7 formed upon one side thereof for receiving and securing the tongue a valve, substantially as described.

2. The combination of a valve box or case having an aperture, 6, and bridge 7 formed upon one side with the valve having a tongue passing through the aperture, and a cylinder for engaging the outer end of the tongue, substantially as described.

3. The combination of a valve box or case having a bridge, 7, aperture 6, and recess 8, a valve, 9, having tongue 10, and cylinder 12, whereby the valve is secured by the gripping of the tongue between the walls of the recess and cylinder, substantially as described.

4. A valve box or case having bridge 7, aperture 6, and recess 8 for the reception and securement of a valve-tongue, substantially as described.

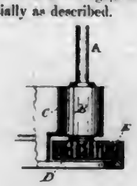
322,796. WIND-ENGINE. PETER T. COFFIELD, New Carlisle, Ohio. Filed June 11, 1885. (No model.)



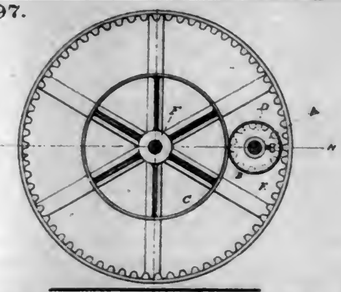
Claim.—In a windmill, the combination, with the wind-wheel shaft A, having bevel-gear 1, and the vertical shaft B, having a bevel-gear, 2, and spur-gear 8, both rigidly secured to said shaft, of the bevel-gear 3 and attached spur-gear e, loosely mounted on a sleeve, *d*, surrounding the shaft B, the shaft C, having fixed spur-gears 4 5, the shaft D, having a collar, *h*, keyed thereto, the bevel-gears 9 9, journaled on said collar, and the bevel-gears 6 7, provided, respectively, with attached spur-gears *f g*, and mounted loosely on the shaft D above and below the gears 9 9, in mesh therewith and with the gears 5 and 8, substantially as described.

322,797. REVERSING-GEAR. HAMILTON D. COLEMAN, New Orleans, La. Filed June 15, 1885. (No model.)

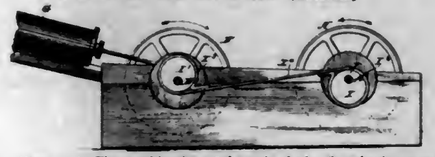
Claim.—A reversing-gear provided with a friction-wheel and a cogged wheel, both fast on one shaft, driven by a cogged pinion and a friction-wheel, both fastened on one driver-shaft, which is provided with a means of obtaining motion so as to engage or disengage the cogged or friction surfaces, substantially as described.



322,797.



322,798. GEARING FOR REVERSE-SHAFTS. WILLIAM F. COWDEN, Cumberland, Md. Filed June 16, 1885. (No model.)



Claim.—1. The combination of the twin shafts, fly-wheels secured on the ends thereof and provided with crank-pins, a pitman extending between and connecting the said pins, eccentrics secured on the said shafts, and a strap connecting the rings of said eccentrics, substantially as set forth.

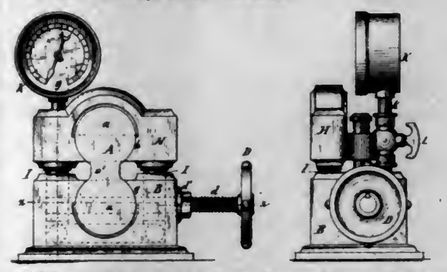
2. The improvement in drive-gearing for reverse-shafts, substantially as herein described and shown, consisting of the twin shafts, the fly-wheels secured thereon and provided with counterpoises, the crank-pins, the connecting-pitman extended between said pins, the eccentrics secured on the shafts, and a strap connecting the rings of such eccentrics, as and for the purpose specified.

322,799. CARPET-STRETCHER AND TACK-DRIVER COMBINED. CHARLES F. CROCKETT, Mount Vernon, N. Y. Filed Apr. 23, 1885. (No model.)



Claim.—The combination, with the handle which carries the carpet-stretcher, of a tubular hammer-guide, a longitudinal groove formed in the handle for receiving said hammer-guide, a tack-feeder which communicates with the hammer-guide, a hammer which extends through the hammer-guide, and a finger-piece secured to said hammer, substantially as shown and described.

322,800. HYDRAULIC TESTING-MACHINE. URIAH CUMMINGS, Buffalo, N. Y. Filed Apr. 8, 1885. (No model.)



Claim.—1. In a machine for testing the tensile strength of materials by hydraulic pressure, the combination, with a stationary jaw containing a working-cylinder and piston and a pressure cylinder, of a movable jaw provided with a pressure-piston, whereby the movable jaw is moved away from the stationary jaw until the material which is being tested is torn asunder, substantially as set forth.

2. In a testing-machine, the combination, with a stationary jaw containing a working-cylinder and piston and a pressure-cylinder, of a movable jaw provided with pressure-piston and guided to move in a straight line and held rigidly against lateral displacement, substantially as set forth.

3. The combination, with the fixed jaw B, provided with a working-cylinder, *c*, and piston C, and a pressure-cylinder, *e*, connected with the cylinder *c*, of the movable jaw H, provided with a pressure-piston, I, substantially as set forth.

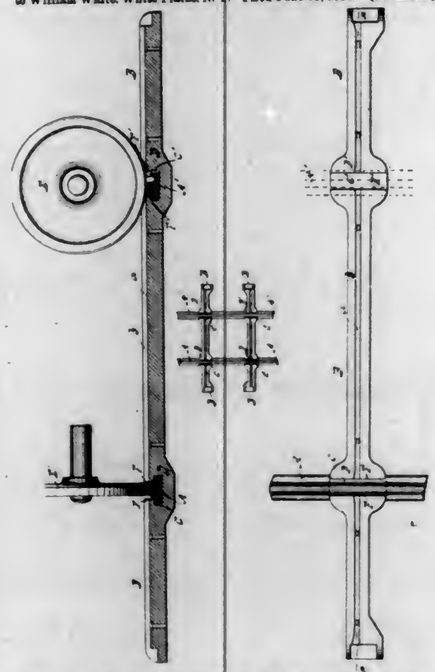
4. The combination, with the fixed jaw B, provided with upright pressure-cylinders *e e*, working-cylinder *c*, and piston C, and a seat, *g*, of the movable jaw H, provided with a pressure-piston, I, and a seat, *h*, substantially as set forth.

5. The combination, with the jaws of a hydraulic testing-machine, of a pressure-gage communicating with the pressure-chamber of the jaws, and a check-valve interposed between the gage and the pressure-chamber, whereby the communication is interrupted when the pressure is removed, substantially as set forth.

6. The combination, with the jaws of a hydraulic testing-machine, of a pressure-gage communicating with the pressure-chamber of the jaws, a check-valve whereby the communication is interrupted when the pressure is removed, and a lifter whereby the valve can be raised to relieve the gage, substantially as set forth.

7. The combination, with the jaws of a hydraulic testing-machine, of a pressure-gage, K, a check-valve, *m*, arranged below the gage, and a stop-cock, L, arranged below the check-valve and adapted to raise the same when required, substantially as set forth.

322,801. **RAILWAY-CROSSING.** JOHN DALY, New York, assignor to William White, White Plains, N. Y. Filed June 11, 1885. (No model.)



Claim.—1. In a railway-crossing, the crossing rails having transverse sockets for the reception of the main rails, and provided with the overhanging lips F F', substantially as shown and described.

2. In a railway-crossing, the crossing rails formed with plates having the transverse sockets to receive the main rails, and provided with the overhanging lips, substantially as shown and described.

3. A rail having a longitudinal depression for the flange of the wheel, plates or enlarged portions distributed in the length of the same formed with transverse sockets and overhanging lips, substantially as shown and described.

322,802. **PROCESS OF MAKING THE COMPOUND TERMED "KERITE."** AUSTIN G. DAY, New York, N. Y. Filed June 29, 1885. (No specimens.)

Claim.—1. The above-described new process of making vulcanized crude kerite, consisting in first mixing together and heating cotton-seed oil and coal-tar or bitumen, and afterward adding linseed-oil and sulphide of antimony or other suitable sulphide, the latter, either alone or united with a greater or less proportion of sulphur, in the ordinary form, substantially as set forth.

2. In any compound designed to form crude kerite or analogous products, the mixture of sulphide of antimony, or other suitable sulphide, either alone or united with a greater or less proportion of sulphur, in the ordinary form, in such manner as to enable the chemical heat of the mixture to be controlled by the sulphide, substantially as described.

3. In any compound designed to form crude kerite or analogous products, the mixture of sulphide of antimony, or other suitable sulphide, either alone or united with a greater or less proportion of sulphur, in the ordinary form, for the purpose of aiding in preventing oxidation of the finished product, as set forth.

322,803. **VULCANIZED PRODUCT TERMED "KERITE."** AUSTIN G. DAY, New York, N. Y. Filed June 29, 1885. (No specimens.)

Claim.—The within-described new product, consisting of a crude kerite compound formed by the mixture of cotton-seed oil, linseed-oil, coal-tar or bitumen, and the sulphide of antimony or other suitable sulphide, substantially as set forth.

322,804. **PROCESS OF MANUFACTURING CRUDE KERITE COMPOUNDS.** AUSTIN G. DAY, New York, N. Y. Filed June 29, 1885. (No specimens.)

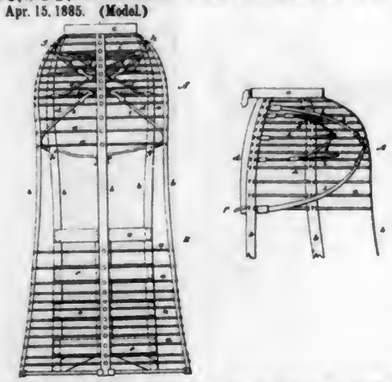
Claim.—1. The herein-described process of manufacturing crude kerite compounds, consisting of combining one or more vegetable astringents with vegetable oils, coal-tar or bitumen, and sulphur or a sulphide, or both the latter together, substantially in the manner set forth.

2. The combination of one or more vegetable astringents with vegetable oils, and subjecting them, without the admixture of coal-tar or bitumen, and either with or without sulphur or a sulphide, or both the latter together, to the treatment herein described, for the purpose specified.

322,805. **VULCANIZABLE COMPOUND OR CRUDE KERITE.** AUSTIN G. DAY, New York, N. Y. Filed June 29, 1885. (No model.)

Claim.—The within-described new product consisting of a crude kerite compound formed by the mixture of vegetable astringents with cotton-seed oil, linseed-oil, and coal-tar or bitumen, substantially as set forth.

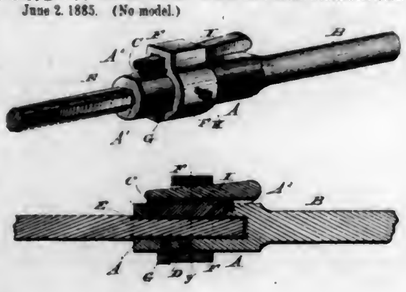
322,806. **HOOP-SKIRT.** LYMAN R. DAY, New York, N. Y. Filed Apr. 15, 1885. (Model.)



Claim.—1. A hoop-skirt having a bustle portion, A, provided with a double-arched brace formed of the two springs 1 and 2, arranged substantially as herein described, and provided also with an inner series of horizontal springs, *i i*, with a double-arched brace formed of the two springs 3 and 4, arranged substantially as herein described.

2. A hoop-skirt having a bustle portion, A, provided with the horizontal springs *i i*, arranged within the bustle, and a double-arched brace comprising the springs 3 and 4, secured to the springs *i*, and arranged to cross each other, substantially as set forth.

322,807. **DRILL-CHUCK.** FRANK DE FOREST, Bonne Terre, Mo. Filed June 2, 1885. (No model.)

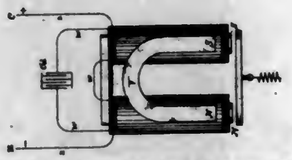


322,807.



Claim.—The combination of the chuck having the pins arranged in its lower side, for the purpose described, and provided with a longitudinal slot in its upper side, the key adapted to fit in said slot, and having the curved lower face, the metallic collar having the set-screw, and the wedge, adapted to operate in the manner set forth.

322,808. **RELAY FOR SYNCHRONOUS MULTIPLEX TELEGRAPHY.** PATRICK B. DELANY, New York, N. Y., assignor to the Standard Multiplex Telegraph Company, same place. Filed Apr. 2, 1885. (No model.)

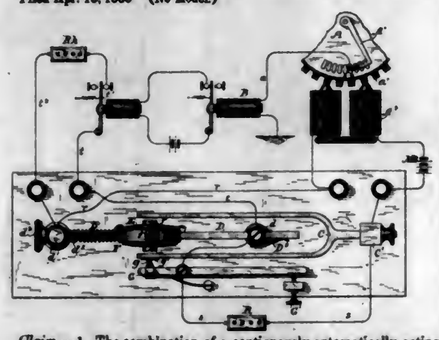


Claim.—1. A main line having a table of contacts and a rotating circuit-completer which traverses the table at each end of the line, whereby each signal transmitted over said line is formed by a series or group of momentary impulses of electricity, in combination with a relay and a condenser or source of electric energy from which a current is discharged to magnetize the relay-magnet during the brief interval between the successive impulses of electricity composing a given signal.

2. The combination, with a synchronous system of telegraphy, in which each unitary signal is made up of a group of impulses, of a relay having a permanent magnet arranged with its poles adjacent to the poles of the relay, the adjacent poles being of like polarity when the current is traversing the circuit, substantially as and for the purpose set forth.

3. The combination of the relay-magnet, its armature, the permanent magnet arranged in proximity thereto, an electric circuit in which the relay is included, a source of electric energy the current from which produces in such relay-core a polarity the same as the polarity of the adjacent pole of the permanent magnet, and the condenser, and circuit connections whereby the discharge from the condenser prevents the relay from releasing its armature when momentary interruptions in the main line occur during the transmission of a unitary signal.

322,809. **MEANS FOR ACTUATING AND CORRECTING THE VIBRATIONS OF FORKS, REEDS, &c.** PATRICK B. DELANY, New York, N. Y., assignor to the Standard Multiplex Telegraph Company, same place. Filed Apr. 13, 1885. (No model.)



Claim.—1. The combination of a continuously automatically-acting circuit-interrupting vibrator, a vibrator-magnet, and means for adjusting the poles of the magnet in the direction of the length of the vibrator to change the normal rate.

2. The combination of the vibrator, a vibrator-magnet, the laterally-adjustable pole-piece of said magnet, which may be adjusted laterally toward or from the vibrator, and means for adjusting the pole of the magnet in the direction of the length of the vibrator.

3. The combination of the vibrating fork, the vibrator-magnet, arranged between the tines of the fork, and means for adjusting the magnet in the direction of the length of the tines of the fork.

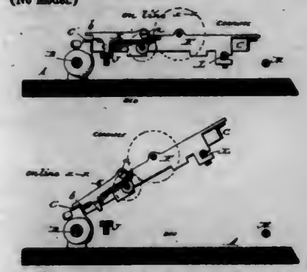
4. The combination of the vibrating fork, the vibrator-magnet, one pole of which is arranged in sliding contact with one tine of the fork, and means for adjusting the magnet in the direction of the length of the tines of the fork.

5. The combination, substantially as set forth, of a continuously automatically-acting circuit-interrupting vibrator, the vibrator-magnet, its fixed core, and the adjustable pole-piece of the magnet, which may be adjusted toward or from the vibrator in a line coincident with the axis of the magnet, whereby the normal rate of the vibrator may be regulated.

6. The combination of the vibrator, the vibrator-magnet, the battery and circuit of the vibrator-magnet, a branch or shunt circuit around the vibrator-magnet, a resistance in said shunt, and means for controlling the shunt to correct the speed of the vibrator.

7. The combination of the rotating disk and circuit-completer, the table of contacts, the motor-magnet, its circuit, an automatic circuit breaker or vibrator for interrupting the motor-circuit, its magnet, its circuit, and shunt around the magnet, and means for controlling said shunt, for the purpose set forth.

322,810. **TYPE-WRITING MACHINE.** PHILIP T. DODGE, Washington, D. C., assignor to E. Remington & Sons, Ilion, N. Y. Filed Feb. 28, 1885. (No model.)



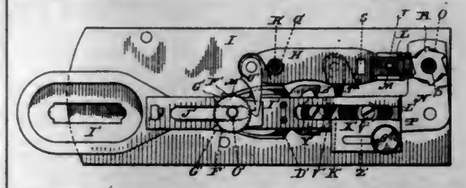
Claim.—1. In a type-writing machine, the reciprocating carriage hinged to swing upward from its operative position, and composed of two parts movable one forward and backward in relation to the other, in combination with the intermediate locking device, substantially as described, adapted to engage automatically as the carriage is raised from an operative position and disengage automatically as it is lowered.

2. In a type-writer, the carriage composed of two parts, one movable forward and backward upon the other, in combination with the connecting dog or lock, substantially as described, adapted to disengage automatically when the carriage assumes an operative position, whereby the movable portion of the carriage is left constantly free when the machine is in action.

3. In a type-writer, the carriage hinged to swing upward from an operative position for the inspection of the writing, and having its upper portion movable forward and backward on the lower, in combination with the dog or connecting device bearing against and held normally out of engagement by a non-rising portion of the machine.

322,811. **BUTTON-HOLE ATTACHMENT FOR SEWING-MACHINES.** FREDERICK EGGE and CARL J. A. SJOBERG, Bridgeport, Conn., assignors to the Smith & Egge Manufacturing Company, same place. Filed Sept. 6, 1884. (No model.) Patented in Canada Oct. 14, 1884, No. 20,342.

Brief.—The oscillator is provided with a yielding fulcrum formed by springs embracing the sides thereof. The rock-shaft operates a lever provided with three spring-pawls adapted to effect the longitudinal feeding, the barring feeding movement, and the vibration of the oscillator.



Claim.—1. In a button-hole sewing attachment for sewing-machines, the oscillator or cloth-support having two racks, and fulcrumed by means of two springs embracing said oscillator at each side, and adapted to be fed forward and backward by the action of an intermittently-revolving pinion on said racks, in combination with means for shifting the normal position of the oscillator laterally, and throwing said pinion out of engagement with the rack, whereby a series of barring-stitches may be made in different places in the fabric and across the end of the button-hole, substantially as set forth.

2. The pivotal fulcrum-plate having spring-arms adapted to constantly embrace the oscillator, and capable of being shifted around its pivotal point by the action of an eccentric, in combination with the oscillator and the devices for effecting the vibration and feeding of said oscillator, substantially as shown and described.

3. The eccentric, trippet, and wheel having two long teeth and intermediate short teeth, all secured on the same short shaft, in combination with the pivoted plate having spring-arms, the oscillator fulcrumed between said arms and provided with a stationary and an adjustable push-bar, a pinion arranged between racks in the oscillator, and the devices for continually revolving said pinion and for operating against the teeth in said wheel, whereby the oscillator is fed and the bearing-stitches formed, substantially as set forth.

4. The combination of the rock-shaft A, adapted to be actuated by the vertically-reciprocating needle-bar of a sewing-machine, dog D, depending from said shaft and operated by adjustable abutments, pivoted lever X, having attached thereto spring-pawls U' T' K, lever N, cut away to accommodate a wiper, Q, secured on the same short shaft with the ratchet-wheel R, pivoted plate Z, having upwardly-extending spring-arms F', wheel W, having two long teeth and intermediate shorter teeth, eccentric X, arranged between two diametrically-opposite points of contact of the plate Z, trippet Y, said wheel, eccentric, and trippet being secured on the same short shaft, oscillator I', fulcrumed between said spring-arms, and having at its forward portion racked slot J', and at the rear elongated slot K', pin T, extending upward through the slot P in the lever N within the slot K', and adjustably secured by means of set-screw V, ratchet-wheel M', secured on the extremity of short shaft N', pinion O', also secured on said shaft and extending below the under surface of the ratchet and between the racks in the sides of the slot J', and a stationary and an adjustable push-bar, V' B'', attached at the sides of the oscillator and adapted to act on the trippet, substantially as shown and set forth.

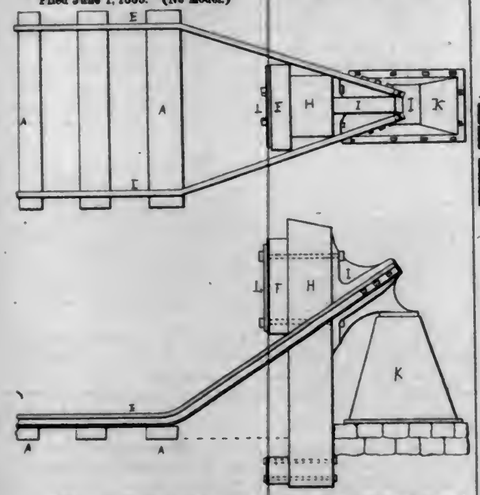
5. The L-shaped lever, pivoted to the bed-plate and recessed at one extremity, and vibrated by a wiper-wheel revolving intermittently within said recess, in combination with the oscillator connected to the lever by a pin adjustable along elongated slots in said oscillator and lever, whereby vibration is imparted to the oscillator, and the throw of the same determined, substantially as set forth.

6. The combination of the pivoted fulcrum-plate, the oscillator supported thereby, and the eccentric, having two diametrically-opposite points of contact with said plate, and adapted to move the latter to and fro, substantially as set forth and described.

7. The lever H, carrying spring-pawls K T' U', in combination with the ratchet R, toothed wheel W, and ratchet M', substantially as set forth.

8. In combination with the toothed wheel, having two long teeth and intermediate short teeth, and the trippet secured on the same short shaft with said wheel, the pawl adapted to be reciprocated throughout the length of the short teeth, and to thereby turn the wheel, in combination with the oscillator, having arranged at the sides thereof push-bars adapted to abut against said trippet and thereby turn the said wheel, whereby said pawl may engage with the long teeth, and, by turning the wheel, enable barring-stitches to be made across the end of the button-hole, substantially as shown and specified.

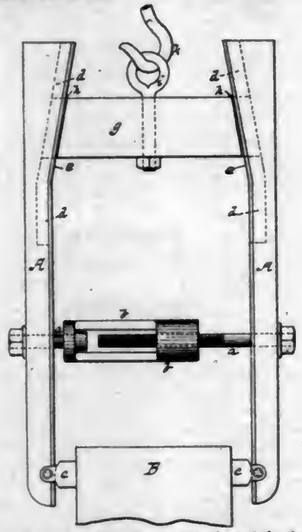
322,812. RAILWAY BUMPING-POST. ELISHA W. ELLIS, Lake, Ill. Filed June 1, 1885. (No model.)



Claim.—1. In combination with a railway bumping-post, the end rails of the railway-track bent upward and inward, and secured either directly or indirectly to the bumping-post, substantially as shown and described.

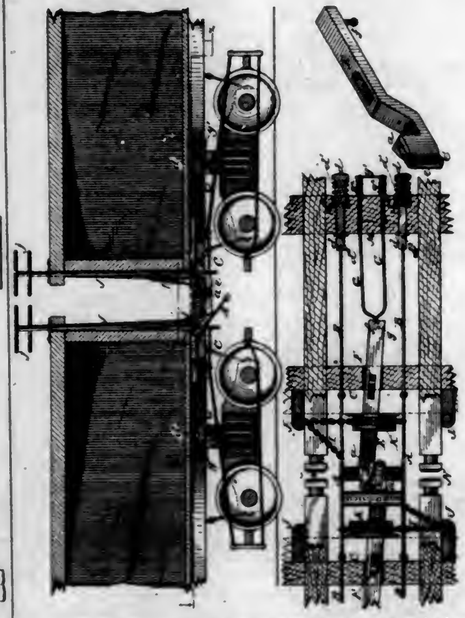
2. The combination of the bumping-post H, the part I, secured to the rear of said post H, the post or column K, adapted to support part I, and the rails E E of the track, bent upward and inward and bolted together in rear of the post H, substantially as shown and described.

322,813. STONE-LIFTER. DANIEL ENGLISH, Brookville, Pa. Filed May 29, 1885. (No model.)



Claim.—In a stone-lifter, the combination of the frame A, provided with self-adjusting pieces c, inclined surfaces e on the inside, and grooves d, bolts a, and sleeve-nut b, for operating the frame A, and cross-bar g, provided with tongues h at either end, substantially as and for the purpose herein described.

322,814. CAR-COUPLING. ALBERT L. ERLER, Lawler, Iowa. Filed May 16, 1885. (No model.)



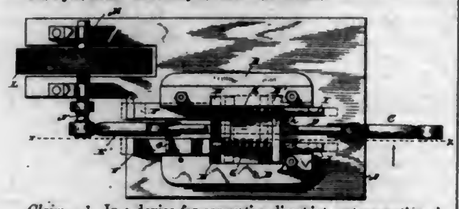
Claim.—1. The combination, with a draw-bar having a top hook, a, and pivotally connected with the car-frame, and having a tapering forward end, of a roller, e, journaled in front of said end and having its sides in line with the tapering sides of the draw-bar, substantially as and for the purpose described.

2. The combination, with a draw-bar having a top hook, a, and pivoted to the car-frame, of a rod, G, pivoted to the rear end of said draw-bar and held under tension by springs, as and for the purpose described.

3. In combination with a bail hinged to the car-sill and weighted at its forward end, a shaft vertically journaled to the front of the car at one side of its center, chains attached to said shaft, the one passing direct to the nearer side of the bail and the other passing over a pulley attached to the car nearly over the other side of the bail to which the chain is attached, substantially as shown and described.

4. The herein-described car-coupler, consisting of a draw-bar, E, having a top hook and a slot, and pivotally connected to the car-frame by a pin, F, passing through said slot, a loop-rod, G, pivoted to the rear end of said draw-bar and held under tension by springs in line with the draw-bar and the car, in combination with a bail, A, hinged to rods B, connected to the bolsters of the car by springs, substantially as described.

322,815. DEVICE FOR CONVERTING MOTION. THOMAS C. FLEMING, Ayer, Nebr. Filed May 1, 1885. (No model.)



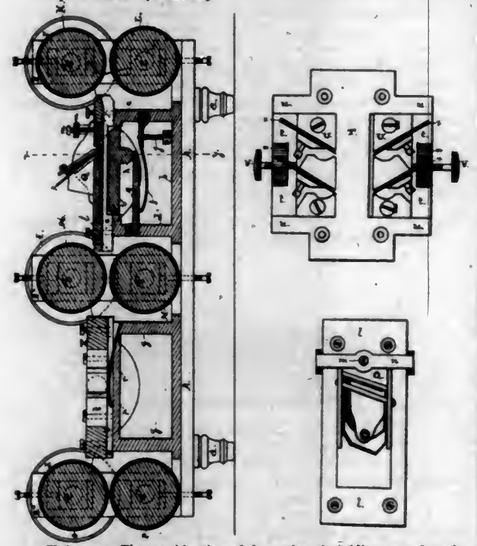
Claim.—1. In a device for converting direct into rotary motion, the combination, with the vibrating frame, of a wrist-lever which receives movement from the direct power, and the pitman which converts such motion into a rotary movement, substantially as and for the purpose set forth.

2. In a device for converting motion, the combination, with the wrist and pitman, of a vibrating frame reacted upon by compressed springs placed between the heads of the vibrating frame and between the wrist and pitman, substantially as and for the purpose set forth.

3. In a device for converting motion, a vibrating frame consisting of the movable head F, moved by a pin on the pitman, and the heads H H', having reacting-springs placed between them, substantially as and for the purpose set forth.

4. In a device for converting motion, the combination, with the wrist and pitman suitably connected, of the vibrating frame and its reacting-springs and band-pulley or suitable device for transmitting the converted motion, substantially as and for the purpose set forth.

322,816. MACHINE FOR PLANING AND FINISHING THIN PIECES OF WOOD. ADDISON M. FORD and JAMES M. MOORE, Jericho, Vt. Filed Apr. 13, 1885. (No model.)



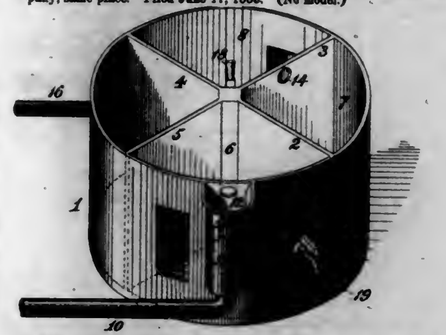
Claim.—1. The combination of the spring *f*, rigidly secured to the frame at one end, a set-screw which bears against the spring at its upper end for the purpose of regulating its tension, the plate *g*, which is fastened to the frame at one end, and which is forced upward at its inner end by the spring, and the platen which is supported by the plate, substantially as shown.

2. The combination of the spring *f*, which is secured to the frame at one end, a set-screw which is connected to the spring for the purpose of regulating its tension, the plate *g*, which is supported at one end by the frame and at its other end by the spring, the platen *i*, which rests upon the plate *g*, the grooved plate *l*, placed upon the top of the frame, and the planes which are attached to the plate *l*, substantially as described.

3. The combination of the plate *l*, placed upon the top of the frame and grooved or recessed to receive the plane, the plane Q, attached to the plate *l*, the pivoted clamping-iron attached to opposite sides of the plate *l*, and the set-screw which is passed down through the clamping-iron and made to fasten the plane in position, substantially as set forth.

4. The combination of the plate *p*, the spring *r*, placed upon the top of the plate, the plate or frame T, having recesses in opposite sides to receive the planes U, and the set-screws V for adjusting the planes laterally, substantially as specified.

322,817. SEPARATOR FOR MINGLED OIL AND WATER. HENRY H. GARRETT, Pittsburg, Pa., assignor to the Westinghouse Machine Company, same place. Filed June 17, 1885. (No model.)



Claim.—1. The combination of a case or chest inclosing an oil-collecting compartment having a lower discharge-opening, and a discharge-compartment receiving fluid from the oil-collecting compartment through said opening, a supply-pipe leading into the oil-collecting compartment, a discharge-pipe leading out of the discharge-compartment near its top, and an oil-delivery cock or valve connected to the oil-collecting compartment, substantially as set forth.

2. The combination of a case or chest, partitions forming a primary and a secondary oil-collecting compartment, and a discharge-compartment therein, passages delivering liquid from the lower portion of the primary oil-collecting compartment to the secondary, and from the lower portion of the secondary to the discharge-compartment, a supply-pipe leading into the primary oil-collecting compartment, a discharge-pipe leading out of the discharge-compartment near its top, a valve governing an opening or passage from the secondary to the primary oil-collecting compartment, and an oil-delivery cock or valve connected to the primary oil-collecting compartment, substantially as set forth.

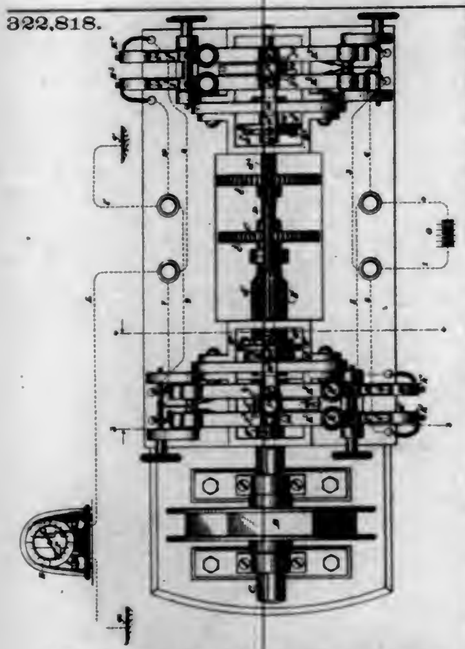
3. The combination of a case or chest, partitions dividing said case into a series of compartments communicating alternately near their upper and their lower ends, a supply-pipe delivering into a compartment which discharges near its lower end, a discharge-pipe leading out of a compartment which receives supply near its lower end, a valve or valves governing openings between the compartments which discharge near their lower ends, and a delivery-cock connected to the compartment into which the supply-pipe delivers, substantially as set forth.

4. The combination of a case or chest, partitions forming a primary and a secondary oil-collecting compartment, and a discharge-compartment therein, a supply-pipe leading into the primary oil-collecting compartment, two valves governing openings in the partition between the primary and secondary compartments, one of said valves being located near the bottom of said partition, and the other at a higher level, a hand-lever connected to said valves on opposite sides of its fulcrum, so as to alternately open one and close the other valve, a passage establishing communication between the secondary oil-collecting compartment and the discharge-compartment near the bottom of their separating-partition, and a discharge-pipe leading out of the discharge-compartment near its top, substantially as set forth.

322,818. ELECTRIC INDICATING APPARATUS. MILTON W. GROVESTEEN, New York, N. Y. Filed Mar. 11, 1885. (No model.)

Claim.—1. The combination, substantially as hereinbefore set forth, with a device moving in either of two directions under the influence of variations in pressure, temperature, or quantity, &c., of a shaft revolved thereby in a corresponding direction, a circuit-controlling device operated by the movement of said shaft in one direction to transmit electric impulses in a given direction, and an independent circuit-controlling device operated by the movement of said shaft in the opposite direction to transmit impulses in the direction opposite to that first named.

322,818.



2. The combination, substantially as hereinbefore set forth, with a device responding to physical variations of a shaft moving in one direction or the other correlatively with said variations, and two circuit-controlling devices governed by said shaft, the one of which is at rest while the other is being operated, and vice versa.

3. The combination, substantially as hereinbefore set forth, with a device responding to physical variations of two independent circuit-controlling devices, and means, substantially such as described, for causing both to stand at a given point after one has been actuated before the other can be operated.

4. The combination, substantially as hereinbefore set forth, of a shaft revolving in either of two directions, a disk carried thereon, a circuit-controlling device consisting of the series of contact-points and the cam for operating the same, and a clutch device, substantially such as described, for coupling the shaft with the cam and causing it to operate said contact-points only when the shaft is driven in a given direction.

5. The combination, substantially as hereinbefore set forth, of a shaft, means for revolving the same in either of two directions, two circuit-controlling devices, two clutch devices for coupling said shaft with said circuit-controlling devices, respectively, one of which clutch devices advances the corresponding circuit-controlling device when the shaft is revolved in a given direction, and returns it to and leaves it in a given position when the shaft is revolved in the opposite direction, while the other clutch device operates its corresponding circuit-controlling devices in like manner when the shaft is revolved in the opposite direction.

6. The combination, substantially as hereinbefore set forth, of a shaft, means for actuating the same, a single-toothed wheel carried thereby, a disk concentric therewith, a pawl engaging the tooth of said wheel upon one side when said shaft is revolved in a given direction, thereby causing said disk to move with said shaft, a second pawl engaging said tooth upon the opposite side when said shaft is revolved in the opposite direction, means for releasing said tooth from engagement with the second pawl when the disk has been returned to a given position, and a circuit-controlling device operated by the movements of said disk.

7. The combination, substantially as hereinbefore set forth, of a battery, two insulated contact-points with which the opposite poles of said battery are connected, two contact-arms against which said points may be caused to impinge, respectively, a second pair of contact-arms to which the first pair are respectively applied, frictional connections between the same, electrical connections from the one of said second pair of arms with the earth and from the other through an electrically-operated instrument with the earth, and means, substantially such as described, for placing the arms of the one pair in contact with those of the other, respectively, and for subsequently placing the respective contact-points against the first-named pair of contact-arms, and thereby separating the respective contact-arms, substantially as described.

8. The combination, substantially as hereinbefore set forth, of two continuity-preserving keys, means, substantially such as described, for prolonging the contacts made thereby, means for operating either of said keys to the exclusion of the other, an indicating device responding to the operation of said keys, and means, substantially such as described, for preventing either key from operating except when the other is at rest in a given position.

9. The combination, substantially as hereinbefore set forth, of a shaft or arbor, a cam carried thereon and having projecting flanges, two contact-points controlled by said cam, two levers controlled by said flanges, intervening contact-arms for said levers and arms, and means, substantially such as described, whereby said levers may be moved out of the paths of said arms before said points are separated therefrom and placed in contact with said arms when said points have been removed from said arms, and means for subsequently placing said points in connection with said levers through said arms, and subsequently separating said arms from said levers.

10. The combination, substantially as hereinbefore set forth, of a gas-holder, a shaft revolved in one direction or the other accordingly as said holder rises or falls, a second shaft, two or more gear-wheel and pinion connections between said shafts, whereby rates of revolution may be imparted to the second shaft by the revolution of the first proportionate to the dimension of the sections of the holder, and means, substantially such as described, for coupling said shafts through their different gears according to the positions of the holder.

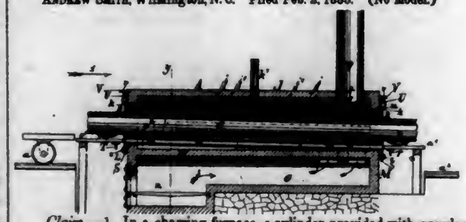
11. The combination, substantially as hereinbefore set forth, of a gas-holder constructed in telescoping sections, a shaft operated by the movements of the holder, a screw-thread and nut for moving said shaft longitudinally, a second shaft, gear-connections between said shafts having different speeds, whereby the second shaft receives a rate of revolution from the movements of the gas-holder dependent upon the section being supplied or exhausted, a circuit-controlling device for transmitting impulses of a frequency and character dependent upon the rate and direction of revolution of the second shaft, and an indicating device responding to such impulses.

12. The combination, substantially as hereinbefore set forth, of a gas-holder constructed in sections, a shaft revolved thereby, a second shaft, multiplying-gears between said shafts of different speeds, each consisting of a pinion and a toothed wheel, the teeth of each of the latter being cut away throughout a portion of its periphery, substantially as described, and circuit-controlling devices operated by said second shaft.

13. The combination, substantially as hereinbefore set forth, in an apparatus for indicating or registering variations, of means for transmitting impulses in either of two directions, and a receiving-instrument consisting of an electro-magnet, two polarized armatures applied to its respective poles, a suspended lever carrying the same and normally holding both armatures away from the electro-magnet and permitting them to be moved from their position of rest in either direction, and a toothed wheel and pawls for actuating the same in one direction or the other by the movement of the lever.

14. The combination, substantially as hereinbefore set forth, with a device for transmitting impulses in a direction and with a frequency dependent upon variations which it may be desired to indicate, of a receiving-instrument consisting of an electro-magnet, two polarized armatures applied to the opposite poles of the same, respectively, a lever normally holding the same away from the electro-magnet and permitting them to move in either direction, two pawls carried by said lever, a toothed wheel, means for normally holding the pawls out of engagement with the wheel and for causing the one or the other to engage the same accordingly as said lever is moved in one direction or the other, and an indicating device actuated by said wheel.

322,819. WOOD-PRESERVING APPARATUS. LUDVIG HANSEN and ANDREW SMITH, Wilmington, N. C. Filed Feb. 2, 1885. (No model.)



Claim.—1. In a charring-furnace, a cylinder provided with annular sectional stoppers constructed to open laterally and approximately fitting the log to be charred, substantially as set forth.

2. In combination with the charring-cylinder A, the furnace and its flue O, arranged beneath the same, said flue having its top set beneath said cylinder at a varying distance from the same, substantially as and for the purpose specified.

3. In combination with the charring-cylinder K, the end cover having a central opening, and made in two parts, R R', hinged together and adapted to be clamped around a log and to the end of the said cylinder, for the purpose set forth.

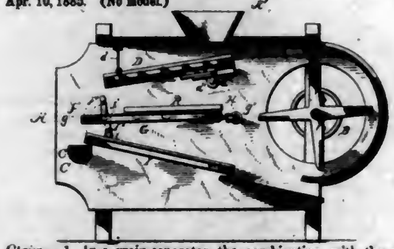
4. The combination of the charring-cylinder K, the log-inclosing end-cover made in two parts, R R', hinged together and provided with the slotted projection S, and the pivoted clamping-lever U, having toe *u*, and set-screw V, substantially as and for the purpose set forth.

5. The combination of the charring-cylinder K, the log-inclosing end-cover made in two parts, R R', provided with the ribs or ridges *w*, and the pivoted clamping-lever U, having set-screws V, and notched toe *u*, substantially as and for the purpose set forth.

6. The combination of the inclined charring-cylinder K, having gas-discharge pipe *k'*, with the furnace A, having the fire-place *n*, flue O, with end openings, *o*, flue P, with end openings, *p*, and flue *j''*, with end chimney, *q*, the said flues P and *j''* being separated by partitions Q along opposite sides of the cylinder, all arranged substantially as and for the purpose set forth.

7. In a charring-furnace, the combination of the open-ended cylinder K, inclosed in and extending from one end of the furnace to the other and over a flue, O, starting from a fire-chamber at one end of said furnace and communicating with the space P, surrounding said cylinder at the other, the partition Q, dividing the space P, and the stack *q*, arranged over the passages between the flue O and the space P, substantially as described.

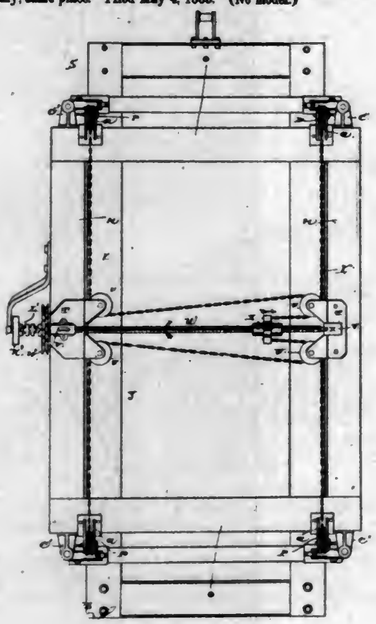
322,820. GRAIN-SEPARATOR. ISRAEL HESS, Goshen, Ind. Filed Apr. 10, 1885. (No model.)



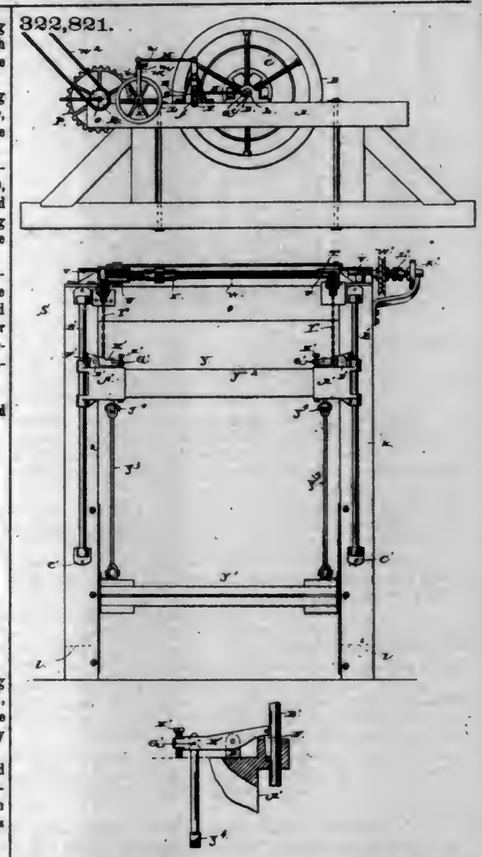
Claim.—1. In a grain-separator, the combination, with the casing and the vibratory screen D, of the screens G and I, the crank-shaft H, the levers F, having central pivotal bearings in the side walls of the casing, and the devices connecting them with the screen, substantially as specified.

2. The screen D, composed of the side rails having slots, the end rails, the longitudinal wires, and the bent cross-bars of sheet metal arranged in said slots and upon said wires, and having inclined leaves on their front faces, and scalloped abrupt leaves *s'* on their rear faces, as and for the purposes set forth.

322,821. STONE-SAWING MACHINE. JULIUS G. HÖFER, Knoxville, Tenn., assignor of one-half to the Knoxville Foundry and Machine Company, same place. Filed May 4, 1885. (No model.)



322,821.



Claim.—1. The combination, with a stone-sawing machine, of the frame S, having the sheaves U and *p*, with the screw W, the collar X, working on said screw, the chains *r*, secured to the collar and passing over the sheaves, and the frame Y, suspended by the chains *r*, substantially as described.

2. The combination, with a stone-sawing machine, of the frame S, having the vertical rods B', the frame Y, sliding on said rods, and means for raising and lowering said frame, and the fulcrumed levers E' on the frame Y, having keys F', bearing against the rod B', and the set-screws H', for adjusting the levers E', substantially as described.

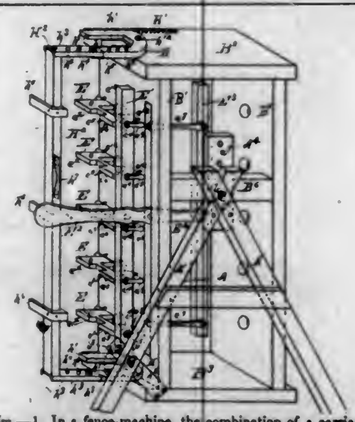
3. The combination, with a stone-sawing machine, of the frame S, the suspended frame G, the screw W, for raising and lowering the frame G, the sliding clutch L' on the screw, and the loose pulleys or chain-wheels on the screw on opposite sides of the clutch, with which said clutch is adapted to engage alternately, for the purpose set forth, substantially as described.

4. The combination, with a stone-sawing machine, of the frame S, the suspended frame G, the screw W, for raising and lowering the frame G, the shaft O and connecting gearing for actuating the screw, and the shaft B and intermediate mechanism for imparting motion to and regulating the speed of the shaft O, substantially as described.

322,822. FENCE-MACHINE. GEO. W. HOSHER, Dublin, Ind. Filed May 20, 1885. (No model.)

Brief.—The ends of the wires are secured to a fence-post and twisted by twisters mounted in a pivotally-suspended frame which is adjusted to be vertical, whatever the inclination of the ground. A picket is dropped between the wires. A lever operates a series of knockers to beat up the picket. Recesses in the edges of the knockers hold the picket in place, and other devices on the knockers bring together the wires behind the picket. The same movement of the lever withdraws a brake which normally keeps the wire-spools from revolving in their frames. An adjustable gage-bar determines the position of the picket, and is swung aside to permit the twisting-frame to be drawn back by a drum and cable after the picket is secured in place. Tension on the wires is secured by adjusting-nuts on the spool-shaft and by a series of rods carried in the twister-frame, and between which the wires are threaded.

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Claim.—1. In a fence-machine, the combination of a carriage and a twisting-frame pivotally hung in said carriage, substantially as described.

2. In a fence-machine, the combination of a carriage and a twisting-frame pivotally hung in said carriage and having means for holding it in a fixed position, substantially as described.

3. In a fence-machine, the combination of a carriage having set-screws and a twisting-frame pivotally hung in said carriage and having the slotted bars, substantially as and for the purpose set forth.

4. In a fence-machine, the combination of a carriage, a twisting-frame pivotally hung in said carriage, and means, substantially as described, for moving said carriage.

5. In a fence-machine, the combination of a carriage, a twisting-frame pivotally hung in said carriage, a drum on said carriage, and provided with a cable attached to a fixed point, and means for revolving and locking said drum, substantially as described.

6. In a fence-machine, the combination of a carriage, a twisting-frame pivotally hung in said carriage and provided with means for locking it with the carriage, and mechanism for moving the machine away from the fence already made, substantially as described.

7. In a fence-machine, the combination of a carriage having the plate provided with openings arranged in a vertical row, and the twisting-frame having the movable trunnions arranged to be journaled in said openings, substantially as described.

8. In a fence-machine, the combination of a carriage having the plates provided with openings arranged in a vertical row and with the set-screws and the twisting-frame having the removable trunnions and the slotted bars connected with said carriage, substantially as described.

9. In a fence-machine, the combination of the twisting-frame having the twisters projecting through the front end, the pivoted knockers arranged between the twisters and having the recesses in their edges, and means for operating said knockers, substantially as described.

10. In a fence-machine, the combination of the twisting-frame having the twisters projecting through the front end, the knockers arranged between the twisters and having the recesses in their edges, the bar E', connected to the knockers by cranks e^3, and the lever fulcrumed in the frame and pivotally connected with said bar, substantially as described.

11. In a fence-machine, the combination of a twisting-frame having the twisters projecting through the front end, the knockers carrying on their faces the projections having recesses with inclined walls, and means, substantially as described, for operating the knockers.

12. In a fence-machine, the combination of a twisting-frame having the twisters projecting through the front end, the knockers having the recesses in their edges and projections on their faces with inclined walls, and means, substantially as described, for operating the knockers.

13. In a fence-machine, a knocker having the recess in its edge, substantially as described.

14. In a fence-machine, a knocker carrying the projection on its face, having a recess with inclined walls, substantially as described.

15. In a fence-machine, a twister having a frame, a spool within the frame and formed of two sections, one section provided with an annular recess for the hub of the other section, and means for holding the sections together, substantially as described.

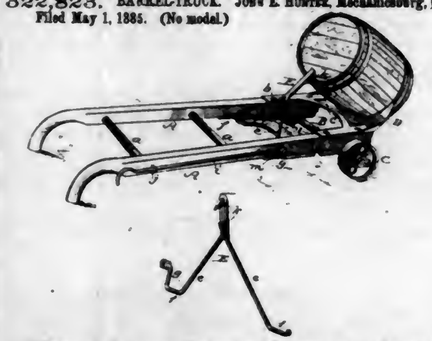
16. In a fence-machine, a twister having a frame with sides formed of springy metal, a spool within its frame and formed of two sections, one section formed with an annular recess for the hub of the other section, and a shaft passing through said spool and frame and having means for clamping the parts together, substantially as described.

17. In a fence-machine, a twister having a frame, a spool having projections on one of its flanges, and a brake pivotally fastened to said frame, and a spring for holding the brake in contact with the spool, for the purpose set forth, in combination with means for withdrawing the brake, substantially as described.

18. In a fence-machine, the combination of the twisters having the brake, the knockers arranged between the twisters, the bars pivoted to the frame and connected with the brake and knockers, and a lever for operating the bars, substantially as described.

19. In a fence-machine, the combination of the twisting-frame, the arms pivoted to the frame and having the gage-bar provided with the handle, and the retracting-spring attached to one of the arms and the twisting-frame, substantially as described.

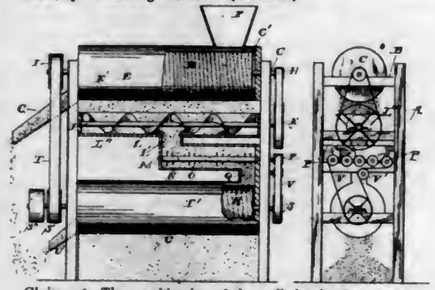
322,823. BARREL-TRUCK. JOHN E. HUNTER, Mechanicsburg, Ohio. Filed May 1, 1885. (No model.)



Claim.—1. In a truck, the combination, with a wheeled frame, of a scoop and a pivoted claw provided with hooks *k*, one in advance of the other to engage the chines of a barrel, as and for the purpose set forth.

2. In a truck, the combination, with a wheeled frame, of a scoop, D, and claw E, provided with hooks *k*, crank-arm *g*, and rod *i*, as and for the purpose set forth.

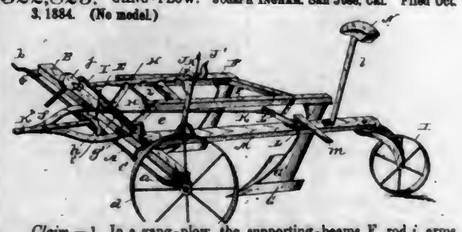
322,824. SEED CLEANER AND HULLER. R. BRENT HUTCHCRAFT, Paris, Ky. Filed Aug. 14, 1884. (No model.)



Claim.—1. The combination of the cylinder having corrugations spirally disposed, the shell or concave having perforations through its lower part and at the end a chute, the box or trough L'', having a central opening, L', the right and left conveyer, the box N, and the series of beater-shafts M, substantially as described.

2. The combination of the upper cylinder provided with corrugations spirally disposed, the outer perforated shell, the right and left conveyer, the box or trough L'', having a central opening, the box N, having an opening, Q, a series of shafts having spirally-disposed beaters, the lower cylinder having corrugations, and an outer shell provided beneath with smaller perforations than those in the upper shell, the whole arranged to operate as described.

322,825. GANG-PLOW. JOSEPH INGHAM, San José, Cal. Filed Oct. 3, 1884. (No model.)



Claim.—1. In a gang-plow, the supporting-beams F, rod *i*, arms H H, rock-shaft *i'*, lever I, and rack-bar J, substantially as shown and described.

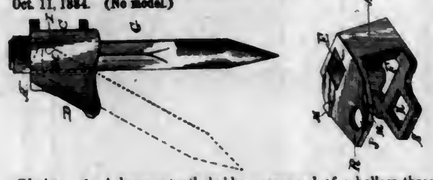
2. The combination of the lever I, rack-bar J, upright K', spring-bar J', rod K, arm L', crank-shaft L, arm L^2, and bolt *k*, for connection with the supporting-beams, substantially as shown and described.

322,826. COOLING AND REFRIGERATING APPARATUS. FRANK G. JOHNSON, New York, N. Y. Filed May 1, 1885. (No model.)



Claim.—For artificial refrigeration for the preservation of perishable articles, the combination of the refrigerating-receptacle A and the detached portable compressed-air receiver C, charged with compressed air, by simply placing the said charged receiver C within the said refrigerating-receptacle A, substantially in the manner and for the purposes set forth.

322,827. HARROW. FREDERICK A. JOHNSON, Madison, Wis. Filed Oct. 11, 1884. (No model.)



Claim.—1. A harrow-tooth holder composed of a hollow three-sided casting, A, having one of its sides or walls inclined, a horizontal projecting lug, R, secured to the tops of the edges of two of the sides, and a horizontal projecting lug, S, secured to the bottoms of the edges of said sides, each of said lugs being provided with a hole or perforation, substantially as and for the purpose set forth.

2. A harrow-tooth holder composed of a hollow three-sided casting, two of said sides being perpendicular, one of which is provided near its upper inner portion with a horizontal lug and the remaining side smooth and inclined from top to bottom, a horizontal projecting lug secured to the tops of the edges of two of said sides, and a horizontal projecting lug secured to the bottoms of the edges of said sides, said lugs projecting at right angles to said edges and each of them being provided with a hole or perforation, substantially as and for purpose set forth.

3. The combination of a series of drag-bars, a number of the above-described tooth-holders secured thereto, each holder being provided with a suitable harrow-tooth and two pairs of parallel tie-bars secured to the tops of the end rows of said tooth-holders, substantially as and for the purpose set forth.

322,828. RAIL-JOINT. ROBERT V. JONES, Cleveland, Ohio. Filed Apr. 27, 1885. (No model.)



Claim.—1. In combination with an interlocking rail-joint, a wedge or wedges narrowed and thinned to near one end, at which end they are thickened and notched and also beveled, substantially as and for the purpose specified.

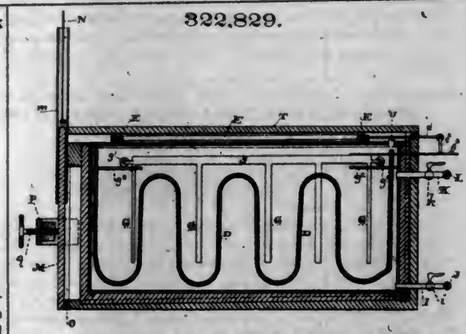
2. A rail-joint consisting of a plate having tongues on one side and extended upward over the flanges of the rails and coincident with the webs thereof on the other side, a plate having one end upturned and the other end engaging over the flanges of the rails and coincident with the webs thereof, and provided with a longitudinal flange or tongue on the said end, and a wedge or wedges engaging under the said flange or tongue and the tongues on the other plate, the whole combined substantially as and for the purpose specified.

322,829. ICE-MACHINE. AUGUSTUS R. KENNEY, San Francisco, Cal. Filed Mar. 6, 1885. (No model.)

Claim.—1. In an ice-machine, the independent partitional water-tight closed refrigerator-cans C, in combination with the vertical evaporator-coil D in said cans, substantially as herein described.

2. In an ice-machine, the independent partitional refrigerator-cans

322,829.



C, for the purpose described, said cans having each a wedge shape, the apex being downward, substantially as herein described.

3. In an ice-machine, the independent partitional refrigerator water-tight closed cans C, having a wedge shape, substantially as herein described.

4. In an ice-machine, the independent partitional refrigerator wedge-shaped cans C, in combination with the evaporator-coils D therein, whereby the freezing is effected from the sides of the cans only, substantially as herein described.

5. In an ice-machine, the horizontally-reciprocating agitators G, adapted to stir the refrigerating-brine or other freezing agent, substantially as herein described.

6. In an ice-machine, the partitional closed refrigerator-cans C, in combination with the horizontally-reciprocating agitators G within said cans and adapted to keep the brine or other freezing agent in motion, substantially as herein described.

7. In a ice-machine, the partitional closed refrigerator-cans C and the evaporator-coils D therein, in combination with the forked or two-part horizontally-reciprocating agitators G in the cans, straddling the coils, substantially as herein described.

8. In an ice-machine, the partitional refrigerator-cans C, having short tracks g^2 in each end, in combination with the agitators G within the cans, the strips *g*, from which they depend, the wheeled trucks g' on the strips and traveling on the tracks, and the stems g^2, secured to the rear trucks and passing out of the rear of the cans, whereby a horizontal reciprocating movement may be imparted to the agitators, substantially as herein described.

9. In an ice-machine, the box A, divided into a number of parallel sweet-water compartments, as described, in combination with the agitators F in said compartments and the means by which they are horizontally reciprocated, consisting of the frame E, from which the agitators depend, the pitman *e'*, and bar e^2, substantially as herein described.

10. In an ice-machine, the box A, and the partitional refrigerator-cans C, dividing the box into a number of sweet-water compartments, in combination with the agitators F in the compartments, and the movable frame E, from which they depend, the agitators G in the cans, and the movable strips *g*, from which they depend, and the mechanism by which the agitators are simultaneously reciprocated, consisting of the stems g^2, secured to the strips G and extending through the rear of the cans and box, and the pitman *e'*, and bar e^2, by which the frame E is connected with one of the stems, substantially as herein described.

11. In an ice-machine, the box A, having a vertically-adjustable end-gate, a sloping bottom, and grooves *a* in its ends and bottom, in combination with the independent partitional refrigerators or brine-cans C, surrounded on top, bottom, and ends by non-conducting frames B, in which they are mounted, said frames fitting the grooves *a* in the box and holding the cans free thereof, substantially as herein described.

12. In an ice-machine, the box A, in which the cakes are formed, in combination with the vertically-moving balanced door or gate M at one end, substantially as herein described.

13. In an ice-machine having a box in which the cakes are formed, the end-gates M for the box, adapted to move vertically in suitable guides, in combination with the means for securing a tight joint between the gate, when closed, and the end of the box, consisting of the rubber packing or washers O on the ends of the sides and bottom of the box, the bracket P, and the binding-screw Q in the bracket, adapted to press the gate against the packing O, substantially as herein described.

14. In an ice-machine, the box A, in which the ice is formed, the rubber packing or washers O on the ends of the sides and bottom of the box, and the bracket P, the front bar, *p*, of which is removable to permit the withdrawal of the ice, in combination with the vertically-moving gate M, and the binding-screw Q in the bracket, adapted to press the gate to its seat against the packing, substantially as herein described.

15. An ice-machine consisting of the box A, the vertically-moving end-gate M, the closed partitional and wedge-shaped refrigerator-cans C, dividing the box into compartments in which the ice cakes are formed,

said cane having inlet and outlet pipes, the evaporator-coils D in the cans, and the horizontally-reciprocating agitators F G in the compartments and cans, all arranged and adapted to operate substantially as herein described.

322,830. CAR-DOOR SEAL-LOCK. JAMES A. KERR, Chicago, Ill., assignor of one-half to Frank P. Purtell, same place. Filed Mar. 16, 1885. (Model.)



Claim.—1. A car-door seal-lock comprising a bottom, A, a top, B, provided with a hole, recess, or opening, L, to receive a locking or fastening stud or pintle, K, and an intermediate sliding piece, D, carrying a piece, E, with said projecting stud or pintle K, a spring, F, to press said stud or pintle into the opening, hole, or recess L in the top B, whereby the sliding piece D is fastened or locked in place and prevented from sliding, substantially as described.

2. A car-door seal-lock comprising a bottom, A, a top, B, provided with a hole, recess, or opening, L, to receive a locking or fastening stud or pintle, K, and an intermediate sliding piece, D, carrying a piece, E, with a projecting stud or pintle, K, a spring, F, to press said stud or pintle into the opening L of the top B, whereby the sliding piece D is fastened or locked in place and prevented from sliding, and a glass or other brittle seal, G, covering the recess or opening in which the pintle or stud K is held to prevent access to the same without breaking such brittle seal, substantially as described.

3. A car-door seal-lock comprising a channel or U-shaped bottom, A, provided with a cross-piece, J, a top B, riveted or fastened to such bottom and provided with a hole, opening, or recess, L, to receive a fastening stud or pintle, K, an intermediate sliding piece, D, carrying a locking hoop, hook, or loop, C, at one end, and provided with a stud, M, a piece, E, with a projecting stud or pintle, K, and a spring, F, which presses or lifts the stud or pintle K into the opening or recess L in the top piece, B, whenever it becomes coincident with the same as the sliding piece D is moved out or in, whereby the sliding is arrested and the intermediate piece fixed until the stud is pressed out of the opening or recess in the top piece, substantially as described.

322,831. CAR-DOOR SEAL-LOCK. JAMES A. KERR, Chicago, Ill., assignor of one-half to Frank P. Purtell, same place. Filed Apr. 3, 1885. (No model.)



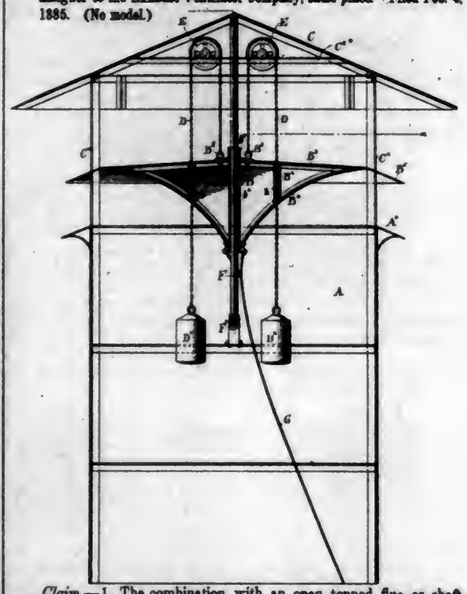
Claim.—1. A car-door seal-lock comprising a bottom, A, a top, B, provided with a hole, recess, or opening, M, to receive a locking or fastening stud or projection, N, on the locking-piece E, a sliding piece, C, provided with a hook or catch, I', on its inner end, and a hoop or loop, D, on its outer end, and a locking-piece, E, provided with a stud or projection N, and a catch or hook, I, at its front end to interlock with a corresponding hook or catch on the inner end of piece C slid or pushed into it, substantially as described.

2. A car-door seal-lock comprising a bottom, A, a top, B, provided with a hole, recess, or opening, M, to receive a locking or fastening stud or projection, N, on the locking-piece E, a sliding piece, C, provided with a hook or catch, I', on its inner end, and a hoop or loop, D, on its outer end, and a locking-piece, E, provided with a stud or projection, N, and a bend or turn, O, at its lower end to rest or fit into a hole or depression, P, in the bottom A, and a hook or catch, I, at its front or upper end to interlock with a corresponding hook or catch on the inner end of piece C slid or pushed into it, substantially as described.

3. A car-door seal-lock comprising a bottom, A, a top, B, provided with a hole, recess, or opening, M, to receive a locking or fastening stud or projection, N, on the locking-piece E, a seal, J, made of glass or other brittle material, a sliding piece, C, provided with a hook or catch, I', on its inner end, and a hoop or loop, D, on its outer end, and a locking-piece, E, provided with a stud or projection, N, and a catch or hook, I, at its front end to interlock with a corresponding hook or catch on the inner end of piece C slid or pushed into it, substantially as described.

4. A car-door seal-lock comprising a bottom, A, a top, B, provided with a hole, recess, or opening, M, to receive a locking or fastening stud or projection, N, on the locking-piece E, a seal, J, made of glass or other brittle material, a sliding piece, C, provided with a hook or catch, I', on its inner end, and a hoop or loop, D, on its outer end, and a locking-piece, E, provided with a stud or projection, N, and a bend or turn, O, at its lower end to rest or fit into a hole or depression, P, in the bottom A, and a hook or catch, I, at its front or upper end to interlock with a corresponding hook or catch on the inner end of piece C slid or pushed into it, substantially as described.

322,832. DAMPER FOR SHAFTS. EDMUND F. KITTOE, Chicago, Ill., assignor to the Exhaust Ventilator Company, same place. Filed Feb. 4, 1885. (No model.)



Claim.—1. The combination, with an open-topped flue or shaft, an elevated roof or cap, C, and uprights C', supporting said cap from the shaft, of a vertically-movable valve or damper located between the top of the flue and the cap, guides for the damper, and means for raising and lowering the damper, substantially as described.

2. The combination, with an open-topped flue or shaft, and a roof or cap, C, of a vertically-movable damper located between the top of the flue and the cap or roof, a guide or guides for the damper, counterbalance-weights and chains, and pulleys for the chains located beneath the said cap or roof, substantially as and for the purpose set forth.

3. The combination, with an open-topped flue or shaft, of a vertically-movable valve or damper, a suitable guide or guides for said damper, one or more chains attached to said damper, a counterbalance weight or weights attached to the chains, pulleys for the chains supported above the damper, and a chain or rope attached to the damper for moving the latter, substantially as described.

4. The combination, with an open-topped flue or shaft, an elevated cap or roof, C, and uprights C', supporting said cap from the shaft, of a vertically-movable damper located between the top of the flue and the cap, a guide for the damper supported from the frame of the cap, and means for raising and lowering the damper, substantially as and for the purpose set forth

5. The combination, with an open-topped flue or shaft provided with an outwardly and downwardly inclined flange, A', at its upper edge, of a vertically-movable damper provided with an outwardly and downwardly inclined marginal flange, B^3, substantially as and for the purpose set forth.

6. The combination, with an open-topped flue or shaft provided with an outwardly and downwardly inclined flange, A', at its upper edge, of a vertically-movable damper made conical upon its lower surface, and provided with an outwardly and downwardly inclined marginal flange, B^3, substantially as described.

7. The combination, with the shaft or flue A and the cap C, supported from the shaft, of the vertically-movable damper B, one or more chains, D, attached at one end to the damper, and provided with weights D' at their opposite ends, and pulleys for the said chains supported upon the frame of the cap, said damper being provided with vertical apertures for the passage of the chains, substantially as described.

8. The combination, with the shaft or flue A, provided with a cap, C, and the vertically-movable damper B, located between the cap and the top of the shaft, and provided with outwardly and downwardly extending flanges B^3, of the uprights C', extending through the said flanges and supporting the cap, substantially as described.

9. The combination, with the shaft or flue A, the cap C, and the vertically-removable damper B, provided with a central guide-aperture, of the vertical guide-rod F, supported from the said cap and fitted to the aperture of the damper, and means, substantially as described, for moving said damper, substantially as and for the purpose set forth.

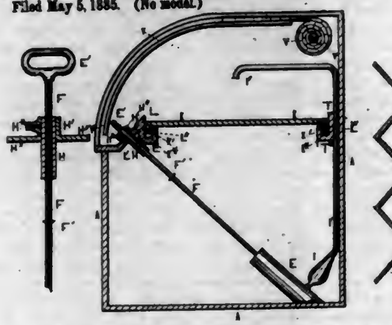
10. The combination, with the shaft or flue A, the cap C, and the vertically-movable damper B, provided with a central guide-aperture, of the vertical guide-rod F, supported from the cap and fitted to the aperture of the damper, and the uprights C', supporting the cap and engaged with the damper to serve as auxiliary guides for the latter, substantially as described.

11. The combination, with the shaft or flue A, and the vertically-movable hollow damper B, made of sheet metal, and having upper and lower walls, B^4 and B^4, of one or more chains, D, attached to the damper and provided with weights D' and pulleys for the weights, said damper being provided with passages for the chains formed by vertical tubes attached at their upper and lower ends to the said walls B^4 and B^4 of the damper, substantially as described.

322,833. UTILIZING THE WASTE CUTTINGS OF TINNED IRON. JOHN H. KOLB, Brooklyn, N. Y., assignor of one-third to William J. Matheson, same place. Filed Apr. 3, 1884. (No specimens.)

Claim.—Wrought-iron composed of the iron-plates or iron-scrap reclaimed from the tin-scrap or other similar material, combined with charcoal-cinder, wrought-iron turnings, or other suitable material, substantially as described.

322,834. OIL-CABINET. HENDRIK KRÖMMELBEIN, New York, N. Y. Filed May 5, 1885. (No model.)



Claim.—1. In an oil-cabinet, the combination, with the body thereof adapted to contain any fluid stored therein, having in its upper part a removable horizontal shelf or partition placed between the handle of the pump of said cabinet and the delivery-pipe thereof, said shelf or partition being constructed with a flange projecting downwardly from each of its edges, upon the lower side of which flange is a corrugated support, of a grooved rail attached to the inner sides of the walls of said cabinet, the outer edge of said groove being higher than the inner edge thereof, said groove being adapted to receive said corrugated edge and a part of the flange of said removable shelf or partition, and while forming a support for the same, at the same time, in connection with said corrugated edge and bar, to form a conduit to conduct waste fluid spilt on said shelf into the fluid-chamber of said cabinet, and in connection with said flange and said waste fluid form a stop to prevent the escape of vapor from said cabinet, substantially as and for the purpose set forth.

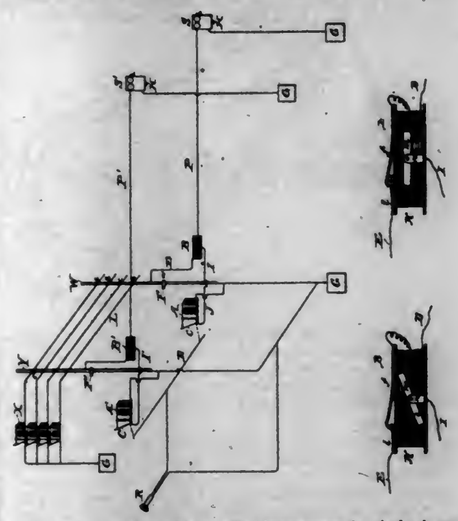
2. The combination, with an oil-cabinet adapted to contain oil and other similar fluids, and having near its upper part a removable horizontal shelf or partition placed between the handle of the pump of said cabinet and the delivery-pipe thereof, said removable shelf or partition being constructed with a downwardly-projecting corrugated edge, upon which it rests, and being sustained by a grooved rail attached to the inner side of the walls of said cabinet, of a pump adapted to raise a fluid from within the fluid-chamber of said cabinet to a place of delivery above said horizontal shelf or partition, said pump being so constructed and placed in said cabinet that the handle is in front of said shelf or partition and the delivery-spout thereof passes up behind said shelf or partition, and said pump having in the guide-plate of its handle a tube which embraces the piston-rod, and is capable of being set in various positions in said guide-plate, whereby the length of the stroke of the piston of said pump may be adjusted and facility afforded for measuring the flow of fluid from the delivery-pipe of said pump, substantially as and for the purpose set forth.

3. In an oil-cabinet, the combination of the shelf or partition K, the flange K', and the corrugated edge K^6, with the rail L with the groove L'' and lip L^6, and the rail T with the groove L'' and the lip T^6, substantially as and for the purpose set forth.

4. In an oil-cabinet, the combination, with the pump E I, of the rod F, the stop F'', the plate H'', the hub or neck H', the tube R, the set-screw H^6, and the rail L, substantially as and for the purpose set forth.

5. An oil-cabinet composed of the body A A, the lattice V, working in the groove V' and rolling up around the roller V'', the removable partition or shelf K, having the flange K' and the corrugated edge K^6, the rail L with the groove L'' and lip L^6, the rail T with the groove L'' and lip T^6, the piston-rod F, the pump E I, the delivery-pipe I' I'', the adjustable tube H, the plate H'', the neck or hub H', the set-screw H^6, and the stop F'', substantially as and for the purpose set forth.

322,835. SIGNAL-CALL FOR TELEPHONE-OFFICES. ALBERT H. LOW, Denver, Colo. Filed Nov. 14, 1884. (No model.)



Claim.—1. The within-described improvement in telephonic systems, the same consisting in the combination, with the central office and stations, of a generator adapted to transmit both alternating and non-alternating electric currents between the stations and central office, and a circuit controller and connections, substantially as described, for automatically causing currents of one character to operate the office-indicators and currents of another character to operate the signals, substantially as set forth.

2. The combination, with generators at the various stations, constructed to produce both alternating and continuous currents, and provided with signal-bells arranged to be operated by alternating currents only, of indicators arranged at the central office, and automatically-controlling devices constructed to be adjusted, when the character of the current is changed, to cause an annunciator-drop to fall in central office, either directly or with other stations in the circuit, whereby the signal-bells of the stations in electrical communication are operated only upon the transmission of signal-currents, substantially as set forth.

3. The combination, in telephone systems, of generators adapted to produce alternating and non-alternating electric currents located at the subscribers' stations, indicators located in the central office, and signal-bells at the subscribers' stations, and automatic circuit-controllers and circuits, substantially as described, whereby the indicators or signal-bells are operated according to the character of the current transmitted and at the will of the operator, substantially as set forth.

4. The combination, with generators at subscribers' stations constructed to produce both alternating and non-alternating currents, of a galvanometer and circuits and connections, substantially as described, whereby the current, according to its character, is made to effect different results, substantially as set forth.

5. The combination, with generators for producing both alternating and non-alternating currents, of automatic switch devices for directing the currents to different circuits according to their character, one circuit including the switch-board and ground, the latter either directly or through another station, and another circuit including an indicator and the receiving-telephone at the central office through a different course to the ground, substantially as specified.

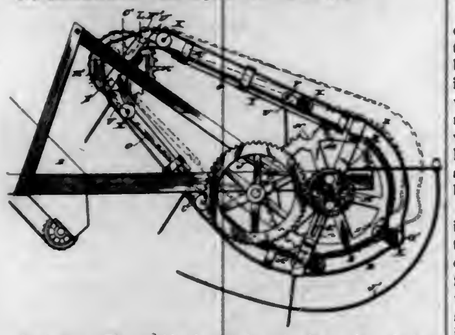
6. The combination, with generators for producing both alternating and non-alternating currents, of automatic switch devices, indicating devices, and switch-board arranged at the central office to form different circuits, according to the character of the current transmitted, substantially as specified.

7. The automatic switch device for telephonic systems, consisting of a coil and contact-plates in circuit with the main line, and a movable galvanometer-bar supported within the coil, and arranged in another circuit, and constructed to connect or disconnect the contact-plates according to its position, substantially as set forth.

8. The combination, with the annunciator-drops and generators for producing both alternating and non-alternating currents, of an automatic galvanometer device and circuits and connections, substantially as described, for mechanically operating the drop in central office or permit-

ting it to remain unaffected, according to the character of the current sent and at the will of the operator, substantially as specified.

322,836. HAY-LOADER. JOHN H. LUX, PHILIP LUX, and SAMUEL EDE, Earlville, Iowa. Filed Aug. 13, 1884. (No model.)

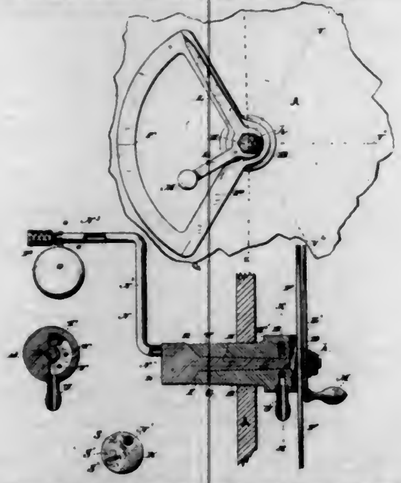


Claim.—1. The combination of the rake-shafts, the rake-bars journaled in tubular links in the said chains and having the cranks provided with anti-friction rollers, and the tracks having the steep portions E' and horizontal portions F' at their upper ends, and having the cams or protuberances G' at their lower ends, as and for the purpose shown and set forth.

2. The combination of the rake-chains having tubular links, the tubular rake-bars, and the cranks at the end of the latter secured in position by rake-teeth driven transversely through the said rake-bars and the inner ends of the cranks, as and for the purpose shown and set forth.

3. In a hay-loader, the combination of the drive-chains having tubular links, the rake-bars journaled in the said links, and having cranks provided with anti-friction rollers, and the tracks pivoted upon the upper rake-driving shaft and having slotted braces at their lower ends sliding upon the lower rake-driving shaft, as and for the purpose shown and set forth.

322,837. COMBINED GAGE-COCK AND INDICATOR. STEWART MACFARLANE, Drifton, Pa. Filed Oct. 14, 1884. (No model.)



Claim.—1. In combination with the spindle turning in a suitable bearing extending through the boiler-head, the indicator-hand on the outer end of the spindle, and the valve-head on the other end thereof, provided with on eccentric opening, the crank-shaped tube attached at one end of the valve-head, with its bore coinciding with the opening therein, and carrying on its outer end the float, and the discharge-passages in the spindle-bearing, so situated that if the spindle and valve be turned over beyond the extent to which it is moved by the float the opening in the valve-head can be brought to coincide successively with the discharge-openings in the bearing, substantially as shown and described.

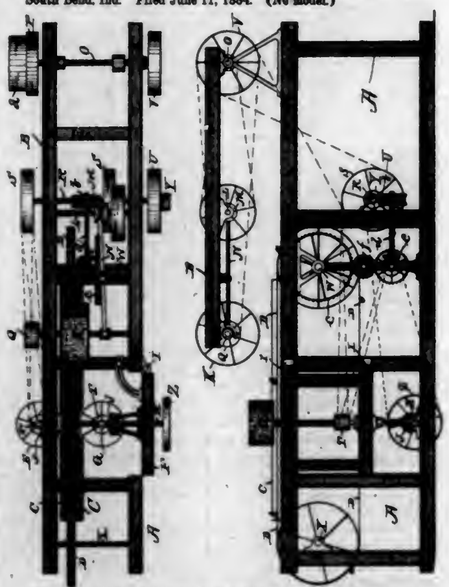
2. In combination with the spindle or shaft turning in a suitable bearing in the boiler-head and carrying on its outer end an indicator-hand and a suitable handle for turning the shaft, and on its inner end a tubular crank-shaped piece standing with reference to the axis of the shaft in the same plane with the indicator-hand and carrying a float, means, substantially as described, for preventing any escape of the contents of the boiler through the tube as the tubular crank is raised or lowered by the float, and for allowing such escape at different points as the shaft is turned to complete the circle of revolution, substantially as shown and described.

3. In combination with the rotary spindle, the valve-head carried on the inner end thereof provided with an eccentric opening, the tube tapped into the head, its bore connecting with such opening, said tube being bent outward in a plane with the axis of the shaft made open at its outer end, and carrying near such end a float, the valve-seat provided on the side opposite to that over which the opening in the valve moves as the valve is turned by the action of the water on the float, with a series of discharge-openings with which the opening in the valve-head can be brought into coincidence by rotating the shaft and valve, and a suitable indicator to show the position of the tube end within the boiler, substantially as shown and described.

4. The tubular shank provided on its inner end with several openings around its central bore, situated on one side of a vertical plane through the axis of the shank, and with passages from these openings communicating with a suitable discharge nozzle or opening, the spindle fitting within the central bore of the shank, carrying on its inner end a valve-head seated against the shank end and provided with an opening at the same distance from the axis of the spindle and valve as the openings in the tubular shank, the tube tapped into the valve-head, with its bore connecting with the opening therein bent outward substantially at a right angle in a plane through the axis of the valve, and carrying on its outer open end a float, and a suitable index-hand and handle on the outer end of the valve-spindle, substantially as shown and described.

5. In combination with the tubular shank or bushing adapted to be tapped through the boiler-head, having its central bore made tapering toward its outer end, the spindle and shaft fitting and rotating therein, the handle and index-hand carried on the outer end of the shaft, the valve-head on the inner end thereof, provided with an eccentric opening, the valve-seat on the end of the tubular shank, provided with a series of openings on one side communicating with passages in the shank connected with a suitable discharge-opening, and the tubular crank attached to the valve-head, with its bore communicating with the opening therein, carrying at or near its outer open end the float, substantially as and for the purpose described.

322,838. MACHINE FOR FINISHING PLOW-BEAMS. WILLIAM C. MARSHDANT, Hamilton, Ohio, assignor to the Economist Plow Company, South Bend, Ind. Filed June 11, 1884. (No model.)



Claim.—In a plow-beam finishing-machine, the combination of a work-supporting table, a feed-chain provided with feeding projections presenting above the level of said table, a sand-wheel arranged upon a vertical axis at the side of the table, a second sand-wheel similarly arranged and fitted to be adjusted with reference to the first sand-wheel, and a frame pivoted upon a horizontal axis and armed at its free end with a horizontal sand-wheel located above the table and adapted to have its height regulated by the object which it operates upon, substantially as set forth.

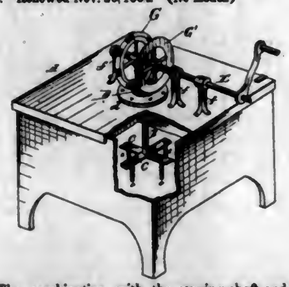
322,839. COMPOUND FOR PURIFYING WATER. ADOLPH MELKER and CHARLES MELKER, Evansville, Ind. Filed July 16, 1884. (No specimens.)

Claim.—1. A compound for purifying and preparing water for industrial and washing purposes, consisting of pulverized anhydrous carbonate of soda or potash, or a mixture of both, to which is added starch or other absorbent, substantially as set forth.

2. A compound for purifying and preparing water for industrial and washing purposes, consisting of pulverized anhydrous carbonate of soda, potash, or both, mixed with an absorbent, and a coloring-matter, such as indigo, indigotine, ultramarine, aniline, &c., substantially as set forth.

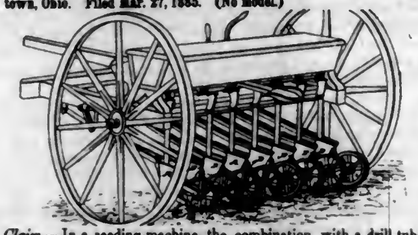
3. A compound for purifying and preparing water for industrial and washing purposes, consisting of carbonated alkali, an absorbent, a coloring-matter, and a perfume, substantially as set forth.

322,840. WASHING-MACHINE. ANDREW J. MERCER, Burdensville, assignor to James M. Mercer and Lorin E. White, Burden, Kans. Filed Mar. 1, 1883. Renewed Nov. 26, 1884. (No model.)



Claim.—The combination, with the stirring-shaft and the gear-wheel mounted thereon, of the driving gear-wheels engaged therewith on opposite sides and arranged to rotate in the same direction, each of said wheels being provided with a series of separated small groups of teeth, each arranged to give the wheel on the stirring-shaft a partial rotation, and a larger group arranged to give said wheel a complete rotation, the groups of teeth of each wheel being respectively arranged opposite corresponding spaces of the other wheel, substantially as and for the purpose set forth.

322,841. SEEDING-MACHINE. GEORGE W. MERKIMER, Newcomerstown, Ohio. Filed Mar. 27, 1885. (No model.)

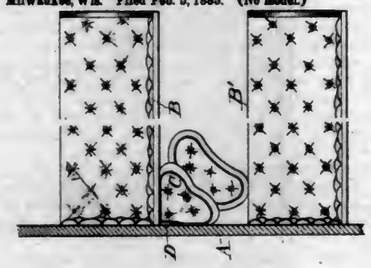


Claim.—In a seeding-machine, the combination, with a drill-tube, of a vertically-adjustable wheel or roller and fenders arranged in front of the latter, substantially as set forth.

322,842. METHOD OF REMOVING FIBER FROM COTTON-SEED. FREDK. MONTGOMERY, Waterloo, N. Y. Filed June 2, 1885. (No specimens.)

Claim.—The method of removing fiber from cotton-seed, which consists in exposing the cotton to the softening effect of the fumes of heated water of ammonia prior to subjecting it to the action of the saws of a gin.

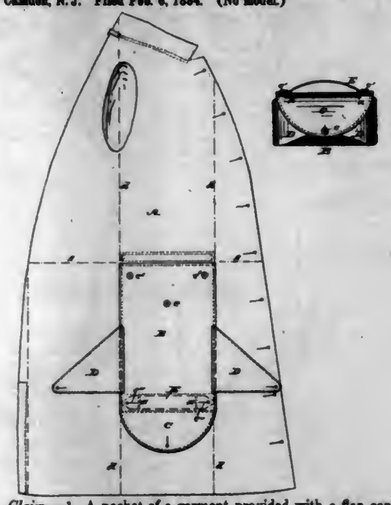
322,843. HEAD-REST FOR RAILWAY-CARS. CHARLES MUNAGLE, Milwaukee, Wis. Filed Feb. 5, 1885. (No model.)



Claim.—1. A rest consisting of a frame adapted to be removably secured to the side of the car, and having cushioned steps, as set forth.

2. The combination of rest C and its cushions and pintles with a strap, D, as set forth.

322,844. GARMENT AND CARRYING DEVICE ATTACHED THERETO. HENRY L. MYERS, Philadelphia, Pa., and JOHN W. ROGERS, Camden, N. J. Filed Feb. 6, 1884. (No model.)



Claim.—1. A pocket of a garment provided with a flap connected with one end thereof and flaps connected with the sides of the same, substantially as and for the purpose set forth.

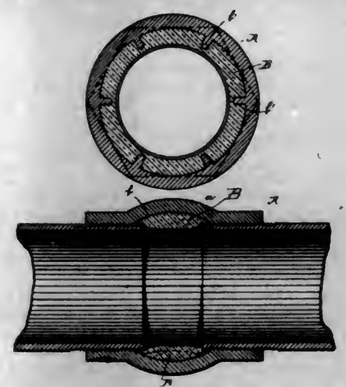
2. A pocket of a garment having a flap, buttoning devices, and a handle-strap, said flap and strap being at the bottom of the pocket, whereby, when the garment is formed into a roll, the pocket and flap are coiled around the same and the flap buttoned to the pocket, the handle-strap being presented for carrying purposes, substantially as and for the purpose set forth.

3. A pocket of a garment, in combination with flaps attached to the sides thereof and a handle-strap, whereby the garment may be rolled within the pocket, the sides of the roll covered by said flaps, and the bundle as formed carried by said strap, substantially as and for the purpose set forth.

4. A pocket of a garment, in combination with a flap attached thereto at one end, flaps attached to the sides of said pocket, and a handle-strap attached to said end flap, substantially as and for the purpose set forth.

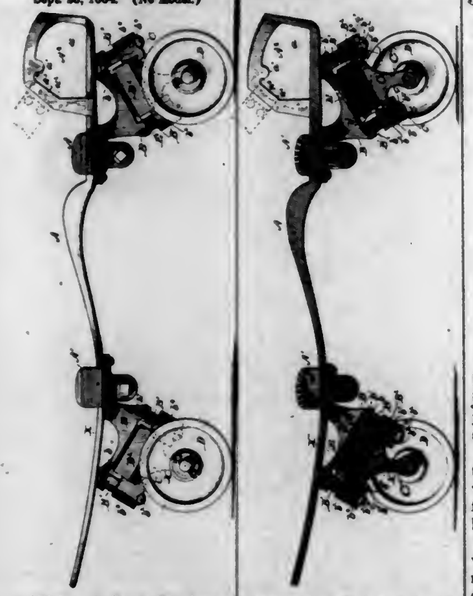
5. A garment having a pocket with buttons *c c'*, a flap with a button-hole attached to the end of the pocket, flaps with button-holes attached to the sides of the pocket, and a handle-strap attached to the end flap with button-holes *b* in its ends, substantially as and for the purpose set forth.

322,845. PIPE-COUPLING. RICHARD C. NUGENT, Pittsburg, Pa., assignor of one-half to Lenox Simpson, same place. Filed June 8, 1885. (No model.)



Claim.—The coupler A, provided with chamber *b*, fins *b'*, and gasket B, substantially as and for the purposes set forth.

322,846. ROLLER-SKATE. HARRISON OSBORN, Richmond, Ind. Filed Sept. 23, 1884. (No model.)



Claim.—1. In a roller-skate, the combination of a hanger having nibs, and sleeves adjustable upon said nibs and provided with open bearings, a rocker journaled in said bearings, and a cushion interposed between said hanger and rocker, substantially as described.

2. In a roller-skate, the combination of a hanger having nibs and guides, and sleeves adjustable upon said nibs, a rocker journaled in said sleeves, and a cushion between the hanger and rocker, substantially as described.

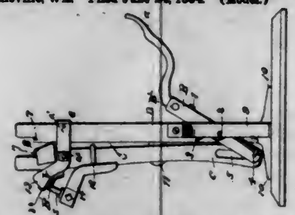
3. In a roller-skate, the combination of a hanger having nibs, a box having a rectangular opening, and sleeves having open bearings and adjustable upon said nibs, a rocker journaled in said bearings, and a cushion interposed between the hanger and rocker, substantially as described.

4. In a skate, a heel-iron having openings *a*, nibs *a'*, and recess a^3, substantially as described.

5. In a roller-skate, the combination of the hanger having the bearings and groove c^3, a rocker journaled on said bearings, a cushion interposed between said hanger and rocker, and adjusting-screws having inclined faces *c'*, substantially as described.

6. In a roller-skate, the combination of the hanger having nibs, the sleeves provided with open bearings, the rocker-plate journaled on said bearings, the cushion interposed between the hanger and rocker-plate, and the adjusting-screws inserted in said nibs, substantially as described.

322,847. COMPOUND METAL-WORKING MACHINE. ELAM A. OLIVER, Belleville, Wis. Filed June 24, 1884. (Model.)

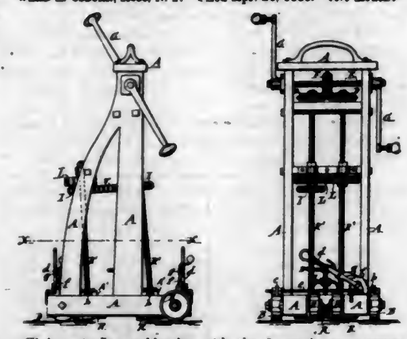


Claim.—1. The combination of the standard, the arm C, pivoted thereto and provided with a cutting-blade, and a gage-plate, 13, supported by the standard and adjustable, substantially as and for the purposes specified.

2. The combination of the standard, the bar C, pivoted thereto, the bar 12, arranged on the outer side of the bar C, and supported on the standard, the die carried by the bar 12, the bar 14, and the punch supported thereon, substantially as set forth.

3. The combination, with the standard and the bar C, both provided on their inner edges near their upper ends with shoulders 7, of the attachment bearing-sockets 17, adapted to fit on the standard and bar C and rest on shoulders 7, with their inner faces flush with the inner faces of the standard and the bar C, substantially as set forth.

322,848. MACHINE FOR DOUBLE-SEAMING TIN ROOFING. EDWARD L. OSBORN, Rose, N. Y. Filed Apr. 20, 1885. (No model.)



Claim.—1. In combination with the frame A, compressing-rollers R R, and their shafts R' R', the sliding boxes *a a*, set-screw *b*, for adjustably sustaining one of said boxes, and the spring *c* and push-pin *c'*, yieldingly sustaining the other of said boxes, substantially as described and shown.

2. In combination with the frame A, compressing-rollers R R, and their shafts R' R', the sliding boxes *a a*, set-screw *b*, spring *c*, provided with the push-pin *c'*, the lever *d*, rod *e*, connecting said lever with the free end of the spring *c*, and the ratchet *f* and dog *g*, for retaining said lever in its position, substantially as described and shown.

3. In a machine for double-seaming tin roofing, the combination, with the frame A, of the carrying-rollers B B, folders C C', compressing-rollers R R, shafts R' R', miter-gears D D, attached to said shafts, the shaft E, and the double miter-gear F, and cranks G G, attached to shaft E, substantially as described and shown.

4. In combination with the frame A, the box H, the folder-jaw C, secured stationary in said box, and the folder-jaw C', connected with said box yieldingly to accommodate itself to the increased thicknesses of the tin at the cross-seam thereof, substantially as set forth.

5. The within-described folder, consisting of the jaws C C', arranged opposite each other and having in their adjacent faces the winding-ledges *h h*, extending part way the length thereof, and rollers *n n*, projecting with a portion of their peripheries from the face of the jaws and over the ledges *h h*, the ledges and rollers of one jaw being disposed conversely in relation to the position of those of the other jaw, substantially as described and shown.

6. In combination with the frame A, mounted on carrying-rollers B B, and provided with the guide-grooves *i i*, the box H, sliding in said guide-grooves, folder-jaws C C', connected to said box, the bridge *l*, attached to the frame and spanning the box, and the adjusting-screw *m*, connecting the box with the bridge, substantially as described and shown.

322,849. SNOW-PLOW. EDWIN PAYNE, Oxbow, N. Y. Filed June 3, 1885. (No model.)

Claim.—1. A snow-plow rigid throughout its active parts and comprising a horizontal knife, a snow-dividing prow, and lateral conduits for conveying the snow in mass from below up and outward laterally from the machine, and upright scrapers arranged fore and aft of the discharge-openings of said conduits, substantially as described.

2. A snow-plow comprising the dividing-prow and knife, lateral conduits, the entrances to which are armed with knives and extending rearwardly and curved outward, and scrapers, substantially as described.

3. A snow-plow comprising the upwardly-inclined conduits having vertical inner walls, horizontal ceilings, and floors slanting laterally downward, combined with scrapers projecting laterally beyond said conduits, a snow-dividing prow, and knives, substantially as described.

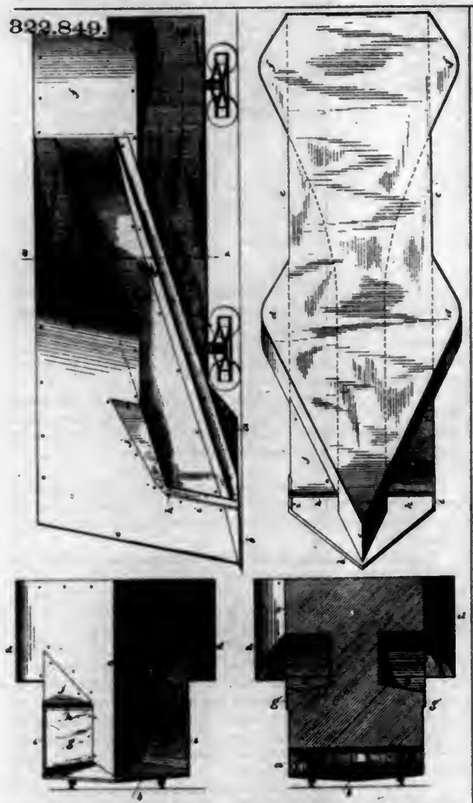
4. The combination of the cutting-knives, vertical and horizontal, the snow-dividing prow, the snow-elevating conduits and scrapers, and the false conduits superposed upon such conduits and provided with outwardly and downwardly slanting floors, substantially as described.

5. The combination, with the upwardly and rearwardly inclined conduits, and means for dividing the snow into them, of the laterally-projecting scrapers *d d* and *f f*, for removing the top surface of the snow beyond the cut made below, substantially as described.

6. The combination, with the upwardly and rearwardly inclined conduits, and means for dividing the snow into them, of the overhanging and laterally-projecting scrapers for removing the top surface of the snow beyond the cut made below and providing for backing, substantially as described.

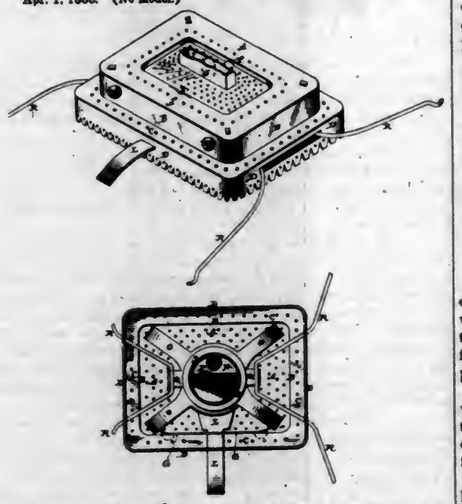
7. The knives *i*, extending laterally beyond the conduits, and the

322,849.



sheathing *g'*, overhanging the sides of the plow to give clearance for the plow in progressing through the snow, combined with the prow, and the conduits open laterally throughout their lengths, substantially as and for the purpose described.

322,850. LAMP-BURNER. HARRY D. PLACE, Newark, Ohio. Filed Apr. 1, 1885. (No model.)



Claim.—1. In a lamp-burner, a draft-plate made from a single piece of metal and having vertical sides B, the horizontal flange for supporting the chimney, and the vertical slotted flange for supporting the shade-holder, in combination with the shade-supporters, substantially as described.

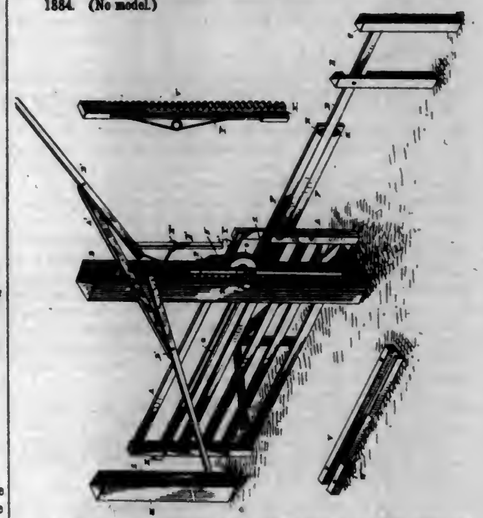
2. In a lamp-burner, a draft-plate made of a single piece and having the vertical sides B, and the horizontal flange C, with the spring which is fastened to the inner side of the plate, and which has projections on its ends to pass through openings in the flange C, and to bear against the inner side of the lower end of the chimney and hold it in place, substantially as set forth.

3. The combination of a lamp-burner having slotted flanges and provided with hooks, with the shade-supports which are bent double at their centers, and passed through the slots in the flanges to engage with said hooks, substantially as shown.

322,851. CALCIMINE COMPOUND. WILLIAM K. POWERS, St. Louis, Mo. Filed Feb. 9, 1885. (No specimens.)

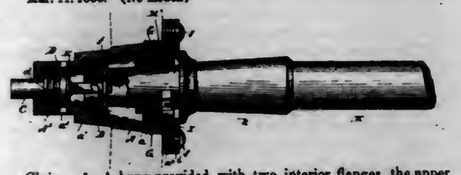
Claim.—The herein-described composition of matter to be used in making liquid calcimine, consisting of plastic clay, glue, and bichromate of potassium, in proportions substantially as specified.

322,852. GATE. WM. A. PRESTON, Fort Branch, Ind. Filed July 22, 1884. (No model.)



Claim.—The combination, with a sliding gate, of a pinion, drum, and pulley on a shaft journaled in the gate-supporting post, a vertically-moving rack-bar having an extended groove on one side, and a cord, wire, or chain connected to its ends, (the rack-bar and cord operating, respectively, on the pinion and drum,) and a cord, wire, or chain connected to the ends of the gate and passing around the pulley, substantially as and for the purpose specified.

322,853. COMBINED BUNG AND FAUCET FOR ALE AND BEER BARRELS. ROBERT M. REILLY and FRANCIS KING, Baltimore, Md. Filed Mar. 11, 1885. (No model.)



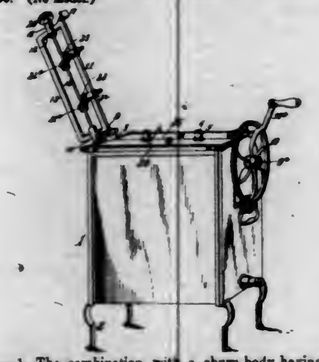
Claim.—1. A bung provided with two interior flanges, the upper one forming a seat for the gasket, the lower one forming a seat for the valve-stop, a valve-chamber, and radial openings thereto, in combination with a spring-valve having a bar, *f*, to receive the pressure of the faucet, the collar I, with its slots, flange, and exterior ears, the securing-plate H, and gasket G.

2. In a bung, a collar, I, provided with the internal and downwardly-projecting flange i^2 i', having slots to receive the locking-lugs of the faucet, and exterior flanges, *i*, to secure the collar to the bung, securing-plate H, and gasket G, substantially as and for the purpose set forth.

3. The combination, with the flanged shell of the bung, of the gasket G, securing-plate H, and the internally-flanged and slotted collar I, substantially as and for the purpose set forth.

4. The combination, with the bung, of the gasket G, fastening-plate H, and internally flanged and slotted collar I, and the faucet provided with two locking-lugs which enter the slots in the upper fastening-plate, and the flange *k*, substantially as and for the purpose set forth.

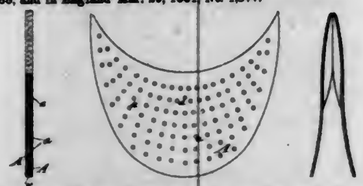
322,854. CHURN. KELITA A. ROGERS, Corning, Ohio. Filed Mar. 19, 1885. (No model.)



Claim.—1. The combination, with a churn-body having brackets provided with perforated clips or ears, of a gearing-frame consisting of a lower horizontal bar, 11, pivoted at one end to one of said clips or ears and having journal-bearings 14 14, and an upper arched bar, 12 13, having journal-bearings 15 15 on its vertical portions, the vertical spindles 24 24, journaled in the bearings 14 14 and adapted to be detachably connected with the dasher-shaft, the horizontal driving-shaft 19, journaled in the bearings 15 15, and gears for connecting said driving-shaft and spindles, substantially as described.

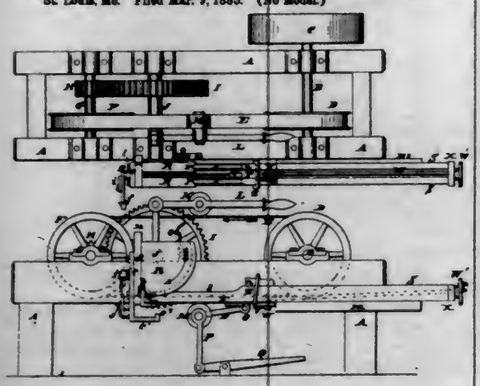
2. The combination, with a churn-body having brackets provided with perforated clips or ears, of a pivoted gearing-frame consisting of a lower horizontal bar, 11, having journal-bearings 14 14, and an upper arched bar, 12 13, having journal-bearings 15 15, the vertical spindles 24 24, journaled in the bearings 14 14 and adapted to be detachably connected with the dasher-shafts, the horizontal driving-shaft 19, journaled in the bearings 15 15, gears for connecting said driving-shaft and spindles, and a detachable balance-wheel on one end of the driving-shaft, substantially as described.

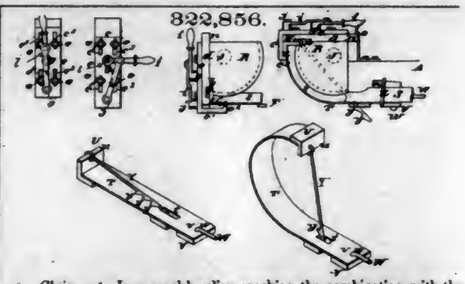
322,855. ARMHOLE-GUSSET. WILLIAM SACHS, Berlin, Germany. Filed July 1, 1882. (No model.) Patented in Belgium Nov. 11, 1880, No. 53,001; in France Nov. 30, 1880, No. 139,753; in Austria-Hungary Jan. 29, 1881, No. 35,063 and No. 2,615; in Germany Feb. 8, 1881, No. 12,688, and in England Mar. 29, 1881, No. 1,377.



Claim.—A gusset for the armhole of a garment composed of two outer pieces of perforated impermeable water-proof material, and one or more pieces of absorbing material interposed between them, all of said pieces having concave upper edges, and being connected together along said upper edges, but otherwise unconnected together, substantially as specified.

322,856. MACHINE FOR BENDING WOOD. CHARLES E. SARGENT, St. Louis, Mo. Filed Mar. 9, 1885. (No model.)





Claim.—1. In a wood-bending machine, the combination, with the turning head or quadrant R, having the L-shaped clamp secured thereto, of the flexible metallic strap T, having the clip U, adapted to be engaged by the clamp on the turning-head, the clamp-ring Z, for embracing the piece being bent, and the chord-bar Y, for holding the parts in curved position, substantially as set forth.

2. In a wood-bending machine, the combination, with the turning head or quadrant R, of the sliding clamp secured to said quadrant, the lever *f*, fulcrumed to said quadrant, and the link *i*, connected at its respective ends to the lever *f* and the sliding clamp, substantially as and for the purpose set forth.

3. In a wood-bending machine, the combination, with the turning-head, of a sliding clamp, secured thereto, and a toggle-connection between said head and clamp, whereby the latter is operated, substantially as described.

4. In a wood-bending machine, the combination, with the turning-head R, of the clamp having a slotted locking-plate, *c*, bolts *e*, projecting from said head and through said slots, the hand-lever *f*, fulcrumed to the said head, and the link *i*, connected at its respective ends to said hand-lever and sliding locking-plate, substantially as set forth.

5. The combination, with a wood-bending machine, of a removable frame, substantially as herein described, for holding the piece during and after the bending operation, said frame consisting of the flexible metallic strap T, the tie-rod W, separate from and adapted to be engaged with the said strap T, the plate X on the tie-rod W, upon which the end of the piece being bent bears, and the chord-bar Y, adapted to engage the strap T and retain it in the curved shape imparted to it by the bending-machine, substantially as set forth.

322,857. ELECTRIC SWITCH. FREDERIC SCHAEFER, Boston, Mass. assignor, by direct and mesne assignments, to Leopold Schlagelmilch, trustee, same place. Filed Nov. 26, 1884. (No model.)



Claim.—1. An inclosing-case, an insulating-block therein, and contact-pieces supported on the said block, each provided with a yielding upright, combined with the actuating-spindle pivoted between the contact-pieces and provided with a connecting-piece one arm of which engages one of the yielding uprights, and the other arm provided with a curved portion forces the second yielding upright from its normal position when the spindle is turned to break the circuit, the said yielding upright holding the connecting-piece in a given position in open circuit until the said spindle is positively moved to close the circuit, substantially as described.

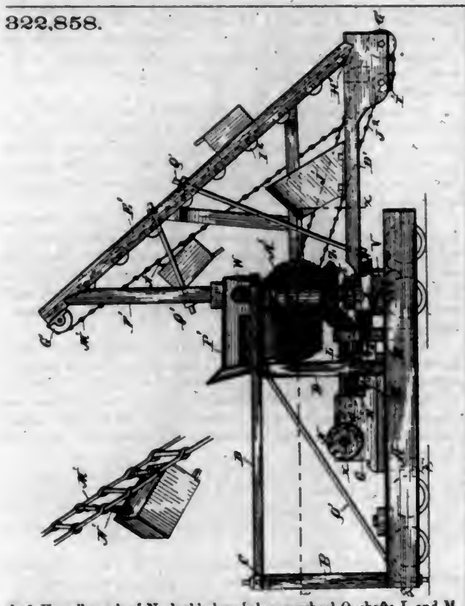
2. The inclosing-case and insulated block secured therein, the said block having contact-pieces rigidly attached thereto and provided with yielding uprights, one of the said uprights having a shoulder, combined with the actuating-spindle provided with a connecting-piece having one arm engaging the shouldered upright to close the circuit, and a second arm provided with a curved finger having a projection, the said curved finger engaging the second yielding upright when the circuit is closed, and forcing the said yielding upright from its normal position, being held in engagement therewith by the action of the said yielding upright when the circuit is opened, substantially as and for the purpose specified.

3. An inclosing-case provided with contact-pieces, combined with an actuating-spindle having a key at its loose end and being provided with screw-threads and a transverse slot, 2, and the retaining-nut, and a connecting-piece to engage the yielding uprights of the contact-pieces, the said connecting-piece resting in the slotted end of the spindle, substantially as described.

322,858. EXCAVATING-MACHINE. HENRY J. SCHERPF and CHARLES B. WOLF, Pulaski, Ky. Filed May 15, 1885. (No model.)

Claim.—1. The frame A, the trucks secured between the sides of the said frame, the upright bearing-frames for the several shafts, pulley-

322,858.

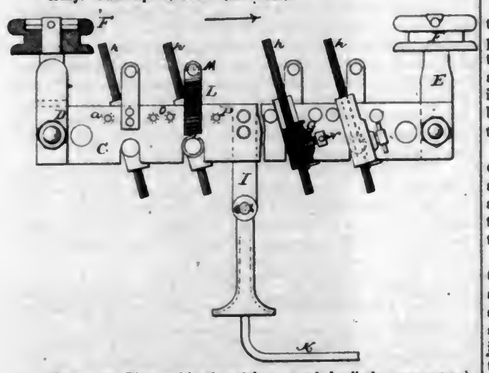


shaft K, pulley-wheel N, double-beveled gear-wheel O, shafts L and M, provided with their loose pinions P and Q, and clutch-collars, levers R and S, for shifting said collars, worm U, and pinion T, in combination with the gear mechanism for working the buckets and turning the crane, substantially as and for the purpose shown and set forth.

2. The frame A, uprights P, cross-beam D, with its end bifurcated, hinged bolt R', plate V, shaft W, cogged disk X, collar Y, and pin Y', in combination with worm U, the power-transmitting shafts and cogs, and the pinion-shifting mechanism, substantially as and for the purpose shown and set forth.

3. The combination of the frame A, having uprights and cross-beams, as described, plate V, shaft W, cogged disk X, collar Y, double-beveled gear-wheel Z, sleeve C', and shaft B', projecting horizontally from said sleeve, gear A', with its sprocketed sleeve journaled upon said shaft, the crane consisting of the sills D', oblique timbers E', and vertical timbers F', connected to the top of shaft W, sprocket-chain J', sprocket-wheel K', toothed roller G', rollers I', carrying chain M', the buckets secured to the said chain, and the shaft-and-cog power-transmitting mechanism, substantially as and for the purpose shown and set forth.

322,859. ELECTRIC RAILWAY. ERNST W. SIEMENS, Berlin, Germany. Filed Apr. 8, 1885. (No model.)



Claim.—1. The combination of the suspended rail, the contact-truck having brushes that press against the under surface of the conducting-rail, and the pendent socket having a flexible conductor leading to the railway-carriage.

2. In an electric railway, the combination of a conducting-rail with a smooth under surface for the contact-brushes, connected with a stationary dynamo-electric machine, and an insulator from which the conducting-rail is suspended.

3. The contact-truck consisting of two side cheeks, C C, connected by bolts D, and uprights E, provided with grooved rollers F, as and for the purposes described.

4. The combination of the contact-truck having sockets G, and stop-pins, *o*, with brushes adjusted by clamping-screws, as and for the purposes described.

5. In an electric railway, the combination, with a rail connected with a stationary dynamo, of a series of brushes mounted in a traveling truck, and having springs which cause them to press against the side of the rail, as and for the purposes described.

6. The combination, with a rail connected with a stationary dynamo-electric machine, of a truck movable upon the rail, and having grooved rollers which travel upon the edge thereof, as and for the purposes described.

7. The combination of a rail, connected with a stationary dynamo-electric machine, with a truck provided with sockets in which are secured contact-brushes that press against the under surface of the rail, so as to carry the current from the latter to the frame of the truck.

8. The combination, with a conducting-rail, of a contact-truck having reversible brushes provided with springs and stops, as and for the purposes described.

9. In an electric railway, the combination of one or more stationary dynamo-electric machines, a movable car having an electro-dynamic motor mounted thereon, a conductor arranged above or at the side of the movable car or vehicle, and a branch conductor provided with a contact-truck having reversible brushes in electrical contact with the conductor and electrically connected with the motor, as and for the purpose described.

10. The combination of a conducting-rail electrically connected with one pole of a dynamo-electric machine, a traveling contact-truck provided with reversible brushes, an electro-dynamic motor electrically connected with the contact-truck and mounted upon a movable car, axle-boxes electrically connected with the motor, wheels the axles of which revolve in the axle-boxes, and rails supporting the wheels and electrically connected to the stationary dynamo-electric machine, as and for the purposes described.

11. The combination, substantially as herein set forth, of an electro-dynamic motor mounted upon a movable vehicle, a circuit-controlling lever capable of closing the circuit upon the commutator of the motor to produce either forward or backward motion of the motor, and a traveling contact-truck provided with reversible brushes electrically connected with the motor, as and for the purposes described.

12. The combination, substantially as herein shown, of an electro-magnetic motor and its commutator, with two sets of contact-brushes electrically connected with a traveling contact-truck having self-reversing brushes, one set of contact-brushes being so adjusted as to produce rotation of the motor in one direction, and the other set so adjusted as to produce rotation in an opposite direction.

13. The combination, in an electric railway, substantially as herein described, of an electrical dynamic motor, two sets of contact-brushes, a lever adapted to throw either one of the two sets of contact-brushes into contact with the commutator, and the other set out of contact therewith, and a contact-truck having reversible brushes connected to the car, whereby a single movement of the lever reverses the direction of travel of the car.

14. The combination of an electro-dynamic motor and its commutator, two sets of contact-brushes, a lever capable of being placed in a position for throwing the brushes for producing a direct motion into contact with the commutator, or removing all contacts from the commutator, and of throwing brushes for producing a reversed motion of the motor into contact with the commutator, and a contact-truck having reversible brushes connected to the car upon which the motor is placed, as and for the purposes herein described.

15. The combination, substantially as herein set forth, of an electro-dynamic motor and its commutator, two sets of commutator-brushes, adjusted respectively to produce direct and reversed motion of the motor, a reciprocating rod or bar, operated by levers attached at each end thereof, and a contact-truck provided with reversible brushes attached to a car.

16. The combination, substantially as herein set forth, of an electro-dynamic motor and its commutator, two sets of commutator-brushes arranged to produce either a direct or reversed motion of the motor, a sliding rod or bar adapted to throw one set of brushes into contact with and the other set out of contact with the commutator, devices for adjusting the position of the shifting or sliding bar, and a traveling contact-truck provided with reversible brushes electrically and mechanically connected to a car.

17. The combination, substantially as herein shown, of an electro-dynamic motor and its commutator mounted in a depending frame beneath the car with two sets of commutator-brushes, one of which is so adjusted in relation to the commutator as to produce rotation of the motor in one direction, and the other of which is so adjusted as to produce rotation in the opposite direction, and a contact-truck provided with brushes which reverse themselves when the direction of the motor of the car is changed.

18. The combination, substantially as set forth, of an electro-dynamic motor and its commutator, supported by suspended beams, two sets of contact brushes or devices, respectively adjusted to produce direct and reverse motion, a shifting-rod passing along underneath the car and connected with the rocking frame of the commutator-brushes, and a contact-truck traveling upon a conductor and provided with brushes which reverse themselves when the direction of the motion of the car is reversed.

19. The combination, substantially as set forth, of an electro-dynamic motor and its commutator suspended by beams from the bottom of the car, two sets of contact-brushes or devices, respectively adjusted to produce direct and reversed motion, a shifting-rod passing along underneath the car and connected with the rocking frame of the commutator-brushes, vertical spindles at each end of the car connected by levers with the shifting-rod, and a traveling contact-truck having reversible brushes electrically connected to the contact-brushes of the commutator

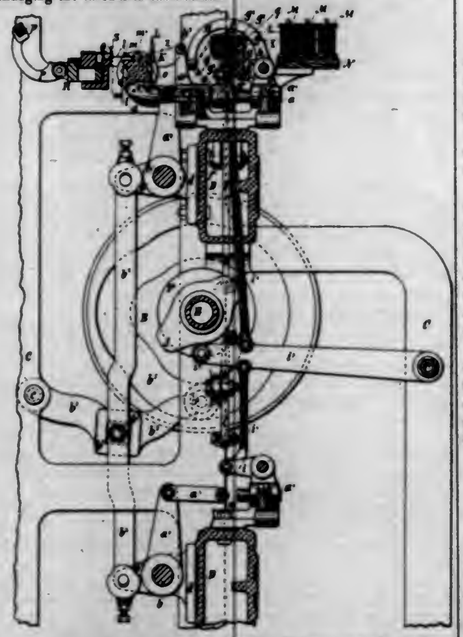
20. The combination, substantially as herein set forth, of an electro-dynamic motor suspended by bearers from the bottom of the car, and having upon its axle a pitch-wheel, a large pitch-wheel upon the axle of the car-wheel, and a pitch-chain passing over the small pitch-wheel on the axle of the motor and the large pitch-wheel on the axle of the wheels, and a traveling contact-truck having reversible brushes, as and for the purposes described.

21. In an electric railway, the combination, substantially as herein set forth, of a frame suspended beneath the car, having resistances connected together in series, a series of contact-plates electrically connected together, a contact-lever which makes the same connection with the contact-plates when moved a certain distance in one direction as when moved a certain distance in a reversed direction, and a contact-truck having reversible brushes and electrically connected with the contact-lever.

22. The combination of the contact-plates a' b' c' d' e', connected, respectively, with the contact-plates a b c d e, the contact-lever N, which on being moved to the same angle of resistance on either side of its contact position makes the same contact, and the contact-truck having reversible brushes electrically connected to the contact-lever.

322,860. EMBROIDERING-MACHINE. JULIUS SOROTKA, Plauen, (Voigtland,) Germany. Filed Dec. 15, 1884. (No model.) Patented in Canada Jan. 20, 1885, No. 20,927.

Brief.—The needle-bar, carrying its gangs of needles, is moved toward and away from the cloth being embroidered, the take-ups being held in a stationary part of the frame. The tension devices give an intermittent friction to the threads. The gangs of needles serve to make embroideries with threads of two, three, or four distinct colors without changing the threads in the needles.



Claim.—1. The combination of the disk B, keyed upon the driving-shaft E, and provided on the inner side with a cam-groove, b^2, with lever b^4, pivoted at c, and provided at the outer end with the roller b^5, resting in groove b^2, connecting-rod b^3, block b^7, sliding in a rectangular hole of lever b^4, and connected with connecting-rod b^3 by means of pin b^8, lever b', keyed upon shaft b, lever a^4, connecting-rod a^3, ring a^2, the cylindrical rods a, carrying the needle-bar A, and the bearings a', as described, for moving the needle-bar A toward and away from the cloth, as specified.

2. In an embroidery-machine using needles and shuttles, the combination of reciprocating rods a with needle-bar A, journaled to said rods, and carrying outwardly-projecting needles l, arranged in rows, with the stationary bobbins M, arranged in sets with the respective rows of needles on the needle-bar, and with the stationary bar h^2 and movable tension-bar h', substantially as specified.

3. The combination of the reciprocating bars g', sliding between the fast bars g, attached to the angle-iron G, with the wooden blocks g^2, secured upon the bars g and g', one end of the said blocks g^2 being flat and covered with a piece of fabric, y, while the other end of the blocks g^2 is circular and covered with a piece of emery-cloth, x, or of other rough material, and with means for reciprocating the bars g', substantially as specified.

4. The combination of the undulated disk F, keyed upon the driving-shaft E, with lever f, pivoted at f^2, and resting with its roller f' against the side of the disk F, and the bars g', provided with blocks g^2, having a rounded end covered with emery-cloth, x, or its equivalent, and placed with their rounded ends alternately with the rounded ends of similar blocks attached to the stationary bars g, substantially as and for the purpose specified.

5. The needle-bar A, capable of turning on its longitudinal axis, and provided with two, three, or more rows of needles, l, as described, in combination with rods a, connecting-rod a^3, lever a^4, shaft b, and means of oscillating said shaft b, arranged to operate in the manner and for the purpose described.

6. The combination of the needle-bar A with a disk, o, provided with holes o', with the pin m', sliding in a hole of lug m, formed at the bearing of needle-bar A, and the flat spring m^2, as described, and for the purpose specified.

322,861. HORSESHOE-PAD. MARTIN S. STARKWEATHER, Boston, Mass. Filed Apr. 4, 1885. (No model.)



Claim.—1. An elastic hoof pad or cushion having the thinner part A for the toe of the hoof, a central open aperture, a, the edge wall a' of which is constructed, substantially as set forth, to lie above the lower surface of the shoe, and having the thicker part B B' below the rear part of the hoof and between the rear ends of the shoe, the calks B' B' projecting forward from the part B and downward below all of the forward or toe part of the rubber, and the said thicker rear part, B B', extending out squarely to the inner edges of the shoe, substantially as set forth.

2. The combination, with the shoe, of the elastic hoof-pad having the thinner part b adapted to be secured to the hoof by the shoe-nails, and the thicker part B B', the side walls, b', of which fit squarely against the inner edges of the shoe, said part B B' extending to a point below the rear ends of the shoe, and having at the front thereof vertical walls or edges extending down below the forward parts of the pad, the parts being constructed and arranged, substantially as set forth, whereby the metallic shoe at the front rests upon the ground, and the rubber at the rear rests upon the ground, substantially as set forth.

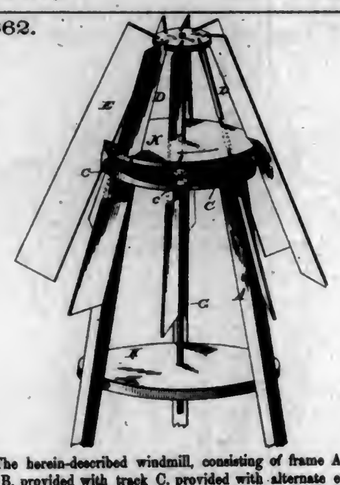
3. An elastic hoof pad or cushion having the thinner part b adapted to lie between the shoe and the hoof, and the thicker part to lie below the frog and receive the pressure thereof, it being formed with the central part, B, extending below the shoe, the recesses b^2 b^3, and the ribs or projecting part b^3 adjacent to the metal shoe, all of said parts of the pad being integral, substantially as set forth.

322,862. WINDMILL. FERDINAND W. STARR, Springfield, Ohio, assignor of one-half to Thomas Wall, same place. Filed Aug. 11, 1884. (No model.)

Claim.—1. In combination with frame A, bed B, and track C, wind-wheel D, having disk K and shaft G, the latter having a head or enlargement, d, and rod J, provided with a cup or socket, e, to receive the head d of rod G, and provided with retaining-pins f and cap g, as shown.

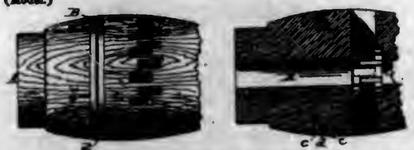
2. A windmill consisting of a supporting-frame having a platform at its upper end, a track having its surface provided with alternate elevations and depressions, a horizontally-rotating wind-wheel provided with a horizontal head or disk, and rollers interposed between said track and disk and serving to impart a vertical motion to the wheel as the latter rotates, substantially as described and shown.

322,862.



3. The herein-described windmill, consisting of frame A, having platform B, provided with track C, provided with alternate elevations and depressions, wheel D, provided with blades E, disk K, and shaft G, and frame H, interposed between the platform B and disk K, encircling shaft G, and provided with rollers c, substantially as shown and described.

322,863. VEHICLE-HUB. FERDINAND W. STARR, Springfield, Ohio, assignor of one-half to Thomas Wall, same place. Filed Mar. 6, 1885. (Model.)



Claim.—1. A hub-band for vehicles, consisting of a piece of sheet metal bent to T form, substantially as shown and described.

2. The combination, with a hub having an annular dovetail groove, of a metal band seated in and filling said groove, substantially as shown.

3. In combination with a hub having dovetail groove a, band B, of T form in cross-section, seated in said groove and spread out to fill the same, as set forth.

4. In combination with hub A, having groove a, band B, inserted in said groove, and staple c, passing through the contiguous ends of the band and into the hub.

5. As a new article of manufacture, a sheet-metal hub-band having a web or tongue radial to the axis of the hub, substantially as and for the purpose set forth.

322,864. DECORATION OF SILVERED GLASS SURFACES AND SIGNS. REBECCA STERN, Philadelphia, Pa. Filed Feb. 4, 1885. (Model.)

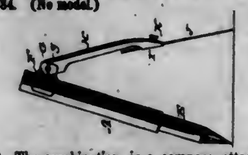
Brief.—Improvement on Patent No. 305,732, dated September 23, 1884.



Claim.—1. An ornament, &c., formed of glass having a silvered back and an etched face, the design thereon being crystallized or dull and the ground being bright, as stated.

2. The method of forming an ornament, &c., consisting in marking out on the face of a plate of glass having a silvered back the design, then covering the ground portion with asphaltum or other suitable material, next etching said face where the design is laid off, and finally removing the acid and asphaltum, the design being crystallized and appearing dull and the ground left bright, substantially as stated.

322,865. COMPASS ATTACHMENT FOR PENCILS. CARL W. STUART, New York, N. Y., assignor to F. W. Devoe & Co., same place. Filed Nov. 15, 1884. (No model.)

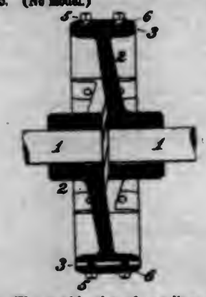


Claim.—1. The combination, in a compass attachment for pencils or similar marking implements, of the tube or sleeve adapted to be fitted upon the pencil, the hinge at its upper end and means for tightening the same, the hinged arm having a recess adapted to receive either end of the needle, and the reversible needle adapted to be fastened adjustably in the arm, substantially as and for the purpose shown and set forth.

2. The combination of the slitted tube or sleeve A, open at both ends, hinge F G, having tightening-nut g, arm H, reversible and extensible needle J, and means for properly securing the same in the arm, substantially as and for the purpose shown and set forth.

3. The hereinbefore-described compass attachment for pencils or similar marking implements, consisting of a slitted spring tube or sleeve having suitable scales marked on opposite sides of the slit or slot, and provided on one side with a projecting bracket having a hinged arm and thumb-nut for fixing said arm in its adjusted position relative to the sleeve, said arm provided with an extensible reversible needle adapted to be inserted with either end into a recess in the arm near the hinge, substantially as and for the purpose shown and set forth.

322,866. SHAFT-COUPLING. HARRIS TABOR, New York, N. Y. Filed June 18, 1885. (No model.)



Claim.—1. The combination of two lines or sections of shafting, and a flexible strip or band secured by intermediate connections at different points in its length to one and the other of said lines alternately, substantially as set forth.

2. The combination of two coupling heads or bearers, each secured to a line or section of shafting, and a flexible strip or band secured peripherally to one and the other of said coupling-heads alternately, at points separated by spaces over which the flexible band passes freely, substantially as set forth.

3. The combination of two coupling heads or bearers, each secured upon a line or section of shafting, and having a series of outer bearing-faces, said bearing-faces being fixed alternately to one and to the other coupling-head, and a flexible strip or band passing over said bearing-faces and secured thereto, substantially as set forth.

322,867. CAP-HEADED SCREW-NUT. CHARLES D. THATCHER, Springfield, Ohio. Filed Jan. 14, 1885. (No model.)



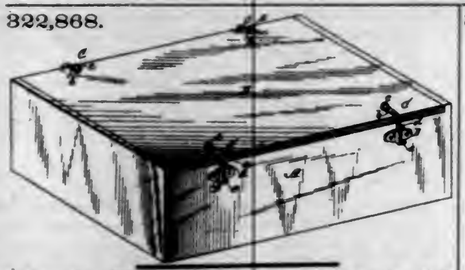
Claim.—1. A screw-threaded nut, A, provided with a flange, b, and claws d, projecting therefrom parallel with the axis of the nut, combined with the base E, united to said nut directly by means of said claws, in the manner substantially as set forth.

2. The screw-threaded nut A, provided with the claws d, and the base F, united to said nut, as set forth, combined with the cap H and the shield-former G, substantially as described.

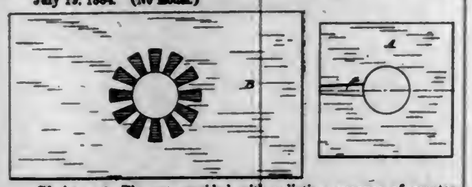
322,868. BOX-FASTENING. WM. S. THAYER, Owego, N. Y. Filed Apr. 20, 1885. (No model.)

Claim.—A fastening for the covers or lids of boxes, consisting of a pivoted clamp adapted to rest over and upon said cover or lid, and stops to limit its horizontal motion in either direction, substantially as and for the purpose set forth.

322,868.



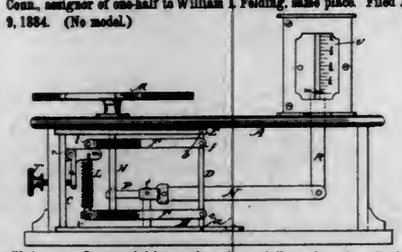
322,869. NUT-LOCK. DANIEL S. TROY, Montgomery, Ala. Filed July 19, 1884. (No model.)



Claim.—1. The nut provided with radiating grooves of greater width at their inner ends than at their outer ends, the fish-plate or the like, against which the nut bears, having grooves radiating from the bolt-hole, these latter grooves being at the bolt-hole of the same width as those in the nut, and widening as they extend outward, and the soft-metal plug, substantially as described.

2. The nut provided with one or more grooves on its inner face, which grooves gradually increase in width and decrease in depth from the outer to the inner end, the fish-plate provided with a groove or grooves, and the soft-metal plug.

322,870. WEIGHING-SCALE. ANDREW TURNBULL, New Britain, Conn., assignor of one-half to William I. Felding, same place. Filed Aug. 9, 1884. (No model.)



Claim.—1. In a weighing-scale, substantially such as described, the combination of the post D, constructed with the trunnions *e f* as an integral part thereof, the parallel links F, having their two arms pierced corresponding, respectively, to the said trunnions *e f*, and closed upon the said trunnions, the base B, and top plate, E, connected by said post D and the post C, the free ends of the links hung to the upright H, the platform M, resting on said upright, the spring L, hung to suspend said links, with a beam and indicator, substantially as described.

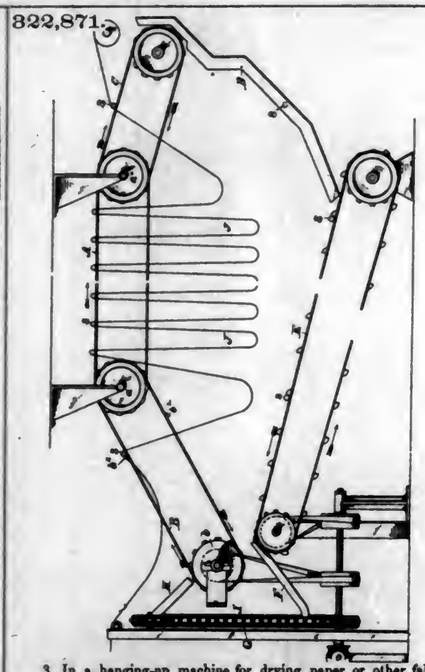
2. The combination of the base B, top plate, E, the two posts C D, connecting said base and top plate, said post D constructed with the trunnions *e f* as an integral part thereof, the parallel links F F, pierced at one end and closed upon said trunnions, the upright H, connecting the free ends of said links and carrying the platform, the spring L, bell-crank lever *m n*, adjusting-screw T, beam N, and indicator, substantially as described.

322,871. HANGING-UP AND CARRYING-OFF MACHINE FOR WALL-PAPER. JOHN WALDRON, New Brunswick, N. J. Filed Apr. 2, 1885. (No model.)

Claim.—1. In a hanging-up machine for drying paper or other fabric in festoons, the following elements in combination: lath or carrying-up belts, two parallel belts or equivalent carrying media forming lines, a returning-chute, lath-returning belts, and an elevating device for receiving the returned slats from the lath-returning belts and redepositing them upon the breast of the lath or carrying-up belts, substantially as described.

2. In a hanging-up machine for drying paper or other fabric in festoons, the following elements in combination: lath or carrying-up belts, two parallel belts or equivalent carrying media forming lines, carrying-off belts, a returning-chute, and lath-returning belts for returning the delivered laths from the lines to the carrying-up belts, substantially as described.

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3. In a hanging-up machine for drying paper or other fabric in festoons, the following elements in combination: lath or carrying-up belts, two parallel belts or equivalent carrying media forming lines, a returning-chute, lath-returning belts for returning the delivered slats from the lines to the carrying-up belts and lifting-belts, substantially as described.

4. In a hanging-up machine for drying paper or other fabric in festoons, the following elements in combination: carrying-up belts, two parallel belts or equivalent carrying media forming lines, carrying-off belts, a returning-chute, lath-returning belts for returning the delivered laths from the lines, a receiving-chute, lifting-belts, and a delivering-chute for delivering upon the lath-belts, substantially as described.

5. The combination, to form a lifting device for depositing returned laths upon the lath-belts of a hanging-up machine for drying wall-paper and other fabric in festoons, of the receiving-chute, the lifting-belts, and the delivering-chute, substantially as set forth.

6. In a machine of the class herein recited, the combination of the hinged gravitating flap with the delivering-chute and with the lifting-belts, substantially as and for the purpose set forth.

322,872. WIRE-FENCE MACHINE. SAM WATSON, Straughn, Ind. Filed Apr. 29, 1885. (No model.)

Brief.—The reels and tension devices are carried on a stationary frame. The twisting-frame is pivoted adjustably to a base which slides in ways on a movable truck. The eyes in the twisting-heads through which the wires pass are in the form of slots, which are made longer or shorter by cross-bars secured by set-screws.

Claim.—1. In a wire-fence machine, the combination of the part or truck A^3, the part A^4, held in place by ways on the part A^3 and connected to the latter by mechanism for shifting its position, a twisting-frame pivoted upon the part A^4, and the part A^3, having the reels and tension devices.

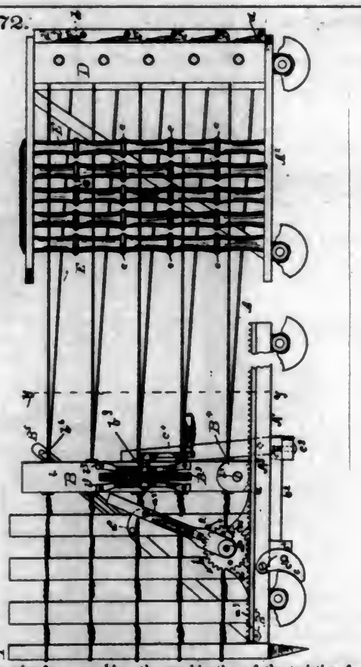
2. In a wire-fence machine, the combination of the stationary part A^3, the sliding part A^4, the twisting-frame having the tubular twisters and pivoted upon part A^4, and reels and tension devices for regulating the tension of the wire, substantially as described.

3. In a wire-fence machine, the combination of the parts A^3 and A^4, the part A^3 having the overlapping strips and rack-bar a^3, and the part A^4 having the cog-wheel journaled thereon and meshing with rack-bar a^3, and having the spring-pawl, substantially as described, whereby the twisting-frame can be forced against the picket and gradually withdrawn as the wire is twisted, substantially as described.

4. In a wire-fence machine, the combination of the part A^3, the part A^4, having the twisting-frame pivoted thereto, and the arm B^3, pivoted to the base and provided with the slot for the set-screws by which it is attached to the twisting-frame, substantially as described.

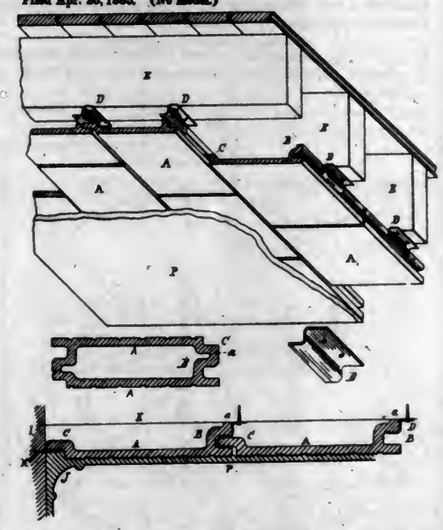
5. In a wire-fence machine, a tubular twisting-head having the elongated eyes and the bars for regulating the size of the eyes, substantially as and for the purpose described.

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6. In a wire-fence machine, the combination of the twisting-frame and its supports and the part A^3, having the reel-frame and reels, and the parts E, interposed between the reels and the twisting-frame, substantially as described.

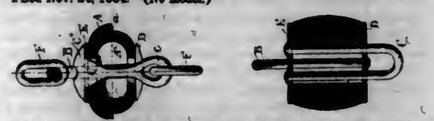
322,873. FIRE-PROOF CEILING. PETER B. WIGET, Hyde Park, Ill. Filed Apr. 20, 1885. (No model.)



Claim.—1. In a fire-proof ceiling which is to be plastered, the tiles A, grooved on one edge and tongued on the other and put together so as to form a continuous tongued and grooved construction, in combination with cleats D, which catch under the upper lips of the grooved edges and are attached to the under sides of the floor-timbers or floor-planks, as and for the purpose specified.

2. For the support of fire-proof tile-ceilings, the sheet-metal cleats D, bent so as to have two horizontal portions and one vertical portion, the upper horizontal portion being fastened to the under side of the floor-planks or floor-timbers, and the lower horizontal parts catching under the upper lips of the grooved edges of the tiles, as specified and shown.

322,874. CHAIN-PUMP BUCKET. WILLIAM B. WILCOX, Chicago, Ill. Filed Nov. 24, 1884. (No model.)

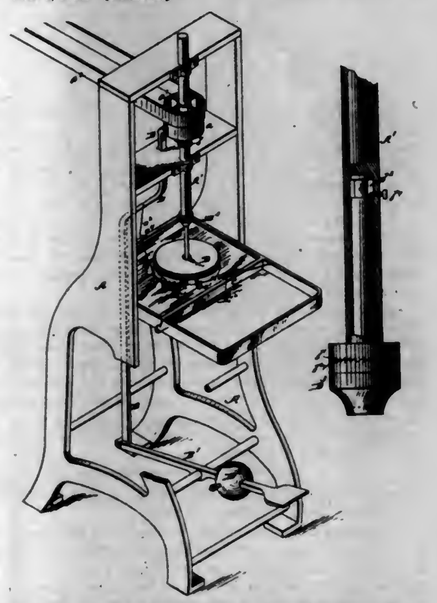


Claim.—1. In a chain-pump bucket, the combination, with an elastic packing, of two disks or rings bearing upon opposite sides of the packing, and two separate rods or links extending through the packing and each connected with a separate disk, substantially as and for the purpose set forth.

2. In a chain-pump bucket, the combination, with a hollow elastic body or packing, of two disks or rings bearing upon opposite sides of the packing, and two separate links or rods for the attachment of the pump-chain, extending through the said packing and each connected with a separate disk or ring, substantially as and for the purpose set forth.

3. In a chain-pump bucket, the combination, with a centrally-apertured flexible packing, A, of a U-shaped bar or link, B, provided at one end with a disk or flange, D, adapted to bear upon the said packing, an apertured disk, E, opposed to the disk D, and a link, C, provided with a cross-bar, C', engaged with the disk D, substantially as and for the purpose set forth.

322,875. SCREW-CUTTING MACHINE. LEWIS WILKINSON, Chicago, Ill.; Frederick M. Steel administrator of said Wilkinson, deceased. Filed June 5, 1884. (No model.)



Claim.—1. In a screw-cutting machine, the combination, with a revolving blank-holder sliding vertically in the main frame, of a cutting-head provided with dies sliding radially to and from the center, and a spring-actuated cam for operating them, and a spring arm or trigger engaging the cam during the cutting, but operated automatically by the screw under operation to release the cam when the cutting is finished, substantially as shown and described.

2. In a screw-cutting machine, a stationary die-plate, having dies sliding in radial grooves therein, and a spring-actuated stop pin or trigger upon its outer side, in combination with a ring surrounding the plate and formed with cam or eccentric grooves with which the dies engage, and a second ring surrounding the first, and adjustable thereon by means of a set-screw, and provided with a projection for engaging the stop-pin to hold the dies in place, and a spring secured to the outer ring to move it when released, substantially as and for the purpose set forth.

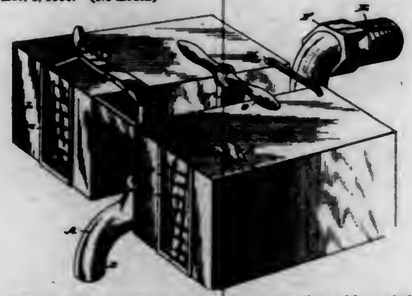
3. In a die-holder for screw-cutting, the combination, with the die-holding arm formed with a slot in its forward end, of a die-plate having a series of equal-toothed cutting-edges, pivoted in the slotted holder, and having means, substantially as shown and described, for securing it with either of its cutting-edges presented for work, substantially as and for the purpose set forth.

4. In a screw-cutting machine, a driving-shaft having its lower end formed hollow, and having a clutch-face, and a blank-holder also having a clutch-face, and a shank sliding endwise a short distance within the hollow shaft, in combination with a series of radially-moving dies, and means, substantially as herein described, for withdrawing the dies and allowing the bolt to fall as soon as the thread is cut, whereby the bolt is not liable to injure the dies, substantially as shown and described.

5. In a screw-cutting machine, the driving-shaft A′, having a stop, *b*, and a clutch blank-holder sliding upon its lower end, in combination with the dies D^2 D′, the cam-ring E, and spring E^2, substantially as and for the purpose set forth.

6. In a screw-cutting machine, the die-plate D, formed with radial grooves, in which move the arms D′, carrying the dies D^2, in combination with the cam-grooved ring E, adjusting-ring E′, spring E^2, incline e^2, and stop-arm G, having pins *g g′*, all constructed and arranged to operate substantially as and for the purpose set forth.

322,876. MEASURING-SPIGOT. JOS. W. WILT, Altoona, Pa. Filed Apr. 1, 1885. (No model.)



Claim.—1. In a measuring device, the combination, with a suitable faucet or spigot having a four-way valve, of a pair of measuring-vessels attached to the sides of said faucet and having their lower ends connected with the sides of said four-way valve, a pipe connecting the upper ends of said measuring-vessels, and a stop-cock arranged in rear of the said four-way valve, substantially as and for the purpose set forth.

2. In a measuring device, the combination, with a pair of measuring-vessels connected with a suitable faucet, of two spring-stops secured upon said vessels and having shoulders and projecting ends adapted to engage the crank or handle of the said faucet, substantially as and for the purpose set forth.

3. In a measuring device, the combination of a suitable faucet or spigot having a four-way valve, a pair of measuring-vessels connected with the sides of the said valve, a pipe connecting the upper ends of the said measuring-vessels, a stop-cock arranged in rear of the four-way valve, a crank or handle upon the upper end of the shank of the said four-way valve, and a pair of spring-stops secured upon the upper sides of the measuring-vessels and having shoulders and projecting ends adapted to engage the crank or handle of the said four-way valve, substantially as and for the purpose set forth.

322,877. BLOCK AND SWITCH SIGNAL. L. EDMUND WEBER, Marysville, Pa. Filed May 5, 1885. (No model.)

Claim.—1. A semaphore-signal mounted at or near the top of a post, 2, operative rods 6 and 9, bell-crank 7, combined with the overhead bell-levers 10 within the operator's house 3, and guides 13, provided with one or more stop-shoulders, for the purpose set forth.

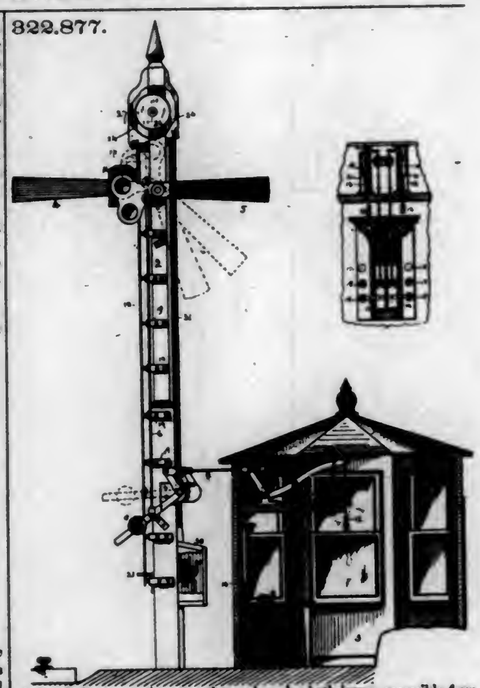
2. In combination with a semaphore-signal and its operative mechanism, a visual-index indicator, 14, connected with and operated by the signaling mechanism, and tablets 15, so that the eye may act as a check upon the hand and prevent errors, as set forth.

3. A semaphore-signal, a post, 2, at or near the top whereof said signal is supported, and a guideway constituted by two strips, 18 18, permanently attached to and projected outward from said post, combined with a carriage, 17, provided with laterally-projecting arms 22 22, which inclose the edges of said strips 18, respectively, so as to traverse between and be confined and guided by said strips 18, a lantern, 10, removably attached to said carriage, a lifting-rope, and a lock-up windlass, substantially as set forth.

4. The post 2, having a signal at or near its top, provided with the foot-pieces 19, attached to said post at short intervals, and the guide-strips 18, attached to said foot-pieces 19 to constitute a combined ladder and guideway, combined with a carriage, 17, adapted to traverse said guideway, and a lantern, 10, mounted thereon, substantially as set forth.

5. In a system of semaphore-signals, wherein sets of signals are displayed at different heights on the same post, the post 2, provided with guideways 18, pulley 26, lifting-rope 24, and windlass 29, combined with two carriages, 17, connected by a chain or other flexible connection of proper length, and two lanterns, 16, whereby when said carriages are

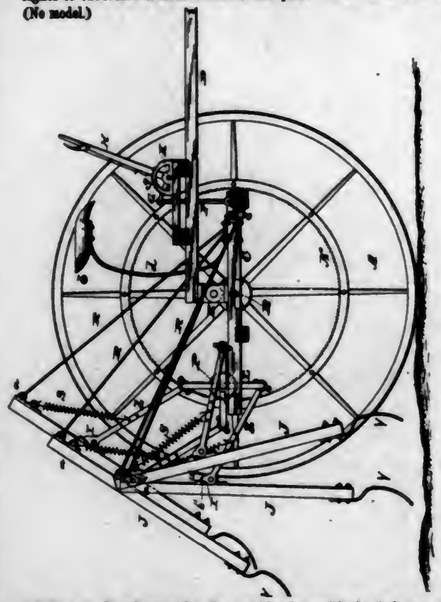
322,877.



lowered they may close together and render both lamps accessible from the ground, as set forth.

6. In connection with a signal-post, 2, and semaphore-signals mounted thereon, guideways permanently attached to said post, a carriage, 17, with legs 22 and rollers 23, and seat for the lantern, combined with a stop, 28, to arrest the upward movement of the carriage at the exact point required, substantially as set forth.

322,878. HAY-TEDDER. JAMES F. WINCHELL, Springfield, Ohio, assignor of one-fourth to Emil Bauroth, same place. Filed Mar. 26, 1884. (No model.)



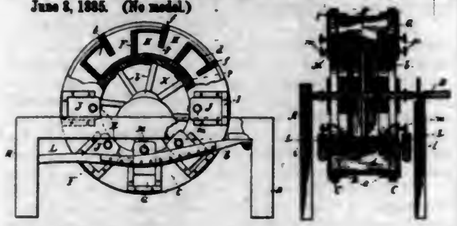
Claim.—1. In a hay-tedder, the combination, with the fork-arm, of the link which is pivoted at one end to the fork-arm by a joint adapted to arrest the movement of the fork in one direction only, and at the other end pivoted to the operating-crank, substantially as specified.

2. In a hay-tedder, the combination, with an operating-crank and fork-carrying arm, of the connecting-rod Z, having a joint adapted to arrest the movement of the fork in one direction only a spring operating to hold the joint down, and a connecting-link pivoted to the upper end of the fork-carrying arm and attached to the forward part of the frame, substantially as specified.

3. The combination, with the fork-arm J, of the pivoted rod Z, connected to an operating-crank, its joint I, having a stop-lug, and the spring connecting said rod to the upper portion of the fork-bar, substantially as specified.

4. In a hay-tedder, the combination, with a fork-carrying arm, of a joint-connection with the link, which is adapted to arrest the movement of the arm in one direction only, and said link connecting the arm with the crank, and a spring acting in opposition to the joint to hold the fork-carrier in a yielding manner so as to permit the fork-carrier to rise in meeting an obstruction, substantially as specified.

322,879. WATER-WHEEL. ROBERT A. WINSO, Erie, Penn., assignor of two-thirds to John W. Hagler and Wm. M. Cooley, same place. Filed June 8, 1885. (No model.)

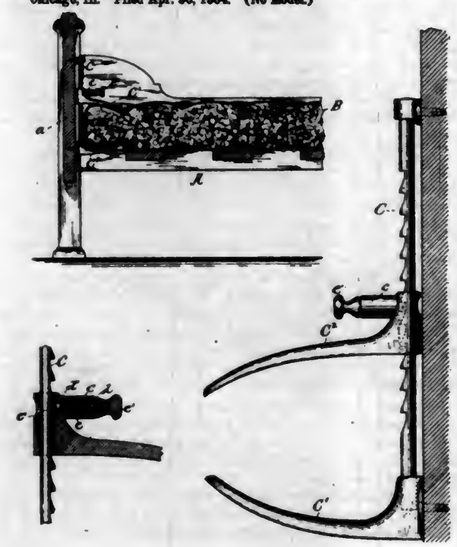


Claim.—1. A water-wheel provided with a series of alternately open and closed buckets, in combination with a passage-way through a side of the latter, a gate controlling the same, and a cam for opening such gate, as and for the purposes described.

2. A water-wheel provided with a series of closed buckets arranged around its periphery, and having coincident openings through its side walls, in combination with the sliding gates closing said openings, and a single spring having its opposite ends bearing upon and serving to normally keep the coincident gates in a closed position, substantially as shown and described.

3. The combination, in an overshot water-wheel, of the open and closed buckets having a narrow communicating passage-way, coincident openings through the side walls of the closed buckets, a guide-frame surrounding said openings, a gate sliding in said guide-frame and provided with a lateral arm, and a friction-roller journaled thereto, a single spring controlling coincident gates on opposite sides of the wheel, and cam-guideways, one each on either side of the wheel, and arranged to engage the friction-roller of the sliding gate, the parts being arranged and operating substantially as shown and described.

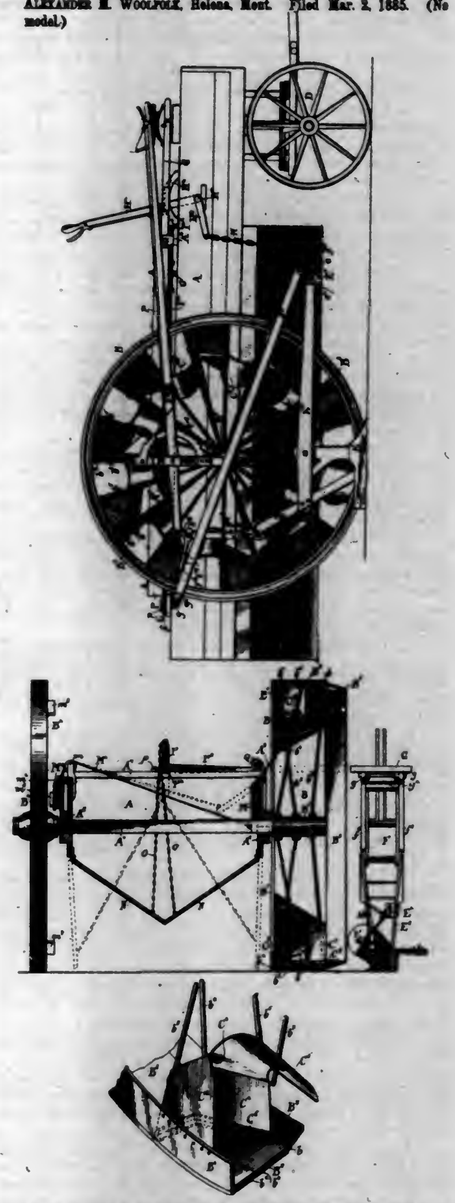
322,880. WARDROBE-BED. JACOB C. WIRTH and HENRY E. SCHULTE, Chicago, Ill. Filed Apr. 30, 1884. (No model.)



Claim.—1. The combination, with the foot-board of a bedstead, of the ratchet-bar C, the jaw C′, rigidly secured thereto, the jaw C^2, movable thereon and formed with the offset *c*, the detent formed with the channel or recess and having collar *d* and screw-cap, and the spring surrounding said detent, substantially as described.

2. The rack-bar C, the rigid curved jaw C′, the movable curved jaw C^2, having offset, the bolt, and spring *d*, as an article of manufacture.

322,881. DEVICE FOR LOADING AND UNLOADING WAGONS. ALEXANDER M. WOOLFOLK, Helena, Mont. Filed Mar. 2, 1885. (No model.)



Claim.—1. A loading device for wagons, consisting, essentially, of a wheel having a broad flat rim and a series of buckets located upon the inner surface of the rim, each bucket of the series having its mouth toward the rear of the wagon when said bucket is at the bottom of the wheel or adjacent to the ground, substantially as and for the purpose set forth.

2. A loading device for wagons, consisting of a wheel provided

about its periphery with a series of buckets having their inner walls or those nearest to the center of the wheel inclined inwardly toward the center of the wheel and toward the mouths of the buckets, whereby the material will be discharged by gravity from the said buckets when the latter are at the top of the wheel, substantially as described.

3. The combination, with the wagon-body, of a loading device comprising a wheel located at the side of the wagon-body and having about its periphery a series of receptacles or buckets, said wheel being provided with deflecting plates or chutes C^9, inclined inwardly toward the axis of the wheel and the wagon-body, whereby material discharged from the buckets will be carried laterally into the wagon-body, substantially as described.

4. A wagon-loading device comprising a wheel having a wide rim provided with a series of buckets secured to the rim, said rim being provided at one edge with a conical flange located exterior to the side walls of the buckets, substantially as and for the purpose set forth.

5. A wagon-loading device comprising a wheel having a wide rim provided with a series of buckets, said rim having a conical flange at one of its edges and a plow or equivalent device located at the side of the wheel adjacent to the said conical flange for lifting and delivering material upon the rim, substantially as described.

6. A wheel for wagon-loaders of the character herein described, the rim of which is formed of two or more rings of thin or sheet metal riveted together, one of said rings being provided at one edge of the rim with a conical flange, substantially as and for the purpose set forth.

7. A wagon-loading device comprising a wheel having a wide rim and a series of buckets secured to the inner surface of the rim, and having a series of inclined flanges or ribs, as C', upon the inner surface of the rim between the buckets, constructed to carry inwardly material delivered to the outer portion of the rim, substantially as described.

8. A wheel for wagon-loaders provided with a relatively thin and wide rim with a series of buckets secured to the rim and with spokes for supporting the said rim, having their outer ends secured in the rim and located adjacent to the walls of the buckets, substantially as and for the purpose set forth.

9. A wheel for wagon-loaders provided with a wide rim, a series of buckets secured to the rim, and spokes for supporting the rim secured to the latter at points adjacent to the walls of the buckets, the portions of said buckets remote from the rim being attached to and supported by the said spokes, substantially as described.

10. The combination, with a wheel, B, having a wide metal rim formed of two or more thicknesses of metal, of buckets C, formed of sheet metal, and angle-irons C^8, for securing the side walls of the buckets to the said rim, said angle-irons being secured to the rim by rivets passing through and holding together the several thicknesses of metal composing the latter, substantially as described.

11. The combination, in the wheel B, having a metal rim and sheet-metal buckets, of angle-irons C^8, for securing the side walls of the said buckets to the said rim, said angle-irons being provided with sockets for spokes, and spokes for supporting the said rim having their outer ends inserted in said sockets, substantially as described.

12. The combination, with the wheel B, having a metal rim provided with flanges B^2 and B^4, sheet-metal buckets comprising walls C' and C^3, secured to the rim by means of angle-irons C^8 and walls C^3, riveted to the flange B^4, substantially as described.

13. The combination, with the wheel B, having a wide rim, of a series of buckets, C, having walls C', C^3, and C^5, secured to the rim, the wall C' being inwardly inclined from the edge of the rim, substantially as and for the purpose set forth.

14. A wheel, for the purpose set forth, comprising in its structure a wide rim provided with a conical flange, B^2, at one edge, and a vertical flange, B^4, at its opposite edge, and a series of buckets, C, each of which comprises a side wall, C', located at the side of the wheel adjacent to the conical flange and inclined inwardly from the edge of the rim, and side walls, C^3, opposite the side walls, C', and adjacent to and in the same plane with the flange B^4, a rear wall, C^5, and an inner wall, C^4, inclined inwardly and toward the mouth of the buckets, substantially as described.

15. The combination, with a wheel having a wide rim, said rim being provided with a conical flange, B^2, of a bucket, C, having a side wall, C', and an angle-iron, C^8, for securing the said side wall of the bucket to the rim, said angle-iron being extended at its end adjacent to the said flange B^2 outwardly over the surface of the latter, substantially as and for the purpose set forth.

16. A wheel provided about its periphery with a series of buckets, C, and with laterally-inclined curved chutes C^9, connected with the inner side walls of the buckets, substantially as and for the purpose set forth.

17. A wheel provided about its periphery with a series of buckets, C, and with chutes C^9, made integral with the inner side walls of the buckets, substantially as and for the purpose set forth.

18. A wheel having a wide rim, B^2, and spokes supporting the rim and provided about its periphery with buckets C, and provided also with chutes C^9, connected at one of their edges with the buckets and supported at their opposite edges by the said spokes, substantially as and for the purpose set forth.

19. The combination, with the wagon-body, of a wheel having about its periphery a series of buckets, C, and provided with chutes C^9 inclined inwardly toward the wheel-axis and wagon-body, said wagon-body being provided with a deflecting plate or shield, A^3, substantially as and for the purpose set forth.

20. The combination, with a wagon, and a wheel located at one side of the wagon-body and provided about its periphery with a series of receptacles or buckets, of a plow located at one side of the wheel, and a frame for connecting the plow with the wagon, said frame being pivoted at its rear end to the wagon-frame and extended downwardly and forwardly with its forward end in position for the attachment of the plow-beam, and means for adjustably sustaining the forward end of the frame from the wagon, substantially as and for the purpose set forth.

21. The combination, with a wagon, and a wheel having a series of receptacles or buckets about its periphery, of a downwardly and forwardly inclined frame, F, pivotally connected at its rear end with the wagon-body, means for adjustably sustaining the front end of the said frame, and a plow having its beam attached to the lower forward end of the said frame F, said plow being adjustably attached at its rear portion to the said frame, substantially as and for the purpose set forth.

22. The combination, with a wagon, and a wheel provided with buckets, as C, of a downwardly and forwardly inclined frame, F, pivotally connected at its rear end with the wagon and adjustably supported at its front end from the latter, a plow, E, having a beam, E', connected with the frame F and provided with arms E^2, a hand-lever, F^2, pivoted upon the frame F and connected with the said arms E^2, and a notched segment and detent or equivalent device for holding the hand-lever in a desired position whereby the rear end of the plow may be adjusted vertically with reference to the frame, substantially as described.

23. The combination, with a wagon-body, and a wheel provided with buckets, as C, of a downwardly and forwardly inclined frame, F, pivotally connected at its rear end with the wagon and adjustably supported from its front end from the latter, a plow, E, having a beam, E', connected with the forward end of the frame F and provided with arms E^2, a hand-lever, F^2, pivoted upon the said frame, and a rock-shaft, F^3, mounted upon the frame and provided with arms connected with the said arms E^2 and with the lever F^2, and a notched segment and detent or equivalent device for holding the said hand-lever in a desired position, substantially as described.

24. The combination, with the pivoted frame F and plow E, of the hand-lever H', provided with the arm H^2, a chain, H, connecting the said arm H^2 with the free end of the frame, and a notched segment and detent or equivalent device for holding the said hand-lever in a desired position, substantially as and for the purpose set forth.

25. The combination, with a wagon-body, and a loading device delivering material at one side of the said body, of a board or leaf hinged to the side of the body beneath the point at which the material is delivered thereto, and means operated by one of the wheels of the wagon for giving an oscillatory movement to the said board or leaf, whereby material falling upon the said board or leaf will be distributed in the wagon-body, substantially as described.

26. The combination, with the wagon-body, and a loading device delivering material at one side of the said body, of a board or leaf hinged to the side of the body beneath the point at which the material is discharged therein, a drum or pulley located upon the side of the wagon-body adjacent to one of the wheels thereof and provided with a radially-extending arm or projection, a rope or cord attached to the drum and connected with the said board or leaf, and a projection or stop upon the wheel constructed to engage the arm or projection upon the drum, whereby the latter will be rotated and the said board or leaf given an oscillatory movement in the forward movement of the wagon, substantially as described.

27. The combination, with a wagon-body, and a board or leaf, M, of a drum, M^2, mounted upon the side of the wagon-body adjacent to one of the wheels thereof and provided with a radially-extending arm or projection, a rope or cord, M', attached to the drum and to the said leaf or board, suitable guide-pulleys for the rope or cord, and a stop upon the wheel located in position to engage said arm or projection, substantially as and for the purpose set forth.

28. A dumping device for a wagon, consisting of two parts or boards, N N, hinged at their edges to the sides of the wagon-body, a longitudinally-arranged bar made of considerably greater width than thickness, and pivoted over the center of the wagon-body so as to rotate about an axis lying at or near one of its edges, and chains connecting the free ends of the boards composing the bottom of the wagon-body with the edge of said bar remote from its pivotal axis, said bar being so arranged that when its said edge is turned downwardly the said bottom will be opened and when the said edge is turned upwardly said bottom will be closed, whereby, when the bottom is closed, the strain caused by the weight of the material thereon will come edgewise upon the beam, substantially as described.

29. The combination, with the wagon-body, and boards N N, of the bar P, chains connecting points upon the said bar remote from its axis with the said boards, said beam being provided at one end with an arm, P^2, a lever, Q, pivoted upon the wagon-body and constructed to engage the free end of said arm, and means for temporarily holding the free end of said lever, substantially as and for the purpose set forth.

322,882. TREATING VEGETABLE SUBSTANCES FOR MAKING PAPER-PULP.

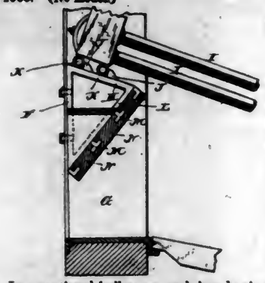
THOMAS G. YOUNG, Durris, and JOHN PETTIGREW, Dinnida County of Kincardine, Scotland. Filed Mar. 6, 1885. (No specimens.) Patented in England Nov. 6, 1884, No. 14,735, and Nov. 14, 1884, No. 14,968, and in Canada Apr. 29, 1885, No. 21,563.

Claim.—1. The treatment of vegetable substances capable of yielding fibers suitable for paper-making and other purposes with a solution of nitric or nitrous acid, substantially as and for the purposes hereinbefore described.

2. The combination of the process forming the subject-matter of the preceding claim with the subsequent treatment of the product thereby obtained with a solution of an alkali or alkaline earth or alkaline salt, substantially as hereinbefore described.

322,883. ARCH FOR FURNACE-DOORS.

ROBERT R. ZELL, New York, N. Y., assignor to the Safety Steam Generator Company, same place. Filed Apr. 20, 1885. (No model.)



Claim.—1. In a sectional boiler, an arch-box having an inclined top provided with transverse ribs, rollers placed loosely on said top and resting against the said ribs, and the boiler-front supported on said rollers, all combined and arranged substantially as set forth.

2. In a sectional boiler, the herein-described triangular arch-box, having upper inclined side adapted to support the boiler-front, and provided with transverse ribs and inclined rear side forming a deflector, substantially as and for the purpose set forth.

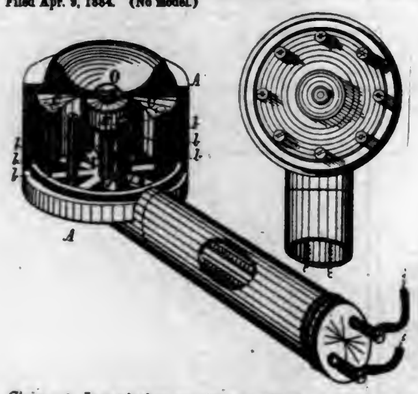
3. In a sectional boiler, the herein-described triangular arch-box, having inclined rear side provided with transverse T-ribs, in combination with the fire-brick attached to the said ribs, substantially as and for the purpose set forth.

4. In a sectional boiler, a triangular arch-box having interior braces, and provided at the ends with extensions or shoulders having open ends, substantially as and for the purpose set forth.

5. The combination, with the furnace-walls, of the T-shaped plates or castings forming seats in the same, and the triangular arch-box having open-ended shoulders or extensions adapted to rest on the said seats, substantially as and for the purpose set forth.

322,884. TELEPHONE-RECEIVER.

J. EMMON FULLER, Chicago, Ill. Filed Apr. 9, 1884. (No model.)



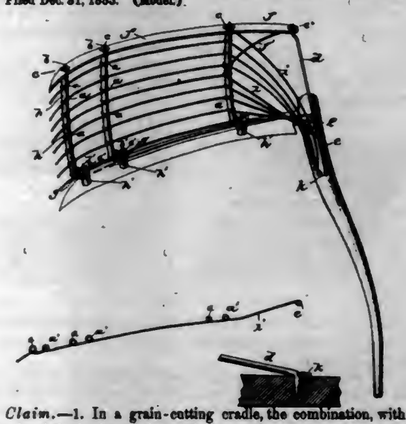
Claim.—1. In a telephone-receiver, a multipolar magnet consisting of a number of pole-pieces of a given polarity attached to or integral with a base or disk, or arms radiating from a common center, carrying a plate or diaphragm, and a re-entrant pole-piece of opposite polarity extending upward from said base or common center, substantially as described.

2. In a magneto-telephone, the combination of a multipolar-magnet having circumferentially-arranged pole-pieces of one polarity projecting from a disk, and a single pole-piece of opposite polarity projecting from the center of the same, with a diaphragm resting upon the circumferential pole-pieces and in inductive proximity to the central pole-piece, substantially as described.

3. In a magneto-telephone, the combination of a multipolar magnet having circumferentially arranged pole-pieces of one polarity attached to or integral with arms radiating from a common center, and a single pole-piece of opposite polarity secured to such common center or integral therewith, with a diaphragm resting upon the circumferential pole-pieces and in inductive proximity to the central pole-piece, substantially as described.

322,885. GRAIN-CRADLE.

WILLIAM B. SMITH, Jonesborough, Ga. Filed Dec. 31, 1883. (Model.)



Claim.—1. In a grain-cutting cradle, the combination, with the brace *d* and the heel-extension of the upper finger, of the brace *f'*, substantially as set forth.

2. In a grain-cutting cradle, the combination, with the cutting-blade and finger *f*, connected by braces, of fingers connecting said braces and the snath, as set forth.

3. In a grain-cutting cradle, the combination, with a suitable frame carrying a blade, of a snath and fingers connecting said frame and said snath, substantially as set forth.

4. In a grain-cutting cradle, the combination of the fingers and ribs, of single pieces of metal, with loops *a a a* turned in fingers, and loops *e* in the ribs *i*, substantially as and for the purpose set forth.

5. In a grain-cutting cradle, the combination of bolts *b b b* with loops *g g g* turned on one end and threaded nuts *c c c* on the other, said bolts passing through loops *a a a* in the fingers, and sleeves *h h h*, forming the same into one frame, substantially as described.

6. In a grain-cutting cradle, the combination of the bolts *b' b' b'*, passing through the loops *g g g* on bolts *b b b*, through loops *a' a' a'* in the lower finger, and through sleeves *h' h' h'*, securing the blades to the frame, substantially as set forth.

7. In a grain-cutting cradle, the combination of the brace *d* and stay *f'* with the heel-extension of the upper finger and the snath, substantially as set forth.

8. In a grain-cutting cradle, the upper finger with the edges turned at right angles to the body, substantially as and for the purpose set forth.

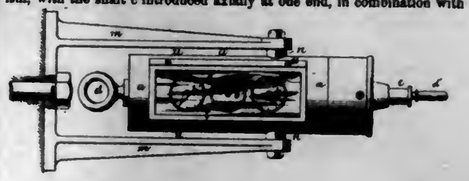
REISSUES.

10,625. REGISTERING SHIP'S LOG.

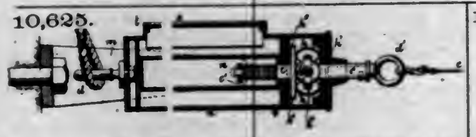
JOHN ELMS and GEORGE H. ELMS, Brooklyn, N. Y. Filed Apr. 7, 1884. Original No. 178,261, dated June 6, 1876.

Claim.—1. The elongated case *a*, with an eye at one end for a safety cord or chain, in combination with the shaft or spindle projecting from the other end, and connected by the wire or rope *c* with the propeller *k*, substantially as set forth.

2. An elongated cylindrical case containing the registering mechanism, with the shaft *c* introduced axially at one end, in combination with



10,625.



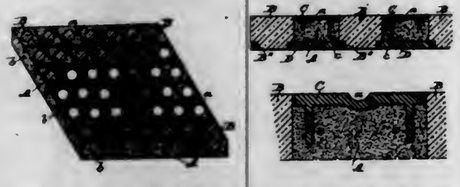
the anti-friction rollers *h*, eye *d'*, propeller, and connecting cord or wire, substantially as set forth.

3. The horizontal attaching-yoke *m*, in combination with the elongated case *a*, registering mechanism *b*, and shaft *c*, substantially as set forth.

4. The glass *s* and metal frame *t*, curved upon its lower surface to the arc of a circle, in combination with the elongated cylindrical case *a*, and registering mechanism, as set forth.

5. The combination, with the propeller of a ship's log, of a messenger-shield, *r*, constructed substantially as and for the purpose set forth.

10,626. ILLUMINATING VAULT-COVER OR GRATING. THADDEUS HYATT, New York, N. Y. Filed Sept. 29, 1884. Original No. 257,714, dated May 9, 1882.



Claim.—1. A concrete light or illuminating stone grating formed with a channeled foot-surface, substantially as and for the purposes herein set forth and illustrated.

2. A concrete light or illuminating stone grating formed with a soft-metal foot-surface, substantially as and for the purposes herein set forth and illustrated.

3. A cast-iron illuminating-grating combined with a soft-metal facing-plate and concrete, substantially as and for the purposes herein set forth and illustrated.

4. A soft-metal perforated facing-plate formed with holdfasts and a channeled face, in combination with an illuminating-grating, substantially as and for the purposes herein set forth and illustrated.

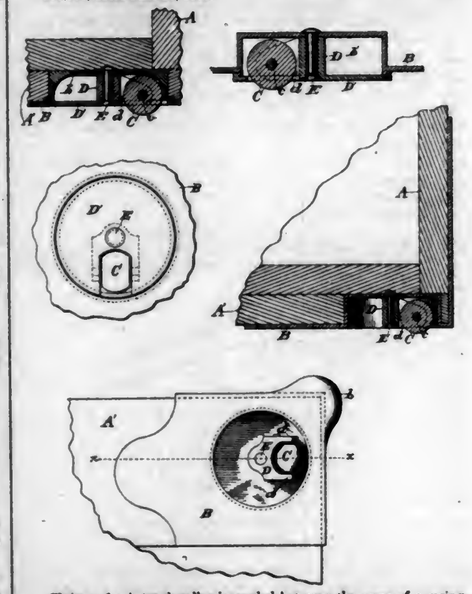
5. A stone light—that is to say, a concrete light—composed of tie metals, hydraulic cement or concrete, and glasses, when made with an ornamental foot-surface formed on the face thereof around and between the glasses by means of a double or raised and sunk design surface.

6. A concrete light—that is to say, an illuminating-grating—composed of a cast-iron floor plate or grating, hydraulic cement or concrete, and glasses, when made with an ornamental foot-surface formed on the face thereof around and between the glasses by means of a double or raised and sunk design surface.

7. An illuminating-grating made by combining tie metals and glasses with a plastic material capable of setting and hardening into stone or stone-like substance, when made with an ornamental foot-surface formed on the face thereof around and between the glasses by means of a double or raised and sunk design surface.

8. An illuminating-grating made by combining a cast-iron floor plate or grating and glasses with a plastic material capable of setting and hardening into stone or stone-like substance, when made with an ornamental foot-surface formed on the face thereof around and between the glasses by means of a double or raised and sunk design surface.

10,627. CASTER. SIGMUND M. MICHELSON, Milwaukee, Wis., assignor, by direct and mesne assignments, of one-third to George Sylvester and August Richter, Jr., same place. Filed June 22, 1885. Original No. 290,061, dated June 26, 1883.



Claim.—1. A trunk-roller journaled between the arms of a swinging frame having a vertical hub and a protecting-plate, all solid or integral with each other, the said hub being pivoted to the center of a depressed plate having protecting and downward-projecting walls, the journals of said roller being entirely above the protecting-plate, which is perforated to allow the roller to project through, but otherwise entirely covering the well or recess within which the roller-bearing moves, substantially as set forth.

2. A combined trunk-roller and corner-iron, the latter having a corner-bumper and a depression or recess in which the roller moves, the latter being journaled between the arms of a swinging frame having a solid hub and solid covering-plate, cut away to allow the roller to project through, but inclosing the journals of the roller and their bearing-frame, substantially as set forth.

3. In a caster, the combination of the shell or well, and central vertical pin or axle, E, with the horseshoe-frame having hub D and arms *d d* solid therewith, and extending horizontally therefrom, substantially as set forth.

4. In a caster, the combination of the shell or well, and central vertical pin or axle E, depending from the top plate of the shell, the horseshoe-frame with hub D and arms *d d* solid therewith and extending horizontally therefrom, journal *c* pivoted in the outer ends of said arms, and bearing-roller C between them, substantially as set forth.

5. In a caster, the roller-bearing consisting of a horseshoe-frame having a perforated hub for attachment to a downwardly-projecting pin or axle, and forks or arms extending horizontally from the hub and adapted to support the roller between them, as set forth.

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DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

DECISIONS OF THE U. S. COURTS.

GAGE *v.* KELLOGG *et al.*

U. S. Circuit Court—Northern District of New York.

Decided May 29, 1885.

1. CLAIM FOR MACHINE AND PROCESS FOR USING IT. There cannot be in the same patent a claim for a machine and a claim for the process of using that machine.
2. SAME—REISSUE VOID—ENLARGEMENT OF CLAIMS. Reissued Letters Patent No. 8,615, dated March 1, 1879, and granted to William B. Fisher for an improvement in seed-steaming apparatus, expands the claims in the original patent, and is void.
3. SAME—INFRINGEMENT. Reissue No. 8,615, compared with defendants' machine which is used to moisten meal, and not to dry or clean the seed for storage or shipping, and *held* not infringed.

Mr. John Dane, Jr., for the complainant.

Mr. John W. Munday for the defendants.

COXE, *J.:*

The complainant, as assignee, seeks by bill in equity to restrain the infringement of Reissued Letters Patent No. 8,615, dated March 11, 1879, and granted to William B. Fisher, for an "improvement in methods and apparatus for treating seeds." The application for the reissue was filed February 19, 1878. The original patent, No. 129,018, is dated July 16, 1872, and is for an "Improvement in seed-steaming apparatus." The defendants contend, among other defenses, that the reissue is void, its claims having been expanded after a delay of five years and seven months. The claims are placed below side by side. The italics in each show the matter not found in the other.

Original.	Reissue.
1. The combination *of the hopper H*, perforated *conical* steam-coil *B*, *jacket O*, *shaft D*, *and rotating arms C C*, *carrying scrapers E E*, *constituting an improved apparatus for treating oily seeds*, as and for the purpose *herein* set forth.	1. The *herein-described* method of *treating* seed, *consisting in allowing it to flow downward around a central* perforated steam-*reservoir*, *and forcing jets of* steam *from said reservoir outward through the mass of seed*, *the flow of said seed being regulated by stirrers*, substantially *as set forth.*
2. The *improved* method of *cleaning and drying oleaginous* seed *by feeding the same over the inclined surface of* a perforated *conical* steam-*coil*, substantially *in the manner described.*	2. The combination, *with a seed-receptacle provided with a* perforated steaming *device arranged within or below the material operated upon*, *of devices for stirring its contents at will*, *said devices operating upon a platform*, *substantially* as and for the purposes set forth.
	3. *In combination with a seed-receptacle for holding the seed while being steamed*, *means for directing the steam into said seed*, *and horizontally rotating stirrers adapted to regulate the flow of said seed*, *substantially as set forth.*
	4. *An apparatus for treating oleaginous seed by steam*, *consisting of a receptacle adapted to receive and retain the seed at will*, *a steaming device adapted to be surrounded by said seed and eject steam in different directions outwardly from within the mass*, *and rotating stirrers*, *substantially as described*, *whereby said seed may be thoroughly permeated by said steam*, *substantially as and for the purposes set forth.*

The first claim of the original, which is for the apparatus, contains the following elements: first, the "hopper;" second, the "perforated conical steam-coil;" third, the "jacket;" fourth, the "shaft;" fifth, the "rotating arms;" sixth, the "scrapers;" and, seventh, (construing the patent liberally,) the "bed," "base," or "table." For this claim the reissue substitutes three indefinite and nebulous claims—the second, third, and fourth—each enlarging and expanding the scope of the original. In the second claim the "hopper," "perforated conical steam-coil," "jacket," "rotating arms," "scrapers," and "table" are all discarded, and in their places appear "a perforated steaming device," "a seed receptacle," and "devices for stirring its contents at will, said devices operating upon a platform." It will be observed that as these devices stir the contents of the seed-receptacle they must necessarily be so located that they can perform this function. In the drawing they are placed outside of and below the hopper. In the original they are not described as doing the work of stirrers.

The third claim is even more sweeping in its terms. It deals with a combination having three elements: A "seed-receptacle for holding the seed while being steamed," "*means* for directing the steam into said seed," and "horizontally-rotating stirrers adapted to regulate the flow of said seed."

The fourth claim is hardly less ambiguous. It is for a "receptacle adapted to receive and retain the seed at will," "a steaming device adapted to be surrounded by said seed and eject steam in different directions outwardly from within the mass," and "rotating stirrers."

In the so-called "process claim" the method of "cleaning and drying oleaginous seed" becomes in the reissue a method of "treating seed." A manufacturer, therefore, who, like the defendants, is engaged in moistening linseed-meal for the press is as much within this claim as one engaged in drying or cleaning.

The only attempt, either in the testimony or the brief, to defend the patent from the attack based upon the expansion of the claims, has reference to this first claim of the reissue. The attention of the complainant's expert witness was called to it, and he expressed the opinion that it is not broader, but narrower, than the original, for the reason that it is limited by the use of the words "the flow of said seed being regulated by stirrers." His silence with reference to the other claims is suggestive. Even if this theory of the witness were correct, it would still be for a different invention. But is it correct? The patentee himself evidently understands that this claim is only for the process of treating seed by the apparatus, and the whole thereof, described in the patent. He says:

I do not wish to be understood as claiming, broadly, the art of treating seed by steam; neither do I wish to be understood as claiming, broadly, all mechanism with which steam may be used for treating oleaginous seed, irrespective of the construction, ar-

rangement, and operation of the same, as I am aware that steam has been employed heretofore for the purpose of treating seed.

In the original and in the reissue he seeks to secure the method of using the apparatus described in each, respectively. The difficulty is that in the original the description is narrow and specific. In the reissue it is broad and general.

It is quite evident that no one would infringe the original who did not use a perforated conical steam-coil or its equivalent, which, in the description, the drawing, and the claims, is made an element, and an essential element, of the invention. It is equally clear that when the inventor, in the reissue, speaks, for instance, of "means for directing steam into said seed," he uses language broader and more generic in its scope and meaning than is used in the original. A mechanism might infringe the claims of the reissue and be entirely outside of the claims of the original. For a "perforated steaming device," "a central perforated steam-reservoir," &c., many equivalents suggest themselves, which would not occupy such a relation to a "steam-coil." In short, for the apt terms and perspicuous statement contained both in the description and the claims of the original patent, obscure and general language has been substituted. In no case has a word of a more limited meaning been employed, but in almost every instance the reverse is true. In studying the reissue the conviction is forced upon the mind that the inventor had before him his own and other machines when drawing its specification, and that he endeavored to cover them all by an ingenious and clever use of words. Had the decision in *Miller* v. *Brass Co.* (104 U. S. 350) been announced at that time it is safe to assume that so venturesome an undertaking would not have been attempted. The language of *Coon* v. *Wilson* (30 O. G. 889, S. C. 5 Sup. Ct. Rep. 537) is applicable. The court say:

> In the present case there was no mistake in the wording of the claim of the original patent. The description warranted no other claim. It did not warrant any claim covering bands not short or sectional. The description had to be changed in the reissue to warrant the new claims in the reissue. The description in the reissue is not a more clear and satisfactory statement of what is described in the original patent, but is a description of a different thing, so ingeniously worded as to cover collars with continuous long bands, and which have no short or sectional bands.

The conclusion is therefore reached that the reissue is void under the doctrine so often announced by the Supreme Court, and which has been reaffirmed as lately as May 4, 1885, in *Wollensak* v. *Reiker*, (5 Sup. Ct. Rep. 1132.) But irrespective of these considerations the inquiry is suggested, with reference to the first claim of the reissue, can there be in the same patent a claim for a machine and a claim for the process of using that machine? I have reached the conclusion that there cannot be with some hesitation, for the reason that the question has not been argued by counsel; and yet I am unable to understand how the complainant can avoid the rule enunciated in the following cases: *MacKay* v. *Jackman*, (12 Fed. Rep. 615;) *Brainard* v. *Cramme*, (Id. 621;) *Goss* v. *Cameron*, (14 Fed. Rep. 576;) *Hatch* v. *Moffitt*, (15 Fed. Rep. 252;) *New* v. *Warren*, (22 O. G. 587;) *Corning* v. *Burden*, (15 How. 252.) But in any view the defendants do not infringe. Their machine is used to moisten meal, not to dry or clean the seed for storage or shipping. It is doubtful whether the apparatus described in the complainant's patent could be used at all with moisted linseed-meal. The experiment has not been tried, as no machine precisely like the patented apparatus was ever built or operated, and the testimony seems, practically, to be unanimous that the meal would clog in the space between the jacket and the coil, and soon cease to flow. The defendants have no conical steam-coil or central reservoir. There is no flowing down of the seed around a perforated steam reservoir while being subjected to the action of the steam. There are no adjustable stirrers performing the functions of complainant's stirrers, and the flow is not regulated by their action. Nor can it be said, remembering that an equivalent must perform the same function in substantially the same manner, that for these elements mechanical equivalents are used. Take, for illustration, the lower part of the seed-receptacle. In the description the inventor states as follows:

> The lower part of the seed-receptacle, represented at O, adapted for partially confining the seed and steam when the softening and moistening process is required for pressing or other purposes, may be removed and a perforated or screen jacket substituted in lieu thereof. By the employment of the latter the steam may be forced directly through the moving seed and screen-jacket in such a manner as to cleanse it and remove and carry away all impurities and excess of moisture previously contained therein.

It is said that for this the steam-jacket of the defendants (the sides of their tub or kettle are made double and filled with steam) is an equivalent; but the defendants' jacket does not perform the same functions as the jacket O. Certainly it does not perform them in substantially the same way. If a curb were placed around complainant's table, the defendants' jacket would, perhaps, be an equivalent for such curb.

For these reasons it follows that the bill must be dismissed.

U. S. Circuit Court—Southern District of New York.

TOMKINSON *v.* WILLETS MANUFACTURING COMPANY.

Decided March 7, 1884.

1. DECREE BY CONSENT—RES JUDICATA.
   When a decree has been entered by consent in a prior suit declaring a patent valid, and that complainant is the sole owner thereof, such decree will be considered binding, as to all questions determined thereby, in a second suit between the same parties.
2. SAME—DESIGN PATENTS—INFRINGEMENT—RESEMBLANCE.
   It is not necessary that a design patent should be copied in every particular to constitute an infringement. It is sufficient if the resemblance is such that an ordinary purchaser would be deceived, although the infringer has deviated slightly in details or has omitted something which an expert could discover.

Mr. Frank v. Briesen for the complainant.

Mr. Philo Chase for the defendant.

COXE, *J.*:

This is an equity action for infringement founded upon Design Patent No. 13,295, granted to John Slater, assignor to Gildea & Walker, September 12, 1882, for a design for a vegetable-dish. The patent is now owned by the complainant. The invention relates to a new shape or configuration for a vegetable-dish or other similar household article of china. The claims are as follows:

1. The design for a rectangular vegetable-dish having straight section *c*, central curved section, *d*, and lower straight section, *e*, substantially as shown.
2. The design for a rectangular vegetable-dish having straight top and a section, *d*, curved first outward and then inward in such manner that the base of the dish is smaller than its top, substantially as shown.
3. The design for a vegetable-dish having parallel sides *a a'* and parallel sides *b b'*, and composed of the sections *c d e*, substantially as shown.

It will be observed that as to the handles, ornamentation, size, and color of the dish, nothing is said in the claims. They are for the shape only.

In June, 1883, prior to this suit, the complainant commenced an action in the United States Circuit Court, district of New Jersey, against the defendant for an infringement of this patent. The complaint was in all respects similar to the one in the present suit. The defendant appeared by its president and consented to a decree and an injunction as prayed for. On or about the 21st of July, 1883, a final decree was entered, by which it was determined that the complainant is the sole owner of the letters patent in suit, and that they are good and valid in law. That decree was pleaded and proved in this action. It is valid and binding upon the rights of the parties, and, as to all the questions determined by it, is *res judicata*. Unfortunately, perhaps, for the defendant, the court is not now permitted to consider the defenses, which, by the defendant's own action, are thus eliminated from the case. The question of infringement is alone open to investigation.

In approaching this subject the rule with reference to design patents should be kept steadily in view. It is by no means necessary that the patented thing should be copied in every particular. If the infringing design has the same general appearance, if the variations are slight, if to the eye of an ordinary person the two are substantially similar, it is enough. It is of no consequence that persons skilled in the art are able to detect differences. Those who have devoted time and study to the subject, who have spent their lives in dealing in articles similar to those in controversy, may see at a glance features which are wholly unimportant and unobserved by those whose pursuits are in other directions, and who are attracted only by general appearances. If the resemblance is such that a purchaser would be deceived, it will not aid the infringer to show that he has deviated slightly from a straight line in one place and from a curved line in another, or that he has added or omitted something which an expert can discover. (*Gorham Co.* v. *White*, 14 Wall. 511; *Lehnbeuter* v. *Holthaus*, 105 U. S. 94; *Wood* v. *Dolby*, 19 Blatchf. 214; S. C. 7 Fed. Rep. 475; Sim. Pat. 218; Walk. Pat. § 375.) Tested by this rule I am constrained to say that the defendant infringes.

The principal difference pointed out between the two dishes in controversy is that in the upper vertical section of defendant's dish the sides are not exactly parallel, but bulge outwardly, departing from a straight line something less than half an inch. It is thought, however, that this divergence is not sufficiently marked to arrest the attention of the average observer. Bearing in mind that the patent deals with shape alone, the same conclusion must be reached with references to the other differences suggested by the defendant's witnesses.

There should be a decree for the complainant.

U. S. Circuit Court—Southern District of New York.

CELLULOID MANUFACTURING COMPANY *et al.* *v.* CHROLITHIAN COLLAR AND CUFF COMPANY *et al.*

Decided July 6, 1885.

1. The decision upon an interference is not conclusive in suits upon the patent granted in pursuance of it, but it is a sufficient foundation for a preliminary injunction against the losing parties and their privies to prevent infringement of it.
2. Alleged anticipation of the invention, either by the defendants or by others known to them while they were applicants for patent, must be made to clearly appear in order that it may prevent the injunction.
3. In this case, the anticipation relied on not being clearly shown, and there being no question that the patent is infringed if valid, the injunction is granted.

Mr. C. Wyllys Betts and *Mr. Frederic H. Betts* for the orators.

Mr. John P. Adams for the defendants.

WHEELER, *J.*:

The patent in question in this case, No. 288,955, dated November 20, 1883, for a collar or cuff of celluloid, was granted to Albert A. Sanborn, assignor, after an interference had been declared between him and Charles A. Kanouse, an applicant for a patent for the same invention, for the benefit and at the expense of the defendants, had been decided in favor of Sanborn. The defendants had an opportunity to be and were heard upon the questions involved in the interference case, and were privies to the judgment upon it, and are bound by the judgment to the same extent as parties to the record. The decision upon an interference is not conclusive in suits upon the patent granted in pursuance of it. (Rev. Stat. Sec. 4919.) But it is a sufficient adjudication upon the patentability of the invention and the right of the successful party to a patent for it to lay the foundation for a preliminary injunction against the losing parties and privies to prevent infringement of the patent; and neither alleged anticipation of the invention by others known to them while they were seeking to obtain a patent for it themselves nor their own will avail them to prevent the injunction without being made clearly to appear. (*Smith* v. *Halkyard*, 16 Fed. Rep. 414; *Peck, Stow & Wilcox Co.* v. *Lindsay*, 13 Off. Gaz. 63; *Holliday* v. *Pickhardt*, 12 Fed. Rep. 147.) The defendant corporation was not formed so early as the time of the anticipations relied upon, and is said, therefore, not to have been within the reach of knowledge of them; but such corporations have the knowledge of their officers and agents, and no other, and the other defendant and the agent of this one is shown by his own affidavit to have had full knowledge of the paper collars with edges turned down relied upon long before and at the time of the interference. Aub's Patent No. 147,588 is the other principal thing set up. That may not have been known to the defendants or their officers or agents. But whether it was or not it does not appear to be for the same invention as this patent. That was for a collar or cuff made of two layers of muslin with the wearing-edges folded, to prevent unraveling and improve the appearance, and all cemented together by a mixture of starch, spermaceti, and indigo. This is for a collar or cuff made of a single thickness of celluloid or other pyroxyline material with the edges turned over onto itself and cemented down to form a hem. Neither are the paper collars with their edges turned over the same as the collars of the patent. Their edges are not cemented down to form a hem, and the material is not adapted to that treatment. There is no question but that the patent is infringed, if valid.

The motion for a preliminary injunction is granted.

U. S. Circuit Court—Southern District of New York.

HOLMES ELECTRIC PROTECTIVE COMPANY *v.* METROPOLITAN BURGLAR ALARM COMPANY.

Decided December 4, 1884.

1. It is only a patent for an invention that has been previously actually *patented* in a foreign country that is limited by the foreign patent.
2. The mere *description* of an invention in a foreign patent does not operate, under section 4887 of the Revised Statutes, to limit a domestic patent for such invention.

STATEMENT OF THE CASE.

This suit was brought for an infringement of Letters Patent No. 120,874, granted Edwin Holmes and H. C. Roome November 14, 1871. An injunction was granted, after argument, September 2, 1884. On November 22, 1884, the suit came up on motion of defendant to vacate the injunction. The ground of this motion was that the invention had been previously patented by the inventors in an English patent dated November 1, 1870, the fourteen-years' term of which expired November 1, 1884, and that by consequence the patent in suit expired at the same time.

Complainants opposed the motion on the ground that while the invention was *described* in the specification of the English patent, it was not "patented" therein within the meaning of section 25 of the Patent Act of 1870 or section 4887 of the Revised Statutes, the *claims* of the English patent not being for the invention set forth in the claims of the patent in suit and incidentally described in the specification of the English patent.

Mr. S. A. Duncan for the complainant.

Mr. F. W. Whitridge for the defendant.

WHEELER, *J.*:

The invention patented in the patent in suit, as the same was construed in granting the injunction now sought to be dissolved, was not patented in the English patent which has expired, the expiration of which is relied upon to terminate this patent, and is the ground of this motion.

It is only a patent for an invention that has been previously actually patented in a foreign country that is limited by the foreign patent. The description of the invention in the foreign patent might affect the validity of the domestic one, and might not, but would not limit it. (Rev. Stat., sec. 4887.)

The effect of the various patents was considered when the injunction was granted as bearing upon the validity and construction of this one, and those questions are not open upon this motion as made.

The motion is denied.

THE OFFICIAL GAZETTE

OF THE

United States Patent Office.

[*BY AUTHORITY OF CONGRESS.*]

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The Official Gazette.

The OFFICIAL GAZETTE is published every Tuesday, simultaneously with the weekly issue of patents. From January 1, 1872, (the commencement of its publication,) to June 30, 1883, it was published and bound in semi-annual volumes; since July 1, 1883, in quarterly volumes. All subscriptions must commence with the beginning of a volume; none taken for less than three months. Terms: To all subscribers within the United States and Canada, $5 per annum; to foreign subscribers, $7; single copies, 10 cents; bound semi-annual volumes, (prior to June 30, 1883,) full sheep, $4 per volume; bound quarterly volumes, (subsequent to July 1, 1883,) full sheep, $2.75 per volume. No club rates. *Payment in advance.* All orders should be addressed to "The Commissioner of Patents, Washington, D. C."

Indexes to Foreign Patents.

The following indexes to foreign patents have been translated, compiled, and published under the authority of the Commissioner of Patents, and may be obtained as a Patent Office publication at the prices given below.

INDEX TO FRENCH PATENTS, 1791 to 1876, inclusive, (subject-matter,) one volume, 935 pp., bound in cloth.....$10 00

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Bound half-turkey	2 50
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Indexes to Patents on Electricity.

Appendix No. 2 to the index to patents relating to electricity, covering the period of time from July 1, 1882, to June 30, 1883, has been issued, and is now for sale. These indexes, arranged alphabetically, numerically, and by classes, are completed to June 30, 1883, and comprise the following volumes:

Vol. 1. Index to patents relating to electricity granted by the United States prior to June 30, 1881, with an appendix, July 1, 1881, to June 30, 1882. One volume, 250 pages. In paper covers, $3; bound, $5.

Vol. 2. Appendix No. 2, July 1, 1882, to June 30, 1883. One volume, 50 pages. In paper covers, $1.50.

Vol. 3. Appendix No. 3, July 1, 1883, to June 30, 1884. One volume, 60 pages. In paper covers, $1.50.

Issue of July 28, 1885.

Patents	498	No. 322,886 to No. 323,383, inclusive.
Designs	9	No. 16,180 to No. 16,188, inclusive.
Trade-Marks	14	No. 12,440 to No. 12,453, inclusive.
Labels	4	No. 4,531 to No. 4,534, inclusive.
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Total issue	528	

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks and Labels.	States.	Patents and Designs.	Trade-Marks and Labels.
Alabama	1	.....	Nebraska	3	.....
Arizona Territory	1	.....	Nevada	.....	.....
Arkansas	1	.....	New Hampshire	4	.....
California	11	1	New Jersey	24	1
Colorado	3	.....	New Mexico Territ'y	.....	.....
Connecticut	22	.....	New York	96	6
Dakota Territory	2	.....	North Carolina	2	.....
Delaware	.....	.....	Ohio	26	1
District of Columbia	1	1	Oregon	.....	.....
Florida	1	.....	Pennsylvania	36	1
Georgia	4	.....	Rhode Island	7	.....
Idaho Territory	.....	.....	South Carolina	2	.....
Illinois	35	.....	Tennessee	3	.....
Indiana	16	.....	Texas	12	.....
Iowa	13	.....	Utah Territory	3	.....
Kansas	6	.....	Vermont	4	.....
Kentucky	4	.....	Virginia	.....	.....
Louisiana	1	.....	Washington Territ'y	.....	.....
Maine	5	.....	West Virginia	.....	.....
Maryland	6	1	Wisconsin	11	.....
Massachusetts	45	1	Wyoming Territory	.....	.....
Michigan	21	.....	United States Army	.....	.....
Minnesota	.....	.....	United States Navy	.....	.....
Mississippi	2	.....			
Missouri	21	.....	Total to citizens of the United States	462	13
Montana Territory	1	.....			

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Labels.	Countries.	Patents and Designs.	Trade-Marks and Labels.
Australia	.....	.....	France	1	.....
Austria-Hungary	1	.....	Germany	9	.....
Barbadoes	.....	.....	Holland	.....	.....
Belgium	1	.....	Italy	.....	.....
Bermuda	.....	.....	Mexico	.....	.....
Brazil	.....	.....	New Zealand	.....	.....
Canada	14	.....	Russia	1	.....
Cape of Good Hope	.....	.....	Scotland	1	3
Colombia, U. S. of	.....	.....	Sweden	.....	.....
Cuba	.....	.....	Switzerland	.....	.....
Denmark	1	.....			
Egypt	.....	.....	Total to citizens of foreign countries	45	5
England	16	2			

DESIGNS.

16,180.—LAMP-CHIMNEY.—*Thomas B. Atterbury* and *Washington Beck*, Pittsburg, assignors to *George A. Macbeth*, Allegheny City, Pa. Application filed January 31, 1884. Term of patent 7 years.

16,181.—PERFUMERY-BOTTLE.—*Daniel R. Bradley*, New York, N. Y. Application filed April 30, 1885. Term of patent 3½ years.

16,182.—TYPE.—*Andrew Little*, New York, N. Y. Application filed May 29, 1885. Term of patent 7 years.

16,183 and 16,184.—RUG.—*Adolph Petzold*, Philadelphia, Pa. Applications filed April 11, 1885. Term of patents 3½ years.

16,185.—AXLE-YOKE.—*Henry K. Porter*, Boston, Mass. Application filed May 2, 1885. Term of patent 14 years.

16,186.—WHIFFLETREE-COUPLING.—*Henry K. Porter*, Boston, Mass. Application filed May 2, 1885. Term of patent 14 years.

16,187.—CARRIAGE-STEP.—*Fred V. Wooster*, Boston, Mass. Application filed March 23, 1885. Term of patent 14 years.

16,188.—BOTTLE-CASE.—*Homer Worden*, New York, N. Y. Application filed December 26, 1884. Term of patent 7 years.

TRADE-MARKS.

[Certificates of registration of Trade-Marks numbered 8,191 and upward are registered under the act of March 3, 1881.]

12,440.—PLUSHES AND VELVETS.—*Samuel Cunliffe Lister*, Manningham Mills, near Bradford, county of York, England. Application filed May 5, 1885.

"A peculiar selvage, having seven stripes, which are alternately of the same color as and of a lighter color than the fabric or pile."

12,441.—CERTAIN ARTICLES FOR GRINDING, SHARPENING, AND POLISHING PURPOSES.—*John C. Montgomerie*, Dalmore, Stair, county of Ayr, Scotland. Application filed March 7, 1885.

"The words 'TAM O'SHANTER.'"

12,442.—CERTAIN ARTICLES FOR GRINDING, SHARPENING, AND POLISHING PURPOSES.—*John C. Montgomerie*, Dalmore, Stair, county of Ayr, Scotland. Application filed March 7, 1885.

"The word 'MONTGOMERIE-STONE.'"

12,443.—CERTAIN ARTICLES FOR GRINDING, SHARPENING, AND POLISHING PURPOSES.—*John C. Montgomerie*, Dalmore, Stair, county of Ayr, Scotland. Application filed March 7, 1885.

"The words 'DALMORE HONE.'"

12,444.—CERTAIN NAMED REMEDY.—*Stanley W. Neuer*, New York, N. Y. Application filed June 25, 1885.

"The word-symbol 'OMINICO.'"

12,445.—MEDICINE FOR STOMACH COMPLAINT.—*Thomas J. Thompson*, Chicopee, Mass. Application filed June 26, 1885.

"The word 'ZETUNG.'"

12,446.—TOOTH-POWDER AND TOILET-SOAP.—*Vail Brothers*, Philadelphia, Pa. Application filed June 4, 1885.

"The word 'IDEAL.'"

12,447.—COFFEE, TEA, AND COCOA.—*The Ceylon Tea and Coffee Agency*, London, England. Application filed April 22, 1885.

"The representation of a cobra, either with or without the word 'PATRAM.'"

12,448.—LAMPS AND LANTERNS.—*Robert E. Dietz*, New York, N. Y. Application filed July 1, 1885.

"The word 'DIETZ.'"

12,449.—BUTTER.—*Jimenes, Haustedt & Co.*, New York, N. Y. Application filed July 6, 1885.

"The representation of Bartholdi's statue of liberty enlightening the world."

12,450.—KID-LEATHER.—*Gustav Levor*, Gloversville, N. Y. Application filed March 9, 1885.

"The arbitrary word 'LION.'"

12,451.—REFINED PETROLEUM FOR ILLUMINATING PURPOSES.—*Meissner, Ackermann & Co.*, New York, N. Y. Application filed July 6, 1885.

"The word 'SALAMANDER.'"

12,452.—DENTAL AMALGAM.—*John R. B. Ransom* and *Thaddeus F. Randolph*, Toledo, Ohio. Application filed January 19, 1885.

"The word 'OCCIDENTAL.'"

12,453.—CERTAIN ARTICLES OF GENTLEMEN'S UNDERWEAR.—*H. F. Woodward & Co.*, Washington, D. C. Application filed May 29, 1885.

"The representation of a lion rampant."

LABELS.

4,531.—Title: "DIMMICK'S KIDNEY AND BLADDER CURE."—*Ammi D. Dimmick*, Oneonta, N. Y. Application filed June 16, 1885.

4,532.—Title: "EMLET'S SARSAPARILLA."—*Charles A. Emley*, Wrightstown, N. J. Application filed July 7, 1885.

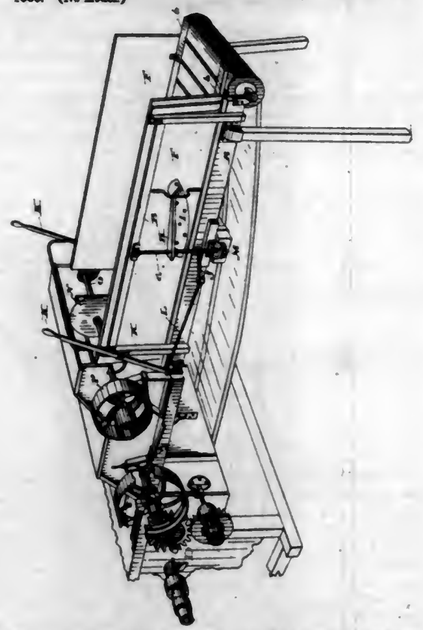
4,533.—Title: "ARIETENE AND YERBA SANTA, COUGH CANDY."—*Derrick F. Fryer*, Oroville, Cal. Application filed July 2, 1885.

4,534.—Title: "THERE'S LIFE IN EVERY DROP," (FOR DR. PETZOLD'S GENUINE GERMAN BITTERS.)—*Louis Petzold & Co.*, Baltimore, Md. Application filed July 6, 1885.

PATENTS

GRANTED JULY 28, 1885.

322,886. **BAND-CUTTER AND FEEDER FOR THRASHING-MACHINES.** ROBERT AITKEN, Brampton, Ontario, Canada. Filed Apr. 15, 1885. (No model.)



Claim.—1. A feed-box having a bottom formed by an endless traveling apron, A, and adjustable sides F, designed to form the box hopper-shaped, in combination with the revolving saw N and means for moving said sides simultaneously, arranged substantially as and for the purpose specified.

2. A feed-box having a bottom formed by an endless traveling apron, A, in combination with hinged sides F and slats *b*, hinged to their bottom edges, substantially as and for the purpose specified.

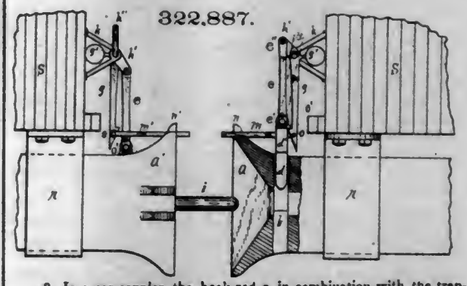
3. The sides F, hinged to the feed-box frame B, in combination with the arm H, fixed to the spindle G, and the hand-lever K, substantially as and for the purpose specified.

4. The combination of the sides F, hinged to the feed-box frame B, the spindles G, provided with the arms H and J, the chain M, connecting the two spindles, and the hand-lever K, for operating the same.

5. The sides F, hinged to the feed-box frame B, and the plates I, secured to said sides, in combination with the spindles G, the arms H, secured thereto and having bent end, the chain M, connecting said spindles, and the hand-lever K, for operating the same, substantially as described.

322,887. **CAR-COUPLING.** CHARLES A. ANDERSON, Des Moines, Iowa. Filed Oct 20, 1884. (No model.)

322,887.

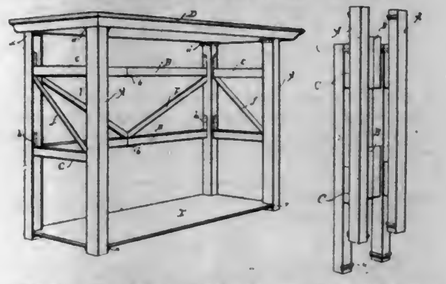


Claim.—1. In a car-coupler, the hook-rod *g*, hinged at its upper end, as shown, with its hook *o* and weight *g'*, in combination with the trap-rod *m*, substantially as herein described.

2. In a car-coupler, the hook-rod *g*, with its hook *o* and weight *g'*, in combination with the trap-rod *m*, and the link-pin *d*, with its counter-hook *o'*, as set forth.

3. In a car-coupler, the hook-rod *g*, in combination with the trap-rod *m*, link-pin *d*, connecting-rod *e*, crank-arm *h'*, crank-rod *h*, and link *i*, all substantially as described, and for the purposes specified.

322,888. **FOLDING WARDROBE OR CLOTHES-PRESS.** JOHN B. ATKINSON, Kansas City, Mo. Filed Feb. 16, 1885. (No model.)



Claim.—1. In a folding wardrobe, the combination of the corner posts or standards, the end standards provided with end braces hinged to said end standards, a sectional back brace having the sections hinged together, and hinged, also, to the opposite end standards, all adapted to fold together, as described.

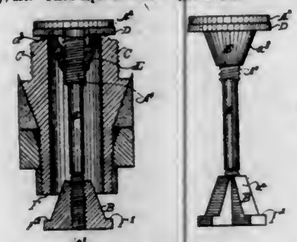
2. In a folding wardrobe provided with corner posts or standards, the combination of end standards provided with end braces hinged to said end standards and adapted to fold together, a sectional back brace or braces having the sections hinged together, and hinged, also, to opposite end standards, and removable inclined stays between the standards and said braces, for the purpose described.

3. In a folding wardrobe, the combination of the corner posts or standards, the end standards provided with end braces hinged to said end standards, a sectional back brace having the sections hinged together and hinged to the opposite end standards, all adapted to be extended from a folding relation, as described, and stops rigidly attached to and near the upper end of the respective standards, and removable stays between the opposite end standards and the hinged sectional back brace, and inclined as described, and a top frame adapted to extend over the ends of the extended standards and provided with mortises at opposite corners adapted to receive the respective ends of said standards and rest upon the said fixed stops, as described.

4. In a folding wardrobe, the combination of the corner posts or standards, the end standards provided with end braces hinged to and between said end standards, a sectional back brace having the sections hinged together and hinged to and between the opposite end standards, and adapted to fold between said standards of the corresponding front end standards, and opposite back end standards hinged to said braces, as described, and adapted to fold together, for the purpose set forth.

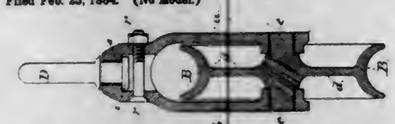
5. In a folding wardrobe, the combination of the corner posts or standards, the end standards provided with end braces hinged to said end standards, a sectional back brace having the sections hinged together and hinged to the opposite end standards, all adapted to be extended from a folding relation, as described, stops rigidly attached to and near the upper end of the respective standards, and stops rigidly attached to and at a suitable height from the bottom of the respective standards, stays between the standards and said sectional braces and oppositely inclined, a top frame having mortises in opposite corners adapted to receive the ends of the respective standards, and a bottom to said wardrobe having notches in opposite ends, and adapted to extend from and between opposite end standards and rest upon the stops on the lower ends of said standards, as described.

322,889. CHECK-VALVE. DOR AUSTIN and FREDERICK H. SMITH, Kansas City, Mo. Filed Apr. 24, 1885. (No model.)



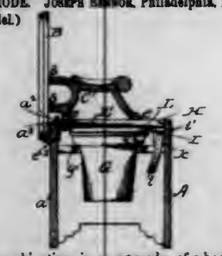
Claim.—In combination with a check-tube, as C, a valve stem or spindle carrying at one end a metal disk, and a cone having a smooth surface for guiding the stem during downward movement, and at the opposite end a cone provided with water-passages for guiding it during upward movement, substantially as set forth.

322,890. PULLEY-BLOCK. HUNTINGTON BEARD, Fayetteville, N. Y. Filed Feb. 23, 1884. (No model.)



Claim.—A pulley-block constructed with a bipartite frame, *a b*, having corrugations *h*, and corresponding indentations, *s*, in the meeting edges, a swivel-seat, *i*, and swivel-ring D and wheel B, having chilled bearings *e*, all held together by a single bolt, substantially as shown and described.

322,891. COMMODE. JOSEPH RENNER, Philadelphia, Pa. Filed Oct. 20, 1884. (No model.)



Claim.—1. The combination, in a commode, of a body, hinged seat with a slot or space between each side of the seat and the side of the body, hinged or pivoted bars adapted to close or fill up said spaces, side arms secured to said bars, and a lid rigidly secured to said arms without being hinged to the body directly, substantially as shown and described.

2. The combination, with a commode-body, A, having a rounded upper rear edge or corner, a^3, hinged seat C, and side spaces, D, of lid B, arms C', and bars E, rigidly secured to each other, and only connected to said body by the pivotal or hinged connections for bars E, substantially as shown and described.

3. A commode-box, A, having a movable lid which is rigidly secured to and supported by side arms secured to pivoted bars located between the seat and the sides of the box, in combination with a slide locking-bar, I, having arm *i*, spring K, and push-knob *i'*, substantially as and for the purpose set forth.

4. In a commode having side spaces, D, and closing-up bars E, the metal brackets H, having recesses *h'* and screw-openings *h*, and adapted to the outer ends of spaces D, as and for the purpose set forth.

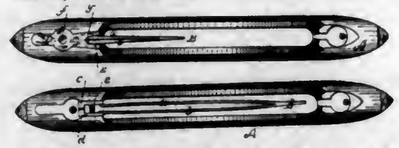
5. In a commode, a pot, G, having upper outwardly-flaring end, g^3, with inside seat g^3, located below the edge of said end, and lid *g'*, of less diameter than that of end g^3, and adapted to said seat, in combination with a hinged seat, C, having segmental drip-plate L, depending into pot end g^3, substantially as shown and described.

6. The combination, with a commode, of the metal brackets H, having recesses *h* and screw-openings *h'*, substantially as and for the purpose set forth.

7. In a commode, the combination, with pivoted or movable bars E, of sliding bars I, having arm *i*, and retracting-spring K, substantially as and for the purpose set forth.

8. A commode-lid or seat-arm locking-bar I, having arm *i*, spring K, and push-knob *i'*, substantially as shown and described.

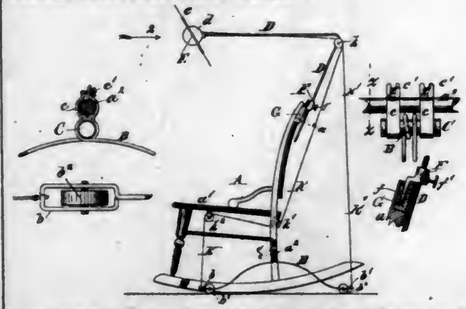
322,892. LOOM-SHUTTLE. ANDRÉ BOISSONNEAULT, Lawrence, Mass. Filed May 22, 1884. (No model.)



Claim.—The combination, with the shuttle-body A and the fixed plate D, having a V-shaped notch, of the spindle B, constructed with the parts *a b* and projections *c d*, substantially as described.

322,893. FAN ATTACHMENT FOR ROCKING-CHAIRS. JOSEPH BURTON, New York, N. Y. Filed July 3, 1884. (No model.)

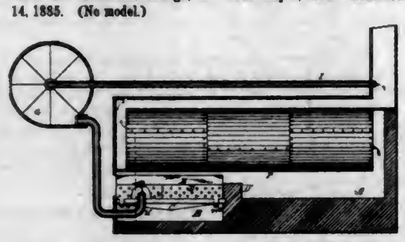
Brief.—The fan rotates continuously in one direction during the forward and backward movements of the chair.



Claim.—1. The combination of the double-acting floor-spring B, attached to the chair so as to have its two ends set, the ratchet-wheel *g*, secured upon the fan-shaft E, the two cord-drums H H', loose upon the said shaft and having pawls J acting on the said ratchet-wheel, the springs I, attached each with one end to one of the said drums and with the other end to the casing, so as to be coiled by the rotation of the said drum, and two cords, K K', each wound at one end to one of the said drums and connected with the other end to one end of the said floor-spring, said cords leading over pulleys on the chair in front and rear of its central point and connected to the drums, all substantially as and for the purpose hereinbefore set forth.

2. The floor-spring B, wound by its central portion around a pin or rod, C, in combination with the said pin, and with its encircling clamp or bands *c*, provided with hinge-bolts *c'*, for attaching the floor-spring to the rung a^2, substantially as specified.

322,894. SMOKE-BURNING APPLIANCE FOR STEAM-BOILERS. CHARLES J. BRUSCHKE, Chicago, Ill. Filed May 3, 1883. Renewed May 14, 1885. (No model.)



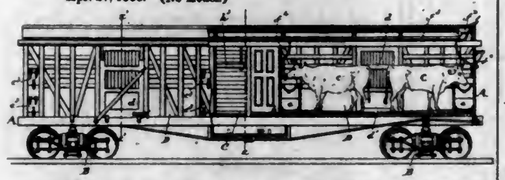
Claim.—In suction-blast-fan smoke-burners, the blast-chamber D, constructed with air-ports *x* under the projecting eaves *a a*, inclined roof E to deflect the heat from the boiler, side ports, *f*, and means for fastening it to the grate-bars, substantially as described, in combination with the fan G, pipes I, and pipe H, with or without the half-blast chamber, as and for the purpose specified.

322,895. CARBON ELECTRODE FOR LAMPS. GEORGE D. BURTON, New Ipswich, N. H. Filed Dec. 19, 1882. (No model.)



Claim.—An improved article of manufacture, a carbon or electrode for an electric lamp provided with an internal metallic conductor extending through a portion of its length, and an external conductor covering the remainder of the length of the said carbon and having metallic connection with the internal conductor, substantially as described.

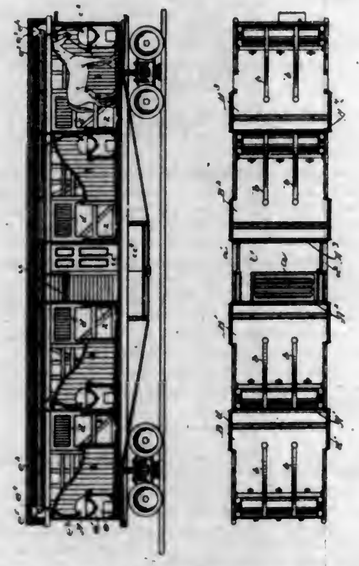
322,896. STOCK-CAR. GEORGE D. BURTON, New Ipswich, N. H. Filed Apr. 27, 1885. (No model.)



Claim.—1. A stock-car having a central room for the attendant, and cattle-apartments at each side thereof and extending from the attendant's room to the ends of the car, the said cattle-apartments having feed and water troughs at their opposite ends, and having a door, *d*, at or near the middle of their lengths, whereby the load may be brought more nearly over the trucks and the attendant be located in a more safe and convenient position, substantially as described.

2. A stock-car having cattle-receiving apartments D at each end, a room, C, for the attendant at the center of the car, and the fodder-locker below the said apartment, where it is not exposed to drippings from the car, substantially as described.

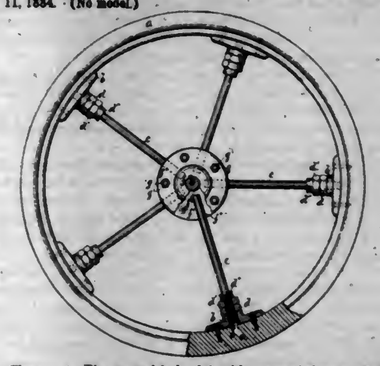
322,897. STOCK-CAR. GEORGE D. BURTON and EDWIN F. PERKINS, Boston, Mass. Filed May 13, 1885. (No model.)



Claim.—1. A stock-car divided transversely by partitions A' A^2 A^3 A^4 to constitute a central apartment, C, for the attendant, and at each side the two independent apartments B B' and B^2 B^3, respectively, for horses, the latter apartments being divided by longitudinal partitions *b* to form stalls leading from one alley closed at its ends by doors, substantially as described.

2. A stock-car divided transversely by partitions A' A^2 A^3 A^4 to constitute a central apartment, C, for the attendant, and at each side the two independent apartments B B' and B^2 B^3, respectively, for horses, the latter apartments being divided by longitudinal partitions *b* to form stalls leading from one alley closed at its ends by doors, the apartments B B', &c., being provided with planking, as at 2, to strengthen the partitions separating the apartments, substantially as described.

322,898. PULLEY. WILSON W. CAREY, Lowell, Mass. Filed Dec 11, 1884. (No model.)

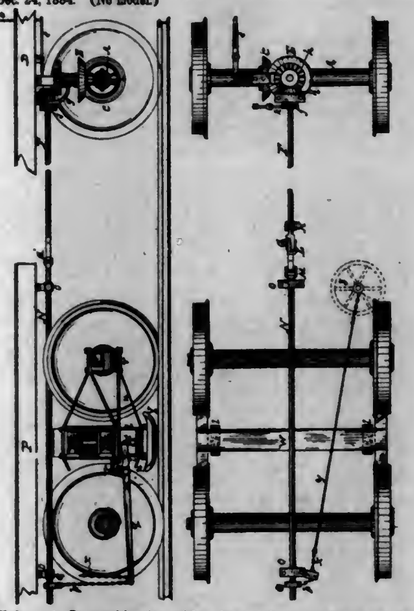


Claim.—1. The central hub, *f f*, with recessed flanges *f' f'' f³*, as described, combined with the radial steel arms *c c*, the pressure and holding nuts *d d'*, and outer rim, *a*, as and for the purpose set forth.

2. In a pulley, the outer rim, *a*, and screw-threaded steel arms *c c*, combined with pressure-nut *d* and check-nut *d'*, having cup-protector *d''* in its inner end, as and for the purpose set forth.

3. In a pulley, the divided hubs *f f*, having grooves or radial recesses *f'' f''* in the flanges *f f*, for the reception of the inner ends of the radial metal arms *c c*, such arms being clamped between said grooved flanges by means of screw bolts and nuts *g g'*, as and for the purpose set forth.

322,899. CAR-BRAKE. CYRUS M. CARNAHAN, Pittsburg, Pa. Filed Dec. 24, 1884. (No model.)



Claim.—1. In combination with a locomotive or railway-car, the bevel-faced frictional wheel C, affixed to an axle thereof and capable of a sliding movement thereon by means of a hand-lever, a companion friction-wheel arranged at right angles to and actuated by that on the axle, and two or more bevel-toothed gear-wheels meshing together and deriving their motion from the frictional wheels and axle, a rod extending therefrom underneath the car and coupled to a brake-lever for forcing the brake-shoes tightly down upon the rails of the track as a means for stopping the cars, and a spring for lifting and holding the shoes above the track when and as required.

2. In combination with a brake-rod having one or more gimbal or yielding joints, a clutch consisting of a sort of hand provided with four webbed fingers or inner ribs, and a broad flat thumb joined thereto at its base and extending outwardly therefrom separate but parallel with the fingers, all of which are curved outwardly at their extremities, in the manner shown, for the purposes set forth.

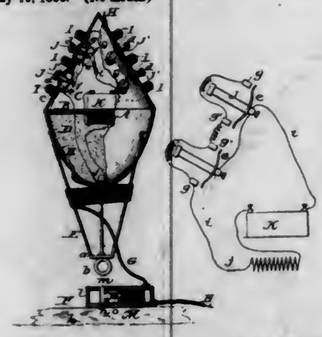
3. The combination of a brake-shoe that shall press upon the railway-rails, a cross-beam connecting such shoes, a spring for lifting and keeping the same above the track when not in use, a lever attached thereto and with frictional gearing, together with a means for setting and releasing the brakes by hand independent of said gearing.

4. In combination with the axle of a car, the beveled-faced friction-wheels and toothed gearing, the brake-rod provided with one or more gimbal-joints, consisting of two pairs of branches or forks coupled together in reverse positions by means of an intermediate cross, substantially as shown and described.

5. In combination with the axle of a car, the bevel-faced friction-wheels and toothed gearing, the brake-rod, provided with one or more joints, consisting of two pairs of branches or forks connected by a cross-piece, the arms of which extend through the prongs of each fork, one pair of forks being slotted and the other pair having between them a compensating spring, substantially as described and shown.

6. In combination with a brake-rod provided with a yielding joint and connecting-clutch, the brake-shoe, its connecting-lever and lowering devices, of an eccentric located on the brake-rod, a chain connecting it with said lever, and an additional chain and connecting-rod extending to a wheel or other device for operating the brake, substantially as described, and for the purpose set forth.

322,900. MARINE TORPEDO. ANGEL CASTRO, New York, N. Y. Filed May 19, 1885. (No model.)



Claim.—1. The herein-described apparatus for effecting submarine explosions, consisting of a torpedo having an eye or loop, an anchorage at the bed of the stream or basin, provided with an electro-magnet, and a bolt or detent serving to engage the eye of the torpedo, and adapted to be withdrawn by the electro-magnet, a battery, and a circuit-closer located at a convenient point for manipulation and adapted to close the battery-circuit.

2. In combination with a torpedo having its shell provided with an eye or loop, *b*, an anchorage therefor below the water, provided with electro-magnet M, a sliding bolt, *n*, serving as an armature for said magnet, a battery, O, a conductor, H, extending from the battery to the electro-magnet, and a circuit-closer, O', adapted to complete the battery-circuit and to cause the withdrawal of the bolt *n*.

3. The combination of a submarine torpedo provided with exterior electro-magnets and with an eye or loop, an anchorage located beneath the water, an electro-magnet located in said anchorage, a sliding bolt placed within the field of attraction of said magnet, a battery, an insulated electric conductor extending from the battery to the electro-magnet of the anchorage, and thence to the external electro-magnets of the torpedo, and a circuit-closer, all constructed and arranged substantially as shown and described, whereby the closing of the circuit is caused to release the torpedo from its anchorage and to prepare the electro-magnets to fasten the torpedo to an armored vessel.

4. In combination with the shell A, containing an explosive, electro-magnets I on the outer face thereof, external battery, O, and a circuit-wire connecting the battery O and the electro-magnets I, as and for the purpose set forth.

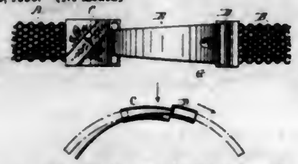
5. A torpedo provided with an electric battery, and with a movable permanent magnet (one or more) carrying a circuit-closer for said battery, the permanent magnet being exposed at the exterior of the torpedo, so that when brought close to the armor or metal of a vessel the magnets will be automatically drawn out and caused to close the battery-circuit.

6. The herein-described torpedo, consisting of a shell containing an air-space and a space for explosive material, a battery, an interrupted conductor connected with opposite poles of the battery, and containing a portion adapted to be heated by the passage of an electric current through it, a circuit-closer for said conductor, and a permanent magnet connected with said circuit-closer and adapted to move outward automatically and close the circuit when brought close to an external body of iron or steel.

7. A torpedo consisting of shell A, electro-magnet I on the outer face thereof, cable *b*, connecting the torpedo and its releasing device, external battery, O, internal battery, K, movable permanent magnets J, projecting from the face of shell A, and provided at their inner ends with circuit-closers *e*, contact-blocks *g g'* on the interior of the shell, and wires *h i*, connecting the opposite poles of the internal battery, K, with the circuit-closers *e*, and contact-blocks *g g'*.

8. In combination with shell A, containing explosive material, internal battery, K, movable magnets J on the outer face of the shell, contact-blocks *g g'* on the inner face of the shell, circuit-closers *e e'*, carried by the magnets J at their inner ends, wires *h i*, connecting the battery K with the blocks *g g'* and the closers *e*, and water-proof caps *d*, covering the outer ends of the magnets, substantially as and for the purpose set forth.

322,901. BRACELET. HORACE E. CHADWICK, Providence, R. I. Filed Feb. 18, 1885. (No model.)



Claim.—1. A bracelet having a flexible body, A B, with the cases or parts C D attached thereto, and the tongue or strap E, having the click G for engagement with an opening on the under side of part C, whereby the parts may be disengaged by an inward pressure on the part C.

2. A bracelet consisting of the body A B, having the parts C D on the ends thereof, and the tapering tongue or strap E, secured to part D, and detachably engaging with part C, so that when the bracelet is closed the tapering tongue E shall be covered by the body A.

322,902. EMBROIDERING ATTACHMENT FOR SEWING-MACHINES. FRANKLIN H. CHILTON, New York, N. Y., assignor to the Empress Embroiderer Company, same place. Filed JUNE 12, 1883. (No model.)



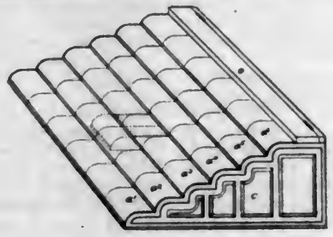
Claim.—1. The bracket H, having lips *i i*, supporting the post *k*, and the lip *m*, carrying the foot, in combination with the operating-lever I as described, adapted to actuate the post *k*, the rack F, pinion G, and the thread carrier and detainer and operating mechanism, substantially as set forth.

2. The bracket H, supporting the thread carrier and detainer and actuating mechanism, and provided with the slotted eyes *u v* and (between said eyes) the slot *w*, in combination with the operating-lever I, carrying the downwardly-turned hook *t*, the hook being at a suitable point to receive the loop of embroidering-thread drawn downward between the eyes *u v*, substantially as shown and described.

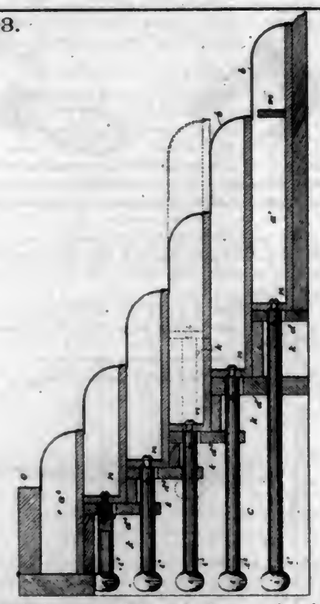
3. In an embroiderer, the foot formed of the parts *d e*, the part *d* having an opening, *h*, to receive the central projection, *g*, of the part *e*, substantially as set forth.

322,903. EXHIBITING-CASE. JULIUS M. CLAPP, Newton, Mass. Filed Nov. 17, 1884. (No model.)

Claim.—1. The series of tiers of sliding boxes or receptacles, those of each tier normally projecting beyond those above them, combined with independent transparent shields for the projecting portions, each box being adapted to be slid to uncover the same and render its contents accessible, substantially as described.



322,903.



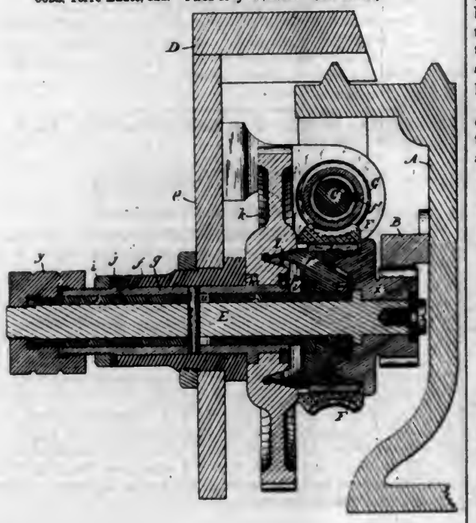
2. An exhibiting-case consisting of the frame-work and series of tiers of drawers therein, those of each tier normally projecting a portion of their length from those above them, combined with drawer-operating devices arranged at the rear of the drawers, whereby any desired one of the drawers may be pushed forward to render the entire interior accessible, substantially as described.

3. The frame-work and series of tiers of sliding drawers, and an upper tier of stationary boxes, those of each tier normally projecting a portion of their length from those above them, combined with a removable cover for the stationary boxes in the upper tier, substantially as described.

4. A series of tiers of sliding boxes, those of each tier normally projecting a small amount from those above them, each box having its main portion normally covered, and being adapted to be uncovered by sliding the box, combined with locking devices for the said boxes, substantially as described.

5. An exhibiting-case consisting of the frame-work and series of tiers of drawers therein, those of each tier normally projecting a portion of their length from those above them, combined with drawer-operating devices provided with locking devices, substantially as described.

322,904. TOOL-FEEDING MECHANISM FOR LATHES. EDWARD S. COBB, Terre Haute, Ind. Filed May 25, 1885. (No model.)



Claim.—1. A tool-feeding mechanism for lathes, consisting of the following elements, namely: a tool-carriage arranged to slide longitudinally on the lathe-bed and having a tool-support arranged to slide on said carriage across the lathe-bed, a screw mounted in the carriage and arranged to move said tool-support, a rack-bar secured to and along one side of the lathe-bed, a shaft mounted in bearings along one side of the lathe-bed and arranged to revolve, a hollow shaft arranged to revolve in a suitable bearing in the apron of the tool-carriage, a gear-wheel arranged to revolve on said shaft and to impart movement to the cross feed screw in the carriage, a central shaft passing through said hollow shaft and connected therewith so as to bear a fixed relation thereto, a pinion arranged to revolve on said central shaft and to engage the rack-bar, a second hollow shaft mounted upon said central shaft within the first hollow shaft and arranged to have a longitudinal movement in relation thereto, a double-faced clutch mounted on said hollow shaft so as to turn thereon and to move longitudinally therewith, and arranged between the opposed sides of the gear connected with the cross feed screw, and the pinion engaging the rack-bar, so as to engage clutch-surfaces on either, a clamping-nut or its equivalent arranged outside of the apron of the tool-carriage and adapted to move the second hollow shaft longitudinally, and to thereby bring the clutch into engagement, an annular screw gear-wheel mounted on the periphery of the clutch and secured thereto so as to revolve therewith and permit a sliding movement thereon, and a screw engaging said screw gear-wheel and actuated by the shaft on the lathe-bed, all combined and adapted to co-operate substantially as specified.

2. In a tool-feeding mechanism for lathes, the combination, with the lathe-bed, a rack-bar secured thereto, a shaft arranged to revolve in bearings on the lathe-bed, and a tool-carriage arranged to slide on said bed, of a hollow shaft arranged to revolve in a bearing on the tool-carriage, a central shaft passing through said hollow shaft and connected therewith so as to bear a fixed relation thereto, a pinion arranged to revolve on said central shaft and to engage the rack-bar, a second hollow shaft mounted upon said central shaft within the first hollow shaft and arranged to have a longitudinal movement in relation thereto, a clutch mounted on said hollow shaft so as to turn thereon and to move longitudinally therewith, and arranged to engage a clutch-surface on the pinion which engages the rack-bar, means for moving the interior hollow shaft longitudinally, whereby the clutch is brought into engagement with the pinion, an annular screw gear-wheel mounted on the periphery of the clutch so as to turn therewith, and a screw engaging said screw gear-wheel and actuated by the shaft on the lathe-bed, all substantially as and for the purpose specified.

3. In a tool-feeding mechanism for lathes, the combination, with the lathe-bed, a shaft arranged to revolve in bearings thereon, and a tool-carriage arranged to slide longitudinally on said bed, and having a tool-support arranged to slide across the bed, of a screw arranged to move said tool-support, a pinion on said screw, a hollow shaft arranged to revolve in a bearing on the tool-carriage, a gear-wheel arranged to revolve on said shaft and to impart movement to the cross feed screw, a second shaft fitted to the interior of the hollow shaft and connected thereto so as to revolve therewith, but capable of a limited longitudinal movement in relation thereto, a clutch mounted on said second shaft so as to revolve thereon and to move longitudinally therewith, and arranged to engage a clutch-surface on said gear-wheel, a clamping-nut or its equivalent arranged on said shafts and adapted to move the said second shaft longitudinally, whereby the clutch is brought into engagement, an annular screw gear-wheel mounted on the periphery of the clutch so as to turn therewith, and a screw engaging said screw gear-wheel and actuated by the shaft on the lathe-bed, all substantially as and for the purpose specified.

4. The friction clutching mechanism, consisting of two hollow shafts, one arranged to slide within the other, a central shaft passing through the interior hollow shaft and connected with the exterior hollow shaft so as to bear a fixed relation thereto, clutch-wheels mounted on each of said shafts so as to revolve thereon, and means, substantially as shown and described, for moving the interior hollow shaft longitudinally, whereby the clutch-wheel on said shaft is brought into engagement with either of the other clutch-wheels, all combined and arranged to co-operate substantially as specified.

322,905. AXLE-LUBRICATOR. WARREN COLE, Jr., Keokuk, Iowa. Filed Nov. 15, 1884. (No model.)

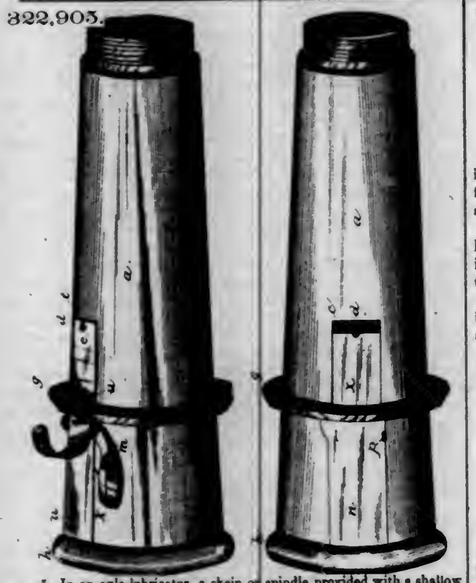
Claim.—1. In an axle-lubricator, a spindle or skein having a slot entering the frictional surface thereof through the shoulder, in combination with a slide, substantially as shown and described.

2. In an axle-lubricator, a spindle containing a flat slot provided with an inclined plane and headed screw or pin, in combination with a slide having a notched end, substantially as shown and described.

3. In an axle-lubricator, a skein or spindle provided with a flat or level place on the outside between the back band and shoulder, substantially as shown and described.

4. In an axle-lubricator, a spindle having a short flat slot, in combination with a slide provided with a double crook or shoulder, substantially as described and shown.

322,905.

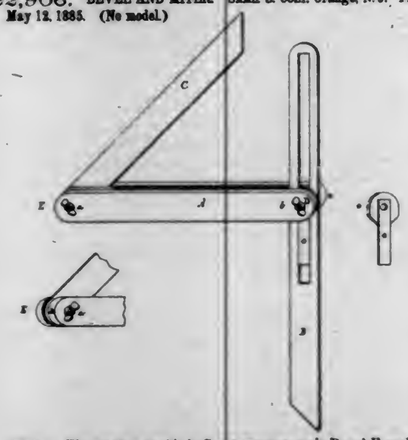


5. In an axle-lubricator, a skein or spindle provided with a shallow slot and thin slide, in combination with a wedge or its equivalent having a spring secured thereto, whereby the wedge and slide are held in place, substantially as specified.

6. In an axle-lubricator, a spindle provided with a wedge having a spring on the under side where it is protected from dirt, and a lug whereby the wedge is held in place, substantially as shown and described.

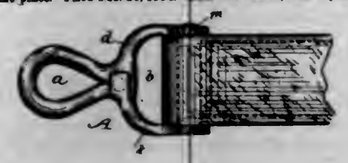
7. The combination, with an axle-lubricator, of a spindle provided with a short shallow slot, *x*, inclined plane *c*, screw or pin *d*, notched and crooked slide-lug *p*, flat place *n*, wedge *k*, with spring *m*, attached on under side, substantially as specified.

322,906. BEVEL AND MITER. SAML. S. COLT, Orange, N. J. Filed May 12, 1885. (No model.)



Claim.—The guide *c*, the blade C, set-screw *a*, scale D and E, and index *e* and *d*, in combination with the handle A, slotted blade B, and set-screw *b* of a bevel, all substantially as set forth.

322,907. COCKEYE. CHARLES J. COOPER and HARRY S. BOLLINGER, Chicago, Ill., assignors to Charles J. Cooper and Herbert W. Cooper, both of same place. Filed Feb. 26, 1884. Renewed June 4, 1885. (No model.)



322,907.



Claim.—1. As an improved article of manufacture, a cockeye having its loop end formed with two detachable parts, substantially as set forth, and means for holding said parts together, substantially as described.

2. As an improved article of manufacture, a cockeye having the loop end formed of two parts detachable from each other, said parts having the headed projections and openings for said projections, substantially as described.

3. The combination of a trace and cockeye, said cockeye having its loop end formed with the two detachable parts, substantially as described.

322,908. ATOMIZER. JOHN F. CORELY, Chicago, Ill. Filed June 1, 1885. (No model.)



Claim.—1. An atomizer consisting of the combination of a tube, E, having in its upper end the spiral cuts or notches *f f*, the tube or top piece, D, having a contracted end entered by the upper end of the tube E, and the outer tube, C, having at or near its lower end the openings or ports *g g*, substantially as and for the purposes specified.

2. The combination, in an atomizer, of the horizontally-arranged tube D, open at both ends, the depending tube C, open at or near its lower end, and the interior tube, E, entering the tube D, and bent horizontally at its upper end, so that the said end shall be arranged, substantially as shown, with relation to the eduction or discharging end of the tube D, substantially as and for the purposes specified.

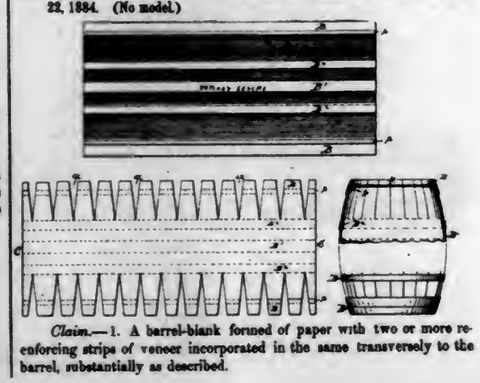
3. An atomizer in which the upper end of the discharging-tube has spiral cuts or notches, substantially as and for the purposes specified.

322,909. REIN-GUARD FOR WHIFFLETREES. FRANK E. COREY, Westborough, Mass. Filed Mar. 30, 1885. (No model.)



Claim.—The combination, with the whiffletree and thills of a carriage or other vehicle, of a device for preventing the reins used for guiding a horse in driving from getting under the end of said whiffletree and becoming caught thereon, consisting of a loop or ring formed upon or fastened to the end of the whiffletree, which is adapted to engage with and slide upon a bent rod or strap attached to said thills, substantially as shown and described.

322,910. BARREL. JAMES COSGROVE, Flatbush, N. Y. Filed Sept. 22, 1884. (No model.)



Claim.—1. A barrel-blank formed of paper with two or more re-enforcing stripe of veneer incorporated in the same transversely to the barrel, substantially as described.

2. A barrel-blank formed of paper with re-enforcing strips B^2, and lateral triangular incisions extending to the said strips, as and for the purpose described.

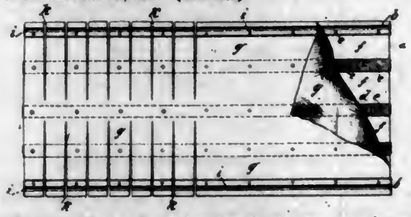
3. A barrel-blank formed of paper with re-enforcing-strips B B' B^2, and having lateral incisions, as and for the purpose described.

4. A paper barrel having re-enforcing strips of veneer incorporated in the same transversely to the barrel, as described.

5. A barrel-hoop made of alternate layers of paper and veneer rolled to a flare or taper, as described.

6. A barrel-head made of two or more layers of paper or straw board with a re-enforcing rim of veneer or stiffening material incorporated between the layers at the edges, as described.

322,911. PAPER KEG OR BARREL. JAMES COSGROVE, Flatbush, N. Y. Filed Dec. 30, 1884. (No model.)



Claim.—1. A paper keg or barrel made of two or more layers of paper with five intervening bands of wood, one at each chine edge, one at the middle, and one at each side of the bilge, substantially as herein shown and described.

2. A paper keg or barrel made of two or more layers of paper with intervening bands of wood tacked and cemented between said layers, substantially as set forth.

3. A paper keg or barrel made with internal strengthening-bands of wood extending circumferentially with the grain running crosswise in the bands, substantially as set forth.

4. A paper keg or package made of two or more overlying sheets of paper cemented together with intervening bands of wood having the grain running crosswise and secured between the said sheets, substantially as set forth.

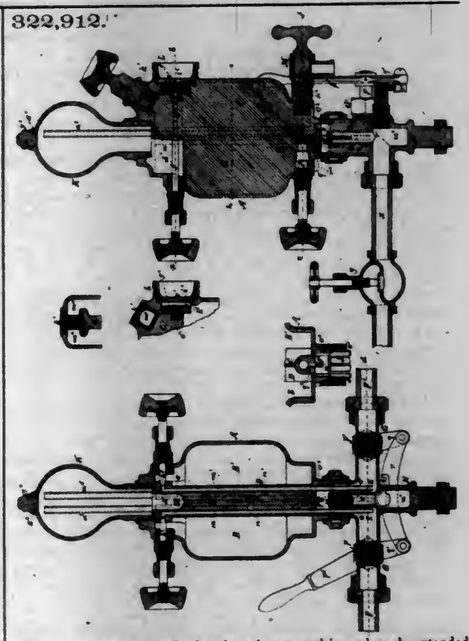
5. A keg or package made of layers or sheets of paper with the intervening strengthening-bands *e e* at the bilge, and stave-forming slits *k*, extending from the edge of the sheet through said bilge-bands, substantially as shown and described.

6. A keg or barrel made of a sheet or sheets of paper and provided with a grooved wooden band at each chine edge secured to the paper to form the croze of the barrel, substantially as set forth.

7. A keg or package made of two or more sheets or layers of paper with grooved bands *b b*, placed between said sheets at the chine edges, and having the margin of the inner sheet rolled into said grooved bands to form the croze of the barrel, substantially as shown and described.

322,912. STEAM-ENGINE LUBRICATOR. WARREN H. CRAIG, Lawrence, Mass. Filed June 1, 1885. (No model.)

322,912.



Claim.—1. The oil-reservoir as provided with the divisional partition C and column D, arranged in it as described, and having in the said column, lengthwise thereof, the two oil and the two steam passages *m m'* and *n n'*, all being substantially as set forth.

2. The oil-reservoir provided with the transverse partition C, with its column D, having oil and steam passages, as set forth, the sight-feed L, and the chamber *d'*, and the passage *c'*, leading from such chamber *d'*, and provided with branch educts communicating with the two flutes of the sight-feed, all being arranged substantially as set forth, and the chamber *d'* being provided at top with an opening to communicate with the condenser when fixed to and arranged above the oil-reservoir, as represented.

3. The combination of the condenser K and the chamber E, and its steam-induct *x u'*, and discharge-cocks G G', with the oil-reservoir A, arranged between such chamber and condenser, and provided with a sight-feed, L, divisional partition C, and oil and steam passages *m*, *m'*, *n*, and *n'*, extending within such partition or its enlargement or column D, and communicating with the condenser and the chamber E, all being substantially as set forth.

4. The combination of the index-finger I, recessed link *r*, crank *q*, and the lever p^2, with the chamber E, and its steam induct and discharge cocks G and G', arranged and communicating with the condenser and the chambers B and B' of the oil-reservoir, substantially as set forth.

5. The sight-feed L, having the two separate reflecting flutes arranged in rear of and close against its glass-pane, and communicating with the condenser and the chambers B and B' of the oil-reservoir, substantially as set forth.

6. The chamber E, connected with the oil-reservoir at its lower part, and provided with the steam-induct *u'*, its tubular neck *v'* and partitions *z z*, and with the check-valve *w'*, arranged in such neck, extended upward through and beyond the chamber E, substantially as represented.

7. The duplex oil-reservoir A, provided in its lower part with the drainage-cock M, communicating by separate passages with the two chambers B and B' of such reservoir, all being substantially as described, such cock being to simultaneously drain both chambers, as explained.

8. The combination, with the duplex oil-reservoir A, of the deflecting-bar p^3, arranged over the valve *w'*, and extending across the neck o^3, projecting down from such oil-reservoir, as represented, such bar being for the purposes as specified.

9. The duplex oil-reservoir provided at top with the oil-feeding mouth *k'*, and its two branch passages, m^3, opening therefrom into the two chambers B and B' of such reservoir, and also with the stopple *l'*, to screw into such mouth and against its bottom and across the said passages, all being substantially as set forth.

10. The duplex oil-reservoir provided with the chamber r^3, having passages u^3 leading laterally from it into the two chambers B and B' of such reservoir, and also having a passage, q^3, leading from it into the neck o^3, and provided with a screw-plug, s^3, for opening and closing such passages, all being substantially as set forth

11. The duplex oil-reservoir having in it the two separate oil-chambers, and the sight-feed communicating with such chambers and the condenser, as described, and also having the chamber *d'* arranged in the upper part of it, (the said reservoir,) and opening into the condenser and provided not only with a passage leading from it to the two flutes of the sight-feed, but with a screw-plug to close the said passage, all being substantially as set forth.

12. The combination, with the condenser K and the oil-reservoir A, and with the chamber E arranged below such reservoir and communicating therewith, and having an induct and cocks, as described, of the partition C, extending across the reservoir and provided with the central column, D, and its passages *m m n n'* and pipes a^2 a^2 *o o'*, leading from such passages into the said chamber and condenser, such reservoir having a sight-feed, as described, to its two chambers, and also having means of regulating the passage of water from the condenser to the two flutes of such sight-feed, and also being provided with means or cocks for draining such reservoir either outside of or into the said chamber E, all being substantially as represented.

13. The combination of the condenser with the oil-reservoir, having in it two separate chambers for holding oil, and also a water-inlet from the condenser and an oil-discharge passage to each of such chambers, and with a chamber below such reservoir and opening into its oil-discharge passages and provided with two educts and cocks thereto, all being substantially and to operate as set forth.

14. The combination of the condenser with the oil-reservoir having two separate oil-chambers within it, and provided with a sight-feed, substantially as described, communicating with the condenser and reservoir, and having a stop-cock or screw-plug to regulate the flow of water from such condenser into the compartments or flutes of said sight-feed, such

oil-reservoir having below it a steam induction and eduction chamber and passages leading from the upper parts of the oil-chambers into such steam-induction chamber, all being essentially as represented.

15. A displacement-lubricator having a duplex oil-reservoir with oil-discharge passages to each oil-holding part thereof, and also having a valve to each of such passages, in combination with a water-chamber from which water can be admitted to each of the said oil-holding parts of such duplex oil-reservoir.

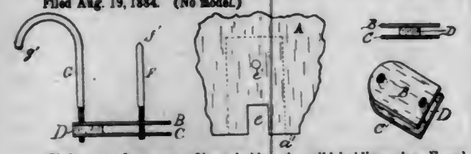
16. The combination of a lubricator consisting of an oil-reservoir and a steam-condenser arranged to communicate with each other, and having a valve between them to open and close such communication, with a concaved light-reflector set in close proximity to a glass pane or window arranged in the oil-reservoir, and having a water-passage leading from the condenser to the concaved face of such reflector, so that the water from the condenser may be seen as it passes through the channel so formed on its way to the oil-reservoir.

17. The combination of a displacement-lubricator having a duplex or double-chambered oil-reservoir provided with an oil-discharge passage to each oil-holding chamber or part of such reservoir, and with a valve to such passage, with a water-chamber from which water can be admitted and seen through a glass as it may enter either part of said duplex oil-reservoir.

18. The combination of a lubricator having a steam-condenser and an oil-reservoir provided with two oil-discharge passages leading from the latter, with an oil receiving and distributing chamber having two discharge-pipes leading from it and provided with a valve to each, such valves having mechanism by which they may be opened or closed by one lever, all being substantially as described.

19. The combination, with a lubricator provided with an oil-reservoir and a steam-condenser, of an oil-discharge chamber having valves to open and close its oil-discharge pipes, and provided with mechanism to be operated by one lever or handle, the said chamber being to communicate with the oil-reservoir and steam-condenser, substantially in manner and for the purpose as set forth.

322,913. PAPER CLIP OR FILE. CALVIN D. CRANE, St. Louis, Mo. Filed Aug. 19, 1884. (No model.)



Claim.—1. In a paper file or holder, the solid holding-wires F and G, screw-threaded at their lower ends to permit the raising or lowering of either or both wires and to permit their connection or disconnection with each other by the turning of the curved wire on its screw, and whereby, also, the capacity for holding more or less numbers of papers is regulated, and whereby the holding-power at the junction of the wires may be adjusted and increased or diminished, substantially as described.

2. In a paper file or holder, the metal plates B and C, connected at their external ends with a metal block, plate, or disk, in combination with the back A, interposed between said plates, and provided with a recess, *e*, to receive the block or disk D, substantially as described.

3. In combination, the mortised back A, plates B and C, the metal block D, and the adjustable solid wire F, screwed into said plates and back, the combination serving to attach the plates to the back and to vary the practical length of the wire, substantially as described.

4. In combination, the mortised back A, plates B and C, the metal block D, the adjustable solid wire F, screwed into said plates and back, and the adjustable solid curved wire G, screwed into said plates and block, all substantially as shown and described.

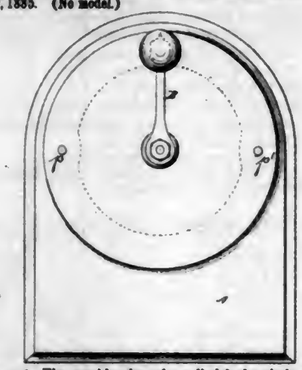
322,914. COMBINATION-TOOL. GEO. CUTTER, Boston, Mass. Filed June 6, 1885. (No model.)



Claim.—1. In a tool substantially such as described, the combination of the following instrumentalities, to wit: a handle, a brad-awl, a countersink, and a screw-driver, the countersink and brad-awl being integral or formed in one piece, the screw-driver being provided with two ends adapted to engage a screw, and adjustably connected with the body of the brad-awl, and the handle provided with an open socket adapted to receive either end of said driver and house the same when the driver is arranged for use.

2. The improved combination-tool herein described, the same consisting of the handle A, provided with the open socket *t*, the screw-driver C, provided with the points *m x* and screw H, and the brad-awl B, provided with the slot D, countersink *z*, and point E, constructed, combined, and arranged to operate substantially as set forth.

322,915. ELECTRIC SWITCH. LEO DAFT, Greenville, N. J. Filed Mar. 9, 1885. (No model.)



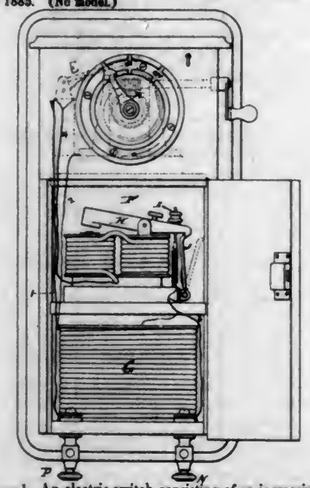
Claim.—1. The combination of a cylindrical switch, provided with an angular conducting-place embedded in insulating material, with a series of springs connected to successive sections of a resistance-coil, and adapted to be successively brought in contact with the angular edge of the conducting-plate, thereby gradually increasing or decreasing the resistance of the circuit, substantially as described.

2. The combination of a reversing-switch, having contact-plates and a series of springs arranged to connect therewith, a series of resistances, and the connections shown, whereby the current may be reversed in the switch, and the series of resistances simultaneously thrown into or out of circuit, thereby accomplishing the double result of reversing the current and avoiding secondary discharge, substantially as described.

3. The combination of the reversing-switch C, provided with angular plates D D′, with a series of springs adapted to bear against said plates, and connected in succession to a series of resistances for the purpose of reversing the current and preventing secondary discharge, substantially as described.

4. The combination of the switch C, provided with plate D, and the series of springs 1 2 3 4 5 6, with an adjustable rheostat connected to said springs, substantially as described.

322,916. ELECTRIC SWITCH. LEO DAFT, Greenville, N. J. Filed Mar. 9, 1885. (No model.)



Claim.—1. An electric switch consisting of an increasing-cam with a sudden drop, having peripheral conducting-strips arranged partially around its surface and a transverse conducting-strip arranged across its highest point, substantially as described.

2. In an electric switch, the combination, with a gradually-increasing cam having peripheral conducting-strips, of spring-contacts bearing upon said cam and an actuating worm-gear for said cam, substantially as described.

3. The combination, in an electric switch, of a gradually-increasing cam of insulating material, having peripheral conducting-strips arranged circumferentially and transversely, spring-contacts bearing upon said cam, and connections, substantially as described, whereby the circuit may be opened, closed through a resistance, and then closed direct through the working-circuit, as set forth.

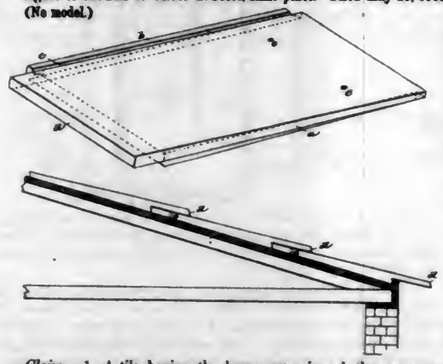
4. The combination, in an electric switch, of a gradually-increasing cam having a sudden drop, circumferential and transverse conducting-stripe on the periphery thereof, spring-contacts bearing on the cam, a worm and gear for operating the cam, and an indicator for showing its position, substantially as described.

5. The combination, in an electric circuit, of a resistance, a switch for varying the resistance, and a worm-gear for operating the switch, whereby a slow movement of the resistance-varying apparatus is insured, substantially as described.

6. The combination, in an electric circuit, of a resistance, a switch for varying the resistance, a worm-gear for operating the switch, and an automatic cut-out, substantially as described.

7. The combination, with the increasing cam-switch and contacts, of an automatic cut-out and connections, substantially as described.

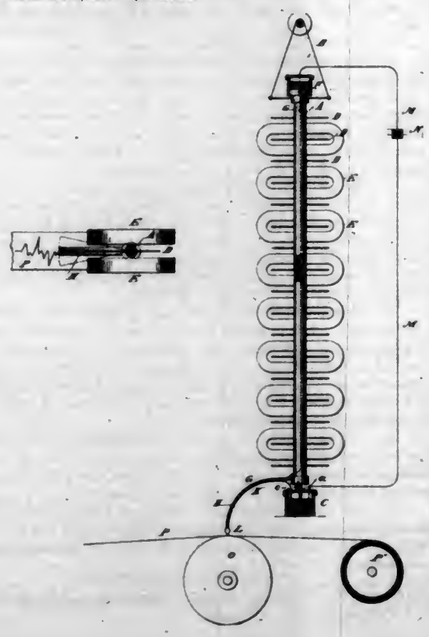
322,917. ROOFING-TILE. JOHN E. DONALDSON, Montezuma, Ind., assignor of one-half to Oliver B. Price, same place. Filed May 28, 1885. (No model.)



Claim.—1. A tile having the lower extension, *d*, the upper and lower edges of the tile being beveled or inclined inwardly, and having the projecting side extensions, *a* and *b*, the lower extension, *b*, having the groove *c*, substantially as described.

2. A tile having the lower extension, *d*, the upper and lower edges of the tile being beveled or inclined inwardly, for the purpose set forth, substantially as described.

322,918. CABLE-RECORDER. MOSES G. FARMER, Newport, R. I. Filed Dec. 4, 1884. (No model.)



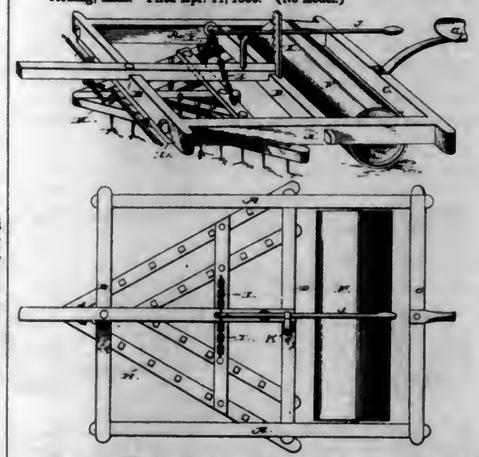
Claim.—1. An electrical recorder consisting of the combination, with insulated coils and armatures, of a platinum wire arranged to be heated by an electric current and attached to the armature-support, so as to move therewith, and a band or strip of colored tissue-paper, adapted to be moved past the platinum wire, as and for the purpose set forth.

2. The combination, with a series of insulated coils, armatures, or magnetized bars, and a support for the same capable of being moved by the action of currents in the coils upon the armatures or bars, of a platinum wire arranged to be electrically heated attached to the support, so as to move therewith, and a band or strip of colored tissue-paper adapted to be moved past the platinum wire, all substantially as described.

3. The combination, with a series of insulated coils, magnetized needles or bars, and a vertically-suspended support by which said bars are carried, of copper or similar wires connected with an electric circuit and projecting from the armature-support, a short length of platinum wire united to the copper wires, and a band or strip of colored tissue-paper adapted to be moved past said platinum wire, as set forth.

4. The combination, with a series of stationary galvanometer-coils, magnetized bars in position to be moved by currents in the coils, and a vertically-suspended tube carrying said bars, of copper wires extending from said tube, a platinum wire connected to the copper wires, an electric battery for heating the platinum wire, mercury-cups for connecting the wire with the battery, and a band or strip of colored tissue-paper adapted to be moved past the platinum wire, as herein set forth.

322,919. HARROW AND LAND-ROLLER. WILLIAM T. FERGUSON, Corning, Kans. Filed Apr. 11, 1885. (No model.)



Claim.—1. The combination, with the main frame, of the roller journaled in the rear end thereof, the tongue rigidly secured to the top of the frame, the double-tree L, attached to the under side of the frame at the front end, the A-shaped harrow, having its rear ends extended out under the side beams of the frame, the lifting-lever, the chain connecting the latter with the harrow in advance of its rear end, and chains connecting the forward ends of the harrow to the tongue, as set forth.

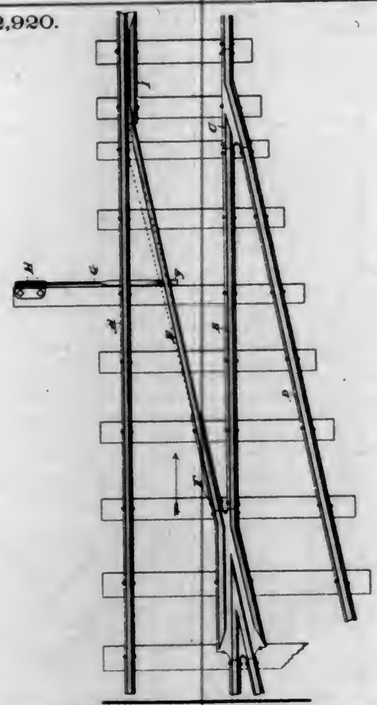
2. The combination, with the main frame, of the roller, the rigid tongue, the V-shaped harrow suspended loosely below the frame and extended at its front end beyond the latter, to connect by chains with the tongue, and also having its rear ends extended out under the side beams, a lifting-lever, and chains connecting the latter with the harrow in advance of its rear end, whereby the operation of the lever causes the rear ends of the harrow to be brought up against the under side of the main frame, and thus act as a fulcrum to allow the raising of the front end of the harrow above the ground, as set forth.

322,920. RAILROAD-SWITCH. THOS. M. FOOTE, Black Wolf, Kans. Filed Apr. 8, 1885. (No model.)

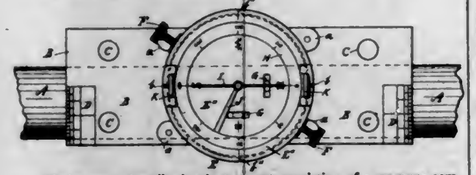
Claim.—1. The combination, with the main and side tracks, of the guard-rail having the beveled end, and the switch-rail E, which is fast at one end and adapted to bear or spring at its free end normally against the beveled end of the guard-rail, for the purpose set forth, substantially as described.

2. The combination, with the main and side tracks, of the guard-rail, the switch-rail E, fast at one end and adapted to spring or bear normally at its free end against the guard-rail and keep the main track open, and the rod G, for moving the switch-rail, connected to the latter at a distance from its free end, for the purpose set forth, substantially as described.

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322,921. ALIGNING-INSTRUMENT. ROBERT GARICH, Chicago, Ill. Filed Oct. 3, 1884. (No model.)



Claim.—1. An aligning-instrument consisting of a compass combined with sight-vanes, and a base-plate having a flange or depending edge, B′, thereon, substantially as and for the purposes specified.

2. An aligning-instrument consisting of a compass having sights on a needle-box rotary on its seat, combined with a base-plate having a flange or depending edge, B′, substantially as and for the purposes specified.

3. The combination, in an aligning-instrument, of a compass having a needle in a rotary box provided with sights, of the support E′, of the screws F F, and of the base-plate B, having thereon the depending flange B′, substantially as and for the purposes specified.

4. The combination, in an aligning-instrument, of a compass having a needle in a rotary box provided with sights, of the support E′, of the screws F F, of the flanged plate B B′, and of the screws C C, substantially as and for the purposes specified.

5. The combination, in an aligning-instrument, of a compass having a needle in a rotary box provided with sights, and having thereon the marks *b*″ *b*″, of the screws F F in the said support, of the flanged plate B B′, and of the screws C C in the said plate, substantially as and for the purposes specified.

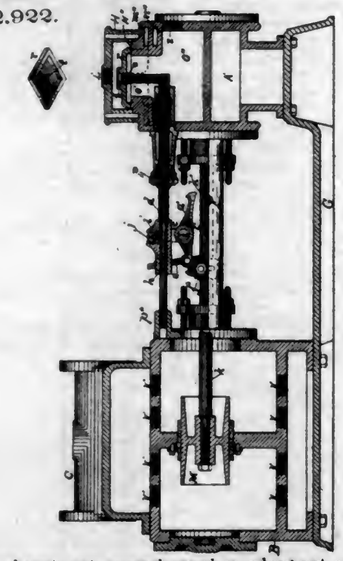
6. The combination, in an aligning-instrument, of a compass, sights, or sight-vanes K K, a plate, B, having thereon a flange, B′, and the block M, substantially as and for the purposes specified.

322,922. DUPLEX PUMPING-ENGINE. HARVEY F. GASKILL, Lockport, N. Y. Filed Dec. 4, 1884. (No model.)

Claim.—1. The combination, with two steam-cylinders, of a single valve-seat having ports communicating with the ends of the cylinders, and provided with an exhaust-port, and a valve adapted to cover and uncover the supply-ports by making four rectilinear movements in rotation, and in like manner to bring the said supply-ports into communication with the exhaust-port, substantially as herein specified.

2. In a duplex pumping-engine, a valve-seat having four obliquely-

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disposed supply-ports arranged around an exhaust-port, a rectangular valve, and mechanism, arranged as described, for imparting to the valve longitudinal and transverse motions in alternation, substantially as herein specified.

3. In a duplex pumping-engine, the combination, with a slide-valve capable of movement in longitudinal and transverse directions, of a single valve-rod, and mechanism for imparting to it rotary motion from a reciprocating part of one of the engines, and mechanism for imparting to it longitudinal motion from a reciprocating part of the other engine, substantially as herein specified.

4. The combination, with a slide-valve arranged to move alternately in two paths crossing each other, of a valve-rod entering the exhaust-passage and connected with the under surface of the valve, and mechanism for imparting longitudinal and transverse movements to the valve, substantially as herein specified.

5. The combination, with the valve-seat H″, having ports *m m′ n n′*, arranged around an exhaust-port, *o′*, and the valve *r*, adapted to open and close the said ports, of direct steam-passages communicating between the steam-chest and the front end of the cylinders, and crossed passages *m″ n″*, communicating between the steam-chest and opposite end of the cylinder, substantially as shown and described.

6. The combination, with the two steam-cylinders of a duplex pumping-enghie, of a single valve-chest having a valve-seat with four supply-ports and an exhaust-port, a valve adapted to cover and uncover supply-ports in rotation and bring them into communication with the exhaust-port in rotation, an exhaust-passage common to both cylinders, and mechanism, substantially as described, for imparting longitudinal and transverse motions to the valve, as herein specified.

7. The combination, in a duplex pumping-engine, of a valve, *r*, adapted to slide on the seat H″ and cover and uncover the ports *m m′ n n′* in rotation, a valve-rod, *d*, adapted to slide and turn in the gland *p*, and provided with an arm, *o*, extending upward through the exhaust-port *o′* into a cavity formed in the exhaust side of the valve *r*, and mechanism for imparting longitudinal and rotary reciprocating movements to the said rod, substantially as herein described.

8. The combination, in a duplex pumping-engine, of the valve-rod *d*, cross-head *i*, mounted loosely on the rod, the cam *a*, and arm *e*, turning on a fixed pivot, and the roller *f*, carried by the piston-rod *k* and adapted to engage the cam *a* during the latter half of each stroke of the piston, the cam *a′*, turning on a fixed pivot-arm, *h*, fixed to the valve-rod *d*, the connecting-link *e*, and the roller *f′*, carried by the pistou-rod *k′*, substantially as herein specified.

9. The combination, with the valve *r* and valve-rod *d*, of two cams, *a a′*, and two rollers, *f f′*, carried by the piston-rods *k k′*, the said cams arranged to receive motion from the said rollers during the latter half only of the strokes of the piston-rods, as herein specified.

10. The combination, with the rotating and sliding valve-rod *d*, of a sleeve extending into the exhaust-passage of the engine and carrying at its inner end a bearing for the valve-rod and at the outer end a gland, *p*, substantially as described.

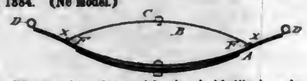
322,923. LEATHER WASHER. TIMOTHY GINGRAS, Buffalo, N. Y. Filed July 14, 1884. (No model.)

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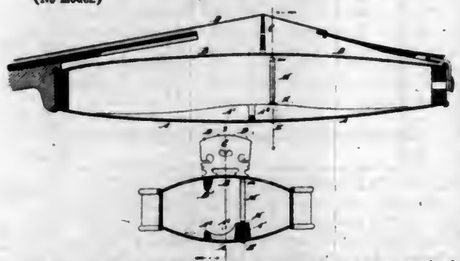
Claim.—As an article of manufacture, a leather washer consisting of two concentric rings cut from leather and cemented together, with their hair or grain sides on the outside, substantially as specified.

322,924. VEHICLE-SPRING. ALBERT GUMMER, Omro, Wis. Filed May 21, 1884. (No model.)



Claim.—The combination, with the half-elliptic primary spring, having the fixed perforated ears between its middle and each end, of the supplemental spring, attached at its end to the fixed perforated ears described, its middle forming a bearing about in the same plane with the ends of the main spring, substantially as set forth, for the purpose specified.

322,925. VIOLIN. ISAAC HALL, Brooklyn, N. Y. Filed Nov. 14, 1884. (No model.)



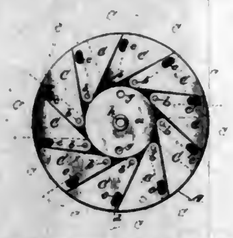
Claim.—1. The post M, having an elastic end or cushion, *m*, glued or otherwise permanently secured on its front, in combination with a violin, and arranged to serve therein, substantially as herein specified.

2. The post M, having a tapering or pointed back end, in combination with a violin having a recess adapted to receive such pointed post, arranged for joint operation, substantially as herein specified.

3. The combination, with a violin or analogous musical instrument, of the post M and adjusting-screw E, having a hollow front end to receive said post, arranged to serve as and for the purposes herein specified.

4. The post M, screw E, and bushing H, in combination with the back A, longitudinal strengthening-ribs A′ A², and cross-ribs A², front B, bridge C, and springs D, arranged for joint operation, substantially as herein specified.

322,926. ALARM ATTACHMENT FOR BALING-PRESSES. JOHN L. HALL, Colony, Kans. Filed Sept. 19, 1884. Renewed June 29, 1885. (No model.)



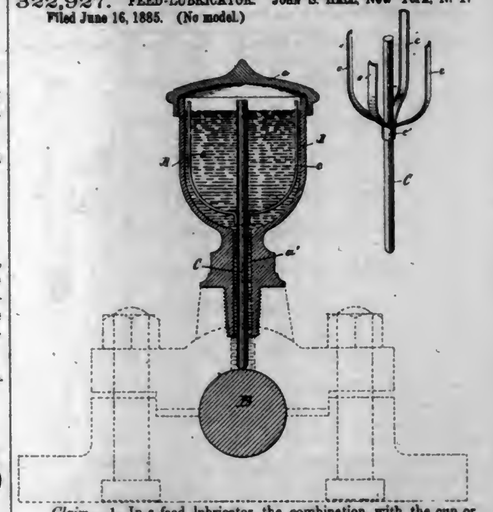
Claim.—1. A wheel for the alarms of baling-presses, provided with means, substantially as described, for increasing or diminishing the periphery or circumference of the wheel, for the purpose set forth.

2. A wheel for the alarms of baling-presses, consisting of two disks and a series of adjustable plates held between them, substantially as and for the purpose specified.

3. A wheel for the alarms of baling-presses, consisting of two disks and a series of pivoted plates held between the disks, and means for extending or projecting the plates beyond the periphery of said disks, substantially as and for the purpose described.

4. In a wheel for the alarms of baling-presses, the combination, with two disks connected together, one of which is provided with pins upon its inner side and adapted to turn upon its axis, of a series of pivoted plates held between said disks and having elongated slots, in which the pins upon the disk enter, substantially as and for the purpose set forth.

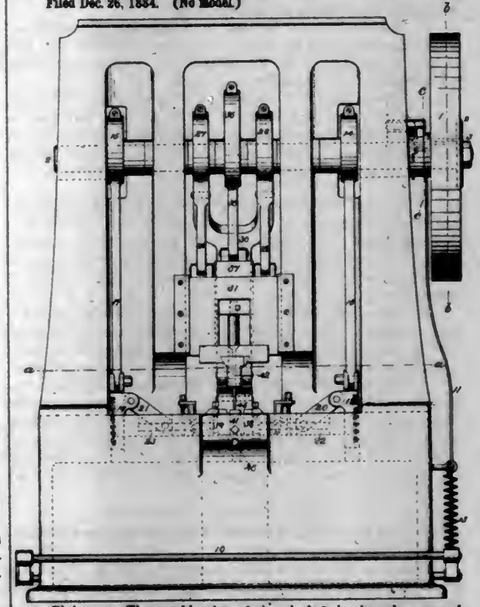
322,927. FEED-LUBRICATOR. JOHN S. HALL, New York, N. Y. Filed June 16, 1885. (No model.)



Claim.—1. In a feed-lubricator, the combination, with the cup or reservoir for holding the lubricant and the channel for conducting the same to the journal-bearing, of a needle or stem extending loosely longitudinally of said channel and with its outward extremity adapted to impinge upon said journal, and provided with arms or projections extended transversely of the said cup within the same, as and for the purpose set forth.

2. In a feed-lubricator, the combination, with the cup or reservoir for holding the lubricant and the channel for conducting the same to the journal-bearing, of a needle or stem extending loosely longitudinally of said channel, and with its outward extremity adapted to impinge upon said journal, and provided with arms extending radially and in conformity with the outline of the interior of the said cup from a sleeve fitted on said needle or stem within the said cup, as and for the purpose set forth.

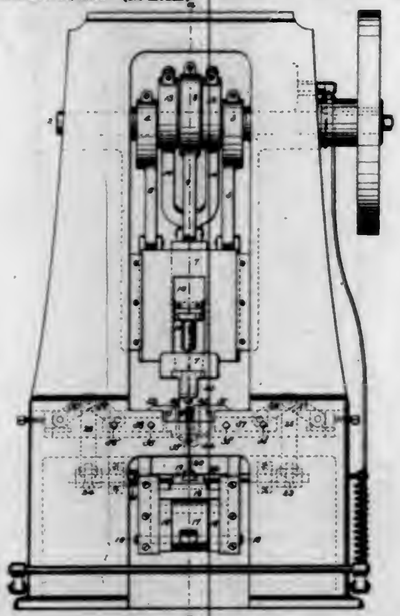
322,928. FORGING-MACHINE. HENRY HAMMOND, New Haven, Conn. Filed Dec. 26, 1884. (No model.)



Claim.—1. The combination of the shaft 2, having the eccentrics 14, 15, 26, and 27, with the rods 16, 17, 28, 29, and 30, and with the gate 31, carrying the die 42, and with the link-lever 32, link 33, and slide 34, working the die 40, and with the slide 18, link 20, and slide 22, working the die 38, and with the slide 19, link 21, and slide 23, working the die 39, all substantially as described.

2. A set of dies constructed substantially as shown in Fig. 15 of the drawings and described in the corresponding part of the specification.

322,929. FORGING-MACHINE. HENRY HAMMOND, New Haven, Conn. Filed Dec. 26, 1884. (No model.)



Claim.—1. The combination of the rod 14, worked by the shaft 2, with the lever 15, turning on the fulcrum 16, and with the link 17, working the slide 18, all substantially as described.

2. The combination of the slide 18 with the punch-holder 19, adjustable thereon, and with the punch 20 adjustable on the punch-holder, all substantially as shown and described.

3. The combination of the shaft 22, worked by the lever 21, and having the arms 23 and 24, with the rods 25 and 26, and with the links 27 and 28, working the slide 31, and with the links 29 and 30, working the slide 32, all substantially as described.

4. The combination of the punches 11 and 20, driven by one shaft, and so working in opposite directions that the punch 20 penetrates the blank till it almost meets the punch 11, when it is withdrawn, followed by the punch 11, which latter passes down through the blank, and thus enlarges the eye to the desired size from end to end, all substantially as described.

5. A die of four sections, the bottom one of which is stationary, and the two side sections of which are adapted to move together along the upper surface of the bottom section, and are provided with shoulders to do the work of end sections, and the top section of which is adapted to work between the two side sections, substantially as shown in Fig. 28 of the accompanying drawings.

6. The combination of the concave side dies, 49 and 50, adapted to hold a metal blank between them, with a punch or punches adapted to split that blank from edge to edge, and thus to force its sides outwardly to fill the concavities in the dies, all substantially as shown and described.

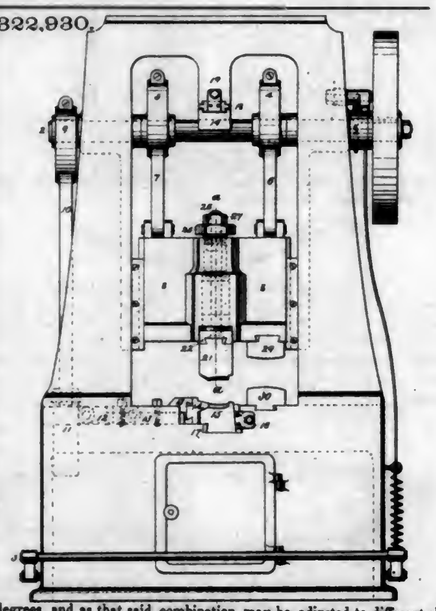
7. A die of three sections, two of which are adapted to hold a perforated ax-blank in a cavity between them, and to form its sides and edges, and to hold an ax-pin exactly central relatively to the thickness of that cavity, and exactly placed relatively to its length, and the other section of which die is adapted to press the ax-blank into conformity with such die and such ax-pin, all substantially as described, and as shown in Fig. 42 of the accompanying drawings.

322,930. FORGING-MACHINE. HENRY HAMMOND, New Haven, Conn. Filed Dec. 26, 1884. (No model.)

Claim.—1. The combination of the die-holder 22, the rubber spring 23, the bolt 26, and the nut 27, so arranged relatively to the gate 8 as that the die-holder will meet a gradually-increasing resistance when pressed upward, all substantially as described.

2. The combination of the die-holder 22, the rubber spring 23, the bolt 25, the bolt 26, and the nut 27, so arranged relatively to the gate 8 as that the die-holder will meet a gradually-increasing resistance when pressed upward, and as that said resistance may be adjusted to different

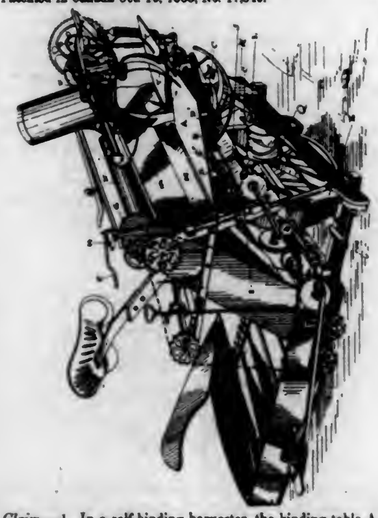
322,930.



degrees, and as that said combination may be adjusted to different elevations within the bore of the gate, all substantially as described.

3. The combination of the die-holder 22, the hollow bolt 25, the long bolt 26, and the nut 27 with the gate 8, so arranged as that the die-holder may be adjusted to different elevations within the gate, all substantially as described.

322,931. SELF-BINDING HARVESTER. JOHN HARRIS and JOSIAH LUCAS, Brantford, Ontario, Canada. Filed July 31, 1883. (No model.) Patented in Canada Oct. 10, 1883, No. 17,849.



Claim.—1. In a self-binding harvester, the binding-table A, hinged at one side to the main frame, and provided with the usual binding attachments and carrying the knotter mechanism, in combination with the brackets C' C, the former pivotally connected with the table and supporting the inner side thereof, the latter rigidly connected with the main frame, and serving as supports for the outer end of said table when in a normal position, the parts being constructed, arranged, and operating substantially as and for the purpose specified.

2. In combination with the rods D D', supporting the binding-table, its attachments, and the knotter mechanism, the brackets C C', the former having the frame-rod D of the binding-table sleeved therein, and the latter rigidly connected to the main frame to receive and support the rod D' when the binding-table is in a normal position, as and for the purposes set forth.

3. In a self-binding harvester in which the binding-table is hinged to the elevator-frame below an independent table secured to the elevator-frame, and extending from the binder-table to the conveying-apron, one or more bolts arranged to hold down the independent table, in combination with springs, as specified, so as to permit a slight upward movement of the independent table during the folding up of the binding-table.

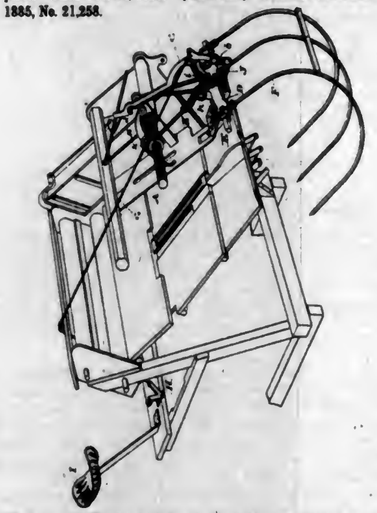
4. In a self-binding harvester in which the frame carrying the binding mechanism is hinged to the harvester, the divided packer-shaft, one portion thereof carried by the harvester, and the other portion carried by the hinged binder-frame, a socket formed in the end of that portion carried by the binder-frame to receive the end of that portion of the packer-shaft carried by the harvester, in combination with a spring attached to that portion of the shaft on the harvester and arranged to engage with the portion on the binder-frame, substantially as and for the purpose specified.

5. In a self-binding harvester in which the frame carrying the binding mechanism is hinged to the main frame of the harvester and adapted to be folded up to reduce the width of the harvester, the brackets C' C, arranged to support the said frame in its normal position, in combination with an arm pivoted on the bottom of the binder-frame and arranged to support the frame when folded up, substantially as described.

6. In a self-binding harvester, the folding table A, the brackets C' C, rigidly attached to the main frame, the rods D D', carrying the binding-table, its attachments, and the knotter mechanism, the rod D, pivotally mounted within the brackets C', to permit the folding of the parts carried thereby, in combination with a cranked lever to impart a longitudinal movement to said rod D, as and for the purposes set forth.

7. In a self-binding harvester, one or more fingers attached rigidly to the main binder-shaft, which operates the knotter and carries the ejector-fingers for the purpose of retaining loose grain while the sheaf is being formed.

322,932. MECHANISM FOR DUMPING THE BUNDLE-CARRIERS OF HARVESTING-MACHINES. JOHN HARRIS and JOSIAH LUCAS, Brantford, Ontario, Canada, assignors to A. Harris, Son & Co., (Limited,) same place. Filed Feb. 24, 1885. (No model.) Patented in Canada Mar. 14, 1885, No. 21,258.



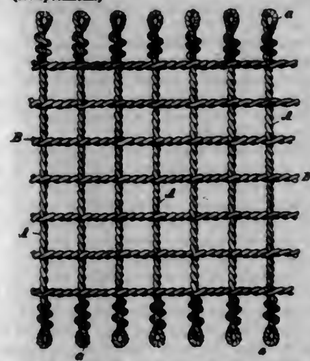
Claim.—1. The hooked arm C, pivotally connected to the bundle-carrier, in combination with the knotter-shaft A and the crank-arm B, fixed to the knotter-shaft, and adapted to intermittently engage said hooked arm, substantially as and for the purpose specified.

2. The arm C, pivoted at *b* to the bracket D and supported by the spring J, a hook, *d*, formed on the end of the arm C, and a rope, G, connected, respectively, to the arm C and foot-lever H, in combination with a crank-arm, B, fixed to the knotter-shaft A, the whole being arranged and operated substantially as and for the purpose specified.

3. The arm C, pivoted at *b* to the bracket D, the stop *f* on the arm C, and the stop *g* on the bracket D, in combination with the rope G and arm B, the latter being arranged to engage with the hook *d* on the arm C, substantially as and for the purpose specified.

4. The arm K, pivoted at *k* to the bracket D, and having a long hooked end, *k*, to fit over the knotter-shaft A, and a tail, *j*, on the back side of the pivot *k*, in combination with the arm C, pivotally connected to the bundle-carrier and having formed thereon the projection *i*, substantially as and for the purpose specified.

322,933. WIRE CLOTH OR FABRIC. WILLIAM HEWITT, Trenton, N. J., assignor to the Trenton Iron Company, same place. Filed Oct. 20, 1884. (No specimens.)



Claim.—1. As a new article of manufacture, a metallic fabric composed of a series of parallel continuous straight cables, each composed of two or more wires twisted together, in combination with a second series of parallel continuous straight cables the strands of which are twisted about or embrace the first-mentioned cables, so as to form a rectangular mesh therewith and retain the latter against displacement in either direction, substantially as set forth.

2. As a new article of manufacture, a metallic fabric composed of a series of parallel continuous straight cables, each composed of two or more wires twisted together, and provided at their extremities with loops, in combination with a second series of parallel continuous straight cables the strands of which are twisted about or embrace the first-mentioned cables, so as to form a rectangular mesh therewith and retain the latter against displacement in either direction, substantially as set forth

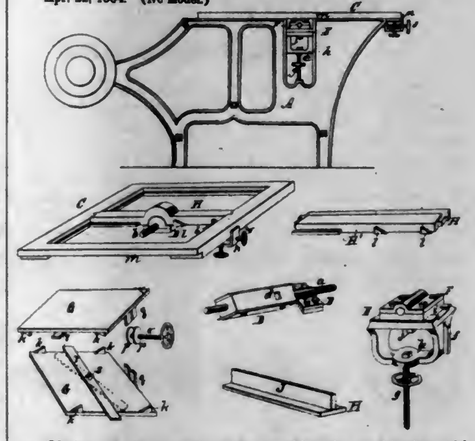
322,934. HAME-TUG. ANDREW L. HILL, Chicago, Ill. Filed Dec. 13, 1884. (No model.)



Claim.—1. The combination, in a hame-tug, of draft-iron *f*, provided with slot *h*, and plate *g*, provided with hooks *e e* and pin *g'*, as and for the purpose set forth.

2. The combination of fender *a*, provided with openings *a' a'* and *d*, box-loop *c*, provided with outwardly-extending flanges *c' c'*, and draft-iron *f f g e e*, as and for the purpose set forth.

322,935. PLANING-MACHINE. HENRY A. HOLT, Wilton, N. H. Filed Apr. 22, 1884. (No model.)



Claim.—1. In a wood-working machine, the combination, with an adjustable arbor block or carrier having vertical, horizontal, and an-

gular adjustments, substantially as set forth, and a planing-cylinder attached at one end to and driven by the arbor or spindle of the said arbor-block, and having its bearing at the other end adjustable in the frame of the machine, substantially as and for the purpose herein specified.

2. The combination of an arbor block or carrier having vertical, horizontal, and angular adjustments, substantially as set forth, a planing-cylinder mounted at one end on the said arbor-block, and a bearing for the other end of the said planing-cylinder having both a vertical and a horizontal adjustment in the frame of the machine, substantially as and for the purpose herein specified.

3. In a wood-working machine, the combination of an arbor block or carrier having adjustments substantially as set forth, a planing-cylinder mounted at one end on the said arbor-block, and having its bearing at the other end adjustable in the frame of the machine, a carriage, C, and a table, G, mounted upon the said carriage and adjustable in height thereon tangentially to the pathway of the revolving planing-cylinder, substantially as and for the purpose herein specified.

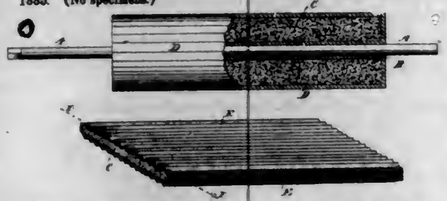
4. The combination of the arbor block or carrier having adjustments substantially as set forth, a planing-cylinder mounted at one end on the said arbor-block, and having its bearing at the other end adjustable in the frame of the machine, a carriage, C, provided with a laterally-adjustable cross-bar, H, having inclined lugs *l l* thereon, and with inclined lugs on one of its end beams, *m*, and the table G, having inclined lugs *k k k k*, resting upon the lugs of the carriage, and having a horizontal adjustment on the said carriage-lugs, substantially as and for the purpose herein specified.

5. The combination of the arbor block or carrier having adjustments substantially as set forth, a planing-cylinder mounted at one end on the said arbor-block, and having its bearing at the other end adjustable in the frame of the machine, a carriage, C, having an end beam, *m*, and cross-bar H, and an adjustable table, G, supported by the said end beam and cross-bar of the carriage, and provided with an elastic swinging attaching-bar, *r*, substantially as and for the purpose herein specified.

6. The arbor block or carrier having adjustments substantially as set forth, a planing-cylinder mounted at one end on the said arbor-block, and having its bearing at the other end adjustable in the frame of the machine, a carriage, C, having a laterally-adjustable cross-bar, H, which is provided with a gage-plate, J, substantially as and for the purpose herein specified.

7. In a wood-working machine, a bearing, E, having a vertical adjustment in the frame A of the machine, and provided with a laterally-adjustable pillow-block, F, in combination with the planing-cylinder D and arbor block or carrier having vertical, horizontal, and angular adjustments, substantially as set forth, on which the said planing-cylinder is mounted, and by means of which it is driven, substantially as and for the purpose herein specified.

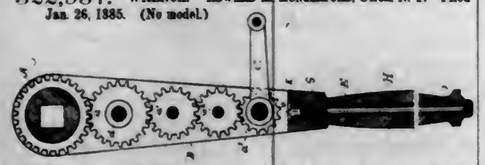
322,936. RUBBER-COVERED COMPOUND. LEWIS S. HOTT, Boston, Mass., assignor of one-half to John M. Culver, same place. Filed Apr. 16, 1885. (No specimens.)



Claim.—1. A composite material of granulated cork bark with rubber particles, in combination with an exterior surface of virgin caoutchouc, the mass to be vulcanized under pressure, so as to unite inseparably the exterior and interior products to form one homogeneous elastic or non-elastic compound, substantially as and for the purpose specified.

2. In manufactured articles, the combination of virgin caoutchouc and an added desirable proportion of sulphur with and enwrapping a laminated or composite material of granulated cork and rubber and sulphur homogeneously united, in the manner and for the purpose set forth.

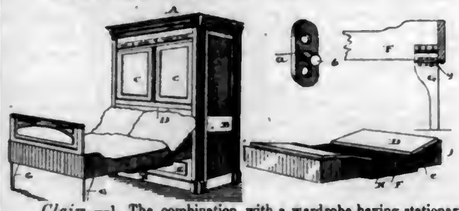
322,937. WRENCH. EDWARD M. HUNGERFORD, Utica, N. Y. Filed Jan. 26, 1885. (No model.)



Claim.—1. The combination, in a rotary wrench having side bars and handles, with a succession of spur-gears between the side bars operated by a crank, as described, of the circular wrench-head, with the eye in the central bearing of the wrench-head journaled between the side bars, substantially as described.

2. The combination, with a rotary wrench-head constructed and mounted to be rotated in either direction through a succession of spur-gears moved by crank, substantially as described, of a movable stop for engaging the cogs, whereby the wrench-heads and connecting-gear may be held stationary.

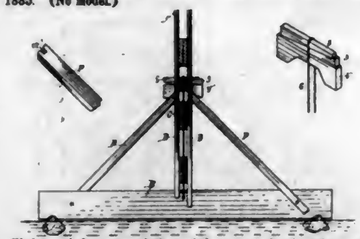
322,938. COMBINED WARDROBE AND BEDSTEAD. ROBERT M. HUSTON, Toronto, Ontario, Canada. Filed June 10, 1884. (No model.) Patented in Canada Mar. 3, 1884, No. 13,765.



Claim.—1. The combination, with a wardrobe having stationary bottom panel, E, and the plate *a*, provided with pin *b*, and secured to said wardrobe, of the bed-frame having side boards, F, provided with the inclined metal strips F', having groove *e* and an open end, *f*, substantially as and for the purposes specified.

2. The combination, with the wardrobe A, having the stationary bottom panel, E, and the top panels, C C, hinged to the front thereof, of the bedstead provided with a hinged head-board, D, of such length as to fold below said panels C C, whereby said head-board forms the center panel of the wardrobe when the bedstead is extended, and with a bottom forming the center panels, H, when the bedstead is folded, substantially as herein shown and described.

322,939. FENCE. GEORGE H. IVES, Martin, Mich. Filed Apr. 16, 1885. (No model.)

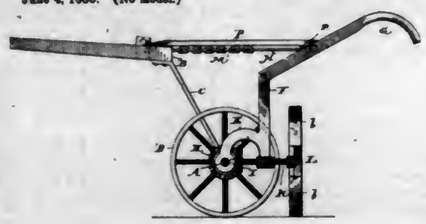


Claim.—A fence consisting of the panels having the uprights at the lapped ends, said uprights provided with the registering-apertures, the base having the center gains to detachably receive the lower ends of the uprights, the side braces, the binding cap and wedges, and the binding-wire secured to the base and passing between the lapped ends of the panels and over the binding cap and wedges, the whole constructed and arranged substantially as set forth.

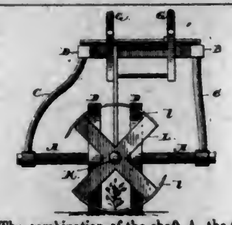
322,940. MANUFACTURE OF IODOFORM, BROMOFORM, AND CHLOROFORM. THEODOR KEMPF, Berlin, Germany, assignor to the Chemische Fabrik auf Actien, same place. Filed June 5, 1884. (No specimens.) Patented in Germany Mar. 7, 1884, No. 29,771; in England May 23, 1884, No. 8,148; in France May 23, 1884, No. 162,306; in Belgium May 23, 1884, No. 65,227; in Luxemburg May 24, 1884, No. 405, and in Austria-Hungary Sept. 23, 1884, No. 19,725 and No. 42,228.

Claim.—The herein-described process of obtaining iodoform, bromoform, and chloroform, which consists in subjecting the corresponding halogen combinations of the alkalies or alkaline earths to electrolysis in the presence of alcohol, aldehyde, or acetone and heat, and with or without the addition of carbonic acid.

322,941. COTTON-CHOPPER. JAMES S. LAMAR, Augusta, Ga. Filed June 4, 1885. (No model.)



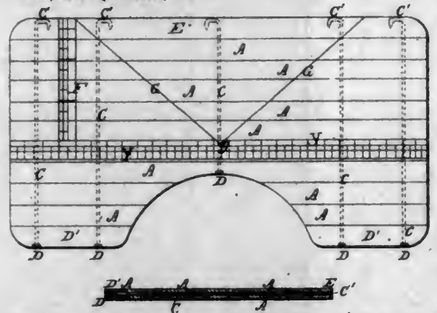
322,941.



Claim.—1. The combination of the shaft A, the thills journaled on the ends thereof, the driving and supporting wheels fixed to the shaft near its center, the bearing-arm E, journaled or pivoted on the center of the shaft A, and having the vertical rear extension, F, the handles secured to said extension, the shaft K, journaled in arm E, and having the chopper and the connecting gearing, substantially as described.

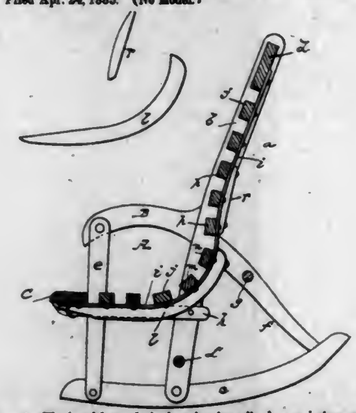
2. The combination of the shaft A, the thills journaled on the ends thereof, the driving and supporting wheels secured near the center of the shaft, the bearing-arm E, journaled on the shaft, and having the vertical extension F, the shaft K, journaled in arm E, and having the chopper and a miter-pinion meshing with a miter gear-wheel on the shaft A, the handles secured to the extension F, the chain or rod connecting said handles with the thills, and means for lengthening and shortening said chain or rod, and the pivoted bar P, having the offset adapted to engage with the cross-bar of the handles, for the purpose set forth, substantially as described.

322,942. LAP-BOARD. WILLIAM I. LANCE, Philadelphia, Pa. Filed Oct. 2, 1883. (No model.)



Claim.—A lap-board composed of a series of narrow strips of wood secured together by rods or bolts passing transversely through them, the strips along the front and rear edges of the board being of a comparatively harder material than the central strips to form a secure seat for the binding-bolt heads and protect the board from injury at the points most subjected to the same, substantially as described.

322,943. ROCKING-CHAIR. GEORGE W. LARGE, Yellow Springs, Ohio. Filed Apr. 24, 1885. (No model.)

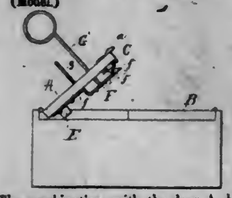


Claim.—1. The rocking-chair herein described, consisting of the curved side bars *b*, connected at their lower ends to the rockers *c*, the arms B, secured to the front bar *e* and side bars *b*, and the extension secured to the rear end of the rocker, the side bars *h*, secured to the bars *e b*, extending forward, on which is the transverse seat-bar C, the curved seat-bars *l*, secured to the transverse slats, and the back curved bars *r*, the whole constructed and arranged as shown and described.

2. In a rocking-chair, the combination, with the flexible back, of the curved bars *r* and seat curved bars *l*, secured to the slats and front cross-bar, C, the latter secured to the extended ends of the side bars A, the whole arranged as shown and described.

3. In a rocking-chair provided with a flexible seat and back, the curved bars arranged beneath the seat to rigidly hold the slats, and the bars *r*, arranged in rear of the back to securely fasten and hold several slats of the back in a rigid position, as shown and described.

322,944. DOOR-BOLT. RALPH G. LEMMON, Philadelphia, Pa. Filed Sept. 2, 1884. (Model.)



Claim.—1. The combination, with the door A, having opening G, of the bolt C, pivoted on the door A, the spring D, wound around the pivot or pintle of bolt C and having one end secured to the door and its other end engaged with the bolt, and a latch, F, arranged on the door A, in position to be actuated through opening G, substantially as set forth.

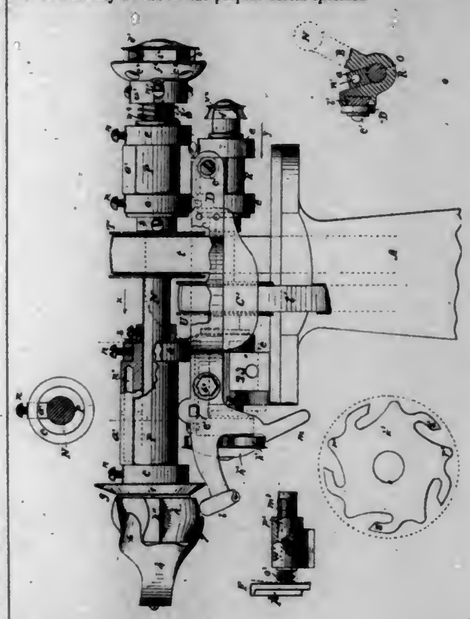
2. The combination, with the door A, having a latch, F, of the bolt C, pivoted to the door A, a spring, D, wound around the pivot or pintle of bolt C, and having one secured to the door A and its other end engaged with bolt C, and a stop, E, substantially as set forth.

322,945. HEEL AND SOLE EDGE TRIMMING MACHINE. WILLIAM MANLEY, Rochester, N. Y. Filed Feb. 19, 1885. (No model.)

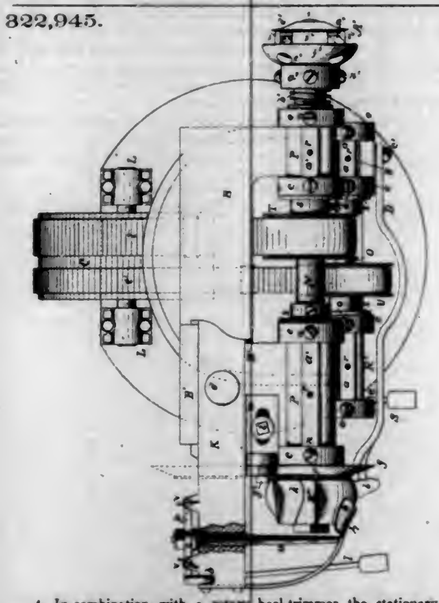
Claim.—1. In a boot and shoe trimming machine, the journals or spindle-bearings arranged one above and partially beyond the other, in combination with the series of lost-motion spindle-bearing boxes *a'*, substantially as described, having the oil-reservoirs *n'*, as shown, and the bands or collars *c*, provided with adjusting-screws *n*, for holding the boxes to the spindles, substantially as and for the purpose herein specified.

2. In combination with a rotary heel-trimmer, the stationary or non-rotating top piece guard *g*, provided with the top piece edge-rest 5, as a means to preserve or retain the original shape of the top piece during the trimming of the heel, substantially as herein specified, for the purpose set forth.

3. In combination with a rotary heel-trimmer, the stationary or non-rotating top piece guard *g*, provided with the rest 5, the slotted plate W, screw g^2, frame B, and the screw *i*, all arranged and adapted to operate substantially as and for the purpose herein specified.



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4. In combination with a rotary heel-trimmer, the stationary or non-rotating tread-surface top piece guard, *g*, provided with the top piece edge-rest, 5, clamping-screw, g^2, screw o^3, and the collar *c*, all arranged and adapted to operate substantially as and for the purpose herein specified.

5. In combination with a rotary heel-trimmer, the curved spring counter-guard *h*, and the adjusting-screw *u* P, and means to support the same, substantially as shown, and for the purpose set forth.

6. The flexible curved-spring counter-guard *h*, in combination with the adjusting-screw *u* P, the double heel-rest M *l* D, the bar K, and the rotary heel-trimmer, substantially as herein specified, for the purpose set forth.

7. The curved spring counter-guard *h*, in combination with the cross-head screw *u* P, the bar K, held rigidly and adjustably in the ways B' B' of the frame B, the rotary heel-trimmer, and the double heel-rest M *l* D, and the treadle-rod G, with its connecting mechanism, substantially as herein set forth.

8. The cutter *k*, having knives with inner surfaces substantially circumferential with the outer surfaces, and rear end clearance of the knives, as shown, in combination with the double heel-rest M *l* D, sliding plate *l'*, screw 42, and the treadle mechanism and lever *e'*, substantially as shown, and for the purpose set forth.

9. The rand and heel-seat trimming and peening or hammering-up wheel *k'*, provided with trimming-knives S, and peening or hammering-up teeth *r'*, in combination with the cutter 5^2 for trimming the feather of the rand, and the disk *h'*, substantially as herein stated.

10. The rand and heel-seat trimming and hammering-up wheel K', provided with trimming-knives S, and peening or hammering-up teeth *r'*, in combination with the rand-trimmer 5^3, rand-disk *h'*, double heel-rest M *l* D, and the heel and top piece supporting device F F^2, and means, substantially as described, for supporting the device F F^2, for the purpose set forth.

11. The universal and longitudinally movable heel and top piece support, F F^2, in combination with the trimming and peening or hammering-up device K', and means, as shown, to support both, substantially for the purpose herein stated

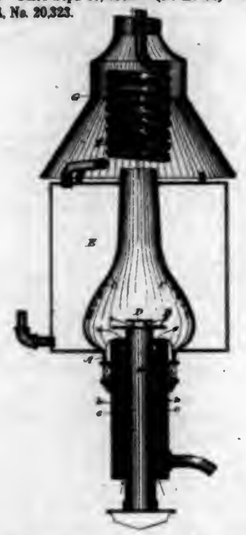
12. The universal and longitudinally movable heel and top piece support, F, provided with the rest F^2, in combination with the double heel-rest M *l* D, substantially as set forth.

13. In a boot and shoe trimming machine, the series of lost-motion spindle-bearing boxes *a'*, provided with oil-reservoirs *n'*, as shown, in combination with the bands or collars *c* for holding the boxes in their bearings, and provided with adjusting-screws *n* for holding the boxes to the spindles to prevent lost motion, substantially as herein set forth.

14. In a boot and shoe trimming machine, the combination of the plain-edge trimmer and the bevel-edge trimmer, as shown, provided with the shell-guard f^3, screw n^3, and the spring-band a^2, with the shank-beveling trimmer V', all arranged and adapted to operate substantially as herein stated.

15. The combination of the plain and bevel edge trimming-knives, provided with the shell-guard f^3, having holes, substantially as shown, beveled on their inner edges in front of the bevel-edge trimming-knives and on their outer edges in the rear of the knives, as and for the purpose herein stated.

322,946. WATER-HEATER. MARMADUKE MATTHEWS, Toronto, Ontario, Canada. Filed Sept. 25, 1884. (No model.) Patented in Canada Oct. 1, 1884, No. 20,323.



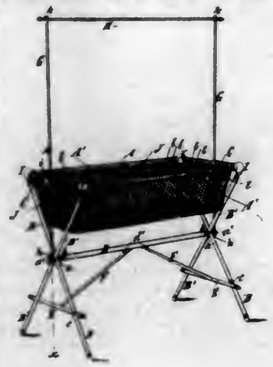
Claim.—1. A combined boiler and heater consisting of a water-vessel provided with a flue having a globular enlargement formed therein above the bottom of said water-vessel, and having a water-space surrounding and extending below said globular enlargement, in combination with a burner provided with a deflector to spread the flame toward the sides of the said enlargement of the flue, as and for the purposes set forth.

2. A combined boiler and heater consisting of a water-vessel provided with a flue having a globular enlargement above the bottom of said vessel, near its base, the sides of said enlargement gradually diminishing toward the exit end of the flue, and having a water-space surrounding and extending below said globular enlargement, in combination with a burner having a series of concentric tubular air-passages and a deflector for each passage, said deflectors being arranged one above the other in a gradually-decreasing series, as and for the purposes specified.

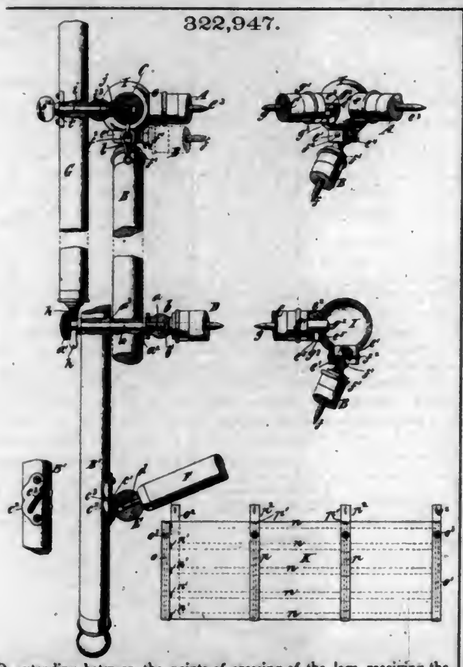
3. A burner, A, provided with the central air-tube, *a*, carrying deflector B, and having a second deflector, D, immediately above, and an air-space, *b*, between the air-tube *a* and wick *c*, in combination with the deflector B and flue or chimney C, carried through the boiler E, substantially as and for the purpose specified.

322,947. FOLDING CRIB. GEORGE MAZERGUE, New York, N. Y., assignor to the Bamboo and Brass Manufacturing Company, same place. Filed Jan. 14, 1884. (No model.)

Claim.—1. The combination of the crossed legs B B', the screws *a*, pivoting the legs together and shouldered to prevent their movement lengthwise, the braces E, permanently pivoted at one end to the legs B and detachably connected with the legs B', the longitudinal stretcher



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D, extending between the points of crossing of the legs, receiving the screw *a* in its ends, and the braces F, pivoted to said stretcher and extending to the braces E, substantially as herein described.

2. The combination of the side bars, A A', the crossed legs B B', permanently connected with said side bars, the braces E E, each pivoted at one end to a leg, B, and detachably engaged at the other end with a leg, B', the stretcher D, and the braces F F, each pivoted at one end to the stretcher D and detachably engaged at the other end with a brace, E, substantially as herein described.

3. The combination of the side bars, A A', the crossed and pivoted legs B B', the detachable end bars, C, the stretcher D, the braces E E, and the braces F F, all substantially as herein described.

4. The combination of the side bars, A A, the crossed legs B B', and pivotal screws *a*, the end bars, C, the stretcher D, extending between the points of crossing of the legs, the braces E E, each pivoted at one end to a leg, B, and detachably engaged at the other end with a leg, B', the braces F F, each pivoted at one end to the stretcher D and detachably engaged at the other end with a brace, E, the uprights G, connected at their lower ends with the screws *a*, and also connected with the end bars, C C, and the bar H, connecting said uprights, substantially as herein described.

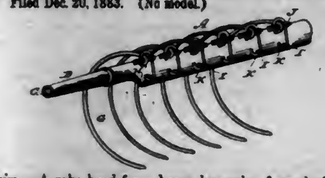
5. The combination of the side bars, A A', the crossed legs B B', and their pivotal screws *a*, the detachable end bars, C, the stretcher D, extending between the points of crossing of the legs, the braces E E, each pivoted at one end to a leg, B, and detachably engaged at the other end with a leg, B', the braces F F, each pivoted at one end to the stretcher D and detachably engaged at the other end with a brace, E, and the uprights G, provided with the forks *h* and the screws *i*, whereby the said uprights are detachably secured to the detachable end bars, C, substantially as herein described.

6. The combination, with a side bar, A, and a leg, B, of the corner connection, I, having a projection, *e*, provided with a rigid screw, e^2, a socket, *e'*, provided with a cross-pin, f^2, and a notch or opening, e^4, at its front side, and the leg terminal *f'*, through which the cross-pin f^2 passes, and which is made conical or flaring to receive said pin, substantially as herein described.

7. The combination, with a side bar, A, and a leg, B, of the corner connection, I, with which the side bar is rigidly connected and with which the leg is pivotally connected, and the end bar, C, detachably secured to said connection by a bayonet-lock, substantially as herein described.

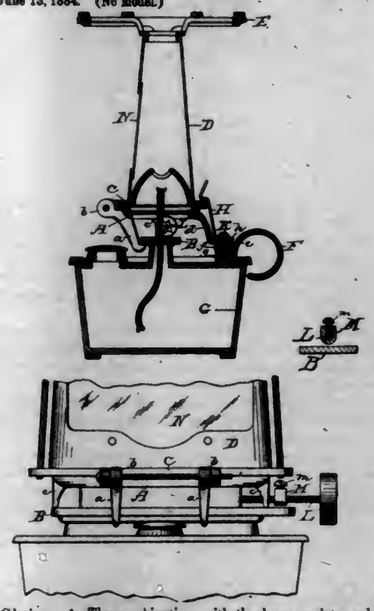
8. The combination, with the connection I, having the projection *e* and rigid screw e^2, the socket *e'*, notched at e^4, and the socket e^3, provided with the L-shaped slot e^5, of the side bar, A, with which the screw e^3 is engaged, the leg B and leg terminal *f'* and pin f^2, whereby said leg terminal is loosely pivoted in the socket *e'*, and the end bar, C, and its terminal g' g^2 g^3, engaging with the socket e^3 and its slot e^5, substantially as herein described.

322,948. HORSE HAY-RAKE. SAMUEL MELLINGER, Mount Pleasant, Pa. Filed Dec. 20, 1883. (No model.)



Claim.—A rake-head for a horse hay-rake, formed of sheet metal bent into an inverted-U-shaped form in cross-section, having the lower flanges bent in toward each other at the ends, forming tapering spindles or axles for the supporting-wheels, and provided with tapering sleeves fitting upon them, as and for the purpose shown and set forth.

322,949. OIL-STOVE. JOHN MCCONNELL, Cleveland, Ohio. Filed June 13, 1884. (No model.)



Claim.—1. The combination, with the burner-plate and a cone-stand having one or more depending hooks which engage with said plate, of one or more cone-stand legs which rest on the latter, a clamp which secures the cone-stand in position, and a cone hinged to the cone-stand, substantially as set forth.

2. The combination, with a reservoir and a burner-plate, of a cone-stand having one or more legs resting on the latter, one or more depending hooks engaging with the burner-plate, and a depending arm adapted to be clamped to the reservoir, said cone-stand having a cone hinged thereto, substantially as set forth.

3. The combination, with a reservoir having a top stud, of a handle bearing on the latter and a fastening connecting the two together, substantially as set forth.

4. The combination, with a reservoir having a top stud and a cone-stand having an arm, of a handle and a fastening which clamps said arms and handle to said stud, substantially as set forth.

5. The combination, with a reservoir having a top stud and a handle, of a cone-stand having an arm, a cone-clasp, and a fastening which holds said parts together, substantially as set forth.

6. The combination, with a cone-stand having a depending arm, a handle, and a cone-clasp, said three parts respectively provided with a horizontal extension, of a fastening which clamps said extensions to the reservoir, substantially as set forth.

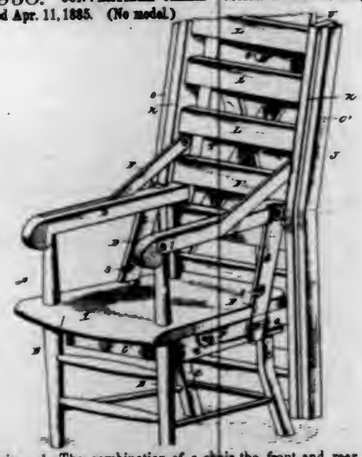
7. The combination, with burner-plate B and rod L, of the stop M, adjustably fitted thereon and adapted by engagement with said burner-plate to limit the movement of the rod, substantially as set forth.

8. The combination, with burner-plate B and rod L, located above the latter, of the stop M, adjustably and eccentrically fitted thereon, the two sides of said stop respectively engaging with the top of said burner-plate to limit the movement of said rod, substantially as set forth.

9. The combination, with wick-rod L and burner-plate B, of stop M, loosely fitted on said rod, and set-screw *m*, threaded in a hole in the

stop and having end bearing against the rod, said stop engaging with said burner-plate to limit the rotary movement of said rod, substantially as set forth.

322,950. CONVERTIBLE CHAIR. JOSEPH L. MCKAY, Neoga, Ill. Filed Apr. 11, 1885. (No model.)



Claim.—1. The combination of a chair the front and rear legs of which are extended above the seat and connected by the arm-rests, rearwardly-extending levers pivoted near the front ends of the latter, downwardly-extending levers pivoted near the rear ends of the arm-rests, and the back connected pivotally to the front levers, and having pivoted arms connected pivotally with the rear levers, substantially as and for the purpose herein set forth.

2. The combination of a chair having front and rear legs extending above the seat, arm-rests connecting the same, levers pivoted near the front and rear ends of said arm-rests, and the back pivoted to the front levers, and having pivoted slotted arms connected with the rear levers by headed studs sliding in said slots, and provided with studs adapted to enter notches in the edges of said rear levers, substantially as herein described, for the purpose set forth.

3. The chair constructed substantially as described, and the sides of the seat of which are provided with notches, in combination with the levers pivoted at the front and rear ends of the arm-rests, said rear levers being adapted to rest in said notches, and the swinging convertible back pivoted to the front levers, and having pivoted arms pivotally connected with the rear levers, substantially as and for the purpose herein set forth.

4. In a convertible chair and clothes-rack, the combination, with the chair, of the back connected with the arm-rests of said chair by means of levers and jointed arms, said back comprising the braces or cross-pieces having perforations in which slide rods forming extensible clothes-racks, substantially as and for the purpose herein set forth.

5. In a convertible chair and clothes-rack, the herein-described swinging or tilting back, consisting of side pieces connected by transversely-perforated cross-braces, and extensible side rails having rods or rungs seated in the perforations of said cross-braces, substantially as and for the purpose herein set forth.

6. The combination of the chair-frame, the swinging or tilting back connected with the arm-rests of said chair, substantially as described, and the ironing-board having the ornamental top flange, a folding leg-frame, a spring-catch, and a turn-button, said catch and button serving to connect the said ironing-board detachably with the chair-back, and the spring-catch serving, also, to retain the leg-frame in an extended or folded position, as the case may require, substantially as and for the purpose set forth.

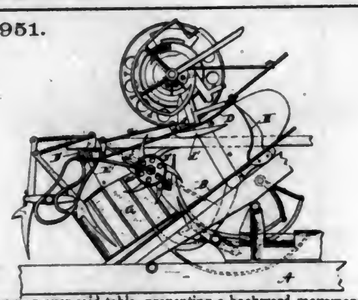
322,951. GRAIN-BINDER. LEWIS MILLER, Akron, Ohio. Filed June 9, 1883. (No model.)

Claim.—1. The combination, with the inclined elevating binder-table interposed between the grain-platform and the driving-wheel, of a star-wheel adapted to be rotated by the grain moving upward over said table and to prevent backward movement of the grain on said table, substantially as described.

2. The combination, with the inclined elevating binder-table and the packers for moving the grain upward on said table, of the star-wheel arranged above and adapted to be rotated by the grain moving upward over said table, and the endless butter, all for holding the grain against backward movement on said inclined table, substantially as described.

3. The combination, with a binder-table and packers for moving the grain on said table, of a star-wheel arranged to be rotated by the

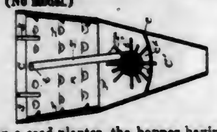
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grain moving over said table, preventing a backward movement of said grain, substantially as described.

4. In a grain-binding harvester, the combination, with a binder-table located on the grain side of the drive-wheel, of a binder-arm operating from beneath said table, a knotting mechanism supported above said binder-table, a rotating discharge-arm connected with and operated by the knotter-actuating shaft, a yielding arm or abutment pendent from the knotter-support, and connections extending from said arm on one side of the rotating discharge-arm around the path of the latter to the binder-mechanism trip on the opposite side of said discharge-arm, for the purpose and substantially as described.

322,952. SEEDING-MACHINE. TEDOR T. MILLER, Hico, Tex. Filed July 1, 1884. (No model.)

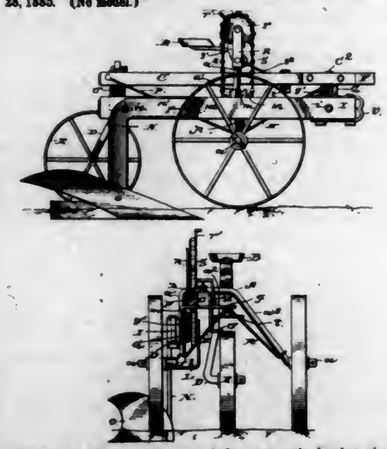


Claim.—1. In a seed-planter, the hopper having the open bottom, in combination with stirrers working above and through the opening of the bottom, and a packer arranged to reciprocate in the hopper above the stirrers, as set forth.

2. In a seed-planter, the hopper having the open bottom, in combination with a shaft journaled in the hopper above the bottom, stirrers located on the shaft and working through the said bottom, a packer working vertically within the hopper above the stirrers, and a connecting-rod attached to the packer and secured to the hub of the stirrer, as set forth.

3. In a seed-planter, the combination, with the hopper, of the packer-frame corresponding in form thereto and made smaller in size so as to fit within the hopper, said packer-frame working vertically against the several sides of the hopper so that the seed will be worked evenly downward from all portions of the same, as set forth.

322,953. SULKY-PLOW. TEDOR T. MILLER, Hico, Tex. Filed Feb. 28, 1885. (No model.)

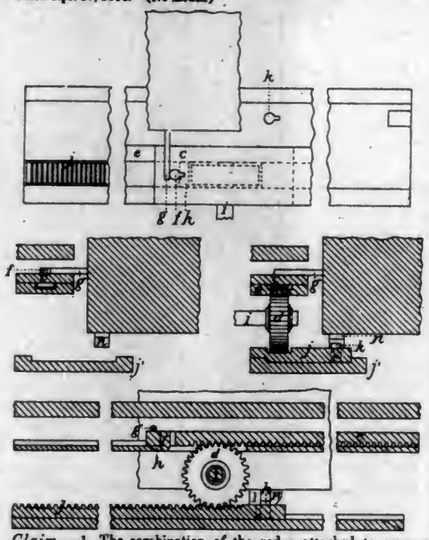


Claim.—1. The combination of the bent axle having the curved vertical portion *a'*, the supporting-wheels, the draft-bar C, secured to the axle, the trail-wheel at the rear end of the draft-bar, the bracket G, secured to the front end of the draft-bar, the plow-beam pivoted at its front end to the bracket G, and bearing against the portion *a'* of the axle and sliding vertically thereon, and means for raising and lowering the plow-beam and the plow attached to the plow-beam, said plow working in rear of one of the supporting-wheels, substantially as described.

2. The combination of the bent axle having the curved vertical portion *a'*, the supporting-wheels, the brace-rods H, secured to the axle, the slotted bracket G, secured to the brace-rods, the draft-bar C, secured at its front end to the bracket by a bolt, C^3, that passes through the slot in the bracket, said draft-bar being secured to the axle and adapted to be adjusted laterally thereon, the trail-wheel in rear of the draft-bar, the plow-beam pivoted to bracket G and bearing against portion *a'* of the axle, the plow attached to the beam and working in rear of one of the supporting-wheels, and means for raising and lowering the plow, substantially as described.

3. The combination of the bent axle having the vertical curved portion *a'*, the draft-bar C, secured to the axle, the plow-beam pivoted at its front end to a bracket secured to the draft-bar, rack *k*, secured to the plow-beam, pinion *m*, secured to the axle and engaging with the rack, sprocket-wheel M on the shaft with pinion *m*, sprocket-wheel *r*, journaled above wheel M and having a crank, and the endless sprocket-chain connecting the wheels *r* and M, substantially as described.

322,954. ELEVATED RAILWAY. HENRY MONK, Lewiston, Me. Filed Apr. 17, 1885. (No model.)

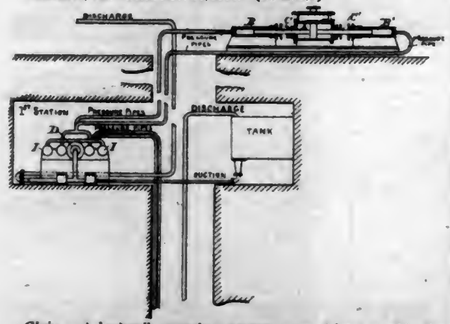


Claim.—1. The combination of the rod *g*, attached to a car, as specified, with the pin *f*, rack *c*, recess *h*, and gear *d*, as herein set forth, and for the purposes described.

2. The combination of the rack *j*, pin *k*, recess *m*, gear *d*, and projections *n* and *l*, as herein set forth.

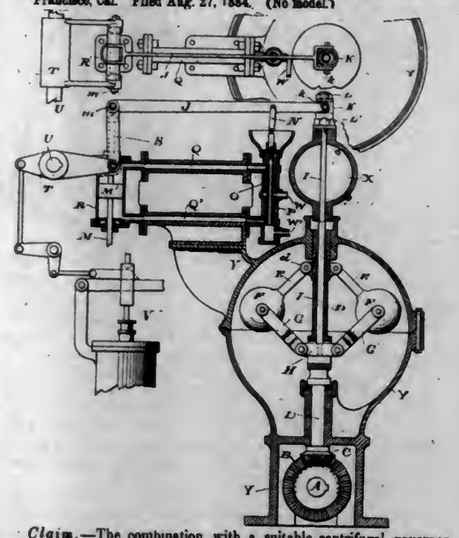
3. A passenger-elevator to receive and discharge passengers on and from an elevated station by means of the motion of the train or power supplied by the locomotive, in combination with the projection *g*, racks *c* and *j*, gear *d*, pin *f*, and projections *n* and *l*, as herein set forth.

322,955. MINE-DRAINING MACHINERY. JOSEPH MOORE, San Francisco, Cal. Filed Nov. 28, 1883. (No model.)



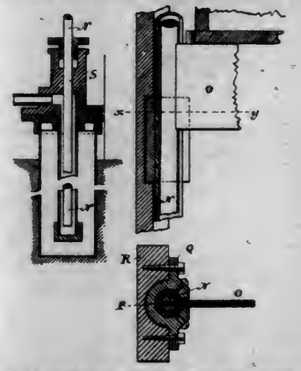
Claim.—A hydraulic pumping apparatus comprising a combination of, first, a hydraulic-pressure generator; second, a set of hydraulic actuating-rams operated by said pressure-generator, and through suitable connections transmitting their motion to adjacent pumps; and, thirdly, a set of pressure-generating rams, also operated by the first set of actuating-rams, to produce and transmit their pressure through leading-pipes to other actuating-rams to operate further pumping machinery distantly located, the whole arranged and operating substantially as herein described.

322,956. GOVERNOR FOR STEAM-ENGINES. JOSEPH MOORE, San Francisco, Cal. Filed Aug. 27, 1884. (No model.)



Claim.—The combination, with a suitable centrifugal governor, of the hydraulic cylinder R, having inlet and outlet passages, as shown, piston M', and rod M, valve O, moving in suitable chamber to control the action of said piston and rod, and the differential valve-mover consisting of the valve J, connected, first, at one end with the end of piston-rod M; second, at the other end with the governor-spindle I, and intermediately with the stem of the valve O, arranged and operating substantially as and for the purpose herein described.

322,957. HYDRAULIC-RAM ELEVATOR. JOSEPH MOORE, San Francisco, Cal. Filed Dec. 5, 1884. (No model.)



Claim.—In hydraulic-ram elevators, the combination of the rams N N', the cylinders inclosing the rams, and the cylindrical guides P, secured to the sides of the elevator-shaft, constructed and operating substantially as and for the purpose described.

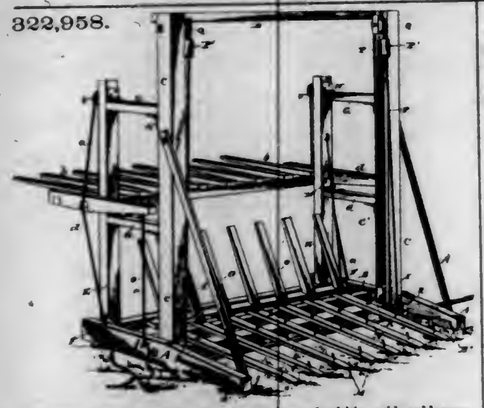
322,958. HAY-STACKER. GEORGE W. MOYER, Fremont, Nebr. Filed Apr. 16, 1885. (No model.)

Claim.—1. In a hay-stacker, the combination, with bed-plates, posts pivotally secured thereto, and detachable braces for holding the posts in upright positions, of a hay-carriage located between the posts, and devices for raising and lowering the carriage, substantially as set forth.

2. In a hay-stacker, the combination, with bed-plates and upright posts secured thereto and having grooved inner faces, of bearing-blocks located within said grooves and provided with projecting lugs, as described, and a hay-carriage secured to said bearing-blocks.

3. In a hay-stacker, the combination, with upright posts having

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guideways therein, and bearing-blocks located within said guideways and provided with inwardly-projecting lugs, of a hay-carriage pivoted to said bearing-blocks, and devices for elevating and lowering said carriage.

4. The combination, with upright posts and a hay-carriage adapted to move between said posts, of a vertically-adjustable platform.

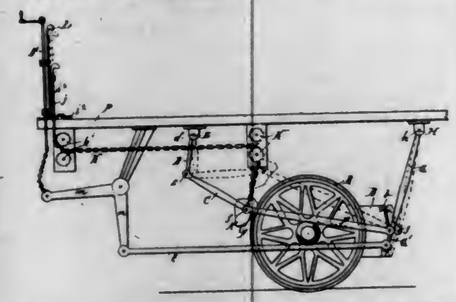
5. The combination, with bed-plates, upright post pivoted thereto, and an auxiliary frame connected by bars and hinges to the upright post, of a hay-carriage and a platform, substantially as set forth.

6. In a hay-stacker, the combination, with bed-plates, uprights pivoted thereto, and an auxiliary frame pivotally connected with the upright, of a vertically-movable carriage and a tilting platform, substantially as set forth.

7. The combination, with upright posts and a vertically-movable hay-carriage located between said posts, of a supplemental frame connected to the upright post by cross-bars and hinges, the vertically-adjustable platform, and devices for regulating the tilting movement of said platform, substantially as set forth.

8. In a hay-stacker, the combination, with the bed-plates, upright post pivotally secured thereto, and uprights pivoted in the rear of the post, of connecting-bars hinged to the upright posts and the uprights, whereby the same may be lowered simultaneously, substantially as set forth.

322,959. CAR-BRAKE. ERNST F. W. MÜLLER, Berlin, Germany. Filed Feb. 12, 1885. (No model.)

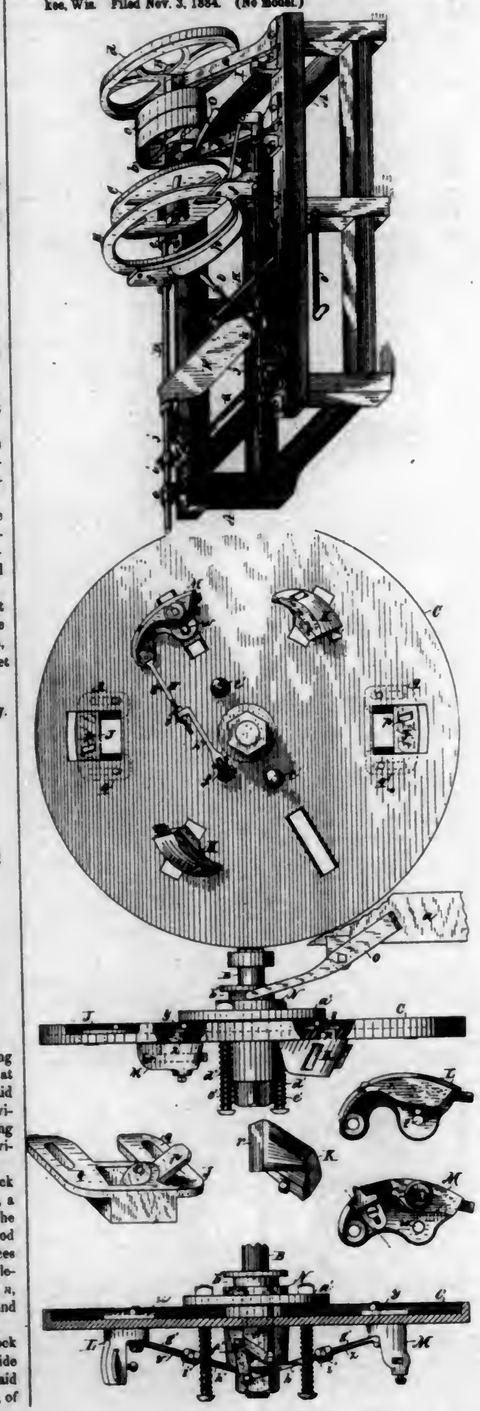


Claim.—1. In a car-brake, the combination, with a swinging brake-block arranged to bear on the periphery of one of the wheels at one side, of a gravity-block arranged to bear on the periphery of said wheel at the opposite side, the pivoted supporting-rod C, for said gravital block, a connecting-rod for connecting the latter with the swinging block, and devices such as described for lowering and raising the gravital block, substantially as and for the purpose specified.

2. In a car-brake, the combination, with a swinging brake-block arranged to bear on the periphery of one of the wheels at one side, a gravital block arranged to bear on the periphery of said wheel at the opposite side, a pivoted support for said gravital block, a connecting-rod for connecting the latter block with the swinging block, and devices such as described for lowering and raising the gravital block, of the lever Z, connected with the swinging block, the bell-crank lever *m* and *n*, and appliances for actuating said bell-crank lever, substantially as and for the purpose specified.

3. In a car-brake, the combination, with a swinging brake-block arranged to bear on the periphery of one of the wheels on one side thereof, a gravital block arranged to bear upon the periphery of said wheel at the opposite side, and a pivoted support for the latter block, of a connecting rod connected at one end to the swinging block and at the other to the pivot for the support of the gravital block, and devices, substantially such as described, for lowering and raising the gravital block, substantially as and for the purpose specified.

322,960. BARREL-MAKING MACHINE. DAVID MURRAY, Milwaukee, Wis. Filed Nov. 3, 1884. (No model.)



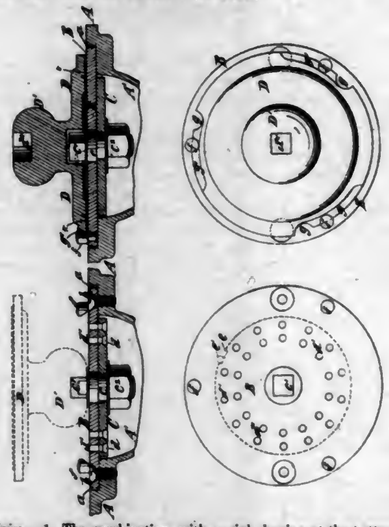
Claim.—1. The combination, with a swinging block and devices for lowering and raising the same, substantially as described, of the rod *c'* *c'*, rigid to said collar N, and passing movably through the face-plate C, the springs *d'* *d'*, the rods *e'* *e'*, rigid at one extremity to collar N and at the other end connected to levers *f f*, levers *f f*, rods *v* and *z*, connected at one end to levers *f f* and at the other extremity to a howeling or crozing tool, and the lever *o*, substantially as and for the purpose described.

2. In a barrel-machine, the combination of the driving-shaft B, the face-plate C, rigid on said shaft, the collar N, sliding upon and rotating with the shaft B, said collar being provided with flange *a'* and groove *b'*, the rods *c'* *c'*, rigid to said collar N, and passing movably through the face-plate C, the springs *d'* *d'*, the rods *e'* *e'*, rigid at one extremity to collar N and at the other end connected to levers *f f*, levers *f f*, rods *v* and *z*, connected at one end to levers *f f* and at the other extremity to a howeling or crozing tool, and the lever *o*, substantially as and for the purpose described.

3. In a barrel-machine, the combination of the driving-shaft B, the face-plate C, rigid on said shaft, the collar N, sliding upon and rotating with the shaft B, said collar being provided with flange *a'* and groove *b'*, lever *o*, one end of which runs in groove *b'*, rods *c'* *c'*, rigid at one extremity to collar N and at the other end connected to levers *f f*, levers *f f*, and the adjustable rods *v* and *z*, connected at one end of the levers *f f* and at the other extremity to a howeling or crozing tool, respectively, substantially as and for the purpose set forth.

4. In a barrel-machine, a howeling or crozing tool pivoted to the revolving face-plate, and having its front end adapted to be moved in or out toward or from the center of the face-plate by rods *v* or *z*, connected thereto, said rods being attached to mechanism adapted to that purpose when said tool has its cutting device between said pivot and said front end, substantially as and for the purpose described.

322,961. SEWER-GAS CHECK FOR SINKS. JAMES NEALE, Bridgeport, Conn. Filed Jan. 30, 1885. (No model.)



Claim.—1. The combination, with a sink having at the bottom a strainer-opening and lugs or projections *f*, of a cap or stopper for closing the strainer gas-tight, having the recesses *g* and inclines or cam surfaces *g'* extending therefrom, substantially as herein described.

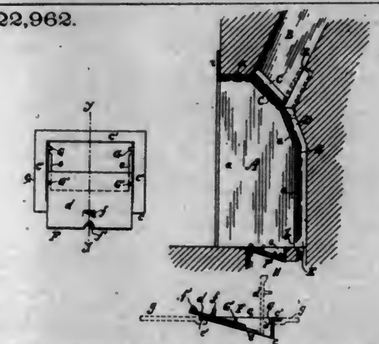
2. The combination, with the sink-strainer B, provided with lugs or projections, and a pivoted cut-off valve, C, applied thereto, of a cap or stopper to be applied to the top of the strainer and provided with recesses and inclines or cam surfaces for engaging the lugs or projections on the strainer, substantially as herein described.

3. The combination, with the sink-strainer and a pivoted cut-off valve applied thereto, of a cap or stopper to be applied to the top of the strainer and having a knob or handle whereby it may be turned, and a socket in the top of the knob or handle fitting the head of the valve-pivot, whereby the cap or stopper, when inverted, may be utilized as a handle for turning the valve, substantially as herein described.

322,962. FIRE-PLACE. CHARLES L. PAGE, Chicago, Ill. Filed June 23, 1885. (No model.)

Claim.—1. The combination, with a portable metallic fire-place or fire-place lining, of an ash dump or trap, F, consisting of the flanged box *e*, having thereon the inclined ways *e e*, and the lugs G G, and of the slide *d*, having thereon the studs G' G', substantially as and for the purposes set forth.

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2. The combination of a fire-place dump or trap with a portable metallic fire-place or fire-place lining having at or near its bottom the opening *b*, and having thereon flanges D D, substantially as and for the purposes specified.

322,963. NAIL-PLATE FEEDER. LOUIS PATTERSON, South Pueblo Colo. Filed May 14, 1885. (Model.)



Claim.—1. The combination, in a nail-plate-feeding machine, with the frame and driving-shaft of a nail-machine, of the stud W, arms A, A', B, and B', the two latter connected to the rock-shaft C, and the rack M, all constructed and arranged to impart rotary motion to the feed-barrel Q, all substantially as set forth.

2. The combination, in a nail-plate-feeding machine, with the frame D E of a nail-machine, of the base-bar O, with its slot 29 and lugs 30, the hinged socket P, hinged to base-plate O, the two screws 26 and 27 in socket P, and the vertical pivot I, all constructed and arranged to permit a lateral and vertical adjustment and an oscillating motion to feed-barrel Q and its connected mechanism, all substantially as set forth.

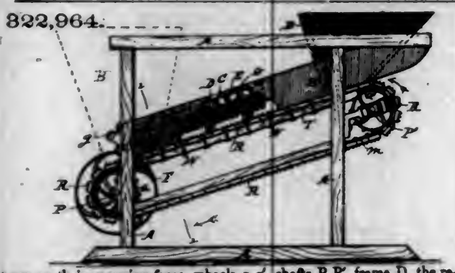
3. The combination, in a nail-plate-feeding machine, of the loose slotted collar S, carrying on its face the cam 7 and upon its side the cams 17 17, the stud 5, the pawl R and its spring 23, the spring 8, the collar T, carrying on its face the two cams 24 24, and the spring 25, all constructed and arranged to permit of a rotary motion of feed-barrel Q, and to hold it rigid while the nail-plate 36 is being fed forward, all substantially as set forth.

4. The combination, in a nail-plate-feeding machine, with the common feeding-rod 16 and nippers 38 of a nail-machine, the guide-plate 21, connecting the rod 16 and nippers 38, of the arm U, with its slot 31 and set-screw 15, permitting a lateral adjustment of said arm, the sides 9 9, the links X X X X, the jaws 10 10, the lever-cams Y Y, the rock-shaft 12, the arm H, the spring 33, and the slotted bar Z, with its slot 35 and screw 34, all constructed and arranged for feeding forward the nail-plate 36, all substantially as set forth, and for the purpose specified.

322,964. CORN-SHELLER. AURELIUS V. PITTS and MARCELLUS H. PITTS, Marseilles Ill. Filed Apr. 2, 1885. (No model.)

Claim.—1. In a corn-sheller, the combination of the frame A, the sides 8 8, the endless traveling apron R, made in jointed sections, with

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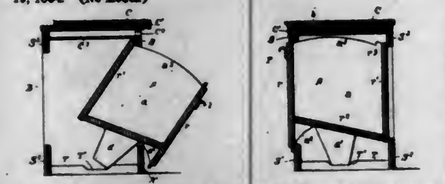


teeth on their engaging faces, wheels *a a'*, shafts P P', frame D, the recessed longitudinal bars G, springs E, and yielding breast formed of the independent cross-bars C, having their engaging contiguous faces toothed, and recessed in each end to receive the frame D, as and for the purpose set forth.

2. In a corn-sheller, the breast consisting of the independent contiguous cross-bars C, having their engaging faces toothed and recessed in each end, in combination with the frame D, longitudinally-recessed bars G, and coil-springs E, as and for the purpose set forth.

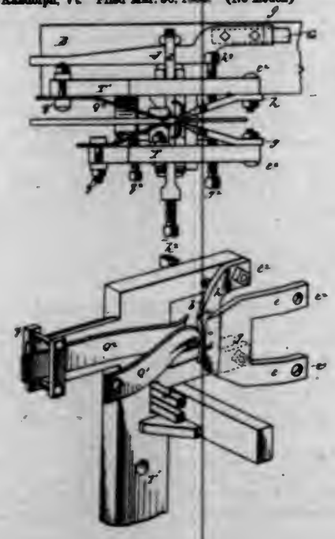
3. In a corn-sheller, the endless jointed apron R R' and the partition A^3, said apron being provided with teeth on one side of the partition for assisting in the shelling operation, and being without teeth on the other side thereof, and forming a tread-power for driving the toothed portion, in combination with the yielding breast constructed as described and shown, all as and for the purpose set forth.

322,965. FLOUR-BIN. EDWIN A. POWELL, Peoria, Ill. Filed June 19, 1884. (No model.)

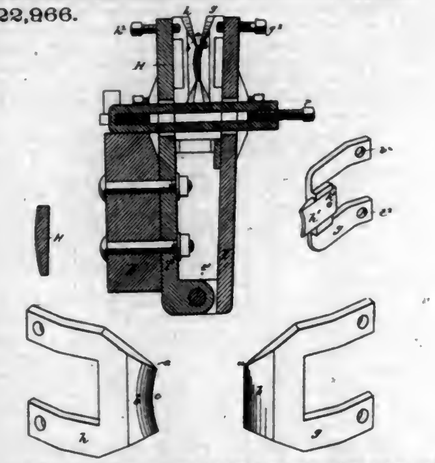


Claim.—The enveloping-case B, consisting of a top, sides, more or less complete back, and of the strip *s'*, covering the lower part of the open front of the case, in combination with the bin A, whose sides *a* are formed with the pivotal projections *a'* and the projections a^2, curved concentric with the rocking-points of said projections *a'*, and whose front *r* is prolonged to the ends of said curved projections a^2, and suitable sockets for the rocking-points of said projections *a'*, whereby said bin can be, when rocked out of or into its case, held in place at its rocking-points by the contact of said curved projections with the upper edge of the said strip *s'*, and also when said bin is closed the front *r* thereof shall be flush with the said strip *s'*

322,966. KNIFE FOR HOOP-SHAVING MACHINES. JOHN PRINCE, West Randolph, Vt. Filed Mar. 30, 1885. (No model.)



322,966.



Claim.—1. A shaving-knife having a curved cutting-edge, *c*, and double bevel *a b* upon the opposite faces of its blade, substantially as and for the purposes set forth.

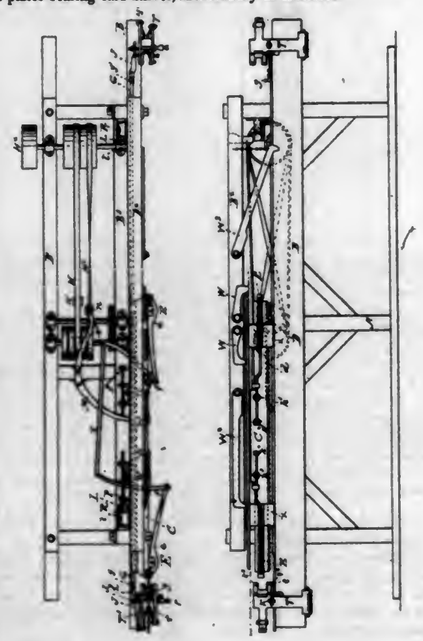
2. The combination of two shaving-knives provided with double bevel edges arranged to act on opposite sides of the material to be shaved, substantially as described.

3. A shaving-knife, in combination with its knife-holding plate, the said knife-holding plate being provided with a screw whereby the angle of inclination of the knife with the knife-holding plate is adjusted, substantially as described.

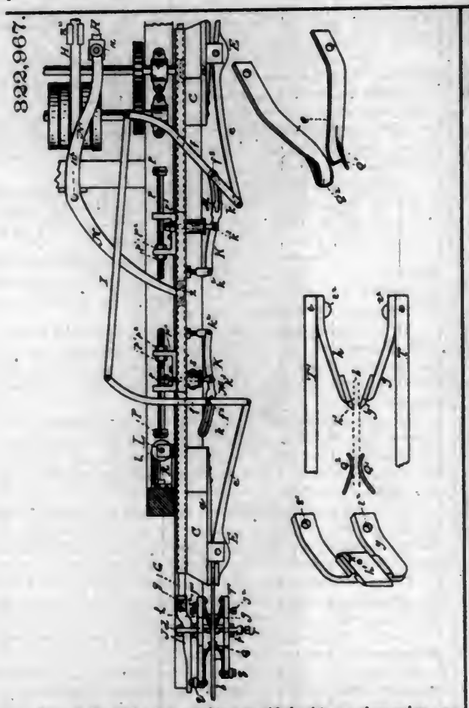
4. The guide-spring Q^2, having a circular gripping end, arranged to act in conjunction with the guide-spring Q', having a triangular gripping end, in combination with the knife-plates T T', substantially as described.

322,967. HOOP-SHAVING MACHINE. JOHN PRINCE, West Randolph, Vt. Filed Mar. 30, 1885. (No model.)

Claim.—1. In a hoop-shaving machine provided with a reciprocating carriage having at each end a clutching mechanism for grasping a hoop-blank, two sets of shaving-knives located in knife-plates and automatically opened and set at each end of the machine by the action of the reciprocating carriage on the projections of a rod connected with the plates bearing said knives, substantially as described.



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2. In a hoop-shaving machine provided with a reciprocating carriage, a clutching mechanism for grasping the hoop-blanks, consisting of the clutch E, the lever *f*, connected to the slotted lever K, which is pivoted to the frame of the carriage, and also connected thereto by a spring-bearing rod, said mechanism being operated by the motion of the reciprocating carriage, to which it is attached, by bringing the lever *f* in contact with a stop, L, on the frame of the machine, substantially as described.

3. In a hoop-shaving machine, the belt-shipping mechanism consisting of the lever N, pivoted at n^2 to the frame of the machine, provided at one end with the arms *n n'*, having shoes for grasping the belt, and having its other end loosely fixed in a slot in the knife-operating rod G, in combination with said rod, substantially as and for the purpose described.

4. In a hoop-shaving machine, a reciprocating carriage provided at each end with a clutching mechanism connected by levers and a rod, in combination with a stop or bearing located at each end on the frame of the machine, the said levers being, by the motion of the reciprocating carriage, alternately brought in contact with the said stops, whereby the said clutches are simultaneously shut and opened, substantially as described.

5. In a hoop-shaving machine provided with a reciprocating carriage, the dog W^2, pivoted to the frame of the machine, in combination with the reciprocating carriage, substantially as and for the purpose described.

6. In a hoop-shaving machine provided with a reciprocating carriage, the dog W, pivoted to the frame of the machine, in combination with a reciprocating carriage having a clutching mechanism on its end, substantially as and for the purpose described.

7. In a hoop-shaving machine provided with a reciprocating carriage, and having at each end a set of knives located in knife-plates, a bar provided with wedge-shaped ends and connected with said knife-plates and having projections near each end, and also a slot in it for a loose connection with the arm-lever of the belt-shipping mechanism, in combination with the reciprocating carriage operated by a rack and a pinion connected by a shaft to the prime power, whereby the movement in one direction of the said bar actuated by the contact of the said carriage on one of the said projections simultaneously causes the knife-bearing plates at one end to open and at the other end to be set, and the arm-lever of the belt-shipping mechanism to reverse the belts on the pulleys of the shafting governing the motion of the reciprocating carriage, substantially as described.

8. In a hoop-shaving machine, the clutch E, the lever *f*, pivoted to the rod I, and connected by the pin f^2 to the slotted lever K, notched at M, pivoted at k^2 to the frame, in combination with a spring, *s*, on the rod k^2, pivoted at one end to the lever K, and secured at its other end to the frame, whereby a hoop-blank is firmly held while being shaved and automatically released thereafter, substantially as described.

9. In a hoop-shaving machine consisting of a frame, A, provided with a reciprocating carriage, C, having at each end a clutch, E, operated by levers *f* and K, and connected together through the levers *f* by the rod I, the stops L, the air-cushion R and its piston P, arranged as described, in combination with a rod, G, provided with wedge-shaped ends, operating on the knife-bearing plates at each end of the machine, and loosely connected with the belt-shipping lever N, the said rod G having projections *g* for communicating the motion of the reciprocating carriage to it, whereby the reciprocating carriage automatically operates the device which clutches and releases the hoop-blank, and, through the rod G, the knife-bearing plates and the lever which reverses the bearings which operate the machine, so that while the machine is in operation at one end it automatically discharges work at the other end and adjusts itself for action, substantially as described.

10. In a hoop-shaving machine, a clutch for grasping a hoop-blank, in combination with a spring connected to and operating on said clutch through a rod connected to a pivoted slotted lever, which communicates its pressure to one arm of the clutch by a connecting-lever, whereby the clutch, automatically adapting itself to various thicknesses of hoops, firmly grasps the same, substantially as described.

322,968. HAY-CARRIER. JAMES W. PROVAN, Oshawa, Ontario, Canada. Filed May 8, 1885. (No model.) Patented in Canada Sept. 17, 1884, No. 20,200.



Claim.—1. The bracket B, fixed to some convenient part of the barn, in proximity to the iron rod A, in combination with the lever C, pivoted to the said bracket and arranged to support the rod A, substantially as and for the purpose specified.

2. The bracket B, fixed to some convenient part of the barn, in proximity to the iron rod A, in combination with the lever C, pivoted to the said bracket and held by the latch D for the purpose of supporting the rod A, substantially as specified.

3. The bracket B, fixed to some convenient part of the barn, in proximity to the iron rod A, in combination with the lever C, with the notch *c*, and latch D, arranged for the purpose of supporting the rod A, substantially as specified.

4. The bracket B, fixed to some convenient part of the barn, in proximity to the iron rod A, in combination with the lever C, with the notch *c*, and latch D, spring *e*, attached to the latch D, and the lug *f*, attached to the bracket, the whole arranged and operating substantially as and for the purpose specified.

5. The latching-lever G, pivoted to the body or frame F at *h*, in combination with the eye H, connected to the latching-lever G at a point inside of the pivot *h*, so that the said pivot shall be between the eye H and hook *i*, substantially as and for the purpose specified.

6. A wheel or roller, L, journaled on the axle K, which is hinged at one end to the body or frame F, in combination with a locking device arranged to lock the free end of the axle, substantially as and for the purpose specified.

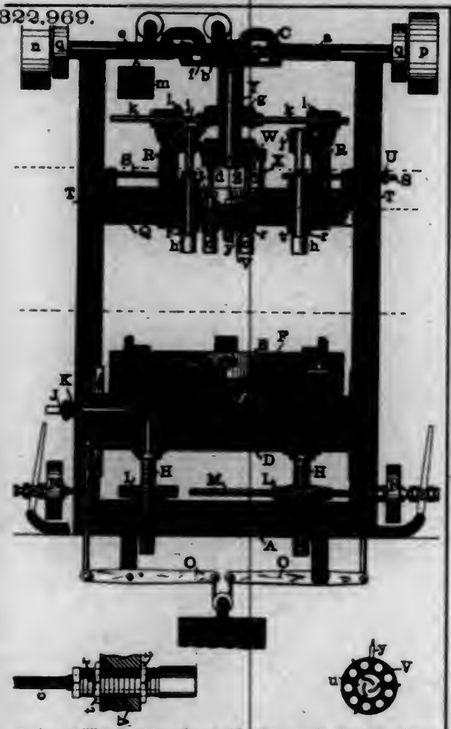
7. The latching-lever G, pivoted to the body or frame F, and having one of its ends extending back to the point where the bail *j* enters the carriage, and an upward projection, *n*, formed upon or attached to the said lever G, in combination with a sliding bar, J, held in suitable guides within the frame F, and having one of its ends projecting down so as to form a hook, *l*, and its other end formed with an upward projection, *m*.

322,969. DRILLING-MACHINE. GEORGE T. REED, Hamilton, Ohio, assignor to the Niles Tool Works, same place. Filed Apr. 15, 1885. (No model.)

Claim.—1. In a drilling-machine, the combination of sole-plate A, columns B, drilling mechanism supported thereby, work-supporting bed D, fitted to slide vertically on the columns, elevating-screws H, and shaft J, geared to the screws, substantially as and for the purpose set forth.

2. In a drilling-machine, the combination of sole-plate A, columns B, drilling mechanism supported thereby, work-supporting bed D, fitted to slide on the columns, elevating-screws H, shaft J, geared to the screws, and levers O, provided with counterbalance-weight and linked to the bed, substantially as and for the purpose set forth.

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3. In a drilling machine, the combination of sole-plate A, columns B, drilling mechanism supported thereby, work-supporting bed D, fitted to slide on the columns, elevating-screws H, worm-wheels L, forming nuts for the screws, and shaft M, provided with worms and with mechanism, substantially as described, for rotating it, substantially as and for the purpose set forth.

4. In a drilling-machine, the combination of sole-plate A, columns B, drilling mechanism supported thereby, two pulleys, *q*, arranged to rotate in opposite directions, the work-supporting bed D, fitted to slide on the columns, elevating-screws H, worm-gears L, forming nuts for the screws, shaft M, provided with worms, and the pulleys N, loose upon the shaft, and provided with locking-clutches, substantially as and for the purpose set forth.

5. In a drilling-machine, the combination of sole-plate A, columns B, drilling mechanism supported thereby, work-supporting bed D, fitted to slide upon the columns, elevating-screws H, shaft J, geared to the screws, clutch K, fitted to lock said shaft against rotation, worm-gears L, forming nuts for the screws, and shaft M, provided with worms and with mechanism, substantially as shown, for rotating it, substantially as and for the purpose set forth.

6. In a drilling-machine, the combination of columns B, drill mechanism supported thereby, bed D, fitted to slide on the columns and provided with horizontal slideways, and table E, fitted to slide upon the bed, substantially as and for the purpose set forth.

7. In a drilling-machine, the combination of columns B, drilling mechanism supported thereby, bed D, fitted to slide upon the columns, and provided with transverse slideways, hinged wings P, forming outward prolongations of the slideways, and table, E, fitted to move inward and outward on the slideways, substantially as and for the purpose set forth.

8. In a drilling-machine, the combination of columns B, drilling mechanism supported thereby, bed D, fitted to slide upon the columns, and chuck F, secured to the top thereof, and pinion G, for partially rotating the chuck with reference to the bed, substantially as and for the purpose set forth.

9. In a drilling-machine, the combination of columns B, drilling mechanism supported thereby, bed D, fitted to slide upon the columns, table E, sliding transversely upon the bed, and chuck F, supported by the table and fitted to revolve thereon, substantially as and for the purpose set forth.

10. In a drilling-machine, the combination of columns B, drilling mechanism supported thereby, bed D, fitted to slide upon the columns, table E, sliding upon the bed, chuck F, supported upon the table and adapted to rotate, and pinion G, arranged to rotate the chuck with reference to the table and bed, substantially as and for the purpose set forth.

11. The combination of columns B, bed D, fitted to slide upon the columns, disk Q, rigidly secured to the columns and supporting a group of drill-spindles, housing C, secured to the top of the columns, a horizontal shaft journaled in this housing, an axially-arranged vertical shaft, and gearing arranged to transmit motion to this vertical shaft from the housing-shaft and from this vertical shaft to surrounding drill-spindles, substantially as and for the purpose set forth.

12. In a drilling-machine, the combination of disk Q, outer series of drill-spindles, *h*, supported thereby, block V, fitted to slide vertically in the disk and be locked thereto, and drill-spindles *c*, carried by said block, substantially as and for the purpose set forth.

13. In a drilling-machine, the combination of radially-slotted disk Q, brackets R, provided with drill-spindles, screws S, provided with bevel-pinions, and annular bevel-gear T, engaging said pinions, substantially as and for the purpose set forth.

14. In a drilling-machine, the combination of slotted disk Q, brackets R, provided with drill-spindles, screws S, provided with bevel-pinions, annular bevel-gear T, engaging said pinions, and clutches U, fitted to lock the bevel-pinions to their screws, substantially as and for the purpose set forth.

15. In a drilling-machine, the combination of the slotted disk Q, brackets R, provided with drill-spindles, screws S, provided with bevel-pinions, annular bevel-gear T, engaging said pinions, and clutches U upon the alternate ones of the screws S, substantially as and for the purpose set forth.

16. In a drilling-machine, the combination of brackets R, provided with drill-spindles, and disk Q, provided with slots for the brackets, the alternate slots being prolonged inward beyond the inner ends of the intermediate slots, substantially as and for the purpose set forth.

17. In a drilling-machine, the combination of disk Q, block V, sliding vertically in the disk, and cam-disk *u*, provided with locking-plungers, substantially as and for the purpose set forth.

18. In a drilling-machine, the combination of a series of drill-spindles supported in brackets or a block, bearing-tubes *r*, forming bearings for the spindles, and nuts *t*, for adjusting the spindles independently with reference to their supports, substantially as and for the purpose set forth.

19. In a drilling-machine, the combination of an inner circular series of drill-spindles, *c*, a disk, Q, having a series of radial slots, and an outer series of drill-spindles, *h*, supported in brackets R, adjustable in the slots of the disk, substantially as and for the purpose set forth.

20. In a drilling-machine, the combination of a circular series of drill-spindles, *c*, spur-pinions *d*, spur-gear Z, vertical shaft Y, bevel-gear *b*, and horizontal shaft *a*, provided with pulley *p*, and with a bevel-pinion engaging said bevel-gear, substantially as and for the purpose set forth.

21. In a drilling-machine, the combination of disk Q, block V, carrying a circular series of drill-spindles, bearing-plate W, and posts X, substantially as and for the purpose set forth.

22. In a drilling-machine, the combination of brackets R, provided with drill-spindles, radial shafts *k*, geared to these spindles, and provided at their inner ends with bevel-pinions, united bevel-gears *f g*, and shaft *e*, provided with pulley *n*, and with a bevel-pinion engaging bevel-gear *f*, substantially as and for the purpose set forth.

23. In a drilling-machine, the combination of brackets R, provided with drill-spindles, radial shafts *k*, bevel-geared to these spindles, and provided at their inner ends with bevel-pinions, a hub on a bearing-plate furnishing bearings for the inner ends of said radial shafts, shaft Y, rising from said hub, and united bevel-gears *f g*, bearing upon said shaft, substantially as and for the purpose set forth.

24. In a drilling-machine, the combination of inner series of drill-spindles, *c*, vertical shaft Y, geared to the spindles of said series, outer series of drill-spindles, *h*, radial shafts *k*, geared to said outer spindles, and provided at their inner ends with bevel-pinions, and bevel-gear *g*, encircling the shaft Y and engaging the bevel-pinions of the radial shafts, substantially as and for the purpose set forth.

25. In a drilling-machine, the combination of sliding block V, provided with series of drill-spindles *c*, vertical shaft Y, geared to said drill-spindles, and counterbalance-weight *m*, attached to the block V by cord or chain passing axially through shaft Y, substantially as set forth.

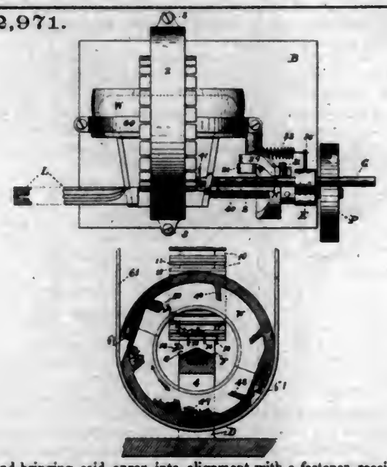
322,970. ASPHALTIC TILING AND PAVING MATERIAL. JUDSON REE and ANDREW STRIBER, San José, and ISAAC L. THURBER, Santa Cruz, Cal. Filed Oct. 2, 1884. (No specimens.)

Claim.—A tiling or roofing material consisting of compressed melted native asphalt, substantially pure and having a hard, smooth, durable, and elastic surface, substantially as set forth.

322,971. MECHANISM FOR FEEDING BUTTON-FASTENERS. FRANCIS H. RICHARDS, Springfield, Mass., assignor to the American Button Fastener Company, New Britain, Conn. Filed Dec. 26, 1884. (No modal.)

Claim.—1. In a button-fastener-feeding machine, the combination of a slotted apron, means, substantially as described, for delivering button-fasteners onto said apron, means, substantially as described, for tipping and bringing said apron into alignment with a fastener-receiving channel, a fastener-receiving channel, and a plunger for pushing fasteners out of the slot in said apron into said channel, all arranged to operate substantially as described.

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2. In a button-fastener-feeding machine, the combination of a series of slotted aprons arranged to travel in a circuit, means, substantially as described, for delivering button-fasteners onto the lower aprons of said series, means, substantially as described, for moving forward said aprons in said circuit to successively bring each apron with its slot into alignment with a fastener-receiving channel, a fastener-receiving channel, and a plunger for pushing fasteners out of said slots into said channel, all arranged to operate substantially as described.

3. In a button-fastener-feeding machine, the combination of an apron-wheel having a series of slotted aprons supported by inwardly-projecting spokes and suitable operating devices, substantially as described.

4. In a button-fastener-feeding machine, the combination of a slotted apron having depressions 11 and 12 and suitable operating devices, substantially as and for the purpose described.

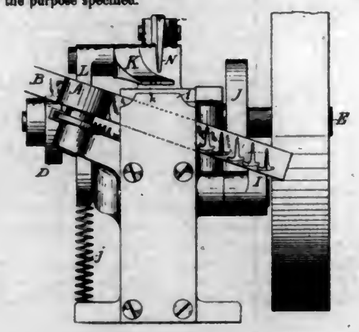
5. In a button-fastener-feeding machine, the combination, of an apron-wheel having platforms 9, which are provided with depressions 11 and 12, and a plunger provided with projection 43, and suitable operative means, substantially as and for the purpose described.

6. The combination of the apron-wheel F and its slotted aprons, hopper H, and bucket-wheel W, and suitable operating means, substantially as and for the purpose described.

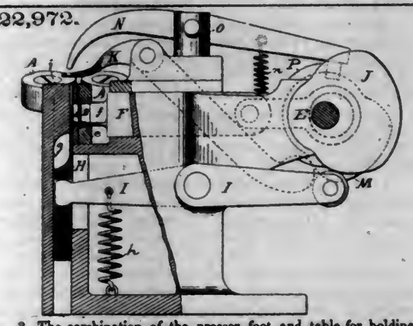
322,972. MACHINE FOR MAKING AND SETTING BUTTON-FASTENERS. FRANCIS H. RICHARDS, Springfield, Mass., assignor to the American Button Fastener Company, New Britain, Conn. Filed Dec. 8, 1884. (No modal.)

Claim.—1. The combination of mechanism for clinching or bending the fasteners with the die and punch for cutting the fasteners from a strip or plate of metal, and a driver adapted to receive and carry a fastener from the cutting-dies bodily to said clinching or bending mechanism, substantially as described, and for the purpose specified.

2. The combination of mechanism for clinching or bending the fasteners, mechanism for feeding the strip or plate of metal to the cutting-dies, dies for cutting the button-fasteners from said strip or plate, and a driver adapted to receive and carry a fastener from the cutting-dies bodily to said clinching or bending mechanism, substantially as described, and for the purpose specified.



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3. The combination of the presser-foot and table for holding the material to which buttons are to be set, mechanism for cutting button-fasteners from the stock and presenting it to a driver, the driver for carrying the fastener from the cutting mechanism to the material-holding mechanism and for forcing it through the material held thereby, and mechanism for bending the prong of the fastener to clinch it upon the button-eye, substantially as described, and for the purpose specified.

4. The combination of the table *i*, the die *d* and punch *f* underneath said table, and the reciprocating driver H, having an anvil-face at its upper end, substantially as described, and for the purpose specified.

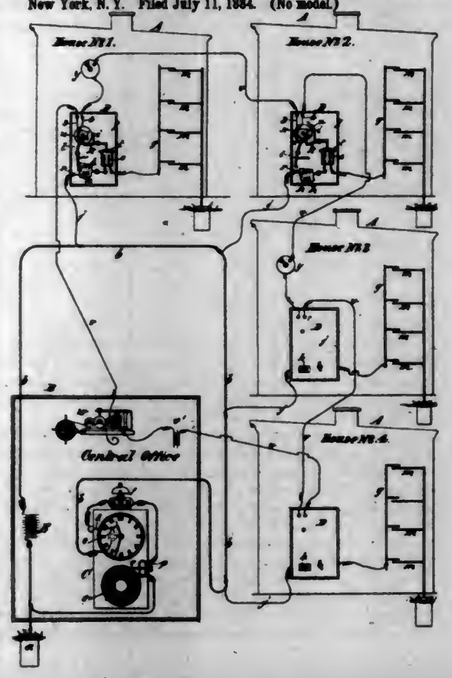
5. In a button-setting machine, the combination of the table *i*, upon which to place the material to which the buttons are to be attached, the presser-foot K, having a slot in its end, through which the prong of the fastener may pass, and a driver for forcing the fastener through said material and slot while it is being held by the presser-foot, substantially as described, and for the purpose specified.

6. In a button-setting machine, the combination of the presser-foot K, the finger N, and mechanism for moving said finger both vertically and laterally, substantially as described, and for the purpose specified.

7. The combination of the punch *f*, for use in connection with a proper die, the driver H, presser-foot K, the finger N, the driving-shaft E, having a set of cams thereon, and means for operatively connecting said cams with the said several parts, substantially as described, and for the purpose specified.

8. The combination of the feeding mechanism, the punching mechanism for cutting out button-fasteners, the driver H, having an anvil-face at its upper end, the presser-foot K, the finger N, and their operating mechanisms, substantially as described, and for the purpose specified.

322,973. CIRCUIT-CONTROLLER FOR COMBINED DISTRICT-TELEGRAPH AND DOMESTIC-SUPPLY CIRCUITS. DAVID ROSSEAU, New York, N. Y. Filed July 11, 1884. (No modal.)



Claim.—1. In a district electric system, the combination, with a central office and a series of distant houses, each provided with electrical instruments in open circuit, of a central battery and a common supply-line extending therefrom to the houses, and connecting with the instruments in the respective houses in multiple arc, with an automatic timed or retarded electric cut-off in each house branch of the multiple circuit, acting to cut off the house branch from the main line whenever the circuit through it remains closed beyond a normal period of time, substantially as herein set forth.

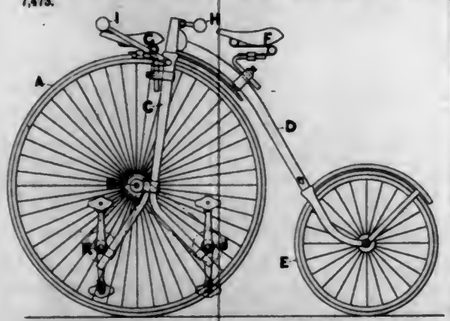
2. The combination, with a central office and a series of distant houses, each equipped with an open electric circuit, including suitable instruments and suitably supplied with battery, of a telegraphic circuit extending from the central office to the houses, having a receiving-instrument in the office, and individual signal-instruments in the houses, with an automatic timed or retarded electric-motor device in the open circuit of each house, operatively connected with the signal-instrument, substantially as set forth, so that a prolonged closure of the house-circuit operates the signal, substantially as and for the purpose set forth.

3. In a district electric system, the combination, with a central office and a series of distant houses, each house provided with electric instruments in an open circuit suitably supplied with battery, of an automatic retarded or timed electric cut-off in the circuit of said house-instruments, substantially such as described, with a telegraphic or signal circuit extending from the houses to the central office, having a receiving-instrument in the office and individual signal-instruments in the respective houses, and an operative connection between the aforesaid cut-off and the signal-instrument, whereby the action of the house cut-off due to prolonged closure sets off the signal, and automatically telegraphs to the central office that the circuit is defective in a particular house, substantially as herein set forth.

4. In a district electric system, the combination, with a central office and a series of houses, each provided with electrical instruments in open circuit, of a common battery-supply circuit extending from the central office to the circuits of each house, with electric alarming or indicating devices in the supply-circuit at the central office, and with an automatic timed or intermittent circuit-closer, acting to close the battery-supply circuit at intervals, substantially as and for the purpose herein set forth.

5. The combination, with a central office and a central or common battery having one end grounded, with a series of houses, each provided with electrical instruments arranged in open circuit and having one end grounded, with a line connecting the opposite side of the instruments to the opposite side of the battery, and with an automatic timed or retarded electric circuit-breaking device, substantially such as set forth, arranged in each house-circuit between the house-instruments and the central battery, substantially as and for the purpose set forth.

322,974. BICYCLE. MARTIN D. RUDGE, London, England. Filed Apr. 14, 1885. (No model.) Patented in England May 9, 1884, No. 7,473.



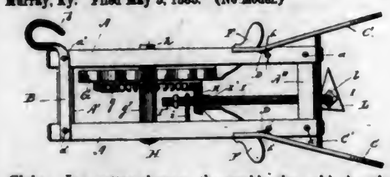
Claim.—1. In a bicycle, the combination of two spring-seats attached to the frame over the driving and steering wheel, duplex pedal-cranks having axles journaled in bearings also clamped to the frame, and the mechanism connecting the crank-axles with the axle of the steering-wheel, substantially as and for the purpose set forth.

2. In a bicycle, the combination of two spring-seats attached to the frame over the driving and steering wheel, duplex pedal-cranks having axles journaled in bearings also clamped to the frame, handles for the convenience of the front rider, a handle-bar for steering, and the mechanism connecting the crank-axles with the axle of the steering-wheel, substantially as and for the purpose set forth.

3. In a bicycle, the combination of a driving-wheel, a fork-frame, a handle-bar for guiding the driving-wheel, a backbone pivoted in the head of the fork-frame and provided with a small rear wheel, a spring-seat clamped to the backbone, a spring-seat clamped to the fork-frame, duplex pedal-cranks having axles journaled in bearings also clamped to the fork-frame, and chain-wheels and chains for connecting the crank-axles with the axle of the driving and steering wheel, substantially as and for the purpose set forth.

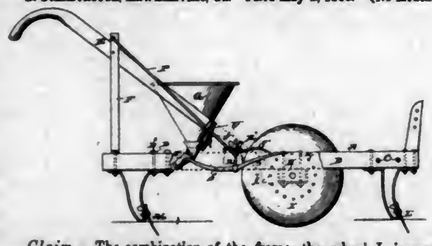
4. In a bicycle, the combination of driving-wheel A, having axle B, the fork-frame C, the handles H, for guiding the said driving-wheel, the backbone D, provided with small rear wheel, E, the spring-seats F and G, the handles I, for the convenience of the front rider, the duplex pedal-cranks having axles J and K, the chain-wheels secured to the said axles B, J, and K, and the chain for communicating the rotary motion, substantially as and for the purpose set forth.

322,975. COTTON CHOPPER AND CULTIVATOR. JAMES H. SALE, Murray, Ky. Filed May 5, 1885. (No model.)



Claim.—In a cotton-chopper, the combination, with the wheel and beveled gear, of the hoe-shaft provided with a pinion near one end, which engages with said gear, having its rear end terminating in an angle to the body and provided with two nuts, and a pointed hoe fitted between said nuts, whereby it is capable of being adjusted up and down and at any angle, so as to effect a draw-cut.

322,976. SEED-DRILL AND FERTILIZER-DISTRIBUTER. JOHN B. SCARBOROUGH, Hawkinsville, Ga. Filed May 2, 1885. (No model.)



Claim.—The combination of the frame, the wheel I, journaled therein and having the tappet-pins K, the hopper G, supported on the frame, the bar N, fulcrumed on the frame, the rod P, for moving the bar N, bolt R, passing through the bar N and having the thumb-nut R', the lever S, fulcrumed to the lower end of the bolt R, the distributer T, suspended below the hopper, and the strap U, for supporting the distributer, the outer end of the distributer being supported upon the rear end of the lever S, substantially as described.

322,977. TOILET-POWDER BOX. HENRY SCHMELA, New York, N. Y. Filed Feb. 25, 1884. (No model.)



Claim.—A powder-box composed of a body, A, and of a dome-shaped cover, B, said cover having a raised seat, C', and a perforated portion or sprinkler, C, the latter being covered by a removable cap, D, whereby the box may be used as a puff-box or a sprinkler, substantially as set forth.

322,978. KNITTING-MACHINE. RICHARD SCHOFIELD and GEORGE DAVIDSON, Paris, Ontario, Canada, assignors of one-third to John Penman, same place. Filed Oct. 30, 1884. (No model.) Patented in Canada Nov. 7, 1884, No. 20,509.

Brief.—A pivoted yarn-guide is constructed to support a supplemental thread over the needles of the machine, and is so arranged with respect to the main thread as that when the latter breaks or runs out the pivoted guide is operated to immediately bring the supplemental thread into action with the needles, so as to avoid the dropping of stitches and other injuries consequent upon such happening.

Claim.—1. In combination with the needles and main thread-guide of a knitting-machine, a movable guide arranged to be normally supported by the main thread, substantially as and for the purpose specified.

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2. The combination, with the needles and the usual main thread-guide of a knitting-machine, of a second guide for the main thread, arranged at a greater distance from the needles than said main thread-guide, and a supplemental movable thread-guide arranged to be supported by the thread between the main and second guides for the main thread, substantially as and for the purpose specified.

3. The combination, with the needles and the usual main thread-guide of a knitting-machine, of a second guide arranged at a greater distance from the needles than the main thread-guide, and a pivoted arm, H, arranged to carry a supplemental thread, and having an arm adapted to be supported in its normal position by the main thread, substantially as and for the purpose specified.

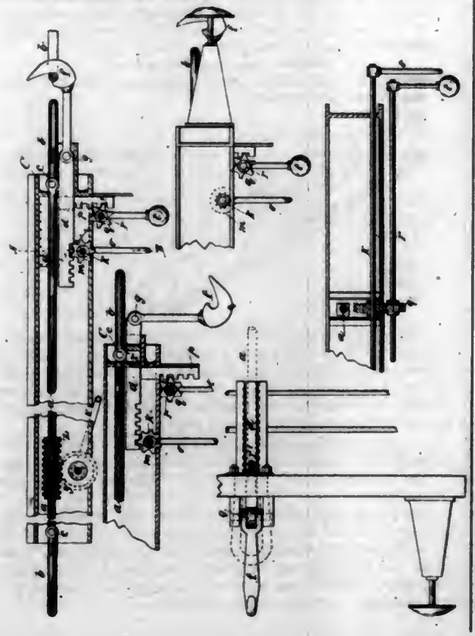
4. The needles *d* and the pivoted arm H, provided with an arm, *b*, and a curved spring end, *h*, the latter having a forked end to receive a thread, E, in combination with the guides *a c*, constructed and arranged, substantially as described, to carry and hold a thread, D, within the path of the arm *b*, whereby the latter is supported by the thread D when said thread is unbroken, as and for the purposes specified.

5. The needles *d* and the pivoted arm H, terminating in the hollow guide *i*, with a curved spring end, *h*, extending from said guide, and having a forked end to carry the thread E, in combination with the arm G, and an arm, *b*, connected with the pivoted arm H, and arranged to be supported by the thread D to normally keep the thread E out of action, as and for the purposes set forth.

6. The bracket F, having thread-guides *a* and *c*, arranged at different distances from the needles, and the pivoted arm G, one end of which moves in the space between said guides to deflect the thread out of a straight line passing through the guides, the said arm G being held in a normal position by a spring applied to the arm, in combination with said spring, the needles *d*, and guide *i*, connected to the arm *b*, as and for the purposes set forth.

7. A bracket, F, having thread-guides *a* and *c*, the pivoted arms H and *b*, the pivoted arm G, having one of its ends arranged to operate between the said guides *a* and *c*, and a second end arranged to swing within range of the spring *f*, in combination with said spring *f*, the needles *d*, and the guide *i*, connected to said arm H, substantially as and for the purposes described.

322,979. CAR-COUPLING. CARL L. SCHULER, Berlin, Germany. Filed Jan. 21, 1885. (No model.)



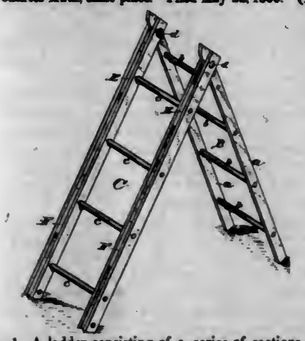
Claim.—1. In a car-coupling, the combination of a longitudinally-movable coupling-hook operating to rise and fall when moved in or out of its guide, as described, with a continuous draw-bar constructed of two sections and carrying coupling-links at each end, the coupling-sleeve *z*, and mechanism for rotating said sleeve to adjust the draw-bar, substantially as described, for the purpose specified.

2. In a coupling for railway-vehicles, the hook *f*, attached to a rack or toothed bar, *d*, both working in a suitable guide, *i*, in the buffer-beam C, the rack *d* being operated by the toothed wheel *m*, connected with the lever *o*, substantially as and for the purpose set forth.

3. In a coupling for railway-vehicles, the latch *p*, gearing with the toothed wheel *q*, operated by the counterweighted lever *t*, and serving to fix the coupling-hook *f* in position, substantially as set forth.

4. A coupling for railway-vehicles, in which the coupling-hook on one vehicle is caused to rise or fall by means of a toothed bar or rack, *d*, operating in combination with the guide *i* or equivalent, so that the hook may engage with the link of the vehicle or release the same, substantially as and for the purpose set forth, and shown in the drawings.

322,980. LADDER. HENRY H. SCHUMANN, Troy, Pa., assignor of one-third to Charles Muth, same place. Filed May 22, 1885. (No model.)



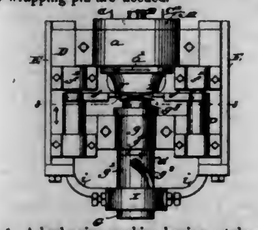
Claim.—1. A ladder consisting of a series of sections detachably secured together, one of said sections having projecting stripe to which the other section is adapted to be secured, substantially as set forth.

2. A ladder consisting of a series of sections, one of said sections having blocks secured between the strips composing its sides, said blocks having V-shaped recesses, and the other section having stripe having V-shaped upper ends projecting from between the strips composing its sides, as set forth.

3. A ladder having the projecting tongues A^3, the bands or collars A^4, and the strip A^2, as set forth.

322,981. BARB-WIRE MACHINE. GEORGE P. SCHUSTER, St. Louis, Mo., assignor to the Crescent Manufacturing Company, same place. Filed Dec. 8, 1884. (No model.)

Brief.—The main and barb wires are fed longitudinally through the reciprocating rotary head. In front of and reciprocating with the head is a hollow tube carrying wrapping-pins. As the rotary head moves forward, the tube is rotated in the opposite direction by means of pins and grooves, and wraps the barb onto the main wires. The barb is then cut off by suitably-operated knives, and the barbed wire passes on through the hollow tube. When but one barb-wire is used, only one knife and one wrapping-pin are needed.



Claim.—1. A barb-wire machine having a tube provided with one or more projections, g^3 g^3, and having a reciprocating rotary movement, substantially as and for the purpose set forth.

2. The combination, in a barb-wire machine, of the head A, the slide D, the bed-plate E, the tube G, having the grooves g^3 and projections g^3, the frame I, and the pins H H, substantially as described.

3. The combination, in a barb-wire machine, of the rotating head A and the reciprocating rotating tube G, having the projections g^3, substantially as described.

4. The combination, in a barb-wire machine, of the rotating head A, the knives F F', and the reciprocating rotating tube G, having the projections g^3, substantially as described.

5. The combination, as described, of the head A, perforated at *b b*, and having the tubes or passages *c c*, with the slide D, the bed-plate E, the knives F F', the tube G, having the grooves g^2 g^2 and projections g^3 g^3 the pins H H, and the frame I.

322,982. BEE-HIVE. JOHN T. SHANK, Springfield, Mo., assignor of one-half to Allyn M. Lapham, same place. Filed Dec. 15, 1884. (Model.)



Claim.—1. In a bee-hive, a honey-board, J, having the ribs j', grooves j^2, and metal stripe j^3, in combination with comb-frames L, having metal strips *l*, as and for the purpose set forth.

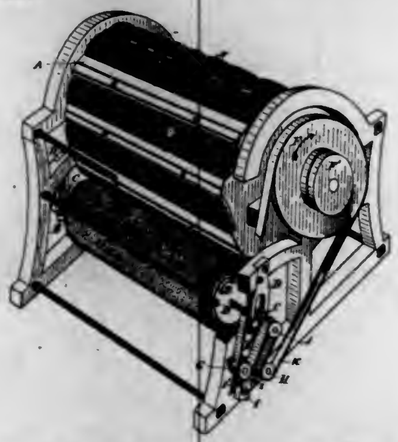
2. In a bee-hive, a honey-board, J, provided with grooves capable of receiving and supporting comb-frames, in combination with comb-frames L, having an upper strip that extends laterally, and adapted to enter the said grooves and be removed endwise, as set forth.

3. In a bee-hive, a honey-board, J, having ribs j', grooves j^2, and the metal strips j^3, attached to the ribs and extending over the grooves, as and for the purpose set forth.

4. In a bee-hive, a comb-frame having attached to its upper strip, l^2, an overhanging strip of tin, *l*, the strip l^2 being provided with the notch or notches l^3, as and for the purpose set forth.

5. In a bee-hive, a comb-frame having attached to its upper strip, l^2, an overhanging strip of metal, *l*, which serves as a supporting device and prevents the bees from attaching the frame to the hive or honey-board, all as shown and described.

322,983. GIG FOR NAPPING CLOTH. JOHN SHEARER, Preston, Ontario, Canada, assignor of one-half to George Pattinson, same place. Filed Apr. 17, 1884. (No model.) Patented in Canada May 14, 1884, No. 19,333.

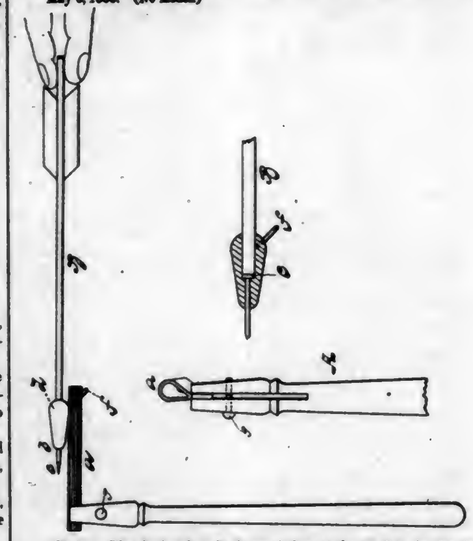


Claim.—1. The napping-cylinder A, provided with teasles A', and the cylindrical brush B, bearings therefor working in the slotted hangers D of the main frame, and the set-screws E, for adjusting said bearings, in combination with the pulleys F J, secured, respectively, to the shafts of the cylinders A B, the pulleys G H, the belt K, and means for adjusting the pulleys G H, whereby the same tension of belt may be preserved on the adjustment of the cylinder B, substantially as described.

2. The napping-cylinder A and the brush-cylinder B oppositely revolved, and the pulleys F J, secured, respectively, to their shafts, in combination with the pulleys G H, located at a distance from the pulley F in line with and beyond the range of pulley J, and the belt K, passing over the pulleys F and G H, and returning on itself between the two latter pulleys, the bight of which embraces the pulley J, as and for the purpose set forth.

3. The belt K and pulleys F, G, H, and J, in combination with the T-arm I, carrying the pulleys G and H, and the main frame, substantially as and for the purpose specified.

322,984. TARGET-DART. THOMAS J. SHEARS, Detroit, Mich. Filed May 6, 1885. (No model.)



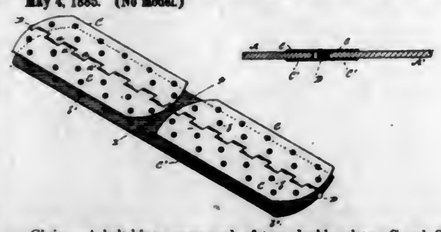
Claim.—The device described, consisting of the staff A, having in its upper the single kerf adapted to receive the rubber *a*, and provided with the securing-screw *g*, the arrow B, having the spike *c*, and staple *f*, secured to the portion *d*, as shown and described.

322,985. CLASP. CHRISTOPHER C. SHELEY, New York, N. Y. Filed June 3, 1885. (No model.)



Claim.—The herein-described clasp, consisting of the plate having the slots or openings at its opposite ends for the passage of the webbing, the movable jaw pivoted to ears formed upon said plate, and the spring for keeping the said jaw closed, said clasp being applied to the webbing in the manner described, so that the webbing shall constitute one of the gripping-jaws, substantially as and for the purpose specified.

322,986. BELT-HINGE. EUGENE C. SMITH, New York, N. Y. Filed May 4, 1885. (No model.)

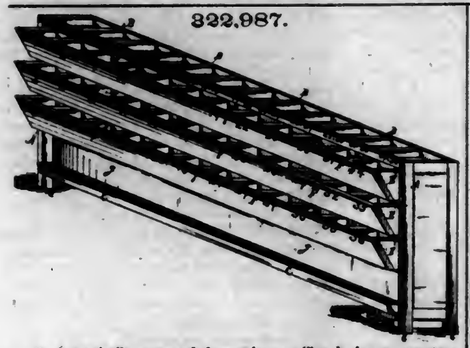


Claim.—A belt-hinge composed of two double plates, C and C', each turned over and hinged upon a continuous central rod or pintle, D, as described, one or both of said plates being divided into sections and thereby made capable of flexure transversely and longitudinally, and said plates provided with rivet-holes *b b'*, set opposite to each other on opposite plates, as and for the purpose set forth.

322,987. UMBRELLA AND OVERSHOE RACK. HOWARD J. SMITH and CHRISTIANA ROUNDS, Brooklyn, N. Y., Filed Jan. 10, 1885. (No model.)

Claim.—1. The combination of a receptacle for umbrellas and like articles, and pockets for the reception of overshoes, rubbers, and the like, said pockets being provided with an opening at or near their lower portion, and a suitably-located drip pan or receptacle to catch and hold the drip and dirt which may come from the umbrellas, overshoes, &c., substantially as and for the purposes set forth.

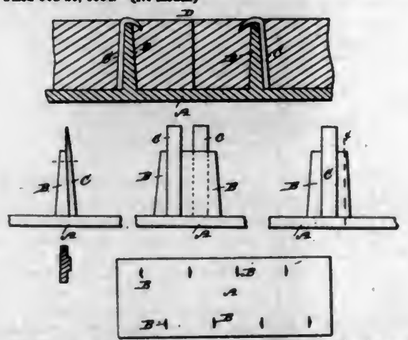
322,987.



2. A vertically-arranged frame, jar, or like device or structure adapted to receive and hold umbrellas and like articles, divided into separate compartments, and provided with pockets adapted to receive and hold overshoes and the like articles placed upon the exterior of the umbrella-holding device, and a drip-pan placed beneath the pockets and adapted to catch the drip and dirt which may come from the umbrellas or the overshoes, or both, substantially as and for the purposes set forth.

3. As a new article of manufacture, a rack for overshoes, rubbers, and like articles, consisting of a frame or like structure having attached thereto vertically-arranged pockets open both at the top and bottom, adapted to receive and hold rubbers, overshoes, &c., and a drip-pan placed beneath the pockets to catch and retain the dirt and drip which may come from the overshoes, rubbers, &c., substantially as and for the purposes set forth.

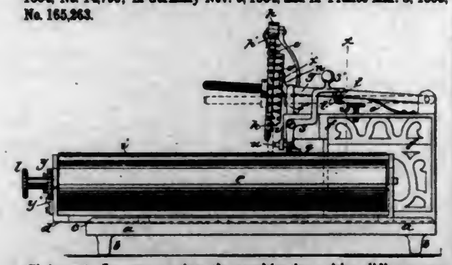
322,988. BELT-FASTENER. GEORGE W. SOUTHWICK, Stamford, Conn. Filed Oct. 29, 1884. (No model.)



Claim.—1. A belt-fastener plate provided with teeth having one or more ribs the ends of which project beyond the upper ends of the teeth, substantially as set forth.

2. A belt-fastener plate provided with teeth having ribs on their opposite faces in different planes to each other, the ends of said ribs projecting above the ends of the teeth, substantially as set forth.

322,989. TYPE-WRITING MACHINE. CHARLES SPIRO, New York, N. Y. Filed Apr. 1, 1884. (No model.) Patented in England Nov. 6, 1884, No. 14,768; in Germany Nov. 9, 1884, and in France Mar. 3, 1885, No. 165,263.



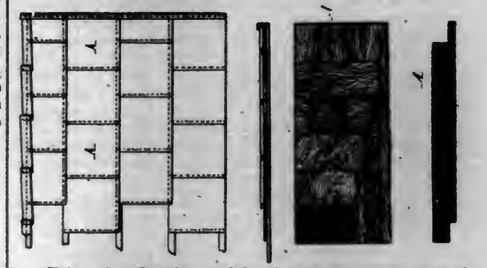
Claim.—1. In a type-writer, the combination, with a sliding paper-carriage and step-by-step feeding mechanism for moving the same, of the rotary removable type-wheel A, having the types arranged on the periphery thereof in successive order with one of their edges in line and provided with feed-regulating pins or stops of variable length corresponding to the width of the types, said stops being integral with the type-wheel itself and operating in relation with the step-by-step feeding mechanism, substantially as herein shown and described.

2. The combination, with a movable paper-carriage adapted to move step by step, of a rotary and reciprocating type-wheel provided with the pins or stops of different lengths, and a reciprocating feed-pawl operated by the reciprocating movements of the type-wheel and engaging the carriage and limited in its movements by the said stops, whereby the feed impulses of the pawl are varied in proportion to the width of the types, substantially as herein shown and described.

3. The combination, with the sliding paper-carriage having the rack *i*, of the depressible rod *g*, rotary type-wheel *h*, having the pins *v*, of different lengths, with the pawl-lever *s*, operated by the rod *g*, the pawl *q*, engaging the rack *i*, and a pawl-stop operating in relation with the pins *v*, substantially as and for the purpose set forth.

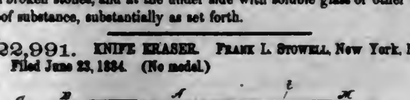
4. The combination, with the movable paper-carriage having a rack, *i*, of the rotary type-wheel *h*, having the stop-pins *v*, of varying lengths, with the movable support *g*, on which the wheel is mounted, a reciprocating feed-pawl engaging the rack and moving in relation with the stop-pins *v*, and operatively connected with the support *g*, with a spring, *t*, in the connection between the support and pawl, substantially as and for the purpose set forth.

322,990. ROOFING-PLATE. JOSEF SPORNY and IAN ZARSKI, Warsaw, Russia. Filed Apr. 27, 1885. (No model.) Patented in England Apr. 13, 1885, No. 4,539.



Claim.—A roofing-plate consisting of two or more veneers arranged at cross-grain to each other, and coated at the outer surface with asphaltam and broken stones, and at the under side with soluble glass or other fire-proof substance, substantially as set forth.

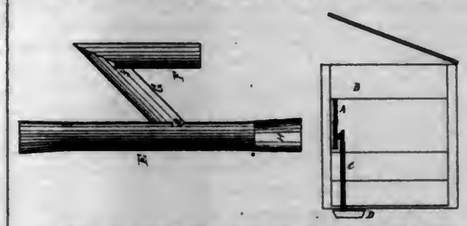
322,991. KNIFE ERASER. FRANK L. STOWELL, New York, N. Y. Filed June 23, 1884. (No model.)



Claim.—1. An instrument for desk purposes, consisting of a handle, A, provided with a double-edged blade, B, having a sharpening-notch formed in one edge only thereof, and a flat oblong file-surface in the rear of said blade, substantially as specified.

2. The handle A, provided with the blade B, having the file-surface C, in combination with the sheath J, for protecting said file-surface, substantially as set forth.

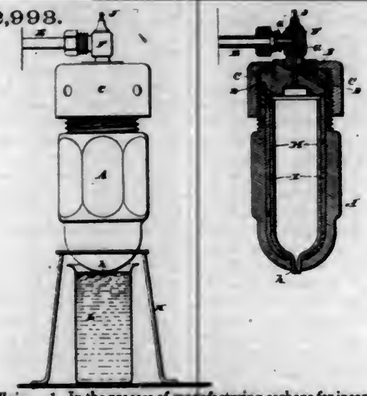
322,992. SIPHON FOR ICE-BOXES AND REFRIGERATORS. SAMUEL A. SUYDAM, New York, N. Y. Filed May 21, 1885. (No model.)



Claim.—In a siphon for ice-boxes, the leg E, projecting below the branch G, so as to form a chamber for the reception of dirt and sediment, in combination with the opening *e* and the projection *f*, the siphon being detachable, to enable it to be cleaned and to facilitate the cleaning of the pipes in the ice-box, substantially as set forth.

322,993. MANUFACTURE OF CARBONS FOR INCANDESCENT LAMPS. JOSEPH W. SWAN, Bromley, County of Kent, England, assignor to Thomas James Montgomery, New York, N. Y. Filed Aug. 7, 1884. (No model.) Patented in England Dec. 31, 1883, No. 5,978; in France Apr. 28, 1884, No. 161,780, and in Germany May 4, 1884, No. 30,291.

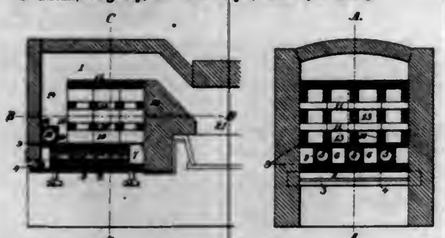
322,993.



Claim.—1. In the process of manufacturing carbons for incandescent electric lamps, the following steps: placing a mixture or solution of nitro-cellulose in acetic acid (or other solvent) in a receiver and forcing said mixture through a contracted opening, thereby producing a filament and conducting said filament into a liquid for hardening the same and subsequently carbonizing the filament, substantially as set forth.

2. Manufacturing carbons for incandescent electric lamps by forcing a mixture or solution of nitro-cellulose in acetic acid (or other solvent) or the equivalent thereof, as hereinbefore stated, through a hole or holes or die or dies and into a liquid for causing the setting, coagulation, or coherence of the issuing filament or filaments, and subsequently treating the said filament or filaments with a deoxidizing agent and then carbonizing the said filament or filaments, substantially as hereinbefore described.

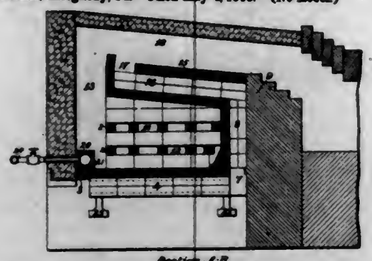
322,994. REGENERATIVE NATURAL-GAS FURNACE. WILLIAM SWINDELL, Allegheny, Pa. Filed May 4, 1885. (No model.)



Claim.—1. A regenerative gas-furnace provided with a series of horizontal air-flues extending through the lower part of the fire-chamber and opening into a checker-work having a closed top and longitudinal and lateral passages, in combination with a lateral gas-flue provided with a gas-supply pipe, into which gas-flue the longitudinal air-flues open at different levels, substantially as and for the purposes described.

2. A furnace having a checker-work provided with longitudinal and lateral flues arranged next to the bridge-wall with a vertical combustion-flue in front of the checker-work into which the air from the latter passes, and a gas-pipe extending across said combustion-chamber, substantially as and for the purposes described.

322,995. REGENERATIVE NATURAL-GAS FURNACE. WILLIAM SWINDELL, Allegheny, Pa. Filed May 4, 1885. (No model.)



Section A-B.

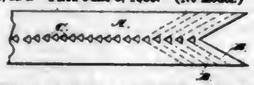
Claim.—1. A furnace provided with a checker-work arranged in front of the bridge-wall, air-flues entering below the checker-work and discharging a portion of their contents into the same and a portion into flues which lead up over the checker-work and discharge into the bed-flue at a point beyond the checker-work, in combination with a combustion-chamber arranged in front of the checker-work and provided with a pipe for supplying natural gas or hydrocarbon liquid to the furnace, substantially as and for the purposes described.

2. The combination, in a furnace, of a checker-work arranged in front of the bridge-wall, a gas-combustion chamber arranged in front of the checker-work, air-supplying flues leading under the checker-work and supplying a portion of the air into the same and another portion into flues which lead over the top of the checker-work, with checker-work flues arranged alternately with the last-named flues in the upper part of the chamber, substantially as and for the purposes described.

322,996. MANUFACTURE OF LEATHERY COMPOUND. STEPHEN P. M. TARKER, Philadelphia, Pa. Filed Feb. 16, 1885. (No specimens.)

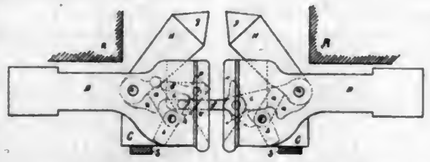
Claim.—The method of manufacturing a leathery compound which consists in treating fibrous material with gelatine, molding or working the same into the desired form, and in treating such worked, molded, or formed material with tannic acid, as specified.

322,997. METHOD OF CUTTING STAPLES. JAMES F. THAYER, Providence, R. I. Filed June 8, 1885. (No model.)



Claim.—The method of forming sheet-metal staples which consists in taking a flat sheet-metal blank of the proper width and thickness, removing small sections therefrom at intervals to form the crown of the fastener, and afterward cutting and pointing the fasteners at one and the same operation, substantially as set forth.

322,998. CAR-COUPLING. WALTER TURNBULL, New Orleans, La. Filed Feb. 24, 1885. (No model.)



Claim.—1. In an automatic car-coupler, the combination of the draw-head B, provided with recess for hook-lever H, and panel *a*, with the hook-lever H, secured to draw-head by pin *n*, and provided with grip *g*, and pawl *a*, shaft *f*, rod *r*, and handle *v*, all substantially as set forth and for the purpose specified.

2. The combination, in an automatic car-coupler, of the draw-head B, shaped at front end to guide and receive a common coupling-link and provided with recesses to receive the pawls *a* and *b*, hook-lever H, and link-lever L, and projection C, with the hook-lever H, provided with grip *g*, and the link-lever L, provided with the hook *h* and shank Q, and the pin *n*, all substantially as described, and for the purpose specified.

3. In an automatic car-coupler, the combination of the draw-head B, hook-lever H, and link-lever L with the pawls *a* and *b*, shaft *f*, rod *r*, bearings *w*, rod *d*, handles *m*, and joints *t*, all substantially as set forth, and for the purpose specified.

4. In an automatic car-coupler, the combination of the draw-head B, hook-lever H, and link-lever L with the link *l*, provided with pin *i*, and shanks K and *o*, all substantially as set forth.

5. In an automatic car-coupler, the combination of the pawls *a* and *b* and shaft *f* with the draw-head B, hook-lever H, link-lever L, rods *d*, and joints *t*, all substantially as set forth.

6. In an automatic car-coupler, the link-lever L, provided with hook *h* and shank Q, and the link *l*, provided with pin *i* and shanks K and *o*, all substantially as described.

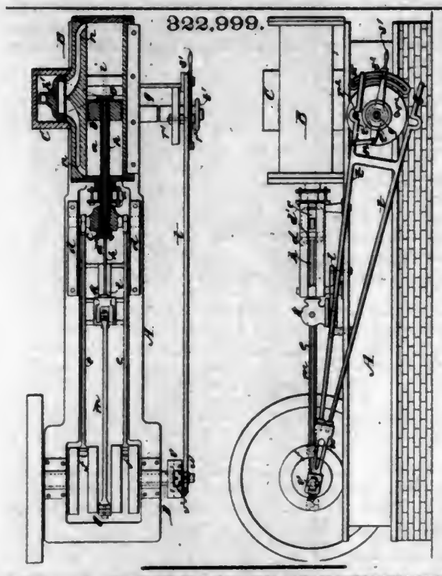
7. In an automatic car-coupler, the combination of draw-head B, hook-lever H, and link-lever L with the pawls *a* and *b*, shaft *f*, rod *r*, and the lever *p*, rod *u*, and lever *y*, working on fulcrum *z*, all substantially as set forth and for the purpose specified.

322,999. STEAM-ENGINE. BENJAMIN C. WAITE, Brooklyn, N. Y. Filed June 23, 1884. (No model.)

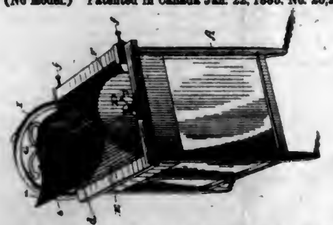
Claim.—1. In a steam-engine, the combination of cylinder B, having steam-passages *n o*, heads *b i*, piston-rods *a h*, stuffing-box *d'*, and cross-heads *c k*, substantially as shown and described.

2. The combination of valve *p'*, fitted for movement transversely of the cylinder, with a cylinder formed with steam-passages *n n o* and intermediate exhaust-port, and the two pistons *b i*, substantially as described.

322,999.



323,000. MACHINE FOR CLEANING AND BRIGHTENING DRIED FRUIT. JOSEPH J. WALSH, Stratford, Ontario, Canada. Filed Jan. 23, 1885. (No model.) Patented in Canada Jan. 22, 1885, No. 20,945.



Claim.—1. In a fruit-cleaner, the cylinder D, made of sheet metal and having made in it oblong perforations extending transversely to the axis of the cylinder, in combination with the adjustable brushes F G, arranged at right angles to each other, one on the outside and the other on the inside of said cylinder, substantially as and for the purposes specified.

2. The frame H, the brush G, carried thereby, the stationary spindles *i* and *h*, and the cylinder D, in combination with a hand-wheel, I, and the spindle J, substantially as and for the purpose specified.

3. The cylinder D, the frame H, carrying the brush G and provided with the spindles *h i*, the spindle *i* supported by said cylinder, and the spindle *h* passing through the end of the cylinder and having a flattened portion, *h'*, and the bearing-box *j*, in combination with the spindle J, secured to the end of the said cylinder, and the hand-wheel I, fastened to said spindle, substantially as and for the purposes specified.

323,001. GRAIN-BINDER. JAMES WEDLAKE, Brantford, Ontario, and LYMAN M. JONES, Winnipeg, Manitoba, assignors to A. Harris, Son & Co., (Limited,) Brantford, Canada. Filed May 23, 1884. (No model.) Patented in Canada May 17, 1884, No. 19,371.



Claim.—1. In a grain-binding machine, a spring-tension device, in combination with a releaser acting independently of the binding-cord, the needle-shaft provided with a crank-arm, and connecting mechanism whereby the releaser is operated to release the tension device and allow the cord to pass freely, substantially as described.

2. In a grain-binding machine, a spring-tension device and a take-up for the cord connected with and operated by the needle-shaft, and constructed to strike and release the tension, and when the arm is operated to take up the binding-cord permitting the tension to close on the cord, substantially as described.

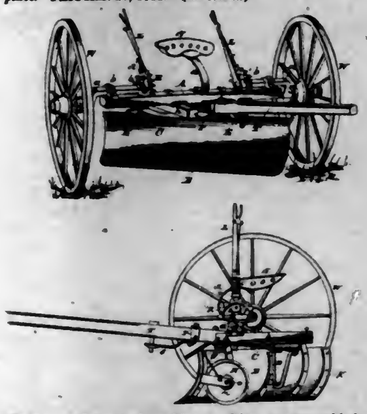
3. The tension-bracket F, secured to the frame of the machine and having a hole, *e*, through which the twine is threaded, and a ledge, *b*, to support the twine, in combination with the pivoted tension-arm G, actuated by the spring *k*, and arranged to hold the twine against the ledge *b*, substantially as and for the purpose specified.

4. The tension-bracket F, formed substantially as specified, and the pivoted arm G, having a projection, *d*, formed on it, and actuated by the spring *k*, in combination with the rod I, operated by the motion of the needle-shaft and arranged to actuate the tension-arm G, substantially as and for the purpose specified.

5. The tension-bracket F, secured to the frame of the machine, the holes *e f*, the bracket H, having the hole *h*, through which the cord is threaded, as specified, the pivoted arm G, provided with a projection, *d*, and arranged to rest on the ledge *b*, and the rod I, having a looped end, *i*, through which the cord is threaded, in combination with the pivoted arm K, one end of which is connected to the rod I and its other end to the crank-pin *p*, which is attached to and works with the needle-shaft C, substantially as and for the purpose specified.

6. In a grain-binding machine, an arm, K, pivoted to the frame of the machine, and having an oblong hole, *o*, formed in it, through which the crank-pin *p* passes, which crank-pin is attached to the needle-shaft C, in combination with the rod I, supported by the pivoted arm K, and having a loop, *i*, through which the twine is threaded, the whole being arranged and operating substantially as and for the purpose specified.

323,002. ROAD-WORKING MACHINE. S. FRANK WELCH, Mount Pleasant, Iowa, assignor to the Western Wheel Scraper Company, same place. Filed Mar. 27, 1885. (No model.)



Claim.—1. In a road-working machine a scraper-blade pivotally secured to a supporting-frame in horizontal angular adjustment, and adapted to be vertically adjusted by means of rocking axles, substantially as set forth.

2. The combination, with a scraper-blade secured to a supporting-frame in horizontal angular adjustment, of a pair of crank-axles secured to the supporting-wheels, and means for rocking the axles, and thereby tilting and vertically adjusting the scraper-blade, substantially as set forth.

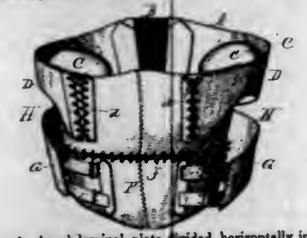
3. The combination, with a bar having axles journaled to each end and supporting-wheels mounted on the axles, of the tongue secured to the said bar, the scraper-blade pivotally secured to the tongue, the circle or arc secured to the tongue and bar, and means for locking the scraper-blade to the circle or arc in horizontal angular adjustment, substantially as set forth.

4. In a road-working machine, the combination, with a supporting-frame, of a scraper-blade pivotally secured to the supporting-frame by a U-shaped bolt, one of the legs of said bolt acting as a brace to support the lower end of the other leg, substantially as set forth.

5. The combination, with a vertically-adjustable supporting-frame and a scraper-blade secured thereto in horizontal angular adjustment, of a colter journaled in bearings secured to the scraper, substantially as set forth.

6. The combination, with a scraper secured to a supporting-frame in horizontal angular adjustment, of a rolling colter secured to the scraper-blade in horizontal angular adjustment, substantially as set forth.

323,003. ABDOMINAL SUPPORTER. MARY M. WERUM and JOHN H. WERUM, Toledo, Ohio, assignors, by mesne assignments, to Mary M. Werum, same place. Filed May 28, 1884. (No model.)



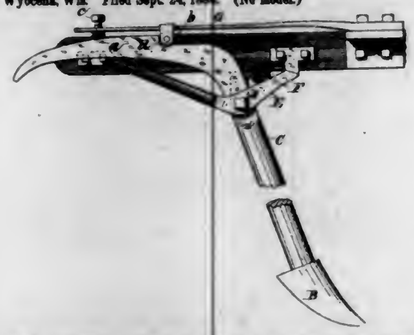
Claim.—1. An abdominal plate divided horizontally into two sections, the proximate edges of which are adjustably secured together, whereby they can be loosened and extended as required by the form of the wearer, substantially as and for the purpose set forth.

2. A divided abdominal plate, substantially as described, in combination with the body having two arms on each side thereof adjustably secured to a divided abdominal plate and forming hip-spaces, as and for the purpose set forth.

3. The body A, joined at the back by elastics, and having pads, one upon either side of said elastics, and two arms on each side, in combination with a divided abdominal plate adjustably secured together, as and for the purposes set forth.

4. A supporter having a solid back, an abdominal plate divided horizontally and adjustably laced together, as and for the purpose set forth.

323,004. TOOTH-HOLDER FOR CULTIVATORS. JOSEPH F. WHEELER, Wyoena, Wis. Filed Sept. 24, 1884. (No model.)



Claim.—1. The combination, with the draw-bar A, of the spring G, secured upon the top thereof, the anti-friction wheel *b*, attached to said spring, and the arm *a* of shank C, provided with shoulder *d*, substantially as described.

2. The shank C, attached to the draw-bar A by being pivoted below the bar in bracket E and arm F, both rigid to said bar and provided with arm *a*, having shoulder *d*, in combination with bar A and spring G, having anti-friction wheel *b*, as set forth.

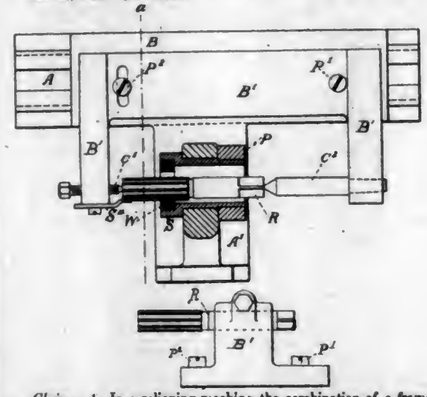
323,005. SAW-SET. MOSES B. W. WHEELER, Westport, Conn. Filed Apr. 17, 1885. (No model.)



Claim.—1. The anvil having a rounded edge formed by brazing in a piece of chilled iron or steel wire and an adjustable gage secured to said anvil, in combination with a clamp and an adjustable block, substantially as described.

2. The anvil having a rounded edge of chilled iron or steel and back of said edge a hollow, D', in combination with a clamp and an adjustable block which acts to bend the teeth of a saw over the edge of the anvil, but without compressing the teeth which lie in said hollow.

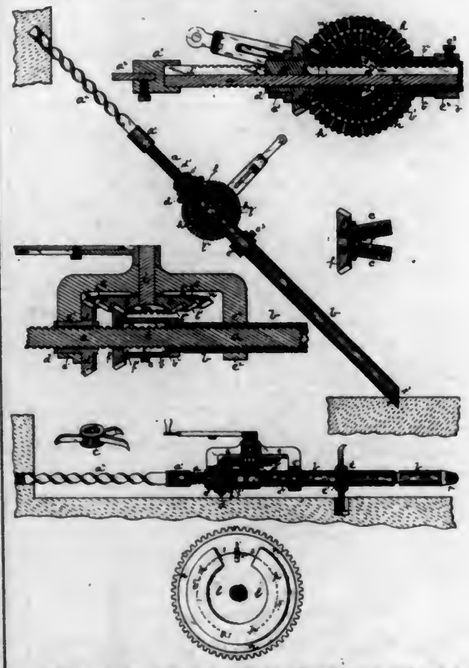
323,006. REAMER-RELIEVING MACHINE. AMOS WHITNEY, Hartford, Conn., assignor to the Pratt & Whitney Company, same place. Filed Mar. 10, 1884. (No model.)



Claim.—1. In a relieving-machine, the combination of a frame or bed, a sliding table arranged to slide on said frame, a spindle-head, a hollow spindle supported in said head and carrying a hollow grinding-wheel, and a tool-holding bracket, substantially as described, on said slide, for holding a tool against the inner surface of said wheel, substantially as described.

2. In a relieving-machine, the combination of bed A, a table, B, a bracket, B', pivotally secured to that table and having centers C and C' for supporting a tool, a sliding head, A', a spindle, S, and a ring-shaped wheel, W, substantially as described.

323,007. ROCK AND COAL DRILL. THOMAS WILLARD, Woodville, Pa., assignor of two-thirds to John A. Hartz and Enoch P. Holland, same place. Filed Nov. 20, 1884. (No model.)



Claim.—1. In combination with the drill and screw-shaft and the inclosing-tube, the partible nut hinged at its end to its support around the shaft and means for holding it in engagement with the shaft.

2. In combination with the drill and screw-shaft, the partible nut *c* and the tube *b*, having the extension *b'* fitting around the nut, substantially as and for the purposes set forth.

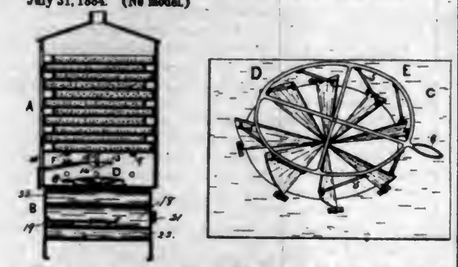
3. In combination with the drill and screw-shaft, the support *b*, the sliding frame *e*, having a collar fitting around said support and secured thereto by a set-screw or equivalent device, partible nut *c*, engaging with the shaft within the frame, and the extension *b'* on said support fitting around said nut, substantially as and for the purposes set forth.

4. In combination with the drill and screw-shaft, the support *b*, having the extension *b'*, the frame *e*, adjustably secured to said support and carrying the pinion *l*, and the pinion *f* and partible nut *c*, hinged thereto and engaging with the screw-shaft within the frame, substantially as and for the purposes set forth.

5. The combination of the drill and screw-shaft, the support *b*, having the extension *b'*, frame *e*, adjustably secured to the support and carrying the pinion *d*, keyed to the screw-shaft, pinion *f*, carrying the partible nut *c*, engaging with the screw-shaft, combined power-pinion *h*, mounted in the frame and formed of the pinion *l* and ring-pinion *n* around it, and means for connecting the two pinions, substantially as and for the purposes set forth.

6. In combination with the drill and screw-shaft, the pinion *d*, keyed thereto, the pinion *f*, carrying the nut engaging with the shaft, the combined pinion *h*, having the ring-pinion *n*, meshing with the pinion *d*, and the pinion *l*, having two gear-faces, l^1 l^2, to mesh with the pinion *f* according to the feed desired, substantially as set forth.

323,008. FRUIT-DRIER. NATHAN G. WILLIAMS, Bellows Falls, Vt., assignor to the Vermont Farm Machine Company, same place. Filed July 31, 1884. (No model.)

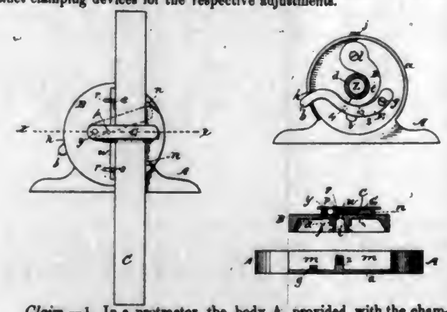


Claim.—1. In a fruit-drier, a deflector for admitting heat to the drying-chamber and for adjustably controlling and deflecting the same within such chamber, composed of a circular series of sector-like wings separately pivoted and adapted to be adjusted to different inclinations, and to open or close the heat-inlet passage to any desired degree and to distribute the heat, as set forth.

2. In a fruit-drier, in combination with a series of adjustable deflector-wings of sector-like form and severally arranged on bearings about a common center, a ring or wheel connected by links to each of the wings, and whereby they may all be simultaneously opened or closed to any desired extent, substantially as set forth.

323,009. BEVEL-PROTRACTOR. THOMAS R. WILLIAMS, Orange, assignor of one-half to Sumner H. Lawrence, Athol, Mass. Filed Feb. 23, 1884. (No model.)

Brief.—Blade has longitudinal and angular adjustment. Two distinct clamping devices for the respective adjustments.



Claim.—1. In a protractor, the body A, provided with the chamber *m*, conical stud *z*, and index *j*, and the disk B, provided with the scale H and stud *d*, having the tapering hole *i*, in combination with the rule C, means for rendering said rule longitudinally adjustable on the disk, and means for locking the disk in any desired position, substantially as set forth.

2. In a protractor, the pivoted levers D E, in combination with the hollow grooved stud *d* and conical stud *z*, substantially as and for the purpose specified.

3. In a protractor, the combination of the disk B, provided with stop-pins *n*, the lever pivoted to said disk and provided with pin *p*, the key-bar *w*, and the rule C, substantially as described.

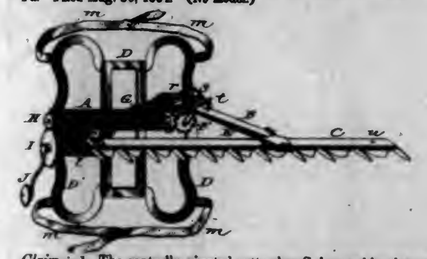
4. In a protractor, the key-bar *w*, having the pins *e*, working in the slots *r*, in combination with the lever G, rule C, and pins *n*, substantially as set forth.

5. The improved protractor herein described, the same consisting of the body A, having the chamber *m*, stud *z*, back *a*, and index *j*, the disk B, having the scale H, pins *n*, hole 7, slots *r*, and stud *d*, provided with the groove *f* and hole *i*, the pivoted lever G, provided with the pin *p*, the key-bar *w*, provided with the pins *e*, the lever E, provided with the pins 5, and the lever D, provided with the edge *t* and incline *v*, constructed, combined, and arranged to operate substantially as specified.

6. The combination, in a protractor, of the back *a*, provided with an index, *j*, and a revolving disk, B, provided with a scale on its periphery, composed of two parallel alternating graduating sections, the dividing lines or marks of either section standing opposite the spaces between the dividing-lines of the other section, and half-length semi-space marks extending from the outside toward the center, substantially as described.

7. The combination, in a protractor, of the back *a*, provided with an index, *j*, and a revolving disk, B, provided with a scale on its periphery, composed of two parallel alternating graduated sections, the dividing lines or marks of either section standing opposite the spaces between the dividing-lines of the other section, and half-length semi-space marks extending from the outside toward the center, said index *j* extending across both said sections, and having one straight and one beveled edge, substantially as described.

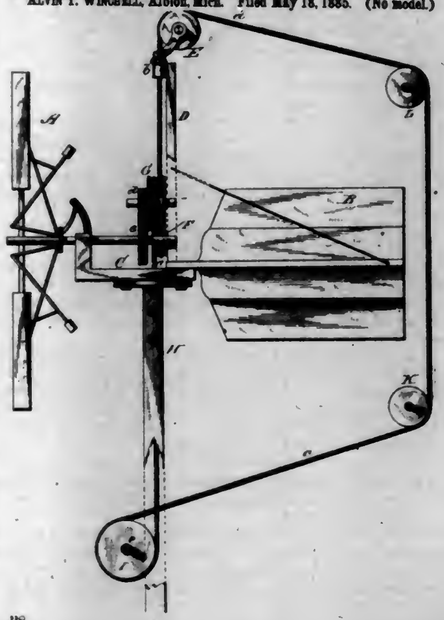
323,010. HEDGE-TRIMMER. WILLIAM WILLIAMS, Jr., Sugartown, Pa. Filed Aug. 30, 1884. (No model.)



Claim.—1. The centrally-pivoted cutter-bar C, in combination with the supporting-frame attached to the body of the operator, and mechanism, substantially as described, whereby it is adapted to be elevated or depressed and adjusted to cut horizontally or vertically, as set forth.

2. In a hedge-trimmer, a centrally-pivoted cutter-bar, in combination with the breast-plate D and intermediate cutter-bar-supporting mechanism, as shown and described.

323,011. DEVICE FOR TRANSMITTING POWER TO WINDMILLS. ALVIN T. WINCHELL, Albion, Mich. Filed May 18, 1885. (No model.)



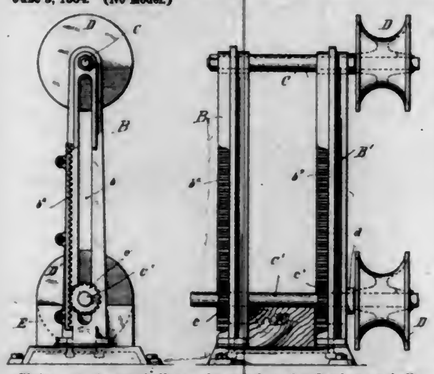
Claim.—1. The combination, with a windmill, of means for transmitting the power thereof, consisting of an endless belt or rope extending over a system of pulleys, as shown, one of which has a swivel-connection upon the end of a post secured to and projecting from the turn-table of the windmill, substantially as and for the purpose set forth.

2. In a windmill, the combination, with the turn-table thereof provided with an upright post, of a swiveled sheave or pulley connected thereto and an endless belt or rope passing over it, and a system of pulleys, substantially as and for the purpose specified.

3. In a windmill, the combination, with the turn-table thereof and a post connected thereto, and having a swiveled sheave or pulley at its upper end, of an endless belt or rope passing over the same and around pulleys arranged above and over the turn-table, and over pulleys arranged below the turn-table and above and below the vane of the windmill, substantially as and for the purpose described.

4. In a windmill, the combination, with the wind-wheel thereof having a shaft carrying a gear-wheel, and a turn-table having connected thereto a vertical post, of a swiveled sheave or pulley upon the upper end thereof, two pulleys having their shafts supported in the post, one of which has a gear-wheel meshing with the teeth of the wheel on the wind-shaft, and an endless belt or rope extending around the several pulleys and around pulleys below the turn-table and below and above the vane of the windmill, substantially as and for the purpose set forth.

323,012. **WIRE-UNWINDING REEL.** JAMES WITHINGTON, Chambersburg, assignor to the Trenton Iron Company, Trenton, N. J. Filed June 3, 1884. (No model.)



Claim.—1. An unwinding-reel consisting of a fixed upper hollow-faced pulley, a movable hollow-faced pulley adapted to have movement toward or from said fixed pulley, and a housing or suitable frame for containing said pulleys, substantially as and for the purposes set forth.

2. The combination, to form an unwinding-reel, of standards forming a housing, a fixed shaft carrying a hollow-faced pulley disposed at the top of said standards, and a movable shaft carrying a hollow-faced pulley disposed in line below the pulley upon the fixed shaft and adapted to have a motion toward or from said fixed pulley, substantially as and for the purposes set forth.

3. The combination, to form an unwinding-reel, of the slotted standards, the fixed shaft and fixed hollow-faced pulley, and the movable shaft, traveling by means of a rack and pinion within said slotted standards and provided with a second hollow-faced pulley so disposed as to be in line below the fixed pulley, substantially as and for the purposes set forth.

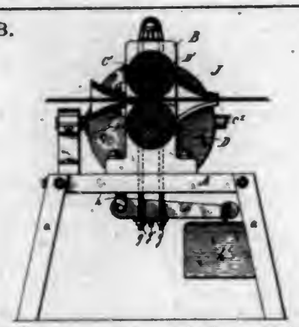
4. The combination, to form an unwinding-reel, of the slotted standards, the fixed shaft and fixed hollow-faced pulley, the movable shaft traveling by means of a rack and pinion within said slotted standards and provided with a second hollow-faced pulley so disposed as to be in line below the fixed pulley, and the cushioning-block adapted to arrest the descent of the movable shaft, substantially as and for the purposes set forth.

5. The combination, to form an unwinding-reel, of the slotted standards B B', provided with the racks $b^{\times}$, the fixed shafts C, provided with the hollow-faced pulley D, the movable shaft C', provided with the pinions c c', which engage with the racks of the standards, and also provided with the hollow-faced pulley D', disposed below the pulley D, substantially as and for the purposes specified.

323,013. **WIRE-FEEDING DEVICE.** JAMES WITHINGTON, Chambersburg, assignor to the Trenton Iron Company, Trenton, N. J. Filed June 3, 1884. (No model.)

Claim.—1. The combination, in an apparatus for feeding wire, wire rods, and kindred products, of a grooved feed-roll mounted upon and driven by a fixed axle, a second grooved feed-roll disposed in line with the first-named roll and mounted upon an axle which is movable so as

323,018.

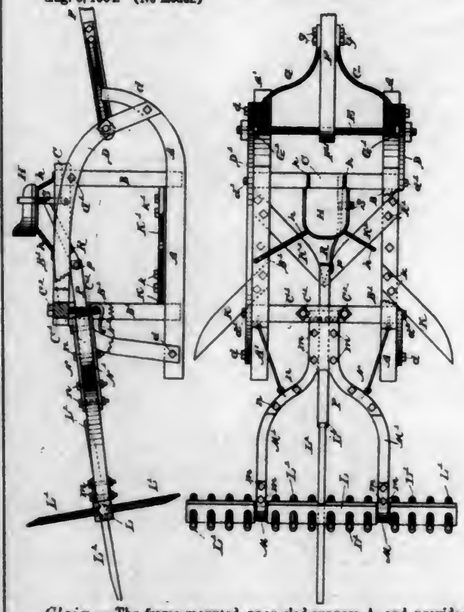


to permit the rolls to move apart from each other, means for driving the fixed roll, gearing for positively connecting the two rolls, means for retaining the movable roll in yielding contact with the fixed roll, a bell-mouthed guide for directing the wire to the feed-rolls, and a housing for containing the said appliances, substantially as and for the purposes set forth.

2. The combination of the standards, the lower shaft fixedly journaled in said standards, the lower feed-roll, the movable shaft adapted to move to and from the fixed shaft, the movable feed-roll mounted upon said movable shaft, means for driving the fixed shaft, positive gearing for connecting the two shafts, the yoke, suspenders, lower cross-head, and weighted lever for retaining the rolls in contact, substantially as and for the purposes specified.

3. The combination of the standards, the lower shaft fixedly journaled in said standards, the lower feed-roll, the movable shaft adapted to move to or from the fixed shaft, the movable feed-roll mounted upon said movable shaft, means for driving the fixed shaft, positive gearing for connecting the two shafts, the yoke, suspenders, lower cross-head, and weighted lever for retaining the rolls in contact, and a bell-mouthed guide for directing the wire into the bite of the rolls, substantially as and for the purposes specified.

323,014. **COTTON-STALK CHOPPER.** JAMES A. WOODARD, Grape Vine, Tex., assignor of one-half to Andrew J. Halford, same place. Filed Aug. 8, 1884. (No model.)

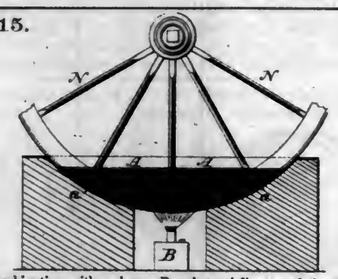


Claim.—The frame mounted upon sled-runners A, and provided with braces D D', draft-pole F, and knives K K', in combination with the rake L, having check-bar L^2, the sliding bar P, connecting-bar R, and lever S, all co-operating in the manner and for the purpose described.

323,015. **APPARATUS FOR TREATING WHEELS WITH OIL.** BENJAMIN YOUNG, Milwaukee, Wis. Filed Oct. 16, 1884. (No model.)

Claim.—As a new article of manufacture, a portable trough, A, provided underneath with a recess or chamber for the reception of a

323,015.

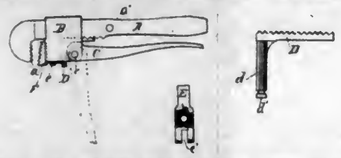


lamp, in combination with a lamp, B, substantially as and for the purposes set forth.

323,016. **WATER-PROOF COMPOSITION FOR FELT, PAPER, &c.** OTTO ZIUREK, Berlin, Germany, assignor to Otto Bernhard Emanuel Hiller, same place. Filed Feb. 7, 1885. (No specimens.)

Claim.—The herein-described waterproofing composition, composed of a solution of acetate of alumina, acetate of lead, and albumen, in or about in the proportions set forth.

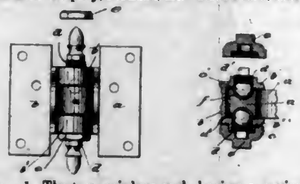
323,017. **PIPE AND MONKEY WRENCH.** GEORGE S. ARMSTRONG, Denver, Colo., assignor of one-half to Wm. G. Hutchinson and John L. Berger, both of same place. Filed Aug. 25, 1884. (No model.)



Claim.—1. In a combined pipe and monkey wrench, the combination of notched bar A, with corrugated jaw a, the sliding block B, receiving the bar A, the eccentric lever C, working within the block B, the tapering pin c, passing through the block B, and the eccentric lever C, in the manner shown in the drawings, and so as to allow the lever C to perform its proper function, as explained above, the vertical adjusting-clamp D, the adjustable corrugated wedge F, dovetailed as above set forth, and the spring E, performing the double office of acting upon the wedge F and the adjustable clamp D, substantially in the manner and for the purpose above described.

2. In a combined pipe and monkey wrench, the combination of the notched bar A, with smooth jaw a, the sliding block B, the eccentric lever C, the tapering pin c, the vertical adjusting-clamp D, with the dovetailed guide d and the head d', as shown in Fig. 4, the spring E, fastened to sliding block B by the set-screw e and containing the slot e', and the smooth wedge F, containing the notch f, as shown in Fig. 2, which receives the smaller end of the spring E, substantially in the manner and for the purpose above explained and set forth.

323,018. **HINGE.** SULLIVAN H. ATKINS, Lynn, Mass., assignor to the Eureka Axle Company, Portland, Me. Filed Feb. 9, 1885. (No model.)



Claim.—1. The two members each having a projection provided with a cup-shaped recess and a ball entering the said recesses, partly in one and partly in the other member, thereby uniting the said members and constituting a pivot upon which the one member may have a rotary movement relative to the other member, the center of said ball lying in the axis of the said rotary movement, substantially as described.

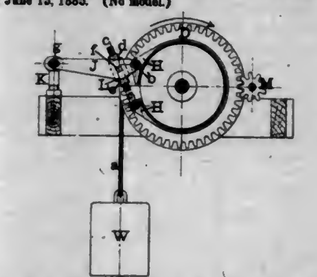
2. The two members, one provided with a projection and the other with two projections which receive that of the first member between them, the first-mentioned projection having at its ends cup-shaped recesses and the other projection being provided with screws having cup-shaped recesses, and balls placed in the sockets formed by the recesses of both projections and affording a bearing-surface upon which one member may turn with relation to the other member, substantially as described.

3. The two members, one provided with a projection and the other with two projections which receive that of the first member between them, the first-mentioned projection having at its ends cup-shaped recesses and the other projection being provided with screws having cup-shaped recesses, combined with balls entering the recesses of both members and locking devices for the recessed screws, substantially as described.

4. The two members, one provided with a projection and the other with two projections which receive that of the first member between them, the first-mentioned projection having at its ends cup-shaped recesses and the other projection being provided with screws having cup-shaped recesses, combined with balls entering the recesses of both members and locking-screws for the recessed screws having a thread of different inclination from that of the recessed screws, substantially as described.

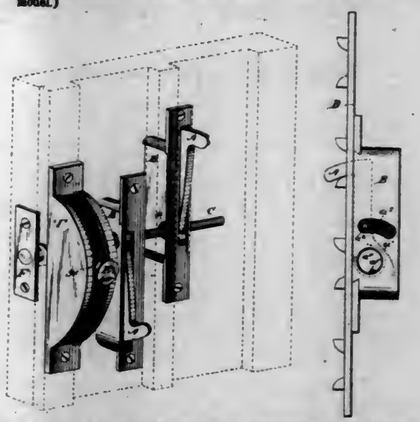
5. The two members, one provided with a projection and the other with two projections which receive that of the first member between them, the first-mentioned projection having at its ends cup-shaped recesses and the other projection being provided with screws having cup-shaped recesses, combined with lining-pieces in the said recesses, and balls entering the recesses and affording the bearing-surface upon which one member may turn with relation to the other member, substantially as described.

323,019. **MACHINERY FOR TRANSMITTING MOTION.** J. SELLERS BANCROFT, Philadelphia, Pa., assignor to William Sellers, same place. Filed June 15, 1885. (No model.)



Claim.—In machinery for transmitting motion and preventing reaction, a friction-clutch which is engaged by the reaction of the load, in combination with a brake which permits motion in one direction and prevents motion in the opposite direction, the combination being and operating substantially as and for the purposes set forth.

323,020. **SASH-FASTENER.** JOHN Y. BASSELL, Cincinnati, Ohio, assignor to Rebecca G. Bassell, same place. Filed Aug. 4, 1884. (No model.)



Claim.—1. In a sash-fastener, and in combination with the recessed sash, a locking-dog pivoted to the frame and provided with an interlocking portion, whose bearing-surfaces are formed in arcs of circles, of which the pivot is the center, substantially as described.

2. In a sash-fastener, and in combination with the sliding sash and the recesses therein, a pivoted locking-dog mounted in bearings in the frame, and provided with an arc-shaped engaging portion whereby the dog can be inserted and withdrawn from the recess in the sash without moving the latter, substantially as and for the purpose set forth.

3. In a sash-fastener, and in combination with the window-sash and its attached strike-plate provided with a shoulder or offset, as described, a pivoted locking-dog having the arc-shaped bearing-surfaces, and the notches near the outer end thereof, substantially as described.

4. In a sash-fastener, and in combination with the window-sash,

the spring-pressed locking-dog having an arc-shaped engaging portion and a pivot concentric therewith, and the operating key or spindle passing through said pivot and engaging a lug or projection therein, substantially as described.

5. In a sash-fastener, and in combination with the locking-dog thereof, the actuating-spindle provided with a flange or collar at one end and an interlocking stud or projection, and an escutcheon having a notched collar or opening for the reception of the end of the spindle to prevent longitudinal movement of the latter and form a bearing therefor, substantially as described.

6. In a sash-fastener, and in combination with the locking-dog thereof and the operating-lever, the angular or feathered actuating-spindle and the escutcheon, the latter adapted to form a bearing for the end of the spindle and prevent its withdrawal, substantially as described.

7. In a sash-fastener, and in combination with the pivoted dogs, the operating-lever and the escutcheon, the removable actuating-spindle adapted to be inserted through the said operating-lever and escutcheon, and to be locked in position by a collar or flange on the latter, resting between a stud and collar on the end of the said spindle, substantially as described.

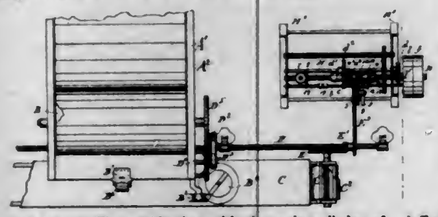
8. In a sash-fastener, and in combination with the locking-dogs and actuating-spindle, the operating-lever connected at one end to said spindle and provided with a sliding portion or extension for engagement with a locking-plate, substantially as described.

9. In a sash-fastener, and in combination with the actuating-spindle and the locking-dogs controlled thereby, the operating-lever applied to said spindle and provided with a locking device for engagement with a fixed plate or escutcheon, substantially as described.

10. In a sash-fastener, and in combination with the actuating-spindle and the locking-dogs controlled thereby, the operating-lever applied to said spindle and carrying the outer sliding section, provided with wings or projections for engaging suitable recesses or projections in an escutcheon or plate, substantially as described.

323,021. CARDING-MACHINE. PHILIP T. BIGELY, Newton Upper Falls, Mass., assignor to Pettee Machine Works, same place. Filed Sept. 1, 1884. (No model.)

Brief.—When the machine has been stopped, the doffer is turned backward automatically for a portion of a rotation just before starting, whereby the accumulated fiber on the doffer is broken up and spread over the teeth which have been stripped by the carding-cylinder, enabling a continuous sliver to be taken from the doffer.



Claim.—1. The combination, with the main cylinder, of a doffer and mechanism, substantially as described, to automatically rotate the doffer backward for a short distance preparatory to starting the movement of the doffer in its regular forward direction, substantially as and for the purpose described.

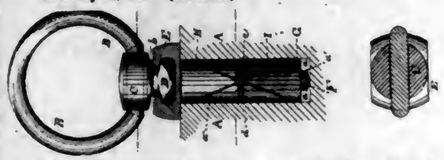
2. The main cylinder of a carding-machine, the doffer, the shaft D, and mechanism, substantially as described, between it and the shaft of the doffer, to rotate the latter, combined with the shaft H, of the railway-head and mechanism, substantially as described, between it and the shaft D, to rotate the latter backward for a short distance before commencing to rotate the said shaft D forward, the preliminary reversal of the shaft D effecting the backward rotation of the doffer for a short distance, as and for the purpose described.

3. The carding-cylinder, the doffer, a quill, and intermediate mechanism, substantially as described, to rotate the doffer, combined with mechanism, substantially as described, to rotate the said quill in one and then in the opposite direction, whereby the movement of the doffer may be reversed for a short distance prior to being started in its regular direction, for the purposes described.

4. The carding-cylinder and the doffer and rolls of the railway-head and mechanism, substantially as described, to conduct the sliver from the doffer to the said rolls, and the shaft H and the quill and mechanism, substantially as described, intermediate the said shaft and quill, and the doffer to actuate them, combined with mechanism, substantially as described, to effect the engagement of the said quill and its rotation in the reverse direction on the said shaft H to rotate the doffer in the reverse direction, as and for the purpose described.

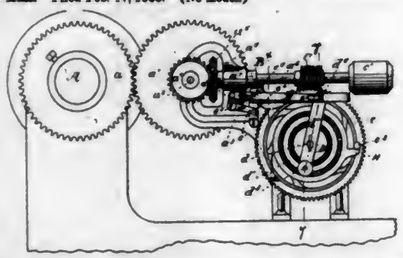
5. The shaft H of the railway-head, its fast pulley, and the quill, gear e, provided with the clutch part e^2, loose on the said shaft, combined with the loose pulley having the pinion f, intermediate f^2, and the shaft d', provided with pinions d d^2, whereby the quill may be rotated on the shaft H while the latter is at rest, substantially as described.

323,022. HITCHING DEVICE. WILLIAM C. BOONE, Brooklyn, N. Y. Filed May 13, 1884. (No model.)



Claim.—The combination, with an expanding-bolt, of a ring, B, bead C, having bulb D, and block or boss E, having a socket for the reception of the said bulb, substantially as and for the purpose herein set forth.

323,023. HAT-FORMING MACHINE. ISAAC F. BROWN, Hyde Park Mass. Filed Feb. 17, 1885. (No model.)



Claim.—1. In a hat-forming machine, in combination with the doffer-shaft or other revolving shaft of the machine, an indicator for noting the completion of the making and feeding of a given quantity of bat, all substantially as and for the purposes described.

2. In combination with the doffer or other shaft of a hat-forming machine having the spur-wheel a, an indicator, and a device for varying or adjusting the time of the indication, whereby the indicator may be set to note the making and feeding of bat for all sizes and weights of hats, all substantially as and for the purposes described.

3. The combination of the spur-wheel c, its operating-worm C, and a device for disengaging the worm from the spur-gear operated by said gear, all substantially as and for the purposes described.

4. The combination of the spur-gear c, the worm-gear C, its shaft a^4, having a vertical swinging movement, as described, the cam B, and the cam-lifter c^3, operated by the spur-gear c, all substantially as and for the purposes described.

5. The combination of the cam-lifter c^3, its latch c', and the tripping-bar E, operated by the spur-gear c, all substantially as and for the purposes described.

6. The combination of the spur-gear c, the bar G, and the cam-lifter c^3, all substantially as and for the purposes described.

7. The combination of the spur-gear c, the spring d^4, and the arm G, all substantially as and for the purposes set forth.

8. The combination of the spur-gear c, the arm d^5, adjustable, as described, the stop H, and the lug or projection c^3 and spring F, all substantially as and for the purposes described.

9. The combination of the arm d^5 and the adjustable stop, disk, or wheel D, all substantially as and for the purposes described.

10. The combination of the arm d^5, adapted upon its movement to operate the alarm mechanism, the spur-wheel c, moved in one direction by the worm-gear C and upon the reverse direction by the spring F, all substantially as and for the purposes described.

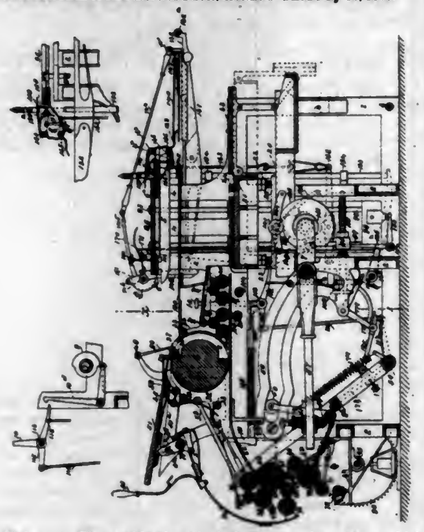
11. The combination of the arm d^5, connected with the alarm mechanism, and the adjusting-wheel D, having the stop H, the spur-wheel c, having the lug or projection c^3, the worm C, the tripping-latch c', cam-lifter c^3, and cam B, all substantially as and for the purposes described.

12. The hinged or pivoted shaft a^4, carrying the worm C and cam B and weight c', all substantially as and for the purposes described.

13. In combination with the pivoted worm-shaft and its cam B, the cam-support c^4, moved into position by a spring and withdrawn by the reverse movement of the spur-gear c, all substantially as and for the purposes described.

14. The combination of the bars E G, having the slots, with the arm d^5, having the pin d^6, which projects into said slots and which is adapted to be moved by the worm operating the spur-gear in one direction and in the reverse direction by a spring operating the spur-gear, all substantially as and for the purposes described.

323,024. PRINTING-MACHINE. MERWIN DAVIS, Brooklyn, N. Y., assignor of one-eighth to J. W. Puckett, same place; Mary Jane Davis administratrix of said Merwin Davis, deceased. Filed July 16, 1879.



Claim.—1. The combination of a bed, 21, a carriage, 32, to which a reciprocating movement (with a dwell at its termination) is imparted by a modification of the crank movement, and a counterbalanced segment of a cylinder, 6, located in said carriage, which is free to revolve on its forward movement, but not on its return movement, being locked, substantially as shown, the same constructed and operating substantially as hereinbefore described.

2. The combination, with the counterbalanced segment of a cylinder, 6, and carriage 32, of the supplemental rack 11^b, the L-shaped lever 127, the finger 8 on shaft 7, the supplemental sliding piece 28^b, Fig. 10, and the pin A, combined and operating substantially as hereinbefore described.

3. The combination, with the counterbalanced segment of a cylinder, 6, and carriage 32, of the supplemental sliding piece 28^b, (see Fig. 10,) the finger 44, attached to shaft 45, the bell-crank lever 46, connecting-rod 13, upright lever 47, and cam 12 on crank-shaft 7, the same constructed and operating substantially as hereinbefore specified.

4. The combination, with the sheet-taking nippers 37, of the rod 38, the semi cog-wheel 42, the rack 43, the finger 44, the shaft 45, the bell-crank lever 46, connection 13, upright lever (with stud and roller) 47, and cam 12, combined and operating substantially as and for the purpose specified.

5. The combination, with the sheet-taking nippers 37, of rod 38, the semi cog-wheel 42, rack 43, sliding piece 28^b, supplemental rack 11^b, L-shaped lever 127, and the finger 8 on shaft 7, constructed and operating substantially as specified.

6. The combination of the frame provided with the curved slot 58, roller 60, lever 61, hinged support 59, frame-work 55, connecting-rod 57, and crank-shaft 7, constructed and operating substantially as described, for the purpose of giving a period of rest to the carriage 32 at the termination of either reciprocating movement.

7. The combination of the counterbalanced segment of a cylinder, the throw-off shaft 113, operated by the hand-lever 115 or pedal 117, the toe-shaped lever 119, lever 118, shaft 128, link 129^a, lever 129, and connecting-rod 13, the same combined and operating substantially as described.

8. The alternating rollers 66, supported by the double arms 67 on shaft 68, in combination with the E-shaped lever or trip 176^a, the spring finger or pawl 177^a, oscillating lever 54, and the center-passing lever (with spiral spring) 69, combined and operating substantially as and for the purpose set forth.

9. The vibrating roller 73, frame-work 74, right-handed screw 79, shaft 78, collars 178^a, projections 179^a, spiral springs 180^a, blank-wheel 80, connecting-rod 88^a, crank-pin 82, elongated nut 84, pin 85, and grooved pulley 83, substantially as and for the purpose set forth.

10. The rider for the form-rollers 40, in combination with the spindle 184, spiral thread 185, collars 186, and pins or projections 187 and 188, operating substantially as and for the purpose set forth.

11. The combination, with the sheet-carrier 130, of the prong 154, (with curved projection 155,) the pin 156, strip 157, and cam 158, operating a lever, 158^a, for the purpose of raising the forward end of the sheet-carrier 130, operating substantially as set forth.

12. The sheet lifter and carrier 131, composed of a series of strips of wood or metal secured upon a bar, 143, and provided with the spring-stops 147, operating substantially as and for the purpose set forth.

13. The combination, with the sheet lifter and carrier 131, of the hinged ways 132, rods 133, levers 135, shaft 136, cam 138, lever 139, connecting-rod 140, and lever 141, for the purpose of giving a vertical movement to the sheet lifter and carrier 131, operating substantially as and for the purpose set forth.

14. The combination, with the sheet lifter and carrier 131, of the hinged ways 132, vertical rods 133, connecting-rods 144, curved levers 145, shaft 146, flanged half-pulley 150, strap 151, lever 152, and cam 153, for the purpose of giving a horizontal movement to sheet lifter and carrier 131, operating substantially as and for the purpose set forth.

15. The combination, with sheet lifter and carrier 131, of the fingers 159, (held upon the rod 160,) the cam 161, lever 162, arm 164, rod 165, connecting-rod 163, lever on rod 160^a, and link 167, operating substantially as set forth.

16. The combination of the sheet-releasing lever 169, the tongue 170 upon the shaft 146, the carrier 131, the lever 172, upright rod 171, and cam 161, operating substantially as and for the purpose described.

17. The combination of the vertical standards 97, the yokes 98, levers 103, rock-shaft 104, and lever 106, with the threaded shaft 108, ratchet-wheel 109, and nut 110, substantially as and for the purpose described.

18. The combination of the ratchet-wheel 109, shaft 108, pawl 111, rod 173, sliding box 174, hooked lever 175, pin 176, bell-crank lever 177, and thumb-screw 178, substantially as and for the purpose described.

19. The combination, with the sheet-carrier 130, of the sheet lifter and carrier 131, substantially as and for the purpose described.

20. The combination, with the sheet lifter and carrier 131, and falling pile-board 96, of the sheet-releasing lever 169, substantially as and for the purpose described.

21. The combination, with the supplemental rack 11^a, of the inclined block 123, the inclined block 122, rod 120, lever 118, and shaft 113, substantially as and for the purpose described.

22. The combination, with the supplemental rack 11^a, of the shaft 128, lever 129, link 129^a, lever 118, and throw-off shaft 113, substantially as and for the purpose described.

323,025. COMBINED MATCH-BOX AND CIGAR-CUTTER. WILLIAM M. DUCKER, Brooklyn, N. Y. Filed June 1, 1883. (No model.)



Claim.—1. A combined match-box and cigar-cutter provided with the match-striker c, having an outwardly-roughened striking-surface, in combination with the spring e, for longitudinally retracting said striker, substantially as described.

2. A combined match-box and cigar-cutter provided with the movable striker c, having an outwardly-roughened striking-surface, in combination with suitable guides for such striker, the button d, and the spring e, as described.

3. A match-box consisting of a body and hinged cover having a cutter operated to sever the tip of a cigar by the closing of the box, situated in the angle formed by the body and cover when the box is opened, and having its edge parallel and contiguous with the side of the box and protected by a portion thereof, the box being provided with a hole for a cigar-tip, situated in the path of the said cutter when the box is being closed, and a transverse tube or receiver, substantially as set forth.

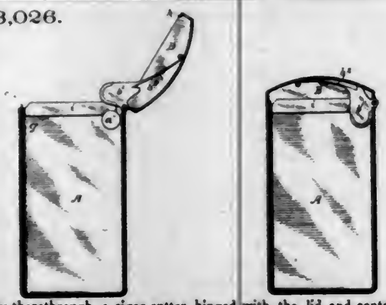
4. A combined match-box and cigar-cutter having a tube or passage through the lid to receive the end of a cigar, a cutter-blade arranged to operate across the passage in the lid, a spring seated against said blade to throw back the lid, and a shoulder arranged on the box to force said blade through the cigar by the operation of closing the lid, substantially as described.

5. In a combined match-box and cigar-cutter, a knife, h, hinged to swing with the cover, and a shoulder on the box for supporting said knife, in combination with the box-cover b, having cigar-receiving passage therein, and the spring p, secured to said cover, and bearing upon said knife, and adapted to throw back the cover of the box, substantially as described.

323,026. COMBINED MATCH-BOX AND CIGAR-CUTTER. WILLIAM M. DUCKER, New York, N. Y. Filed Oct. 11, 1884. (No model.)

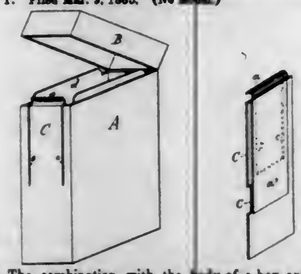
Claim.—A match-box having a cigar-receiving tube passing trans-

323,026.



versely therethrough, a cigar-cutter hinged with the lid and contained therein, and adapted to be moved across the cigar-receiving passage by the movement of said lid, and a spring formed integral with the cutter, and secured to the lid and acting to throw back the lid, and also to carry the cutter away from the cigar-receiving passage when the box is open, as set forth.

323,027. SPRING FOR BOXES, &c. WILLIAM M. DOCKER, New York, N. Y. Filed Mar. 9, 1885. (No model.)



Claim.—The combination, with the body of a box and a suitable lid therefor, of a snap-spring adapted to secure said lid, the said spring being formed of a partially-separated portion of the body of the box, in combination with a re-enforcing strip resting against the said partially-separated portion and secured to the body of the box, substantially as described.

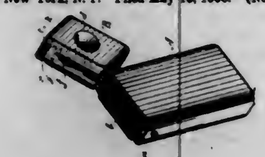
323,028. COMBINED MATCH-BOX AND CIGAR-CUTTER. WILLIAM M. DOCKER, New York, N. Y. Filed Apr. 15, 1885. (No model.)



Claim.—1. A match-box having a transverse cigar-receiving tube passing through the body of the box, in combination with a cigar-cutter hinged with and partially contained within the lid and adapted to be moved across the cigar-receiving tube by the action of opening and closing the said lid, and a spring, *c*, attached at one end to the body of the cutting-blade and at the other to the lid of the box and acting to raise the lid, and then, when the lid is thrown back, to carry the cutter away from the cigar-receiving passage, as set forth.

2. A match-box having an opening in one side of the body of the box adapted to receive the tip of a cigar, and a discharge-tube on the opposite side registering therewith, in combination with a cigar-cutter hinged with the lid of the box and adapted to be moved across said opening by the operation of closing the lid, and a spring secured to and connecting both the cutter and lid, and operating to throw back the lid, and then carry the cutter away from the opening when the lid is raised, substantially as specified.

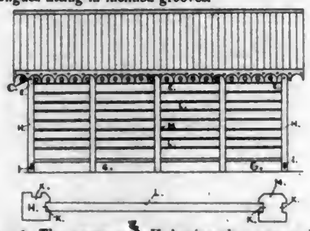
323,029. COMBINED MATCH-BOX AND CIGAR-CUTTER. WILLIAM M. DOCKER, New York, N. Y. Filed May 13, 1885. (No model.)



Claim.—A match-box, A, provided with a shoulder, *l*, a hinged lid, B, having a passage, *c*, through the same, a knife, *f*, and spring, as *h*, bearing upon said knife and lid, in combination with a bottom, *j*, substantially as and for the purposes set forth.

323,030. PORTABLE HOUSE. WILLIAM ELFORD, Oakland, Cal. Filed May 25, 1883. (No model.)

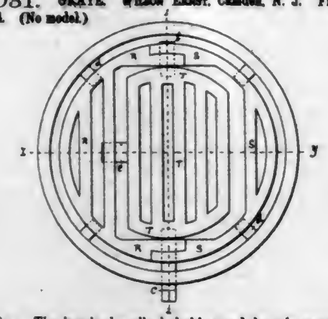
Brief.—Corner-posts are provided with shrinkage-slots to receive pins on the sills, and grooves to receive the siding, which is connected to said posts by tongues in said grooves. The intermediate posts also are provided with tongued grooves, and the roofing-boards are connected by V-shaped tongues fitting in inclined grooves.



Claim.—1. The corner-post H, having the grooves J, the metal tongues K, and the slot I, in combination with the sills G and siding L, constructed and operated substantially as and for the purposes set forth.

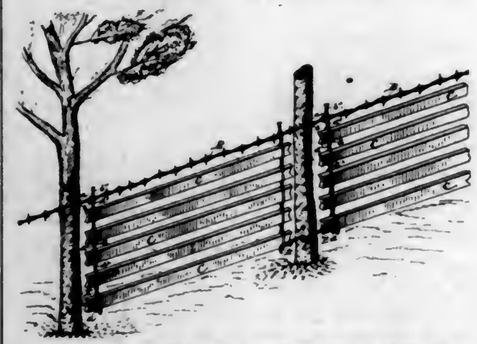
2. The portable house herein described, comprising in its construction the corner-posts H, having grooves J, tongues K, and slots I, the roofing-boards having the grooves Y and tongues X fitted therein, siding L, sills G, and intermediate posts having grooves and tongues, substantially as shown and described.

323,031. GRATE. WILSON ERNST, Camden, N. J. Filed June 5, 1884. (No model.)



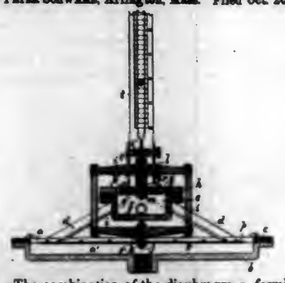
Claim.—The herein-described shaking and dumping grate, consisting of the pieces R, S, and T, R and S being secured together by the pivots *b c*, and T being wider upon one side of the center line of the pivots *b c*, upon which it is hung, than upon the other, and being furnished with a finger, *e*, the whole arranged and operating substantially as and for the purposes set forth.

323,032. FENCE. JOHN S. FERGUSON, Lewisville, Tex. Filed Dec. 22, 1884. (No model.)



Claim.—The improved fence herein described, consisting of the series of upright posts provided with the notches or incisions in their face, having the staples *b*, the continuous longitudinal barbed top wire extending along the posts, the panels comprising the rails secured at their ends by the wire strands having their top ends intertwisted under and above the top wire, one strand being passed between the strands of the longitudinal top barbed wire, and the hooks engaging the lowermost loop of the said securing-strands, substantially as and for the purpose set forth.

323,033. PRESSURE-INDICATING GAGE. CHARLES H. FISHER, Boston, and PETER SCHWARZ, Arlington, Mass. Filed Oct. 20, 1884. (No model.)



Claim.—1. The combination of the diaphragm *a*, forming one side of a space communicating with the inclosure the pressure in which is to be indicated, the reservoir *f* and the indicating-tube communicating therewith, the diaphragm *g*, covering said reservoir, and the yoke *i*, connecting the two diaphragms, as set forth.

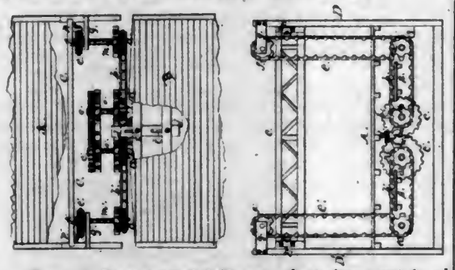
2. The combination of the pan or casing *b*, the diaphragm *a*, covering the same, the clamping-frame *c*, having arms *d*, the reservoir *f*, supported by said arms and communicating with an indicating-tube, the diaphragm *g*, covering said reservoir, and the yoke or frame *i*, connecting the two diaphragms, as set forth.

3. In a pressure-indicating gage, two diaphragms connected together, one of said diaphragms sustaining a column of liquid in an indicating-tube, in combination with one or more weights for adjusting the surface of said column of liquid to the proper point on a graduated scale, as set forth.

4. In a pressure-indicating gage, the pan *b*, the diaphragm *a*, secured to and covering said pan, the reservoir *f*, the diaphragm *g*, secured to and covering said reservoir, the yoke *i*, connecting said diaphragms, the indicating-tube *s*, connected to the reservoir *f*, and provided with a graduated scale, said reservoir and tube containing a quantity of liquid, in combination with one or more weights, *i'*, for correcting the scale, as set forth.

323,034. AUTOMATIC BRIDGE-GATE. ROSWELL W. HALE, West Bay City, Mich., assignor to Alson Trude and John K. Saunders, same place. Filed Apr. 25, 1884. (No model.)

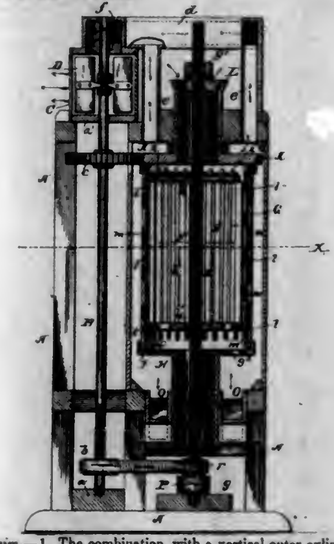
Brief.—A pair of spur-wheels geared together beneath the roadway carry on their shafts sprocket-wheels having horizontal endless drive-chains passing over sprocket-wheels adjacent to the bottom of posts at the sides of the approach. The shafts of the latter sprocket-wheels carry sprocket-wheels over which pass vertical drive-chains, passing over sprocket-wheels at the top of said posts. The latter drive-chains are connected with a gate sliding in grooves in the posts. The horizontal drive-chains have supports between the sprocket-wheels, and lugs which are engaged by a sliding projection on the bridge.



Claim.—1. In an automatic bridge-gate, the stationary part A and the draw B, provided with the bar *d*, in combination with the drive-chains *b* and *b'*, provided with the lugs *i* and *i'* and *n* and *n'*, as described, the sprocket-wheels *a*, *a'*, *a''*, and *a'''*, shafts *o* and *o'*, gear-wheels *c* and *c'*, shafts *m* and *m'*, sprocket-wheels *h* and *h'*, drive-chains *e* and *e'*, lugs *p* and *p'*, and gate C, located and arranged to operate substantially as hereinbefore set forth and described.

2. In mechanism for operating a bridge-gate, the combination of the horizontal drive-chains *b b'*, provided with the lugs *i* and *n*, and the slides S, located beneath the upper part of the said chains, with the bar *d*, attached to the draw B, and adapted to engage with the said lugs *i* and *n*, or to be withdrawn from contact with the said lugs, substantially as described, and for the purpose set forth.

323,035. GRAIN-SCOURER. LEON J. HARVEY, Plover, Wis. Filed Apr. 23, 1885. (No model.)



Claim.—1. The combination, with a vertical outer cylinder having a gear-wheel, K, of an inner cylinder revolving in a direction opposite to the rotation of the outer cylinder and provided with a hollow sleeve, H, and the adjustable beaters h^2, the pinions *c*, shafts B and E, and means for operating the shafts, substantially as described.

2. The combination, with an outer cylinder having its circumference slotted its entire length and provided with an interior corrugated surface and the horizontal flanges *l*, of an inner oppositely-revolving cylinder having a sleeve, H, supported in the frame of the machine, and the corrugated adjustable beaters h^2, the inclined chutes upon each side of the sleeve O, the gears *c* and K, the shafts B and E, and means for operating said shafts, substantially as herein described.

3. The slotted vertical cylinder G, having a hollow sleeve, L, through which the grain passes from the hopper, a gear-wheel, K, and a perforated disk, I, forming the lower end of said cylinder, in combination with an inner cylinder having the end disks, *h h'*, the adjustable corrugated beaters h^2, a hollow sleeve, H, supported in the frame, and means for driving the cylinders in opposite directions, substantially as herein described.

4. A grain-scourer comprising the frame A, shafts B and E, gears *c* and K, the cylinders F and G, adjustable beaters, a suction-fan mounted on the shaft B, a fan-case having a discharge-opening, and the horizontal and vertical flues *d* and *e*, the latter communicating with the interio of the frame outside of the cylinder G, substantially as herein described.

323,036. CHECK-ROWER. GEORGE D. HAWORTH, Chicago, Ill. Filed Aug. 23, 1884. (No model.)

Claim.—1. In a check-rower, the check-row bar A, for attachment to corn-planters, composed of the flat metallic parallel bars *a a'*, connected together, in combination with the mechanism whereby the seeding devices are actuated substantially as and for the purposes specified.

2. In a check-rower, the combination, with the cross-bar, of lever-arms having pitmen provided with rigidly-attached racks to engage the opposite sides of a pinion having a pitman connected with the lever which operates the seeding devices, substantially as and for the purposes set forth.

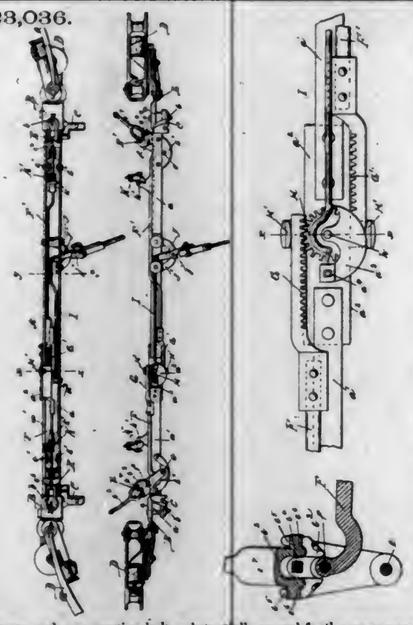
3. In a check-rower, the combination, with the lever-arms, pitmen connected thereto, and suitable connecting mechanism for operating the seeding devices, of guards mounted on said pitmen, substantially as and for the purposes specified.

4. In a check-rower, the combination, with the swiveling guides, of the lever-arms, and guards pivoted to swing laterally, substantially as and for the purposes specified.

5. In a check-rower, the combination, with a pinion having a pitman connecting with the lever which operates the seeding devices, of the lever-arms having pitmen provided with racks to mesh with opposite sides of the pinion, the said racks being provided with flanges to retain them in position laterally, and a guide or yoke to retain the racks in position vertically, substantially as and for the purposes specified.

6. In a check-rower, the lever-arm composed of an upper part adapted to receive the check-line and having gudgeons at its lower end, and a lower part consisting of two portions notched to receive said

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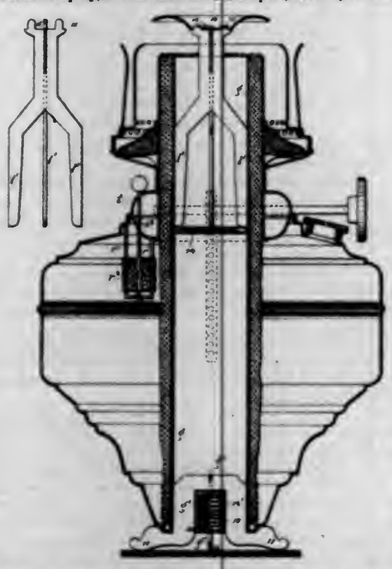


gudgeons, and a connecting-bolt, substantially as and for the purposes set forth.

7. In a check-rower, the open inverted L-shaped guard, K, pivoted on a stud projecting from a suitably-mounted lug, and having stops to engage with the opposite sides of said lug to limit its motion, substantially as and for the purposes specified.

8. In a check-rower, the combination, with the swiveling guide composed of an upper and a lower plate suitably connected together, of the guards formed by downwardly-projecting arms on the upper plate and upwardly-projecting arms on the lower plate, the ends of said arms overlapping and being arranged in substantially parallel planes a sufficient distance apart to admit the check-line, substantially as and for the purposes specified.

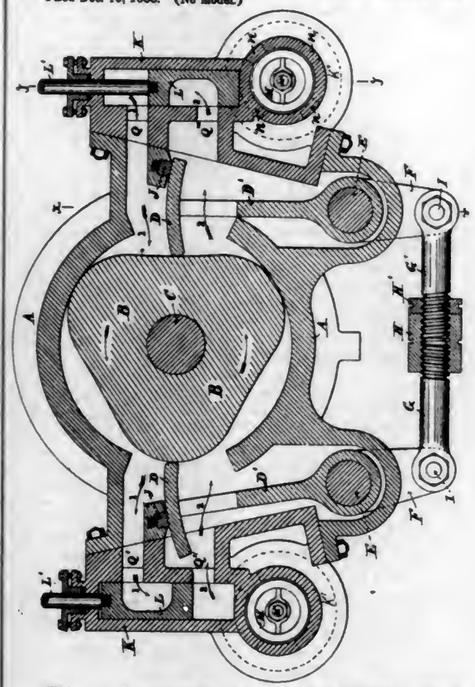
323,037. LAMP. THOMAS HIPWELL, Astoria, assignor to the Manhattan Brass Company, New York, N. Y. Filed Apr. 6, 1885. (No model.)



Claim.—1. The combination, with the wick-tube and air-tube in an Argand lamp, of a flame-spreader or button, *n*, two longitudinally-slotted crossing and interlocking plates, each having legs *l'* extending down into the air-tube *g*, and ears 15 at their upper ends passing through mortises in the flame-spreader and clinched, substantially as set forth.

2. The combination, with an Argand lamp, of the crossing and interlocking plates with slots forming a skeleton socket fitted within the air-tube, and having projecting foot-pieces below the lower end of such air-tube, and the plug *h*, fitted within the socket-piece, substantially as set forth.

323,038. ROTARY ENGINE. HORACE F. HODGES, Boston, assignor to Charles F. Paine, Groveland, and George H. Spencer, Fitchburg, Mass. Filed Dec. 10, 1883. (No model.)

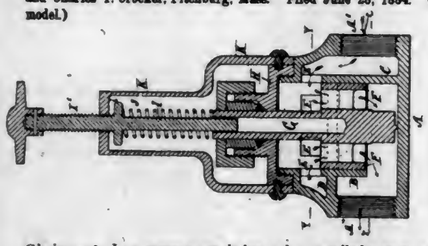


Claim.—1. In combination with the cylinder A, shaft C, and piston B, the gates D, supported by arms or spokes D', shafts E, cranks F, and connecting-rod G G', substantially as and for the purpose described.

2. In combination, the cylinder A, shaft C, and piston B, gates D, supported by arms D', shafts E, cranks F, connecting-rod G G', and the nuts H H', arranged and operating substantially as and for the purpose set forth.

3. The combination of the cylinder A, shaft C, piston B, gates D, fitted with packing-pieces J, arms or spokes D', shafts E, cranks F, connecting-rod G G', and steam-chest K, substantially as shown and described.

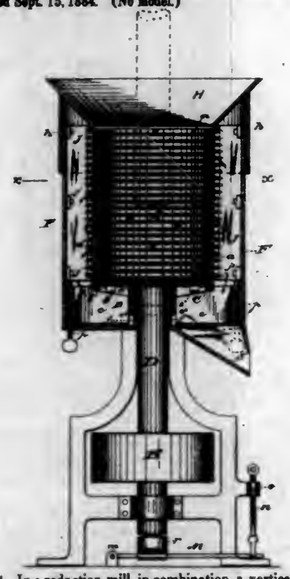
323,039. PRESSURE-REGULATING VALVE. HORACE F. HODGES, Boston, assignor to Charles F. Paine, Groveland, and George H. Spencer and Charles T. Crocker, Fitchburg, Mass. Filed June 28, 1884. (No model.)



Claim.—1. In a pressure-regulating valve, a cylinder open at its lower end and provided with equidistant ports in its walls, and containing a tubular valve open from end to end and fitted to slide in said cylinder, in combination with a valve-stem, one end of which passes out of said valve through a stuffing-box to the atmosphere, and provided with a variable tension device, substantially as set forth.

2. The combination of the body A, provided with inlet and outlet passages, the cylinder B, partition C, floor D, the equidistant ports E E, valve F, valve-rod G, head H, regulating-rod I I', spring J, and supporting-cap K, substantially as shown and described.

323,040. REDUCTION-MILL. HENRY C. INGRAHAM, Woodbridge, N. J. Filed Sept. 15, 1884. (No model.)



Claim.—1. In a reduction-mill, in combination, a vertical stationary grinding-chamber provided with openings or perforations in the walls thereof, a plate arranged and adapted to rotate at the bottom of said chamber, and mechanism adapted to rotate said plate, for the purpose set forth.

2. In a reduction-mill, in combination, a vertical stationary grinding-chamber provided with openings or perforations in the walls thereof, a perforated plate arranged and adapted to rotate at the bottom of said chamber, and mechanism adapted to rotate said plate, for the purpose set forth.

3. In a reduction-mill, in combination, a vertical stationary grinding-chamber provided with openings or perforations in the walls thereof, a perforated plate arranged and adapted to rotate at the bottom of said chamber, a revolving wheel upon which said perforated plate is arranged and by which it is rotated, and mechanism for actuating said wheel, all said parts operating for the purpose set forth.

4. In combination, in a reduction-mill, a grinding-chamber provided with openings or perforations in the walls thereof, a grinding or rotating plate, a casing arranged around and beneath said chamber, forming a powder chamber or receptacle therebetween, and provided with an exit for the powder in the bottom thereof, and a telescopic feeding device, through which the material to be pulverized is fed to the grinding-chamber, for the purpose set forth.

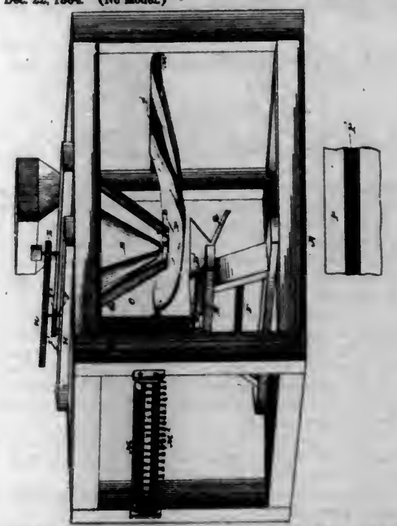
5. In a reduction-mill, in combination, a perforated stationary grinding-chamber, an outer casing surrounding said grinding-chamber and provided with an exit for the powder in the bottom thereof, a rotating plate arranged at the bottom of said grinding-chamber and connected with and rotated by a vertical driving-shaft, an exhaust-fan arranged beneath said rotating plate, and a vertical driving-shaft, all said parts being arranged and operating for the purposes set forth.

6. In a reduction-mill, the combination, with an outer casing, and a grinding-chamber arranged within said casing, composed of rings placed one above another, with openings therebetween, and provided with lugs on the outer circumference thereof, and a grinding or rotating plate, of hangers J, arranged between said lugs and secured to the outer casing, for the purposes set forth.

7. In a reduction-mill, the combination, with an outer casing, of a grinding-chamber formed by rings *a'*, arranged one above another, with openings therebetween, and having lugs a^2 on the outer circumference thereof, hangers J, arranged between said lugs, having projections *j'* and secured to the outer casing, and a grinding or rotating plate arranged and operating substantially as and for the purposes set forth.

8. A reduction-mill comprising an outer casing having a powder-exit in the bottom, a perforated stationary grinding-chamber arranged within said outer casing, a vertical driving-shaft, a wheel arranged upon the top of said driving-shaft at the bottom of the grinding-chamber, a perforated grinding-plate arranged upon said wheel, having lugs which engage with the spokes of said wheel, an exhaust-fan placed beneath the perforated plate, overlapping boxes *f* and *c*, and mechanism for adjusting the vertical shafts and parts secured thereto in relation to the grinding-chamber, substantially as specified.

323,041. CIDER-MILL. MARK B. KAYLOR, Philadelphia, Pa. Filed Dec. 22, 1884. (No model.)



Claim.—1. The combination, with the conical grinding-cylinder and the vertical press-rolls, of the carrying-rolls, and the endless apron provided with the netting P', substantially as specified.

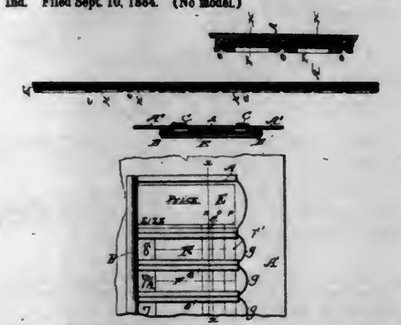
2. The combination, with the vertical conical grinding-cylinder and the vertical press-rolls, and mechanism, substantially as described, for operating said cylinder and rolls, of the carrying-rolls, the endless apron provided with the netting, and the receptacle with the spout, substantially as specified.

3. In a cider-mill, an endless apron provided with a longitudinal central strip of netting, substantially as specified.

4. The combination, with the frame provided with two carrying-rolls, and the bench having one carrying-roll and the receptacle with spout, of the grinding-cylinder, the vertical press-rolls, the endless apron with netting-strip, and mechanism, substantially as described, for operating the cylinder and press-rolls, as set forth.

5. The combination, with the carrying-rolls and the endless apron, of the clearing-brush, as set forth.

323,042. SHOE-BOX INDICATOR. FRANK I. KERR, Alexandria, Ind. Filed Sept. 10, 1884. (No model.)

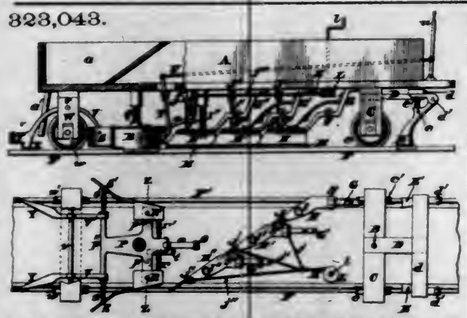


Claim.—In an indicator to be attached to drawers and boxes, the combination, with a frame, A, having an exterior guide or guides, tangs C, and card-receivers H, provided with flanges *e*, of an indicating card or cards graduated and marked to show the size of the articles contained, price, amount on hand, and amount sold, substantially as and for the purpose set forth.

323,043. SNOW-PLOW. JOHN G. KUHLMANN, Cincinnati, Ohio, assignor of one-half to Hermann A. Kuhlmann, same place. Filed Oct. 27, 1884. (No model.)

Claim.—1. The combination, in a snow-plow, of the scrapers E E'

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hinged at *d'* to the cross-bar *d* of the swiveled trunk B C D, said scrapers being provided with bearings *e* and springs *e'*, for the purpose described.

2. The combination, in a snow-plow, of a gang of plows, H H' H'', hinged to hanger G G' G'', and provided with lifting devices *j j' j''*, communicating with a common drum, L, suitable springs, as I I' I'', being employed for retaining said plows in their normal position, as herein described.

3. The combination, in a snow-plow, of the frame P *p p' p''*, coupled by means of the link *o* to the car, said frame being maintained in its normal position by the spring Q, and being provided with scrapers R R', hinged wings S S', and springs *r r' s s'*, for the purpose described.

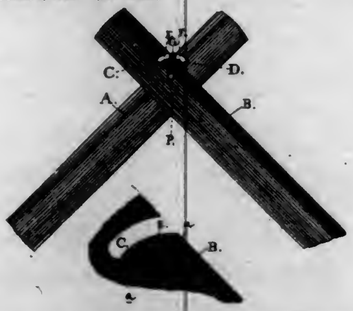
4. In combination with the frame P *p p' p''* and its attachments Q R R' S S' *r r' s s'*, the lever T, having its toe *t* engaged under said frame P, for the purpose described.

5. The rock-arms V V', hung on the rod *v*, coupled to the bar *p''* of frame P, and carrying at their rear ends the deflecting-wings Y and tongues X, for the purpose described.

6. The combination of the plow H, brushes M, and rollers N N', for the purpose described.

7. The combination, in a snow-plow, of a car provided with a gang of scrapers hinged to its under side and arranged in line obliquely across the track, each scraper being furnished with a branch chain attached to a main chain, which latter is coiled around a drum in order that said hinged scrapers can be raised or lowered simultaneously, in the manner herein described, and for the purpose stated.

323,044. CLOTHES-PROP. ADOLPH LA JEUNESSE, Oakland, Cal. Filed June 6, 1884. (No model.)



Claim.—1. The combination of the bars, pivoted together near their upper ends, and springs carried by said bar for clamping the line by bearing directly upon the same, as set forth.

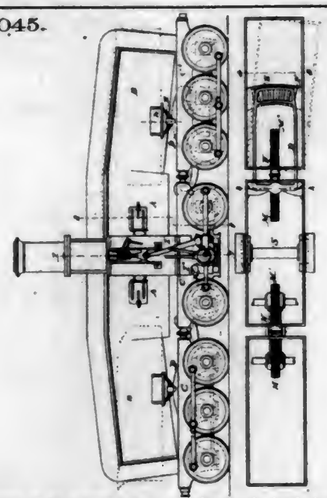
2. In a clothes-line prop, the combination of the bars A B, pivoted together near their upper ends and provided with notches C D and springs E F, located in said notches, as set forth.

323,045. LOCOMOTIVE-ENGINE. JAMES A. LONGRIDGE, Westminster, England. Filed Feb. 28, 1885. (No model.) Patented in England Nov. 19, 1884, No. 15,773.

Claim.—1. In a locomotive-engine in which the superincumbent weight of the boiler is distributed upon two adjacent bogie-frames by means of a balance-beam, the construction of the point of support of one end of the balance-beam in the form of a ball-and-socket or universal joint, substantially as and for the purpose herein described.

2. In a locomotive-engine in which the superincumbent weight of the boiler is distributed upon two or more adjacent bogie-frames by means of a balance-beam, supporting one end of the balance-beam on a ball-and-socket or universal joint, and the other end upon a rolling bearing carried upon springs, whereby the movements of the bogie-frames due to inequalities of the rails are in great part prevented from being

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transmitted to the balance-beam, and whereby the bogie-frames are enabled to adapt themselves to the curve of the line, substantially as shown and described.

3. The combination, with a balance-beam supported at one end on a ball-and-socket and at the other on a rolling bearing, of springs interposed between the balance-beam and the boiler to carry the latter, substantially as shown and described.

4. In a locomotive-engine in which power is transmitted to the driving-wheels of a bogie-frame through the medium of a crank-shaft hung in bearings on the engine-framing between the driving-wheels of the said bogie-frame, but independent of said frame, the combination, with the circular guides around said bearings and with the straight guides of the horn-plate, of sliding blocks adapted to slide around the axis of the crank-shaft, which permit of the fore and aft and lateral oscillations and the rising and falling motions of the bogie-frame independently of the crank-shaft bearings, substantially as shown and described.

5. In a locomotive-engine supported on two or more bogie-frames, and in which the adjacent axles of adjoining frames are geared together by spur-gearing and the frames are connected by ball-and-socket couplings, as described, the combination, with the stems of the couplings, of springs whereby the coupling is enabled to yield to strains either of tension or compression in excess of the normal tractive strain on the coupling, substantially as described.

6. The combination, in a locomotive-engine, of two distinct boilers separated by an intermediate space but connected together rigidly with the steam-cylinders, and valve-gear arranged vertically between them, substantially as described and shown.

7. In a locomotive-engine in which the weight of the boiler is distributed over five adjacent bogie-frames, the combination and arrangement for that purpose of two sets of superposed balance-beams, substantially as above described.

8. In a locomotive-engine in which the weight of the boiler is distributed over five bogie-frames, the arrangement at each end of the engine of a set of superposed balance-beams, each resting on a pivot-bearing at one end and on a roller-bearing at the other, for the purpose of dividing the amount of lateral motion between them in traversing curves.

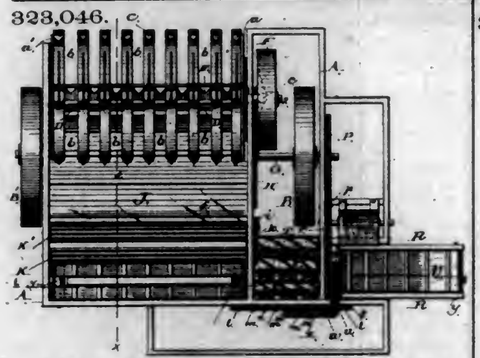
323,046. CORN-HARVESTER. KIRBY E. LATHROP, Afton, Iowa. Filed Oct. 8, 1884. (No model.)

Claim.—1. In a corn-harvester, a revolving cylinder composed of outwardly-extending curved arms with open circular hubs, in combination with a removable sickle-bar and a mechanism for imparting to the sickle-bar a reciprocating movement, substantially as and for the purpose set forth.

2. In a corn-harvester, a revolving cylinder composed of a series of spaced outwardly-extending curved arms with open circular hubs, and provided with disks, as described, in combination with a removable sickle-bar, a wheel with a series of cam-surfaces for reciprocating the sickle-bar, and gears H I, 4 and 5, for imparting a rotary movement to said cylinder, substantially as described.

3. In a corn-harvester, a cylinder composed of a series of independent outwardly-extending curved arms, each set of arms having an open hub, disks upon the ends of the cylinder, and cross-bars for connecting the arms so as to leave spaces between the arms for the passage of the stalks to a reciprocating sickle-bar, substantially as described.

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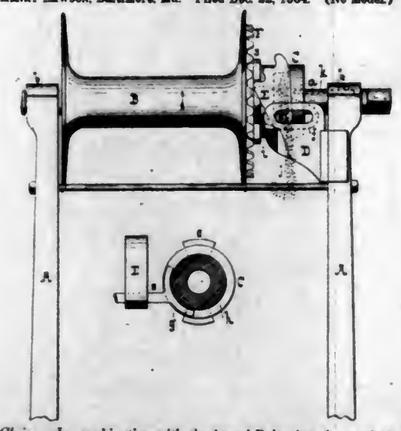
4. In a corn-harvester, and in combination with a revolving cylinder, C, and a frame, D, a removable sickle-bar carrying an anti-friction roller at one end, a wheel having a series of cam-surfaces, and suitable mechanism connected with the main shaft to operate the sickle-bar and at the same time revolve the cylinder, substantially as described.

5. In a corn-harvester, the frame A, revolving cylinder C, gears for operating the cylinder, a wheel with cam-surfaces for reciprocating the removable sickle-bar, and endless band or apron, in combination with yielding roller K' and endless bands or carriers for feeding the corn to the husking-rolls, substantially as described.

6. In a corn-harvester and husking apparatus, a revolving cylinder composed of outwardly-extending curved arms, a removable sickle-bar, and mechanism for operating the cylinder and sickle-bar, an apron for carrying the corn to a pair of longitudinally-grooved yielding rolls, K K', and endless bands or carriers M, in combination with the grooved husking-rolls O O T T, the upper husking-rolls, T, provided with spirally-grooved faces, and arranged at right angles to the lower rollers, O O, and suitable gearing connecting with the gear-wheels H and P on the main shaft for operating the husking-rolls to give the corn a forward and also a lateral movement, substantially as described.

7. In a corn-harvester and husking apparatus, the mechanism set forth for cutting and feeding the corn to the aprons or carriers M, and the grooved husking-rollers K K', the spirally-grooved husking-rolls T, arranged to run at right angles to the lower roller, O O, to give the corn a lateral as well as a forward movement, in combination with a frame, R, the roller Y, the belt or carrier U, a fan, and a suitable platform for receiving the husk, silk, &c., and suitable gearing connected with the main shaft to operate the parts, substantially as set forth

323,047. OYSTER-DREDGE WINDLASS. ALBERT LAWSON and HENRY LAWSON, Baltimore, Md. Filed Dec. 22, 1884. (No model.)



Claim.—In combination with the barrel B, having the toothed disk F, adapted to revolve loosely on the shaft *a*, the clutch C, which rests on a feather on the said shaft, toothed pawl E, pin *e*, with the fork *g*, and the slotted bracket D, substantially as specified.

323,048. CHECK-ROW CORN-PLANTER. ALFRED LISTON and WILLIAM H. NAVERT, Emerson, Iowa. Filed June 14, 1884. (No model.)

Claim.—1. The combination, in a check-row corn-planter, of a vertical pivot, a swinging forked lever having a recessed hub supported on said pivot and containing a torsional spring attached to said hub and

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pivot, and a movable portion or casting hinged to one end of said lever and adapted to maintain the tappets in contact with the forked lever until it completes its throw, substantially as set forth.

2. The combination, in a check-row attachment for corn-planters, of a segmental guide forming part of the operating-frame of the attachment and having a depression at or near one end, a fork-lever pivoted at its elbow and adapted to be operated in one direction by the partial action of a spring, one of the portions of said fork-lever extending adjacent to the segmental guide, and cut away, as specified, and a pivoted portion, *b''*, having one end overlapping the cut-away portion of said fork-lever, and adapted to oscillate vertically on its pivots, and carrying at its outer portion a roller designed to travel upon the segmental guide and enter the depressed portion of the latter to tilt the rear end of the pivoted portion, substantially as set forth.

3. The combination, in a check-row attachment for corn-planters, of a segmental guideway, *b*, forming part of the operating-frame of the attachment and having a depression, *b''*, located at one end thereof, a fork-lever pivoted at its elbow, as described, and having one of its portions extending adjacent to the said segmental guide, and cut away, as specified, and a casting, E'', pivoted on said cut-away portion so as to oscillate vertically on its pivot and overlap the cut-away portion of the lever, the outer end of said casting carrying a roller designed to travel on the guide and enter the depression of the same, the said guide being formed integrally with a support, B', carrying guide-rollers or pulleys and provided with stops c^2 and *d*, substantially as set forth.

4. In a check-row corn-planter, the combination of the swinging lever located at each side of the machine and each operated in one direction by a tappet-wire and in opposite directions by a spring, each of said levers carrying at one end an arm, G, engaging with a horizontally-grooved ratchet formed in the face of the horizontal rear wheel, which is additionally provided with peripheral teeth to mesh with another wheel provided with mechanism for operating the seed-slide, substantially as shown, and for the purpose set forth.

5. The combination, in a check-row attachment for corn-planters, of a segmental guide forming part of the operating-frame, a fork-lever located at each side of the machine and having one portion extending adjacent to said guide, and cut away, as described, a pivoted portion, E''', pivoted on said lever to overlap the cut-away portion thereof, and adapted to oscillate vertically on its pivot, and carrying a roller designed to travel on the guideway and enter the recess thereof at the limit of its movement, and an arm, G, pivoted to the inner end of each fork-lever and engaging at the other end with a central gear-wheel, J, having formed on its upper face an annular ring, with ratchets, and mechanism for operating the same, substantially as shown, and for the purpose specified.

6. In combination with the gear-wheel J and means for rotating the same, substantially as specified, the cap or cover M, secured above

said wheel and provided with cut-away portions, as shown, for the purpose set forth.

323,049. LOCK. CHARLES A. LUDLOW, Bridgeport, Conn., assignor of one-half to Walter Lipe, New York, N. Y. Filed Mar. 13, 1885. (Model.)



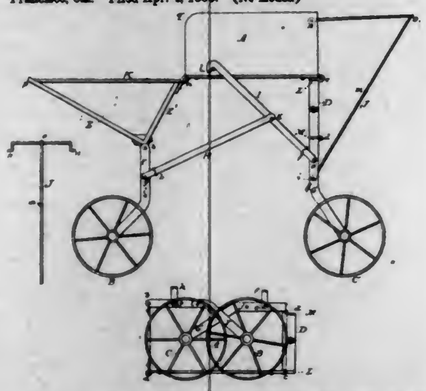
Claim.—1. In a lock, the combination, with two bolts, C, provided with lugs or ears *c'*, extending from their faces near those edges which are outermost or most distant from each other, of the lock cam or hub D, overlying the bolts and provided with projections or teeth engaging with said lugs or ears to operate the bolts, and a tumbler for holding the bolts after operation by the said cam or hub, substantially as herein described.

2. In a lock, the combination, with a bolt or bolts provided with projecting lugs or ears, of a cam or hub engaged with said lugs or ears to operate the bolt or bolts, a tumbler, E, consisting of a plate overlying the cam or hub and provided with an incline and projection with which one of the lugs or ears engages, and a spring acting against the edge of the tumbler and serving to hold the incline and projection thereof in engagement with the lug or ear, substantially as herein described.

3. In a lock-case, the combination of a head or disk, A, and portions A^2, connected with the head or disk by necks *a*, the same being bent at the necks *a* and along the dotted lines a^*, and a head or disk, A', provided with mortises a^2 for the reception of tongues *a'* upon the parts A^2, and securing devices for holding the lock in place, substantially as herein described.

4. In a lock-case, the combination of the head A, provided with tongues a^3, projecting beyond the edge thereof, and portions A^2, united by necks *a* with the head A, the same being bent at the necks *a* and along the dotted lines a^*, and the head A', larger in diameter than the head A and provided with mortises a^2 for the reception of tongues *a'* on the parts A^2, the tongues a^3 serving to secure the lock in place, substantially as herein described.

323,050. FOLDING BABY-CARRIAGE. MORITZ LUXENBERG, San Francisco, Cal. Filed Apr. 4, 1885. (No model.)



Claim.—1. The combination, in a baby-carriage, with the box-seat A, of the folding foot-rest E, having hinged thereto the front standard, and folding in the manner described.

2. In a baby-carriage, the combination of a hinged front standard carrying the fore wheels, with a backward folding foot-rest, substantially as described.

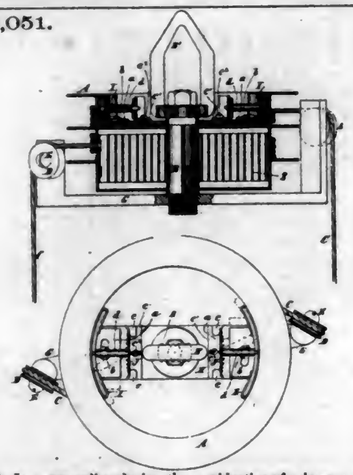
3. In a baby-carriage, the combination of the spring D, hinged to the box-seat, with the standard G of the rear wheels hinged thereto, and folding substantially in the manner described.

4. The combination, in a baby-carriage, of the hinged standard G with the box-seat, and folding thereon in the manner described.

323,051. SUSPENSION DEVICE. CHARLES H. LYMAN, Ansonia, Conn., assignor to the Ansonia Brass and Copper Company, same place, and Wolcott A. Hull, New York, N. Y. Filed May 8, 1885. (No model.)

Claim.—1. In a suspending device, the combination of a drum, a non-rotary arbor upon which the drum is mounted, a counter-balance acting in conjunction with the drum, a cord or chain wound thereon, a brake or brake-shoe in contact with the interior of the drum, and a swinging rod or arm extending between the brake or brake-shoe and an abutment supported by the arbor, substantially as specified.

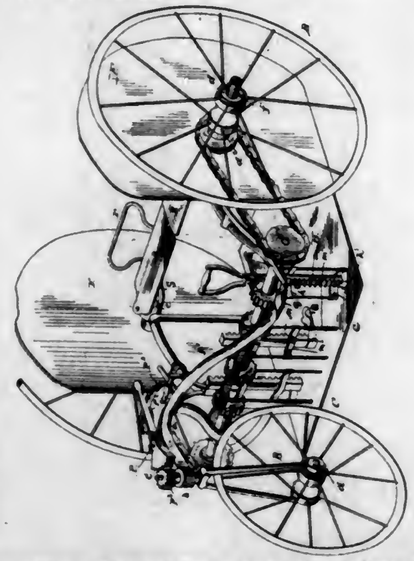
323,051.



2. In a suspending device, the combination of a drum, a non-rotary arbor upon which the drum is mounted, a counter-balance acting in conjunction with the drum, a cord or chain wound thereon, a brake or brake-shoe in contact with the interior of the drum, a swinging rod or arm extending between the brake or brake-shoe and an abutment supported by the arbor, and consisting of a spring and a stop for limiting the movement of the brake or brake-shoe in the direction of the rotation of the drum, substantially as specified.

3. In a suspending device, the combination of a drum, a non-rotary arbor upon which the drum is mounted, a counter-balance acting in conjunction with the drum, a cord or chain wound thereon, a brake or brake-shoe in contact with the interior of the drum, a swinging rod or arm extending between the brake or brake-shoe and an abutment therefor, and a support for said abutment sustained by the arbor and adjustably secured in place, substantially as specified.

323,052. TRICYCLE. JEFFERSON W. MATTESON, Hebron, Pa. Filed Nov. 1, 1884. (No model.)



Claim.—1. The combination, in a tricycle, of a main frame, carrying-wheels mounted loosely upon shafts projecting from said frame, a drive-shaft, a vertical bar or bars having rack-teeth, a gear-wheel mounted on said drive-shaft, and clutch mechanism secured to said shaft and adapted to be operated by said gear-wheel when the same is rotated by said bar in a predetermined direction, substantially as set forth.

2. The combination, in a tricycle, of a main frame having stub-shafts, as described, carrying-wheels mounted loosely thereon, a drive-shaft suitably journaled at the front of the machine and carrying a ratchet

device, a gear-wheel mounted loosely on said shaft, and adapted to engage said ratchet device when rotated in a forward direction, a vertical rack-bar engaging said gear-wheel and guided between parallel vertical bars, and means for transmitting motion from said drive-shaft to said carrying-wheels, substantially as set forth.

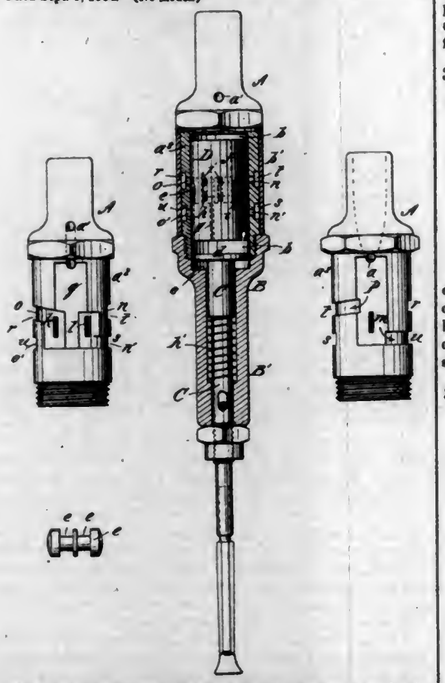
3. The combination, in a tricycle constructed and operating substantially as described, of a seat consisting of pivoted sections R R' and devices for securing said sections together, as and for the purpose specified.

4. The combination, in a tricycle constructed and operating substantially as described, of a seat consisting of pivoted sections R R' and spring-braces secured on the under side of said sections and pivotally attached to fixed portions of the machine, substantially as set forth.

5. The combination, in a tricycle, of a main frame carrying wheels mounted loosely upon shafts projecting from said frame, a drive-shaft, vertical parallel guide-bars, actuating rack-bars located between the same, a spring for maintaining each rack-bar in a normal position, a gear-wheel mounted on said drive-shaft, and clutch mechanism secured to said shaft and adapted to be operated by said gear-wheel when the same is rotated by said rack-bars in a predetermined direction, substantially as set forth.

6. The combination, in a tricycle, of a main frame carrying wheels mounted loosely upon shafts projecting from said frame, a drive-shaft, sprocket-wheels J', mounted loosely thereon, link-chains connecting said sprocket-wheels to drive said carrying-wheels, gear-wheels mounted on said drive-shaft, ratchet-sleeves rigidly mounted on said shaft, means for throwing said sprocket-wheels into and out of engagement with the said sleeves, vertical rack-bars meshing with the gear-wheels on the driving-shaft, and clutch mechanism adapted to permit said gear-wheel to operate said sleeves when rotated in a predetermined direction, substantially as set forth.

323,053. PNEUMATIC TOOL. JAMES S. MCCOY, Brooklyn, N. Y. Filed Sept. 1, 1884. (No model.)

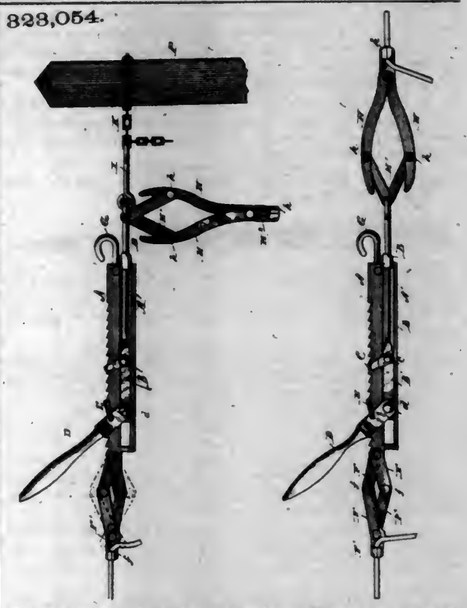


Claim.—The combination of induction and eduction ports in the piston-chamber *b*, and striker D, controlled by the valve *e* within the striker D, and the plate *d* of the tool-bearing rod to cushion the piston or striker and valve at every point with air so perfectly as to secure the minimum amount of wear in the working parts of the tool.

323,054. WIRE-STRETCHER. SAMUEL J. MCDONALD, Gallatin, Mo. Filed Aug. 26, 1884. (No model.)

Claim.—In a wire-stretching device, the combination, with the slotted bar having serrations on one side, of the pivoted bars and clamp pivotally secured at one end of said bar A, and a hook, G, at the opposite end, the lever D and its pawl, the sliding rod B and its pivoted pawl, and the pivoted bars H' H, bars H being provided with gripping and cutting ends, as described, and bars H' being secured to the outer end of the sliding rod, substantially as and for the purpose set forth.

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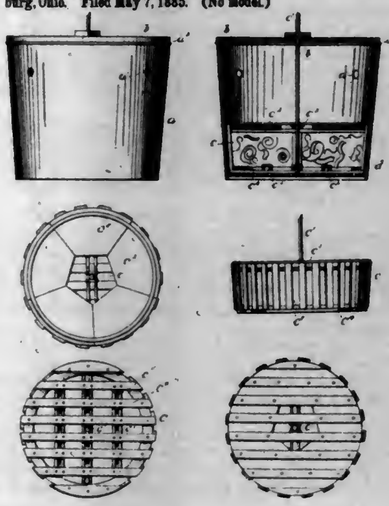


323,055. INSULATOR. THOMAS MCGRORY, Philadelphia, Pa. Filed Oct. 15, 1884. (No model.)



Claim.—An insulator having in its side an irregular downwardly-curved opening provided at each end with recesses C C, a beveled and curved mouth, *c*, and a downwardly-projecting V-shaped bridge, said bridge extending beyond the mouth *c*, all so constructed that the points of contact with the wire shall be acute angles to form as little contact as possible, substantially as described.

323,056. VINEGAR-GENERATOR. HORACE P. MCMASTER, Leonardsburg, Ohio. Filed May 7, 1885. (No model.)



Claim.—1. In a vinegar-generator, the combination of a vessel for holding the fluid to be acetified and provided with lateral air-openings, of an open slat or lattice work plunger working from top to bottom of the vessel and adapted to hold or retain the air and compel it to escape slowly upward through the fluid, substantially as set forth.

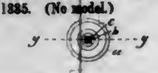
2. In a vinegar-generator, a plunger made of open slat or lattice work and partially closed on its upper side, and having one or more air-retaining inverted troughs having perforations through the bottom, substantially as and for the purposes set forth.

323,057. GRAIN-TRIER. THOMAS METLOR, St. Louis, Mo. Filed Nov. 4, 1884. (No model.)



Claim.—The combination, with the outer tube, B, having the slot E near its extremity, and the inner tube, A, having the pin F occupying said slot, of the collar D, covering said slot and pin, substantially as set forth.

323,058. READY LIGHT OR TAPER. JOHN R. MITCHELL, Portland, Me., assignor of three-fourths to Abel H. Sawyer and John S. Morris, same place. Filed Feb. 5, 1885. (No model.)

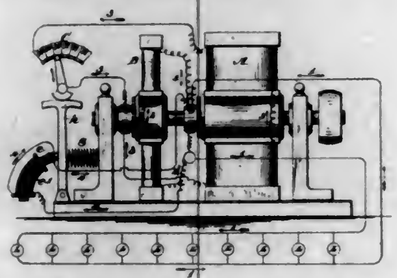


Claim.—1. The combination of a plug or taper of chalk, clay, or similar absorbent substance with paraffine, tallow, petroleum, or similar illuminating material, substantially as described.

2. The combination of a plug or taper of chalk, clay, or similar absorbent material with paraffine, tallow, petroleum, or similar illuminating material and a friction-match, substantially in the manner described.

3. As a new article of manufacture, a ready light consisting of a taper of absorbent earth or similar substance saturated with an illuminating material and inclosing a friction-match, substantially as described.

323,059. REGULATOR FOR DYNAMO OR MAGNETO ELECTRIC MACHINES. RICHARD R. MOFFATT, Brooklyn, N. Y., assignor to the Brooklyn Electric Construction Company, same place. Filed Jan. 18, 1882. Renewed May 6, 1884. (No model.)



Claim.—1. The combination of a dynamo-electric machine, A, with a similar auxiliary machine, B, the circuit from which energizes the field of the machine A, the field of the machine B being energized entirely or in part by the machine A through means of a derived circuit to its main or working circuit, substantially as set forth.

2. The combination, with a battery of dynamo-electric machines, of an auxiliary machine for supplying the field-current thereto, said auxiliary machine having its field energized entirely or in part by means of a derived circuit to the main circuit of the battery of the machines, substantially as set forth.

3. The combination of one or more generators, A, with the auxiliary generator B, the former having its fields energized by the latter, and the latter having its field energized entirely or in part by the dynamo or dynamos A through a circuit derived from the main circuit, and a variable resistance, R, located in said derived circuit for controlling the current that energizes the field of dynamo B, substantially as and for the purpose specified.

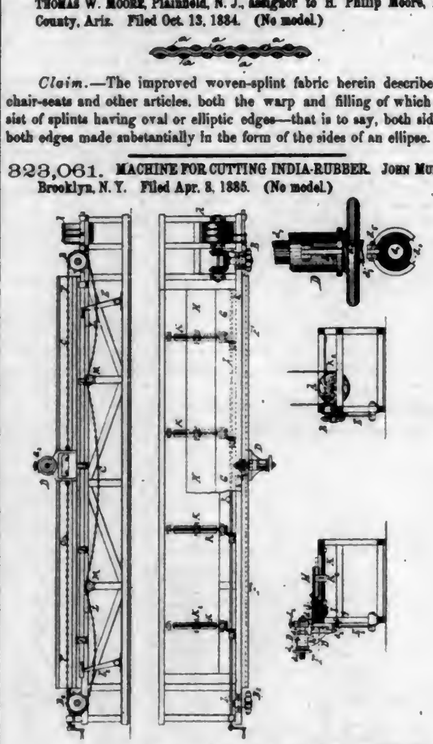
4. The combination of one or more generators, A, with an auxiliary generator, B, the dynamo or dynamos A having their fields energized by the dynamo B, the latter having its field energized by the generator or generators A through a circuit derived from the main circuit, and a variable resistance, C, located in the circuit that energizes the fields of the generator or generators A, for controlling their generating capacity, substantially as and for the purpose herein specified.

5. The combination of one or more dynamos, A, with an auxiliary dynamo, B, the field of the latter being energized by the former through a derived circuit, and the field of the dynamos or dynamo A being energized by the dynamo B, and an automatically-adjustable resistance, C, located in the circuit that energizes the machine or machines A, said resistance being operated by means of magnets *c* and *c'*, located in and forming part of a circuit that is derived from the main circuit of the machine or machines A, substantially as and for the purpose herein specified.

323,060. SPLINT FABRIC FOR CHAIRS AND OTHER ARTICLES. THOMAS W. MOORE, Plainfield, N. J., assignor to H. Philip Moore, Pima County, Ariz. Filed Oct. 13, 1884. (No model.)

Claim.—The improved woven-splint fabric herein described for chair-seats and other articles, both the warp and filling of which consist of splints having oval or elliptic edges—that is to say, both sides of both edges made substantially in the form of the sides of an ellipse.

323,061. MACHINE FOR CUTTING INDIA-RUBBER. JOHN MURPHY, Brooklyn, N. Y. Filed Apr. 8, 1885. (No model.)



Claim.—1. In a machine for cutting rubber, the combination of a reciprocating tool-carriage operated by a transmitting-belt, and a table, work-bench, or platform, substantially as and for the purposes specified.

2. In a machine for cutting rubber, the combination of a double-edged cutting-tool, a carriage for controlling the movement thereof, a transmitting-belt, and a table, work-bench, or platform, substantially as and for the purposes specified.

3. In a machine for cutting rubber, the combination of a double-edged cutting-tool, a reciprocating tool-carriage for controlling the movement and depth of cut thereof, a groove or guide controlling the movement of the reciprocating tool-carriage, a transmitting-belt, and a table, work-bench, or platform, substantially as and for the purposes specified.

4. In a machine for cutting rubber, the combination of a double-edged cutting-tool, a reciprocating tool-carriage for controlling the movement and depth of cut thereof, as well as the angular adjustment of cutting-tool, a groove or guide controlling the movement of the reciprocating tool-carriage, a transmitting-belt, and a table, work-bench, or platform, substantially as and for the purposes specified.

5. In a machine for cutting rubber, the combination of a reciprocating tool-carriage, a groove or guide controlling the movement thereof, a transmitting-belt and its operating mechanism, and a table or platform, substantially as and for the purposes specified.

6. In a machine for cutting rubber, the combination of a reciprocating tool-carriage operated by a transmitting-belt, a table, work-bench, or platform, and an adjustable grip or gage, substantially as and for the purposes specified.

7. In a machine for cutting rubber, the combination of a reciprocating tool carriage, a double-edged cutting-tool, a transmitting-belt, a guide or groove controlling the movement of the reciprocating tool-carriage, an adjustable grip or gage, and a table, work-bench, or platform, substantially as and for the purposes specified.

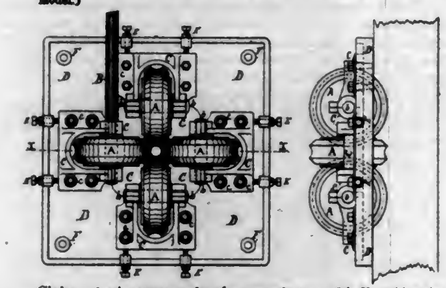
8. In a machine for cutting rubber, in combination with an operating table, bench, or platform, an adjustable grip or gage, a guide or groove controlling the movement of the reciprocating tool-carriage, a double-edged cutting-tool, a transmitting-belt, and the operating wheels or pulleys through which power is applied, substantially as and for the purposes specified.

9. In a machine for cutting rubber, the combination, with an operating table, work-bench, or platform, an adjustable grip or guide, a reciprocating tool-carriage, a double-edge cutting-tool capable of angular adjustment to perform a draw-cut, and a transmitting-belt and pulleys, substantially as and for the purposes specified.

10. In a machine for cutting rubber, the combination of an operating table, bench, or platform having an adjustable grip or gage to fall length of operating table or platform, a guide or groove, F, controlling the movement of reciprocating tool-carriage, a reciprocating tool-carriage, D, double-edged cutting-tool *d*, a transmitting belt, C, sprocket-wheels B and B^2, and an operating crank, wheel, or pulleys, through which power may be applied, substantially as and for the purposes specified.

11. In a machine for cutting rubber, the combination of the tool-carriage A, the adjusting-screw d', the hand-wheel d^4, having slots d^5 and d^6 upon hub, by means of which the cutting-tool is adjusted to a vertical or a draw cut, the double-edged knife *d*, adjusting-screws and hand-wheel d^2, and the bolt d^3, substantially as and for the purposes specified.

323,062. APPARATUS FOR THE MANUFACTURE OF INDIA-RUBBER HOSE. JOHN MURPHY, Brooklyn, N. Y. Filed Apr. 8, 1885. (No model.)



Claim.—1. A compress for the manufacture of india-rubber hose, provided with two or more adjustable elastic compressing-rolls having concave surfaces to form an orifice to receive the hose, capable of adjustment as to position, nature, and amount of pressure to be exerted upon the hose while being passed through.

2. In a machine for the manufacture of india-rubber hose, the combination of two or more adjustable elastic compression-rolls, substantially as described, a mandrel about which the hose is wrapped, and means whereby a steady radial pressure is maintained upon the material wrapped about the mandrel while being drawn or passed through the orifice formed by the elastic compression-rolls, substantially as set forth.

3. In a machine for the manufacture of india-rubber hose, the combination of two or more elastic compression-rolls having concave face-surfaces to receive the hose, with a bed-plate to which the several parts or bearings are attached and upon which they are adjusted and operated, substantially as set forth.

4. In a machine for the manufacture of india-rubber hose, the combination of the elastic compression-rolls, each held in place and up to its work between a pair of disks upon a shaft or axle, and adjustable bearings attached to and operated upon a bed-plate, substantially as and for the purposes specified.

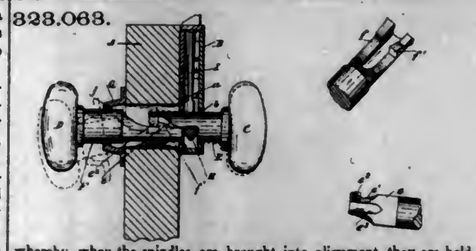
5. In a machine for the manufacture of india-rubber hose, the combination of two or more compression-rolls, A A, axles or shafts *b b*, adjustable bearings C, and a bed-plate, D, substantially as specified.

6. In a machine for the manufacture of india-rubber hose, the combination of two or more elastic compression-rolls, power shaft or shafts B, axles or shafts *b b*, adjustable bearings C, and a bed-plate, D, substantially as and for the purposes specified.

7. In a machine for the manufacture of india-rubber hose, the combination of a bed-plate, D, adjustable bearings C, axles or shafts *b b*, driving-shafts B, two or more elastic compression-rolls, A A, and a mandrel upon which the hose material is wrapped and compressed, substantially as and for the purposes specified.

323,063. LATCH. MILTON C. NILES, Oak Park, Ill. Filed Mar. 10, 1884. (Model.)

Claim.—1. In a door-lock, a bolt-retracting piece, in combination with the spindle E, halved at its inner end and provided with a notch, *e'*, and a shoulder at its point of bearing in the side of the lock in which it is entered which abuts against the retracting-piece, and the spindle F, halved at its inner end and provided with a lug, *f'*, and end piece which abuts against the bolt-retracting piece on the other side of the lock, whereby, when the spindles are brought into alignment, they are held from slipping back and forth through the lock, substantially as described.



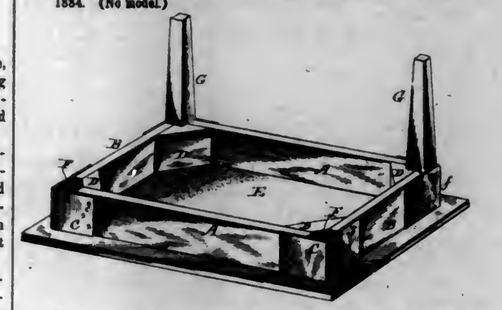
2. The knob-spindle E, provided with the notch *e'* and the cut-away e^2, in combination with the knob-spindle F, provided with the lug *f'* and the raised cam *f*, substantially as for the purposes set forth.

3. The knob-spindle E, provided with the notch *e'*, in combination with the knob-spindle F, provided with the lug *f'*, and the belt-lever H, beveled backward at its side, and the case B, substantially as and for the purposes set forth.

4. The case B, in combination with the knob-spindle E, cut down to provide a face, *e*, for the bolt-lever, the knob-spindle F, cut away on the opposite side to overlap the cut-away part of the spindle, but not extending quite to the uncut portion of said spindle E, and the bolt-lever H, arranged to abut against the shoulder of the spindle E on one side and the end of the spindle F on the other, substantially as and for the purposes set forth.

5. The knob-spindle E, extending through the lock-plates into the door and halved at its inner end, in combination with the bolt-lever arranged in contact with the halved section of said spindle inside of the lock-case, and the opposing knob-spindle F, also halved at its inner end, and arranged with its inside bearing against the corresponding side of the spindle E and its opposite or outer side bearing against the lock-plate, substantially as and for the purposes set forth.

323,064. TABLE. STEPHEN A. NOLEN, Searcy, Ark. Filed Apr. 30, 1884. (No model.)



Claim.—1. The combination of table-legs provided with a polygonal tenon at one end thereof, a table-frame having side and end rails with spaces between them, diagonal braces secured to said rails, and exterior angle-plates having screws passing through the frame and into the diagonal braces, whereby a mortise is formed for the tenon of each leg, and the rails, diagonal brace, and angle-plate will bear against the different sides of the tenon therein inserted, substantially as and for the purposes set forth.

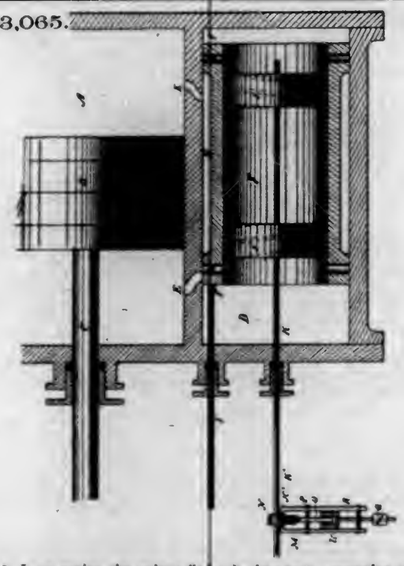
2. The combination of the side and end rails, A B, exterior angle-plates, C, secured to the sides of the frame, and diagonal braces D, arranged to form together a pentagonal socket between them, with removable legs, substantially as and for the purpose described.

323,065. CUT-OFF VALVE FOR ENGINES. HENRY J. OLIVER, San Francisco, Cal. Filed Jan. 24, 1885. (No model.)

Claim.—1. In an engine, the main cylinder having ports opening in its opposite ends, in combination with reciprocating cut-off valves, a cylindrical valve-chamber having a hollow main valve provided with a longitudinal slot or channel, U, and with enlarged ends, and ports made through said ends upon opposite sides to admit steam and balance, while the central portion of the valve is reduced in size so as to form an escape-passage for the exhaust-steam, substantially as herein described.

2. In an engine, the main cylinder having ports connecting its ends with a valve-chamber, and a hollow main valve having its ends fitting the interior of the valve-chamber and provided with steam-ports, while the central portion of the valve is reduced, as shown, in combination with a concentric hollow cylindrical cut-off valve fitting to and moving within the main valve, substantially as herein described.

323,065.



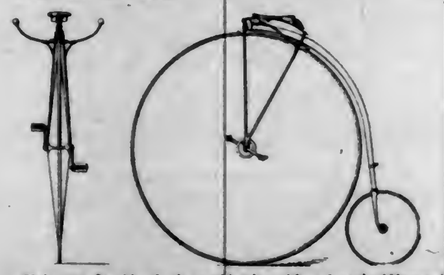
3. In an engine, the main cylinder having ports connecting with its opposite ends, a valve-chamber into which said ports open, a main valve having its ends fitted to the cylinder, and ports made through these ends to correspond with those of the cylinder, cut-off valves having a rod concentric therewith and by which they are caused to reciprocate within the main valve, and spiral or screw flanges with corresponding arms engaging them from the rod, so that the valves may be moved to or from each other by the turning of the valve-rod, substantially as herein described.

4. In an engine, the main cylinder and main valves with the intermediate and connecting ports, as shown, the cut-off valves provided with the guiding-lugs and moving with the main valve so as to uncover and expose its ports, the spiral flanges, and adjusting-arms from the valve-rod, in combination with a pinion secured to the valve-rod, and a gear engaging said pinion and actuated by the movement of the governor-stem, substantially as herein described.

5. The pinion N, secured to the cut-off-valve stem, and the toothed quadrant M, engaging said pinion, and having a lever-arm extending backward and connected with the governor-stem, in combination with the counterbalance-weight Q, substantially as herein described.

6. The pinion B, secured to the cut-off-valve stem, and the gear or toothed quadrant M, actuated by the governor-stem so as to rotate the pinion N, in combination with the standards or lugs N', whereby the pinion is prevented from having end movement, substantially as herein described.

323,066. BICYCLE. FREDERICK D. OWEN, Washington, D. C. Filed Jan. 9, 1885. (No model.)



Claim.—1. In a bicycle, the combination, with a triangular bifurcated steering-frame joined at its vertex to the wheel-bearings, provided at point above the periphery of the wheel with a pivot, stud, or bolt, and to the rear of pin with a transverse curvilinear track-plate, of a backbone connected to said fore and aft points, and fitted so as to allow said steering-frame to turn freely around the aforesaid pin and move radially aft on a sliding or rolling attachment secured to the backbone, all substantially as described and set forth.

2. In a bicycle, the combination of a triangular bifurcated steering-frame with a curved track-plate or guide-bar extending across the frame to rear of the center-turning point, and terminating in handles in the desired position for steering, substantially as described and shown.

3. A triangular steering-frame for velocipedes, consisting of uprights *f* and *f'*, branching from the wheel-bearings, and connected at top by a brace, *m*, (one or more,) a pivot-stud above the wheel-axle, and a curved track-plate arranged to rear of said stud and concentric therewith, substantially as described.

4. In a velocipede, the combination, substantially as before set forth, of the steering-wheel, the triangular steering-frame provided with a pivot-stud, and a curved track-plate to rear of the pivot-stud, and the backbone pivoted upon the stud and abutting against the track-plate.

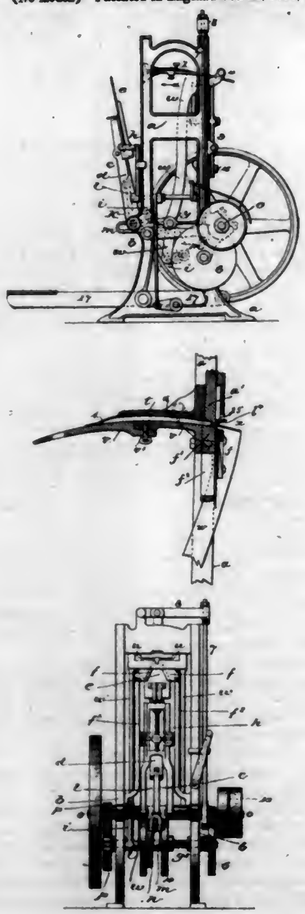
5. In a velocipede, the combination, substantially as set forth, of the backbone extending forward of the steering-center, and the triangular steering-frame provided with a vertical pivot-stud, and with curved track-plates to support the backbone forward and to rear of the pivot-stud.

6. In a velocipede, the combination, substantially as described, of the triangular steering-frame provided with a pivot-stud and curved track-plate, and the backbone pivoted upon the stud and provided with rollers to engage the track-plate.

7. In a velocipede, the combination, substantially as described, of the triangular steering-frame provided with a pivot-stud, the backbone pivoted upon the stud and provided with rollers, and the track-plate secured to the steering-frame, and moving between the rollers carried by the backbone.

8. In a bicycle, the combination, with a steering-frame, of a long extended center pin or rod joined rigidly to and forming part of the backbone by a curved neck or bend, said rod or pin to extend vertically down one side of fork or frame journaling in bearings on the upright part of said steering-frame, all substantially as described.

323,067. MACHINE FOR FOLDING AND EYELETING LABELS. EDGAR A. PALLISTER, Leeds, County of York, England. Filed Nov. 22, 1883. (No model.) Patented in England Oct. 21, 1880, No. 4,299.



Claim.—1. The combination, with the swinging arm *c*, adjustable label-carrier, slide *d*, and male templet secured to said slide, of the stationary female templet *f*, and means for actuating the swinging arm and slide, substantially as set forth.

2. The swinging arm *c*, adjustable label-carrier, levers *k* and *w*, link *i*, and cam *g*, in combination with the slide *d*, templet *e*, connecting-rod *l*, bent lever *m*, cam *n*, and means for rotating the cams, substantially as and for the purposes set forth.

3. The combination, with the swinging arm *c*, label-carrier, slide *d*, male templet *e*, and female templet *f*, of the plates *t v*, pusher *x*, levers *w*, and means, substantially as specified, for actuating the arm, slide, and levers, substantially as set forth.

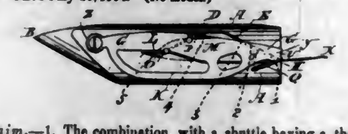
4. In a machine for folding and eyeleting labels, the combination of a swinging arm, a label-carrier, a slide mounted on said arm, a male templet secured to said slide and having a triangular upper end, a female templet having an opening in its face corresponding to the shape of the end of the male templet, and means for swinging the arm and carrying the male templet and label into the female templet, substantially as set forth.

5. The combination, with the plates *t v* and spring 1, secured to said plates, of the levers *w*, fingers 45, hanging loosely from said levers, the pusher *x*, and means for actuating said levers *w*, substantially as and for the purposes set forth.

6. The combination, with the swinging arm *c*, of the label-carrier consisting of the base-piece A and adjusting-screw A^3, the stop A', and plates A^2, substantially as and for the purposes set forth.

7. In combination with the means for folding and holding the label, the slide 3 and punch 2, and means for actuating the slide, the swinging frame 5, having a cam-slot therein, the die 4, carried by said frame, the vertical sliding bar 10, the spring-pin 11 at the top of said bar 10, the runner 15, entering the cam-slot in frame 5, and means for actuating the bar 10 and for supplying eyelets to the pin 11, substantially as set forth.

323,068. SHUTTLE FOR SEWING-MACHINES. CHARLES PARTON, Plattsburg, N. Y., assignor of one-half to Dugald Graham, Montreal, Canada. Filed July 29, 1884. (No model.)

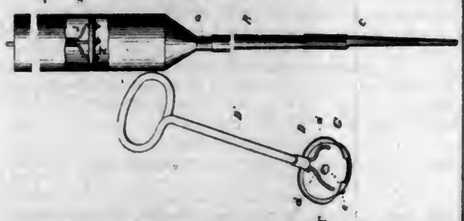


Claim.—1. The combination, with a shuttle having a threading-slot extending to the heel of the shell, of a tension-spring having a tongue or projection near its rear end and the open end of said slot, said tongue or projection being arranged to point away from the rear end of the spring and to support the thread so as to prevent it from being broken, substantially as described.

2. In combination with a shuttle having a threading-slot extending to the heel or rear edge of the shell, a tension-spring extending to and covering the open end of the threading-slot, and having a tongue or projection near the rear end of said spring and the open end of said slot, and pointing away from same, substantially as and for the purpose specified.

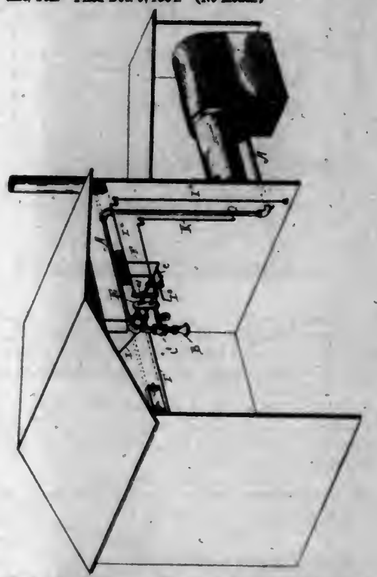
3. The combination, in a shuttle, of shuttle-shell A, having open slots D E and recesses R S T, and tension-spring G, having slots L M N, projections O P Q, guide K, and hook U, substantially as set forth.

323,069. DEVICE FOR AERATING MILK. JEPTHA D. PATTERSON, Abbotts, N. Y. Filed Apr. 18, 1884. (No model.)



Claim.—The herein shown and described milk-cooling device, consisting of a cylinder contracted at its lower end to form a nipple and provided with interchangeable pipe-sections of varying lengths, in combination with a piston working in said cylinder, composed of a rod having arm-extensions branching from its lower end, threaded on their outer extremities to receive a pair of concentrically-apertured disks between which is interposed a disk of leather the periphery of which extends beyond the edges of the disks, the three being confined by nuts on the threaded ends of said arms, the opening in the upper disk being smaller than the opening in the lower disk to form a seat for a flap-valve cut in the center of the leather disk, as shown, and for the purpose described.

323,070. MECHANICAL MOVEMENT. GRAHAM A. PERLE, Palestine, Tex. Filed Dec. 9, 1884. (No model.)



Claim.—1. The combination, with the weighted lever D and pawl E, having detent *e* and cross-rod G, of the bracket F, having levers *a* a' a^2 a^3, cords I I' I^2 I^3, and springs *c*, as and for the purpose set forth.

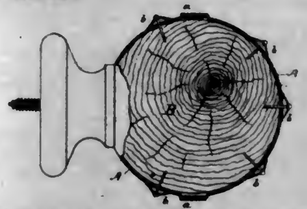
2. The combination, with the weighted lever D, of the pawl E, having detent *e* and cord K, as set forth.

323,071. TORPEDO. CONRAD PILGRIM, East New York, N. Y. Filed May 22, 1884. (No model.)



Claim.—In a torpedo, the combination of the following elements, namely: a fulminate pellet, a wrapper composed of water-proof material in which the pellet is separately inclosed, a sand or gravel filling, and an outer envelope or wrappers inclosing both the filling and the water-proof wrapper with its contained fulminate, substantially as and for the purpose herein described.

323,072. CURTAIN-POLE END. WILLIAM K. PIER, Newark, N. J., assignor to William T. Mersereau & Co., New York, N. Y. Filed June 13, 1885. (No model.)

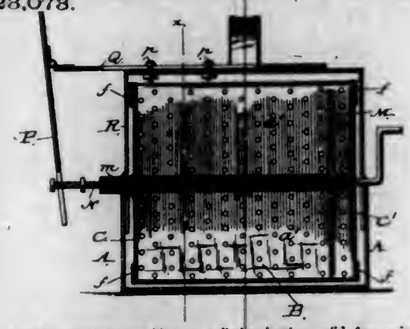


Claim.—In a metal end, A, for curtain-poles, ornamented upon its exterior, the combination of the hemispherical sections, the interior ball, B, of wood or suitable material, and a series of retaining-pins and ornaments, *b*, constructed substantially as and for the purpose set forth.

323,073. WASHING-MACHINE. CHARLES W. POSTLETHWAITE, Monroe, Mo., assignor of one-half to David A. Ely, same place. Filed July 7, 1884. (Model.)

Claim.—1. In a washing-machine, a cylinder having four-pointed heads and perforated sections, one of said sections being hinged, in combination with curved connecting-bars *g*, which form cups or buckets, substantially as described.

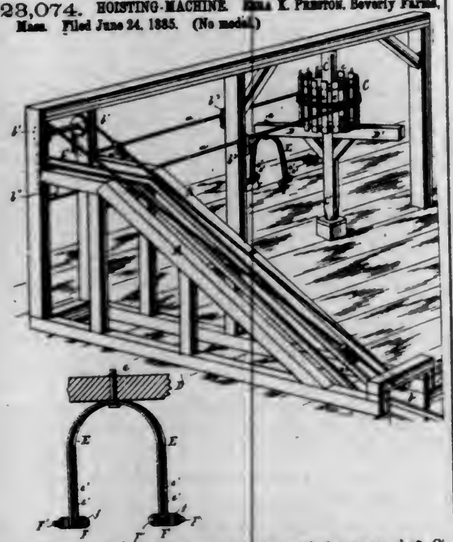
323,078.



2. In a washing-machine, a cylinder having solid four-pointed heads and perforated sections, a sleeve or bearing upon one head, and a crank-shaft upon the opposite head, in combination with a piston and piston-rod and a lever for operating the piston-rod, substantially as described.

3. In a washing-machine, the combination, with a boiler and a cylinder, of a cover, R, a slotted bar adjustably secured thereon, a piston and piston-rod, and a lever hinged to the slotted bar and operating the piston, substantially as herein described.

323,074. HOISTING-MACHINE. ELLA K. PRESTON, Beverly Farms, Mass. Filed June 24, 1885. (No model.)



Claim.—1. In a hoisting-machine, the vertical post or shaft C, located in suitable bearings, and having the drum C secured to it, and the beam D, combined with the swivel-yoke E, hinged to the beam D, as and for the purpose set forth.

2. In a hoisting-machine, the draft-beam D and swivel-yoke E, hinged to it as described, in combination with hooked plates F F, vertically adjustable on the yoke E, substantially in a manner and for the purpose set forth.

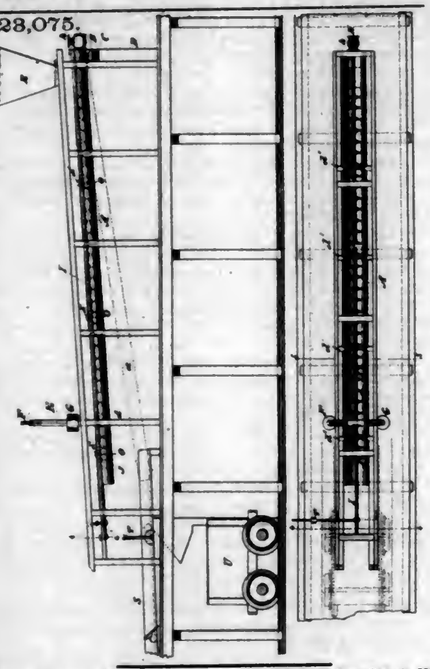
323,075. MACHINE FOR WASHING COAL, &c. WILLIAM RAMSAY, Tursdale Colliery, County of Durham, assignor of one-half to Thomas Hugh Bell, Middlesbrough, England. Filed Mar. 14, 1885. (No model.) Patented in England Apr. 11, 1882, No. 1,716.

Claim.—1. The herein-described coal-washing machine, comprising the frame, the trough, the rock-shaft journaled and supported independently of said trough and having the arms or stirrers projecting therefrom, and the transverse ledges or stops depending from said frame, the trough being hinged at one end and adapted to be moved to and from said stirrers and stops, substantially as set forth.

2. The combination, with the movable trough, of the frame and the transverse ledges or stops depending from said frame and adapted to occupy the trough, substantially as and for the purposes set forth.

3. The combination, with the trough, of the ledges or stops provided with india-rubber or other pliable material on their lower ledges, as and for the purpose set forth.

323,075.



323,076. FEED-WATER HEATER. DELOS E. RICE, Detroit, Mich. Filed Sept. 13, 1884. (No model.)

Claim.—1. The combination, with a locomotive, of a feed-water tank, one or more pipes connected with the exhaust-pipes and communicating with the tank, a feed-water inlet-pipe communicating with said tank, and a submerged pump arranged to pump water from the tank into the boiler, the pump-piston being geared to one of the driving-axles of the locomotive and operated thereby, substantially as described.

2. The combination, with a locomotive, of a feed-water tank, one or more pipes to communicate exhaust-steam thereto, an inlet feed-water pipe, and a pump to feed the water from said tank into the boiler, said tank provided with a diaphragm, G, substantially as described.

3. The combination, with a feed-water tank having one or more pipes to communicate exhaust-steam thereto and an inlet feed-water pipe, of a pump to feed water from said tank into a boiler, said tank provided with a diaphragm, G, and an overflow-pipe extended above said diaphragm, substantially as described.

4. A locomotive feed-water heater consisting of a tank with a feed-water inlet, an inlet for steam, an exit to the boiler, a horizontally-arranged submerged pump, and a diaphragm arranged across the chamber above the pump to prevent surging of the water and consequent impaired action of the pump, substantially as described.

5. In a locomotive feed-water heater, a submerged pump, and a diaphragm located across the interior of the feed-water reservoir, said diaphragm adapted to prevent displacement of the water from the entrance to the pump, substantially as described.

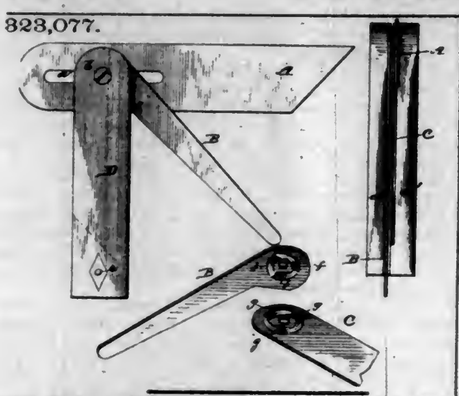
323,077. BEVEL. GEORGE W. REED, Manistique, Mich. Filed Dec. 31, 1884. (No model.)

Claim.—1. In a bevel-square, the combination of an adjustable blade-stock made up of two parts and a clamping-lever provided at its pivotal end with inclined projections, the parts being organized substantially as shown, and for the purpose set forth.

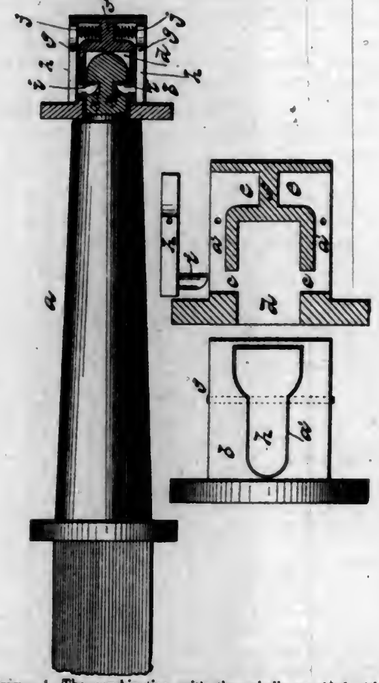
2. In a bevel-square, the stock made of two parts and provided centrally with longitudinal slots, and a plate, C, attached centrally to the stock, in combination with an adjustable blade, and pivoted lever having cams or projections formed on its face, substantially as shown.

3. In a bevel-square, an adjustable blade, a two-part stock recessed on its inner sides, the parts of the stock having interposed between the same a clamping-plate with recesses, in combination with the locking-lever having inclined projections, the parts being combined and organized substantially as shown.

323,077.



323,078. LOCK-NUT. GEORGE S. ROBINSON, Canastota, N. Y. Filed Apr. 22, 1885. (No model.)



Claim.—1. The combination, with the spindle provided with the recesses *k*, of the nut *b*, having the recesses and openings, as shown, and provided with the pivoted dogs *h*, having at one end the lugs *i*, and the spring *j*, the whole adapted to operate as specified.

2. The herein-described nut for spindles, bolts, &c., consisting of nut proper, having the recesses, as shown, and provided with the pivoted dogs *h*, having the lugs *i*, and adapted to be operated upon by means of the springs *j*, whereby the nut is automatically secured to the bolt, as described, and for the purposes specified.

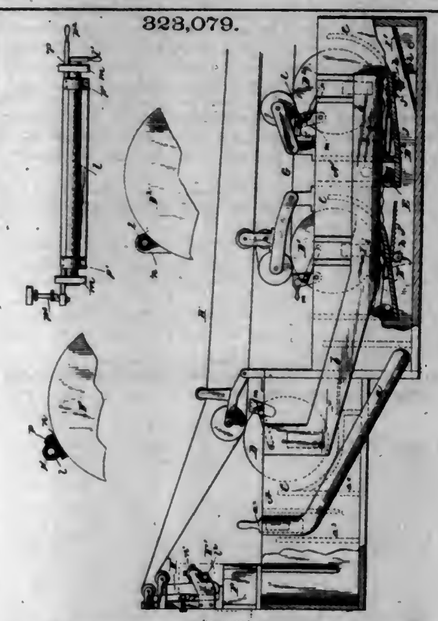
323,079. VAT FOR PAPER-MAKING MACHINES. JOHN F. SKINNER, Akron, Ohio. Filed May 19, 1885. (No model.)

Brief.—Improvement on Patents No. 212,155, dated February 11, 1879, and No. 312,390, dated February 17, 1885.

Claim.—1. In a paper-making machine, the combination of the lower vat and cylinder, the elevated vat and cylinder, and the exhaust-water conductor connecting said upper and lower vats, substantially as described.

2. The combination of the lower vat, A', the vat A, elevated above the plane of the lower vat and containing two or more pulp-mixing chambers, the overflow-gate a^2, and the pulp-conducting pipe *a*, extending from said overflow-gate to said lower vat, substantially as described.

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3. The combination of the vat A, the mixing-box F, the stuff-box F', the stuff-pipe *f*, and the water-pipe *c*, all arranged substantially as described.

4. The combination of the mixing-box F, arranged on the end of the vat A, the washer *s'*, and the sprinkler f^2, the latter arranged above the mixing-box to adapt said box to receive the water from the sprinkler f^2, substantially as described.

5. The combination of the vat of a paper-making machine, the receptacle for knots and heavy foreign substances and the cover arranged to slide over said receptacle, the rack *j''*, and pinion *k*, connected with each end of said cover for operating the same, substantially as described.

6. The cover I, made in two or more parts, connected by hinges or a yielding connection, in combination with the curve bottom of the vat, substantially as described.

7. In combination with the making-cylinder of a paper-making machine, the acid receptacle or pipe *l* and the swab *n*, for the purpose stated.

8. In combination with the cylinder of a paper-making machine, the metallic pipe *l*, perforated on one side, the swab *n*, and the supports *m* at each end of said pipe and swab, substantially as described.

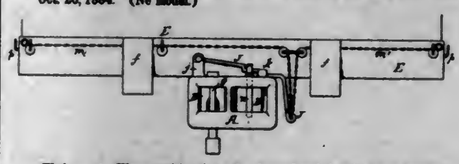
9. In combination with the vat and cylinder of a paper-making machine, the acid-receptacle pipe *l*, the swab *n*, and the adjustable supports *m*, said swab being arranged to be reciprocated, substantially as described.

10. The combination of the acid-receptacle pipe *l*, the swab *n*, and the sliding supports *n'* for the latter, substantially as described.

11. The combination of the acid-pipe l^2, the swab *n'*, and the upper felt, H, substantially as described.

12. The combination of the acid-pipe l^2, the swab *n'*, the upper felt, H, and the mixing-box, arranged substantially as described.

323,080. CAR-COUPLING. EDGAR E. SELL, Charleston, S. C. Filed Oct. 20, 1884. (No model.)



Claim.—1. The combination of a draw-head having two compartments, B and D, a link, G, contained within and projecting from the compartment B, and having a projection, *i*, and a weighted arm, H, pivoted to the draw-head and exercising a lateral controlling influence on the link, substantially as set forth.

2. The combination of the draw-head and the lever J, pivoted thereto, with a retaining-pin, *n*, pivoted to the lever, and chains *m*, extending over pulleys to the side of the car for raising the lever, substantially as set forth.

3. The combination of the draw-head and lever J, bent downward at the side of the draw-head, with a pin pivoted to the said lever, and chains connected to the bent end of the lever and extending to the opposite sides of the car, as and for the purpose described.

4. The combination of the draw-head and a hinged lever, J, bent downward at the side of the draw-head, with a pin, *n*, pivoted to the said lever, chains *m*, connected to the bent end of the lever and extending to the side of the car, and hooks *p* for the chains, substantially as specified.

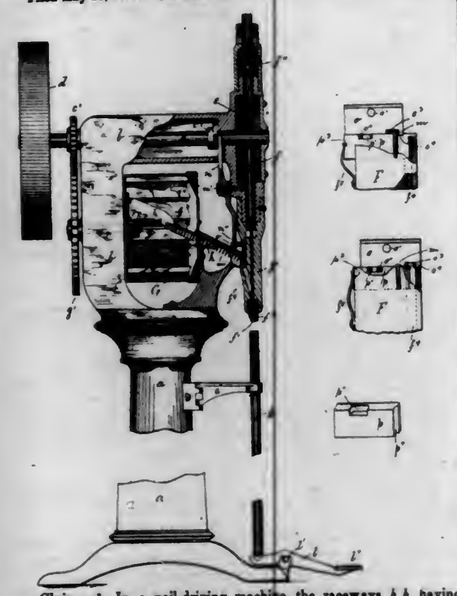
5. The combination of the draw-head having a tapering slot, *s*, with lever J, hinged to the side thereof, and a pin, *n*, pivoted to the lever, as and for the purpose described.

6. The combination of a draw-head with a link pivoted thereto, and having a projection, *i*, and a weighted arm, *h*, pivoted to the draw-head and exercising a lateral controlling influence on said projection *i*, as set forth.

7. The combination of a draw-head with the lever J, carrying the pin *n*, and projecting downward at one side of the draw-head, as and for the purpose set forth.

323,081. NAIL-DRIVING MACHINE. THOMAS E. SMITH, Lynn, Mass.

Filed May 28, 1885. (No model.)



Claim.—1. In a nail-driving machine, the raceways *h h*, having their lower ends entering the driver-tube F, the reciprocatory block *o*, with its recess o^3, for receiving the head of the nail, and block *p*, actuated by block *o* and spring f^5, and having groove p'', for receiving the shank of the nail for the purpose of carrying individual nails from raceways *h h*, and to deliver them one by one into channel f^4, leading to nail-die f^3, in a manner as set forth.

2. The reciprocatory block *o*, having pin or projection o'' and recess o^3, with lip o^4, in combination with lower block, *p*, having slot p' for receiving pin o'', recess p'', for receiving the shank of the nail, stop p^3 to limit its motion toward the delivery-channel f^4, and spring f^5, as and for the purpose set forth.

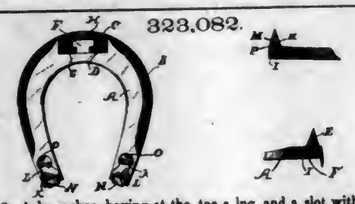
3. In a nail-driving machine, the rotary hopper G, having wings or scoops g'' g'' and raceways *h h*, leading from it to the driver-tube F, in combination with the reciprocatory nail receiving and carrying blocks *o* and *p*, having the respective recess o^3, lip o^4, and recess or groove p'', as and for the purpose set forth.

4. In a nail-driving machine, the nail picking and delivery mechanism, as described, consisting of a pair of reciprocatory blocks, constructed substantially as shown—viz., a lower one for receiving and carrying the nail from the raceway to the delivery-channel and an upper block for ejecting the nail from the lower block into the driver-tube, as set forth.

323,082. HORSESHOE. ALFRED L. STEVENS, Darien, Conn. Filed Mar. 30, 1885. (No model.)

Claim.—1. A horseshoe having at the toe a slot and a lug, in combination with a removable calk having a lug adapted to engage said slot and a depression corresponding with the lug upon the shoe, and an attaching-screw adapted to be turned in from the back to hold the calk in place.

323,082.



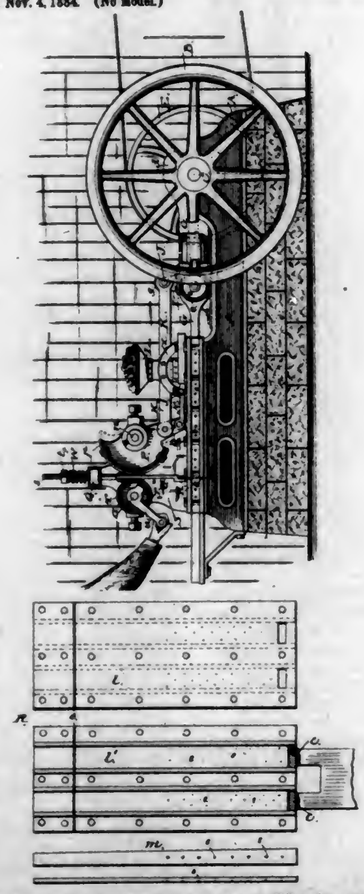
2. A horseshoe having at the toe a lug and a slot with shoulders projecting into it, in combination with a removable calk having a depression at the toe corresponding with the lug upon the shoe, and a lug corresponding with the slot and having notches in which the shoulders fit, and an attaching-screw.

3. The shoe having a cut-away portion at the toe, which is provided with a lug and a slot, in combination with a calk adapted to fit in said cut-away portion and having a depression and lug to engage the corresponding parts of the shoe, and an attaching-screw which enters from the back to hold the calk in place.

4. The shoe having cut-away portions K at the ends, which are provided with inclined recesses O and lugs N, in combination with heel-calks having lugs O′, which engage recesses O, lugs P, which cover the ends of the shoe, and depressions N′, which receive lugs N.

5. The shoe having cut-away portions K, with shoulders L, recesses O, and lugs N, in combination with calks adapted to fit in said cut-away portions, and having notches which receive the shoulders, and lugs O′ and P, depressions N′, and attaching-screws.

323,083. BRICK-MACHINE. WILLIAM H. STEWART, Boonville, Mo. Filed Nov. 4, 1884. (No model.)



Claim.—1. In a brick-machine, a two-part sliding frame provided with openings for the clay received from the hopper, in combination with a compressing-chamber formed with openings near one end, through which the clay passes into the said chamber, a crank-shaft for changing the position of the sliding frame, and a plunger for compressing the clay, substantially as described.

2. A brick-machine provided with a horizontal plunger, in combination with a two-part sliding frame operated by suitable connecting-arms, to receive from the hopper and deposit within a compressing-chamber at each revolution of a crank-shaft an amount of clay less than that required to make a brick, substantially as described.

3. In a brick-machine, the shaft *a* and connecting-bars D and G, in combination with a flanged plate bolted to said bars so as to receive their movement, substantially as described, and for the purpose set forth.

4. A brick-machine having a crank-shaft, *a*, bars D and G, and a plunger, in combination with a flanged plate bolted to said bars, whereby the movement of said bars is communicated to other connecting-bars to operate a sliding mold-frame, M, substantially as described.

5. In a brick-machine, a crank-shaft and connecting-bars for operating a two-part sliding frame, whereby an amount of clay less than is required to make a brick is deposited into a compressing-chamber, to be operated upon by each revolution of the crank-shaft, the said compressing-chamber being provided with suitable exits for the escape of the gases, substantially as herein set forth.

6. In a brick-machine, a rectangular compressing-chamber formed with two or more passages, said chamber having apertures in its sides for the escape of gases, substantially as described.

7. In a brick-machine, a compressing-chamber provided with partitions *m*, whereby two or more rectangular passages are formed, substantially as described.

8. In a brick-machine, a compressing-chamber with open ends, consisting of the grooved top and bottom plates and partitions *m*, thereby forming two or more rectangular passages, into which the clay is received and compressed, substantially as described.

9. In a brick-machine, a compressing-chamber for receiving the loose clay in fractional quantities less than a brick, to be operated upon by a plunger, and to form a rectangular body of compressed clay, substantially as described.

10. In a brick-machine, a compressing-chamber consisting of the grooved top and bottom plates and the partitions *m*, and provided with suitable exits for the escape of gases, in combination with a sliding frame and its operative mechanism, whereby the clay is deposited within said compressing-chamber in fractional quantities less than a brick to form a rectangular body of compressed clay, and a knife or cutter for severing a portion of said clay, substantially as described.

11. In a brick-machine, and in combination with the arms K and their actuating mechanism, suitable frictional devices for operating a vertically-moving plate carrying a knife or cutter, substantially as described.

12. In a brick-machine, the arms K and their actuating mechanism, in combination with suitable frictional devices for operating a vertically-moving plate carrying a knife or cutter, and a compressing-chamber having a slot or opening for the entrance of said knife, substantially as described.

13. In a brick-machine, the shaft *a*, provided with reduced ends and a crank portion, in combination with the bars G, with open ends partially encircling the shaft, and the bar D, to which the plunger is attached, substantially as described.

14. In a brick-machine, the shaft *a* and bars D and G, as described, in combination with a plunger attached to one end of bar D, and suitable guide-wheels traveling upon the bed of the machine to support said bars, substantially as described.

15. In a brick-machine, the bars D and G, in combination with a casting, I, having flanges by which it is bolted to the bars, and the connecting-arms K, secured to said casting and to a segment-wheel, P, substantially as and for the purpose set forth.

16. In a brick-machine, the segment-wheel P, provided with a depending arm, in combination with the bars D, G, and K, and the connecting-arms for actuating a sliding mold-frame, substantially as described.

17. In a brick-machine, the castings S, with suitable bearings for the shafts *n* and *o*, in combination with a vertically-moving plate and frictional devices for operating said plate, substantially as described.

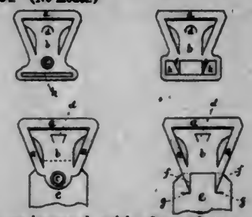
18. In a brick-machine, the castings S, provided with grooves and suitable adjustable bearing-blocks, as set forth, in combination with a vertically-moving slotted plate carrying a knife or cutter, segment-wheel P, idle-pulley T, and springs for withdrawing the knife from the compressing-chamber, substantially as described.

19. In a brick-machine, the compressing-chamber with tapering sides and partitions, and provided with openings for the entrance of the clay and exits for the gases therein contained, in combination with a vertically-moving cutter having two or more blades passing through slots in the top of the compressing-chamber to sever a portion of the compressed clay about equal to the length of a brick, substantially as described.

20. In a brick-machine, a frictional device for operating a knife or cutter to sever a portion of compressed clay, consisting of the segment P and an idle-pulley provided with angular levers and chains, substantially as described.

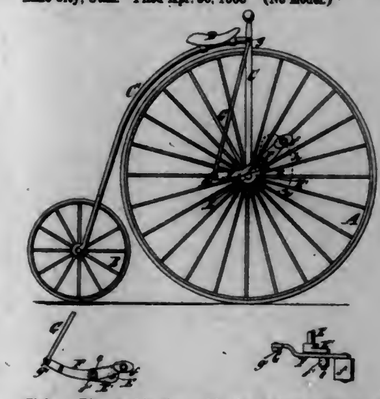
21. In a brick-machine, the segment-wheel P, having a depending arm to which is attached the bars K and N, and connecting-bars, herein set forth, for operating the segment to raise or lower a plate carrying a cutter, and to reciprocate a sliding frame, M, substantially as described.

323,084. BUCKLE. WILLIAM D. STRATTON, Boston, Mass. Filed Aug. 11, 1884. (No model.)



Claim.—As an improved article of manufacture, a buckle having its tongue, frame, and attaching means all of a single piece of spring metal, the tongue provided with a lifting projection, all substantially as set forth.

323,085. TREADLE FOR PEDOMOTORS. GEORGE J. TAYLOR, Salt Lake City, Utah. Filed Apr. 30, 1885. (No model.)



Claim.—The combination, with the driving-wheel A, main frame C, axle, and driving-crank of a bicycle or other pedomotive vehicle, of a seat, D, supported in rear of the main frame, the levers F, attached between their ends to the crank-pins and projecting forward of the crank-pins, swinging links or rods G, extending from the upper part of said frame downward and rearward and jointed to the rear ends of the levers F, and pedals *f*, attached to the forward ends of the said levers forward of the crank-pins, substantially as herein described.

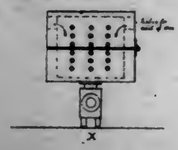
323,086. METHOD OF CONSTRUCTING ROADS. HIRAM W. THORNTON, Millersburg, Ill. Filed Aug. 5, 1884. (No model.)



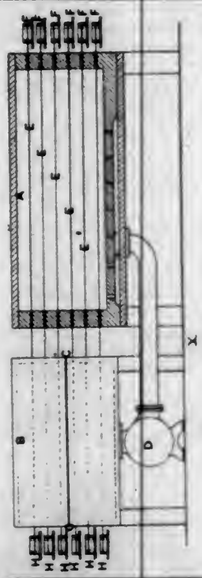
Claim.—In a road, a drain under its crown, the portion of the ditch above the drain and considerable part of the road-bed on each side of the drain supplied with gravel, sand, or other porous material, substantially as described and shown.

323,087. APPARATUS FOR HARDENING AND TEMPERING WIRE. JOHN THORNTON, Cleckheaton, County of York, England. Filed Aug. 14, 1884. (No model.)

Claim.—In an apparatus for hardening and tempering steel, the furnace A, in combination with the vessel B and fan D, constructed as described, and for the purpose set forth.



323,087.

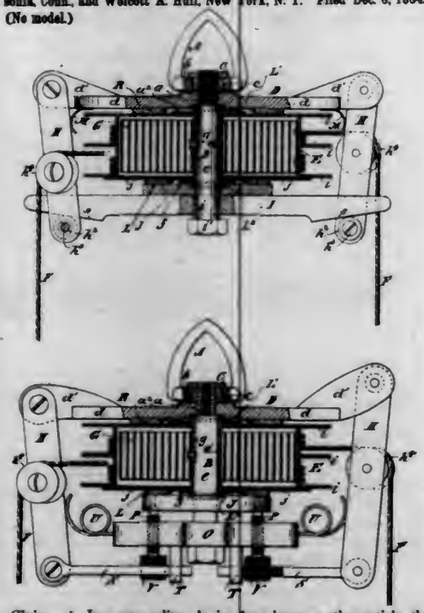


323,088. DYNAMITE. ROBERT W. WARREN, Houghton, Mich. Filed Feb. 24, 1885. (No specimens.)

Claim.—1. An explosive compound composed of nitro-glycerine, nitrate of soda, and the vegetable substance ground peat, combined in the proportions substantially as described.

2. An explosive compound composed of nitro-glycerine, nitrate of soda, together with ground peat and calcic hydrate, in the proportions substantially as described.

323,089. SUSPENSION DEVICE FOR LAMPS. THEODORE A. WEBER, New York, N. Y., assignor to the Ansonia Brass and Copper Company, Ansonia, Conn., and Wolcott A. Hull, New York, N. Y. Filed Dec. 6, 1884. (No model.)



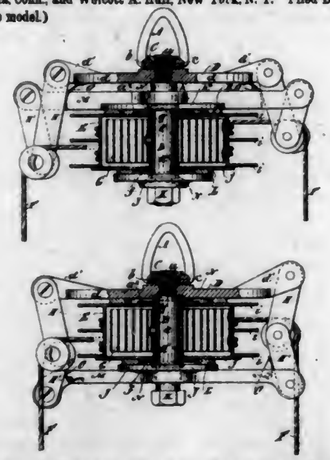
Claim.—1. In a suspending device for a lamp or other article, the combination of a frame, an arbor, a rotary drum arranged upon the arbor, a friction-brake made independently of the said frame and arranged upon the arbor so that it may slide along the same toward and from the drum, guides, devices, substantially such as described, for communicating motion from the guides to the brake, and cords or chains wound upon the drum and passing thence around the guides to the lamp or other article to be suspended, substantially as described, whereby the weight of the lamp or other article upon the cords or chains will cause the brake to operate and the same will be released when said weight is removed from the cords or chains.

2. In a suspending device for a lamp or other article, the combination of a frame, an arbor, a drum adapted to rotate upon and move lengthwise of the arbor, a friction-brake upon the frame above the drum, another friction-brake arranged upon the arbor below the drum and capable of moving toward the drum, guides, devices, substantially such as described, for communicating motion from the guides to the friction-brake which is below the drum, and cords or chains wound upon the drum and passing thence around the guides to the lamp or other article to be suspended, substantially as described, whereby both said brakes are rendered effective by the weight of the lamp or other article upon the cords or chains and released when the weight is removed from the cords or chains.

3. In a suspending device for a lamp or other article, the combination of a frame, an arbor, a rotary drum arranged upon the arbor, a friction-brake made independently of the said frame and arranged upon the arbor so that it may slide along the same toward and from the drum, a wedge or bar having an inclined surface or surfaces, guides, devices, substantially such as described, for communicating motion from the guides to the wedge or bar, having an inclined surface or surfaces, and cords or chains wound upon the drum and passing thence around the guides to the lamp or other article to be suspended, substantially as described, whereby when the cords or chains are subjected to the weight of the lamp or other article attached to them the brake will be applied through the wedge, and when the cords or chains are relieved from the weight of the lamp or other article the brake will be released.

4. In a suspending device for a lamp or other article, the combination of a frame, an arbor, a rotary drum arranged upon the arbor, a brake-bar, a friction-brake between the brake-bar and the drum made independently of the frame and arranged upon the arbor so that it may slide along the same toward and from the drum, swinging arms provided with projections bearing against the brake-bar, and cords or chains wound upon the drum and passing thence over guides upon the swinging arms to the lamp or other article to be suspended, substantially as described, whereby when the weight of the lamp or other article is brought to bear upon the cords or chains the projections upon the swinging arms will cause the brake-bar to operate the brake and retard the rotation of the drum, and when the weight upon the cords or chains is relieved the brake will be released.

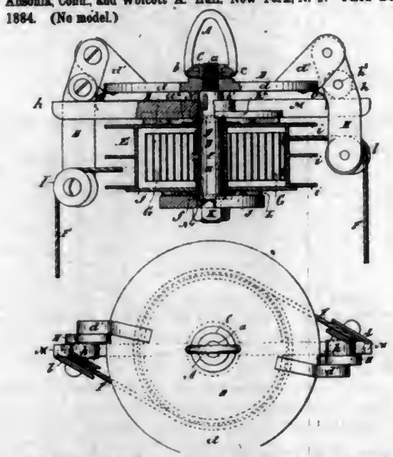
323,090. SUSPENSION DEVICE FOR LAMPS. THEODORE A. WEBER, New York, N. Y., assignor to the Ansonia Brass and Copper Company, Ansonia, Conn., and Wolcott A. Hull, New York, N. Y. Filed Dec. 12, 1884. (No model.)



Claim.—1. In a suspending device for a lamp or other article, the combination of a frame, an arbor, a rotary drum upon the arbor capable of vertical movement thereon, cords or chains wound upon the drum, toggles supported by the frame, guides upon said toggles for receiving the cords or chains and from which the cords or chains pass to the lamp or other article to be suspended, and a brake, substantially as described, whereby when the cords or chains are subjected to the weight of the lamp or other article attached to them the brake will be rendered effective through the toggles, and when the cords or chains are relieved from the weight of the lamp or other article the brake will be released.

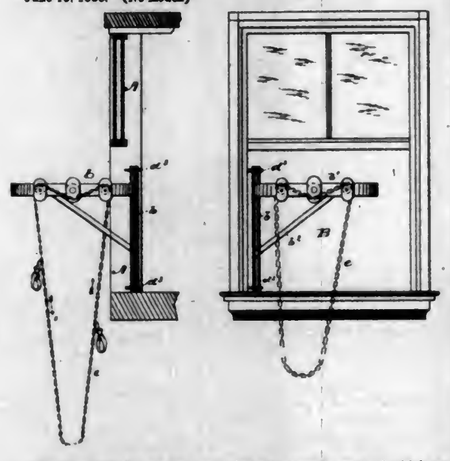
2. In a suspending device for a lamp or other article, the combination of a frame, an arbor, a rotary drum upon the arbor capable of vertical movement thereon, cords or chains wound upon the drum, toggles supported by the frame, guides upon said toggles for receiving the cords or chains and from which the cords or chains pass to the lamp or other article to be suspended, a brake above the drum, and another brake below the drum, substantially as described, whereby both said brakes are rendered effective through the toggles by the weight of the lamp or other article attached to the cords or chains, and released when said weight is removed from the cords or chains.

323,091. SUSPENSION DEVICE FOR LAMPS. THEODORE A. WEBER, New York, N. Y., assignor to the Ansonia Brass and Copper Company, Ansonia, Conn., and Wolcott A. Hull, New York, N. Y. Filed Dec. 13, 1884. (No model.)



Claim.—In a suspending device for a lamp or other article, the combination of a frame, an arbor, a rotary drum upon said arbor capable of vertical movement thereon, cords or chains wound upon said drum, levers fulcrumed upon said frame, guides on said levers over which said cords or chains pass to the lamp or other article to be suspended, projections upon said levers above the guides, a bar upon which said projections bear arranged above the drum, a friction-brake between the bar and the drum, and another friction-brake arranged below the drum, substantially as specified, whereby when the weight of the lamp or other article is brought to bear upon the cords or chains it will operate the levers to cause the projections to exert a cam-like action upon the bar and force it downwardly, so that the friction-brake between it and the drum will exert pressure upon the drum, and the drum will be forced downwardly, when it will be subjected to pressure from the brake below the drum, and whereby when the weight upon the cords or chains is relieved the drum will be released from the action of the brakes.

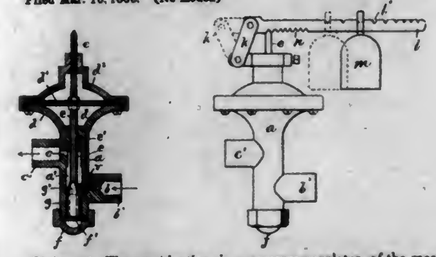
323,092. FIRE-ESCAPE. LEOPOLD WERNER, Newark, N. J. Filed June 18, 1885. (No model.)



Claim.—1. A fire-escape consisting of a post the ends of which are adapted to be inserted in sockets or eyes secured to a window-casing, said posts being provided with an arm having three pulleys journaled therein, the central pulley being of larger diameter than the end pulleys, and an endless chain passing over the end pulleys and under the large central pulley, substantially as and for the purpose set forth.

2. The combination, with a window-casing having eyes or sockets secured thereto, of a fire-escape removably arranged in said sockets and turning pivotally therein, consisting of a post, *b*, provided with arms *b'* *b²*, having three pulleys, *d* *d'* *d²*, journaled therebetween, the central one of which, *d'*, is of larger diameter than the end pulleys, *d* *d²*, an endless chain passing over the end pulleys and under the central large pulley, and a belt having a hook and ring at the ends thereof, all said parts being arranged and operating substantially as and for the purposes set forth.

323,093. PRESSURE-REGULATOR. FRANK WIDMER, Newark, N. J. Filed Mar. 18, 1885. (No model.)



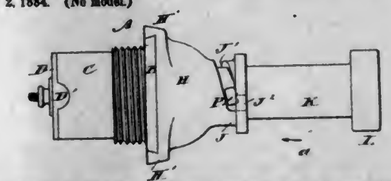
Claim.—1. The combination, in a pressure-regulator, of the means for preventing the violent movements of the diaphragm, consisting in the valve having a head, *v*, and stem v^3, fitted snugly to their respective apertures, with the washer v^2, applied to the stem, and the means for connecting the valve with the diaphragm for pressing the valve upon its seat, substantially as shown and described.

2. In a pressure-regulator, the combination of the casing *a* with the diaphragm-box *d* and the collar *e'* between the casing and the box, the spindle *e*, secured to the diaphragm and being projected above the box and fitted snugly to the collar, as set forth, the free outlet *c*, connecting with the receiving-chamber, the valve *v*, provided with leather washer v^2, and located in the inlet-passage at right angles to the spindle *e*, and the conical plug *g'*, attached to the spindle and operating against the inclined head of the valve, the whole being arranged and operated substantially as and for the purpose set forth.

3. In a pressure-regulator, the combination of the casing *a*, provided with the inlet *b*, having the valve fitted snugly, as described, the diaphragm-box, and the spindle *e*, with the snugly-fitting collar *e'* between the casing and the box, and the free outlet *c*, connecting with the receiving-chamber, the whole arranged and operated with a weight and lever for depressing the diaphragm, substantially as herein shown and described.

4. In a pressure-regulator, the means for varying the effect of the weight upon the diaphragm, consisting in the combination, with the diaphragm-box d^2 and the projecting end of its spindle *e*, of the lever *l*, the links *k*, jointed to the diaphragm-box d^2, the lever being provided with a series of notches, *n*, to fit the top of the spindle, and the adjustable weight *m*, the whole arranged and operated substantially as shown and described.

323,094. FAUCET. FRANK F. WOLFF, New York, N. Y. Filed May 2, 1884. (No model.)

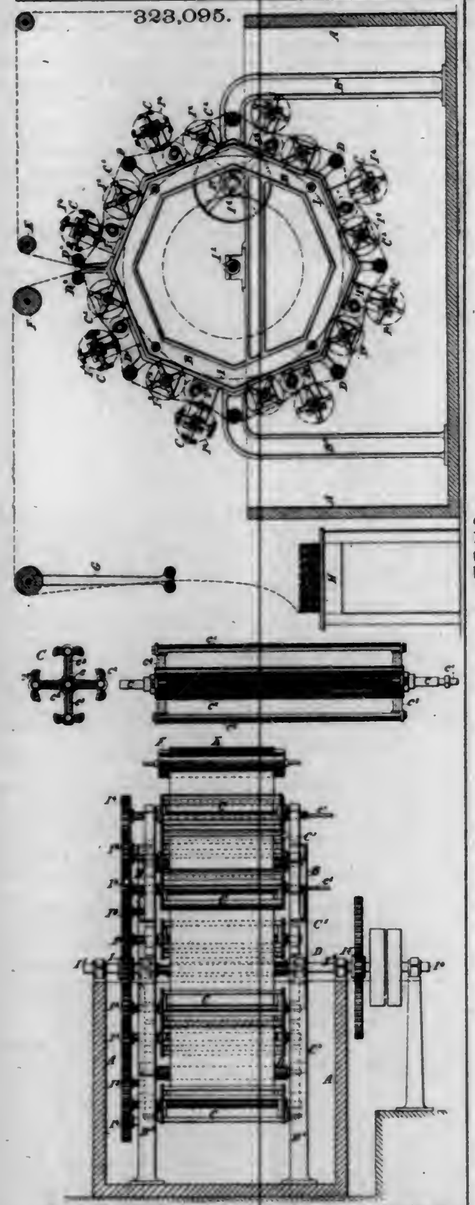


Claim.—1. In a faucet or tapping-valve and attachment, the combination, with the bushing A, of the tube C on the same, which tube has notches *a* in its inner end, the plate D, having lugs D', fitting in the notches *a*, and of a spring for pressing the plate D against the end of the tube C, substantially as herein shown and described.

2. In a faucet, the combination, with the bushing A and the tube C, provided with notches *a*, of the spindle E, provided with the plate D, having lugs D' and the valve F on opposite ends, the spring G, surrounding the spindle, the cup-shaped part H, secured to the bushing, and the tube K, working in the cup-shaped part H and provided with prong N, substantially as herein shown and described.

323,095. APPARATUS FOR WASHING AND DYEING. JAMES WORRALL, Ordsall, Salford, County of Lancaster, England. Filed Dec. 29, 1884. (No model.)

323,095.

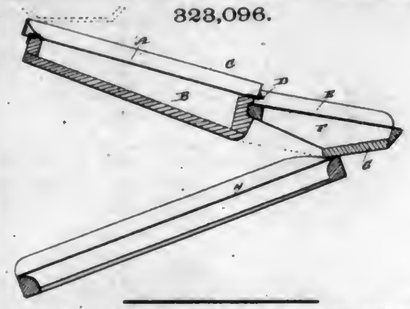


Claim.—In a washing and dyeing machine, the combination of a tank for containing liquor with a frame carrying a ring of guide-rollers and two rings of wincos or beaters concentric with the rollers, the guide-rollers serving to present the fabric as it is drawn through the machine to the action of the beaters, such beaters being driven in opposite directions by gearing operated from the central shaft, and serving while the cloth is presented to the action of the liquor to impart to the cloth a rapid vibratory motion, for the purpose above set forth.

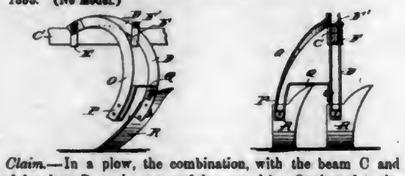
323,096. FANNING-MILL SIEVE. SIVER J. AASEN, Republican, Dak. Filed Apr. 15, 1885. (No model.)

Claim.—The combination, with the sieve A, the box B, the box F, the sieve E below the lower edge of the sieve A, and the sieve H below the sieve E and inclined in the inverse direction, of the spout J on the lower end of the box B, the chute K at the side of the box F, carrying the sieve E, and the spout L, substantially as herein shown and described.

323,096.

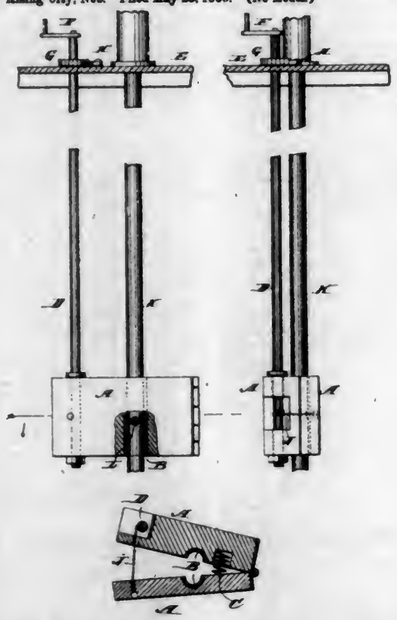


323,097. PLOW. CHARLES D. ADAMS, Geneva, Ga. Filed Apr. 21, 1885. (No model.)



Claim.—In a plow, the combination, with the beam C and the curved foot-bars D on the same, of the curved bar O, pivoted to the clip E, and having an arm, P, and a brace, Q, bolted to the foot-bars D of the shovels R R, bolted to the bars D and the arms P, substantially as herein shown and described.

323,098. WELL-PIPE-CLOSING CLAMP. HARRY L. ADEN, Jr., Rising City, Neb. Filed May 23, 1885. (No model.)

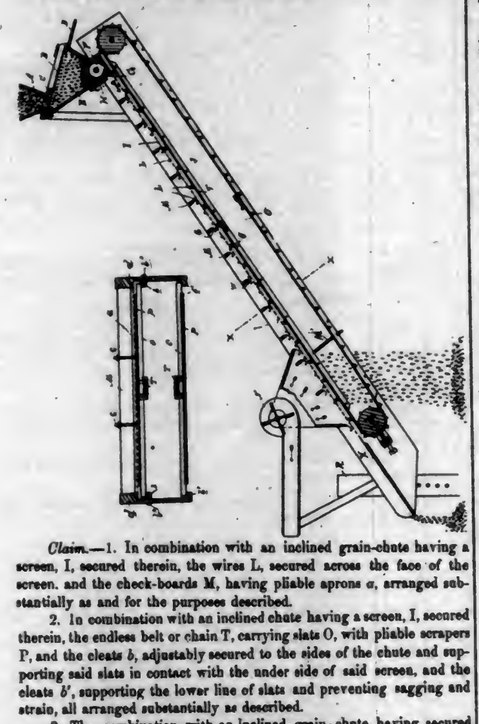


Claim.—1. The combination, with a well-tube having an aperture in its side near the lower end, of hinged blocks held at the sides of the same, and a rod or shaft for swinging or pressing the blocks together extending up to the well-platform, substantially as herein shown and described.

2. The combination, with the grooved blocks A, hinged together, of a shaft or rod mounted to turn in the end of one block, and of a chain or cord secured to the said shaft or rod and to the end of the other block, substantially as herein shown and described.

3. The combination, with the hinged grooved blocks A, of the spring C, the shaft or rod D in one block, and the chain or cord J, secured to the said shaft and to the free end of the other block, substantially as herein shown and described.

323,099. GRAIN CLEANER AND GRADER. SAMUEL R. BACKUS, Toledo, Ohio. Filed Feb. 12, 1885. (No model.)



Claim.—1. In combination with an inclined grain-chute having a screen, I, secured therein, the wires L, secured across the face of the screen, and the check-boards M, having pliable aprons *a*, arranged substantially as and for the purposes described.

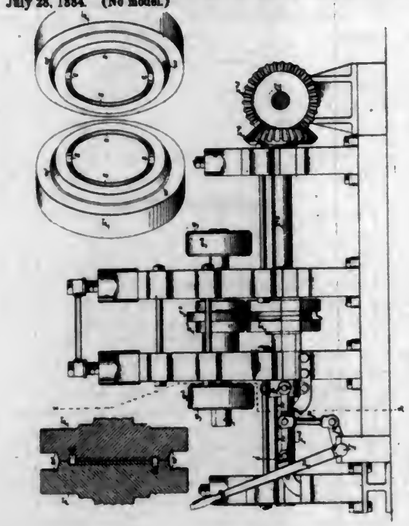
2. In combination with an inclined chute having a screen, I, secured therein, the endless belt or chain T, carrying slats O, with pliable scrapers P, and the cleats *b*, adjustably secured to the sides of the chute and supporting said slats in contact with the under side of said screen, and the cleats *b'*, supporting the lower line of slats and preventing sagging and strain, all arranged substantially as described.

3. The combination, with an inclined grain-chute having secured therein a screen, I, formed of sections overlapping each other, of the wires L, secured across the face of the screen, and the check-boards M, provided with pliable aprons *a*, arranged substantially as and for the purposes described.

4. The inclined chute J, combined with the screen-sections I, provided with bolts *c* and nuts, substantially as and for the purpose specified.

5. In a grain cleaner and grader, a screen, I, made in removable sections of perforated sheet metal overlapping each other, in combination with the chute J and screw-bolts *c*, whereby the said screw-sections are adjustably supported from the chute, substantially as described.

323,100. ROLLING-MILL. JOHN M. BAKER, Allentown, Pa. Filed July 28, 1884. (No model.)



Claim.—1. The combination of the lower coiling-roll, the upper yielding roll, the pressure-springs K therefor, and a stop independent of said springs for limiting the upward yielding of the roll, as set forth.

2. The combination of the lower coiling-roll, the upper roll having yielding bearings, the pressure-springs K therefor, and an elastic stop independent of said springs for limiting the movement of the roll, as set forth.

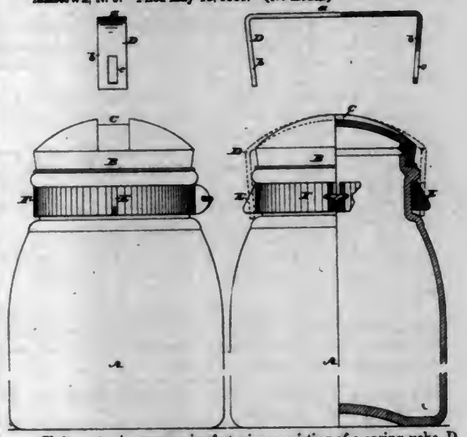
3. The combination of the driven shaft F^2, carrying part of the lower coiling-roll, the dead-shaft F^3, carrying the other part of the same, and a clutch, whereby the two parts of the roll are connected and caused to rotate together, as specified.

4. The combination of the shaft F^2, carrying part of the lower coiling-roll, the shaft F^3, carrying the other part of the roll, the sleeve *k*, the links *h h'*, the rock-shaft I, and its arms, as specified.

5. The lower coiling-roll, F, having a groove with undercut recess *w*, as set forth.

6. The combination of the roll D', the lower coiling-roll, F, the upper coiling-roll, F', having yielding bearings, and the belts whereby said roll is driven from the spindle of the roll D', as set forth.

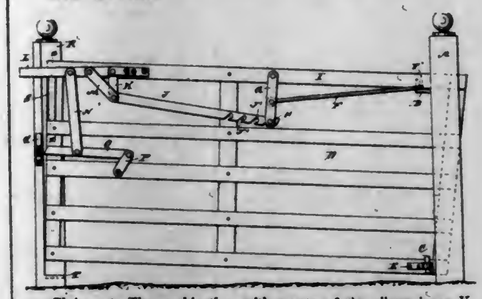
323,101. PRESERVE-JAR FASTENING. REUBEN B. BARD, Williamstown, N. J. Filed May 12, 1885. (No model.)



Claim.—1. A preserve-jar fastening consisting of a spring-yoke, D, having slotted legs *b*, collars F, having lugs E, with inclined upper faces, and cover B, having recess C, substantially as and for the purpose set forth.

2. A preserve-jar fastening consisting of a cover having at top a recess, C, formed with a curved bottom, a yoke, D, formed of a right-lined top part, *a*, and side legs, *b*, with slots *c*, and the neck-band F, having inclined lugs E, said parts being combined and operating substantially as and for the purpose set forth.

323,102. GATE. GEORGE A. BARLOW, Hamilton, Me. Filed Oct. 29, 1884. (No model.)



Claim.—1. The combination, with a gate, of the elbow-lever K, the bar J, the links G, the rod F, the bar L, the connecting-bar N, the link P, the lever O, the eye E on the bottom inner corner of the gate, and the hooks B C on the post A, substantially as herein shown and described.

2. The combination, with a gate, of the elbow K, the bar J, having notches J', the links G, the pin H, the rod F, bar L, connecting-bar N, the link P, lever O, the eye E on the bottom of the inner corner of the gate, and the hooks B C on the post A, substantially as herein shown and described.

3. The combination, with a gate, of the elbow-lever K, the bar J.

the links G, the rod F, the bar L, and the rest S on the free end of the gate, substantially as herein shown and described.

4. The combination, with a gate, of the elbow-lever K, the bar J, the links G, the rod F, the bar L, the connecting-bar N, the link P, and the lever O, substantially as herein shown and described.

5. The combination, with a gate, of an angle-lever pivoted on the swinging end of the gate, a bar connecting the lever with a hanger, a rod pivoted to the hanger and provided at its free end with an eye forming part of the top hinge, and of a latch-bar secured on the elbow-lever, whereby, by raising the said latch-bar, the swinging end of the gate is raised, substantially as herein shown and described.

323,103. VAPOR-BURNER. CHARLES BARTON, Brandon, County of Warwick, assignor of one-half to ALEXANDER Rotherham, Coventry, England. Filed Oct. 15, 1884. (No model.) Patented in England Sept. 26, 1884, No. 13,322.



Claim.—1. A vapor-burner consisting of a tube provided with a porous packing, said packing being provided with a longitudinal opening and exposed to contact with the oil at its lower end, and a wick inserted in said opening, substantially as described.

2. A vapor-burner consisting of an inner and an outer tube, a porous packing between said tubes, exposed at its lower end, and a wick inserted in the inner tube, substantially as described.

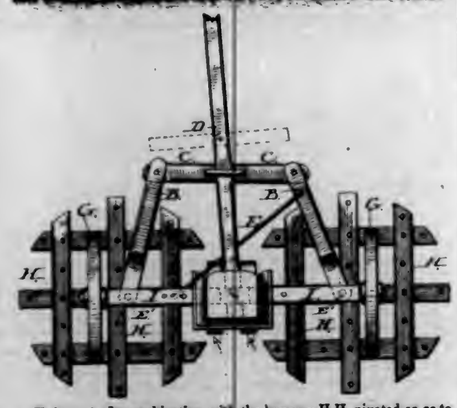
3. A vapor-burner consisting of a tube provided with a porous packing, said packing being provided with a longitudinal opening and exposed to contact with the oil at its lower end, and a wick inserted in said opening, the upper end of said tube being extended above said packing, substantially as described.

4. A vapor-burner comprising an outer and inner tube and a porous packing between said tubes, exposed at its lower end, the upper end of said outer tube being extended above said packing, substantially as described.

5. A vapor-burner comprising an outer and an inner tube and a porous packing between said tubes, exposed at its lower end, the upper end of said outer tube being extended above said packing and recessed at opposite sides, substantially as described.

323,104. HARROW. ELIJAH T. BETTERTON, Atlanta, Tex. Filed July 12, 1883. (No model.)





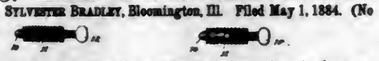
Claim.—1. In combination with the harrows H H, pivoted so as to be capable of a rotary movement, the supporting-frame consisting of bars A B, pivotally attached to each other over the central portion of the harrows, cross-bar C, adjusting-bar E, and tongue, substantially as shown, and for the purpose set forth.

2. The combination, in a harrow, of rotary disks H H, pivoted to the supporting-frame, a draft-tongue, D, having an end bearing in said supporting-frame, to permit a limited lateral play of said tongue therein, a cross-bar, C, provided with a loop through which passes said draft-tongue, side bars, B B, pivotally connecting each end of said cross-bar C with the supporting-frame, and the bar E, connected at one end of said bars B, and having its other end bent to engage a series of perforations in the supporting-frame, substantially as set forth.

3. The combination, in a harrow, of a rear cross-bar, A, side bars, B, having bifurcated ends, front cross-bar, C, pivotally connected thereto, draft-tongue D, attached to the front and rear cross-bars, and an adjusting-bar, E, the ends of said bars B being connected to the cross-bar A by vertical pins attached to the harrows, substantially as shown, and for the purpose set forth.

4. The combination, in a rotary harrow, of the bars A B B C, pivotally connected to each other, as shown, and the axle I, carrying wheels G G, and provided near its spindles with recessed bearings for the upper ends of the pins E', substantially as shown.

323,105. MACHINE FOR MAKING LIGHTNING-ROD CONNECTIONS. SYLVESTER BRADLEY, Bloomington, Ill. Filed May 1, 1884. (No model.)

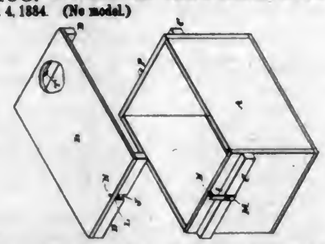


Claim.—1. In a machine for making lightning-rod and other connections, in combination with a clamp for holding the rod, the hollow screw carrying suitable grooving-die and having means of operation substantially as described.

2. In combination with clamp, hollow screw-holding block, a grooving-die having suitable means of adjustment, substantially as and for the purpose set forth.

3. The adjustable die consisting of thimble or sleeve, screw-threaded internally and externally, die, and set-screw.

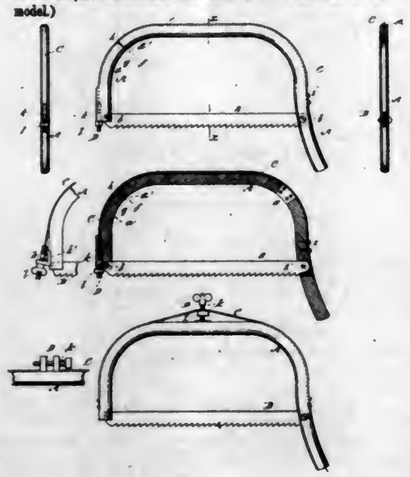
323,106. BOX-FASTENER. ORRIN N. BRADNERD, St. Louis, Mo. Filed Nov. 4, 1884. (No model.)



Claim.—1. In combination with the box A, having the cleat C, and the spring I, having its extremity bent at right angles, as described, the cover B, the cleat D, secured thereto, the chamfered notch J, cut in said cleat, and a recess or mortise, L, for the reception of the end of the spring I, as set forth.

2. In combination with the box A, having the cleat C, and the spring I, having its extremity bent at right angles and perforated, as described, the lid B, having the cleat D, the chamfered notch J, cut in the side of said cleat D, the mortise L, cut in the top thereof, the perforations N, and the pin O, as and for the purposes set forth.

323,107. BUCK-SAW. WILLIAM E. BROCK, New York, N. Y., assignor to Christopher Richardson, Newark, N. J. Filed Dec. 6, 1884. (No model.)

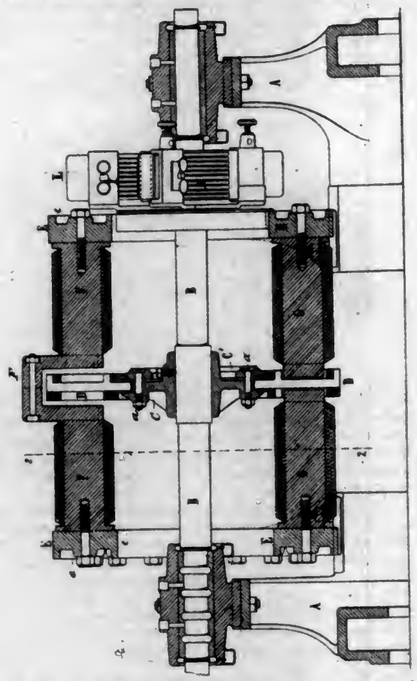


Claim.—1. The combination, with a saw-frame, A, of a surrounding strap, C, attached to the outer edge of said frame, and a clamping or tightening device, D, for tightening said strap upon said frame, as and for the purpose set forth.

2. The combination, with a saw-frame, A, composed of two or more abutting sections, *a a'*, which said sections when in position form one continuous piece, of a surrounding strap, C, attached at one end to the outer edge of the frame, and attached at its other end to a screw-bolt, *k*, adapted to work in a screw-nut, *l*, arranged to bear against the end of said frame, as and for the purpose set forth.

3. The combination of a saw-blade, B, a frame, A, within the lower ends of which said blade is fixed, a strap or band, C, attached to the outer edge of said frame and embracing the same, and a clamping device, D, of suitable construction for tightening said strap over and upon said frame, as herein shown and described, for the purpose set forth.

323,108. DYNAMO-ELECTRIC MACHINE. LOUIS BOLLMANN, Vienna, Austria-Hungary. Filed Nov. 26, 1884. (No model.) Patented in England Nov. 8, 1884, No. 14,779; in France Nov. 18, 1884, No. 165,437; in Belgium Nov. 20, 1884, No. 66,952; in Italy Dec. 31, 1884, XXXV, 366, and in Austria-Hungary Mar. 6, 1885, No. 42,744 and No. 11,356.



Claim.—1. The spiral circuit, to form an element or section of an armature constructed of radial strips P and tie-strips R, substantially as shown and described, whereby coils are formed that nest together, as set forth.

2. An armature composed of spiral circuits formed of the radial strips and tie-strips, substantially as described, and said spiral circuits pot together to overlap, substantially as set forth.

3. An armature composed of the series 1 2 3 4 of spiral circuits, constructed as described, the tie-strips of the several circuits being arranged on opposite sides of the armature, substantially as shown.

4. The combination, with the field-magnets, of the armature made up of spiral circuits constructed, as described, of strips P and R, said circuits forming equal segments of the armature-disk, and each segment being equal in extent to the angular distance between the poles of the adjacent magnets, as shown and described.

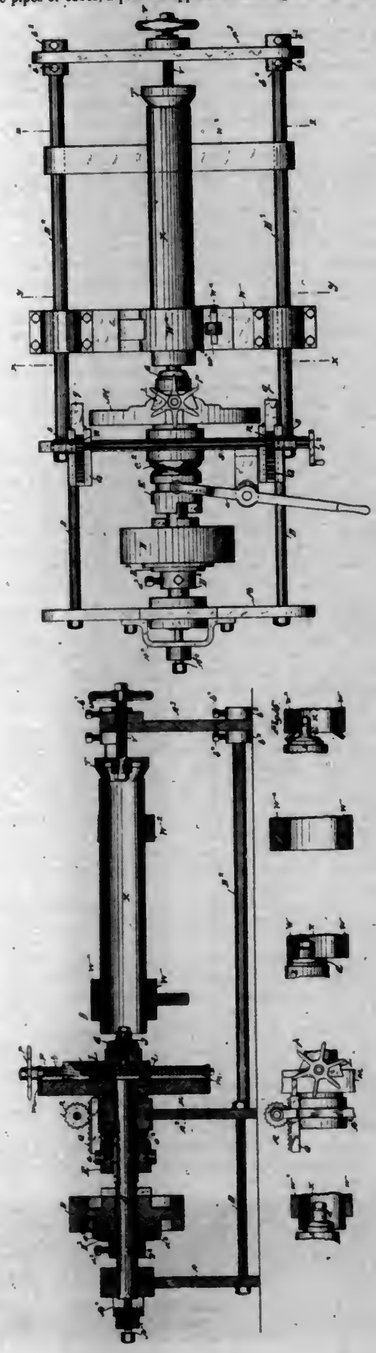
5. The combination, with the field-magnets, of the armature made up of spiral circuits constructed substantially as described, and having its tie-strips R' R'' arranged with reference to the pole-pieces of the magnets, as set forth, whereby the said pole-pieces pass between the outer groups, R', of said strips and the inner groups, R'', as described.

6. A dynamo-electric machine wherein the poles of alternate pairs of the magnets are connected substantially as described, whereby S-magnets are formed, and free north poles are formed on one side of the armature, and free south poles on the other side, as set forth.

7. The combination, with the removable shaft bearing the armature, of the stand E, constructed open at the top and provided with detachable and removable closing-segments *e e*, as set forth, whereby by removing said segments the armature and shaft may be lifted out.

323,109. PIPE-FLANGING MACHINE. ALEXANDER CAMPBELL, Brooklyn, N. Y. Filed Apr. 24, 1884. (No model.)

Claim.—1. In a machine for forming flanges on the ends of the metallic pipes or tubes, a pair of supports for holding the tube or pipe in



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a horizontal position, an adjustable fulcrum-pin at one end of the pipe for centering it and sliding it longitudinally in its supports and against a radially-adjustable flange-former or interiorly-placed expander at the other end of the tube or pipe, substantially as described and set forth.

2. In a machine for forming flanges on the ends of metallic pipes or tubes, a tapering plug or flange-former automatically eccentrically adjustable with reference to the axis of the pipe operated upon, and arranged to form a flange on the end of the pipe between the said former and the contiguous holder or clamping plate in which the pipe is held during the flanging operation, substantially as described and set forth.

3. In a machine for forming flanges on the ends of metallic pipes, a rotary expander or flange-former automatically adjustable by suitable actuating mechanism connected with the machine, so as to move the said flange-former radially, and therefore eccentrically, at the same time that the expander is rotated and the pipe is fed up against it, substantially as described and set forth.

4. The driving-shaft C, carrying on its forward end a disk or chuck, M, in which is adjustably held a flange-former, G, which said former is provided with suitable mechanism for automatically moving it toward the periphery of the disk or chuck M as the latter rotates, thereby pressing the said former automatically farther outward, and with it the forming-flange, until the flange shall have been fully pressed outward and completed, substantially as described and set forth.

5. The disk M, having peripheral lugs *m* for holding a transverse screw-threaded shaft, P, in position across the face of the said disk, a central sliding block, L, seated in proper ways in the said disk and arranged to hold any position in the said disk either concentrically or eccentrically therewith, and combined with an automatically-operating mechanism for operating or rotating the said shaft P, and thereby adjusting the eccentricity of the former G while the machine is in operation, substantially as described and set forth.

6. The combination, with the screw-shaft P, having the sprocket-wheel *p*, of the racks Q, having the tongues or extensions *q*, and the pinions R, carried by the shaft S, working in bearings *s* and provided with the crank s^1, substantially as and for the purpose herein described.

7. The shaft C, the disk or chuck M, the former G, the driving-wheel D, and the clutch E, with its operating-lever *e*, combined as described and set forth.

8. The combination, with the driving-pulley D, of the flanged collar D^2, attached to the shaft C by the set-screw d^2, and the flanged ring D^3, attached to the pulley by the screws d^3, substantially as and for the purpose herein described.

9. The combination, with the shaft C, of the flange or collar c^3, attached near its inner end, and the spider $A^\times$, and the screw $A^{\times 2}$, having its point bearing against the end of the shaft, substantially as and for the purpose herein described.

10. The combination, with the bars B^2 of the frame-work of the machine, of the bar W and half-boxes W^4, secured by bolts w^4, as herein shown and described.

11. The combination, with the bar W, of the hinged bar $W^\times$, key $w^\times$, and slotted lug $w^{\times 2}$, as shown and described, for the purpose specified.

12. The combination, with the bars B^2, of the bar W^2 for holding the rear portion of the work, arranged as shown and described.

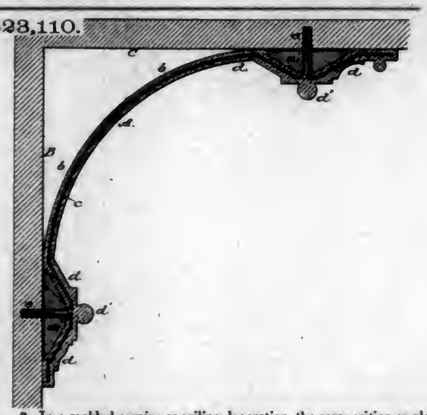
13. The combination, with the end plate or frame A^2, of the screw-shaft V, provided with the hand-wheel *v* and carrying the swiveled plug T, as shown and described, for the purpose specified.

14. The combination and arrangement of the end plate or frame, A^2, horizontal bars B^2, collars b^2, and set-screws $b^\times$, as shown and described, for the purpose specified.

323,110. CORNICE AND CEILING DECORATIONS. AUGUST CARLSEN, Newark, N. J. Filed Sept. 3, 1884. (No model.)

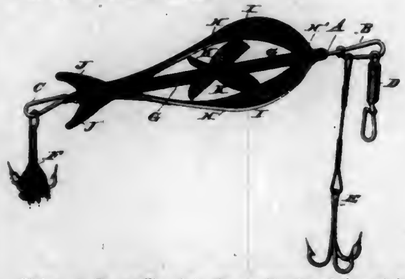
Claim.—1. A cornice or ceiling decoration composed of plaster or composition and wooden strips embedded at the edges, substantially as shown and described.

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2. In a molded cornice or ceiling decoration, the composition or plaster, intermediate layer of cloth or canvas, *c*, and wooden strips *a*, all combined together substantially as and for the purposes shown and described.

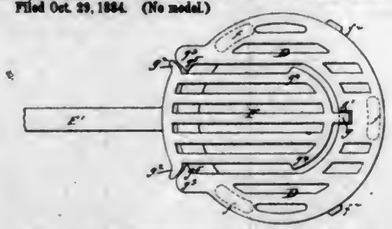
323,111. TROLLING-BAIT. WILLIAM D. CHAPMAN, Theresa, N. Y. Filed Sept. 30, 1884. (No model.)



Claim.—1. In a trolling-bait, the combination of the rod having the line, swivel, and hook attached to its ends, the sleeve having stripe secured to it to form the outlines of a fish, and propeller-shaped wings secured upon the sleeve in the wider portion of the outlines of the fish, and having their concave faces facing forward, as and for the purposes shown and set forth.

2. In a trolling-bait, the combination of the rod formed with eyes at its ends for the attachment of the line and the hook, and having the side hook attached to the forward eye, the sleeve turning upon the said rod, the strips secured to the sleeve, with the edges of their forward ends oblique to the axis, twisted and bulged to form a bulge near their forward ends and secured at their rear ends to the sleeve, as described, and the propeller-shaped wings secured in an inclined position upon the sleeve in the space between the bulges of the strips, and having the concave forwardly-facing sides striped in bright colors, as and for the purpose shown and set forth.

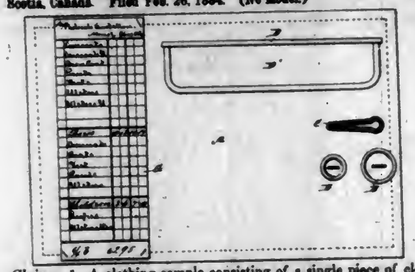
323,112. FURNACE-GRATE. RICHARD S. T. CRISP, Elizabeth, N. J. Filed Oct. 29, 1884. (No model.)



Claim.—1. The combination of a movable grate, D, having front projections, g^3, and stops g^5, and a recess, g', at the rear part, a dumping-section, F, provided with laterally-projecting front and rear lugs, g^3 g^4, and a center lug, *g*, at the rear part, and a grate-rest having supports for said movable grate, substantially as described.

2. The combination of a movable grate, D, having front projections, g^3, and stops g^5, and a recess, g', at the rear part, a dumping-section, F, provided with laterally-projecting front and rear lugs, g^3 g^4, and a center lug, *g*, at the rear part, and a grate-rest having boxes with anti-friction rollers, substantially as set forth.

323,113. CLOTHING SAMPLE. EDWARD CLAYTON, Halifax, Nova Scotia, Canada. Filed Feb. 26, 1884. (No model.)

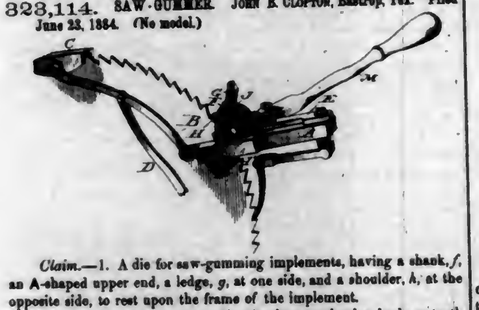


Claim.—1. A clothing sample consisting of a single piece of cloth on which buttons, lining, a hanger, and price-cards are secured, substantially as herein shown and described.

2. In a clothing sample, the combination, with a single piece of cloth in which a button-hole is made, of buttons, lining, and price-card secured on the said piece of cloth, substantially as herein shown and described.

3. In a clothing sample, the combination, with a single piece of cloth in which button-holes and pocket-slits are formed, of buttons, linings, and price-cards secured on the said piece of fabric, substantially as herein shown and described.

323,114. SAW-GUMMER. JOHN B. CLOPTON, Bastrop, Tex. Filed June 23, 1884. (No model.)



Claim.—1. A die for saw-gumming implements, having a shank, *f*, an A-shaped upper end, a ledge, *g*, at one side, and a shoulder, *h*, at the opposite side, to rest upon the frame of the implement.

2. A die for use in saw-gumming implements, having barbs or teeth to remove clippings from the cutter, substantially as explained.

3. A die for saw-gummers, having its cutting-edge inclined forward at the outer end, substantially as and for the purpose set forth.

4. A reversible bit or cutter for saw-gummers, having one side face at each end beveled to conform to the required form or inclination of the tooth of the saw.

5. A bit or cutter for saw-gummers, having its cutting-face beveled, substantially as shown, whereby it is caused to cut from its base to its point, as explained.

6. The herein-described bit or cutter for use in a saw-gummer, consisting of a body having beveled face *a*, rib *b*, and inclined cutting-face *c*.

323,115. LOOM-SHUTTLE SPINDLE. WILLIAM T. COCHRANE, Lowell, Mass. Filed Feb. 15, 1883. Renewed Dec. 26, 1884. (No model.) Patented in England Mar. 6, 1883, No. 1,194; in France Mar. 6, 1883, No. 154,111, and in Belgium Mar. 6, 1883, No. 60,663.



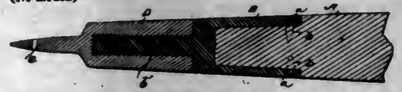
Claim.—1. A longitudinally grooved or slotted spindle having a spring rigidly fastened at its middle portion in the groove of the spindle, with its upper edge projecting out of the slot in rear and in front of the fastened portion, substantially as specified.

2. The combination of the cop-holding spring *d*, having a concave upper edge, serrated, as shown, with a longitudinally-grooved spindle, *a*, in which it is rigidly fastened at its middle portion, substantially as specified.

3. The combination, with a shuttle-spindle, *a*, of a flat cop-holding spring having a serrated concave upper edge, and fastened rigidly at its middle portion within the longitudinal groove of said spindle, the spindle *a* being provided with depressions *l* in its top on each side of the groove to afford full play to the serrations in the spring, substantially as specified.

4. The combination, with a longitudinally-grooved spindle, of a flat spring having a serrated concave upper edge, and seated edgewise in the groove, and fastened rigidly therein at its middle portion, said spring being free at its ends and having its rear end provided with a stop projection, *z*, substantially as specified.

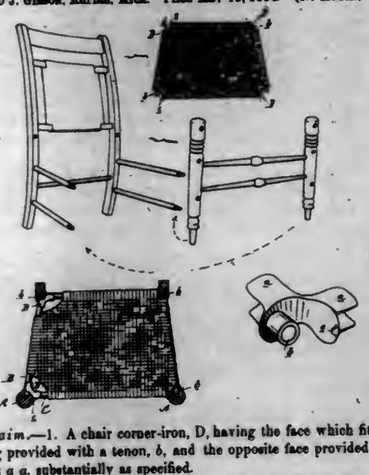
323,116. WHIFFLETREE-HOOK. CHARLES H. COLLINS, Elkton, Md., assignor of one-half to R. C. Collins, same place. Filed June 27, 1885. (No model.)



Claim.—1. The combination, with a whiffletree, of a ferrule fitted thereon and having a threaded extension, and a sleeve having a hook projecting therefrom, as set forth.

2. The combination, with the whiffletree, of a ferrule having a threaded extension, said extension being smaller than the ferrule, and a sleeve having a threaded opening, and a projecting spear-shaped hook, substantially as set forth.

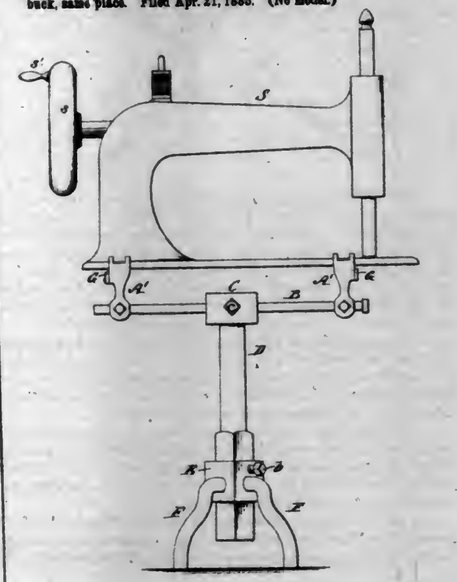
323,117. CORNER-IRON FOR CHAIRS. ISAAC D. COMSTOCK and EDWARD J. GIBSON, Adrian, Mich. Filed May 15, 1884. (No model.)



Claim.—1. A chair corner-iron, D, having the face which fits the chair-leg provided with a tenon, *b*, and the opposite face provided with the arms *a a*, substantially as specified.

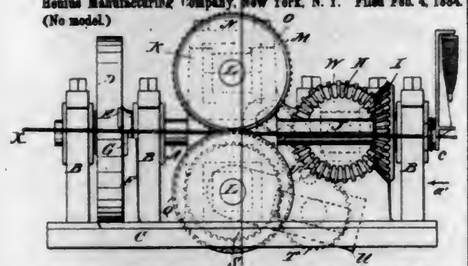
2. A corner-iron for chairs, consisting of the iron D, provided with the tenon *b*, lip *c*, and arms *a*, when constructed substantially in the manner and for the purposes specified.

323,118. QUILTING-SUPPORT FOR SEWING-MACHINES. JOSEPH A. COFFOCK, Norwood, Ga., assignor of one-half to Mrs. Amanda L. Harbuck, same place. Filed Apr. 21, 1885. (No model.)



Claim.—The block C, pivoted in the standard D, and provided with the longitudinally-adjustable rods B, in combination with the clamps A A', for holding a sewing-machine, substantially as described.

323,119. MACHINE FOR COVERING, MEASURING, AND CUTTING OFF STRIPS, &c. WILLIAM CROSS, Brooklyn, assignor to the Hunt & Hentes Manufacturing Company, New York, N. Y. Filed Feb. 4, 1884. (No model.)



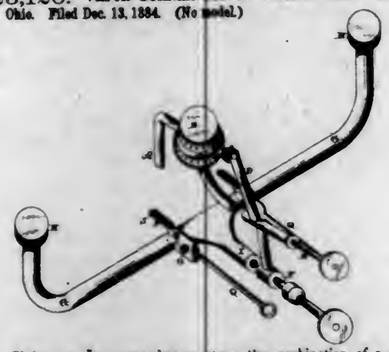
Claim.—1. The combination, with a cutter, of mechanism for covering the wire, and mechanism for feeding the covered wire to the cutting device, substantially as herein shown and described.

2. The combination, with the wheel D, having blades E, of the fixed blade G, the feeding-wheels N Q, for feeding a strip or wire to the cutting device, and of mechanism for covering the wire or strip before it has passed to the feeding device, substantially as herein shown and described.

3. The combination, with the shaft A, of the disk D, the blades E on the same, the fixed blade G, the shafts L L, the feeding-wheels N Q on the same, gearing for revolving the shaft A from the shaft J, and gearing revolving the shafts L from the shaft J, substantially as herein shown and described.

4. The combination, with the shaft A, of the disk D, the blades E on the same, the fixed blade G, the shafts L L, the feeding-wheels N Q on the same, the shaft J, the bevel cog-wheels H I, the cog-wheel S on the lower shaft, L, the cog-wheel W on the shaft J, the intermediate cog-wheel, T, engaging with the cog-wheels S and W, and mounted on an adjustable frame mounted to turn on the bottom shaft, L, and provided with devices for locking it in place, substantially as herein shown and described.

323,120. VAPOR-BURNER STOVE. ZEBULON DAVIS, Cleveland, Ohio. Filed Dec. 13, 1884. (No model.)



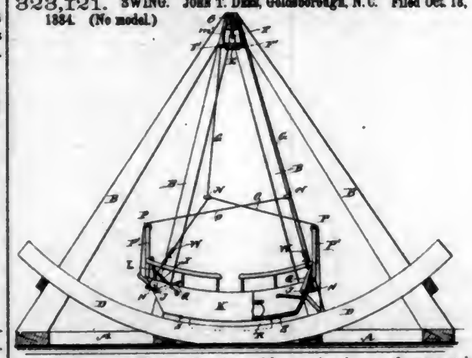
Claim.—1. In a vapor-burner stove, the combination of a central generating-burner, a support therefor, and a pipe, D, for conducting away the vapor, the pipe G, having burners placed upon opposite ends, and having a central inlet for the vapor, a needle-valve placed beyond the inlet for controlling the flow of vapor to the pipe G, and valves placed in the pipe G on each side of the inlet, for controlling the flow of vapor to the burners, whereby the vapor may be divided between the two burners, or forced to one only, substantially as shown.

2. In a vapor-burner stove, the combination of a central generating-burner, the needle-valve F, the pipe G, for conducting the vapor to the burners, and which is provided with an inlet for the vapor, and the dampers, the dampers being adapted to open and close the pipe upon either side of the inlet-opening, substantially as described.

3. In a vapor-burner stove, the combination of a central generating-burner, the needle-valve F, the pipe G, having inlet I, and provided with cuts or slots through its side, and the dampers N, provided with solid portions for closing the pipes, and the openings O, for registering with the pipe, substantially as set forth.

4. The combination of the pipe G, having suitable slots or cuts through its side, and provided with the ear or projection R, with the damper N, having a solid portion to close the pipe, and the opening O, for registering with the pipe, and having the slotted ear P, for catching over the pin S, substantially as shown and described.

323,121. SWING. JOHN T. DEER, Goldsborough, N. C. Filed Oct. 18, 1884. (No model.)



Claim.—1. The combination, with a swing-frame, of segmental tracks held on the same, a swinging car or box, and guards projecting from the bottom of the same at the sides of the tracks, substantially as herein shown and described.

2. The combination, with a swing-frame, of segmental tracks held on the same, a swinging car or box, guards projecting downward from the same, and rollers journaled in the bottom of the car or box, substantially as herein shown and described.

3. In a swing, the combination, with a swing car or box, of shafts journaled transversely in the same at the ends, arms on the ends of the shafts, to which arms the ends of the suspension ropes or wires are secured, a handle or arm for turning each shaft, and devices for locking the shafts in place, substantially as herein shown and described.

4. In a swing, the combination, with a swinging car or box, of ropes or wires by which the car is suspended, a rocking elbow-lever at each end of the car, and a rope or wire secured to the elbow-lever and connected with the suspending ropes or wires at the opposite end of the car, substantially as herein shown and described.

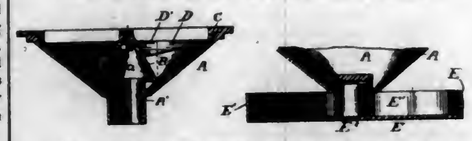
5. In a swing, the combination, with a swinging car, of ropes or wires by which it is suspended, a rocking elbow-lever at each end of the car, a standard at each end of the car, a pulley on the top of each standard, a rope secured to each elbow-lever passed over the pulley on the top of the standard and connected with the opposite suspending ropes or wires, substantially as herein shown and described.

6. The combination, with a swing-frame, of the bar E, suspended from the cross-piece of the frame by hangers, a car suspended from the bar E, and of a safety-rope, *m'*, passed through the cross-piece O of the frame and through the bar E, substantially as herein shown and described.

7. In a swing, the combination, with the swinging car K, of the shafts J, having arms H, the arm L, having a notch, M, and the latch or pawl I for locking the arm L in place, substantially as herein shown and described.

8. In a swing, the combination, with the bolt *f*, having an aperture, *g*, having a recess, *h*, in its top, of the pin *l*, provided with a projection and held at its ends by bolts *m*, substantially as herein shown and described.

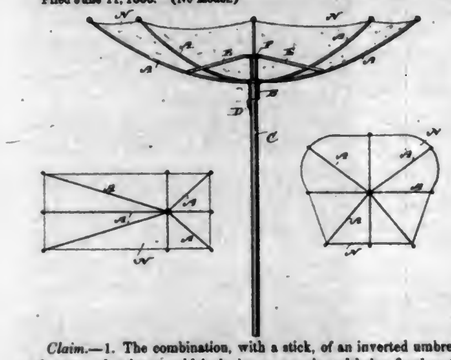
323,122. CUSPIDOR AND DUST-TRAP. PHILIP H. DEIS and SAMUEL W. CROXTON, Canal Dover, Ohio. Filed Oct. 9, 1884. (No model.)



Claim.—1. A combined cuspidor and dust-trap comprising the following elements in combination: a receiver, a short tube projected through its bottom and partially extended within the receiver, a centrally depressed and apertured shield supported by walls of the receiver, a hood surrounding and projecting slightly below the mouth of the short tube, and having its upper end extended through the opening in the shield and attached directly to and sustained by the cover, substantially as shown and described.

2. The combination, in a cuspidor, of the receiver provided at its lower end with a tube or opening, and the base provided with an upward-projected rim, and with an intermediate post fitted to receive the tube or opening in the receiver, whereby the latter may be removably supported, substantially as set forth.

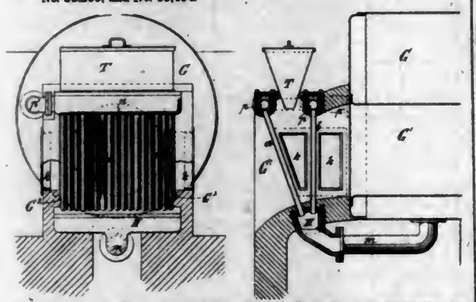
323,123. SCRAPER ATTACHMENT FOR REMOVING CALCIMINE AND THE LIKE FROM CEILINGS. HIRAM C. DEXTER, New York, N. Y. Filed June 11, 1885. (No model.)



Claim.—1. The combination, with a stick, of an inverted umbrella on the same, the ring to which the braces are pivoted being fixed on the stick, and the sleeves to which the ribs are hinged being mounted to slide on the stick, substantially as herein shown and described.

2. The combination, with the stick C, of the catch D, the sliding sleeve B, the ribs A, hinged to the sleeve, the braces E, pivoted to the ribs and to a ring fixed on the end of the stick, and of a fabric or other covering on the frame, substantially as herein shown and described.

323,124. FURNACE FOR STEAM-BOILERS. ADOLPH DONNELEY, Hamburg, Germany. Filed June 7, 1884. (No model.) Patented in Germany July 1, 1883, No. 25,313; in France July 24, 1883, No. 156,707; in Belgium Aug. 8, 1883, No. 62,264, and Mar. 28, 1884, No. 64,664; in England Sept. 24, 1883, No. 4,559, and in Austria-Hungary Dec. 13, 1883, No. 35,205, and No. 53,454.



Claim.—1. The combination, with a boiler and a passage or conduit external thereto and communicating with the heating flues or surfaces thereof, of an upright basket extending across the passage or conduit and composed of two series of bars, and provided at the top with a feeding mouth or hopper external to the boiler, substantially as herein described.

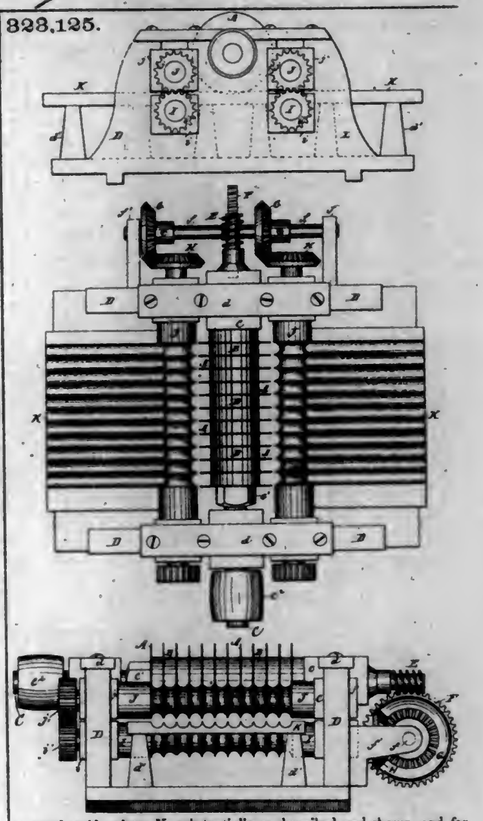
2. The combination, with a boiler and the passage or conduit leading thereto, of the upright basket extending across the passage or conduit and composed of two series of bars, some or all of which are tubular, a feeding mouth or hopper at the top of the basket, and channels or passages in which the upper and lower ends of the tubular bars are fixed, and which communicate with the water-space of the boiler, substantially as herein described.

3. The combination, with a boiler and the passage or conduit leading thereto, of an upright basket extending across the passage or conduit and composed of two series of bars, a feeding mouth or hopper at the top of the basket, and supplemental bars *d*, hinged at the front of the basket and adjustable to more or less close the space between the bars of the front series, substantially as herein described.

323,125. CARBON-CUTTING MACHINE. MATHEW EAGAN, Cleveland, Ohio. Filed Apr. 1, 1885. (No model.)

Claim.—1. In a carbon-cutting machine, the combination of the saw-blades A, mounted on spindle C, and separated by washers B, with the grooved rollers I and J, driven through suitable mechanism from the spindle on which the said saws are mounted, the grooves of said rollers being arranged coincidently with the spaces between the saw-blades, substantially as described, and for the purpose set forth.

2. In a carbon-cutting machine, the combination of the saw-blades A, mounted on spindle C, and separated by washers B, with the grooved rollers I and J, driven from the said spindle C, and with the grooved guide-plates K, substantially as described and shown, and for the purpose set forth.



3. In a carbon-cutting machine, the combination of grooved rollers I, mounted in bearings *i* in the frame-work of the machine and driven through suitable mechanism from the saw-spindle, with the grooved rollers J, driven from said rollers I by suitable gearing, and mounted in blocks *j*, which allow the said rollers J to have a slight vertical movement, substantially as described and shown, and for the purpose set forth.

4. The combination of the spindle C, having driving-pulley c^3, collar *c*, nut *c'*, and a series of saws and washers mounted thereon, the worm E, worm-wheel F, mounted on shaft *f*, bevel-wheels G and H, and grooved rollers I and J, substantially as described and shown.

5. The combination of the spindle C, having driving-pulley c^3, collar *c*, nut *c'*, and a series of saws and washers mounted thereon, the worm E, worm-wheel F, mounted on shaft *f*, bevel-wheels G and H, grooved rollers I, running in fixed bearings *i*, grooved rollers J, running in vertically-movable blocks *j*, and driven from said rollers I, and the grooved guide-plates K, attached to the framing of the machine, substantially as described and shown, and for the purpose set forth.

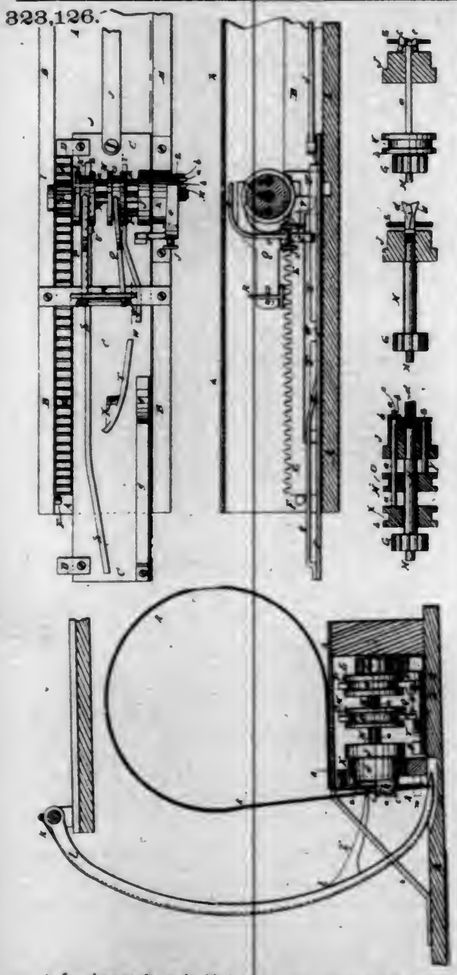
323,126. KNOTTER FOR GRAIN-BINDERS. EDWARD EBI, Cedar Rapids, Iowa. Filed June 4, 1884. (Model.)

Claim.—1. In a knotter for grain-binders, the combination, with the reaper-platform A, of the revoluble knotter-spindle journaled transversely therein and the pinion G thereon, the slide C, having lugs D D projecting from opposite ends of one side thereof, and the rack-bar E to one side of the slide C, and engaging the pinion G the said rack-bar being of less length than the space between its operating-lugs D D, substantially as set forth.

2. In a knotter for grain-binders, the combination of the sliding plate C, provided with the cam-guides S T, the rack-bar E, the spindle H, provided with the pinion G, the knotter-head J, having lugs *b*, the forked levers P Q, the grooved collars L M, the rod Y, the hook *a*, and the stripper-plate Z, substantially as set forth, whereby the knot will be formed and completed by the reciprocating movement of the said sliding plate C.

3. In a knotter for grain-binders, the combination of the knotter-head provided with the lugs *b*, the hook *a*, the spindle H, the stripper-plate Z, and the pivoted loop-retainers *c* and *d*, whereby the loop will be securely held and can be readily released, substantially as set forth.

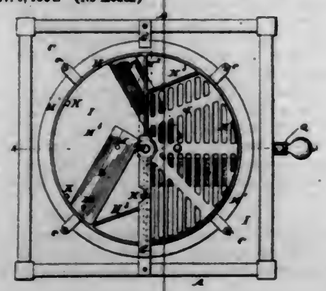
323,126.



4. In a knotter for grain-binders, the combination of the knotter-head, the loop-retaining fingers, the stripper-plate Z, the sliding plate C, having the cam-guide *g*, and the elbow-lever *e*, whereby the cord will be held back from the loop-retainers after the loop has been formed, substantially as set forth.

5. In a knotter for grain-binders, the combination of the knotter-head and means for operating the same with two laterally-reciprocating rods passed through the said knotter-head, and provided, respectively, with a hook and a stripper-plate, loop-retaining fingers pivoted to the knotter-head, substantially as described, and the needle provided with an inward-projecting arm constructed to press the cords against the stripper-plate, substantially as and for the purpose set forth.

323,127. VEGETABLE-CUTTER. JACOB ECKHARDT, St. Louis, Mo. Filed Nov. 1, 1884. (No model.)



Claim.—1. A vegetable-cutter having a hopper with projections K on the inner side thereof to arrest the descent of a follower within the hopper or compartment of the hopper, in an inclined position, for the purpose set forth.

2. A vegetable-cutter having a hopper made circular, as shown, and having a bar, H^2, extending across it diametrically, and angularly-extending bar H^3, contracting the compartment into which it extends, substantially as set forth.

323,128. METHOD OF AND COMPOUND FOR PRESERVING STONE. THOMAS EGLESTON, New York, N. Y. Filed Mar. 13, 1885. (No specimens.)

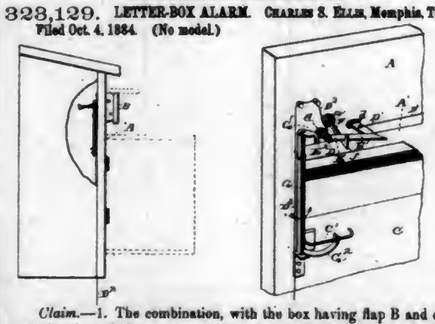
Claim.—1. The method of preserving stone, consisting in saturating its surface with fat-oil, substantially as herein described.

2. The method of preserving stone, consisting in saturating its surface with petroleum products dissolved in fat-oil, substantially as herein described.

3. The method of preserving stone, consisting in saturating its surface with a compound of fat-oil, petroleum products, and sulphur, substantially as herein described.

4. The compound for preserving stone, consisting of fat-oil having in solution petroleum products and sulphur, substantially as herein described.

323,129. LETTER-BOX ALARM. CHARLES S. ELLIS, Memphis, Tenn. Filed Oct. 4, 1884. (No model.)



Claim.—1. The combination, with the box having flap B and door C, of the plates D D', representing the positive and negative poles of an electric circuit, a plate, E, pivoted on plate D, and movable into contact with the plate D', the rod F, connected at one end with the flap B, and arranged to engage and actuate the plate E, and the shaft G, having a crank, G', arranged to engage the plate E, and a crank, G^2, connected with the door C, substantially as and for the purposes specified.

2. The combination of the box, the flap B, the door C, the plates D D', having attached wires D^2 D^2, the plate E, pivoted on plate D, and having its arm E' movable into and out of contact with plate D', and an arm, E^2, extended in rear of its pivot, a rod, F, attached at one end to the flap B, and having its other end adapted to engage arm E' and draw it into contact with plate D' when said flap B is raised, and the shaft G, having crank-arm G^2, connected with the door C, and crank-arm G', arranged to engage arm E^2 and actuate the plate E into contact with the plate D' when the door C is opened, substantially as set forth.

3. In combination with a letter-box having a flap and a door, the plates D D', representing the positive and negative poles of an electric circuit, a plate, E, pivoted on one of said plates and movable into contact with the other, and connections between said plate E and the box, flaps, and doors, substantially as set forth.

323,130. MANUFACTURE OF HOES. JOHAN W. ELLS, Pittsburg, Pa., assignor to Richard E. Breed, same place. Filed Sept. 4, 1884. (No model.)



Claim.—1. As a new article of manufacture, a hoe formed of a single piece of sheet metal without seam, rivet, or joint, and having a coniform socket and an angular overlap of the blade formed on each side of said socket, substantially as described.

2. As a new article of manufacture, a hoe formed of a single piece of sheet metal without seam, rivet, or joint, the blade of which is gradually thinned from its top down to its cutting-edge and provided with a coniform socket and having an angular overlap of the blade on each side of the socket, substantially as described.

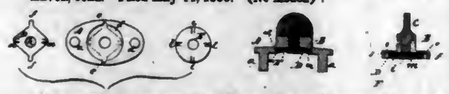
3. As a new article of manufacture, a hoe formed of a single piece of sheet metal without seam, rivet, or joint, the blade of which is gradually thinned from its top down to its cutting-edge, and provided with a coniform socket, also thinned from its point of juncture with the blade to its outward extremity, and with an overlap of the blade on each side of the socket, substantially as described.

4. A plate or sheet-metal blank for the construction of hoes, consisting of a broad portion for the blade A, having integral therewith a fan-tailed extension, C, for the socket, each of which is gradually thinned from or near its point of juncture—that is, to the cutting-edge of the blade in one direction and the extremity of the fan-tailed extension in the opposite direction.

5. A plate or sheet-metal blank for the construction of hoes, consisting of a broad portion for the blade A, having integral therewith a narrow part, B, for the overlap, and a fan-tailed extension, C, for the socket, and thinned from or near the middle of the blank to the cutting-edge of the blade in one direction and the extremity of the fan-tailed extension in the opposite direction.

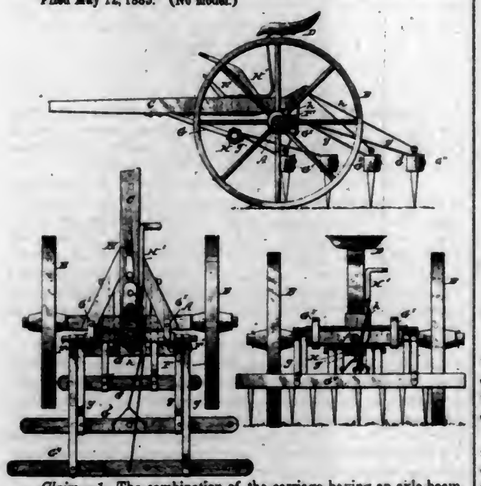
6. A hoe-blank having a gradually thinned or tapering blade and a gradually thinned and tapering part for the socket, the same being formed by cutting such blank from a previously-beveled or gradually-thinned plate or sheet of metal.

323,131. CARRIAGE-CURTAIN BUTTON. JAMES G. ENGLISH, New Haven, Conn. Filed May 11, 1885. (No model.)



Claim.—The herein-described fastener for carriage-curtains, consisting of the plate A, adapted for attachment to the point where the curtain is to be secured, said plate constructed with the boss B upon its face and with a recess, *d*, upon the reverse side, the recess having one or more notches, *e*, in its side, combined with the turn-button C, constructed with a pintle, *b*, extending through a central opening in said boss, a spring, D, arranged in said recess and adapted to engage the side of the recess to prevent its rotation, and the collar E upon said spring, and secured to the pivot so as to rotate with the turn-button, the said collar and spring, the one constructed with notches and the other with corresponding projections, whereby said spring will engage said collar at certain predetermined points, substantially as described.

323,132. WHEEL-HARROW. THOMAS B. FAGAN, Van Wert, Ohio. Filed May 12, 1885. (No model.)



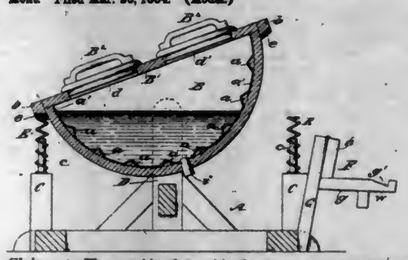
Claim.—1. The combination of the carriage having an axle-beam, the main supporting-bar pivoted between its ends in rear of the axle-beam, the supplemental supporting-bar pivoted between its ends in front of the axle-beam, and the toothed frames having their hangers supported on the opposite ends of said supporting-bars, substantially as set forth.

2. The improved harrow herein described, consisting of the carriage having an axle-beam and a tongue, the main supporting-bar pivoted between its ends to the rear side of the axle-beam, vertically-elongated keepers fixed to the axle-beam, and embracing the opposite ends of the main supporting-bar, the shaft depending and inclined rearwardly from the tongue in advance of the beam, the supplemental supporting-bar pivoted between its ends on the said shaft, the toothed frames having hangers journaled at their upper ends to the opposite ends of the supporting-bars, the lever pivoted to the carriage, and the links connecting said lever with the toothed frames, substantially as set forth.

3. The combination of a supporting-bar pivoted between its ends, a plurality of toothed bars arranged one in rear of the other, and hangers connecting the said bars, the hangers of one toothed bar being arranged between those of the adjacent one, substantially as set forth.

4. The combination, in a wheel-harrow, of the carriage, a shaft, G, supported thereon, a bar, H, pivoted between its ends to said shaft, a bar, F, pivoted between its ends to the carriage in rear of the bar H, and toothed frames having hangers supported from said bars H and F, substantially as set forth.

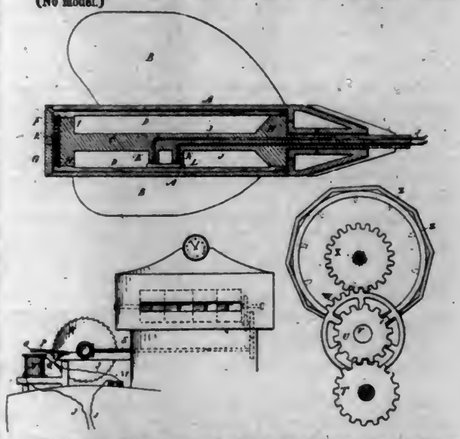
323,133. WASHING-MACHINE. HENRY FALKENTHAL, Bozeman, Mont. Filed Mar. 26, 1884. (Model.)



Claim.—1. The combination, with the frame A, rocking body B, and its end cleats, *b*, of the uprights C C, having the studs *c c*, and the spiral springs E, mounted on the studs below the cleats, substantially as set forth.

2. The hinged support F, composed of boards *g h*, the board *g* being notched as shown at *g*, in combination with the body B, provided with the buttons *j*, substantially as and for the purposes set forth.

323,134. ELECTRO-MAGNETIC SPEED-REGISTER FOR SHIPS' LOGS. BERNARD FAYMONVILLE, San Francisco, Cal. Filed Apr. 16, 1885. (No model.)



Claim.—1. In a speed-indicator, an electro-magnetic circuit connected with an indicating mechanism, in combination with a revolving cylinder, a second inner revolving cylinder, and mechanism for rotating the latter at a different speed from the former, and means for opening and closing a circuit, substantially as herein described.

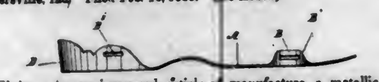
2. In a speed-indicator, an electro-magnetic circuit connected with an indicating mechanism, in combination with a revolving cylinder, a cylinder of less diameter within the revolving cylinder, suitable contact-plates, and gearing whereby the interior cylinder is rotated at a speed different from that of the exterior cylinder, substantially as set forth.

3. A stationary bearing-shaft having the insulated wires passing through its interior, an intermediate non-conducting cylinder having a conducting-plate fixed to one side, so as to make connection between the ends of the wires whenever it arrives in contact with them, and an exterior revolving cylinder with wings or means for producing revolution, substantially as herein described.

4. The exterior cylinder with its wings or vanes, the interior non-conducting cylinder having the conducting-plate fixed in one side, so as to make and break connection between the wires which are brought to it through the non-conducting and stationary central shaft, in combination with the gears E, G, and I, whereby the rate of rotation of the inner cylinder is determined, substantially as herein described.

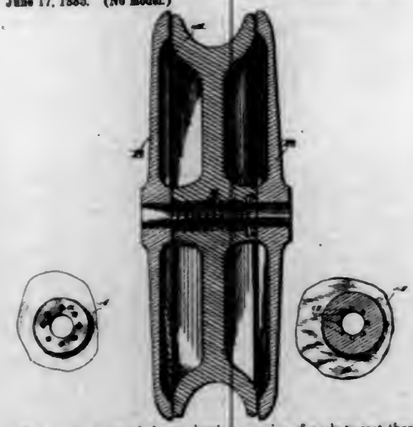
5. A rotating cylinder and a means for making and breaking the electrical circuit, an electro-magnet with an armature, a pawl connected with said armature, and a toothed wheel which is operated by said pawl by the movement of the armature to and from the magnet, in combination with gears T, U, W, and X, and intermediate gearing, whereby the indicators are operated, substantially as herein described.

323,135. BOTTOM FOR ROLLER-SKATES. JAMES H. FEARIS, Connersville, Ind. Filed Feb. 16, 1885. (No model.)



Claim.—As an improved article of manufacture, a metallic foot-plate for roller-skates, consisting of one piece provided with ears or lugs B' B', and flange D, as and for the purposes set forth.

323,136. METAL SHEAVE. GEO. A. FORD, Cleveland, Ohio. Filed June 17, 1885. (No model.)

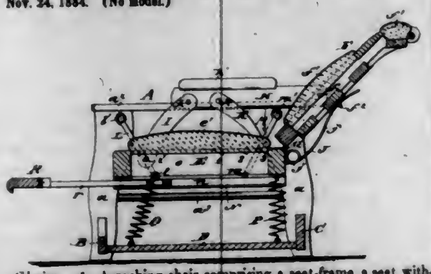


Claim.—1. A metal sheave having a series of pockets cast therein, arranged around and opening into the axial bore of the sheave, for retaining graphite or other suitable lubricant, substantially as set forth.

2. A metal sheave having a series of pockets cast therein, arranged around an opening into the axial bore of the sheave, the outer pocket also opening through the end walls of the hub of the sheave, substantially as set forth.

3. In a metal sheave, the combination, with a series of pockets cast therein, arranged around and in open relation with the axial bore of the sheave, and the outer pockets opening also through the respective ends of the hub, of graphite or other suitable lubricant packed in said pocket, substantially as set forth.

323,137. ROCKING-CHAIR. NILS G. FRANZEN, Randolph, Kans. Filed Nov. 24, 1884. (No model.)



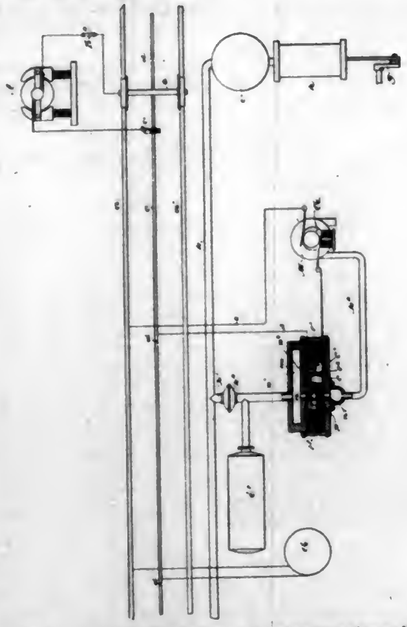
Claim.—1. A rocking-chair comprising a seat-frame, a seat within the upper part of said frame, hangers pivoted to the seat-frame and to the seat, the back, the arms pivoted thereto, links pivotally connecting the forward parts of said side arms with the seat, and pawls pivoted to said side arms at or near the middle parts thereof and constructed to engage notches in the sides of the movable seat, substantially as set forth.

2. A rocking-chair constructed with a base-frame open from front to back at its upper part, and a chair-body supported therein on hangers L M, and said chair-body consisting of a seat, E, back F, hinged thereto, a spring tending to swing the back forward with relation to the seat, the arms H, links I, and pawls K, adapted to enter notches in the chair-seat, substantially as herein set forth.

3. A rocking-chair constructed with a base-frame open from front to back at its upper part, and a chair-body supported therein on hangers L M, said chair-body consisting of seat E, hinged back F, spring J, arms H I, pawls K, and a foot-rest, R, sliding under the seat, and the springs O P, connecting the seat and base-frame, all substantially as herein set forth.

4. In a rocking-chair, the combination with the seat, the pivoted hangers L, and the springs O, of the base-frame constructed with side frames, A A, having legs a a, connected by upper bars, a', caps a^2, and rounds a^3, the cross-bars B C, and tie-bar D, substantially as herein set forth.

323,138. ELECTRIC RAILWAY. OSCAR GARRETT, Boston, Mass. Filed May 26, 1884. (No model.)



Claim.—1. In an electric railway, a stationary conductor divided into a series of sections, combined with independent electric generators for each of the said sections, and a prime motor affording motive power for several of the said generators, substantially as described.

2. In an electric railway, the rails for supporting the trains or vehicles, and the stationary conductors extending along the said rails divided into a series of sections, and an electromotor supported on the train or vehicle for propelling the same on the railway, the said motor being in circuit with each of the said sections of the conductor while the train or vehicle is passing the same, and independent electric generators for each of the said sections, and means controlled by the train or vehicle for governing the operation of the said generators, they being maintained in operation while the trains are moving along the corresponding sections, substantially as set forth.

3. In an electric railway, the rails for supporting the trains or vehicles, and the stationary conductors extending along the railway, and an electromotor supported on the train or vehicle for propelling the same, the said motor being in circuit with the said conductors, and an electric generator in circuit with the said conductors, and an actuating-motor for the said generator, and means controlled by the trains for governing the operation of the said motor, which is maintained in operation while the electromotor is in circuit, substantially as set forth.

4. A prime motor for supplying power to a series of secondary motors, electric generators operated by the said secondary motors, an electromotor movable into circuit with the said generators, and controlling devices for the secondary motors, whereby the power is applied when the electromotor is in circuit with the corresponding generator, substantially as described.

5. An electric generator in a normally-open circuit, and a continuously-operating motor thereto, combined with a device effecting the application of power to and its removal from the said motor, an electro-magnet included in the circuit of the generator co-operating with the said device, substantially as described, whereby the power is applied to the motor when the said circuit is closed, and the reverse.

6. A prime motor operating to accumulate fluid under pressure, a pipe for distributing said fluid, and a series of reservoirs connected with the said pipe, combined with a series of secondary motors, electric generators actuated thereby, and a series of independent electric circuits connected with the said generators, and an electromotor movable from one to another of the said circuits and actuated by the current therein, substantially as described.

323,139. VIOLIN-BOW. RICHARD N. GILMORE, Camden, Ky. Filed Nov. 17, 1883. Renewed Feb. 24, 1885. (No model.)

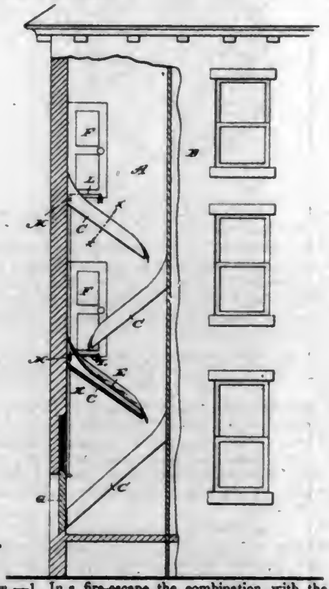


Claim.—1. In a violin-bow, the combination of the tubular metallic portion with the end pieces to which the hair is secured, substantially as shown.

2. In a violin-bow, the combination of the tubular metallic portion provided with a series of perforations with the end pieces to which the hair is secured, the parts being constructed and arranged to operate substantially as described.

3. A violin-bow having the tubular portion A, substantially as set forth.

323,140. FIRE-ESCAPE. HENRY GOLLINER, Baltzhoover, Pa. Filed June 4, 1885. (No model.)



Claim.—1. In a fire-escape, the combination, with the inclined ways or chutes C, having their tops recessed, of the fabric E, secured on the sides of the same at the top, substantially as herein shown and described.

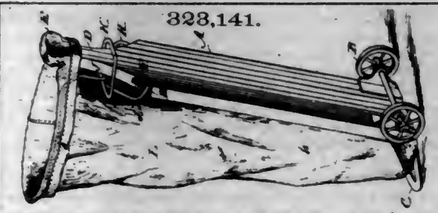
2. A fire-escape consisting of a series of ways or chutes arranged one below the other in a fire-proof vertical shaft and inclined alternately in opposite directions, substantially as and for the purpose set forth.

3. In a fire-escape, the combination, with the inclined chutes C, of a vertically-sliding door, G, at the bottom of the lowest chute, the doors F, the wire K, and wires L, connecting the wire K with the several doors, substantially as herein shown and described.

4. In a fire-escape, the combination, with inclined chutes arranged in a shaft, of doors leading from the several floors into the shaft, a door at the bottom of the lowest inclined chute, and of wires connecting the said door with the doors at the several floors, substantially as herein shown and described.

323,141. COMBINED BAG-HOLDER AND TRUCK. CASPER HATZ, Big Stone City, Dak. Filed Nov. 28, 1884. (No model.)

Claim.—1. A bag-holder consisting of a bag-supporting loop, G', having an approximately-circular form, and a smaller loop, K, which is adapted for attachment to a vertical support, said loops being in different but parallel planes and connected by vertical rods or arms, as shown and described.



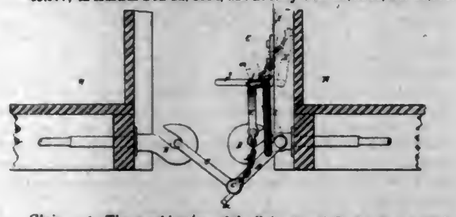
323,141.

2. The combination of the bag-holder, formed of loops G' and K, with the truck-board having its free end tapered to adapt it to enter the smaller loop, as shown and described.

3. The combination, with a truck-board, A, of the loop G', having its free ends connected to form a loop, K, and provided with hooks H, substantially as shown and described.

4. The combination of the bag-holder proper, consisting of loops G' and K, having hooks H, with the truck-board having a tapered upper end and side grooves, F, substantially as shown and described.

323,142. CAR-COUPLING. JAMES B. HANNAY and JOHN COWAN, Glasgow, County of Lanark, Scotland. Filed Jan. 15, 1885. (No model.) Patented in England June 5, 1884, No. 8,639; in Germany June 19, 1884; in France Aug. 8, 1884, No. 163,686; in Belgium Aug. 8, 1884, No. 65,977; in Austria Dec. 22, 1884, and in Italy Dec. 24, 1884, No. 17,773.



Claim.—1. The combination of the links A and C of a wagon with a transverse shaft, F, carrying lever-arms E, provided with chains connected to said links to raise the same, substantially as described.

2. The combination of the link A of a wagon and chains D with a transverse shaft, F, having a crank or cranks, F', and carrying arms E, to which the chains are connected, substantially as set forth.

323,143. BOLTING-REEL. AUGUST HEINE, Silver Creek, N. Y. Filed Mar. 10, 1885. (No model.)



Claim.—1. The combination, with the reel-frame provided with two circumferential series of hooks, of a bolting-cloth provided with strong end strips having eyelets or openings which are fastened on and securely held by said hooks, whereby the cloth is secured to the reel-frame and a uniform predetermined tension is applied to the cloth circumferentially, substantially as set forth.

2. The combination, with the end heads, A A', of the reel-frame, of the rings D D', provided with hooks e, and a bolting-cloth, B, provided with strong end strips b having eyelets c, which are engaged with said hooks, substantially as set forth.

3. The combination, with the end heads, A A', of the reel-frame, of the rings D D', provided with hooks e, the bolting-cloth B, provided with strong end strips, b, having eyelets c, which are engaged with said hooks, and whereby a uniform predetermined tension is applied to the cloth circumferentially, and adjusting-screws F, whereby the cloth is stretched longitudinally, substantially as set forth.

323,144. VALVE. FRANK HENNEBOEHLE, South Chicago, Ill. Filed July 8, 1884. (No model.)



Claim.—1. A valve comprising, in combination, the following elements, viz: a shell, A, having an inlet, *s*, and an outlet, s^2, a valve-seat, C, within the said shell, having openings *n'* through it, a chamber, r^3, formed on the lower side of the said valve-seat, and communicating with the upper portion of the interior of the said shell, a valve, D, resting upon the valve-seat, and having openings *m* through it corresponding with the openings *n'* in the valve-seat, and means for rotating the valve D upon the valve-seat C, all substantially as described, and for the purpose set forth.

2. A valve comprising, in combination, the following elements, viz: a shell, A, comprising the parts *t* and *t'*, and provided with an inlet-opening, *s*, and an outlet-opening, s^2, a valve-seat, C, cast within the shell A, and provided with openings *n* and *n'*, and with a chamber, r^3, communicating with the interior of the part *t* of the said shell, a wall, *o*, within the shell A, separating the openings *n* and *n'* from each other, a chamber, B^2, formed by the said wall, a discharge-opening, *s'*, leading from the chamber B^2, a disk-shaped valve, D, resting upon the valve-seat C, and provided with openings *m* to correspond with the openings *n'* in the valve-seat, and with recesses *l* to correspond with the openings *n* and *n'* in the valve-seat, and wall *o* between them, and means for rotating the valve D upon the valve-seat C, the whole being constructed and arranged to operate substantially as described.

3. A valve comprising, in combination, the following elements, viz: a shell, A, formed in two parts, *t* and *t'*, and provided with an inlet-opening, *s*, in the part *t*, and an opening, s^2, in the part *t'*, a valve-seat, C, cast with the part *t'* of the shell A, and provided with openings *n* and *n'* leading into the chamber B' in the part *t'* of the shell, and with a chamber, r^3, communicating with the interior of the part *t* of the said shell, a wall, *o*, cast within the part *t'* of the shell A, and extending between the openings *n* and *n'* in the valve-seat, a chamber, B^2, formed below the valve-seat by the wall *o*, a discharge-opening, *s'*, leading from the chamber B^2, a disk-shaped valve, D, resting upon the valve-seat C, and provided with openings *m* to correspond with the openings *n'* in the valve-seat, and with recesses *l* to correspond with the openings *n* and *n'* in the valve-seat, and wall *o* between them, stops *h* and *h'* upon the valve D, stop *g*, formed upon the part *t* of the shell A, and lying between the stops *h* and *h'*, and means for rotating the valve D upon the valve-seat C, the whole being constructed and arranged to operate substantially as described.

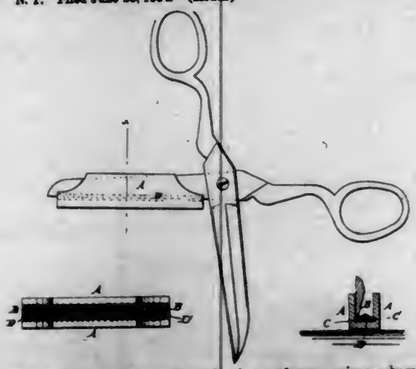
323,145. TOOL-HANDLE. CHRISTIAN HERMANN, Bristol, R. I. Filed Jan. 2, 1885. (No model.)



Claim.—1. The combination, with the hollow hub or enlargement A, having the straight plain cylindrical bore, of the cylindrical ratchet-sleeve B, provided with the longitudinal teeth and the integral cap *b*, and the collar C, as described.

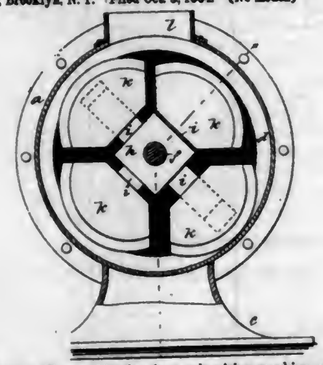
2. The combination, with the hollow hub or enlargement A, having the straight plain cylindrical bore, and the reversible spring-click D, of the cylindrical ratchet-sleeve B, provided with the integral cap *b* and teeth *b'*, and the collar C, having the eccentric turning-catch F, adapted to engage a notch in the tool-shank, substantially as set forth.

323,146. SCISSORS-SHARPENER. JAMES W. HILTON, Brooklyn, N. Y. Filed June 22, 1884. (Model.)



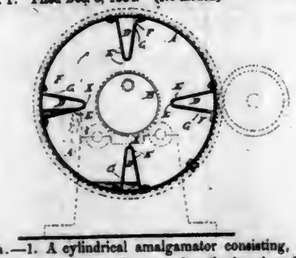
Claim.—As an improved article of manufacture, scissors-sharpener consisting of the longitudinally-grooved block A, having beveled ends and provided with the angular grooves C, and the triangular file D, having one wide and two narrow sides and fitting in the grooves of the said block, as set forth.

323,147. MACHINE FOR PULVERIZING ORES, &c. JAMES W. HILTON, Brooklyn, N. Y. Filed Oct. 3, 1884. (No model.)



Claim.—The combination, in a pulverizing-machine, of hub *h*, having arms *i*, grinders *k*, carried by the arms and sliding thereon, screens *d*, and the case consisting of shell *a* and plates *b*, substantially as shown and described.

323,148. CYLINDRICAL AMALGAMATOR. JAMES W. HILTON, New York, N. Y. Filed Dec. 3, 1884. (No model.)



Claim.—1. A cylindrical amalgamator consisting, essentially, of the shell A, V-shaped flanges D, secured to the interior of the shell and provided with perforations E in their rear wings, near the bend, and with slots F in their forward wings, near the shell, substantially as set forth.

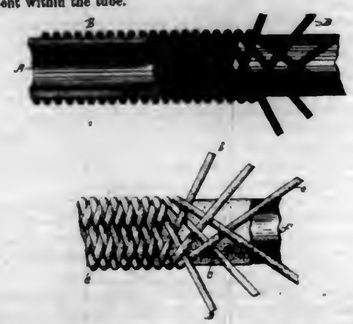
2. In a cylindrical amalgamator, the V-shaped flanges D, provided with the perforations E in their rear wings, near the bend, slots F in the opposite ends of forward wings, and perforations G, adjacent to the slots F, substantially as set forth.

3. In a cylindrical amalgamator, the perforated flanges having curved extremities and corrugations H on their inner faces, substantially as set forth.

4. A cylindrical amalgamator consisting of the shell A, having hollow gudgeons B, spout or chute C, V-shaped flanges D, having perforations E, slots F, and corrugations H, substantially as set forth.

323,149. MANUFACTURE OF HOSE. ALBERT T. HOLT, Brooklyn, assignor to Loewenthal & Morganstern, New York, N. Y. Filed May 2, 1885. (No model.)

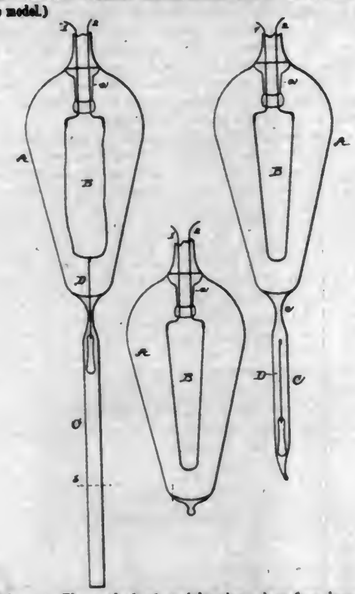
Brief.—The novel method in this case consists in braiding a covering closely around an unvulcanized tube, and then expanding the tube and vulcanizing it at one operation by the introduction of steam or its equivalent within the tube.



Claim.—1. The herein-described process for manufacturing hose, consisting, first, in braiding in place directly upon an unvulcanized rubber tube a textile covering, and then by a suitable apparatus applying internal pressure to the rubber tube to force the rubber into the interstices of the textile and which at the same time vulcanizes the rubber, substantially as set forth.

2. The herein-described process of manufacturing hose, consisting, first, in applying a vulcanizable rubber cement to the exterior of an unvulcanized rubber tube or to the strands of a fibrous material, or to both; second, braiding in place directly upon the tube the said strands to form a textile covering, and then by a suitable apparatus applying internal pressure to the rubber tube to force the rubber into the interstices of the textile, and which at the same time vulcanizes the rubber, substantially as set forth.

323,150. METHOD OF MANUFACTURING INCANDESCENT ELECTRIC LAMPS. WILLIAM HOLMES, Harrison, N. J. Filed June 5, 1884. (No model.)

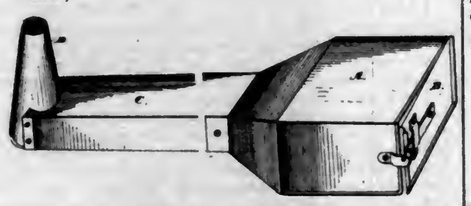


Claim.—1. The method of straightening a loop-form incandescing conductor or of changing its shape, consisting in subjecting it to strain while raised to incandescence, substantially as set forth.

2. The method of maintaining straight a loop-form incandescing conductor during the operation of exhausting the lamp and heating the conductor prior to sealing, consisting in maintaining such conductor under constant strain during such operation, substantially as set forth.

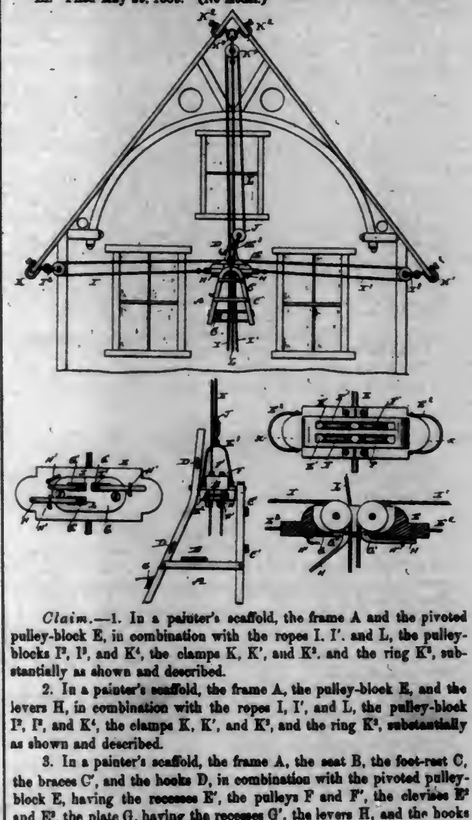
3. The method of exhausting and sealing incandescing electric lamps having loop-form conductors, consisting in attaching weights to the loops, then exhausting such lamps and heating the conductors therein, then sealing off the tubes some distance from the lamps, then removing the weights from the conductors and dropping them into said tubes, and finally sealing off the lamps from the tubes above the weights, substantially as set forth.

323,151. APPARATUS FOR BURNING AND PREPARING PLANT-BEDS. JAMES H. HORNER, Oxford, N. C. Filed Feb. 16, 1885. (No model.)



Claim.—The herein-described plant-bed burner, consisting of a furnace and a flue communicating at one end with the furnace and extended laterally therefrom in approximately a horizontal line, whereby it may be rested flat upon the ground, the said flue being bottomless, whereby the heat will act directly on the ground, and made in cross-section of less area than the furnace, whereby the heat will be intensified and directed in close contact with the ground-surface, substantially as and for the purposes specified.

323,152. PAINTER'S SCAFFOLD. WILLIAM T. HOWES, White Heath, Ill. Filed May 29, 1885. (No model.)



Claim.—1. In a painter's scaffold, the frame A and the pivoted pulley-block E, in combination with the ropes I, I', and L, the pulley-blocks I^2, I^3, and K^4, the clamps K, K', and K^2, and the ring K^3, substantially as shown and described.

2. In a painter's scaffold, the frame A, the pulley-block E, and the levers H, in combination with the ropes I, I', and L, the pulley-block I^2, I^3, and K^4, the clamps K, K', and K^2, and the ring K^3, substantially as shown and described.

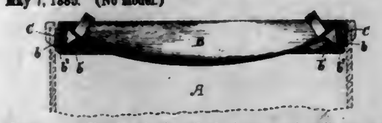
3. In a painter's scaffold, the frame A, the seat B, the foot-rest C, the braces C', and the hooks D, in combination with the pivoted pulley-block E, having the recesses E', the pulleys F and F', the clevises E^2 and E^3, the plate G, having the recesses G', the levers H, and the hooks H', substantially as shown and described.

4. In a painter's scaffold, the frame A, the seat B, the foot-rest C, the braces C', the hooks D, the pivoted pulley-block E, having the recesses E', the pulleys F F and F' F', the clevises E^2 and E^3, the plate G, having the recesses G', the levers H, and the hooks H', in combination with the ropes I, I', and L, the pulley-blocks I^2, I^3, and K^4, the pulley J, the clamps K, K', and K^2, and the ring K^3, all operating substantially as shown and described.

5. In a painter's scaffold, the pulley-block E, having the recesses E', the pulleys F and F', the clevises E^2 and E^3, the plate G, having the recesses G', the levers H, and the hooks H', in combination with the ropes I, I', and L, the pulley-blocks I^2, I^3, and K^4, the pulley J, the clamps K, K', and K^2, and the ring K^3, substantially as shown and described.

6. In a painter's scaffold, the pulley-block E, having the recesses E', the pulleys F and F', the clevises E^2 and E^3, the plate G, having the recesses G', the levers H, and the hooks H', substantially as shown and described.

323,153. MILK-CAN COVER. HALLAN L. IVES, Potsdam, N. Y. Filed May 7, 1885. (No model.)



Claim.—1. The herein-described sheet-metal milk-can cover, the same consisting of the annular disk, concave upon its upper and convex upon its lower face and having a peripheral flange provided with an elastic band or packing, as set forth.

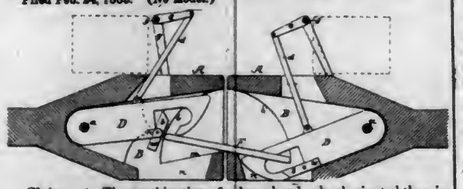
2. The herein-described sheet-metal milk-can cover, the same consisting of the annular disk, concave upon its upper and convex upon its lower face and having a peripheral flange turned down at substantially a right angle from the plane of the upper face of the cover and thence back to meet the convex lower face, as set forth, whereby the flange is braced and strengthened.

3. The herein-described sheet-metal milk-can cover, the same consisting of the annular disk, concave upon its upper and convex upon its lower face and having a peripheral flange turned down at substantially a right angle from the plane of the upper face of the cover and thence back to meet the convex lower face, the said flange being provided with an elastic band or packing, as set forth.

4. The herein-described sheet-metal milk-can cover, the same consisting of the annular disk, concave upon its upper and convex upon its lower face and having a peripheral flange provided with a flat elastic band or packing, rectangular in cross-section, one of the edges of which projects more prominently than the other, as set forth.

5. The herein-described sheet-metal milk-can cover, the same consisting of the annular disk, concave upon its upper and convex upon its lower face and having upon its periphery a flange turned down at substantially a right angle from the plane of the face of the cover, in combination with a vessel having a plane interior wall, whereby the cover may be set at any height within the vessel, and the sand and dirt falling upon the upper face of the cover are retained and prevented from working into the joint between the cover and the can, as set forth.

323,154. CAR-COUPLING. GEORGE F. JACKSON, Philadelphia, Pa. Filed Feb. 24, 1885. (No model.)



Claim.—1. The combination of a draw-head, a hook pivoted therein and having an opening in the bottom, a pivoted catch for closing said opening, and a projection whereby said catch is operated as the link is elevated, as set forth.

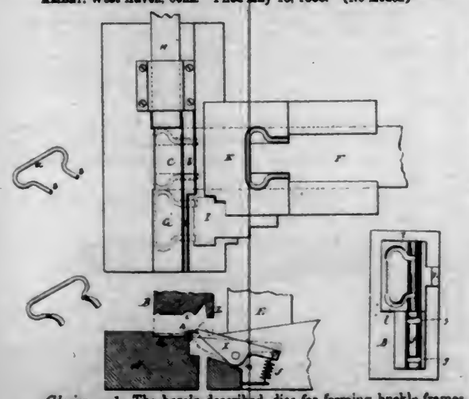
2. The combination of the draw-head, a hook pivoted therein and having an opening in the bottom, and guides *i*, whereby the end of the link is directed outward through said opening when the link is pressed inward, as set forth.

3. The combination of a draw-head, a coupling-hook pivoted therein, a rock-shaft connected to said hook, and having an arm, *g*, and a pivoted catch, *p*, engaging with said arm and serving to retain the hook in position for coupling, as specified.

4. The combination of a draw-head, a hook pivoted therein, a rock-shaft connected to the said hook and having an arm, *g*, and a finger engaging with said arm and serving to retain the hook in an elevated position for uncoupling, as specified.

5. The combination of the draw-head, having in the bottom a recess, *n*, with a hook pivoted in the draw-head and having the opening in the bottom, said hook being so constructed that when its nose is depressed and enters the recess *n* the top of the hook at the front end will be below the top of the recess, as set forth.

323,155. MACHINE FOR MAKING BUCKLE-FRAMES. GEORGE R. KELSEY, West Haven, Conn. Filed May 13, 1885. (No model.)

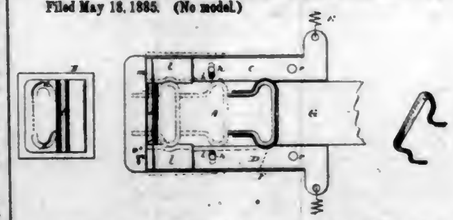


Claim.—1. The herein-described dies for forming buckle-frames, consisting of two parts, A B, the one part, A, constructed with the longitudinal recess C, and with a rib, *d*, at its rear edge corresponding to the inner surface of the first bend to be made on the legs, and with a second recess, G, forming a continuation of said recess C, with the rib *h* at its front edge overhanging that front edge, and in shape corresponding to the bend of the legs to be made, the second die, B, constructed with transverse cavities *g g*, corresponding to the rib *d* and the outer surface of the first bend of the legs, and with a second longitudinal cavity, *i*, with cavities *l l*, extending therefrom forward, corresponding to the end portions of the frame, combined with the bender I, arranged in rear of said rib *i*, and adapted to turn the end portions of the legs down around the rib, substantially as described.

2. The herein-described dies for forming buckle-frames, consisting of two parts, A B, the one part, A, constructed with the longitudinal recess C, and with a rib, *d*, at its rear edge corresponding to the inner surface of the first bend to be made on the legs, and with a second recess, G, forming a continuation of said recess C, with the rib *h* at its front edge overhanging that front edge, and in shape corresponding to the bend of the legs to be made, the second die, B, constructed with transverse cavities *g g*, corresponding to the rib *d* and the outer surface of the first bend of the legs, and with a second longitudinal cavity, *i*, with cavities *l l*, extending therefrom forward, corresponding to the end portions of the frame, combined with the bender I, arranged in rear of said rib *i*, and adapted to turn the end portions of the legs down around the rib, and longitudinal slide H, adapted to move through the said recess C, substantially as and for the purpose described.

3. The herein-described dies for forming buckle-frames, consisting of two parts, A B, the one part, A, constructed with the longitudinal recess C, and with a rib, *d*, at its rear edge corresponding to the inner surface of the first bend to be made on the legs, and with a second recess, G, forming a continuation of said recess C, with the rib *h* at its front edge overhanging that front edge, and in shape corresponding to the bend of the legs to be made, the second die, B, constructed with transverse cavities *g g*, corresponding to the rib *d* and the outer surface of the first bend of the legs, and with a second longitudinal cavity, *i*, with cavities *l l*, extending therefrom forward, corresponding to the end portions of the frame, combined with the bender I, arranged in rear of said rib *i*, and adapted to turn the end portions of the legs down around the rib, a channel, D, in rear of said rib *d*, a vertical feeding-tube, E, and slide F, adapted to work through said channel beneath said tube, substantially as and for the purpose described.

323,156. DIE FOR SWAGING BUCKLE-FRAMES. JARVIS E. KELSEY, West Haven, Conn., assignor to West Haven Buckle Company, same place. Filed May 13, 1885. (No model.)

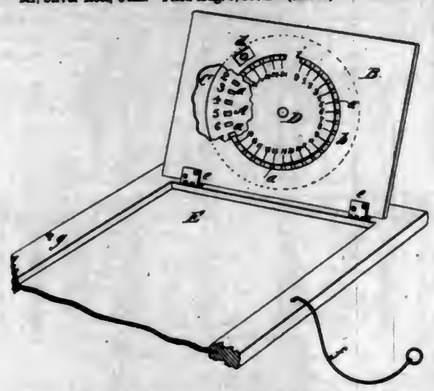


Claim.—1. The combination of the two dies A B, the one constructed with a flat face and a rib, *a*, at its front edge corresponding to the internal curve required for the bend of the legs, the die B, constructed with a longitudinal groove forming a cavity, *b*, in transverse section corresponding to the exterior of the bend required for the legs, and with recesses extending from said groove *b* corresponding to the end portions of the frame, the edge of the die B forward of the groove extending downward below the face in front of the groove, substantially as described.

2. The combination of the two dies A B, the one constructed with a flat face and a rib, *a*, at its front edge corresponding to the internal curve required for the bend of the legs, the die B, constructed with a longitudinal groove forming a cavity, *b*, in transverse section corresponding to the exterior of the bend required for the legs, and with recesses extending from said groove *b* corresponding to the end portions of the frame, the edge of the die B forward of the groove extending downward below the face in rear of the groove, the swinging guides C D, each constructed with a recess, *l*, upon its inner face, said recesses adapted to embrace the ends of the blank when in the proper condition for bending, substantially as described.

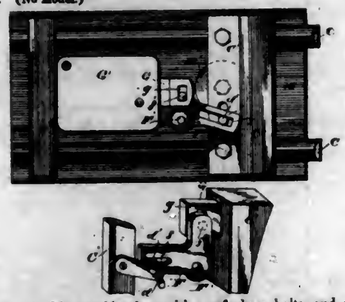
3. The combination of the two dies A B, the one constructed with a flat face and a rib, *a*, at its front edge corresponding to the internal curve required for the bend of the legs, the die B, constructed with a longitudinal groove forming a cavity, *b*, in transverse section corresponding to the exterior of the bend required for the legs, and with recesses extending from the said groove *b* corresponding to the end portions of the frame, the edge of the die B forward of the groove extending downward below the face in rear of the groove, the swinging guides C D, each constructed with a recess, *l*, upon its inner face, said recesses adapted to embrace the ends of the blank when in the proper condition for bending, a vertical feeding-tube, F, over the said die A, adapted to deliver the blanks between the said guides C D, and a slide, G, adapted to pass between said guides and below the mouth of the tube F, substantially as and for the purpose described.

323,157. CALCULATOR. WILLIAM B. KENNEDY and WATSON M. NESBIT, Silver Reef, Utah. Filed Aug. 8, 1884. (Model.)



Claim.—The calculator comprising the disk having a circle of numbers and a concentric circle of apertures coincidently disposed with said numbers, and the dial having the circular slot arranged coincidentally with the apertures of said disk, said dial also having a viewing-aperture in line with the disposition of the numbers of the disk and a series of numbers arranged reversely in order to the numbers of the disks, substantially as and for the purpose set forth.

323,158. SAFE-LOCK. ALBERT KIRES, Canton, Ohio. Filed Dec. 30, 1884. (No model.)

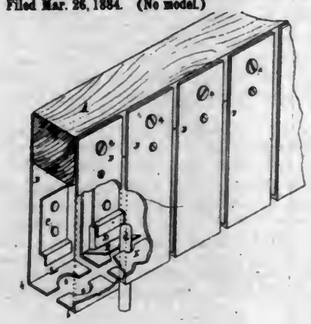


Claim.—1. The combination, with a safe-door, bolts, and a handle having a notched disk thereon, of a lock, a lever connected with the bolt of said lock, and a pin forming a connection with the bolts and notched disk and directly connected with said lever, whereby it is positively moved up and down to engage with or be disengaged from the handle, substantially as set forth.

2. The combination, with a safe-door, sliding bolts, and a handle provided with a notched disk, of a permutation-lock, a lever connected with the bolt of said lock and provided with an elongated slot, and a pin passing through said slot and adapted to form a connection between the notched disk and sliding bolts.

3. In a safe-lock, the combination, with a door, sliding bolts, a handle, a notched disk, and the stop H, of a pin or lug and devices for moving said pin or lug into the notch in the disk, whereby a connection is formed between the handle and sliding bolts, substantially as set forth.

323,159. CAPSULE-STRIPPING DEVICE. JOHN KREBBIEL, Detroit, Mich. Filed Mar. 26, 1884. (No model.)



Claim.—1. The combination of a pair of jaws having their adjacent edges cut away to partially embrace said mold-pin, and an independent separate support for each jaw, substantially as and for the purpose specified.

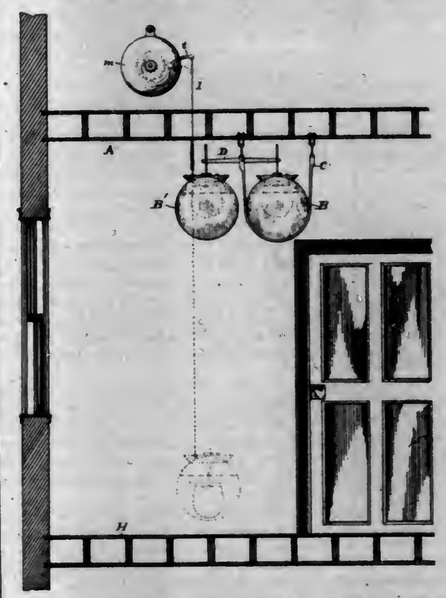
2. The combination, with a capsule mold-pin, of a pair of movable jaws and independent supports for the same, said jaws having their adjacent edges cut away to partially embrace said mold-pin, and their opposite edges bearing against said independent support, and the latter provided with stops to limit the motion of the jaws in one direction, substantially as described.

3. In a device for the purpose described, the combination of the block A, spring-plates B, secured to said block and arranged in opposite pairs, and provided with feet *b*, and the separate and independent jaw-plates E, supported by said spring-plates, substantially as specified.

4. In a device for the purposes described, the combination of the blocks A, spring-plates B, secured to the sides thereof, clamp-plates C, secured to the inner sides of said spring-plates, rubber blocks D, and jaw-plates E, supported by said spring-plates, the parts being constructed and operating substantially as set forth.

5. In a device for the purpose described, the combination of the blocks A in series, and provided with the spring and jaw plates and their attachments, herein described, with the frame F, provided with screws G, and means, substantially as described, for giving said screws a simultaneous movement in either direction, substantially as and for the purposes set forth.

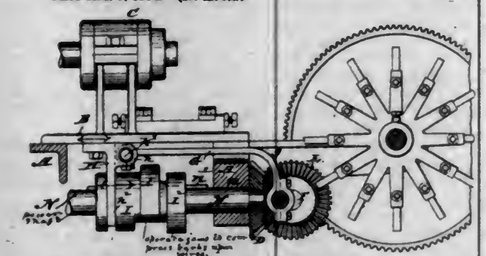
323,160. AUTOMATIC FIRE EXTINGUISHER AND ALARM. GEO W. LANDON, Baltimore, Md. Filed June 3, 1885. (No model.)



Claim.—1. An automatic chemical fire-extinguisher having, in combination, a receptacle for containing an alkaline solution, and having an opening, a cover of non-corrosive material securely fastened over the opening of the alkaline-receptacle, an open-top acid-receptacle inclosed in the alkaline-receptacle with its top rim in contact with the lower side of the aforesaid cover, and a supporting-rod, *e*, passed through the cover, holding the acid-receptacle up against the cover and above the cover suspended by a readily-fusible fastening, whereby when the said fastening melts the acid-receptacle will drop in the alkaline solution, and the alkaline-receptacle itself will drop to the floor, as set forth.

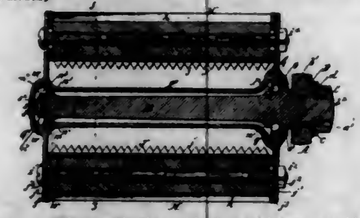
2. An automatic chemical fire-extinguisher having, in combination, a receptacle, B, for containing an alkaline solution, a support for said receptacle, a smaller open-topped receptacle, E, for acid inclosed in the alkaline-receptacle, a second alkaline-receptacle, also containing an acid-receptacle, a balanced bar, D, above the two alkaline-receptacles, and two rods, *e*, each attached by a readily-fusible fastening to an opposite end of the balanced bar, and each rod passed through the top of an alkaline-receptacle and attached to the inner acid-receptacle, whereby the first alkaline-receptacle may explode at an elevated position, and the second alkaline-receptacle and its inclosed acid-receptacle are sustained by the readily-fusible fastening and may explode near the floor, as set forth.

323,161. BARB-WIRE MACHINE. GODFREY H. LASAR, St. Louis, Mo. Filed Mar. 3, 1884. (No model.)



Claim.—The combination, as described, of the shaft N, the bed-plate A, the slide B, the bracket H, the sleeve I, the cams I' I², the gears D E, the crank-shaft F, and the pitman G.

323,162. VELOCIPEDE. EMMET G. LATTA, Friendship, N. Y., assignor to the Pope Manufacturing Company, Hartford, Conn. Filed Sept. 6, 1884. (No model.)



Claim.—1. The combination, with the pedal-frame provided with rubber bars H H, pivoted to the frame by rods *i*, of the serrated bars J, pivoted at their ends to the rods *i* by slotted openings, and provided at their ends with hooks which engage over the sides of the pedal-frame to retain the serrated bars in position, substantially as set forth.

2. The combination, with the pedal-frame, of a rubber pedal-bar, H, provided with a central longitudinal groove, *h*, and two bearing-surfaces, *h' h'*, on opposite sides of the groove *h*, substantially as set forth.

3. The combination, with the pedal-frame, of a rubber pedal-bar, H, pivoted to the frame by a rod, *i*, and provided on each of its sides with a longitudinal groove, *h*, and two bearing-faces, *h' h'*, on opposite sides of the groove, whereby the bar H is adapted to receive the pressure at its sides or edges and be compressed on opposite sides of the rod *i*, substantially as set forth.

4. The combination, with the pedal-shaft B, provided with a cone at each end, of a pedal-frame having a solid outer end and provided with a center sleeve, F, which receives the shaft, two rows of balls interposed between the sleeve and the shaft, and a collar, O, provided with a screw-thread engaging in a threaded opening formed in the inner end of the sleeve, whereby the pedal-frame is secured to the shaft and the balls are adjusted for wear, substantially as set forth.

5. The combination, with the pedal-shaft B, provided at its opposite ends with cones *n n'*, of a sleeve, F, inclosing the shaft B, and provided with end plates, G G', and outer cone, n^2, and balls interposed between the cones *n'* and n^2 and between cone *n* and collar O, the latter being provided with a screw-thread engaging in a threaded opening formed at the inner end of the sleeve, whereby the sleeve is secured to the shaft B and the balls are adjusted in the cones, substantially as set forth.

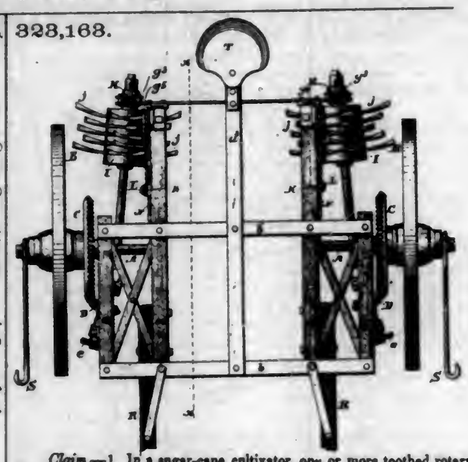
6. The combination, with the pedal-shaft and pedal-frame provided with a center sleeve, F, and end plate, G, of a block or nut, L, adjustably secured to either side of the end plate, G, and adapted to balance the pedal and cause the opposite side of the pedal, to which the block L is secured, to remain uppermost, substantially as set forth.

7. The combination, with the crank A and shaft B, secured in a slot formed in the end of the crank by a screw-nut, C, of a washer, D, arranged on the shaft between the crank and the nut C, and provided with a spring-arm, *d'*, and nut lock E, secured to the arm *d'*, and adapted to engage against the nut C and prevent the latter from turning, substantially as set forth.

8. The combination, with the crank A, shaft B, and screw-nut C, provided with a serrated rim or flange, *c*, of a washer, D, secured to the shaft between the crank and nut C, and provided with a spring-arm, *d'*, and a nut-lock, E, hinged to the arm *d'*, and provided with a serrated edge adapted to engage with the serrated rim *c* of the nut, substantially as set forth.

323,163. ROTARY CULTIVATOR. JOHN L. LAUGHLIN, Louisville, Ky., assignor to B. F. Avery & Sons, same place. Filed Dec. 4, 1884. (No model.)

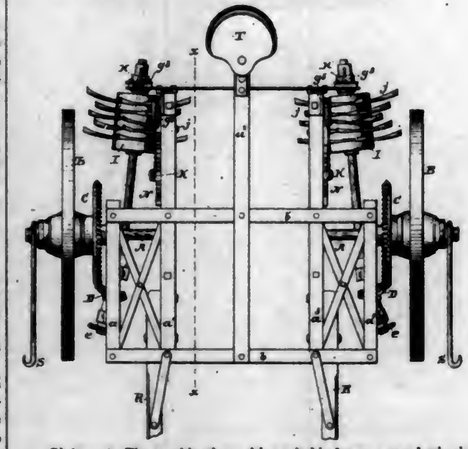
323,163.



Claim.—1. In a sugar-cane cultivator, one or more toothed rotary drums, the direction of rotation of which is or are nearly or quite transverse to that of the main wheels of the machine, and which operate on the soil at a locality or localities more or less distant from that at which the row of growing stalks is planted, to both pulverize and brush or throw up the earth or soil toward and into the row of growing stalks, all substantially as and for the purposes set forth.

2. The combination, with a suitable frame, ground-wheels, and driving mechanism, of a pair of rotary brush-like drums arranged to travel on ether side of the row of plants to be cultivated, having their shafts substantially parallel to the line of motion and so geared as to throw the dirt to the plants, and means for vertically adjusting either or both of said brush-like drums, all substantially as and for the purpose set forth.

323,164. ROTARY CULTIVATOR. JOHN L. LAUGHLIN, Louisville, Ky., assignor to B. F. Avery & Sons, same place. Filed Mar. 30, 1885. (No model.)



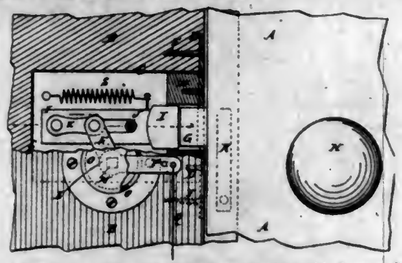
Claim.—1. The combination, with a suitable frame, ground-wheels, and driving mechanism, of a pair of rotary toothed drums for pulverizing and throwing up the soil, arranged to travel on each side of the row of plants being cultivated, and having their shafts or axes arranged convergently from the forward ends rearwardly, as and for the purposes set forth.

2. In a cultivator adapted to straddle a row of plants and throw up the soil on either side of the row, the combination, with the main frame-work and ground-wheels, of two poles or tongues, and a cross-bar or yoke-piece near the forward ends of said poles, and means for effecting the draft of the machine from the axle ends, substantially as set forth.

3. A rotary brush-like drum or cultivator device, composed, as specified, of a series of clamping-disks arranged on a shaft, and one or more sets of radially-arranged teeth or their equivalents loosely secured, as described, whereby each of said teeth is free to vibrate more or less in its bearings between the clamping-disks, as and for the purpose set forth.

4. The combination, with a suitable frame, ground-wheels, and driving mechanism, of a pair of rotatory soil-throwing drums arranged to travel on each side of the row of plants and means for adjusting the axes of said drums both laterally and vertically, all substantially as and for the purposes hereinbefore set forth.

323,165. DEVICE FOR OPENING DOORS. SAMUEL H. LAW, Brooklyn, N. Y. Filed Apr. 16, 1885. (No model.)



Claim.—1. In a door-opener, the combination, with the case C, of the push-bolt I, the link K, pivoted to the said bolt, the tumbler L, having arm L', the spindle M, having crank-arm P, the operating-wire Q, attached to the said crank-arm, and the spring S, substantially as herein shown and described, whereby the catch-bolt of a door can be pushed back and the door unfastened by operating the said wire, as set forth.

2. The combination, with the case C of a door-opener, of the separate striking-plate E, substantially as herein shown and described whereby the said striking-plate can be readily reversed when desired, as set forth.

323,166. HOOF-PAD. THOMAS W. LEONARD, Detroit, Mich. Filed Mar. 18, 1885. (No model.)



Claim.—1. In combination with a horseshoe, a plate, A, provided with a stationary locking-bar near its toe and adjustable locking-plates near the heel, substantially as and for the purposes set forth.

2. In combination with a horseshoe, the plate A, provided with the rigid locking-bar B, and adjustable locking-plates C, when constructed, arranged, and operating substantially in the manner and for the purposes set forth.

323,167. BUTTON OR STUD. JACOB J. LINDAUER, New York, N. Y. Filed May 5, 1885. (No model.)



Claim.—In a button or stud, the combination, with a head, of swinging bars having intermeshing teeth, and a slider-bar provided with teeth engaging with the teeth of one of the swinging bars, substantially as specified.

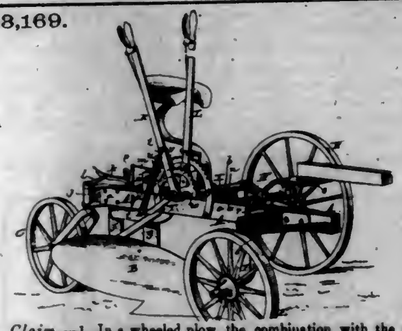
323,168. GRIPPER FOR PRINTING-MACHINES. PHILIP LINDMEYER, Jr., Jersey City, N. J. Filed Apr. 16, 1885. (No model.)



Claim.—A printing-press gripper having the spring *d* attached to the under side thereof and adjusted by the set-screw *f*, substantially as and for the purpose specified.

323,169. WHEEL-PLOW. AUGUST LINDGREN, Moline, Ill., assignor to the Moline Plow Company, same place. Filed Jan. 12, 1885. (No model.)

323,169.



Claim.—1. In a wheeled plow, the combination, with the main frame, of the land-wheel, its axle provided with the two cranks, the hand-lever and its locking devices, and the spring interposed between the crank and lever, as shown.

2. The wheel and its axle provided with cranks at opposite ends, in combination with the hand-lever mounted loosely around the axle, the devices for locking the lever, the rod connecting the lever and crank, and the spiral spring.

3. In a wheeled plow, the combination of the following members: a frame or beam having a mold-board plow secured thereto, a land-wheel, a swiveling leading-wheel connected to and guided by the draft-pole and arranged to travel in the furrow in advance of the plow, a rear caster-wheel to travel in the new furrow behind the plow, and a locking device, substantially as shown, whereby the operator may lock and unlock the rear wheel at will.

4. In a wheeled plowing-machine provided with a mold-board plow, two swiveling furrow-wheels, one in advance and the other in rear of the plow, the forward wheel attached to and guided by the draft devices, and the rear wheel combined with devices, substantially such as described, by which it may be locked during the plowing action, but unlocked when turning the machine.

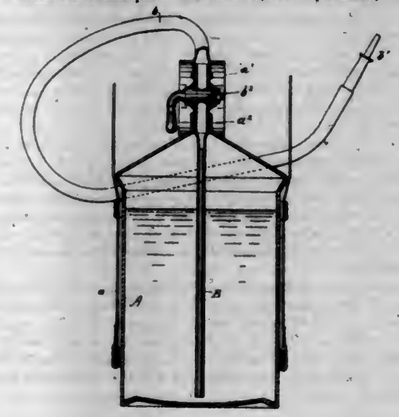
5. In a wheeled plow, the triangular main frame having the mold-board plow attached, in combination with the swiveling leading-wheel, the swiveled rear wheel, and the land-wheel located at the apex of the frame between the front and rear wheels, as described, whereby the turning of the machine in a small space is permitted.

6. In a wheeled plowing-machine having a main frame and a mold-board plow attached thereto, a non-swiveling wheel to travel on the unplowed ground, a swiveling leading-wheel attached to and guided by the tongue and pole, and a swiveled trailing-wheel provided with locking devices, said parts combined and arranged for joint operation as described.

7. The main frame having the slotted arm *d*, in combination with the leading-wheel, the axle having the vertical portion, and the axle box or bearing connected to the slotted arm by bolts.

8. In a wheel-plow, the combination of the main frame provided with a vertical box or bearing, *r*, the wheel E, the tongue-connection, and the axle F, having the vertical middle portion arranged to turn in the bearing *r*, and the two horizontal ends extended in opposite directions, one of said ends carrying the wheel, and the other secured to the tongue-connection, substantially as described and shown.

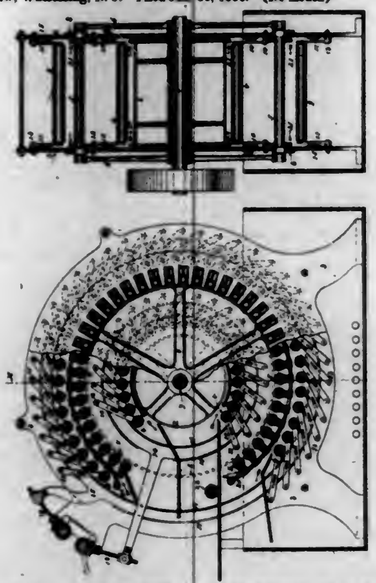
323,170. CHEMICAL FIRE-EXTINGUISHER. GEORGE A. LINDGREN, La Porte, Ind., assignor of one-half to Ellsworth E. Weir and Franklin R. Carson, both of same place. Filed Mar. 23, 1885. (No model.)



Claim.—1. A fire-extinguisher consisting of the usual strong vessel or receiver having controllable outlet and containing a charge of ammonium gas therein under pressure, substantially as described.

2. A fire-extinguisher consisting of the usual strong vessel or receiver having controllable outlet and containing a charge of ammonium gas in liquefied or anti-freezing solution therein, said gas serving as the impelling-motor to deliver the charge onto the fire, substantially as described.

323,171. HAT FELTING AND SIZING MACHINE. THOMAS LONGSHAW, Watsessing, N. J. Filed Jan. 30, 1885. (No model.)



Claim.—1. In a hat felting and sizing machine, the rollers 5, in combination with the pulleys 6 6 and adjustable pressure-rolls 9, substantially as and for the purpose specified.

2. In a hat felting and sizing machine, the steam-pipes 20, provided with perforations 21, in combination with the drum 2 and pressure-rolls 9, substantially as and for the purpose specified.

3. In a hat felting and sizing machine, the revolving drum 2 and series of adjustable rolls 4, in combination with pulleys 6 6, rolls 5, pressure-rolls 9, adjusting-screws 18 and 19, and steam-pipes 20, provided with perforations 21, substantially as and for the purpose specified.

323,172. TRAVELING EMERY-WHEEL FOR CARD-GRINDERS. JOSEPH H. LOUDON, Westerly, R. I. Filed May 23, 1884. (No model.)

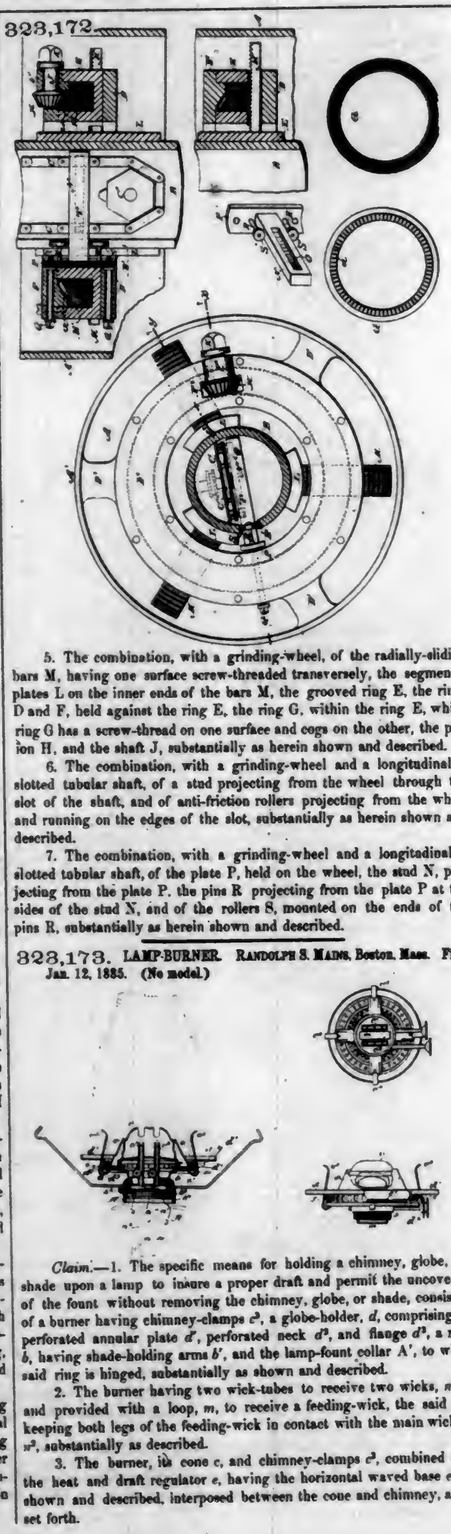
Claim.—1. The combination, with a shaft, of a grinding-wheel mounted on the said shaft to turn with the same and to slide on the shaft in the direction of its length, which wheel is provided with an adjustable hub for taking up the wear of the wheel and adjusting the wheel to fit accurately and nicely on its shaft without impeding its longitudinal movement on said shaft, substantially as herein shown and described.

2. The combination, with a grinding-wheel provided with radially-movable bars adapted at their inner ends to clamp on a shaft, which bars have one surface screw-threaded, of a ring capable of rotation and having one surface screw-threaded, the screw-threaded surface of the ring resting on the screw-threaded surface of the radially-movable bars, and of means for turning the ring, substantially as herein shown and described.

3. The combination, with a grinding-wheel provided with radially-movable bars adapted at their inner ends to clamp on a shaft, which bars have one surface screw-threaded, of a ring capable of rotation and having one surface screw-threaded in such a manner that it can engage with the screw-threads on the radial bars, and having cogs cut in the opposite surface, a pinion adapted to engage with the cogs on the said ring, and means for turning the said pinion, substantially as herein shown and described.

4. The combination, with a grinding-wheel, of the radially-sliding bars M, having one surface screw-threaded transversely, segmental plates L, secured to the inner ends of the bars M, the ring D, supporting the bars M, the ring G, having one surface screw-threaded and the other provided with cogs, the grooved ring E, containing the ring G, the pinion H, and the shaft J, on which it is mounted, substantially as herein shown and described.

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5. The combination, with a grinding-wheel, of the radially-sliding bars M, having one surface screw-threaded transversely, the segmental plates L on the inner ends of the bars M, the grooved ring E, the rings D and F, held against the ring E, the ring G, within the ring E, which ring G has a screw-thread on one surface and cogs on the other, the pinion H, and the shaft J, substantially as herein shown and described.

6. The combination, with a grinding-wheel and a longitudinally-slotted tubular shaft, of a stud projecting from the wheel through the slot of the shaft, and of anti-friction rollers projecting from the wheel and running on the edges of the slot, substantially as herein shown and described.

7. The combination, with a grinding-wheel and a longitudinally-slotted tubular shaft, of the plate P, held on the wheel, the stud N, projecting from the plate P, the pins R projecting from the plate P at the sides of the stud N, and of the rollers S, mounted on the ends of the pins R, substantially as herein shown and described.

323,173. LAMP-BURNER. RANDOLPH S. MAINS, Boston, Mass. Filed Jan. 12, 1885. (No model.)

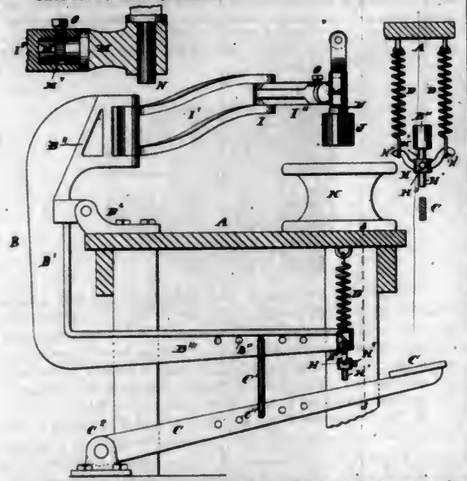
Claim.—1. The specific means for holding a chimney, globe, and shade upon a lamp to insure a proper draft and permit the uncovering of the fount without removing the chimney, globe, or shade, consisting of a burner having chimney-clamps c^3, a globe-holder, *d*, comprising the perforated annular plate d', perforated neck d^2, and flange d^3, a ring, *b*, having shade-holding arms *b'*, and the lamp-fount collar A', to which said ring is hinged, substantially as shown and described.

2. The burner having two wick-tubes to receive two wicks, n' n^2, and provided with a loop, *m*, to receive a feeding-wick, the said loop keeping both legs of the feeding-wick in contact with the main wicks n' n^2, substantially as described.

3. The burner, its cone *c*, and chimney-clamps c^3, combined with the heat and draft regulator *e*, having the horizontal waved base *e'*, as shown and described, interposed between the cone and chimney, as set set forth.

4. The combination, with the burner and its clamps c^3, of the globe-holder, shaped as shown and described, and provided with openings 4 and 5, for the passage of air, as set forth.

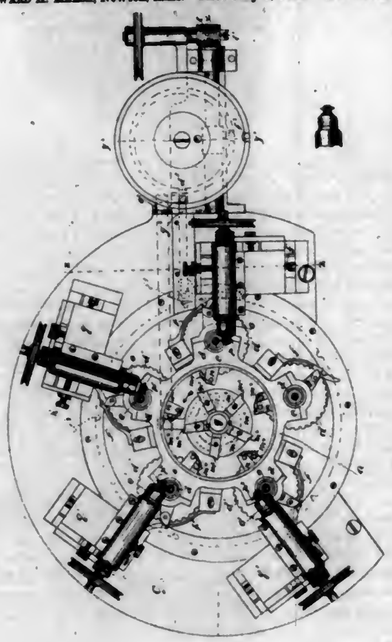
323,174. IRONING-MACHINE. CHARLES MARCK, St. Louis, Mo. Filed Feb. 2, 1884. (No model.)



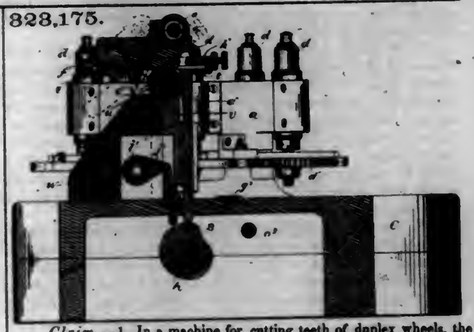
Claim.—1. The combination, with a table and lever for supporting the iron hinged thereto, of the springs D D, secured to the under side of the table over the outer end of the lower arm of the lever, cross-bar H, having hooks $H^\times$ $H^\times$, by which it is supported by the springs beneath the outer end of the arm, short pin H', adjustable through the cross-bar, and a set-screw by which the pin is adjusted to bear more or less on the under side of the arm, as set forth.

2. The combination of a table, a lever, B, having body B', upper arm, B'', and lower arm, B''', and hinged to the table, block C^2, treadle C, springs D D, cross-bar H, having hooks $H^\times$ $H^\times$, short pin H' in cross-bar, and set-screw H^3, the lower arm and treadle each having a series of perforations and connected by a link or chain adjustable in the perforations, as set forth.

323,175. MACHINE FOR CUTTING TEETH OF DUPLEX WHEELS. EDWARD A. MARSH, Newton, Mass. Filed July 5, 1884. (No model.)



323,175.



Claim.—1. In a machine for cutting teeth of duplex wheels, the combination of a series of cutters of which a part are adapted to cut radial or face teeth on a wheel-blank and the others to cut peripheral teeth, a holder or a series of holders for a wheel blank or blanks, automatic mechanism for moving said holder or holders from cutter to cutter, and automatic mechanism for rotating each holder step by step while it is presented to a cutter, whereby both series of teeth are cut automatically, as set forth.

2. In a machine for cutting the teeth of duplex wheels, the combination of a series of cutters and operating mechanism therefor, substantially as described, a series of wheel-holding spindles adapted to present a series of wheels or wheel-blanks simultaneously to said cutters, mechanism for rotating said spindles on their own axes step by step, and mechanism for moving the series of spindles in unison to change the positions of the wheels, as set forth.

3. In a machine for cutting the teeth of duplex wheels, the combination of a series of cutters and operating mechanism therefor, substantially as described, a rotary carriage or turret, a series of wheel-holding spindles journaled in said turret, mechanism for rotating said spindles step by step, and mechanism alternating in its action with said spindle-rotating mechanism to partially rotate the turret after each complete rotation of the spindles, and thereby move the spindles to their next position, as set forth.

4. An organized machine for cutting the teeth of duplex wheels composed of the following elements, viz: first, a series of cutters having operating mechanism, substantially as described, said cutters being arranged in circular order at uniform distances apart, excepting the first and last of the series, which are separated by a longer space; secondly, a series of wheel-holding spindles arranged to coincide with the cutters and exceeding the same in number, as specified, mechanism for rotating said spindles step by step, and mechanism for moving the series of spindles at stated intervals, whereby the spindle having the completed wheel is brought into the space between the first and last cutters, and the other spindles are brought into position to present their wheels or wheel-blanks to the several cutters for their action, as set forth.

5. An organized machine for cutting the teeth of duplex wheels comprising a series of spindles or supports for a wheel-blank normally locked and prevented from rotating, a series of cutters having operating mechanism, substantially as described, whereby they are adapted to perform the successive operations required to form the duplex teeth, mechanism for intermittently unlocking said holders and giving them step-by-step rotary movements while they are presented to the cutters, and mechanism for moving said holders bodily to advanced positions without unlocking them, as set forth.

6. In a machine for cutting the teeth of duplex wheels, the combination of the series of cutters, operating mechanism, substantially as described, whereby said cutters are moved as required to cut the side and peripheral teeth, the rotary turret, the series of wheel-holding spindles journaled in said turret, each provided with an index-wheel, a latch therefor, and lever adapted to disengage said latch and rotate the wheel, the continuously-rotated shaft occupying the axial center of the turret, the movable sleeve on said shaft adapted when in one position to engage and move the index-wheel-operating levers, and when in another position to engage and move the turret without moving said levers, mechanism whereby said sleeve is held in its index-wheel-operating position during a predetermined number of rotations, and in its turret-operating position during an additional partial rotation, and mechanism whereby the turret is locked while the index-wheels are being rotated and released preparatory to its own rotation, as set forth.

7. In a machine for cutting the teeth of duplex wheels, the combination of the cutters having operating mechanism, substantially as described, the wheel-holding spindles having index-wheels and operating-levers, the turret, the locking device therefor, the shaft *g*, having a sliding sleeve adapted to engage successively with the index-wheel levers and then with the turret, the driving-shaft geared to the shaft *g*, the count-wheel rotated by the driving-shaft and provided with cam grooves, and devices, substantially as described, operated by said cam-grooves,

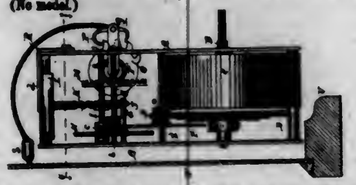
whereby the turret-locking device and the sliding sleeve of the shaft *g* are operated, as set forth.

8. In a machine for cutting the teeth of duplex wheels, the combination of wheel-holding spindles, each provided with an index-wheel, a rotary support or carriage for said spindles, latches adapted to automatically lock the index-wheels, levers adapted to oscillate independently on the spindles, and each provided at one end with a noose or cam adapted to disengage the latch from the index-wheel and at the other end with a pawl adapted to engage with and rotate the index-wheel, means for moving said levers in one direction at stated periods, and springs whereby the levers are returned to their normal positions after being thus moved, as set forth.

9. In a machine for cutting the teeth of duplex wheels, the combination of a rotary cutter mounted on a slide or carriage, a guide-plate for said carriage pivoted to a support and adapted to stand horizontally or at any desired angle, means for positively holding said guide-plate in any position to which it may be adjusted, and mechanism for reciprocating said carriage on its track and for raising and lowering the track with the carriage, as set forth.

10. The combination of a slide or carriage, *q*, having a rotary cutter, the guide-plate *t*, on which said slide is adapted to reciprocate, the slide *v*, adapted to move vertically in guides in a fixed support and connected with the guide-plate *t* by a pivot, *u*, the pinion *b'*, mounted loosely on said pivot and engaged with a rack, *p'*, on the slide, the vertical rack-bar *s'*, adapted to move in a guide in the slide *v*, and a continuously-rotated shaft having cams *s* and *s'*, adapted to actuate the slide *v* and bar *s'*, as set forth.

323,176. AUTOMATIC ADVERTISING DEVICE. EDWARD MASON, Detroit, Mich., assignor to John O'Connor, same place. Filed July 23, 1884. (No model.)



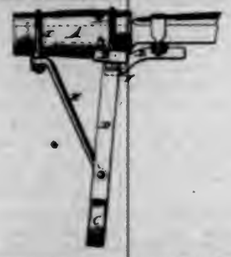
Claim.—1. An advertising device provided with means for attaching it to a window-sash, and with a hammer and actuating mechanism, substantially as described, for causing said hammer to tap upon said window, as and for the purposes specified.

2. In combination with a window, a clock-work provided with a striking device for producing a tapping upon the window, substantially as and for the purpose described.

3. In combination with a window, a clock-work provided with a striking device for automatically producing an intermittent tapping upon said window, as and for the purpose specified.

4. In an advertising device, the combination of the window and window-pane with the shaft G, shaft I, wheel J, worm-shaft K, balance-wheel L, shaft N, escapement O, verge P, arm R, and hammer S, arranged to be automatically operated by a train of gear and a spring, substantially as and for the purposes specified.

323,177. SLEIGH-RUNNER. JOHN L. MASON, Davenport, Iowa. Filed Mar. 20, 1885. (No model.)



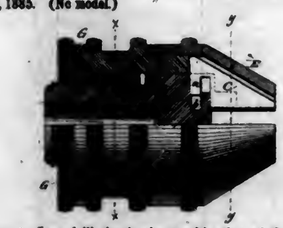
Claim.—1. In a sleigh-runner for use on an ordinary carriage-axle, a hub provided with circumferential grooves at its two ends, in combination with the runner, the rave underlying the hub, the standard D, the brace H, and the two clip-bolts E and I, seated in the grooves and connecting the upper parts therewith in the manner described and shown.

2. The combination of the runner, the standard D, the rave B, the hub A, the clip-bolt E, encircling the hub and extending through the rave and standard, and the clip-bolt encircling the hub and passing through both the brace H and the brace K.

3. In a runner for use on an ordinary carriage-axle, a hub, A, the runner, standard, and rave located beneath the inner end of the hub, and united thereto by a clip, E, in combination with the forked brace H, extending from the standard to the outer end of the hub and connected thereto by the clip I, whereby the runner is suitably braced from the outer side.

4. The combination of the axle and axle-clip with the runner journaled on the axle, and the stop-arm L, secured rigidly to the runner and adapted to encounter the clip to prevent the overturning of the runner.

323,178. DRILL-CHUCK. WILLIAM MASON, New Haven, Conn. Filed Jan. 12, 1885. (No model.)



Claim.—1. In a drill-chuck, the combination of the body, a head longitudinally movable thereon, several jaws arranged in said head free for radial movement independent of the body, but in connection with the body, whereby longitudinal movement with the head is prevented, a sleeve between the body and head, the adjacent surfaces of the body and sleeve and sleeve and head both screw-threaded in the same direction, but with differential threads, substantially as described.

2. The combination of the body A, the head D, arranged on the body and so as to move longitudinally thereon, jaws C, arranged radially in said head free for radial movement, but in connection with the body, and thereby held to prevent longitudinal movement of the jaws with the body, the head and backs of the jaws of conical shape, the correspondingly conical-shaped cap E, secured to the head over the jaws, the sleeve F, arranged between the body A and the head D, the outer surface of the body and the inner surface of the sleeve correspondingly screw-threaded, and the outer surface of the sleeve and the inner surface of the head correspondingly screw-threaded, the two threads in the same direction, but of differential pitch, the sleeve constructed with an annular projection corresponding substantially to the exterior of the head, substantially as described.

323,179. DRILL-CHUCK. WILLIAM MASON, New Haven, Conn. Filed Apr. 20, 1885. (No model.)

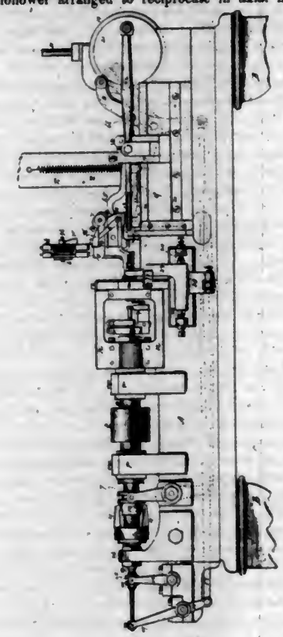


Claim.—1. In a drill-chuck, the combination of the body A, constructed of conical shape at its forward end, and with radial recesses at the said forward end, a head, E, over said forward end correspondingly inclined upon its inner surface, jaws D, arranged in said radial recesses, free for longitudinal and radial movement therein, a sleeve, G, surrounding the said body and free for longitudinal movement thereon in rear of the jaws, but in connection therewith, and so that a longitudinal movement of said sleeve G will be imparted to said jaws, a second sleeve, I, arranged around the body outside the said sleeve G, free for rotation, but fixed as to longitudinal movement, and an intermediate sleeve, L, between said sleeves I and G, said sleeve L constructed upon its inner surface with a screw-thread corresponding to the thread upon the exterior of the sleeve G, and so as to engage therewith, and the said sleeve L constructed with a screw-thread to engage a corresponding screw-thread in the sleeve I, the pitch of the thread on the said sleeves I and G and the corresponding threads on the sleeve L being greater the one than the other, and whereby the said intermediate sleeve forms a differential screw between the sleeves I and G, substantially as described.

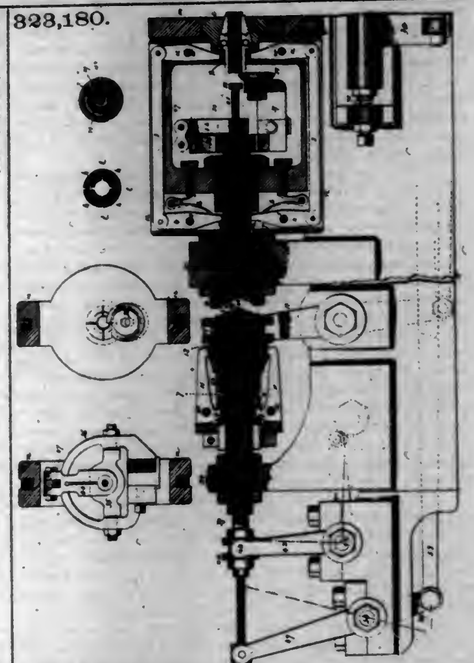
2. In a drill-chuck provided with longitudinally and radially movable jaws at its outer end and with a sleeve arranged on the said body and movable longitudinally thereon in connection with said jaws, the said body constructed with a cavity at its rear end to receive the plug, the surface of the said chuck around the rear end of said cavity of conical shape, combined with a ring, N, its inner surface of correspondingly conical shape and set over said rear end of the body, substantially as described.

323,180. MACHINE FOR TRIMMING CARTRIDGE-SHELLS. WILLIAM MASON, New Haven, Conn., assignor to the Winchester Repeating Arms Company, same place. Filed May 18, 1885. (No model.)

Claim.—1. The combination of a revolving chuck arranged to receive and hold a shell to be operated upon, a carrier arranged to oscillate in a plane coincident with the axis of said chuck, said carrier provided with spring-jaws arranged to receive and hold a shell, and under the oscillating movement of the carrier present said shell in axial line with the chuck, and a follower arranged to reciprocate in axial line with said



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chuck and adapted to transfer said shell from the grasp of said jaws into said chuck, substantially as described.

2. The combination of a revolving chuck arranged to receive and grasp a shell to be operated upon, a carrier arranged to oscillate in a plane coincident with the axis of said chuck and constructed with a recess adapted to receive a shell, and under the oscillating movement of said carrier to present said shell in axial line with said chuck, the said carrier also constructed with a second recess at substantially right angles to the recess which so receives and presents the shell, a follower arranged to reciprocate in the axial line of said chuck and adapted to pass through the first-mentioned recess in said carrier when said recess is in axial line with the chuck, whereby the shell therein will be transferred to said chuck, and a second reciprocating follower, also in axial line with the chuck, but upon the opposite side to the first-mentioned follower, said second follower adapted to transfer the shell from the chuck to the second recess in said carrier, when said recess is in its turn presented in line with the chuck, substantially as described.

3. The combination of a revolving chuck arranged to receive and hold a shell, a carrier arranged to oscillate in a plane coincident with the axis of said chuck, constructed with two recesses at substantially right angles to each other, the said recesses being in the plane with the axis of said chuck, the oscillatory movement of said carrier first presenting one of said recesses and then the other to said chuck, a feeding-tube arranged to successively conduct shells to said carrier and deliver a single shell to the first recess therein when presented to the mouth of the tube while the second recess is in axial line with the chuck, the oscillatory movement of said carrier adapted to transfer the shell so received into a position in axial line with the chuck, a follower arranged to reciprocate in axial line with said chuck and adapted to pass through the recess in the carrier containing the said shell when so presented to the chuck, and thereby transfer the shell from the carrier to the chuck, and a second follower reciprocating in axial line with said chuck, but upon the opposite side of the chuck to the first-mentioned follower, the said second follower adapted to pass through the chuck and transfer the shell introduced by the first follower from the chuck to the second recess in the carrier, substantially as described.

4. The combination of a revolving chuck adapted to receive and hold cartridge-shells, a carrier arranged to swing in a plane coincident with the axis of said chuck, the said carrier constructed to receive a shell and present it in line with the chuck, a reciprocating follower in axial line with said chuck and adapted to transfer the shell from said carrier to said chuck, and a cutter arranged to swing in a path at right angles to the axis of and in front of said chuck, substantially as described, whereby under such swinging movement of the cutter it is brought into contact with and so as to operate upon the shell held by the chuck.

5. The combination of a revolving chuck arranged to receive and hold a shell to be operated upon, a carrier arranged to oscillate in a plane

coincident with the axis of said chuck, said carrier provided with spring-jaws arranged to receive and hold a shell and under the oscillating movement of the carrier present said shell in axial line with the chuck, and a follower arranged to reciprocate in axial line with said chuck and adapted to transfer said shell from the grasp of said jaws into said chuck, and a cutter arranged to swing in a path at right angles to the axis of and in front of the said chuck, substantially as described, and whereby under such swinging movement of the cutter it is brought into contact with and so as to operate upon the shell held by the chuck.

6. The combination of a revolving chuck arranged to receive and grasp a shell to be operated upon, a carrier arranged to oscillate in a plane coincident with the axis of said chuck and constructed with a recess adapted to receive a shell, and under the oscillating movement of said carrier to present said shell in axial line with said chuck, the said carrier also constructed with a second recess at substantially right angles to the recess which so receives and presents the shell, a follower arranged to reciprocate in the axial line of said chuck, and adapted to pass through the first-mentioned recess in said carrier when said recess is in axial line with the chuck, whereby the shell therein will be transferred to said chuck, a second reciprocating follower, also in axial line with the chuck, but upon the opposite side to the first-mentioned follower, said second follower adapted to transfer the shell from the chuck to the second recess in said carrier when said recess is in its turn presented in line with the chuck, and a cutter arranged to swing in a path at right angles to the axis of and in front of said chuck, substantially as described, and whereby under such swinging movement of the cutter it is brought into contact with and so as to operate upon the shell held by the chuck.

7. The combination of a revolving chuck arranged to receive and hold a shell, a carrier arranged to oscillate in a plane coincident with the axis of said chuck, constructed with two recesses at substantially right angles to each other, the said recesses being in the plane with the axis of said chuck, the oscillatory movement of said carrier first presenting one of said recesses and then the other to said chuck, a feeding-tube arranged to successively conduct shells to said carrier and deliver a single shell to the first recess therein when presented to the mouth of the tube while the second recess is in axial line with the chuck, the oscillatory movement of said carrier adapted to transfer the shell so received into a position in axial line with the chuck, a follower arranged to reciprocate in axial line with said chuck and adapted to pass through the recess in the carrier containing the said shell when so presented to the chuck, and thereby transfer the shell from the carrier to the chuck, a second follower reciprocating in axial line with said chuck, but upon the opposite side of the chuck to the first-mentioned follower, the said second follower adapted to pass through the chuck and transfer the shell introduced by the first follower from the chuck to the second recess in the carrier, and a cutter arranged to swing in a path at right angles to the axis of and in front of said chuck, substantially as described, whereby under such swinging movement of the cutter it is brought into contact with and so as to operate upon the shell held by the chuck.

8. The combination of a substantially rectangular frame arranged upon a hollow arbor so as to revolve therewith, chuck-jaws arranged in said frame at the outer end and in axial line with the revolution of said frame, a longitudinally-sliding sleeve arranged within said arbor, and a system of levers between said longitudinally-sliding sleeve and the jaws of said chuck, whereby said jaws are made to open or close, as the case may be, a tube arranged longitudinally within said arbor, fixed at its rear end, the other end extending into the frame in rear of the chuck-jaws, a yoke hung within the frame upon the end of said fixed tube so as to swing in a plane coincident with the axis of the chuck, and a longitudinally-reciprocating shaft within said tube and extending through it into said frame, and carrying an arm upon its end within the frame, the said arm in connection with the yoke upon one side of the center, the said yoke extending to the opposite side of the center and there carrying a cutter, whereby under the longitudinal reciprocating movement of said shaft the said cutter will be turned inward or outward from the center of motion of the chuck, substantially as described.

9. The combination of a substantially rectangular frame arranged upon a hollow arbor so as to revolve therewith, chuck-jaws arranged in said frame at the outer end and in axial line with the revolution of said frame, a longitudinally-sliding sleeve arranged within said arbor, and a system of levers between said longitudinally-sliding sleeve and the jaws of said chuck, whereby said jaws are made to open or close, as the case may be, a tube arranged longitudinally within said arbor, fixed at its rear end, the other end extending into the frame in rear of the chuck-jaws, a yoke hung within the frame upon the end of said fixed tube so as to swing in a plane coincident with the axis of the chuck, a longitudinally-reciprocating shaft within said tube and extending through it into said frame and carrying an arm upon its end within the frame, the said arm in connection with the yoke upon one side of the center, the said yoke extending to the opposite side of the center and carrying a cutter, whereby under the longitudinal reciprocating movement of said shaft the said cutter will be turned inward or outward from the center of motion of the chuck, a carrier arranged to oscillate in a plane coincident with the axis of said chuck and forward of the face of the chuck, the said carrier constructed to receive a shell at one of its extreme points of movement and at its other extreme present said shell in axial line with said chuck, and a follower reciprocating in the axial line of said chuck and arranged to pass through said recess in the carrier when presented in axial line with the chuck, substantially as described, whereby the shell so presented by the carrier will be transferred therefrom into the chuck.

10. The combination of a substantially rectangular frame arranged upon a hollow arbor so as to revolve therewith, chuck-jaws arranged in said frame at the outer end in axial line with the revolution of said frame, a longitudinally-sliding sleeve arranged within said arbor, and a system of levers between said longitudinally-sliding sleeve and the jaws of said chuck, whereby said jaws are made to open or close, as the case may be, a tube arranged longitudinally within said arbor and fixed at its rear end, the other end extending into the frame in rear of the chuck-jaws, a yoke hung within the frame upon the end of said fixed tube so as to swing in a plane coincident with the axis of the chuck, a longitudinally-reciprocating shaft within said tube and extending through it into said frame and carrying an arm upon its end within the frame, the said arm in connection with the yoke upon one side of the center, the said yoke extending to the opposite side of the center and carrying a cutter, whereby under the longitudinal reciprocating movement of said shaft the said cutter will be turned inward or outward from the center of motion of the chuck, a carrier arranged to oscillate in a plane coincident with the axis of said chuck and forward of the face of the chuck, the said carrier constructed with two recesses at right angles to each other, one of which is presented in axial line with the said chuck at each extreme movement of said carrier, the first of said recesses arranged to receive a shell and present it in axial line with said chuck, a reciprocating follower arranged to pass through said first recess in the carrier when in line with the chuck and transfer the shell therein to the said chuck, and a spindle arranged longitudinally through the arbor carrying the chuck-frame and in axial line with the chuck, the said spindle arranged to reciprocate in said axial line outward through said chuck and return, substantially as described, whereby the shell so introduced to the chuck by the said follower will be forced from the chuck by said spindle into the second recess in the said carrier when presented in axial line with the chuck, substantially as described.

12. The combination of a revolving chuck, feed-tube I, oscillating carrier K, spring-jaws U U, hung in said carrier, double fixed cam Y, reciprocating follower 18, and transversely-swinging cutter-arm 23, carrying the cutter 31, substantially as and for the purpose described.

13. The combination of the revolving chuck, feed-tube I, oscillating carrier K, spring-jaws U U, hung in said carrier, spring-jaws 56, also hung in said carrier, reciprocating follower 18, transversely-swinging cutter-holder 23, carrying the cutter 31, and vertically-reciprocating slide 60, carrying the ejecting-finger 59, substantially as described.

14. The combination of the revolving chuck, the feed-tube I, hook-shaped dog 75, oscillating carrier K, constructed with a recess to receive shells from said tube and with a second recess at substantially right angles to said receiving-recess, a reciprocating follower, 18, and reciprocating spindle 48, substantially as and for the purpose described.

15. The combination of the revolving chuck, the feed-tube I, hook-shaped dog 75, oscillating carrier K, constructed with a recess to receive shells from said tube and with a second recess at substantially right angles to said receiving-recess, a reciprocating follower, 18, and reciprocating spindle 48, with a vertically-reciprocating ejecting-finger, 59, substantially as and for the purpose described.

16. The combination of the revolving chuck, feed-tube I, oscillating carrier K, between said tube and chuck, said carrier constructed with a recess adapted to receive shells from said tube and transfer them into line with said chuck, the reciprocating follower 18, transversely-swinging cutter-holder 23, carrying the cutter 31, and the reciprocating spindle 48, substantially as described.

17. The combination of the feed-tube, oscillating carrier K, longitudinally-reciprocating follower 18, revolving chuck-frame n, chuck-jaws arranged in the outer end of said frame, yoke 36, hung upon fixed bearings within said frame and carrying a cutter, 38, at one side of the axis of said frame, longitudinally-reciprocating shaft 39, carrying an arm, 46, in connection with said yoke upon the opposite side of the axis of the chuck-frame, substantially as described.

18. The combination of the feed-tube, oscillating carrier K, longitudinally-reciprocating follower 18, revolving chuck-frame n, chuck-jaws arranged in the outer end of said frame, yoke 36, hung upon fixed bearings within said frame and carrying a cutter, 38, at one side of the axis of said frame, longitudinally-reciprocating shaft 39, carrying an arm, 46, in connection with said yoke upon the opposite side of the axis of the chuck-frame, and the transversely-swinging cutter-bar 23, carrying the cutter 31, substantially as described.

19. The combination of the feed-tube, oscillating carrier K, longitudinally reciprocating follower, revolving chuck-frame n, chuck-jaws arranged in the outer end of said frame, yoke 36, hung upon fixed bearings within said frame and carrying a cutter, 38, at one side of the axis of said frame, longitudinally-reciprocating shaft 39, carrying an arm, 46, in connection with said yoke upon the opposite side of the axis of the chuck-frame, and the vertically reciprocating ejector-finger 59, substantially as described.

20. The combination of the feed-tube, oscillating carrier K, longitudinally-reciprocating follower 18, revolving chuck-frame n, chuck-jaws arranged in the outer end of said frame, yoke 36, hung upon fixed bearings within said frame and carrying a cutter, 38, at one side of the axis of said frame, longitudinally-reciprocating shaft 39, carrying an arm, 46, in connection with said yoke upon the opposite side of the axis of the chuck-frame, and the transversely-swinging cutter-bar 23, carrying the cutter 31, and the vertically-reciprocating ejector-finger 59, substantially as described.

21. The combination of the revolving chuck, feed-tube I, carrier K, constructed with a shoulder, 69, reciprocating follower 18, dog 65, and rest 72, substantially as described.

22. The combination of the revolving chuck, feed-tube I, carrier K, constructed with the shoulder *g*, lever *b*, carrying a stud, *d*, lever *f*, in connection with said lever *b*, and reciprocating follower 18, substantially as described.

323,181. DRILL-CHUCK. WILLIAM MASON, New Haven, Conn. Filed June 15, 1885. (No model.)

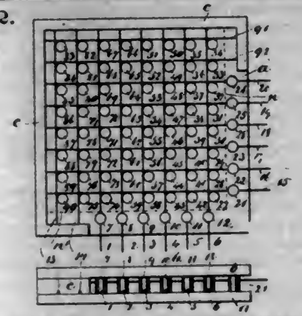


Claim.—In a drill-chuck, the combination of a conical-shaped head, jaws arranged therein, free for longitudinal and radial movement, the head constructed with a body extending therefrom and adapted for attachment to the mandrel, a sleeve on said body, free for longitudinal movement and connected to said jaws, the exterior of the said sleeve screw-threaded, a principal ring surrounding said sleeve, internally screw-threaded, corresponding to the screw-thread on said sleeve, an abutment in rear of said sleeve and against which said ring may bear, the said ring also free for a certain extent of longitudinal movement with the sleeve, and a second internally-screw-threaded ring, the screw-thread of which is of smaller pitch than that of the principal ring, arranged upon a corresponding screw-threaded portion of the chuck in rear of said principal ring and adapted to force said principal ring forward, substantially as described.

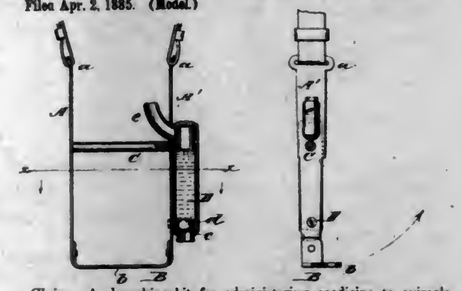
323,182. ELECTRICAL SWITCH-BOARD. ALEXANDER C. MATHER, Montreal, Quebec, Canada. Filed Jan. 22, 1885. (No model.)

Claim.—The combination of the wires of electrical generators and auxiliary electrical generator-wires arranged in one plane with circuit-wires and auxiliary circuit-wires arranged in another plane, the one said plane overlying the other, and the wires in the one said plane being in direction at an angle with the direction of the wires in the other said plane, and with connections arranged to connect one wire in one plane with another wire in another plane, the said connection consisting of a strip, *k*, formed into forked ends at an angle, the end of the fork with the other end of the fork, the said angle being made to agree with the angle of the wires in the two said planes, and the said fork having the block *l* placed between the forked ends, the whole substantially as described.

323,182.

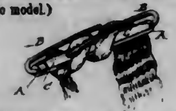


323,183. DRENCHING-BIT. JAMES F. MARVIN, Fort Apache, Ariz. Filed Apr. 2, 1885. (Model.)



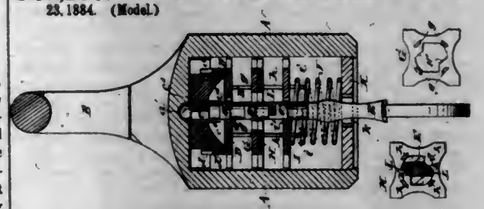
Claim.—A drenching-bit for administering medicine to animals, consisting of the reservoir D, secured to the side bars of the bit in an inverted position, having a spout at one end and a valve at the opposite end, as described.

323,184. HAIR-FRIZZLER. JNO. MATHINGER, New York, N. Y. Filed Apr. 1, 1885. (No model.)



Claim.—A hair-frizzler composed of a short tube, a semicircular retaining-piece pivoted to the tube, and a flexible wire passing through the tube and extending beyond the ends of the same, substantially as set forth.

323,185. PADLOCK. SAMUEL MCCARTER, Lancaster, Pa. Filed Oct. 23, 1884. (Model.)



Claim.—1. A padlock constructed with a notched hasp, a tumbler, C, made with end parts, c^2 c^2, adapted to enter the hasp-notches, and with side recesses, c^3 c^3, and a spring-pressed clutch, D, having the side lugs, *d d*, adapted to enter the tumbler-recesses c^3 c^3, in combination with a key having a bit adapted to force the clutch from the tumbler and a bit to turn the tumbler, substantially as herein set forth.

2. In a padlock, the tumbler C, constructed with parts c^2 c^3, adapted to enter the hasp-notches, side recesses, c^3, a key-hole, c^4, and a boss, c^1, concaved at c^5, in combination with a clutch, D, having a flange, d^1, in which the tumbler-boss c^1 centers, and lugs *d*, adapted to enter the tumbler-recesses c^3, and a key-hole, d^3, substantially as herein set forth.

3. In a padlock, the combination, with the lock-case A, notched hasp B, the tumbler C, and clutch D, made substantially as specified, of a series of interchangeable wards, G H I, having studs *g h i*, respectively, and the spring J, and a key having cam-bits adapted to force the clutch and wards back and turn the tumbler, substantially as herein set forth.

4. In a padlock, the combination, with the lock-case A, notched hasp B, the tumbler C, and clutch D, made substantially as specified, of a series of interchangeable wards, G H I, having studs *g h i*, respectively, and said wards G H having right and left hand stops *g' h'* formed at their key-holes, and a key, E, provided with cam-bits adapted to force the wards and clutch back, and also provided with stop-shoulders L to act on either ward G H, substantially as herein set forth.

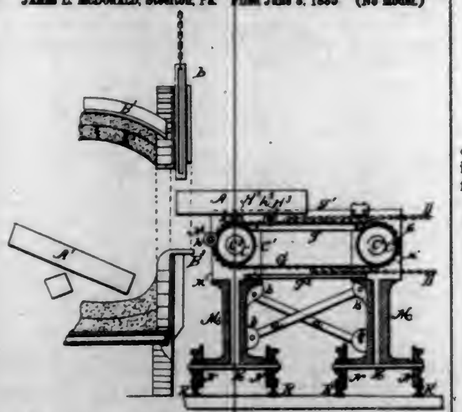
5. In a padlock of the character described, the wards G H, made with studs *g h*, and right and left hand stop-shoulders *g' h'*, substantially as herein set forth.

6. In a padlock of the character described, the ward I, made with studs *i*, and diagonally-opposite beveled edges *i'* to the key-hole at its opposite faces, substantially as herein set forth.

7. In a padlock of the character described, the clutch D, constructed to operate in combination with the tumbler C, as specified, and having diagonally-opposite bevels or inclines d^6 on its inner face at the key-orifice, substantially as herein set forth.

323,186. CHARGING-CARRIAGE FOR ROLLING-MILL FURNACES.

JAMES L. MCDOWALD, Steelton, Pa. Filed June 8, 1885. (No model.)



Claim.—1. In a charging-carriage for mill-furnaces, the combination, with laterally-movable carriage on tracks in front of furnace-mouth, of drums journaled in uprights on said carriage, and of an endless-chain belt provided with mechanism for operating it back and forth, for the purpose substantially as set forth.

2. In a charging-carriage for mill-furnaces, the combination of rigid carriage-frame mounted on wheels, and tracks adapted for moving carriage from furnace to furnace laterally, of drums journaled in said frame, of endless-chain belt supported on said drums, of a trundle-bed having its axles or transverse bars flexibly secured to said belt, and its rollers guided for relieving said belt of undue stress thereon, and of chains or means connecting said belt with a motor adapted to impart a reciprocatory movement thereto, substantially as and for the purposes set forth.

3. In a charging-carriage for mill-furnaces, the combination of the pedestals M, braced rigidly together and movably mounted on tracks R R', the drums C, journaled in said pedestals, the chain belt G, supported on said drums, the trundle-axles H, &c., attached to said belt, the trundle-rollers *h*, &c., applied to flanges C^4 on said drums and to the rails *g* g^3 in line therewith, and the chains D D', applied to couple said belt and actuating mechanism, substantially as and for the purposes set forth.

4. In a charging-carriage for mill-furnaces, the combination of pedestals M, braces *a*, wheels N, drums C, chain belt G, trundle-bed *h* H, &c., guide-rails *g* g' g^3, and chains D D', all connected and adapted for operation as and for the purposes set forth.

323,187. GRAIN-ADJUSTING MECHANISM FOR GRAIN-BINDING HARVESTERS.

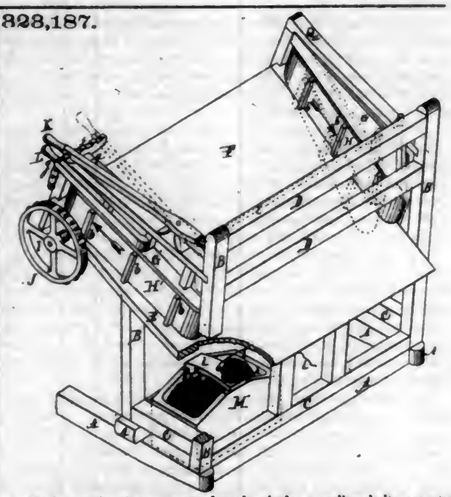
WILLIAM MCGREGOR and THEODORE M. FLENNIKEN, Rockford, Ill.; said McGregor, for himself and as administrator of said Flenniken, deceased, assignor to William Lathrop, same place. Filed May 12, 1879.

Claim.—1. An endless belt moving in the direction of the grain-delivery, operating when in contact with the heads of the grain on its passage from the elevators to insure their passage over the table, substantially as and for the purpose set forth.

2. The combination, with an inclined table, the shaft I, pinions *d*, pinions *c*, shafts *a*, and rollers and belt-carrying frames secured to the said shafts *a*, of the endless belts moving in the direction of the grain-delivery, one of the said belts operating when in contact with the heads of the grain on its passage from the elevators to insure their passage over the table, and the other operating on the stubble ends of the grain, substantially as set forth

3. The combination, with the shaft I, pinions *d*, pinions *c*, and shafts

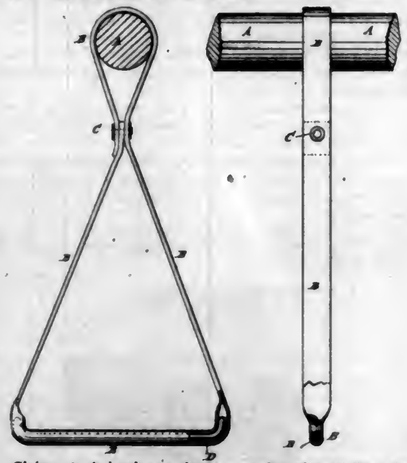
323,187.



a, of belt-carrying frames secured to the shafts *c*, endless belts mounted in said frames and provided with slats, and levers for adjusting the belt-frames independent of each other, substantially as set forth.

323,188. HAND-STRAP FOR CARS.

JAMES MCMANUS, New York, N. Y. Filed Nov. 15, 1884. (No model.)

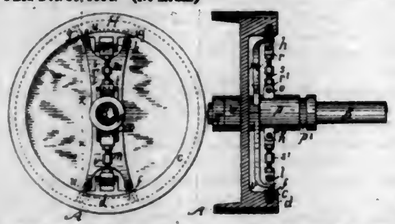


Claim.—1. A hand-strap for cars, made, substantially as herein shown and described, with the hand-piece of its hand-loop rounded and stiffened by a rigid rod, as set forth.

2. In a hand-strap for cars, the combination, with the rounded bend of the hand-loop of the strap B, of a rigid rod, D, having its ends bent upward, substantially as herein shown and described, whereby the said hand-loop will be kept open and in proper shape to be conveniently grasped, as set forth.

323,189. FRICTION-CLUTCH.

SOLOMON MEAD, New Haven, Conn. Filed Dec. 31, 1884. (No model.)



Claim.—1. In a friction-clutch, in combination with the brake and the clutch-sleeve, an arm pivoted to the sleeve, an arm pivoted to the brake, and a right and left handed screw tapped at its ends into such arms

and pivoted at or near its middle with an angular enlargement by which it can be turned, substantially as and for the purpose described.

2. In a friction-clutch, in combination with the arm pivoted to the brake and the arm pivoted to the sliding clutch-sleeve, the right and left handed screw tapped at its ends into such pivoted arms and provided with jam-nuts to prevent the turning of the ends in the arms, substantially as and for the purpose described.

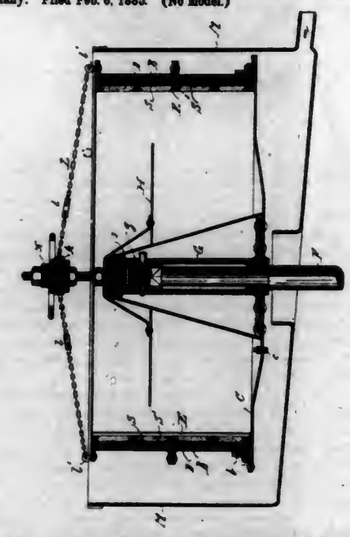
3. In a friction-clutch, in combination with the movable brake provided on its inner or lower side with suitable openings, the arm *v*, provided on its outer end with studs or pins *h h*, entering the openings in the friction-shoe, substantially as and for the purpose described.

4. In combination with the pulley loosely journaled on the shaft, the arm *v*, rigidly connected with the shaft and provided on its outer end with pins or studs, the brake provided with openings engaging the pins or studs on the arm, the clutch-sleeve sliding on the shaft, and the link or arm pivotally connected at its end to the clutch-sleeve and brake, substantially as and for the purpose described.

5. In combination with the pulley or wheel having on the interior of the rim a groove having its sides inclined toward or approaching each other toward the bottom of the groove, the brake having its bearing portion shaped to correspond with the shape of the groove, and the expanding-arm pivotally connected at its ends to the brake and clutch-sleeve, substantially as and for the purpose described.

323,190. APPARATUS FOR MANUFACTURING PLATES, TUBES, AND OTHER ARTICLES FROM CLAY, CEMENT, PLASTER-OF-PARIS, &c.

FRIEDRICH C. A. MEIER, Walkenried-on-the-Harz, Brunswick, Germany. Filed Feb. 6, 1885. (No model.)



Claim.—1. In a basket or centrifugal apparatus for the manufacture of articles from clay and other plastic materials, the folding sides B, jointed to the bottom C and controlled by chains L or equivalent device, substantially as specified.

2. In a basket or centrifugal apparatus for the manufacture of articles from clay and other plastic materials, a plate, D, of glass or other material capable of taking a fine surface, against which the plastic material is pressed by centrifugal force for the purpose of imparting a smooth surface to the said plastic material.

3. In a basket or centrifugal apparatus for the manufacture of articles from clay and other plastic materials, the combination, with the folding sides B, of mold-plates E or frames E', adapted to be attached thereto in any suitable manner.

4. In a basket or centrifugal apparatus for the manufacture of articles from clay and other plastic materials, the combination, with the folding sides B, of chains or equivalent device L, adapted to hook into eyebolts *l'*, and provided with adjusting-nut and right and left handed screws *l*, screw-bolt J, and nut K, the whole constructed and operating substantially as and for the purpose specified.

5. In a basket or centrifugal apparatus for the manufacture of articles from clay and other plastic materials, and as a means of movably connecting the basket with its spindle or shaft F, the combination, with the said shaft, of the sleeve G, adapted to fit over the square *f* or be secured by the movable pin *g*, substantially as specified.

323,191. WINDOW-MIRROR.

SIMPFREID L. F. MELOHN, Milwaukee, Wis. Filed Oct. 25, 1884. (No model.)

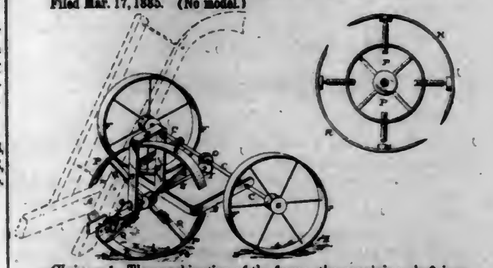
323,191.



Claim.—The combination of mirrors A A, set rigidly in the frame B B, the frame B B, consisting of two wings set at an angle to each other and held rigidly together by a triangular block inserted between the parts thereof, the supporting-arm C, journaled at the outer end into the triangular block in frame B, and the set-screw D, whereby said frame B, adjustable on arm C, is held in position, substantially as set forth.

323,192. COTTON-CHOPPER.

JULIAN T. MILLER, Branchville, Tex. Filed Mar. 17, 1885. (No model.)

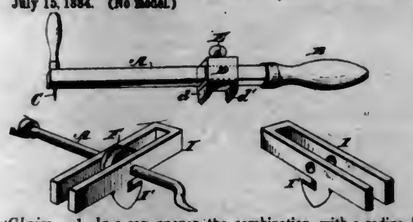


Claim.—1. The combination of the frame, the revolving shaft journaled therein, and the chopping-wheel having the adjustable semicircular cutters which are arranged in relation to each other so as to form virtually the rim of the wheel, substantially as shown.

2. The combination, in a cotton-chopper, of the jointed frame, the spring, the revolving shaft, and the chopping-wheel secured thereto, substantially as described.

323,193. CAN-OPENER.

RICHARD O. MESSNER, Waco, Tex. Filed July 15, 1884. (No model.)



Claim.—1. In a can-opener, the combination, with a radius-bar having a handle at one end and a vertical fulcrum or pivot-pin, of an adjustable sleeve mounted on the bar and carrying two cutters, one being adapted to act as a guide and the other as a cutter, substantially as described.

2. The combination, with the bar A, of a frame loosely mounted thereon and having a cutting-bar integral therewith, and a double-edged cutter mounted upon the bar within said frame.

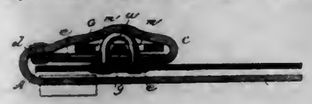
323,194. MAIL-BAG.

ANDREW J. MORRISON, West Troy, N. Y., assignor of one-half to John N. Baxter, Rutland, Vt. Filed Nov. 25, 1884. (No model.)

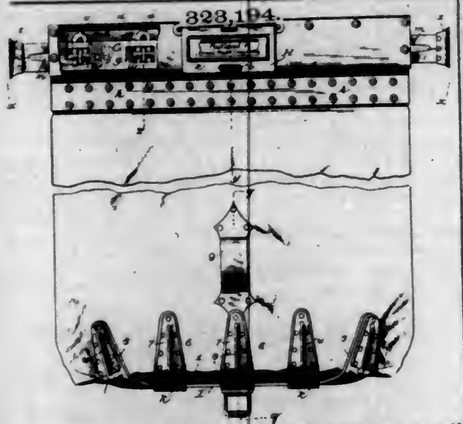
Claim.—1. In combination with a bag and flap having its edge folded upon itself to form a sheath, the strap having locking-bolts contained within said sheath, and slots in the inner part of said sheath to receive the staples, all substantially as described.

2. In combination, a flap of a bag having slots to receive the staples on the mouth of the bag, a locking-strap inclosed in a sheath in the flap and exposed at its middle part, said strap having slots and bolts adapted to lock in the staples when the strap is drawn outward from the center, and a locking-plate adapted to cover the exposed portion of the strap, all substantially as described.

3. In combination with the flap of the mail-bag having slots to receive the staples on the mouth of the bag, a locking-strap inclosed in the sheath in the flap and exposed at its middle part, said strap having slots and bolts adapted to lock in the staples when the strap is drawn outward from the center, a locking-plate adapted to cover the exposed por-



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tion of the strap, and a label-holder pivoted in the center of the said plate over the strap, as described.

4. In combination with the bottom of a mail-bag, the re-enforcing leather strips K and branches 5 5, and the metal side plates, 7, substantially as described.

5. In combination with the bottom of a mail-bag, the re-enforcing leather strips K and branches 5 5, the metal side plates, 7, and the rods 8, fitted to said side plates and bent around the bottom thereof, substantially as described.

323,195. CAR-COUPLING. ROBERT T. MORRISON, Jr., Medina, Ohio. Filed Dec. 10, 1884. (No model.)

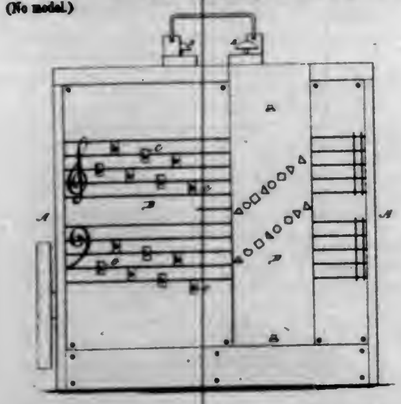


Claim.—1. The combination, with a draw-head having an elongated open slot formed therein, preferably at or about an angle of forty-five degrees from a transverse horizontal line through the draw-head, of a hook pivoted at one end within said slot and extending outward and terminating beyond or outside of the draw-head, substantially as set forth.

2. The combination, with a draw-head having an elongated open slot formed therein, preferably at or about an angle of forty-five degrees from a transverse horizontal line through the draw-head, and also provided with a buffer-face and link-pocket, of a hook pivoted at one end within said slot, and extending outward and terminating beyond or outside of the draw-head, substantially as set forth.

3. In car-couplers, the combination, with a draw-head with link-pocket, pin, and buffer, and a hook pivoted so as to swing outward and upward and return by gravity, of buffers of unequal length on either side of the link-buffer, substantially as set forth.

323,196. DEVICE FOR ILLUSTRATING THE TRANSPOSITION OF MUSICAL SCALES. JOHN F. NEILL, Rusk, Tex. Filed Sept. 30, 1884. (No model.)

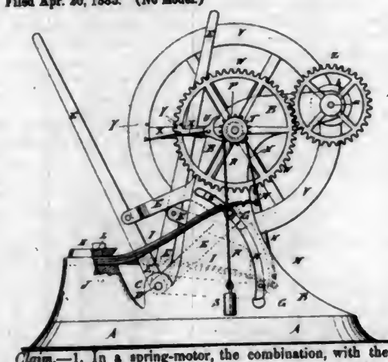


Claim.—1. The combination of the frame having a musical staff marked thereon and provided with openings C, movable devices with flats and sharps marked thereon, and a vertically-movable slide having the scales marked upon it, and the lever for moving the slide, substantially as described.

2. The combination of the frame having the perforations C, made through its side in any desired relation to the musical staff which is marked thereon, the vertically-moving rods W, the sliding spring-actuated rods U, which are alternately moved by the cams T upon the shaft I, and the lever H, for raising the rods W into position again, substantially as set forth.

3. The combination of the shaft I, provided with cams T, the spring-actuated sliding rods U, vertically-moving rods W, the shaft E, provided with cams F, lever H, cam-wheel upon the shaft I, and the lever for operating the slide, substantially as specified.

323,197. SPRING-MOTOR. WILLIAM H. OSTRANDER, Newburg, N. Y. Filed Apr. 20, 1885. (No model.)

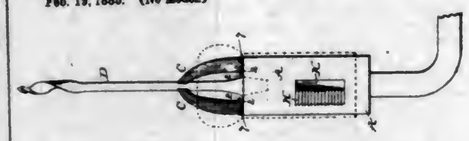


Claim.—1. In a spring-motor, the combination, with the frame, the shaft P, the fly-wheel V, and the gearing W Z *b*, of the elbow-levers E, having laterally-projecting pins G, the springs I, engaging with the said pins, the drums O Q, and the cords N, connecting the said springs and drums, and the cords R, attached to the said drums and to the suspended weights S, substantially as herein shown and described, whereby the said springs can be made to drive the said gearing, as set forth.

2. In a spring-motor, the combination, with the springs I and the standards J, having recesses in their tops to receive the ends of the said springs, of the cap-plates K, having their forward ends beveled, and the bolts L, substantially as herein shown and described, whereby the said springs will be held securely, as set forth.

3. In a spring-motor, the combination, with the shaft P, the wheels V W, attached to the said shaft, and the drums O Q, placed loosely upon the said shaft, of the ratchet-wheels T, the double pawls U, the springs X, and the pair of pins Y, substantially as herein shown and described, whereby the said drums can be made to rotate the said shaft and wheels in either direction, and can be readily thrown out of gear, as set forth.

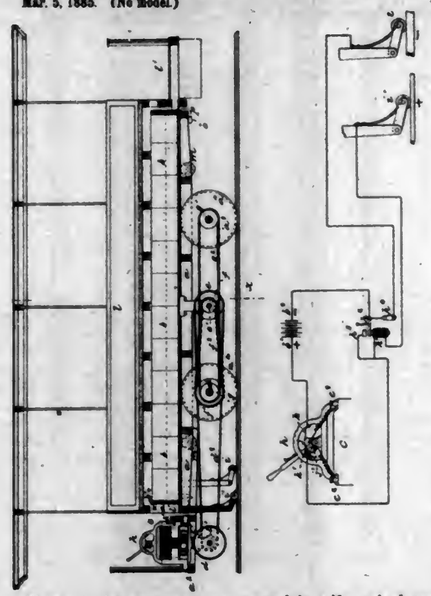
323,198. BIT-STOCK. GEORGE H. PACKWOOD, Tampa, Fla. Filed Feb. 19, 1885. (No model.)



Claim.—1. In a bit-stock, the combination of a center piece provided with a longitudinal recess, K, and a segmental threaded rack, H, communicating therewith, as described, sleeve B, carrying on its inner surface one or more teeth projecting inwardly to engage with the threaded rack and adjustably or rigidly connected with said sleeve, and clamping-jaws C C, operated through the longitudinal and partially rotating movement of the sleeve, substantially as set forth and described.

2. In a bit-stock, the combination of clamping-jaws C C, having spring 2 2, center piece A, to which said jaws are pivoted at their base, said center piece having thereon a longitudinal recess, K, and segmental threaded rack H, communicating therewith, as shown and described, sleeve B, fitting over said center piece and bearing with the inner edge of its upper opening against the sloping backs of the clamping-jaws, engaging teeth G, projecting inwardly into recess K through slot 5 in said sleeve, whereby the clamping-jaws are opened and closed by the longitudinal movement of the sleeve and locked by a partial turn thereof, substantially as set forth and described.

323,199. ELECTRIC LOCOMOTION. JOHN M. PENDLETON, New York, N. Y., assignor to the Equitable Electric Company, same place. Filed Mar. 5, 1885. (No model.)



Claim.—1. An electromotor-car actuated by self-contained accumulators or storage-batteries and electromotor, in combination with a car-body detachably connected thereto, substantially as set forth.

2. In an electromotor-car, in combination, accumulators or storage-batteries, an electric motor provided with a commutator by which the current from the battery is used to actuate it in either direction, and by which it may be cut out of the battery-circuit, an automatic switch the armature of which is in the circuit of the battery and motor, a contact-brush constructed and arranged to bear on a conductor fixed along the line and connected to the battery and motor through the magnet-coil of the automatic switch, and a contact-brush constructed and arranged to bear on another fixed conductor, and joined to the circuit of the battery and motor on the other side of the automatic switch, substantially as set forth.

3. An electromotor-car having a platform at one end and an electric motor secured thereon, and accumulators or storage-batteries permanently attached along the length of the top of the car-truck, in combination with a car-body having a platform at one end and an opening at the other end, through which the accumulators pass when the motor-car and car-body are being connected to or separated from one another, substantially as set forth.

4. The combination, with a car-body having downwardly-projecting hooks at one end and downwardly-projecting pins at the other end, of a motor car or truck having pins projecting from its sides at one end, adapted to engage the downwardly-projecting hooks of the car-body, and sockets at its other end, adapted to receive the downwardly-projecting pins of the car-body, substantially as and for the purpose set forth.

5. In an electromotor-car, in combination, an electric motor having its shaft arranged vertically, a bevel-pinion secured to the lower end of its armature-shaft, a bevel-wheel secured to a shaft parallel with the car-axles, and connecting pulleys and belts, whereby motion is imparted to the axles from the motors, substantially as set forth.

323,200. SPLIT NAIL OR TACK. RUFUS S. PERRETT, New Haven, Conn. Filed Feb. 2, 1885. (No model.)

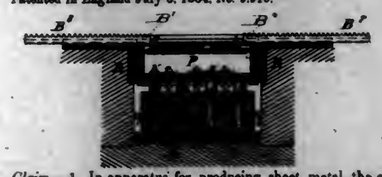


Claim.—1. As an article of manufacture, a nail or tack having its shank in cross-section and oblong with rounded ends, and provided with a longitudinal slot cut in the shank parallel to the rounded edges or side thereof, substantially as and for the purpose described.

2. As an article of manufacture, a split nail or tack having the ends of its prongs formed with a concave bevel, substantially as and for the purpose described.

3. As an article of manufacture, a split or slotted nail or tack having the ends of its prongs beveled, and such beveled portions concaved both longitudinally and transversely, substantially as and for the purpose described.

323,201. APPARATUS FOR MAKING SHEET-LEAD. REINHARD POENSGEN, Duesseldorf, Prussia, Germany. Filed Oct. 3, 1884. (No model.) Patented in England July 8, 1884, No. 9,910.



Claim.—1. In apparatus for producing sheet metal, the combination, with a box or chamber, of the sliding cheeks or dies B' B^2 and B^3 B^4 and toothed gearing and hand-wheels for effecting their adjustment in determining the width and thickness of the metal, substantially as described.

2. In apparatus for producing sheet metal, the combination of the adjustable cheeks B' and B^2 with the adjustable cheeks B^3 and B^4, substantially as described, and for the purpose set forth.

3. In apparatus for producing sheet metal, the combination of the adjustable cheeks B^3 and B^4, situated near the top of a suitable box, and constructed substantially as described, whereby they may be closed, thus separating the dross from the pure metal, substantially as described.

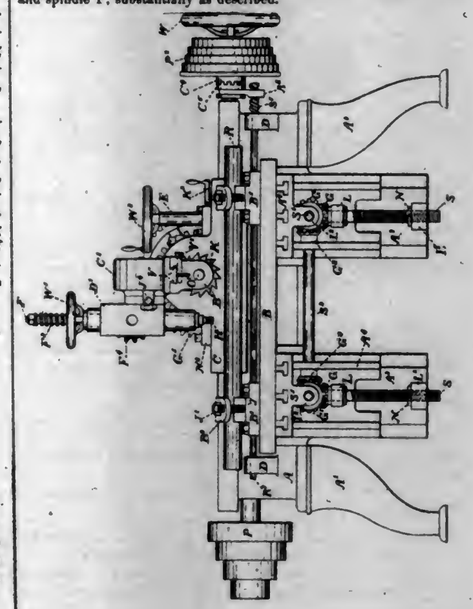
4. In the herein-described apparatus for producing sheet metal, the combination of the adjustable cheeks B' and B^2 and B^3 and B^4, the presses and their plungers, and the plate K, substantially as described, and for the purposes set forth.

5. In a device for manufacturing sheet metal, the combination of the chamber or box and the strengthening-barrel R with the hydraulic press and the adjustable dies, substantially as set forth.

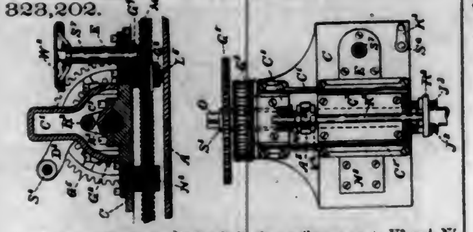
323,202. MILLING-MACHINE. FRANCIS A. PRATT, Hartford, Conn., assignor to the Pratt & Whitney Company, same place. Filed May 1, 1884. (No model.)

Claim.—1. In a milling-machine, a sliding carriage, as C, having a rigidly-fixed arm, C, a laterally-adjustable frame, D', supported on said arm, horizontal spindle O' vertical spindle F, and gearing, substantially as described, between said spindles, combined and operating substantially as set forth.

2. In a milling-machine, in combination, carriage C, having arm C', sleeve S^2, gears G^5 and F^2, splined shaft S^3, gears F^3 and F^4, frame D', and spindle F, substantially as described.



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3. In combination, spindle O, having collars or nuts V^3 and N', arm A^3, rod R^3, and screws J^2 and J^3, substantially as described.

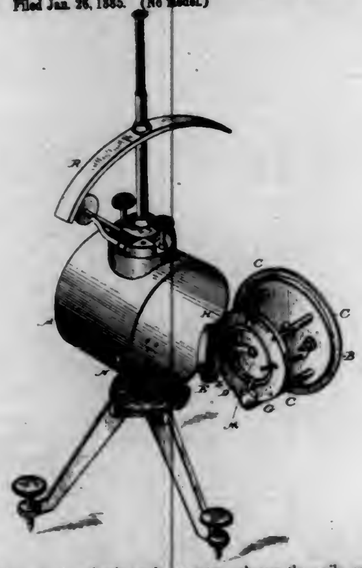
4. In combination, frame A, carriage C, having nuts N^3 and parts to receive shaft S^7 and gear G^4, splined screw M, gear G^4, gear G^5, shaft S^7, and hand-wheel W^3, substantially as and for the purpose described.

5. In combination, a frame, as A, a carriage, as C, having a pin, T, an oscillating shaft, R', carrying an adjustable spiral-faced stop, T', and having a screw-thread, S^8, arm A^4, screw M, and clutches C^3 and C^4, substantially as described.

6. In combination, a frame, as A, a carriage, as C, having a lug, L^4, and a bearing for shaft S^6, splined shaft R', having screw-thread S^9, gears G^6 and G^7, shaft S^6, having a handle, as K^2, arm A^4, screw M, and clutches C^3 and C^4, substantially as described.

7. The combination and arrangement herein shown and described of the frame A, having ways for the two sliding knees A^4, and supports for nuts N, screws S, shafts S', connecting-shaft S^6, large gears G' on shaft S', and smaller gears G and G^4 on said screws and shafts S^6, respectively, whereby both of said knees may be elevated simultaneously by the turning of either of said shafts S', without the gear on one screw acting as an intermediate for the transmission of power to the other screw.

323,203. REFLECTING-GALVANOMETER. ROBT. J. PRATT, Greenbush Heights, assignor to the Electric Manufacturing Company, Troy, N. Y. Filed Jan. 26, 1885. (No model.)



Claim.—1. A reflecting-galvanometer wherein the coils and suspended system are attached to the back plate, said back plate being hinged to the main casing and adapted to be secured in position by a catch or its equivalent upon the casing, substantially as shown and described.

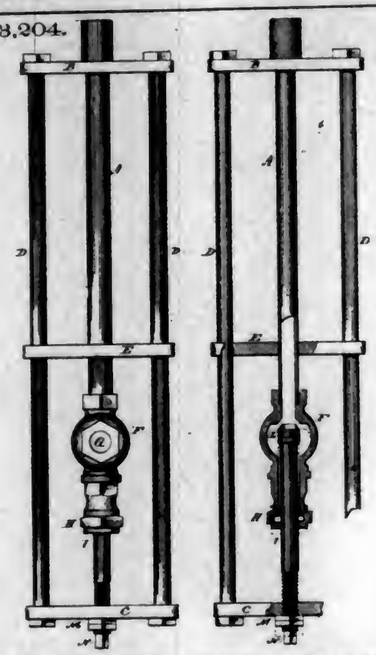
2. A reflecting-galvanometer wherein the coils located in front of the suspended system are adapted to slip into rings, said rings being hinged and held in position by a catch or its equivalent, substantially as shown and described.

3. A reflecting-galvanometer having a hinged back and removable swinging coils, substantially as described.

323,204. STEAM-TRAP. MARK J. REDMOND, Naugatuck, Conn. Filed Oct. 13, 1884. Renewed June 27, 1885. (No model.)

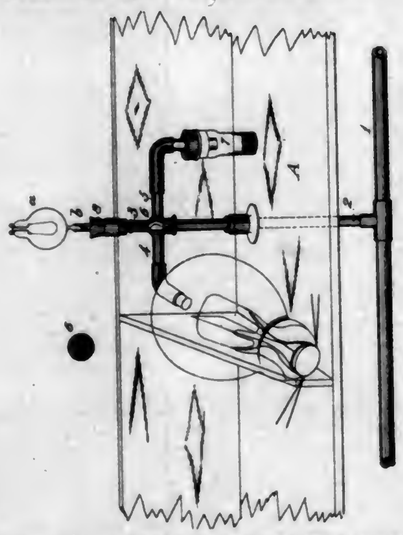
Claim.—The combination of the two cross-bars B C, parallel rods D D, rigidly connecting the said cross-bars B C, the steam-pipe A, one

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end fixed in the one cross-bar, B, and extending toward the other cross-bar, C, the valve-chamber F, rigidly fixed to the lower end of the steam-pipe A, the said steam-pipe opening into the said valve-chamber, the spindle I, screw-threaded through the lower cross-bar, C, and extending up into the valve-chamber, carrying at its upper end the valve L, and the jam-nuts M on the screw-threaded portion of the spindle below the cross-bar C, substantially as and for the purpose described.

323,205. MANUFACTURE OF INCANDESCENT LAMPS. ALBERT L. REIMANN, Pittsburg, Pa. Filed May 15, 1885. (No model.)

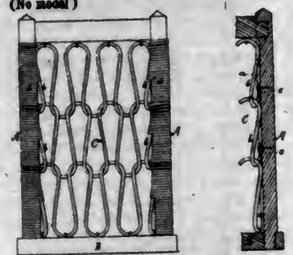


Claim.—1. As a step in the art of manufacturing incandescent electric lamps, the removal of moist air or vapor from the lamps while in a heated condition, substantially as set forth.

2. As a step in the art of manufacturing incandescent electric lamps, the removal of the air from the lamps while in a heated condition, and the subsequent admission of dry air, substantially as set forth.

3. As a step in the art of manufacturing incandescent electric lamps, exhausting the air from the lamps while in a heated condition, permitting the lamps to cool while exhausted, and then admitting chemically-dried air, substantially as set forth.

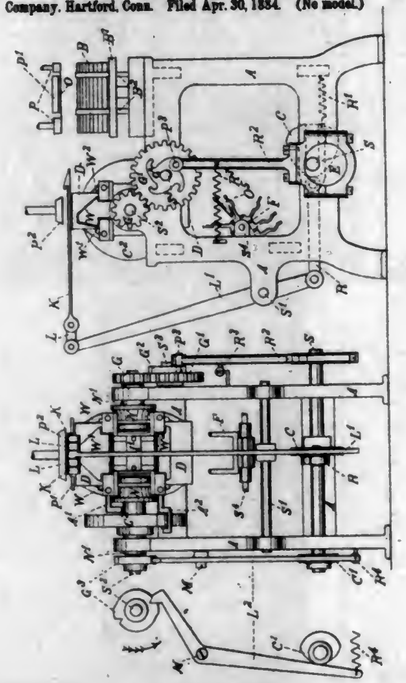
323,206. CHAIR-BACK. HENRY M. REED, Athol, Mass. Filed June 23, 1884. (No model.)



Claim.—1. A chair-back consisting of two posts, each grooved lengthwise on its inner edge, a knit fabric of wire or rattan or other material extending between and from one to the other of said posts and into the grooves thereof, and a strip or band wound in a spiral about each post and through the loops next thereto, so as to connect or aid in connecting them to such posts.

2. Two bars grooved lengthwise on their inner edges, in combination with a knit fabric extended from one to the other of such bars and into the grooves thereof, and secured to each bar by having the free end of each loop nailed or fastened to the bar, and by having such free end covered by a band or flat strip wound about it and the bar and carried through the loop, all as set forth.

323,207. ENVELOPE-FOLDING MECHANISM. FRANCIS B. REYNARDS, Springfield, Mass., assignor of one-half to the Pratt & Whitney Company, Hartford, Conn. Filed Apr. 30, 1884. (No model.)



Claim.—1. In an envelope-folding mechanism, the combination of fixed concave cams N, a revolving folding-box, substantially as described, and end-folding wings W, substantially as described.

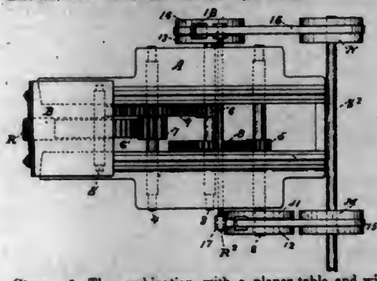
2. In an envelope-folding mechanism, the combination of the fixed cam C^2, having cam-grooves H and H', a revolving folding-box, substantially as described, and side-folding wings W' or W^2, substantially as described.

3. In an envelope-folding mechanism, in combination, the fixed cams N and cam C^2, having cam-grooves H and H', shaft S^2, and frame D', and a series of revolving folding-boxes, as D^2, Figs. 4, 5, 6, and 7, each having wings W, W', and W^2, operated by said cams, substantially as described.

4. In an envelope-folding mechanism, in combination, a pair of revolving folding-boxes, as D^2, folding-beds D^3, connected together, and plunger P^2, substantially as described.

5. In an envelope-machine, in combination, suitable pickers, as P, a carrier, K, a plunger, P^2, and a series of intermittently-rotating folding-boxes, D^2, with their folding-wings and movable folding-beds, substantially as described.

323,208. PLANER-TABLE-DRIVING MECHANISM. FRANCIS H. REYNARDS, Springfield, Mass., assignor to the Pratt & Whitney Company, Hartford, Conn. Filed Mar. 16, 1885. (No model.)



Claim.—1. The combination, with a planer-table and with a continuously-revolving shaft, of a pair of reversely-operated shafts, a pair of pulleys, tight and loose, on each of said shafts, a pair of similarly-disposed belts from the continuously-revolving shaft to said pulleys, gearing between said reversely-operating shafts, and gearing between the second of these shafts and the planer-table, substantially as set forth.

2. The combination, in a planer-table-driving mechanism, of shaft S^9, having pulleys M N, shafts 2 and 3, pulleys 11 12 and 13 14, gears 5 and 8, and belts 15 and 16, substantially as described.

323,209. COMBINED RADIATOR AND HEATING-OVEN. LOUIS C. RODIER, Detroit, Mich. Filed Oct 11, 1884. (No model.)



Claim.—1. A radiator composed of a series of short loops or pipes, said series located between higher loops or pipes, and the space thus left between the high loops and above the shorter ones provided with an oven, substantially as described.

2. A radiator consisting of long and short loops or pipes, a heating-oven located in the space above the short loops, and a common top covering the whole structure, substantially as described.

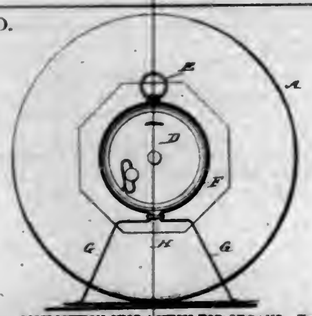
3. A radiator consisting of long loops or tubes and short loops or tubes, said loops or tubes made separate and united at their bases, so as to communicate with each other, and in connection therewith a heating-oven located in the space above the short tubes, substantially as described.

323,210. ADVERTISING MEDIUM. WILLIAM C. ROGERS, New York, N. Y. Filed Jan. 21, 1885. (No model.)

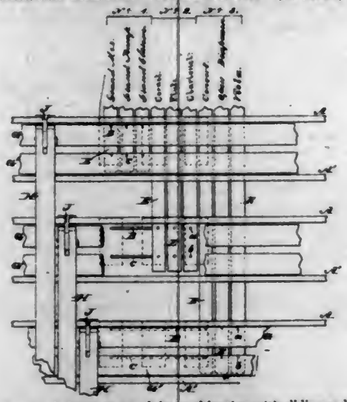
Claim.—The combination, with a plaque having advertisements produced on its face, of a clock held in the middle of the plaque, and the wire F, held on the clock-casing back of the plaque and forming legs G, substantially as herein shown and described.



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323,211. COMPOSITION STOP-ACTION FOR ORGANS. HILBORNE L. ROOSEVELT, New York, N. Y. Filed Mar. 21, 1883. (No model.)



Claim.—1. A draw stop-rod, in combination with sliding rods which work through it, an operating-lever to which said rods are attached, and pedal-bars arranged to engage said sliding rods, substantially as set forth.

2. A draw stop-rod and adjacent pedal-bars, in combination with sliding rods and a pivoted lever to whose opposite ends said sliding rods are attached, substantially as and for the purpose set forth.

3. A draw stop-rod and adjacent pedal-bars, in combination with a lever and sliding rods, the latter being connected with said lever and passing freely through said stop-rod, and arranged to operate in reversed directions, substantially as and for the purpose set forth.

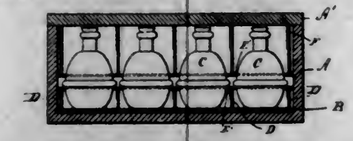
4. The pedal-bars A A', stop-rod E, rods B C, and centrally-pivoted levers, in combination with two springs, F, one for each end of said lever, substantially as and for the purpose set forth.

5. The forked frame H, in combination with the shafts G G', pedal-arms J J', attached to said shafts, bars A A', and sliding bars B and C, and means for actuating said sliding bars, substantially as and for the purpose set forth

6. A pedal having a forked frame attached thereto and provided with arms attached to oscillating shafts, the said arms carrying horizontal bars, substantially as described.

7. A pedal having a forked frame attached thereto and provided with arms secured to oscillating shafts and carrying horizontal bars, in combination with a draw stop-rod and sliding bars, the latter being attached to an operating-lever and working through said stop-rod, substantially as described.

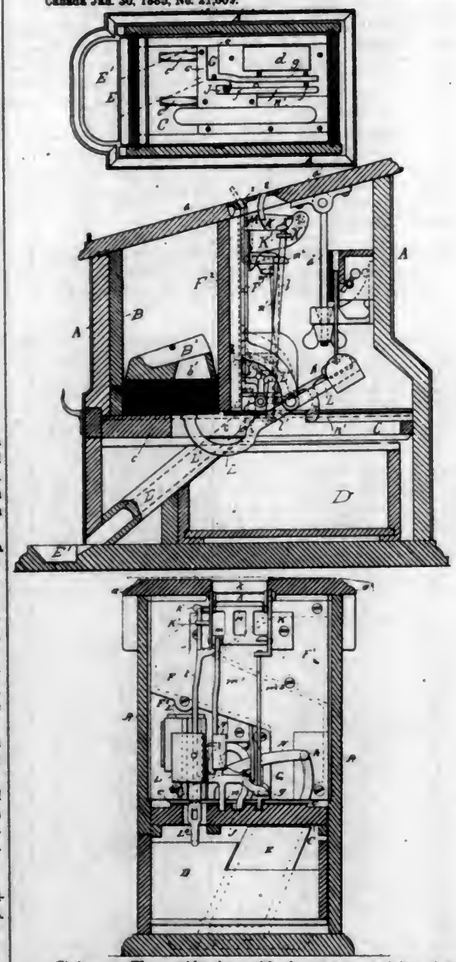
323,212. PACKING-CASE FOR BOTTLES. CHARLES H. ROTCH, Chicago, Ill., assignor to James H. Petrie, same place. Filed Oct. 13, 1884. (No model.)



Claim.—1. The packing-case for bottles comprising two horizontal sheets of card-board or equivalent material, arranged to bear upon the bottles on each side of their centers and securely hold them in place, and suitable sustaining-strips extending between the bottles and braced against the top and bottom of the box for supporting the horizontal sheets, substantially as described.

2. A packing-case for bottles having the horizontal sheets E E', provided with the openings therein to receive the bottle, the bottom supporting-strips, D, for the sheet E, and the top supporting-strips, F, for the sheet E', substantially as described.

323,213. APPARATUS FOR AUTOMATICALLY DELIVERING PREPAID GOODS TO ACCORD WITH THE PRICE PAID THEREFOR. JOHN G. SANDEMAN and PERCIVAL EVERITT, London, England. Filed Jan. 19, 1884. (No model.) Patented in England Apr. 21, 1883, No. 2,033; in France Oct. 20, 1883, No. 158,135; in Belgium Oct. 27, 1883, No. 63,006; in Germany Dec. 1, 1883, No. 27,454; in Italy Mar. 31, 1884. XVII, 16,373; XXXII, 355; in Victoria Apr. 1, 1884, 3,691; in South Australia Apr. 5, 1884, No. 438; in Tasmania Apr. 10, 1884, No. 317; in India Apr. 15, 1884, No. 429; in Portugal Apr. 16, 1884, No. 904; in New Zealand Apr. 17, 1884, No. 1,076; in Spain Apr. 21, 1884, No. 3,855; in New South Wales May 27, 1884, No. 1,433; in Queensland June 21, 1884, No. 7; in Austria-Hungary Aug. 27, 1884, No. 1,121 and No. 38,984, and in Canada Jan. 30, 1885, No. 21,009.



Claim.—1. The combination, with the money-receiving channel F, of the arm G, weighted rock-lever H, having a bent end, *h*, crank-lever I, its pendent arm *i*, and a slide having a slot, *g*, and opening *d*, and the frame B, substantially as shown and described, and for the purpose set forth.

2. In combination with mechanism, substantially as set forth, for unlocking the slide by the deposit of coin in the box, the slide C, made with the plate *c* at its rear, and with the described slot *e* and opening *d* therein.

3. In combination, the indicating pivoted frame *k*, having a lug, *k'*, the vertical rod *l*, guide K', weighted lever L, having the bent arm L^2, and weight B', provided with the hole *b'* therein, substantially as and for the purposes set forth.

323,214. MACHINE BAND OR BELTING. GEORGE S. SAPSWORTH, Shadwell, County of Middlesex, England. Filed May 4, 1885. (No model.) Patented in England Oct. 14, 1884, No. 13,594.

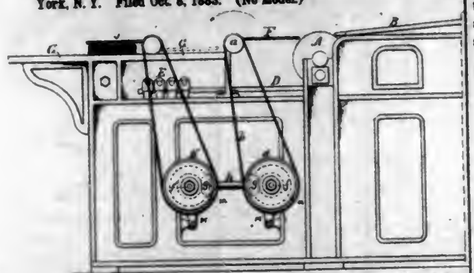
Brief.—The belt is made of a series of links of wood flexibly joined and arranged side by side, their inner faces lined with leather or its equivalent.



Claim.—1. A machine belt, band, or strap composed of wood or wood-composition links, pieces, or blocks arranged lengthwise and side by side, and connected together substantially as set forth.

2. The described combination of parts, constituting a machine belting, band, or strap consisting of the jointed pieces *a*, of wood or composition of wood, their connecting-pins *b*, and the described leather or equivalent lining *c*, substantially as and for the purposes set forth.

323,215. DELIVERY APPARATUS FOR PRINTING-PRESSES. J. S. SCHEIBELL, Philadelphia, Pa., assignor, by direct and mesne assignments, to the Campbell Printing Press and Manufacturing Company, New York, N. Y. Filed Oct. 8, 1883. (No model.)



Claim.—The combination, in a printing-press, of two fly-shafts, *f f'*, each carrying a drum, to which an oscillating motion is imparted from the said shafts, two flies, one actuated from the drum of one shaft and the other from the drum of the other shaft, and gearing whereby the two shafts operate in unison and cause the flies to co-operate one with the other, all substantially as set forth.

323,216. CAR-AXLE BOX. WILLIAM S. SCHROEDER, Chicago, Ill. Filed May 26, 1885. (No model.)



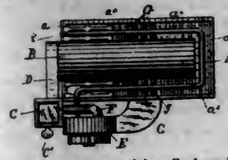
Claim.—1. A box-lid for car-axle boxes having a dovetailed longitudinal recess in its rear side, provided with an enlarged recess toward one end, in combination with a bolt for securing it to the box, having a head to be confined within the slot and of a diameter sufficiently narrow to permit its insertion edgewise into the enlarged recess, substantially as described.

2. A box-lid for car-axle boxes having a dovetailed longitudinal recess in its rear side, provided with an enlarged recess toward one end and with shoulders toward it opposite end, in combination with a bolt for securing the lid to the box, having a head to be confined within the recess and of a diameter sufficiently narrow to permit its insertion edgewise into the enlarged recess, substantially as described,

3. A car-axle box having lateral flanges near the edges of its opening, provided with guides for confining the lateral edges of the box-lid, and a lug on the box provided with an orifice extending through it, in combination with a box-lid having a longitudinal recess on its rear surface, provided with notches or shoulders, and containing and confining the head of a bolt secured within the opening through the lug on the box, the whole being constructed and arranged to operate as and for the purpose set forth.

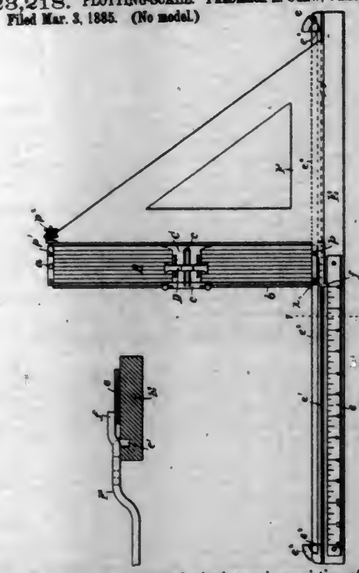
4. A car-axle box, A, having lateral flanges *t* near the edges of its opening, provided with guides *t'*, for confining the lateral edges of the box-lid, and a lug, B, on the top of the box, provided with an orifice extending through it, in combination with a box-lid, C, to slide between the guides *t'*, and provided with a dovetailed longitudinal recess, *p*, on its rear surface, enlarged at its upper extremity to afford a recess, *p'*, and a bolt, *r*, having a head, *r'*, to enter the recess *p'* edgewise and be confined within the dovetailed recess *p*, to permit the lid to slide upon it, and inserted at its opposite end and secured within the opening in the lug, the whole being constructed and arranged to operate substantially as described.

323,217. SMOKE-CONSUMER. JOHN H. SHANK, Gallipolis, Ohio. Filed Oct. 18, 1884. (No model.)



Claim.—The herein shown and described smoke-consuming furnace, consisting of the following elements in combination: the furnace a^1, chimney C, located in front of and to one side of the furnace, the boiler B, set to project beyond the front wall of the furnace and form the flue A' beneath and in the rear of the boiler, the flue D, connecting the front of the boiler with the chimney below a damper located therein, a fan-blower, E, connected with the chimney at a point below its valve, a hot-air pipe extending around and in the rear of the boiler and connecting with said fan-blower, perforated pipes G, extending transversely across the flue A' in the rear of the fire-chamber, and the pipe E^2, connecting the fan-blower with the discharge-pipes G, the parts being constructed, arranged, and operating in the manner substantially as shown and described.

323,218. PLOTTING-SCALE. FREDERICK E. SHAW, Valley Falls, R. I. Filed Mar. 3, 1885. (No model.)



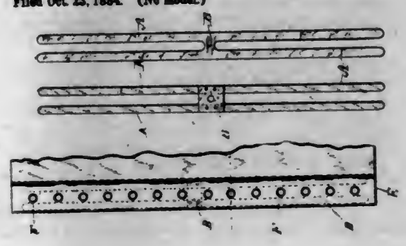
Claim.—1. An improved plotting-scale consisting of a protecting-frame, B, having a scale or ruler, A, mounted therein, a slotted base, E, carrying a ruler, *e*, and a triangle, F, arranged to move in the slot and adjustably connected to the frame B, substantially as described.

2. The combination of ruler A, frame B, saddle C, and slide D, as specified.

3. The combination, with the base E, carrying a scale, *e*, and having slot *e'* and wire e^2, of the triangle F, having index *f* and adjusting-screw f^2, and the scale A B C D, as set forth.

4. The combination, with the scale A B C D and the triangle F, of the base E, having rule *e*, slot *e'*, extensions e^3, and wire e^2, as specified.

323,219. CORSET-STAY. HENRY C. SHERWOOD, Bridgeport, Conn. Filed Oct. 23, 1884. (No model.)



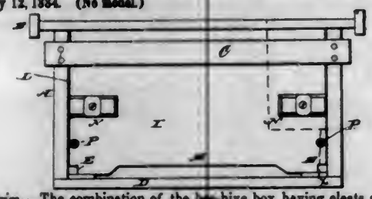
Claim.—1. As a new manufacture, a double corset brace or stiffener consisting of two straight parallel strips and a cross-piece connecting them at or near the center, leaving their ends free.

2. A double corset-brace consisting of two straight parallel strips and a cross-piece, said cross-piece having an eyelet-hole as its center, as and for the purpose set forth.

3. The combination, with a half-corset having a pocket at its back outer edge, of a brace or stiffener consisting of two straight parallel strips joined by a metallic cross-piece at the waist of the corset, leaving their ends free, and eyelets which pass through the plies of the corset between said strips.

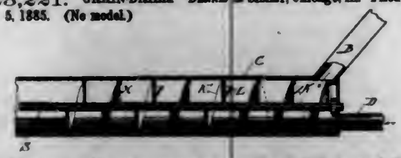
4. The combination, with a half-corset having a pocket, as shown, of a brace consisting of two straight parallel strips joined together by a metallic cross-piece, a strip, G, of paper or cloth, placed in the pocket lengthwise of the brace, and eyelets which pass through the plies of the corset, through strip G, and between the side strips of the brace, substantially as described.

323,220. BEE-HIVE. WILLIS H. SHIRLEY, Glenwood, Mich. Filed July 12, 1884. (No model.)



Claim.—The combination of the bee-hive box having cleats at the sides and comb-frames arranged between the cleats, whereby spaces between the sides of the box and the closely-adjoining side pieces of the comb-frames are formed, with the adjustable front piece having apertures P at its end, registering with the spaces between the sides of the box and the comb-frames, as and for the purpose shown and set forth.

323,221. GRAIN-DRIER. DENNIS E. SIBLEY, Chicago, Ill. Filed Jan. 5, 1885. (No model.)



Claim.—1. The conveyer consisting of the shell C, the shaft S, and the described flight composed in part of sections made of imperforated sheet metal, and partly of other sections having their bodies made of wire-cloth attached to their frames, which are fastened to the main shaft, substantially as described.

2. The flight-section K, the effective or main portion of which is made of wire-cloth, which is surrounded and held by a frame or sieve which is fastened to the main shaft, substantially as described.

3. The described conveyer with a flight in sections, and one or more of the sections provided with buckets L, substantially as described.

323,222. PROCESS OF EXTRACTING GOLD, SILVER, AND COPPER FROM THEIR ORES. JEROME W. SIMPSON, Newark, N. J. Filed Oct. 20, 1884. (No specimens.)

Claim.—1. The process of separating gold and silver from their ores which consists in subjecting the ore to the action of a solution of cyanide of potassium and carbonate of ammonia, and subsequently precipitating the dissolved metal, substantially as set forth.

2. The process of separating metals from their ores, to wit: subjecting the ore to the action of a solution of cyanide of potassium, carbonate of ammonia, and chloride of sodium, and subsequently precipitating the dissolved metals.

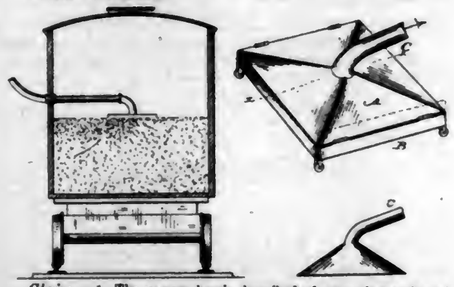
323,223. KITCHEN-CABINET. LOREN P. SLAUGHTER, Montrose, Mo. Filed Apr. 11, 1885. (No model.)



Claim.—1. In a kitchen-cabinet or flour-and-meal chest consisting of a compartment at each side and one between them, each of said side compartments having a bin or hopper at its upper part and provided with suitable covers, a downwardly-projecting spout at the bottom of each of said hoppers, a pair of slides so arranged that either the top or bottom of the spout is always covered by one or the other of them, a frame for supporting said slides, a suitable sifting device below said spout and frame, and means for operating said slides and sifting device, substantially as and for the purpose set forth.

2. In a kitchen-cabinet or flour-and-meal chest, as described, the combination, with each of the bins above and the drawers below, of cleats secured to the inner sides of the compartments below the bins, a bottomless drawer sliding upon said cleats, a frame sliding within said drawer, and means for operatiug the same, and a suitable sieve within said frame, substantially as and for the purpose set forth.

323,224. MOUTH-PIECE FOR PNEUMATIC LIFTING APPARATUS FOR GRAIN-CONVEYERS. LYMAN SMITH, Kansas City, Mo. Filed Jan 17, 1885. (No model.)

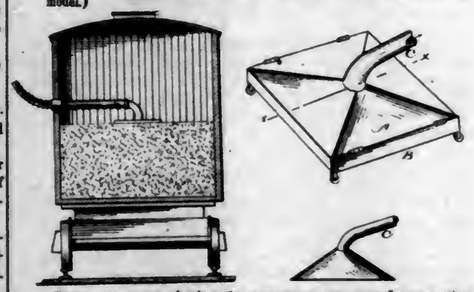


Claim.—1. The manner herein described of conveying grain and sucking or drawing it into a receiver by first covering the surface of grain in bulk or a portion thereof, then forming a vacuum or suction under said covering, and then drawing the grain or other material therefrom.

2. The manner herein described of lifting or transferring grain, of first covering the surface thereof, excluding external air from under said covering, then imparting a sucking or drawing action to the grain beneath the covering, which gives to it the character, when mixed with air already mingled with the grain, of a semi-fluid, and then drawing it off by means of a suction-machine.

3. The method herein described of conveying grain, which consists in first covering the surface of the grain, thereby excluding the air, forming an air-chamber above the mouth of the suction-pipe, and then imparting a sucking or drawing action to the grain beneath the cover, whereby said grain is drawn off as a semi-fluid.

323,225. MOUTH-PIECE FOR PNEUMATIC GRAIN-TRANSFER APPARATUS. LYMAN SMITH, Kansas City, Mo. Filed Mar. 2, 1885. (No model.)



Claim.—1. A mouth-piece for pneumatic grain-transfer apparatus, having an enlarged area to cover a large grain-surface and having wings or flanges to prevent the admission of air beneath it, and an exit-pipe, substantially as set forth.

2. A mouth-piece for pneumatic grain-transfer or conveying apparatus, having an enlarged area and wings or flanges to enter the surface of the grain, whereby the admission of external air is prevented from entering beneath said mouth-piece, and a bellied central portion whereby the suction-nozzle is brought close to the surface of the grain and an air-chamber is formed in the other portion of the said mouth-piece, substantially as described.

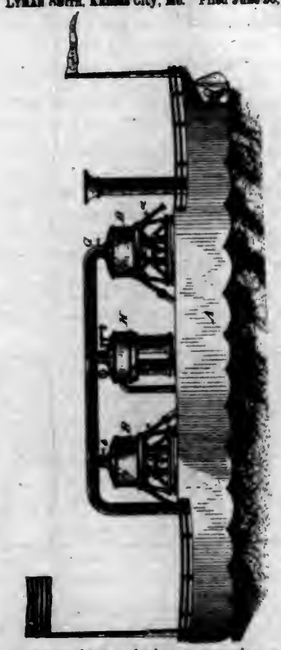
3. A mouth-piece for pneumatic grain-transfer or other apparatus, having an enlarged area and wings or flanges to prevent the admission of external air while in operation, a central bellied portion, and an upwardly-inclined portion, substantially as described.

4. A mouth-piece for pneumatic grain-conveying apparatus, having an enlarged area and flanges to prevent the admission of external air, the said flanges being hinged or jointed, for the purpose set forth and described.

5. A mouth-piece for pneumatic grain-transfer or other material, consisting of an exit-pipe and a surrounding portion of enlarged area having an air-chamber extending above the mouth of said pipe, substantially as described.

6. As a new article of manufacture, a mouth-piece having an enlarged area, constructed so as to substantially prevent the entrance of external air beneath it while in operation.

323,226. PNEUMATIC GRAIN-ELEVATOR AND TRANSFER APPARATUS. LYMAN SMITH, Kansas City, Mo. Filed June 20, 1885. (No model.)



Claim.—1. A system for transferring or conveying grain, consisting of a grain-receiver or tank provided with inlet and outlet orifices, a blower having connecting-pipes with said tanks, a motive-power engine connected to said blowers, and pipes arranged within the tank extending above the grain and into the discharging-orifice for forcing the grain from said orifice, the whole being adapted to be arranged on a barge or vessel, substantially as described.

2. An apparatus for transferring grain, which consists of a tank provided with supply and exhaust pipes, a blower, and motive power for operating said blower, and a discharge-pipe arranged with valves whereby to exhaust from either side of said tank, and an air-forcing pipe which leads from the upper space of said tank to the discharge-orifice, substantially as set forth.

3. A system for transferring or conveying grain from ships, boats or the like, consisting of a barge or vessel having prearranged compartments, substantially as described, the motive power of which being contained in one compartment, while the remaining compartments are arranged for the reception of the grain, the air-pipes, and the tank, the latter being arranged to receive grain from one vessel, weigh it, and discharge it into another from the opposite side of the said tank through different pipes, substantially as set forth.

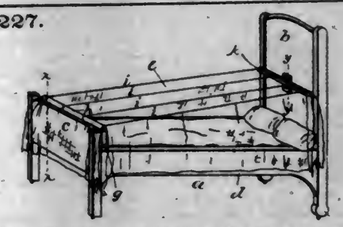
4. In a system for transferring grain from vessels, two or more tanks above deck, one or more blowers below deck, and their operating mechanism, in combination with an air-connecting pipe arranged at right angles, or thereabout, and connecting said blowers and tanks, the pipes being provided with controlling-valves, substantially as set forth.

5. A system for transferring or conveying grain or other material from one vessel, car, or other receptacle to another, consisting of the barge or vessel, the blowers, and the receiving and discharging tanks, being arranged to receive and discharge from either side, substantially as set forth.

323,227. MOSQUITO-BAR CANOPY. CHARLES SNOW, Glastonbury, Conn., assignor of one-half to Joseph P. Smith, same place. Filed Feb. 29, 1884. (No model.)

Claim.—1. In combination with the frame of a bed or like article of furniture, the spring-roller, *h*, supported on standards *g* near one end

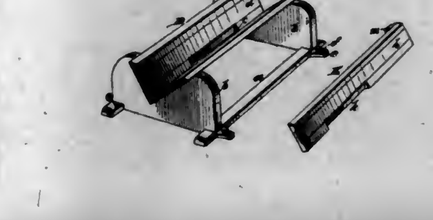
323,227.



of the frame, the cords *i*, each secured to the roller at one end and to a cross-bar, *k*, at the other end, bearing the knob *l* and the socket-bracket *m* fast to the end of the frame opposite that supporting the roller, and the netting *e*, all substantially as described.

2. In combination, a bed-frame having head-board *b* and foot-board *c*, standards *g*, fast near one end of the frame and bearing a spring-roller, *h*, the mosquito-netting *e*, cords *i*, supporting the netting when extended and attached to the roller *h* and cross-bar *k*, and the cross-bar *k*, bearing a knob or equivalent means for attaching it to a bracket, *m*, fast to the frame, all substantially as described.

323,228. CULTIVATOR. OLIVER P. SOWERS, Moline, Ill., assignor to the Moline Plow Company, same place. Filed May 2, 1885. (No model.)



Claim.—1. In a cultivator, the combination, with the frame or axle, of the rock-shaft mounted in bearings parallel therewith, and provided with the longitudinal slot from front to rear, the vertically and laterally adjustable plate C, to receive the plow-coupling, and the fastening-bolt D, extending through the plate and the slot in the rock-shaft, as described and shown.

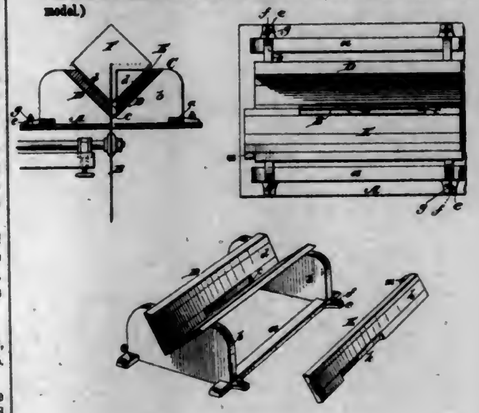
2. In a cultivator-coupling, the longitudinally-slotted rock-shaft B, in combination with the plate C, having the vertical hole *g*, the fastening-bolt D, extended through the rock-shaft and plate, and the pivot-bolt E, passing through the plate C, as described and shown.

3. In a cultivator, the combination of an axle having a horizontal end and an arched central portion with a rocking coupling-head applied to the horizontal end of the shaft, and a detachable arm or plate secured to the rocking head, and extending thence inward past the raised portion of the axle, substantially as described and shown.

4. In a cultivator-coupling, the combination of the rock-shaft, the arm I and its fastening device, and the plate C and its fastening device.

5. In a cultivator having an axle with an arched or raised central portion, a rocking coupling-head extended both inside and outside of the arched portion, and adapted, substantially as described, for the attachment of the plow to either end thereof at will.

323,229. MACHINE FOR SAWING SPOUTS. CHARLES M. STRODRIDGE and WILLIAM HOUGHTON, Merrill, Wis. Filed May 26, 1885. (No model.)



Claim.—1. In a machine for sawing wooden troughs, the combination of a frame composed of side and end pieces and provided with devices, substantially as described, for connecting it with the table of a circular saw, and a V-shaped guide-bed supported by the said frame and having its angular bottom portion provided with a longitudinal slot for the passage of a circular saw to cut troughs from the timber arranged in the guide-bed, as set forth.

2. In a machine for sawing out wooden troughs from a piece of squared timber, the combination of a saw-table, a circular saw mounted in said table, a vertically and laterally adjustable frame mounted on said saw-table and having a V-shaped guide-bed provided with a longitudinal slot, and a series of removable slides placed in said guide-bed and adapted to gage the depth of saw-cut and the thickness of the trough, substantially as described.

3. In a machine for sawing out wooden troughs from a piece of squared timber, the combination of a saw-table, a vertically-arranged circular saw, a V-shaped guide-bed adjustably mounted on the saw-table and provided with a longitudinal slot for the passage of the saw, and one or more movable slides for gaging the size of the trough, substantially as described.

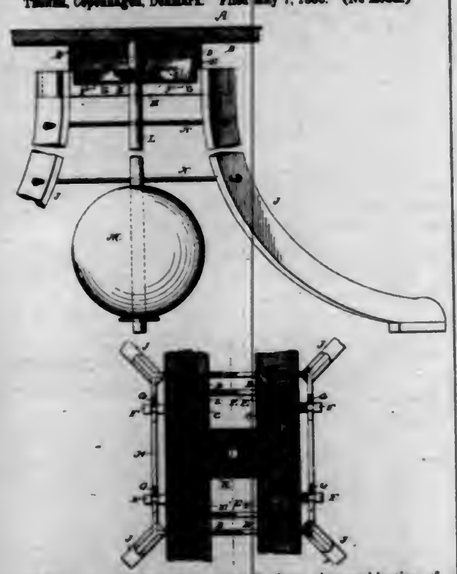
323,230. **GRAB-IRON FOR RAILROAD-SWITCHES.** PATRICK J SWAN, Ira, Iowa. Filed June 13, 1885. (No model.)



Claim.—1. As an improvement in grab-irons for railroad-switches, the grab-iron consisting of the bar formed at each end with a stationary jaw and vertical slot, and the spring-actuated movable jaws, arranged as described, substantially as set forth.

2. As an improvement in grab-irons for railroad-switches, the grab-iron consisting of the bar formed at each end with the stationary jaw and the vertical slot, the movable jaws provided with the recesses at their operative ends, and the spring, all constructed and arranged to operate in the manner and for the purpose shown and set forth.

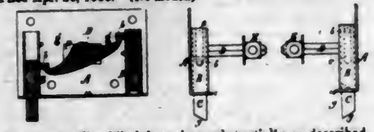
323,231. **SELF-LEVELING SHIP'S FURNITURE.** ALBERT J. V THUREN, Copenhagen, Denmark. Filed May 7, 1885. (No model.)



Claim.—1. In self-leveling ship's furniture, the combination of a bed-frame, two opposite sides of which are provided each with two V-shaped notches, a frame having laterally-extending arms provided with beveled under edges resting in the said notches, and a top frame having two pairs of arms resting in V-shaped notches in the said intermediate frame, and provided with a downwardly-extending stem carrying a suitable balance-weight, substantially as and for the purpose set forth.

2. In self-leveling ship's furniture, the combination and arrangement, as herein described, of a set of frames, each provided with two distinct parallel axes of oscillation, one of said frames resting upon the other, with the axes of one frame at right angles to the axes of the other, substantially as herein described, for the purpose set forth.

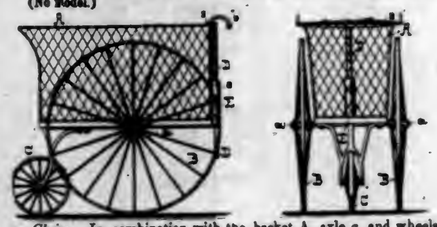
323,232. **SHUTTER-FASTENER.** GEORGE J. THOMAS, Newton, Mass. Filed Apr. 20, 1885. (No model.)



Claim.—1. The blind-fastening substantially as described, consisting of the plate A and its bolt-guides, the two gravitating studded beveled bolts arranged in such guides, the spindle and its handle, and the lever and its friction-spring adapted to such spindle and the two bolts, such friction-spring being out of contact with either of the bolts, and all being essentially as set forth.

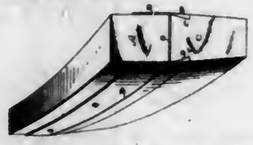
2. The blind-fastening as represented, consisting of the plate A and its lever-stops and slotted bolt-guides, the two gravitating studded beveled bolts arranged in such guides, the spindle pivoted to the plate and provided with a handle, and the lever and the friction-spring adapted to such spindle and the two bolts, such friction-spring being out of contact with either of the bolts, and all being substantially as set forth.

323,233. **PARCEL-CARRIER.** GEORGE W. THOMAS, Baltimore, Md., assignor of one-half to John A. Wright, same place. Filed June 16, 1885. (No model.)



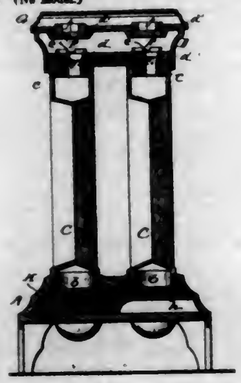
Claim.—In combination with the basket A, axle a, and wheels B B and C, the adjustable post D and means to lock it, substantially as specified.

323,234. **SLEIGH-RUNNER.** GEORGE W. THOMPSON, Shickshinny Pa. Filed June 1, 1885. (No model.)

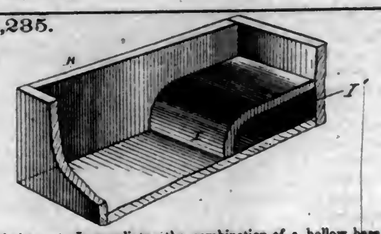


Claim.—The combination of the runner A, a clamp which is removably applied thereto, and the shoe, the upper edge of the shoe being clamped between the lower edges of the clamp, substantially as shown.

323,235. **HOT-WATER OR STEAM RADIATOR.** SAMUEL D. TOMPKINS, Jersey City, N. J., and JOHN N. MATLOCK, Brooklyn, N. Y. Filed Apr. 28, 1885. (No model.)



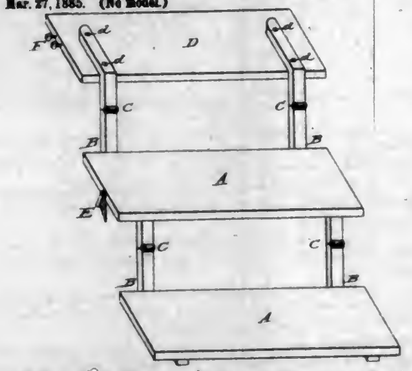
323,235.



Claim.—1. In a radiator, the combination of a hollow base provided with a vertical partition, cut away to form an outlet, a horizontal partition conforming to the cut-away portion of the outlet-partition and forming one of the walls of said outlet, and pipes C, with an upper chamber connected to said pipes, substantially as described.

2. In a radiator, the combination of a hollow base and pipes having threaded apertures *c* with the hollow casting having threaded apertures *d d'*, the threaded thimbles screwed into the holes *d c* and expanded, and the threaded plugs F, operating in the holes *d'*, whereby the upper chamber is made steam or water tight, substantially as and for the purpose set forth.

323,236. **CAR-STEP.** TENNILLE TONEY, Union Springs, Ala. Filed Mar. 27, 1885. (No model.)



Claim.—1. The combination, with permanent car-step D, of two extension-steps, A A, mounted in iron frames B B, provided with shouldered hinges C and holes *d d*, for the purpose specified.

2. The combination, with stationary step D and extension-step A, of automatic lock-catch E and screws F in car-step D, substantially as described.

323,237. **CARRIAGE-JACK.** DAVID TRUE, Salisbury, Mass. Filed Feb. 2, 1885. (No model.)

Claim.—1. In a carriage-jack, the combination, with the lifting-bar E, of the strip or bar P, of rubber or other comparatively soft substance, secured to the side of said bar longitudinally and vertically, substantially as described, whereby the side of the axle will come in contact with said rubber or other soft substance when the jack is used.

2. In a carriage-jack, the lifting-bar E, provided with the lips K K, in combination with the piece of rubber or other comparatively soft substance, P, set in the slot or space between said lips, substantially as and for the purpose described.

3. In a carriage-jack, the lifting-bar E, provided with the lips K K, having the teeth K', in combination with the piece of rubber or other comparatively soft substance, P, set in the slot or space between said lips, substantially as and for the purpose set forth.

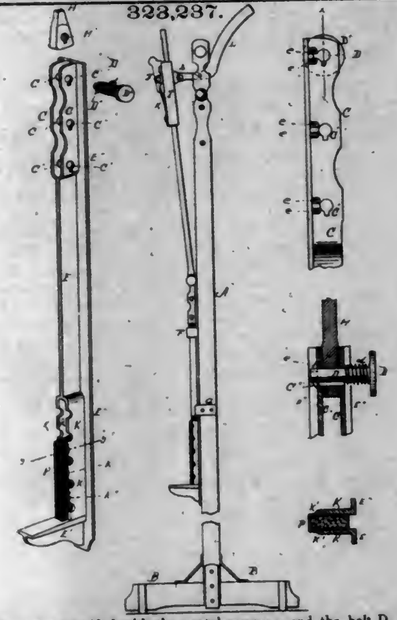
4. In a carriage-jack, the lifting-bar E, provided with the lips K K, having the teeth K', bent inwardly, as described, in combination with the piece of rubber or other comparatively soft substance, P, set in the slot or space between said lips, substantially as and for the purpose described.

5. In a carriage-jack, the combination of the lifting-bar E, provided with irregular perforations C', the rack-bar H, having similar irregular perforations H', and the bolt D, whose end is formed in shape to correspond with said perforations, substantially as and for the purpose set forth.

6. The lifting-bar E, provided with the lips C, having irregular corresponding perforations C', as described, one of said lips being provided with the protuberances e, in combination with the bolt D, of shape to fit into said perforations, substantially as and for the purpose described.

7. The combination of the lifting-bar E, provided with the lips C, having irregular corresponding perforations, C', as described, one of said

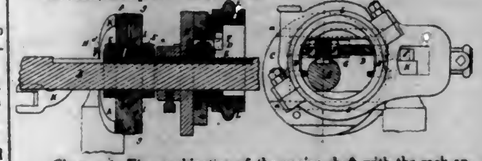
323,237.



lips being provided with the protuberances *e*, and the bolt D, of shape to fit into said perforations, and provided with the head D'' and spring *d*, substantially as and for the purpose set forth.

8. The lifting-bar E, provided near its lower end with a side buffer of rubber or other soft material, and near its upper end with means whereby it is rendered adjustable as to height on the rack-bar, substantially as and for the purpose described.

323,238. **STEAM-ENGINE VALVE-GEAR.** THOMAS B. VAN ANKEN, Auburn, N. Y., assignor, by mesne assignments, to himself and Walter W. Jones, same place. Filed May 5, 1885. (No model.)

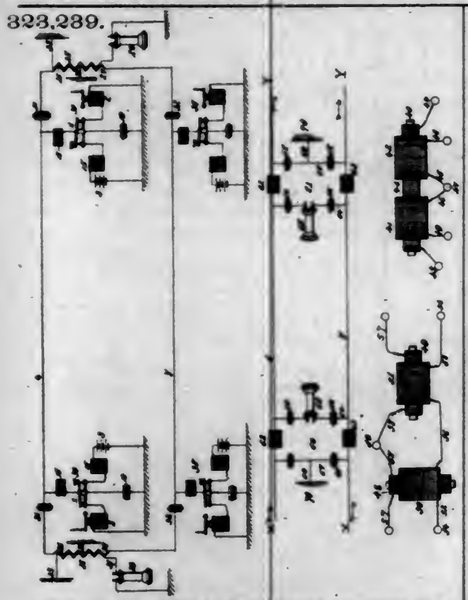


Claim.—1. The combination of the engine-shaft with the rack applied thereto, and provided with means of moving it (the said rack) lengthwise therein, the disk fixed on the said shaft and having means of supporting the eccentric and guiding it rectilinearly in its movements across the said disk, the ears projecting from the disk, the pinion engaging with the rack and arranged between and against the ears, and the screw arranged within and across and fastened to the eccentric, and going through the ears and screwed into and through the pinion concentrically therewith, all being substantially and to operate as and for the purpose set forth.

2. The combination of the engine-shaft A, the tube H, having the triangular flange *d'*, the collar I, encompassing such flange, and the furcated lever K, pivoted to such collar, the rack G, fixed to the tube H and adapted to slide lengthwise on the shaft, the disk C, fixed on the said shaft, the tubular eccentric B, supported, as described, by the said disk, so as to be capable of moving rectilinearly across it, the pinion E, pivoted to such disk and engaging with the said rack, and the screw D, arranged within and across and fastened to the eccentric, and screwed into and through the pinion concentrically therewith, all being substantially and to operate as set forth.

323,239. **MEANS FOR PREVENTING INTERFERENCE IN COMBINED TELEGRAPHIC AND TELEPHONIC SYSTEMS.** FRANÇOIS VAN RYSSELBERGHE, Schaarbeek, Belgium. Filed Jan. 24, 1884. (No model.) Patented in Germany Aug. 14, 1883, No. 27,272; in Belgium Nov. 16, 1883; in France Nov. 16, 1883; in England Nov. 23, 1883, No. 5,503; in Luxemburg Dec. 8, 1883; in Italy Dec. 31, 1883; in Portugal Jan. 18, 1884; in Canada Jan. 24, 1884, No. 18,547; in India Jan. 29, 1884; in Sweden Feb. 12, 1884; in Spain Apr. 23, 1884; in Denmark June 18, 1884; in Brazil July 5, 1884; in Argentine Republic July 19, 1884; in Austria Sept. 13, 1884, and in Uruguay Dec. 12, 1884.

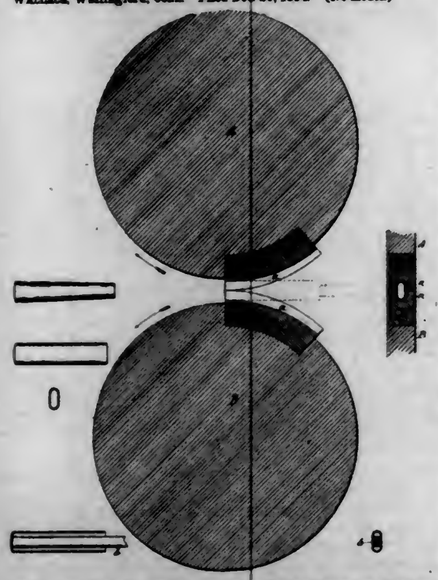
323,239.



Claim.—1. In a system for the simultaneous transmission of telegraphic and telephonic currents or messages, the combination, with telegraph-instruments and devices for rendering gradual the emission and extinction of the telegraphic currents, of two telegraph-line wires or conductors, and a telephone connected with said line-wires, the latter forming a complete telephonic circuit, substantially as described.

2. In a system for the simultaneous transmission of telegraphic and telephonic currents or messages, the combination, with telegraph-instruments, and devices for rendering gradual the emission and extinction of the telegraph-currents, of an induction-coil having its two primary circuits connected with two telegraph-line wires and the earth, and the terminals of the secondary circuit in communication with a telephone and the earth, substantially as described.

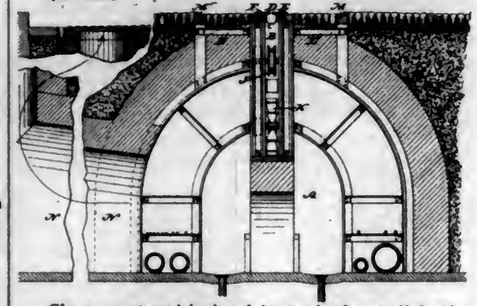
323,240. METHOD OF MAKING HANDLES FOR CUTLERY. ROBERT WALLACE, Wallingford, Conn. Filed Dec. 26, 1884. (No model.)



Claim.—1. The method herein described of making tapered tubular handles for cutlery, consisting in first forming a blank of flattened tubular shape closed at one end, the transverse section of said blank corresponding in form to that of the transverse section of the finished handle at the butt, then passing said blank between roller-dies to gradually contract its depth from the butt or closed end toward the open or bolster end, substantially as described.

2. The method herein described for forming tapered hollow or tubular handles for table-cutlery, in which the butt-end of the handle is closed, consisting in introducing a mandrel into the open end of the blank, the said mandrel being in thickness equal to the distance between the two sides of the blank, but in depth no greater than the opening in the end of the handle when finished, then passing the said blank with the mandrel therein between roller-dies, substantially as and for the purpose set forth.

323,241. UNDERGROUND CONDUIT FOR CABLES, ELECTRIC WIRES, &c. WILLIAM WALTER, Philadelphia, Pa. Filed Mar. 31, 1885. (No model.)



Claim.—1. A conduit adapted for electric wires provided with a passage-way constructed in its upper wall and adapted to serve as a conduit for cables, substantially as described.

2. A conduit provided with mortised stringers and slot-irons with transversely-extending slots and securing-bolts, substantially as and for the purpose set forth.

3. A conduit, A, having a second conduit, B, the latter provided with a ventilating-fan in the lower part thereof, substantially as described.

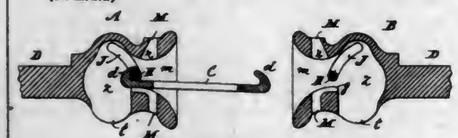
4. A cable-conduit, in combination with a conduit for electric wires, &c., provided with bracings, which are attached to said conduits, substantially as and for the purpose set forth.

5. A conduit for electric wires, &c., in combination with a conduit for cables for traction purposes, the latter conduit rising through the former, substantially as and for the purpose set forth.

6. The conduit A, having an opening in its upper walls forming a second conduit, the base of the second conduit being supported on masonry within the said conduit A, substantially as described.

7. The conduit A, adapted for electric wires and provided with a second conduit, B, formed as described, the said second conduit, B, being provided with a ventilating-fan and pulleys, substantially as described.

323,242. CAR-COUPLING. JOHN H. WARD, Lowell, Mass., assignor to himself and James H. McDermott, same place. Filed June 6, 1885. (No model.)



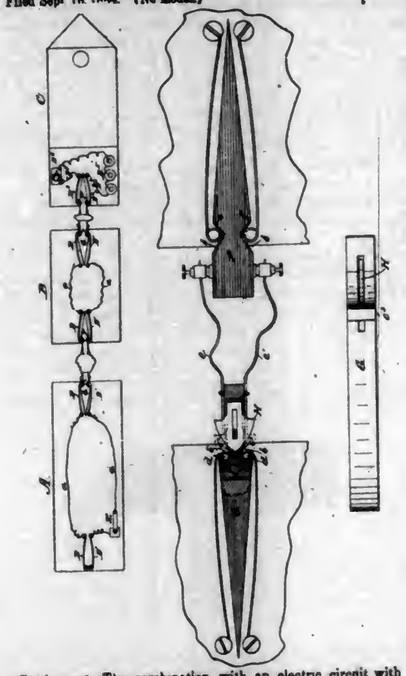
Claim.—1. In a car-coupler, the combination of the following instrumentalities, to wit: two draw-bar heads, each of said heads being provided with an open mouth and chamber for receiving the coupling-link, upwardly and backwardly curved slots opening through either of its sides into said chamber, a transverse coupling-pin adapted to work in said slots, two gravitating pivoted levers for said pin, and a lifting-chain for raising the levers and pin in uncoupling the cars, and a coupling-link provided with hooks adapted to engage said pins, substantially as described.

2. The improved car-coupler herein described, the same consisting of the bars D and heads A B, each of said heads being provided with a mouth, *m*, chamber *z*, slots J, pin H, levers E, and chain K, in combination with the link C, having the hooks *d*, constructed, combined, and arranged to operate substantially as set forth.

3. The head A, provided with the groove *g*, slots J, and hole M, flared as shown at *r*, in combination with the pins H N and levers E, substantially as described.

4. In a car-coupler, the head A, provided with the mouth *m*, chamber *z*, slots J, and groove *g*, for receiving and guiding the pin N into the lower portion of the hole M, in combination with the pin H, levers E, and chain K, constructed, combined, and arranged to operate substantially as described.

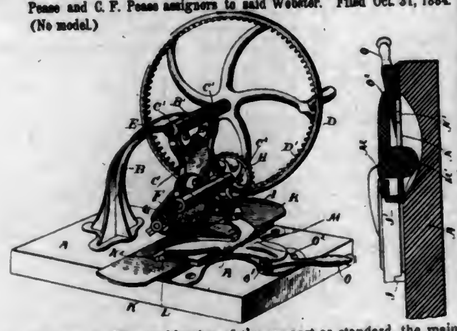
323,243. ELECTRIC RAILWAY-SIGNAL. ALBERT G. WARREN, Mayesville, S. C., assignor of one-fourth to Alfred A. Strauss, same place. Filed Sept. 16, 1884. (No model.)



Claim.—1. The combination, with an electric circuit with key, a bell, and battery mounted on the engine or tender, of spring-jaws at the ends of the car, connected with the electric circuit and arranged to spring together, and two tapering notched plugs or wedges having conducting-plates in the notches and connecting circuit-wires from the plate of one plug to the corresponding plate of the other plug, the front plug being arranged to pull out and the rear one to remain seated, as and for the purpose described.

2. The non-conducting tapered rear plug, G, having hook-shaped notches faced with metal, and sliding cam H, in combination with the spring-jaws having projections *d*, the circuit-wires, and the front plug having beveled notches faced with metal, as and for the purpose described.

323,244. HARVESTER-KNIFE GRINDER. JOHN F. WEBSTER, WARREN H. PEASE, and CHARLES F. PEASE, Elkhart, Ind.; said W. H. Pease and C. F. Pease assignors to said Webster. Filed Oct. 31, 1884. (No model.)



Claim.—1. The combination of the support or standard, the main frame pivoted thereto, a geared drive-wheel keyed to the outer end of the pivotal connection, the supplemental frame pivoted to the outer end of the main frame, a pinion, C^2, journaled in line with the pivotal connection between the two frames and meshing with the gear of the drive-wheel, the grinding-wheel supported on the outer end of the supplemental frame and having its shaft provided with a gear-pinion, G', a gear-pinion, H, meshed with the pinion G', and journaled in line with the pivot between the main and supplemental frames, and keyed to and rotating with the pinion C^2, whereby the grinding-wheel may be revolved in any position of the main or supplemental frame, substantially as described.

2. The combination of the curved support or standard B, the main frame, the supplemental frame pivoted to the main frame, the grinding-wheel journaled in the supplemental frame and having its shaft provided with a pinion, G', the gear H, keyed to the pivotal connection between the two frames and meshed with pinion G', pinion C^2, keyed to gear H, and the drive-wheel geared with pinion C^2 and journaled on the pivotal connection between the standard and the main frame, all substantially as set forth.

3. The combination, with the main frame, of the supplemental grinding-wheel frame pivoted to the main frame and a handle projected from the supplemental grinding-wheel frame in advance of and between its pivotal supports, substantially as set forth.

4. The combination, with the base provided with suitable ways, of the knife-supports mounted and movable on said ways, and provided with a slot elongated in the direction of the line of adjustment of said supports, and a clamping-screw turned through the said slot into the base, whereby the said supports may be held at any desired point of adjustment, substantially as set forth.

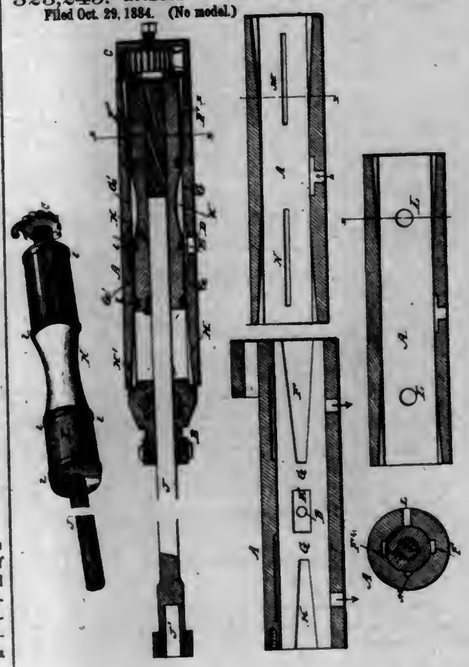
5. The combination of the base, the knife-supports, the knife-clamp pivoted midway its length and adapted at its forward end to bear on and secure the knife, and means, substantially as described, whereby to forcibly elevate the rear end of the clamp, whereby its forward end will be caused to bear firmly on the knife, substantially as set forth.

6. The combination of the base provided with a slot, N, enlarged laterally, as at N', near its rear end, the knife-supports, and the knife-clamp provided midway its ends with a depending lug, M', adapted to operate through slot N, and provided on its lower end with lateral pins M' and bearings M^2, arranged at or near the upper end of the lug M', and means, substantially as described, whereby to forcibly elevate the rear end of the knife-clamp, substantially as set forth.

7. The combination, with the knife-clamp pivoted midway its ends, of the lever O, provided with a wedge, O^2, and pivoted to work in a plane substantially at right angles to the movement of the clamp, the wedge being suitably arranged to engage under and elevate the rear end of the knife-clamp, substantially as set forth.

8. The combination of the main frame pivotally supported at one end, the supplemental frame provided in one end with the grinding-wheel and pivoted at its other end to the outer end of the main frame, a handle projected from the supplemental frame in rear of its pivot and inclined outwardly, and suitable gearing whereby to operate the grinding-wheel, substantially as set forth.

323,245. ROCK-DRILL. CHARLES S. WHITBROOK, Spragueville, N. Y. Filed Oct. 29, 1884. (No model.)

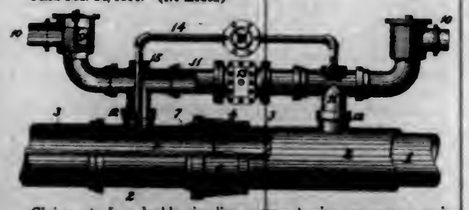


Claim.—1. The combination, in a rock-drill, of the cylinder having the open recesses or passages F and F′ and H and H′, arranged longitudinally, diametrically opposite to one another, and the recessed piston balanced in the cylinder between said recesses, and having expansible packing-rings, whereby a steam-tight joint is formed between the heads of the piston and the solid inside part of the cylinder, substantially as set forth.

2. The combination, in a rock-drill, of the cylinder having at both ends of two of its opposite sides the open recesses or passages F and F′ and H and H′, arranged longitudinally and facing one another, and on its other two sides the exhaust-ports and the narrow longitudinal channels arranged opposite to the same, and the recessed piston having expansible packing-rings at each end of its solid heads on opposite sides of the recess, substantially as and for the purpose shown and set forth.

3. In a rock-drill, a cylinder constructed with an interiorly-recessed inlet-port on one side, two flaring recesses arranged longitudinally on opposite sides of the central recess, two corresponding flaring recesses on the diametrically-opposite side of the cylinder, a recess between the inner ends of said flaring recesses, the longitudinal steam grooves or channels cut in the inside of the cylinder in a plane at right angles to a plane laid longitudinally through the middle of the diametrically-opposite flaring recesses, and the exhaust-ports located diametrically opposite to said narrow steam grooves or channels, substantially as and for the purpose shown and set forth.

323,246. PIPE-LINE. GEORGE WESTINGHOUSE, Jr., Pittsburg, Pa. Filed Feb. 24, 1885. (No model.)

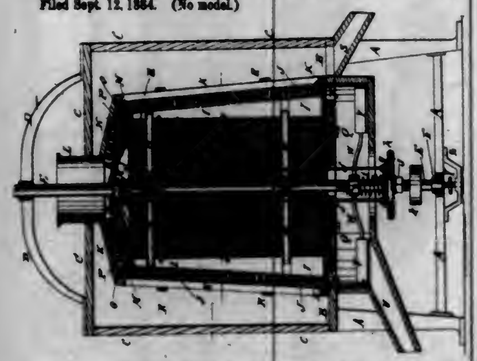


Claim.—1. In a double pipe-line system having an inner or main conduit adapted for the conveyance of gas under high pressure, and an outer casing containing gas at lower pressure, the combination, with the pipe-sections, of a series of detachable coupling-sleeves, each connecting two adjacent casing-sections and surrounding a joint of the inner line, and a series of partitions, each fitting tightly between the inner and outer lines adjacent to the couplings, and forming separate compartments between the same, substantially as set forth.

2. In a double pipe-line system of the class described, the combination of an inner line, an outer casing having its sections connected by detachable coupling-sleeves, each surrounding a joint of the inner line, a partition interposed between two compartments of the casing adjacent to a coupling-sleeve, and a communicating pipe connecting the compartments on opposite sides of said partition, substantially as set forth.

3. In a double pipe-line system of the class described, the combination of an inner line, an outer casing divided into compartments and having its sections connected by detachable coupling-sleeves, each surrounding a joint of the inner line, a communicating pipe connecting two of said compartments on opposite sides of a coupling-sleeve, and a relief-valve and vent-pipe leading out of said communicating pipe, substantially as set forth.

323,247. BRAN-DUSTER. JOSEPH W. WILSON, Brookville, Kans. Filed Sept. 12, 1884. (No model.)



Claim.—1. In a bran-duster of the character described, the combination, with the top of the bolt K, having a feed-opening and provided with the brushes P on its under surface, of the rotating distributing-plate M, having a wire-gauze facing contacting with the brushes substantially as herein shown and described, whereby lumps of bran will be broken and the material evenly fed to the bolt, as set forth.

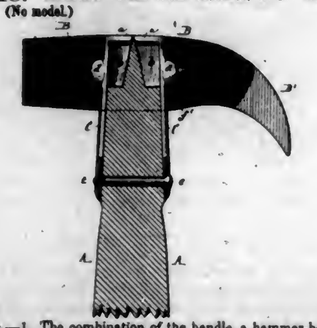
2. In a bran-duster, the combination, with the bolt K, provided with the brushes P on the under surface of its top, and the feed-opening L, of the vertically-adjustable shaft E, the distributing-plate M, secured thereon, and the adjustable wings I on said shaft below the distributing-plate, provided with brushes J, substantially as herein shown and described.

3. In a bran-duster, the combination, with the shaft E, the loose sleeve *a* on said shaft, brush-wings I, and the inclined rods *b*, connecting the wings to the sleeve, of the plate *g* on the shaft E beneath the frame, rods *f*, connecting said plate with the sleeve *a*, and the hand-nut *h* below and in contact with the plate *g*, whereby the said hand-nut may be operated from the outside of the machine to adjust the wings, substantially as herein shown and described.

4. In a bran-duster, the combination, with the shaft E and the fan G H I, having movable wings, of the inclined rods *b*, the sleeve *a*, the rods and annular plates *c d* and *f g*, the hand-nut *h*, and the spiral springs *e i*, substantially as herein shown and described, whereby the said wings and their attached brushes will be drawn inward when the said hand-nut is screwed downward, as set forth.

5. In a bran-duster, the combination, with the bolt K, the shaft E, and the fan G H I, of the casing C, provided with the bottom B, having central opening and provided with curved slots T at the inner side of the lower end of the said bolt, substantially as herein shown and described, whereby air will be drawn into the central part of the bolt, and the bran will escape at the lower end of the said bolt, as set forth.

323,248. HAMMER. JOSEF WOLF, Hoboken, N. J. Filed Dec. 10, 1884. (No model.)

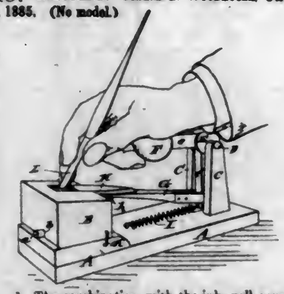


Claim.—1. The combination of the handle, a hammer-body having an eye and locking-recesses at both sides of said eye, bushings provided with end flanges, rearwardly-projecting wedges, and exterior projections, and means for fastening the bushings to the handle, substantially as set forth.

2. In a handle attachment to hammers and other tools, a bushing having a concavo-convex shank, an end flange, an inwardly-projecting wedge, and an exterior rounded-off projection, substantially as described.

3. The combination of a handle, a hammer-body, bushings, means for attaching the bushings to the handle and hammer-body, a screw secured to one of said bushings, a socket at one end of the hammer-body, and a detachable claw or other tool having a shank with a threaded socket fitting over the screw, substantially as set forth.

323,249. INKSTAND. FRANK B. WOODHOUSE, Utica, N. Y. Filed Jan. 29, 1885. (No model.)



Claim.—1. The combination, with the ink-well cover, of the crank-lever pivoted to the upper ends of standards, the lower end of said lever having a pivotal connection with said cover, and the upper end of said lever forming a hand-rest, substantially as described, whereby, when the hand holding the pen is rested on said lever, the cover will be withdrawn or removed, as set forth.

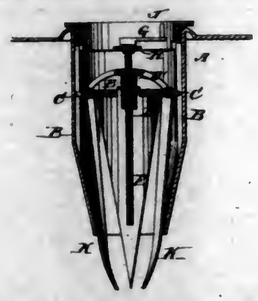
2. The combination, with the ink-well cover, of the crank-lever pivoted to the upper ends of standards, the lower end of said lever being pivoted to a bar connected to the said cover, the upper end of said lever forming a hand-rest, substantially as and for the purpose set forth.

3. An inkstand comprising an ink-well supported on a base, a crank-lever pivoted to standards on the base, and connected with the ink-well by a bar which operates the sliding cover of the ink-well, and a spring acting to close the cover, substantially as set forth.

4. The combination, in an inkstand, of a base, A, a detachable ink-well, B, held to the base by the interlocking projection and cavity *a b*, the crank-lever E, pivoted to standards C, the rod and cover G H, stop J, and spring I, substantially as herein set forth.

5. The combination, in an inkstand, of base A, detachable ink-well B, held thereto by the interlocking projection and cavity *a b*, and removable clamps K, the lever E, pivoted to standards C, and the rod and cover G H, stop J, and spring I, substantially as herein set forth.

323,250. STOVE. ALEXANDER T. YOUNG, East China, St. Clair County, Mich. Filed June 4, 1884. (No model.)



Claim.—1. In a fuel-magazine for a stove or grate, a fuel-regulator consisting of a series of hinged downwardly-projecting prongs and mechanism for contracting and expanding the opening between the lower ends of the prongs, whereby the prongs may be adjusted to regulate the descent of the coal and different sizes of coal be used therewith, substantially as described.

2. The combination, with a fuel-magazine for a stove or grate, of a vertically-movable piece to which downwardly-projecting prongs are hinged, and mechanism for opening or closing the opening formed by the lower ends of the prongs when the movable piece is operated, substantially as herein shown and described.

3. The combination, with a fuel-magazine for a stove or grate, of a vertically-movable piece to which downwardly-projecting prongs are hinged, and of a screw for raising and lowering the said piece, and mechanism for opening or closing the opening formed by the lower ends of the prongs when the movable piece is operated, substantially as herein shown and described.

4. The combination, with a fuel-magazine for a stove or grate, of a vertically-movable piece to which downwardly-projecting prongs are hinged, feathers, slots, or splines in the magazine for guiding the vertically-movable piece, and of a screw-spindle for moving the said piece vertically, and mechanism for opening or closing the opening formed by the lower ends of the prongs when the movable piece is operated, substantially as herein shown and described.

5. The combination, with the fuel-magazine A, having its lower part tapered, of the ring J, having a cross-piece, H, the screw F in the cross-piece H, the ring D, having the bub E, and of prongs K, hinged on the ring D, substantially as herein shown and described.

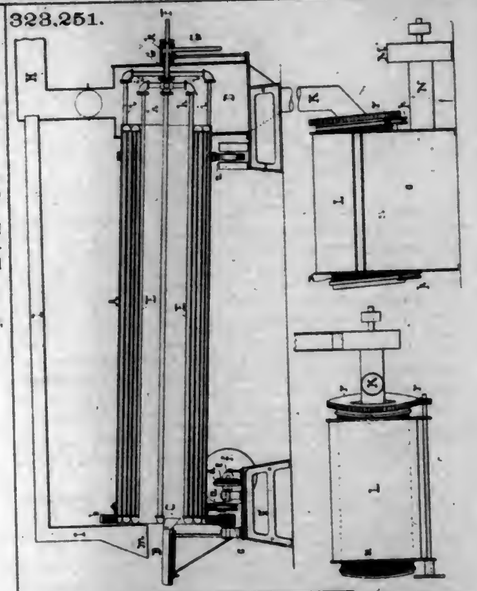
323,251. TOBACCO-DRIER. JOHN B. ADT, Baltimore, Md. Filed Feb. 21, 1884. (No model.)

Claim.—1. The combination, in a drying apparatus, of an inclined revoluble cylinder, the box located at one end and stationary relative to said cylinder, a gang of steam-pipes extending into said cylinder and having their supply and exhaust located at one end, substantially as described.

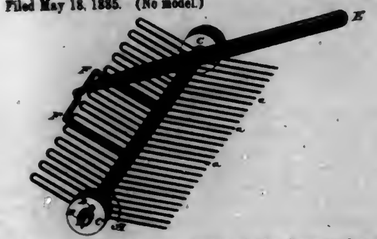
2. The combination, in a drying apparatus, of an inclined revoluble cylinder, the box located at one end, stationary relative to said cylinder, a gang of steam-pipes extending into said cylinder and having both their supply and exhaust located at their lower end, and the flues to carry off the moisture from said cylinder, substantially as set forth.

3. The combination, in a drying apparatus, of an inclined revoluble cylinder, the box located at one end and stationary relative to said cylinder, a gang of steam-pipes extending into said cylinder and having both their supply and exhaust located at their lower end, and the plates stationary relative to the cylinder and located adjacent relative to the steam-pipes to serve as paddles, substantially as set forth.

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323,252. LAWN-RAKE. HENRY D. ALEXANDER and DAVID HARRINGTON, Canton, Ohio, assignors of one-third to Mathew Bast, same place. Filed May 18, 1885. (No model.)

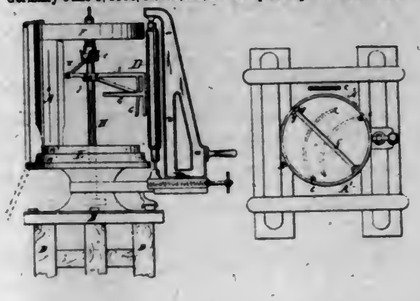


Claim.—1. A lawn-rake consisting of a head mounted upon wheels and provided with an operating-handle, and rake-teeth passed through apertures in said head and secured thereto at or about their centers, substantially as described.

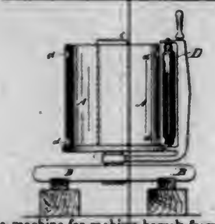
2. In a lawn-rake, the combination, with a tubular head mounted upon wheels and provided with an operating-handle, of rake-teeth passing through apertures in said tubular head, and a locking-bar passed longitudinally through said tubular head for holding the teeth in position, substantially as described.

3. In a lawn-rake, the combination, with a head mounted upon wheels and provided with an operating-handle, of U-shaped rake-teeth consisting of metal wires bent over as shown, and the free ends passed through apertures in the said head and secured therein so as to project equally in front and rear thereof, substantially as described.

323,253. BARREL-MAKING MACHINE. FREDERICK ANDREW, Burnt Ash, County of Kent, assignor of one-half to John Christie, Mark Lane, London, England. Filed July 7, 1884. (No model.) Patented in England Feb. 21, 1884, No. 3,701; in France May 2, 1884, No. 161,864; in Germany June 6, 1884, No. 30,612, and in Spain Sept. 10, 1884, No. 6,175.



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Claim.—1. In a machine for making barrels from a prepared flexible strip of staves and hoops, a collapsible former, in combination with a roller traveling around its periphery, substantially as described.

2. In a machine for making barrels of the described kind, the combination of the collapsible former A, the holding-standard C, pivoted to the base and provided with catch mechanism at its free end, the pivoted crank and handle, and the roller journaled in such crank, substantially as described.

3. In a machine for making barrels, the collapsible former, composed of sections hinged to one another, in combination with the removable locking device *f*, having its bearings in the stationary part A', and secured by lugs *g g* on the parts A^2 A^3, substantially as described.

323,254. PROCESS OF PURIFYING MAPLE SIRUP. AMOS M. BAILEY, Middle Branch, Ohio, assignor to the Bailey Canning Company, same place. Filed May 20, 1885. (No specimens.)

Claim.—The herein-described process of purifying maple sirup, consisting, essentially, in mixing with the sirup, in about the proportions of one thousand pounds of sirup, two gallons of milk, two dozen of eggs, well beaten, and applying heat to bring the mass to a boiling-point; second, to the heated mass adding about twenty-five pounds glucose, one-half pound baking-soda, one ounce of alum, keeping the mass about at the boiling-point, stirring, and skimming so long as impurities rise to the surface.

323,255. POWDER-PUFF. ELLEN A. BAILEY, St. Charles, Mo. Filed Feb. 3, 1885. (No model.)



Claim.—1. As a new article of manufacture, a receptacle for holding toilet-powder, consisting of two side or body portions united together at their bottom edges to a common bottom piece, and provided at their top edges with a separate closing device, as set forth.

2. A powder-puff consisting of a bag-shaped receptacle formed of material of a close texture and provided with a flat bottom piece composed of loosely-woven fabric having a nap or pile surface, substantially as set forth.

323,256. FENCE-POST. DAVID P. BAKER, Shambaugh, Iowa. Filed Apr. 30, 1884. (No model.)



Claim.—1. A fence-post composed of a body, B, and foot A, in combination with the strip *a*, vertically adjustable within the side pieces, *d d*, and flush with the outer service thereof, and adapted to receive the bars, rails, or wires upon its face, substantially as described.

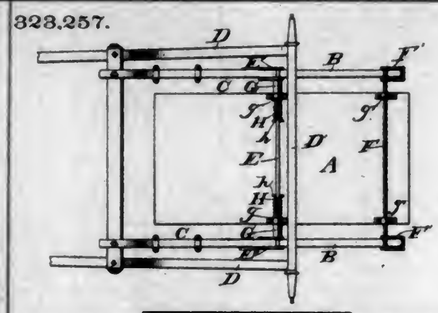
2. A fence-post composed of the body B and foot A, in combination with the strip *a*, vertically adjustable in the side pieces, *d d*, and the retaining-pins *c*, substantially as described.

323,257. TWO-WHEELED VEHICLE. CHARLES S. BEEBE, Racine, Wis. Filed Nov. 12, 1884. (No model.)

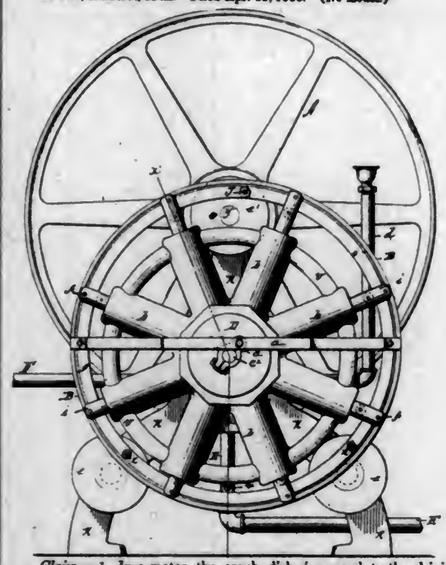
Claim.—1. In a road-cart having its body supported on transverse rods depending from swinging arms of the side bars, coil-springs mounted on the supporting-rods between the staples connecting the same to the body of the cart, and stop-pins of the rods, substantially as and for the purpose set forth.

2. In a road-cart, in combination with the body A, side bars, B, having swinging arms E' F', rods E F, staples *g g*, and pins *h h*, the rubber washers G G, and coil-springs H H, substantially as shown and described, and for the purpose set forth.

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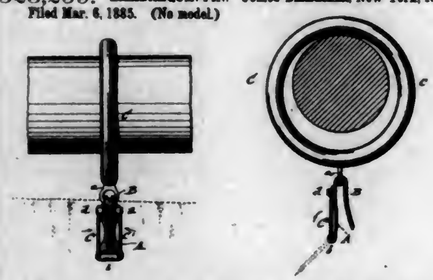
323,258. MOTOR. ELIJAH B. BENHAM, Holyoke, and HENRY B. RICHARDSON, Amherst, Mass. Filed Apr. 13, 1885. (No model.)



Claim.—1. In a motor, the crank-disk *e'*, secured to the driving-shaft thereof, the crank-disks *e e*, hung to rotate on the frame of the machine, the ring B, attached to a crank-pin on each of said disks, combined with a series of pistons, substantially as described, having a movement in the plane of said ring, substantially as set forth.

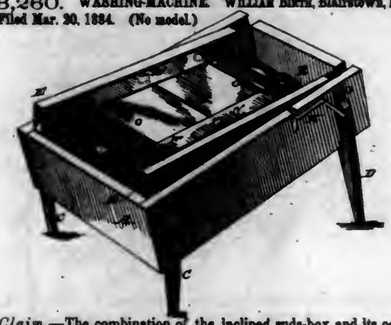
2. In a motor, the series of pistons *i*, having reciprocating motions in the same plane, the disks *e e* and *e'*, the ring B, attached to said pistons and to said disks, the bar *a*, attached to said ring, the valve H, and the crank-arm *c*, secured to the stem of the valve and to said bar, combined and operating substantially as set forth.

323,259. LAMBREQUIN-PIN. JULIUS BERBECKER, New York, N. Y. Filed Mar. 6, 1885. (No model.)



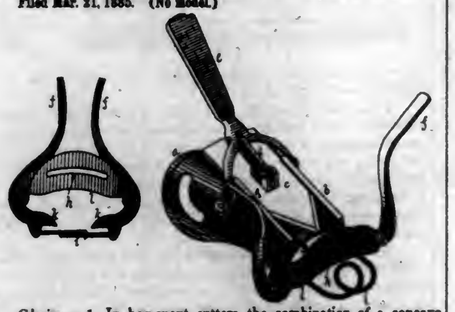
Claim.—A lambrequin-pin composed of a main plate having a downwardly-bent rear hook at the upper end, a bent-up sleeve at the lower end, and forward-bent guards at the upper end of the plate, said hook, sleeve, and guards being made integral with the main plate, and of a U-shaped fastening-pin hinged to the sleeve and adapted to be retained by the guards, substantially as set forth.

323,260. WASHING-MACHINE. WILLIAM BIRTH, Blairstown, Iowa. Filed Mar. 20, 1884. (No model.)



Claim.—The combination of the inclined suds-box and its cover, the swinging frame pivoted therein and consisting of the bars connected near their free ends by a smooth roller and near their pivoted ends by corrugated rollers, with a transverse board intermediate the smooth and corrugated rollers, an endless apron passing around the rollers, said apron having its edges provided with hems and having transverse rods with looped ends secured within the hems, a wash-board with one of its ends resting against the lower end of the suds-box and its other end supported upon a spring, and a crank attached to one of the rollers, all substantially as described.

323,261. HOG-SNOUT CUTTER. WILLIAM C. BLILER, Decatur, Ill. Filed Mar. 21, 1885. (No model.)

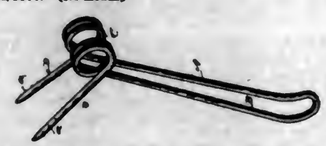


Claim.—1. In hog-snout cutters, the combination of a concave frame, a knife adapted to slide longitudinally thereon, and a pair of opposed bent levers pivoted to the frame at right angles therewith, as and for the purpose set forth.

2. In hog-snout cutters, the combination of a concave frame, a knife-guide oblique therewith, a knife adapted to slide longitudinally in the knife-guide, and a pair of opposing bent levers pivoted to the frame at right angles therewith, as and for the purpose set forth.

3. The combination, in a hog-snout cutter, of frame *a*, provided with opening *g*, guide *b*, knife *c*, lever *e*, connecting-bar *d*, vertical plate *l*, provided with slot *h*, levers *f f*, terminating in jaws *k k*, and a suitable spring for compressing said jaws, all constructed and arranged to operate substantially as and for the purpose set forth.

323,262. HAT-HOLDER. FREDERIK BLINTLER, Blakeslee, Ohio. Filed Feb. 24, 1885. (No model.)

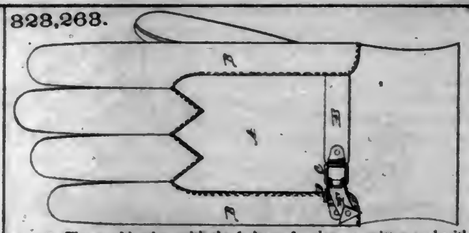


Claim.—A hat-holder composed of a single wire bent to form a loop-finger, B, with an outwardly-turned end, and a coil, C, between the end of said finger and the two ends D of the wire, the said ends being extended directly rearwardly at an angle from the lower portion of the two sides of said looped finger, substantially as described.

323,263. GLOVE. JOHN BLOWERS, Rockford, Ill., assignor to Henry W. Price, same place. Filed Mar. 31, 1885. (No model.)

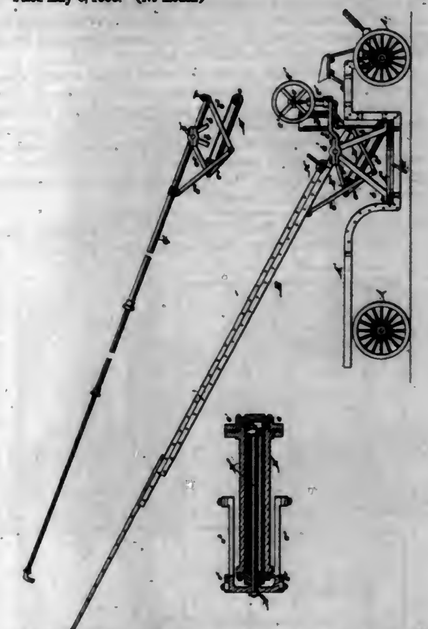
Claim.—1. The combination, with the facings of a glove or mitten, and with the fabric more expansible than the facings forming the back thereof between the edges of the facings, of a tuck-band connecting the edges of the facings and spanning the fabric forming the back of the glove or mitten, substantially as and for the purpose set forth.

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2. The combination, with the facings of a glove or mitten, and with the fabric more expansible than the facings forming the back thereof between the edges of the facings, of a tuck connecting the edges of the facings and spanning the fabric forming the back, said tuck having a detachable connection, substantially as and for the purpose set forth.

323,264. MECHANISM FOR RAISING LADDERS, PIPES, &c. SILAS N. BLOOM, Detroit, Mich., assignor of one-half to James Battle, same place. Filed May 6, 1885. (No model.)



Claim.—1. The combination of a supporting-frame, a horizontally-rotating table or bed thereon, a ladder or pipe pivotally supported on the table or bed, a cylinder, and a piston in the cylinder actuated by fluid-pressure and connected with the ladder or pipe, substantially as and for the purpose described.

2. The combination of a supporting-frame, a rotating table thereon, a ladder or pipe pivotally supported on the table, a cylinder journaled on said table, and a piston in the cylinder actuated by fluid-pressure and connected with the ladder or pipe, substantially as and for the purpose described.

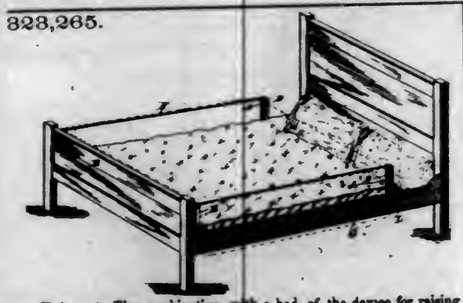
3. The combination of a supporting-frame, a rotating table thereon, a pivoted ladder or pipe, a cylinder having a piston connected with the ladder or pipe, and a pump connected with the cylinder, the ladder or pipe, the cylinder, and the pump being all supported by and moving with the rotating table, substantially as and for the purpose described.

4. The combination, with a ladder or pipe, of a cylinder provided with a piston actuated by fluid-pressure, said piston engaged with said ladder or pipe by intervening compound levers to raise the ladder or pipe from a horizontal to an upright position, substantially as described.

5. The combination, with a ladder or pipe having a pivotal engagement toward its base and provided with braces b^3 b^4, of a cylinder provided with a piston actuated by fluid-pressure, said piston provided with a yoke pivotally engaged with said braces, and a bar, c^2, pivotally engaged with said yoke and with the axle of the ladder, substantially as described.

323,265. DEVICE FOR ELEVATING AND SUSPENDING BED-CLOTHING. ANDREAS W. BONAKER, Boston, Mass. Filed July 15, 1884. (No model.)

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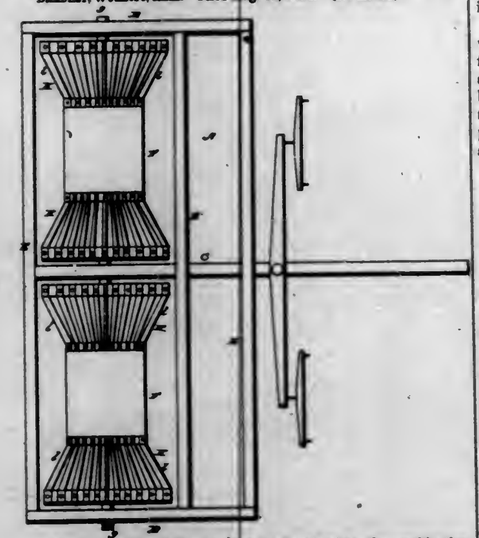
Claim.—1. The combination, with a bed, of the device for raising the upper covering thereof, consisting of arms or levers hinged to the side pieces of the bedstead, near the head and foot, respectively, rods for connecting said arms or levers, and the cords attached to said arms for operating to raise the covering, substantially as described.

2. The combination, with a bed, of the hinged arms or levers, the connecting-rods, the cords for raising the arms or levers, and the guides for said cords, substantially as described.

3. The combination of the two sets of hinged arms or levers and the cords for raising them, the connecting-rods, the pawl-arms connected to one set of arms, and the ratchet-bars with which said pawl-arms cooperate to sustain the arms in elevated position, substantially as described.

4. The combination of the hinged arms or levers, the connecting-rods, the cords for raising the arms or levers, and the guides for the same, the hinged pawl-arms, and the ratchet-bars, the whole constructed and arranged substantially as described.

323,266. ROLLING CULTIVATOR AND PULVERIZER. JOSEPH G. BRADLEY, Wetmore, Kans. Filed Aug. 18, 1884. (No model.)



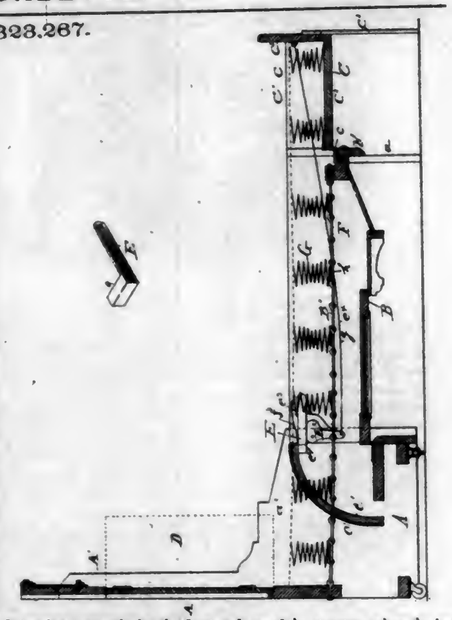
Claim.—1. In a rolling cultivator and pulverizer, the combination of the rollers provided with journals *g*, revolving in vertically-slotted bearings H, and the end series of vertical knives, K, having their cutting-edges *l* commencing near the middle of each roller and inclined outward, attaining their full depth at the ends of the roller, substantially as specified.

2. In a rolling cultivator and pulverizer, the combination of the rollers provided at each end with a series of radial knives having inclined cutting-edges *l* of greatest depth at the ends of the roller, and thence gradually extending to the roller-surface near its middle at an angle of from thirty degrees to forty-five degrees, substantially as specified.

323,267. CABINET-BEDSTEAD. SILAS S. BRADSHAW, Chicago, Ill., assignor to Samuel S. Chisholm, same place. Filed Jan. 23, 1884. (No model.)

Claim.—1. In a folding bed, the combination, with a stationary casing provided with a back wall forming a head-board, of a sectional folding bed-frame comprising a main part or section, B, hinged to the said casing, and a foot-section, C, hinged to the part A, and constructed to fold into a position at right angles to the latter, said sections B and

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C forming, respectively, the front and top of the structure when the bed is folded, substantially as described.

2. In a folding bed, the combination, with a stationary casing provided with a back wall forming a head-board, of a sectional folding bed-frame comprising a main part or section, B, hinged to the said casing, and having side walls or rails, B', and a foot-section, C, hinged at its bottom to the part A, and adapted to fold into a position at right angles to the latter, said section C having its side pieces or rails, C', located in position to overlap the side rails, B', of the section B, substantially as and for the purpose set forth.

3. In a folding bed, the combination, with a stationary casing provided with a back wall forming a head-board, of a sectional folding bed-frame comprising a main part or section hinged to the said casing, and a foot-section, C, consisting, essentially, of side rails, C', a bottom, C^3, and a foot-board, C^3, the said foot-section being hinged at the edge of its bottom C to the section B, and the sides C' being located in position to enter between the sides B' of the section B when the bed is folded, substantially as and for the purpose set forth.

4. In a folding bed, the combination, with a stationary casing, A, and a folding bed-frame comprising a main part or section, B, hinged at its upper end to the casing A, and a foot-section, C, hinged to the part B, of a flexible support for the mattress, connected at one end with the rear wall of the casing, and at its opposite end with the outer end of the section B, substantially as and for the purpose set forth.

5. The combination, with the stationary casing A and a folding bed-frame hinged to the casing, the said casing being provided with a groove, *c'*, curved concentrically with the axis of the hinged joint, between the casing and bed-frame, and having a notch or lateral extension, c^3, of a latch, E, pivoted to the bed-frame and engaged with the said groove, substantially as and for the purpose set forth.

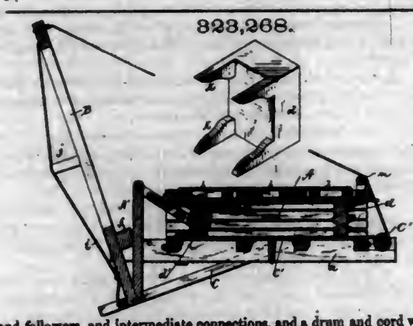
6. The combination, with the stationary casing A and a folding bed-frame hinged to the casing, the said casing being provided with a groove, *c'*, curved concentrically with the axis of the hinged joint, between the casing and frame, and having a notch or lateral extension, c^3, of a latch, E, pivoted to the bed-frame and engaged with the groove, and a spring applied to throw the latch into position to engage the notch, substantially as and for the purpose set forth.

7. The combination, with the stationary casing A and a folding bed-frame hinged to the casing, the said casing being provided with a groove, *c'*, curved concentrically with the axis of the hinged joint, between the casing and bed-frame, and provided with a notch or lateral extension, c^3, of a latch, E, pivoted upon the frame and engaged with the groove, and a lever, E', pivoted to the bed-frame in position to engage the latch, whereby the latter may be disengaged from the notch, substantially as described.

323,268. HAY OR COTTON PRESS. THOMAS P. BRAGG, Ennis, assignor of one-half to George S. Higginbotham, Ellis County, Tex. Filed June 11, 1885. (No model.)

Claim.—1. In a hay-press, the combination of a box or casing, a main operating-lever having a semi-rotating fulcrum, auxiliary levers,

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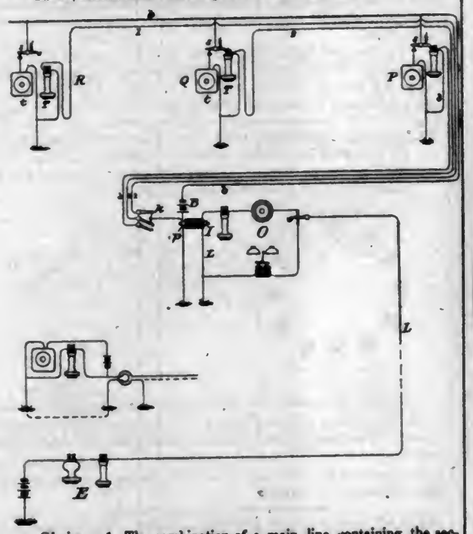


and followers, and intermediate connections, and a drum and cord whereby the parts are operated, substantially as specified.

2. In a hay-press, the combination of the box or casing having suitable doors in its top, bottom, and side, and supported on longitudinal base-strips, a main lever having a short toggle-arm, a semi-rotating fulcrum therefor, auxiliary levers pivotally connected with the main lever, reciprocating followers, and a drum and cord, substantially as described.

3. In a hay-press, the combination of the box or casing having friction-roll *m*, the levers B and A', and semi-rotating fulcrum-block *f*, the auxiliary lever C, followers *d d'*, rod *i*, and the drum C', having thereon a cord attached to the main lever, all substantially as described.

323,269. TELEPHONE-CIRCUIT. MORGAN BROOKS and HOWELL R. MASON, Boston, Mass. Filed Apr. 20, 1885. (No model.)



Claim.—1. The combination of a main line containing the secondary of an induction-coil the primary of which is connected with a circuit composed of three branches, the first of which contains the said primary coil, the second the transmitter and battery, and the third a receiving-telephone.

2. The combination of a main line containing the secondary of an induction-coil the primary of which is connected with a circuit composed of three branches, the first of which contains the primary coil and is of the lowest resistance, the second the transmitter and battery and is of the highest resistance, and the third the receiving-telephone having an intermediate resistance.

3. The combination of a set of telephonic communicating instruments located in the main line at one station and a sub-station equipped with a telephone and transmitter connected with the primary of the induction-coil located at the main station by three branches containing, respectively, the receiving-telephone, the battery and transmitter, and the said primary coil.

4. The combination of a line for telephonic communication containing the secondary of an induction-coil with a circuit connecting with a second station and composed of three branches, the first of which contains a battery-transmitter and a battery with a controlling-switch located at the sub-station, the second a telephone with a controlling-switch at the main station, and the third the primary of the said induction-coil.

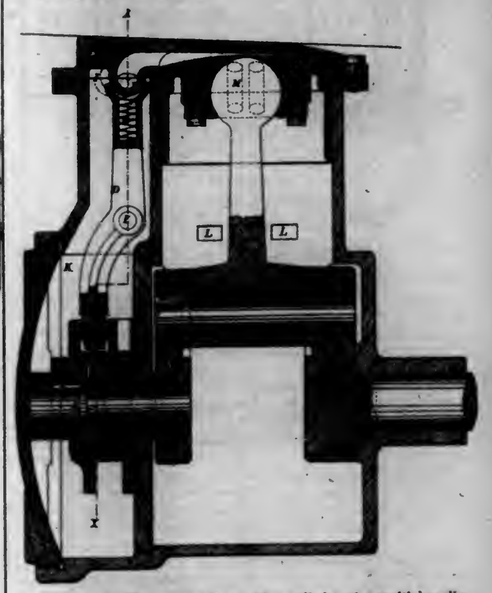
5. In a system of telephonic communication, the combination of a telephone located in a circuit composed of three branches connecting two stations, and an induction-coil having its primary in one of the multiple-arc branches and its secondary in a line extending to a third station.

6. The combination of a main line with a receiving and transmitting telephone and the secondary of an induction-coil located therein, the primary of said coil having one terminal connected to a return-wire or the ground and having the other terminal connected to two or more branches extending to sub-stations.

7. In a system arranged for telephonic communication, the combination, at one station, of a receiving-telephone, a transmitting-telephone, and an induction-coil having its secondary in the main line and its primary extending to one or more sub-stations, each of which is equipped with a transmitting-telephone, a receiving-telephone, and suitable battery-power.

8. A telephone-line containing the secondary of an induction-coil, and a local circuit containing the primary of said coil, a battery-transmitter, and battery, combined with a receiving-telephone in a branch circuit the terminals of which are respectively connected to the local circuit at points upon opposite sides of the said transmitter, substantially as described.

323,270. VALVE-GEAR. PETER BROTHERHOOD, Lambeth, County of Surrey, England. Filed Mar. 24, 1885. (No model.) Patented in England Mar. 6, 1885, No. 2,965.



Claim.—1. The combination, with a cylinder of a multiple-cylinder engine, of the slide F, located entirely beneath and having its seat upon the lower surface of the cylinder-cover M, the lever D, pivoted between its ends, and the cam B, substantially as described.

2. The combination, with the cylinder of a multiple-cylinder engine, of a semi-cylindrical slide, F, seated upon the lower surface of a cylinder-cover, a lever, D, pivoted between its ends and having a cup-shaped outer end into which is seated the slide, and the cam B, substantially as described.

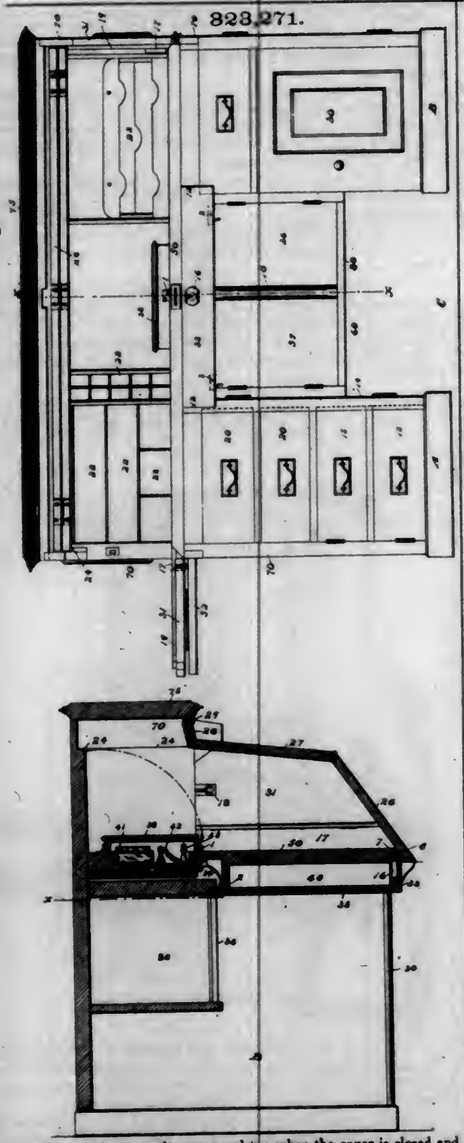
3. The combination, with the cylinder of an engine, of the slide F, seated upon the lower side of a cylinder-cover, the lever pivoted between its ends, a spring, G, carried by the lever and pressing the slide upon its seat, and the cam B, substantially as described.

323,271. DESK. BLOOMFIELD BROWER, New York, N. Y. Filed July 21, 1884. (No model.)

Claim.—1. The combination, with the desk-top and the stationary roof portion 75, of a sliding cover arranged to be drawn forward to cover the desk-top and to be slid back beneath the roof portion to expose the top, and the portions 31, hinged to the desk-top and arranged to be turned up to close the space between the cover and top when the cover is closed and to be turned down to extend the top when the cover is opened, substantially as described.

2. The combination, with the desk-top and the stationary roof portion 75, of a sliding cover arranged to be drawn forward to cover the desk-top and to be slid back beneath the roof portion to expose the top, the portions 31, hinged to the desk-top and arranged to be turned up to

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close the space between the cover and top when the cover is closed and to be turned down to extend the top when the cover is opened, and the hinged flaps 17, substantially as described.

3. The combination, with the desk-top, of the sliding cover composed of the two parts 26 27, hinged to each other and arranged to be folded together, and the portions 31, hinged to the desk-top and arranged to be turned up to close the space between the cover and top when the cover is closed and to be turned down to extend the top when the cover is opened, substantially as described.

4. The combination, with the desk-top and the roof portion 75, of the sliding cover composed of the two parts 26 27, hinged to each other and arranged to be folded together and then slid back beneath the roof portion, substantially as described.

5. The combination, with the top 50, back 60, ends 70 31, and the roof portion 75, provided with the cleat 29, of the sliding cover composed of the two parts 26 27, hinged to each other and arranged to be folded together, and provided with the cleat 28, for engagement with the cleat 29, substantially as described.

6. The combination, with the top 50, provided with the hinged cover 38, having the catch 1, of the drawer 40, having the catch 39 and lock 16, substantially as described.

7. The combination, with the top 50, of the cover 26 27, having the catch 6, and the drawer or slide 40, having the lock 16, substantially as described.

8. The combination, with the door 30, of the drawer or slide 40, having the lock 16 and a projection, 12, upon the end of its front, which overlaps said door, substantially as described.

9. The combination, with one or more drawers, 20, of a hinged piece, 14, arranged to overlap said drawer or drawers, and a drawer or slide having a projection, 12, upon the end of its front, which engages with said hinged piece, substantially as described.

10. The combination, with a hinged door, 15, of a hinged piece, 14, arranged to overlap the edge of said door, and a drawer or slide having a projection, 12, upon the end of its front, which engages with said hinged piece, substantially as described.

11. The combination, with the door 30 and one or more drawers, 20, of the hinged piece 14 and the drawer or slide 40, having the lock 16 and the projections 12 upon the ends of its front, substantially as described.

12. The combination, with the drawer or slide 40, having the lock 16, of the cupboard 80, the doors 36 37 of which are engaged by the back of said drawer, substantially as described.

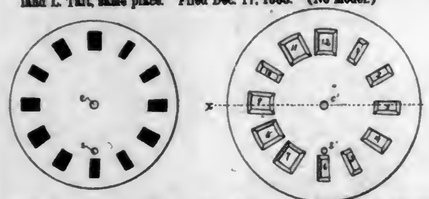
13. The combination, with the top 50, of a cover for said top, the door 30, and the drawer or slide 40, having the lock 16 and the projection 12 upon the end of its front, which overlaps said door, substantially as described.

14. The combination, with the top 50, of a cover for said top, one or more drawers, 20, the hinged piece 14, and a drawer or slide having the lock 16 and projection 12, which engages with said hinged piece, substantially as described.

15. The combination, with the top 50, of a cover for said top, the door 15, the hinged piece 14, and a drawer or slide having the lock 16 and a projection, 12, which engages with said hinged piece, substantially as described.

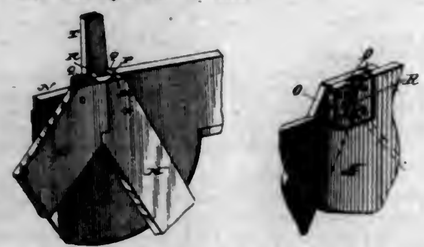
16. The combination, with the top 50, of the cover 26 27, door 30, one or more drawers, 20, the hinged piece 14, and the drawer or slide 40, having the lock 16 and projections 12, which engage with said door and hinged piece, substantially as described.

323,272. PRODUCING UPON THE DIALS AND FACES OF WATCHES THE PAINTED ROMAN CAPITAL NUMERAL LETTERS. DAVID R. BUCHANAN and EDWARD L. DODGE, Springfield, Ill., assignors to Ryland L. Taft, same place. Filed Dec. 17, 1883. (No model.)



Claim.—In a machine for ruling dials, the combination of the main frame or stand, the revolving cylinder *b*, having the fixed pins adapted to enter the center and fourth hole of a dial and ruling and clearing plate interchangeably, and the vertical movable rod *f*, having the circular shoe *e*, to engage and hold the said ruling and clearing plates down upon a dial, substantially as specified.

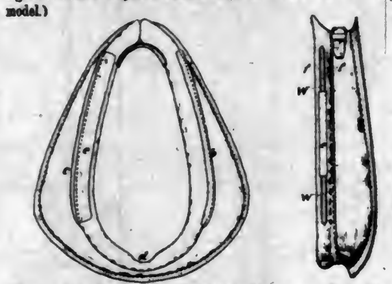
323,273. WASHING-MACHINE. FRANCIS B. BLACK, Mount Carmel, Ind. Filed May 28, 1884. (No model.)



Claim.—1. The combination of the inclined stationary legs, having the edges of their upper ends cut off vertically and inwardly beveled, as described, with the pivoted legs formed with bearings for the rubber at their upper ends, and having the edges of their upper ends cut off and outwardly beveled to fit between the beveled edges of the upper ends of the stationary legs, as and for the purpose shown and set forth.

2. The combination of the suds-box having recesses provided with one vertical and one rounded edge cut in the upper edges of its sides near their middles, the inclined stationary legs having their upper ends cut off vertically and inwardly beveled and formed with bearings at their lower ends, the axle provided with the wheels and turning in the bearings in the stationary legs, the brace having the notch in the under side of its free end and the ends of its divergent legs hinged upon the axle, the legs pivoted at or near their middles upon the sides of the suds-box and having their upper edges cut off and outwardly beveled, as described, the bearings or blocks having grooves curved at their upper ends, the rubber rocking with its trunnions in the said bearings, and the foot-board or catch pivoted transversely between the lower ends of the pivoted legs, as and for the purpose shown and set forth.

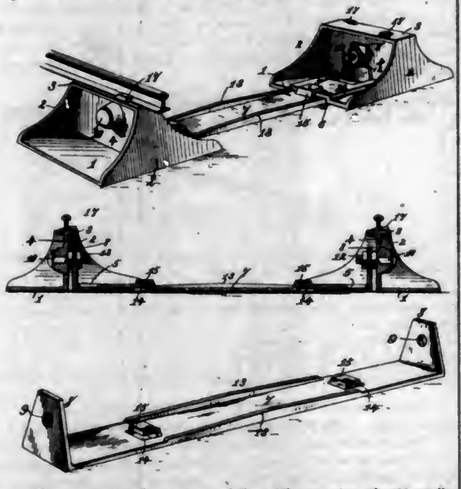
323,274. HORSE-COLLAR. MICHAEL F. CAVANAGH, St. Louis, assignor to John P. Snyder, Jefferson City, Mo. Filed Jan. 24, 1885. (No model.)



Claim.—In a horse-collar, the neck-roll having a slit in its outside covering in front and lengthwise of the neck-roll, forming lips *f f*, which are stitched together and covered by the binder *e*, all combined substantially as described.

323,275. RAIL SUPPORT OR TIE FOR RAILWAYS. JOHN K. CLARK, Buffalo, N. Y. Filed Aug. 18, 1884. (No model.)

Brief.—The ends of the tie-plate are seated in depressed seats in the bases of the rail-supports, its upturned ends being bolted to the uprights thereof. The top plate of the rail-support holds the rail.



Claim.—1. A rail-support consisting of the top plate, the side walls, the web, and the bottom wall having a rectilinear depressed seat in its under side to receive the end of a rectilinear tie-plate, substantially as described.

2. A rail-support consisting of the top plate, the side walls, the web, and the bottom wall having the slot or perforation and the rectilinear depressed seat for receiving the end of the rectilinear tie-plate, substantially as described.

3. The combination of the two rail-supports, each composed of the top plate, the side walls, the web, and the horizontal bottom wall having a rectilinear depressed seat, with the rectilinear tie-plate having its end portions confined in the depressed seats, substantially as described.

4. The combination of the two rail-supports, each composed of the top plate, the side walls, the web, and the horizontal bottom wall having the depressed rectilinear seat, with the tie-plate arranged in said seats, and having standards connected with the web, substantially as described.

5. The combination of the two rail-supports, each composed of the top plate, the side walls, the web, and the horizontal bottom wall having the slot or perforation and the rectilinear depressed seat in its under side, with the tie-plate arranged in said seats, and having standards at its extremities and bolts connecting the standards to the web, substantially as described.

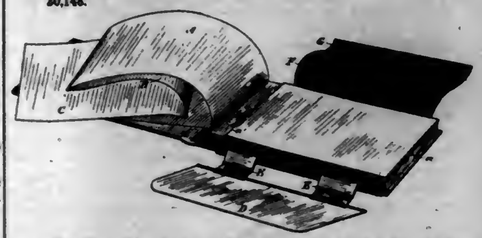
6. The combination of two rail-supports, each having a top plate to receive the rail, and an extended bottom wall having a rectilinear seat, with a tie-plate secured in said seats, with its lower surface flush or substantially flush with the lower surfaces of the said bottom walls, substantially as described.

7. The combination of the two rail-supports, each composed of the top plate, the side walls, the vertical web, and the horizontal bottom wall, with a rectilinear tie-plate connecting the adjacent ends of the bottom walls of the supports and arranged in the plane of the said bottom walls, substantially as described.

8. The combination of the two rail-supports having the webs, the tie-plates having the end standards, the bolts and nuts connecting the end standards with the web, and means for securing rails on the top plate, substantially as described.

9. The tie-plate having the oppositely-projecting raised lips and end standards, in combination with the rail-supports having webs to which the standards are attached and bottom walls engaging the lips, substantially as described.

323,276. BLACK-LEAF CHECK-BOOK. THOMAS G. COOPER, Jarvis, Ontario, assignor of one-tenth to Samuel John Moore, Toronto, Canada. Filed July 7, 1884. (No model.) Patented in Canada Sept. 6, 1884, No. 20,148.

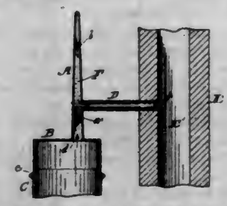


Claim.—1. The leaves A, B, and C, connected together, and having one of their ends fastened to the book, in combination with the black leaves F and G, fastened to the book at right angles to the fastening of the leaves, and the sheet-metal plate D, flexibly connected to the book at right angles to the connection of the leaves A, B, and C, substantially as described.

2. In a black-leaf check-book arranged to produce simultaneously several copies of a written memorandum, the leaves A, B, and C, connected to and folded in the book as described, in combination with a metal plate, D, flexibly connected to the book at right angles to the connection of the leaves.

3. In combination with a black-leaf check-book, a metal plate, D, flexibly hinged to the cover by a double joint, whereby said plate will accommodate itself to the decreasing thickness of the book as the leaves are removed, substantially as and for the purpose specified.

323,277. RADIATOR. FRANCIS E. CORET, Westborough, Mass. Filed Feb. 14, 1885. (No model.)



Claim.—A device for utilizing the heat from oil-stoves, having the base B, adapted to fit the top of an oil-stove surmounted by and connected with the radiator A, said radiator being provided with the escape-pipe D and the V-shaped deflector F, in the manner and for the purpose shown and specified.

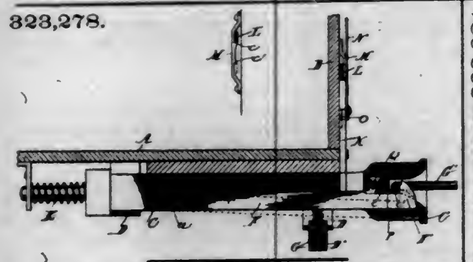
323,278. CAR-COUPLING. PETER V. CORNIA, Chicago, Ill. Filed June 8, 1885. (No model.)

Claim.—1. The combination, with draw-head C, lever F F′, and spring G of piece P and spring Q, as set forth.

2. The combination, with draw-head C, lever F F′, and spring G, of rod K, lever L, and guide M, provided with offsets *c c′*, as set forth.

3. The combination, with draw-head C, lever F F′, and spring G, of piece P, spring Q, rod K, and suitable lever for operating such rod, as set forth.

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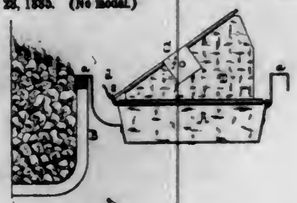


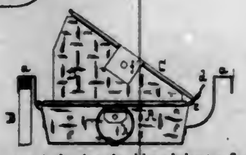
323,279. LATHE-CHUCK JAW. THOMAS H. COSTELLO, Chicago, Ill., assignor to H. H. Goss, same place. Filed May 8, 1882. (No model.)



Claim.—The jaws *a*, having their holding-surfaces, by which they grasp the work, provided with inclined grooves and ridges *a'*, substantially as and for the purpose described.

323,280. DOMESTIC OVEN. WILEY G. CROOM, Vicksburg, Miss. Filed Feb. 23, 1885. (No model.)



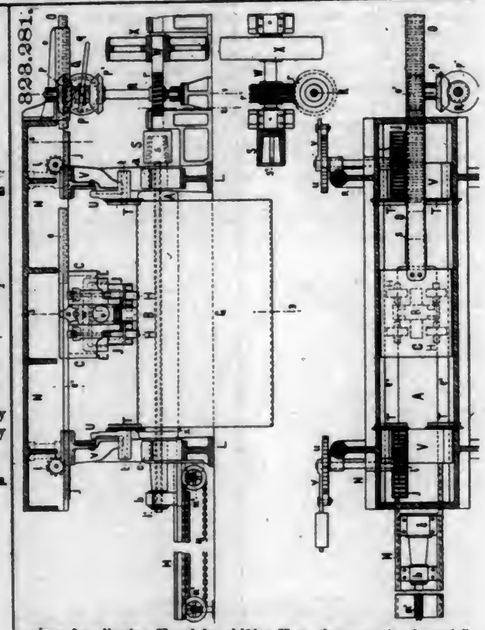


Claim.—1. The pan A, having the hinged heat-reflecting plate C and suitable supports therefor, substantially as specified.

2. The pan A, having the heat-reflecting plate C and wings D, combined with the hooks, whereby the same may be attached to a grate, substantially as specified.

3. The pan A, having the heat-reflecting plate C, combined with the wings D, hinged to the plate C, whereby they may be folded to the face of the said plate and secured thereat, substantially as specified.

323,281. MACHINE FOR ROLLING METAL CYLINDERS. VITAL DAHLEN, Berlin, Germany. Filed Sept. 27, 1884. (No model.) Patented in England Sept. 8, 1884, No. 12,141.



Claim.—1. In a machine for rolling seamless cylinders, the long roll A, adapted to be shifted longthwise to the extent required for introducing the cylinder G into the machine and removing it therefrom, the short roll B, mounted by means of swiveling bearings in a carriage, C, sliding on ways *c'*, parallel to the roll A, and mechanisms for rotating the roll A, for shifting it lengthwise, for imparting to the carriage C a reciprocating motion, and for adjusting the rolls A and B closer together or farther apart, all combined together substantially as and for the purpose described.

2. The long roll A, carried at one end in bearings *b* and *c*, movable on ways M, parallel to the roll, the short roll B, mounted in bearings pivoted to the box E, which is adjustable toward and away from the roll A in a carriage, C, sliding on ways *c'*, also parallel to the roll A, and mechanisms for rotating the said roll A for shifting its bearings *b* and *c* on the ways M, for moving to and fro the carriage C on the ways *c'*, and for adjusting the box E in respect to the carriage C, all combined together substantially as and for the purpose described.

3. The combination, with the long roll A, short roll B, carriage C, and box E, of the guiding-rolls H, rotating in bearings *h*, pivoted to a frame, I, which is supported by springs and adjustable in respect to the carriage C, and means for carrying out the adjustment of I, substantially as and for the purpose described.

4. The combination, with the rolls A and B, reciprocating carriage C, and box E, of the flanged guiding-rolls T, mounted in a slide, U, adjustable on a carriage, V, movable on ways *c'* parallel to A, and mechanisms for adjusting U and for shifting V on the ways *c'*, substantially as hereinbefore set forth.

5. The combination, with a long roll, A, deviating partly or wholly from the cylindrical form, the short roll B, the box E, mounted by trunnions *e* in the carriage C, of the slide-blocks *z*, bearing on semi-cylindrical parts of the wedges *w* and abutting against the bars Y, having a form corresponding to the roll A, and of the arm *u'*, fixed to one of the trunnions *e*, lever *v'*, and connecting-bars *x'* and *y'*, substantially as and for the purpose described.

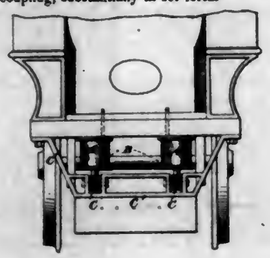
323,282. MUSIC-RACK FOR UPRIGHT PIANOS. JOHN J. DECKER, New York, N. Y. Filed May 7, 1885. (No model.)



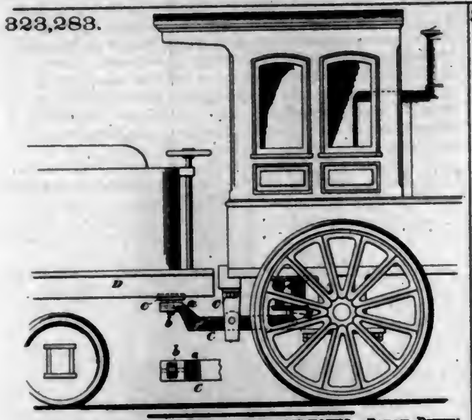
Claim.—The combination, with the front A of a musical instrument, having in it an opening, A', of the rack or board B, pivoted at its top, a rest supported by arms E, having fixed pivotal supports at their inner ends, and a strap, F, attached at one end to the rest, and at the other end to the inner side of the rack or board B at a point considerably above its lower edge, substantially as herein described, whereby the strap is caused to sustain the rest when in use and to prevent its falling back against the action of the instrument when not in use.

323,283. TRACTION-INCREASER FOR LOCOMOTIVES. MARK A. DEES, Scranton, Miss. Filed Nov. 7, 1884. (No model.)

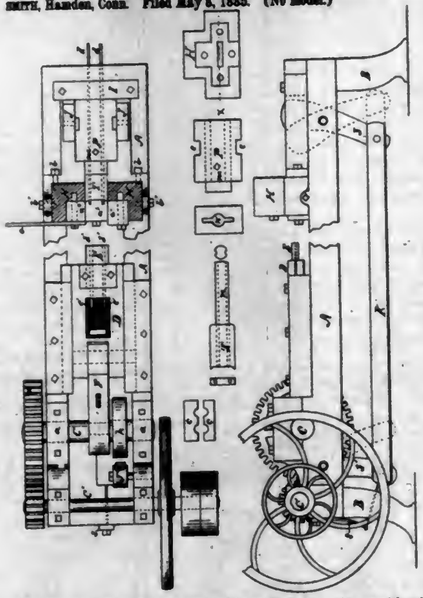
Claim.—In a traction-increaser for locomotives, a vertical cylinder and a suspension-brace, both secured under the floor of the cab, combined with a piston-rod and lever, the lever being directly connected with the piston-rod so as to receive a downward thrust, and the free end of said lever extending under the forward end of the tender to a position adjacent to the coupling, substantially as set forth.



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323,284. MACHINE FOR MAKING CLIP-YOKES. PHILIP DEITESMITH, Hamden, Conn. Filed May 8, 1885. (No model.)

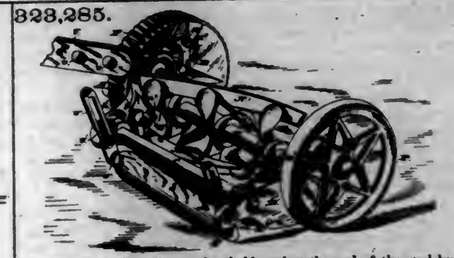


Claim.—1. In a machine for making clip-yokes, the combination of the die-block H, having a series of removable pieces, a' a^2 a^3 a^4, the reciprocating punch E, and the reciprocating crowning-tool T, substantially as described.

2. In a machine for making clip-yokes, the combination of the die-block H, having a series of removable pieces, a' a^2 a^3 a^4, the reciprocating crowning-tool T, the stationary punches *d d*, and the reciprocating punch E, having circular openings d' d' in the end of the same, arranged to operate in conjunction with the stationary punches *d d* to punch holes in the end of the clip-yoke, substantially as and for the purpose described.

3. In a machine for making clip-yokes, the combination of the die-block H, having a series of removable pieces, a' a^2 a^3 a^4, the reciprocating crowning-tool T, the reciprocating punch E, having circular openings d' d' in the end, the stationary punches *d d*, and the ejecting-rods e' e', substantially as and for the purpose described.

323,285. LAWN-MOWER. HENRY H. DILLE and ELWOOD W. MCGUIRE, Richmond, Ind. Filed Mar. 20, 1884. (No model.)



Claim.—1. In combination with the side plate of the frame provided with a hollow stud, the handle-attaching plate pivoted thereon and held in place by means of a bolt passing through the stud, a nut on the bolt, and a washer between the nut and plate, substantially as shown and described.

2. In combination with a handle-attaching plate formed with an annular flange on its inner side and pivoted on a hollow pivot-stud on the side plate of the frame, a bolt passing through the frame-plate and stud, a nut on the bolt, and a washer held against the end of the stud by the nut and bearing against the side of the handle-plate within the annular flange, substantially as and for the purpose described.

3. In combination with the frame-plate formed on its outer side with a hollow cylindrical stud provided on its outer end with radial grooves or notches, the drive-wheel journaled on the stud, a bolt passing through the latter, a washer on the bolt of greater diameter than such stud and provided with radial ribs adapted to fit the grooves or notches in the stud end, and a nut on the bolt adapted to force and hold the washer against such end, substantially as and for the purpose described.

4. In combination with the hollow drive-wheel open on its inner side, the disk-shaped portion of the frame-plate fitting within and closing the open side of the wheel, the hollow stud cast on the plate and forming the axle upon which the wheel is journaled, the bolt passing through the stud, the washer on the bolt of a larger diameter than the stud and provided with radial ribs adapted to fit in notches in the stud end, and the nut on the bolt adapted to force and hold the washer against the stud, substantially as shown and described.

5. In combination with the driving-wheel formed with an annular concentric groove or recess in one side, having one of its walls formed with a series of recesses having inclined sides and the other with ratchet-teeth, the wheel to be driven from the driving-wheel provided with ways in which slide reciprocating pawls adapted to engage the opposing ratchet-teeth and inclined sides of the recesses at the sides of the annular groove as the driving-wheel rotates, substantially as and for the purpose described.

6. The wheel formed with a series of ratchet-teeth, each having its squared face not radial but parallel to a radius, and with an opposing concentric series of alternately long and short inclines, the latter opposite the points of the ratchet-teeth, in combination with the wheel carrying on its side sliding pawls guided in ways not radial but parallel to the same diameter and so situated on the wheel that the pawls are brought between the series of teeth and recesses when the wheels are placed together concentrically, substantially as shown and described.

7. In combination with the driven wheel carrying pawls sliding in ways on its side, the driving-wheel provided with ratchet-teeth adapted to be engaged by the inner ends of the pawls, and with a concentric series of recesses with inclined sides adapted to engage the outer ends of the pawls and so situated with reference to the ratchet-teeth that as the wheels revolve independently the pawls will be caused to slide inward so as to be in position to engage the ratchet-teeth, substantially as shown and described.

8. The drive-wheel provided with an annular groove on its inner face having one side formed with ratchet-teeth and the other side formed with alternately long and short inclined portions, inclined, respectively, outwardly and inwardly, in combination with the power-transmitting wheel provided with pawls guided in ways thereon and reciprocating between the ratchet-teeth and inclines as the drive-wheel is rotated backward, but adapted to engage the ratchet-teeth when the drive-wheel is rotated in the opposite direction.

9. In combination with the pivoted handle-attaching plate, the pawl pivoted on the frame-plate and engaging notches or steps on the forward end of the handle-plate, substantially as shown and described.

10. In combination with the handle-attaching plate pivoted to the frame and provided on its front end with notches or steps, the pivoted pawl adapted to engage such notches or steps to adjust the angle of the handle-plate and to allow play of the same upon its pivot at any point of its adjustment, substantially as shown and described.

11. In combination with the notched or stepped end of the handle-attaching plate, the two-armed pawl pivoted to the frame-plate and provided with a friction-spring to hold it from accidental movement, substantially as shown and described.

12. The pivoted handle-attaching plate having on its forward end a projection, X, provided with steps *x x' x²*, and a projection above provided on its upper side with shoulder X^5, in combination with the two-armed pivoted pawl Y, adapted to engage the steps, shoulder, and projections on the handle-plate, substantially as shown and described.

13. In combination with the two-armed pawl, the handle-attaching plate provided with the step engaged by the lower end of the pawl, the shoulder engaged by the end of the other pawl-arm, the intermediate

step to allow the lower end of the pawl-arm to be carried inward to disengage the other arm and shoulder to permit the handle to be raised, the upper and inner step, and the upper projection between which the lower end of the pawl-arm projects when the handle is adjusted on its pivot to its highest point, substantially as and for the purpose described.

14. The frame-plate cast with a concave portion open on its outer side, the supporting-wheel having a hub extending within the sides of the concavity, the hollow bushing or short axle for the wheel with its inner end resting against the bottom of the concavity, and means for clamping and holding such bushing in place to form a rigid axle, substantially as shown and described.

15. In a lawn-mower, in combination with the supporting-wheel having an inwardly-extending hub, the side frame-plate provided with an axle for the wheel and with a flange extending out, over, and around the hub, substantially as and for the purpose set forth.

16. In a lawn-mower, the side frame cast with a cup-shaped portion open on its outer side, having a central opening through its inner side surrounded by an annular flange, a hollow cylinder clamped and held against the bottom of the cup by means of a bolt passing through the frame and cylinder, and carrying on its outer end a washer overlapping the end of the cylinder, and a wheel journaled on the cylinder as an axle, all combined substantially as and for the purpose set forth.

17. In a lawn-mower, the drive-wheel and the independent gear-wheel adapted to be locked together so that the gear-wheel can be turned backward by the rotation of the drive-wheel, substantially as and for the purpose described.

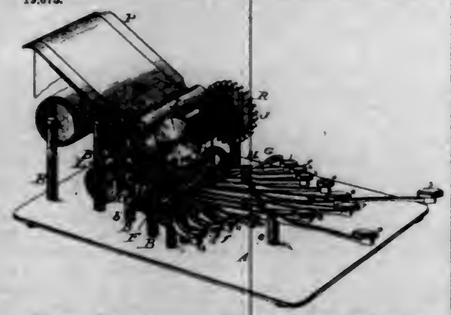
18. In a lawn-mower, a drive-wheel and a concentric gear-wheel for driving the cutter, connected together by means of a backing ratchet or clutch and adapted to be locked together so that the gear-wheel can be turned backward by rotation of the drive-wheel, substantially as and for the purpose described.

19. In a lawn-mower having a drive-wheel and a concentric gear-wheel for driving the cutting apparatus connected with the drive-wheel by a backing ratchet or clutch, the drive-wheel provided with an opening to admit the insertion of a pin to lock the drive and gear wheels together, substantially as and for the purpose described.

20. In a lawn-mower, the gear-wheel meshing with the pinion on the cutter-shaft, in combination with the drive-wheel inclosing said gear, and connected therewith by a backing ratchet or clutch mechanism and provided with an opening for the admission of a pin or other device for locking together the drive and gear wheel, substantially as shown and described.

21. In a lawn-mower having a hollow drive-wheel and a gear-wheel journaled on the hub of the drive-wheel and connected with said wheel by sliding pawls engaging ratchet-teeth on the drive-wheel, the drive-wheel provided with an opening through which a pin or equivalent device can be inserted to engage the side of one of the pawlways, substantially as shown and described.

323,286. STENOGRAPHIC-PRINTING MACHINE. GEORGE K. ANDERSON, Memphis, Tenn. Filed Dec. 30, 1884. (No model.) Patented in England June 17, 1884, No. 9,048, and in Canada June 26, 1884, No. 19,673.



Claim.—1. In a stenographic printing or writing machine, two groups of keys, each key provided independently with a special character or mark, and having their finger-buttons arranged in curved lines corresponding to the position of the fingers and thumbs of the two hands as held in the act of striking the keys, whereby any or all of the keys may be struck at a time without shifting the hands or fingers.

2. In a stenographic machine, the combination of two groups of keys arranged in curved lines corresponding to the position of the fingers of the two hands, a key or keys in rear of and between the groups in position to be actuated by the joint or knuckle of the thumbs, and two keys in position to be actuated by the body of the hand or wrist without shifting the hand, whereby any or all of the keys may be operated at a time.

3. Two series of keys, each series arranged with its finger-buttons in a curved line for the application thereto of the respective fingers, thumbs, thumb-joints, and wrists or bodies of each hand of the operator, one key for each finger and wrist or palm of each hand, and one common to both thumb-joints, the keys being provided, substantially as described, with type-characters which singly and by permutation may represent the letter S preceding the consonants, vowels, combinations of consonants, and numerals of the ordinary alphabet, and the sounds or letters R, L, N, T, or D and S or Z succeeding the same.

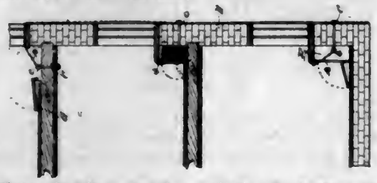
323,287. STOCKING. SAMUEL APPLETON, Bristol, Pa. Filed May 28, 1884. (Model.)



Claim.—1. A stocking having the upper portion, *a*, and calf *b* knitted with a tuck, and an intermediate contracted garter, *d*, of plain continuous fabric, as set forth.

2. A stocking having the upper portion, *a*, and calf *b* knitted with a tuck, and a contracted garter, *d*, and contracted ankle *f* of plain continuous fabric, as set forth.

323,288. FIRE-ESCAPE. MARY A. ARROWSMITH, Freehold, N. J. Filed July 31, 1884. (No model.)



Claim.—In a fire-escape, the combination of a flexible ladder having its sides composed of chains A, consisting of links *a*, and its rounds composed of rods B, having each end of each round embracing two of said links, a bolt or bolts, C, passing through the wall or floor-beam and provided with a hook or ring for attachment of the upper end of the ladder, and a closet or locker arranged in the wall or floor beneath the window-sill and inclosing the inner end of said bolt, substantially as shown and described.

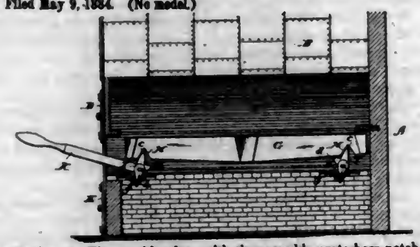
323,289. BICYCLE. JOHN G. BLOUNT, Boston, Mass., assignor of one-half to Harry M. Clark, New York, N. Y. Filed Aug. 12, 1884. (No model.)



Claim.—1. The herein-described bicycle attachment, consisting of a frame having an auxiliary bicycle-supporting wheel, and being adapted to be attached to the front fork of the bicycle at each side of the driving-wheel, and between the hub of said wheel and the main frame or backbone, substantially as set forth.

2. The herein-described bicycle attachment, consisting of a frame having an auxiliary bicycle-supporting wheel, the said frame being composed of rods *i i'*, arranged at each side of the driving-wheel, and provided with clamps adapted to be adjustably secured to the arms of the fork between the hub of the driving-wheel and the main frame or backbone, whereby the said auxiliary frame may be adjusted to cause the auxiliary wheel to be supported at different heights from the ground, substantially as described.

323,290. GRATE FOR FURNACES. STEPHEN E. BURKE, Eden, Ohio. Filed May 9, 1884. (No model.)



Claim.—1. The combination, with the movable grate-bars notched at both ends, of the supporting-shafts formed with pivots on their lower edges, with ledges on their upper faces entering the notches of the grate-bars and supporting the latter, and with shoulders or bumpers on their inner opposing faces intermediate of the ledges and pivots, the same ledges supporting the grate-bars at both ends of their reciprocation, whereby the grate-bars will be oscillated, reciprocated, and jarred, substantially as and for the purposes set forth.

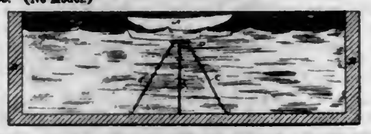
2. The combination, with the movable grate-bars notched at both ends, of the shafts formed on their lower faces with wedge-shaped pivots, on their upper faces with wedge-shaped ledges, and on their inner opposing faces intermediate of the ledges and pivots with wedge-shaped bumpers or shoulders, the ledges fitting in the notches of the grate-bars and supporting the latter at both ends of their reciprocation, and recessed plates for the pivots to rest in, substantially as and for the purposes set forth.

323,291. VEHICLE-SPRING. FREDERICK T. BATELAFF, La Porte, assignor to Edward F. Statz, Middleburg, Ind. Filed June 6, 1885. (No model.)



Claim.—The combination, with the lower branch of the spring having eyes B B' at its ends, of the upper portion, P, having hinged attaching-plates at its ends, the securing-bolt connecting the upper and lower portions of the spring, and the equalizing-springs Q Q', interposed between said upper and lower spring-sections on opposite sides of the securing-bolt, substantially as specified.

323,292. ROWING APPLIANCE, &c. GEORGE W. BRIGGS, Chicago, Ill., assignor of one-half to William J. Hall, same place. Filed May 23, 1885. (No model.)

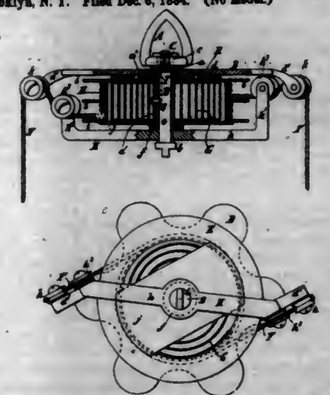


Claim.—1. In combination with a boat or other suitable vessel or device capable of holding or sustaining a person or persons, one or more elastic attachments for holding the same captive with capability of resilience, substantially as described.

2. In combination with a boat or other suitable receptacle or device for holding or sustaining a rower or rowers, one or more elastic attachments, such as springs, the boat being pivoted or swiveled with relation to the spring or springs, substantially as and for the purpose set forth.

3. The combination of a boat, A, a tank, B, elastic attachments or springs C, and a swivel consisting of the plate D and a pin, substantially as described.

323,293. SUSPENSION DEVICE FOR LAMPS, &c. EDWIN H. BROWN, Brooklyn, N. Y. Filed Dec. 6, 1884. (No model.)



Claim.—1. In a suspending device for a lamp or other article, the combination of an arbor, a drum fitted upon said arbor and capable of moving lengthwise and rotating thereon, cords or chains wound upon said drum and adapted to support the lamp or other article, a frame affixed to the arbor, a brake above the drum, and guides arranged upon the frame for receiving the cords or chains, and arranged at such elevation relatively to the drum that the weight of the lamp or other article connected to the cords or chains will operate to move the drum upwardly toward the frame and render the brake effective, substantially as specified, whereby when the weight of the lamp or other article is removed from the cords or chains the brake will be released.

2. In a suspending device for a lamp or other article, the combination of an arbor, a drum fitted upon said arbor and capable of moving lengthwise and rotating thereon, cords or chains wound upon the drum and adapted to support the lamp or other article, a frame affixed to the arbor, a brake above the drum, guides arranged upon the frame for receiving the cords or chains, and arranged at such elevation relatively to the drum that the weight of the lamp or other article connected to the cords or chains will operate to cause the drum to move upwardly and the brake to be rendered effective, and a spring for moving the drum away from the brake when the weight is relieved upon the cords or chains, substantially as specified.

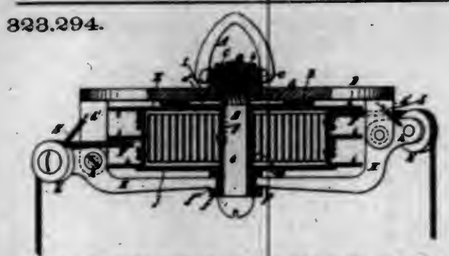
3. In a suspending device for a lamp or other article, the combination of an arbor, a drum fitted upon said arbor and capable of moving lengthwise and rotating thereon, cords or chains wound upon said drum and adapted to support the lamp or other article, a frame affixed to the arbor, a brake above the drum, guides arranged upon the frame and receiving the cords or chains, a yoke arranged below the drum and adapted to rise and fall, and guides or pulleys mounted on the yoke and receiving the cords or chains before they pass to the said guides upon the frame, the said guides upon the frame being arranged at such elevation that the weight of the lamp or other article will operate to cause the yoke to move the drum upward and render the said brake effective, substantially as specified.

4. In a suspending device for a lamp or other article, the combination of an arbor, a drum fitted upon said arbor and capable of moving lengthwise and rotating thereon, cords or chains wound upon said drum and adapted to support said lamp or other article, a frame affixed to the arbor, a brake above the drum, guides arranged upon the frame for receiving the cords or chains, a yoke arranged upon the arbor beneath the drum and vertically movable upon the arbor, and other guides arranged upon said yoke for receiving the cords or chains, the guides upon the frame being elevated above the guides upon the yoke, substantially as specified, whereby when the weight of the lamp or other article is brought to bear upon the cords or chains it will operate to cause the drum to move upwardly and the brake to be rendered effective, and when said weight is removed from the cords or chains the brake will be released.

323,294. SUSPENSION DEVICE FOR LAMPS. EDWIN H. BROWN, Brooklyn, N. Y. Filed Dec. 12, 1884. (No model.)

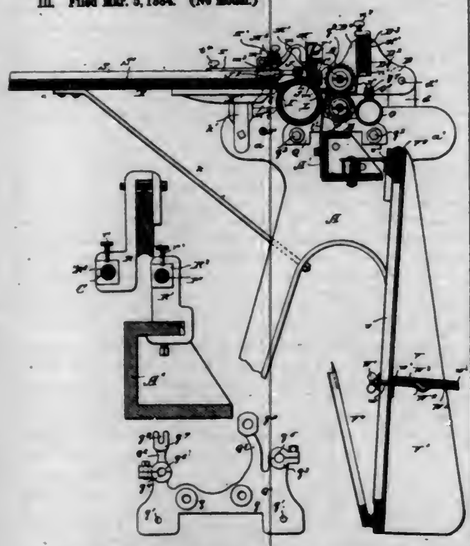
Claim.—1. In a suspending device for a lamp or other article, the combination of an arbor, a frame supported by said arbor, a drum adapted to rotate and move lengthwise upon the arbor, a brake above the drum, a cord or chain wound upon the drum, and a lever fulcrumed between its ends to the frame extending at one end under the drum and provided at the other end with a guide for the cord or chain, substantially as described, whereby when the weight of the lamp or other article is brought to bear upon the cord or chain it will operate through the lever to cause the drum to move upwardly to render the brake effective, and when said weight is removed from the cord or chain the brake will be released.

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2. In a suspending device for a lamp or other article, the combination of an arbor, a frame supported by said arbor, a drum adapted to rotate and move lengthwise upon the arbor, a brake above the drum, cords or chains wound upon the drum, and levers fulcrumed between their ends to the frame, extending at one end under the drum and provided at the other end with guides for the cords or chains, substantially as described, whereby when the weight of the lamp or other article is brought to bear upon the cords or chains it will operate through the levers to cause the drum to move upwardly to render the brake effective, and when said weight is removed from the cords or chains the brake will be released.

323,295. PERFORATING-MACHINE. AUGUSTUS G. BURTON, Chicago, Ill. Filed Mar. 5, 1884. (No model.)



Claim.—1. The combination, with a grooved matrix, of a disk having a narrow peripheral surface forming its cutting-edge, as distinguished from being sharpened or beveled to an acute edge, substantially as and for the purpose set forth.

2. The combination, with a grooved matrix, of a disk beveled at its margin and having a narrow peripheral surface forming, with the beveled surfaces of the disk, two obtuse cutting-edges, substantially as and for the purpose set forth.

3. The combination, with a disk beveled at its margin and having a narrow peripheral surface forming its cutting-edge, of a matrix having a groove of a width greater than the thickness of the said cutting-edge and less than the thickness of the body of the disk, substantially as and for the purpose set forth.

4. The combination, with the cutters and matrices of a perforating-machine and feed-rollers for the paper, of a guide-plate located between the said rollers and the cutters and matrices constructed to preliminarily bend or curve the paper without straining it as it is fed to the said cutters, substantially as and for the purpose set forth.

5. The combination, with the cutters and matrices of a perforating-machine, of a feed-roller, I, located with its upper surface above a horizontal plane passing through the meeting point of the cutters and matrices, two laterally-separated rollers, J and J', opposed to the feed-roller I, for retaining the paper in contact with the said feed-roller, and a guide-plate constructed to direct the paper from the said roller I to the cutters, substantially as and for the purpose set forth.

6. The combination, with the cutters and matrices of a perforating-machine, of a feed-roller, I, laterally-separated rollers J and J', opposed to said roller I, flexible bands *j*, placed over said rollers J and J' and in contact with the roller I, and a guide-plate, L, constructed to direct the paper from the said roller I to the cutters, substantially as described.

7. The combination, with the cutters and matrices of a perforating-machine, of a feed-roller, I, laterally-separated rollers J and J', opposed to said roller I, flexible bands *j*, placed over said rollers J and J' in contact with the roller I, and bands *i*, of elastic material, placed around the said roller I beneath the bands *j*, substantially as and for the purpose set forth.

8. The combination, with the cutters and matrices of a perforating-machine, of a feed-roller, I, an opposing feed-roller, J', a series of bands, *i*, upon the said roller I, and a guide-plate, L, located between the roller I and the cutters, and provided with projections constructed to rest upon the roller I between the bands *i* thereon, substantially as and for the purpose set forth.

9. The combination, with the cutters and matrices of a perforating-machine, of a feed-roller, I, rollers J and J', opposed to said roller I, and bands *j*, placed over said rollers J and J', the said roller J having a vibratory movement toward and from the roller I, substantially as and for the purpose set forth.

10. The combination, with the cutters and matrices of a perforating-machine, of a feed-roller, I, rollers J and J', opposed to said feed-roller, and a vibrating feed-gage, M, located between the rollers J and J', said roller J having a vibratory movement toward and from the roller I, substantially as and for the purpose set forth.

11. The combination, with the cutters and matrices of a perforating-machine, of a feed-roller, I, bands *i* upon said feed-roller, a guide-plate, L, provided with prongs, constructed to rest upon the said roller between the bands, and a vibratory feed-gage, M, provided with projections *m*, arranged opposite the said prongs and adapted to bear upon the latter when the gage is depressed, substantially as and for the purpose set forth.

12. The combination, with the cutters and matrices of a perforating-machine, of a feed-roller, I, rollers J and J', opposed to said roller I, said roller J having a vibratory movement toward and from the roller I, bands *j*, placed over said rollers J and J', and a vibrating feed-gage, M, provided with projections or prongs *m*, located between the bands *j*, substantially as and for the purpose set forth.

13. The combination, with the cutters and matrices of a perforating-machine, of a feed-roller, I, rollers J and J', opposed to said roller I, bands *j*, placed around said rollers J and J', movable supports for the roller J, a feed-gage, M, located at the rear of the roller J and between the rollers J and J', and connecting mechanism between the supports of the roller J and the feed-gage, constructed to depress the said roller J when the feed-gage is raised and to lift the said roller J when the feed-gage is depressed, substantially as and for the purpose set forth.

14. The combination, with the shafts C and F, and the cutters and matrices thereon, of a rotary feed-roller, O, located at the exit side of the cutters and matrices, and a vertically-movable roller, O', mounted to rotate freely above the roller O and resting upon said roller, the surface of said roller O being driven faster than the speed at which the cutters travel at the line at which they engage the paper, substantially as and for the purpose set forth.

15. The combination, with the frame of a perforating-machine, of a stationary matrix-shaft, F, a hinged frame, D, a cutter-shaft, C, mounted in said frame D, a revolving cam-plate, G', a shaft, P, mounted in the machine-frame, arms P' and P², rigidly secured to the shaft P, a pin, p^3, upon the arm P', constructed to engage the cam-plate G', and suitable supporting-bars sustaining the free end of the frame D at opposite sides of the machine from the arms P' and P², substantially as and for the purpose set forth.

16. The combination, with the machine-frame, the hinged frame D, and the revolving cam G', of an arm, P', pivoted upon the machine-frame, and provided with a pin, p^3, engaging with the cam, and a notch, p^4, in its upper edge, and a bar, P⁴, pivoted at its upper end to said hinged frame and provided with a knife-edge at its lower end constructed to rest in said notch, substantially as and for the purpose set forth.

17. The combination, with the machine-frame, the hinged frame D, and the revolving cam G', of a horizontal arm, P', pivoted to the machine-frame, a supporting-bar sustaining the free end of the frame D from the arm P', and a pin, p^3, having vertically-adjustable connection with the said arm P' and constructed to engage the cam, substantially as and for the purpose set forth.

18. The combination, with the machine-frame, the hinged frame D, and the revolving cam G', of a horizontal arm, P', pivoted to the machine-frame, supports sustaining the free end of the frame D from the said arm, and a block, P⁴, provided with a pin, p^3, and pivotally connected at one end with the arm P' and adjustably connected at its free end with the said arm P', substantially as and for the purpose set forth.

19. The combination, with the machine-frame, a matrix-shaft, F, having bearings therein, a cutter-shaft, C, and a cutter or cutters adapted for longitudinal adjustment upon the shaft, of a hinged frame, D, constructed to support the said cutter-shaft, and a detachable block, D⁴, affording bearings for one end of the shaft and detachably connected with the said frame D, whereby the bearing at one end of the shaft may be removed for the removal of the cutters from the shaft without disturbing the bearing at the opposite end of said shaft, substantially as described.

20. The combination of the machine-frame, the frame D, hinged to the machine-frame, and the cutter and matrix-shafts mounted in said frames, the latter being provided at points adjacent to the shaft-bearings at one side of the machine, one with a recess and the other with a projection constructed for mutual engagement when the said shafts are in position for operation, substantially as described.

21. The combination, with the cutter-shaft of a perforating-machine, the cutters mounted upon said shaft and adapted for longitudinal adjustment thereon, and a part, as D², of the frame rigidly connected with the bearings of the shaft, of a support, as R, attached to the said part of the frame by connections permitting the adjustment of the said support longitudinally of the shaft, and a bearing-block, as R², fitted to slide upon the shaft and detachably secured to the said support, substantially as and for the purpose set forth.

22. The combination, with the cutters and matrices of a perforating-machine, a feed-table, feed-rollers I and J, a vertically-movable feed-gage, M, and a shaft, M², supporting the feed-gage and located above the table, of a guide-strip, S, and an arm, T, attached to said strip, and having sliding connection with the said shaft, substantially as and for the purpose set forth.

23. The combination, with the feed-table and feed-gage of a perforating-machine, of a rod or shaft, M², for supporting the said feed-gage, located above the table, a guide-strip, S, and an arm, T, pivotally connected with the said strip and adapted both to slide and rotate upon the said shaft M², substantially as and for the purpose set forth.

24. The combination, with the feed-gage of a perforating-machine and a rock-shaft, M², supporting said feed-gage and located above the surface of the table, of a guide-strip, S, and arm T, secured to said guide-strip, a bar, T', rigidly connected with the arm T and constructed to slide and rotate upon the shaft, and an adjustable block, T², for holding the arm T' from longitudinal movement upon the said shaft, substantially as and for the purpose set forth.

25. The combination, with the feed-table and feed-gage of a perforating-machine, and a rock-shaft, M², supporting the feed-gage and located above the surface of the table, of a guide-strip, S, an arm, T, secured to said guide-strip, a bar, T', rigidly connected with the arm T, and provided with apertured projections *t*, constructed to embrace the shaft, a block, T², provided with a notch, t^2, constructed to engage one of the projections *t*, and means for clamping the block T² to the shaft, substantially as and for the purpose set forth.

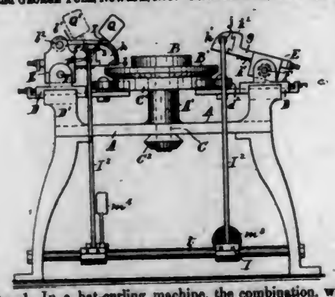
26. The combination, with the feed-table and feed-gage of a perforating-machine, and a rock-shaft, M², supporting the feed-gage and located above the surface of the table, of a guide-strip, S, adjustably connected with the rock-shaft, and a clamp upon the outer end of the said guide-strip for securing the latter to the edge of the table, substantially as described.

27. An inclined receptacle, V, having upwardly-curved side walls converging as they approach its lower end, substantially as and for the purpose set forth.

28. The combination, with an inclined receptacle, V, having upwardly-curved converging side walls, of a laterally-expansible stop, W, adjustably supported within said receptacle, substantially as and for the purpose set forth.

29. The combination, with a receptacle, V, having upwardly-curved converging sides, of a stop, W, provided with sliding plates W², and adjustably supported within the receptacle, substantially as and for the purpose set forth.

323,296. HAT-CURLING MACHINE. FREDERICK COCKER, Danbury, Conn., and GEORGE YULE, Newark, N.J. Filed Mar. 24, 1885. (No model.)



Claim.—1. In a hat-curling machine, the combination, with a rotating hat-clamp and brim-supporting plate, of a slide or guide affixed to a holder supported and vibrated independently of said brim-plate, a tool-carrier adjustable to and from the hat-clamp in such slide, and a pressing-tool affixed to the tool-carrier and constructed and operated to rest freely upon the plate or hat-brim and to exert a yielding pressure thereon, substantially as shown and described.

2. The combination, with a rotating hat-clamp and brim-supporting plate, of a tool-carrier pivoted to a vibrating holder and having a curling-tool affixed to its free end and resting when in operation upon the hat-brim, and a separate weight connected with the tool or its pivoted carrier and operating to press the brim toward the brim-plate.

3. In a hat-curling machine, the combination, with a curling iron, of a weight operated to press the iron upon the hat-brim, and a treadle provided with a connection to the iron or its carrier and operated to lift the iron when pressed by the foot of the operator, substantially as and for the purpose set forth.

4. In a hat-curling machine, the combination, with a curling-iron, of a carrier pivoted upon a vibrating slide, and a treadle provided with a connection to the iron and operated by the foot when pressed to lift the iron from the brim-plate.

5. In a hat-curling machine, the combination, with a curling-iron, of a treadle and weight mounted upon a common fulcrum, and a rod so connecting the same with the iron that the weight operates to depress the iron and the treadle operates when pressed by the foot to lift the iron.

6. In a hat-curling machine, the combination, with the curling-iron, of a weight to press the iron upon the hat-brim, and a rod connected with the weight and applied to the iron near the middle of its width to distribute the pressure of the weight, substantially in the manner set forth.

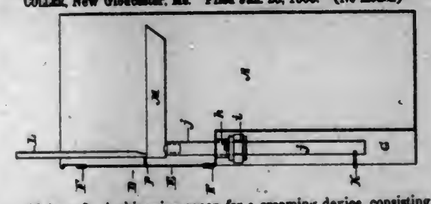
7. In a hat-curling machine, the combination, with a curling-iron, of a carrier movable upon a pivot, as described, a treadle operated when pressed by the foot to lift the iron, and a treadle-connection inserted in the side of the iron and applied to the bottom of the iron upon its inside, substantially in the manner set forth.

8. The combination, with a curling-iron, of a treadle-lever having a foot-plate attached at one side of the fulcrum and an adjustable weight and a lifting-rod applied at the other side of the fulcrum, the lifting-rod being connected with the iron or its tool-carrier and operating to transmit an adjustable pressure to the iron as the weight is adjusted upon the treadle-lever, as and for the purpose set forth.

9. In a hat-curling machine, the combination, with the curling-iron, of a removable weight pivoted to a fixed point by a shank and arranged and operated to effect an increased or diminished pressure upon the iron when tipped back and forth upon its pivot.

10. In a hat-curling machine, the combination, with a hat-clamp and a plate for supporting the hat-brim, of a curling-tool resting freely upon the hat-brim, and a weight removably attached to the curling-tool or its carrier, substantially as and for the purpose set forth.

323,297. SKIMMING DEVICE FOR CREAMING-CANS. PHILIP A. COLLER, New Gloucester, Me. Filed Jan. 28, 1885. (No model.)



Claim.—1. A skimming-spoon for a creaming device, consisting of a V-shaped trough provided with a handle, a pointer on the handle, and an outlet-tube, substantially as described.

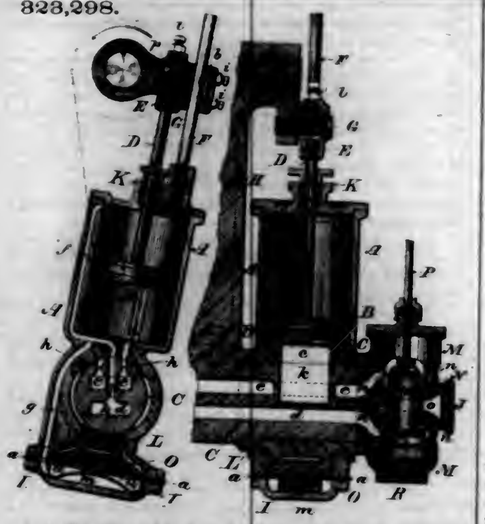
2. The combination of the can A, the vertically-movable pipe *j*, the packing-nut *i*, the removable skimming-trough M, its outlet-tube, and handle, substantially as described.

323,298. OSCILLATING ENGINE. ALBERT CUNNINGHAM, Milwaukee, Wis. Filed Feb. 2, 1885. (No model.)

Claim.—1. The combination, in an oscillating engine, of the trunnion C, having bearing-faces on two diametrically-opposite sides, one of which is closed and the other provided with ports communicating through said trunnion with supply and exhaust ports or connections, cylinder A, having a transverse bore to receive said trunnion C, upon which it is mounted and oscillates, and passages *e* and *f*, communicating with opposite ends of said cylinder, and registering with the ports in said trunnion, substantially as and for the purposes set forth.

2. The combination, in an oscillating engine, of the cylinder A, having a transverse bore to receive the trunnion C, upon which it is supported and oscillates, trunnion C having passages leading from its end or ends and opening at one side thereof, so as to register with ports or passages communicating with opposite ends of said cylinder, and a yielding box or block bearing against said trunnion upon the side opposite the openings of said passages therein, substantially as and for the purposes set forth.

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3. The combination, in an oscillating engine, of the trunnion C, having bearing-faces on two diametrically-opposite sides, one of which is closed and the other provided with ports communicating through said trunnion with the valve-chamber M, cylinder A, having a transverse bore to receive said trunnion C, upon which it is mounted and oscillates, passages *c* and *f*, communicating with the opposite ends of said cylinder, and registering with the ports in said trunnion and valve N, substantially as and for the purposes set forth.

4. The combination, in an oscillating engine, of the cylinder A, mounted upon trunnion C and provided with passages *c* and *f*, communicating with the lower and upper ends of said cylinder, respectively, passage *g*, connecting passages *f* with a cavity, *u u*, below the trunnion, and the segmental box L, substantially as and for the purposes set forth.

5. The combination, in an oscillating engine, of cylinder A, trunnion C, upon which it is mounted and vibrates, passages *c* and *f*, leading from opposite ends of said cylinder to the face of the trunnion, passages through said trunnion registering with said passages *c* and *f*, box L at the opposite side of said trunnion, and a steam-connection with the passage supplying the upper end of said cylinder, whereby the same steam-pressure which is introduced to the top of said cylinder is exerted upon said box L, substantially as and for the purposes set forth.

6. The combination, in an oscillating engine, of the cylinder A, provided with passages *c* and *f*, communicating with its opposite ends and the trunnion upon which it swings, trunnion C, provided with induction and eduction passages which register with said passages *c* and *f*, segmental box L, pressure-plate O, diaphragm *a a*, steam-cavity *u u*, and passage *g*, connecting the same with passage *f*, substantially as and for the purposes set forth.

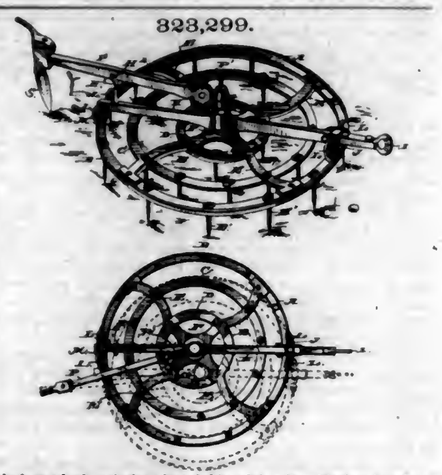
7. The combination, in an oscillating engine, of the cylinder A, having a transverse bore to receive trunnion C, upon which it is mounted and oscillates, trunnion C having passages *d* and *e* opening at one side and at the end or ends thereof, passages *c* and *f*, registering with said passages *d* and *e* and communicating with opposite ends of said cylinder A, and a connection between the face of said trunnion opposite the ports therein and the end of the cylinder, in which the pressure tends to separate the valve-face of said trunnion from its bearing, whereby the latter are held closely together, substantially as and for the purposes set forth.

8. The combination, in an oscillating engine, of the cylinder A, having a transverse bore to receive the trunnion C, upon which it is supported and oscillates, passages *c* and *f*, leading from said trunnion to the opposite ends of said cylinder, trunnion C having passages *d* and *e* opening on one side thereof and registering with said passages *c* and *f*, the box or block L, bearing against said trunnion upon the opposite side, and connections between said block L and the end of said cylinder, in which the pressure tends to separate the valve-face of said trunnion from the valve-face against which it bears, whereby said valve-faces are held snugly together, substantially as and for the purposes set forth.

323,299. ROTARY HARROW. JOHN W. CURETON and JOHAN KAINO, Cuffey's Cove, Cal. Filed Jan. 9, 1885. (No model.)

Claim.—1. The combination, with the connected annular harrow-beams provided with harrow-teeth and a central vertical journal, of the draft-beam provided with trucks and flanged wheels and the vertical

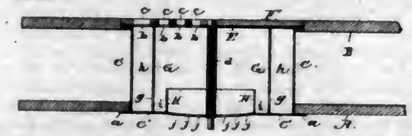
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forked standard, and the pivoted hinged handle with the plow-foot at free end, substantially as specified.

2. The combination, with the connected annular harrow-beams, with the central vertical journal and peripheral flanged truck, of the draft-beam provided with trucks having flanged supporting-wheels, the vertical forked standard, and the pivoted hinged handle with the plow-foot and hand-piece, substantially as set forth.

323,300. VENTILATOR. VESPER DORNICK, Indianapolis, assignor of one-half to W. H. Mahan, Princeton, Ind. Filed June 6, 1885. (No model.)

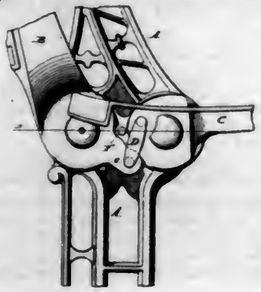


Claim.—1. The combination, with a casing having a top and bottom plate and a damper for controlling the passage of air through the device, of a pipe arranged within the casing and having a series of openings near its lower end, said pipe forming a space which is open at its upper end and closed at its lower end, as set forth.

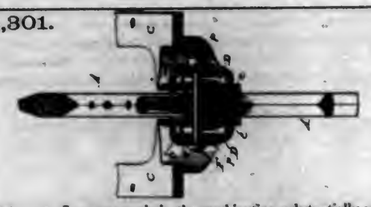
2. The combination, with a casing having a top and bottom plate having openings and a damper for controlling the passage of air through the device, of a pipe arranged within the casing and having a series of openings near its lower end, said pipe forming a space which is open at its upper end and closed at its lower end, and a rim or flange extending upwardly from the bottom plate and forming a space closed at its lower end, as set forth.

3. The combination, with a casing having top and bottom plates having openings and a damper for closing the openings in the upper plate, of a pipe arranged within the casing and forming a space, which space is open at its upper and closed at its lower end, openings in said pipe, and a rim or flange extending upwardly from the bottom plate and forming a space which is closed at its lower end, the openings in the bottom plate being entirely within the space surrounded by the rim or flange, the upper end of the space A being adapted to be closed by the damper E, as set forth.

323,301. OPERA-CHAIR. EDWARD G. DURANT, Racine, Wis., assignor of one-half to Thomas Kane, Chicago, Ill. Filed Sept. 8, 1884. (No model.)



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Claim.—1. In an opera-chair, the combination, substantially as hereinbefore set forth, of the standard, the back-arm and seat-arm connected thereto by fixed journals, and the connecting-link jointed to the back-arm at a point below its journals and to the seat-arm at a point in rear of its journals, substantially as described and shown, whereby the use of a short link is permitted and a compact joint is produced.

2. The combination, substantially as described and shown, of the standard having the fixed journals thereon at the same or substantially the same height, the back-arm mounted on one of said journals and extended below the same, the seat-arm mounted on the other journal, and the link pivoted at one end to the seat-arm in rear of its journal, and at the opposite end to the lower extremity of the back-arm, whereby the two arms are caused to move in unison and the employment of a short link permitted.

3. The combination of the standard, the back-arm journaled thereon and extended below its journal, the seat-arm, also pivoted to the standard, and the connecting-link pivoted at one end to the seat-arm, and at the opposite end to the lower extremity of the back-arm, as and for the purpose described.

4. In an opera-chair, the combination of a rigid standard, the back-arm and seat-arm journaled to said standard on the inner side or side next to the seat proper, and the link connecting said arms, and located also on the inner side of the standard, whereby the outer side of said standard is rendered available to support the arms of a second seat when required.

5. In combination with the standard provided with journals or trunnions, the back and seat arms mounted upon said trunnions, the link D, having its ends connected by journals to the respective arms, the plate E, and means, substantially as described, for securing said plate against the link and arms, whereby the plate is caused to serve the double purpose of retaining the arms in position upon the trunnions and of maintaining the connection between the arms and the link.

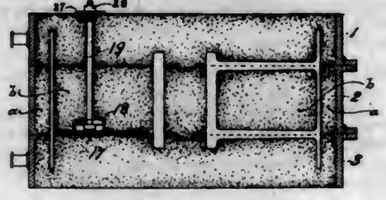
6. The combination of the standard, the two arms pivoted on one side thereof, the plate bearing on the two arms and provided with a central concavity; the elastic disk seated in said cavity and bearing at the edge only, and the central bolt, applied as shown.

7. The combination of the standard having two pairs of journals formed on opposite sides thereof, a back-arm and a seat-arm mounted on each side of said standard, the links connecting the back and seat arms in the manner described and located against their inner faces, whereby a single standard is adapted to sustain the adjacent edges of two seats, and the two arms of each seat adapted to operate simultaneously and independently of those on the other seat.

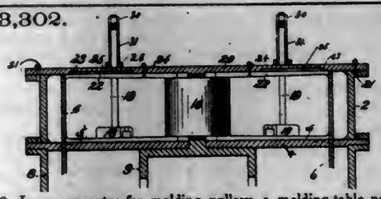
323,302. APPARATUS FOR MOLDING PULLEYS. WILLIAM J. EARLY, Pittsburg, Pa., assignor to Jones & Laughlins, (Limited,) same place. Filed June 5, 1885. (No model.)

Brief.—The cope and the drag are separately molded in like manner on the machine by setting the rim-pattern part way up into them severally, ramming, and then lowering the pattern. Next the middle flask is set on the machine, the rim-pattern set up to the top of the flask; the hub-pattern placed, lifting-plates placed on the table between the spoke half-patterns, a spider carrying on its under side other spoke half-patterns put on the flask, the rods of the lifting-plates being utilized to secure both the lifting-plates to the spider and the spider to the flask. Sand is filled between the arms of the spider, rammed, the rim-pattern withdrawn, the flask, spider, and lifting-plates lifted together from the table, and the hub-pattern and the three parts of the flask united.

Claim.—1. In an apparatus for molding pulleys, a molding-table provided with an annular slot, in combination with a reciprocating rim-pattern, arm or spoke patterns supported on said table, a hub-pattern, and a spider, also provided with arm-patterns, substantially as set forth.



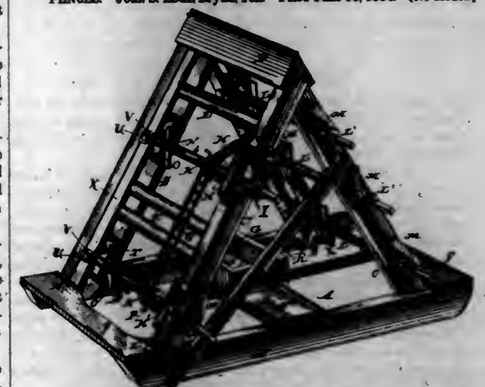
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2. In an apparatus for molding pulleys, a molding-table provided with an annular slot, in combination with a reciprocating rim-pattern, arm or spoke patterns suitably arranged on said table, and lifting-plates arranged between the arm-patterns, substantially as set forth.

3. In an apparatus for molding pulleys, a molding-table provided with an annular slot, in combination with a reciprocating rim-pattern, arm or spoke patterns suitably arranged on said table, a spider provided with arm-patterns, and lifting-plates arranged between the arm-patterns on the molding-table and provided with suitable means of connection with the spider, substantially as set forth.

323,303. MACHINE FOR BUILDING AND REROLLING WIRE FENCES. JOHN S. EDDS, Bryan, Tex. Filed June 16, 1884. (No model.)



Claim.—1. In a machine for building and rerolling wire fences, the combination, with a pair of sills or runners, of a suitable frame having two series of revolving shafts adapted to receive and support the wire-spools, inwardly-projecting blocked flanges secured to the uprights of the frame on one side of the machine, detachable pieces extending along the edges of the two uprights and parallel with the said flanges, and bolts passing through the block flanges and through the detachable pieces and adapted to tighten the said detachable pieces against the sides of the ends of the shafts, thereby forming brakes by means of which the rotary motion of the shaft may be controlled, substantially as and for the purpose set forth.

2. In a machine for building and rerolling wire fences, the combination, with a portable frame consisting of a pair of slanting uprights at the front end and a pair of inclined uprights at the rear end and united at their tops, a series of removable shafts or rollers supporting the spools of wire arranged in the front pair of uprights, and a series of shafts or rollers supporting spools of wire and a series of guide-rollers arranged in the rear pair of uprights, substantially as and for the purpose set forth.

3. In a machine for building and rerolling wire fences, the combination, with the described portable frame and series of rollers supporting the spools to receive the wire, and the guide-rollers arranged as described, of a chain wheel or pulley secured to each of said supporting-rollers, a chain or band passing around said chain wheels or pulleys, and means for imparting motion to said chain and rollers, substantially as and for the purpose set forth.

323,304. AIR-REFRIGERATING APPARATUS. OLIVER J. ELLIS, Dartford, County of Kent, assignor to L and E. Hall, London, England. Filed May 11, 1885. (No model.) Patented in England Apr. 20, 1885, No. 4,882.

Claim.—1. A refrigerating apparatus wherein three cylinders—a steam-cylinder, an air-compressing pump, and an air-expanding cylinder—each provided with a main and a secondary slide, are arranged side by side on one framing above an air-cooler, a water-cooler, and a surface-condenser, and have their pistons connected to cranks on one fly-wheel shaft, and their main slides moved together and their secondary slides moved together, substantially as herein described.

2. In a refrigerating apparatus having three cylinders—a steam-cylinder, an air-compressing pump, and an air-expanding cylinder—each provided with a main and a secondary slide, arranged side by side,

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with their pistons connected to cranks on one fly-wheel shaft, the combination of the three main slides with one guided bar caused to reciprocate by cranks or eccentrics on the shaft linked to the ends of the bar, substantially as described.

3. In a refrigerating apparatus having three cylinders—a steam-cylinder, an air-compressing pump, and an air-expanding cylinder—each provided with a main and a secondary slide, arranged side by side, with their pistons connected to cranks on one fly-wheel shaft, the combination of the three secondary slides with the arms of one rocking shaft caused to rock by connection of the cross-head to the air-compressing piston, substantially as described.

4. In an air-compressing pump having a water casing around it and water-spaces at its ends, the combination therewith of thin metallic plates T T, separate from the cylinder heads or covers for separating the cylinder-cavities from the end water-spaces, and bolts or stays attached to the cylinder heads or covers and connected to the thin plates for clamping or holding them upon the cylinder, substantially as described.

5. The combination, with an air-compressing pump, of a main suction-slide seated on the pump-cylinder, a secondary discharge-slide seated on the back of the main slide, a packing-ring seated on the back of the secondary slide, and a strained adjustable spring acting on the ring for pressing the two slides upon their respective seats, substantially as described.

6. For exhausting the condenser and circulating the cooling water of a refrigerating apparatus, a compound air and circulating pump having one piston and having suction and discharge valves at each end, substantially as herein described.

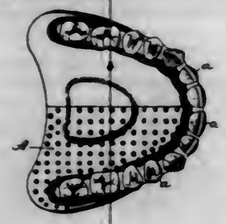
323,305. TOOTH-BRUSH. WARREN R. EVANS, Portland, Me. Filed July 16, 1884. (No model.)



Claim.—1. A tooth-brush the main body of which is composed of woven fabric, the rubbing-surface of which is formed of the fringed or raveled portion of the fabric, as set forth.

2. A tooth-brush formed of a strip of woven fabric rolled and stitched or sewed together, as described, with a fringed or raveled rubbing-surface, the main body or woven portion being saturated with water-repellent material, as set forth.

323,306. ARTIFICIAL TEETH. WARREN R. EVANS, Portland, Me. Filed Apr. 23, 1885. (No model.)



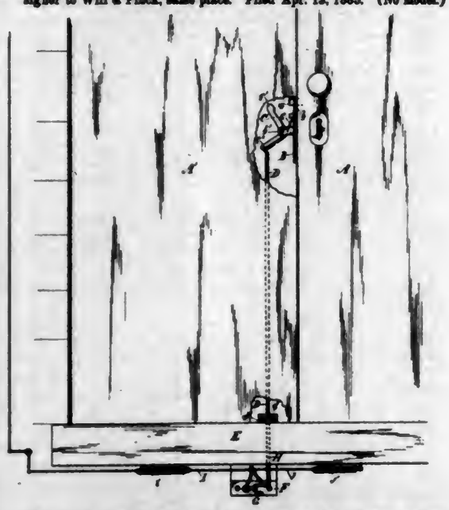
Claim.—A denture composed of a perforated metal plate having a molded or cast interior surface to fit the palatine surface, combined with teeth set on the perforated plate and held in place by the molded or cast material, the metal plate forming the lingual surface, and forming also the basis of the whole plate, all substantially as described.

323,307. CLIP FOR HEADS OF VEHICLE-SPRINGS. WILLIAM EVANS, Philadelphia, Pa. Filed July 24, 1884. (No model.)



Claim.—The clip C, having the peripheral flanges *a a* and openings *c c* between said flanges, struck from a single piece of sheet metal, as shown and described.

323,308. DOOR-OPENER. JULIUS FINCK, San Francisco, Cal., assignor to Will & Finck, same place. Filed Apr. 12, 1885. (No model.)



Claim.—1. In a door-opening device, the bell-crank spring-lever C, pivoted to the back of the striking-plate, in combination with a vertically-moving rod adapted to bear against one arm of said lever to cause it to throw its other arm against and force back the latch, and means for operating said lever, substantially as herein described.

2. In a door-opening device, the bell-crank spring-lever C, pivoted to the back of the striking-plate, in combination with a vertically-moving rod adapted to bear against and operate the lever to force the latch, as described, a bell-crank lever connected with the bottom of the rod, and suitable wires for operating said lever to raise the rod, substantially as herein described.

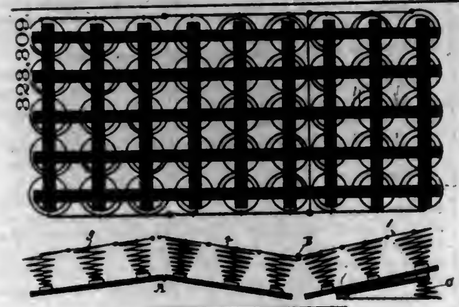
3. In a door-opening device, the bell-crank spring-lever C, pivoted to the back of the striking-plate, in combination with the vertically-adjustable rod D, adapted to bear against and operate the lever to force the latch, as described, the lower end of said rod terminating with or above the level of the door-sill, the vertically-adjustable rod H, passing through the sill and adapted, when raised, to bear up under the rod D, and to fall below the level of the sill when lowered, the wire I, and a suitable intermediate connection between said wire and the rod H, for operating said rod, substantially as and for the purpose herein described.

4. A door-opening device comprising the bell-crank spring-lever C, pivoted to the back of the striking-plate, its upper arm being adapted to bear against and force back the latch, the rod D, the upper end of which bears under the lower arm of lever C, said rod having a plunger-foot, *d*, on its lower end, confined and guided in a socket, *d'*, the rod H, passing through the sill and adapted to rise up under the plunger-foot of rod D, the pivoted bell-crank lever G, to one arm of which the rod H is connected, and the wires I J, with springs *i j*, by which the bell-crank lever G is operated, all arranged and adapted to operate substantially as herein described.

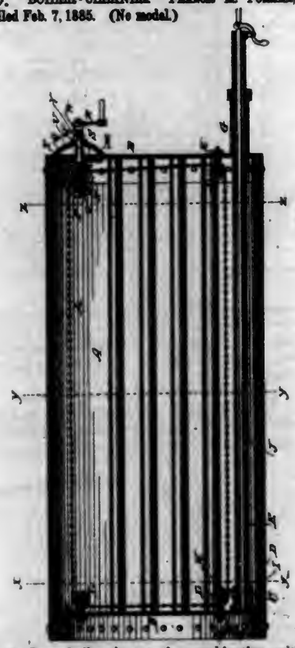
323,309. SPRING BED-BOTTOM. THOMAS FLAGLER, New Sharon, Iowa. Filed Mar. 20, 1884. (No model.)

Claim.—A spring bed-bottom composed of lattice-work, of wood, in three equal sections, for a base, open-top springs with loose couplings, forming an elastic top, two parallel lines of the springs being coupled by a straight wire to form a hinge, all combined and arranged substantially as and for the purposes set forth.

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323,310. BOILER-CLEANER. FRANCIS M. FORMAN, Greenville, Mich. Filed Feb. 7, 1885. (No model.)

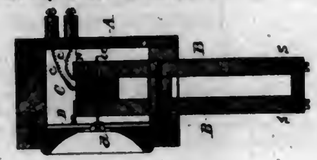


Claim.—1. In a boiler-cleaner, the combination, with a plate or scraper longitudinally movable from end to end of the bottom of the boiler, of an exit-tube extending forwardly from the said plate, and a check-valve at the rear end of the said exit-tube, substantially as and for the purpose herein set forth.

2. In a boiler-cleaner, the combination, with a plate or scraper longitudinally movable in the bottom of the boiler, and having a forwardly-extending exit-tube, of a check-valve at the rear end of the said exit-tube, and having an operating-rod extending forwardly through the said exit-tube, substantially as and for the purpose herein set forth.

3. In a boiler-cleaner, the combination, with a plate or scraper arranged to slide longitudinally in the bottom of the boiler, and having an exit-tube extending through the front end of the same, of guide-pulleys arranged at the upper and lower rear and at the lower front corner of the inside of such boiler, a drive-pulley arranged at the upper front inside corner, an operating-crank, and a drive-chain passing over the several guide-pulleys and the drive-pulley and attached to the front and rear sides of the plate or scraper, substantially as and for the purpose herein set forth.

323,311. TELEPHONE-RECEIVER. CHARLES L. FORTIER, Milwaukee Wis. Filed July 15, 1884. (No model.)



Claim.—1. In a telephone-receiver, the combination, with a diaphragm, of a coil connected with it and two magnets, the coils being placed axially between the two like poles of said magnets, as set forth.

2. In a telephone-receiver, the combination, with two magnetic arms of a like polarity, of a helix or coil suspended between them and a diaphragm connected with the helix.

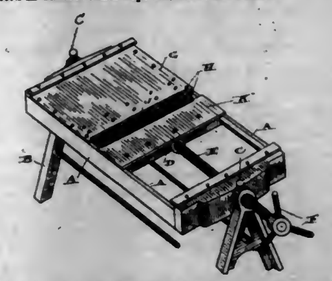
323,312. TOBACCO-PLANT CUTTER. JAMES A. FOSTER and CHARLES F. FOSTER, Fulton, N. Y. Filed May 21, 1885. (No model.)



Claim.—1. Shears having their blades pivoted to each other by a boss struck up from the face of one blade and entering a socket pressed in the adjacent face of the other blade, and a coupling-bolt passing through the center of said pivot, substantially as set forth.

2. In a shearing or cutting implement, the combination of cutting-blades pivoted to each other by frustums of cones struck up from said blades, one of said frustums entering the other, with a coupling-bolt passing through the axis of the frustums, and a tightening-nut on said bolt, substantially as described and shown.

323,313. COMBINED BACKING, PLOWING, AND GILDING PRESS. THOMAS FREEMAN, Toronto, Ontario, Canada, assignor of one-half to John Fitzallen Ellis, same place. Filed Sept. 22, 1884. (No model.) Patented in Canada Filed Sept. 24, 1884, No. 20,258.



Claim.—1. A rectangular frame, A, provided with a detachable table, G, having one of the cheek-blocks H fixed to its inner edge, in combination with the cross-head D, also having a cheek-block, H, fixed to it and operated by the screw E, substantially as and for the purpose specified.

2. A rectangular frame, A, provided with a detachable table, G, having holes to receive guide-bars, and having a cheek-block, H, detachably fixed to its inner edge, in combination with the cross-head, also carrying a cheek-block, H, and the screw E, for operating said cross-head, substantially as and for the purposes specified.

3. In a device for the purposes described, the combination, with the standards B, having bearings on substantially the same horizontal plane, of the rectangular frame A, journaled in said standards, the adjustable cross-head D, carried in said frame, and the screw E, passing through one of said standards and through a nut formed in the end of the frame and operating on said cross-head, substantially as and for the purpose specified.

323,314. MARINE-ENGINE GOVERNOR. ASPINWALL FULLER, New York, N. Y. Filed Oct. 15, 1884. (No model.)

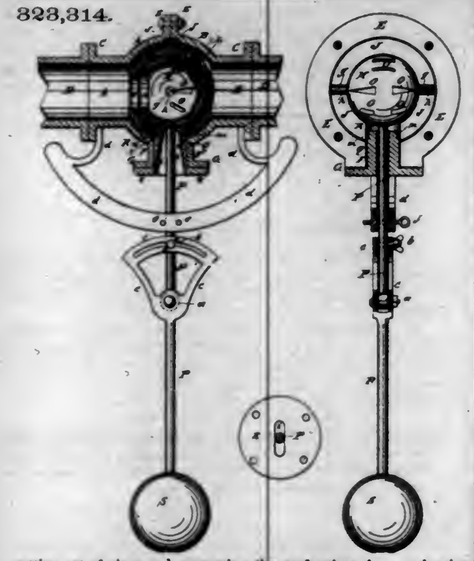
Claim.—1. In a marine-engine governor, the combination, with the weight-carrying stem P, made in two parts, of the pivoting-bolt *a*, the clamping-bolt *b*, and the quadrant *c*, substantially as herein shown and described, whereby the governor can be readily adjusted to operate when the vessel is loaded more heavily at one end than at the other, as set forth.

2. In a marine-engine governor, the combination, with the shell A B and the weight-carrying stem P, of the quadrant *d*, having pin-receiving holes *e*, substantially as herein shown and described, whereby the governor can be locked from operating or prevented from operating when one end of the vessel rises, as set forth.

3. In a marine-engine governor, the combination, with the flanged collar F G, the stationary sphere H I, the movable sphere M, and the stem P, of the flanged gland *j*, having flaring slot *i*, and a rabbet, *l*, around its inner end, substantially as herein shown and described, whereby the said stem is made to oscillate in the same plane and the escape of steam is prevented, as set forth.

4. In a marine-engine governor, the combination, with the stationary sphere H I, having bearings *h*, and the movable sphere M, of the gudgeons *g*, substantially as herein shown and described, whereby the said sphere is prevented from rotating upon the axis of the stem, and thus

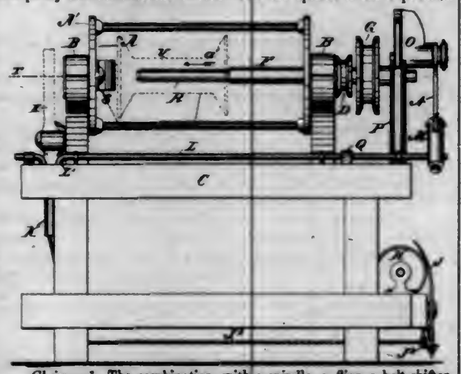
323,314.



getting out of place and preventing the perforations from registering properly, as set forth.

323,315. SAFETY-LOCK FOR SPINDLES ON JENNIES. MICHAEL FURST, Brooklyn, N. Y. Filed Mar. 27, 1884. (No model.)

Brief.—A forked slide is held opposite the end of the spindle and must be moved down to allow the spindle to be moved for replacing a filled bobbin by a fresh one, &c. When the slide is moved, it causes a projection to be thrown in the path of a latch-lever connected with the belt-shipper, whereby the belt is prevented from being thrown upon the fast pulley and the machine started when the spindle is out of position.



Claim.—1. The combination, with a spindle, a flier, a belt-shifter, a latch-lever connected thereto, and means for operating the said spindle and flier, of a slide for receiving the end of a spindle, and a projection connected with and adapted to be thrown into and out of the path of the latch-lever by the movement of the said slide, whereby provision is made for preventing the machines from being started when the spindle is not in place, substantially as herein shown and described.

2. The combination, with a spindle, a flier thereon, a belt-shifter, a latch-lever connected thereto, and means for operating said spindle and flier, of a slide for receiving the end of the spindle, a rock-shaft provided with a projection at one end and an arm at the other, and a link connecting said slide and arm, substantially as herein shown and described.

3. The combination, with a spindle, a flier, a belt-shifter, a latch-lever connected thereto, and means for operating said spindle and flier, of a rock-shaft provided with arms at its ends at about right angles to each other, a slide held in front of one end of the spindle and provided with an opening to receive said spindle, and a link for connecting the said slide to one of the arms of the rock-shaft, substantially as herein shown and described.

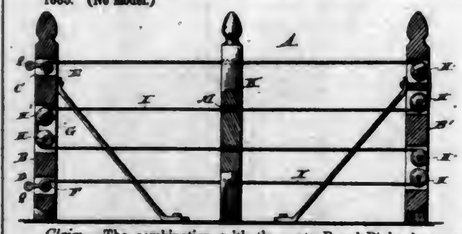
4. The combination, with a spindle, a flier thereon, a belt-shifter, a latch-lever connected thereto, and means for operating said spindle and flier, of a rock-shaft provided with arms at its ends, a slide having an opening for and held in front of one end of the spindle, a link connecting said slide to one arm of the rock-shaft, and a stop on said rock-shaft for limiting its movement, substantially as herein described.

5. The combination, with a spindle, a flier thereon, a belt-shifter, a latch-lever connected thereto, and means for operating said spindle and flier, of an apertured guide-standard at one end of the spindle, a forked slide held in said standard, a rock-shaft provided with arms at its ends at about right angles to each other, and a link connecting said slide to one of the arms of the said rock-shaft, substantially as herein shown and described.

6. The combination, with the spindle R, the flier A, the belt-shifting fork J, the latch-lever K, connected to said fork, and means for operating said spindle and flier, of the guide-standard P, provided with an aperture in line with the aperture of the fliers, the forked slide O, held in said standard, the rock-shaft L, provided with the projection L' and the arm M, and the connecting-link N, substantially as herein shown and described.

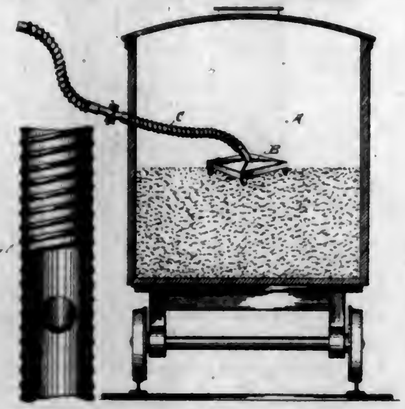
7. The combination, with the spindle R, the flier A, the slide O, the rock-shaft L, provided with the projection L' and the arm M, and the connecting-rod N, of the shifting-fork J, the spring J', the cord J², and the lever K, substantially as described.

323,316. FENCE. JOSEPH F. GLIDDEN, De Kalb, Ill. Filed May 11, 1885. (No model.)



Claim.—The combination, with the posts B and B', having mortises, the keys E and F, provided with holes P, and pulleys arranged in said mortises, of the posts K and the continuous fence-wire, substantially as specified.

323,317. PNEUMATIC APPARATUS FOR GRAIN-CONVEYERS AND ATTACHMENTS. BENJAMIN F. GOODRICH, Akron, Ohio, and LYMAN SMITH, Kansas City, Mo. Filed Feb. 26, 1885. (No model.)



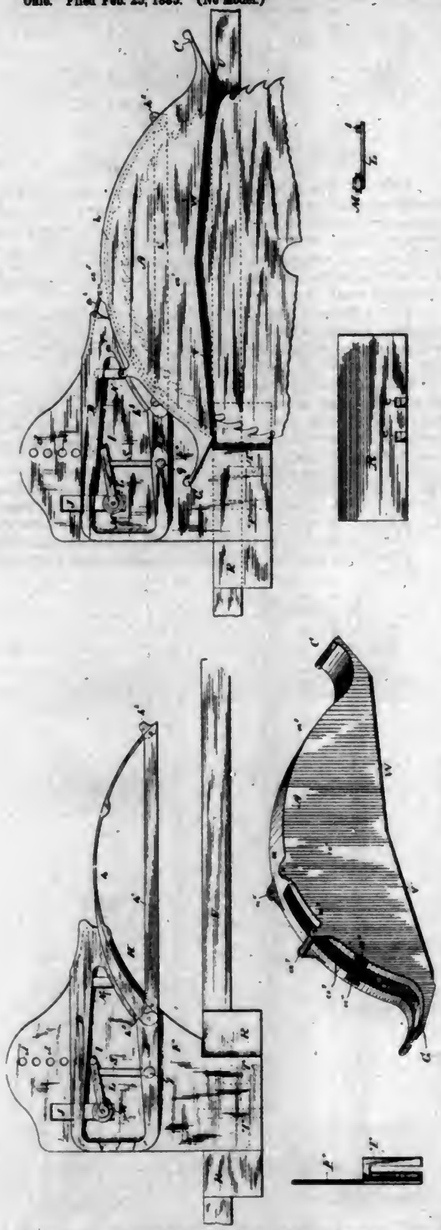
Claim.—1. In a grain-conveying apparatus, a flexible hose, constructed substantially as described, whereby the section of the apparatus will not cause its collapse, in combination with the mouth-piece and coupling, substantially as set forth.

2. A hose-coupling having interlocking tapering flanges, substantially as described.

3. A hose-coupling provided with interlocking tapering flanges, one of which is provided on its face with a recess for the reception of a packing-piece, against which the smooth face of the other impinges in such manner as to form a tight joint, in the manner and for the purpose set forth.

4. A hose consisting of, first, an air-tight inner lining of rubber, covered by a lining of fibrous material, preferably cut bias, then a wrapping of spring-wire spirally wound around the inner linings at certain intervals, then covered with another ply of fibrous material closely rolled and stitched, then an outer covering over the whole, and then vulcanizing the hose, completing it in the manner and for the purpose set forth.

323,318. SAW-GUARD. JOS. G. GROFF, Connersville, Ind., assignor to the Groff & Bennett Saw Guard Manufacturing Company, Cincinnati, Ohio. Filed Feb. 25, 1885. (No model.)



Claim.—1. The combination, with the plate, the supporting-arms, and the frame connected thereto having the projections or lugs co-operating with the perforations in the hood, of the hood proper working over the frame having the inclines for raising and lowering it, substantially as described.

2. The combination, with the arms and the frame connected thereto having the projections or lugs in front and rear, of the hood proper working over said frame and having slots for accommodating said projections or lugs, substantially as described.

3. The combination, with the plate and the supporting-frame having the arms connecting it to the plate, of the hood proper working over the frame, and the link connecting it to the arms, substantially as described.

4. The combination, with the blade, the arms, and the supporting-frame, of the connecting-link and the hood proper carrying the roller which works in the slot in the blade, substantially as described.

5. The combination, with the vertical blade having the series of adjusting-openings and the slot J, of the hood-supporting arms and frame, the roller, and the spring-arm connected to the roller and adapted to co-operate with the adjusting-openings, whereby the normal height of the arms may be regulated, substantially as described.

6. The combination, with the vertical plate or blade, of the arms carrying the hood-supporting frame, and hood proper working over said frame, substantially as described.

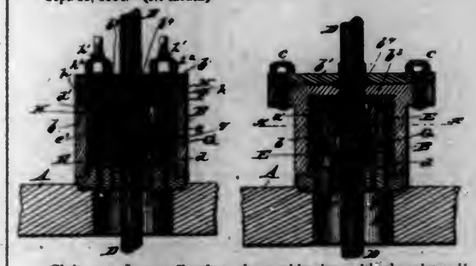
7. The combination, with the vertical plate or blade having the slots, the arms carrying the supporting-frame and having the roller q, the hood proper working over the frame and having the roller working in a slot in the blade, and the link connecting the arms and the hood proper, substantially as described.

323,319. PROCESS OF MAKING INCANDESCENTS. HUBERT H. GRUBBS, London, England, assignor of one-half to Charles Horace Benton, same place. Filed Dec. 12, 1883. (No specimens.)

Claim.—1. The improved method of preparing carbon filaments for incandescent electric lamps, which consists in softening vegetable fibers by immersing in a solvent liquid, then drawing the softened fiber through a die or dies until reduced to the desired diameter, and then carbonizing the same, substantially as specified.

2. The improved method of preparing carbon filaments for incandescent electric lamps, which consists in softening vegetable fibers by immersing in a solvent liquid, then drawing the softened fiber through a succession of dies until reduced to the desired diameter, then carbonizing the same, and finally depositing carbon thereon, substantially as set forth.

323,320. PISTON-ROD PACKING. JACOB H. GUILEY, East Saginaw, Mich., assignor of one-third to James E. Wright, same place. Filed Sept. 13, 1884. (No model.)

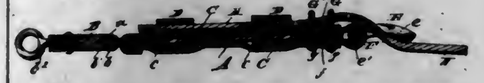


Claim.—1. In a stuffing-box, the combination, with the plates b', b^2, and b^3, the rod D, and the cleft-rings d, d', and E, of the adjusting-plate G, having the wedge-piece to enter the cleft of the said rings E, and screws H, adapted to operate substantially as specified.

2. In a stuffing-box, the combination, with the plates b', b^2, and b^3, the rod D, the cleft-rings d, d', and E, and the screws c c, of the adjusting-plate G, the ring F, and the screws H, substantially as specified.

3. In a stuffing-box, the combination, with the plates b', b^2, and b^3, the rod D, and the cleft-rings d, d', and E, of the adjusting-screws H, having the squared ends h', and nuts h^2, substantially as specified.

323,321. HAME-TUG. LOUIS GUSTAVEL, Jr., Delphi, Ind. Filed Mar. 24, 1885. (No model.)



Claim.—1. In a hame-tug, the combination, with a leather casing having the loops attached thereto, of a metal plate secured within the casing, and having the clip for attachment to the hames and buckle for the traces pivoted, respectively, to its front and rear ends, substantially as specified.

2. In a hame-tug, the combination of an interior metal plate carrying the hame-clip and buckle, respectively, on its front and rear ends, with an exterior leather casing provided on its outer layer with recesses or cut-away portions in which the sides of the loops are inserted and the loops placed therein, the metal plate passing through the loops and holding them to the casing, substantially as specified.

3. In a hame-tug, the combination of the casing C and plate A with the hame-clip B, pivoted to the front end of the plate, the buckle-frame E, collar F, provided with the wedge-shaped projection f, and pins G G, substantially as specified.

4. In a hame-tug, the combination, with the casing C, plate A, buckle-frame E, collar F, provided with the wedge-shaped projection f,

and pins G G, of the re-enforcing metal collar I, provided with the plates *i*, substantially as specified.

5. The combination, in a hame-tug, with the casing C, provided with recesses *c c*, loops D, and plate A, of the buckle-frame E, collar F, provided with the projection *f*, and pins G G, substantially as specified.

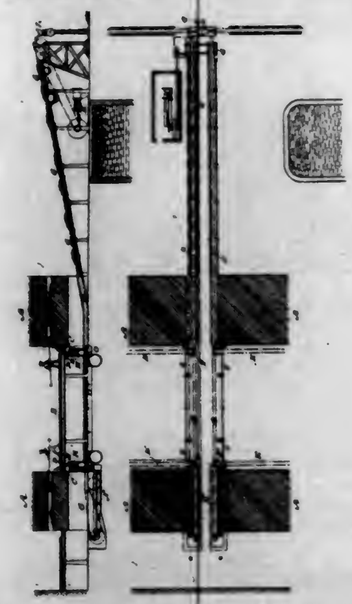
323,322. FINGER-RING. JAMES W. GWINN, Providence, R. I. Filed May 20, 1884. (No model.)



Claim.—1. An improved ring consisting of the loop A, having one end provided with serrations inclined oppositely on opposite edges, and the other end provided with the frame-like setting B, slotted at one edge to permit the passage of said serrated end, in combination with the spring-catch arranged entirely within the setting for engaging the serrations, substantially as set forth.

2. The combination, with the loop A, provided with the serrated extension *a* and the setting B, of the spring *b*, having the projection *b'*, the projection *b''*, for limiting the movement of the spring, the projection *a'*, for holding the extension, and the plate *c*, for confining the extension, said spring, projections, and plate being secured within the setting, as described.

323,323. APPARATUS FOR RECEIVING AND CONVEYING AWAY COKE DRAWN FROM GAS-RETORTS. HENRY HACK, Saltley, Birmingham, County of Warwick, and FRANCIS LEY, Barrow-on-Trent, County of Derby, England. Filed Mar. 3, 1885. (No model.) Patented in England Feb. 13, 1884, No. 3,236.



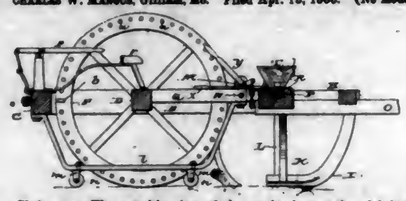
Claim.—1. The arrangements for receiving the coke, consisting of guide-plates forming long hoppers into which the coke falls as it is drawn from the retorts or ovens and which deliver it onto the conveyer, such long hopper being provided with sprinkling apparatus for quenching the coke, substantially as described.

2. The system of conveyers, consisting of endless chains supported on rollers and made up of links carrying receptacles locking together to form a continuous traveling trough, such conveyers being arranged at right angles the one to the other and being all driven through one main conveyer, substantially as described.

3. The means for the delivering of the coke from the conveyer, consisting in placing within the trough of the conveyer a plow-like implement, which, being held stationary while the conveyer continues in movement, directs its contents over the sides of and out of the conveyer, substantially as described.

4. The combination of the endless trough-like conveyers, the overhead rails, and the plow-like delivering instrument, substantially as described.

323,324. CHECK-ROW CORN-PLANTER. WILLIAM D. HAYNES and CHARLES W. MANSUR, Gilliam, Mo. Filed Apr. 15, 1885. (No model.)

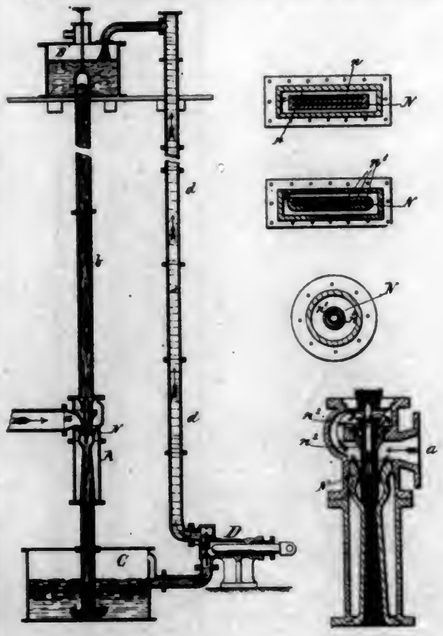


Claim.—1. The combination of the main frame, the driving and supporting wheels, gear-wheels *c* and *d*, fulcrumed lever *e*, shaft *g*, having one end journaled in lever *e*, and a finger, *i*, at the opposite end, pinion *k*, fixed to shaft *g* and meshing with gear *d*, and the frame H, hinged to the main frame and carrying the seed-tubes, furrow openers, seed-hoppers, and seed-slide, the latter operated by the finger *i*, substantially as described.

2. In a check-row corn-planter, the driving and supporting wheels having the openings in their rims, markers *b*, adapted to be inserted in the openings, and the pointers *z*, for indicating the openings that will align with the hills, substantially as described.

3. The combination of the main frame having the supporting-wheels, the frame H, hinged thereto, and having the furrow-openers, hoppers, and seed-slide, and the frame *l*, depending from and secured to the main frame, and having the rollers *n*, for maintaining the main frame in a horizontal position, substantially as described.

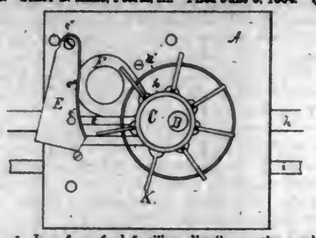
323,325. MEANS FOR PRODUCING A VACUUM. GUSTAV HAMBRUCH, Berlin, Germany. Filed Sept. 6, 1884. (No model.) Patented in Germany June 22, 1884, No. 30,491; in France July 25, 1884, No. 163,492; in England Aug. 21, 1884, No. 11,485; in Belgium Oct. 21, 1884, No. 66,650; in Italy Dec. 6, 1884, XXXIV, 456, and in Spain Mar. 6, 1885, No. 4,507.



Claim.—1. The herein-described mode of producing a vacuum, which consists in exhausting the air from a close chamber or vessel by suction through the medium of a jet of a liquid water-absorbent acting to draw the air directly from said chamber or vessel and bringing said air in direct contact with the jet, substantially as described, for the purpose specified.

2. The herein-described mode of producing a vacuum, which consists in exhausting the air from a close chamber or vessel by suction through the medium of a jet of a liquid water-absorbent acting to draw the air directly from said chamber or vessel, converting the jet into spray, and bringing said air in direct contact with the sprayed liquid, as described, for the purpose specified.

323,326. FORCE-FEED FERTILIZER ATTACHMENT FOR GRAIN-DRILLS. STACY B. HART, Peoria, Ill. Filed June 5, 1884. (Model.)



Claim.—1. In a force-feed fertilizer-distributer, the combination of a revolving disk having a slotted rim, with a series of independent feeding-knives which operate in said slots, each knife being rigidly attached to an independent ring, and a cam upon which said rings revolve, substantially as set forth.

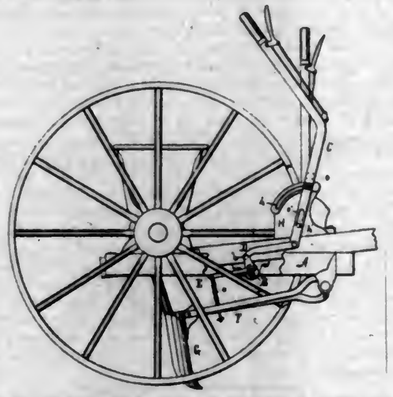
2. In a force-feed fertilizer-distributer, the combination of a revolving disk having a slotted rim and a series of independent feeding-knives which operate within said slots, each knife being attached to an independent ring, with a cam inclosed within said disk, and means for changing the position of the cam within said disk, substantially as and for the purpose set forth.

3. In a force-feed fertilizer-distributer, the combination, with a revolving disk having a slotted rim and independent feeding-knives which revolve about an inclosed cam and operate within said slots, of a pivoted guard-plate having a raised rim, and an arm connecting said guard-plate to the cam, by means of which the guard-plate is retained in a fixed relative position to the feeding-knives, whatever be the rate of feed, substantially as described, and for the purposes set forth.

4. In a force-feed fertilizer-distributer, the combination, with a revolving disk having a slotted rim and an inclosed cam around which a series of feeding-knives revolve, of a depending scraper attached to the lower knife of the series, substantially as and for the purpose set forth.

5. In a force-feed fertilizer-distributer, the combination, with the revolving shaft and the revolving disk, of a frangible pin uniting the same, substantially as and for the purpose set forth.

323,327. GRAIN-DRILL. STACY B. HART, Peoria, Ill. Filed Sept. 26, 1884. (No model.)



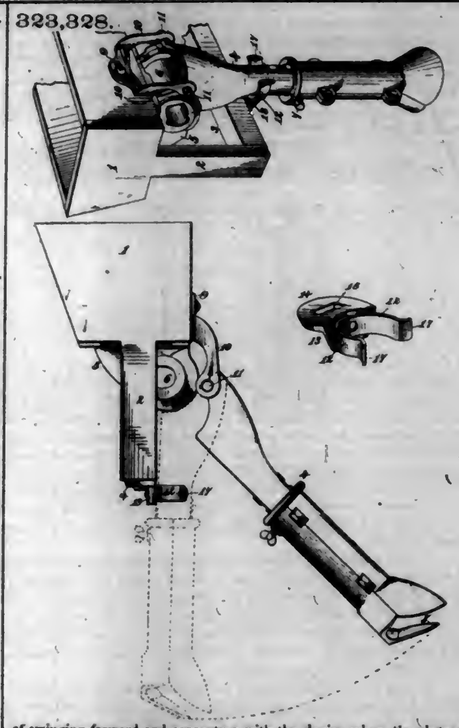
Claim.—The combination, with a lever provided with a longitudinal slot, of a supporting-plate provided with a pin which fits into said slot in the lever, and with a curved slot, one end of which is nearer to said pin than the other end, which curved slot receives a pin rigidly attached to said lever, substantially as and for the purpose specified.

323,328. BROADCAST-SEEDING MACHINE. STACY B. HART, Peoria, Ill. Filed Nov. 17, 1884. (No model.)

Claim.—1. The combination, with a pivoted spout hanging at a distance from the ground and having means to scatter grain broadcast, of a spring detaining and releasing device secured to a stationary part of the frame, said spout being capable of disengaging itself from the device and yield rearward when an obstruction is met and to swing forward and engage itself with the device when the obstruction is passed, substantially as described.

2. The combination of a hopper, a cross-bar supported below the same, a swinging grain-spout and a spout detaining and releasing device carried by the cross-bar, the spout being capable of disconnecting itself from the device and yielding rearward when an obstruction is met and

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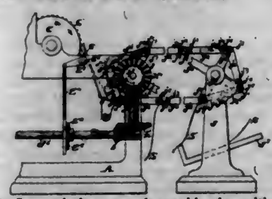
of swinging forward and connecting with the device when the obstruction is passed, substantially as described.

3. The combination of a hopper, a cross-bar supported below the hopper, a swinging grain-spout, and two spout detaining and releasing spring-arms carried by the cross-bar, the spout being capable of disconnecting itself from between the spring-arms and yielding rearward when an obstruction is met and of swinging forward between the said arms when the obstruction is passed, substantially as described.

4. The combination of a tubular swinging spout for scattering grain broadcast, of a spout detaining and releasing device composed of two spring-jaws constructed to encircle the tubular body of the spout, substantially as described.

5. The combination of a hopper, a broadcast grain-scattering spout having its upper end pivoted upon the hopper, and a spout detaining and releasing device composed of two spring-jaws for detaining the spout but permitting it to yield rearward when an obstruction is met, substantially as described.

323,329. SHEET-DELIVERY APPARATUS. JOHN T. HAWKINS, Taunton, Mass. Filed Dec. 1, 1884. (No model.)

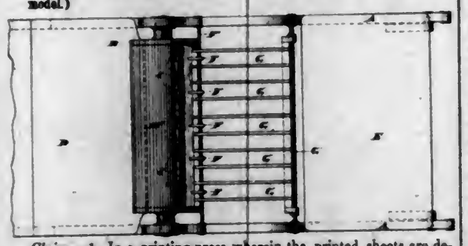


Claim.—1. In a printing-press, in combination with a grooved delivery-cylinder, a sheet-delivery consisting of a series of oscillating stripper-fingers, and two sets of sprocket-wheels carrying suitable endless chains provided with sets of grippers arranged to successively take the sheets from the stripper-fingers and to convey them suspended by their upper or leading ends until, by the action of suitable stationary cams, said grippers are opened, thereby releasing the sheets in a pile upon a suitable receiving-table, substantially as set forth.

2. In a printing-machine, a sheet-delivery consisting of endless chains and grippers carried upon sprocket-wheels or spiders, and constructed with pivots upon which the links hinge, consisting of rods extending from chain to chain, and with gripper-shafts journaled in said links in such positions as to allow each series of grippers to close upon said rods for clamping or gripping the sheets, substantially as set forth.

3. As part of the delivery apparatus of a printing or other machine, a transverse endless belt or apron intermittently operated at the proper time so as to remain at rest during the deposition of a sheet upon it through suitable connection with said machine, and provided with slats rigidly secured to the outer surface of said apron at intervals apart, whereby means are provided for retaining removable drying frames or trays between said slats on top of said apron, substantially as and for the purposes set forth.

323,330. SHEET-DELIVERY APPARATUS FOR PRINTING-PRESSES. JOHN T. HAWKINS, Taunton, Mass. Filed Dec. 27, 1884. (No model.)

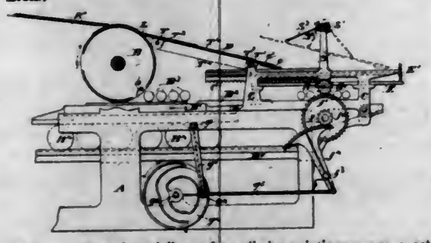


Claim.—1. In a printing-press wherein the printed sheets are delivered tail first from an impression-cylinder, in combination with said cylinder, elastic sheet-supports, as J J', secured to the tympan or covering of said cylinder, whereby the tail-margins of the sheets are elevated from said covering without said supports passing over the types or form during the operation of printing, substantially as and for the purposes set forth.

2. In a printing-press wherein the printed sheets are delivered tail first from an impression-cylinder, in combination with said cylinder, a series of elastic sheet-supports, as J J', secured to its covering, and a series of sheet-strippers, whereby the tail-margins of the sheets are received upon said supports and said sheets stripped from said cylinder by said strippers without contact of said supports and strippers, substantially as and for the purposes set forth.

3. In a printing-press wherein the printed sheets are delivered tail first from an impression-cylinder, in combination with said cylinder, a series of elastic sheet-supports, as J J', secured to its covering, and a series of stripper-fingers, as F, whereby the tail-margins of the sheets are received upon said supports and said sheets stripped from said cylinder by said fingers without contact of said supports and fingers, substantially as and for the purposes set forth.

323,331. SHEET-DELIVERY APPARATUS FOR PRINTING-PRESSES. JOHN T. HAWKINS, Taunton, Mass. Filed Feb. 11, 1885. (No model.)



Claim.—1. In a sheet-delivery for cylinder printing-presses, a set of inclined stripper or receiving fingers, as D, in combination with mechanism for reciprocating said fingers in a horizontal plane, substantially as described, whereby a sheet deposited upon said fingers is held in contact therewith by the resistance of the air on the upper side of the sheet during the travel of said fingers in one direction, and the sheet released from contact therewith by the resistance of the air upon the under side of said sheet upon the return travel of said fingers in an opposite direction, substantially as and for the purposes set forth.

2. In a sheet-delivery for cylinder printing-presses, a set of stripper or receiving fingers, as D, in combination with mechanism for reciprocating said fingers in a horizontal plane, and varying the angle of inclination of said fingers from the horizontal during their reciprocation, substantially as described, whereby a sheet deposited upon said fingers is held in contact therewith by the resistance of the air against the upper side of the sheet during the travel of said fingers in one direction, and said sheet released from contact therewith by the resistance of the air upon the under side of the sheet upon the return travel of said fingers in an opposite direction, substantially as and for the purposes set forth.

3. In a sheet-delivery, delivering the sheet by means of a set of inclined reciprocating stripper or receiving fingers for the reception of the sheet on their upper side, in combination with said fingers, means for varying the angle of said stripper or receiving fingers, consisting of a rock-shaft, as *h*, to which the said fingers are secured, an arm, as *h'*, secured to said rock-shaft, carrying a roller, as *h²*, said roller engaging a suitable incline, as *h³*, substantially as and for the purposes set forth.

4. In a sheet-delivery for cylinder printing-presses, in combination with a set of inclined reciprocating stripper or receiving fingers, as D, a series of supporting-tapes, as T⁴, whereby the sheet is supported from contact with said inclined fingers while passing down or upon them, substantially as and for the purposes set forth.

5. In a sheet-delivery for cylinder printing-presses, delivering the sheet by means of a set of inclined reciprocating stripper or receiving fingers, as D, the combination, with said inclined reciprocating fingers, of a delivery or receiving board, as E, placed under said inclined reciprocating fingers when in their outward-assumed position, substantially as and for the purposes set forth.

6. In a sheet-delivery for cylinder printing-presses, delivering the sheet by means of a set of inclined reciprocating stripper or receiving fingers, as D, in combination with said fingers a series of adjustable frictional sheet-stops, as S², whereby the upper surface of the sheet at the termination of the outward excursion of said inclined fingers is impinged upon by said stops, the sheet's momentum overcome and its motion arrested simultaneously with the arrival of the said fingers at the termination of their outward travel, substantially as and for the purposes set forth.

7. In a sheet-delivery for cylinder printing-presses, delivering the sheet by means of a set of inclined reciprocating stripper or receiving fingers, as D, in combination with said fingers, an abutting sheet-stop or series of stops, as E', whereby the residual motion of the sheets is arrested, substantially as and for the purposes set forth.

8. In a sheet-delivery for a cylinder printing-press, delivering the sheet by means of a set of inclined reciprocating stripper or receiving fingers, as D, the combination, with said fingers, of a set of frictional adjustable sheet-stops, as S², and an abutting sheet-stop or series of stops, as E', whereby both the forward momentum and residual motion of the sheets are arrested, substantially as and for the purposes set forth.

9. In a sheet-delivery for cylinder printing-presses, in combination with an impression-cylinder, as B, delivering the sheet from the top of said cylinder, a series of reciprocating inclined stripper or receiving fingers, as D, for receiving and discharging the sheets from said cylinder, substantially as and for the purposes set forth.

10. In a sheet-delivery for cylinder printing-presses, in combination with an impression-cylinder, as B, delivering the sheet from its top, a series of inclined reciprocating stripper or receiving fingers, as D, and a set of receiving-tapes, as T⁴, whereby the sheets are removed from said cylinder, substantially as and for the purposes set forth.

11. In a sheet-delivery for cylinder printing-presses, in combination with an impression-cylinder, as B, delivering the sheet from its top, a series of inclined reciprocating stripper or receiving fingers, as D, a set of supporting-tapes, as T⁴, and a series of frictional adjustable sheet-stops, as S², whereby the sheets are removed from said cylinder and their momenta arrested, substantially as and for the purposes set forth.

12. In a sheet-delivery for cylinder printing-presses, in combination with an impression-cylinder, as B, delivering the sheet from its top, a series of inclined reciprocating stripper or receiving fingers, as D, a series of supporting-tapes, as T⁴, a series of adjustable frictional sheet-stops, as S², and an abutting sheet-stop or series of stops, as E', all constructed and operating substantially as and for the purposes set forth.

13. In a sheet-delivery for a cylinder printing-press, in combination with an impression-cylinder, as B, delivering the sheet from its top, a series of inclined reciprocating stripper or receiving fingers, as D, a set of supporting-tapes, as T⁴, a set of adjustable frictional sheet-stops, as S², and an abutting sheet-stop or series of stops, as E', and a receiving-board, as E, all arranged and operating substantially as and for the purposes set forth.

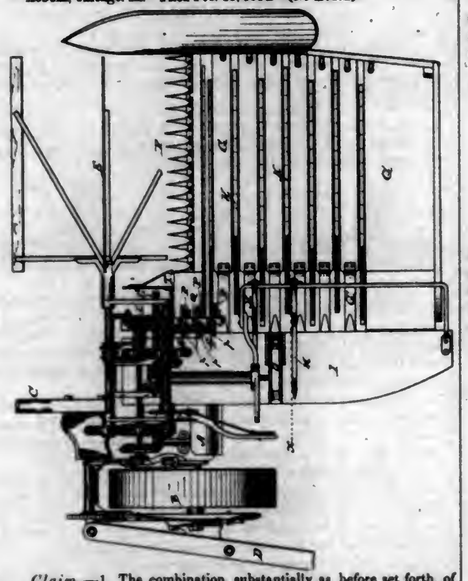
323,332. DIPPER. EBENEZER HESTER, Unionville, Conn. Filed Apr. 14, 1885. (No model.)



Claim.—1. A dipper having a tubular handle provided with a hand or handle grip of non-conducting material and forming a nozzle at its outer end, substantially as and for the purpose shown and set forth.

2. The combination of the dipper having a tubular handle and shield as described, said shield having an upward projection, and the removable and adjustable T-shaped nozzle having a rose or sprinkler on one of its arms and adapted to be fitted upon the shield-stud when not in use, substantially as and for the purpose shown and set forth.

323,333. LOW-DOWN SELF-BINDING HARVESTER. PLINY F. HODGE, Chicago, Ill. Filed Feb. 13, 1884. (No model.)



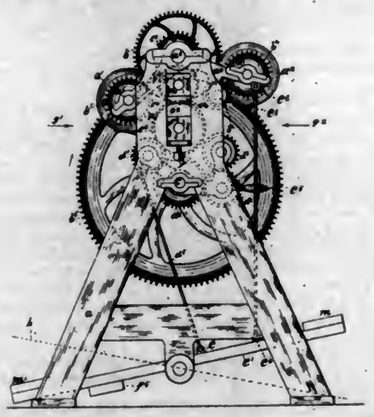
Claim.—1. The combination, substantially as before set forth, of the butt-rake at or near the stubble end of the finger-beam and packers.

2. The combination, substantially as before set forth, of a platform-carrier, a butt-rake at or near the stubble end of the finger-beam, packers, and a low-down binder-table.

3. The combination, substantially as before set forth, of a platform-carrier, a fixed butt-rake at or near the stubble end of the finger-beam, and a longitudinally-adjustable low-down binder.

4. The combination, substantially as before set forth, of a platform-carrier, a fixed butt-rake at or near the stubble end of the finger-beam, and a fixed butt-board.

323,334. PUTTING-OUT MACHINE. WILLIAM M. HOFFMAN, Buffalo, N. Y. Filed Dec. 18, 1884. (No model.)



Claim.—1. In a putting-out machine, two putting-out cylinders mounted in bearings upon oscillating arms, in combination with a double connecting-rod, c^5, jointed thereto and to a foot-step, whereby either one of the putting-out cylinders may be brought into action against the roller c^3, substantially as described.

2. The putting-out cylinder mounted in bearings on the arms a^4 a^5, and the rubber-covered feeding-rollers and gearing, in combination with the oscillating arm *d*, provided with the gearing *d'* d^2 d^3, the gearing d^4, connecting-rods d^5 c^5, and a foot-step, substantially as specified.

3. The combination of the rubber-covered feeding-rollers and connecting-gearing, the oscillating arm *d*, mounted on the shaft *c*, pinions *d'* d^2 d^3, gear-wheel d^4, and rod d^5, for connecting the arm with the foot-step, whereby the action of the rollers may be reversed or stopped, substantially as described.

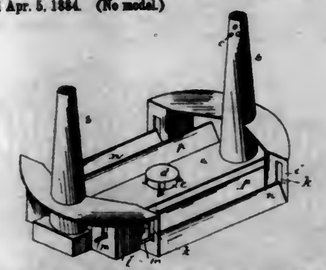
4. In a putting-out machine, the combination of two putting-out cylinders with the rubber-covered feeding-rollers, their operating-gearing, and reversing mechanism, substantially as described, whereby the skin may be passed back and forth until complete, substantially as described.

323,335. VEHICLE-SPRING. FERDINAND HORN, Coshocton, Ohio, assignor of one-half to Houston Hay, same place. Filed Mar. 10, 1885. (No model.)



Claim.—A spring for vehicles, having in combination a wood side bar, B, a link, *e*, near each end and suspended below said side bar, and a metal leaf-spring, C, underneath and extending lengthwise of the side bar, and having each end of both the upper and lower leaves terminated with a hook, *d*, and both hooks engaged with one of the suspended links, as set forth.

323,336. WASHING-MACHINE. WILLIAM B. HUBER, Fremont, Nebr. Filed Apr. 5, 1884. (No model.)

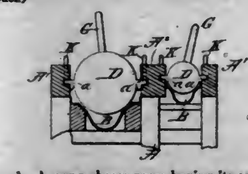


Claim.—1. In a steam washing-machine, the combination, with the vertically-slotted end walls of the steamer-table, of the triangular-shaped agitators having bearings in the vertical slots, substantially as specified.

2. A steam washing-machine having the forcing-chamber provided with the vertical perforated pipes and the valve and the agitators, substantially as described.

3. A steam washing-machine having the forcing-chamber provided with the vertical perforated pipes and the agitators, which are secured in vertical slots in the end walls of the machine, substantially as described.

323,337. GANG CHEESE-PRESS. ROBERT W. JACOBS, Rome, assignor to Burrell & Whitman, Little Falls, N. Y. Filed Mar. 13, 1885. (No model.)



Claim.—1. A gang cheese-press having its opposite sides arranged for pressing a series of large cheese and a series of small cheese, respectively, substantially as described.

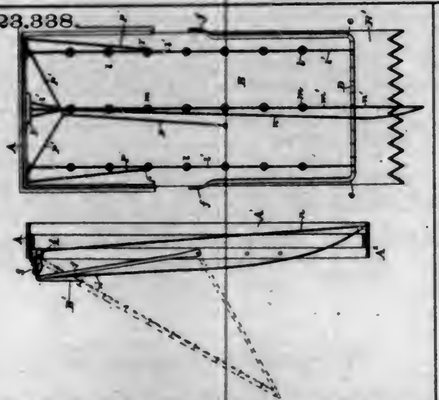
2. In a gang cheese-press, the combination, with the frame A, having ways C C, bulk-head M, and removable pins K K, of the troughs B B, adjustable platens D D, adjustable head-blocks E E, power-screws F F, and actuating mechanism, the opposite sides of said press being of unequal size, substantially as described.

323,338. WINDOW-AWNING. WILLIAM H. JOLLIFFE, Baltimore, Md. Filed June 11, 1885. (No model.)

Claim.—1. An awning having in combination the fabric B, provided on one surface with rows of rings, a stretcher-bar attached to the lower end of the fabric, and having two angle ends, *f*, each adapted to be pivoted to an opposite side of the window-frame, pulleys for attachment to the frame-top, and a cord for each row of rings, each cord having one end attached to the stretcher-bar and adapted to be passed over a pulley at the frame-top, as set forth.

2. An awning having in combination the fabric B, provided on one surface with rows of rings, a stretcher-bar attached to the lower end

323,338.



of the fabric, and having two angle ends, *f*, each adapted to be pivoted to an opposite side of the window-frame, pulleys for attachment to the frame-top, a cord for each row of rings, each cord having one end attached to the stretcher-bar and adapted to pass over a pulley at the frame-top, a reef-cord, *p*, having branches *p'*, each provided with a hook, *r*, for engagement with the said rings, and a pulley, *q*, for each branch of the reef-cord, as set forth.

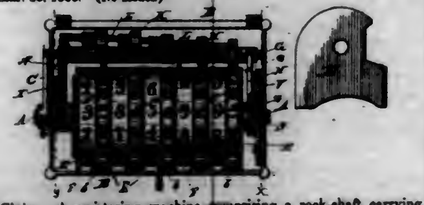
323,339. FOLDING BASKET. EUGENIA KILBORN, Cedar Rapids, Iowa. Filed Nov. 25, 1884. (No model.)



Claim.—1. The bottom sections, A A', provided with means to detachably secure their innermost or meeting lines in horizontal position, in combination with the back sections, B B', hinged to the bottom sections, and together at their meeting wire, the end sections, D D', hinged to the back sections, and the front sections, E E', hinged to the bottom sections, and provided with means to detachably connect them together at their innermost lines of wire, and having hooks to hold them in position to the end sections, all substantially as described, and for the purpose stated.

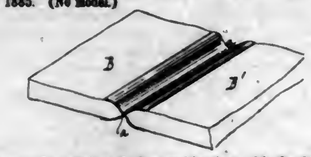
2. The bottom sections, A A', provided with means to detachably secure their innermost or meeting lines of wire together, in combination with the back sections hinged together and to the bottom sections at their meeting lines or wire, and provided with means to hold the basket in a suspended position, the end sections, D D', hinged to the back sections, and having the cross-rod or wire C and bottom hooks, *d d'*, and the front sections, E E', formed with knobs or lugs *e e'*, and hinged to the bottom sections, and provided with means to detachably connect them together at the innermost lines of wire, and having hooks *f f'*, to hold them in vertical position to the end sections, all substantially as described, and for the purpose stated.

323,340. REGISTER. IRVING A. KLEMER, Schenectady, N. Y. Filed Mar. 28, 1885. (No model.)



Claim.—A registering-machine comprising a rock-shaft carrying loose digit-disks provided with ratchet-disks, tension-plates, separating said digit-disks, the vibratory rod-bearing parallel to the rock-shaft, provided with a series of pawls overlapping one another from the left, the springs N and S, and the spring retaining-pawls *b*, substantially as specified.

323,341. STAIR-PAD. THOMAS H. KIRK, Newton, Mass. Filed Feb. 28, 1885. (No model.)



Claim.—In a stair-pad, the combination, with the felt sections, and with the case inclosing the same, of tapes *a a'*, connected to the edges of the felt sections and to the ends of the case, substantially as shown and described.

323,342. SEWING-MACHINE-COVER FASTENER. JOHN KITSON, Jersey City, N. J., assignor of one-half to Joseph Hooker Russell, same place. Filed Mar. 6, 1885. (No model.)

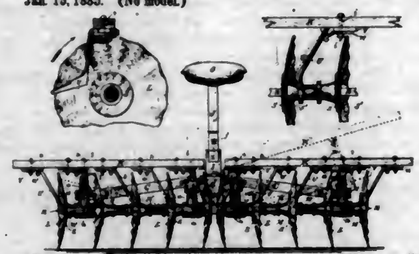


Claim.—1. The combination, with a sewing-machine table having hook-catches for the back of the cover projecting above its surface, of a cover having studs or equivalent fastenings located above its lower edge, and arranged and adapted to engage said catches by a backward or forward movement of the cover with the back edge of the cover resting on the table, substantially as described.

2. The combination, with a sewing-machine table having catches with oval heads *f*, projecting above its surface, of a cover having studs *g*, located above the lower edge of the cover and adapted to engage said catches above the surface of the table, substantially as described.

3. The combination, with a sewing-machine table having catches with oval heads *f*, projecting above its surface, of a cover having studs *g*, located above the lower edge of the cover and adapted to engage said catches above the surface of the table, said cover also having recesses *i*, adapted to close over the catches, substantially as described.

323,343. DISK-HARROW. CHARLES LA DOW, Albany, N. Y. Filed Jan. 15, 1885. (No model.)



Claim.—1. The combination of a disk, a scraper held normally out of contact with the disk and adapted to be forced against the disk by the soil adhering thereto, and a support or supports for the disk and scraper.

2. The combination of a disk with a scraper hinged to its support and adapted to automatically approach the disk to clean the same and to move in a lateral direction from the disk when cleaned, and a frame for the disk and scraper.

3. The combination of a disk, a scraper adapted to approach the disk and to gravitate therefrom independently of other scrapers in the same gang, and a frame for supporting the disk and scraper.

4. The combination of a disk, a scraper held normally out of contact with the disk and adapted to automatically approach the disk and to follow the inequalities thereof, and a support or supports for the disk and scraper.

5. A corrugated disk, in combination with a scraper adapted to conform to the corrugations, and a support or supports for the disk and scraper.

6. The combination of a disk and a hinged scraper adapted to automatically approach the disk laterally, the hinge being located outside of the circumference of the disk.

7. A gang of disks and a frame in which they are mounted, in combination with a gang of scrapers adapted to independently and automatically approach and recede in a lateral direction from the sides of the disks.

8. The combination of the disk L, a draft frame or support therefor, the bar K, and the hinged scraper U, arranged at an angle relatively to the side of the disk and adapted to be forced against it by the suction of the earth adhering on the disk.

9. The disk L, in combination with the hinged scraper U, arranged at an angle to the face of the disk and adapted to automatically approach and recede therefrom.

10. The combination of a seat-standard, the casting I, having the seat-standard socket, and the swinging or pivoted locking-button for uniting the standard to the casting.

11. The combination of a disk and a scraper held normally out of contact with the disk and adapted to have both lateral and torsional movement in cleaning the disk.

12. The combination of a disk, a scraper adapted to have both lateral and torsional movement on a single hinge, and a support or supports for the disk and scraper.

13. The combination of the pole A, the adjustable disk-gangs B B, the lock-joint lever G, and the bars C C, adapted to push and pull in line with the side of the pole.

14. The concavo-convex cutting-disk for a plow or harrow, made of a single plate of metal and formed with radial corrugations adapted to strengthen the disks against lateral pressure.

15. The herein-described corrugated cutting-disk for a plow or harrow, made of a single plate of metal, in combination with mechanism for varying the angle of the disk.

16. A harrow-frame, in combination with a disk having corrugations which diminish in depth as they approach the edge of the disk.

17. A gang of corrugated disks and spools having corrugated ends, in combination with an axle and nut for clamping the corrugated parts together.

18. A disk-harrow having a pole forked at its rear end and adapted to be thereby hinged to the disk-gangs, draft-bars for adjusting the angle of the gangs, and mechanism for shifting the draft-bars.

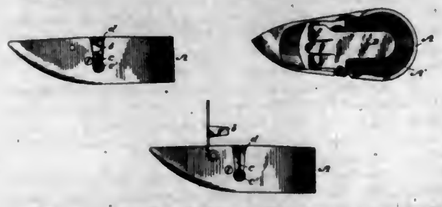
323,344. DISK-HARROW. CHARLES LA DOW, Albany, N. Y. Filed July 6, 1885. (No model.)



Claim.—1. The combination of two opposing disk-gangs arranged upon opposite sides of the draft-line, and adapted to have their inner disks abut against each other when the gangs are in their working position, substantially as and for the purpose set forth.

2. The combination of two opposing disk-gangs, the inner disks of the gangs being corrugated, as set forth, and arranged to abut against each other when the gangs are thrown into the working position.

323,345. SHUTTLE FOR SEWING-MACHINES. SAMUEL LARKIN, Philadelphia, Pa., assignor to the American Button Hole, Overseaming and Sewing Machine Company, same place. Filed Jan. 31, 1885. (No model.)



Claim.—1. A shuttle-body formed with an eye, a groove leading from the edge of the body to the eye, and a thread-slot cut in the bottom of the groove, in combination with a retaining-lip formed with square corners, which lies in said groove.

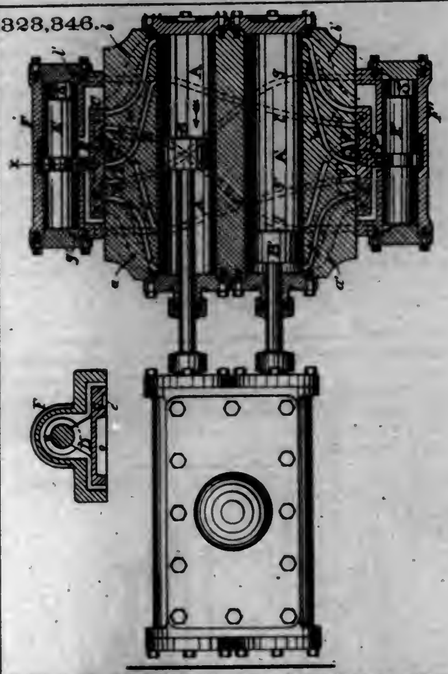
2. A shuttle-body formed with an eye, a groove leading from the edge of the body to the eye, and a thread-slot cut in the bottom of the groove, in combination with a thread-retaining lip formed with square corners, which lies in said groove, but does not reach quite to the eye.

323,346. STEAM-PUMP. FRANK M. LEAVITT, New York, assignor to E. W. Bliss, Brooklyn, N. Y. Filed Aug. 16, 1884. (No model.)

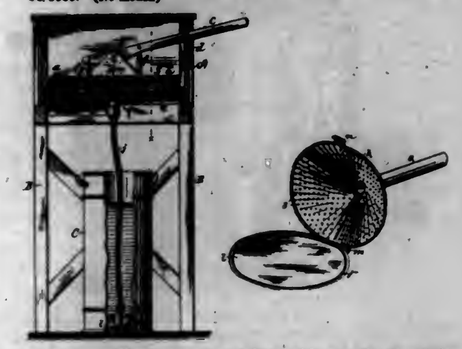
Claim.—1. In a direct-acting duplex steam-pump, having its valves operated by direct steam-pressure, exhaust-ports or passage-ways leading from each end of the valve-plunger cylinders into the ends of the main cylinders, as described, each passage-way controlled by a valve arranged substantially as described, as and for the purposes stated.

2. In a direct-acting duplex steam-pump, having its valves operated by direct steam-pressure, exhaust-ports or passage-ways leading from the ends of the valve-plunger cylinders into ports leading from the ends of the main cylinders into the recess O and O' in main valves, each passage-way controlled by a valve combined and arranged as described, as and for the purposes stated.

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323,347. MILK-AERATOR. HORACE B. LONG, Worcester, and ERWIN L. HILL, West Upton, Mass.; said Long assignor to said Hill. Filed Mar. 14, 1885. (No model.)



Claim.—1. The combination of the hand-lever *c*, the oppositely-moving bellows *e e*, the receiving bellows-chamber *h*, flexible tube *j*, perforated conical plate *k*, and hinged covering-plate *l*, all arranged and operating substantially as described.

2. The milk-aerating rose or nozzle consisting of the tube *o*, perforated conical plate *k*, and covering-plate *l*, hinged to the plate *k*, substantially as and for the purpose specified.

323,348. BRICK-PRESS. HIRAM LUPHER, Tullahoma, Tenn. Filed Oct 22, 1884. (No model.)

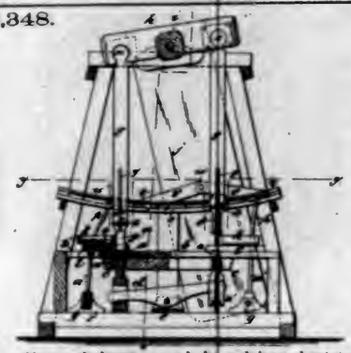
Claim.—1. The combination of the feed-slides having pockets and the alternately-acting plungers and rams, said slides being operated by levers connected by arms to rockers and acted upon by arms connected to the pendulum or working lever, substantially as and for the purpose described.

2. The combination of the feed-slides having pockets, the boxes having passages, and the alternately-acting plungers and rams, said slides being operated by levers connected by arms to rockers and acted upon by arms connected to the pendulum-lever, substantially as and for the purpose described.

3. The combination of the rods *v*, pivoted to the pendulum-lever, push-studs *t*, attached to said rods, guide *u*, for the push-studs, feed-levers *p*, guide *s*, for the feed-levers, and feeders *l*, with the duplex molds *a*, rams *g*, and ejectors *c*, substantially as described.

4. The combination of the pendulum-lever *j*, rock-beam *h*, duplex

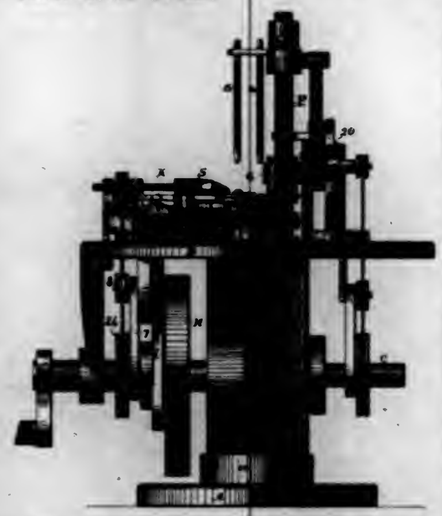
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rams *g*, molds *a*, and plungers *c*, and the rock-lever *d*, substantially as described.

5. The combination of the pendulum-lever *j*, rock-beam *h*, duplex rams *g*, molds *a*, plungers *z*, connecting-rods *v*, push-studs *t*, feed-levers *p*, feed-slides *l*, and feed-boxes *k*, said levers *p* and push-studs having guides *s* and *u*, substantially as described.

323,349. PILL-MAKING MACHINE. JOHN LUBBY, Philadelphia, Pa. Filed Nov. 20, 1884. (No model.)



Claim.—1. A pill-making machine comprising a series of molds brought successively beneath a compressing plunger or die, means for feeding the material to said molds and removing the completed pills therefrom, and a cleaner moving into contact with the operating-surface of the plunger or die after each operation.

2. A pill-making machine comprising a series of molds moving successively beneath a compressing plunger or die, means for feeding the material to said molds and removing the completed pill therefrom, and a revolving cleaner brought into contact with the operative surface of said die after each operation.

3. As a means for cleaning the reciprocating plunger of a pill-making machine of the kind described, a continuously-revolving cleaner carried by the frame which supports the plunger, and moving into contact with such plunger after each operation compressing the material.

4. A cleaner adapted to remove adhesive material from the contact end of the plunger of a pill-making machine of the kind described, the said cleaner receiving rotary motion from the main driving-shaft of the machine and moving into contact with the said plunger after each operation.

5. As a means of removing the powder from the plunger in a pill-making machine of the kind described, a cleaner mounted upon a shaft having its bearings in a hanger depending from the frame carrying the said plunger, the said hanger having a projection running in a guide in an upright attached, the form of which guide is such as to carry the cleaner into contact with the end of the plunger.

6. In a pill-making machine, a carrier-disk having a series of molds therein, and a series of plungers fitting in said molds and having their lower ends bearing upon a cam, whereby the position of the plunger is determined and the size of the mold regulated.

7. In a pill-making machine, a carrier-disk having a series of molds, a series of plungers having laterally-projecting pins fitting into the said molds, a disk of equal diameter to that of the carrier-disk situated beneath the said carrier-disk, provided with openings for the reception of the plungers and slots for the reception of the projecting pins, and a stationary cam situated beneath the said plungers, whereby the positions of the plungers are controlled.

8. In a pill-making machine, a disk or plate carrier carrying a series of molds, a plunger adapted to enter the molds successively, a series of plungers forming the bottom of the molds, means for raising the plungers in the molds, and a cleaner adapted to act upon the upper ends of the molds when they are in an elevated position.

9. In a pill-making machine, the carrier-disk carrying a series of molds, the bottoms of which are formed by a series of vertically-movable plungers, a cam situated beneath said plungers, and a rotary cleaner situated above the carrier-disk, and coming into contact with the ends of the plungers when they are raised by the cam.

10. In combination with the plungers F, the continuously-rotating shaft 9, carrying a cleaner at its end, which cleaner is in line with the ends of the plungers when they are raised from the molds.

11. In a pill-making machine, the carrier-disk having the series of plungers regulated by the cam, and the shaft 9, mounted in vertically-moving bearings, whereby it is adapted to be removed from the carrier-disk during the turning thereof.

12. In a pill-making machine, a disk carrying a series of molds, and having an intermittently-rotary motion to bring the molds beneath a compressing-plunger, and a plunger carried upon a reciprocating frame, the said frame being also provided with a depending plunger which enters a mold from which the pill has been removed as the frame descends and removes any powder that may adhere to the walls of said mold.

13. In a pill-making machine, a disk carrying a series of molds, and having an intermittently-rotary motion to bring the molds beneath a compressing-plunger, and a plunger carrying a lubricant and entering the mold from which the pill has been removed, for the purpose of facilitating the removal of the pill to be formed in the said mold.

14. In a pill-making machine, an intermittently-rotating carrier-disk carrying a series of molds, a reciprocating plunger adapted to enter the molds successively, and two depending plungers adapted to enter the molds after the pills are removed, one of said plungers carrying a cleaner and the other lubricating material.

15. In a pill-making machine, a carrier-disk having notches in its periphery for the reception of a pawl by which it is given an intermittently-rotary motion, a reciprocating frame carrying a plunger and adapted to enter the molds successively, and a projection from said frame adapted to pass through the notches in the plate when the frame descends, if the several parts of the machine operate properly, and bearing upon the carrier-disk when any of the parts fail, for the purpose set forth.

16. In a pill-making machine, a carrier-disk containing a series of molds the bottoms of which are formed by plungers which bear upon a cam situated beneath the said disk, and by which the plungers are raised to expel the completed pills, and a scraper extending partially across the disk for the purpose of removing the completed pill.

17. In combination with the carrier-disk having the vertically-moving plungers, and the continuously-rotating shaft 9, carried in movable bearing, reciprocating bar K, carrying a projection adapted to come into contact with the said movable bearing and carry the cleaner from the surface of the disk during the turning thereof.

18. As a means for cleaning the molds and dies in a pill-making machine of the kind described, a continuously-rotating cleaner brought periodically into contact with the plunger by which the material is compressed, a similar cleaner brought into contact with the upper ends of the plungers forming the bottoms of the molds, and plungers depending from the frame carrying the compressing-plunger adapted to enter the molds in which the pills are formed.

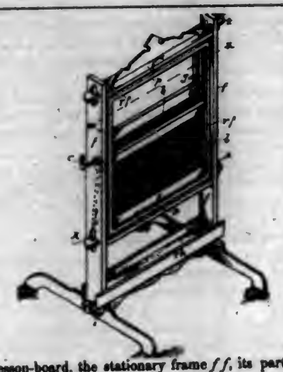
19. In a pill-making machine, a carrier-disk carrying a series of molds the bottoms of which are formed by vertically-movable plungers, a cam situated beneath and in contact with the lower ends of the plungers, and set-screw passing through the said cam at the point at which the mold receives its charge of powder, whereby the size of the mold, and consequently the quantity of powder placed in the mold, is regulated.

323,350. BLACKBOARD. WILLIAM E. MCKENZIE, Zionsville, Ind. Filed Jan. 16, 1885. (No model.)

Claim.—1. A lesson-board wherein a revolving frame containing two or more boards adapted to slide in grooves formed in the sides of such revolving frame is adapted to revolve on pivots having bearings in an outside stationary frame, substantially as described.

2. In a lesson-board, the stationary frame *f f*, the revolving frame *r f*, having pivots *p*, adapted to revolve in socket-plates attached to the stationary frame, the boards *b*, adapted to slide in grooves *g* on the inside of the revolving frame, and the catch *c*, for locking such revolving frame in place, all combined substantially as described.

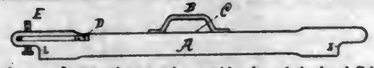
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3. In a lesson-board, the stationary frame *f f*, its parts secured by keys *k*, the frame *r f*, adapted to revolve in the frame *f f* on pivots *p*, the boards *b*, sliding in grooves *g*, formed on the inside of the revolving frame *r f*, and the catch *c*, all combined substantially as described.

4. In a lesson-board, the stationary frame *f f*, provided with chalk-box *c h*, catch *c*, socket-plates *s p*, the frame *r f*, revolving in such stationary frame on pivots *p*, and the boards *b*, sliding in grooves *g*, formed on the inside of the revolving frame *r f*, all combined substantially as described.

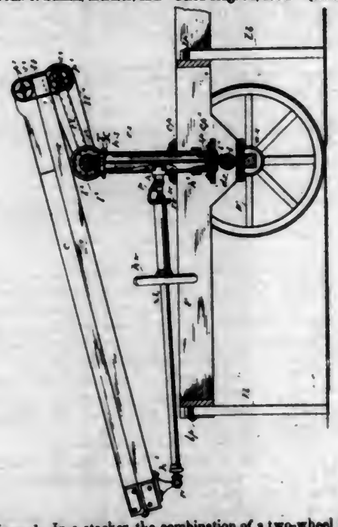
323,351. RAILWAY-TRACK GAGE AND LEVEL. SAMUEL MCMANUS, Marshalltown, Iowa. Filed Dec. 30, 1884. (No model.)



Claim.—1. In a track-gage, the combination of the level C in the packing J, the standard E, the tooth I, the spring D, the thumb-piece *c*, and the handle B, substantially as and for the purposes shown and described.

2. The combination of the bar A, the level C in the packing J, the standard E, the tooth I, the spring D, the thumb-piece *c*, and the handle B, as shown and described.

323,352. STRAW-STACKER. JOHN H. MELTZER, DAVID MELTZER and JOHN J. BAKER, Meltzer, Ind. Filed Aug. 14, 1884. (No model.)



Claim.—1. In a stacker, the combination of a two-wheel truck and means whereby the frame-work is adapted to be sustained independent of the wheels, comprising solid leveling-braces at each end, their lower ends resting upon the ground, the braces passing obliquely upward and under the sills, and brace-pins driven into the cross-pieces of the frame for supporting the upper ends of the braces and allowing their ready adjustment to any suitable length, substantially as shown and described.

2. The adjustable leveling-braces *lb*, each consisting of a straight solid piece of wood, the frame F, the brace-pins *bp*, driven into the cross-pieces of said frame, wheels *w*, axle *ax*, carrier *c*, extension-brace *xb*, standard *hs*, channel-irons *ci*, and the connection with the carrier-frame, all combined substantially as described.

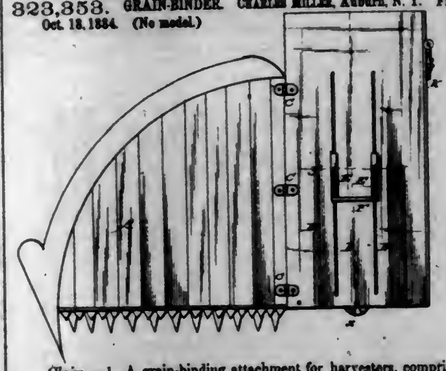
3. The combination, with a carrier-frame and its support, of the extension-brace *xb*, composed of tube t^2, having hand-wheel *hw*, ratchet-wheel *rw*, tube *t*, having pins p' p^2 at its lower end, tube *t'*, hinged at *v* to hanger *h'* and provided with nut *n* at its lower end, a screw, *s*, adapted to work in said nut *n*, hinge *h*, set-screws 1 2, and pawl *p*, mounted on the bolt of hinge *h*, substantially as described.

4. The combination, with frame F, of the hollow upright standard *hs*, hub h^2, socket-plate *sp*, seated on cross-piece *cp'* of the frame F, the horizontal pipe *hs'*, having flanges *f* at either end, union T, vertical shaft *vs*, bevel-gears *b* b' b^2 b^3, shaft *s'*, channel-irons *ci*, stops *st*, driving-shaft *ds*, and pulley *dp*, all operating substantially as described.

5. The combination of the upright hollow standard *hs*, the inclosed vertical shaft *vs*, the carrier-frame *c*, standard *hs*, means for supporting the receiving end of said carrier, and the extensible brace *xb*, comprising a series of pipes, and the screw-rod and nut for throwing the inner one out or drawing it in, the whole brace connected with the standard *hs* and adapted to swing round with such standard, all arranged and operating substantially as described.

6. The combination of shafts *ss'*, hollow standard *hs*, union T, cross-pipe *hs'*, and flanged hubs bored to form journal-bearings for shaft *s'*, all substantially as described.

323,353. GRAIN-BINDER. CHARLES MILLER, Auburn, N. Y. Filed Oct. 13, 1884. (No model.)



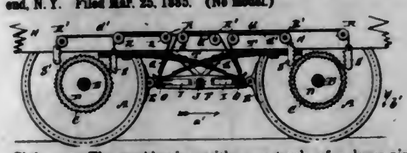
Claim.—1. A grain-binding attachment for harvesters, comprising a table or platform having longitudinal slots, suitably-connected carriers or rakes sliding in the same, and an operating-chain connected by means of a suitable spring to the said carriers, substantially as and for the purpose set forth.

2. In a grain-binding attachment for harvesters, the combination, with a longitudinally-slotted table or platform, of a reciprocating carrier, a chain running upon sprocket-wheels journaled to the under side of the said table or platform, and a spring connecting the said chain with the said carrier, substantially as and for the purpose set forth.

3. The herein-described attachment for harvesters, comprising a table or platform having longitudinal slots and means for attaching it to the main platform of the machine, a reciprocating carrier, a chain running upon horizontal sprocket-wheels under the said platform, and a spring connecting the said chain with the said carrier, substantially as and for the purpose set forth.

4. An improved harvester attachment comprising a detachable platform, the outer rear corner of which is supported upon a caster-wheel, a carrier sliding in longitudinal slots in the said platform, an operating-chain, and a spring connecting the carriers with the said chain, substantially as and for the purpose set forth.

323,354. CAR BRAKE AND STARTER. JOHANN H. MULLER, Gravesend, N. Y. Filed Mar. 25, 1885. (No model.)



Claim.—1. The combination, with a car-truck, of a lever pivoted at its center at each side of the car and between the wheels at the said side of the car, slides on the ends of the levers, and brake-shoes pivoted to the said slides, substantially as herein shown and described.

2. In a car brake and starter, the combination, with bars pivoted at their middles between the wheels at each side of the car, of sliding brake-shoes held in the said bars, cross-bars connecting the sliding brake-shoes, springs secured to the car-bottom and resting on the cross-bars, ratchet-wheels on the axles, and ratchet-bars connected by cords or chains passed over pulleys with the cross-bars on which the springs act, substantially as herein shown and described.

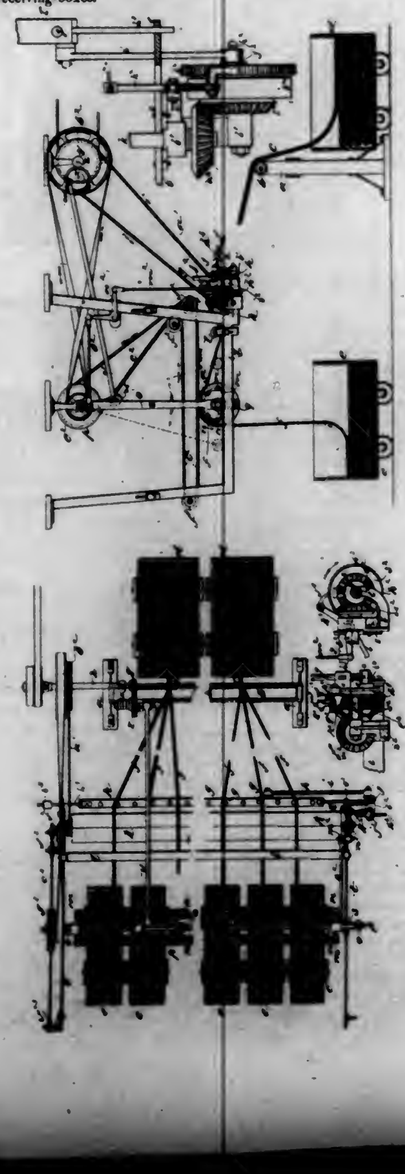
3. In a car brake and starter, the combination, with the swinging bars F, mounted on a shaft, J, and bars O, uniting the bars F, of the sliding brake-shoes E, the toggle-levers K, the sleeves L, devices for moving the sleeves from each other, the springs T, resting on the bars O, the ropes or chains Q Q', connected with the bars O and passed over pulleys R R', the ratchet-bars S S' on the ends of the ropes or chains, and the ratchet-wheels C D on the shafts, substantially as herein shown and described.

4. In a car brake and starter, the combination, with the shaft J, of the bars F, the bars O, uniting them, the sliding brake-shoes E, the toggle-levers K, the sleeves L, the springs N on the shaft J, the springs T, secured on the truck-frame and resting on the bars O, the ropes or chains Q Q', the pulleys R R', the ratchet-bars S S', and the ratchet-wheels C D on the axles, substantially as herein shown and described.

323,355. MACHINE FOR SEPARATING WARP-YARN CHAINS.

ANDREW HUMSALL, Manchester, N. H. Filed Oct. 15, 1883. (No model.) Patented in England Nov. 7, 1877, No. 4,149.

Brief.—The comb or heck is slowly reciprocated to guide the separated chains to the delivery-roller, and is given a quick back-and-forth jigging motion through a crank-arm and eccentric stud operated by gearing from the shaft of the shaking-roller, which is triangular in cross-section, and operated by a belt from the main driving-shaft. The delivering-roller, having also an angular circumference, is journaled in boxes in the lower end of a vibrating hanger, by which it is made to reciprocate back and forth on the supporting-rail, as it revolves, to lay the chains in the receiving-boxes.



Claim.—1. The combination, with the supporting-frame and the shaking-roller *k*, of a comb or heck and means for reciprocating the same and rotating the shaking-roller, substantially as herein shown and described.

2. The combination, with the supporting-frame, the shaking-roller *k*, the delivery-roller *m*, and means for operating the said rollers, of a reciprocating comb or heck and means for reciprocating the same, substantially as herein shown and described.

3. The combination, with the supporting-frame, the shaking-roller *k*, the delivery-roller *m*, the reciprocating comb or heck *g h*, and means for operating the said rollers and comb, of the carrying-roller *b*, substantially as herein shown and described.

4. The combination, with the supporting-frame, the delivery-roller *m*, and means for revolving and vibrating the delivery-roller, of a comb or heck and intermediate mechanism for operating the comb by the vibratory movement of the delivery-rollers, substantially as herein shown and described.

5. The combination, with the supporting-frame, of the pivoted hangers *o*, the delivery-roller *m*, journaled in the lower ends of said hangers, the reciprocating comb or heck *g h*, and means for revolving said roller, vibrating the hangers, and reciprocating the comb or heck, substantially as herein shown and described.

6. The combination, with the supporting-frame, the hangers *o*, the delivery-roller *m*, journaled in the lower ends of said hangers, and means for vibrating said hangers, of the comb *h g* and intermediate mechanism for reciprocating the comb from the hangers, substantially as herein shown and described.

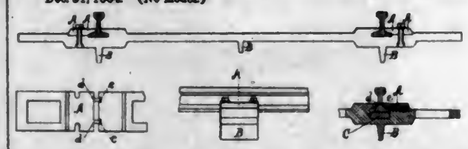
7. The combination, with the pivoted hangers *o*, the delivery-roller *m*, the pulley g^3 on said roller, and means for vibrating the said hangers, of the pulley e^3, the guide-pulleys f^3 f^3, and the belt c^3, substantially as herein shown and described.

8. The combination, with the delivery-roller *m*, the hangers *o*, and means for rotating the said roller, of the comb or heck *g h*, connecting-rod *i*, ratchet-wheel h^3, provided with a crank, the pawl j^3, the pivoted pawl-lever k^3, the rod m^3, the bell-crank n^3, and the rod o^3, substantially as herein shown and described.

9. The combination, with the comb or heck *g h*, provided with guide-bars working in ways in the frame, of the ratchet-wheel h^3, provided with a crank-pin, the rod *i*, connecting the comb to the crank-pin, and means for operating said ratchet-wheel, substantially as herein shown and described.

10. The combination, with the comb or heck *g h*, of the ratchet-wheel h^3, the crank-pin p^3, the connecting-rod *i*, the shaft p^3, the pinion q^3, the internally-toothed wheel r^3, and means for operating the ratchet-wheel and the internally-toothed wheel r^3, substantially as herein shown and described.

323,356. RAILROAD-TIE. GORDON MURRAY, Negaunee, Mich. Filed Dec. 31, 1884. (No model.)



Claim.—1. In a railroad-tie, a seat for the rail, consisting of a solid part upon one side adapted to support the rail against lateral strain in one direction and upward strain, and a movable plate adapted to support the opposite side of the said rail, the said movable plate being provided with projections *d' d*, adapted to enter openings in the rail end and to hold the same securely in place, substantially as described.

2. A railroad-tie having seats for the rails upon opposite ends thereof, combined with central and end projections on the under surface thereof to prevent the said tie from moving from its position, all substantially as described.

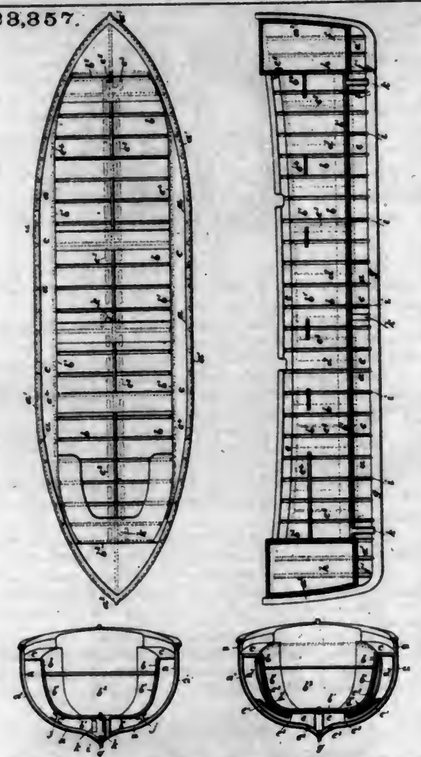
323,357. LIFE OR OTHER BOAT. FRANCIS L. NORTON, New York, N. Y., assignor of one-half to Margaret Sidney Norton, same place. Filed Nov. 19, 1884. (No model.)

Claim.—1. In combination, a series of separate and independent water-ballast chambers located along the keel, and each provided with an aperture for the ingress of water, as described, a pipe communicating with each of said chambers and extending above the water-line, and a valve for controlling the passage through said pipe, substantially in the manner set forth.

2. In a boat, substantially as herein described, the combination of a series of separate and independent water-ballast chambers located along the keel, as described, each being provided with an aperture for the induction of water, and a pipe communicating therewith and extending above the water-line for the egress of air, as and for the purpose set forth.

3. In a boat, substantially as herein described, the combination of

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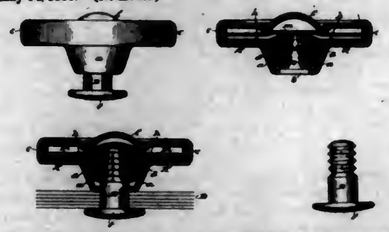
the water-ballast chambers *e*, located along the keel and having the arms *e'*, as described, the induction-ports e^2, and the pipes e^3, for the egress of the air displaced by the water, communicating with said chambers below the level of the arms *e'* and extending above the water-line, as described.

4. In a boat, the double shell *a a' b b'* and cover *c*, so arranged as to form the chambers *d*, as described, in combination with the separate and independent water-ballast chambers *e*, secured water-tight in said chambers *d*, and having apertures for the ingress of water and egress of air, as set forth.

5. The combination, with the outer shell, *a a'*, and the inner shell, *b b'*, having the end walls, a^2 and b^2, respectively, of the hermetically-sealed chamber A, placed in the space between said end walls, so as to be removable therefrom, as and for the purpose set forth.

6. The combination, with a series of independent water-ballast chambers, each having an aperture for the ingress of water and a pipe communicating therewith and extending above the water-line, of a common pipe with which said independent pipes communicate, and a valve located in said common pipe, as and for the purpose set forth.

323,358. BUTTON. JOSEPH P. NOYES and THOMAS J. WINANS, Binghamton, N. Y., assignors to Joseph P. Noyes & Co., same place. Filed May 14, 1885. (No model.)



Claim.—1. A button head or body provided with loose retaining-jaws, which are arranged to separate as the shank is introduced, but to wedge against the shank to prevent its withdrawal, substantially as described.

2. A button head or body provided with the depression *a*, in which are located the loose retaining-jaws *d*, which are arranged to separate as the shank is introduced, but to wedge against the shank to prevent its withdrawal, substantially as described.

3. A button head or body provided with the depression *a*, in which are located the loose retaining-jaws *d*, and the disk *m*, for holding said jaws in position, substantially as described.

4. A button head or body provided with the depression *a*, in which are located the retaining-jaws *d*, having the projections *h*, substantially as described.

5. The combination, with the head or body having the depression *a* and loose retaining-jaws *d*, of the shank B, arranged to be engaged by the jaws, substantially as described.

323,359. BUTTON. JOSEPH P. NOYES, Binghamton, N. Y., assignor to Joseph P. Noyes & Co., same place. Filed May 14, 1885. (No model.)



Claim.—1. A button head or body provided with the perforated conical-shaped holding device *d*, made of yielding or elastic material, substantially as described.

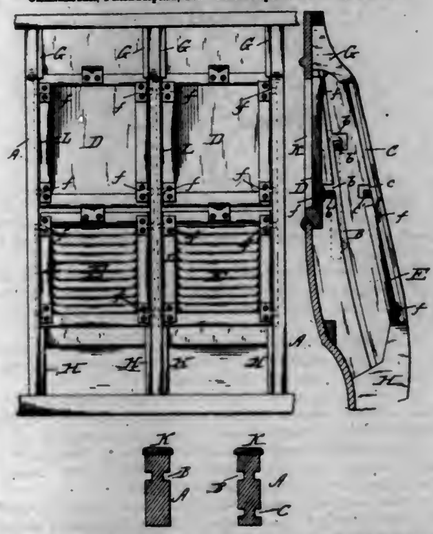
2. A button head or body provided with the perforated conical-shaped holding device *d*, made of yielding or elastic material, and the disk *m*, substantially as described.

3. A button head or body provided with the depression *a*, in which is seated the perforated conical-shaped holding device *d*, made of yielding or elastic material, substantially as described.

4. A button head or body provided with the depression *a*, in which is seated the perforated and slit conical-shaped holding device *d*, made of yielding or elastic material, substantially as described.

5. The combination, with the head or body having the depression *a* and the conical-shaped holding device *d*, made of yielding or elastic material, of the toothed shank B, substantially as described.

323,360. WINDOW FOR STREET-RAILWAY CARS. ROBERT L. OWSLEY, Philadelphia, Pa. Filed Sept. 4, 1884. (No model.)



Claim.—1. In a street-railway car, the posts A, having one or more side grooves, B, extending from near the top to the bottom of said posts, and provided with L-shaped branches *b* and end cheek-pieces, G and H, in combination with sash-frames adapted to move in said grooves and branches, substantially as shown and described.

2. In street-railway cars, the posts A, having one or more side grooves, B, with branches *b*, having metal facings *b'*, substantially as and for the purpose set forth.

3. The street-car posts A, having narrow regular grooves B, with branches *b* and cheek-pieces at the ends of said grooves, substantially as shown and described.

323,361. COMMUTATOR FOR DYNAMO-ELECTRIC MACHINES. BENJAMIN F. ORTON, East Saginaw, Mich. Filed May 10, 1884. (No model.)



Claim.—1. In a commutator, a supporting hub or block of insulating material for the commutator-segments, mounted on a shaft and having a lateral extension or flange parallel to said shaft, as and for the purpose described.

2. The combination, with the flanged insulating cylindrical support, of commutator plates or segments secured to the outer surface thereof, and wires or conductors, as G, carried to the inside of the flange and electrically united by suitable devices with the segments.

3. The combination, with the insulating hub or support, of the lateral flange or extension, bolts or pins extending through the commutator-segment and the flange to the inner side of the latter, and a wire or conductor attached to the inner end of the pin or bolt.

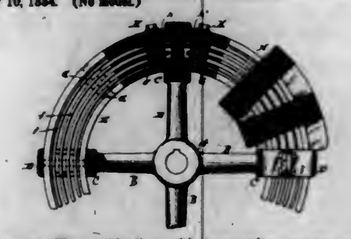
4. The combination, with the insulating support for the commutator-segments, of a lateral extension or flange, and connections from the segments extending through said flange to the under side thereof for attachment of the wire or conductor to be electrically connected with the commutator.

5. A commutator-support formed in a single piece and having recesses or depressions at points beneath the openings between its conducting segments or plates.

6. The cylindrical hub B, of insulating material, having the recesses or depressions, as *e*, for the purpose described.

7. A commutator-support of insulating material having depressions or recesses formed in the surface upon which the commutator plates or segments rest, and at portions thereof coinciding with the slots or openings between the segments.

323,362. ARMATURE FOR DYNAMO-ELECTRIC MACHINES AND ELECTRIC MOTORS. BENJAMIN F. ORTON, East Saginaw, Mich. Filed May 10, 1884. (No model.)



Claim.—1. The combination, with the annular armature, of a coil spool or bobbin adapted to be slipped onto and off of an armature-core segment, and made of separated ribs or bars connected at their ends in the spool-heads.

2. In a dynamo-electric machine or motor, a spool or bobbin for the armature-coil, consisting of separated ribs or bars of iron parallel to the axis of the coil and joined or connected at their ends in spool-heads, also of iron.

3. In a dynamo-electric machine or motor having an annular armature, a spool for an armature-coil having a circumferentially-extending projection formed in one piece with said spool.

4. The combination, with the armature made up from thin superposed iron plates, of the iron retaining-band and the radial bolts passing through the plates and band, as and for the purpose described.

5. The combination, with a sectional or segmental armature, of a retaining-band and a cap-piece or clamp applied to the band and segmental armature at a joint of the armature and band.

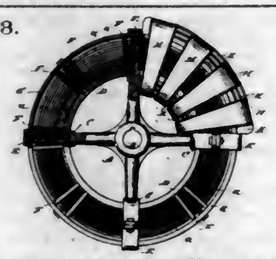
6. The combination, with an annular armature built up from superposed plates of iron, of a retaining-band formed with an offset at one end, where the joint is formed, so as to present a smooth exterior surface.

7. The combination, in an annular armature built up from segments or sections, of a retaining-band having a lapped joint formed, as described, so as to present a smooth exterior surface.

8. The combination, with a segmental or sectional armature, of a retaining-band having a lapped joint formed over the point of junction of the armature-segments, so as to present a double thickness of metal for assisting in preserving the magnetic continuity of the core.

323,363. ARMATURE FOR DYNAMO-ELECTRIC MACHINES. BENJAMIN F. ORTON, East Saginaw, Mich. Filed July 11, 1884. (No model.)

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Claim.—1. In a dynamo-electric machine or motor, an armature whose core is made up of parallel wires supported out of contact with one another and having intermediate free-air spaces.

2. In a dynamo-electric machine or motor, an armature made up of wires arranged in superposed planes, the wires in one plane being separated from those in an adjoining plane by free transverse air-spaces.

3. In a dynamo-electric machine or motor, an armature made up of wires or portions of wire supported out of contact and having intervening air-spaces between contiguous wires.

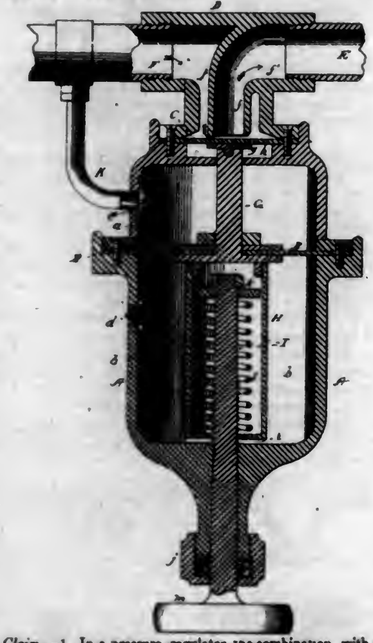
4. In a dynamo-electric machine or motor, the combination, with a series of wires or portions of wire forming in whole or in part the armature core, of supporting-bridges in which said wires rest separately.

5. The combination, with the wires forming the core for magnet-coils, of one or more supporting-bridges, as and for the purpose described.

6. The combination, with the wires forming a core for magnet-coils, of a perforated bridge, as and for the purpose described.

7. The combination, with the sectional tray-like holders abutting against one another, of a mass of iron wires supported on said tray, with intervening air-spaces between the wires, as and for the purpose described.

323,364. PRESSURE-REGULATOR. CASPER PFAUDLER, Rochester, N.Y., assignor to the Pfaudler Vacuum Fermentation Company, same place. Filed Apr. 17, 1885. (No model.)

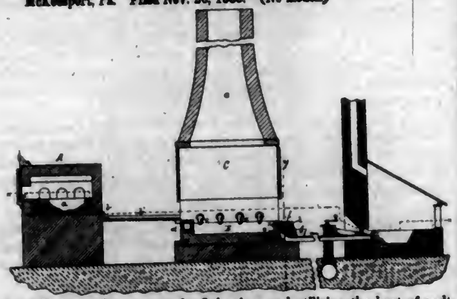


Claim.—1. In a pressure-regulator, the combination, with a case or cylinder having an induction and eduction pipe and a valve-seat connected with the pipes, of two flexible diaphragms connected by a positive connection, the upper one resting under the valve-seat and closing the same when moved upward, a barrel attached to or connected with the lower diaphragm, a spring resting inside of the barrel and bearing down on the same, and a screw for regulating the tension of the spring, as set forth.

2. In a pressure-regulator, the combination of a case or cylinder provided with induction and eduction pipes, a valve-seat in the pipes, two flexible diaphragms connected by a positive connection and dividing the cylinder into two chambers, openings or ports being made into the two chambers, and branch pipe on one side connecting one of the openings with the main pipes above, the other chamber communicating with the open air, substantially as and for the purpose specified.

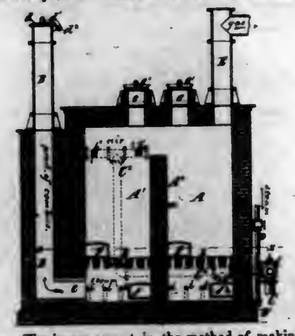
3. The combination of the cylinder or case A, the induction and eduction pipes E F, the valve-seat *f*, the diaphragms B C, positive connection G, branch pipe K, the barrel H, spring *l*, and regulating-screw I, all arranged to operate in the manner and for the purpose specified.

323,365. PROCESS OF MAKING WROUGHT-IRON. WILLIAM PRICE, McKeesport, Pa. Filed Nov. 26, 1883. (No model.)



Claim.—The process of refining iron and utilizing the heat of molten slag, which consists in subjecting a charge of molten pig metal, coke, and cinder to the action of an air-blast, tapping off the molten refined iron and the cinder, and subsequently introducing the molten cinder and a fresh charge of crude metal, and continuing the refining process, as described.

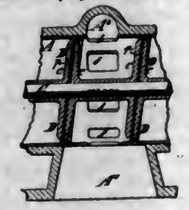
323,366. METHOD OF PRODUCING GAS. ANTHON W. PUTNAM-CRAMER, Brooklyn, N.Y. Filed Oct. 30, 1884. (No model.)



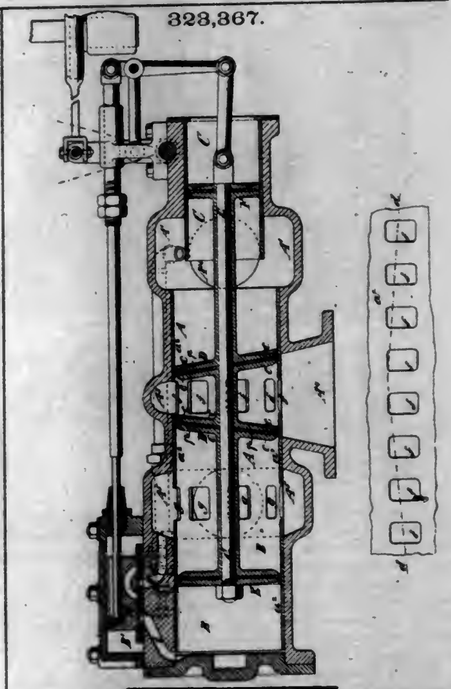
Claim.—The improvement in the method of making gas by the decomposition of water in presence of carbon, consisting in subjecting a body of carbon to the influence of currents of air to produce combustion therein, in mingling air with the carbonic oxide evolved from the said body of carbon, in heating another body of carbon by the burning of the mixture of air and carbonic oxide, and in passing steam directly to and through both bodies of carbon simultaneously, whereby both bodies of carbon are made effective in decomposing steam, substantially as herein described.

323,367. VALVE FOR HYDRAULIC ELEVATORS. GEORGE H. REYNOLDS, New York, N. Y., assignor of one-half to Crane Bros. Manufacturing Company, Chicago, Ill. Filed June 26, 1885. (No model.)

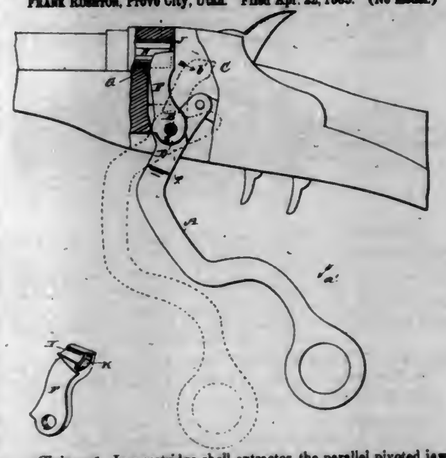
Claim.—In a hydraulic valve, the combination of a cylinder having a circumferential series of slots or openings, and a piston-valve movable in said cylinder to open or close said slots or openings, and having its packings in planes which are oblique to the axis of the valve and cylinder, substantially as and for the purpose herein described.



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323,368. CARTRIDGE-SHELL EXTRACTOR FOR FIRE-ARMS. FRANK RUSHTON, Provo City, Utah. Filed Apr. 22, 1885. (No model.)



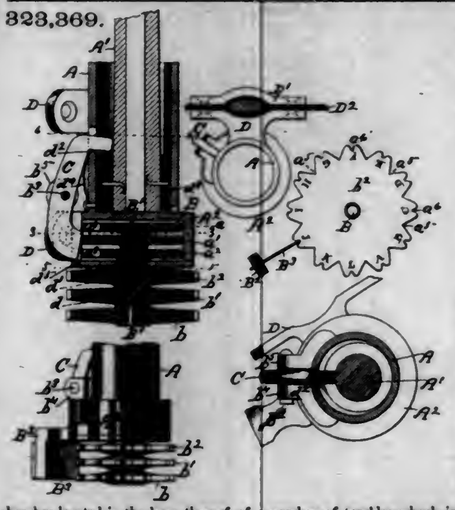
Claim.—1. In a cartridge-shell extractor, the parallel pivoted jaws, with their lower rounded ends formed at the forward sides with shoulders, and with their upper ends shouldered to act upon the bead or flange of the cartridge, in combination with the lever, with its upper end provided upon the sides with curved shoulders, the forward ends of which shoulders act upon the shoulders of the lower ends of the jaws, substantially as and for the purpose set forth.

2. In a cartridge-shell extractor, the parallel pivoted jaws, with their lower rounded ends formed at the forward sides with shoulders, and with their upper ends recessed to hug or embrace the sides of the cartridge-shell, and shouldered to act upon the flange or bead of the cartridge-shell, in combination with the lever, with its upper end provided upon the sides with curved shoulders, the forward ends of which shoulders act upon the shoulders of the lower ends of the jaws, substantially as and for the purpose set forth.

323,369. LOCKING WHIP-SOCKET. MARION W. RYLAND, Warsaw, Ind. Filed June 1, 1885. (No model.)

Claim.—1. The combination, with a whip-socket having a lock-

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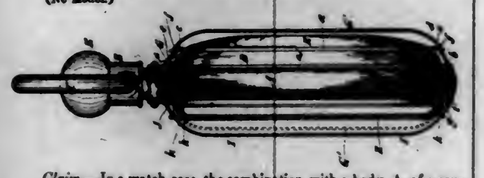


chamber located in the base thereof, of a number of tumbler-wheels in said chamber, a corresponding series of letter-disks placed below said chamber, and the means described for mounting and connecting said wheels and disks, substantially as set forth.

2. The combination, with a whip-socket provided with a locking mechanism secured to the base, as described, of an angular locking-bolt having a pivotal movement, the upper end of said bolt being adapted to enter said socket and lock the whip in place, and the means for throwing said bolt into an unlocked position, substantially as set forth.

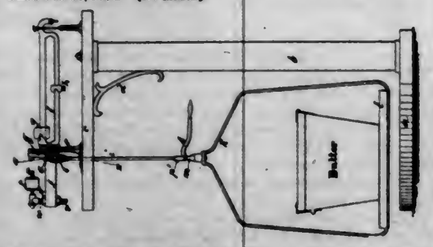
3. The combination, with a whip-socket, of the angle-bracket B^3, the leaf-spring B^3, and the series of letter-disks provided with notches d^3, substantially as set forth.

323,370. WATCH-CASE. CHARLES H. SHAW, Brooklyn, assignor to the Fahys Watch Case Company, New York, N. Y. Filed May 24, 1884. (No model.)



Claim.—In a watch-case, the combination, with a body, A, of a crystal or glass holder, D, a ring, G, forming a portion of the front cover, having the inwardly-turned flange *d* fitting snugly around the glass-holder D, and provided with the outwardly-flaring shoulder *e*, the detachable section G', having the inwardly-turned flange *f*, the inner back cover, H, having the rabbet *k*, and the outer back cover, I, substantially as specified.

323,371. WEIGHING-SCALE. LUKE G. SPENCER and PERLEY F. HASEN, St. Johnsbury, Vt., assignors to E. & T. Fairbanks & Co., same place. Filed Oct. 21, 1884. (No model.)



Claim.—1. The combination, in a scale, with a supporting framework, of a scale-beam and its necessary adjuncts fulcrumed on the frame, a weighing pan or platform placed below the beam and suspended therefrom, and a raising and lowering device in the connection between pan and beam, for raising the pan off the bearings and throwing its stress onto the beam, and vice versa, substantially as herein set forth.

2. The combination, with the base or foot *a*, column *b*, and overhanging arm *c*, of the beam *f* and its necessary adjuncts supported on said arm, the suspensory rod *i*, hung from the short arm of the beam, and pan or platform *l*, suspended from said rod, with a raising and lowering device in the connection between rod and pan, substantially as and for the purpose set forth.

3. In a scale having an overhead beam and an underlying pan suspended therefrom, a raising and lowering device consisting of a cranked or elbow lever, A, jointed into the connection between beam and pan, substantially as herein set forth.

4. In a scale, the combination, with the supporting-frame and the beam *f*, with the suspending-rod *i*, bail *k*, and pan *l*, of the swiveled link *i* and the elbow-lever A, jointed between the link and rod, substantially as and for the purpose set forth.

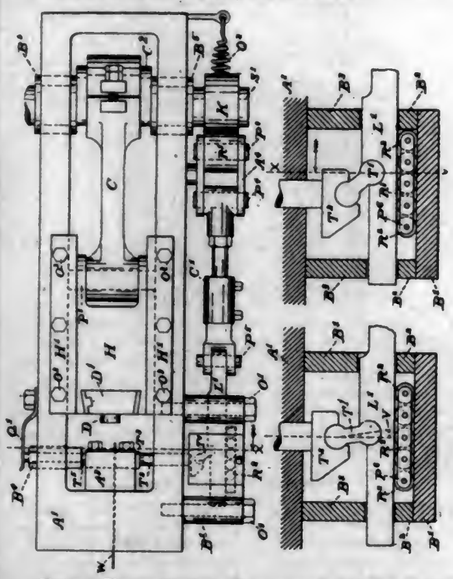
5. In a scale, substantially such as set forth, the combination, with the pan *l*, its bail *k*, and with the beam *f* and its rod *i*, of the elbow-lever A, jointed between the rod and bail, and having its crank-arm provided with the stop *p'*, arranged and operating substantially as and for the purpose set forth.

6. The combination, with the beam, its balance-ball *t*, and the horizontal stem *u*, of the bolt *w*, passing through a hole in said beam and supporting the stem *u*, and arranged vertically on the end of said beam, and the nuts *v* and *v'* on said bolt, one above and the other below the beam, substantially as and for the purposes specified.

323,372. CARBON FOR INCANDESCENT LAMPS. WILLIAM STANLEY, Jr., Englewood, and EDWARD P. THOMPSON, Elizabeth, N. J.; said Thompson assignor to said Stanley. Filed May 12, 1883. Renewed Apr. 17, 1885. (No specimens.)

Claim.—The hereinbefore-described process of manufacturing carbon conductors for incandescent lamps, which consists in first saturating silk thread, or other animal matter or fiber, with a solution of dilute sulphuric acid and sugar, then heating the saturated material, so as to evaporate the water and leave the acid of the solution in the fiber, and finally carbonizing suitably-formed stripe or filaments thereof, substantially as and for the purposes set forth.

323,373. SCREW-BLANK-HEADING MACHINE. MONROE STANNARD, Hartford, Conn. Filed Oct. 6, 1884. (No model.)

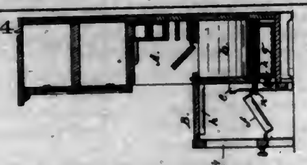


Claim.—The combination, with a screw-blank-heading machine having opening dies and devices, substantially as described, for holding them, of slide L' and suitable devices, substantially as described, for imparting thereto a reciprocating motion, a fixed support, as B', in front of said slide, a series of friction-rollers between said slide and said fixed support, a slide, as T^3, adapted to communicate pressure to said opening dies, and a thrust-link, as T', between said slide L' and the said slide T^3, all constructed and arranged to operate substantially as and for the purpose set forth.

323,374. KITCHEN-CABINET. JOHN M. SWAIM, Bloomingdale, Ind., assignor of three-fourths to M. P. Maddox, same place. Filed Mar. 30, 1885. (No model.)

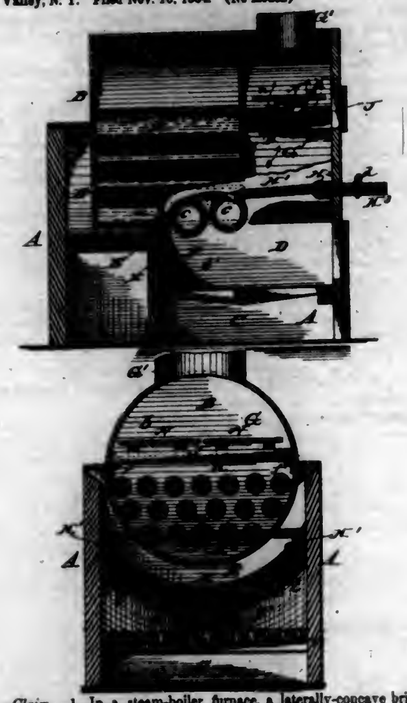
Claim.—In a cabinet or other like piece of furniture, the combination of a downward-swinging door, a frame constructed substantially as described, and hinged to the free edge of the door, and one or more

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braces hinged to the lower rail of said frame and to the cabinet, all substantially as and for the purpose specified.

323,375. STEAM-BOILER FURNACE. JOSEPH P. TUTTLE, Onondaga Valley, N. Y. Filed Nov. 10, 1884. (No model.)



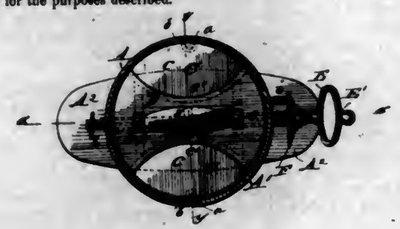
Claim.—1. In a steam-boiler furnace, a laterally-concave bridge-wall, the concave top of which forms a flue with the convex shell of the boiler, and the front surface of which forms an inclined and concave fire-bed at the rear part of the fire-box, substantially as specified.

2. The combination of the laterally-concave steam-injecting pipe, its side pipe-coil connections, its front pipe-connection located in the smoke-box, and a pipe provided with a cock and leading to water-vessel, substantially as described.

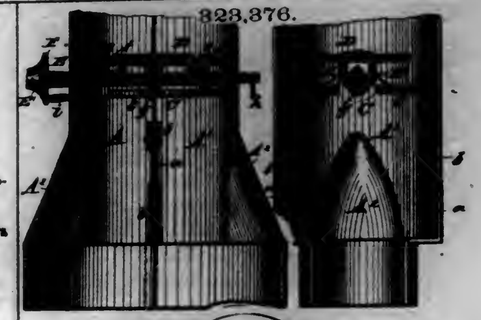
3. The combination, with the smoke-box, of a heat-retainer composed of plates having curved edges and connected by bridges and a removable supporting-frame, substantially as and for the purposes described.

323,376. DAMPER. JOSEPH P. TUTTLE, Onondaga Valley, N. Y. Filed Nov. 10, 1884. (No model.)

Claim.—A damper composed of two ovate bottom plates united by angular bridges having tenons on them, a top scalloped plate perforated to receive said tenons and constructed with an angularly-perforated lug, and a square spindle uniting said top and bottom plates, substantially as and for the purposes described.

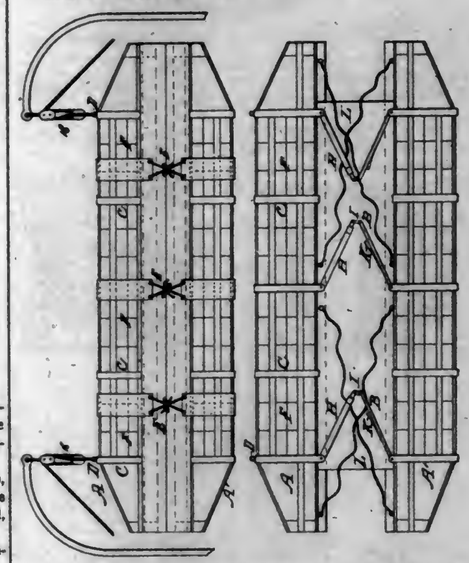


323,376.





323,377. LIFE-RAFT. WILLIAM M. VAN WAGENEN, Newark, N. J., assignor to Marcus L. Ward, same place. Filed Jan. 20, 1883. Renewed Oct. 11, 1884. (No model.)



Claim.—The combination of the floats A A, bars B, connecting said floats and having joints therein, and the sleeves H, sliding upon the connecting-bars, and adapted, when covering the joints and partially extending over each pair of rods, to hold said rods rigidly in their extended position.

323,378. COLD PROCESS OF MANUFACTURING PAPER-PULP AND BLEACHED OR UNBLEACHED TEXTILE FABRIC. HIPPOLYTE VERSTER and AMÉDÉE WILBAUX, Paris, France. Filed Dec. 8, 1884. (No model.) Patented in France May 14, 1884, No. 149,596, and in Belgium Oct. 23, 1884, No. 66,671.

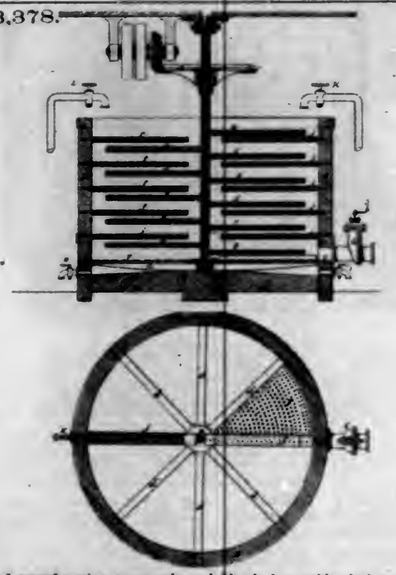
Claim.—1. The cold lixiviation of all the substances that are or may be used for the manufacture of paper or textile fibers by means of the process hereinbefore described and grounded upon the chemical compound specified.

2. The washing, whitening, and rinsing, in one single apparatus arranged substantially as set forth with reference to the accompanying drawings, such operations being carried out successively without the matters in treatment having to be removed from the apparatus.

3. The bleaching operation effected by means of the chemical compound herein described.

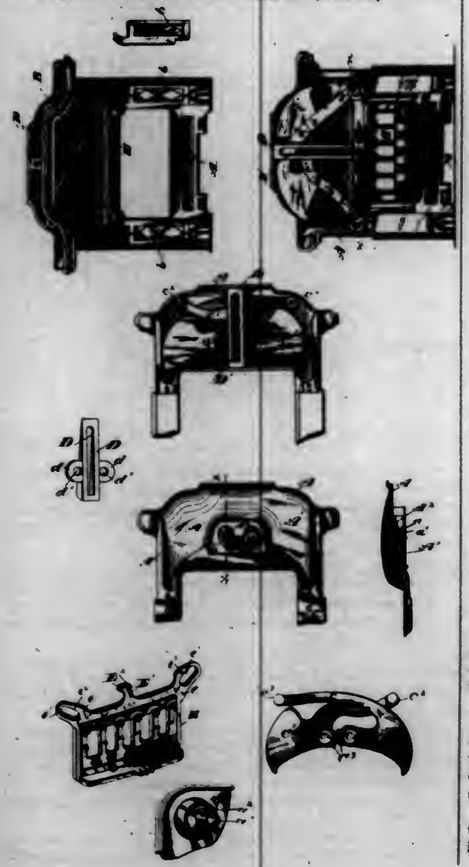
4. The whole combination of the operations mentioned in the preceding claims, so united as to constitute the above-described cold pro-

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cess of manufacturing paper-pulp and bleached or unbleached textile fibers.

323,379. BALANCE-DOOR FOR STOVES AND GRATES. GEORGE WELLHOUSE, Akron, Ohio. Filed Nov. 3, 1884. (No model.)



Claim.—1. The combination, with the plate A, having depressions A', and part A^2, having lugs *a a'*, of the weights pivoted upon said lugs and a door suspended from said weights.

2. The combination, with a supporting-plate and counterbalance-weights pivotally secured to the rear face thereof and provided with arms, the latter having laterally-projecting lugs, of a vertically-movable door having oblong closed slots therein, in which the lugs on the arms of the counterbalance-weights rest.

3. The combination, with a supporting-plate and pivoted counterbalance-weights having intermeshing teeth and projecting arms, the latter provided with laterally-projecting lugs, of a vertically-movable door having oblong slots, in which the lugs on the arms of the counterbalance-weights rest.

4. The combination, with a supporting-plate and the counterbalance-weights pivoted to said plate and provided with arms having laterally-projecting lugs, of a vertically-movable door having inclined ways, in which said lugs rest.

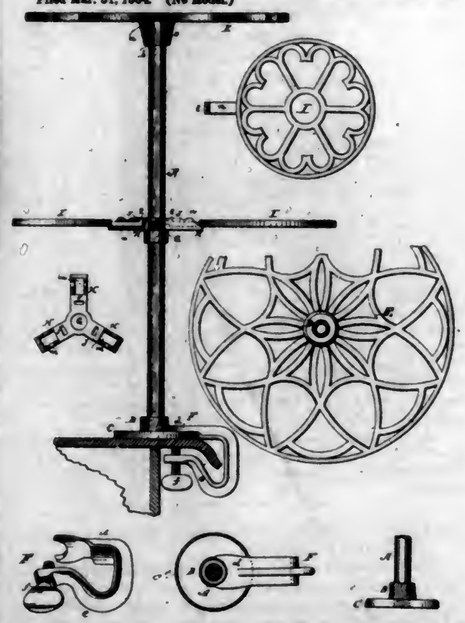
5. The combination, with a supporting-plate and counterbalance-weights pivoted thereto, and provided with arms crossing each other in opposite directions, the said arms having laterally-projecting lugs, of the vertically-movable door having inclined ways, in which said lugs rest.

6. The combination, with a supporting-plate having lugs, the counterbalance-weights pivotally secured on said lugs, a guide secured on said lugs to the rear of the weights, and a vertically-movable door, of a guide-pin secured to the door and moving within the guide.

7. The combination, with a supporting-plate and counterbalance-weights pivoted thereto, of a vertically-movable door connected to said weights, a stationary guide located in front of the door in a vertical line passing through the center of said door, and a guide-pin secured to the door and engaging the guide.

8. The combination, with the supporting-plate having lugs, counterbalance-weights pivoted on said lugs, and the guide-plate having perforated ears, of the door connected to the counterbalance-weights and a guide-pin secured to said door.

323,380. STOVE-BRACKET. JOHN H. WEISENBURK, Mansfield, Ohio. Filed Mar. 31, 1884. (No model.)



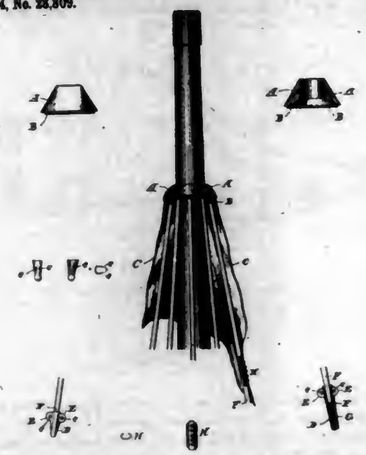
Claim.—1. In a stove-bracket, the vertical post A, secured to the stove at its lower end by a clamp, and having at its upper end the shoulders *a b*, combined with the shelf E, provided at its center with the sleeve D, containing an aperture closely conforming to the upper end of the post A, substantially as set forth.

2. In a stove-bracket, the vertical post A, supporting suitable shelves, and provided with the base C, having a central collar, B, in combination with the detachable clamp F, the end *d* of which conforms to the circumference of the collar B, and the end *e* whereof carries a set-screw, *f*, substantially as set forth.

3. In a stove-bracket, the vertical post A, the body of which is of uniform diameter, in combination with the sleeve G, closely encompassing said post, and provided with outwardly-projecting arms H, having

recesses *m* and cross-bars J, (the cross-bars being at the upper edge adjacent to the inner end of the recesses,) and the shelves I, having lugs *n* and shoulders *t*, the lugs fitting the recesses *m*, and the shoulders passing on the inner side of the bars J, substantially as set forth.

323,381. UMBRELLA, PARASOL, OR SUNSHADE. THOMAS WRENCH, Liverpool, County of Lancaster, England. Filed May 6, 1884. (No model.) Patented in England Sept. 5, 1883, No. 4,271; in France Mar. 5, 1884, No. 160,740; in Belgium Mar. 11, 1884, No. 64,471, and in Germany Mar. 13, 1884, No. 28,809.

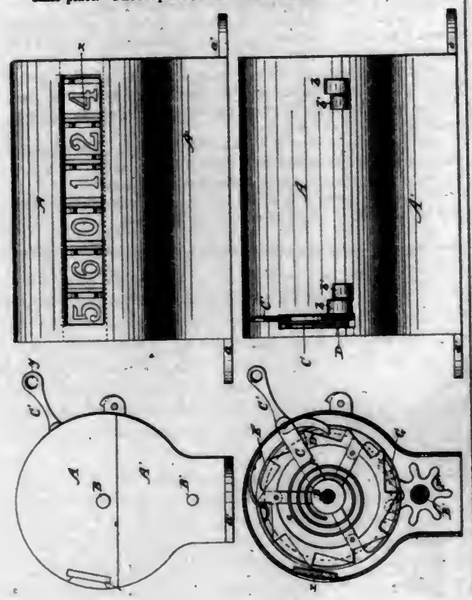


Claim.—1. In combination with the cover of an umbrella and the umbrella-stick, a double cone of india-rubber, substantially as described, adapted to fit around the stick and to receive the top of the cover between its two cones.

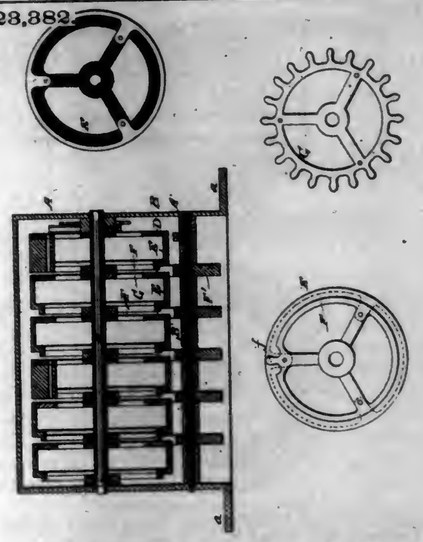
2. The combination of the cap or socket D, fixed to the cover, the rib F, and the spring G, by which means any sudden strain on the cover is taken by the spring, instead of falling upon the sewing-thread attaching the rib or tip to the cover.

3. The combination of the cover with the caps D, spring-clips H, and elastic collar A B, substantially as and for the purpose described.

323,382. COUNTER FOR PRINTING-PRESSES, &c. CHARLES T. BROWN, Chicago, Ill., assignor, by mesne assignments, to Flora L. Brown, same place. Filed Apr. 20, 1882. (No model.)

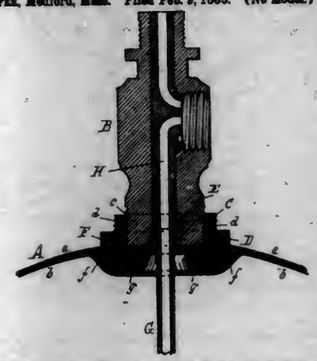


323,382.



Claim.—A counter for printing-presses and other purposes, comprising the following elements, viz: a counter composed of a shell or case divided into two parts, connected together by means of a hinge, a series of counting-wheels placed loosely on a shaft in one of said parts, a series of transmitters or gear-wheels placed loosely on a shaft in the other of said parts, the ends of the teeth of the said transmitters, in connection with and in addition to the transmission of motion, serving as a lock to hold all wheels of a denomination higher than units in their proper place and position, and all arranged so that when the shell or case is opened the counting-wheels may be revolved loosely upon the shaft, and when the same is closed the counting-wheels shall mesh and come in contact with the transmitters, substantially as described.

323,383. FITTING FOR SODA-WATER APPARATUS. ALVIN D. PUTTER, Medford, Mass. Filed Feb. 9, 1885. (No model.)



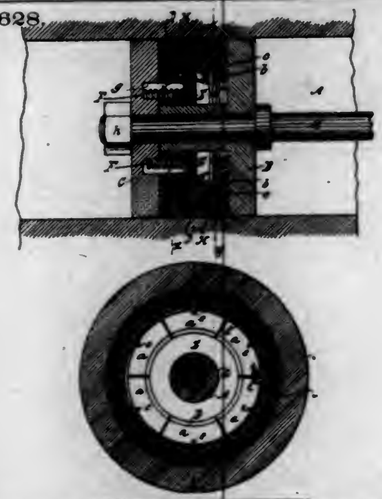
Claim.—The combination of shell A and discharge-cock B with retaining-bung C, having lip *g*, the draft-pipe G, and the packing F, said cock compressing said packing to form a tight joint, substantially as set forth.

REISSUES.

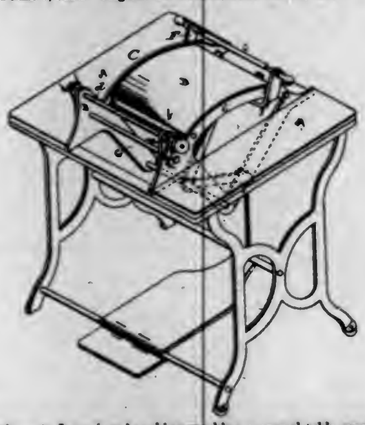
10,628. PISTON-PACKING. THOMAS BARBER, Flatbush, N. Y. Filed June 27, 1885. Original No. 313,704, dated Mar. 10, 1885.

Claim.—The combination, substantially as hereinbefore described, with the piston-head B and the follower C, of the expanding ring D, composed of a number of wedge-shaped sections, *a*, the spring *d*, inclosed thereby and acting upon the same, the expanding cone E, which projects into the expanding ring, the spring F, situated between the expanding cone and the follower, and the packing H on the expanding ring.

10,628.



10,629. CIGAR-BUNCHING MACHINE. GEORGE MORRIS, Detroit, Mich. Filed June 6, 1884. Original No. 266,711, dated Oct. 31, 1882.



Claim.—1. In a cigar-bunching machine, a curved table supported between and hinged or pivotally secured to bars of coincident curvature, which are provided with stops to arrest the fall of the free end of the table, and an apron secured to the under side of said table, substantially as and for the purposes set forth.

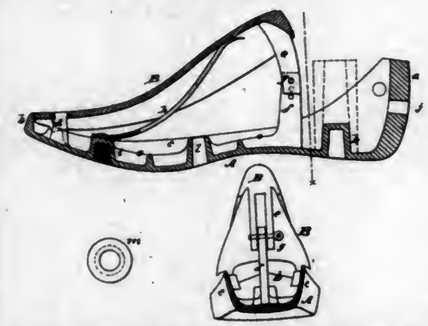
2. In a cigar-bunching machine, the combination of a curved table, hinged or pivoted as shown, and an apron or bunching-cloth, with a ratcheted roller, and a spring for holding said roller in locked position until the force of said spring is overcome, as specified.

3. The curved table D, having trough *b*, and hinged as shown, combined with the curved frame C C, having stops *a a*, and with the apron E, secured to the under side of said table D, as set forth.

4. The combination of the curved hinged table D, frame C C and A A, roller *c*, and apron E, as shown, with the roller *d*, having rack *m*, pawl *n*, nut *h*, and spring *i*, as and for the purposes specified.

5. The combination of the apron E and roller *c* with the roller *d*, having rack *m*, the pawl *n*, nut *h*, and spring *i*, as set forth.

10,630. LAST FOR BOOTS OR SHOES. EDWARD S. KINGSTON, Little Falls, assignor to George A. Reynolds, Utica, N. Y. Filed May 8, 1883. Original No. 273,106, dated Feb. 27, 1883.



Claim.—1. The collapsible shell-last formed of a bottom section and a broad adjustable instep section adapted to fall within the contour of the last, whereby the last may be removed from a boot or shoe, substantially as described.

2. The collapsible shell-last consisting of a bottom section formed with a toe, and with a broad instep section extending from the toe to the top of the instep and hinged to the bottom section behind the toe, substantially as shown and described.

3. The collapsible shell-last formed of a bottom section, A, having heel *a*, toe *b*, and side rims, *c c*, and a broad upper section, B, hinged to the bottom at the toe, with suitable devices for holding the upper section in a raised position, substantially as shown and described.

4. The collapsible shell-last formed of a bottom and a broad pivoted upper section, which leaves open sides to the last when the upper section is in its normal position, the upper section extending only to the top of the instep, with suitable devices for holding the upper section in its raised position, substantially as shown and described.

5. In a hollow last, the combination of the bottom section, A, with the spring *h*, substantially as and for the purpose set forth.

6. A hollow last formed of the bottom section, A, and adjustable section B, in combination with the spring *h*, substantially as shown and described.

7. The collapsible last having a hinged instep-block adapted to fall within the contour of the last, whereby the last may be removed from the boot or shoe without detaching the instep-block from the last, substantially as shown and described.

8. The upper section, B, formed with the flange *e*, and combined with the main body A of the last, formed with the parts *d f* and a locking device, substantially as and for the purpose set forth.

9. In combination with a last having a projection, *k*, the hollow tube *m*, substantially as and for the purpose set forth.

PHOTO-LITH NORRIS PETERS WASH. D.C.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

DECISIONS OF THE U. S. COURTS.

U. S. Circuit Court—Southern District of New York.

THE BATE REFRIGERATING COMPANY *v.* EASTMAN.

Decided June 12, 1885.

Original Letters Patent No. 44,731, granted to Moses J. Kelly, for an improvement in air cooling and distributing apparatus, described two forms of ice-chest, through which the air was passed for the purpose of cooling it by contact with the ice, and his claim was precisely commensurate therewith. It is apparent that there was no inadvertence, accident, or mistake in so limiting the claim, and therefore the claim in the reissue, No. 7,643, broadening the invention so as to include any and all methods of chilling the air which were known at date of the patent, is invalid.

Messrs. Dickerson & Dickerson for the complainant.

Mr. John R. Bennett and *Hon. Roscoe Conkling* for the defendant.

SHIPMAN, *J.*:

This is an action at law to recover damages for the alleged infringement by the defendant in the port of New York of the fifth claim of Reissued Letters Patent No 7,643, issued to Moses J. Kelly April 24, 1877, for an improvement in air cooling and distributing apparatus. The original Patent No. 44,731, dated October 18, 1864, and antedated October 6, 1864, was assigned to the plaintiff of December 21, 1876.

By written stipulation between the parties a jury was waived, and the action has been tried by the court. After the plaintiff had rested his case, and after the introduction by the defendant of two patents and a decree or order of the circuit court of this district dismissing the bill in equity of the present plaintiffs against the present defendants, praying for an injunction against the infringement of the reissued letters patent which are the subject of this action, the defendant moved that judgment be entered for the defendant upon the ground that upon the facts as presented the action could not be maintained.

The only question which I shall consider is whether the fifth claim, properly construed, includes the apparatus which is admitted to have been employed and used by the defendant on board an English vessel in the port of New York between the dates stated in the complaint in the manner stated in the written stipulation.

The patentee states in the specification of the reissue, and also of the original patent, that his air-cooling apparatus was "for cooling carcasses where hung to cool in slaughtering-establishments, cooling halls, railroad-cars, grain-bins, the holds of vessels, and other places and apartments in which it may be desired to reduce the temperature of the atmosphere by the introduction of cool or cold air." In the description of the construction and operation of the apparatus the patentee described with particularity two forms of chests or receptacles for ice. Certain portions of one form of one box are to be filled with ice, and the other form of box is to be kept full of ice, or nearly so. The air which enters an aperture in the lower portion of the ice-box is cooled by passing through or over the ice in the compartment. Over the ice-box are placed what are styled "common fanners," inclosed within an air-tight casing, or otherwise directly connected with a pipe which conducts the cold air from the ice-box, so that (the fanners being put in motion by a bolt on a pulley or otherwise) all the air they move is drawn through this pipe. Leading from the fanners overhead in slaughtering-establishments is a large pipe, tube, or conductor. Smaller pipes lead from this tube immediately over each row of carcasses, and in the small pipes are openings from which currents of air issue upon each carcass, as may be desired. The ice being arranged in either of the two described ice-boxes, or in a described ice-house in the manner detailed in the patent, "and the fanners put in rapid motion, a portion of the air is rapidly cooled and forced through the pipe P (the pipe connected with the fanners) into any place or apartment to be cooled, and there distributed through and from a sufficient number of small perforated tubes," so as to properly equalize or equally distribute the air thus introduced.

There are five claims of the reissued patent. I will only read the first and fifth.

1. In an air cooler or apparatus for cooling carcasses, &c., the combination of a fan-blower or its equivalent, an ice-chest or equivalent, and one or more pipes or conduits which equally distribute the air within the place or apartment to be cooled, substantially as and for the purpose herein set forth.

5. In an air cooler or apparatus for cooling carcasses, &c., the combination of the fan-blower or fanners F, the system of tubes T *t t*, &c., and the ice chest or depository in either of said forms, as and for the purpose shown and represented.

The fifth claim is substantially like the single claim of the original patent.

The apparatus which is claimed to infringe the Kelly patent is described in letters patent to Joseph J. Coleman, No. 226,231, dated April 6, 1880, for an air cooling and refrigerating apparatus, the refrigerating effect being produced by the compression and expansion of air. The following description of the apparatus is, in general, the description contained in the specification, but is much abbreviated. The refrigerating-chamber is between the decks of a vessel, and is for the reception of meats. There are two air-compressing cylinders, the piston-rods of which are connected to the pistons of the two expansion-cylinders. The compressed air from the compression cylinder passes up through a cylindrical vessel or tower, in which it is subjected to the cooling action of sprays of cold water, and thence the com-

pressed and cooled air passes to a similar cylindrical vessel, where it is deprived of most of its moisture by passing in contact with a series of perforated plates. The partially dried compressed air passes through a pipe to a second drying device, composed of a number of horizontal tubes. The air in its passage through these tubes is deprived of its remaining moisture and passes through a pipe to the expansion-cylinder. The expanded air from the exhaust-ports of these cylinders enters chambers, so that any moisture which may remain will be converted into snow and deposited in said chambers. The expanded air then passes into a main pipe, and thereafter into pipes which extend up the sides of the chamber, and then horizontally along the beams, the air escaping from the open ends of the pipes, which are of different lengths, in order to equalize the distribution of the cold dry air throughout the refrigerating-chamber.

It will be seen that in the infringing apparatus the air is not chilled by contact with ice, and that it contains no chest or receptacle for ice in the ordinary meaning of those terms.

The Kelly reissued patent was under careful examination in 1881 by Judge Nixon in the suit of the present plaintiff against Toffey; but as the infringing mechanism in that case contained an ice-chest filled with ice, by contact with which the air was cooled, the important question in this case, and which relates to the construction of the fifth claim, was not considered by the court.

The same facts which are here presented were under discussion before Judge Blatchford in 1881 upon a motion for preliminary injunction in a suit in equity between the present parties. It was held that the defendants infringed the first and second claims of the Kelley reissue. Since that time, in view of the effect of the reiterated decisions of the Supreme Court, which commenced in the year 1882, upon the subject of reissues, it is now conceded that these claims are undue expansions of the original patent, and the contention is narrowed to the claim concerning which testimony was not presented to Judge Blatchford, and which he did not therefore pass upon; and it is conceded that the fifth claim is to receive the same construction which it should properly receive if the original patent had never been surrendered. In examining this claim, by the aid of the specification and the state of the art in 1864, it is apparent that the patentee's invention included the cooling of carcasses in slaughtering-establishments, the cooling of halls, holds of vessels, and other apartments in which it might be desired to reduce the temperature of the atmosphere by the introduction of cold air, and that this cooling effect was produced by the introduction and distribution of a sufficient quantity of cool or cold air through a number of perforated tubes, that the air then introduced could be properly equalized, or that the temperature of the apartment be made equable. He desired to cool not only the holds of vessels, but also halls or other apartments to which external air was admitted by doors and windows. The principal thing which he had in mind was the cooling of recently-slaughtered carcasses or animals. He did not, however, confine himself to that single object, but included the cooling of any apartment, and this was to be done by equalizing throughout the place to be cooled the air introduced or distributed through his system of tubes. The only described or suggested manner by which the cooling of the air that was to be introduced into the apartment was effected was by compelling it to pass over and through ice in an ice-chest by the aid of a blower or fanner. He did not, apparently, intend to include, and did not suppose that his invention was broad enough to include, any method of cooling air which existed in the use of scientific means operating in a very different manner from the simple mechanical appliances which he had adopted. He therefore did not suggest the possible use of any other means, but asked for and obtained a patent for the combination of the fanners F, the system of tubes T *t t*, and the ice chest or depository, in either of the forms which he had described. His claim was not so rigid as to prevent ordinary mechanical modifications of the apertures, which might be on one side or the other side or on the end of the small tubes, or mechanical modifications of the shape and length of the pipes themselves. His fanner would include mechanical modifications or equivalent devices by which motion is imparted to air. There might be various forms of chest or depository besides the simple ones which his ingenuity had suggested, but the language of his specification does not indicate the idea that the invention as it lay in his mind was so far reaching as to include any and all means of cooling air which the scientific mind had then made known.

Although, as a rule, a patent for a combination includes the then known equivalents for the respective elements of the combination, yet I cannot conceive that the claim of the original Kelly patent can be properly construed to include, as an equivalent or substitute for the described ice-chest, any and all methods of accomplishing the result of chilling air which were known at the date of the patent, the specification or the claim not having given a suggestion of an invention of such general character. It is not necessary to inquire whether the invention of Kelly could be generalized, or was in fact broad enough to have justified him in asking for, when he made his original application in 1864, and in obtaining, a patent for any ice-depository or its equivalent, meaning by the term "equivalent" any then known method or apparatus for cooling air and removing moisture which might consist of cylinders for compressing and expanding air and condensing-coil and air-pumps; and whether, therefore, under the theory of reissues which prevailed until a comparatively recent date, courts were not justified in construing a claim in a reissue for any ice-chest to include such a substitute, for the original patent shows that the application which he did make, and which he intended to make, was for a patent of a much narrower character. He described the invention, and only the invention, which is contained in the claim, and which, so far as it relates to the ice-receptacle, was the ice chest or depository in either of the described forms—meaning a chest for the reception of ice as the cooling agent. His claim aptly describes the same invention which was described in the specification, and an invention "complete in itself." The omission to make a broader claim not being the result of inadvertence, accident, or mistake, as those terms are now defined, could not be corrected by a reissue, and cannot now be corrected by expanding the original claim so as to include that which makes the new claim of the reissue invalid. If, as is declared in *Mahn* v. *Harwood*, (112 U. S., 354,)

> a patent for an invention cannot be lawfully reissued for the mere purpose of enlarging the claim, unless there has been a clear mistake inadvertently omitted in the wording of the claim, such original claim cannot be enlarged by construction, so as to include what was intentionally, and not inadvertently and by mistake, omitted.

It is unnecessary, under the construction of the fifth claim, even if an examination of the testimony of Mr. Brevoort and Professor Morton was proper upon this motion, to examine the question whether, if the ice-chest in either of its forms meant any ice-chest, that term would include any receptacle or mechanism in and by means of which air was chilled by any mechanical or chemical instrumentality known at the date of the patent; or to further consider whether the Coleman mechanism was known at the date of the original Kelly patent in any other than the broad sense that compression and expansion cylinders were known, by means of which, and the force-pumps connected therewith, air was chilled; or other important questions which have received, as they deserve, the earnest attention of the counsel in the case.

The motion is granted, and let judgment be entered for the defendant.

U. S. Circuit Court—District of New Jersey.

RAILWAY REGISTER MANUFACTURING COMPANY *v.* NORTH HUDSON C. R. CO. *et al.*

Decided February 24, 1885.

1. INFRINGEMENT—DEFENSE OF IRREGULAR ISSUE BY PATENT OFFICE.

   In a suit for infringement a patent cannot be invalidated by showing that the requirements of the statute to be observed by the Commissioner of Patents in order to its issue have not been regarded.

2. SAME—DURATION OF PATENT—IMPROPER ISSUE—FOREIGN PATENT.

   Where letters patent have been issued by the Patent Office for a period of less than seventeen years, because of a reference to a supposed foreign patent, and the inventor has refused to accept them, and on further examination such letters are canceled and a new patent issued, the time intervening between the issue and allowance of the patent should not be deducted from the term of the patent, but the patentee be allowed to enjoy his monopoly for the full term of seventeen years.

NIXON, *J.*:

When the above case came up for final hearing, the counsel for the defendants raised two preliminary questions, which were supposed to be decisive, and which, if ruled in favor of the defendants, would relieve the court from the duty of considering the controversy upon its merits. The two questions were, first, whether the complainant's patent was not invalid because no written specifications and claim were, in fact, signed by the inventor, nor was his signature attested by two witnesses, as required by the statute, before the letters patent could be issued; second, whether the letters patent were not void because issued for a greater length of time than the statute allowed. The court considered these matters of sufficient gravity and importance to request the counsel of the parties, on a preliminary argument, to confine themselves to their discussion.

1. The facts in regard to the first question are these: On the 29th of December, 1877, John B. Benton, the inventor, made application in writing to the Patent Office for letters patent for "improvement in fare-registers." It consisted of a petition, oath, specification, and six claims, appointing C. C. Beaman, Jr. Esq., his attorney, with full power of substitution and revocation, to prosecute the application, and to make alterations and amendments therein. The specification was signed by the applicant and attested by two witnesses, and was verified by the oath of the patentee that he was the original and first inventor. On the 3d of January, 1878, the Patent Office gave notice that the first, second, third, and sixth claims were rejected, having been anticipated by other patents. Matters thus stood till February 10, 1879, when Mr. Beaman gave notice to the Commissioner of Patents to associate with him Messrs. Baldwin, Hopkins & Peyton as attorneys in the case. On the 29th of March following the Patent Office, at the request of Baldwin, Hopkins & Peyton, erased the entire specification before filed, except the signatures, and in lieu thereof inserted new specifications and claims. These new specifications were not signed by Benton nor attested by any witnesses. They were a substitute for the former at the request of the attorneys, and contained sixteen instead of six claims. Owing to suggestions of anticipation made to the attorney of the applicant, the third, fourth, eleventh, twelfth, thirteenth, fourteenth, and fifteenth claims were erased on May 19, 1879, and the first, third, fourth, and fifth, as renumbered, on the 7th of August following. Other changes were made, and on August 20, 1879, the Commissioner of Patents declared a preliminary interference with a pending application of Fowler and Lewis, filed April 2, 1879, as to the first, second, and third claims, as they then stood. These three claims were again amended November 20, 1879, the first interference dissolved, and on the 18th of December following a second interference was declared upon the amended claims. After being involved for some time in the technicalities of the Patent Office, Lewis and Fowler seem to have withdrawn from the interference proceedings, and the complainant had the patent of its assignor, Benton, allowed with the then claims as last amended, which, it is alleged by the complainant, were merely a fuller restatement of the invention claimed by Benton in the fifth claim of his original application. The defendants, on the other hand, insist that they are for an entirely different invention. Upon this important question in the suit I shall express no opinion until it is more fully presented and argued by the respective parties. Outside of that question I do not find any irregularity in the method of procedure which authorizes me to declare the patent void. There is a long list of cases holding that patents cannot be invalidated by proving that the requirements of the statute to be observed by the Commissioner in order to their issue have not been regarded. Section 4920 of the Revised Statutes enumerate the five special defenses which may be pleaded in a suit for infringement. If Congress had intended that the validity of patents might be assailed collaterally for other reasons, it would have said so in explicit terms. The only defenses set up in the answer in this case are, first, that Benton was not the original and first inventor of the alleged invention in the complainant's patent; second, that the matters and things patented had been in prior use more than two years before the time when the application for the letters patent was made;

third, non-infringement; and, fourth, that the fare-registers used by the defendants are embodied and contained in certain letters patent granted to Lewis and Fowler. No suggestion is made that the patent is void for fraud or irregularity in obtaining it. The Supreme Court in *Rubber Co.* v. *Goodyear* (9 Wall., 797) held that Congress did not mean a patent to be abrogated collaterally, but had left the remedy in such a case to be regulated by the principles of general jurisprudence, quoting with approbation the remark of Chancellor Kent in *Jackson* v. *Lawton*, (10 Johns., 23,) that "unless letters patent are absolutely void on the face of them, or the issuing of them was without authority or was prohibited by statute, they can only be avoided in a regular course of pleading, in which the fraud, irregularity, or mistake is regularly put in issue." In the recent case of *Giant Powder Co.* v. *Safety Nitro Powder Co.* (19 Fed. Rep., 511) Judge Sawyer says that the Supreme Court has over and over again affirmed the principle that "all questions of fact behind the patent are to be examined, heard, and conclusively determined by the Commissioner of Patents. (See, also, on this point, Curt. Pat., § 274; *Hartshorn* v. *Eagle Shade Roller Co.*, 18, Fed. Rep., 91, and cases there cited; *Crompton* v. *Belknap Mills*, 3 Fisher, 541; *Mowry* v. *Whitney*, 14 Wall., 434.)

2. The second question may be disposed of in fewer words. On the argument I was inclined to the opinion that the complainants' patent must be reckoned void, because it was practically granted for a longer term than the law allowed, but on careful examination of the facts I am not sure that this is a correct view of the transaction. It appears that while the proceedings for the patent were pending an English patent, granted to one Towle, dated November 2, 1877, was introduced into the case, not to show that the inventor, Benton, had patented the invention abroad, but to prove its non-patentability here by reason of the anticipation there. Benton met the reference, and from the fact that a patent was granted to him, it is presumed he satisfied the proper officers of the department that the date of his invention was anterior to the date of the English patent. This claim was allowed July 21, and the letters patent were issued August 17, 1880. It does not appear when the patentee received them, but on the 5th of October following these letters patent, as granted, were returned to the office with the statement of the solicitors that they had not been and could not be accepted by the inventor because not issued for seventeen years as the law authorized and required. It seems that before forwarding them some of the officers of the Patent Office had printed over the specification the words "Patented in England November 2, 1877." The legal effect of such an indorsement was to limit the life of the patent, as issued, to the period which the English patent had to run. It is conceded that this was a mistake, and that the Patent Office had inadvertently assumed that the Towle English Patent had been proved to have been obtained by or in the interest of Benton. The Commissioner of Patents at once ordered the letters patent numbered 231,207 "to be returned to the original files of the application and to be canceled, and that letters patent in due form for the invention therein described be issued to John B. Benton, pursuant to his petition and the record in the case. The cancellation followed, and Letters Patent No. 233,915, and dated November 2, 1880, were issued for the full period of seventeen years from their date. If the first patent had been accepted by the patentee and he had brought suit upon it against infringers or had claimed any privileges or exercised any rights of ownership under it, a grave question would arise whether afterward the Commissioner had any power to make any change, except by surrender and reissue under the provisions of section 4916 of the Revised Statutes; but he did nothing of the sort. Under the patent law the inventor and the government were parties to a contract, and when the officers of the government said to him, in effect, "Accept of a monopoly of your invention for a less period than seventeen years," he had a right to reply "No; I repudiate such a contract; give me what the law allows." And when it is given to him the time intervening between the issue and allowance of his patent should not be deducted from the term of the patent unless he has derived some advantage therefrom. He will only enjoy his monopoly for the seventeen years. If the complainant should have a decree for infringement, damages and profits will only be allowed, on the accounting, from the date of the patent.

The case must be heard upon its merits.

NOTE.—Since preparing the foregoing opinion my attention has been called to the recent decision of the Supreme Court in *Mahn* v. *Harwood*, (5 Sup. Ct. Rep., 174.) I have examined the case with care, and do not find anything therein which affects or controverts the reasoning and conclusions in the above case.

THE OFFICIAL GAZETTE OF THE United States Patent Office.

[BY AUTHORITY OF CONGRESS.]

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The Official Gazette of July 7.

Arrangements having now been made for the publication of the OFFICIAL GAZETTE of July 7, it will probably be mailed to subscribers on or about the 20th instant.

Indexes to Foreign Patents.

The following indexes to foreign patents have been translated, compiled, and published under the authority of the Commissioner of Patents, and may be obtained as a Patent Office publication at the prices given below.

INDEX TO FRENCH PATENTS, 1791 to 1876, inclusive, (subject-matter,) one volume, 935 pp., bound in cloth.....$10 00

INDEX TO ITALIAN PATENTS, 1848 to May 1, 1882, (subject-matter,) one volume, 120 pp.—

Bound half-turkey	2 50
Bound in cloth	1 25
Paper covers	1 00

Indexes to Patents on Electricity.

Appendix No. 2 to the index to patents relating to electricity, covering the period of time from July 1, 1882, to June 30, 1883, has been issued, and is now for sale. These indexes, arranged alphabetically, numerically, and by classes, are completed to June 30, 1883, and comprise the following volumes:

Vol. 1. Index to patents relating to electricity granted by the United States prior to June 30, 1881, with an appendix, July 1, 1881, to June 30, 1882. One volume, 250 pages. In paper covers, $3; bound, $5.

Vol. 2. Appendix No. 2, July 1, 1882, to June 30, 1883. One volume, 50 pages. In paper covers, $1.50.

Vol. 3. Appendix No. 3, July 1, 1883, to June 30, 1884. One volume, 60 pages. In paper covers, $1.50.

Attorneys.

DEPARTMENT OF THE INTERIOR,
OFFICE OF THE SECRETARY,
Washington, D. C., July 29, 1885.

SIR: I am directed by the Secretary to inform you that he has ordered that Charles L. Skinner, of Baltimore, Maryland, be not recognized from and after this date as attorney in the prosecution of any claim or other matter before the Department of the Interior or any bureau thereof.

I am, sir, very respectfully, your obedient servant,

GEO. M. LOCKWOOD,
Chief Clerk.

The Commissioner of Patents.

32 O G—5—i

Issue of August 4, 1885.

Patents	514	No. 323,384 to No. 323,897, inclusive.
Designs	5	No. 16,189 to No. 16,193, inclusive.
Trade-Marks	31	No. 12,454 to No. 12,484, inclusive.
Labels	5	No. 4,535 to No. 4,539, inclusive.
Reissues	3	No. 10,631 to No. 10,633, inclusive.
Total issue	558	

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks and Labels.	States.	Patents and Designs.	Trade-Marks and Labels.
Alabama	1	.....	Nebraska	2	.....
Arizona Territory	.....	.....	Nevada	1	.....
Arkansas	1	.....	New Hampshire	2	.....
California	10	.....	New Jersey	27	.....
Colorado	2	.....	New Mexico Territ'y	.....	.....
Connecticut	21	.....	New York	89	6
Dakota Territory	.....	.....	North Carolina	1	.....
Delaware	.....	.....	Ohio	30	5
District of Columbia	5	.....	Oregon	2	1
Florida	3	.....	Pennsylvania	60	6
Georgia	5	.....	Rhode Island	10	.....
Idaho Territory	.....	.....	South Carolina	1	.....
Illinois	50	2	Tennessee	3	.....
Indiana	23	.....	Texas	6	.....
Indian Territory	.....	.....	Utah Territory	2	.....
Iowa	10	.....	Vermont	1	.....
Kansas	2	.....	Virginia	2	4
Kentucky	6	.....	Washington Territ'y	.....	.....
Louisiana	.....	.....	West Virginia	.....	.....
Maine	3	.....	Wisconsin	8	.....
Maryland	4	4	Wyoming Territory	.....	.....
Massachusetts	61	1	United States Army	.....	.....
Michigan	22	.....	United States Navy	.....	.....
Minnesota	2	.....			
Mississippi	.....	.....	Total to citizens of the United States	489	31
Missouri	10	2			
Montana Territory	1	.....			

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Labels.	Countries.	Patents and Designs.	Trade-Marks and Labels.
Argentine Republic	.....	.....	Germany	9	.....
Austria-Hungary	.....	.....	Holland	1	.....
Barbadoes	.....	.....	Mexico	.....	.....
Belgium	1	.....	Norway	1	.....
Bermuda	.....	.....	Russia	1	.....
British Columbia	.....	.....	Scotland	2	.....
Canada	2	.....	Spain	.....	.....
Chili	.....	.....	Sweden	.....	.....
Colombia, U. S. of	.....	.....	Switzerland	.....	.....
Cuba	.....	.....	West Indies	.....	.....
Denmark	.....	.....			
Ecuador	.....	.....	Total to citizens of foreign countries	30	5
England	10	5			
France	3	.....			

DESIGNS.

16,189.—COOKING STOVE OR RANGE.—*Andrew Garbutt*, Boston, Mass. Application filed June 29, 1885. Term of patent 7 years.

16,190.—BRUSH-HANDLE.—*Frederick J. Kaldenberg*, New York, N. Y. Application filed October 25, 1883. Term of patent 7 years.

16,191.—TRAY.—*James F. Lockwood*, Philadelphia, Pa. Application filed May 18, 1885. Term of patent 3½ years.

16,192.—RUG.—*Adolph Petzold*, Philadelphia, Pa. Application filed April 11, 1885. Term of patent 3½ years.

16,193.—DISH OR TUREEN.—*Louis Sherry*, New York, N. Y. Application filed November 8, 1884. Term of patent 7 years.

TRADE-MARKS.

[Certificates of registration of Trade-Marks numbered 8,191 and upward are registered under the act of March 3, 1881.]

12,454.—TABLETS AND OTHER PREPARATIONS CONTAINING COCAINE. *John H. Allen*, New York, N. Y. Application filed June 15, 1885.

"The figure of the leaf of a cocoa-plant and the word 'COCAINE' superimposed thereon."

12,455.—WRITING-INK.—*William Allen & Co.*, New York, N. Y. Application filed July 9, 1885.

"The word 'LEDGER.'"

12,456.—HORSE-BLANKETS.—*William Ayres & Sons*, Philadelphia, Pa. Application filed July 13, 1885.

"The name 'BAKER.'"

12,457.—HORSE-BLANKETS.—*William Ayres & Sons*, Philadelphia, Pa. Application filed July 13, 1885.

"The representation of a horse."

12,458.—CANDY.—*George J. Blome*, Baltimore, Md. Application filed July 8, 1885.

"The words 'GILT EDGE' and ornamental scrolls."

12,459.—GIN.—*Charles Booth*, London, England. Application filed July 8, 1885.

"Concentric circles surmounted by a red lion and the facsimile signature 'BOOTH & COMP.'"

12,460.—HIGH-TEST CARBON OIL FOR LIGHTING PURPOSES.—*Central Oil Company*, Galion, Ohio. Application filed July 8, 1885.

"The word 'ALBAINE.'"

12,461.—GILLING-THREAD.—*J. Dukehart & Co.*, Baltimore, Md. Application filed July 13, 1885.

"The word 'CHESAPEAKE.'"

12,462.—MEDICINAL PREPARATION FOR NERVOUS AFFECTIONS.—*Dundas Dick*, New York, N. Y. Application filed July 13, 1885.

"The word 'MENTHOLETTE.'"

12,463.—FAMILY SOAPS.—*N. K. Fairbank & Co.*, Chicago, Ill. Application filed July 2, 1885.

"The arbitrary word 'CHERUB.'"

12,464.—FAMILY SOAPS.—*N. K. Fairbank & Co.*, Chicago, Ill. Application filed July 8, 1885.

"The arbitrary words 'RABBIT FOOT.'"

12,465.—CANNED SALMON.—*George & Barker*, Astoria, Oreg. Application filed July 7, 1885.

"The word-symbol 'EPICURE.'"

12,466.—FANCY YARNS OR CHENILLES.—*Robert N. Havers*, Bradford, county of York, England. Application filed July 13, 1885.

"The word 'ARRASENE.'"

12,467.—FANCY YARNS OR CHENILLES.—*Robert N. Havers*, Bradford, county of York, England. Application filed July 13, 1885.

"The representation of a curtain, on which appears the word 'ARRASENE.'"

12,468.—FLOUR.—*Houston, Meeks & Co.*, St. Louis, Mo. Application filed July 10, 1885.

"The words 'SWAN'S DOWN.'"

12,469.—MIXED TEAS.—*Cornelius D. Kenny*, Baltimore, Md. Application filed June 15, 1885.

"The words 'HI-HI.'"

12,470.—PLUG-TOBACCO.—*Larus & Bro.*, Richmond, Va. Application filed June 20, 1885.

"The words 'BASE BALL CLUB' upon a rectangular tag, having thereon the figure of a base-ball player in uniform."

12,471.—FOOD FOR HORSES OR CATTLE.—*Merriam & Rolph*, Fitchburg, Mass. Application filed June 15, 1885.

"The arbitrary word 'ARABIAN.'"

12,472.—CANNED TOMATOES.—*Nicolaus Borzner*, Philadelphia, Pa. Application filed July 14, 1885.

"The arbitrary word-symbol 'WOODCOCK' and the representation of a woodcock in the act of flying."

12,473.—PEANUTS.—*Pembroke Decatur Gwaltney*, Smithfield, Va. Application filed July 14, 1885.

"The designation 'SHIELD,' whether expressed pictorially or by the printed or written word "Shield.'"

12,474.—PEANUTS.—*Pembroke Decatur Gwaltney*, Smithfield, Va. Application filed July 14, 1885.

"The designation 'SUN,' whether expressed pictorially or by the written or printed word 'SUN.'"

12,475.—STOVE-POLISH.—*Phœnix Plumbago Mining Company*, Philadelphia, Pa. Application filed February 5, 1885.

"The word 'ELECTRIC.'"

12,476.—VALVES, LUBRICATORS, PLUGS, AND SIMILAR DEVICES.—*Wm. Powell & Co.*, Cincinnati, Ohio. Application filed April 22, 1885.

"A star."

12,477.—CANDLES.—*Procter & Gamble*, Cincinnati, Ohio. Application filed July 11, 1885.

"The fanciful name 'IVORYDALE' and the word 'STAR.'"

12,478.—LAUNDRY-SOAP.—*Procter & Gamble*, Cincinnati, Ohio. Application filed July 11, 1885.

"The fanciful name 'IVORYDALE.'"

12,479.—LIME-JUICE SIRUP OR CORDIAL.—*Richard Harris Pugh*, London, England. Application filed July 6, 1885.

"The representation of a tower inclosed within the letter 'S.'"

12,480.—CIGARS.—*Carl Stofregen*, Baltimore, Md. Application filed June 6, 1885.

"A diamond-shaped figure with an ellipse at each extremity of its longest diameter, and the word 'DIAMOND' associated with it."

12,481.—DISINFECTANT AND INSECTICIDE.—*U. S. Importing Co.*, Pittsburg, Pa. Application filed July 2, 1885.

"The arbitrarily-selected word-symbol 'CAMPHORINE.'"

12,482.—BINDERS' TWINE FOR REAPING-MACHINES.—*L. Waterbury & Co.*, New York, N. Y. Application filed July 11, 1885.

"The fanciful or arbitrary words 'TIN TAG.'"

13,483.—BINDERS' TWINE.—*L. Waterbury & Co.*, New York, N. Y. Application filed July 13, 1885.

"The fanciful or arbitrary words 'RED TIN TAG.'"

12,484.—FERTILIZER.—*Cary L. Wright* and *Robert T. Craighill*, Lynchburg, Va. Application filed July 3, 1885.

"The word 'ΦΕΡΤΙΣΤΟΝ' printed in letters of the Greek alphabet."

LABELS.

4,535.—Title: "FACTORY 540, FIRST DISTRICT, PENNA." (FOR CIGARS.)—*Juan F. Portuondo*, Philadelphia, Pa. Application filed July 9, 1885.

4,536.—Title: "STOWER'S LIME JUICE CORDIAL."—*Richard Harris Pugh*, London, England. Application filed July 3, 1885.

4,537.—Title: "JOHN H. ROWLAND'S VEGETABLE ASTRINGENT PILLS."—*John H. Rowland*, Oswego, N. Y. Application filed July 9, 1885.

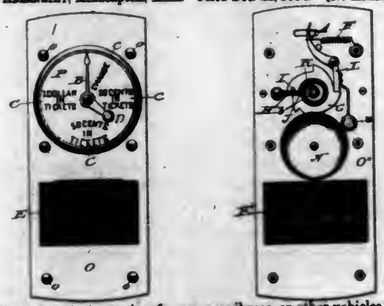
4,538.—Title: "THE L. M. AND S. SHIRT."—*L. Mange & Son*, St. Louis, Mo. Application filed July 10, 1885.

4,539.—Title: "NYMPHICA VEGETABLE COMPOUND," (FOR A MEDICINE.)—*Mary Webster*, Massillon, Ohio. Application filed July 13, 1885.

PATENTS

GRANTED AUG. 4, 1885.

323,384. SIGNALING ATTACHMENT FOR CHANGE-BOXES. W. J. ABERNETHY, Minneapolis, Minn. Filed Dec. 22, 1884. (No model.)



Claim.—1. A change-box for cars, omnibuses, or other vehicles, provided with a dial containing words, figures, signs, or characters denoting the amount of tickets or change desired, an indicating-pointer, and a bell or gong arranged to be sounded once as each figure, word, character, or sign is passed, whereby the driver is informed of the amount of tickets or change called for, substantially as described.

2. A change-box for cars, omnibuses, and other vehicles, provided with an inside dial containing words, figures, signs, or characters denoting the amount of tickets or change desired, an indicating-pointer, a pawl, a ratchet-wheel turning with such pointer, with teeth spaced and arranged as described, whereby they will pass the engaging end of the pawl at the same time the indicating finger or pointer reaches each word, sign, figure, or character on the dial, and a bell or gong arranged to be sounded at the same instant, whereby the driver is informed of the amount of tickets or change called for, substantially as described.

3. A change-box for cars, omnibuses, and other vehicles, provided with a dial on both its faces containing words, figures, signs, or characters denoting the amount of tickets or change desired, an indicating-pointer on each dial turning simultaneously, and a bell or gong arranged to be sounded as the pointer is turned, whereby the driver is called by the bell and informed by the indicating-pointer of the amount of tickets or change called for, substantially as described.

4. A change-box for cars, omnibuses, and other vehicles, provided with a dial containing words, figures, signs, or characters denoting the amount of tickets or change desired, an indicating-pointer, a pawl, a ratchet-wheel turning with the pointer, with teeth spaced and arranged as described, whereby they will pass the engaging end of the pawl at the same time the indicating finger or pointer reaches each word, sign, figure, or character on the dial, a bell or gong arranged to be sounded at the same instant, and a pin coming in contact with the pawl and extending through a slot in the outer case, whereby the ratchet-wheel may be released and permitted to return to its proper position, substantially as described.

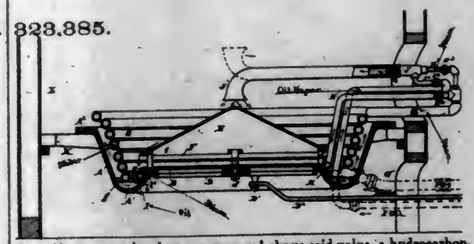
323,385. HYDROCARBON-BURNER. JOHN B. APPLE, Philadelphia, Pa. Filed Aug. 20, 1884. (No model.)

Claim.—1. In a hydrocarbon-burner, a tray having an annular groove, in combination with a draft-regulating valve placed within the center bounded by said groove, and water and oil coils located within said groove, substantially as and for the purpose specified.

2. In a hydrocarbon-burner, a tray having an annular groove, in combination with a draft-regulating valve placed within the center bounded by said groove, a hood or cap arranged above said valve, and water and oil coils located within said groove, substantially as and for the purpose specified.

3. In a hydrocarbon-burner, a tray having an annular groove, in combination with a draft-regulating valve placed within the center bounded

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by said groove, a hood or cap arranged above said valve, a hydrocarbon-nozzle arranged above said hood or cap, and water and oil coils located within said groove, substantially as and for the purpose specified.

4. In a hydrocarbon-burner, a tray having an annular groove, in combination with a draft-regulating valve placed within the center bounded by said groove, and water, steam, and oil coils located within said groove, the steam-coils being provided with apertures to direct the flame over the other coils, substantially as and for the purpose specified.

5. In a hydrocarbon-burner, a tray having an annular groove, in combination with water and oil coils, a hood bounded by said groove, and a hydrocarbon-nozzle above said hood, substantially as and for the purpose specified.

6. In a hydrocarbon-burner, a tray having an annular groove, in combination with steam, water, and oil coils, a hood bounded by said groove and a hydrocarbon-nozzle above said hood, the steam-coil directing the flame upon and among the other coils and spraying any oil which runs into the groove, substantially as and for the purpose specified.

7. The tray for a hydrocarbon-burner, having annular groove A' and central valved part, B, substantially as and for the purpose specified.

8. The tray for a hydrocarbon-burner, having annular groove A' and central valved part, B, in combination with the hood or cap E, hydrocarbon-nozzle above said hood, and air-passage F, substantially as and for the purpose specified.

9. The combination of tray A, having groove A', flange A^2, and central valved part, B, substantially as and for the purpose specified.

10. The combination of tray A, having groove A', valve D, coils G, H, and I, hood E, injector J, and nozzle J', substantially as and for the purpose specified.

11. The combination of tray A, having groove A', valve D, coils G, H, and I, hood E, injector J, and nozzle J', pipes G^2 I^2 H' H^3, and valves I^2 H^3 H^4, substantially as and for the purpose specified.

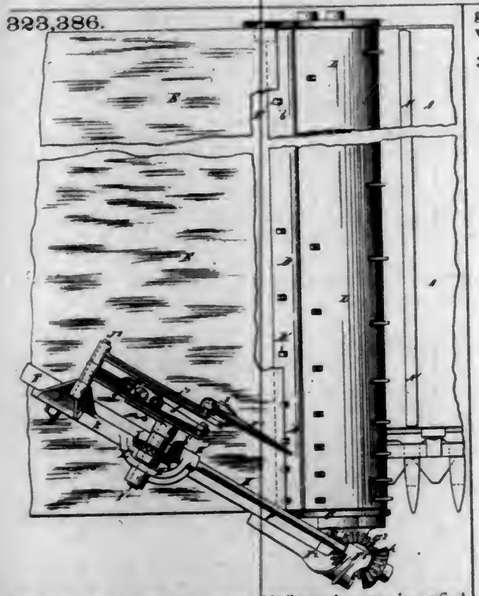
323,386. GRAIN-CARRIER FOR LOW-DOWN GRAIN-BINDERS. JOHN F. APPLEBY, Minneapolis, Minn., assignor to the Minneapolis Harvester Works, same place. Filed Dec. 13, 1883. (No model.)

Claim.—1. In a self-binding harvesting-machine, the combination of a spider-cylinder arranged between the binder-deck and the platform-carrier, and provided with different series of retracting teeth, respectively mounted upon rock-shafts parallel to the axis of the spider-cylinder, and with means for causing the said teeth to be appropriately projected from and withdrawn into the spider-cylinder, the teeth of each series being interplaced relatively to the teeth of the adjoining series, whereby teeth mounted upon different rock-shafts move in different transverse planes.

2. In a spider-cylinder, the combination, with series of movable teeth, of means for appropriately projecting such teeth from and withdrawing them into the shell of the said cylinder, the teeth of each series lying at variable distances from each other in the direction of the length of the cylinder, those near the forward end of the cylinder being nearer together than those near the rear end of the cylinder, as shown and described.

3. The platform-carrier and the rotating spider-cylinder arranged between the platform-carrier and the binder-deck, in combination with

323,386.

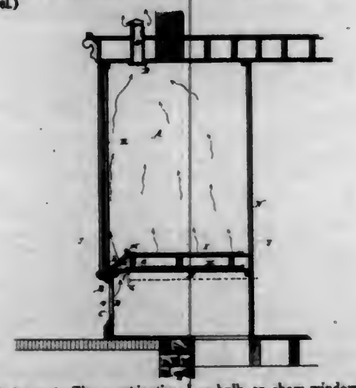


butt-hastening arms vibrating apon orbitally-moving axes in vertical planes inclined rearwardly from the front part of the binder-deck toward the drive-wheel side of the machine, and suitable intermediate shafting and gearing connecting the said vibrating arms with the said rotating spider-cylinder.

4. An adjustable butt-board having affixed to it a frame for supporting butt-hastening arms and an upright rotating shaft which is concentric with the axis upon which the butt-board is rocked when undergoing adjustment, in combination with suitable intermediate gearing partly supported upon the butt-board for transmitting the power to operate the butt-hastening arms from the said upright shaft.

5. The vibrating butt-hastening arms J and J' and the crank-shaft I', supported upon the adjustable butt-board F, in combination with the counter-shaft H, also supported by the butt-board F, and connected by suitable bevel or miter gears with the crank-shaft I', and the upright shaft G, concentric with the axis of oscillation of the butt-board F.

323,387. VENTILATOR FOR SHOW-WINDOWS. John N. Baer and Jesse S. Edwards, Philadelphia, Pa. Filed Jan. 10, 1885. (No model.)

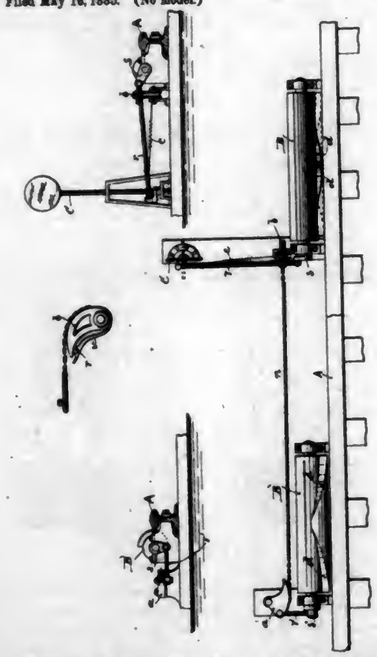


Claim.—1. The combination, in a bulk or show window, of the floor I, having oblique edges provided with air-passages K and sliding grate-valves L, adapted to direct the air-currents against the lowermost part of the glass window, guides for the grate-valves, and cranked rod M, substantially as and for the purpose specified.

2. The combination, in a bulk or show window, of the floor E, having passages F, screens *f*, valves G, floor I, having openings K, valves L, and ventilator-openings O in the roof, substantially as and for the purpose specified.

3. The combination, in a bulk or show window, of the substantially horizontal floor I, having inclined openings K, formed like gratings, grate-valves L, and ventilating-openings opening from the roof of said window, substantially as and for the purpose specified.

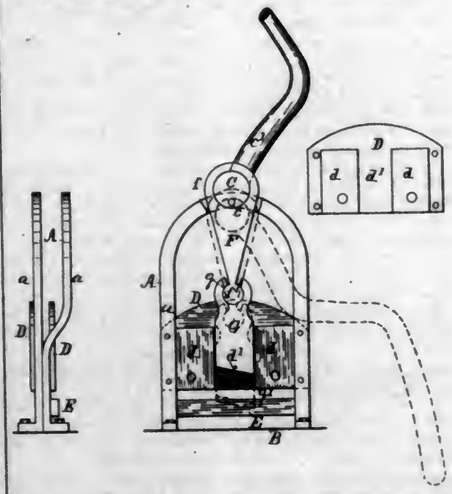
323,388. RAILWAY-SIGNAL. John E. Baker, New York, N. Y. Filed May 16, 1885. (No model.)



Claim.—1. The combination of the cam-lever B, quadrant-lever *b*, crank *s'*, rod *r*, and springs *v* and *c* with a signal, C, substantially as described, and for the purpose set forth.

2. The cam-lever B', crank *s'*, rod *r'*, and quadrant-lever *a*, in combination with the quadrant-lever *b* and rod *n*, substantially as and for the purpose specified.

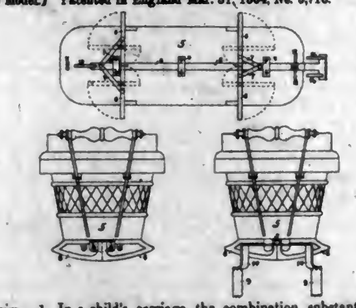
323,389. SHEARS FOR IRON. David K. Beals, Strasburg, Ill. Filed May 15, 1884. (No model.)



Claim.—1. In a machine for cutting metal, the combination of the standard A, consisting of parallel upright frames *a a'*, the side plates, D D, the clips *d d*, arranged between said plates D and having their inner edges separated, whereby to provide the guide-slot *d'*, the lower blade, E, the upper blade, G, operating in slot *d'*, the lever C', and the connection F, substantially as set forth.

2. In a machine for cutting metal, the combination of the parallel uprights *a a'*, the plates D, extended between the vertical arms of said uprights and provided centrally with an intermediate groove, *d'*, the knife E, the knife G, operating in slot *d'*, the eccentric C, pivoted between the upper ends of the uprights *a a'* and provided with lever-arm *c'*, and the arm F, connected with knife G and having a circular opening fitted over eccentric C, substantially as set forth.

323,390. CONVERTIBLE CARRIAGE AND CRADLE. George C. Bond and John Sadler, Nottingham, England. Filed May 26, 1885. (No model.) Patented in England Mar. 31, 1884, No. 5,718.



Claim.—1. In a child's carriage, the combination, substantially as described, with the carriage-body provided with locking-studs and the supporting-frame constructed to engage said studs, of a longitudinally-movable locking-bar, also constructed to engage the lugs and lock the frame to the carriage-body, for the purposes specified.

2. In a child's carriage, the combination, substantially as described, with the carriage-body provided with slotted locking-studs, and the supporting-frame constructed with slotted bearing-surfaces for the reception of said lugs, of a longitudinally-movable locking-bar constructed to engage the locking-studs to lock the frame to the body and stops to limit the movement of said bar in either direction, substantially as and for the purposes specified.

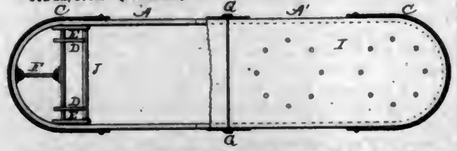
3. In a child's carriage convertible into a cradle, the combination, substantially as described, with the carriage-body, of two rockers, each formed in two sections pivoted to said body, and an operating-bar for oscillating the rocker-sections on their pivots to move the same into a position parallel with or at right angles to the longitudinal axis of the carriage-body, for the purposes specified.

4. In a child's carriage convertible into a cradle, the combination, substantially as described, with the carriage-body, of two rockers, each formed in two sections pivoted to said body, an operating-bar for oscillating the rockers on their pivots to move the same into a position parallel with or at right angles to the longitudinal axis of the carriage-body, and a stop to limit the oscillatory movement of the rocker-sections and the longitudinal movement of the locking-bar, for the purposes specified.

5. In a child's carriage convertible into a cradle, the combination, substantially as described, with the carriage-body, the rockers 6, pivoted thereto, and the frame from which said body is supported, of the locking-bar 8, adapted to lock the carriage-body to the frame, and having a cam-surface whereby said carriage-body is slightly elevated above the frame and on which the body is adapted to rock laterally, as described, for the purpose specified.

6. The combination of the longitudinal bar 8, links 7, and rocker parts 6 with the body or cot 5 of a perambulator, substantially as and for the purpose hereinbefore described with reference to the accompanying drawings.

323,391. COOLING-BOARD. Oliver P. Boyer, Dayton, Ohio. Filed Oct. 22, 1884. (No model.)

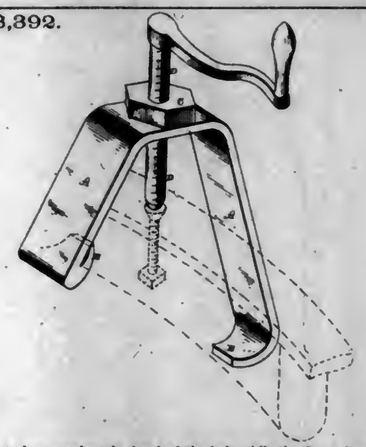


Claim.—In a cooling-board, the combination of the bent frames A A', hinged together, the elevating-frame B, hinged to frame A, said elevating-frame having notched blocks on the under side thereof, and pawls D D, pivoted to bar J to support the same, substantially as set forth.

323,392. DEVICE FOR CLAMPING TIRE-BOLTS. Wilbert F Brown, Richmond, Mich. Filed Feb. 6, 1885. (Model.)

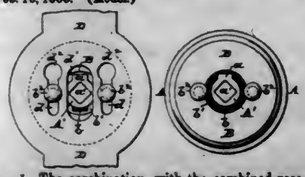
Claim.—In a device for holding tire-bolts, the combination of the bent frame having its two ends turned inwardly in opposite directions, and the screw D, which is passed through the center of the frame and

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made to bear against the head of the bolt while the frame is applied to the rim of the wheel, substantially as shown.

323,393. KNOB ATTACHMENT. Charles W. Bullard, Chicago, Ill. Filed Feb. 16, 1885. (Model.)



Claim.—1. The combination, with the combined rose and escutcheon plate D, of the attaching-sleeve B, adjustably secured thereto, and the shank A' of the door-knob or rosette, the one being provided with a groove, *b*, and a circular recess, *b'*, and the other with a lug, *a*, essentially as set forth.

2. The combination, with the combined rose and escutcheon plate D, of the attaching-sleeve B, adjustably secured thereto, and provided with a groove or passage, *b*, and a circular recess, *b'*, at its rear end, and the knob-shank A', provided with a projecting lug, *a*, at its end, essentially as set forth.

3. The combined rose and escutcheon plate D for door-locks, provided with an elongated slot to permit of an adjustment on the lock-spindle, in combination with the attaching-sleeve B of the knob or rosette, and means, substantially as herein described, for adjustably attaching said sleeve to the plate D, essentially as set forth.

4. The combination, with the door knob or rosette and the attaching-sleeve B, provided with screws or headed posts b^2, of the rose and escutcheon plate D, having elongated slots *d' d* and *d'*, substantially as and for the purpose set forth.

5. The combination, with the door knob or rosette and the attaching-sleeve B, having screws or headed posts b^2, of the rose and escutcheon plate D, provided with elongated guide-slots *d d*, having enlargements d^2, and an elongated spindle-slot, *d'*, essentially as and for the purpose set forth.

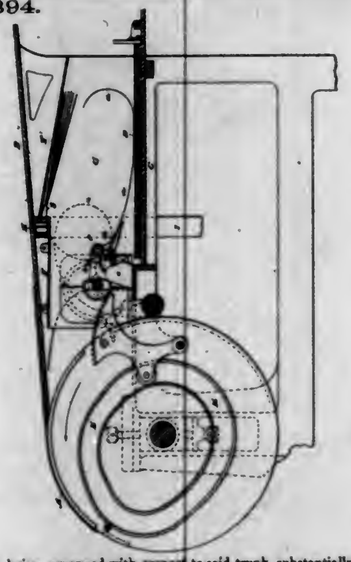
323,394. DELIVERY APPARATUS FOR PRINTING-MACHINES. Andrew Campbell, Brooklyn, assignor to John and Edmund McLaughlin, New York, N. Y. Filed Dec. 19, 1883. (No model.)

Claim.—1. As a means for delivering a sheet from a printing-press, the combination, with means, substantially as described, for taking the advancing edge of the sheet and carrying it back to the delivery-point, of an apparatus for rarefying the air or creating a partial vacuum in front of the sheet as it is being turned, substantially as set forth.

2. As a means for delivering a sheet from a printing-press, the combination of a mechanism, substantially as described, for taking the advancing edge of the sheet and carrying it back to the delivery-point, substantially as described, a trunk formed of a roof-plate and side plates, arranged substantially as shown, and an air-rarefying mechanism, substantially as described, constructed to rarefy the air within said trunk in front of the sheet as it is being turned, substantially as set forth.

3. The combination, in a sheet-delivery for printing-presses, of the trunk comprising the roof-plate and side plates, substantially as described, and the air-trunk constructed and adapted to be connected with an air-forcing apparatus and provided with an air-outlet or jet-tubes *g*, with chambers *h*, and with dash-plates *k*, either perforate or imperforate, said

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air-trunk being arranged with respect to said trunk, substantially as set forth.

323,395. GATE. James B. Campbell, Normanda, Ind. Filed Jan. 16, 1885. (No model.)



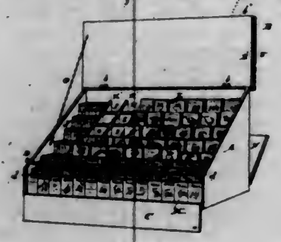
Claim.—1. A gate composed of parallel rails pivoted at each end between two opposite vertical bars the rear pair of which are hinged to the rear gate-post, in combination with the parallel-motion device composed of the bars C and C', pivoted to the lower rail of the gate, and the bar C^2, pivoted to the upper ends of the former bars, and mechanism, substantially as described, secured to the rear gate-post, connected with the rail C^2, and adapted to automatically draw the parallel-motion device rearward and lift the front of the gate as the latter is opened.

2. The combination, with the front and rear gate-posts, and a gate hinged to the latter at or near its edges, and composed of horizontal rails pivoted between vertical end and center rails, of the parallel-motion device composed of the rails C C', pivoted at their lower ends to the lower rail of the gate, and the rail C^2, pivoted to the rails C C', the detent-plate D, pivoted upon the rear gate-post, the detent-bar E, engaging the shoulder d^2 of the plate D, and the rod F, connecting the projection d^3 of the plate D with a proper point of the rail C^2, substantially as specified.

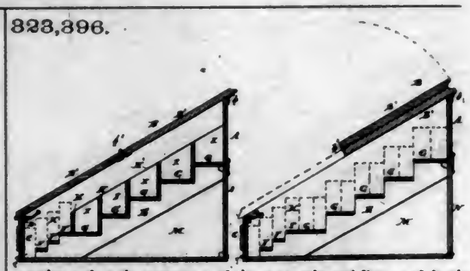
3. The combination, with the posts A A', gate B, bars C, C', and C^2, and mechanism, substantially as described, acting from the rear gate-post to automatically draw the bar C^2 rearward, of the bars H, links A, and supporting-rods A', substantially as specified.

323,396. SEED-CASE. Robert P. Carpenter, Philadelphia, Pa. Filed Dec. 10, 1884. (No model.)

Claim.—1. A case for containing and exhibiting seeds, which consists of a box, A, made substantially triangular in cross-section, open on the top, and provided with the steps F and receptacles I, in combination with a suitable lid or cover formed of the two parts B' B', hinged



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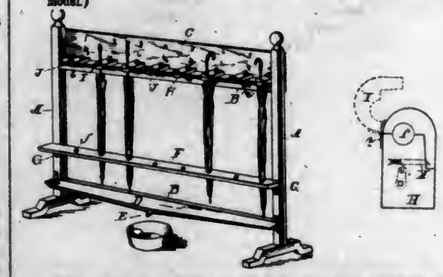
together and at the upper part of the case, substantially as and for the purpose specified.

2. A seed-case having a series of steps, G, arranged one above the other, part of which have receptacles I and part are left without, steps F, arranged in front and below the steps G, and a door, C, adapted to open down and expose the steps F or their contents, substantially as and for the purpose specified.

3. The box A, made substantially triangular in cross-section, and provided with steps F and receptacles I, arranged substantially as shown, lid B, and door C, substantially as and for the purpose specified.

4. The box A, made substantially triangular in cross-section, and provided with steps F and receptacles I, arranged substantially as shown, lid B, and doors C and N, substantially as and for the purpose specified.

323,397. UMBRELLA-STAND. William C. Carter, Cincinnati, Ohio, assignor to George S. Baily, same place. Filed Mar. 1, 1884. (No model.)



Claim.—1. The umbrella-stand herein described, consisting of the end pieces, A, the cross-pieces B B', the back C, the drip-pan D E, the cross-piece F, having openings *f* to receive the lower portion of the umbrella, and the handle-containing piece H, attached to the upper cross-piece, B', all constructed and combined as and for the purposes described.

2. The combination of the plate H, having spring-lock K attached thereto, with plate I, hinged to plate H, and provided with a recess in line with lock K when the plates are brought together, the said plates H and I being provided with corresponding recesses in their meeting edges, as and for the purposes set forth.

323,398. DOUBLE-ACTING PUMP. Daniel R. Cloud, Detroit, Mich. Filed May 22, 1885. (No model.)

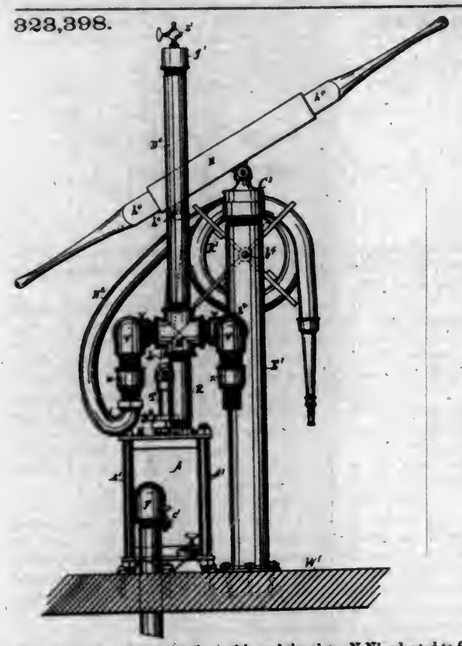
Claim.—1. In a pump, substantially as specified, the combination of the body containing the barrel C, the valve-chambers and ledges, with chamber D, the partition E, having ports *t t*, the U-shaped supply-openings leading from the chambers B' B' into the barrel C, said parts formed integral, the valves, as set forth, the plates N N', having the annular flanges D', with cut-out portion *i*', said flanges fitting within the barrel, as specified, the bolts for securing said plates to the body of a supply and discharge pipe, as set forth, the piston-head, and means for operating said piston-head, substantially as set forth.

2. In a pump, as set forth, the combination of the valve-chamber B, the ledge, the valve H, its thimble *n*, fitting over the thimble *o*, containing the coiled spring, and the arms *m*, supporting the guide-pins *i*, the free ends of said pins engaging with the wall of the valve-chamber, as and for the purposes set forth.

3. In a double-acting pump, the combination of the body having the parts formed integral, as set forth, of the horizontal valves and ports *t t*, the vertical valves, as specified, having ports *f f*, of the piston-head operated by means, substantially as set forth, of the plates N N', the plate N having stuffing-box and discharge-pipe R, said pipe located vertically over the horizontal valves, of a supply-pipe located between the horizontal valves and leading into the chamber D, of a vent and drip cock, and bolts for securing the heads to the body, as and for the purposes specified.

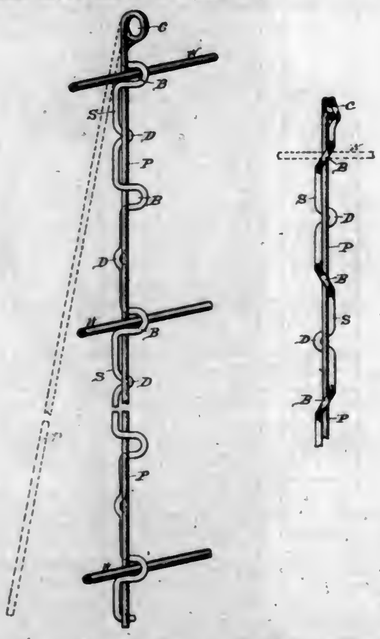
4. In a pump, substantially as set forth, the body A, having the

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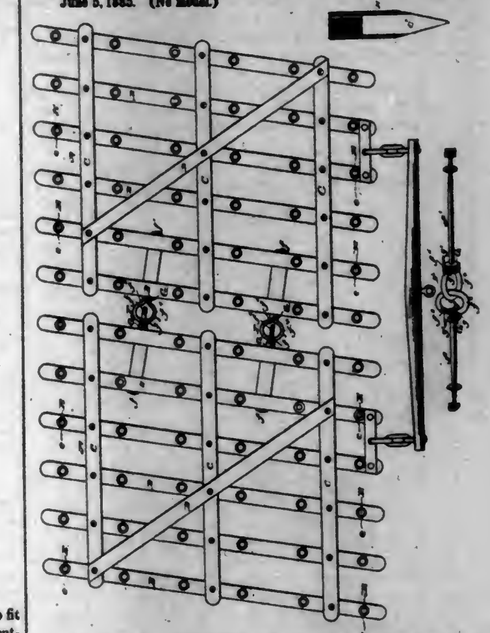
chambers formed integrally therewith, and the plates N N', adapted to fit over said chambers, said plates having the annular flanges D', with cut-out portions *i*', fitting within the ends of the barrel C, as and for the purposes specified.

323,399. WIRE-FENCE STAY. William M. Clow, East Wheatland, Ill. Filed Dec. 9, 1884. (No model.)



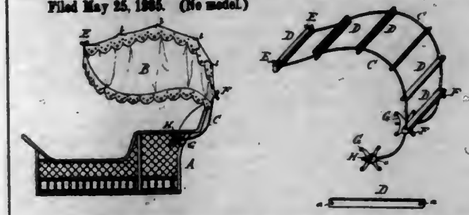
Claim.—The stay for wire fences, comprising the body portion S, having crimps or bends B formed therein at intervals along its length, the portions between said crimps being alternately bent to one side and having crimps or bends D, the coil c at the top of said body portion, and the lock-wire projecting from said coil and adapted to be interlaced with the crimps B and D, substantially as described.

323,400. HARROW. Merritt H. Cogswell, Blissfield, Mich. Filed June 5, 1885. (No model.)



Claim.—The hinge formed of the sections *f f'*, having the loops f^3 and f^4, and the bends f^5, and the collars G, having the notches *g* to receive the bends f^5, and the spurs or projections *g'*, for the purpose set forth, substantially as described.

323,401. CHILD'S CARRIAGE. Jesse A. Crandall, Brooklyn, N. Y. Filed May 25, 1885. (No model.)



Claim.—1. In combination with the body of a child's carriage, the rods C C, running parallel with each other above the body of the carriage and adapted to support and accommodate the adjustments of the canopy, substantially as described.

2. A support for canopies of children's carriages, consisting of the rods C C, running parallel with each other above the carriage-body, attached to the carriage at or near the rear of the body thereof by supports G G, having sockets *c c* and thumb-screws H H, the adjustable cross-bars D D, each having apertures *a a* near their extremities, and the thumb-screws E E and F F, substantially as described, and for the purposes shown and described.

3. In combination with a child's carriage, the supports G G, parallel rods C C, adjustable cross-bars D D, and thumb-screws E E and F F, substantially as shown and described, and for the purpose described.

4. The thumb-screws E E and F F, adjustable cross-bars D D, and parallel rods C C, in combination with a child's carriage, as and for the purposes described.

5. In canopies for children's carriages, the combination, with said carriage, of the supports G G, having sockets *c c* and thumb-screws H H, the parallel rods C C, adjustable cross-bars D D, and thumb-screws E E and F F, as and for the purposes shown and described.

6. The adjustable cross-bars D D, having apertures *a a* near their extremities, in combination with the thumb-screws E E and F F, or their equivalents, and the canopy-rods C C of a child's carriage, as and for the purpose shown and described.

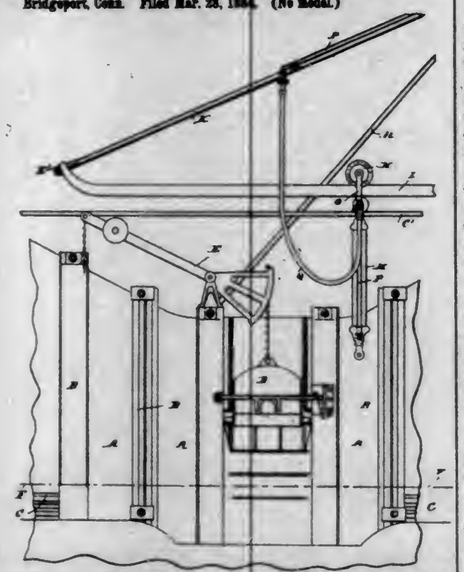
323,402. COMPOUND FOR WATERPROOFING BOOTS, SHOES, &c. Jean Baptiste Dupret, Brussels, Belgium. Filed May 13, 1885. (No specimens.)

Claim.—1. The herein-described preserving, strengthening, and waterproofing compound, or basis for such compounds, consisting of tar and alumina, or a salt of alumina, as described.

2. The herein-described compound, consisting of aluminated tar combined with other substances, ingredients, or chemicals, substantially as described.

3. The herein-described compound for waterproofing leather and other materials, consisting of aluminated tar, tallow, or stearine, beeswax, and turpentine, or their specified equivalents, substantially as described.

323,408. HYDRAULIC JACK FOR CRANES. WILLIAM F. DURFEE, Bridgeport, Conn. Filed Mar. 23, 1884. (No model.)



Claim.—1. The combination, with a swinging crane-arm and its stay-rod, of a roller adapted to traverse the arm, a hydraulic jack supported by the roller, a water-pipe extending along and supported by the stay-rod, devices for supplying water to the pipe, and flexible connections, whereby the pipe may communicate with the jack to supply water thereto, substantially as set forth.

2. The combination, with a crane-arm and its stay-rod, of a roller adapted to traverse the arm, a hydraulic jack supported by the roller, a water-pipe extending along the stay from the axis of the crane to about the middle of the crane-arm and supported by the stay, devices for supplying water to the pipe, and flexible water-connections between the jack and the nearest end of the pipe, substantially as set forth.

3. The combination, with the crane-arm, of the roller adapted to traverse the same, the hydraulic jack supported by the roller, the projection K^2, overhanging the path of the jack, a water-pipe supported by said projection, water-supply connections leading to said pipe, and a flexible pipe connected with the latter at the extremity of said projection and with the jack, substantially as set forth.

4. The combination of the stationary mast, an upright water-pipe carried thereby, a crane-arm adapted to swing on said mast, a hydraulic jack supported by said arm, a water-pipe carried by the crane-arm, and a flexible pipe, Q, connecting said first-mentioned pipes, and a second flexible pipe connecting the water-pipe upon the arm with the jack, substantially as set forth.

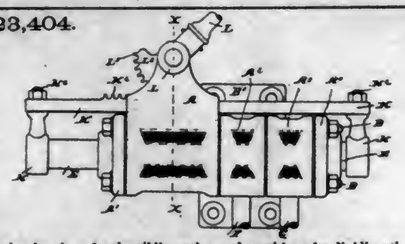
5. A hydraulic lifting-jack consisting of the combination of a cylinder, an upper cap having a petcock and means for attachment to a supporting device, a piston and piston-rod, a lower cap having openings for the passage of said piston-rod and an inlet-pipe, disks l^1 and l^2, cup-leathers *l*, and rubber ring *m*, substantially as set forth.

6. In a hydraulic lifting-jack, the combination, with the piston and a piston-rod passing through the lower cap, of cup-leathers held against the rod to prevent leakage, and a solid rubber ring, against which the piston strikes in the event of its sudden descent.

323,404. VALVE. WILLIAM F. DURFEE, Bridgeport, Conn. Filed Mar. 23, 1884. (No model.)

Claim.—1. In a valve, the combination of a plerality of annular sections, A A^2 A^3, the ducts F G H, a sliding tube of less diameter than the interior of said sections and having the apertures *e*, and the disks C and their packings clamped between the ends of said sections and

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forming bearings for the sliding tube, and partitions for dividing the annular space between the tube and said sections into chambers, substantially as set forth.

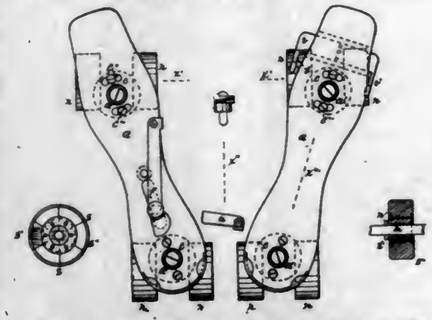
2. In a valve, the combination of a water-tight casing having ducts communicating therewith, a tube adapted to slide therein and place the desired ducts in communication with one another, said tube being connected with a parallel bar, also adapted to slide in the casing, whereby the alignment of the tube is maintained, substantially as set forth.

3. In a valve, the combination of a water-tight casing having ducts communicating therewith, and a tube adapted to slide therein and place the desired ducts in communication with one another, said tube being connected with a parallel bar, also adapted to slide in the casing, the bar being provided with a rack, and the casing with a lever and segment for actuating the rack and tube, substantially as set forth.

4. In a valve, the combination of a plurality of annular sections, A A^2 A^3, the ducts F G H, a sliding tube of less diameter than the interior of said sections and having the apertures *e*, and the disks C and their packings clamped between the ends of said sections and forming bearings of the sliding tube, and partitions for dividing the annular space between the tube and said sections into chambers, said sections having in their ends the recesses *b*, adapted to receive and fit the disks C, thereby centering the sections, substantially as set forth.

5. The casting A, having a groove, K', and set-screws K^4, the bar K, having a rack, and stops K^5, in combination with a toothed sector which engages the rack, supports N, which connect the rack with the perforated sliding tube, and induction, eduction, and circulating chambers, through which the tube passes.

323,405. ROLLER-SKATE. WILLIAM H. ELLIOT, Ilion, N. Y. Filed Feb. 4, 1885. (No model.)



Claim.—1. The combination, in roller-skates, of tread *a*, roller *n*, and axle or bearing *m*, with suitable intermediate roller-carrying devices fixed to said tread, the roller-carrying devices being in such arrangement with said tread that when both skates are on the floor and moving in a right line the medial line of the right tread shall diverge from the line of travel and the plane of the roller to the right, and the medial line of the left tread shall diverge from the line of travel and the plane of the roller to the left, substantially as specified.

2. In a roller-skate, the U-shaped double-forked key *w*, constructed substantially as described, in combination with groove c'' in the hub of the roller-frame and the annular groove n''' in the hub of the roller, as set forth.

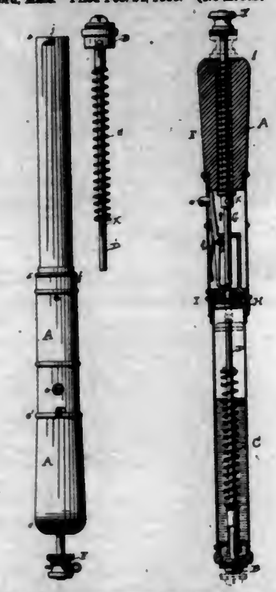
3. In a roller-skate, a hanger, *c*, having a slight rotary movement on a vertical axis, as upon central screw, *a'*, and in combination therewith means of rigidly fastening the same to the tread of the skate in any desired position, whereby the skates may be adjusted to the peculiarities of the skater's feet and securely fastened in said adjustment, substantially as specified.

4. In a roller-skate, the double-balanced and adjustable spring *i*, having the opening i' for the long arm of the hanger, and the bar i'' across the end, in combination with the roller-frame *c* and the adjusting thumb-screw r', substantially as specified.

5. In a roller-skate, the combination, with the tread thereof, of the

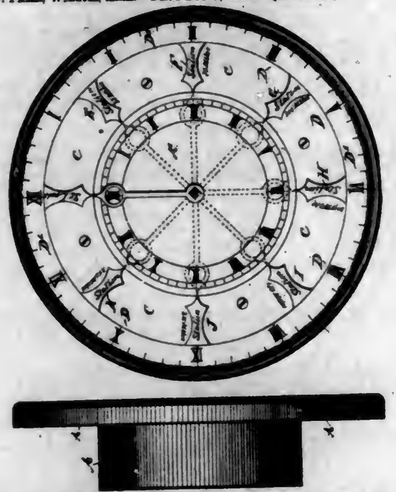
sole-clamp *v*, provided with the spur v'', the screw v''', and the rearward-extending arm v', substantially as and for the purpose specified.

323,406. INSTRUMENT FOR DOSING ANIMALS. GILES S. FALES, New Bedford, Mass. Filed Feb. 24, 1885. (No model.)



Claim.—In a farrier's instrument for administering medicine to animals, the combination of the handle A, barrel *c d' e*, and lock *g h a*, all constructed, combined, and operating substantially as and for the purposes set forth and described.

323,407. STATION-INDICATOR FOR RAILWAY-CARS, &c. DAVID J. FALES, Windom, Kans. Filed Dec. 8, 1884. (No model.)

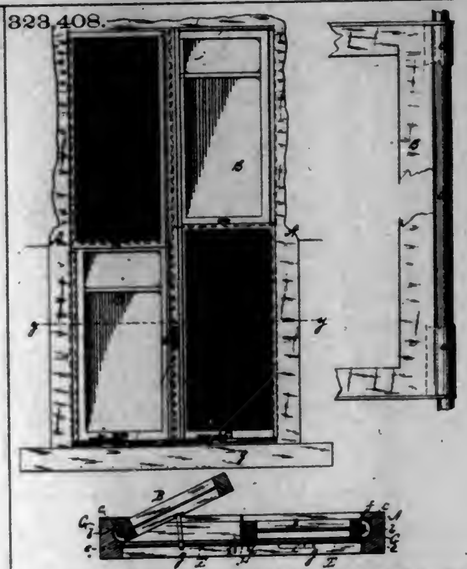


Claim.—In combination with a clock, the additional dial C, provided with hour-numbers, minute-graduations, and fixed hands E F G H I J K, as shown and specified, and provided with the names of and distances to stations, and located so as to indicate on the dial C the time of train arrivals, as and for the purpose set forth.

323,408. CAR-WINDOW. JOHN M. FENNERTY, Memphis, Tenn. Filed May 26, 1884. (No model.)

Brief.—A car-window consisting of two independently vertically-sliding or horizontally-swinging leaves, which slide or turn upon vertical rods which extend from the sill to the top of the space in casing above window.

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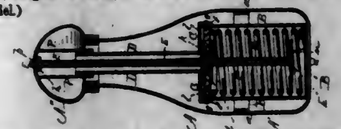


Claim.—1. A car-window composed of two independent leaves arranged side by side, and pivoted on opposite sides, so as to swing horizontally outward in opposite directions, and adapted to slide on said pivots, so that either may be raised or lowered independently of the other, substantially as and for the purposes specified.

2. In a car-window, the combination of a central T or meeting rail having lateral arms, and pivot and guide rods extending between and connecting the lateral arms of the T-rail, substantially as shown and described.

3. In a car-window having two independently sliding and swinging leaves or sashes and two independently-moving screens, a common meeting or T rail having screen-grooves, whereby the swinging leaves may be arranged and adjusted relatively to each other, substantially as shown and described.

323,409. PERFUME-EJECTOR. ROBERT F. FISHER, Attleborough, Mass., assignor to Henry F. H. Bothe, same place. Filed Apr. 27, 1885. (Model.)



Claim.—1. The herein-described improved perfume-ejector, consisting, essentially, of the following parts, viz: the internal vessel, B, provided with the spring *e* and tube D, the ejecting-tube E, provided with a shoulder, *h*, and disk *l*, said tube extending from the interior of the vessel to the exterior of the case containing the same, and said disk fitting tightly into said vessel, and an external case provided with a perforation, *b*, through which the ejecting-tube projects, and an opening, *d*, through which access may be had and pressure applied to the vessel containing the perfume, substantially as set forth.

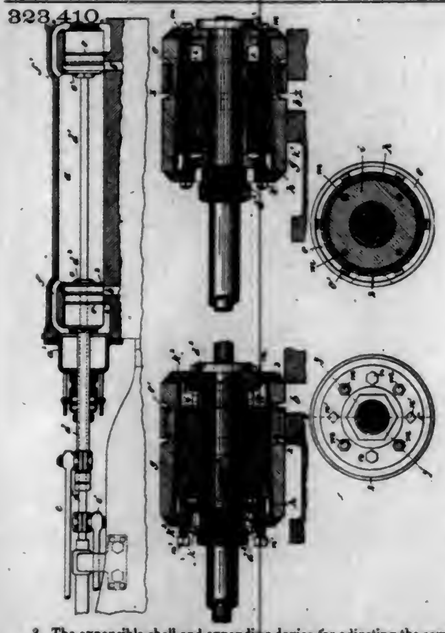
2. The combination of the case A A', provided with the openings *b* and *d* and tube F, the internal vessel, B, provided with the cover C, tube D, and spring *e*, and the ejecting-tube E, with the shoulder *h*, flanges *k n*, and disk *l*, substantially as and for the purpose described.

323,410. PISTON-VALVE. FREDERICK FOSDICK, Fitchburg, Mass. Filed June 16, 1884. (No model.)

Claim.—1. In a piston-valve for steam-engines, the combination, with an expansible shell having tapering or conical ends and tapering plug co-operating therewith, of heads engaging the ends of the said shell, the faces of the said head which engage the ends of the said shell being tapering, whereby the shell, when adjusted by the plug, is prevented from further expansion, substantially as described.

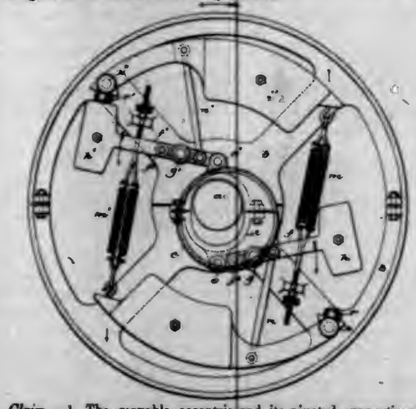
2. In a steam-engine, the steam-chest *a*, having ports *b* b^2 leading therefrom to the cylinder and steam-passages connecting the steam-spaces at opposite ends of the valve-heads, combined with a piston-valve acted upon at each end by live steam, the valve being provided with openings surrounding it at different portions of its length, such openings being united by longitudinal passages *o*, whereby steam is admitted alternately into the ports *b* b' at two places simultaneously, substantially as described.

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3. The expansible shell and expanding device for adjusting the same as to external diameter, combined with the locking device positively engaging the said shell, preventing further expansion thereof after the said shell is properly adjusted, substantially as described.

323,411. STEAM-ENGINE GOVERNOR. FREDERICK FOSDICK, Fitchburg, Mass. Filed June 2, 1884. (No model.)



Claim.—1. The movable eccentric and its pivoted supporting-levers, combined with counterbalancing-weights connected with the said levers for the eccentric and parts of the engine supported thereon, and the actuating centrifugal weights, substantially as described.

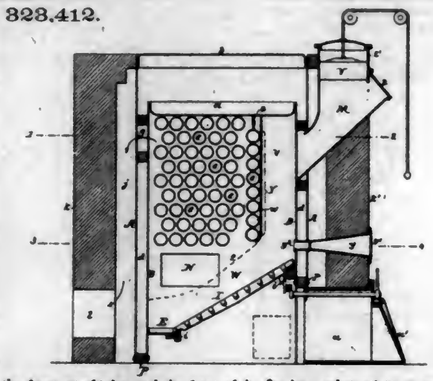
2. The movable eccentric and the counterbalanced supporting-levers therefor, fulcrumed and pivotally connected with the said eccentric at opposite sides thereof, combined with the pivoted centrifugal weights connected with the said levers at opposite sides of their fulcra, whereby both weights operate in conjunction on the eccentric, substantially as described.

3. The movable eccentric and its pivoted supporting-levers, combined with counterbalancing-weights connected with the said levers, stops limiting the movement thereof, and centrifugal weights connected with the said levers, substantially as described.

323,412. STEAM-BOILER. ARTHUR H. FOWLER, Newark, Ohio. Filed May 16, 1884. (No model.)

Claim.—1. The combination of the fire-box of a steam-boiler, the transverse tubes therein, a grate between which and the lowest set of tubes is the combustion-chamber W, and the vertical fuel-reservoir V, communicating with the said combustion-chamber and situated between

323,412.



the front set of tubes and the front of the fire-box, substantially as specified.

2. The combination of the fire-box of a steam-boiler, having a fuel-reservoir, V, a combustion-chamber, and transverse tubes, with a series, Y, of tubes in contact, or nearly so, with each other, and located as described, so as to form a water-back between the combustion-chamber and fuel-reservoir, substantially as described.

3. The combination of the fire-box of a steam-boiler and a row, Y, of tubes in contact, or nearly so, with each other, so as to form a water-back, with a perforated plate, w, placed in front of the said row of tubes, substantially as set forth.

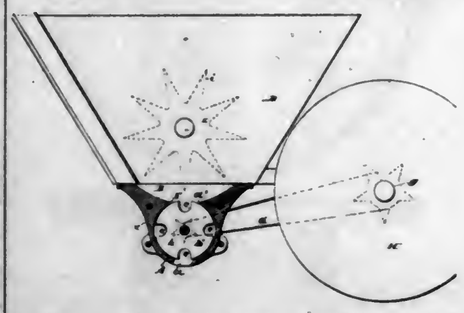
4. The combination of the fire-box containing a series of tubes, the inclined grate D, the combustion-chamber W, the fuel-reservoir V at one end of said chamber and within the boiler-casing, and the inclined feeder M, communicating with the reservoir, as set forth.

5. The combination of the fire-box and boiler-casings, the inclined grate D, and the base-frame P, forming the bottom bearing for the boiler on three sides, but having at the front an offset, P', for the ash-pit opening, as set forth.

6. The combination of the inclined grate, the combustion-chamber W, the fuel-reservoir V at the end of the same, and the transverse water-tubes, with the fire-box and boiler-casing having a lateral passage, N, communicating with the combustion-chamber between the tubes and the lower portion of the inclined grate, as set forth.

7. The combination of the quadrangular boiler-casing having internal combustion-chamber, the outer quadrangular brick structure having an opening, *l*, at or near the bottom, and the flue *j* between the boiler-casing and outer structure, said flue communicating at the upper end with the combustion-chamber of the boiler and at the lower end with the outlet *l*, as set forth.

323,413. SEED-PLANTER. WILLIAM B. GIBSON, Smithville, assignor of one-half to O. N. Geise, Terrell County, Ga. Filed June 5, 1885. (No model.)



Claim.—1. In a cotton-seed planter, the combination, with a hopper, of a casing located directly below and forming the bottom of the hopper, and provided with a tapering or funnel-shaped recess or cavity, and a wheel-pocket located below and communicating with said funnel-shaped recess or cavity, and a dropping-wheel located within said pocket.

2. In a cotton-seed planter, the combination, with a hopper, of a casing located below and forming the bottom of said hopper, and provided at a point below the hopper with two sharp lips or edges lying transversely to the plane of rotation of the dropping-wheel, and the dropping-wheel located within the casing below said lines or edges, substantially as set forth.

323,414. WORK-HOLDING CHUCK. JULIAN A. GILES, Cortland, N. Y. Filed Jan. 5, 1885. (No model.)

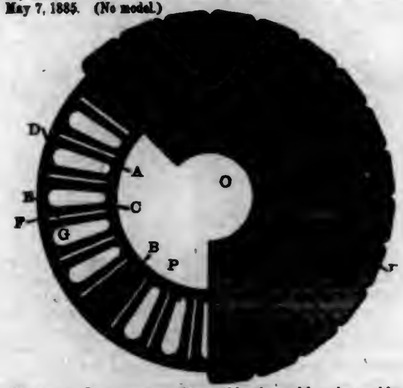


Claim.—1. In a chuck or vise, the combination, with the fixed jaw B, of the movable jaw C, traveling screw-nut E, and link G, connecting said movable jaw and screw-nut, substantially as shown and described.

2. In a chuck or vise, the combination, with the fixed jaw B, of the movable jaw C, traveling screw-nut E, having series of pins F F, and notched link G, adapted to connect the movable jaw with either of said pins, substantially as described.

3. In a chuck or vise, the combination, with fixed jaw B, of the movable jaw C, swivel-pin H, link G, and bifurcated traveling screw-nut E, having pins F F, substantially as shown and described.

323,415. TREE-SEAT. JOHN P. GRIMLE, Hamilton, Ohio. Filed May 7, 1885. (No model.)



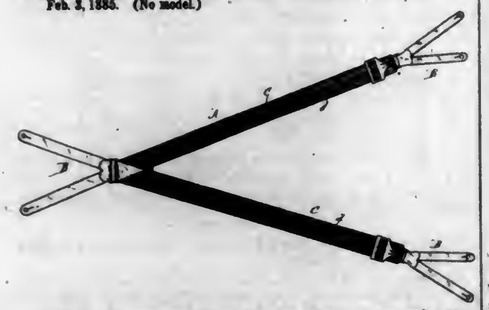
Claim.—1. In a tree-seat, the combination, with a ring and its supporting-legs, of a circular series of sector-shapnd seat-boards secured to said ring, as by means of bolts engaging in radial slots, and adapted to move radially outward as the tree expands in growth, substantially as set forth.

2. In a tree-seat, the combination of a radially-slotted ring-piece, a circular series of sector-shaped seat-boards secured thereto, and vertical extensible legs secured to the ring-piece, substantially as and for the purpose set forth.

3. In a tree-seat, the combination of ring A, having slots E and lugs F, supporting-legs secured to the same, and sector-shaped seat-boards H, provided with guide-grooves K, and secured to the ring by bolts J, substantially as and for the purpose set forth.

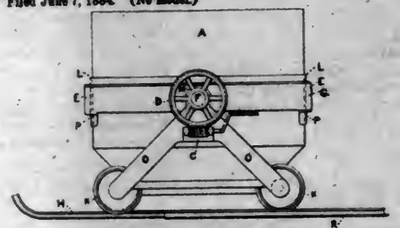
4. In a tree-seat, the combination of radially-slotted ring A, sector-shaped seat-boards H, secured thereto, legs L, secured to the ring, and footed screws M, engaging the legs, substantially as and for the purpose set forth.

323,416. SUSPENDERS. GEORGE C. HALE, Kansas City, Mo. Filed Feb. 3, 1885. (No model.)



Claim.—As an improved article of manufacture, a suspender provided with a cord secured to or housed within the strap of the suspender in a curved or folded position and adapted to be withdrawn therefrom, substantially as and for the purpose set forth.

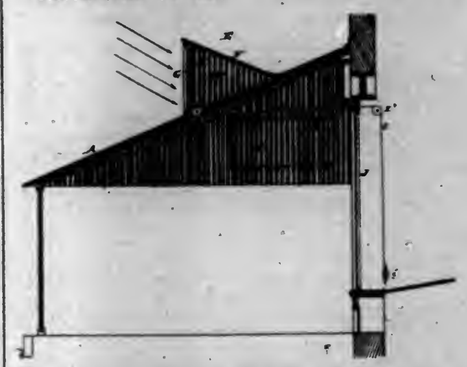
323,417. DUMPING-CAR. JOHN M. HARTMAN, Philadelphia, Pa. Filed June 7, 1884. (No model.)



Claim.—1. In a device for transporting and dumping cinder, the combination of a main track, an auxiliary track of different gage therefrom and capable of extension longitudinally beyond the same, a car-truck having double-tread wheels adapted to run upon both of said tracks, a car-body pivoted upon an axis, substantially at right angles to the line of track, and means for tilting said car-body upon its pivots, the whole operating substantially as set forth.

2. The combination of the car-truck having raised bearings M, substantially parallel to the axes of the truck-wheels, the ring E, having trunnions F, supported upon said bearings, and the car-body or tank A, of similar diameter of said ring and provided with an exterior flange, L, which projects from said ring, so as to support the body freely thereon, the whole operating substantially in the manner set forth.

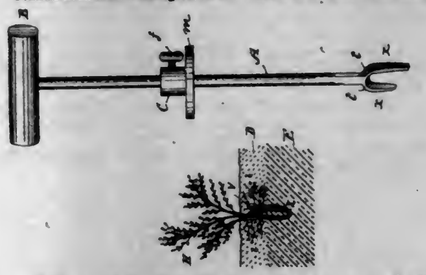
323,418. AWNING. EDWARD A. HILDEBRANDT, Philadelphia, Pa. Filed Jan. 5, 1885. (No model.)



Claim.—1. An awning having rigid wings provided with one or more doors or flaps loosely hinged and opening outward only, by which any strong currents of air may have egress, and thus prevent rupture in case of storms or hurricanes, substantially as and for the purpose specified.

2. The combination of the roof A and skylights E, formed of roof F, side parts, E', and glass fronts G, substantially as and for the purpose specified.

323,419. IMPLEMENT FOR PLANTING CRANBERRY-VINES. FRANCE B. HILLER, Wilmington, Mass. Filed June 18, 1885. (No model.)

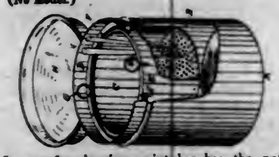


Claim.—1. In an implement for planting cranberry and other vines, the combination of the following instrumentalities, to wit: a long slender body adapted to enter and be withdrawn from the ground without greatly disturbing it, said body being provided with two short prongs at the lower end of said body adapted to pass astride the vines, and with a handle at or near its upper end for forcing the implement into the ground, substantially as described.

2. In an implement for planting cranberry and other vines, the combination of the following instrumentalities, to wit: a long slender body adapted to enter and be withdrawn from the ground without greatly disturbing it, two short prongs at the lower end of said body adapted to pass astride the vines, a handle at or near the upper end of the body for forcing the implement into the ground, and a gage or stop to prevent it from entering the ground too far, substantially as set forth.

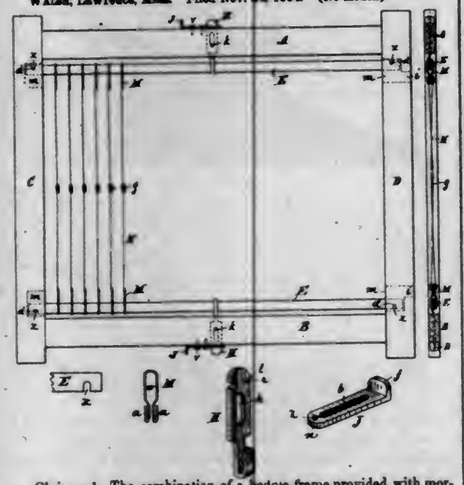
3. The improved implement herein described, the same consisting of the body A, provided with the handle B, and having the prongs *z z*, and the sleeve C, provided with the screw *f*, constructed, combined, and arranged to operate substantially as described.

323,420. PAINT-POT. Caroline E. Hills, Chicago, Ill. Filed Dec. 31, 1884. (No model.)



Claim.—In pots for cleaning paint-brushes, the pot A, provided with flange B and cover H, in combination with the removable cup C, having a solid periphery and perforated bottom, D, eyes G, and bracket-supports F, attached to its periphery and extending down past the flange B, and separating it from the cup, and forming a space for the overflow from wiping the brush, the cup and pot having such relative height as will allow a chamber below the cup for the precipitated paint, as specified and shown.

323,421. LOOM-HARNESS. William J. Hulford and Thomas P. Walsh, Lawrence, Mass. Filed Nov. 24, 1884. (No model.)

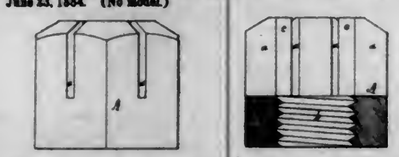


Claim.—1. The combination of a heddle-frame provided with mortises in its end rails, heddle-rods the ends of which are free in said mortises, said rods being provided with notches near their opposite ends, pins passing through said end rails and engaging said notched heddle-rods, heddles connected to said heddle-rods, and hooks for retaining said heddle-rods in engagement with said pins, substantially as described.

2. The combination of the heddle-frame, the rod E, the hook H, having the lip *l*, and a slide, J, provided with depression *z*, substantially as described.

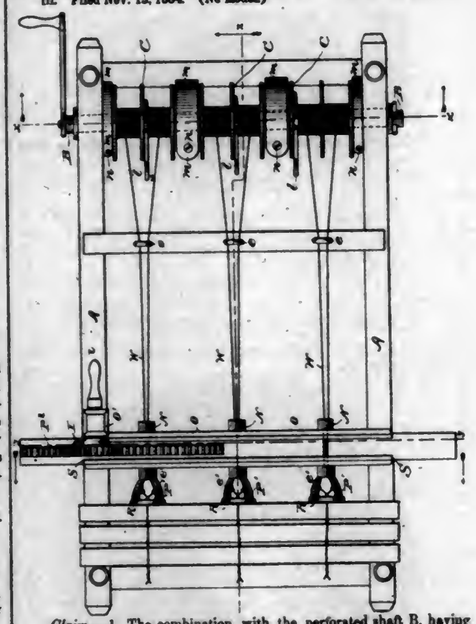
3. The combination of the heddle-frame, the rod E, the hook H, and the slide J, for locking said hook, substantially as described.

323,422. SCREW-NUT. Edward C. Ibbotson, Boston, Mass. Filed June 23, 1884. (No model.)



Claim.—The nut A, having the threaded groove *b*, the unthreaded portion *c* of a less diameter than the groove *b*, and the slits *a*, the last extending only the length of the portion *c*, as set forth.

323,423. WIRE-FENCE MACHINE. Oswald Jackson, Carrollton Ill. Filed Nov. 12, 1884. (No model.)

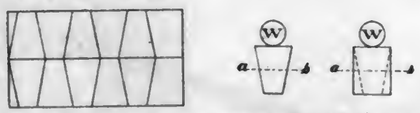


Claim.—1. The combination, with the perforated shaft B, having the tension devices L at suitable intervals thereon, the perforated spools C on said shaft, provided with wires W, and the pins *l*, engaging the perforations of the spools and shaft, whereby one or more spools are thrown into engagement with the shaft, of the hollow shafts N, having the pinions P, forks P', having eyes *e'* and rings R, and means, as described, for operating the above parts, as and for the purpose set forth.

2. The combination, with the perforated shaft B, having perforated spools mounted thereon provided with wires, said spools keyed to said shaft by means of pins *l*, engaging the perforations of the spools and shaft, of the hollow shafts N, having the pinions P, forks P', provided with eyes *e'* and ring R, whereby the wires from the spools are conveyed through the eyes *e*, shafts N, and eyes *e'*, and twisted to the picket which abuts against the rings R, and the double rock-bar R' P', engaging the pinions P', and a gear-wheel for operating the shafts N and their devices, as shown and described.

3. The combination, with the shaft B, having the wired spools C, each spool adapted to be keyed to the shaft by means of pins *l*, engaging perforations in the spools and shaft, the hollow shafts N, having pinions P, and forks P', having eyes *e'* and ring R, of the double rack-bar R' P', sliding in the bearings S on the frame O, to allow the pinions of the shafts N to engage the under side of the rack-bar operated by the gear-wheel I, which meshes with the upper rack to twist the wires to the picket, as shown and described.

323,424. METHOD OF CUTTING AND EMPLOYING WOODEN BEAMS AND GIRDERS. Peter H. Jackson, San Francisco, Cal. Filed Dec. 30, 1884. (No model.)



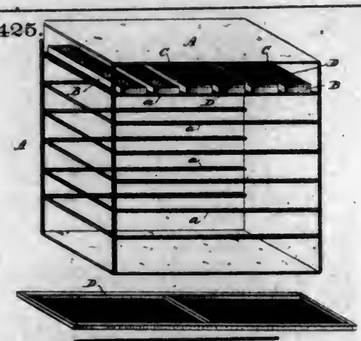
Claim.—A wooden beam or girder of suitable depth to serve as such, and of a greater width at the top than at the bottom, proportioned to the greater capacity of the wood to resist tensile than compressive strains, as set forth.

323,425. DRYING STARCH. Richard Johnson, Madison, Ind. Filed May 15, 1885. (No model.)

Claim.—1. The herein-described method of drying starch, consisting in exposing the same to the action of heat through a textile or reticulated medium, substantially as set forth.

2. The herein-described starch-drying receptacle, consisting of the combination, with a suitable holder for the starch, having an imperforate bottom, of the frame D and textile C, substantially as set forth.

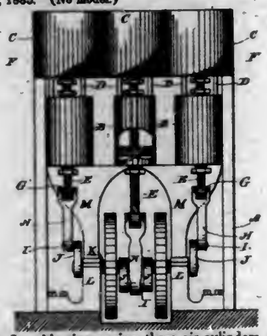
323,425.



323,426. METALLIC COMPOUND. Frank Kavanaugh, Harrisburg, Tex. Filed May 13, 1884. (Specimens.)

Claim.—The process of making alloys for journal-bearings, which consists in melting zinc, tin, copper, lead, and cast-iron in the proportions stated, with a flux of sal-ammoniac, silica, and borax, substantially as described.

323,427. BLOWING-ENGINE. William Kent, Jersey City, N. J. Filed Jan. 5, 1885. (No model.)

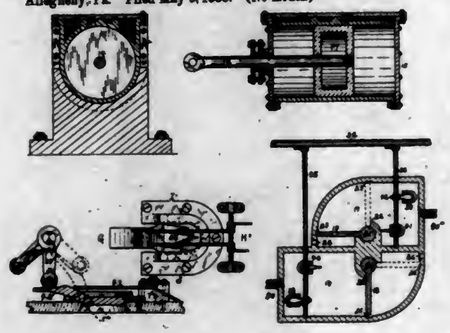


Claim.—1. In a blowing-engine, three air-cylinders, each having a steam-cylinder arranged opposite it, with the same piston-rod, and coupled together by means of a crank-shaft the cranks of which are set at an angle of one hundred and twenty degrees to each other, whereby all strains proceeding from the weight of parts or from the pressures of steam or air are balanced, substantially as set forth.

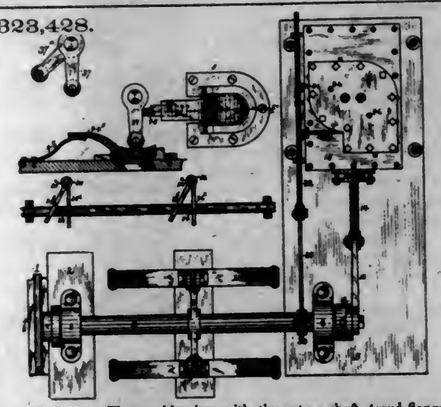
2. A blowing-engine having three air-cylinders, of equal size, each with a steam-cylinder opposite it, and having the same piston-rod, and coupled together by means of a crank-shaft the cranks of which are set at angles of one hundred and twenty degrees to each other, the steam-cylinders being proportioned so that each does an equal amount of work, substantially as shown and described.

3. A blowing-engine containing three air-cylinders, each with a steam-cylinder opposite it, and upon the same piston-rod, the cylinders of which are arranged as a compound engine, with one high-pressure and two low-pressure cylinders, and coupled together by means of a crank-shaft the cranks of which are set at angles of one hundred and twenty degrees to each other.

323,428. PNEUMATIC RAILROAD-SIGNAL. John L. L. Knox, Allegheny, Pa. Filed May 5, 1885. (No model.)



323,428.



Claim.—1. The combination, with the rotary shaft 4 and flanged rail 1, of the tappet 7, extending above said rail, having the top 8 cut away beneath said top, substantially as and for the purpose described.

2. The combination, with the shaft 4, of the cross-piece 9, links 10, and elliptic springs 11, arranged substantially as and for the purpose specified.

3. The combination of the pump-casing 15, the piston 14, adapted to make a quarter-stroke when the tappet 7 is forced in either direction, the piston-head 47 of a thickness not less than the length of said quarter-stroke, and the orifices 48 49, formed in the pump-casing directly in front and rear of said head 47 when in the latter is in normal position, substantially as and for the purposes described.

4. The combination, with the pump, of the valve-chest provided with chambers 16 17, containing suitable pistons for working the targets, the suction-valves 38 39, and force-valves 40 41, said suction-valves covering ports connecting, respectively, with opposite extremities of the pump, and said forcing-valves also covering ports connecting, respectively, with opposite extremities of the pump, substantially as described, whereby when the air is forced into one of said chambers it will be exhausted from the remaining chamber, for the purpose set forth.

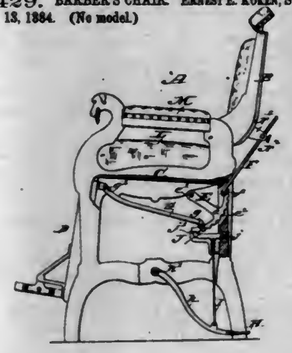
5. The combination, with the forcing and suction valves, of the rocking shafts 35 36, provided with bifurcated levers 35ª 36ª, adapted, when said shafts are simultaneously rocked in a given direction, to free a suction-valve and lock a forcing-valve in one chamber, while simultaneously locking a suction-valve and freeing a forcing-valve in the remaining chamber, as and for the purposes set forth.

6. The combination, with the valves and the rocking shafts provided with locking-arms and bifurcated levers, of the reciprocating bar 32, provided with pins 33 34, adapted to engage with the legs of said bifurcated levers, substantially as and for the purposes described.

7. The combination of the valve-chest provided with chambers 16 17, and having a target-operating piston, a forcing and a suction valve, and a valve-locking device in each chamber, of a main-line pipe communicating at one end of the valve-chest directly with chamber 17, and at the other end of the chest directly with chamber 16, substantially as and for the purposes described.

8. The combination of the pump 15, provided with orifices 15 16, and piston 14, having head 47, the superposed valve-chest having chambers 16 17, valves 38 39 40 41, and pistons 18 19, main-line pipe, shafts 20 21, targets 23 24, shafts 35 36, provided with locking-arms 37 37ª, and bifurcated levers 35ª 36ª, reciprocating bar 32, and mechanism for operating piston 14 and bar 32, substantially as and for the purposes described.

323,429. BARBER'S CHAIR. Ernest E. Koken, St. Louis, Mo. Filed Feb. 13, 1884. (No model.)



Claim.—1. The combination, in a chair, of an adjustable back, B, an adjustable foot-rest, D, the rods F G, and the bell-crank E, substantially as described.

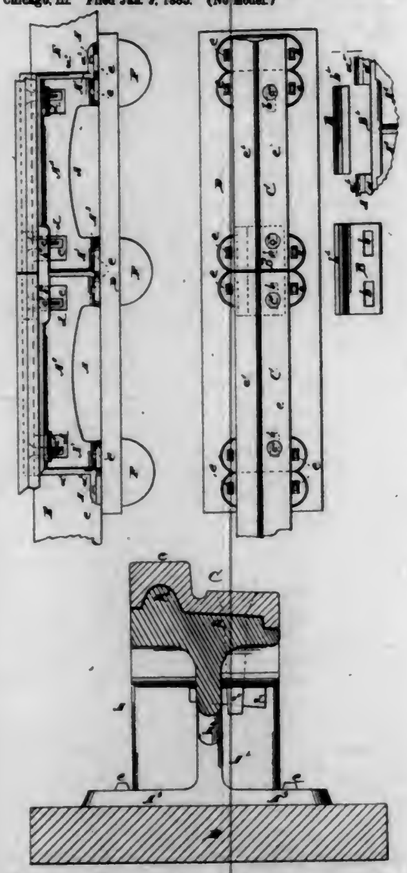
2. The combination, in the chair A, of the chair-frame, the rods F G, the adjustable back B, the adjustable foot-rest D, the bell-crank E, having the toothed segment *e*, and the dog J.

3. The combination, in the chair A, of the chair-frame, the back B, the rod F, the bell-crank E, having the toothed segment *e*, with the pedal H, rod I, and dog J, as described.

4. The combination, in the chair A, of the chair-frame, the back B, the foot-rest D, the bell-crank E, having the toothed segment *e*, the rods F G I, the pedal H, and the dog J, as described.

5. The combination, in the chair A, of the chair-frame, the chair-back, the foot-rest, the rod G, the bell-crank E, the rod F, the block N, the bracket N', and the set-screw N², as described.

323,430. COMBINED CHAIR AND STRINGER. JAMES K. LAKE, Chicago, Ill. Filed Jan. 9, 1885. (No model.)



Claim.—1. A combined chair and stringer, A, having a flange or bead, *a'*, and formed at its base with flanges *a²*, substantially as described.

2. The combined chair and stringer A, in combination with the hardened plate B, for supporting the ends of the rails, substantially as specified.

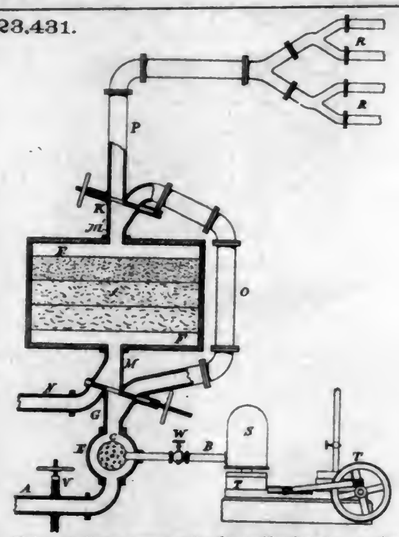
3. The combination, with the chair and stringer A and rails C, of the removable bolts *c''*, having their ends slotted, and the wedge-keys *d*, passing through the slots of the bolts, substantially as described.

4. The combination, with the chair and stringer A, plate B, and rails C, of the bolts *c''* and wedge-keys *d*, substantially as and for the purpose specified.

5. The combination, with the chair and stringer A and rails C, of the timber or piece D, substantially as and for the purpose specified.

323,431. APPARATUS FOR PURIFICATION OF WATER. ALBERT R. LEEDS, Hoboken, N. J. Filed Dec. 26, 1884. (No model.)

323,431.



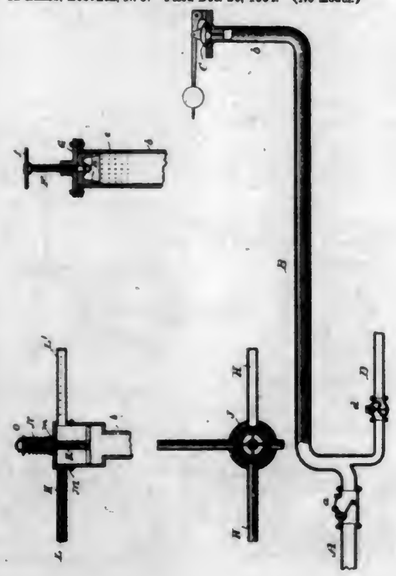
Claim.—1. In an apparatus for the purification of water, the combination, with a pipe, A, for supplying water under pressure, and a pipe communicating therewith for injecting compressed air thereinto, of a closed chamber containing filtering material, through which the mixture of the air and water is forced while under pressure, as set forth.

2. In an apparatus for the purification of water, the water-pipe A, supplying water under pressure, and the air-pipe B, which supplies air under pressure into the water in pipe A, in combination with the filter-chamber F, wherein the mixture of air and water still under pressure is submitted to the action of filtering, and a circulating-pipe, O, provided with suitable stop-cocks, whereby the filter can be supplied with either air or water, separately or combined, substantially as set forth.

3. In an apparatus for the purification of water, the combination, with the water-supply pipe A, the air-supply pipe B, and the mixing-chamber E, of the filter F, and the valves G K, and pipe O, in the manner and for the purposes set forth.

4. In an apparatus for the purification of water, the combination, with the water-supply pipe A, air-supply pipe B, provided with perforated end C, the chamber E, filter F, and suitable conveying-pipe, substantially as set forth.

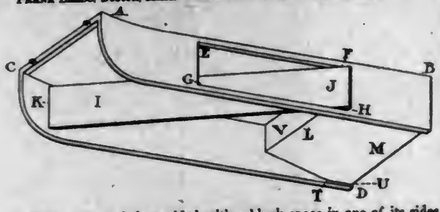
323,432. APPARATUS FOR PURIFICATION OF WATER. ALBERT R. LEEDS, Hoboken, N. J. Filed Dec. 26, 1884. (No model.)



323,433. APPARATUS FOR PURIFICATION OF WATER. ALBERT R. LEEDS, Hoboken, N. J. Filed Dec. 29, 1884. (No model.)

Claim.—The combination, with a main conveying-pipe, of pipes supplying water and air, both under pressure, thereinto, and of an adjustable valve continuously controlling the discharge from and the pressure within said conveying-pipe, and adapted to deliver the water in a more or less finely-divided condition, substantially as set forth.

323,433. COMBINED SNOW SCRAPER AND COMPRESSOR. B. FRANK LEEDS, Boston, Mass. Filed Oct. 11, 1884. (No model.)



Claim.—1. A sled provided with a blank space in one of its sides, and a scraper, as described, and a compressor, as described, as a new and useful machine, for the purposes described.

2. In a combined snow scraper and compressor, the combination of the blank space E F G H and scraper I J with the compressor L M, as and for the purposes described, as set forth.

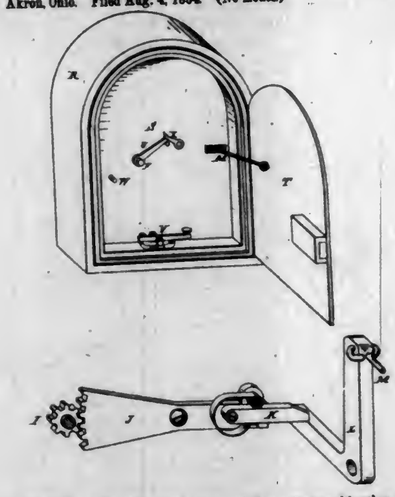
3. In a combined snow scraper and compressor, the combination of the blank space E F G H, scraper I J, and extension W with the compressor L M, substantially as and for the purposes described, as set forth.

323,434. TRUNK. LEWIS A. LEESER, Baltimore, Md. Filed Sept. 25, 1884. (No model.)



Claim.—A trunk whose box or lid is made of wood and provided at its angles or corners with two wood strips, C C', extending crosswise of the grain of the said box or lid, one strip being placed against each surface at the angle or corner and secured by a covering of suitable material, as described, placed over the said two strips and made fast to the box, substantially as set forth.

323,435. FIRE-ALARM-TELEGRAPH BOX. FRANK F. LOOMIS, Akron, Ohio. Filed Aug. 4, 1884. (No model.)

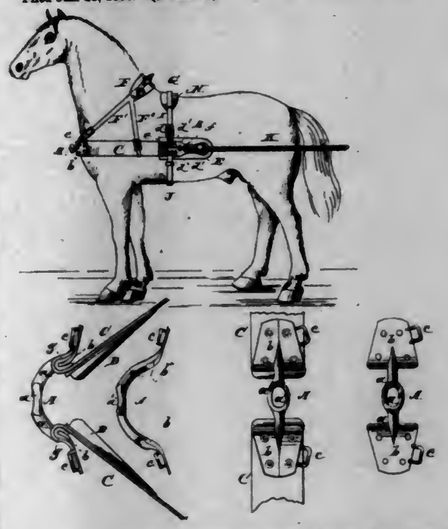


Claim.—1. In a fire-alarm-telegraph box, the combination, with a circuit-breaker actuated by a weight, or equivalent, through a train of gearing, of a swinging lever having at one end a segmental rack meshing into a winding-pinion, and a latch at the other, and a pivoted bent lever adapted at one end to engage the latch and having the other connected with the box-door, all constructed and arranged substantially as shown, and for the purpose specified.

2. In a fire-alarm-telegraph box the combination, with a circuit-breaker, a weight, and train of gearing to actuate the same, and a door connected therewith to wind up the weights when opened, of the radial arm T', and springs *n o*, constructed, connected, and arranged substantially as shown, and for the purpose specified.

3. In a fire-alarm-telegraph box containing a circuit-breaker, a weight, and a train of gearing connected with a door, to be wound up by opening the latter, the combination therewith of the radial arm U and hook X, all constructed and arranged substantially as shown, and for the purpose specified.

323,436. BREAST-HARNESS. BERNARD MCDEVITT, Chicago, Ill. Filed Jan. 23, 1885. (No model.)



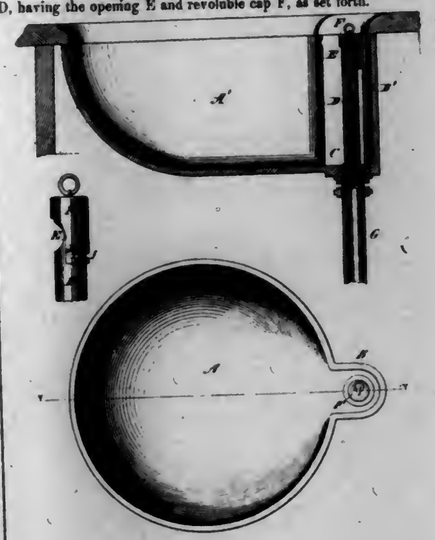
Claim.—1. In a breast-harness, the plates B, having the slotted ribs *d* and vertical pin *e*, and hook *f*, for the attachment of the back and belly bands, breast-straps, and tugs, substantially as specified.

2. The yoke A, constructed substantially as described, in combination with the breast-straps C and straps *g*, substantially as and for the purpose specified.

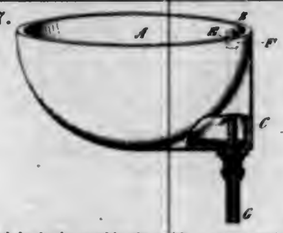
3. The yoke A, constructed substantially as described, and breast-straps C, in combination with the plates B, constructed substantially as described, and backing-piece E, substantially as and for the purposes specified.

323,437. STATIONARY WASH-STAND. CLARENCE MORPIT, New York, N. Y. Filed Feb. 20, 1885. (No model.)

Claim.—1. A wash-basin, in combination with the stopper-tube D, having the opening E and revoluble cap F, as set forth.

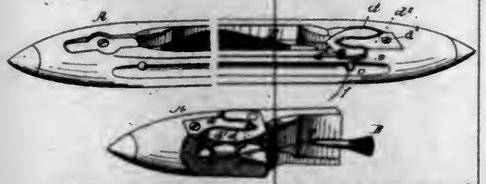


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2. A wash-basin, in combination with a stopper-tube, the top of the latter being below the top of the former and provided with a closing-cap, whereby the basin may be filled with water and form a water-seal, as set forth.

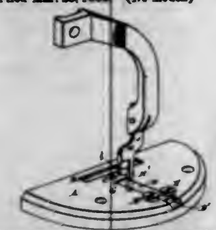
323,438. LOOM-SHUTTLE. John H. Nolan, Boston, Mass., assignor to the Union Shuttle Company, Portland, Me. Filed Aug. 29, 1883. (No model.)



Claim.—1. The combination of the shuttle-body A, having a slotted eye, C, with the protecting-plate *d*, having the post *d'* fastened thereto and extending down therefrom into the body of the shuttle, the protecting-plate d^2, having the post d^2 attached or fastened thereto and extending down into the body of the shuttle, the said plates being arranged in relation to each other to provide a guiding-passage between them, all substantially as and for the purposes set forth.

2. The combination of the shuttle-body having the eye C, extending straight inward from the side, and inclined at its inner end forward, so that its forward corner is well under the portion of the shuttle-body above it, and forms, substantially, an extension of the eye forward toward the front post, *d'*, with the protecting-plate *d*, shaped substantially as described, and secured to the top of the shuttle-body, as set forth, and the tension-regulating post *d'*, fastened at its top to the plate *d* and extending downward therefrom, then bent sharply toward the bobbin-cavity, and then again bent vertically and attached tightly to the body of the shuttle, all substantially as and for the purposes described.

323,439. TRIMMER FOR SEWING-MACHINES. Thomas K. Ober, Philadelphia, Pa. Filed Mar. 23, 1885. (No model.)



Claim.—1. In a sewing-machine trimming attachment, the combination, with a reciprocating trimming-knife having a guiding-stem and cutting-edge, of throat-plate having a cutting-edge thereon, against which said trimming-knife cuts, and a recess and a notch for said guiding-stem, and a sharpening-stone supported by the recess in said throat-plate and arranged in the path of the cutting-blade, so as to rub the edge thereof during its reciprocation, substantially as and for the purpose specified.

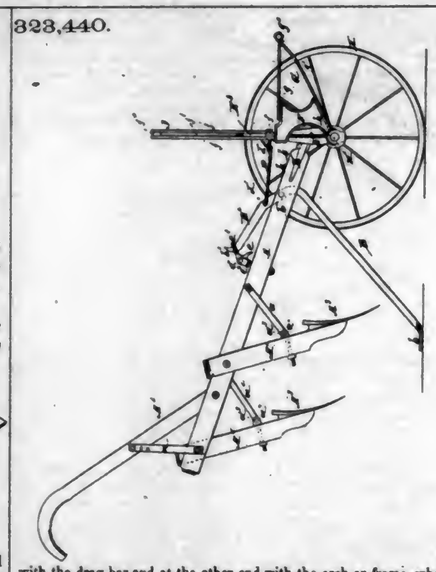
2. The combination of the throat-plate A, having notch F, cutting-edge G, and recess D', with sharpening-stone D and cutter H, having cutting-edge *h* and guiding-stem H', substantially as and for the purpose specified.

323,440. CULTIVATOR. John F. Packer, Chicago, Ill., assignor to David Bradley Manufacturing Company, same place. Filed Oct. 2, 1884. (No model.)

Claim.—1. The combination, with a beam, A, and drag-bar B B', of the latch C, formed of the foot *c* and latch *c'*, substantially as and for the purpose specified.

2. The combination of a beam, A, a drag-bar, B B', hinged thereto, an arch or frame, and a rod, D, having a loose connection at one end

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with the drag-bar and at the other end with the arch or frame, whereby it is adapted to aid in holding the arch or frame in an upright position, substantially as described.

3. The combination of a beam, A, a drag-bar, B B', hinged thereto, an arch or frame, J, a bracket connected with said arch, and a rod, D, having a loose connection at one end with said drag-bar and at the other end to said bracket, substantially as described.

4. The combination, with a cultivator drag-bar having a curved end, *b'*, of a pivoted loop-catch secured to the beam and adapted to fit over the curved end of the drag-bar when the latter is down and hold it firmly in position, substantially as described.

5. The combination of the arch J, having the laterally-extending portions J', and the supporting-bracket composed of the horizontal portion E, the downwardly-extending portion E", and the upwardly-extending portion E', secured to the arch, substantially as described.

6. The combination of the wheel I, the plate F, having said wheel connected thereto and formed with a horizontal upper edge and upwardly-inclining under edge, and the draw-bar G, formed of the upper and lower portions, *g g'*, secured to the plate F and converging at their forward ends, substantially as described.

7. The combination, with the arch J J' and bracket-support E E' E", of the plate F, draw-bar G, spindle H, and wheel I, substantially as and for the purpose specified.

323,441. WHEEL. John F. Packer, Chicago, Ill., assignor to David Bradley Manufacturing Company, same place. Filed Oct. 28, 1884. (No model.)



Claim.—1. A hub consisting of sections of equal length, each having its inner end provided with ratchet or engaging teeth, and its outer end with spoke-openings for bringing the strain equally over the length of the hub and preventing extra draw at any one point, substantially as and for the purposes specified.

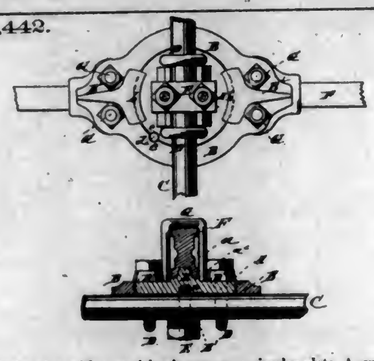
2. A hub formed of sections A of equal length, having ratchet-teeth *a* and end flanges, A', provided with openings *a'*, in combination with spokes D and rim E, whereby the strain is brought equally over the length of the hub and extra draw at any one point presented, substantially as and for the purpose specified.

3. The combination, with a hub formed of sections A of equal length, having ratchet or engaging teeth *a*, whereby the strain is brought equally over the length of the hub and extra draw at any one point is prevented, of a pipe-box, B, having a flange, B', and a locking-nut, C, substantially as and for the purposes specified.

323,442. BED-PLATE FOR SULKY-PLOW BEAMS. John F. Packer, Chicago, Ill., assignor to David Bradley Manufacturing Company, same place. Filed Oct. 28, 1884. (No model.)

Claim.—1. In a sulky-plow, the combination of a plow-beam, F, a plate, B, suspended therefrom and having a circular opening, B", pro-

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vided in its edge with a semicircular recess, a circular plate, A, supported by the plate B in its circular opening and provided with a semicircular recess, and a bail, C, loosely connected with the circular plate, substantially as described.

2. The combination of plate A, having the pivot *a*, and in its under face a curved recess, *c*, the ring or support B, having ends B', a plow-beam, F, fitting on a pivot, *a*, and resting on the ends B', a plow-bail, C, and clip E, passing around bail C and fitting in recess *c*, substantially as described.

3. The plate A, having the pivot *a*, and ring or support B, having the ends B' and flanges *b*, in combination with a plow bail and beam, substantially as and for the purposes specified.

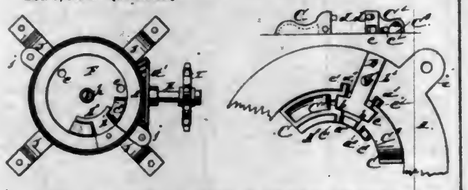
4. The plate A, having the pivot *a*, ring or support B, having ends B' and flanges *b*, and opening *c*, formed by semicircular openings in the plate and ring, in combination with a plow bail and beam, and a locking-pin, *d*, substantially as and for the purposes specified.

5. The plate A and ring or support B, constructed as described, in combination with the plow-bail C, clips D E, plow-beam F, and clips G, substantially as and for the purposes specified.

6. The plate A and ring or support B, constructed as described, and locking-pin *d*, in combination with a bail, C, clips D E, plow-beam F, and clips G, substantially as and for the purpose specified.

7. The plate A and ring or support B, constructed as described, in combination with the bail C, clips D E, plates D', plow-beam F, and clips G, substantially as and for the purposes specified.

323,443. SEEDING-MACHINE. John F. Packer, Chicago, Ill., assignor to the David Bradley Manufacturing Company, same place. Filed Dec. 9, 1884. (No model.)



Claim.—1. A spring, D, located and operating between the heels of the cut-offs or dogs, substantially as specified.

2. A cut-off, C, having its under face provided with a recess, C", for the reception of grain, said recess being deepest near the outer end of the cut-off, and contracted in depth toward its inner end, as shown, for the purposes described.

3. The cut-off dogs C C', and spring D, located between the heels of the dogs, in combination with the dropping-plate E, substantially as and for the purposes specified.

4. The ring A, having the housing A' A", in combination with the dogs C C' and spring D, located between the heels of the dogs, substantially as and for the purposes specified.

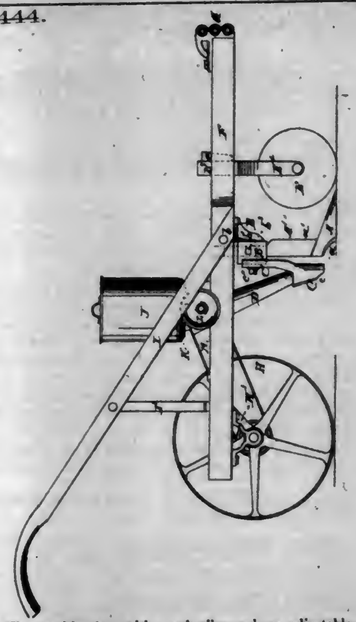
5. The ring A, having the housing A' A", and plate B, having the projections *b*, in combination with the cut-offs C C' and spring D, substantially as and for the purposes specified.

6. The ring A, having the housing A' A", cut-offs C C', and spring D, in combination with the plates E F and ring G, substantially as and for the purpose specified.

323,444. SEEDING-MACHINE. John F. Packer, Chicago, Ill., assignor to David Bradley Manufacturing Company, same place. Filed Jan. 23, 1885. (No model.)

Claim.—1. The combination, with a subsoiler, of an adjustable dropping tube or spout located and operating at the heel of the subsoiler, for depositing seed below the surface of the ground, substantially as described.

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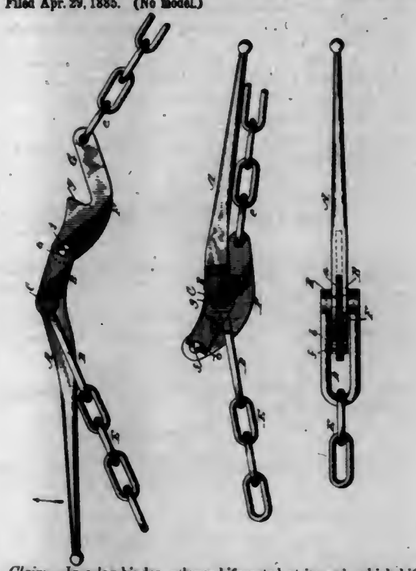


2. The combination, with a subsoiler and an adjustable dropping tube or spout located and operating at the heel of the subsoiler, of an adjustable colter-blade located and operating in front of the subsoiler, substantially as and for the purpose specified.

3. The subsoiler A, having the shank A', with the sharp front cutting-edge *a'*, in combination with the dropping tube or spout C, located and operating at the heel of the subsoiler, substantially as and for the purpose specified.

4. The combination, with a subsoiler, of a tube, D, leading from dropping devices, and an adjustable spout, C, located and operating at the heel of the subsoiler, substantially as described.

323,445. LOG-BINDER. Henry Pangborn, Lee's Corner, Mich. Filed Apr. 29, 1885. (No model.)



Claim.—In a log-binder, a lever bifurcated at its end, which bifurcation consists of two notched arms having studs upon their outer sides for connecting thereto the link or clevis, in combination with a curved plate provided with studs to engage with the notches in the arms, and a recess or hook-shaped depression to engage with the studs on the notched arms, substantially as and for the purpose set forth.

323,446. METALLIC PACKING. Jackson Richards, Philadelphia, Pa. Filed May 15, 1884. (No model.)



Claim.—1. A packing composed of a spiral spring having a coiled or spiral packing between its coils, the inner and outer circumferential edges of which packing project beyond the corresponding edges of said spring, substantially as shown and described.

2. A packing composed of two intercoiled spirals having the inner and outer circumferential edges of one projecting beyond the corresponding edges of the other, substantially as shown and described.

3. A packing composed of intercoiled metal spirals B and C, of unlike density or hardness, and having different diameters and mandrel-openings, substantially as shown and described.

4. The metal packing herein described, comprising a spiral spring, B, and a soft-metal spiral, C, having projecting edges $c' c^2$, substantially as shown and described.

5. The packing A, composed of spiral spring B and intercoiled spiral C, having ends d d, substantially as shown and described.

323,447. MUSCLE-BEATER. John E. Ruekman, Washington, D. C. Filed June 22, 1885. (No model.)



Claim.—1. In a muscle-beater, a stock or handle provided with a series of holes and elastic rods which are removably held in said holes, in combination with elastic beating-cushions which are removably secured to said rods, substantially as set forth.

2. In a muscle-beater, a stock or handle, elastic rods removably fitted therein, and elastic beating-cushions removably secured to said rods, in combination with elastic securing cords or bands attached to the ends of said rods and to the stock, substantially as set forth.

3. In a muscle-beater, a stock or handle provided with a series of holes and elastic rods removably fitted in said holes, in combination with elastic tubes which fit over said rods, said tubes being of a length less than the length of the rods, whereby the rods project beyond the ends of said tubes, and elastic bands or cords which are removably attached at the opposite ends to the stock and to the projecting ends of said rods, substantially as set forth.

4. In a muscle-beater, a stock or handle, jointed rods fitted therein and elastic tubes which fit over said rods, in combination with elastic bands or cords attached at opposite ends to the rods and stock, respectively, substantially as set forth.

323,448. COUNTERSINK. Nikolas Schenkel, Allegheny City, Pa. Filed June 8, 1885. (No model.)



Claim.—1. A countersink having opposite cutting-faces on the same head and a stem or stems detachable therefrom, substantially as and for the purpose described.

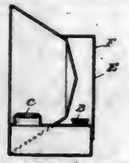
2. A countersink having opposite cutting-faces of different gages on the same head and a stem or stems detachable therefrom, substantially as and for the purposes described.

323,449. CUFF-HOLDER. Albert Schiffling, Indianapolis, Ind. Filed June 5, 1885. (No model.)



Claim.—The cuff-holder formed of one continuous piece of elastic wire having the end transverse loop, A, arms 1 and 2, with hook c and finger c, as shown and described.

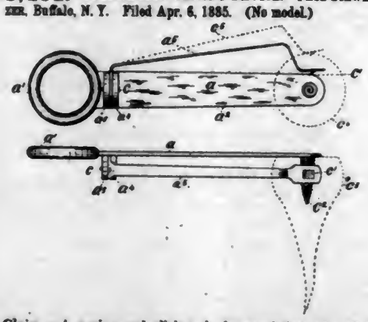
323,450. LAMP. Augustus L. Schryver, New York, N. Y. Filed Apr. 22, 1885. (No model.)



Claim.—1. The combination of the reservoir tapering from back to front and flaring from its bottom outward, the reflector cut away so as to conform to the cross-section of the reservoir and to embrace the latter, and the handle, one end thereof secured to the reflector and the other to the reservoir, all arranged as described, and for the purpose set forth.

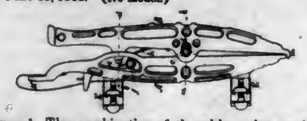
2. The combination of reservoir A, having inlet B and burner-collar C, reflector D, wedged as described over the forward portion of the reservoir, and handle E, secured to and connecting the reflector and reservoir, substantially as described.

323,451. PARING AND SLICING DEVICE. Paul Schwarzenbolzer, Buffalo, N. Y. Filed Apr. 6, 1885. (No model.)



Claim.—A paring and slicing device consisting of a slicing-knife provided with a handle at one end and a pointed screw at the opposite end, in combination with a spring, a^3, secured to the knife, and provided with a paring-knife, c', substantially as and for the purposes described.

323,452. WHIP-SOCKET. Erastus W. Scott, Wauregan, Conn. Filed June 15, 1885. (No model.)



Claim.—1. The combination of the whip-socket sections hinged or connected by hooks and eyes at or near their middle, as described, with a spring arranged in the space between such sections and upon a stud or projection extending from one of them, such spring being to press the sections asunder, for the purpose as set forth.

2. The combination, with the whip-socket and its rein-holding spring, of the finger or fingers projecting from the said whip-socket against or across the spring, substantially and for the purpose as represented.

3. The two whip-socket sections connected at or near their middles and also between their middles and upper ends by hooks extended from one section into eyes formed in the other, all being substantially as set forth.

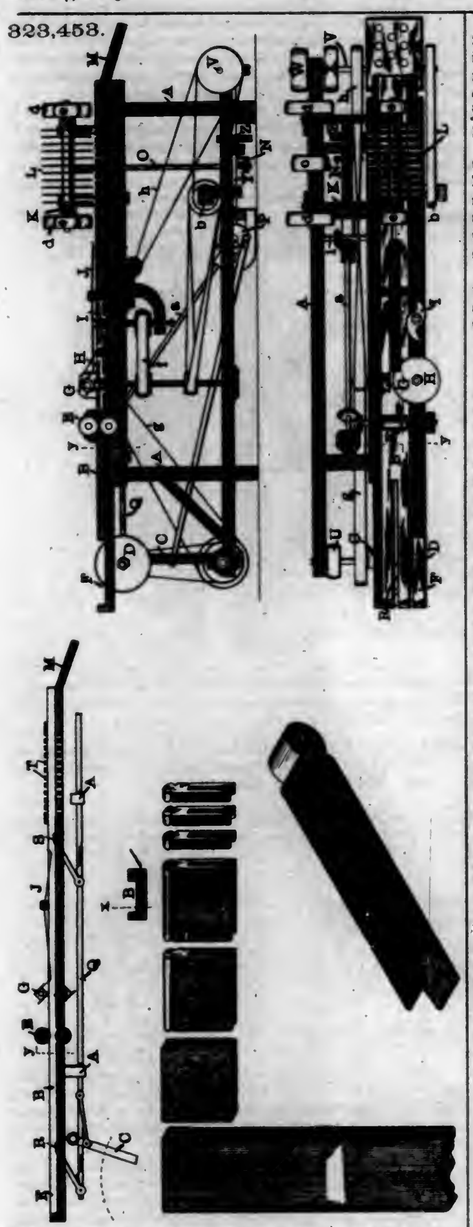
323,453. MACHINE FOR MAKING CLOTHES-PINS. James D. Senate, Bunker Hill, Ohio. Filed May 22, 1885. (No model.)

Claim.—1. In a clothes-pin machine, the combination of a longitudinal trough, a cutting-off saw at the initial end of the trough in the plane of one side of the trough, a pair of feed-rolls in advance of said saw, a slotting-saw, and pair of molding-heads in advance of the feed-rolls, a chamfering-cutter in advance of the slotting-saw, and a gang of splitting-saws in advance of the chamfering-cutter, substantially as and for the purpose set forth.

2. In a clothes-pin machine, the combination of a trough, a cutting-off saw disposed in the plane of one side of the trough and adapted, by any suitable means, to advance and retreat along a portion of the trough, and a gap in the side wall of the trough in the plane of the advancing and retreating motion of said saw, substantially as and for the purpose set forth.

3. In a clothes-pin machine, the combination of a trough, a cutting-off saw arranged to move in the plane of one side of said trough, a pair of feed-rolls disposed across the trough in advance of said saw, and a reciprocating feed-tooth moving with said saw, and adapted to advance the

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sawed-on blocks to the feed-rolls, substantially as and for the purpose set forth.

4. In a clothes-pin machine, the combination of a rigid horizontal trough of a width corresponding to the length of the clothes-pins to be made, a pair of horizontal feed-rolls disposed across the trough, one substantially even with its floor and the other above its floor, and a pair of horizontal molding-cutters projecting inward from one side of the trough in advance of said feed-rolls, constructed and arranged substantially as and for the purpose set forth.

5. In a clothes-pin machine, the combination of a rigid horizontal trough of a width corresponding with the clothes-pins to be made, a pair of feed-rolls disposed across said trough, one substantially even with the floor of the trough and the other above the floor, and a slotting-saw projecting inward from one side of the trough toward the opposite rigid wall of the trough, constructed and arranged substantially as and for the purpose set forth.

6. In a clothes-pin machine, the combination of a trough, a pair of feed-rolls disposed across the trough, a horizontal slotting-saw disposed in advance of the feed-rolls and having its periphery projecting inward from one side of the trough, and a chamfering-cutter disposed in advance of the slotting-saw upon a vertical arbor, and having its periphery projecting inward from one side of the trough, substantially as and for the purpose set forth.

7. In a clothes-pin machine, the combination of a rigid horizontal trough of a width corresponding with the length of the clothes-pins to be made, and provided with transverse slots, and a gang of rising and falling splitting-saws disposed with the plane of the saws transverse to the trough and in line with the trough-slots, so as to be capable of vertical reciprocation into and out of said slots, constructed and arranged substantially as and for the purpose set forth.

8. In a clothes-pin machine, the combination of trough B, transversely slotted for a gang of splitting-saws, a gang of splitting-saws, L, and top strips, T, disposed between the saws and secured to the top of the trough, substantially as and for the purpose set forth.

9. In a clothes-pin machine, the combination of a rigid horizontal trough of a width corresponding with the length of clothes-pins to be made, a pair of horizontal feed-rolls disposed across said trough, one substantially even with the floor of the trough and the other above, a mandrel for a chamfering-cutter disposed near one side of the trough in advance of the feed-rolls, and a pair of convex cutter-blades on said mandrel and projecting into the trough toward the opposite rigid wall of the same, constructed and arranged substantially as and for the purpose set forth.

10. In a clothes-pin machine, the combination of a horizontal rigid trough of a width corresponding to the length of the clothes-pins to be made, a pair of horizontal feed-rolls disposed across the same, a longitudinal slot in the floor of the trough, a gang of splitting-saws disposed transverse to the trough in advance of the feed-rolls, and a reciprocating feed-tooth projecting up through said floor-slot between the feed-rolls and the gang of splitting-saws, and adapted to rapidly advance the blocks intermittently to the splitting-saws, constructed and arranged substantially as and for the purpose set forth.

11. In a clothes-pin machine, the combination of a rigid horizontal trough of a width corresponding with the length of the clothes-pins to be made, a pair of horizontal feed-rolls disposed across the trough, one substantially even with the trough-floor and the other above, a pair of horizontal molding-cutters projecting inward from one wall of the trough in advance of the feed-rolls, a vertically-journaled slotting-saw with its periphery projecting into the trough from the side opposite to said molding-cutters, saw D, disposed in line with one wall of the trough at the rear of the feed-rolls, reciprocating feed-tooth R, projecting upward through the slot in the trough-floor between the saw D and the feed-rolls, a gang of splitting-saws in advance of the slotting-saws and disposed with the plane of the saws transverse to the trough, and a reciprocating feed-tooth, S, projecting up through a slot in the trough-floor between the slotting-saw and the splitting-saws, constructed and arranged substantially as and for the purpose set forth.

12. In a clothes-pin machine, the combination of a rigid horizontal trough of a width corresponding to the length of the clothes-pins to be made, swinging cut-off saw D, disposed in the plane of one wall of the trough, a pair of horizontal feed-rolls disposed across the trough in advance of said saw, the oscillating gang-saw frame K in advance of the feed-rolls disposed with the plane of its saws transverse to the trough, and the two cranks P and N, geared together and respectively linked by connecting-rods to the two saw-frames, substantially as and for the purpose set forth.

323,454. AUGER-BIT. Pink Shailer, Chester, Conn. Filed May 11, 1885. (Model.)

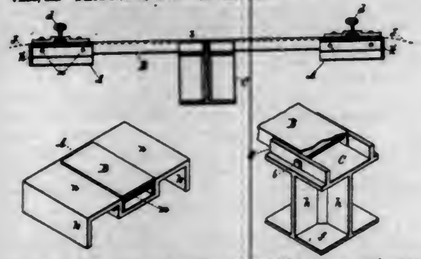


Claim.—1. A twist-bit having a single-threaded screw-point the extremity of which is formed with a double thread, substantially as set forth.

2. A double-twist bit having a single-threaded screw-point the thread of which unites with one cutting-lip, and having at the base of such point a secondary thread uniting with the other cutting-lip, substantially as set forth.

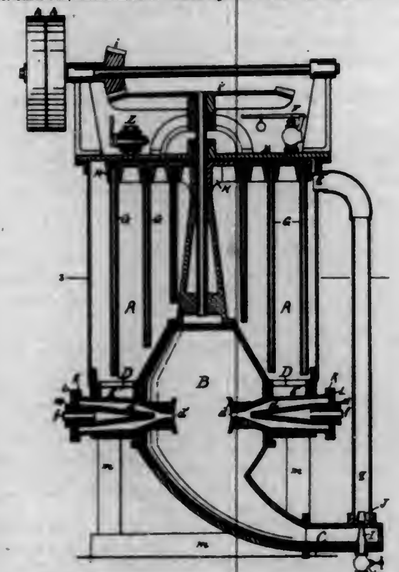
3. The double-twist bit herein described, having a screw-point, the body of which has a single thread and having its extremity formed with a double thread, and having at its base a secondary thread uniting with one cutting-lip, the main thread uniting with the other lip, substantially as set forth.

323,455. RAILROAD-TIE SUPPORT. Abraham A. Shuee, Jerseyville, Ill. Filed Feb. 6, 1885. (No model.)



Claim.—The combination, with a railroad-tie, of the central support, C, constructed substantially as herein described, and for the purpose set forth.

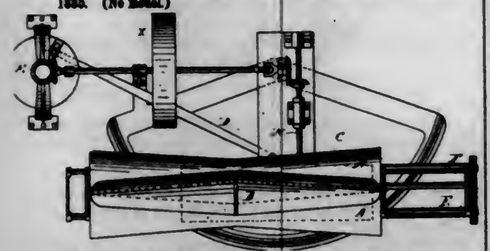
328,456. STEAMING AND ORE-SCOURING APPARATUS. Thomas C. Sergeton, Paterson, N. J. Filed Apr. 25, 1885. (No model.)



Claim.—1. Tank A, provided with cover N, safety-valve F, stop-cock E, stirring-arms H, rods G, and passages D, in combination with chamber B, plugs K, nozzles L, steam-pipes *f*, pipes C *g*, and steam-jet I J substantially as and for the purposes set forth.

2. Chamber B, provided with plugs K K, steam-nozzles L L, steam-pipes *f f*, and lever-arms *k k*, in combination with steam-jet pump I J, pipe C, pipe *g*, tank A, stirring-arms H H, and rods G G, and stop-cock E and safety-valve F, substantially as and for the purposes set forth.

328,457. FELT-BOOT MACHINE. William A. Smith, Lawrence, assignor to the Lawrence Felting Company, Millville, Mass. Filed Feb. 4, 1885. (No model.)

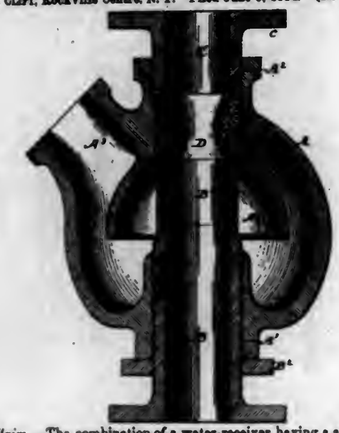


Claim.—1. In a felt-boot-forming machine, the rollers A A in splined or sliding connection with their revoluble shafts F F, said shafts being journaled in a standard, G, attached to and moving with an oscillating table, C, substantially as herein set forth.

2. The combination, in a felt-boot-forming machine, with the rollers A A in splined or sliding connection with their supporting-shafts F F, of a slider, H, and suitable mechanism for imparting a continuous to-and-fro motion to the slider, and thus to the rollers A A, all substantially as herein set forth, and for the purpose herein specified.

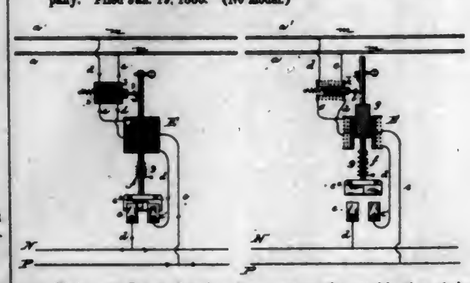
3. In a felt-boot-forming machine, the combination of the shafts F F, the rollers A A, splined thereon, the slotted slider H, disk and pin I, and suitable gearing and shafting, substantially such as herein described, whereby rotary motion is transmitted to the disk I, substantially as set forth.

323,458. SAND-PUMP. William S. Smith, Chicago, Ill., and Charles W. Clift, Rockville Centre, N. Y. Filed June 5, 1884. (No model.)



Claim.—The combination of a water-receiver having a semi-spherical deflector thereon, a suction-pipe entering said receiver at one end, a discharge-pipe at the other end, and a compressible throat-piece between said pipe, substantially as and for the purpose described.

323,459. ELECTRIC-RAILWAY SYSTEM. Frank J. Sprague, New York, N. Y., assignor to the Sprague Electric Railway and Motor Company. Filed Jan. 19, 1885. (No model.)



Claim.—1. In an electric-railway system, the combination of the main conductors, the working-conductors divided into sections, two branch conductors for each section, and an electro-magnetic switch for a section affected by the current in both said branch conductors, substantially as set forth.

2. In an electric-railway system, the combination of the main conductors, the working-conductors divided into sections, a permanent connection from one main conductor to a working-conductor of a section, and a connection from the other main conductor to the other working-conductor affected by the current of said permanent connection, substantially as set forth.

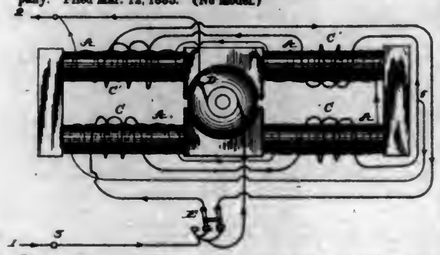
3. In an electric-railway system, the combination of the main conductors, the working-conductors divided into sections, two branch conductors, one permanently, the other electro-magnetically, connected, and the electro-magnetic controlling device included in the circuit of both said branch conductors, substantially as set forth.

4. In an electric-railway system, the combination of the main conductors divided into sections, two branch conductors, each connecting a main and a working conductor, a switch controlled by the current in both said branch conductors, and a locking device for said switch controlled by the current in both said branch conductors, substantially as set forth.

5. In an electric-railway system, the combination, with the main conductors and the sectional working-conductors, and the motors so arranged relatively that a motor-contact in passing from one section to another leaves one of said working-conductors before it leaves the other, of the permanent connection between a main and a working conductor of a section situated first in the path of the motor and including an electro-magnetic switching device, and a connection from the main to the other working conductor of the section controlled by the said switching device, substantially as set forth.

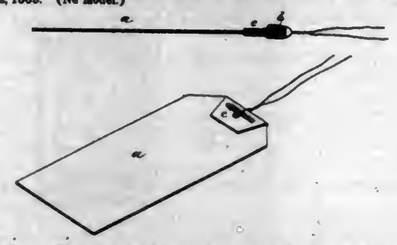
6. The combination, in an electric-railway, of continuous main conductors, two sets of working-conductors supplied from said main conductors, each of said sets being divided into sections, and devices controlled by the movement of the trains or motors for controlling the circuit of each section, substantially as set forth.

323,460. ELECTRO-DYNAMIC MOTOR. Frank J. Sprague, New York, N. Y., assignor to the Sprague Electric Railway and Motor Company. Filed Mar. 12, 1885. (No model.)



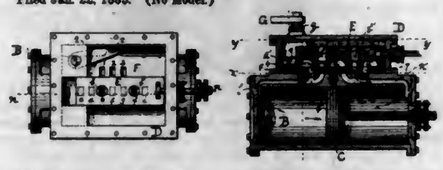
Claim.—The combination, in an electro-dynamic motor, of main field-coils in shunt relation to the armature, differential field-coils in series with the armature and inside the terminals of the armature and main field-shunts, and differential field-coils in series with the armature and outside the terminals of the armature and main field-shunts, substantially as set forth.

323,461. TAG. Charles A. Squier, Battle Creek, Mich. Filed Feb. 2, 1885. (No model.)



Claim.—The combination, with the card-paper of a tag, of a cross-piece, a double lap-piece, and a wire or cord for connecting the tag, with a package, substantially as described.

323,462. REVERSING-VALVE. Hermann Stevens, Homestead, Pa. Filed Jan. 22, 1885. (No model.)

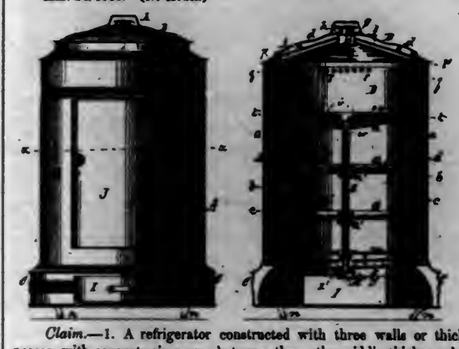


Claim.—1. As a device for reversing the motion of slide-valve steam-engines, a movable perforated diaphragm interposed between the face of the slide-valve and its seat, said diaphragm having two or more series of holes so placed in relation to the steam ports and passages in the valve-seat and cylinder, substantially as described, as that one series of holes shall at one stroke of the slide-valve connect the adit steam-port of the valve with the steam-passage communicating with the forward end of the cylinder, and connect the exhaust-steam port with the passage communicating with the other end of the cylinder, and vice versa on the return-stroke of the slide-valve, and that the other series of holes shall reverse the relative arrangement of adit and exhaust ports, causing on the first stroke of the valve (before referred to) the adit steam-passages of the valve and cylinder to connect through said diaphragm with the rear end of the cylinder, and the exhaust-steam ports with the forward end of the cylinder, and vice versa on the return-stroke, and an intermediate passage for connecting the opposite ends of the cylinder by a continuous passage, so that the end of the cylinder at which the steam shall be admitted and exhausted at any given stroke of the valve may be reversed by shifting the diaphragm, so as to bring the other series of holes in communication with the steam passages or ports in the valve and cylinder without changing the motion of the slide-valve, substantially as described.

2. In combination with the slide-valve and piston-cylinder of a steam-engine, a perforated diaphragm interposed between the slide-valve and cylinder or valve-seat, said diaphragm having two series of holes, and a passage or groove so arranged, substantially as described, in relation to the steam ports and passages of the slide-valve and cylinder as that when one series of such holes is in communication with said steam ports and passages the steam shall be admitted and exhausted at the reverse ends of the cylinder to that at which the steam is admitted, and exhausted when the other set of holes is brought in connection with the steam ports and passages of the slide-valve and cylinder, and when both series of holes are disconnected with the adit and the exhaust the opposite ends of the cylinders shall be connected by a continuous passage, substantially as described.

3. The combination, with the piston and cylinder of a steam-engine, of the sliding valve E, having exhaust-passages *a a' a''*, the diaphragm F, perforated with two series of holes, 1 2 3 and 4 5 6 7, and the steam-cylinder having steam-passages K and *l* communicating with its opposite ends, and branch passages *d* and *e* connecting with passage *l*, and *g* and *h* connecting with passage K, and exhaust-ports *e*, *f*, and *i*, constructed and arranged substantially as and for the purposes hereinbefore described.

323,463. REFRIGERATOR. Joseph A. Stocken, Goshen, N. Y. Filed Mar. 24, 1885. (No model.)



Claim.—1. A refrigerator constructed with three walls or thicknesses, with separate air-spaces between them, the middle thickness being narrowed at its upper and lower ends or edges to fit the inner wall, and thereby keep the main part of the said walls at the required distance apart, substantially as herein specified.

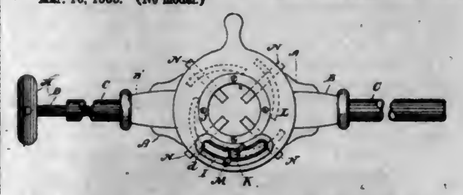
2. An ice-tray, D, made of metal and provided with an additional bottom thickness, of wood or equivalent slow heat-conducting material, substantially as herein set forth.

3. The separate waste-pipe E, on which the provision-shelves are supported, mounted between the ice-tray and bottom of the refrigerator, and adapted to be turned around the short central waste-tube of the ice-tray as a journal at the top, and in an annular or grooved step at the bottom around the bottom waste-tube, substantially as set forth.

4. A provision-shelf, G, formed of a hub, spokes, and rim, the eye of the hub fitting around the waste-pipe shaft E, substantially as herein specified.

5. A provision-shelf formed of a hub, spokes, and rim, and having a spoke or rod screw-threaded in the hub, whereby the shelf is clamped to the shaft and adapted to be adjusted in height, as herein set forth.

323,464. DIE-STOCK. John W. Strong, Bridgeport, Conn. Filed Mar. 16, 1885. (No model.)



Claim.—1. In a die-stock, the cutter-block fitted and adapted to slide within one of the guides of said stock, in combination with the rod D, threaded in one of the handle-extensions, its forward end swiveled to the cutter-block and its rear end passing outward through the handle, substantially as set forth.

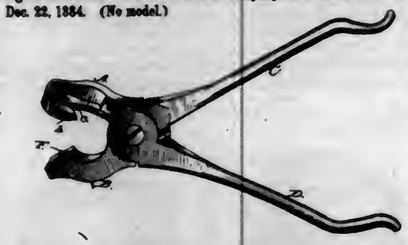
2. In a die-stock, as described, the slotted segment, the slot and counter-slot thereof ending in the same vertical plane, in combination with the shouldered thumb-nut, substantially as set forth.

323,465. BUTTON-FASTENER. Parker H. Sweet, Jr., Washington, D. C., assignor to the Heaton Button Fastener Company, Providence, R. I. Filed Dec. 22, 1884. (No model.)



Claim.—As an improved article of manufacture, the herein-described button-fastener, consisting of the central loop, *a*, side wings or table, *b*, and two downwardly-projecting prongs *c*, the said loop, side wings, and prongs being arranged in lines parallel with each other, and adapted for operation substantially as and for the purpose specified.

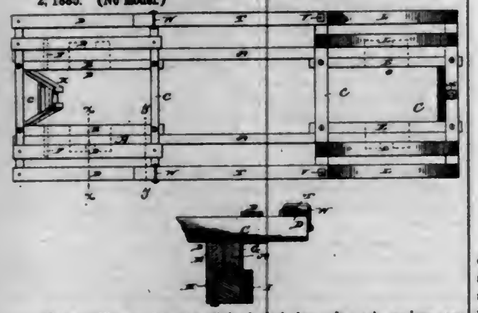
323,466. SETTING-INSTRUMENT FOR ATTACHING BUTTONS TO WEARING-APPAREL. Parker H. Sweet, Jr., Washington, D. C., assignor to the Heaton Button Fastener Company, Providence, R. I. Filed Dec. 22, 1884. (No model.)



Claim.—1. The herein-described setting-instrument, the upper jaw, A, of which is formed with the recess *a*, opening outwardly to the rear and to one side of the said jaw, and with an elongated slot, *c*, in the bottom *b* thereof, said recess being provided with the bifurcated spring *d*, corresponding in shape to the contour of the bottom *b*, and the lower jaw, B, being provided with a curved die, F, extending from one side of said jaw to the opposite side, substantially as and for the purpose specified.

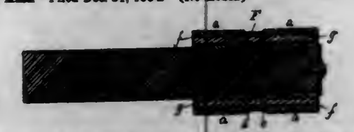
2. In a setting-instrument, the upper jaw, A, formed with a recess, *a*, opening outwardly to the one side and rear of said jaw, and the bottom *b*, having an elongated slot, *c*, and provided with the bifurcated spring *d*, substantially as and for the purpose specified.

323,467. HAY-RACK. Benjamin Tanner, Sturgis, Mich. Filed May 2, 1885. (No model.)



Claim.—The combination of the bed-timbers, the rack-sections, one of which is secured to one end of the bed-timbers and the other adapted to slide back and forth thereon for the purpose of lengthening and shortening the rack, and the blocks H R, secured to the sections and extending under and supporting the bed-timbers, said blocks being adapted to rest upon the bolsters of a running-gear, substantially as described.

323,468. ANTI-FRICTION JOURNAL-BOX. Thomas Tripp, Stoughton, Mass. Filed Dec. 31, 1884. (No model.)



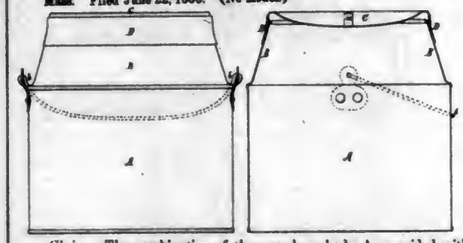
Claim.—1. In an anti-friction journal-box, the combination, with the double series of concentric parallel bearing-rolls, of the separator-ring provided with pins extending the length of the bearing, and upon which the bearing-rolls freely turn when revolving about the journals, substantially as stated.

2. A journal-box provided with a separator-ring revolving freely within said box and adapted to maintain a series of bearing-rolls in fixed relative positions one with the other about the journal, substantially as herein described, and for purposes set forth.

3. In an anti-friction bearing, the combination, with the journal, of a series of inclosing bearing-rolls, all actively employed and free to revolve about said journal in its rotation, and the separator-ring with its pins, substantially as herein set forth.

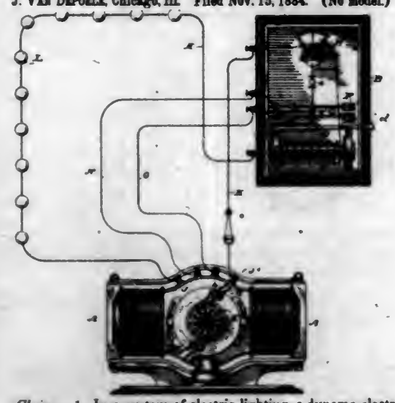
4. In an anti-friction journal-box, the sectional ring F, composed of the parts *b c d e*, and provided with the concentric series of fixed pins *g g*, carrying the bearing-rolls *a a*, the inner and outer peripheries of said ring lying within the peripheries of the bearing-rolls, substantially as stated.

323,469. PAIL FOR COMMODES. Daniel E. True, Leominster, Mass. Filed June 22, 1885. (No model.)



Claim.—The combination of the vessel or body A, provided with the conical or tapering mouth-piece B, with the cover C therefor having the elastic band extending down from its periphery and encompassing and fitting by its inherent elasticity tightly upon the outer surface of the said mouth-piece, all being substantially and for the purpose as set forth.

323,470. CUT-OUT FOR DYNAMO-ELECTRIC MACHINES. Charles J. Van Depoele, Chicago, Ill. Filed Nov. 15, 1884. (No model.)

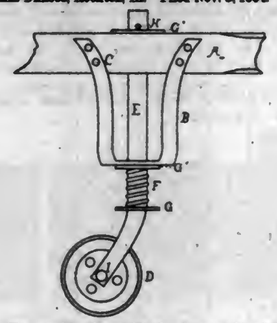


Claim.—1. In a system of electric lighting, a dynamo-electric generator having an armature with two independent circuits—one the main and the other the field circuit—and a by-pass or circuit of low resistance around the field-magnets, said by-pass being normally open while the machine is in operation, in combination with an electro-magnet in the main circuit, said magnet being adapted on the breaking of said main circuit to close the by-pass circuit, thereby diverting the current from the field-magnets in order to stop the production of current in the armature-coils on the breakage or interruption of the main circuit, as described and set forth.

2. In a system of electric lighting in which the field-circuit of the dynamo or generator is supplied by an independent current from its armature or by a shunt from the same, an electro-magnet in the main circuit operating a short-circuiting device whenever the main circuit is interrupted or broken, said short-circuiting device shunting through a low resistance the current supplied to the field-magnets in order to deprive the latter of their magnetism, and thus to stop the production of current in the machine.

3. In a system of electric lighting wherein the field-magnets of the dynamo are excited by a derivation from the main current, an automatic circuit-closer, and means, substantially as described, for holding down, as long as the working-circuit is closed, a contact-bar putting the field-coils of the dynamo in operative condition, and for short-circuiting the field-circuit whenever the main circuit is broken or interrupted, for the purpose set forth.

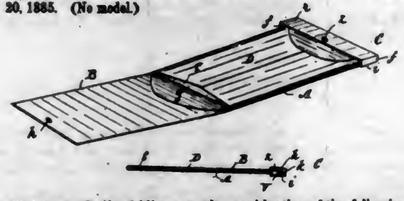
323,471. TONGUE-SUPPORT FOR HARVESTERS. David Wallace and James Darcus, Rockton, Ill. Filed Nov. 3, 1884. (No model.)



Claim.—1. The combination, with the hanger B, of the stem E, wheel D, washers G G' G², tongue A, and pin H, substantially as and for the purpose set forth.

2. The combination, with the tongue A, of hanger B, bolts C, caster-wheel D, stem E, spiral spring F, washers G G' G², and pin H, substantially as described.

323,472. TAG. Clinton F. Webster, Brockton, Mass. Filed May 20, 1885. (No model.)

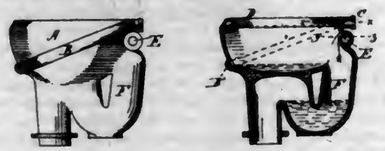


Claim.—1. In the folding tag, the combination of the following instrumentalities, to wit: a body, an envelope cemented or attached to the inner side of said body, a flap and a socket adapted to receive and protect the free ends of said body and flap, the free end of the body being inserted in the socket and secured to the under side or bottom thereof by an eyelet, and the upper side or top of said socket, and also the free end of the flap, being, respectively, provided with eyelets, all of which eyelets register when the ends of the flap and body are inserted in the socket, substantially as described.

2. In a folding tag provided with a socket, an envelope having one of its ends secured to the free end of the body of the tag and to the bottom portion of the socket, substantially as set forth.

3. The improved folding tag herein described, the same consisting of the body A, flap B, envelope D, socket C, and eyelets *h v z*, constructed, combined, and arranged to operate substantially as described.

323,473. WATER-CLOSET BOWL. Henry C. Weeden, Boston, Mass. Filed Dec. 3, 1884. (No model.)



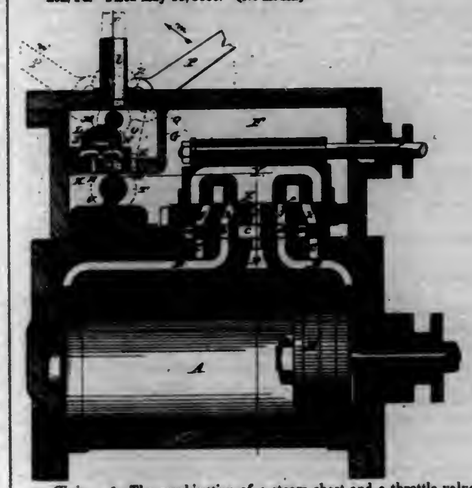
Claim.—1. A washout-closet of the character described, having the bottom-flushing pipe located upon the outside of the bowl and wholly within the vertical line of the front edge of the closet, substantially as herein described, and for the purposes herein set forth.

2. In a washout-closet, the combination, with the bowl A and flushing-rim C, of the double and externally-located flushing-pipe B, for flushing the bottom of the bowl, all substantially as herein set forth.

3. The combination, with a washout-closet bowl, of a ventilating-outlet located in the side of the bowl, over the mouth of the outlet-pipe, which connects the bowl with its trap, whereby said ventilating-outlet is removed out of the path of matters passing out of the bowl, and is also adapted to furnish a direct ventilation of the bowl, and thereby an indirect ventilation of its outlet pipe and trap, substantially as set forth.

4. In a washout-closet, the combination of the bowl A, outlet-pipe F, connecting the bowl and its trap, and the branched ventilating-outlet E, located in the side of the bowl itself, and above the point of connection between the bowl and its outlet-pipe F, all substantially as set forth.

323,474. VALVE FOR STEAM-ENGINES. Peter L. Weimer, Lebanon, Pa. Filed May 15, 1885. (No model.)



Claim.—1. The combination of a steam-chest and a throttle-valve provided with ports to supply steam to and exhaust it from the chest, substantially as described.

2. The combination of a steam-chest, a reversing-valve, and a valve to relieve the chest of imprisoned steam when the supply is cut off, substantially as described.

3. The combination, with a steam-chest and its distributing-valve, of a throttle or supply valve provided with an exhaust-port to relieve the imprisoned steam in the chest, substantially as described.

4. The combination of a steam-chest, a reversing-valve and a throttle or supply valve provided with an exhaust-port adapted to relieve the imprisoned steam from the chest and relieve the reversing-valve of the pressure thereof, substantially as described.

5. The combination of a steam-chest, a distributing-valve, a reversing-valve, and a throttle-valve, the latter provided with an exhaust-port to relieve the steam-chest simultaneously with the cutting off of the supply of steam, substantially as described.

6. The combination of a steam-chest, a distributing-valve, and a throttle or supply valve contained within the steam-chest, substantially as described.

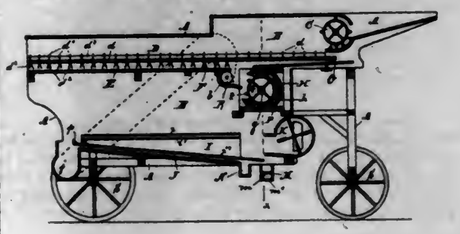
7. The combination of an engine-cylinder, a supply-valve, and a reversing-valve, the latter provided with ports, substantially as described, and adapted to be put in communication with both ends of the cylinder at the same time to relieve it of imprisoned steam, substantially as described.

8. The combination of a throttle-valve and a reversing-valve operated by the same mechanism and adapted to close the throttle-valve before the reversing-valve is moved, substantially as described.

9. The combination of a distributing-valve provided with two steam-supply ports, its seat, having two supply-ports on each side of an exhaust-port, a reversing-valve, and its seat, having ports to correspond with the ports in the seat of the distributing-valve, whereby upon moving the reversing-valve to register with the ports in the cylinder, as described, after the supply is cut off, the steam in both ends of the cylinder is instantly exhausted.

10. The combination of a reversing-valve and a throttle-valve, a lever provided with an elongated slot, the arm connecting the operating-shaft of the reversing-valve, provided with a pin to engage with said lever through the medium of said slot, and a shaft connected to the lever for imparting motion to the throttle-valve, substantially as described.

323,475. CLOVER-HULLER. Elmer L. Williams, Buchanan, Mich. Filed Mar. 21, 1885. (No model.)



Claim.—1. In a hulling-cylinder, the combination of a shaft, *g*, cylinder-heads *g' g'*, disk-sections g^2 g^2, provided with corrugated projecting teeth *t t*, constructed as described, and disk-sections g^2 g^2, alternating with the sections g^2 g^2 and being provided with corrugations on their outer surfaces, the sections g^2 g^2 and g^2 g^2 being firmly secured to the shaft *g*, so as to balance and form the cylinder G, substantially as described.

2. A hulling-cylinder comprising the shaft *g*, the cylinder-heads *g' g'*, the toothed sections g^2 g^2, and the corrugated sections g^2 g^2, said sections keyed upon the shaft *g*, substantially as described and specified.

3. In combination with a hulling-cylinder, the teeth *t t*, each secured to the cylinder-sections g^2 g^2, and having corrugated outward-tapering sides, a corrugated outer face, and a beveled lead or forward portion with smooth sides, substantially as shown and described.

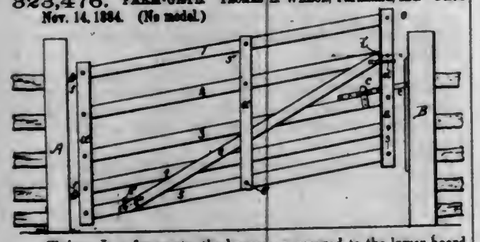
4. A grooved hulling-concave composed of a suitable supporting-bed and arc-shaped rubber-sections, each formed with a corrugated face and corrugated sides and secured in place by bolts, as described and specified.

5. In a hulling cylinder and concave, the combination, with the cylinder-shaft *g*, the cylinder-heads *g' g'*, the cylinder-sections g^2 g^2, provided with the projecting corrugated teeth *t t t*, with smooth beveled front portions, and the cylinder-sections g^2 g^2, having their peripheries corrugated, of the concave frame H, and the arc-shaped projecting sections *h h h*, secured to said frame H, and having corrugated sides and faces forming grooves for the teeth *t t t* of the cylinder-sections g^2 g^2 to operate in, all substantially arranged as described, and for the purpose specified.

6. In a clover-huller, the combination, with the frame-work A, the chamber B, the thrashing-cylinder C, the rakes and separating device D, the solid stationary floor E, and the laterally-removable screen-slide F, located in said floor E back of the hulling-cylinder G and over the cleaning-shoe I, of the hulling concave and cylinder H G, located back of the thrashing-cylinder C, as described, the shaking inclined floor O, extending from under the thrashing-cylinder C to the mouth of the hulling-concave H, the cleaning-shoe I, and the fan K, all arranged as described, and for the purpose specified.

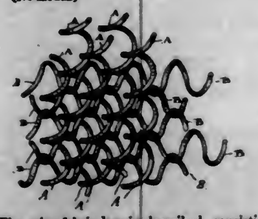
7. In a clover-huller, an oscillating cleaning-shoe, I, comprising the riddle *i*, the sieve *i'*, placed beneath the riddle *i*, the screen-floor i^2, situated under both the riddle and sieve and extending out beyond the ends of the same in front and rear, and the adjustable stem-cut-off bar *p*, secured to the rear of and across the screen-floor i^2, where desired, in combination with the frame-work A of the machine, the slanting bottom J, the tailings-box *j*, and the fan K, substantially as described, and for the purpose specified.

323,476. FARM-GATE. THOMAS E. WILSON, Farmland, Ind. Filed Nov. 14, 1884. (No model.)



Claim.—In a farm-gate, the braces *e e*, secured to the lower board by the clevis *c' c''*, and provided with clamp *d*, and studs *d'' b''*, and the bars *a b*, provided with perforated metal strips *b' d''*, the whole combined with bars *a*, *b*, *a'*, and *a''*, and the hinges *f* and latch *c*, all for the purpose set forth.

323,477. WIRE FABRIC. HENRY T. WINDT, New York, N. Y. Filed Apr. 27, 1883. (No model.)



Claim.—1. The wire fabric herein described, consisting of a series of longitudinal wires, A, each wound in the form of a right-hand helix, and interwoven with each other, and a series of transverse wires, B, wound in the form of a left-hand helix and interwoven with the wires A, each of the two series of wires crossing, bracing, and connecting together all of the wires of the other series, substantially as described.

2. The wire fabric herein described, consisting of a series of longitudinal wires, A, each in the form of a right-hand helix and interwoven with each other, and a series of transverse wires, B, wound in the form of a left-hand helix and interwoven with each other, and with the wires A, each wire of the two series of wires crossing, bracing, and connecting together all of the wires of the other series, substantially as described.

323,478. TOWEL-RACK. ELI P. WINEMAN, Joliet, Ill. Filed July 22, 1884. (No model.)



Claim.—The towel-rack described, consisting of the back board, E, having the lugs A and D', (a pair at each end,) in combination with the spring-clamps B B, each pivoted centrally to a lug, A, on said back board, and each having a series of hooked arms, *c c' c²*, and a concave lug, D, roller R, and spring S S, located between the upper ends of said clamps and said back board, as and for the purpose set forth.

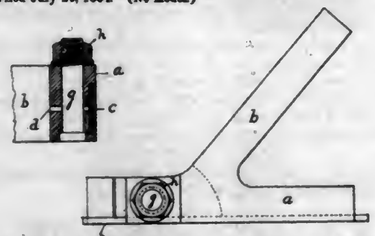
323,479. KEY. JOHN F. WOLLENHAK, Chicago, Ill. Filed Apr. 28, 1885. (No model.)



Claim.—1. As a new article of manufacture, a long key for store-door rim-locks, comprising a flat steel bit or blade and a strong, stiff, thickened shank or handle rigidly connected together, substantially as described.

2. As a new article of manufacture, a long key for store-door rim-locks, comprising a flat steel bit or blade cut off square at one end and a strong, stiff, thickened shank or handle slotted at one end in shape to correspond with and receive such square end of the blade, and a connector rigidly securing the two together, substantially as described.

323,480. CUTTING-OFF TOOL. ARTHUR A. WOOD, Hyde Park, Mass. Filed July 26, 1884. (No model.)



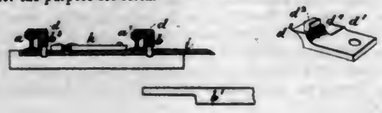
Claim.—1. A cutting-off tool having a body, *a*, and offset *b*, as and for the purpose herein set forth.

2. In a cutting-off tool, the combination of body *a*, made in one piece and having a score cut in one side to receive a cutting-blade, and also having a slot, *d*, cut in one end, with a binding-screw, *g*, and nut *h*, the whole adapted to secure the cutting-blade *c* firmly close to the end of the body.

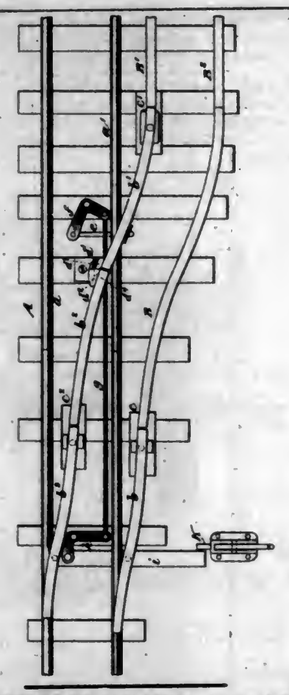
323,481. RAILROAD-SWITCH. FREDERICK S. WOOD, Pittsburg, Pa., assignor of one-third to the Novelty Tool Company, (Limited,) same place. Filed Apr. 11, 1885. (No model.)

Claim.—1. A railroad-chair, *d'*, constructed with the body or main part b^4, the part d^3 rising therefrom, and the vertical flange d^3, to adapt it to be used as described.

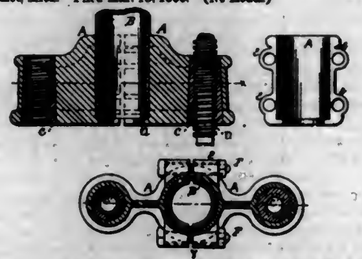
2. The combination of the chair *d'*, made fast to sleeper, the fixed rail-section b^3, end supporter on said chair, and the end pivoted rail-section *b'*, cut away under its free end, whereby the overlapping end of said rail-section *b'* will abut against the flange d^3 of the chair, in the manner and for the purpose set forth.



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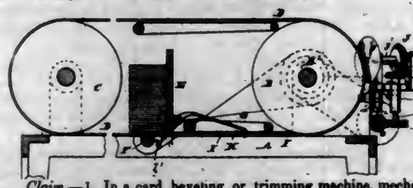
323,482. SUPPORT FOR ROCK-DRILLS. LEANDER S. WOODBURY. Calumet, Mich. Filed Mar. 13, 1885. (No model.)



Claim.—1. In a column for the support of a rock-drill, a base or foot having tapering seats in the outer ends for the reception of nuts formed tapering to fit the seats, with screws passing through the nuts for raising and lowering the said base, with said nuts constructed solid.

2. In a column for the support of a rock-drill, the combination, with the post, of a base formed of two parts having flanges on their inner ends, formed with semicircular seats for the post, with bolts passing through the flanges connecting the parts and clamping the post, and having tapering seats on their outer ends for the reception of nuts formed tapering to fit the seats, with screws passing through the nuts for raising and lowering the said base, with said nuts constructed solid.

323,483. CARD-BEVELING MACHINE. CHARLES A. WRIGHT, Philadelphia, Pa. Filed Oct. 27, 1884. (No model.)



Claim.—1. In a card beveling or trimming machine, mechanism, substantially as set forth, to bend or curve the card, in combination with a rotating cutter arranged at an angle to said card, substantially as and for the purpose specified.

2. In a card beveling or trimming machine, mechanism, substantially as set forth, to bend or curve the card, in combination with a rotating cutter arranged at an angle to said cards, and devices, substantially as set forth, to feed the card to said curving and cutting devices, substantially as and for the purpose specified.

3. In a card beveling or trimming machine, the combination of endless feed-bands, wheels about which said bands travel, and rotating cutters arranged at an angle to said bands and close to the outer edges of said wheels, substantially as and for the purpose specified.

4. In a card beveling or trimming machine, the combination of endless feed-bands, wheels about which said bands travel, and rotating cutters journaled in adjustable bearings and arranged at an angle to said bands and close to the outer edges of said wheels, substantially as and for the purpose specified.

5. In a card beveling or trimming machine, the combination of endless feed-bands, wheels about which said bands travel, and rotating cutters journaled in adjustable bearings and arranged at an angle to said bands and close to the outer edges of said wheels, and connecting devices, substantially as set forth, whereby the cutters are made to rotate with a speed commensurate with the travel of the bands or rotation of their wheels, substantially as and for the purpose specified.

6. In a card beveling or trimming machine, mechanism, substantially as set forth, to bend or curve the card, in combination with a rotating cutter arranged to an angle to said card, and means, substantially as set forth, whereby said cutters may be adjusted, substantially as and for the purpose specified.

7. In a card beveling or trimming machine, the combination of endless feed-bands, wheels about which said bands travel, an automatic feed, substantially as described, to deliver said cards in succession to said bands, and rotating cutters arranged at an angle to said bands and adapted to work close to or against the outer edges of said wheels, substantially as and for the purpose specified.

8. In a card beveling or trimming machine, the combination of endless feed-bands, wheels about which said bands travel, an automatic feed, substantially as described, to deliver said cards in succession to said bands, and rotating cutters arranged at an angle to said bands and rotated in opposite directions and adapted to work close to or against the outer edges of said wheels, substantially as and for the purpose specified.

9. In a card beveling or trimming machine, the combination of endless feed-bands, wheels about which said bands travel, an automatic feed, substantially as described, to deliver said cards in succession to said bands, stop-fingers to arrest the forward movement of the cards and cause them to be fed to the cutters in such a manner as to insure the edges being cut at right angles, and rotating cutters arranged at an angle to said bands and adapted to work close to or against the outer edges of said wheels, substantially as and for the purpose specified.

10. In a card beveling or trimming machine, a wheel, in combination with a rotating cutter arranged close to said wheel, and mechanism, substantially as set forth, to hold the cards flat against the face of said wheel and carry them against the rotating cutters, substantially as and for the purpose specified.

11. The combination of wheels B C, bands D, and rotating cutters J, substantially as and for the purpose specified.

12. The combination of wheels B C, bands D, rotating cutters J, shafts J', bevel-gears J^3 J^3, shafts J^4, worm-wheels J^5, screw O, and suitable framing, substantially as and for the purpose specified.

13. The combination of wheels B C, bands D, and rotating cutters J, with frame M, by which said cutters are carried, and devices, substantially as described, to adjust said frame, substantially as and for the purpose specified.

14. In a card-beveling machine, mechanism, substantially as set forth, to bend or curve the card, in combination with a rotating cutter, feeding devices, substantially as set forth, and stop-fingers to adjust the cards before passing to the cutters to insure their edges being cut at right angles, substantially as and for the purpose specified.

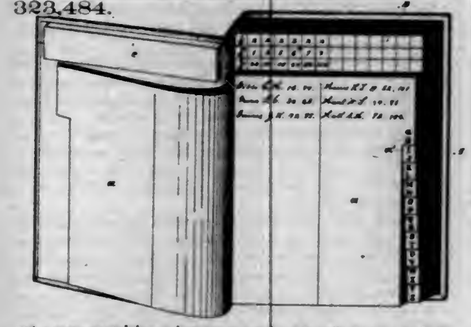
15. In a card-beveling machine, card-feeding bands and wheels adapted to positively feed the card, in combination with a rotating cutter against which the cards are forced, the said cutter being arranged at an oblique angle to the plane of the card, substantially as and for the purpose specified.

16. In a card-beveling machine, card-feeding bands, and wheels adapted to positively feed the cards against the cutters, in combination with cutters against which the cards are forced and which are arranged obliquely to said cards at place of cutting, a feeding device, substantially as described, to positively feed the cards to the bands, and stop-fingers, substantially as set forth, actuated intermittently by said feeding device to catch and adjust each successive card before passing to the cutters, whereby the edges are cut at right angles to form a square or rectangular card, substantially as and for the purpose specified.

323,484. INDEX. RICHARD H. WYMAN, Evanston, Ill. Filed Sept. 16, 1884. (No model.)

Claim.—1. As a new article of manufacture, a blank letter or impression copying book provided with the usual marginal or sight index, the pages of which latter are made smaller than those of the book to per-

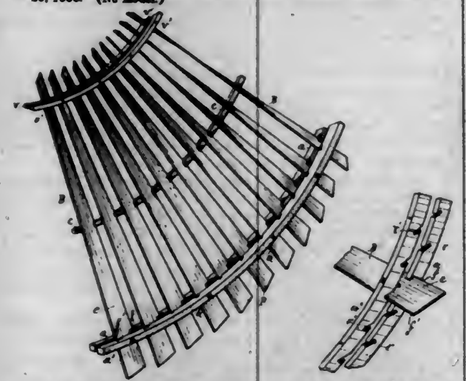
323,484.



mit a page containing a key constructed as described to protrude from beneath or extend beyond the same, substantially in the manner and for the purposes specified.

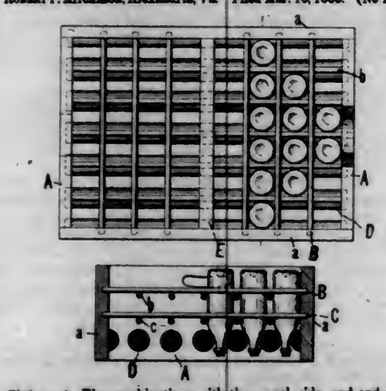
2. The combination of the key arranged as specified with the shortened initial marginal index-pages of a blank-book, and a pad to compensate for the portion of said index-pages cut off, substantially as and for the purposes specified.

323,485. WINDMILL. John Q. Adams, Alamo, Mich. Filed Apr. 29, 1885. (No model.)



Claim.—In a windmill, the combination of the tapering twisted slats, the ring or rim *a*, having grooves or recesses in its edges on lines inclined to the axis of the wheel, the inner slat-support, *v*, having the slots or recesses in its edges formed at an inclination differing from the inclination of the slots or recesses in the ring *a*, the ring or rim *a'*, opposite to the ring *a*, having slots in its edges corresponding to those in the ring or rim *a*, and the ring or rim *a'*, opposite the ring or rim *v* and similarly slotted, substantially as set forth.

323,486. BOX FOR BOTTLED LIQUIDS. Peter Aitchison and Robert P. Aitchison, Alexandria, Va. Filed Mar. 10, 1885. (No model.)

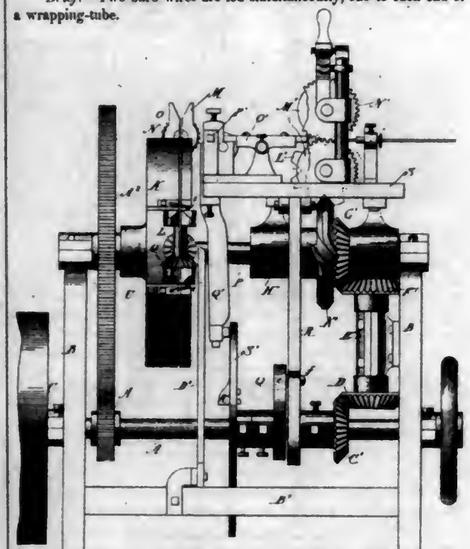


Claim.—1. The combination, with the usual side and end pieces, A A *a a*, of the series of lateral and longitudinal sustaining-rods B *b* C *c*, and the shoulder-bars D, as shown.

2. The crate described, consisting of the side and end pieces, A *a*, central partition, E, the lateral and longitudinal sustaining-rods B *b* C *c*, and the shoulder-bars D, extending through the partition, as described.

323,487. BARB-WIRE MACHINE. Charles H. Baker and Francis L. Bestor, Knoxville, assignors to themselves, and Thomas C. Cunningham, Sigourney, Iowa. Filed May 13, 1884. (No model.)

Brief.—Two barb-wires are fed simultaneously, one to each end of a wrapping-tube.



Claim.—1. The combination, with a frame mounted upon a driving-shaft, one or more slotted tubes mounted thereon, and each provided with wrapping-pins, as described, of a partially-toothed stationary wheel and intermediate gearing for revolving said tube or tubes therefrom, as and for the purpose set forth.

2. The combination, with a frame mounted upon a driving-shaft, one or more slotted tubes mounted thereon, and each provided with wrapping-pins, as described, of a partially-toothed stationary wheel provided with a cam-surface, and intermediate gearing for revolving said tubes from the stationary wheel, as and for the purpose set forth.

3. The combination, with a frame mounted upon a driving-shaft, one or more slotted tubes, each provided with wrapping-pins and mounted on said frame, of a partially-toothed stationary wheel, intermediate gearing for revolving the tubes therefrom, and an oscillating table or platform carrying the barb-feeding mechanism, as and for the purpose set forth.

4. The combination of frame K, slotted tubes N, each provided with wrapping-pins *c*, slotted gears O, mounted upon said tubes, partially-toothed stationary wheel E, and intermediate gearing for revolving said tubes N, as and for the purpose set forth.

5. The combination of frame K, slotted tubes N, each provided with wrapping-pins *c*, slotted gears O, mounted upon said tubes, partially-toothed stationary wheel E, intermediate gearing for revolving said tubes N, platform S, carrying the barb-feeding mechanism, and means for oscillating said platform, as and for the purpose set forth.

6. The combination, with suitable wrapping mechanism and table S, carrying suitable barb-wire-feeding mechanism, of link-arm R provided with pin *f*, wheel Q, provided with cam-slot *e*, and means for revolving said wheel, as set forth.

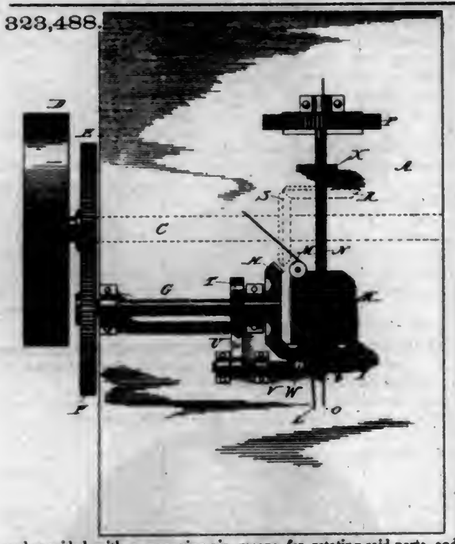
323,488. BARB-WIRE MACHINE. Charles H. Baker and Francis L. Bestor, Knoxville, assignors to themselves, and Thomas C. Cunningham, Sigourney, Iowa. Filed May 13, 1884. (No model.)

Claim.—1. The combination of a shaft provided with a passage for one fence-wire and a wrapping-pin, and mounted in a block through which the remaining wire is passed, a gear revolving around said shaft and provided with a wrapping-pin, and suitable gearing for revolving the parts, as and for the purpose set forth.

2. The combination of a shaft provided with a passage for one fence-wire, and with a wrapping-pin, and mounted in a block through which the remaining wire is passed, means for imparting a rotary and reciprocating motion thereto, and a gear revolving around said shaft and provided with a wrapping-pin, as described.

3. The combination of a shaft provided with a passage for one fence-wire, and with a wrapping-pin, and mounted in a block through which the remaining wire is passed, a gear revolving around said shaft

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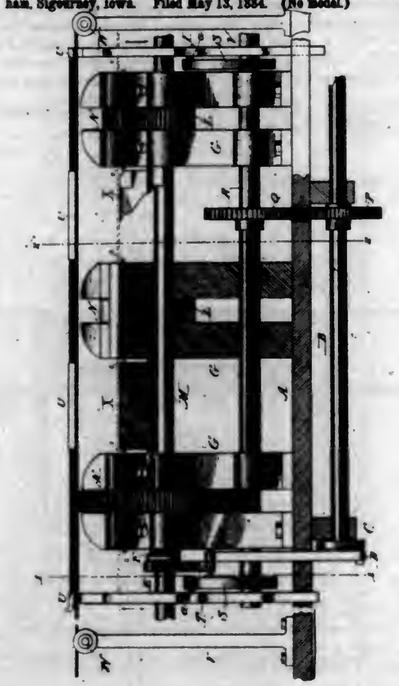
and provided with a wrapping-pin, means for rotating said parts, and an oscillating support for the barb-wire, as described.

4. The combination of gear I, provided with pin *b*, and mounted on block K, through which there is a passage for one wire, means for revolving said gear, shaft N, provided with a passage for the other wire and with a pin, *a*, and means for revolving said gear and shaft, as described.

5. The combination, with gear I and shaft N, constructed and arranged as described, and with means for revolving them, of cam X, arm Y, and bracket Z, as and for the purpose set forth.

6. The combination, with gear I and shaft N, constructed and arranged as described, and means for operating them, as described, of arm W, shaft V, arm U, cam T, shaft G, and means for imparting motion to said shaft, as described.

323,489. BARB-WIRE MACHINE. Charles H. Baker and Francis L. Bestor, Knoxville, assignors to themselves, and Thomas C. Cunningham, Sigourney, Iowa. Filed May 13, 1884. (No model.)



Claim.—1. The combination, with a series of slotted wrapping-tubes mounted in stationary bearings, of mechanism for drawing the fence-wires into said tubes and at intervals lifting them therefrom, as set forth.

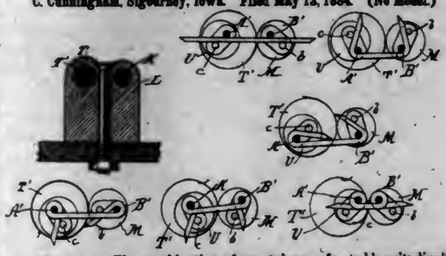
2. The combination, with a series of slotted wrapping-tubes mounted in stationary bearings and upon the same vertical plane, of mechanism for drawing the fence-wires into said tubes and at intervals lifting them therefrom, as set forth.

3. The combination, with shaft B and eccentric C, mounted thereon, of arms D E, pawl H, and ratchet I, wrapping-tubes O, and intermediate gearing for revolving said tubes, as described.

4. The combination, with slotted wrapping-tubes, shaft B, and shaft R, driven therefrom, of eccentrics S, secured to shaft R, and arms T U, driven from said eccentrics, as set forth.

5. The combination of wrapping-tubes O, arms T, having arms U, and means for driving said parts to attach barbs to the fence-wires, and to insert and withdraw the wires from said tubes, as described.

323,490. BARB-WIRE MACHINE. Charles H. Baker, Knoxville, Iowa, assignor of two-thirds to Francis L. Bestor, same place, and Thomas C. Cunningham, Sigourney, Iowa. Filed May 13, 1884. (No model.)



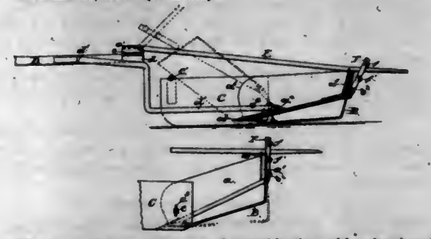
Claim.—1. The combination of two tubes perforated longitudinally for the passage of fence-wires, means for revolving said tubes, wrapping-pins formed thereon for wrapping the barb-wires, and mechanism constructed and arranged for varying the speed of one of said tubes, substantially as described and shown.

2. The combination of two tubes perforated longitudinally for the passage of fence-wires, wrapping-pins formed thereon for wrapping the barb-wires, mechanism for varying the speed of one of said tubes, and mechanism for changing the position of said tube with respect to the remaining tube, substantially as described and shown.

3. The combination, with shaft T K, having wrapping-pins *b* and *c*, and means for revolving them, shaft T being mounted eccentrically in tube T', of bevel-gear V, mounted on said tube, segmental gear W, and means for operating said gear from the main shaft, substantially as described and shown.

4. The combination, with shaft T, having wrapping-pin *c*, cam S, and eccentric R, of shaft K, having wrapping-pin *b*, and means for revolving the parts from the main shaft, as described and shown.

323,491. SNOW-SCRAPER. George A. Birch, East Greenbush, N. Y. Filed Mar. 20, 1885. (No model.)



Claim.—1. In a snow-scraper, the combination, with a face-board, A, a pole, D, hinged to said face-board, and provided with a lever, E, which is adapted to lock the face-board in an angular position, and a roller-frame, F, hinged to the face-board, as described, of the cleaners C, provided with slotted openings c^3, and pivoted to the end pieces, *a*, as and for the purpose specified.

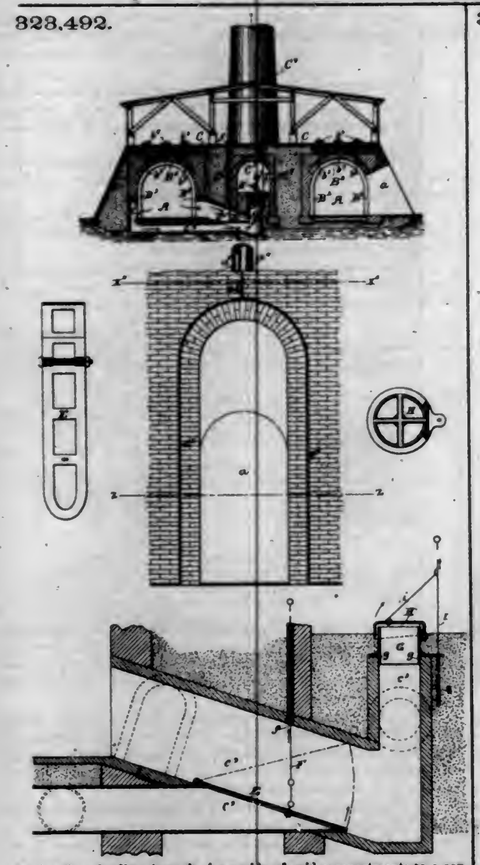
2. In a snow-scraper, the combination, with the face-board A, of the runners B, adjustably connected to said face-board, as and for the purpose specified.

3. In a snow-scraper, the combination of a roller-frame, F, hinged to the face-board A, and a lever, E, adapted to lock said face-board in an inclined position and to overturn the same, as herein specified.

323,492. CONTINUOUS BRICK-KILN. Max A. Th. Boehncke and Henry Rohwer, Omaha, Neb. Filed Feb. 2, 1885. (No model.)

Claim.—1. A brick-kiln having a series of compartments, A,

323,492.



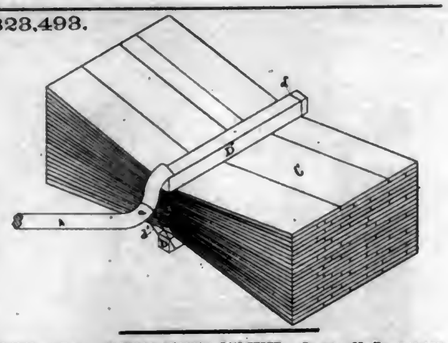
having flues leading from the inner side of said compartments to a central exit-passage, combined with the flues or pipes c^4, leading from the opposite side of said compartment beneath the floor of the compartment and communicating with the first-mentioned flue, substantially as shown and described.

2. A brick-kiln comprising burning-compartments A, having flues leading from the inner side thereof, and flues c^4, leading from the opposite side of said compartment, beneath the floor thereof, and joining the first-mentioned flue, combined with a damper hinged at the junction of the two flues, and means for operating the same, substantially as described.

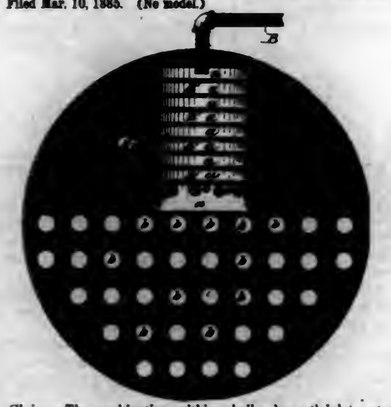
3. A brick-kiln the walls of which are made up of sections with spaces between them to allow for expansion by heat, substantially as described.

4. A brick-kiln the walls of which are made in sections with spaces between them, combined with a strip of metal, a^4, secured to said sections at the spaces to prevent the exit of filling material, substantially as described.

323,493.

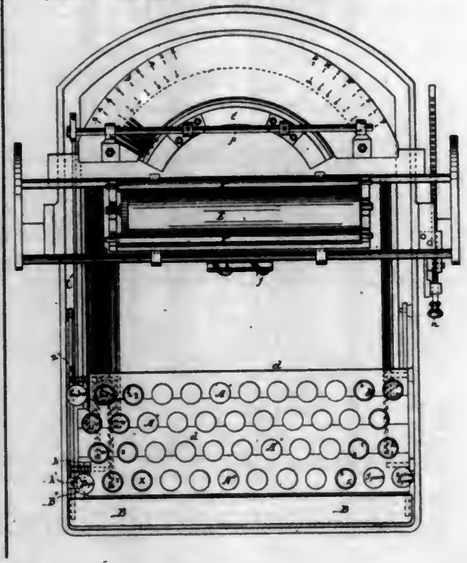


323,494. BOILER-WATER PURIFIER. George M. Braundiger, Janesville, assignor of one-half to Eugene Wuesthoff, Milwaukee, Wis. Filed Mar. 10, 1885. (No model.)



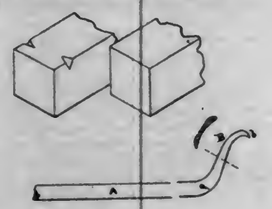
Claim.—The combination, within a boiler, beneath inlet-water pipe, of a series of separate detachable pans having interlocking shoulders or fastenings by which they are retained and rendered self-supporting, one above another, independently of an inclosure, said pans being provided with apertures or passages communicating with each other and the boiler and adapted to secrete the sediments of the water in passing from the inlet-pipe to the boiler, and to be detached and removed in sections from and replaced in the boiler, substantially as and for the purpose specified.

323,495. TYPE-WRITING MACHINE. Byron A. Brooks, Brooklyn, N. Y. Filed June 13, 1884. (No model.)



323,498. BAND FOR SHINGLE-BUNCHES. Hiram E. Brackett and Fred. L. Sawyer, Hampden, Me. Filed May 21, 1885. (No model.)

Claim.—The combination of the endless metallic loops or links d d', with the wooden shingle binders D D', all as shown and described, and substantially as and for the purpose specified.



Claim.—1. In a type-writing machine, the combination of a vibrating frame bearing a series of type-keys with a series of key-levers controlling the movement of the printing-type, the type-keys operating above but not connected to the corresponding levers, each key being combined with a plurality of key-levers and brought in position to operate the same by the vibrations of the key-frame, substantially as described, for the purpose specified.

2. In a type-writing machine, the combination of a vibrating key-frame, d, suitable mechanism, h', for imparting to said frame its vibrating movement, type-keys A''', springs s', and corresponding key-levers, A' A', controlling the operation of the printing-type, substantially as described.

3. In a type-writing machine, a series of key-levers of different lengths capable of being adjusted to various fulcrum-points to give equal leverage, combined with a series of keys operating above but not connected with said levers, and with suitable fulcra, substantially as described.

4. In a type-writing machine, a fulcrum-piece, q', provided with a series of grooves cut in its face and combined with the key-levers A' A', pivoted therein, substantially as described.

5. In a type-writing machine, in combination with the inking-ribbon, two reels to which said ribbon is attached, one of said reels being operated and controlled by a ratchet-wheel and pawl, and the other being controlled by the action of a coiled spring operating against the throw of said pawl to draw the ribbon back when said pawl is released, substantially as described.

6. In a type-writing machine, a platen, rack, and worm-wheel operating the same, a ratchet-wheel and pawl to control the revolutions of said worm-wheel, combined with a rack-bar and connecting pinion-wheels, operated and combined, substantially as described, for the purpose of drawing the platen-carriage back.

7. In a type-writing machine, a platen, rack, and worm-wheel operating the same, a variable escapement to control the revolutions of said worm-wheel, combined with a rack-bar and connecting pinion-wheels, operated and combined, substantially as described, for the purpose of drawing the platen-carriage back.

8. In a type-writing machine, the combination of an inking-ribbon, i, spring-reel j''', reel j'''', ratchet operating the same, connecting-bar, and spacing mechanism, substantially as described.

9. In a type-writing machine, and in combination with the platen thereof, an escapement-wheel and pawl having a positive variable throw, key-levers, spacing-bar, and connecting-rods, substantially as described.

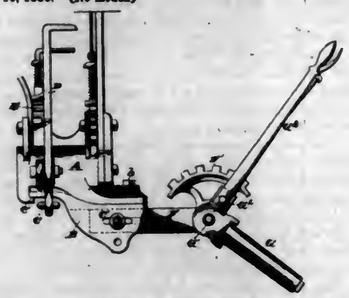
10. In a type-writing machine, a platen-carriage and a rack and worm-wheel combined with a variable escapement controlling the movement thereof, substantially as described.

11. In a type-writing machine, the combination of key-levers, a bar having a variable reciprocating motion, an escapement-wheel and pawl having a positive variable throw controlling the forward movement of the platen, substantially as described.

12. In a type-writing machine, and combined with the platen-carriage, a rack and worm-wheel, and an escapement-wheel, and a pawl having a positive variable throw, substantially as described.

13. The combination of a spring, i', ratchet-wheel h'', pawl q, pivoted bars S and S', pins o', prong g', and actuating-levers, substantially as described, to produce a variable escapement.

323,496. WHEEL-PLOW. William L. Casaday, South Bend, Ind., assignor of one-half to the South Bend Iron Works, same place. Filed June 10, 1885. (No model.)



Claim.—1. In a wheel-plow, the combination, with a rigid sector and a pivoted wheel-spindle, of a lever rigidly secured to the wheel-spindle, whereby the latter can be moved vertically in the arc of a circle for the purpose of changing the inclination of the wheel, and a dog for locking the lever to the sector, substantially as set forth.

2. In a wheel-plow, the combination, with a block having a sector rigidly secured thereto, of a wheel-spindle pivotally secured to said block, a lever rigidly secured to said spindle, whereby the spindle can be moved vertically in the arc of a circle for the purpose of changing the inclination of the wheel, and a dog for locking the lever to the sector, substantially as set forth.

3. In a wheel-plow, the combination, with an adjustable block and a wheel-spindle pivoted thereto, of a lever for changing the inclination of the spindle, and devices for locking the lever to the block, substantially as set forth.

4. The combination, with a horizontally-movable block and spindle pivoted to the outer end thereof, of a lever for changing the inclination of the spindle, and devices for locking the lever against movement.

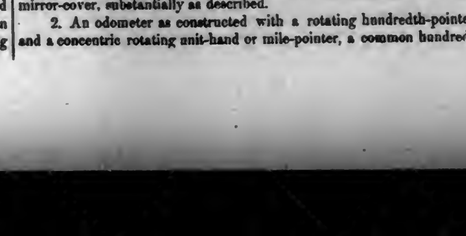
5. The combination, with a longitudinally-adjustable and horizontally-movable block, of a spindle pivotally secured to said block, and devices for changing the inclination of said spindle.

6. The combination, with a pivoted box and a block adjustably secured within said box, of a spindle pivoted to the outer end of the block, and a lever for changing the inclination of the spindle, substantially as set forth.

7. The combination, with the pivoted box, a lever for moving the same, and a block secured within said box, of a lever secured to the spindle, whereby the inclination of the latter can be changed.

8. The combination, with the pivoted box, the lever for moving the same, the longitudinally-adjustable block secured to the box, and the sector secured to the outer end of the block, of the spindle pivoted to the outer end of the block, the lever for changing the inclination of the spindle, and a dog for locking the lever against movement.

323,497. COTTON-CHOPPER. Rufus F. Cochran, Chiversville, Ga. Filed May 6, 1885. (No model.)



Claim.—1. In a cotton-chopper, the combination, with a drive-wheel journaled in a beam, of a frame projecting at right angles from said beam, and a spacer-wheel journaled in said frame, substantially as set forth.

2. In a cotton-chopper, the combination, with a beam, a drive-wheel journaled in bearings therein, and a plow located directly behind the drive-wheel, of a frame projecting laterally from one side of the beam, and a spacer-wheel journaled in said laterally-projecting frame.

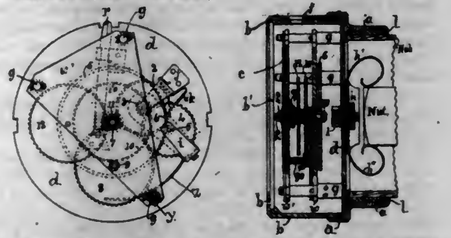
3. In a cotton-chopper, the combination, with a two-section beam, of a drive-wheel and plow-standard secured to the beam between the sections, substantially as set forth.

4. In a cotton-chopper, the combination, with the plow-beam and drive-wheel, of a spacer-wheel supported in yielding adjustment over the row by a curved spring secured to its frame, and having a bearing on the ground, substantially as set forth.

5. The combination, with a beam, a drive-wheel, a laterally-projecting frame, and a spacer-wheel journaled in said frame, of double-edge reversible knives, secured to the periphery of said spacer-wheel, substantially as set forth.

6. In a cotton-chopper, the combination, with a spacer-wheel provided with one or more shouldered projections on its face, of reversible knives seated on the projections and bearing against the shoulders, substantially as set forth.

323,498. ODOMETER. David N. B. Coffin, Newton Center, Mass. Filed Nov. 17, 1884. (No model.)



Claim.—1. An odometer as constructed with fixed and rotating graduated faces, fixed and rotating or revolving pointers, change-wheel 6, swing i, gear 1, nut-clasp, intermediate parts, frame-work, case, and mirror-cover, substantially as described.

2. An odometer as constructed with a rotating hundredth-pointer and a concentric rotating unit-hand or mile-pointer, a common hundred-

point graduated face, change-wheel 6 upon the shaft of the hundredth-pointer, with a suitable disengaging device, as swing *i* and gears, with intermediate and actuating mechanism, substantially as described.

3. In the construction of an odometer, a unit or mile pointer carried upon a sleeve shaft within which is a shaft carrying a hundredth-pointer, both actuated through intermediate gearing and changeable gears, with speeds proportionate to the diameter or circumference of a measuring or road wheel and indicating distances upon common graduation-points or upon a common face, or both points and face, substantially as shown.

4. In an odometer, the case and frame as constructed and united—viz., having the ring *a* fitted to the wheel-hub outside, and to base-plate *d* and ring *b*, the two rings thus clamping plate *d* and carrying it with attached parts—substantially as described.

5. As applied in an odometer, the setter-arm *p*, its sleeve-shaft, and attached worm-gear *q* and worm *r*, with necessary related parts, substantially as and for the purpose set forth.

6. The odometer adjustable pointer as constructed with the described hub part detached or having an open joint on one side adjacent to the base of the pointer to allow a grasping and releasing action, substantially as described.

7. A pointer having the hub or part grasping the arbor divided at one side of its junction with the index-finger for the purpose of causing it to release its grasp on the arbor when turned thereon in one direction, and of resuming its grasp when the opposite relative movement occurs.

8. The combination, in an odometer, of the rotating adjustable pointer and its shaft, and the setter-arm *p* and its shaft and suitable operative mechanism, substantially as described.

9. In an odometer, a rotating pointer adjustable upon its arbor by means of a setter-arm, *p*, operated by a worm-gearing and sleeve-shaft, substantially as described.

10. In an odometer, in combination with the indicating-face, a cover provided with an inner reflecting-surface or mirror, and made adjustable so as to reflect the zenith-light upon the indicating-face and enable the observer from his seat in the carriage to see the indications, substantially as shown and described.

11. The basal ring *a* as constructed with a cavity lined with an elastic or semi-elastic material fitted to receive the carriage-hub and provided on the opposite side with a seat and rim, within which rim is fitted and fastened the base-plate of the internal mechanism, and the front case-ring, *b*, substantially as described.

12. The front ring, *b*, as constructed with a glass front and provided with lugs *s* and fastenings *u v* by which it is held within ring *a*, and, with the entire instrument, is made fast to the wheel-hub, substantially as described.

13. In an odometer, the base-plate *d*, constructed with a bearing for gear 1, and studs *g*, fitted to carry frame-work, as *w* and *w'*, and fitted within ring *a* and held by ring *b* therein, substantially as described.

14. The combination of the lock-fastening *u v*, the odometer-case, lug, key-hole, and guard *u'*, substantially as described.

15. The combination of the fastening *u v*, lock, and odometer-case and lug *e*, substantially as described.

16. In an odometer, the nut-clasp as constructed with the two curved and easily-yielding spring *h' h''*, substantially as shown.

17. In an odometer, the nut-clasp as constructed with the widened ends for grasping the nut by the long curved and easily-yielding springs *h' h''*, substantially as shown.

18. In an odometer, the nut-clasp as constructed, having a bearing for the neck of gear 1, the spring-pawl *h'''*, the springs *h' h''*, and side guards or flanges, all in one piece, substantially as shown.

19. In an odometer, the swing *i* as constructed to carry the double-stud gear 4 5, and connecting the gear 3 with the change-gear 6, substantially as described.

20. The shaft 70, arranged in the same line with gear 1, but detached, carrying a pointer, and a change-wheel, 6, giving required changes in speed proportioned to the size of the road or measuring wheel, the same being provided with intermediate gearing, and made capable of being connected and disconnected at will for changes, substantially as described.

21. In an odometer, a change-wheel, 6, on a central pointer-shaft, in combination with a central driving-shaft and intermediate detachable and connecting gearing, substantially as described.

22. An odometer as constructed—viz., having a central sleeve-shaft with mile-pointer, intermediate gearing, and central hundredth-pointer shaft made variable together in their movements proportionate to different diameters of road or measuring wheels by means of change-gear 6, and suitable related and operative mechanism—substantially as described.

23. In an odometer having a fixed face and rotating pointers carried upon and rotated by a central shaft and shafts, a rotating face geared directly to and actuated by one central shaft for registering, in combination with a road or measuring wheel, substantially as described.

24. In an odometer, in combination with a measuring or road wheel and intermediate gearing, a central pointer-shaft and sleeve pointer-shaft, to which is directly geared a rotating face, substantially as shown.

25. In an odometer, the swing *i* as constructed, having the long and short arms, and carrying the double-stud gears 4 5, and pivoted by its long arm to the journal or bearing of the double-stud gear 2 3 for engaging and disengaging the change wheel, substantially as described.

26. In an odometer, an adjustable indicating revolving pointer, in combination with a yielding wedge-shaped or inclined setter-arm for adjusting the same, substantially as described.

27. In an odometer, the rotating pointer, adjustable upon its arbor with reference to the face-graduations by means of and in combination with a yielding setter-arm, *p*, operated by an attached worm-gear and worm, substantially as described.

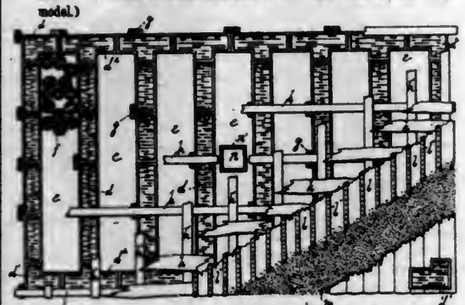
28. In an odometer, the combination of a hinged angularly-adjustable reflecting and protecting cover and indicating-face, reflecting the zenith-light upon the face, and face indications to the observer's eye in the carriage, substantially as described.

29. In an odometer, the two pairs of double-stud gears 2 3 and 4 5 and swing *i*, as constructed and arranged to connect the two axially-coincident shafts and their gears 1 and 6, substantially as described.

30. In an odometer, the combination of the cashioned socket to receive the end of the hub of the measuring-wheel and an elastic fastening, substantially as described.

323,499. APPARATUS FOR THE MANUFACTURE OF WHITE LEAD.

S. Douglas Cornell, Buffalo, N. Y. Filed June 18, 1885. (No model.)



Claim.—1. In the manufacture of white lead, a corroding-stack constructed with a series of courses, each course consisting of a number of troughs or pots to hold the acid alone, and arranged with spaces between them, the metallic buckles being placed within such spaces between the troughs or pots, flooring above and below the troughs or pots, and a layer of tan-bark or equivalent material, the whole suitably ventilated, substantially as and for the purpose set forth.

2. A corroding-stack constructed with a series of courses, each course consisting of the layer of tank-bark *b*, the flooring *c*, the acid-troughs *d d' d²* or pots *o*, arranged with the spaces *e* between them, the blocks *g*, the two sets of stringers *h* and *h'*, the boards *k*, and flooring *l*, all arranged as shown, and for the purpose set forth.

323,500. FURNACE FOR BAKING INCANDESCENTS.

Charles Coultas, Sharpsburg, assignor to the Empire Electric Carbon Company, Pittsburg, Pa. Filed May 6, 1885. (No model.)

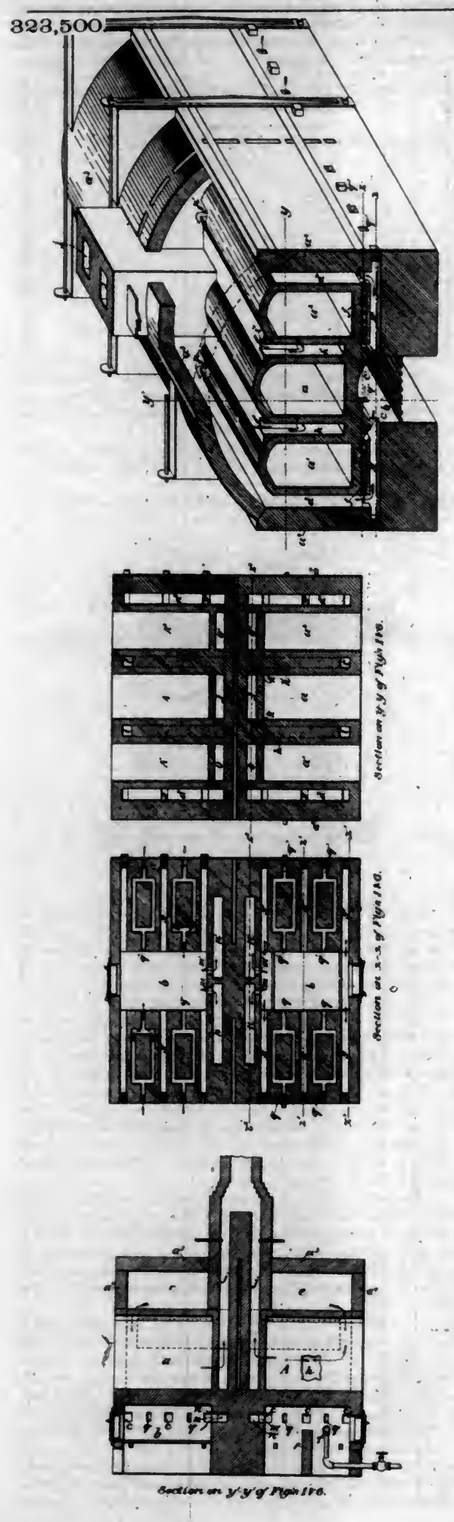
Claim.—1. In a roasting-furnace, the combination, with a series of adjacently-situate heating-ovens, *a a' a²*, of a combustion-chamber, *b*, flues *g g'*, underlying said ovens, a flue, *e*, overlying the same, rising flues *d d'*, connecting the said upper and lower flues and contiguous with the sides of said ovens, and flues *h h'*, communicating with said overlying flue and contiguous with the remaining sides of said ovens, substantially as and for the purposes specified.

2. In a roasting-furnace, the combination, with a series of adjacently-situate heating-ovens, *a a' a²*, of a combustion-chamber, *b*, flues *g g'*, underlying said ovens, a flue, *e*, overlying the same, rising flues *d d'*, connecting said upper and lower flues and contiguous with sides of said ovens, a flue or flues, *h*, communicating with said overlying flue contiguous with the remaining sides of said ovens, and a flue, *j*, contiguous with the rear of one of said ovens and communicating with said flue or flues *h*, substantially as and for the purposes set forth.

3. The combination, with a series of adjacently-situate heating-ovens, of a combustion-chamber, *b*, rising flues *d d'*, contiguous with the sides of several of said ovens, flues underlying the same, communicating with the combustion-chamber *b* and with the rising flues *d d'*, for heating the floors of the ovens, and flues *g g'*, leading directly from the combustion-chamber to the rising flues and separated from said floors, substantially as specified.

4. The combination, with a series of adjacently-situate heating-ovens, *a a' a²*, of a combustion-chamber, *b*, flues *f*, underlying said ovens, a flue, *e*, overlying the same, rising flues *d d'*, connecting said upper and

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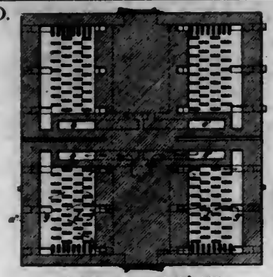


Section on x-x of Fig. 1.

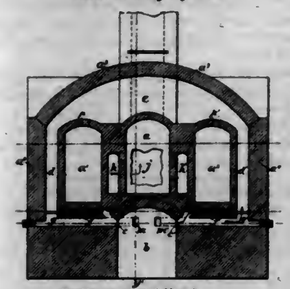
Section on y-y of Fig. 1.

Section on z-z of Fig. 1.

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Section on x-x of Fig. 1.

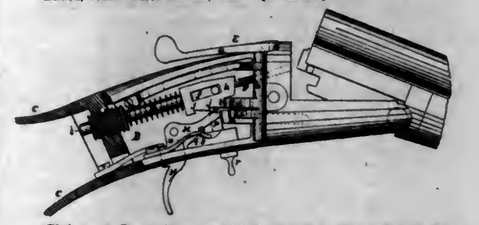


Section on z-z of Fig. 2.

lower flues and contiguous with the sides of said ovens, flues *h h'*, communicating with said overlying flue and contiguous with the remaining sides of said ovens, a flue or flues, *m m'*, leading from the combustion-chamber to the rear of the ovens, and rising flues *o*, leading thence to said overlying flue, all of said flues being in intercommunication, substantially as and for the purposes described.

323,501. BREECH-LOADING FIRE-ARM.

Amos Dickerman, New Haven, Conn. Filed Feb. 24, 1885. (No model.)



Claim.—1. In combination with the barrel-locking bolt and firing mechanism of a gun, the locking-lever E, having cam-arms *c* and *d*, which act, respectively, on the bolt and firing mechanism to retract them, and an arm or projection, *e*, together with a spring which bears against said arm to return the lever to its normal position, substantially as set forth.

2. A firing-pin consisting of a front and rear part which are circular in cross-section, and a longitudinally-slotted middle part which is provided with sear-notches and an incline or cam face, in combination with a supporting-stud which extends into said slot, a spring which actuates said firing-pin, a trigger which engages with either one of said notches, and an arm or cam on the top lever which acts on the cam or incline upon said firing-pin to force it backward against the tension of said spring, substantially as set forth.

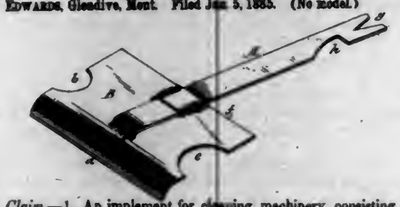
3. In combination with a barrel-locking bolt, trigger, and trigger-spring, a sliding locking-plate having an upright part engaging the bolt, whereby the plate is moved by said bolt, an inclined or curved part, and a spring acting on the incline to further move the bolt and lock the trigger, and a downwardly-projecting handle whereby the trigger is unlocked, substantially as set forth.

4. The receiver having a screw-threaded perforation in its rear end, in combination with a firing-pin which extends through said perforation, a spring which actuates said firing-pin, and a screw-plug which engages with the threads of said perforation and bears against said spring for the purpose of adjusting the tension of the latter by screwing said plug in or out, substantially as set forth.

5. A firing-pin provided with notches and an incline, as described, in combination with a spring-actuated trigger which engages one of said notches, and a lever having a vertical axially-movable part, *b*, which is provided with a cam that acts on said incline to withdraw said firing-

pin when said part *b* is turned, and a second cam, together with a spring bearing on the same, to return the lever to its normal position, substantially as set forth.

323,502. IMPLEMENT FOR CLEANING MACHINERY. WILLIAM EDWARDS, Gleadive, Mont. Filed Jan. 5, 1885. (No model.)

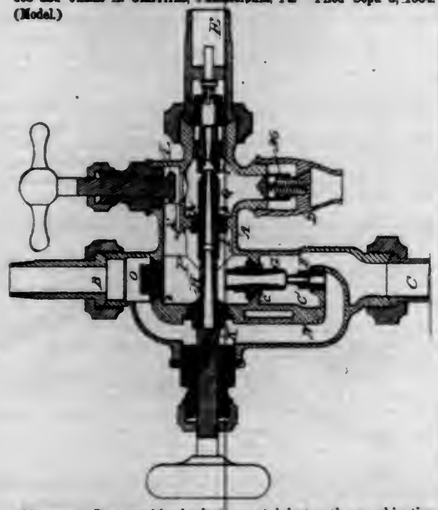


Claim.—1. An implement for cleaning machinery, consisting of a flat metal plate or bar bifurcated and notched at one end, and having detachably connected at its opposite end a scraper, substantially as and for the purpose set forth.

2. An implement for cleaning machinery, consisting of a metal plate or bar having at one end a bifurcation and notch, substantially as and for the purpose described.

3. An implement for cleaning machinery, consisting of a metal plate or bar bifurcated and notched at one end and curved at the other, substantially as and for the purpose described.

323,503. COMBINED EJECTOR AND INJECTOR. DAVID M. FERGUS and JAMES A. GRIFFITHS, Philadelphia, Pa. Filed Sept. 3, 1884. (Model.)



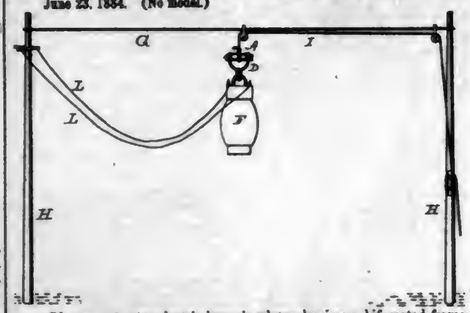
Claim.—1. In a combined ejector and injector, the combination, with the ejector-chamber C', of the pipe N, arranged as shown, cast integral with the body or shell and extended or projected into said chamber and carrying the steam-nozzle F, said nozzle being above the water-supply pipe C and aligned axially therewith, substantially as shown and described.

2. In a combined ejector and injector having the ejector located below the injector, and the tubes of the former transverse to the axial plane of the latter, both being contained in a single shell or body, a water-chamber, P, having for its boundaries the walls of the shell and the two bridges which sustain the combining and discharging tubes of the ejector and injector, the discharging end of the ejector-tube, the steam-nozzle of the injector, and the receiving end of the injector combining tube being located in said chamber, substantially as shown and described.

3. In a combined ejector and injector having a water-chamber, P, in which are located the discharge end of the ejector-tube, the receiving end of the injector combining tube and the injector-nozzle, the combination, with said chamber and the chamber Q, in which is located the discharging end only of the injector-tube I, of a passage, *p'*, and valve L, whereby the lifted water is caused to be directly discharged from the ejector on the injector-tubes and to submerge the latter, and the passage-way between said chambers opened in the preliminary lifting and closed when the injector is forcing, substantially as shown and described.

4. In a combined ejector and injector in which the ejector-tubes are aligned with the steam-inlet of the machine, the plug O, which closes up the entrance-opening for said tubes, substantially as shown and described.

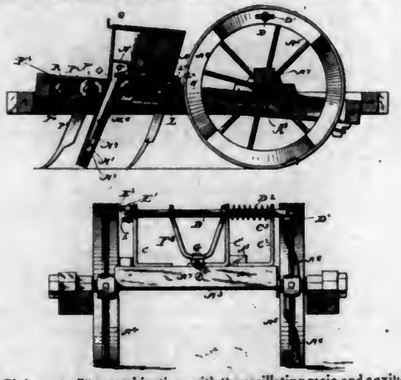
323,504. ELECTRIC-LAMP INSULATOR. JOHN R. FLETCHER, Dayton, Ohio, assignor of one-half to Joseph E. Lowes, same place. Filed June 23, 1884. (No model.)



Claim.—1. An electric-lamp insulator having a bifurcated frame with hook at bottom of same, a bolt to connect the arms of same, upon which is supported rubber tubing, and over said tubing is placed a grooved porcelain insulator, substantially as set forth.

2. The metallic frame D, with hook and arms, combined with bolt C, supporting a suitable insulating material, substantially as set forth.

323,505. COMBINED CORN PLANTER AND CHECK-ROWER. JASPER GANNETT, Ruthven, Iowa. Filed Nov. 13, 1884. (No model.)



Claim.—1. The combination, with the oscillating main and auxiliary frames, of the drive-wheels, one of which is provided with a cam, the spring-actuated slide-rod connecting with the dropping mechanism, and means, substantially as described, for depressing or operating the oscillating frames to throw the slide-rod out of operation, as set forth.

2. The combination, with the oscillating main and auxiliary frames, of the drive-wheels, the spring-actuated slide-rod connecting with the dropping mechanism and arranged to be operated by the movement of the wheels, and means, substantially as described, for depressing the oscillating frames to throw the slide-rod out of operation, as set forth.

3. The combination, with the oscillating main and auxiliary frames, of the drive-wheels mounted in the main frame, a cam provided on one of the wheels, a spring-actuated slide-rod connecting with the dropping mechanism and journaled in the auxiliary frame, and means, substantially as described, for depressing the latter to throw the slide-rod out of operation with the cam, as set forth.

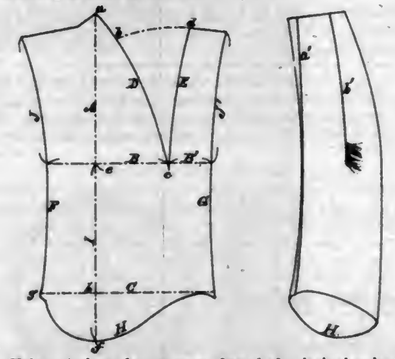
4. The combination, with the oscillating main and auxiliary frames, of the drive-wheels mounted in the main frames, a cam provided on one of the wheels, a spring-actuated slide-rod connecting with the dropping mechanism and mounted in the auxiliary frame, a roller on one end of the rod, and means, substantially as described, for depressing the auxiliary frame to cause the slide-rod to be thrown out of operation, as set forth.

5. The combination, with the main frame and drive-wheels, one of which is provided with a cam, of the spring-actuated slide-rod D, working through suitable standards projecting upward from the frame in rear of the seed-boxes and bearing at one end upon the cam, an arm, F^4, connecting with the rod, the lever G, attached to the arms, and the feed-slide H, fitted to the lever and connected with the seed-disks, as set forth.

6. The combination, with the seed-hopper having the oscillating seed-disk and depending discharge-chute, of a shoe or foot arranged transversely across the lower or open end of the chute and having lateral points or projections, said shoe having a vertical and a lateral movement to distribute the seed, as set forth.

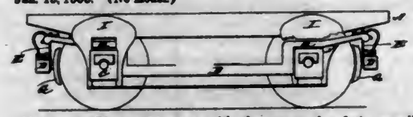
7. The combination, with the seed-hopper having the oscillating seed-disk and the discharge-chute, of the slotted lever N, provided with a shoe; P, at its lower end to close the open end or bottom of the chute, and a lever connecting the lever N with the seed-disk, said lever N having a vertical as well as a lateral movement and imparting a corresponding movement to the shoe, for the purpose set forth.

323,506. SLEEVE FOR GARMENTS. GEORGE S. GATES, Athol, Mass. Filed Aug. 8, 1884. (No model.)



Claim.—A sleeve for a garment, formed of a single piece having a seam, *a'*, and a seam, *b'*, the latter being formed by fulling or gathering the inner end of the long side of a dart until it equals the short side and sewing the two equalized sides of the dart together, thereby giving a fullness at the elbow, substantially as set forth.

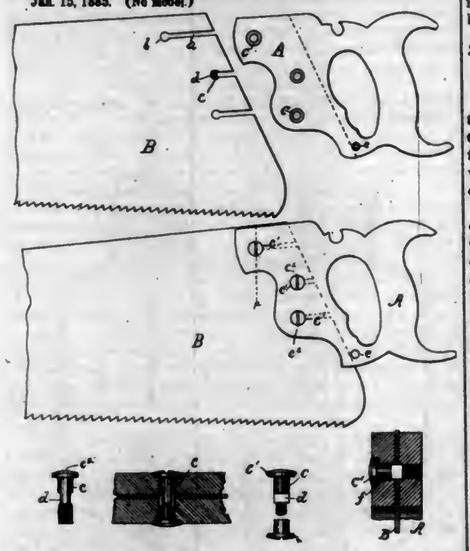
323,507. CAR-BRAKE. FRANK S. GERRARD, Scranton, Pa. Filed Jan. 15, 1885. (No model.)



Claim.—1. The combination, with the car-truck, of the equalizers B, fitted in the boxes C, and provided with extensions *a*, the brake-beam D, and hangers E, substantially as specified.

2. The combination, with the car-truck, of the equalizers fitted to the boxes and provided with extensions, the brake-beams, hangers, and brake-shoes, substantially as specified.

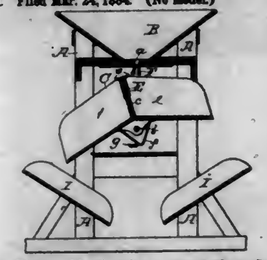
323,508. SAW-HANDLE. JAMES HILTON, Newark, N. J. Filed Jan. 15, 1885. (No model.)



Claim.—1. The combination, with the saw-blade provided with the slot *a*, having enlargement *b* at its inner end, of the handle provided with the round stud, flattened, as described, and arranged so as to pass through the slot and to be turned at right angles thereto in the enlargement, the head of the stud having the nick c^2, to indicate its adjustment relative to the slot, substantially as herein set forth.

2. The combination, with the saw-blade provided with slot *a* and enlargement *b*, of the stud *c*, flattened, as described, and arranged to pass through the slot and to be turned at right angles therewith, and provided with head *c'*, having a nick parallel with the flattened sides, and a separate nut, *e*, for clamping the stud and saw-blade in the handle, substantially as shown and described.

323,509. OSCILLATING GRAIN-METER. GEORGE B. HOWLAND, Chicago, Ill. Filed Mar. 24, 1884. (No model.)



Claim.—1. The combination, in an automatic grain-meter, with a hopper, of an oscillating cradle divided into two receptacles by a transverse partition and an inverted-U frame designed to ride said partition, and having flanges extending laterally from the top portion thereof, substantially as set forth.

2. The combination, in an automatic grain-meter, with an oscillating trough-shaped cradle divided into two receptacles by a central transverse partition, of a weight adjustable vertically on a rod radiating from the center of oscillation of said cradle and parallel to the contiguous edge of said partition.

3. The combination, in an automatic grain-meter, with an oscillating cradle and a hopper placed above said cradle, having an outlet on the same vertical plane as the pivotal center of said cradle, of the chutes I I, pivoted in suitable bearings immediately below the ends of said cradle.

4. The combination, with a hopper A, having an outlet in its bottom, and brushes F, arranged transversely on either side of said outlet, of the oscillating cradle C, divided into two receptacles by a partition, *c*, and the frame E, substantially as set forth.

5. The combination, in an automatic grain-meter, with an oscillating cradle, and frame *f*, extending downward from its under surface, of a rock-shaft, G, pawl H, ratchet *h*, shaft *h'*, having a hand on its outer end, and a dial, *i*, as hereinbefore set forth.

6. The combination, in an automatic grain-meter, with an oscillating cradle, and a frame, *f*, of a rock-shaft, G, having a crank engaged by said frame *f*, and registering mechanism actuated by said shaft.

323,510. FEEDING MECHANISM FOR ROLLING-MILLS. ROBERT W. HUNT and MAXIMILIAN M. SUPPES, Troy, N. Y.; said Suppes assignor of one-sixth of his right to said Hunt. Filed Feb. 5, 1885. (No model.)

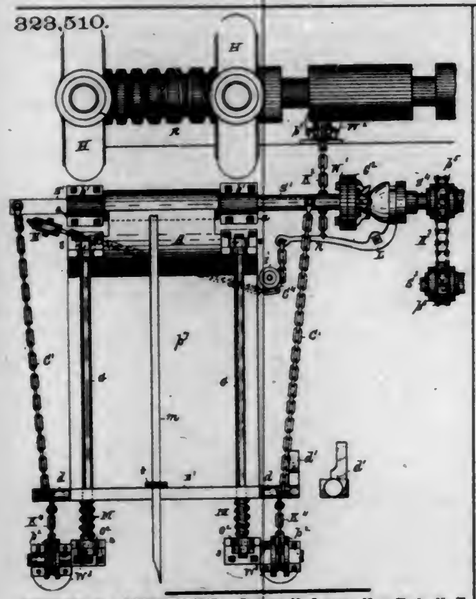
Claim.—1. In a feeding-mechanism attachment to a rolling-mill train, the combination of the shaft S', having the coupler-wheel W', the clutch C^2, constructed and connected to receive power, and made with the pivoted coupler-lever L, the chains C' C', and the carrier-bar B', made with the dog *d'*, the said parts being constructed and arranged to operate substantially in the manner as and for the purposes set forth.

2. In a feeding-mechanism attachment to a rolling-mill train, the combination of the shaft S', made with the coupler-wheel W', the clutch C^2, constructed and connected to receive power, and made with the pivoted coupler-lever L, the carrier-bar B', made with the dog *d'*, the chains K^4 K^4, pulleys p^3, and the weights W^3, said parts being constructed and arranged to be operated substantially in the manner as and for the purposes set forth.

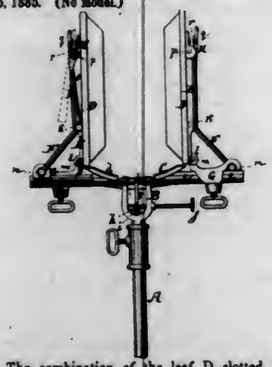
3. In a feeding-mechanism attachment to a rolling-mill train, the combination of the shaft S', provided with bearings and made with the coupler-wheel W', the clutch C^2, constructed and connected to receive power, and made with the pivoted coupler-lever L, the carrier-bar B', having the dog *d'*, and sliding on guides G G, the chains K^4 K^4, the weight W^3, the pulleys p^3, and the stops O^2 O^2, said parts being constructed and arranged to operate substantially in the manner as and for the purposes set forth.

4. In a feeding-mechanism attachment to a rolling-mill, the combination of the shaft S', made with the coupler-wheel W', the clutch C^2, constructed and connected to receive power, and having the pivoted coupler-lever L, the carrier-bar B', having the dog *d'*, and sliding on guides G G, the chain C^4, and the pulleys N and *i*, said parts being constructed and arranged to operate substantially in the manner as and for the purposes set forth.

323,510.



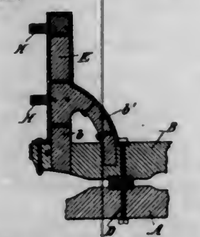
323,511. BOOK-HOLDER. ROBERT M. LAMBIE, New York, N. Y. Filed Feb. 25, 1885. (No model.)



Claim.—1. The combination of the leaf D, slotted plate E, and block G with the link F, having upper cross-pin, *k*, and with the bolt H, which is adapted to lock said link in its lower position when the leaf D is vertical, substantially as herein shown and described.

2. The combination of the fork B, having upwardly-projecting tooth *i* and screw *j*, with the book-support C, connecting pivot-pin *b*, segment *g*, and tooth *h* on said segment, substantially as herein shown and described.

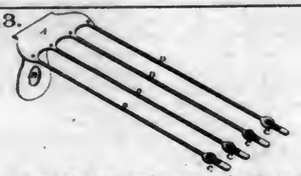
323,512. WAGON-STAKE. FELIX LANG, Chicago, Ill. Filed Mar 24, 1885. (No model.)



Claim.—The standard E, provided with straight leg *b* and inwardly flaring and curved leg *b'*, as set forth.

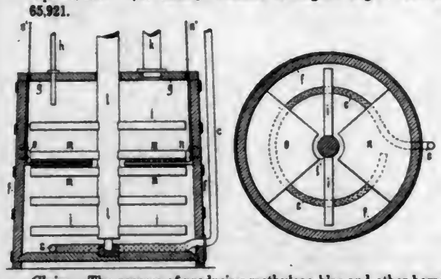
323,513. STRING-HOLDER FOR VIOLINS. JOHANN D. LOFFENTIEN, Pittsburg, Pa. Filed May 28, 1884. (No model.)

323,513.



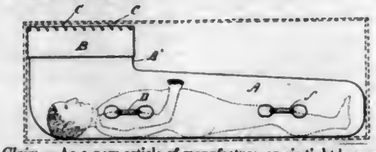
Claim.—A metallic string-holder composed of the body A and four slotted fingers, D, having slots in their free ends for the attachment of the strings, substantially as shown.

323,514. MANUFACTURE OF METHYLENE-BLUE BY ELECTROLYSIS. WILHELM MAJERT, Grunau, near Berlin, Germany, assignor of two-thirds to Dr. Adolph Ewer and Paul Pick, same place. Filed Sept. 19, 1884. (No model.) Patented in Belgium Aug. 1, 1884, No 65,921.



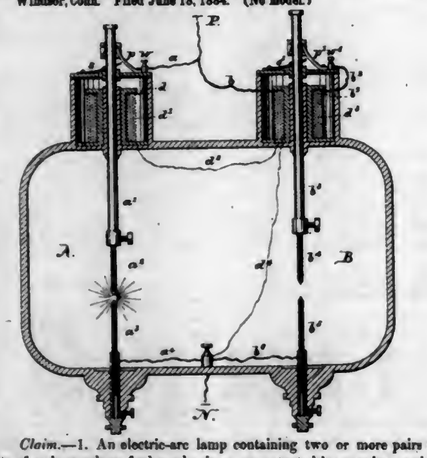
Claim.—The process of producing methylene-blue and other homologous colors containing sulphur from paramido derivatives of primary, secondary, and tertiary amines, and from the hydrazo compounds of the latter, by electrolysis in acidulated solution and in the presence of such sulphurous substances as, under the action of the electric current, separate out sulphur on the positive pole, substantially as hereinbefore described.

323,515. DEVICE FOR TRANSPORTING HUMAN BODIES. JAMES D. MARSTON, Englewood, and GEORGE CLAPP, Oak Park, Ill. Filed Jan. 30, 1885. (No model.)



Claim.—As a new article of manufacture, an air-tight bag or shroud to receive a human body, said bag being provided near one end with a side opening adapted to be hermetically closed, and through which the face of the body may be seen, substantially as described.

323,516. MULTIPLEX ELECTRIC-ARC LAMP. RICHARD H. MATHER, Windsor, Conn. Filed June 18, 1884. (No model.)



Claim.—1. An electric-arc lamp containing two or more pairs or sets of carbons whose feed mechanisms are actuated by a series consisting of a corresponding number of electro-magnets, the first magnet in said series being wound with a shunt-coil, and the second magnet in said series being wound with a shunt-coil and with a main-circuit coil supplementary thereto, in which lamp each such set of carbons constitutes a pair of contacts in a compound automatic switch regulating such lamp and co-ordinating the functions thereof, substantially as specified.

2. An electric-arc lamp containing two or more pairs or sets of carbons whose feed mechanisms are actuated by a series consisting of a corresponding number of electro-magnets, the first magnet in said series being wound with one helix and located in a shunt-circuit about said carbons, and the second magnet in said series being wound with two helices, one of which is placed in a shunt-circuit about said carbons, and the other of which is connected in series with that pair of carbons whose feed mechanism is actuated by said second magnet, whereby the normal establishment, maintenance, and disestablishment of the current through said sets of carbons automatically determines and regulates the excitation of said helices, substantially in the manner and for the purpose specified.

3. In a multiplex electric-arc lamp, a single set or pair of carbons, suitable holders therefor, a rod or tube carrying one of said holders, a friction-clutch adapted to engage said rod or tube, and a spring upon which said clutch is mounted, in combination with an electro-magnet adapted to actuate said clutch, said magnet being wound in one and the same direction with two coils or helices, one of said coils being placed in an electric circuit in series with said carbons and with a source of current, and the other of said coils being in a derived circuit about said carbons, substantially in the manner and for the purpose specified.

4. A pair of carbons with holders therefor, a rod or tube to which one of said holders is joined, and a spring-clutch adapted to engage said rod or tube, in combination with an electro-magnet adapted to actuate said clutch, and wound in a single direction with two helices, one of which is connected in series with said carbons, and the other of which is in a derived circuit about said carbons, substantially in the manner and for the purpose specified.

5. In a multiplex electric-arc lamp, a pair of carbons and a carbon rod or holder carrying one of said carbons, in combination with feed mechanism actuating said carbon rod or holder, and controlled by an electro-magnet wound with two independent coils or helices adapted to re-enforce each other in energizing such magnet, one of said coils being connected in series and the other in parallel with said carbons, substantially in the manner and for the purpose specified.

6. In an electric-arc lamp containing two or more pairs or sets of carbons, a series consisting of a corresponding number of electro-magnets, the first magnet in said series being wound with a shunt-coil, and the second magnet in said series being wound with a shunt-coil and with a coarse-wire coil supplementary thereto, in combination with spring-armatures which are actuated thereby, in the manner specified.

7. In an electric-arc lamp containing two or more pairs or sets of carbons, a corresponding number of electro-magnets, the first of said magnets being wound with a shunt-coil, and the second of said magnets being wound with a shunt-coil and with a coarse-wire coil supplementary thereto, in combination with armatures of said magnets actuated thereby to produce similar or dissimilar motion or rest in said armatures, according to the course pursued for the time being by an electric current energizing said magnets.

8. In an electric-arc lamp containing two or more pairs or sets of carbons, a corresponding number of feed mechanisms actuated by an equal number of electro-magnets, the first of said magnets being a simple shunt-magnet, and the second of said magnets being wound with a shunt-coil and with a carbon-circuit coil supplementary thereto, whereby the action of such feed mechanisms is governed and determined by the course pursued by the electric current energizing said magnets.

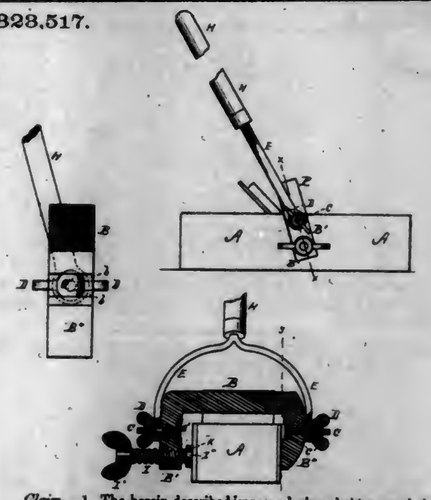
9. In an electric-arc lamp containing two or more sets of carbons, a series consisting of a corresponding number of electro-magnets, the first magnet in said series being wound with a shunt-coil, and the second magnet in said series being wound with a shunt-coil and with a coarse-wire coil supplementary thereto, in combination with a corresponding number of carbon-supporting rods and intermediate feed mechanisms actuated by said magnets, substantially as and for the purpose specified.

10. In a multiplex electric-arc lamp, a series of electro-magnets, of which the first is wound with a shunt-coil, and the second is wound with a shunt-coil and with a carbon-circuit coil supplementary thereto, in combination with intermediate mechanisms actuated by said magnets to impart to the carbons of such lamp independent separating and feeding movements.

11. The feed-magnet of lamp A, wound with the shunt-coil d^2, and the feed-magnet of lamp B, wound with the shunt-coil d^6 and with the supplementary carbon-circuit coil b', in combination with the springs e and e', said springs and magnets co-operating to produce an unequal initial sensitiveness in the feed mechanisms actuated thereby, and to produce an equal sensitiveness in the same during the maintenance of the light first in A and then in B.

323,517. PLANE-HOLDER. FRANK F. MATTOON, Boston, Mass. Filed Feb. 16, 1885. (No model.)

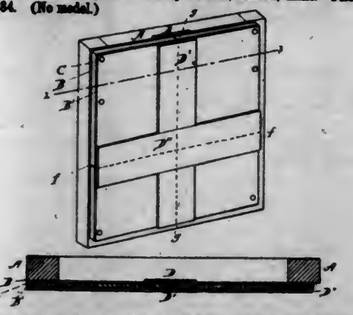
323,517.



Claim.—1. The herein-described improved plane-holder, consisting, essentially, of the following parts, viz: the frame B, provided with the embracing-legs B' B'', the set-screw I, provided with a thumb-piece and extending horizontally through the leg B', whereby the plane is clamped between said set screw and the opposite leg, B'', the long handle H, the spreading-arms E E, meeting in said handle and extending down on opposite sides of the frame, and the pivots or screws C, extending outward from the legs into the lower ends of the arms, substantially as and for the purpose set forth.

2. The herein-described plane-holder, consisting, essentially, of the following parts, viz: the frame B, provided with the legs B' and B'', grooved at *b*, the screws C, provided with the squared heads C' and thumb-pieces D, the arms E, the long handle H, and set-screw I, constructed and arranged substantially as and for the purpose described.

323,518. PROTECTING BUILDINGS FROM FIRE. JONATHAN G MERRILL, Quincy, assignor to Moody Merrill, Boston, Mass. Filed Dec. 22, 1884. (No model.)



Claim.—1. As a fire-proof material for walls, ceilings, floors, shutters, &c., the combination of layers of clay-board and layers of asbestus felt cemented together by silicate of soda, and arranged with an asbestus-felt covering to the joints of the abutting pieces of clay-board, substantially as described.

2. As a means of delaying the fix of silicate of soda or tinted silicate of soda, the addition of glycerine to the solution, substantially as described.

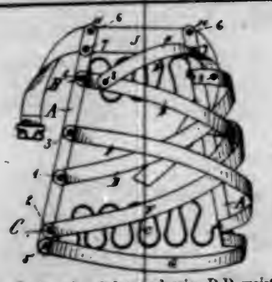
323,519. BUSTLE. FARNSWORTH G. MOORE, Brooklyn, N. Y. Filed Jan. 17, 1885. (No model.)

Claim.—1. A bustle consisting of main strips A A, upper zigzag wire, B, lower zigzag wire, C, crossed and bowed strips D D and F F, and bowed strip G at the bottom, substantially as set forth.

2. A bustle consisting of main strips A A, upper zigzag wire, B, lower zigzag wire, C, crossed and bowed strips D D and F F, bottom bowed strip, G, and brace-strip E, secured to the strips D D, substantially as set forth.

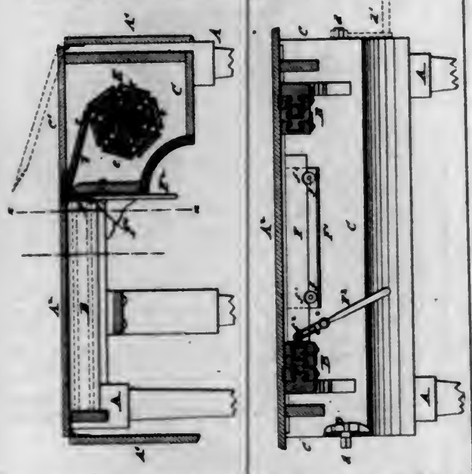
3. A bustle consisting of main strips A A, each strip having a series of perforations, 1, 2, 3, 4, 5, 6, and 7, upper zigzag wire, B, secured at the perforations 1 1, lower zigzag wire, C, secured at the perforations 2 2, crossed and bowed strips D D, riveted at 1 1 and 4 4, crossed and bowed strips F F, riveted at 2 2 and 3 3, bottom bowed strip, G, riveted

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at 5 5, brace-strip E, riveted at 8 8 to said strips D D, waistband J, and short strips H H, riveted at 6 7 6 7, to secure the waistband, substantially as set forth.

323,520. EXTENSION-TABLE. Emil Neuner and Martin Dirx, New York, N. Y. Filed Mar. 11, 1885. (No model.)



Claim.—1. The combination of a table having extension-slides, a storage-box, a roller in said storage-box, an extension-leaf formed of longitudinal straps or bands attached to the main portion of the table, and of transverse strips attached to said straps or bands, said strips diminishing gradually in width from the main portion to said roller, substantially as set forth.

2. The combination of a table having extension-slides, an extension-leaf formed of longitudinal straps or bands, and transverse strips attached thereto, a roller adapted to wind up or unwind the extension-leaf, a transverse rail, and means for raising or lowering the rail, so as to raise the extension-leaf to a level with the main portion of the table or lower the same for winding it up, substantially as set forth.

3. The combination of a table having extension-slides, an extension-leaf formed of longitudinal straps or bands, and transverse strips attached to said bands, mechanism for winding up or unwinding the extension-leaf, a storage-box inclosing said winding-up mechanism, a transverse rail located below the point where the leaf leaves the storage-box, and means for raising or lowering said transverse rail, substantially as set forth.

4. The combination of a table having extension-slides, an extension-leaf formed of longitudinal straps or bands, and transverse strips attached to said bands, a roller for winding up or unwinding the extension-leaf, a storage-box inclosing said roller, a transverse rail having segmental bottom recesses, a supporting-piece having anti-friction rollers, and a fulcrumed lever connected to the transverse rail, substantially as set forth.

323,521. AUTOMATIC WAGON-BRAKE. Diederik Oltmann, South Bend, Ind. Filed Mar. 10, 1885. (No model.)

Claim.—1. In a wagon-brake, the combination of the body A^2, axle B', and reach E with the axle B, carrying the roller D D on its bolster, bounds H H, provided with the sheath H', brake-bar G, provided with shoes G' G', rods *d*, levers I, and rods *d'*, connected at their front ends either to the wagon-body or to the reach, substantially as specified.

2. In a wagon-brake, the combination of the axles B B', body A^2, reach E, roller D D, bounds B^2 B^2, and brake-bar G, actuated by the motion of the load of the bounds H H, provided with the sheath H',

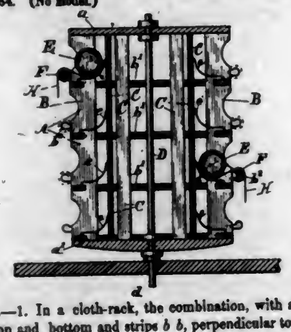
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loops E' and *f'*, tongue F, provided with the slot *f*, and bolt *f''*, substantially as specified.

3. The combination, in a wagon-brake, of the longitudinally-movable reach E, rear bounds, H H, and brake-bar G with the long sheath H' and pins *h h*, substantially as specified.

323,522. CLOTH-RACK. William W. Palmer, Montague, Tex. Filed June 5, 1884. (No model.)



Claim.—1. In a cloth-rack, the combination, with a frame composed of a top and bottom and stripes *b b*, perpendicular to said top and bottom and uniting their corners, of the transverse base *b' b'*, posts C C at a proper distance behind said bars, wires *e e*, and rollers F F, each pivoted in proper bearings, b^2 b^2, on the edges of said strips, as shown and described.

2. In a four-sided rectangular rotating cloth-rack, the combination, with the frame of the rack, composed of a rectangular top plate, A, similar rectangular bottom plate having the pivot depending centrally from its lower surface, and stripe *b b*, perpendicular to and uniting the corners of said top and bottom plates, of the transverse bars *b' b'*, wires *e e*, posts C C, and rollers F F, turning in proper bearings attached to the stripe *b b*, to make them parallel to and somewhat above the bars *b' b'*, substantially as set forth.

3. In a cloth-rack, the combination of the main frame, a roller, F, journaled to the outer side of said frame, and concave bearings *e*, arranged in rear of rollers F, and with their outer side the lowest, and arranged below the plane of the upper side of roller F, whereby said roller serves to retain the bolt of cloth in its bearings, substantially as set forth.

323,523. MACHINE FOR FEEDING, OPENING, AND MIXING WOOL. Stephen R. Parkhurst, Montclair, N. J., assignor to Emily R. Parkhurst, same place. Filed Nov. 3, 1884. (No model.)

Brief.—A feeding-bopper having a longitudinal opening in the bottom over a toothed cylinder is oscillated by an eccentric. A comb is fixed to the hopper at one side of the opening, and there is a stationary guard between bopper and cylinder. A stripper removes burrs from the cylinder, and a revolving brush transfers the wool to burring and delivery apparatus.

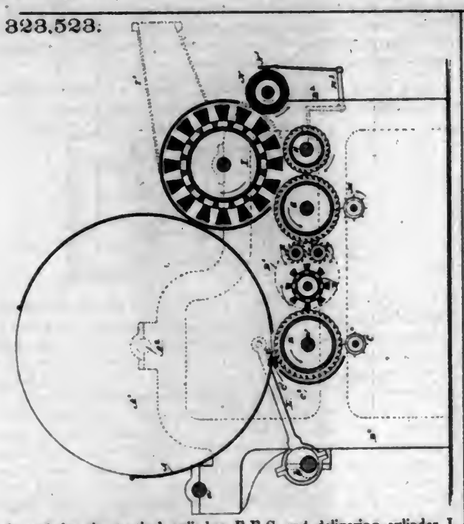
Claim.—1. The combination, with a revolving toothed cylinder, of a feeding-hopper having a longitudinal opening in the bottom portion above the toothed cylinder, pivots to support the hopper, and crank or equivalent mechanism for giving to the hopper an oscillating motion, and a comb fixed to the hopper at one side of the longitudinal opening, substantially as set forth.

2. The combination, with a revolving toothed cylinder, of a feeding-hopper having a longitudinal opening in the bottom, mechanism, substantially as specified, for moving the hopper transversely to the toothed cylinder, a comb upon the hopper at the longitudinal opening, and a stationary guard between the hopper and the cylinder, substantially as set forth.

3. The combination, with a revolving toothed cylinder, of a feeding-hopper having a longitudinal opening over the toothed cylinder, means for moving the hopper across above the toothed cylinder, and a revolving stripper acting to separate the burrs, substantially as set forth.

4. The combination, with a revolving toothed cylinder, of a feeding-hopper having a longitudinal opening over the toothed cylinder, teeth upon the hopper at the opening, a brush to remove the wool from

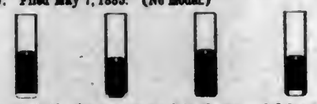
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the cylinder, the toothed cylinders F E G, and delivering-cylinder I, substantially as set forth.

5. The combination, with the cylinder B, stripper C, and the slotted oscillating hopper A, of the toothed cylinders G H, the toothed cylinders between the cylinder B and the cylinder G, the delivery-cylinder I, the doffer-cylinder N, and comb and belts and pulleys or gearing to revolve the respective cylinders, substantially as set forth.

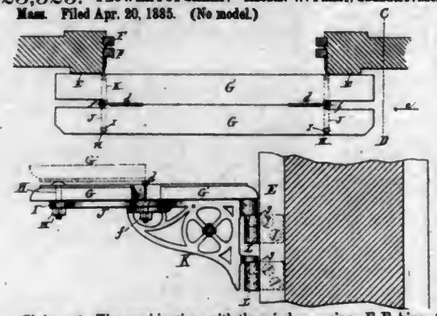
323,524. CAP FOR EXPLODING DYNAMITE. Jacob Paulus, Berlin, Germany. Filed May 7, 1885. (No model.)



Claim.—1. A blasting-cap adapted for downward firing, having its bottom weakened, substantially as set forth, in combination with a metallic cylindrical re-enforcing mantle or shell open at both ends, which is located at the lower end of the cap, substantially as set forth.

2. A blasting-cap which contains the explosive, having its bottom integral with the body thereof, said bottom being weakened by being partially cut away, substantially as set forth, whereby a downward explosion is attained.

323,525. FLOWER-POT SHELF. Reuben W. Perry, Saundersville, Mass. Filed Apr. 20, 1885. (No model.)



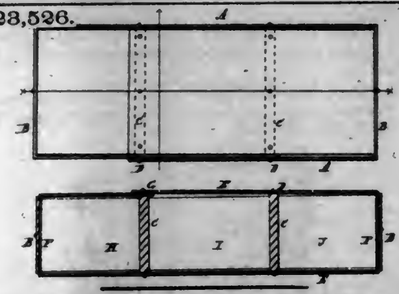
Claim.—1. The combination, with the window-casings E E, hinged brackets K K, and hinged arms J J, of adjustable notched shelf G, substantially as and for the purposes set forth.

2. The combination, with the hinged brackets K K, provided with lugs *g g*, sockets L L, and hinged arms J J, of adjustable shelf G, and folding shelf G', substantially as and for the purposes set forth.

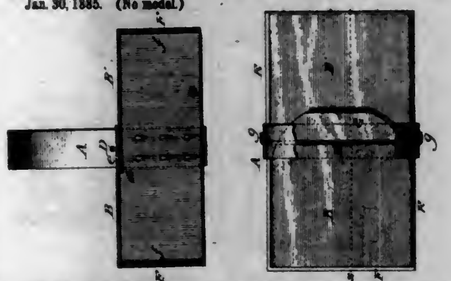
323,526. FRUIT-CRATE. Isaac S. Platt, Sandusky, Ohio. Filed Jan. 30, 1885. (No model.)

Claim.—A fruit crate or box having one or more transverse partitions, and the sides and ends of the box consisting of one piece of material, with the terminals lapped onto each other and nailed to the partitions, and the top and bottom of the box also consisting of one piece of material and forming duplicate ends to the crate or box, substantially as described, and for the purpose specified.

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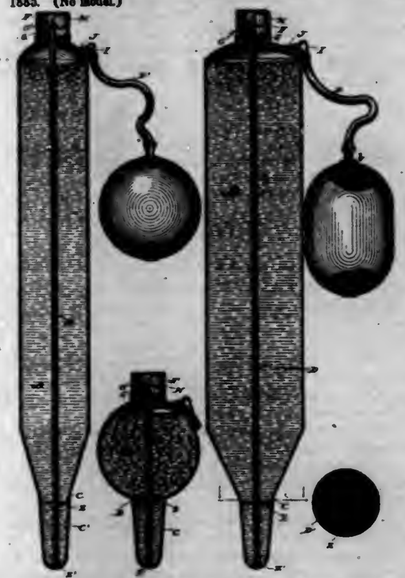


323,527. FRUIT-BASKET. Isaac S. Platt, Sandusky, Ohio. Filed Jan. 30, 1885. (No model.)



Claim.—A fruit-basket consisting, preferably, of three parts or sections, with a lapping cover forming the terminals of the ends and bottom, and inclosed at the sides and ends E F by the exterior section, and provided with a handle lapping on over the sides and bottom, and forming a brace above, with a wire fastening across the top and connected to the handle, arranged substantially as set forth.

323,528. HAND FIRE-EXTINGUISHER. Alonzo W. Porter, New York, N. Y., assignor to James J. Cooper, Philadelphia, Pa. Filed June 9, 1885. (No model.)

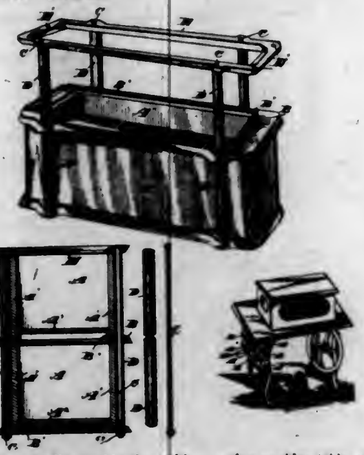


Claim.—1. A hand fire-extinguisher having the receptacle A, provided with the tapering bottom C, the inner tube, D, provided with tip G, the ring H, attached to said tip, and the overall-cap F, fitting over the tip and ring, substantially as shown and described.

2. In a hand fire-extinguisher, the combination, with the chamber A, of the tapering bottom piece, C, the tube D, extending from the base of said piece through the top of the chamber and firmly soldered therein, and the separate filling-opening J, substantially as shown and described.

3. In a hand fire-extinguisher, the combination, with the chamber A, of the inner tube, D, extending from the base of said chamber and firmly soldered therein, and the stud *s*, substantially as shown and described.

323,529. SEWING-MACHINE TABLE. D'ARCY PORTER, Cleveland, Ohio, assignor to the White Sewing Machine Company, same place. Filed Jan. 26, 1885. (No model.)

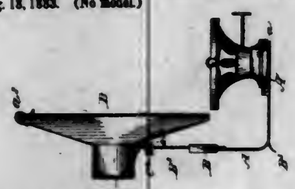


Claim.—1. The combination, with a sewing-machine table, of a drawer-support consisting of metal plates connected together by means of bolts and secured to the under side of the table, substantially as and for the purposes shown and described.

2. In a sewing-machine table, a drawer-support suspended from the under side of the table, consisting of the metal plates B, provided with a guide-flange, B', said plates connected together and supported by bolts, substantially as shown and described.

3. In a sewing-machine table, a drawer-support suspended from the under side of the table, and consisting of metal plates connected together by bolts, and the tubular rods D, surrounding the bolts and separating the plates, substantially as shown and described.

323,530. LAMP-REFLECTOR. MERRITT F. POTTER, Hinckley, Ill. Filed Aug. 18, 1883. (No model.)



Claim.—1. A divided support for lamp-reflectors, one part thereof hinged to the reflector, and having a thumb-screw, and the other part joined to it by a sleeve at its upper end, the lower end thereof adapted to be secured to the collar of the lamp, in the manner set forth.

2. The guard a^2, attached to a lamp-reflector and adapted to support it by bearing against the side of the chimney, a portion of the guard being at right angles to the longitudinal axis of the chimney, as and for the purpose set forth.

3. The protection-plate a^2, arranged between the end of the thumb-screw and the reflector, as and for the purpose set forth.

4. The curved spring-arms A', having their terminal points bent inwardly, in combination with the collar of a lamp having a groove, as set forth.

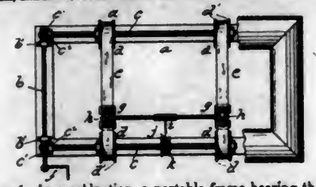
5. In combination with a lamp and lamp-reflector support, the tapering spring-arms A', as and for the purpose set forth.

6. The curved, elastic, and tapering spring-arms A' of a lamp-reflector support, adapted to be combined with the guide-groove of a lamp-collar, and having but three points of contact therewith—to wit, at the center and at each extremity thereof—whereby friction between the spring and collar is reduced, as and for the purpose described.

7. The combination of the reflector-support B^2, having the fixed nut and screw C^2 working through the same, with the reflector hinged to the support and bearing against the screw, but unattached thereto, substantially as described.

8. The combination of the reflector, the hinged support B^2, the thumb-screw C^2, the chimney and reflector guard, whereby when the thumb-screw is turned back and wholly withdrawn from contact with the reflector the latter will move toward the chimney until the reflector-guard comes in contact with the chimney, as herein set forth.

323,531. LOWERING COFFINS. CHARLES E. REICHE and HERMANN C. REICHE, Hartford, Conn. Filed Oct. 1, 1884. (No model.)

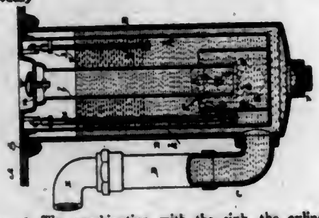


Claim.—1. In combination, a portable frame bearing the lowering mechanism, whereby straps or bands are simultaneously wound up or unwound at their opposite ends from opposite sides of the frame, each strap bearing a coupling device, *g*, the hollow rod bearing bolts *h*, the cord *i*, fast to the bolts and to a cord, *j*, wound upon a drum or pulley, *k*, attached to one of the lowering-shafts, all substantially as described.

2. In combination, a portable frame, *a*, the rotary shafts *c*, connected by gears with the worm-shaft *b*, the pulleys *d d'*, fast to the shafts bearing the straps or bands *e*, the coupling device *g*, the rod extending between the straps and bearing bolts *h*, the latter connected by cords *i j* with a drum or pulley, *k*, rotarily connected to shaft *c* and bearing a spring, *l*, that holds the drum with a frictional grasp, all substantially as described.

3. In combination with a portable frame, a lowering mechanism consisting of the rotary shafts connected by gears, bands *e*, wound upon pulleys on the shafts, an automatic coupling device consisting of the bolt-bearing bar, the coupling, and the cords connecting the bolt with a drum held against rotation on one of the shafts by the frictional grasp of the spring *l*, all substantially as described.

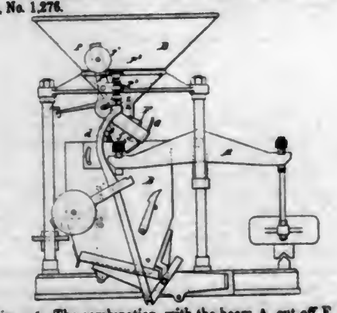
323,532. GREASE-TRAP FOR SINKS. JOHN REID, Yonkers, assignor to the J. L. Mott Iron Works, New York, N. Y. Filed Feb. 2, 1885. (No model.)



Claim.—1. The combination, with the sink, the cylinder B, and the rising discharge-pipe C D E, of the movable inlet-tube *l*, and strainer *n* connected therewith, the grease-bucket *h*, having an opening, *o*, at one side and a slide-valve, *t*, to close such opening, the lifting-rods *u v*, the lever *r* and connections between the rods and the movable strainer, substantially as set forth.

2. The combination, with the cylinder B and rising discharge-pipe, of a removable grease-bucket, *h*, having an opening in one side thereof, a slide-valve to close the opening, the removable inlet-tube *l*, and strainer *n*, substantially as set forth.

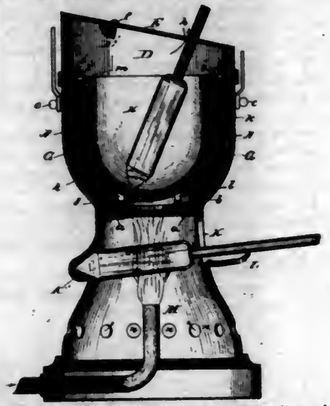
323,533. AUTOMATIC GRAIN-WEIGHING MACHINE. CARL REUTHER, Hennef, Prussia, Germany. Filed Apr. 15, 1884. (No model.) Patented in Belgium Dec. 15, 1883, No. 63,554, and in England Jan. 11, 1884, No. 1,276.



Claim.—1. The combination, with the beam A, cut-off F, brushes *d d'*, and slide G, of the balancing means L V, the cramp-weight, and their connections, all arranged and operating as and for the purposes set forth.

2. The receptacle B, beam A, perforated brush, and cut-off, combined with the frame C, having lug *n*, the cramp-weight *p q*, slide G, brush *d'*, lug *m*, and means, as L V, for adjusting the pressure on the beam, as set forth.

323,534. SOLDERING-IRON HEATER. CARROLL L. RIKER, Brooklyn, N. Y. Filed Mar. 24, 1884. (No model.)



Claim.—1. In an apparatus for heating soldering-irons, the combination, with a furnace or burner, and with a support to facilitate the subjection of the copper-bit of the soldering-iron to the direct heat of said furnace or burner, of a receptacle in which the solder is to be melted and retained in its molten condition by the same flame which heats the iron, substantially in the manner and for the purpose herein set forth.

2. In an apparatus for heating soldering-irons and melting a solder alloy, the combination, with the heating device, the vessel to contain the molten alloy, and an outer casing to inclose the heating device and melting-pot, of a close-fitting cover upon the casing, under which the products of combustion are made to pass over the top of the melting-pot and its contents, substantially in the manner and for the purpose herein set forth.

3. The furnace for heating soldering-irons and other purposes, constructed, substantially as herein described, of an outer casing adapted to inclose within its base a heating device and within its upper section a melting-pot to be encircled by the flame and products of combustion from the heating device, and a cover fitting closely upon said casing, having a lid swinging within said opening, and adapted to provide, when closed, a contracted vent or outlet in the cover for the heat and products of combustion, which are made thereby to sweep over the melting-pot.

4. In a furnace for heating soldering-irons and other purposes, the combination, with its outer casing, A, cover D, detachable melting-pot H, and heating device M, of an inner partition-plate, G, interposed between the melting-pot and casing to produce an encircling non-conducting air-space, *k*, within the casing, substantially in the manner and for the purpose herein set forth.

5. In a furnace for heating soldering-irons and other purposes, the combination, with its heating device M, and with its inclosing-casing A, provided with a lateral opening for the insertion of a soldering-iron into direct contact with the heat and flame, of a supporting-recess formed in the casing opposite said opening, and adapted to receive and protect the point of the copper-bit from the heat and flame playing upon the body thereof, substantially in the manner and for the purpose herein set forth.

323,535. CARRIAGE-SPRING. ANDREW R. SCHMIDT, Ann Arbor, Mich. Filed June 2, 1884. (Model.)



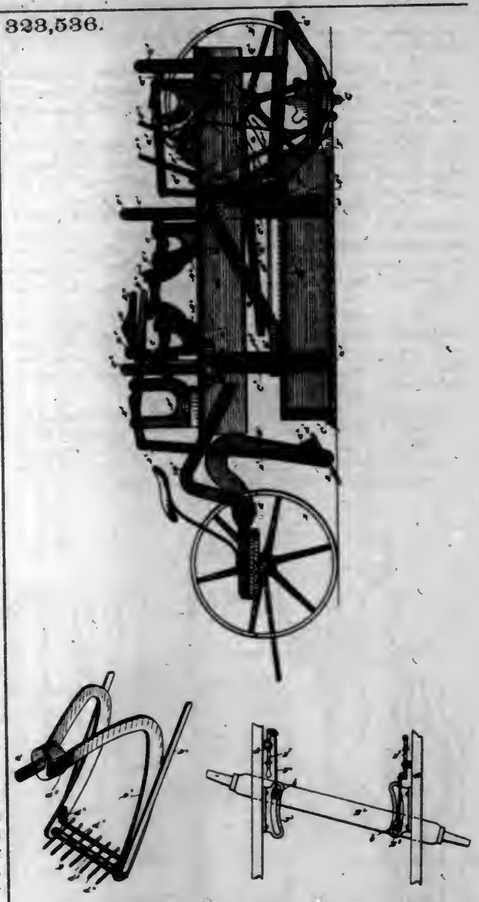
Claim.—The link D E, with its projection F, as a new form of link and a new article of manufacture.

323,536. GRADING-MACHINE. PHILO B. SHELDON, Erie, Pa. Filed Dec. 5, 1884. (No model.)

Claim.—1. In a grading-machine having a scraper-bar suspended below a carrying-frame, the combination, with the lifting-posts connected with said scraper-bar, of the jointed levers C^3 c and the forked fulcrum-brackets A^4, as and for the purposes set forth.

2. In a grading-machine having a scraper-bar suspended below a carrying-frame, the combination, with the lifting-posts connected with said scraper-bar, of the jointed levers C^3 c and the forked fulcrum-brackets A^4 with arms a^5, as and for the purposes set forth.

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3. In a grading-machine having a scraper-bar supported by a carrying-frame, the combination, with the lifting-posts connected with said scraper-bar and the levers by which said posts are lifted, of the series of adjusting bolt-holes c^4 with connecting-slots c^5, and the bolt c^3 with flattened space 1 and rounded space 2, as and for the purposes set forth.

4. In a grading-machine of the class herein shown, the combination, substantially as set forth, of a vertically-adjustable scraper-bar and a scarifier arranged in advance of said scraper, which is supported by a frame which is both swiveled and pivoted, as at *d* and d^3, so as to permit of both a tilting and a vertical movement, as set forth.

5. In a grading-machine of the class herein shown, the combination, substantially as set forth, of the frame A, the arched front frame, A', the scarifier-frame D', swiveled within the fork of the frame A', the lifting-bars D^2, and means, substantially as shown, for actuating said lifting-bars.

6. In a grading-machine of the class herein shown, the combination, substantially as set forth, of a vertically-adjustable scarifier, a vertically-adjustable scraper-bar, and a vertically-adjustable conveying scoop-scraper.

7. In a grading-machine scarifier, the combination, substantially as set forth, with a frame vertically adjustable on the main frame, of the reversible bar d^3, the oppositely-projecting teeth d^4, a supporting-frame, and an adjustable stop for regulating the angle of incline of said teeth.

8. In a grading-machine of the class herein shown, the combination, substantially as set forth, of a vertically-adjustable and laterally-tilting scarifier, a vertically-adjustable and obliquely-arranged scraper-bar, and a vertically-adjustable conveying and dumping scraper-bowl.

9. In a grading-machine of the class herein shown, the combination, substantially as set forth, of a vertically-adjustable obliquely-arranged bar-scraper, and a vertically-adjustable tilting and dumping conveyer scraper-bowl.

10. In a grading-machine of the class herein shown, the combination of the scraper F, the winch F' F^2 F^3, the supporting chain or rope *f*, and the tilting and dumping levers F^4, F^5, and F^6, as set forth.

11. In a grading-machine of the class herein shown, the combination, substantially as set forth, of the spur G, frame G', and leverage-gearing G^2, G^3, G^4, G^5, G^6, and G^7.

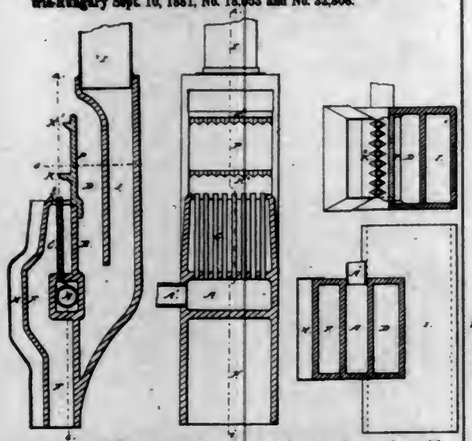
12. In a grading-machine of the class herein shown, the combination, with the rear axle and the frame A, of the attaching-brackets B^3, with curved slots, and the bolts *b*, adjustable within said slots, as and for the purposes mentioned.

13. In a grading-machine of the class herein shown, the combination, with the rear axle and the frame A, of the brackets B^3 with curved slots, the bolt *b*, the links B^4, and levers B^5, as shown, and for the purposes set forth.

14. In a grading-machine of the class herein described, the combination of an obliquely-arranged scraper-bar, a spur to prevent the wheels from slewing, which consists of a revolving wheel or disk arranged, as shown, to enter the earth by the side of the wheel opposite its tread, and levers for moving said spur vertically from the operator's stand.

15. In a grading-machine of the class herein described, the combination, substantially as set forth, of an obliquely-arranged scraper-bar and a spur to prevent slewing of the wheels while the scraper is in action, which is adjusted, substantially as set forth, to enter the earth by the side of the wheel opposite its tread.

323,537. GAS-BURNER. FRIEDRICH SIEMENS, Dresden, Saxony, Germany. Filed Feb. 3, 1884. (No model.) Patented in Germany May 31, 1881, No. 17,342; in England June 17, 1881, No. 2,633; in France June 21, 1881, No. 131,908; in Belgium July 4, 1881, No. 55,086, and in Austria-Hungary Sept. 10, 1881, No. 18,053 and No. 32,308.



Claim.—1. The combination of a straight row of gas-tubes with a regenerator or passage for heating the air-supply to the flame on one side of a straight or curved division-wall, and a regenerator or passage for taking up heat from the products of combustion on the other side of the said wall, the upper part of which wall extends to a height above the gas-tubes corresponding to the height of the flame, and is formed of porcelain or other refractory material having an aperture for the downward passage of the products of combustion, as and for the purposes described.

2. In a regenerator-lamp, the combination with the burner, of a plate of porcelain or other refractory and light-reflecting material having one or more rows of notched projections, as and for the purposes described.

3. In a regenerative lamp, the combination of a plate of porcelain or other refractory and light-reflecting material having one or more rows of notched projections at a certain height above the gas-tubes, with an air-deflecting flange on the other side of the gas-tubes at or above the level of the tops thereof, as and for the purposes described.

4. The combination of a series or group of flat regenerative burners with a flue-pipe common to all, as and for the purposes described.

5. In a lamp or burner in which the incoming air and gas and outgoing products of combustion flow in relatively opposite directions, the combination of a number of gas-orifices with a plate of porcelain or other suitable refractory material extending above the orifices and having an opening through which the products of combustion flow on their way to the flue-pipe, as and for the purposes described.

6. The combination of the inner passage, through which the products of combustion pass from the flame, the chamber surrounding the burner, through which the air passes, and the plate of porcelain or other refractory material located above and behind the burner.

7. The combination of the inner passage, through which the products of combustion pass from the flame, the air-passage surrounding the burner, and an exterior air-passage, which takes up the heat radiated from the casing of the air surrounding the burner, as and for the purposes described.

8. The combination of the inner passage, into and through which the products of combustion pass from the burner, with an adjacent gas-passage communicating with the burner-tubes, whereby the heat of the outflowing products of combustion is communicated to the inflowing-gas, as and for the purposes described.

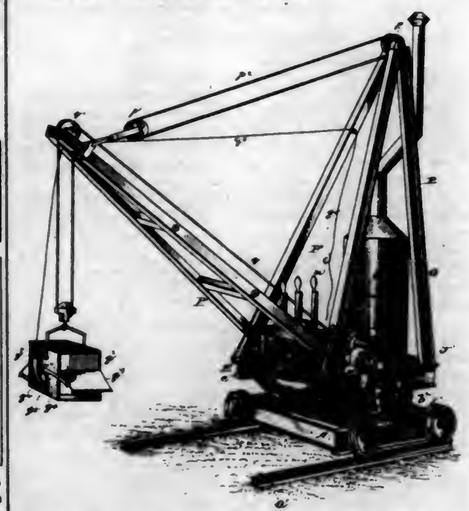
9. The combination of the passages into which the products of combustion are drawn over the plate of porcelain above the burner-tubes and the adjacent flue-pipe communicating with the bottom of the said passage, as and for the purposes described.

10. The flat or ribbed vertical plate B, on the top of which is the plate P, in combination with the passages F and D, as and for the purposes described.

11. The flat or ribbed vertical plate B, having formed upon it a channel into which the illuminating-gas is led and from which it issues through a number of vertical tubes, in combination with plate P, of porcelain or other refractory material.

12. The combination of the partition-plate B, between the passages D and F, with one or more rows of gas-tubes, C, arranged in front of the partition-plate and communicating with the gas-channel formed thereon, as and for the purposes described.

323,538. REVOLVING DERRICK. ALBERT N. SHMERLY, Cleveland, Ohio. Filed May 29, 1885. (No model.)



Claim.—1. In a revolving derrick, substantially as described, the body-base C, cast in a single piece with bars *c c'*, and radial arms, and the I-beams E, jointed and secured together, as shown, the said body-base furnishing bearings for the several journal-supports, and the whole adapted to serve as and for the purposes set forth.

2. The combination, with the body-base C and a circular way, as B, of castings F, furnishing journals *f* for the wheels *f'*, and secured directly to said base, as set forth.

3. The combination, with the way b^2 and step A', of the body-base C, the eye-bars E, and the segmental castings F, and pivoted-leg D, as set forth.

4. In a revolving derrick, as described, the combination, with the power-shaft N, drum-shaft S, and boom, of the castings L, having step l', and journals L' and l^2, as and for the purpose set forth.

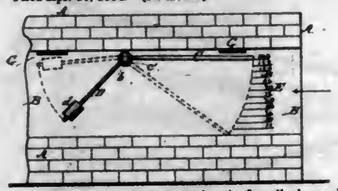
5. The casting L, having the journals l^2 and L', arranged as described, whereby the pressure upon the journal L' will be directly upon the casting, and the cap *l* relieved, adapted to serve with the shafts N S and their gears as set forth.

6. The way B, formed in sections, each section formed with track b^3, offset-support *b*, and rack *b'*, with teeth projecting outward, as set forth.

7. The combination, with the dumping-bucket q^2 and drum Q', the boom and its drum P^2, the way B, shaft I, having pinion I', and gear K, of the operating-levers *m* Q^2 P^2, arranged adjacent to each other and to the rope q^2 and their respective connections, as and for the purposes set forth.

8. In a derrick substantially as described, the combination of the I-bars E, with the body-base C, secured in a recess, *e*, upon one side, and the bracket H, secured in a recess, *e'*, upon the other side, and all secured together, as and for the purposes set forth.

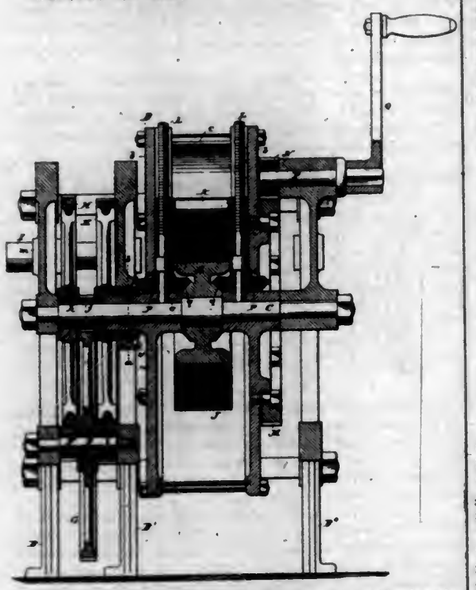
323,539. AUTOMATIC DAMPER. SOLOMON P. SMITH, Waterford, N. Y. Filed Apr. 16, 1884. (No model.)



Claim.—1. The automatic damper herein described, consisting of the open cold-air conduit B, having upon one of its vertical walls an indicating-scale, the opposite wall having a hinged glass door, F, and between them a balanced damper provided with an adjustable weight, as and for the purpose specified.

2. The open cold-air conduit B, having the roof-cushions G G, and the damper C, having the screw-threaded arm D, and the adjustable weight, the said cushions being arranged to receive the blows of the damper and weight, as and for the purpose specified.

323,540. SPRING-MOTOR. B. FRANK TEAL, Philadelphia, Pa. Filed Dec. 3, 1884. (No model.)



Claim.—1. In a spring-actuated mechanism, the combination of a revolving drum and a coiled spring fixed at one end and secured at the other to a movable bearing upon the drum, operated positively substantially as set forth.

2. The combination of a revolving drum, coiled spring, a bearing connecting the outer end of the spring and drum, and positively-operating devices, substantially as described, for carrying said bearings toward the periphery of the drum as the spring uncoils, for the purpose set forth.

3. The combination, in a motor, of a shaft, drum, coiled spring secured at one end of the shaft and at the other to a bearing upon the drum, and positively-operating devices, substantially as described, for carrying the bearing outward as the spring uncoils.

4. The combination of the shaft C, drum, carrying screw-shafts having reversed threads, cross-bar carried by said screw-shafts, and spring secured at the outer end to the said cross-bar, substantially as specified.

5. The combination of the shaft C, coiled spring, cross-bar carried by screw-shafts turning in bearings on the drum, and gears upon the screw-shafts engaging with gears upon the shaft C, substantially as set forth.

6. The combination, with the housings and shafts C F I, of the gears and pinions carried by the shafts C F, and drum carried by the shaft C, substantially as set forth.

7. The combination, with the shaft, of steel sleeves carrying the gears and projecting beyond the sides of the latter and formed into pinions, substantially as specified.

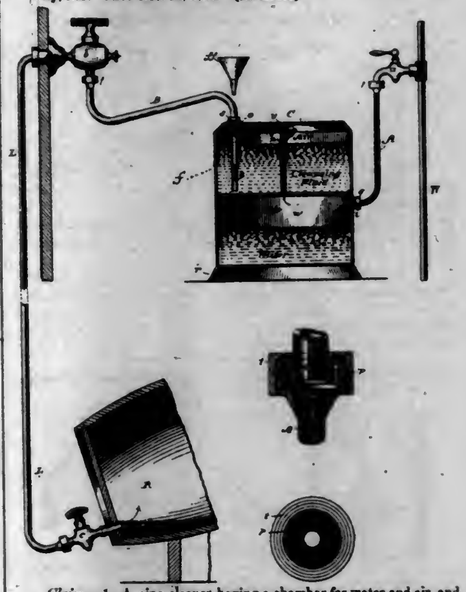
323,541. SLAG AND MATTE POT. RICHARD H. TERRUHN, Salt Lake City, Utah. Filed May 4, 1885. (No model.)



Claim.—1. A slag and matte pot constructed with a removable bottom, substantially as and for the purposes set forth.

2. The combination of the bottomless pot A with a bottom plate or section, B, fitting the bottom opening of the pot, and formed with a flange, *c*, overlapping the pot, as set forth.

323,542. PIPE-CLEANING APPARATUS. WILLIAM THOMAS, Jersey City, N. J. Filed Nov. 14, 1884. (No model.)



Claim.—1. A pipe-cleaner having a chamber for water and air, and a chamber for cleansing-fluid, with a connection between the top of the former and the top of the latter, and adapted to be connected at will with a water-pipe and a liquid-conducting pipe for cleaning the latter by forcing a suitable cleansing-fluid therethrough by compressed air followed by the air-compressing water, substantially as herein set forth.

2. The combination, in a pipe-cleaning apparatus, of a portable vessel having a chamber for water and air and a chamber for cleansing-fluid, with a connection between the two, an inlet-neck communicating with the chamber first named, and an outlet-neck communicating with said fluid-chamber, and a pair of hose attached to said necks, and adapted at their outer ends to be applied, respectively, to the nozzle of an ordinary water-faucet and that of the liquid-drawing faucet, substantially as herein specified, for the purpose set forth.

3. In a pipe-cleaning apparatus having a chamber for water and air, a chamber for cleansing-fluid, and a connection between said chambers, the combination, with the latter, of a self-closing valve, for preventing the escape of the cleansing-fluid into said chamber for water and air in the filling operation, substantially as herein specified.

323,543. PIN-TONGUE FOR BREASTPINS. ADOLPH THOMSEN, New York, N. Y. Filed Mar. 28, 1885. (No model.)

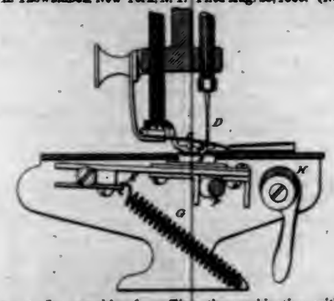


Claim.—1. The combination, with a breastpin or other article having a socket applied thereto, of a pin-tongue having an enlarged bent and flattened end inserted into and passing through said socket, and a key or locking-pin for attaching the enlarged end of the pin-tongue to said socket, substantially as set forth.

2. The combination, with a breastpin or other article having a socket or keeper, of a pin-tongue having an enlarged bent and flattened end provided with a transverse depression, and a transverse locking-pin passed through the transverse hole of the socket and across the depression of the enlarged end, substantially as set forth.

323,544. MACHINE FOR GATHERING AND RUFFLING FABRICS.

JOHN H. TROWBRIDGE, New York, N. Y. Filed Aug. 25, 1880. (No model.)

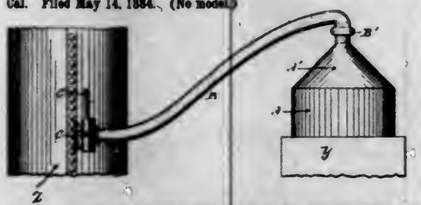


Claim.—1. In a machine for ruffling, the combination, with a supplemental presser and a feed-dog provided with a roughened surface with the center thereof depressed or cut away, thereby forming a space, of a presser-foot adapted to rise and fall by the action of the said feed, whereby gathers or ruffles are formed, substantially as and for the purpose set forth.

2. In a machine for gathering and ruffling fabric, the combination, with a feeding device having a space or channeled way located about the center of its roughened surface, of a presser adapted to drop into said space, whereby the fabric is detained as the feed-dog is advancing, substantially as and for the purpose set forth.

323,545. HEAT-TRANSMITTER.

JOSIAH H. L. TUCK, San Francisco, Cal. Filed May 14, 1884. (No model.)



Claim.—1. The herein-described apparatus for applying flame and heat, consisting of the collecting-receptacle adapted to receive and collect the heat and flame, and a fire-proof conveying-pipe of flexible character, and a suitable nozzle or distributer, as set forth.

2. The combination of the collecting-receptacle A, having the conical or convergent top or dome adapted to receive and collect the heat and flame, and a fire-proof conveying-pipe secured to the apex thereof, said pipe being flexible, substantially as set forth.

3. The apparatus described for collecting and conveying heat, flame, and other products of combustion, consisting of the receptacle A, having the convergent top A', for location over the furnace or fire, the pipe B, united to the apex of the top A' by a swivel-joint, said pipe being formed of such material or in such a manner as to be flexible and fire-proof, and a distributer, C, attached to the outer end of the pipe, as set forth.

4. In a device for transmitting and applying heat, the combination, with the collector A, pipe B, and distributer C, of the slide C', working under the punctured face of the distributer, substantially as and for the purpose set forth.

323,546. DEVICE FOR CONVERTING MOTION.

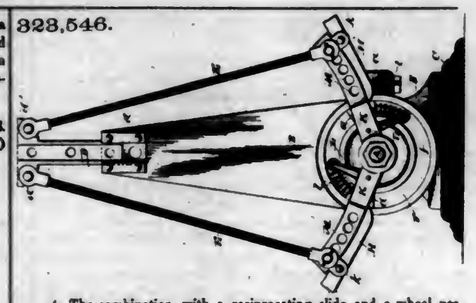
CHARLES H. TUCKWOOD, Janesville, Wis. Filed Dec. 27, 1884. (No model.)

Claim.—1. The combination, with a grooved wheel suitably mounted, of a pair of two-part grips and means for operating the grips independent of each other, whereby they are alternately caused to bind against the opposite sides of the groove, substantially as set forth.

2. The combination, with a grooved wheel suitably mounted, of a pair of sectional or two-part grips adapted to fit within the groove and means for alternately separating the grip-sections and allowing them to collapse, substantially as set forth.

3. The combination, with a reciprocating slide and a wheel provided with an annular groove, of spring-actuated two-part grips adapted to fit within the groove, and independent devices connecting the slide and grips, whereby the latter are caused to alternately engage and release the sides of the groove, substantially as set forth.

323,546.



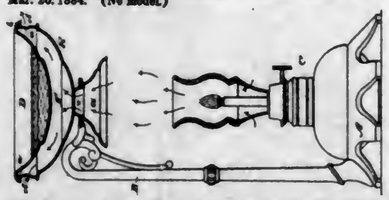
4. The combination, with a reciprocating slide and a wheel provided with an annular groove, of a pair of spring-actuated grips, each grip made of two parts and adapted to fit within the groove, and a pair of grip-operating levers actuated by the slide and adapted to act in conjunction with the springs in causing the grips to alternately engage and release the sides of the groove, substantially as set forth.

5. The combination, with a reciprocating slide, a grooved wheel suitably mounted, and a pair of grips adapted to fit within the groove of the said wheel, of a pair of grip-operating levers, a pair of concentric arms attached to said grip-operating levers and the slide, and a pair of auxiliary arms adapted to support springs in contact with the grip, substantially as set forth.

6. The combination, with a reciprocating slide and a wheel provided with an annular groove, of a pair of two-part grips adapted to fit within said groove, a pair of concentric arms adapted to be connected with the slide in different lateral adjustments, and devices connecting the said arms and grips, substantially as set forth.

323,547. VAPORIZER.

JAMES H. VALENTINE, Stanley, N. J. Filed Mar. 20, 1884. (No model.)



Claim.—1. A vaporizer consisting of the combination of the basin D for containing the liquid to be vaporized, a cup-shaped vessel, E, adapted to support the basin and deep enough to form an air-chamber beneath it, and having an opening, *c*, in its bottom, and the frame or standard B, adapted to uphold the vessel E above a source of heat, substantially as and to the effect set forth.

2. A vaporizer consisting of the combination of the basin D for containing the liquid to be vaporized, a cup-shaped vessel, E, adapted to support the basin and deep enough to form an air-chamber beneath it, and having an opening, *c*, in its bottom, a bell, G, arranged beneath said vessel and communicating with said opening, and the frame or standard B, adapted to uphold the vessel E and bell G above a source of heat, substantially as and to the effect set forth.

3. A vaporizer consisting of the combination of the basin D for containing the liquid to be vaporized, a cup-shaped vessel, E, adapted to support the basin, deep enough to form an air-chamber beneath it, and having an opening, *c*, in its bottom and a series of small openings, *d d*, in its sides, whereby its interior becomes a draft-flue, and the frame or standard B, adapted to uphold the vessel E above a source of heat, substantially as and to the effect set forth.

323,548. COTTON-GIN.

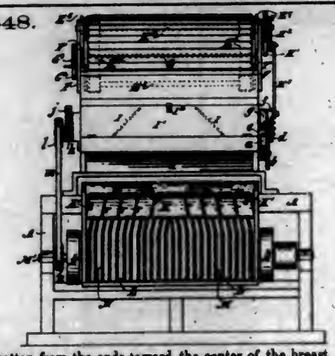
OSCAR WASHBURNE, Sing Sing, N. Y., assignor to Mary E. Washburne, same place. Filed Dec. 15, 1884. (No model.)

Claim.—1. In a self-feeding cotton-gin, the combination, with a breast, of a cove provided with upwardly-inclined ribs, serving to direct cotton from the ends to the center of the breast, substantially as specified.

2. In a self-feeding cotton-gin, the combination of a breast and a cove provided with upwardly-inclined ribs, serving to direct cotton from the ends to the center of the breast, of ribs forming the grate of the breast, having their upper portions inclined laterally toward the center of the breast, substantially as specified.

3. In a self-feeding cotton-gin, the combination, with a breast, of guide-plates, whereby the feed of seed-cotton will be caused to enter the breast of the gin in larger quantity at the ends than at the center thereof, and a cove provided with upwardly-inclined ribs, serving to direct

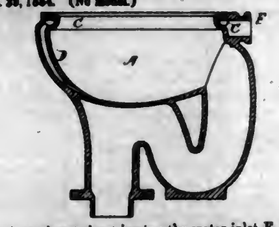
323,548.



the seed-cotton from the ends toward the center of the breast, substantially as specified.

323,549. WATER-CLOSET BOWL.

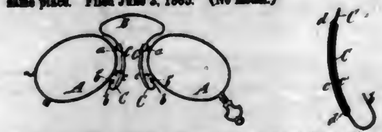
HENRY C. WEBBER, Boston, Mass. Filed Dec. 20, 1884. (No model.)



Claim.—A wash-out closet having the water-inlet E, located at the back of the bowl and made integral therewith, a branched flushing-rim extending from the water-inlet around both sides of the bowl and located wholly therein, and a hollow descending passage, D, connected with the two branches of the flushing-rim at a point opposite its junction with the water-inlet, and extending downwardly to the bottom of the bowl, whereby the flushing-current first enters and fills the flushing-rim and is subsequently discharged through a contracted orifice upon the level of the bottom of the bowl to scour it, all substantially as herein described, and for the purposes herein set forth.

323,550. CUSHION FOR EYEGLASS NOSE-GUARDS.

GEORGE W. WELLS, Southbridge, Mass., assignor to the American Optical Company, same place. Filed June 3, 1885. (No model.)



Claim.—1. The combination, with a nose-guard for eyeglasses, having lips or flanges projecting from its face, of a soft and elastic facing or cushion inserted under and overlapped by the lips or flanges and cemented to the guard, substantially as herein described.

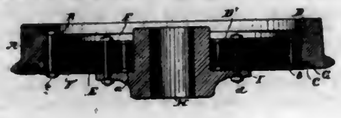
2. The combination, with a nose-guard for eyeglasses, of lips or flanges made of a separate piece or pieces fixed upon the guard, and a soft and elastic facing or cushion inserted under and overlapped by the lips or flanges and cemented to the guard, substantially as herein described.

3. A nose-guard for eyeglasses, having on its opposite sides facings or coverings of soft elastic material wider than the guard, cemented or connected together beyond and along the edges of the guard, and also cemented to the guard, substantially as herein described.

4. A nose-guard for eyeglasses, having on opposite sides facings or coverings of soft elastic material wider than the guard, cemented or connected together beyond and along the edges of the guard, and also cemented to the guard, the guard also having lips or flanges which overlap and hold the material in place, substantially as herein described.

323,551. CAR-WHEEL.

RICHARD N. ALLEN, Cleveland, Ohio. Filed June 24, 1885. (No model.)

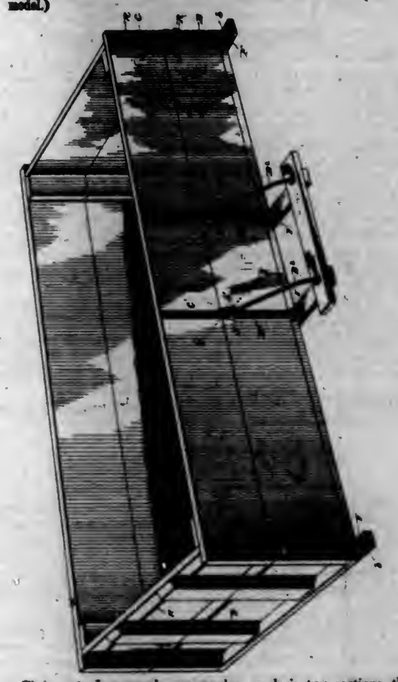


Claim.—1. A car-wheel composed of a tire and a hub united to an intermediate body, which latter consists of an outer and an inner metal ring, and an interposed core secured between two side plates, substantially as and for the purpose described.

2. A car-wheel composed of a tire, a hub, and an intermediate body, the latter being united to the tire by a tongue-and-groove lock, and by a series of bolts passing through the flange B and the outer periphery of the intermediate body, and united to the hub by a series of bolts passing through the inner periphery of the intermediate body and the flange I of the hub, substantially as and for the purpose set forth.

323,552. WAGON-BOX BRACE.

PETER ANDERSEN, Fort Wayne, Ind., assignor to Henry G. Olds, same place. Filed Apr. 21, 1884. (No model.)



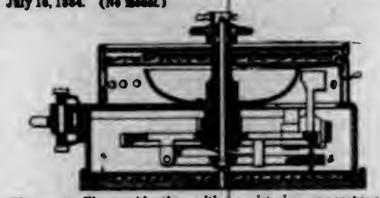
Claim.—1. In a wooden wagon-box made in two sections, the upper detachable from the lower, a set of fastenings and braces to be applied at either end and in the completed box at each end of the wagon-box, consisting of the following parts in the combination stated, viz: an iron brace fastened to the side of the lower section of the box near the end of the same, with a projecting foot standing at a right angle with side of the box and bolted to the cross-piece, an iron cleat fastened to the upper section of the box and projecting downward and fitting into a socket formed on the upper end of the lower box-brace aforesaid, and an iron rod passing below the socket aforesaid by suitable apertures through said lower brace, and the projecting cleat of the upper section resting in its socket and across the box outside the end-gate through the corresponding brace and cleat on the farther side of the box and fastened by a nut, each and all formed and combined substantially as set forth and described.

2. In a wooden wagon-box made in two sections, the upper detachable from the lower, a set of braces and fastenings, four in number, two on each side of the box, placed centrally between the ends, embracing in each a combination of parts as follows: an iron brace fastened to the side of the lower section of the box, having a projecting foot standing at a right angle with the side of the box and bolted to the cross-piece, an iron cleat fastened to the side of the upper section of the box and projecting downward into a socket formed upon the upper end of the lower section-brace aforesaid, a diagonal brace with its lower end fastened upon the projecting cross-piece at a little distance from the side of the box and its upper end resting against the socket aforesaid, and a bolt passing by suitable apertures through said lower and diagonal braces, and the foot of said cleat resting in its place in said socket and through the side of the box and secured by a nut on the outside, substantially as described and set forth.

3. In a double wagon-box and in combination, the socketed braces B, the cleats C, and the rods E at each end of the box and centrally

placed, the socketed braces B', the diagonal braces B², the cleat C, and the bolts b', each and all formed, combined, and used substantially as described and set forth.

328,553. FARE-RECORDER. Eli Baldwin, New York, N. Y. Filed July 16, 1884. (No model.)



Claim.—1. The combination, with a registering apparatus adapted to permanently indicate and record fares, units, or trips, consisting of a visual dial and a recording dial or tablet adapted to receive impressions, a marking device, and an actuator for operating said parts, of a lifting device extending and operating through the central shaft or post, substantially as described, whereby the marking device may be lifted from contact with the said dial or recording device adapted to receive impressions, substantially as and for the purpose set forth.

2. The combination, with a registering apparatus provided with a detachable strip, tablet, or dial of paper, or other material adapted to receive marks or impressions as a record, and means for actuating said parts, of a lever and connections extending through the center of shaft for moving the marker from contact with said tablet or dial, substantially as and for the purpose set forth.

3. In a recording-register for indicating actuations thereof, the combination, with a tablet of paper or similar materials adapted to receive impressions from a marking device with which said register is provided, of a cam-lever and intermediary connection for lifting the marker from contact with the tablet, substantially as and for the purpose set forth.

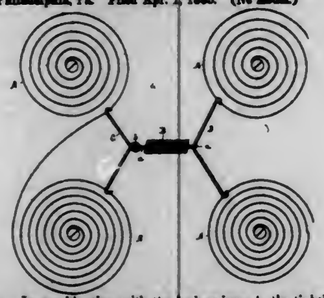
328,554. LOOM-SHUTTLE. James Baldwin, Manchester, N. H. Filed Feb. 14, 1885. (No model.)



Claim.—1. A shuttle-body provided with a spindle pivoted thereto, said spindle having at its opposite ends sockets, which are closed at their outer ends, in combination with a longitudinally-expansible spring the ends of which are loose in said sockets, said spring being adapted to expand longitudinally under compression into either socket and to expand laterally without withdrawal of its ends from said sockets, substantially as described.

2. A shuttle-body provided with a spindle having a longitudinal groove, said spindle having sockets at each end of said groove, in combination with a spring having two waves or curves, the central depression of said spring resting in said groove and its ends being free to reciprocate in said sockets, substantially as described.

328,555. BED OR FURNITURE SPRING CONNECTION. Alonzo Bell, Philadelphia, Pa. Filed Apr. 1, 1885. (No model.)

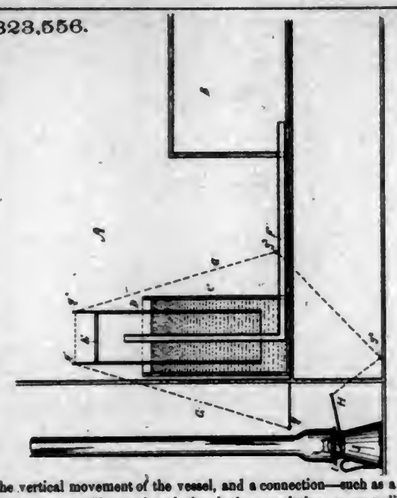


Claim.—In combination with the bed-springs A, the tightly-wound helical spring B, the ends of which are bent over to form rings *a*, and the rods *c*, the centers of which are secured to B at *a* and the ends to the springs A, substantially as and for the purposes set forth.

328,556. THERMOSTAT. Frederick Byrn, San Francisco, assignor of two-thirds to Charles C. Moore and William C. Seamands, Stockton, Cal. Filed Apr. 27, 1885. (No model.)

Claim.—1. A heat-regulating device comprising an air-tight chamber within the apartment to be regulated, a vessel containing a liquid, an inverted vertically-moving vessel, a connection between the air-chamber and the inverted vessel whereby the expansive force of the air causes

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the vertical movement of the vessel, and a connection—such as a string, G—between said vessel and the device regulating or controlling the source of heat, substantially as herein described.

2. In a heat-regulating apparatus, the vessel C, containing the liquid, and the inverted vertically-moving vessel E, adapted to be operated by means of the expansive force of air, in combination with a string, G, attached below and at one side of the vessel, and thence extending upwardly over the top of the vessel and downwardly on its other side, suitable guides through which the end of the cord passes, and a heat-adjusting device whereby the movement of the vessel E imparts an increased movement to the heat-adjusting device, substantially as herein described.

3. A heat-regulating apparatus comprising the air-tight air-chamber B within the apartment to be regulated, the vessel C, containing a liquid, D, the vessel E, inverted in said liquid, the pipe F, connecting the air-chamber B with the vessel E, a heat-adjusting device, and a connection between said vessel and the heat-adjusting device, substantially as herein described.

4. A heat-regulating apparatus comprising the air-tight air-chamber B within the apartment to be regulated, the vessel C, containing liquid D, the vessel E, inverted into the liquid, whereby a seal is formed, the pipe F, connecting the air-chamber B with the vessel E, the string G, attached below and at one side of the vessel E, and passing over its top and down its other side through suitable guides, and the heat-controlling lever H, to which the string is attached, substantially as herein described.

328,557. STEREOTYPE-PLATE HOLDER. A. Zellar Boda and Louis Klopsch, New York, N. Y., assignors to said Klopsch. Filed Apr. 20, 1885. (No model.)



Claim.—1. A holder for stereotype-plates, made in sections and recessed to form clamping-jaws near the central line, the two sections being made slightly rhombic in reverse directions, whereby under pressure they will tilt to tighten the grip upon the plate and to hold the center from rising, as set forth.

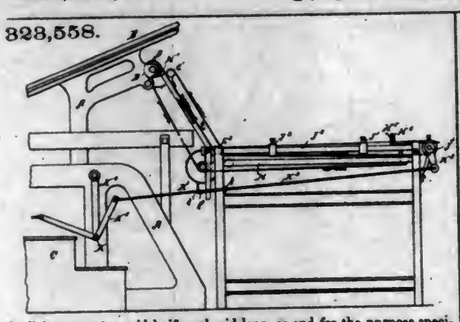
2. The duplex base-blocks B B, having the dovetailed grooves *b b* and inclined upper surfaces, *b'*, in combination with each other and with a correspondingly-formed stereotype or electrotype plate, A, having the dovetailed tongue *a* and the edge supports, *a' a'*, adapted for joint operation, as herein specified.

328,558. PAPER-FOLDING MACHINE. Louis P. Brault, Lowell, Mass., assignor of one-half to Hilaire Dorais, same place. Filed Apr. 8, 1884. (No model.)

Claim.—1. In combination with the conveying-tapes of a paper-folding machine, one or more stops or gages normally arranged to arrest a sheet traveling on said tapes, the rock-shaft having an arm, said stops or gages being provided with shanks secured to said rock-shaft, the bell-crank lever adapted to be operated at will, and the rod connecting said arm and lever, as and for the purpose specified.

2. The combination of the folding-table, the folding-rolls, the folding-knife, conveying-tapes, the rock-shaft, means, substantially as described, of rocking the same, the rod having a loop secured thereto, and

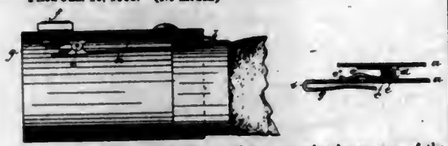
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the link connecting said knife and said loop, as and for the purpose specified.

3. The combination of the folding-table, the folding-rolls, the folding-knife, the conveying-tapes, the rock-shaft, means, substantially as described, of rocking the same, a rod having a loop secured thereto, the link connecting said knife and said loop, and one or more gages normally arranged to arrest a sheet traveling on said tapes, as and for the purpose specified.

328,559. CUFF-HOLDER. Daniel W. Brown, Woodbridge, N. J. Filed Jan. 10, 1885. (No model.)

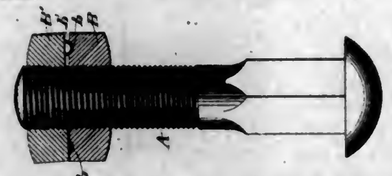


Claim.—1. The combination, with the grasping-levers *a a*, of the spring having the ends bearing oppositely thereagainst, one of said ends being provided with the bends *e' e''*, which form, with one of the levers, a mouth and loop, substantially as and for the purposes set forth.

2. In combination, the levers *a a*, one of which is provided with a hook, *g*, notched at the turn, substantially as and for the purposes set forth.

3. In combination with the grasping-levers *a a*, pivoted together by the pin *c*, a spiral spring arranged on said pin, the ends of which bear outwardly and oppositely upon said levers, one of said ends being bent, as at *e'*, to form a loop or eye with one of said levers to receive the looped shank of the button *f*, substantially as set forth.

328,560. NUT-LOCK. Justin H. Burdick, Utica, assignor to the Burdick Nut Lock Company, Milwaukee, Wis. Filed Dec. 9, 1884. (No model.)



Claim.—1. The combination, with a main screw-bolt nut having a series of semi-spheroidal sockets in its outer face, of a locking-nut provided on its inner face with a semi-spheroidal lug adapted to lodge in either one of the sockets of the main nut at the end of its course, whereby the bolt is tightly grasped and the nuts locked in position around the same, substantially as set forth.

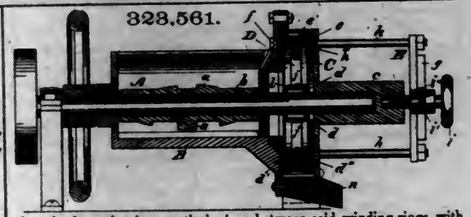
2. The combination, with a threaded bolt, of a main nut having a series of sockets arranged at regular intervals in its outer face, the spaces between each two consecutive sockets being rounded down to make a continuous curved surface all around the said nut, and a locking-nut provided on its inner face with a lug of shape corresponding to the sockets in the other nut, substantially as set forth.

328,561. FEED-MILL. Thomas C. Cadwuan, Springfield, Ohio, assignor of one-half to Benjamin F. K. Jennings, same place. Filed Nov. 29, 1884. (No model.)

Claim.—1. In a feed-mill, the combination of a crusher, a fixed and an adjustable grinding-ring and a grinding-wheel rotating in a vertical plane between said grinding-rings, said grinding-wheel being free to move horizontally on its shaft and to adjust itself to the grinding-surfaces of the ring on either side of the same, as set forth.

2. In a grinding-mill, the combination of the two grinding-rings, one being fixed and the other provided with means for adjustment, and

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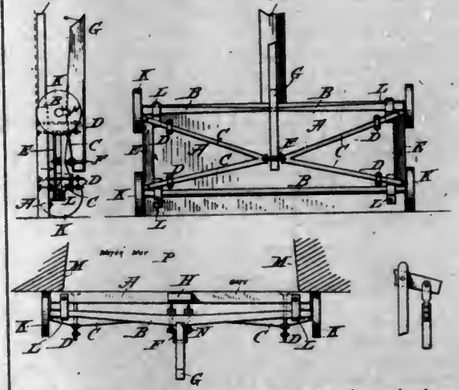


the wheel rotating in a vertical plane between said grinding-rings, with a grinding-surface on either side of the same, and having a central opening therein to allow the material to be carried to said grinding-surfaces, said grinding-wheel being free to move in either direction in the line of its shaft, and thereby adjust itself to the grinding-surface of both said grinding-rings, substantially as set forth.

3. In a grinding-mill, the combination of the cylindrical case with an extended sleeve central thereon, a horizontal shaft provided with splines having a bearing in said sleeve, a fixed grinding-ring in one side of said case, a grinding-ring with means for adjustment attached thereto in the opposite side, and an open-spoked grinding-wheel rotating between the fixed and the adjustable grinding-rings, said grinding-wheel being free to move toward either grinding-ring on said shaft, and provided with scrapers projecting from either side of its rim into the spaces within the case outside said grinding-rings, substantially as and for the purpose hereinbefore set forth.

4. In a grinding-mill, the combination of a cylindrical case with a sleeve cast central thereon, a horizontal shaft having a bearing in the latter, an open self-adjustable grinding-wheel rotating with said shaft, a fixed grinding-ring on the inner side of the same, a grinding-ring on the outer side, and means for effecting the adjustment of the latter in either direction in the line of said shaft, consisting of a sliding frame and a screw engaging the end of said sleeve, as set forth.

328,562. WATER-GATE. Cleveland J. Chesley, Lowell, Mass. Filed June 2, 1885. (No model.)



Claim.—1. A water-gate consisting of a gate, a locomotive frame-work, and a system of leverage for lifting the gate from its seat onto the frame-work and for moving the same, substantially as shown and described.

2. In a water-gate, the combination of a gate, A, having start H, and a quadrilateral frame-work joined thereto by clasps L, provided with wheels and serving as a vertically-movable car, the said gate adapted to be lifted onto the car by means of a lever, G, fulcrumed on one axle, and levers C C C C, connected therewith by an eyebolt, F, and fulcrumed on the cross-pieces E E, and attached to the gate at D D D D, all arranged and operating substantially as shown and described.

3. In a water-gate, a system of levers for lifting the same from its seat, which is composed of a main lever, G, engaging with an eye-hook, F, to which are united four levers, C C C C, fulcrumed at points on cross-beams E E, and fastened to the gate A by straps D D D D, for lifting the same, substantially as shown and described.

4. In a water-gate, the vertically-moving car consisting of axles B B, cross-beams E E, and wheels K K K K, the whole adapted to raise or lower a gate attached to it, substantially as shown and described.

328,563. FAUCET FOR WASH-BOWLS. Thomas C. Clark, Cohoes, N. Y. Filed May 22, 1885. (No model.)

Claim.—1. The faucet I, consisting, essentially, of a valve-case, P, with means for attaching the same to the wash-bowl C, having open-

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ings Q in the neck L, admitting the overflow-water from the chamber G to the interior of the valve-case, a suitable passage or passages, R, for conducting the overflow-water into the discharge-passage S, an upper conical valve-seat, T, a lower conical valve-seat, U, an opening or passage, V, for conducting the water from the interior of the plug or valve W into the discharge-passage, S, a discharge-opening, X, and suitable inlet-openings, Y, for admitting water to the valve, in combination with the plug or valve W, having an upper and a lower conical part or working-face of suitable taper, and corresponding to the valve-seats T and U, in which they move, a longitudinal, axial chamber, Z, for the admission of water to and the discharge of water from the interior of the wash-bowl, and a suitable opening, *a*, for the passage of water through the face of the lower valve.

2. The faucet I, provided with the hollow plug or key W, having the axial chamber Z, in combination with the screw *m*, cross-bar *o*, and spring *n*, for adjusting the plug W and holding it to its seat, substantially as described.

3. The faucet I, provided with the conical seats T and U, in combination with the hollow plug or key W, provided with the conical faces fitting the seats T and U, the axial chamber Z, extending entirely through the same and the projecting flange *g*, and held to its seat by a coiled-wire spring attached to the lower end thereof, and operating in the manner and for the purpose substantially as described.

4. The faucet I, provided with the outlet-passages, and having the conical seats T and U, in combination with the hollow conical plug or key W, provided with the combined sieve and handle or lever for operating the same, substantially as specified.

5. The faucet I, provided with the conical seats T and U, in combination with the plug or key W, provided with the flange *g*, the conical faces and the continuous axial chamber Z, and the curved lever *j*, attached to said plug by means of the sieve *h*, to which it is rigidly secured, substantially as described.

6. The faucet I, provided with the conical seat having several openings for the admission and escape of water, in combination with the adjustable and hollow conical plug or key provided with an opening for the admission of water to or the escape of water from the axial chamber of said plug, the flange *g* on the plug or key, the sieve secured thereto, as described, and the curved lever for operating or turning said plug or key in its seat, for the purpose and substantially as set forth.

7. The faucet I, provided with a jet-pipe, *j*, and means for opening and closing the same, and with suitable passages, *s* and *p*, and groove *q*, for conducting water from the inlet-pipe to and into the jet-pipe.

323,564. MORTISE-LOCK. Orrman B. Cowles, New Britain, Conn. assignor to the Corbin Cabinet Lock Company, same place. Filed Mar. 30, 1885. (No model.)



Claim.—The herein-described lock-case, having overhanging side edges which adapt the case to be secured within a routed cavity, and having a re-enforce or reserve selvage firmly secured to said lock-case, substantially as described, and for the purpose specified.

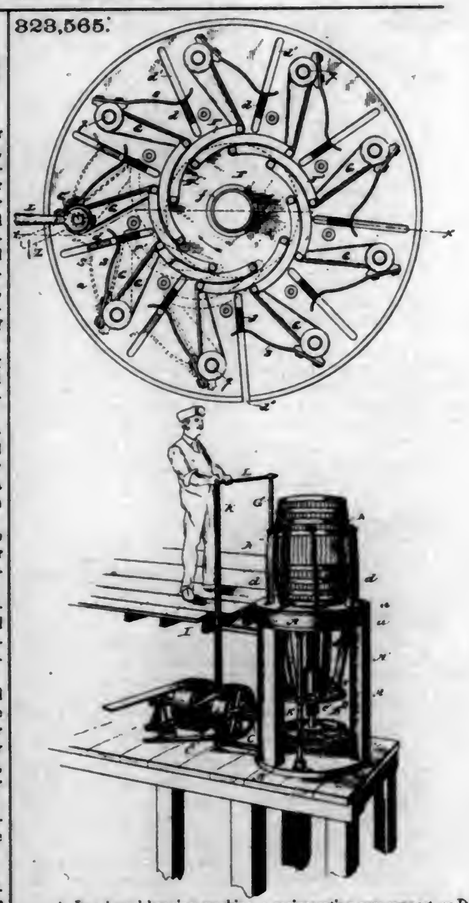
323,565. MACHINE FOR HOOPING BARRELS. Eben A. Delano, Chicago, Ill. assignor to Daniel W. Ryan, same place. Filed Oct. 18, 1884. (No model.)

Claim.—1. In a barrel-hooping machine, a reciprocating arm-support, as D, having arms *d*, provided with hoop-drivers, in combination with springs applied against the back of the arms, and a hand-lever, as L, having a link-connection with the springs, the arrangement and relation of the lever and springs being such that the inward pressure of the springs upon the arms may be increased or lessened through the medium of the lever without changing the position of the arms, substantially as specified.

2. In a barrel-hooping machine, the driving-arms, as *d*, provided with hoop-drivers made of steel and having a sharp projecting corner extended in the arc of a circle, in combination with an inclined or beveling face adapted to fit closely against the outer circular tapering surface of the barrel when the corner is resting on the thin curved edge of the hoop in the act of driving it on the barrel, substantially as specified.

3. In a barrel-hooping machine, the support D, having arms *d* hinged thereto, in combination with one or more top plates, *a*, having slots *d'*, the pivotal points of the arms on the support being placed nearer the center than the inner ends of the slots *d'*, so that the arms will at all times incline outward at the top, substantially as specified.

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4. In a barrel-hooping machine, a reciprocating arm-support, as D, having hoop-driving arms *d* hinged thereto, in combination with a slotted plate, *a*, provided with a pivotal plate, F, having links F', connecting said pivotal plate with cranks G, which are pivoted to plate *a* and provided with springs S, arranged to extend across the slots of said plate, and a hand-lever, L, by which the springs of said cranks are operated on the arms passing through the slots, substantially as specified.

5. In a barrel-hooping machine, a slotted plate, as *a*, provided with a pivotal plate, F, having links F', connecting said pivotal plate with cranks G, said cranks being pivoted to plate *a*, and having springs S extending across the slots thereof, and a hand-lever for simultaneously operating all of said cranks and their springs, substantially as and for the purpose specified.

6. In a barrel-hooping machine, the combination of a reciprocating arm-support, as D, having the hoop-driving arms *d* hinged thereto, with a stationary plate, as *a*, arranged for supporting the barrel to be operated on, and having radial slots *d'* for the hoop-driving arms to work in, and a pivotal plate, F, having link-connections with said arms, and a connection with a hand-lever, L, whereby the pivotal plate may be turned by operating the hand-lever, substantially as and for the purpose specified.

7. In a barrel-hooping machine, the combination of the friction-pulley C', having the friction-clutch and lever K, with a reciprocating arm-support, D, having arms *d* hinged thereto, a stationary plate *a*, arranged for supporting the barrel to be operated on, and having radial slots *d'* for the arms to work in, and a pivotal plate, F, having connections with the arms, and a connection with a hand-lever, L, whereby said pivotal plate may be turned by operating the hand-lever, substantially as specified.

323,566. GUIDE-TRACK FOR HEAVY FURNITURE. François Delrowt, San Francisco, Cal. Filed Aug. 29, 1884. (No model.)

Claim.—1. Guide tracks or ways for heavy furniture, consisting of the independent and removable strips A, adapted to be laid upon the

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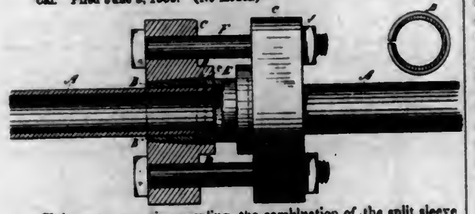


floor or carpet, and upon which the casters or rollers of the furniture are adapted to travel, substantially as herein described.

2. Guide tracks or ways for heavy furniture, consisting of the strips A, adapted to be laid upon the floor or carpet under the casters or rollers of the furniture, and having hinged or folding ends *a*, adapted to be extended when the furniture is to be moved, and turned back out of the way when the furniture is moved back to its place, substantially as herein described.

3. The independent removable guide tracks or ways A for heavy furniture, said tracks having hinged or folding ends *a*, adapted to extend the tracks when in use, and to be turned back out of the way when not in use, substantially as herein described.

323,567. PIPE-COUPLING. Michael Dillenburg, San Francisco, Cal. Filed June 3, 1885. (No model.)



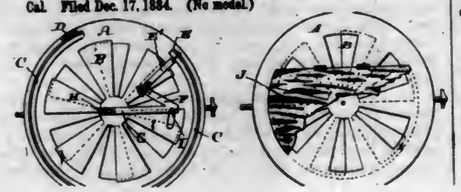
Claim.—1. In a pipe-coupling, the combination of the split sleeve B, fitted on the pipe, and having a conical or wedge-shaped exterior surface, the head C, having a correspondingly-shaped aperture, in which the sleeve is seated, the tie-bolts F, for setting up the head, and the tubular connecting-sleeve E, seated in the head and upon the inner end of the pipe, substantially as herein described.

2. In a pipe-coupling, the combination of the split sleeve B, fitted on the pipe, and having a conical or wedge-shaped exterior surface, the head C, having a correspondingly-shaped aperture, in which the sleeve is seated, the tubular connecting-sleeve E, seated in the head on the inner end of the pipe, and the washer D between the connecting-sleeve and the split sleeve, substantially as herein described.

3. In a pipe-coupling, the split sleeve B, fitted on the pipe, and having a conical or wedge-shaped exterior surface, and the tubular connecting-sleeve E, fitted on the inner end of the pipe, in combination with the head C, having an aperture, one portion of which has a conical shape for seating the split sleeve, and the other portion has a plane or parallel surface for seating the connecting-sleeve, substantially as herein described.

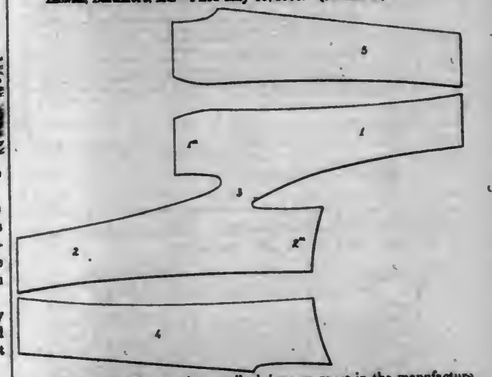
4. A pipe-coupling comprising the split sleeve B, fitted on the pipes, and having a conical or wedge-shaped exterior surface, the heads C, having conical-shaped apertures, in which the sleeves are seated, the tubular connecting-sleeve E, seated in the inner portion of the aperture of the heads on the ends of the pipes, the washers D between the connecting-sleeve and the split sleeve, and the bolts F and nuts *f*, by which the heads are forced together, substantially as herein described.

323,568. STOVE-PIPE DAMPER. John H. Doherty, San Francisco, Cal. Filed Dec. 17, 1884. (No model.)



Claim.—In combination with a stove-pipe damper or ventilating device capable of being opened and closed in an automatic manner by means of an expansible ring surrounding the movable plate of such damper, and connected thereto by suitable arms and levers, the hinged flap or plate J, adapted to fall by gravity upon or against the plate A at the rear portion or side thereof, and act in the capacity of an ordinary stove-pipe damper, constructed and arranged to operate substantially in the manner as herein set forth and specified.

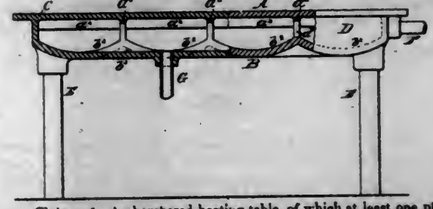
323,569. PANTALOONS, DRAWERS, OR OVERALLS. Joseph Ehrer, Baltimore, Md. Filed May 13, 1885. (No model.)



Claim.—1. The herein-described improvement in the manufacture of pantaloons, drawers, or overalls, which consists of a front of one leg, having a body portion, a back of the other leg, having a body portion, a connecting-band, and additional leg portions having additional body portions, said front and its body portion, said back and its body portion, and said connecting-band all being formed in one piece, and the said body portions extending beyond said connecting-band, substantially as set forth.

2. The combination of front 1, having body portion 1°, back 2, having body portion 2°, connecting-band between the body and leg portions, and the additional half-leg portions 4 and 5, the front and its body portion, the back and its body portion, and the band between them all being in one piece, substantially as set forth.

323,570. STEAM-TABLE. Charles E. Emery, Brooklyn, N. Y. Filed Sept. 27, 1884. (No model.)



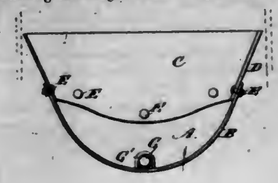
Claim.—1. A chambered heating-table, of which at least one plate is constructed of a series of arches, and is connected to the other plate by stays, substantially as specified.

2. A chambered heating-table provided with an arched lower plate and a cross-channel connecting bottoms of arches, substantially as and for the purposes set forth.

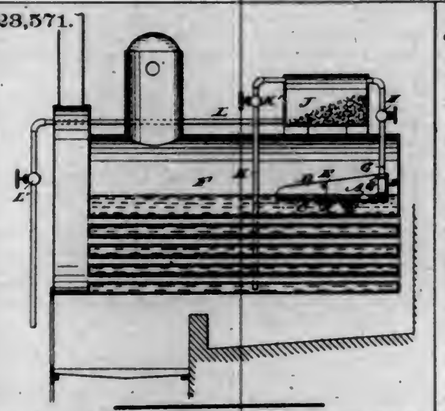
323,571. BOILER-CLEANER. Henry Estelle, Chattanooga, Tenn. Filed May 13, 1885. (Model.)

Claim.—1. The combination, with the settling-drum J, of the pipe G and the skimmer A, provided with an extension-plate extended laterally, as shown, at its front edge, substantially as herein shown and described.

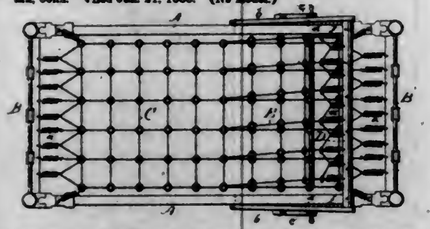
2. The combination, with the settling-drum J, of the pipe G, the skimmer A at the lower end of the same, which skimmer has a flange, B, and the extension-plate C, held by bolts on the front edge of the skimmer, and having end flanges, substantially as herein shown and described.



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323,572. BOLSTER BED-BOTTOM. WILLIAM I. FIELDING, New Britain, Conn. Filed Jan. 21, 1885. (No model.)



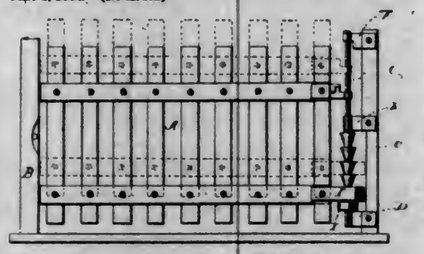
Claim.—The combination of the main bed-bottom consisting, essentially, of a flexible fabric extending substantially the whole length of the bed, and suspended upon a frame with the flexibility of its middle portion unimpaired, the bolster-frame, and the supplementary fabric with one of its edges connected to the cross-bar of said bolster-frame and its opposite edge connected to the middle portion of the flexible fabric which forms the main bed-bottom, substantially as described, and for the purpose specified.

323,573. DENTAL LIP-HOLDER. AMANIAH GARNER, Lynchburg, Ohio. Filed May 12, 1885. (No model.)



Claim.—A dental lip-holder consisting of the following elements in combination: a concavo-convex-shaped plate having a lateral extension, a ring or thimble, and a block attached to one side of the thimble and pivotally supporting the plate, the parts being constructed, arranged, and operating substantially as shown and described.

323,574. GATE-HINGE. PETER C. GOSHORN, Ligonier, Ind. Filed June 2, 1884. (No model.)



Claim.—1. The combination, in a gate-hinge, of a series of cones, and a strap or link fitted to engage the said cones and movable from one to the other, substantially as set forth.

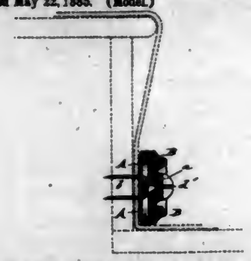
2. A gate-hinge consisting of a series of cones having a common axial line, cast or otherwise formed integrally, and pivotally supported, whereby they may be rotated, and the strap or link, substantially as set forth.

3. The combination of the series of cones, the strap or link encircling said cones, and the disk or base-piece arranged at the lower end of said series and made larger than the opening through said link, substantially as set forth.

4. The combination of the series of cones formed in a common axial line and with a central longitudinal bearing-opening, the pintle inserted through said opening, and the strap engaging the cones, substantially as set forth.

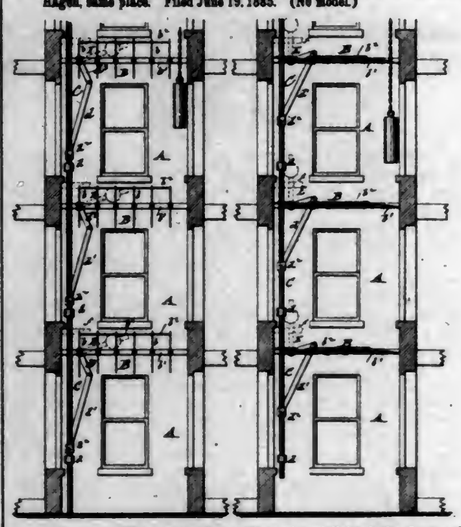
5. As a new and improved article of manufacture, the hinge-iron herein described, consisting of a series of cones integrally formed on a common axial line and having the apex of one joined to the base of the next cone, and provided at one end with a disk or base-piece, substantially as set forth.

323,575. CARPET-FASTENER. ROBERT S. GOULD, East Orange, N. J. Filed May 22, 1885. (Model.)



Claim.—A carpet-fastener consisting of a bottom plate having a circumferential and exteriorly-threaded flange, a nail or staple passing through a hole or holes of the bottom plate, and a detachable screw-cap having a raised and nicked center portion, substantially as set forth.

323,576. PROTECTING-SCREEN FOR AIR AND LIGHT SHAFTS. AUGUSTUS A. HAGEN, New York, N. Y., assignor of one-half to Macarius Hagen, same place. Filed June 19, 1885. (No model.)



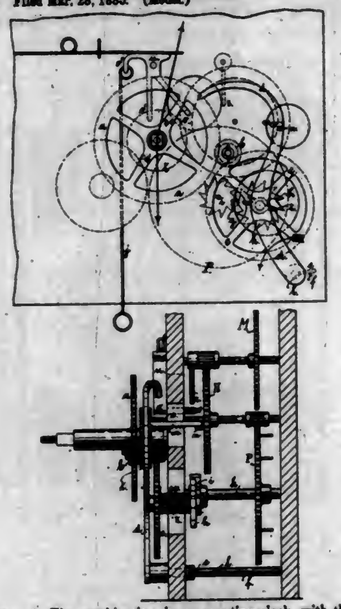
Claim.—1. The combination, with an air and light shaft, of a guard screen or partition arranged for each floor, said guard screens or partitions being composed of pivoted plates and pivot-rods connecting said plates, and a vertically-guided governing-rod, and intermediate mechanism whereby the plates of all the screens are thrown into open or closed positions, substantially as set forth.

2. The combination of an air and light shaft having horizontal supporting-bars, a guard screen or partition arranged for each floor, said guard screens or partitions being made of plates pivoted to said bars and connected by pivot-rods, vertically-guided governing-rod, and lever mechanism connecting said rod with the screens, substantially as set forth.

3. The combination of an air and light shaft having horizontal supporting-bars, a guard screen or partition arranged for each floor, the guard screens or partitions being made of plates pivoted to said bars and connected by pivot-rods, a vertically-guided governing-rod, intermediate mechanism connecting the rod with the screens, and weighted levers

connected to the screens on each floor for setting the screens into open or closed position, substantially as set forth.

323,577. CLOCK-STRIKING MECHANISM. CARL HAHLWEG, Stettin, Prussia, assignor to Gebrüder Junghans, Schramberg, Würtemberg, Germany. Filed Mar. 28, 1885. (Model.)

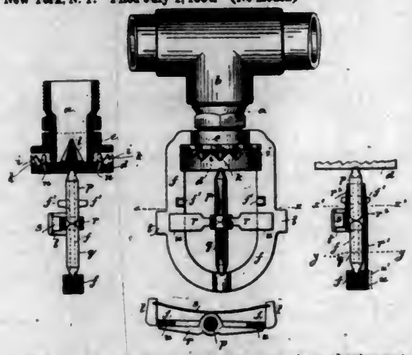


Claim.—1. The combination, in a repeating clock, with the striking mechanism, of an hour-wheel and transfer-wheel having the same number of teeth, an intermediate idler-pinion, and a repeating mechanism, constructed substantially as described, and for the purpose set forth.

2. In a repeating clock, the combination of an hour-wheel, *a*, an idler-pinion, *b*, meshing with the hour-wheel, a spring-actuated latch-lever, *d*, having a nose, *m*, and shaft *d'*, a transfer-wheel, *c*, on the shaft *d'*, meshing with the idler-pinion and having the same number of teeth as the hour-wheel, a spur-wheel, *h*, on the shaft *d'*, a spiral spring, *sp*, connecting the transfer-wheel *c* and spur-wheel *h*, a spur-wheel, *i*, on the shaft of the pin-wheel, an unlocking-pin, *n*, on the heart-wheel H, a moderator-pin, *r*, and a repeating lever, *u*, having arms *o* *o'* *o²* and a hook, X, substantially as set forth.

3. In a repeating clock, the combination, with the latch *d* and spur-wheel *i* on the shaft of the pin-wheel, of a compound gear supported on a shaft, *d'*, of the latch *d*, and consisting of a transfer-wheel, *c*, having a notch in its spider-frame, and a banking-pin, *z*, passing through said notch, a wheel, *h*, having a pin, *y*, a cut-away tooth next to the pin *y*, and shallow recess *g* adjoining the cut-off tooth, and a spiral spring, *sp*, connecting the wheels *c* and *h*, substantially as set forth.

323,578. AUTOMATIC FIRE-EXTINGUISHER. WILLIAM HARKNESS, New York, N. Y. Filed July 1, 1884. (No model.)



Claim.—1. The combination, with the water-pipe and valve-seat, of a valve, a frame with a ring screwed upon the coupling above the valve-seat, two bars in line with each other and with the axis of the valve abutting against each other and against the valve and frame, respectively, a support secured by solder from the central part of the two bars, and a spring to throw the bars out of line with each other when the solder melts, substantially as set forth.

2. The combination, with the water-supply pipe and valve-seat in an automatic fire-extinguisher, of a valve having a projecting water-distributing rim around it, with perforations and saw-tooth projections with inclined surfaces at their inner sides, and the studs *k*, and an axial support for the valve that is liberated by the action of the heat, and a frame and ring screwed upon the coupling above the valve-seat, between which and the serrations of the valve the water issues, substantially as specified.

3. The combination, in an automatic fire-extinguisher, of a supply-pipe, a valve at the end of the same, a frame connected with the supply-pipe, two bars, *p q*, in line with each other and having rounding ends and resting at the top against the valve and the bottom against the frame, and an arm secured to the frame by solder and having a hole through it for the reception of the ends of the bars *p q*, substantially as set forth.

4. The combination, with the valve and frame in a fire-extinguisher, of two abutting bars in line with each other and resting at the lower end upon the frame and at the upper end against the under side of the valve, a support for the central part of the bars formed as a tube, having a bar projecting therefrom, which bar is secured by fusible solder to the frame, and a spring to remove the bars when the solder melts, substantially as specified.

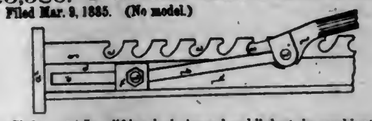
323,579. CLOTHING FOR BOLTING-REELS. AUGUST HEMM, Silver Creek, N. Y. Filed Mar. 10, 1885. (No model.)



Claim.—1. A wire-clothing for bolting-reels, composed of a body woven of wire and end bands composed of fibrous threads which are interwoven with the wires of the body, fastenings applied to said end bands, whereby the ends of the clothing are secured to the heads of the reel-frame, and a longitudinal joint, whereby the longitudinal edges of the body are secured to complete the clothing, substantially as set forth.

2. The combination, with the body of wire-cloth having its longitudinal edges doubled back on its under side, of strips of strong cloth secured between the two thicknesses of wire-cloth and provided on the inner side of the wire-cloth with overlapping flaps, which cover the joint, substantially as set forth.

323,580. LIFTING-JACK. ADOLPH E. HERMAN, Ravenna, Ohio. Filed Mar. 9, 1885. (No model.)



Claim.—1. In a lifting-jack, lever *l* and links *b*, in combination with guides *h* and lifting-bar *g*, formed with notches *c*, substantially as described.

2. The lever *l*, formed with slot l^2 and end bearing *s*, in combination with links *b*, guides *h*, and bar *g*, formed with notches *c*, substantially as described.

3. The lever *l*, formed with slot l^2 and double bearings *o* *o'* at each side of the slot, one of the bearings *o* *o'* being open, in combination with links *b*, formed with bearings *i* *i*, guides *h*, and lifting-bar *g*, formed with notches *c*, substantially as described.

4. Guides *h*, formed with lugs *n* and bolted to standard *d*, in combination with notched bar *g*, links *b*, and lever *l*, substantially as described.

5. The lifting-bar *g*, of a single piece, formed with a bead, a^2, two opposite grooves, *a* *a*, slot *a'*, and notches *c*, in combination with guides *h*, bolt *e*, links *b*, and lever *l*, substantially as described.

6. The standard *d*, of a single piece of casting, forming a base, and grooved vertically on two opposite sides, in combination with and bolted to guides *h* *h*, substantially as described.

7. The lifting-bar *g*, formed with inclined notches *c*, whose upper parts are semicircular, in combination with lever *l*, formed with an end bearing, *s*, to fit and turn in the upper part of said notches, substantially as described.

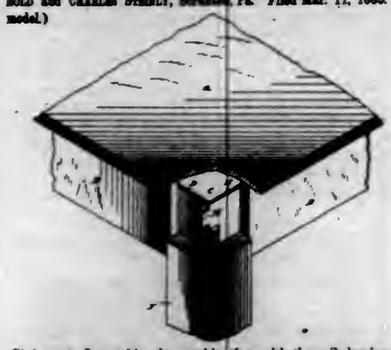
323,581. PORTE CAUSTIQUE FOR TESTING METALS. EMIL HUBER, New York, N. Y., assignor to Emile Bayet, same place. Filed Mar. 20, 1885. (No model.)

323,581.



Claim.—A gold and silver tester composed of a case or holder having a neck of reduced thickness, a stick of nitrate of silver inserted in the neck and body of the holder, and a detachable cover having a socket at the end and a body of abrasive material inserted into said socket, substantially as set forth.

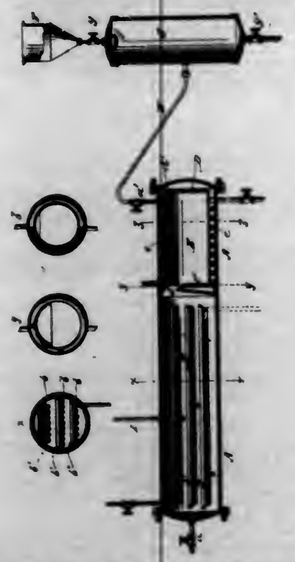
323,582. LOCKING-PLATE FOR TABLE-LEGS. Henry A. Kaufhold and Charles Strehly, Scranton, Pa. Filed Mar. 11, 1885. (No model.)



Claim.—1. In a table, the combination, with the rails having kerfs and the legs having intersecting slots which at the point of intersection extend each beyond the other, of the angular locking-plate having flanges which engage said kerfs, and connected with the rails and provided with lugs at the angle of the plate, which extend each beyond the other, and constructed to engage the slots in the leg.

2. As an improved article of manufacture, a locking-plate constructed of sheet metal and consisting of the angularly-disposed wings provided with flanges at their ends and with lugs at the angle of the plate formed from the body thereof, and which extend each beyond the other.

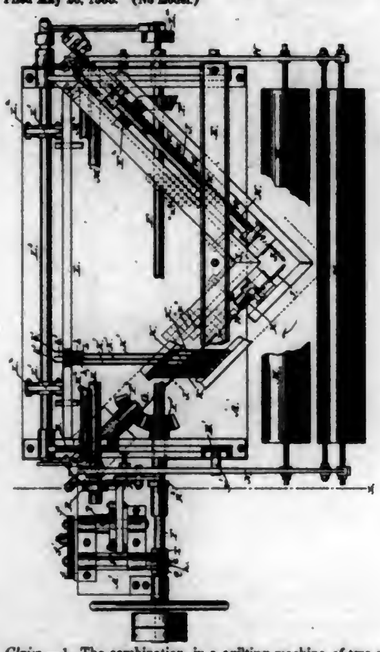
323,583. PROCESS OF RECOVERING SULPHURIC ANHYDRIDE. Edward D. Kendall, Brooklyn, N. Y. Filed May 23, 1884. (No model.)



Claim.—1. The process of recovering sulphuric anhydride from a compound containing an excess of fuming sulphuric acid, which consists in heating the compound in a vacuum or under a pressure less than that of the atmosphere, and of then condensing the volatilized sulphuric anhydride in a suitable chamber, substantially as described.

2. The process of recovering sulphuric anhydride from a compound containing an excess of fuming sulphuric acid, heating the compound in a vacuum or under a pressure less than that of the atmosphere in condensing the volatilized sulphuric anhydride, and depositing it in a chamber artificially cooled, substantially as described.

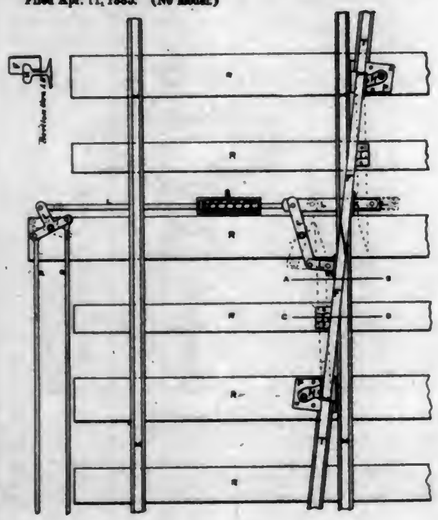
323,584. QUILTING-MACHINE. William Koch, New York, N. Y. Filed May 20, 1885. (No model.)



Claim.—1. The combination, in a quilting-machine, of two needle-bars arranged at an angle with each other and each carrying a series of needles, with devices for feeding the work beneath the needles, substantially as described.

2. The combination, with a single reciprocating shuttle-bar, and with a series of needles fitted upon two diverging needle-bars at an angle with said shuttle-bar, of a series of shuttle-carriers, one for each needle, and a series of rods increasing progressively in length to connect the several carriers with the single bar, substantially in the manner and for the purpose herein set forth.

323,585. RAILWAY-FROG. Gustav Lehlbach, Newark, N. J. Filed Apr. 11, 1885. (No model.)



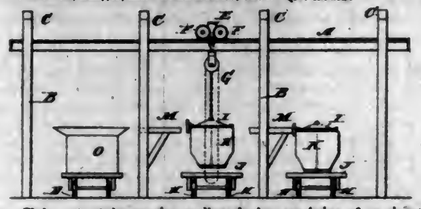
Claim.—1. The combination, with the rails of a railroad-track, of frog-bars, as F F, slotted or grooved, as described, and means arranged to operate in connection therewith, for the purposes set forth.

2. The combination, with the rails of a railroad-track, of frog-bars as F F, and a system of levers, as L, arranged and operating for the purposes set forth.

3. The combination, with the rails of a railroad-track, of frog-bars, as F F, a system of levers, as L, and a spring, as S, or equivalent means, arranged and operating in connection therewith, for the purposes set forth.

4. The combination, with the rails of a railroad-track, of frog-bars, as F F, a system of levers, as L, a spring, as S, or equivalent means, and rods, as Q, connecting the levers, as L, with the mechanism for moving the switch, and adapted to be operated thereby, for the purposes set forth.

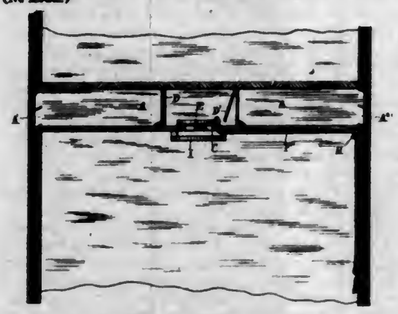
323,586. MEANS FOR COALING LOCOMOTIVES. Henry McLaughlin, Bangor, Me. Filed Dec. 24, 1884. (No model.)



Claim.—1. A locomotive-coaling device consisting of an elevated track crossing the track on which the locomotives run, and tracks leading to the coal-heaps, on which elevated track a traveling derrick-frame runs, which is provided with a hoisting apparatus, substantially as herein shown and described.

2. The combination, with the elevated track A, crossing the track on which the locomotive runs, and tracks leading to the coal-heaps, of the traveling derrick E and the platforms M, adjacent to the tracks leading to the coal-heaps, substantially as herein shown and described.

323,587. HOUSE-VENTILATION. Lewis Merriman, Beloit, Wis., assignor of one-half to Wm. S. Hinman, same place. Filed Nov. 8, 1884. (No model.)



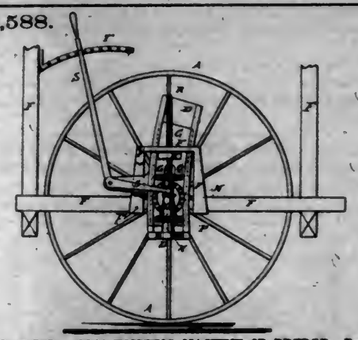
Claim.—In ventilation, the combination of a flue or viaduct extended above the room and having its ends opening in two or more directions, and having a discharge-opening leading into the room intermediate the ends of said viaduct, means whereby to regulate the operating area of said discharge-opening, and check valves or gates arranged on opposite sides of the discharge-opening and between said opening and the receiving ends of the viaduct.

323,588. ADJUSTING MECHANISM FOR HARVESTERS. Newton W. Miller, Marshall, Ind. Filed Oct. 4, 1884. (No model.)

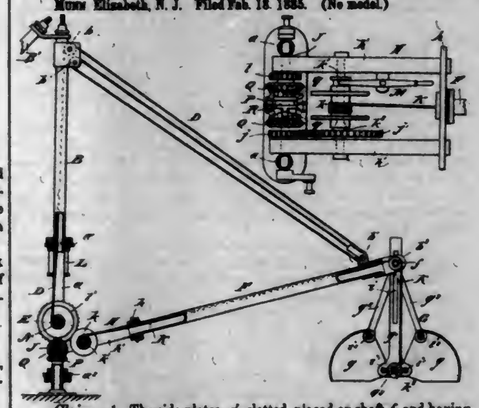
Claim.—1. The combination, with the drive-wheels A, the hollow axle C, and the frame F, of the shaft I, the guide-plate D, having bearing N, the sliding bar G, having arm H, the beveled gear-wheel M, the hub and beveled gear-wheels O P Q, the screw R, and the elbow-lever S, substantially as herein shown and described, whereby the said frame can be raised and lowered by turning the said shaft, as set forth.

2. The combination, with the hub B of the drive-wheel A, the hollow axle C, the shaft I, the guide-plate D, having bearing N, the sliding bar G, having arm H, the beveled gear-wheel M, the hub and beveled gear-wheels O P Q, the screw R, the frame F, and the elbow-lever S, of the fastening K L, substantially as herein shown and described, whereby the said shaft will be turned to lower and raise the said frame by the revolution of the said drive-wheel, as set forth.

323,588.



323,589. COAL-HOISTING MACHINE OR DREDGE. Bernard M. Muhn Elizabeth, N. J. Filed Feb. 18, 1885. (No model.)

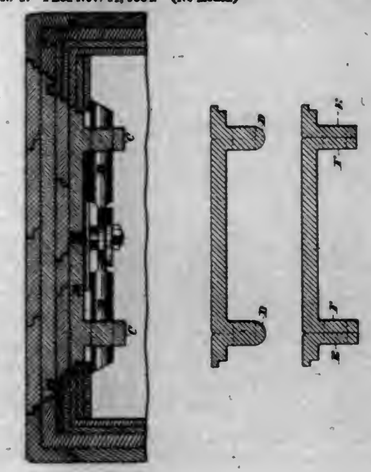


Claim.—1. The side plates, g', slotted, placed on shaft f, and having the scoops g pivoted to them, in combination with arms g^3, and the cable K for raising and lowering the plates g' for opening and closing the scoops g, substantially as and for the purposes set forth.

2. In a hoisting-machine, the drum k, cable K, boom F, and means for revolving the drum k, in combination with the vertically-movable plates g', arms g^3, and scoops g, all arranged to operate substantially as and for the purposes set forth.

3. In a hoisting-machine, the hinged frame H, drum k, and boom F, in combination with cable K, and side plates, g', to which the cable is attached for operating the scoops of the bucket, substantially as described.

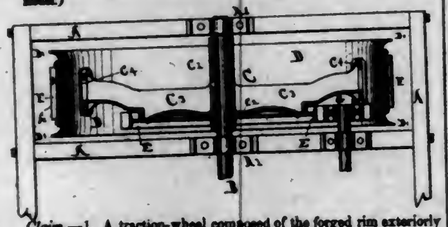
323,590. BURGLAR-PROOF SAFE. Henry F. Newbury, Brooklyn, N. Y. Filed Nov. 11, 1884. (No model.)



Claim.—1. A burglar-proof safe or vault door having the frame or bearings for the door-bolts made integral with the inner sheet of such door.

2. A burglar-proof safe or vault door having the frame or bearings for the door-bolts made integral with the inner sheet of such door, such inner sheet also being extended sufficiently to have a bearing against the jamb of the door.

328,591. TRACTION-WHEEL. LA VERNE W. NOYES, Chicago, Ill., assignor to William Deering, same place. Filed Oct. 27, 1884. (No model.)

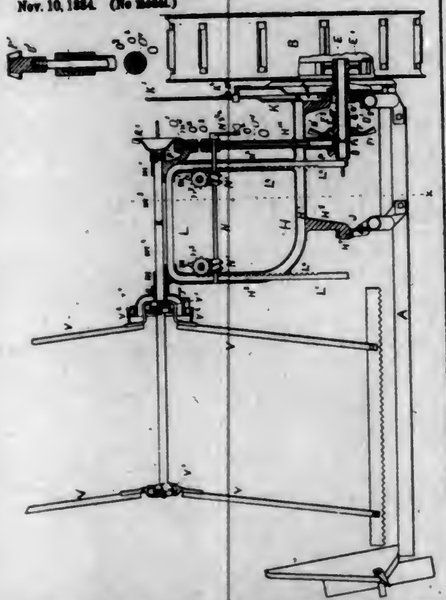


Claim.—1. A traction-wheel composed of the forged rim exteriorly concave and interiorly convex, the spider and the driving-gear rigid therewith, and the traction-ribs secured to the flange in its exterior concavity, substantially as and for the purpose set forth.

2. In a traction-wheel, the combination, substantially as hereinbefore set forth, of a flange or rim and the traction-ribs secured thereto, having their exposed surfaces curved tangentially to the circumference of the rim or flange, substantially as and for the purpose set forth.

3. The combination, substantially as hereinbefore set forth, of the spider C, the gear rim or flange E, the tread rim or flange D, and the traction-rib F.

328,592. HARVESTER-REEL. LA VERNE W. NOYES and THOMAS O. PERRY, Chicago, Ill., assignors to William Deering, same place. Filed Nov. 10, 1884. (No model.)



Claim.—1. In a harvesting-machine, in combination with the main driving-shaft and the frame on which the same is supported, a rocking reel-sustaining frame the axis of whose rocking motion is the axis of the main driving-shaft, means for rocking said reel-sustaining frame over its pivot on the main frame and for securing it fixed in any desired position in the arc through which it is rocked, the reel-shaft and the reel-driving shaft journaled on said reel-sustaining frame at right angles with each other, and the bevel-gears on the main driving-shaft and the reel-driving shaft and the reel-shaft, whereby power is transmitted from the main driving-shaft and to the reel-driving shaft and thence to the reel-shaft, substantially as set forth.

2. In a harvesting-machine, in combination with the main driving-shaft and the frame on which it is supported, the primary rocking reel-frame pivoted to the main frame or some fixed adjunct thereof, the axis of whose rocking motion is the axis of the main driving-shaft, the means for rocking said primary frame over its said pivot and for securing it fixed in any desired position in the arc through which it is so rocked, the secondary or reel-carrying frame, means for sliding said secondary frame upon said primary frame and for securing it thereon at any desired distance from the main driving-shaft, a telescoping reel-driving shaft journaled on both said frames, and the beveled gears on the said main driving-shaft, reel-driving shaft, and reel-shaft, whereby power is transmitted from the main driving-shaft to the reel-driving shaft and thence to the reel-shaft, substantially as set forth.

3. In a harvesting-machine, in combination with the main driving-shaft and the frame on which the same is sustained, a rocking reel-frame pivoted to the main frame or some fixed adjunct thereof, and having as the axis of its rocking motion the axis of the main driving-shaft, means for rocking said reel-frame over its said axis, and means for securing it fixed in any desired position in the arc through which it is rocked, the reel-shaft journaled in said reel-frame, and means for transmitting power from said main driving-shaft to said reel-shaft, all substantially as set forth.

4. In a harvesting-machine, in combination with the main driving-shaft and the frame in which said shaft is supported, a reel-frame pivoted to the main frame and rocking thereupon over the axial line of said main driving-shaft, the reel-shaft journaled in said reel-frame, means for transmitting power from the main driving-shaft to the reel-shaft, and the segment C^2, formed as integral with the segmental axial guide and being a continuation of the curve thereof, and the lever K, secured rigidly to said reel-frame and provided with a suitable adjunct to engage the notches of the notched segment C^2, substantially as set forth.

5. In a harvesting-machine, in combination, the primary rocking reel-frame having the parallel side branches provided with openings for the cog-pinions, the secondary or reel-carrying frame having parallel side branches constituting similar rack-arms and telescoping within the similar tubular branches of the primary frame, the transverse crank-shaft journaled on said tubular branches, the endless screws fixed on said shaft, the worm-wheels meshing with and actuated by the endless screws, respectively, the cog-pinions rigid with said spur-wheels, respectively, and working through the openings *h* and engaging with the rack-arms of the secondary frame, the reel-shaft journaled in said secondary frame, and means for transmitting power to said reel-shaft, substantially as set forth.

6. The combination, substantially as hereinbefore set forth, of the reel-shaft and its bearings, the cam secured to said bearings and having the alternating direct and oblique portions, the reel-arms pivoted to the reel-shaft and engaged by the cam and actuated by its oblique portions back and forth in the direction of the length of the reel once in each revolution thereof, and guided in direct rotation by the direct portions of said cam in the intervals of the said reciprocating movement, and the bats secured to the reel-arms and receiving endwise reciprocation from said movement of the reel-arms, substantially as set forth.

7. The combination, substantially as hereinbefore set forth, of the reel-shaft and its bearings, the cam secured to said bearings, the reel-arms, each pivoted to the shaft on pivots oblique thereto and engaged and actuated by the cam in the direction of the length of the reel, and the bats secured to the reel-arms.

8. The combination, substantially as hereinbefore set forth, of the reel-shaft and its bearings, the divided cam secured to said bearings, means for adjusting the parts of said cam in different positions with reference to each other, as described, and the reel-bats secured to the reel-arms.

9. The combination, substantially as set forth, of the reel-shaft and its bearings, the cam secured to said bearings and having the alternating direct and oblique portions, the reel-arms pivoted to the reel-shaft and engaged by the cam and actuated by its oblique portions back and forth in the direction of the length of the reel once in each revolution thereof, and guided in direct rotation by the direct portions of said cam in the intervals of said reciprocatory movement, and the bats secured to the reel-arms and receiving endwise reciprocation therefrom and provided with toothed or serrated edges, substantially as set forth.

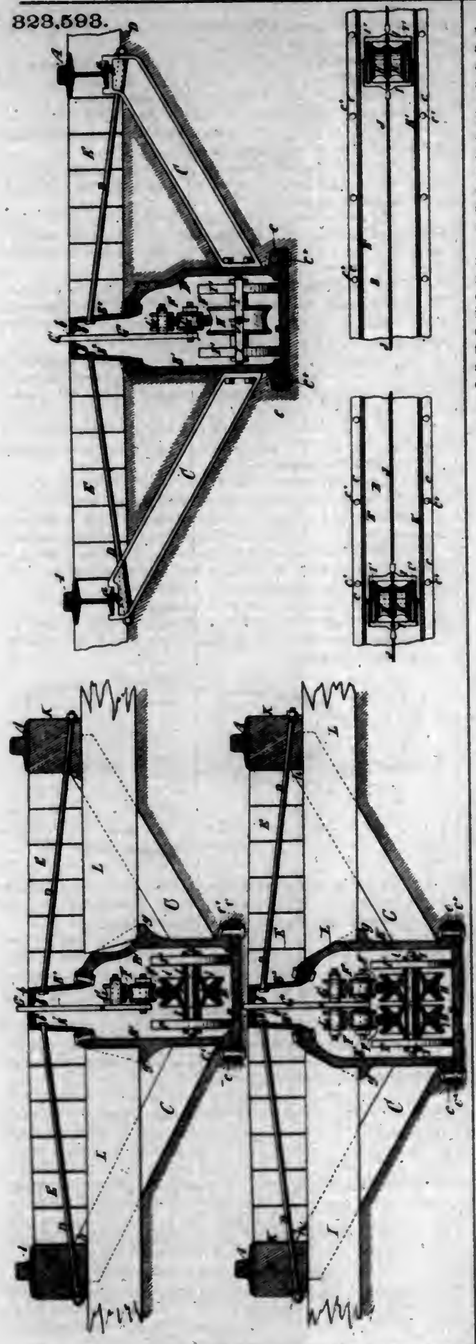
328,593. CABLE RAILWAY. ORIL D. OLVIS and NELSON B. ADAMS, New York, N. Y. Filed Nov. 18, 1884. (No model.)

Brief.—The cable-supporting pulleys are mounted upon trucks which are flexibly connected so as to be capable of movement. The track-rails are supported by struts extending inward and downward therefrom to the tunnel or tube, and are braced by rods extending from the slot-irons, and having screw-threads and nuts, whereby to regulate the grip-slot.

Claim.—1. The combination, with a tunnel or trough, and a cable arranged to work therein, of a chain or system of cable-supporting sheaves or pulleys, and trucks or frames therefor separate from and supporting the cable, and capable of movement in the tunnel or trough independently of the cable, substantially as and for the purpose herein described.

2. The combination, with a tunnel or trough, and a cable arranged to work therein, of cable-supporting sheaves or pulleys, trucks or frames

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wherein they are journaled, and flexible connections between the trucks or frames, the whole forming a chain or system of cable-supporting sheaves movable independently of the cable, substantially as herein described.

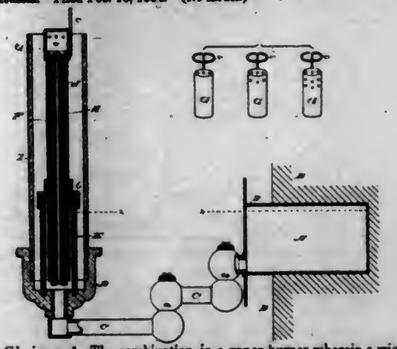
3. The combination, with the tunnel or trough, and cable F therein, of the sheaves H, the frames I, and their wheels I', carrying the said sheaves, and flexible connections J between the frames I, the whole forming a chain or system of cable-supporting sheaves movable independently of the cable, substantially as herein described.

4. The combination, with a tunnel or trough, and a cable arranged to work therein, of a chain or system of cable-supporting pulleys or sheaves movable independently of the cable, and brushes or sweepers attached to and movable with the chain or system of pulleys or sheaves, substantially as herein described.

5. The combination, with the track-rails, and a tunnel between them having at the top a slot, *b*, of the struts or braces C, supporting the rails at their outer ends and extending inward and downward to the tunnel, and the tie-rods D, extending from the side pieces of the tunnel adjacent to the slots and serving to confine the outer ends of the braces C, the said tie-rods being provided with screw-threads and nuts, whereby tension may be applied to them to draw or strain apart the side pieces which form the slot, substantially as herein described.

6. The combination, with the track-rails A A, and the tunnel between them having the slot *b*, and the brackets *g*, projecting laterally from its sides, of the longitudinal stringers K, on which the rails are secured, the divided cross-ties L, supporting the stringers and having their inner ends resting and supported on the lateral brackets *g*, the braces C, supporting the stringers, and tie-rods D, extending from the side pieces forming the slot *b* to the stringers K, and provided with screw-threads and nuts, whereby tension may be applied to them, substantially as herein described.

323,594. VAPOR-BURNER. NICOLAS L. POUSCHKAREFF, Moscow, Russia. Filed Feb. 18, 1884. (No model.)



Claim.—1. The combination, in a vapor-burner wherein a wick is employed, of the close or imperforate base D, the imperforate and removable cylindrical envelope I, mounted in base D, and the wick-tube F, mounted in said base D inside the envelope I, and provided with a generating-chamber, *e*, above the wick, the said envelope I extending up nearly to the top of the wick-tube, substantially as and for the purposes set forth.

2. The combination, in a vapor-burner, of the close or imperforate base D, the imperforate outer envelope, I, mounted in said base D, the tubular holder E, fixed in said base D, the wick-tube F, provided with a generating-chamber *e*, and the screw-threaded flanged collar *b*, fixed on the wick-tube, constructed to fit over and arranged to screw onto the screw-threaded top of the holder E, substantially as described.

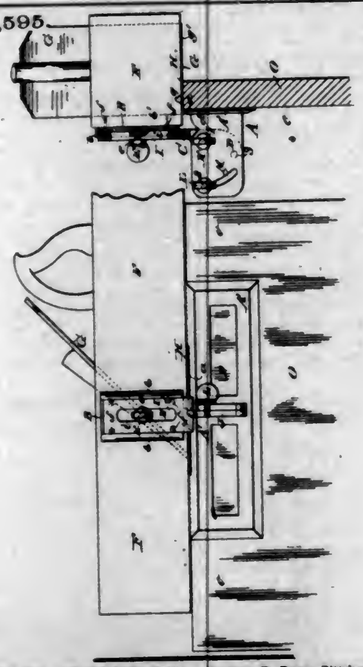
328,595. PLANE-GUIDE. WILLIAM W. PRESTON, Coldwater, assignor to himself and Edward Floyd Preston, Bismarck, Mich. Filed Jan. 3, 1885. (No model.)

Claim.—1. A plane-guide comprising a fence, A, formed of a plate, A', having a flange, D, provided with a curved slot, M, and a set-screw, K, passing through the said flange in the same horizontal plane as the upper end of the slot, a reversible connecting-piece, C, formed with the lower flange, J, and upper plate, I, in planes at right angles to each other, the said flange J having holes 1 and 2 in horizontal alignment, and the set-screw L, whereby the set-screw K may serve as a pivotal point and the set-screw L the adjusting-point, to allow of adjustments, substantially as set forth.

2. A plane-guide comprising a fence, A, formed of a plate, A', having a flange, D, provided with a curved slot, M, and a set-screw, K, passing through the said flange in the same horizontal plane as the upper end of the slot, a reversible connecting-piece, C, formed with the lower flange, J, and upper plate, I, in planes at right angles to each other, the said flange J having holes 1 and 2 near its upper edge in the same horizontal plane, and a hole, S, near its lower edge, and the set-screw L, adapted to engage either one of the said holes for adjustment when one of the other holes is engaged by the set-screw K as a pivotal point.

3. In a plane-guide, the combination, with the fence A and its flange D at right angles therewith, of the reversible connecting-plate C, having a flange, J, in the plane of flange D, and adjustably pivoted to said flange D, and a binding-screw for locking said parts in their adjusted positions, substantially as set forth.

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to afford a channel across and over the main rail for the flange of the car-wheel, substantially as described.

3. The combination of the grooved movable frog adapted to be brought above the main rail and terminating at the inner edge of the latter, and a lead-rail with its inner side level with the face of the frog and extending to opposite sides of the tread of the latter to afford a continuous bearing for the tread of the wheel across the space between the lead-rail and frog, substantially as described.

4. A movable frog-rail adapted to be thrown upon without crossing the main rail, and having one groove in line with the lead and branch rails, substantially as described.

5. The combination, with the main rail and siding-rail, of a movable frog-rail provided with an edge-tread inclining upward from each end, and with a tread, *s*, at an angle to the edge-tread, substantially as described.

6. The combination, with the siding-rails and rail of the main track, of a frog-rail having a portion adapted to lie upon the main rail and constitute a tread, *r*, above the same, and with a tread leading at an angle to the tread *r* to the switch-rail, substantially as described.

7. The lead-rail increased in height at the inner stationary end, in combination with a movable frog-rail provided with a tread leading to the branch rail at the same height as the end of the lead-rail, substantially as described.

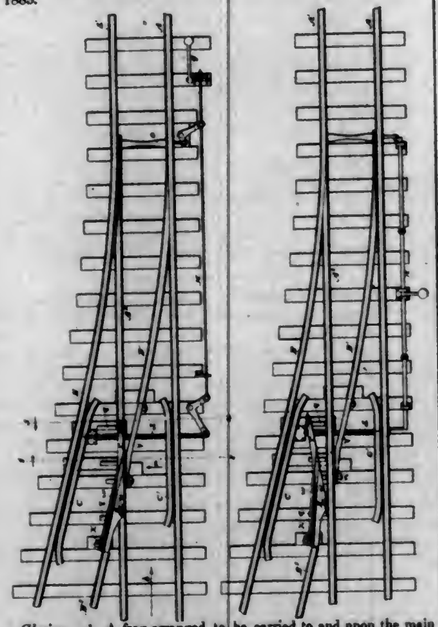
8. The combination of the main rail, movable frog-rail, lead-rail thickened at the inner end and provided with an inclined face, *z*, substantially as and for the purpose set forth.

9. The combination, with the movable rails of a switch, and a movable frog-rail at separated points, of a crank-shaft, H, connected to said rails and provided with a switch-lever arranged midway between the cranks to operate the switch and frog rails in unison, substantially as described.

10. The combination, with the movable rails at different points, of the crank-shaft consisting of two crank-sections and intermediate section carrying the switch-lever, substantially as described.

323,596. RAILROAD-FROG. Charles B. Peek, Pittsburg, Pa. Filed Jan. 30, 1885. (No model.)

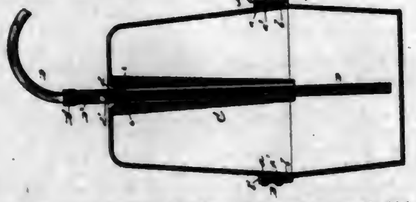
Brief.—An improvement on Patent No. 310,613, dated January 13, 1885.



Claim.—1. A frog arranged to be carried to and upon the main rail of a track, and when upon the latter to coincide at its inner edge with the inner edge of said rail, extending to the rail of the branch track and affording a tread over the main rail in line with the latter and a tread across the main rail in line with the branch rail, substantially as described.

2. The frog constructed to coincide when upon the main rail with the inner edge of the latter, and extending to the siding-rail and grooved

323,597. NURSING-BOTTLE. William R. Prime, Richford, Vt., assignor of one-half to Samuel Baxter Foster, Chicago, Ill. Filed Oct. 25, 1884. (No model.)



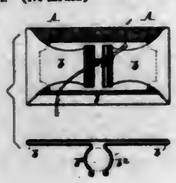
Claim.—1. A nursing-bottle formed in two parts, one of which is provided with a neck or tube extending inward, through which the exit-tube is passed loosely, substantially as and for the purpose set forth.

2. A nursing-bottle having an inwardly-extending neck provided with small notches within its outer end, in combination with a collar upon the flexible outlet-pipe, provided with prongs which are sprung into said notches to hold the tube in position without closing the neck of the bottle, substantially as and for the purpose set forth.

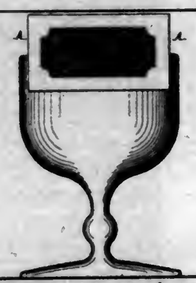
3. The combination, with the tube of a nursing-bottle, of a small collar placed thereon, and provided with two inwardly-turned prongs or points, and a ring screwed upon the collar to compress these points, substantially as and for the purpose set forth.

4. A nursing-bottle formed in two parts, having their adjacent ends fitting one within the other, and formed with a ground joint drawn tightly together by a collar or band screwed over it, and an open neck or tube extending inward from one of the parts of the bottle, in combination with a rubber tube passed loosely through this neck, a metal collar upon said tube, formed with two prongs extending outward to engage notches in the base of the bottle-neck and two prongs turned inward upon the tube, and a screw-collar upon the tube to compress the latter prongs and regulate the flow of milk, substantially as and for the purpose set forth.

323,598. CARD-HOLDER. Solomon N. Rosenbaum, New York, N. Y. Filed Oct. 23, 1884. (No model.)



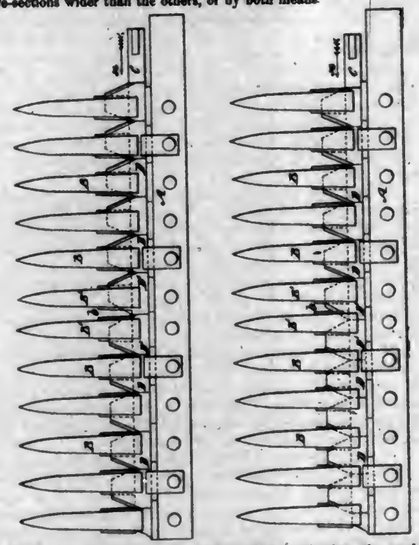
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Claim.—A card-holder consisting of a sheet-metal frame having guide-flanges to support the card, and of springs arranged at the back of the frame and made integral therewith, substantially as set forth.

323,599. CUTTING APPARATUS FOR MOWERS AND REAPERS. Lukan Rundell, New Baltimore, N. Y. Filed Sept. 5, 1884. (No model.)

Brief.—The knives are made to cut a half at a time by placing the middle fingers closer together than the others, or by making the middle knife-sections wider than the others, or by both means.



Claim.—1. In a mower or reaper cutting mechanism, the combination, with a reciprocating serrated cutter, of the central or intermediate fingers or guards arranged in closer relation with each other than the remaining fingers or guards, substantially as specified.

2. In a mower or reaper cutting mechanism, the combination, with the fingers or guards, of a reciprocating serrated cutter having its central or intermediate tooth or teeth of greater width than the remaining teeth, essentially as described.

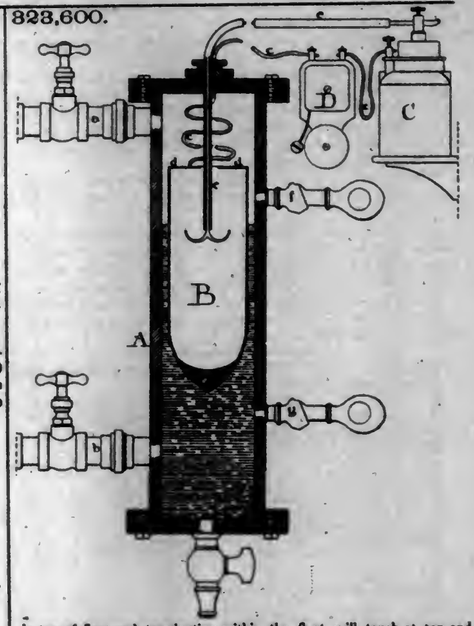
3. In a mower or reaper cutting mechanism, the combination of the serrated cutter having its central or intermediate tooth or teeth of greater width than the remaining teeth to either side thereof, and the finger-bar having its central or intermediate fingers arranged in closer proximity to each other than the remaining fingers to either side thereof, substantially as and for the purposes specified.

323,600. ELECTRIC LOW-WATER ALARM FOR BOILERS. William P. Ryman, Wilkes-Barre, Pa. Filed Feb. 6, 1885. (No model.)

Claim.—The combination, in an electric low-water alarm, of two poles or electrodes of an electric battery with a hollow metallic float of good electrical conductivity attached to one of these poles or electrodes, and so arranged that the other pole or electrode, passing through a hole

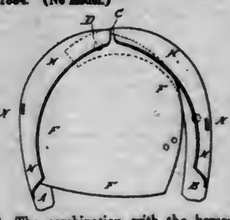


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in top of float and terminating within the float, will touch at top and bottom inside the float with the fall and rise of the water in the boiler, thereby closing and opening the circuit of the electric battery, and indicating both the low and high water in boiler, substantially as and for the purpose set forth.

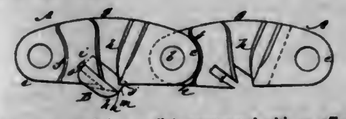
323,601. HORSESHOE. Lawrence Schwaar, New York, N. Y. Filed Oct. 8, 1884. (No model.)



Claim.—1. The combination, with the horseshoe made in two parts, A B, hinged to each other, and provided with the rim H, having apertures N and plate F, of the pad I J, having buckle and strap K L, and projections M, substantially as herein shown and described, whereby the hoof will be protected from jar in traveling, as set forth.

2. A horseshoe constructed in two sections, hinged at their front ends, with an inwardly-inclined flange on the upper edge of each section, a single plate which covers the bottom of the hoof, and secured at the heel by a removable fastening to firmly unite the two sections and the plate upon the hoof, and a flexible boot covering the upper part of the hoof, and which extends under the bottom thereof, so as to be inclosed between the plate and the hoof and held in position by the flanges, as described.

323,602. CHAIN-SAW. Walter S. Snipe, Minerva, Ohio. Filed Mar. 18, 1885. (Model.)



Claim.—1. A chain-saw link constructed with an offset located about centrally of its length, a recess upon one side of the link and in advance of the offset, and upon the opposite side of which link is a second recess having its lower end connecting with the lower end of the aforesaid recess, substantially as and for the purpose set forth.

2. A chain-saw link constructed with an offset, a recess upon one side of the link and in advance of the offset, and upon the opposite side of which link is a second recess having its lower end connecting with

the lower end of the aforesaid recess, said recesses diverging from each other toward their upper ends, substantially as and for the purpose set forth.

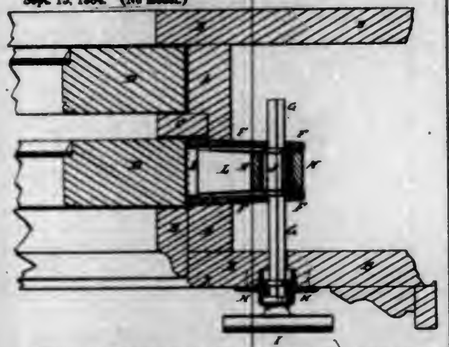
3. In a chain-saw, the links A, pivoted together as described, and constructed with opposite tongue and slotted ends centrally in the plane of the links, and with a shoulder, *f*, at their one end, to prevent the chain from swinging or shutting down on the bits or cutters of the links, said shoulder forming an offset on one side of the link and curved upon its inner face, substantially as described.

4. The links A, provided on their under or inner edge with transverse slots *i j*, for the purpose of holding the bits or cutters, essentially as specified.

5. The chain-saw link provided with the transverse slots, in combination with the bit B, constructed with spurs or cutting-blades *k k l* on its heel, and a front central spur, *m*, on its face, all transverse to the cutting-edge *n* of the bit, substantially as shown and described.

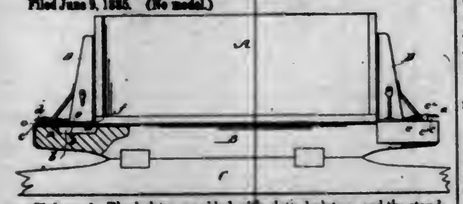
6. In combination with the links A, having slots *i*, and the bits B, constructed to fit said slots, the packings *s*, for blocking out said bits as they wear, substantially as described.

323,603. SASH-HOLDER. Henry Dyas, Jeffersonville, N. Y. Filed Sept. 15, 1884. (No model.)



Claim.—In a sash-holder, the face-plate E, formed with side flanges, F, having spindle perforations and recesses on their inner faces extending from the face-plate to the perforations, the eccentric J, having a central opening and resting in the rear ends of said recesses, the bolt L, formed with a face-plate, K, and a frame, M, surrounding the eccentric, and the removable spindle G, passing through the flanges F and eccentric J, substantially as set forth, whereby the eccentric may be introduced into position through the face-plate, as described.

323,604. WAGON-STANDARD. Jeffery Starner, Lovering, Ohio. Filed June 9, 1885. (No model.)



Claim.—1. The bolster provided with slotted plate *a*, and the standard D, provided with the key or stud *f*, in combination with means, substantially as described, for locking the standard from turning, substantially as and for the purpose described.

2. The bolster B, provided with plate *a*, formed with slot *b*, and an undercut diagonal rib *c*, having projection *c'*, in combination with the standard D, provided with key *f*, locking-spring *d*, and formed with diagonal edge *d'*, substantially as and for the purposes set forth.

3. The plate formed with slot *b*, and undercut diagonal rib *c*, in combination with plate *a*, having key *f*, and diagonal edge *d'*, substantially as and for the purposes set forth.

323,605. CAR-AXLE LUBRICATOR. William H. Sterling and Dyson D. Wade, New York, N. Y. Filed Oct. 23, 1884. (No model.)

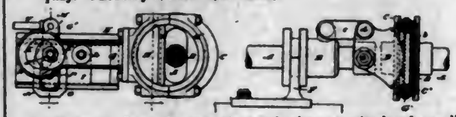


Claim.—1. An axle-lubricator made as herein shown and described, consisting of a rectangular bottom frame of elastic wire, one side of which is formed by the frame extremities, which project inwardly toward and above the center of the frame where said arms terminate, and are secured to an axle on which an oiling-roller is carried, as set forth.

2. An axle-lubricator consisting of a rectangular bottom frame of elastic wire the extremities of which form one side of the frame, and near the center of said frame side are bent inwardly and upwardly toward and above the central part of the frame, where they are connected with and carry a short axle and oiling-roller, substantially as herein shown and described.

3. In lubricators, the sleeve *b*, combined with the wire frame A and its torsion-spring arms *a*, substantially as described.

323,606. VALVE-OPERATING MECHANISM. Frank M. Stevens, New York, N. Y., assignor to the Stevens Locomotive and Machine Company. Filed July 9, 1884. (No model.)



Claim.—1. In a valve-operating mechanism, a mechanism for modifying the motion of the valve, comprising a carrying-block adapted to be reciprocated by the engine, an eccentric mounted rotatively on said carrying-block, a rack-and-pinion device, substantially as described, whereby the reciprocating motion of the carrying-block imparts rotary motion to the eccentric mounted on the carrying-block, and a connection between the said eccentric and the valve-stem, whereby the reciprocating motion imparted to the valve by the reciprocation of the carrying-block is modified by the rotation of the eccentric, substantially as set forth.

2. In a valve-operating mechanism, a mechanism for modifying the reciprocating motion of the valve, comprising a carrying-block adapted to be reciprocated by the engine, an eccentric mounted rotatively on said carrying-block, a rack-and-pinion device, substantially as described, for converting reciprocating motion of the carrying-block into rotary motion of said eccentric, and a lever fulcrumed on said carrying-block and constructed to connect the said eccentric to the valve-stem, whereby the motion imparted by said eccentric is magnified or multiplied, substantially as shown and described.

3. In a valve-operating mechanism, the combination of a valve-operating eccentric, its strap, its rod G, fulcrumed at L on the carrying-block, the said carrying-block arranged to reciprocate, as shown, and the mechanism, substantially as described, for coupling said rod G to the carrying-block, whereby the effect of the vibration of the said rod on said block is neutralized, substantially as set forth.

4. The combination, with the main shaft A, of the keepers C C, fixed thereon and provided with grooves to receive ribs on the eccentric, the slotted eccentric B, provided with ribs *a a*, and a rack, *b*, the segment-rack D, pivoted at *c* on the shaft and arranged to mesh with rack *b* through a slot in one of the keepers C, the clutch or sleeve E, splined on the shaft and constructed to receive a fork, F, the said fork F mounted to slide, as shown, and the link *e*, connected at one end to rack D at *d*, and at the other end to clutch E, whereby reciprocation of said sleeve rotates rack D, substantially as shown and described.

5. The mechanism for modifying the reciprocating motion of the valve, comprising the carrying-block arranged to play in guides, the oscillating lever M, the eccentric O and its shaft, the fixed rack T, and the gear wheel or wheels, whereby rotation is imparted to eccentric O O, all arranged to operate substantially as set forth.

6. The combination, with the eccentric B and its rod, of the fulcrum-stud L, the link-disk K, the stud or shaft J, and the carrying-block I, said block being mounted in guides, and all arranged to operate substantially as set forth.

7. The combination of the shaft A, the valve-operating eccentric and its slotted rod, the fulcrum-pin L, the link-disk K, the guide H, the carrying-block I, the stud or shaft J; the lever N, fulcrumed on J, the eccentric O and its sliding block and shaft, the fixed rack T, and the gear-wheels Q, R, and S, all arranged to operate substantially as set forth.

323,607. SLAG-POT. Reward H. Tremain, Salt Lake City, Utah. Filed Apr. 30, 1885. (No model.)



Claim.—1. A slag-pot provided with a non-conducting space or jacket surrounding it, substantially as and for the purposes set forth.

2. A slag-pot constructed with a non-conducting space, E, in its walls, substantially as set forth.

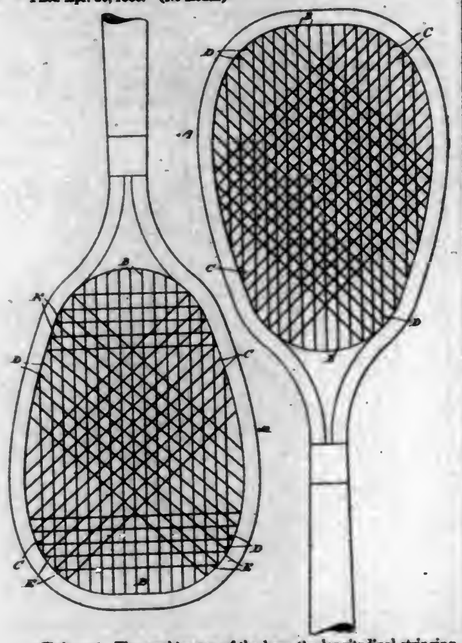
3. A slag-pot consisting of two cast shells, *a* and *b*, constructed to fit one within the other and formed with a hollow space, E, between them, substantially as described.

4. A slag-pot constructed with an air-space, E, in its walls, and with vent-openings, *f f*, for the escape of air from said space, substantially as described.

5. A slag-pot consisting of a solid body portion for containing the mass of matte and hollow side walls, as described.

6. The combination, with a slag-pot, of a cover adapted to close over the top thereof and formed with a non-conducting space, E', substantially as and for the purposes set forth.

323,608. TENNIS-RACQUET. Isaac J. Turner, Princeton, N. J. Filed Apr. 29, 1885. (No model.)



Claim.—1. The combination of the bow, the longitudinal stringing, the two layers of diagonal stringing, and the transverse end layers of stringing, E E.

2. A tennis-racquet strung with three intersecting groups or layers of cord, B C D, substantially as set forth.

3. The combination of the bow, the longitudinal stringing B, and the transverse layers of stringing C D, which cross each other at or about right angles and cross the stringing B diagonally.

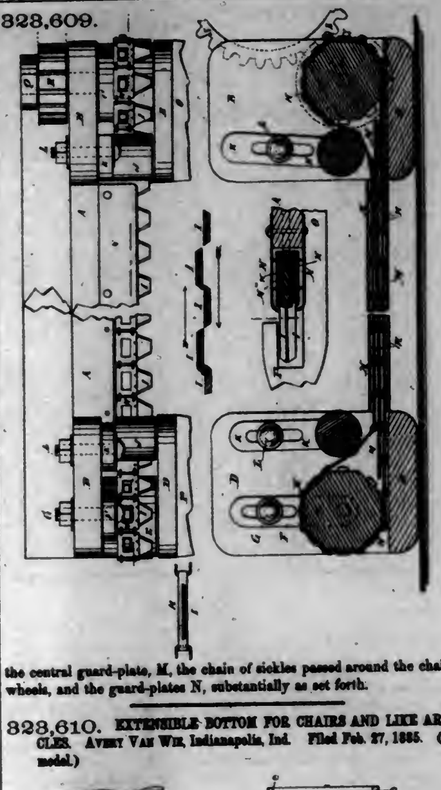
323,609. ENDLESS-CHAIN SICKLE FOR MOWERS AND REAPERS. Squire S. Turner, Columbia, Mo. Filed May 26, 1884. (No model.)

Claim.—1. In a reaper or mower, the cutter-bar A, provided at its opposite ends with vertical standards D D B B, in combination with the chain-wheel C, journaled in standards B B, the crank-axle F, provided with a vertical slotted arm, screw G, securing the same adjustably to one standard, D, the endless chain of sickles and guide-rollers, substantially as set forth.

2. In a reaper or mower, the combination, with the cutter-bar, vertical standards B B D D, the chain-wheels journaled between said standards and the endless chain of sickles, of the crank-axles K K, having vertical slotted arms, screws L, securing them adjustably to one standard, B and D, respectively, and the guide-rollers J J, journaled on said adjustable crank-axle, substantially as set forth.

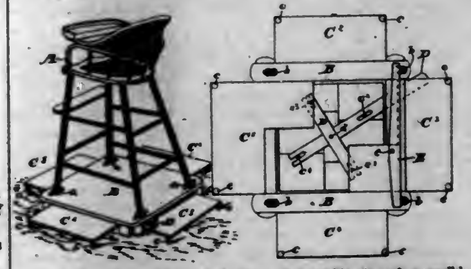
3. A reaper or mower having a cutting apparatus comprising the cutter-bar A, standards D D at the outer end and standards B B Q at the inner end, the chain-wheel C, journaled between the standards B B, and having its shaft extended to the bearing Q, the gear-wheel R on said shaft, the chain-wheel E, the crank-axle F, provided with a vertical slotted arm, screw G, securing the same to one standard, D, the crank-axles K, having slotted arms and set-screws, the guide-rollers J J.

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the central guard-plate, M, the chain of sickles passed around the chain-wheels, and the guard-plates N, substantially as set forth.

323,610. EXTENSIBLE BOTTOM FOR CHAIRS AND LIKE ARTICLES. Avery Van Wie, Indianapolis, Ind. Filed Feb. 27, 1885. (No model.)



Claim.—1. In a base for furniture, the combination of extensible wings, sliding in ways and provided with pins upon the inner ends, and an armed lever pivoted in the center of the base, and provided with slots which engage with said pins, whereby said wings may be operated.

2. The combination of a base, B, consisting of an upper and a lower part and interposed corner-pieces, leaving ways between said corner-pieces, extensible wings mounted in said ways, and a slotted lever engaging with the inner ends of said wings, substantially as set forth.

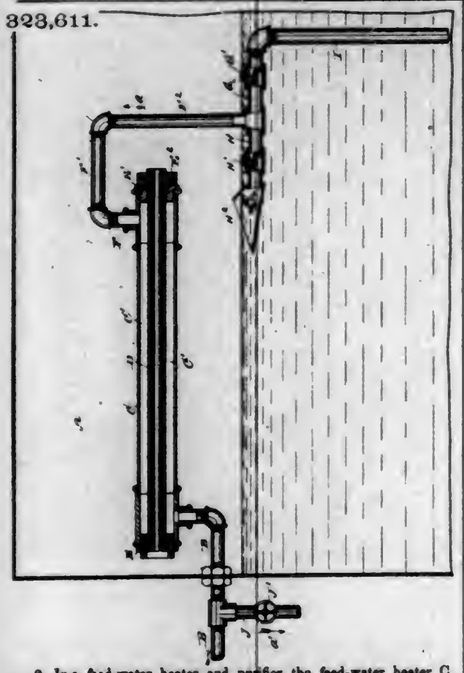
3. The combination of an inclosing-frame, extensible wings therein, the inner ends of which are halved, and thus permitted to pass by each other, the slotted lever pivoted in the center of said casing, the slots whereof engage with pins upon the inner ends of said extensible wings.

4. The combination, in a furniture-base, of an inclosing-casing, extensible wings mounted therein, a lever for operating said wings, and a brake-bar secured to one of said wings, by which the casters which support said base are locked in position as the said wings are extended.

323,611. FEED-WATER HEATER AND PURIFIER. Dyson D. Wade, San Francisco, Cal. Filed May 12, 1885. (No model.)

Claim.—1. A feed-water heater suspended in the steam part of the boiler and provided with a longitudinal tube open at each end and secured at each end of the feed-water heater by suitable means, the said tube forming in the interior of the feed-water heater an annular space, which has no direct connection with the steam part of the boiler, and the said feed-water heater being provided with inlet and outlet feed-pipes, substantially as shown and described.

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2. In a feed-water heater and purifier, the feed-water heater C, provided with the inlet and outlet feed-pipes B and F, in combination with the tube D and bushings E and E', substantially as shown and described.

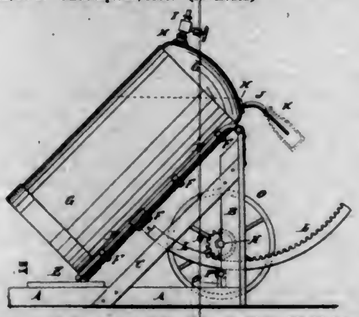
3. In a feed-water heater and purifier, the feed-pipe B, the feed-water heater C, the tube D, and bushings E and E', in combination with the pipes F, F', F², and G, the check-valve G', and the pipe I, substantially as shown and described.

4. In a feed-water heater and purifier, the feed-water heater C, the tube D, the bushings E and E', and the pipes B F F', in combination with the branch pipe H, the check-valve H', the blow-off pipe J, and the valve J', substantially as shown and described.

5. In a feed-water heater and purifier, the feed-water heater C, the tube D, the bushings E and E', and the feed-pipes B, F, F', and F², in combination with the branch pipe H, the check-valve H', the skimming-box H², the blow-off pipe J, and valve J', substantially as shown and described.

6. In a feed-water heater and purifier, the feed-water heater C, the tube D, the bushings E and E', and the feed pipes B, F, F', and F², in combination with the branch pipe G, the check-valve G', the pipe I, the branch pipe H, the check-valve H', the blow-off pipe J, and valve J' substantially as shown and described.

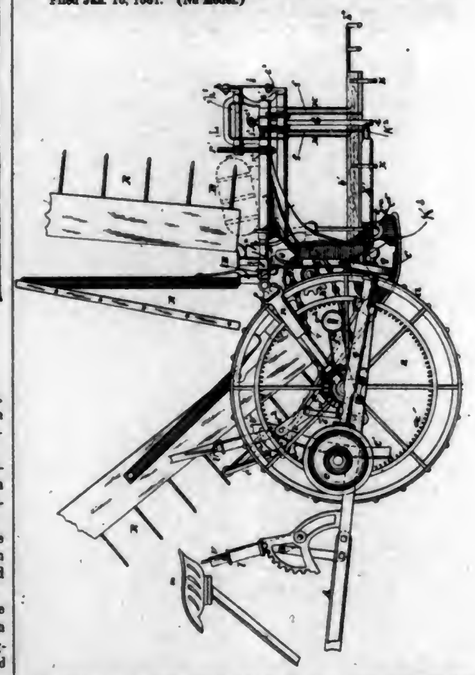
323,612. APPARATUS FOR FILLING BOTTLES WITH HIGHLY-AERATED LIQUIDS WITHOUT PRESSURE. August Werner, New York, N. Y. Filed Apr. 25, 1885. (No model.)



Claim.—1. An apparatus for filling bottles with highly-aerated liquids without pressure, constructed substantially as herein shown and described, and consisting of the stationary frame A B C, the cradle D E F, hinged to the said frame and disposed obliquely and wholly to one side of said frame, and the curved rack-bar L, connected to said cradle near its lower end, pinion-wheel M, and hand-wheel O, for adjusting the said cradle, as set forth.

2. The combination, with the cradle D E F, hinged to the stationary frame A B C, and provided with an adjusting rack-bar, said cradle being disposed obliquely and wholly to one side of said frame, and said rack-bar being connected to said cradle near its lower end, pinion-wheel and hand-wheel L M O, of the fountain G, having two openings, H, in its upper end, one provided with a stop-cock, I, and the other provided with a rubber tube, J, having rigid nozzle K, substantially as herein shown and described, whereby highly-aerated liquids can be bottled without pressure, as set forth.

323,613. HARVESTER AND BINDER. William N. Whiteley, Springfield, Ohio, assignor to Whiteley, Frazier & Kelly, same place. Filed Jan. 10, 1881. (No model.)



Claim.—1. A single wheel side and rear cut reaping-machine provided with a drag-bar, C, ratchet-lever U', and conveyer-platform *b*, combined with a shoe, C⁴, the post C³, attached to an extension of said shoe, a revolving reel, R, supported on said post, and the binding mechanism, also supported by said post, substantially as and for the purpose set forth.

2. The drag-bar C, shoe C⁴, post C³, attached to an extension of said shoe, the binding mechanism supported by said post, and the conveyer-platform *b*, supported at its inner end by said shoe, combined with the miter-gear *n'*, tumbling-shaft *n*, having the universal joint *p*, and the clutch E, substantially as and for the purpose specified.

3. A binder-table, *b'*, provided with a lever, *d*, combined with a connecting-rod *d''*, spring *j*, clutch E, and stop-lug *p*, projecting from the binder-arm *e*, as and for the purpose specified.

4. A bundle-compressor composed of the curved binder-arm *e*, secured to the shaft *s'*, and provided with the slotted arm *e²*, and the compressor-arm *f*, provided with the arm *f²*, engaging with and operated by the slot in the arm *e²*, in combination with the shaft *h²*, provided with the crank *h*, the crank-arm *e²* on the shaft *e'*, and the connecting-link *i*, substantially as and for the purpose set forth.

323,614. RIDING HARROW AND CULTIVATOR. John R. Whitemore, Chicopee, Mass. Filed Dec. 17, 1884. (No model.)

Claim.—1. In combination with the carriage of a wheel-harrow, provided with a rear cross-beam and the tooth-beams, a flat spring having one end secured across the under face of the rear cross-beam of the frame, and the other end of the spring extended and secured to the upper face of the tooth-beams by a bolt set at a distance from the end of the tooth-beams, with the end of the tooth-beam and the lower edge of the rear cross-beam adjacent to each other, substantially as described.

2. In combination with the carriage-frame of a wheel-harrow, the

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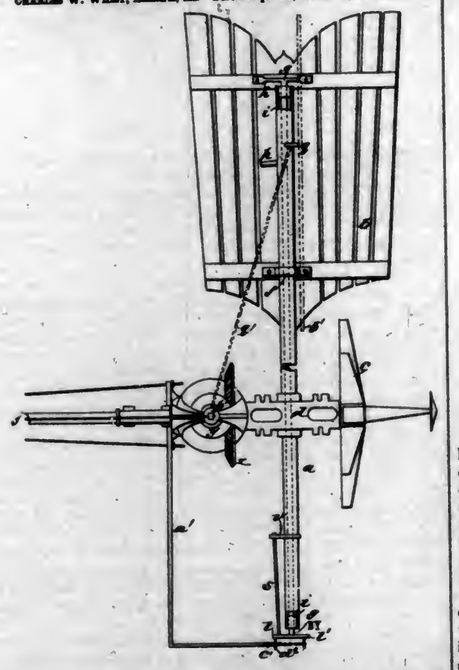


side frame-pieces of which are provided with a series of holes arranged in a direction of the length thereof, an axle-bearing provided with vertical standards having a series of holes, and a fastening pin or bolt, whereby the standards may be adjusted longitudinally and vertically on the frame, substantially as described.

3. The combination of a harrow-frame with wheels *j*, adjustable supports *k*, tooth-beams *d*, secured to the frame by flat springs *e*, and teeth *f*, all arranged and operating substantially as shown.

4. The combination of a harrow-frame with wheels *j*, adjustable supports *k*, seat *l*, tooth-beams *d*, secured to the frame by flat springs *e*, and provided with teeth *f*, all constructed and operating substantially as shown.

323,615. WINDMILL. Daniel D. Wiley, George L. Wiley, and Charles W. Wiley, Lanark, Ill. Filed Sept. 17, 1884. (No model.)



Claim.—1. The side vane of a wind-wheel, arranged to turn on the tubular supporting-arm *a*, and having a crank-shaft extending through said supporting-arm and acting by one of its crank-pins upon a rod supporting a stop and connecting with the vane-shaft, adapted to automatically shift said vane for regulating the wind-wheel, substantially as described.

2. The combination of a spring, *s*, with the unbalanced side vane, *b*, mounted on the tubular supporting-arm *a*, and having the shaft *g* extending through said arm and connected to said spring by a crank, said vane having stops *p* and *q*, substantially as described.

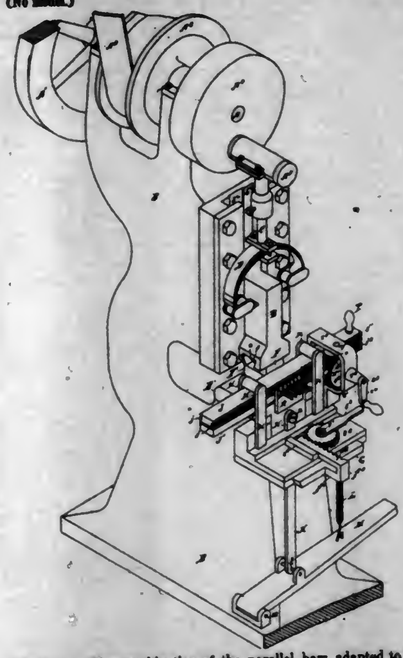
3. The side vane, *b*, arranged to turn on its supporting-arm *a*, and having a crank-arm, *l*, in combination with the stop *c'*, supported on the tail-vane, the crank and the stop being arranged to actuate the side vane when the wheel shifts around by the back thrusts on the driving-shaft, substantially as described.

4. In a windmill having the shifting side vane, *b*, crank-arm *l*, and stop *c'*, the stop-lug *c'*, located upon frame *d'* and with relation to frame *f'* as described, to allow the vane to be actuated by the stop *c'*, substantially as herein set forth.

5. The side vane, *b*, arranged to turn on its supporting-arm *a*, and having a crank-shaft with a pin or arm acting upon a stop of a rod connected with the vane-shaft for automatically shifting it to regulate the wind-wheel, and also having the frame turning with the wheel provided with a stop, *d'*, engaging with the frame or support *f'* for automatically shifting it to resist the turning of the wheel around the shaft *w* by the back thrusts on the same, substantially as herein set forth.

6. The side vane arranged to turn on its supporting-arm *a*, and having a chain, *m'*, connected to its arm *l'*, and also connected to a fixed object suitable for turning said vane upright when the wheel is shifted around parallel with the tail-vane, substantially as described.

323,616. ROD-POINTING MACHINE. John Wilson, Lowell, Mass., assignor of one-half to Jesse N. Bennett, same place. Filed Apr. 27, 1885. (No model.)



Claim.—1. The combination of the parallel bars adapted to slide longitudinally in suitable guides and provided with equal racks, the concentric spur-pinions, each engaging one of said racks, beveled gears, each concentrically connected to one of said pinions, and an intermediate beveled gear engaging said first-named beveled gears, whereby a longitudinal movement of one of said bars will cause a longitudinal movement in the opposite direction of the other of said bars and rotate a round rod placed between and in contact with said bars at right angles to the same, as and for the purpose specified.

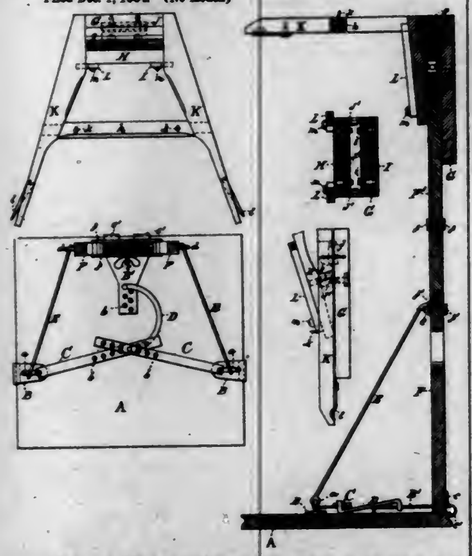
2. The combination of two parallel bars provided with equal racks, one of said bars having longitudinal grooves, suitable guides provided with projections adapted to enter said grooves, the other of said bars being adapted to be raised and lowered between said guides, a vertically-sliding block provided with anti-friction rolls arranged between said guides below said last-named bar, two plates secured to the back and front of said sliding block and provided with notches, the bottoms of which are parallel with the top of said last-named bar, the concentric spur-pinions, each engaging one of said racks, beveled gears each concentrically connected to one of said pinions, and an intermediate beveled gear engaging said first-named beveled gears, as and for the purpose specified.

3. The combination of the bed-piece, the table sliding thereon, vertical standards secured to said table and provided with projections on their inner faces, two parallel bars arranged between said standards, the upper one of said bars being provided with longitudinal grooves to receive the projections on said standards, said bars being provided with racks, pinions engaging said racks, beveled gears, each connected to one of said pinions, an intermediate beveled gear engaging said beveled gears first named, a block adapted to slide vertically between said standards and provided with rolls, a lever pivoted beneath said bed-piece, a rod connecting said sliding block and said lever, and a spring connect-

ing said bed-piece and said lever and adapted to raise said lever and sliding block, as and for the purpose specified.

4. The combination of the bed-piece, the table sliding thereon and provided with a rib, a rack-bar secured to said bed-piece and embraced between said rib, and a gear journaled on said table and engaging said last-named rack-bar, said gear, vertical standards secured to said table and provided with projections on their inner faces, two parallel bars arranged between said standards, the upper one of said bars being provided with longitudinal grooves to receive the projections of said standards, said bars being provided with racks, pinions engaging said racks, beveled gears, each connected to one of said pinions, an intermediate beveled gear engaging said beveled gears first named, a block adapted to slide vertically between said standards and provided with rolls, a lever pivoted beneath said bed-piece, a rod connecting said sliding block and said levers, a spring connecting said bed-piece and said lever, and adapted to raise said lever and sliding block, as and for the purpose specified.

323,617. BAG-HOLDER. J. Lemon Worrell, Philadelphia, Pa. Filed Dec. 1, 1884. (No model.)



Claim.—1. The bag-holding device consisting of the boards G H, the spring I, hinge J', the arms K K, clamping-wedge *g*, hinge J, and pivoted braces L L, all operating substantially as described, and for the purpose set forth.

2. The combination of the clamps B B, having links *a a'*, clamp B', rods E E, screw-eyes *d d*, braces C C, and wire spring E, with the standard F, and the platform of a scale, substantially as described.

3. The bag-holder consisting of the boards G H, spring I, hinge J', arms K K, clamping-wedge *g*, hinge J, and braces L L, in combination with the clamps B B B', rods E E, braces C C, and wire spring D, for attachment to the platform of a weighing-scale.

323,618. CORN-HARVESTER. Samuel H. Young, Bankston, Iowa, assignor to himself and Thomas Francis Kane, same place. Filed Mar. 22, 1884. (No model.)

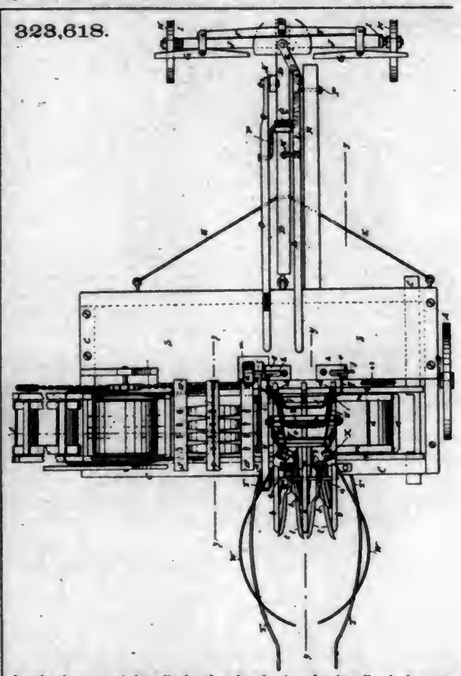
Claim.—1. In a corn harvester and husker, the combination, with the tongue D, of the caster-wheels and standards H I, the cross-bar and crank J K, and the lever L, pivoted upon the standard M, substantially as herein shown and described, whereby the machine can be readily guided and drawn along a row of corn-hills, as set forth.

2. In a corn harvester and husker, the combination, with the tongue D and frame C, of the standards N Q, the lever O, the double crank P, and the rigid bar R, substantially as herein shown and described, whereby the front of the machine can be readily adjusted to the height of the corn, as set forth.

3. In a corn harvester and husker, the combination, with the frame C, of the curved rods T, the stirrups U, and the slotted guide-standards V, substantially as herein shown and described, whereby inclined and fallen stalks are raised or straightened, as set forth.

4. In a corn harvester and husker, the combination, with the frame C, the counter-shaft *p*, and the dividers *b*, of the laterally-pivoted bent rods W, having spring *c* and shoulders *d*, the double hinge-support X Y Z *a*, the crank-shaft *f g*, having projections *h*, shoulders *i*, and tapered projection *j*, and the driving-pulleys and belt *m o n*, substantially as

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herein shown and described, whereby the bunch of stalks is drawn together and against the said dividers, as set forth.

5. In a corn harvester and husker, the combination, with the dividers *b* and the double hinge-support X Y Z *a*, of the stop-spring *k* and the stop-bar *l*, substantially as herein shown and described, whereby the movement of the said double hinge-support is limited, as set forth.

6. In a corn harvester and husker, the combination, with the frame C and the counter-shaft *p*, of the hinged forks *t*, the holding-springs *v*, the inclined shifting-springs *w*, the cylinders *y*, having clutch-teeth *z*, and zigzag grooves 4, the catch-pins and washer 1 2, and pivoted knives 5, substantially as herein shown and described, whereby the movements of the forks will cause the knives to operate, as set forth.

7. In a corn harvester and husker, the combination, with the cam-cylinders *y*, the washers 2, and the pivoted knives 5, of the spring-rods 7, having thickened ends, substantially as herein shown and described, whereby the movements of the said knives will lock the said cylinders in gear and release them, as set forth.

8. In a corn harvester and husker, the combination, with the dividers *b* and the counter-shaft *p*, of the shaft 9, the pulleys *o* 10, and belt 11, the guide-pulleys 12, the forked transfer-springs 8, and the inclined guide-springs 13, substantially as herein shown and described, whereby the ears will be transferred automatically from the forks to the carrier, as set forth.

323,619. MACHINE FOR DRAWING METAL RODS OR BARS. W. Allderdice, Chicago, Ill., assignor to the Agnew Shafting Company, same place. Filed Apr. 2, 1884. (No model.)

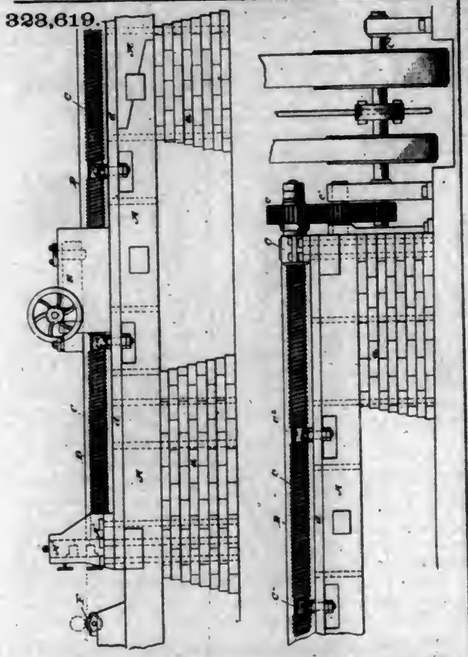
Claim.—1. The combination, with a die, a die-support, and means, substantially as described, for applying the draft on the rod in the prolonged axis of the die, of a guiding-support constructed to uphold the undrawn part of the rod in the prolonged axis of the die, substantially as and for the purposes set forth.

2. The combination, with a die and a support which holds the die with its axis in a horizontal position, of a table arranged in line with the lower surface of the die-aperture, and traveling gripping devices constructed to apply the draft in the prolonged axis of the die, substantially as described.

3. The combination, with the die and a support therefor, of carriage ways or guides, two parallel screws for actuating the carriage, and a carriage fitted to the ways and provided with nuts or interiorly-threaded parts fitted to the screws, substantially as set forth.

4. In a machine for drawing rods, the combination, with a die, horizontal carriage-guides, and means, substantially as described, for actuating the carriage, of a support for upholding the drawn part of the rod in a horizontal position, and gripping-jaws on the carriage constructed to bear laterally on the rod while said rod lies upon its said support, substantially as described.

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5. The combination, with a carriage having an interiorly-threaded part or nut provided with an open slot extending to the threaded passage, of an actuating-screw fitted to said nut, and a stationary support for the screw, constructed and arranged to pass through the slot in the movement of the carriage, substantially as described.

6. The combination, with the slotted and interiorly-threaded carriage and the actuating-screw, of a sleeve embracing a reduced part of the screw, and a standard supporting said sleeve from a stationary part of the machine, substantially as described.

7. The combination, with other parts of an operative machine for drawing rods, of two parallel screws for actuating the drawing-carriage, and a drawing-carriage composed of two interiorly-threaded nuts, a plate or part rigidly joining said nuts, and jaws mounted on said carriage for gripping the rod, substantially as described.

8. The combination, with the rigid parts of the carriage, and means, substantially as described, for actuating the carriage, of gripping-jaws pivoted thereto, right-and-left screws arranged to bear on said jaws, a rotating shaft parallel with said screws, and connecting-gears whereby the screws are simultaneously and equally turned when the shaft is rotated, substantially as set forth.

9. The combination, with the central table, D, and lower side supports or ways for the carriage, of two screws, C C', arranged over the ways, a carriage composed of nuts E', and a junction-plate, E², and rod-gripping jaws, attached to the carriage in position to hold the rod while the latter rests on the table, substantially as described.

10. The combination, with the gripping-jaws, of vertically-adjustable jaw-plates, substantially as described.

11. The combination, with the gripping-jaws, of vertically-movable jaw-plates, vertical set-screws securing said plates to the jaws, and washers interposed between parts of the plates and the jaws, substantially as described.

12. The combination, with suitable supporting parts, A, of a plate, D *d' d*, having its central part elevated, as shown, and a carriage constructed to fit said plate, and provided with gripping-jaws adapted to hold the rod while the latter rests on the said central elevated part, substantially as described.

13. The combination, with a rod-support, D, and die-supports A', of a die-block, B, having a die, B', and a removable liner, B², substantially as described.

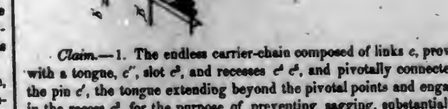
14. The combination, with uprights A', provided with shoulders or flanges *a'*, of a plate, *a²*, secured to the uprights, and clamping-screws *b*, substantially as described.

15. In combination with the screws C C' and their bearings *c²*, the fixedly-attached driving-pinions *c c*, provided with interiorly-recessed annular flanges *c³*, and washers interposed between the pinions and the bearings *c²*, and within the flanges *c³*, substantially as described.

16. The combination, with a table or similar support for the drawn rod, of a reciprocating carriage carrying rod-gripping devices, and constructed to afford a through-passage for the rod, whereby the carriage may return over the drawn rod, substantially as described.

17. The combination, with the table and carriage having a through-passage for the drawn rod, of devices for actuating the jaws by engagement with their outer portions, substantially as described, whereby the space between the jaws is left unobstructed, as set forth.

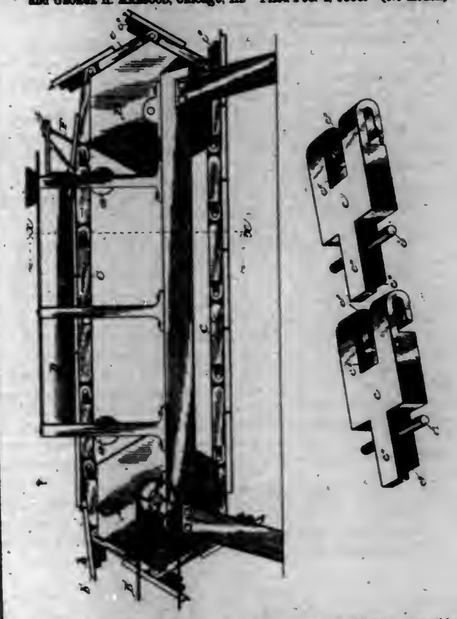
323,620. OVERDRAW-CHECK FOR BRIDLES. Frank M. Abbey, Binghamton, N. Y. Filed Dec. 13, 1884. (No model.)



Claim.—1. In combination with the bridle provided on its top piece, *c*, with the buckle *a* and loop *l*, the bridge *d*, attached at its ends to the top piece, *c*, and having its central portion loose from the same, and provided with an aperture through which the loop *l* projects, the face-piece A, having its upper end slitted longitudinally and passed under the top piece, *c*, at opposite sides of the loop *l*, and the check-rein C, detachably connected to the upper end of the face-piece A, substantially as set forth.

2. The combination of the bridle provided on its top piece, *c*, with the buckle *a* and loop *l*, the face-piece A, slitted longitudinally at its upper end, and passing freely under the bridge *d* and at opposite sides of the loop *l*, the D-shaped eye *e*, attached by its straight bar to the upper extremities of the face-piece A, the check-rein C, and the snap-hook *s*, attached to the forward end of check-rein, all combined substantially in the manner described and shown, for the purpose set forth.

323,621. CARRIER FOR CLAY AND BRICK. John W. Arbogo and George H. Arbogo, Chicago, Ill. Filed Feb. 4, 1885. (No model.)



Claim.—1. The endless carrier-chain composed of links *c*, provided with a tongue, *c''*, slot *c⁴*, and recesses *c⁴ c⁴*, and pivotally connected on the pin *c'*, the tongue extending beyond the pivotal points and engaging in the recess *c⁴*, for the purpose of preventing sagging, substantially as shown.

2. The links *c*, provided with pin *c'*, tongue *c''*, slot *c⁴*, recesses *c⁴ c⁴*, and opening *a'*, all arranged substantially as and for the purpose specified.

3. The endless carrier-chain composed of links *c*, provided with pin *c'*, tongue *c''*, slot *c⁴*, recesses *c⁴ c⁴*, opening *a'*, and pallets *b*, all constructed and connected substantially as shown.

4. The endless carrier-chain, made rigid, so that it will not bend beyond a straight line in one direction, in combination with rollers *a*, arranged at long intervals under the carrier.

5. The endless carrier-chain, in combination with box D and hopper D', said box being provided with a rake, E, as and for the purpose specified.

323,622. SELF-BASTING ROASTER. N. Robert Baar, Lowville, N. Y. Filed May 3, 1884. (No model.)



Claim.—1. A self-basting roaster consisting of a vessel sealed, except at the bottom, and a pan receiving said vessel, with an intervening closed chamber freely communicating with the interior of the vessel below the edge thereof, substantially as described.

2. A roaster for meats or other articles of food, consisting of two sections, the main section sealed at the top, fitting one within the other with an intervening chamber having unobstructed communication with the open bottom of the inner vessel below the edge of said vessel, substantially as set forth.

3. A roaster for meats, &c., consisting of two sections detachably secured together, the inner section being sealed at the top and open at the bottom, and arranged to form an intervening chamber having unobstructed communication with the interior chamber, substantially as described.

4. A roaster for meats, &c., consisting of the sections A B, the former having a spout, *b*, with an intervening chamber, *x*, surrounding the section B, and a cover adapted to close the spout *b*, substantially as set forth.

5. A roaster consisting of a section or pan, A, with inwardly-turned side and end flanges, and a section or receptacle, B, open at the lower end and adapted to fit within said flanges and rest on the bottom of the section A, substantially as described.

6. The combination of the pan A, having inturned side and end flanges, *a*, and inclined end *b*, and vessel or section B, open at the bottom and fitting within the section A, and a lid, *c*, closing the section A at one end, substantially as described.

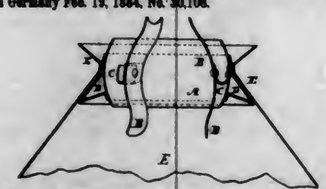
7. A bake-pan consisting of two parts, A and B, the first open at the top and the second closed at the top, open at the bottom, and arranged within the first and sealed by a body of fluid within the part A, substantially as described.

323,623. CAP FOR SHEET-METAL PAINT-CANS. Edmund K. Baker, Springfield, Mass. Filed June 22, 1885. (No model.)



Claim.—A compound cap for closing the orifice in sheet-metal paint-cans, consisting of the centrally-depressed circular metallic base-plate *c*, having the upturned border *x*, and having applied to said depressed portion a coat, *d*, of paint, the perforated metallic top plate, *e*, fitting within the border *x* of plate *c*, and the clear glass disk A, interposed between said two plates, all combined and united substantially as set forth.

323,624. LAMP-SHADE. Adolfe Bara and Ernest Desjardins-Lieux, Paris, France. Filed Dec. 26, 1884. (No model.) Patented in France July 16, 1883, No. 156,553; in Belgium Feb. 18, 1884, No. 64,196, and in Germany Feb. 19, 1884, No. 30,106.



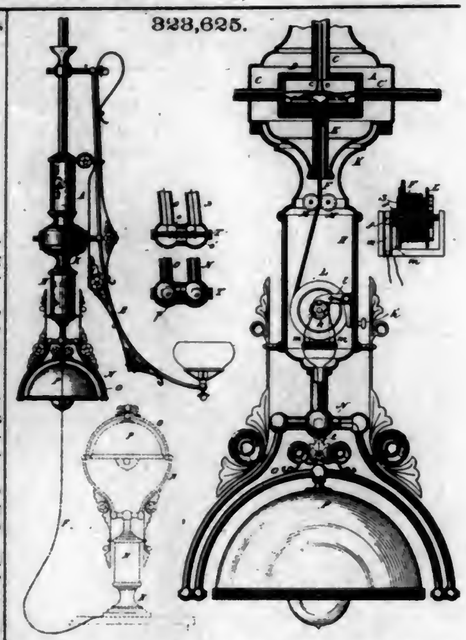
Claim.—1. The combination of a spherical zone, A, clasping-springs secured inside thereof, and an adjustable holder for a lamp-shade, substantially as described.

2. The combination of the spherical zone A, springs B C, the tapered shade-support D adjustable on said zone, as described.

323,625. CHANDELIER. Raymond F. Barker, Brooklyn, N. Y. Filed Feb. 24, 1885. (No model.)

Claim.—1. The combination, with a chandelier, of a lamp-holder adapted to be used in an upright or inverted position, a shade for the lamp

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carried by the holder, arranged to be fixed or held above the lamp in either position of the holder, a flexible connection between the holder and the chandelier, and a reel for the flexible connecting-cord or its equivalent, as set forth.

2. The combination, with a chandelier containing electric wires, of an electric-lamp holder and reversible lamp and shade supported thereby, a flexible cord containing insulated conductors and connecting the chandelier and the lamp-holder, a reel for taking up the flexible cord, and connections from the conductors in the cord to the wires of the lamp, as set forth.

3. The combination, with a chandelier containing electric wires, of an electric-lamp holder and reversible lamp and shade supported thereby, a flexible cord containing insulated conductors and connecting the chandelier and the lamp-holder, a reel within the lamp-holder, upon which the cord is wound, and electrical connections from the conductors in the cord to the conductors of the lamp, as herein set forth.

4. The combination, with a chandelier containing electric wires, of a reversible electric-lamp holder and reversible lamp and shade supported thereby, a flexible two-wire cable connecting the lamp-holder with the chandelier, a reel within the lamp-holder, upon which the cable is wound, and inclosed electrical connections from the conductors of the cable to those of the lamp, as described.

5. The combination, with a chandelier containing electric wires, of a reversible lamp-holder and reversible lamp and shade supported thereby, a flexible two-wire cable connecting the lamp-holder with the chandelier, a spring-actuated reel and locking-pawl within the lamp-holder, upon which the cable is wound, and electrical connections from the conductors of the cable to those of the lamp, as set forth.

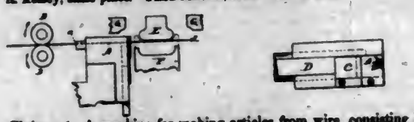
6. A reversible lamp-holder for incandescent lamps, consisting of a casing connected by a flexible cable with a chandelier and containing a reel upon which said cord is wound, in combination with hollow arms supporting a reversible lamp and shade and containing the circuit-wires, all as set forth.

7. A reversible holder for incandescent lamps, consisting of a casing and supporting-base connected by a flexible cable with a chandelier, and containing a spring-actuated reel and locking-pawl, in combination with hollow arms, a bow-shaped tube carrying an incandescent lamp and shade, joined to said arms in such manner as to permit the lamp to be reversed in position, and electrical connections from the wires in the cable to the conductors of the lamp, as herein set forth.

8. The combination, with casing H and base K, the spring-actuated reel and locking-pawl contained in said casing, and the flexible cable wound around the reel and connected to a chandelier containing electric wires, of the branching frame or arms N, the bow O, carrying an incandescent lamp and shade pivoted to the arms N, means for retaining the bow in given positions, and electric conductors extending through the bow O and arms N, and connecting the conductors of the cable with those of the lamp, as herein set forth.

9. The combination, with a chandelier containing electric wires, of a lamp-holder carrying a reversible electric lamp and formed with a casing, H, containing a spring-actuated reel and flexible cable connecting the holder with the chandelier, the guide-rollers M, and the base K, adapted to fit against the casing of the chandelier, or to support the holder when placed in an upright position on a stand.

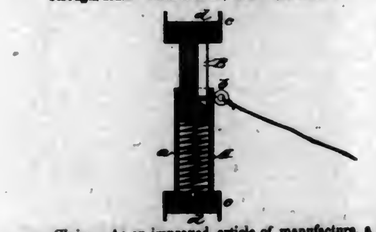
323,626. MACHINE FOR FORMING BLANKS OR ARTICLES FROM WIRE. Marshall L. Barrett, West Haven, Conn., assignor to George R. Kelsey, same place. Filed June 25, 1885. (No model.)



Claim.—1. A machine for making articles from wire, consisting in a guide having two or more longitudinal openings in substantially the same plane, through each of which openings an independent run of wire may pass, combined with a feed adapted to simultaneously force the several runs of wire through the said several openings in the guide-block, a cutter adapted to cut lengths of wire from said several runs so delivered through the several openings in the guide-block, and a former and bender arranged adjacent to the several runs of wire so delivered through the several openings in the guide-block, substantially as described.

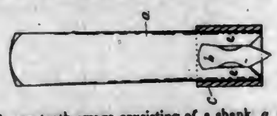
2. In a machine for forming buckle-frames, the combination of a guide-block constructed with several longitudinal openings adjacent to and parallel with each other, each of said openings adapted to receive and guide an independent run of wire, a feed adapted to receive several runs of wire and deliver the same to the several said openings in the said guide-block, a cutter arranged to cut lengths or blanks from said several wires so delivered through said several guides, a former, E, in shape corresponding to the frame to be bent, a bender, F, said bender and former arranged to receive the several cut lengths of wire between them, and the supplemental benders G G upon opposite sides of said former, substantially as described.

323,627. DENTAL JAW-BRACE. Willis J. Bickford, North Attleborough, Mass. Filed Dec. 26, 1882. (Model.)



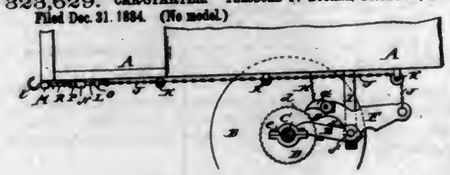
Claim.—As an improved article of manufacture, a jaw-brace consisting of a tube, A, having a socket, *c*, for receiving an elastic block, *d*, the pin B, sliding within the tube, having a socket, *e*, for receiving an elastic block, *d*, the spiral spring *a*, within the tube below the pin B, to force said pin outward, and a pin, *b*, for preventing the pin B from being thrown entirely out of the tube, substantially as set forth, whereby when said brace is in place in a patient's mouth the spring will prevent the brace from being displaced should the mouth be opened to a greater or less extent.

323,628. SAW-TOOTH SWAGE. George S. Black, Indianapolis, Ind., assignor to E. C. Atkins & Co., same place. Filed Mar. 7, 1885. (No model.)



Claim.—A saw-tooth swage consisting of a shank, *a*, having jaws *e e*, rounded inwardly at their extremities, a wedge, *b*, tapering toward its point and provided with curved recesses *g g* on both sides, and a clamping-band, *c*, substantially as and for the purpose described.

323,629. CAR-STARTER. Theodore F. Bourne, Bloomfield, N. J. Filed Dec. 31, 1884. (No model.)



Claim.—1. In a car-starter comprising a ratchet-wheel fixed to the car-axle, a lever pivoted to a swinging support and carrying a pawl adapted to engage the ratchet-wheel, and a chain or coupling connecting the lever to the draft-bar of the car, the combination, with said elements, of a stop, S, between the lever and its swinging support, substantially as herein set forth.

2. In a car-starter, the combination, substantially as hereinbefore described, of a ratchet-wheel fixed to the car-axle, a lever pivoted to a swinging support and carrying a pawl adapted to engage the ratchet-wheel, a stop, S, placed between the lever and its swinging support, a retracting-spring connecting the pawl with a relatively fixed part of the car, and a chain or coupling connecting the lever to the draft-bar of the car, as set forth.

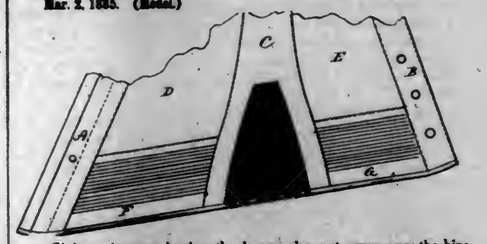
3. The combination, in a car-starter, of the car A, wheels B, axle C, ratchet-wheel D, arm E, lever F, stop S, pawl G, spring H, draft-chain J, and draft-bar L, substantially as herein set forth.

4. The combination, in a car-starter, of the car A, wheels B, axle C, ratchet-wheel D, arm E, lever F, stop S, pawl G, spring H, draft-chain J, draft-bar L, and the hanger-support I, substantially as herein set forth.

5. The combination, in a car-starter, of the car A, wheels B, axle C, ratchet-wheel D, arm E, lever F, pawl G, chain J, and a draft-bar, L, supported in keepers M N and having the collars O P and the spring R, substantially as herein set forth.

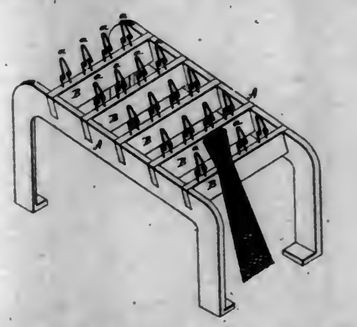
6. In a car-starter, the combination, substantially as hereinbefore described, of a ratchet-wheel attached to the car-axle, a lever pivoted to one end of a swinging support, which support is pivoted at its other extremity to the car-axle, a pawl carried upon said lever, adapted to engage the ratchet-wheel, a stop, S, between the lever and its swinging support, a retracting-spring, H, connecting the pawl with a relatively fixed portion of the car, the hanger I, chain J, pulley K, and draft-bar L, supported in keepers M N and having the shoulders O P and the spring R, as set forth.

323,630. CORSET. Morris P. Bray, Birmingham, Conn. Filed Mar. 2, 1885. (Model.)



Claim.—A corset having the lower edge cut away over the hips from front to the rear, the hip-section C, having a portion cut from its lower end, and the elastic gore H, introduced therein, secured by its edges to the edges of the opening in the hip-section, the band F, extending from the front up to the hip section, and having stays parallel with the lower edge of that section, and the back section, E, having a band, G, at its lower edge, with a series of stays parallel with the lower edge of that section, said band extending from the back to the hip section, substantially as described.

323,631. SHOW-STAND. Morris Bernner, New Haven, Conn. Filed July 11, 1884. (No model.)



Claim.—A show stand consisting of the frames A A and bars B B, extending between said frames and supported thereby, the said bars inclined backward and upward and each of said bars provided with a series of hooks, substantially as described.

323,632. PIANO-ACTION. Charles W. Brewer, Racine, Wis. Filed May 8, 1884. (No model.)



Claim.—1. In a musical instrument, one or more or a series of hammers restricted in their stroke by an adjustable stop, in combination with one or more or a series of keys restricted in their play by an adjustable stop, the stops for the keys and the stops for the hammers being adjustably connected, one relative to the other, substantially as and for the purpose specified.

2. In a musical instrument, one or more or a series of keys restricted in their play by means of an adjustable stop consisting of a strip engaging under one end of said keys and pivotally supported, substantially as and for the purpose specified.

3. In a musical instrument, a soft or piano attachment therefor consisting of a strip having pivotal supports, and engaging under one end of the keys to restrict their play, and a strip pivotally supported engaging with and carrying the hammers nearer the strings, the pivotal supports being adjustably and relatively connected and operated, substantially as and for the purpose specified.

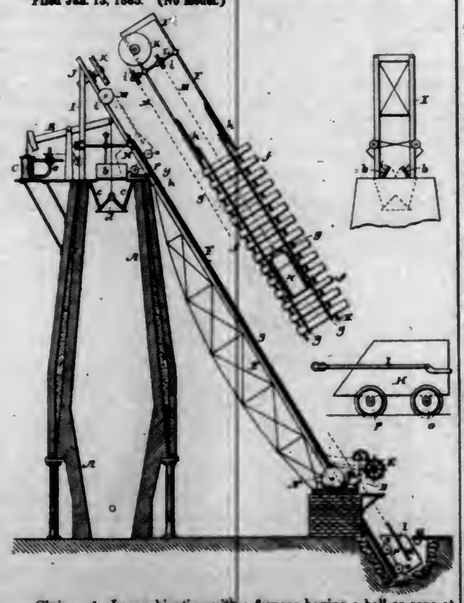
323,633. TIN-STRIP SEAL. Edward J. Brooks, East Orange, N. J., assignor to E. J. Brooks & Co., New York, N. Y. Filed June 7, 1884. (No model.)



Claim.—1. The improved method of fastening tin-strip seals herein specified, consisting in interlocking bent-up portions of the tin-strip preliminarily one within the other, and then pressing and perforating or indenting the socket which incloses the other interlocking portion or portions, substantially as illustrated and described, for the purposes set forth.

2. An improved blank for tin-strip seals, having a series of transverse bends, forming a socket and a tenon portion or portions, the latter adapted to fit within said socket and to be secured against withdrawal by pressing both together and perforating or indenting the whole, substantially as herein specified, for the purposes set forth.

323,634. BLAST-FURNACE. Fayette Brown, Cleveland, Ohio. Filed Jan. 13, 1885. (No model.)

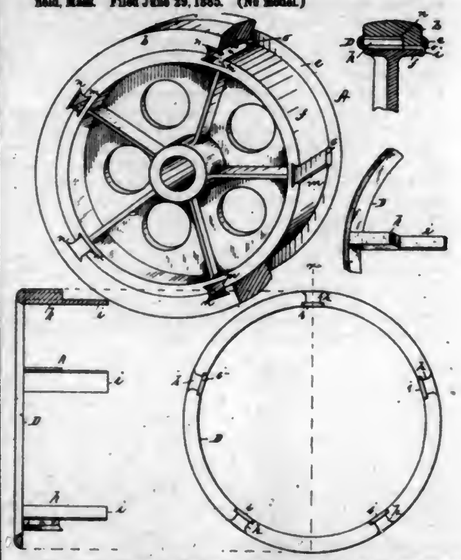


Claim.—1. In combination with a furnace having a bell or cone at its top or mouth, and a suitable stationary hoisting motor or machine, a car or carriage, and ways for the same to travel on, the combination being such, as described, that the loaded car may be hoisted from the lower terminus of the track to the upper terminus thereof and its contents dumped into the top opening of the furnace and onto the apex of the cone or bell, as set forth.

2. In combination with a furnace having a bell or cone at its top or mouth, and a suitable hoisting motor or machine, an inclined track or roadway, and a car or carriage, whereby the loaded car may be hoisted from the lower terminus of the track to the upper terminus and its contents dumped into the top opening of the furnace and onto the apex of the bell, as set forth.

3. In combination with the furnace provided with a bell or cone, the roadway leading directly to the top opening of the furnace, and the hoisting-machine, a car or carriage which travels from the hoisting-machine to a point directly over the top opening of the furnace, and means whereby the car is automatically dumped on its arrival at said point, and so as to discharge its contents directly into said top opening, all substantially as shown and described.

323,635. ELASTIC-TIRED WHEEL. William H. Chapin, Springfield, Mass. Filed June 29, 1885. (No model.)



Claim.—1. In an elastic-tired wheel, a wheel having a continuous flange on one edge of its rim projecting outwardly at right angles to the face of the rim, a series of transverse undercut grooves in the latter terminating at openings through said flange, an elastic tire having a series of undercut transverse grooves in its inner side corresponding in position to those in said wheel-rim, and a ring to bear against one edge of the tire, having arms of dovetail form fixed thereon to pass between and engage with said tire and rim, whose ends engage with one edge of the latter, all combined substantially as set forth.

2. In an elastic-tired wheel, a wheel having a continuous flange on one edge of its rim projecting at right angles to the face of the rim, a series of transverse grooves in the latter terminating at openings through said flange, an elastic tire having a series of transverse grooves in its inner side corresponding in position to those in said wheel-rim, and a ring to bear against one edge of the tire, having arms fixed thereon to pass between and engage with said tire and rim, whose ends engage with one edge of the latter, all combined substantially as set forth.

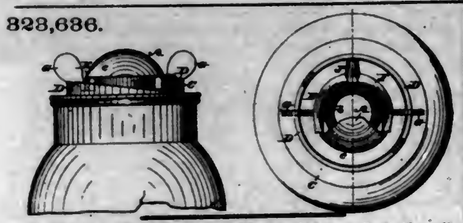
3. The combination, with a wheel having a rim and an upwardly-projecting flange on one edge thereof, of an elastic tire fitting said rim, and of a ring secured against one edge of the tire by arms rigidly attached to said ring and extending between said rim and tire, and having their ends engaged with the edge of said rim, substantially as set forth.

323,636. PRESERVE-JAR STOPPER. James Cosly, Philadelphia, Pa., assignor to G. Wells Root, Hartford, Conn. Filed June 2, 1885. (No model.)

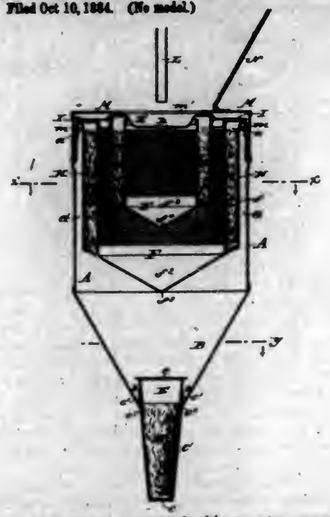
Claim.—1. A key for a preserve-jar stopper, substantially as described, having a yoke with a laterally-projecting lug, as stated.

2. A preserve-jar closure consisting of a stopper, an annulus with inclines, and a gasket, and a key formed of a yoke which partly encircles the stopper, and is provided with wings which bear on the inclines, and a laterally-projecting lug which retains the key on the stopper, substantially as described.

323,636.



323,637. OIL-STRAINER. William Connolly, South Norwalk, Conn. Filed Oct 10, 1884. (No model.)



Claim.—1. A strainer constructed with an outer case and one or more filtering-chambers having perforated side walls and an imperforate bottom tapering downward, to discharge the strained liquid from a central point of its under surface, substantially as herein set forth.

2. A strainer constructed with an outer case, A, and one or more filtering chambers, F, having double perforated side walls, *f f'*, with a filtering substance, H, interposed between them, and said strainer having an imperforate bottom tapering downward to a central point from which the strained liquid discharges, substantially as herein set forth.

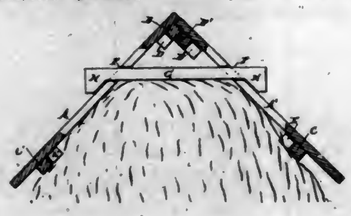
3. The straining-chamber F, constructed with perforated side walls and an imperforate bottom tapering downward to a central point from which the liquid discharges, substantially as herein set forth.

4. A strainer constructed with a case, A, having a discharge-nozzle, C, provided with a perforated bottom plate, *c*, a filtering substance, D, and a cap, E, having a perforated top, *e*, and projecting above the inner end of the spout to form a sediment-collecting pocket, *b*, substantially as herein set forth.

5. A strainer constructed with a case, A, having a discharge-nozzle, C, provided with a perforated bottom plate, *c*, and a filtering substance, D, covered by a cap, E, having a perforated top, *e*, in combination with a straining-chamber held above and dropping the liquid on the cap, substantially as herein set forth.

6. A strainer constructed with a case, A, having one or more straining-chambers, F, made with perforated sides and imperforate bottoms, a cap-plate, K, and cover M, and a discharge-spout, C, having a perforated bottom plate, *c*, perforated top plate, E, the sediment-collecting pocket *b*, and the filtering substances H D, placed in the straining-chambers and spout, all substantially as herein set forth.

323,638. STACK-COVER. Albert Cooley, Osceola, Iowa. Filed Apr. 21, 1884. (No model.)

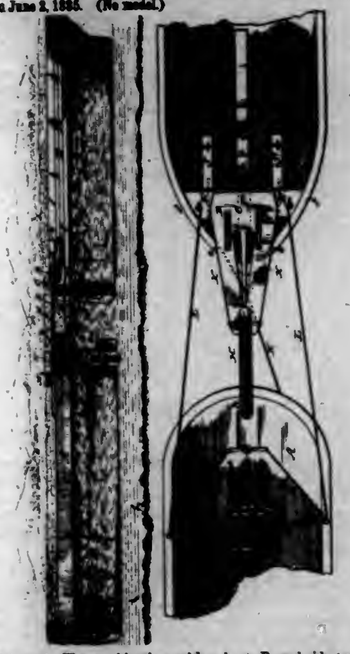


Claim.—1. A stack-cover, constructed substantially as herein shown and described, and consisting of sections provided with projecting cross-bars, the bars on adjacent sections being at different distances from the ends of the sections, said sections also having edge-notches to receive locking-bars, substantially as and for the purpose set forth.

2. In a stack-cover, the adjacent section-boards A, having projecting cross-bars B C and D E at different distances from their ends, substantially as herein shown and described, so that the said projecting cross-bars will overlap each other and the section-boards, as set forth.

3. In a stack-cover, the combination, with the section-boards A, having notches F, with inclined shoulders in their corresponding edges, of the locking-bars G, having inclined shoulders H, and the hooks I, substantially as herein shown and described, whereby the said sections will be held securely in place, as set forth.

323,639. CANAL-CONVOY. William F. Cowden, Cumberland, Md. Filed June 2, 1885. (No model.)

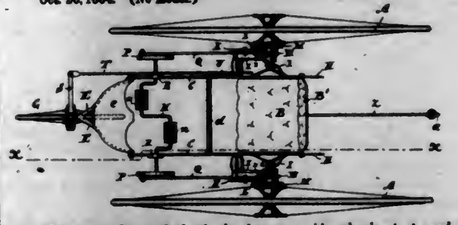


Claim.—1. The combination, with a boat, B, and side bearings, *e*, and bulwarks *f* thereon, of a carriage, C, fitted to slide between the said bearings, and having a transverse timber, E, fitting between the bulwarks when forward, a tongue to the carriage, and detents J, pivoted to the boat to rise behind the carriage, substantially as shown and described.

2. The combination of a boat, B, a carriage, C, fitted sidewise thereto, removable stops behind the carriage, and a tongue hung to the carriage on a horizontal pivot, substantially as shown and described.

3. The combination of a boat having a central rib rising from its deck, and provided with side bearings, as described, a carriage fitted between the said bearings and provided with a notch to fit upon the said rib, means for attaching the carriage to a boat ahead, and the detents J and lines L therefor, substantially as shown and described.

323,640. VELOCIPEDE. Daniel Crowley, Boston, Mass. Filed Oct. 20, 1884. (No model.)



Claim.—1. In a velocipede having two side wheels, A A, and a seat supported between the same, the combination of the bars C C D D, frames E and F, and the wheel G, as and for the purpose set forth.

2. In a velocipede having two side wheels, A A, and a seat supported between the same, the combination of the wheel G, the bifurcated frame F, connected to the axle of the wheel G, the arm S, the adjustable rod T, the lever U, and seat B, all arranged to operate as and for the purpose set forth.

3. The springs V V, in combination with the lever U, bars C and D, and seat B, as and for the purpose specified.

4. The combination of the crank-shaft N, disks P P, adjustable rods Q Q, and lever K, as and for the purpose set forth.

5. The combination, with the seat B, of the adjusting-bars J J and the bars C C D D, as shown and described.

6. The combination, with the seat B, of the adjustable bars C C and D D, for adjusting the position of the seat, substantially as shown and described.

7. The combination, with the seat B, of the adjustable back B' and the adjusting-bars H H, as shown and described.

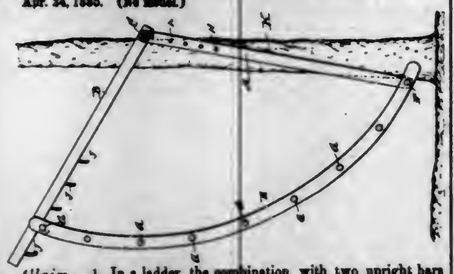
8. The auxiliary lever X, provided with a pin, *x*, and a handle, in combination with the brake W, as shown and described.

9. The bent rod Y, in combination with the lever K, pawl L, and ratchet-wheel M, as and for the purpose set forth.

10. The combination, with the hub of the wheel A, of the lever K, the pawl L, and the stopping device Y, as and for the purpose specified.

11. In combination with the seat of a velocipede, the bars C C, bars J J, crank-axle N, forked frame E, frame F, and wheel G.

323,641. TREE-LADDER. James M. Cummins, Hoskins, Ohio. Filed Apr. 24, 1885. (No model.)

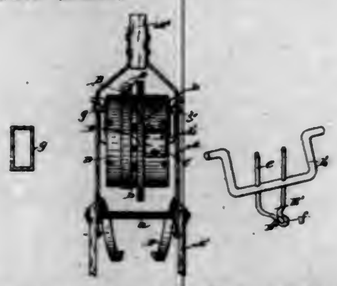


Claim.—1. In a ladder, the combination, with two upright bars united at their lower ends, and having top bars pivoted to their upper ends, of braces united by rungs and pivoted to the lower ends of the uprights, and of devices for holding the upper ends of the braces to the top bars a greater or less distance from their free ends, substantially as herein shown and described.

2. In a ladder, the combination, with the uprights A, united at their lower ends, of the bars B, pivoted to the upper ends of the bars A by a bolt, C, the downwardly-projecting hooks J on the bars B, and of the braces E, united by rungs and pivoted to the lower ends of the bars A, substantially as herein shown and described.

3. In a ladder, the combination, with the upright bars A, having apertures H, and united at their lower ends, of the bars B, having hooks J, and the braces E, pivoted to the lower ends of the bars A, and united by rungs, substantially as herein shown and described.

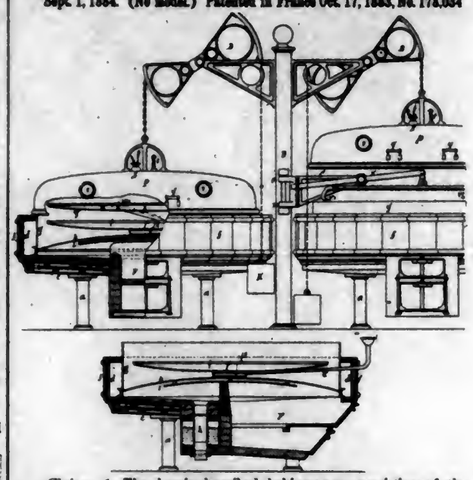
323,642. COTTON-PLANTER. John S. Daniell, Conyers, Ga. Filed May 8, 1885. (No model.)



Claim.—1. In a cotton-planter, the rolling hopper having centrally-projecting rim journaled on an angular axle carrying a depending agitator pivoted in the side bars of the frame, in combination with the links *g* for clamping the axle to the side bars, substantially as set forth and shown.

2. In a cotton-planter, the links *g*, connected to the side bars, in combination with the angular axle carrying a depending agitator, and the rolling hopper having centrally-projecting rim, substantially as shown and described.

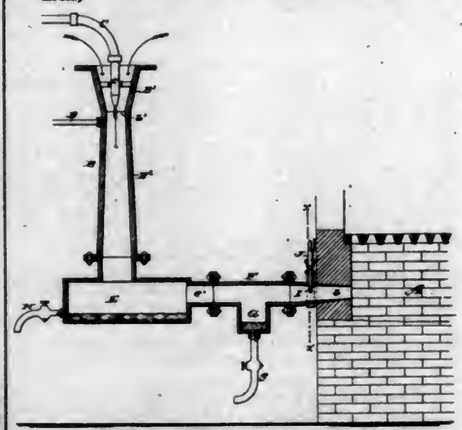
323,643. BAKER'S OVEN. Léon Dather, Fils, Paris, France. Filed Sept. 1, 1884. (No model.) Patented in France Oct. 17, 1883, No. 173,034



Claim.—1. The herein-described baking-oven, consisting of the cylindrical wall *g*, forming an inclosing-chamber surrounded by a double wall, *d f*, said chamber having a convex bottom or sole-plate, *h*, a hearth or fire-box, F, open to the under side of the convex bottom, a hollow diaphragm, *l*, above the said bottom *h*, and constructed with a central perforation, *l'*, the removable plate consisting of the convex sheet-metal plate *y*, and the plain plate *x* above said plate *y*, and so as to form an air-space between the two, the said removable plate adapted to receive the loaves to be baked, and a cover, P, adapted to close the top of the oven, but removable therefrom to permit the introduction or removal of the plate carrying the loaves, substantially as described.

2. The herein-described baking-oven, consisting of the cylindrical wall *g*, forming an inclosing-chamber surrounded by a double wall, *d f*, said chamber having a convex bottom or sole-plate, *h*, a hearth or fire-box, F, open to the under side of the convex bottom, a hollow diaphragm, *l*, above the said bottom *h*, and constructed with a central perforation, *l'*, the vessel P, arranged to receive an injection of water, the removable plate consisting of the convex sheet-metal plate *y*, and the plain plate *x* above said plate *y*, and so as to form an air-space between the two, the said removable plate adapted to receive the loaves to be baked, and a cover, P, adapted to close the top of the oven, but removable therefrom to permit the introduction or removal of the plate carrying the loaves, substantially as described.

323,644. AIR-INJECTOR FOR FURNACES AND FORGES. John B. Dave and William Walker, Jermyn, Pa. Filed May 14, 1885. (No model.)



Claim.—1. The combination, in an air-injector for furnaces and forges, of a trunk, B, having an intake, B', tapering to a throat, *b'*, and a delivery end, B², gradually enlarging from the throat to the outlet, with a steam-jet pipe, C *c*, and a water-inlet pipe, D, both arranged to discharge at or near the throat *b'*, substantially as herein set forth.

2. An air-injector comprising a pipe, B, a steam-jet pipe, C, a water-chamber, E, below pipe B, having water-outlet H, and a pipe, F, communicating at *c'* with chamber E and terminating in a discharge-nozzle, substantially as herein set forth.

3. An air-injector comprising a pipe, B, a steam-jet pipe, C, a communicating water-chamber, E, below pipe B, having water-outlet H, a pipe, F, provided with a chamber, G, and a nozzle, *b*, substantially as herein set forth.

4. An air-injector comprising a pipe, B, a steam-inlet pipe, C, a water-inlet pipe, D, opening into pipe B, a water-chamber, E, below pipe B, and having outlet H, a pipe, F, provided with a chamber, G, and a nozzle, *b*, substantially as herein set forth.

5. The combination, in an air-injector, of a pipe, B, a steam-jet pipe, C, a water-inlet pipe, D, opening into pipe B, a water-chamber, E, below pipe B, and having an outlet, H, a pipe, F, communicating at *c'* with chamber E, and provided with a chamber, G, and nozzle *b*, substantially as herein set forth.

323,645. CAR-AXLE BOX. Martin H. Dooly, Atlanta, Ga., and John D. O'Callaghan, Chattanooga, Tenn. Filed June 4, 1885. (No model.)



Claim.—1. A journal-box having its door provided with a lubricator-receptacle, which has a needle-valve extending through a lug or teat on said receptacle, said teat passing into the box through a hole or orifice therein, substantially as and for the purpose specified.

2. A journal-box having a door provided with a lubricator-receptacle and feeder, which consists of a receptacle proper, with an extended lug or teat, a needle-valve operating in said teat, and a recessed plug normally closing an orifice in said receptacle and receiving one end of the valve, substantially as and for the purpose specified.

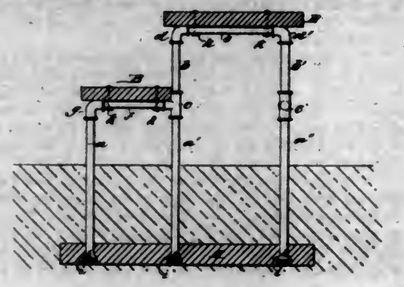
3. A journal-box having its door provided with a lubricator and pivoted at one side, said door being provided with a slot, in which normally rests a flange on the box, and having a longitudinal play on the pivot, substantially as and for the purpose specified.

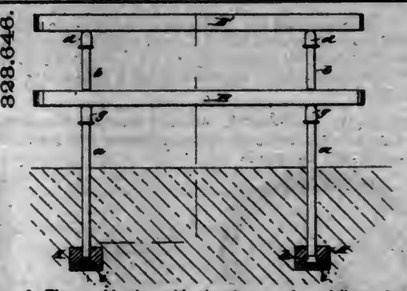
4. A journal-box having a pivoted door with a lubricator-receptacle thereon, and a brass of two pieces, one of brass having grooves and a cup-shaped tongue leading thereto, and the other a cover fitting the said brass and constructed of any suitable material, substantially as and for the purpose specified.

323,646. HORSE BLOCK OR STEP. Martin B. Duncan, Angelica, N. Y. Filed June 11, 1885. (No model.)

Claim.—1. The combination, with a riser-frame consisting of upright and horizontal lengths of pipe united by T and elbow couplings, and having flaring portions, as *h*, at the lower extremity of the upright pipes, of an anchor-block, as A, substantially as described.

2. The combination, with an anchor-block, as A, provided with shoulders, as *i i*, of a riser-frame consisting of two series of upright pipes, the lower series being provided with flaring portions, as *h*, the two series being united by T-couplings, as *c c'*, and of horizontal lengths of pipe united to the upright series by means of couplings, as *g*, *c*, *d*, and *d'*, all substantially as described.

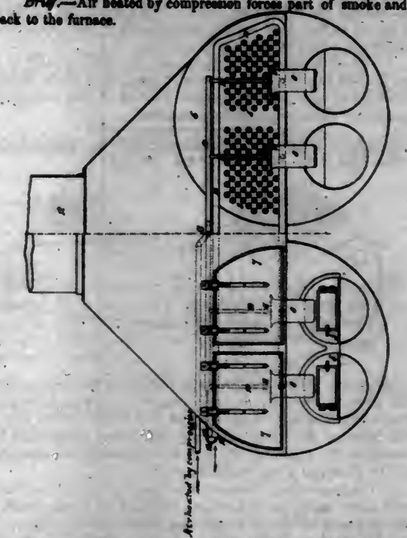




3. The combination, with riser-frames, substantially as described, of treads, as B B', united to said frames by means of U-bolts, as *k*, substantially as set forth.

323,647. STEAM-BOILER. John Elliot, Jr., and Thomas A. Cunningham, Dalbeattie, County of Kirkcudbright, Scotland. Filed Dec. 18, 1884. (No model.) Patented in England May 22, 1883, No. 2,643.

Brief.—Air heated by compression forces part of smoke and gases back to the furnace.



Claim.—1. The combination of the fire-place and flue-tubes 5 of a steam-boiler with a return-pipe, 8, leading from the smoke-box behind the tubes back to the fire, and a compressed-air pipe, 10, opening into the return-pipe to return a portion of the fire-gases after they have passed through the tubes 5 back again into contact with the fuel, substantially as set forth.

2. The combination of the fire-place and flue-tubes of a steam-boiler with a return-pipe, 8, leading from the smoke-box behind the tubes to the fire, a compressed-air pipe, 10, opening into the said return-pipe, the said compressed-air pipe having portions 13 passing through the heating-space in the furnace, substantially as described.

3. The combination of the fire-place and flue-tubes of a steam-boiler with a return-pipe, 8, leading from the smoke-box behind the tubes to the fire, and compressed-air pipe 10, opening into the said return-pipe, an air-pipe, 14, also connected to the return-pipe, and a jet-pipe, 16, from the compressed-air pipe, all substantially as set forth.

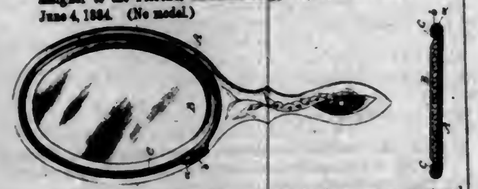
323,648. NECKTIE-RETAINER. J. Albert Eshelman, Philadelphia, Pa. Filed Apr. 27, 1885. (No model.)



Claim.—1. The within-described necktie-retainer, the same consisting of a sheet-metal plate, having opposite openings, *d d*, for the reception of the neckband of a scarf, and a central opening, *a*, with contracted entrance-slot *b* at the top for adaptation to the shank of the collar-button, as specified.

2. The combination of a necktie and its band with the within-described detachable retainer, having a central opening for the reception of the button-shank, and opposite openings, *d d*, through which the band of the tie is passed, whereby the retainer is held in position on the band, as set forth.

323,649. HAND-MIRROR. ALANSON C. ESTABROOK, Florence, Mass., assignor to the Florence Manufacturing Company, same place. Filed June 4, 1884. (No model.)

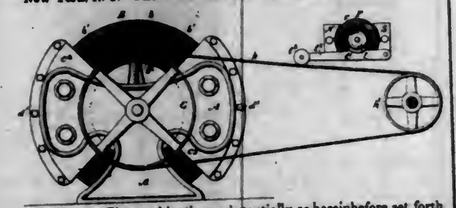


Claim.—1. The mirror-retaining wire having an open joint and provided with one or more laterally-projecting fins or plates, substantially as described.

2. The combination of the mirror-back recessed to receive a glass plate, and also laterally recessed at one or more points, and a retaining-wire having an open joint and provided with one or more laterally-projecting fins or plates, substantially as described.

3. The combination of the glass plate, the back recessed for the glass, and also laterally recessed at one or more points, and a retaining-wire having an open joint and provided with one or more laterally-projecting fins or plates, substantially as described.

323,650. REGULATOR FOR ELECTRIC MOTORS. MOSES G. FARMER, New York, N. Y. Filed Nov. 13, 1884. (No model.)



Claim.—1. The combination, substantially as hereinbefore set forth, with a source of electricity, of an electric motor included in the circuit thereof, a second electric motor included in a circuit derived from the circuit including the first-named motor, and means, substantially such as described, for modifying the rate of revolution of the first-named motor by the action of the second motor.

2. The combination, substantially as hereinbefore set forth, with an electric motor having its field-magnet coils and its armature-coils included in branch circuits, of a regulating electric motor included in circuit with said field-magnet coils, a brake applied to said regulating-motor, a driving-belt applied to the first-named motor, and an arm or lever for controlling said brake, which arm or lever rests upon and is operated by the variations in the tension of said belt.

3. The combination, substantially as hereinbefore set forth, of an electric motor, a second motor for controlling the first-named motor, a belt driven by the first-named motor, and devices, substantially such as described, for controlling the rate of revolution of the second motor by the variations in the resistance offered to the first-named motor through said belt.

323,651. ELECTRO-MAGNETIC HEATING APPARATUS. MOSES G FARMER, Newport, R. I. Filed Mar. 14, 1885. (No model.)



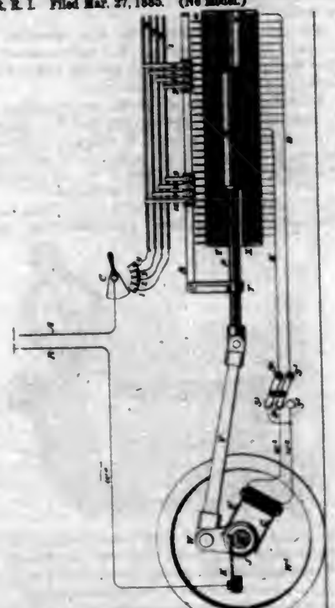
Claim.—1. The combination, with a core of magnetic metal having one or both ends divided into thin plates separated by narrow passages, of a coil of comparatively large size and low resistance surrounding the middle portion of the core, as and for the purpose set forth.

2. The heating electro-magnet having a coil of comparatively large size and low resistance surrounding the middle portion of a core, composed of thin iron plates, some of which project beyond the others, the projecting ends being separated from each other by intervening spaces, as set forth.

3. The combination, with a vessel for containing a substance to be heated, of an iron core the poles of which project into the vessel, and of a coil of low resistance surrounding the middle portion of said core, as set forth.

4. The combination, with a vessel for containing a substance to be heated, of an iron core the poles of which project into the vessel, radiating-plates attached to the ends of said core, and a coil of low resistance surrounding the middle portion of the core, as herein set forth.

323,652. ELECTRO-MAGNETIC MOTOR. MOSES G. FARMER, Newport, R. I. Filed Mar. 27, 1885. (No model.)



Claim.—1. In an electro-magnetic motor, the combination, with a sectional helix composed of separate groups of connected sections, and a reciprocating core, of the following devices or their described equivalents, viz: stationary conducting-bars, and sliding contacts for completing the circuit from the sections of the helix successively, and a rotating commutator and connections for completing the circuit alternately to the groups of sections of the helix at opposite ends of the core alternately, as and for the purpose set forth.

2. In an electro-magnetic motor, the combination, with a sectional helix and reciprocating core, of the following devices or their described equivalents, viz: stationary conducting-bars, a switch for connecting one or more of said bars to the circuit, sliding contacts for completing the circuit from the sections of the helix to the bars successively, a rotating commutator, and connections for completing the circuit to the sections of the helix at opposite ends of the core alternately, as herein set forth.

3. In an electro-magnetic motor, the combination, with a sectional helix and reciprocating core, of the following devices or their described equivalents, viz: stationary bars, and a switch for connecting one or more of the same in circuit, sliding contacts for completing the circuit from the sections of the helix, a rotary commutator, and connections for completing the circuit to the sections of the helix on opposite sides of the core alternately, and a circuit-shifting switch, through which the current to the sections of the helix passes, as and for the purpose set forth.

4. In an electro-magnetic motor, the combination, with a sectional helix, a reciprocating core, and means for completing the circuit from said sections successively, of contact-plates for completing the circuit to the sections of helix and automatically governing devices for altering the position of the same, whereby the circuit to more or less of the sections may be interrupted, as and for the purpose set forth.

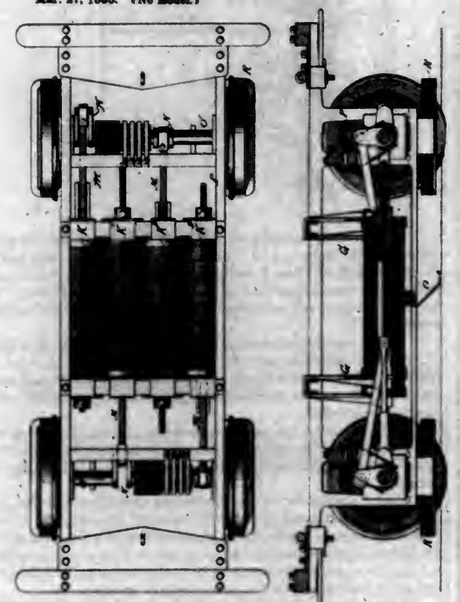
5. In an electro-magnetic motor, the combination, with a sectional helix, a reciprocating core having a stroke of uniform length, and means for completing the circuit from said sections successively, of contact-plates for completing the circuit to the sections of helix, and means for altering the position of said contact-plates, whereby the current to more or less of the sections may be interrupted, as and for the purpose set forth.

6. In an electro-magnetic motor, the combination, with a sectional helix, a reciprocating core, and means for completing the circuit from the sections successively, of contact-plates for completing the circuit to the other sections, and a centrifugal governor driven by the motor and adapted to vary the position of the contact-plates, whereby more or less of the sections are disconnected therefrom, substantially as set forth.

7. In an electro-magnetic motor, the combination, with a sectional helix, reciprocating core, and means for completing the circuit from said sections successively, of the following devices or their equivalents, viz: two contact-plates with inclined or beveled surfaces, a centrifugal governor for moving the same out of contact with more or less of the terminals of the sections of the helix, a rotating commutator, and connections to the movable contact-plates, whereby the circuit is completed to more or less of the sections in each half of the helix alternately, as set forth.

8. The combination, with the sectional helix and reciprocating core, of stationary contact-bars, and a switch for connecting one or more in the circuit, the sliding contacts arranged to bear upon said bars and in the path of the free terminals of the sections of the helix, a rotating commutator, one-half of the surface of which is metallic and connected with the circuit, contact-strips bearing on said commutator, and connections from the strips to the sections on opposite halves of the helix, as and for the purpose specified.

323,653. ELECTRIC MOTOR. MOSES G. FARMER, Newport, R. I. Filed Mar. 27, 1885. (No model.)



Claim.—1. In an electro-magnetic motor, the combination, with a sectional helix or helices and a reciprocating core or cores, of one or more commutators arranged to be moved by the movement of the core or cores, and independent commutator-brushes connected with the helix-sections, respectively, and arranged to make contact successively with the conducting-plates of the commutator, whereby the inductive section or portion of the helix is kept near the end of the core as it moves, as set forth.

2. In an electro-magnetic motor, the combination, with sectional helices and reciprocating cores, of a cylindrical commutator, of insulating material, for each pair of helices, having spiral contact-strips, and adapted to be revolved by the movement of the cores, brushes bearing on the commutator, and electrical connections from the several sections of a helix to said brushes, as set forth.

3. The combination, with a series of four co-operating sectional helices and reciprocating cores, of two cylindrical commutators, of insulating material, having spiral contact-strips and adapted to be revolved by the movement of the cores, brushes bearing on the commutators, and electrical connections from the sections of two of said helices to the brushes of one commutator and similar connections from the sections of the remaining helices to the brushes of the other commutator, as set forth.

4. The combination, with one or more sectional helices and reciprocating cores, of one or more commutators, each composed of an insulating-cylinder revolved by the movement of the cores, and two sets of spiral contact-strips secured to the opposite sides of the cylinder, two sets of brushes bearing on the spiral contact-strips and connected with the sections of the helices, and electrical connections for directing the current to either of the two sets of contact-strips, whereby the direction of movement of the cores may be reversed, as set forth.

5. In an electro-magnetic motor, the combination, with a sectional helix and reciprocating core, of a commutator adapted to be revolved by the movement of the core, and consisting of an insulating-cylinder provided with continuous circular contact-strips, and spiral or diagonal strips connected therewith, brushes bearing on the spiral strips and connected with the sections of the helix, and brushes connected with the circuit-wires bearing on the continuous strips, substantially as set forth.

6. The combination, with a sectional helix and reciprocating core, of a commutator adapted to be revolved by the movement of the cores, and consisting of an insulating-cylinder provided with continuous circular contact-strips, and two sets of spiral or diagonal strips connected therewith, brushes bearing on the spiral strips and connected with the sections of the helix, other brushes bearing on the continuous strips connected with one of the circuit-wires, and permanent connections from the other circuit-wire to the several sections of the helix, as set forth.

7. The combination, with the main coils of an electro-magnetic locomotive, of coils of high resistance in multiple arc with the main coils and surrounding the lower portion of the wheels, as and for the purpose specified.

8. The combination, with the main coils of an electro-magnetic locomotive, of coils of high resistance in multiple arc with the main coils and surrounding the lower portion of the wheels, and means for making or breaking the circuit through said coils without affecting that through the main coils, as and for the purpose set forth.

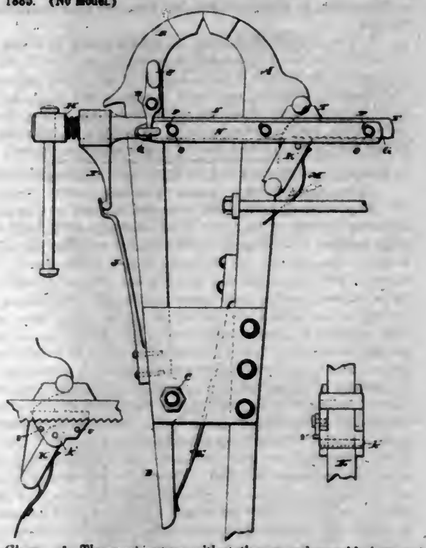
9. The combination, with the sectional helices and reciprocating cores of an electro-magnetic motor or engine, of commutators for directing the current through the sections of the helices in the manner described, and having two sets of contact-strips, electrical connection for conveying the line-current to one set of said strips at a time, and a switch for shifting the current from one set to the other, as and for the purpose set forth.

323,654. WATCH-CASE. RICHARD E. FENNER, Chicago, Ill., assignor to Charles K. Giles, same place. Filed Mar. 19, 1885. (No model.)



Claim.—In a watch-case, an externally-threaded movement box or band provided with an exterior flange near its front edge and a snap-flange on its back edge, in combination with an internally-threaded ring-center and a back-cap constructed to be snapped over the snap-flange on the box, substantially as and for the purposes set forth.

323,655. VISE. OLE FLAGSTAD, HAMAR, Norway. Filed May 6, 1885. (No model.)



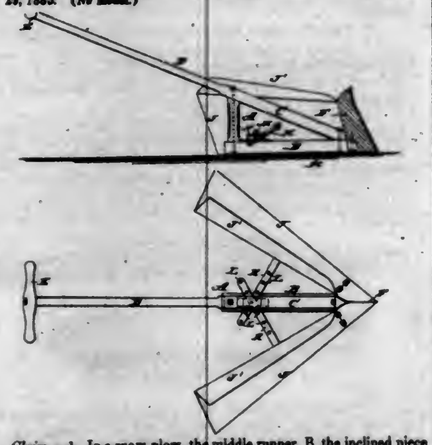
Claim.—1. The combination, with stationary and movable jaws and a spring for holding the movable jaw in contact with the stationary jaw, of a yoke encircling the jaws and provided at one end with teeth, a pawl pivoted to the stationary jaw and engaging the teeth of the yoke, a screw having a bearing in said yoke and engaging the stationary jaw, and devices, substantially as described, for disengaging the pawl from the teeth, substantially as set forth.

2. The combination, with the stationary and movable jaws and the

spring secured to the rigid jaw and bearing against the lower end of the movable jaw, of the yoke encircling the jaws and provided with teeth at one end and a depending arm at the other, a pawl pivotally secured to the stationary jaw and engaging the teeth on the yoke, a spring secured to the movable jaw and engaging the depending arm, and a screw passing through the yoke and engaging the movable jaw, substantially as set forth.

3. The combination, with the stationary and movable jaws and a spring for holding the jaws in closed adjustment, of the yoke provided with teeth, the pivoted pawl constructed to engage said teeth, the bar having inclined slots therein, pins passing through the slots and entering the yoke, the lever for moving the bar, and the screw passing through the yoke and engaging the movable jaw, substantially as set forth.

323,656. SNOW-PLOW. Julius Frank, Warsaw, Ill. Filed Apr. 29, 1885. (No model.)



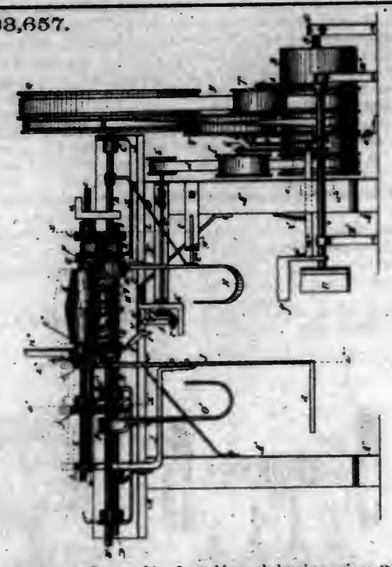
Claim.—1. In a snow-plow, the middle runner, B, the inclined piece C, secured thereto and extended to form a handle, D, the share F, secured in front of the middle runner, the wings J, hinged to the share on opposite sides of said middle runner, and the braces K, hinged to the inner sides of the wings and adjustably connected to the upper side of the middle runner, B, thereby relieving the handle of strain, substantially as set forth.

2. A snow-plow consisting of the middle runner, B, having a clip, N, on its upper side provided with a screw, M, the share F, the wings J, hinged to the share on opposite sides of middle runner and provided with flanges J, projecting outward at an angle to said wings, the braces K, hinged to the inner sides of the wings and having apertures for screw M to engage, and the inclined piece C, secured to the middle runner and extended rearward to form a handle, D, substantially as set forth.

323,657. MACHINE FOR MAKING UPHOLSTERING-SPRINGS. P. Fraser, Hamilton, Ontario, Canada. Filed Nov. 4, 1882. (Model.)

Brief.—The end of the wire is inserted in a hole in a square shaft supported vertically at the center of the lower edge of the inclined bed of the machine. By pressure on a foot-treadle a swinging belt-tightener is thrown into operation and the square shaft is partly rotated, making a hook. The body of the wire is bent toward the free end of the hook by an adjacent bending-lever operated by hand. This hooked end of the wire is then secured in a notched pin on the coiling-drum, and the drum is caused to rotate by another swinging belt-tightener operated by another foot-treadle. During the coiling the wire is pressed into the grooves of the drum by a pressure-roller journaled in a swinging frame, the pressure being regulated by a foot-lever. One half of the coiling-drum is mounted on the power-shaft. The other half is on a separate sliding shaft in line with the power-shaft. The power is transmitted by gears from the power-shaft to a counter-shaft parallel with it, and thence to the sliding shaft, and from the counter-shaft at its sliding-shaft end by gears to the pressure-roller shaft. The coiled wire is severed by cutters, one of which is carried on the coiling-drum and the other on a shaft rotated by gearing from the power-shaft. A sliding guard operated by a knee-lever prevents the spring from flying off the drum when the wire is severed. A final bend is made on the end of the spring first bent by a lever pivoted on the shaft of the pressure-roller, and having a projection which forces the wire into a depression on the drum. The finished spring is removed by releasing the belt-tightener, swinging back the pressure-roller by the foot-lever, and sliding back the left half of the coiling-drum by means of a knee-lever. The wire is loosened from the drum by throwing a third swinging belt-tightener into operation on a reversing-belt.

323,657.



Claim.—1. In a machine for making upholstering-springs, the combination of the frame A A' A'', shafts B B', right and left cone-halves E, counter-shaft D, pinion L on right end of counter-shaft, pinion *m* on left end on counter-shaft, and pinion *o* on shaft B' for revolving the cones, all arranged and constructed substantially as and for the purpose specified.

2. In a machine for making upholstering-springs, the upper half, F, of a cutter inserted in the collar G, and the lower half, *q*, inserted in the right half of the cone E, and means for rotating the collar and cone for cutting off the wire automatically after each spring is formed, substantially as specified.

3. In a machine for making upholstering-springs, the devices for operating cutters F *q*, viz: the combination of the shaft B, pinions H I, cone E, shaft *c*, and collar G, constructed and arranged substantially as specified.

4. In a machine for making upholstering-springs, a press-roller, K, on the end of shaft *i*, and made to revolve on and with the cone E, the same being hung on a swing-frame, J, terminating in a foot-lever, *d*, at the bottom, by which the roller can be pressed on the cone while a spring is being formed around the cone, and elevated above it after it is finished and cut to facilitate its removal, substantially as specified.

5. In a machine for making upholstering-springs, the devices for revolving the press-roller K, consisting of the combination of the shaft B, its pinion H, counter-shaft D, its pinions L *m*, shaft *i*, its pinion *j*, intermediate pinion, *n*, and its shaft *k*, all constructed and arranged to carry motion from the main shaft B to the press-roller K, substantially as specified.

6. In a machine for making upholstering-springs, the combination of the sliding shaft B', bearings C' C'', left half of cone E, and knee-lever O', attached to said shaft for withdrawing left half of cone E from its right half to remove the finished springs, as specified.

7. In a machine for making upholstering-springs, the device for bending the wire, consisting of the shaft *d'*, spring *d''*, brackets *h'' d'*, bevel-gears *i' i''*, movable post *f'*, and lever *g'*, substantially as specified.

8. In a machine for making upholstering-springs, the combination, with the post *f'*, bevel-gears *i' i''*, spindle *c'*, and pulley *b'*, of the power-pulley R, belt *m''*, passing over pulleys *b'* and R, the friction-pulley *l'*, bearing against belt *m''*, standard *k'*, bracket *m⁴*, toe-lever *j''*, shaft 4, and spring *r*, all constructed and operating substantially as described.

9. In a machine for making upholstering-springs, the combination, with the cone E, shafts B B', counter-shaft D, and pinions H L I *m* o, of the devices for tightening the belt *y*, consisting of the foot-lever U, shaft 4, friction-pulley T, and standard 5, all constructed and made to operate substantially as and for the purposes specified.

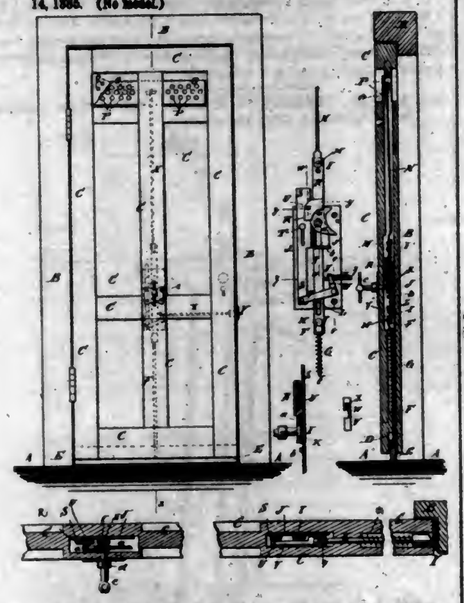
10. In a machine for making furniture-springs, the devices for still further bending the wire, consisting of the combination of the lever *n⁴* on the loose collar A around the shoulder of the roller K, and provided with a rounding-point, *x'*, a recess, *c²*, formed in the cone E for the said lever-point *x'* to operate in to bend the wire, substantially as specified.

11. In a machine for making upholstering-springs, the combination, with the cone E, shafts B B, counter-shaft D, and their driving-pinions, of the devices for tightening the reversing-belt *z*, consisting of the combination of the friction-pulley V, standards *a'* 3, connecting-rod W, shaft 4, bearings D' D'', and foot-lever U, all constructed and operating substantially as and for the purpose specified.

12. In a machine for making furniture-springs, a movable spring-holder, M, to partially surround the right end of cone E, and provided with a knee-lever, N, and a bracket, *g*, made to slide loose on the shaft B, by which means the said spring-holder may be shifted horizontally, as specified.

13. The combination, in a machine for making upholstering-springs, of the knee-lever N, rod *c''*, brackets *i g*, spring-holder M, and shaft B, constructed and arranged substantially as and for the purpose specified.

323,658. DOOR. Jeuleus Gamblee, Crankill, N. J. Filed Apr. 14, 1885. (No model.)

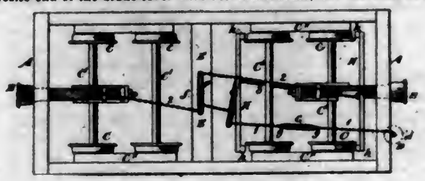


Claim.—1. The combination, with a door, C, having top and bottom openings, of the slides O E I, the rods N F, connecting the said slides, the spiral spring G, placed upon the lower rod, F, the spring R, attached to the slide I, and having pin U, the sliding-bar S, having perforations to receive the said pin U, the elbow-lever V, having its long arm connected with the slide S, and having a slot, W, with side opening in its short arm, the rod X, engaging with the slotted arm of the elbow-lever V, and the spiral spring Z, placed upon the said rod X and pressing it outward, substantially as herein shown and described, whereby the said slides will be operated automatically to cover and uncover the top and bottom openings as the door is closed and opened, as set forth.

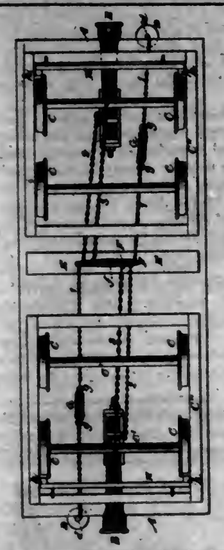
2. The combination, with the door C, the central slide, I, connected by the rods N F with the top and bottom slides, O E, and having shoulder *b*, and the spring R, attached to the said slide I, and having its recessed lower end beveled, of the double cam *a*, having its upper arm beveled, and the key *c*, secured to the cam-hub, substantially as herein shown and described, whereby the said slides can be thrown out of connection with the rod X, and the said top and bottom slides operated by hand, as set forth.

323,659. AUTOMATIC CAR-BRAKE. Jonah B. Gatheright, Louisville, Ky. Filed Dec. 19, 1884. (No model.)

Claim.—An automatic car-brake consisting of an ordinary hand winding-shaft, and a winding-chain having a spring portion intermediate between the winding-shaft and the end of a pivoted brake-lever, thus rendering the winding-chain elastic or extendible, a chain connecting the opposite end of the brake-lever with the brake-beam, and the same end



323,659.



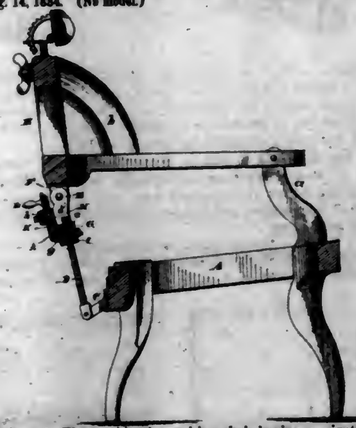
of the pivoted lever connected by chain with the draw-bar, substantially in the manner and for the purposes specified.

323,660. PROCESS OF MANUFACTURING ILLUMINATING-GAS. Charles M. Gearing, Pittsburg, Pa., assignor of one-half to J. R. Mckee, same place. Filed Apr. 8, 1885. (No model.)



Claim.—The process herein described of manufacturing illuminating-gas, the same consisting in injecting the products of combustion of burning liquid fuel, along with a current of steam and air and a hydrocarbon, simultaneously into a highly-heated retort or retorts, whereby the same, in a thoroughly-diffused condition, are instantaneously and mutually decomposed, forming a fixed gas, substantially as specified.

323,661. BARBER'S CHAIR. Henry Gibb, Philadelphia, Pa. Filed Aug. 14, 1884. (No model.)



Claim.—1. The combination, with a chair having a pivotal back, of a depending metallic frame pivoted to said back, a bevel-wheel sup-

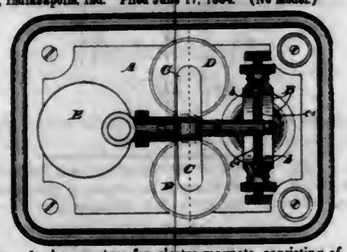
ported in said frame and having a screw-threaded opening, and an operating-wheel journaled in said frame, and meshing with the bevel-wheel of a screw-threaded rod pivoted to the chair and engaging the bevel-wheel, the said rod being located in a line passing through the pivotal bearing-frame and the pivotal bearing of the screw, substantially as set forth.

2. The combination, with a chair having a pivoted back, of the metallic frame pivoted to the chair-back and having the oval-shaped loop at its lower end, a bevel-wheel located within said loop and provided with a screw-threaded opening, an operating-wheel journaled to said frame and meshing with the bevel-wheel, and the screw-threaded rod pivoted to the seat and passing through the bevel-wheel and walls of the loop, the said rod being located in a straight line passing through the pivotal bearing of the metallic frame and the pivotal bearing of the rod, substantially as set forth.

323,662. COMPOSITION FOR BENGAL LIGHTS. CHARLES GERHARD, New York, N. Y. Filed Mar. 19, 1885. (No specimens.)

Claim.—A compound for Bengal lights, consisting of a mixture of nitrate and chlorate of strontium, chlorate of potash, powered glass, and flour, with an alcoholic solution of a resinous substance—such as shellac or resin, or a mixture of the two—about in the proportions above described.

323,663. ARMATURE FOR ELECTRO-MAGNETS. JAMES F. GILLILAND, Indianapolis, Ind. Filed June 17, 1884. (No model.)

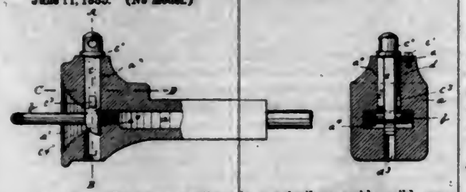


Claim.—1. An armature for electro-magnets, consisting of an armature proper, formed of a flat bar with an enlarged center provided with a hole, and a round straight armature-rod passing through said hole, substantially as set forth.

2. The combination of the straight flat bar C, having an enlarged central portion, *c*, through which is formed a hole, and a round straight rod, C', passing through said hole, forming an armature for electro-magnets, substantially as set forth.

3. The combination of the armature-post, pivot-screws therein, a round straight armature-rod having pivot *c'*, straight flat armature C, having enlarged center *c*, and the magnets, substantially as set forth.

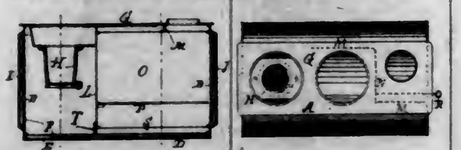
323,664. CAR-COUPLING. ALBERT GOLDSMITH, Salem, Mass. Filed June 11, 1885. (No model.)



Claim.—1. In a car-coupling, the vertically-movable solid coupling-pin *c*, located in a perforation, *a''*, of even size throughout its length in the upper wall of the draw-head *a*, and having a cam-shaped or curved lower end, as described, in combination with side projections, *c³*, spring *d*, and cover *e*, as and for the purpose set forth.

2. The draw-head *a*, with its flaring mouth *a'*, and vertical perforation *a''*, of even size throughout its length, combined with the solid pin *c*, having curved or cam-shaped lower end, strengthening-rib or guide-rib *c''*, projection *c³*, and spring *d*, all arranged and combined substantially as described.

323,665. SUMMER COOKING-STOVE. EDWARD P. GORDON and HORATIO HOBBS, Concord, N. H. Filed Aug. 14, 1884. (No model.)



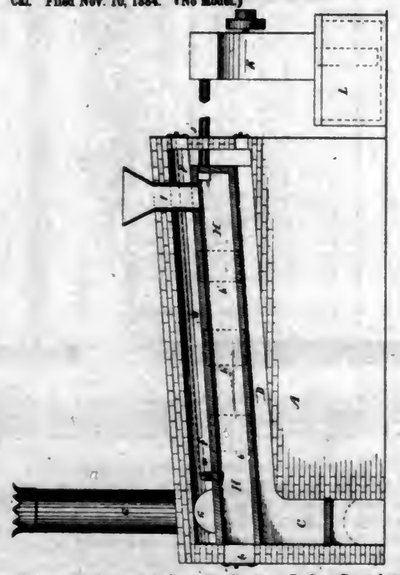
Claim.—1. A cooking-stove having unpacked top and griddle-holes in its top, and the remainder of its body packed to resist radiation by a filling of mineral wool or other non-conducting material between two metallic shells, as set forth.

2. A packed cooking-stove having an inclosed fire-pot near one end, with an ash-door in said end, an interior oven with its door at the opposite end of the stove-body, and an annular space for the caloric-current between the oven and the packed outer wall, as set forth.

3. A stove having a substantially cylindrical body with a flat top, a fire-pot at one end, an interior oven, and a flue leading from the fire-pot entirely around the oven to the funnel, so as to give a generally helical movement to the caloric-current from front to rear of the stove, substantially as set forth.

4. A stove having a substantially cylindrical body with a flat top, a fire-pot at one end, and an interior oven, a flue leading from the fire-pot entirely around the oven to the funnel, and a covered opening from said flue through the partition which separates it from the ash-pit, to provide for cleaning said flue, substantially as set forth.

323,666. ORE-ROASTING FURNACE. EDMUND GREEN, Oakland, Cal. Filed Nov. 10, 1884. (No model.)

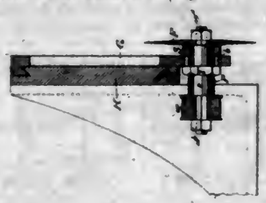


Claim.—The furnace A, having a fire-box, C, flues D, and return-flues F, in combination with the ore-chambers H, air-passage M, communicating with the open air at the rear end and with the forward end of the ore-chambers through pipes *m*, the pipe J, communicating with the end of the ore-chamber, the suction-blower K, and the condensing-tank L, with which the blower communicates, all substantially as herein described.

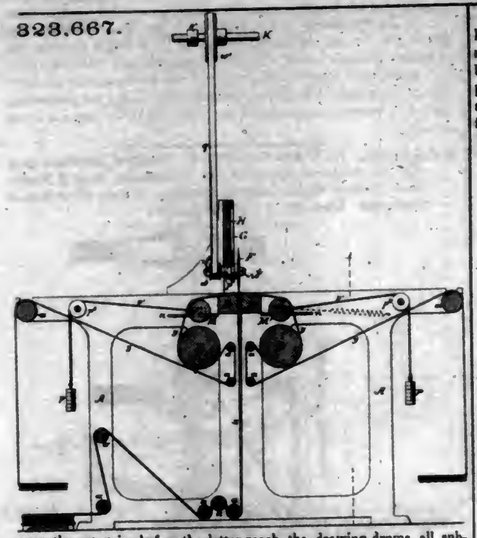
323,667. MACHINE FOR CUTTING DOUBLE-PILE FABRICS. ROBERT C. GREENWALDE, Philadelphia, Pa. Filed Nov. 24, 1884. (No model.)

Claim.—1. The combination of the bearing-bars D D', the drawing-drums B B, the pile-cutters, mechanism for actuating said drums and cutters, tension bars or rollers M, and means for causing said bars or rollers to bear upon the cut strips before the latter reach the drawing-drums, all substantially as set forth.

2. The combination of the bearing-bars D D', the drawing-drums B B, the pile-cutters, a slide carrying the spindles of said cutters, mechanism for rotating the drums and cutters and reciprocating the slide, tension bars or rollers M, and means for causing said bars or rollers to bear



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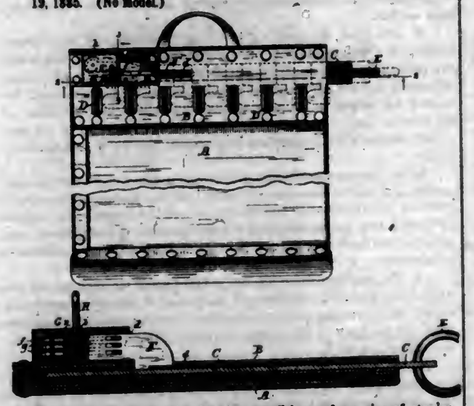
upon the cut strips before the latter reach the drawing-drums, all substantially as specified.

3. The combination of the slide carrying a series of spindles, each having a belt-pulley and cutter, mechanism for reciprocating the slide, a counter-shaft located above and centrally within the limits of reciprocation of said slide, a pulley, *w'*, on said counter-shaft, and a belt, *q*, adapted to said pulley *w'* and to the pulleys of the cutter-spindles, as set forth.

323,668. WITHDRAWN.

323,669. WITHDRAWN.

323,670. MAIL-BAG. ALVIN S. HAINES, Slatington, Pa. Filed May 19, 1885. (No model.)



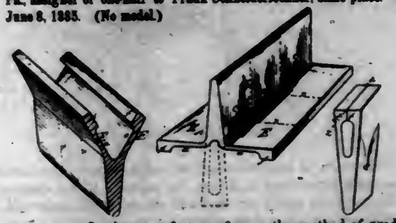
Claim.—1. The combination, in a mail-bag, of a series of staples, a pocket-flap provided with a series of vertical slots for the staples, and with a horizontal slot in its outer face, a lock attached to said pocket-flap and projecting through one end thereof, a sliding strap within said pocket-flap, a series of angular sheet-metal bolts projecting laterally from said strap for engaging the staples, and an angular link attached to said strap through the horizontal slot of the pocket-flap, the outer end of said link being adapted to enter the lock, substantially as described.

2. A fastening-strap for mail-bags, consisting of a solid strap of leather provided with sheet-metal bolts rigidly secured thereto, said bolts projecting laterally beyond the edge of the strap and having tongues parallel therewith, substantially as described.

3. A fastening-strap for mail-bags, consisting of a solid strap of leather provided with sheet-metal bolts rigidly secured thereto, said bolts projecting laterally beyond the edge of the strap and having recesses whose inner edges are even with said edge, the lateral projections being provided with tongues parallel with said strap, substantially as described.

4. In a mail-bag, the combination of a pocket-flap provided with a longitudinal slot for the locking-link, and with vertical slots for the staples, a sliding strap within said flap provided with a series of locking-bolts, a link attached to said strap through said horizontal slot of the pocket-flap, provided with a series of slots at its outer end, and a lock attached to said flap, provided with a series of spring-actuated tumblers for engaging the slots of said link, substantially as described.

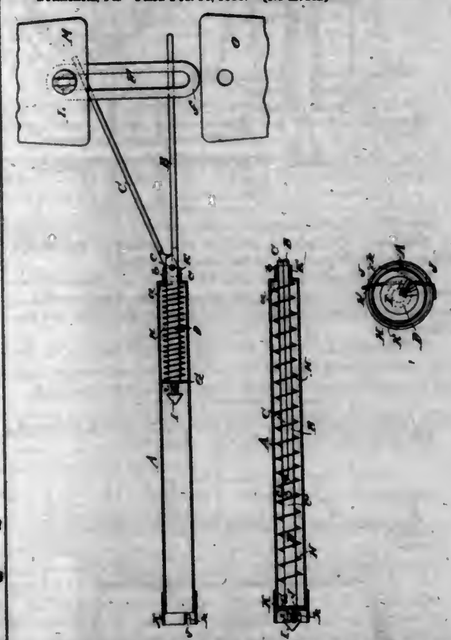
323,671. MANUFACTURE OF AXES. VICTOR HALTER, Pittsburg, Pa., assignor of one-half to Frank Schneiderlochner, same place. Filed June 6, 1885. (No model.)



Claim.—1. In the manufacture of axes, the method of producing a solid steel ax, which consists in reducing an ingot bar or billet to the form of a blank bar of approximately Y shape in cross-section, by rolling, separating the bar into ax-lengths, and then welding the separated wings or webs together to form the head and eye, substantially as described.

2. In the manufacture of axes of solid steel, the method herein described, which consists in rolling an ingot bar or billet to an approximately Y shape, then severing the blank into ax-lengths, and then welding the separated wings or webs together.

323,672. CAR-COUPLING TOOL. EDWARD A. HAMILTON, New Bethlehem, Pa. Filed Feb. 16, 1885. (No model.)



Claim.—1. A coupling-link holder comprising a handle, a pair of arms held to a shank adapted to slide along the handle, and one or both of said arms having a heel or projection adapted to be set against the handle to hold the arms withdrawn therefrom and separated at their outer ends, and a spring acting to draw the arms back from between the draw-heads as the cars are coupled, substantially as herein set forth.

2. The combination, in a coupling-link holder, of the tubular handle A, a shank, D, guided therein and having attached arms B C, said arm C being pivoted at *c* to the shank, and having a heel, *c'*, adapted to enter a slot, E, in handle A, substantially as specified, and a spring, H, acting to draw the arms B C back into the handle A, substantially as herein set forth.

3. The combination, in a coupling-link holder, of the tubular handle A, a shank, D, guided therein and having attached arms B C, said arm

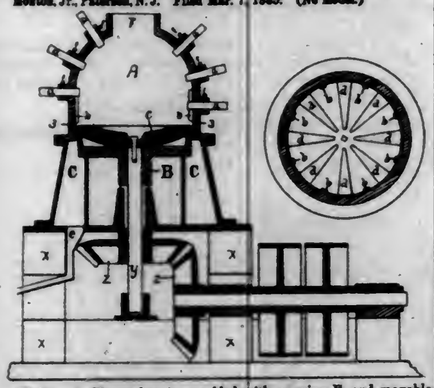
C being pivoted to the shank at *c* and having a heel, *c'*, adapted to enter a slot, E, in handle A, and the spring H, acting to draw the arms B C into handle A, substantially as specified, of the arrow-head I on shank D, and the spring J, held to handle A or a cap thereon, substantially as herein set forth.

323,673. CUTTER-HEAD. Benjamin R. Hand, Camden, N. J., assignor to himself and George A. Mauger, same place. Filed May 11, 1885. (Model.)



Claim.—As an improved article of manufacture, a cutter-head consisting of the cutter-head A, having the rabbets *a a'*, the shoulders B, and the removable caps E, provided with the dowel-pins *b*, the said caps projecting over the edge of the cutter-head, as set forth.

323,674. ROCK-PULVERIZER. Jacob L. Hayward, Framingham, Mass., assignor of two-thirds to Thomas C. Simonton and Thomas C. Simonton, Jr., Paterson, N. J. Filed Mar. 7, 1885. (No model.)

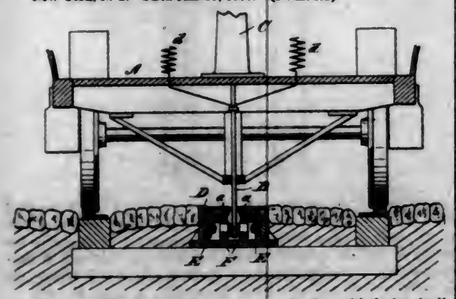


Claim.—1. The casing A, provided with opening F, and movable bars *a a*, substantially as and for the purposes set forth.

2. In a rock-pulverizer, the horizontal disk B, and removable concave plate *c*, provided with arms *d d*, in combination with the casing A, provided with the movable bars *a a*, substantially as and for the purpose set forth.

3. The casing A, provided with opening F, and bars *a a*, the disk B, the plate *c*, having arms *d d*, the chamber C, having openings *e*, and shaft *y*, in combination, substantially as and for the purpose set forth.

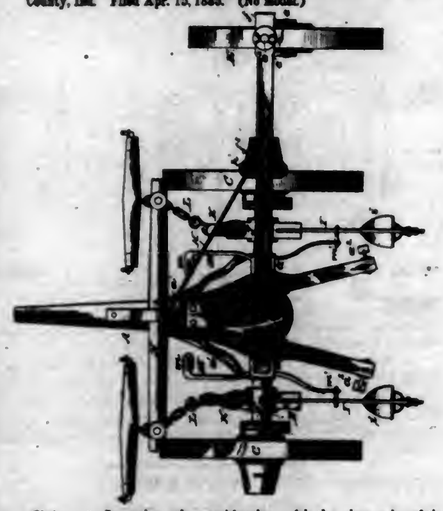
323,675. ELECTRIC GRIP FOR RAILWAYS. John C. Henderson, New York, N. Y. Filed Jan. 23, 1885. (No model.)



Claim.—1. In electric railways, the combination, with the longitudinally-slotted tube D, arranged between the rails of the track upon which car carrying the motor is designed to run, of the flanged rail-shaped the conductors E E within the tube on opposite sides of its longitudinal slot, and the vertically-adjustable bar B, with its attached wheels or rollers F F, arranged to bear under the flanges of said conductors on opposite sides of said bar, and serving to give increased traction, substantially as specified.

2. The combination of the motor-car A, the longitudinally-slotted tube D, the flanged rail-shaped conductors E E within the tube, the vertically-adjustable bar B, with its attached insulated wheels or rollers F F, arranged on opposite sides of said bar and to bear against the under sides of the flanges of the rails or conductors E E, and the conducting-wires *d d*, essentially as shown and described, and for the purposes herein set forth.

323,676. PLOW AND CULTIVATOR. Robert M. Henderson, Louisville, Ind., assignor of one-half to John W. Henderson, James M. Henderson, Jr., Francis Marion Henderson, and Homer B. Goen, all of Jackson County, Ind. Filed Apr. 15, 1885. (No model.)



Claim.—1. In a plow, the combination, with the plow-axle, of the guide-wheel running in a frame pivoted to one end of the guide-wheel bar, the double eye pivoted to the plow-axle, and the guide-wheel bar provided with a series of holes by which it may be connected to the pin of the double eye, substantially as described and shown, and for the purpose set forth.

2. In a plow, the combination of the plow-axle, the guide-wheel running in a frame pivoted to one end of the guide-wheel bar, the double eye pivoted to the plow-axle, the guide-wheel bar provided with a series of holes in one end of it, and the plate f^3, having holes therein, and the hooked bar hinged to the main plow-shaft and engaging with either of the holes in plate f^3, according to the direction of the travel of the machine, substantially as described and shown, and for the purpose set forth.

3. In combination with the axle having a central upwardly-cranked portion, and the tongue secured to such axle, the seat-supports *d d*, secured at their lower ends each to the arms of the cranked axle near its lower end, and having their other ends extended up and forward and united above the tongue at a point in advance of the axle, substantially as set forth.

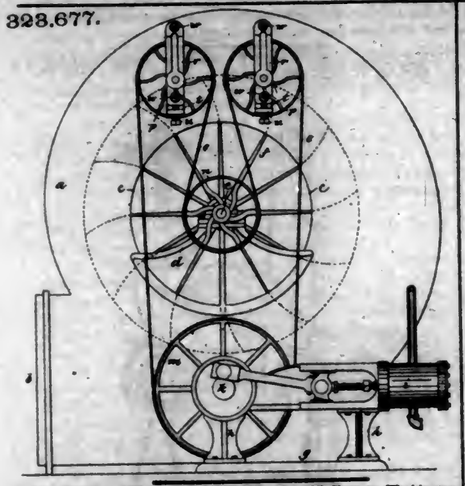
4. The combination, with the cranked axle, the tongue, and the marker-bar pivotally supported on such axle, of the seat-support *d d*, secured to the cranked axle near its lower end and projected up and forward to a point above the tongue in advance of the cranked axle, substantially as set forth.

5. The combination of the double-beam cultivators P, having guiding-handles *p*, the sockets R, having double eyes *r*, and pins *r'* on which said double beams are pivoted, foot-lever M, having coupling-rod *m'*, axle B, cranked upward in the center, upon which sockets R are pivoted, clevises K, pivoted to sockets R and provided with holes *k'*, stay-chains L, draft-bar O, main double-tree N, and main shaft A of the plow, having forked ends provided with the swinging hooks a^3, substantially as described and shown, and for the purpose set forth.

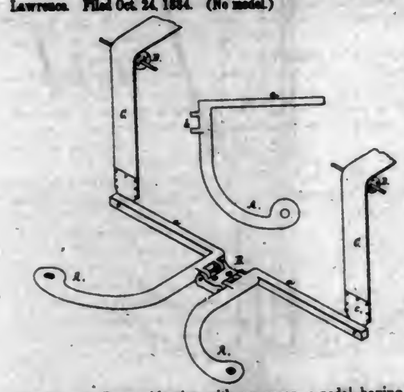
323,677. STEAM FAN-BLOWER. John C. Hendry, Boston, Mass. Filed July 5, 1884. (No model.)

Claim.—The combination of the base and blower-case fixed thereon forming a single rigid frame-work, with the fan-shaft and attached pulley and actuating-engine fixed to the base with its pulley-shaft having its pulley below and in the same vertical plane with the fan-shaft pulley and of greater diameter than said pulley, both the said shafts having their bearings on the said frame-work, the idler-pulleys adjustably connected to the blower-case above the fan-shaft pulley and in the same vertical plane, and the continuous belt running over the several pulleys, in the manner and for the purpose specified.

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323,678. PEDAL FOR ORGANS. Seth W. Herrick, Washington, N. J., and Phillip J. Lawrence, Easton, Pa.; said Herrick assignor to said Lawrence. Filed Oct. 24, 1884. (No model.)



Claim.—1. In combination with an organ, a pedal having two arms projecting substantially in the direction of the length of the organ, one being inside of the organ-case and secured to or connected with the exhaust-bellows strap, the other extending outside and in front of the case, and forming the foot-lever, substantially as described.

2. In combination with an organ, a pedal having an arm projecting inwardly, substantially in the direction of the length of the organ, and secured to or connected with the exhaust-bellows strap, and an outwardly-projecting arm forming the foot-lever, such pedal being hinged or secured at an incline, whereby the motion of the foot-lever when pressed upon is downward and inward toward the organ.

3. In combination with an organ, a pedal having an arm extending inside of the organ-case in the direction of the length of the organ, such arm being pivoted to or adjustably connected with the exhaust-bellows strap, whereby such strap is made to retain its same relative position during the tread of such pedal, substantially as described.

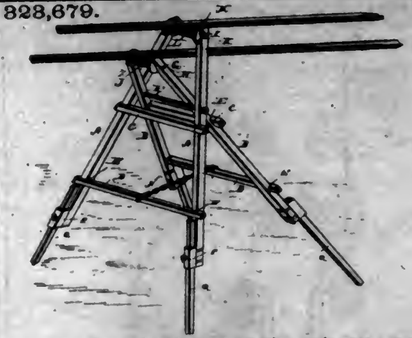
323,679. BELT-SUPPORTER. Columbus Hedshaw and Elwood Hedshaw, Snow Hill, Ind. Filed June 12, 1885. (No model.)

Claim.—1. A belt-supporting device consisting of two diverging pairs of legs having pulleys journaled in their upper ends, and having means for adjusting the lower ends of the legs at different distances from each other, as and for the purpose shown and set forth.

2. A belt-supporting device consisting of two diverging pairs of legs of unequal length having pulleys journaled in their upper ends, the pulley of the longer pair of legs being removable, and having means for adjusting the legs at different angles of divergence, as and for the purpose shown and set forth.

3. In a belt-supporting device, the combination of a pair of longer legs having a pulley journaled removably in their upper ends, a pair of shorter legs having a pulley journaled in their upper ends, cross-pieces connecting the legs, a rod traversing the legs near their upper ends connecting them pivotally, and a chain secured at one end to one of the cross-pieces of one pair of legs and engaging a pin upon a cross-piece of the other pair of legs, as and for the purpose shown and set forth.

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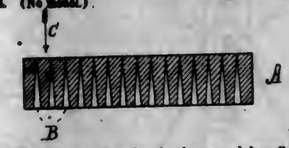


4. In a belt-supporting device, the combination of a pair of longer legs connected by cross-pieces, and having notches or open bearings in their upper ends provided with caps for closing them, a pair of shorter legs formed with bearings at their upper ends and connected by cross-pieces, pulleys journaled in the said bearings, a rod passing transversely through the legs near their upper ends, connecting them and pivoting them to each other, and a chain attached to the cross-piece of one pair of legs and engaging a pin upon the cross-piece of the other pair of legs, as and for the purpose shown and set forth.

5. A belt-supporting device consisting of legs having notches in their outer faces, one pair longer than the other, and formed with bearings in their upper ends, cross-pieces fitting removably in the notches of the legs, pulleys journaled in the bearings of the legs, a rod passing transversely through the legs near their upper ends, connecting them pivotally, and a chain attached at one end to one of the cross-pieces of one pair of legs, and engaging a pin upon a cross-piece of the other pair of legs, as and for the purpose shown and set forth.

6. In a belt-supporting device consisting of two pairs of diverging legs provided with pulleys at their upper ends and adjusted at their lower ends by means of a chain attached to one pair of legs and engaging a pin upon the other pair of legs, the combination, with the said legs having staples or sleeves at their lower ends, of extensions fitting in the said staples or sleeves, and means for adjusting the extensions in the said staples or sleeves, as and for the purpose shown and set forth.

323,680. FILTER-BED. Edgar Holden, Newark, N. J. Filed Aug. 30, 1884. (No model.)



Claim.—The filtering-plate herein shown and described, adapted to remove the impurities combined mechanically with the fluid, the same consisting in a plate provided with minute tapering holes having their smaller ends presented to the flow of the unfiltered fluid, substantially as and for the purpose set forth.

323,681. CAKE-MACHINE. Daniel M. Holmes, Arlington, N. J. Filed Nov. 8, 1884. (No model.)

Claim.—1. The combination, with the dough-chamber having inward-projecting scrapers A^9, of the two packing-rolls A^5 A^5, provided with alternating radial arms arranged to revolve toward each other and descend in the middle, as shown and described.

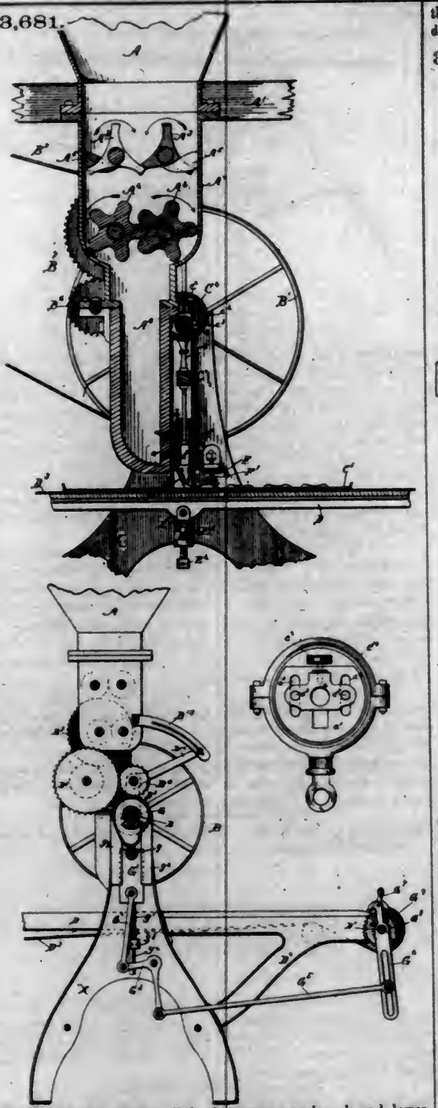
2. The combination, with the force-feed rolls A^4 A^4, having corrugations meshing with each other, as described, of the case or chamber having enlarged openings or passages *ta ta* at the ends of the rolls, as and for the purpose described.

3. The combination, with the dough-chamber, of the corrugated feed-rolls A^4 A^4, arranged to revolve away from each other, and the packing-rolls A^5 A^5, consisting of radial arms located above the feed-rolls and arranged to revolve toward each other, and the scrapers or projections A^9 A^9, attached to the sides of the case and alternating with the arms of the packing-rolls, as described.

4. The combination, with the dough-cylinders, their plungers, and the devices for feeding dough, and gears for varying the feed, of the main drive-shaft B and the adjustable eccentrics C^4, as and for the purpose described.

5. The plate C, having dough-cylinders a^3 bored therein, in combination with the stuffing-boxes a^4, the nozzles a^5, and the plungers C', as and for the purpose described.

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6. The dough-cylinders C, having upper opening, *b*, and lower opening, *a*, with stuffing-box at the top, in combination with the plunger C', working between said openings, as shown and described.

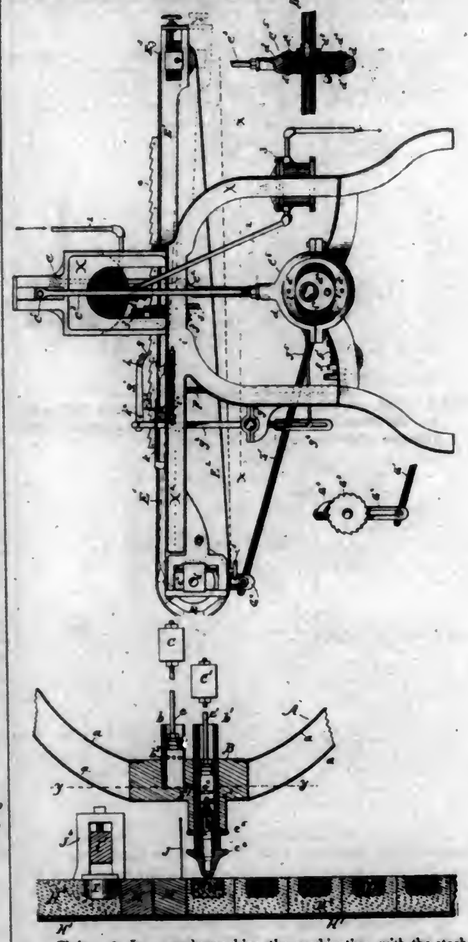
7. The combination, with the dough-discharging nozzles, of the table hung horizontally at one side of the nozzles, and its oscillating devices, consisting of the jointed blocks E², set-screws E⁴, hanger-bars E³, cams E, for depressing the hanger-blocks, and sets of spiral springs *d*², for raising it, substantially as shown and described.

8. The hub *g*, with arm g^{10}, in combination with the adjustable cam g^{11}, having scale, the pointer g^{12} and bolt g^{13}, and the working mechanism of the cake-machine, consisting of spring-seated slide G', pitman G^2, elbow-crank G^3, pitman G^5, the lever G^6, bearing-pawl, and the belt-roller and ratchet operated upon by said pawl, as described.

9. The combination, with a set of dough-delivering devices, of an endless apron and two sets of mechanism for giving intermittent motion to the belt, one mechanism for spacing the cakes and the other being independent of the first and variable for varying the shape of the cakes, as shown and described.

10. The combination, with a set of dough-delivering nozzles and an endless belt, of a main drive-shaft, means for transmitting motion from the drive-shaft to the belt in an intermittent manner, and a cam located on the main drive-shaft and made of a shape to correspond to and govern the shape of the cakes being formed by giving a variable draw to the dough as it issues from the nozzles, as set forth.

323,682. CANDY-MACHINE. Daniel M. Holmes, Arlington, N. J. Filed Jan. 27, 1885. (No model.)



Claim.—1. In a candy-machine, the combination, with the stock chamber having a hollow casing for steam-heating, of positive feed devices surrounded by the steam-chamber, and maintained at a high temperature to prevent crystallization of the candy in the feed devices, substantially as and for the purpose described.

2. The combination, with the hollow casing A, having walls *a a*, of the solid block B, having feed-chambers drilled therein, and provided with feed devices, substantially as shown and described.

3. The combination, with the stock-chamber in a candy-machine, of a positive force-feed consisting of two communicating cylinders and two plungers, one of which serves to feed from one cylinder to the other, and the other of which plungers serves to discharge the stock through nozzles, substantially as described.

4. The combination, with the stock-chamber and the discharge-nozzles, of a cylinder and plunger, and a downwardly-opening valve arranged between the plunger and nozzle to close on the upward movement of the plunger and prevent the suction of air up into the nozzles, thus promoting uniformity of feed, as described.

5. The feed mechanism consisting of block B, with detachable nozzle-sections c^3 c^4, cylinder *b*, with plunger *c* and holes b^2, cylinder *b'*, with plunger *c'*, valve-seat c^3, and valve c^4, substantially as and for the purpose described.

6. The combination, with the stationary feed-nozzles in a candy-machine, of a feed-table supported at one end upon a horizontal axis, and lifting mechanism for raising and lowering the feed-table to and from the feed-nozzles, substantially as and for the purpose described.

7. The combination, with the stationary feed-nozzles in a candy-machine, and a relatively stationary row of dies for molding-pits, of a feed-table having an up-and-down motion to and from the dies and nozzles, and trays with a molding matrix, whereby the rise of the table is made to mold the pits and at the same time receive candy into the previously-formed pits or molds, as described.

8. The combination, with the molding-beds and the dies, of a knife or sharp edge adapted to be buried beside the dies as they enter the molding-beds to prevent said dies from bulging the material of the matrix into the previously-formed pits or molds, substantially as described.

9. The combination, with the main frame, with projecting arm X^2 and the feeding devices, of the feed-table hung upon journals in the end of said arm, the lifting-rods F, arms F' F^2, and the main shaft D, provided with cam F^4, as and for the purpose described.

10. The combination, in a candy-molding machine, with the feed-nozzles, a set of corresponding dies for molding pits, and a laterally-adjustable frame carrying the same, of a subjacent table with molding-trays and a movable device, J, connected to the dies, as described, and adapted to be struck by the rims of the trays to shift the dies laterally to jump the same into the next tray, substantially as set forth.

11. The combination, with the dies and knife J, of rack-bars J', segmental pinions J^2, with arms J^3, and spring i^5, the laterally-adjustable frame J^4, carrying the dies, hook-lug *h'*, and perforated lug *i*, the pawl-bar *g*, arms *g'*, with pins *h* and h^2, spring-catch *k*, tilting trigger k^2, and spring and rod i^7 i^8, substantially as and for the purpose described.

12. The molding-trays having ratchet-strips *e* attached to their sides and extending the full length of same, as and for the purpose described.

13. The combination, with the molding-trays having ratchet-strips *e* attached to their sides, of the transverse pawl-bar *g*, carried by arms *g'*, arms g^2, shaft g^3, arm g^4, rod g^5, and eccentric g^6 on the main shaft, substantially as and for the purpose described.

14. The combination, with the candy-feeding devices, of the table, a projecting arm, X^2, having a vertical slot, c^3, vertically-adjustable block *c'*, carrying the journal of the table, and set-screw c^2 for adjusting the height of the table to adapt it to operate with respect to the candy-feeding devices with trays of different thicknesses and pattern, substantially as described.

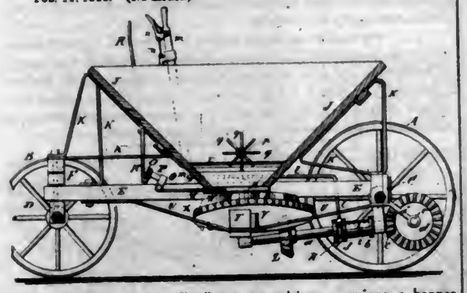
15. The combination, with the candy-feeding devices and the table hung at one end, of the lifting-bars F, arms F', rock-shaft F^3, adjustable arms F^2, having bracket *f*, worm *f'*, segmental gear f^2, and cam F^4 on the main shaft for adapting the lifting devices to the change in the level of the table, substantially as described.

16. The combination, with the plungers of a candy-feeding cylinder, of an adjustable eccentric for operating said plungers with a variable throw to regulate the feed, as described.

17. The adjustable eccentric consisting of strip *d*, clamp-ring *d'*, with lips *l*, adjustable eccentric block d^2, with flange l^2, rigid disk d^3 on the shaft, and bolts d^4, in combination with the rod C^3, cross-bar C', and the plungers of a candy-feeding device, substantially as shown and described.

18. The combination, in a candy-machine, with the hollow steam-heated chamber A, of steam-pipes 1 and 2, and the trap 3 for condensed water, as and for the purpose described.

323,683. LIME-DISTRIBUTER. John Hotham, Hillside, Pa. Filed Feb. 11, 1885. (No model.)



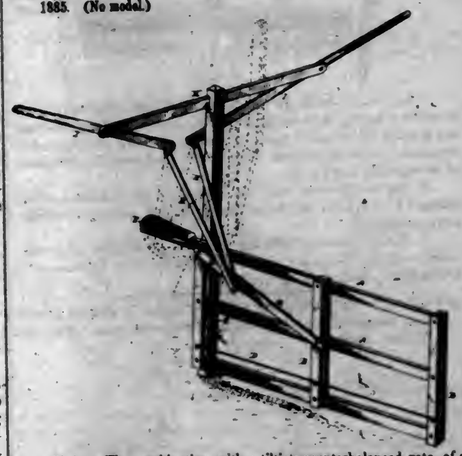
Claim.—1. A lime-distributer comprising a carriage, a hopper supported thereon, and a revolving distributing-wheel arranged at an angle to the plane of support of the carriage, with its outer edge higher than its inner edge, substantially as set forth.

2. In a lime-distributer, the combination, with the hopper J and the running-gear of the machine, of the cross-bar T, the distributing-wheels V, having curved radial flanges W, and the gear-wheels X X, Y, Z, *c*, *d*, and *g h*, substantially as herein shown and described, whereby the lime will be distributed by the advance of the machine, as set forth.

3. In a lime-distributer, the combination, with the hopper J and the reach E, of the sliding plates M, the sliding cross-bar O, having arm P, and the lever R, substantially as herein shown and described, whereby the size of the discharge-opening can be readily regulated, as set forth.

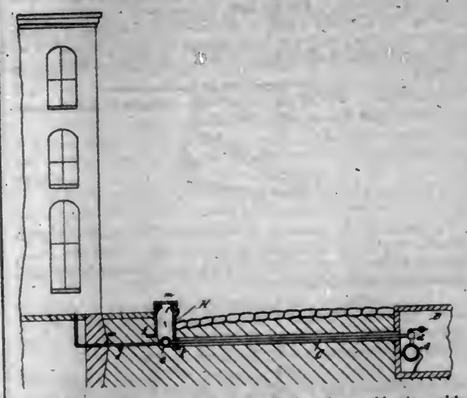
4. The combination of the hopper, the drive-wheel, two intergeared distributing-wheels located below the hopper and arranged at an angle with their inner adjacent edges lower than their other or outer edges, and gearing connecting one of said disks with the drive-wheel, substantially as set forth.

323,684. GATE. Charles P. Howe, Austin, Tex. Filed Mar. 24, 1885. (No model.)



Claim.—The combination, with a tilting counterbalanced gate, of a diagonal rail formed of two parts normally in a line one with the other and joined by a rule or locking joint, and operating-levers having connection with the rail at the joint, substantially as and for the purpose specified.

323,685. MEANS FOR GAS DISTRIBUTION. William A. Hoevelee, Pittsburg, Pa. Filed Apr. 10, 1885. (No model.)

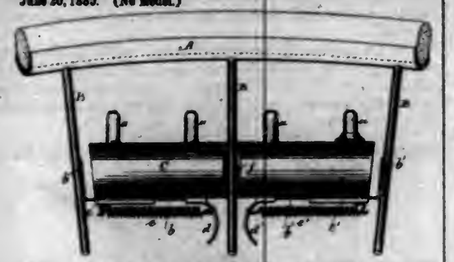


Claim.—1. In a system of gas distribution, the combination, with a subterraneous high-pressure main continuous along a street or roadway, branches therefrom including pressure-regulators and leading to relatively short sub-mains, a conduit laid along the curb and containing said sub-mains, which latter are adapted to supply gas at low pressure to the buildings of a single block or side of a block, and stop-valves between the high-pressure main and the first building supplied, substantially as described.

2. In a system of gas distribution, a combined street curb and gas-main conduit having suitable supports for said main, and its rear side open near the bottom for direct access to said main, substantially as described.

3. In a system of gas distribution wherein a high-pressure main is located along a street or roadway and supplies gas at low pressure to sub-mains along the sidewalk, the combination therewith of a combined street-curb and low-pressure gas-conduit provided with escape devices for leaking gas, substantially as described.

323,686. TIRE-HEATER. Montraville Hott, Jamaica, N. Y. Filed June 20, 1885. (No model.)

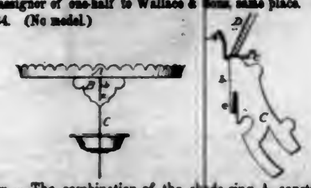


Claim.—1. A heater for cementing rubber tires, composed of a reservoir for a burning fluid—such as alcohol—burners upon such reservoir, and grooved clamps and a spring or springs, by which said reservoir is supported by and between the spokes of the wheel under the felly thereof, substantially as set forth.

2. The combination, with the reservoir C and burners *a*, of the clamps *b b'*, the guides *c c'*, finger-pieces *d d'*, and springs *e e'*, substantially as specified.

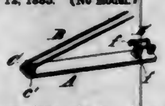
3. The combination, with the reservoir and burners, of grooved clamps engaging the spokes of the wheel, and by which the reservoir is held in place, substantially as specified.

323,687. HANGING-LAMP FIXTURE. George W. Hurrell, Ansonia, Conn., assignor of one-half to Wallace & Sons, same place. Filed Aug. 18, 1884. (No model.)



Claim.—The combination of the shade-ring A, constructed with the inwardly-projecting flange *a*, to receive and support the shade from its lower edge, said flange constructed with two or more openings, *c*, the ring provided with fixed downwardly-projecting flanges B, the said flanges B constructed with vertical slots *b*, corresponding to the openings *c* in the flange *a*, with the harp, its upper ends constructed with a vertical slot, *d*, to form a hook, *e*, substantially as described, so that the upper ends of said arms may be set through the opening in flange B and the hook *e* engage the said flange B through its slot, substantially as described.

323,688. BROOCH OR BREASTPIN. Rudolph R. Hug, Cincinnati, Ohio. Filed Mar. 12, 1885. (No model.)



Claim.—1. An attaching-pin for a brooch, composed of a single piece of wire bent at its hinging end into the form of a lark's-head knot, thereby dispensing with the use of any brazing material in the joint, substantially as herein set forth.

2. In a brooch-pin, the combination, with the plate A and pin B, of the lugs D D *d*, made in a single piece before attaching to said plate, and after attachment cut away to receive the eyes of the pin B, substantially in the manner and for the purpose specified.

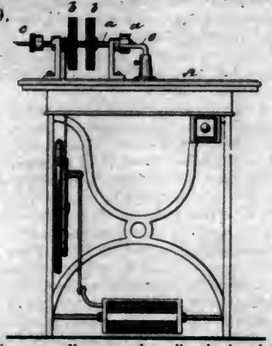
3. In a brooch-pin, the combination, with the double-tongued pin B and the plate or bar A, of a fastening-frame, E, made in one piece, of T shape, having its laterally-projecting arms formed into the open-sided hook-sockets *f f*, and suitably secured to the back of the said bar or plate, substantially as herein set forth.

323,689. MACHINE FOR CLEANING AND REPAIRING ROLLER-SKATES. Ruth F. Hull, Fonda, Iowa. Filed Dec. 26, 1884. (No model.)

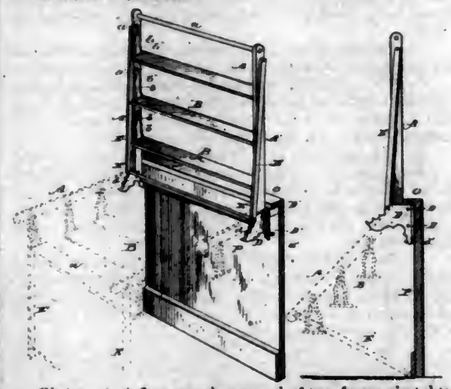
Claim.—1. In a machine for cleaning roller-skates, the rotary shaft *a*, provided with a pair of wheels, *b b*, having a space between them equal to the distance between the pair of skate-wheels to be operated upon, the said wheels *b b* being provided with inclined grooves, whereby the rollers of a skate may be cleaned and cleaned without being removed therefrom, substantially as set forth.

2. A machine for cleaning roller-skates, the same consisting, essentially, in the frame A, the rotary shaft *a*, mounted thereon, and provided at its opposite ends with chucks adapted to receive a skate-roller or abrading-disk and a drill, respectively, rollers *b b*, spaced and grooved, as described, and the rest *e* adjacent to the roller-chuck, substantially as set forth.

323,689.



323,690. FLOWER-STAND. Anthony Ihde, Lancaster, Pa. Filed Jan. 24, 1885. (No model.)



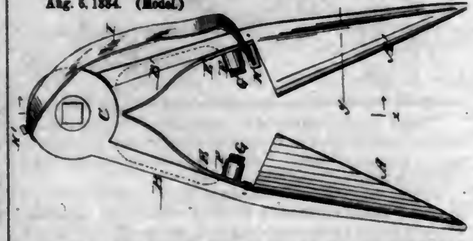
Claim.—1. A flower-stand composed of two frames pivoted together, one of which carries a series of shelves, in combination with a rack for locking in an upright position the frames carrying the shelves, substantially as set forth.

2. In a flower-stand, the combination, with a pivoted frame arranged be raised and lowered at will, of a series of shelves pivoted to said rame and automatically adjusting themselves to a horizontal position, whether the position of said frame be vertical, horizontal, or inclined, ibstantially as set forth.

3. In a flower-stand, the combination of two frames pivoted together, one carrying a series of shelves and racks attached to one of said frames and engaging the other to hold the shelf-carrying frame upright or inclined, substantially as set forth.

4. In combination with the frames A E, pivoted together as described, the rack-plates D, which are attached to the wood-work below the window-sill and have the frame A pivoted to them, and the shelves B, provided with arms *b*, having openings *b'*, which allow the separation of said shelves from frame A, and also their automatic adjustment to maintain a horizontal position, substantially as set forth.

323,691. SHEEP-SHEARS. Elijah Kellogg, Reno, Nev. Filed Aug. 6, 1884. (Model.)



Claim.—In an animal-shears, the combination, with the handle B', provided on the forward end of its under side with a slotted stud, H, and the handle B, provided with a stud, H', at the rear end of its outer side, of the strap I, secured to said studs, substantially as set forth.

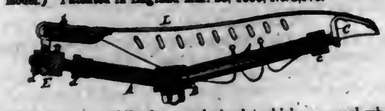
323,692. WOVEN-WIRE BUSTLE. Robert Kelso, Philadelphia, Pa. Filed Apr. 28, 1885. (No model.)



Claim.—1. A bustle made of interwoven spiral-spring coils, and having waistband *d*, loops *f*, tapes *c*, and supporting-tape *e*, substantially as shown and described.

2. A bustle made of interwoven spiral-spring coils having stiffened upper and lower edges *a' a²*, and like cross or transverse coils *a²*, substantially as shown and described.

323,693. SADDLE FOR VELOCIPEDES. James A. Lamplough, Birmingham, County of Warwick, England. Filed June 4, 1885. (No model.) Patented in England Mar. 28, 1885, No. 3,973.

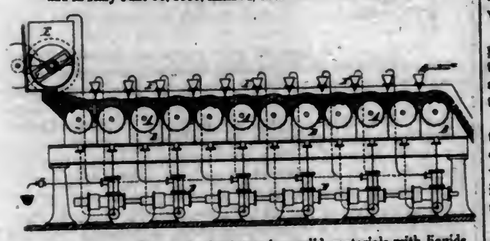


Claim.—1. A saddle for a velocipede vehicle or vessel wherein a central tube bent upward from about its middle, where it is fixed, receives in its front end the shank of a piece attached to the front of the leather, and in its rear end a bolt on which is pivoted a bent tube or bar embraced by the rear loop of the leather, substantially as herein described.

2. In a saddle for a velocipede vehicle or vessel in which the front of the leather is held by the front end of a central tube, and the rear of the leather is looped around a bent tube or bar pivoted at the rear of the central tube, a leather divided along its middle for part of its length, in combination with a hook or catch so arranged that on disengaging the said hook or catch the two lobes or segments of the divided leather can be withdrawn from the bent tube or bar round which they are looped.

3. In a saddle for a velocipede vehicle or vessel in which the front of the leather is held by the front end of a central tube, and the rear of the leather is looped around a bent tube or bar pivoted at the rear of the central tube, the combination of the pivoting-bolt D, the screwed sleeve *a*, and the screwed rear end of the tube A, having a lateral slot, *r*, substantially as and for the purpose herein set forth.

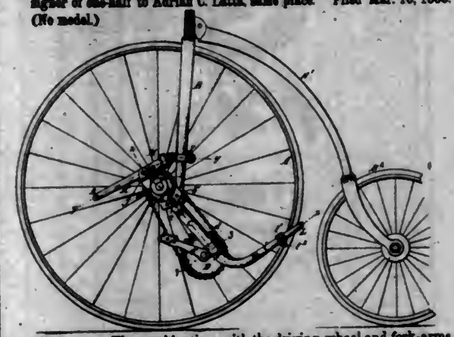
323,694. METHOD OF AND APPARATUS FOR TREATING SEMI-LIQUID SUBSTANCES WITH PURIFYING OR OTHER LIQUIDS. Eugen Langen, Cologne, Germany. Filed May 4, 1885. (No model.) Patented in England July 19, 1884, No. 10,367, and Apr. 10, 1885, No. 4,473, and in Italy June 30, 1885, XXXVI, 176.



Claim.—1. The method of treating solid materials with liquids, wherein the material is caused to pass in a semi-liquid condition successively over a series of hollow cylinders with pervious surfaces, while the liquid with which it is to be treated flows upon it from the top, and after being drawn through the same by suction is conveyed onto the mass passing over the preceding cylinder, so that the purifying liquid, which is first introduced at one end of the apparatus, is made to flow through the same in the contrary direction to that in which the semi-liquid mass introduced at the other end of the machine is made to flow, whereby the liquid that has taken up most impurities is made to act upon the mass still containing most impurities, and the converse, the material purified to the greatest extent being made to flow off at the one end of the apparatus, while the liquid saturated to the greatest extent with impurities is made to flow off from the other end of the apparatus.

2. In apparatus for acting upon semi-liquid material in the manner herein set forth, the combination of the permeable cylinder A, trough B, scraper C, pump D, and liquor-troughs F, arranged and operating substantially as herein set forth.

323,695. VELOCIPEDE. Ernst G. Latta, Friendship, N. Y., assignor of one-half to Adrian C. Latta, same place. Filed Mar. 10, 1885. (No model.)



Claim.—1. The combination, with the driving-wheel and fork-arms, of pivoted supporting-arms, and a toggle-joint whereby the supporting-arms are locked in position, substantially as set forth.

2. The combination, with the driving-wheel, fork-arms, and crank-wheels, of pivoted arms supporting the driving-wheels and crank-wheels, and a toggle-joint whereby the pivoted supporting-arms are locked in position, substantially as set forth.

3. The combination, with the driving-wheel and fork-arms, of the pivoted supporting-arms, the jointed locking-brace H, and the foot-lever K, substantially as set forth.

4. The combination, with the driving-wheel and fork-arms, of the pivoted supporting-arms, and a jointed locking-brace, H, composed of the arm A and link A^3, capable of a sliding movement on each other, substantially as set forth.

5. The combination, with the driving-wheel and fork-arms, of the pivoted supporting-arms, and a jointed brace, H, composed of the arm A, provided with a stem, A', and the link A^3, capable of sliding on said stem, substantially as set forth.

6. The combination, with the driving-wheel and fork, of the pivoted arms supporting the wheel, and a spring interposed between the wheel and the fork, whereby the vibrations are reduced, substantially as set forth.

7. The combination, with the driving-wheel and fork-arms, of pivoted supporting-arms, and a locking toggle-joint provided with a spring or cushion, substantially as set forth.

8. The combination, with the driving-wheel and fork-arms, of the pivoted supporting-arms, and a jointed brace, H, composed of the arm A and link A^3, provided with an interposed spring, A^3, substantially as set forth.

9. The combination, with the driving-wheel and fork-arms, of the pivoted arms C, provided with upward extensions J, levers K, pivoted to said extensions, and the jointed braces H, connecting the levers K with the fork-arms, substantially as set forth.

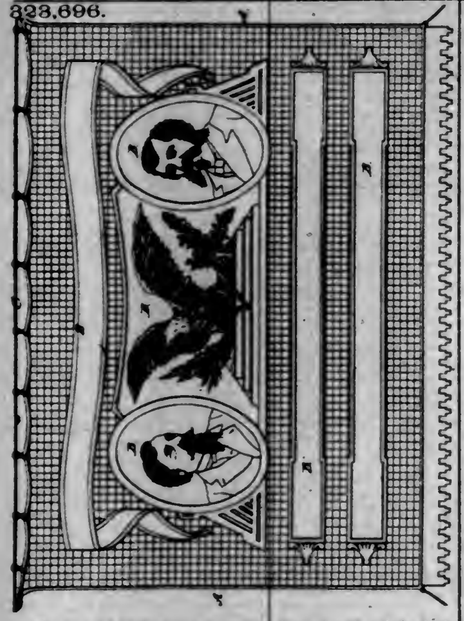
10. The combination, with the driving-wheel and fork-arms, of the pivoted arms C, provided with upward extensions J, levers K, pivoted to said extensions, the jointed braces H, attached to said levers, and the adjustable clamps I, connecting the braces H to the fork-arms, substantially as set forth.

11. The combination, with the fork, of supporting-arms C, having their outer ends connected by a stiffening-bow extending around the rim of the wheel, pivot-bolts connecting the arms C with the fork, a driving-wheel provided with sprocket-wheels *d'*, and crank-wheels D, journaled in the arms C, and fastenings whereby the arms C are adjustably attached to the fork, substantially as set forth.

323,696. SIGN OR BANNER. Morris R. Levy, New York, N. Y. Filed July 2, 1884. (No model.)

Claim.—1. A sign or banner having a base or ground of a net-work, to which is attached, in one or more pieces of any desired size and shape, rubber cloth forming or adapted to receive any desired design or inscription, substantially as described.

323,696.

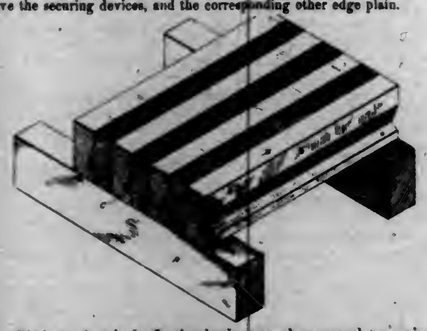


2. As a sign or banner, one or more pieces of rubber cloth of suitable size and shape, and forming or having thereon letters or designs, in combination with a net-work, substantially as described.

3. A sign or banner composed of a net-work made water-proof by being coated or treated with rubber, in combination with pieces of rubber cloth to form or receive the inscription, letters, or designs, and the binding or fringe, substantially as described.

323,697. FLOORING. SAMUEL C. LITTLE, Mount Vernon, Ind. Filed Jan. 9, 1885. (No model.)

Brief.—Consists of a flooring-strip having one edge grooved, to receive the securing devices, and the corresponding other edge plain.



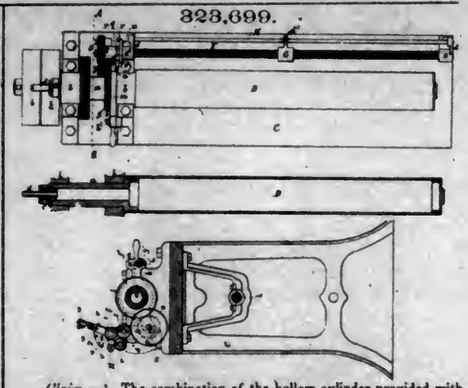
Claim.—A strip for flooring having one edge grooved, to receive the securing devices, and the corresponding other edge plain, substantially as and for the purpose specified.

323,698. HARD-RUBBER SPRING-BAR FOR SURGICAL AND OTHER INSTRUMENTS. RHODES LOCKWOOD, Boston, Mass. Filed Apr. 27, 1885. (No model.)



Claim.—As an improved article of manufacture, a hard-rubber rod provided with a hard-rubber portion integral therewith and spirally arranged to form a hard-rubber spiral spring, substantially as described.

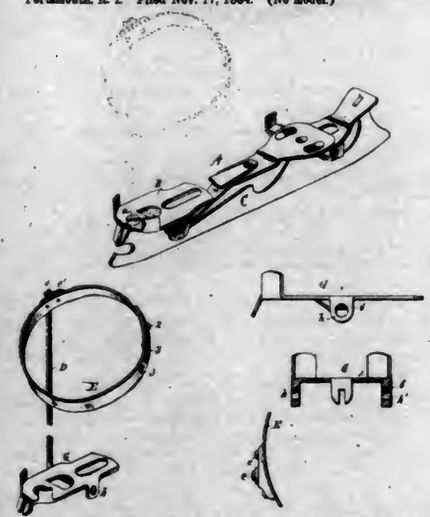
323,699. MACHINE FOR SPIRALLY WINDING A STRIP OF WOOD. JAMES MACFARLANE, Malden, Mass. Filed Apr. 13, 1885. (No model.)



Claim.—1. The combination of the hollow cylinder provided with mechanism for revolving it, and supported at one end only by a tubular neck and bearings, as described, with the guide-nut and its supporting wire and rod, and with the screw arranged with such nut and cylinder, and provided with mechanism for imparting rotary motion to it in either direction, as specified, the said screw, nut, supporting-rod, and hollow cylinder being arranged parallel with each other, as represented.

2. The combination of the cylinder D and the screw F with the mechanism, substantially as described, for revolving the screw in either direction by the cylinder while being revolved, such mechanism consisting of the gear *l*, and the two levers *m* and *q* and their gears *o p r s*, and the gear *t*, the latter gear being fixed on the shaft of the said screw, and the gear *l* being fastened on the neck of the cylinder, and all being arranged and to operate substantially as set forth.

323,700. ANKLE-SUPPORT FOR SKATES. ELLWOOD G. MACOMBER, Portsmouth, R. I. Filed Nov. 17, 1884. (No model.)

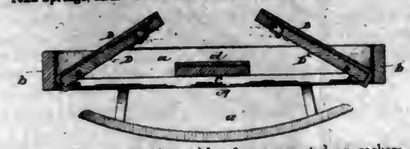


Claim.—1. The improved ankle-support attachment for skates, which consists of the rod D, provided at its upper end with a one-piece metallic leg-band pivoted to the rod, and having means to secure the ends of said band together, the said rod having the arm or bent lower end, and a plate adapted to be secured to the arm of the rod and to be attached to a skate in place of the usual heel-plate, as set forth.

2. The improved ankle-support attachment for skates, which consists of the rod D, provided with the one-piece metallic leg-band pivoted thereto, and having the headed pin and slots, as described, and the strengthening-piece, the said rod having the horizontal arm *d* and a plate detachably connected with the arm and adapted to be secured to a skate in lieu of the usual heel-plate, as set forth.

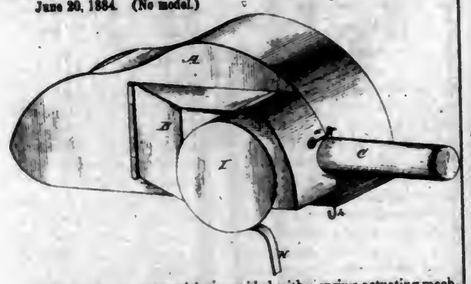
3. The improved attachment for skates, which consists of the rod D, provided with a pivoted one-piece metallic leg-band, and arm *d*, having groove 4 and cut-away portion 5, and the plate G, having the depending socket-lugs *h h'*, the socket-lug *h'* containing a locking-key, 6, substantially as described.

323,701. MOVEMENT-CURE APPARATUS. HARRISON MAIN, Eureka Springs, Ark. Filed Jan. 26, 1885. (No model.)



Claim.—The combination, with a frame mounted on rockers, of a stationary strip secured to said frame, pivoted leaves located on each side of the stationary strip, hinged strips at the inner ends of the leaves, and stops for limiting the movement of the pivoted leaves, as set forth.

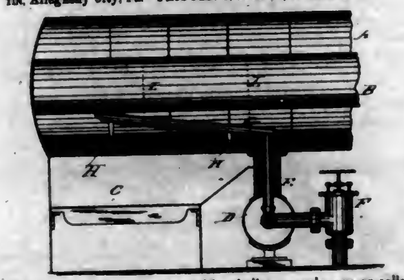
323,702. COTTON-PICKER. JOHN T. MARTIN, Roanoke, Tex. Filed June 20, 1884. (No model.)



Claim.—1. A cotton-picker provided with a spring-actuating mechanism located upon the casing, and a hood for inclosing said mechanism hinged to one of the side walls of the casing and held closed by a fastening device, substantially as and for the purpose specified.

2. In a cotton-picker, the casing thereof, the endless picker-belt, flanged drums, and the toothed disks contained within said casing, in combination with a spring-actuating mechanism located upon the outside of the casing, a hinged hood inclosing the mechanism, and a pulley and belt for winding the spring, substantially as and for the purpose specified.

323,703. SCALE-COLLECTOR FOR STEAM-BOILERS. JOHN F. MARTIN, Allegheny City, Pa. Filed June 1, 1885. (No model.)



Claim.—1. In combination with a boiler, a scale pan or collector arranged in said boiler at an angle to its bottom and communicating with a mud-drum or other suitable receptacle for scale and sediment, substantially as described.

2. The combination, with boiler A and mud-drum D, of inclined pan G, tube I, connected to said pan, and tube J, arranged in the mud-drum and connected to the tube I, all constructed and arranged substantially as described.

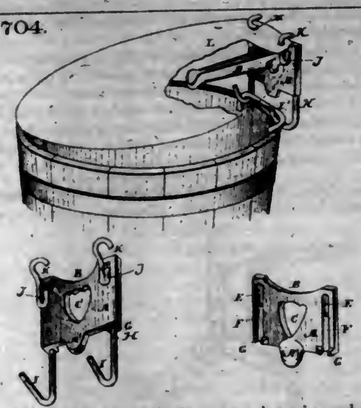
3. In combination with the boiler A and mud-drum D, the pan or chute inclined from its forward end downwardly toward said mud-drum and communicating therewith through the tube I, substantially as described.

323,704. SAP-SPILE. CHRISTOPHER MATTICE, Delhi, N. Y. Filed Aug. 22, 1884. (No model.)

Claim.—1. The metallic plate A, having a central opening and provided with vertical grooves and slots, in combination with the wire pieces, the lower ends of which are curved outward, forming hooks, and the upper ends of which pass outward through the slots and are then curved downward, upward, and inward, as described, and for the purpose herein set forth.

2. The metallic plate A, having a central opening and slots and grooves, in combination with the hooking-pieces, and the spile having lugs on its lower side, and otherwise constructed substantially as described.

323,704.



3. The metallic plate A, having a central opening, and provided on its rear sides with vertical slots and downwardly-extending grooves, in combination with the wire hooking-pieces, formed as described, the spile having lugs on its lower side, and the metallic cover L, attached to the upper hooks, substantially as described.

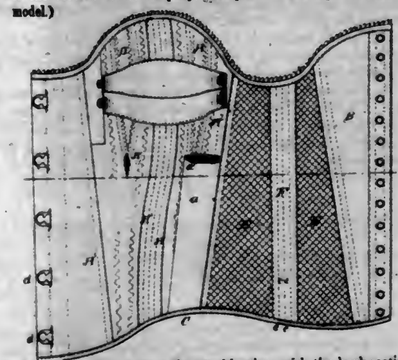
4. The combination of the centrally-perforated grooved and slotted plate A, the hooking-pieces formed and applied to said plate, as described, the spile, and the cover attached to the upper hooks of said hooking-pieces, as specified.

323,705. HARROW. JOSEPH MAUNDER, Little Britain, Ontario, Canada. Filed Apr. 3, 1885. (No model.)



Claim.—A connecting clamp or fastening for harrow beams and teeth, consisting of a clip or clamp having two horizontal openings or passages arranged one above and at an angle to the other, the upper passage being provided with an inwardly-extending lug, and a vertical tapering socket or opening intersecting the said openings or passages, in combination with the main harrow-beam having vertical triangular notches or recesses, the cross-bar having recesses or indentations, and the tapering harrow-tooth, all arranged and operating substantially as and for the purpose herein shown and specified.

323,706. CORSET. CHARLOTTE A. MCGEE, Jackson, Mich., assignor to the Coronet Corset Company, same place. Filed Apr. 18, 1882. (No model.)

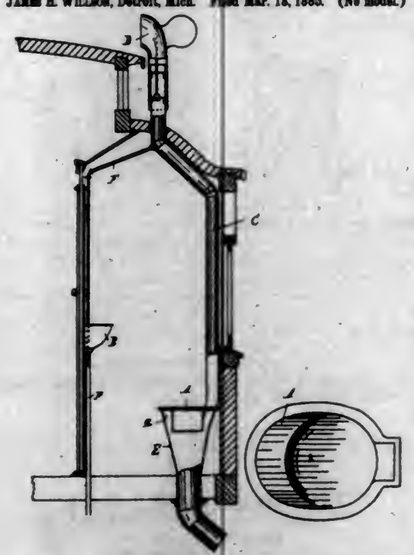


Claim.—1. In a corset, the combination, with the back section and the side section, of a front section, A, provided near its rear edge adjacent to the side section with a stiffening strip or strips, A', and a supplemental open pocket secured to the rear edge of the front section along a line adjacent to the side section and to the stiffeners A', and adapted

to receive a stiffening-strip which can be removed and replaced at will, substantially as set forth.

2. In a corset, in combination with the front section and the back section, the hip portion consisting of the pieces E E, cut on the bias of the cloth and having uninterrupted surfaces from edge to edge, and the piece F between the two pieces E, cut with the thread of the cloth and provided with stiffening devices, whereby the hip-section is rendered elastic by reason of the pieces E cut on the bias, and is prevented from wrinkling by the stiffened piece F, substantially as set forth.

323,707. WATER-CLOSET VENTILATOR. JOHN H. MCGOVERN and JAMES H. WILLSON, Detroit, Mich. Filed Mar. 18, 1885. (No model.)



Claim.—1. In combination with the water-closet and urinal of a railway-car, a downward-draft ventilating-pipe, C, which discharges its current of air into the annular space a between the internal ring and hopper in a vertical line, or nearly so, through the top of the seat-cover, the parts being constructed and operating substantially as and for the purposes described.

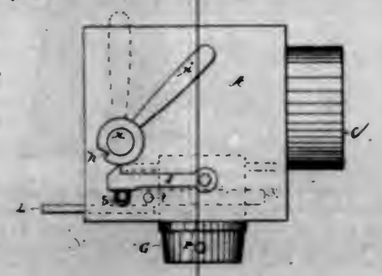
2. In combination with the water-closet and urinal of a railway-car, the downward-draft ventilator-pipes C and F, the former of which is provided with a hood, D, and both of which discharge their currents of air in a vertical line, or nearly so, substantially as and for the purposes set forth.

323,708. BARREL-FILLER. JOHN MCKENZIE, West Troy, N. Y. Filed May 29, 1885. (No model.)

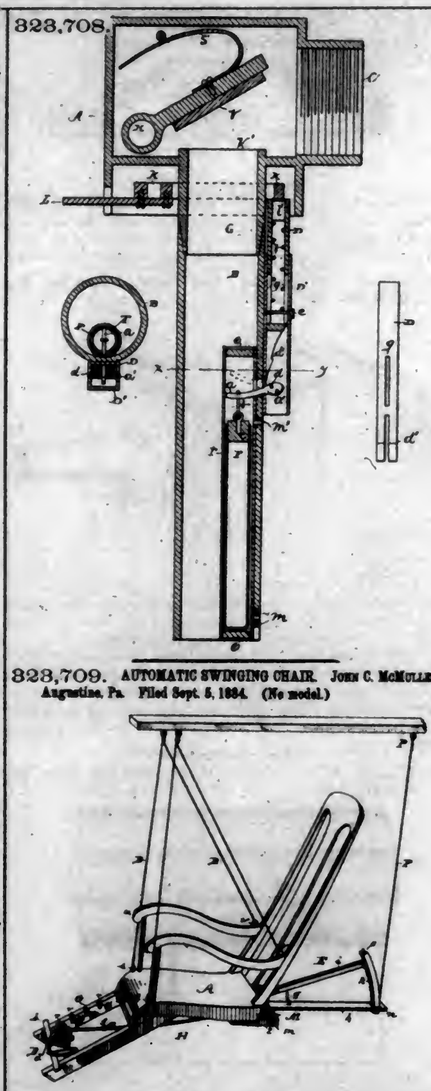
Claim.—1. The combination, with the supply-cock A, having outlet G, of the pivoted drop-valve V, carrying a curved back spring, S' as and for the purpose specified.

2. The combination, in a barrel-filler, with the latch J, of a lever, K, pivoted at *t t*, carrying a trip, S, provided with handle L, and passing through latch, as and for the purpose described.

3. The combination, in a barrel-filler, with the tube B, of the inner tube, T, the float F, link *b*, the lever-carrying trip *d*, the slotted slide D, carrying spring in upper part, and having notch *d*, the case D', the pin *s* in slot *g*, and the screw *l'* in the end of slide D, as and for the purpose specified.



323,708.



323,709. AUTOMATIC SWINGING CHAIR. JOHN C. MCMULLEN, St. Augustine, Fla. Filed Sept. 5, 1884. (No model.)

Claim.—1. The combination of the chair, a pedal supported thereon, a lever having a rock-shaft, a cord connecting said pedal and rock-shaft, and a cord whereby said lever may be connected with a suitable support, substantially as set forth.

2. The combination of the chair having legs C, the pedal having a bar, *a*, pivoted to said legs C, and a bar, *b*, having its ends extended over said legs and adapted to operate as a stop, a segment, C, mounted on said pedal, a lever, a cord connecting said segment with the lever, and a cord connecting the lever and a support, substantially as set forth.

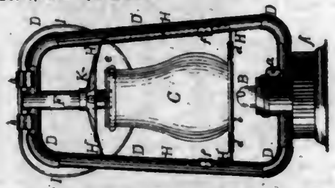
3. In combination with the chair, a lever, E, comprising a rock-shaft, journaled to the chair, an arm fixed rigidly to said shaft, a second arm hinged to said rock-shaft, a spring interposed between the rigid and hinged arms, a rim-bar fixed to the upper arm and movable through the lower one, and a cord connecting the lever with the support, substantially as set forth.

4. The combination, with the chair having legs C, provided with a series of notches, *r*, of the pedal having pivots adjustable into one or the other of said notches, the rock-shaft journaled in rear of the chair, a cord extending between the pedal and the rock-shaft, an arm fixed to the rock-shaft, a second arm hinged to the rock-shaft, a rim-bar fixed to the hinged arm and movable post, a fixed arm, and a cord connecting the lever with a support, substantially as set forth.

5. The combination of the chair having legs C, one of which has slots *r*, springs *s*, arranged in said slots, and the treadle, substantially as set forth.

6. The combination of the chair-hangers whereby said chair is supported, a pedal supported on said chair, a lever, a cord connecting said pedal and lever, and a cord whereby said lever may be connected with a suitable support, the said cord and chair-supporting hangers being independent of each other, substantially as set forth.

323,710. TUBULAR LANTERN. BIBLE B. MERRILL, Brewer, Me. Filed Dec. 8, 1884. (No model.)



Claim.—1. In a tubular lantern, the combination, with the side tubes provided with longitudinal grooves and the globe-holding devices, of a sliding cage or frame carrying said devices and having side pieces substantially parallel with the side tubes, said side pieces being situated within the grooves of the tubes, as and for the purposes described.

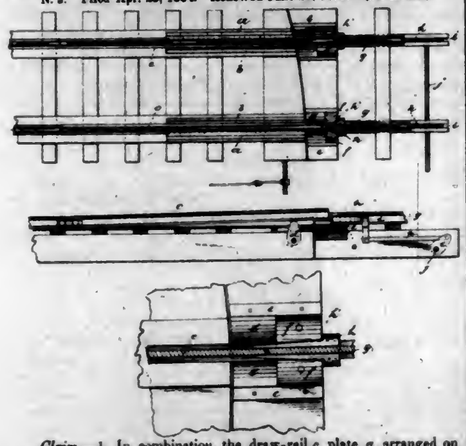
2. In a tubular lantern, the combination, with the sheet-metal side tubes bent to form longitudinal grooves, and the globe-holding devices, of a sliding frame carrying said devices, and having side pieces substantially parallel with the side tubes, said side pieces being situated within the grooves of the tubes, as and for the purposes described.

3. In a tubular lantern, the combination, with the tubular frame, of the vertically-sliding wire cage or frame H H' H'' H''', formed to move freely in the grooves or channels *m m* of the side pieces, D' D', of the tubular frame, the bottom wire, H' H'' H', of said cage being constructed with a semicircular bend or seat, H'', of such radius as to receive and support one-half the outer edge of the perforated disk *b*.

4. In a tubular lantern, the combination of the grooved or channeled side pieces, D' D', of the tubular frame with the wire cage or frame H H' H'' H''', said cage being formed of such width as to allow its side pieces or straps, H H, to fit loosely and move freely up and down in the channels or grooves *m m* of the side pieces, D' D', of the tubular frame.

5. In a tubular lantern, the combination of the grooved or channeled side pieces, D' D', of the tubular frame, the vertically-sliding wire cage or frame H H' H'' H''', and the perforated disk *b*, attached to the straight portions H' H' of the bottom wire of said wire cage by sleeves, loops, or any equivalent device, all as shown and described, and substantially as and for the purpose specified.

323,711. DRAW-BRIDGE JOINT. GEORGE W. MERSHON, Newark, N. J. Filed Apr. 23, 1884. Renewed June 29, 1885. (No model.)



Claim.—1. In combination, the draw-rail *c*, plate *a*, arranged on one side of said rail and of about the same height, and the plate *b*, arranged on the opposite side of and of less height than said draw-rail, for the purpose set forth.

2. The combination, with the draw-rails *c* and plates *a b*, arranged on each side thereof, of the fixed rails *g* and an adjustable sliding device adapted to cover the joint between said draw-rail and fixed rail, for the purposes set forth.

3. The combination, with the rails *c*, of the plates having a recess therein, inclined planes *e'*, and lugs or projections *f*, the inner surfaces of which are inclined, substantially as and for the purposes set forth.

4. A plate, *e*, having a recess therein, inclined planes *e'*, and lugs *f*, the inner surfaces of which are inclined, forming a wedge-shaped opening therein, for the purposes set forth.

5. In combination, the rails *c* and *g*, a plate having a tapering or wedge-shaped opening therein, and a sliding shoe or fork arranged and operating substantially as and for the purposes set forth.

6. In combination, the rails *c* and *g*, a plate having a recess therein, and inclined planes *e'*, sloping downward from said recess, said plate being provided with lugs *f*, the inner sides of which are inclined, forming a wedge-shaped opening therebetween, the sliding shoe moving in said wedge-shaped opening, and mechanism, substantially as set forth, for operating said shoe, for the purposes set forth.

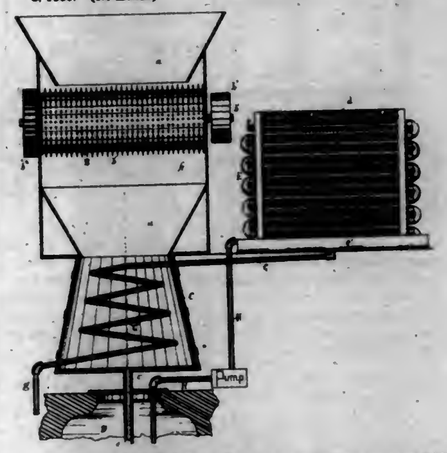
7. In combination, the rails *c* and *g*, sleeves *a b*, recessed plate *e*, having inclined planes *e'*, lugs *f*, sliding shoe, rod *k*, crank *i*, shaft *j*, all arranged and operating as and for the purposes set forth.

8. The combination, with the draw-rail *c* and the fixed rail *g*, of a plate having lugs with an opening therebetween adapted to receive the fixed rail, the inner sides of said lugs next to the rail being inclined toward the web of said rail, as set forth, and a sliding fork moving between the inclined sides of the lugs and the web of the fixed rail, the sides of said fork next to the inclined sides of the lugs being similarly inclined, said fork being adapted to be projected from the fixed portion of the bridge and cover the joint between the fixed and draw rails, for the purpose set forth.

9. The combination, with the draw-rails of a bridge, of plates or angle-irons *b*, of less height than said rails and arranged on one side thereof, and plate *a*, comprising the plates or angle-irons *a' a²*, arranged on the other side of said rails, one of said plates being secured against the foot of the rail, and the other of said plates, *a²*, riveted to the plate *a'*, and projecting over the top thereof, and bearing against the head of the rails, substantially as and for the purposes set forth.

10. The combination, with the draw-rails of a bridge, movably secured thereon, of plates or angle-irons *b*, of less height than said rails and arranged on one side thereof, plate or angle-iron *a*, comprising plates *a' a²*, arranged on the other side of said rails, one of said plates, *a'*, being secured against the foot of the rail, and the other of said plates, *a²*, riveted to the plate *a'*, and projecting over the top thereof and bearing against the head of the rail, and mechanism, substantially as described, for lifting the said draw-rails, all said parts being arranged and operating substantially as and for the purposes set forth.

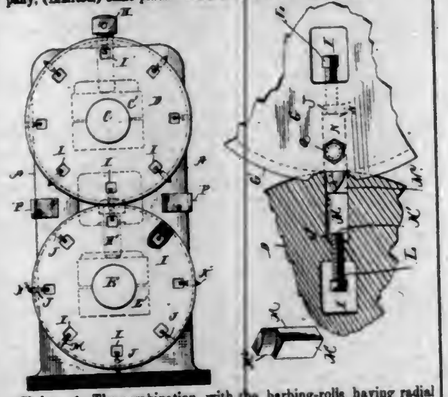
323,712. BEER-COOLER. JOHN MEYER, Covington, Ky. Filed June 8, 1885. (No model.)



Claim.—1. The combination of the ice-tank C, a coil arranged within said tank, and the ice-crusher arranged to discharge crushed ice into said tank, with the cooler E, and pipes G *g*, the said pipes being connected to the opposite ends of the coils, substantially as and for the purpose specified.

2. The ice-tank C, arranged above the cistern D, and having a discharge-pipe leading from the bottom of the tank into the cistern, the case A *a a'*, and the ice-crushing rolls B, arranged above the tank and within the case A to discharge the crushed ice into the tank, in combination with cooler E, pipes H, and pump for forcing water from the cistern through the cooler, with the pipe G, coil G', and pipe *g* to carry the beer from the trough of the cooler through said pipes and coil to the storing-tank, substantially as hereinbefore set forth.

323,713. MACHINE FOR BARBING METALLIC STRIPS. Thomas H. Morgan, Pittsburg, Pa., assignor to the Morgan Barbed Wire Company, (Limited,) same place. Filed Nov. 5, 1884. (No model.)

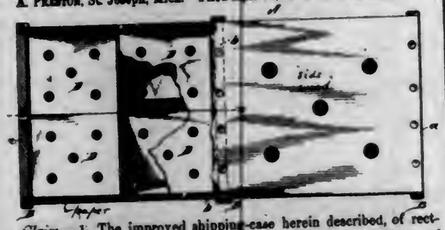


Claim.—1. The combination, with the barbing-rolls having radial recesses I extending from their peripheries inward, of the removable and adjustable punches, and dies located in the opposite rolls, and the set-screws whereby said dies may be adjusted, substantially as specified.

2. The barbing-rolls provided with recesses I J, the recesses J having located therein the removable punches and dies, and the recesses I affording means for reaching the heads of the set-screws for the purpose of adjustment, substantially as specified.

3. The combination, with the barbing-rollers having the recesses I and J, of the punches and dies located in said recesses in the respective rolls, and the set-screws whereby they may be held in an adjusted position, substantially as specified.

323,714. SHIPPING-BOX. Alexander H. Morrison and Wallace A. Preston, St. Joseph, Mich. Filed Apr. 15, 1885. (No model.)



Claim.—1. The improved shipping-case herein described, of rectangular contour, consisting, essentially, of the sides, top, and bottom of perforated paper, the ends and internal division of perforated wood, and cleats on top and bottom coincident with the wooden walls and secured thereto by fastening devices which pass through the top and bottom paper walls, substantially as and for the purpose specified.

2. A shipping-box designed to carry small fruit, consisting of a rectangular outer box with longitudinal perforated paper walls, transverse perforated wooden walls, transverse cleats on top and bottom coincident with said wooden walls, and fastenings securing the cleats to said walls with the paper walls interposed, and internal boxes, each having perforated sides and a bottom under which is formed an air-chamber, the whole arranged to insure a thoroughly ventilated, cheap, and portable fruit-carrier, substantially as and for the purpose specified.

323,715. NUT-LOCK. James W. Morton, Orange Court-House, Va. Filed Jan. 24, 1885. (No model.)

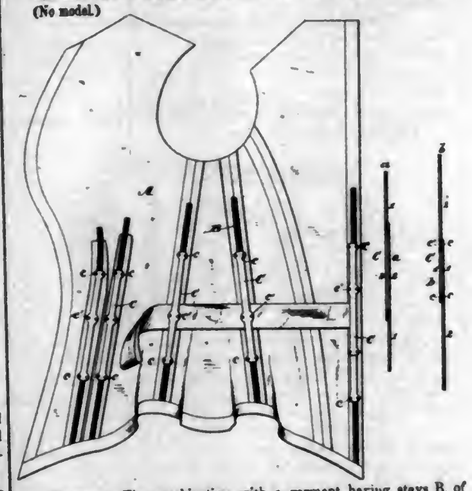


Claim.—1. As a means for retaining a nut against moving longitudinally upon the bolt to which it is attached, a freely-revolving sleeve mounted upon the bolt and carrying the nut, as described.

2. As a means for retaining a nut against moving longitudinally upon the bolt to which it is attached, a freely-revolving sleeve mounted upon the bolt, retained thereon by an enlargement upon the end of the said bolt, the nut being carried by the sleeve, substantially as described.

3. As a means for retaining a nut against moving longitudinally independent of the bolt to which it is attached, a bolt provided with a freely-revolving screw-threaded sleeve by which the nut is carried, the said bolt and sleeve being provided with registering holes for the reception of a pin to hold the sleeve while the nut is screwed thereon.

323,716. STAY FOR DRESSES, CORSETS, &c. Schanu M. Moschcowitz and Herman Moschcowitz, New York, N. Y. Filed July 25, 1883. (No model.)

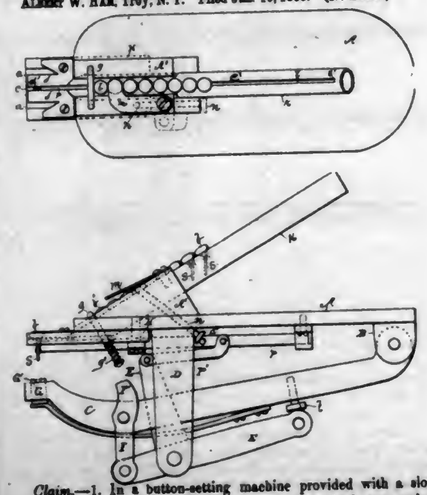


Claim.—1. The combination, with a garment having stays B, of the re-enforce herein described, removable and replaceable from and to the stay at the will of the wearer, composed of elastic plates adjustable one upon the other to vary the length and resistance of the re-enforce, the said plates being provided with fastenings for coupling them together at various points to which they may be adjusted, and also with fastenings for attaching and detaching the re-enforce to and from the garment without disturbing the stays of the garment, substantially as described.

2. A re-enforce for the stays of garments, removable and replaceable from and to the stay at the will of the wearer, composed of elastic plates adjustable one upon the other to vary the length and resistance of the re-enforce, the said plates being provided with fastenings for coupling them together at various points to which they may be adjusted, and also with the fastenings for detachably securing the plates upon the corset-stay at the waist portion without disturbing the stay, substantially as described.

3. A re-enforce for the stays of garments, composed of elastic plates C, adapted to lie and be adjusted one upon the other and provided each with perforated lateral ears to receive threads to secure them together and to a garment, substantially as described.

323,717. BUTTON-SETTING MACHINE. George A. Mosher and Albert W. Ham, Troy, N. Y. Filed Jan. 19, 1885. (No model.)



Claim.—1. In a button-setting machine provided with a slotted member for holding a button and fastener, having the lower portion of its slot arched to receive the crown of the fastener, and another member for setting said fasteners upon fabric, the combination, with said slotted member, of a reciprocating rod or plunger, a portion of the head

of which is crowned to enter and fit the arched slot of said member and travel longitudinally therein, and actuating-lever, all operating substantially as and for the purposes set forth.

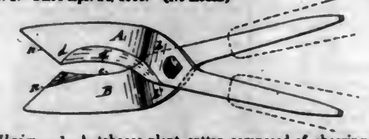
2. In combination with a chute for supplying buttons and fasteners to a button-setting machine, a spring-stop, *m*, sliding pin *n*, and reciprocating trip *e*, for controlling the discharge of buttons from said chute, substantially as described.

3. In combination with a chute for supplying buttons and fasteners to a button-setting machine, provided with a pivoted setting member, a spring-controlled stop, a trip upon said pivoted member, and means, substantially as described, for actuating said trip, whereby it is adapted to act upon said stop to release a button and fastener from the chute, while said member acts to set upon the fabric the fastener of the button previously released, substantially as and for the purposes set forth.

4. In a button-setting machine provided with a slotted member for holding a button and fastener, and another member for setting said fastener upon fabric, the combination, with said members, of a slotted chute for supplying buttons and pendent fasteners to said holding member, and a reciprocating plunger for imparting the initial motion in expelling from the holding member a button and fastener after the latter has been set upon the fabric and forcing another button and fastener to the place thus made vacant in the holding member, said chute being provided with two stops acting independently of each other and in harmony with said plunger and setting-machine, whereby one button and its fastener is discharged from the chute into the slotted holding member by one stop, while the other stop retains the remaining buttons and fasteners until the preceding button and its fastener last set upon the fabric has been partly expelled from the slotted holding member to automatically supply the buttons and fasteners to said holding member one at a time, and prevent the entrance therein of another button and fastener while the operation of setting is repeated upon the same fastener therein, substantially as described.

5. In a button-setting machine provided with a slotted member for holding a button and fastener, and another member for setting said fastener upon fabric, a reciprocating rod or plunger provided with one or more face projections adapted to assist in regulating the position of a button and fastener in said holding member, in combination with an actuating-lever, all operating substantially as and for the purposes set forth.

323,718. TOBACCO-PLANT CUTTER. Charles C. Nagley, Memphis, N. Y. Filed Apr. 24, 1885. (No model.)



Claim.—1. A tobacco-plant cutter composed of shearing-blades pivoted one to the under side of the other, and having the cutting-edge of the upper blade beveled on its under side at the free end thereof, and the corresponding portion of the cutting-edge of the lower blade beveled on its upper side, substantially as and for the purpose specified.

2. The combination of the blade A, formed with the concave cutting-edge *a*, beveled on its upper side, and having the point *d* beveled on its under side, and the blade B, pivoted to the under side of the blade A, and formed with the concave cutting-edge *c*, beveled on its under side, and having the point *d'* beveled on its upper side, substantially as described and shown, for the purpose set forth.

323,719. COACH-LATCH. Aston Ochmbr, New Haven, Conn. Filed Oct. 23, 1884. (No model.)

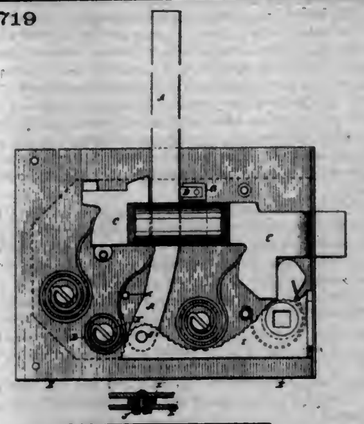
Claim.—1. In a coach-latch, the combination, with a removable handle-lever, of a rubber cushion located in front of and engaging with the same in the latched adjustment of the device, and a spring to throw the said lever forward, substantially as set forth.

2. In a coach-latch, the combination, with the casing and cover thereof, of a removable handle-lever, and a removable top bolt entering the latch from the outer face of the casing and passing thence through the removable handle-lever, of which it forms the fulcrum, substantially as set forth.

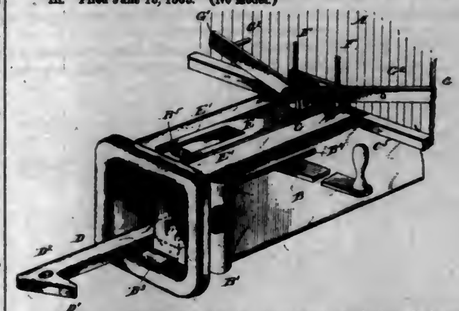
3. In a coach-latch, the combination, with the casing and cover thereof, of a removable handle-lever, a removable top bolt entering the latch from the outer face of the casing and passing thence through the removable handle-lever, of which it forms the fulcrum, and cushions located on either side of said handle-lever and arranged to prevent it from vibrating, substantially as set forth.

4. In a coach-latch, the combination, with a removable handle-lever, of a spring located to the rear of and engaging with the same, a pin arranged to prevent the said spring from springing forward into the place of the lever when the same is removed from the latch, and means for limiting the forward movement of the lever, substantially as set forth.

323,719



323,720. CAR-COUPLING. E. Frank O'Haver, Murphysborough, Ill. Filed June 15, 1885. (No model.)



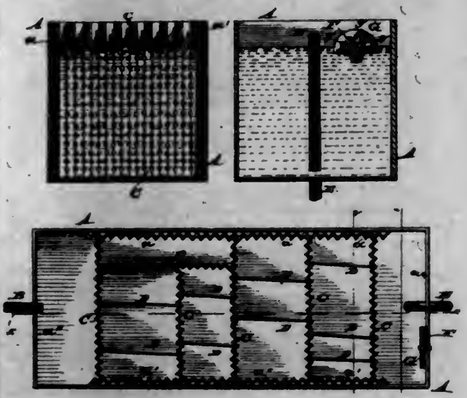
Claim.—1. The combination, in a draw-head, of a hollow rib formed at the side thereof, forming a receptacle for a hinge-jaw, and a spring-actuated locking-jaw, the upper portion of which is bent to form an operating-handle for the same, and arranged to pass through a slot in the draw-head, substantially as specified.

2. The combination, with a draw-head, of a spring-jaw hinged thereto, said jaw having its upper part bent at a right angle and extended through a slot in said head and terminating in a jaw-operating handle, substantially as specified.

3. The combination, with the head B, having the rib B' formed at its side, and the slot B^4 and stop B^3, of the jaw C, having the portion C^2 bent at an angle thereto, and terminating in the handle C^3, and the spring B^2, substantially as shown and described.

4. The draw-head B, in combination with the jaw C, having the hole C^3, and a pin for retaining the jaw in an open position, substantially as shown and described.

323,721. PHOTOGRAPHIC WASHING APPARATUS. Henry W. Oliver, Rome, N. Y. Filed May 10, 1884. (No model.)



Claim.—1. In a gelatine photographic-negative washing apparatus, the combination, with the tank A, having its sides provided with the vertical non-perforated corrugations *a a* and *a' a'*, of the perforated and vertically-corrugated partitions C C, removable from any two opposite corrugations *a a'* to any similar two, substantially as specified.

2. A tank for washing gelatine photographic negatives, having its inner walls adapted to sustain partitions which are provided with means for holding photographic negatives, and provided at one end with a water-supply pipe and at the opposite end with a siphon, whereby the said tank may be automatically emptied at regular intervals, substantially as specified.

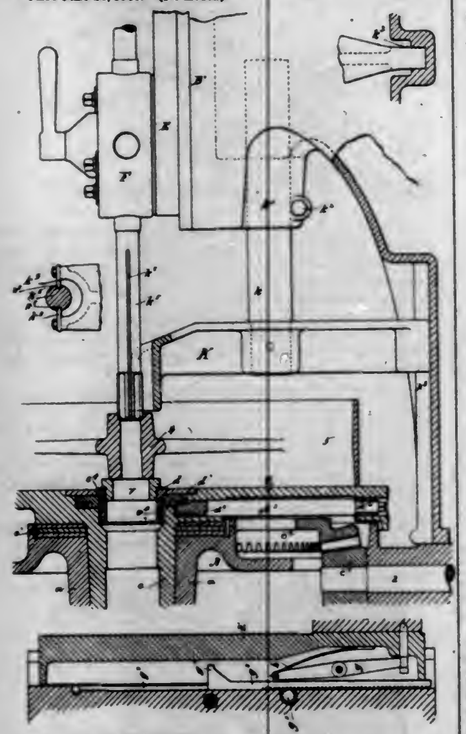
3. A tank for washing gelatine photographic negatives, having its longitudinal inner walls adapted to sustain removable transverse perforated partitions, which are provided with means for holding gelatine photographic negatives, and the said tank also having means for receiving and discharging water, substantially as specified.

4. In a gelatine photographic-negative washing apparatus, the combination, with the tank A, provided at one end with the water-inlet B, of the siphon E at the opposite end of the said tank, the opening F, and the gate G, provided with the holes *g g*, substantially as specified.

323,722. ARTIFICIAL OR PLASTIC SLATE FOR BLACKBOARDS. ALFRED F. PARSHALL, Kansas City, Mo. Filed June 26, 1885. (No specimens.)

Claim.—The herein-described compound, consisting of pulverized pumice-stone, chrome-green or other mineral coloring-matter, boiled linseed-oil, and Portland cement, in substantially the proportions specified.

323,723. BORING-MACHINE. EDWARD H. PARKS, Providence, R. I., assignor to the Brown & Sharpe Manufacturing Company, same place. Filed June 26, 1885. (No model.)



Claim.—1. In a chucking-machine, the bed provided with a horizontal table having a central bore, and adapted to be rotated, as specified combined with a head having a vertically-reciprocating slide provided with a tarret, substantially as set forth.

2. In a chucking-machine, the bed provided with a horizontal table having a central bore and adapted to be rotated, as specified, combined with a head having a vertically-reciprocating slide provided with a tarret and a balance-weight, substantially as set forth.

3. The horizontal table provided with a central bore and screw-threaded sleeve, a geared nut, and means to operate said nut to raise or lower the sleeve, substantially as set forth.

4. The combination, with the head having a reciprocating slide provided with a tarret, and with a pivoted lever having a locking-pin to engage the tarret, as specified, of a tripping-dog having a toothed extension or rack, and means for raising or lowering said tripping-dog in the head, for the purpose specified.

5. The head provided with a reciprocating slide having a tarret, and a pivoted lever having a pin to engage the tarret, combined with a tripping-dog having a rack and adapted to slide in the head, the pinion g^3 and its shaft, and means for locking the shaft in required position, as set forth.

6. The head provided with a clamp, as specified, and the tool-tarret, combined with the tool-guide, having a stem to enter the clamp, and provided with jaws to engage a tool of the tarret, in the manner and for the purpose described.

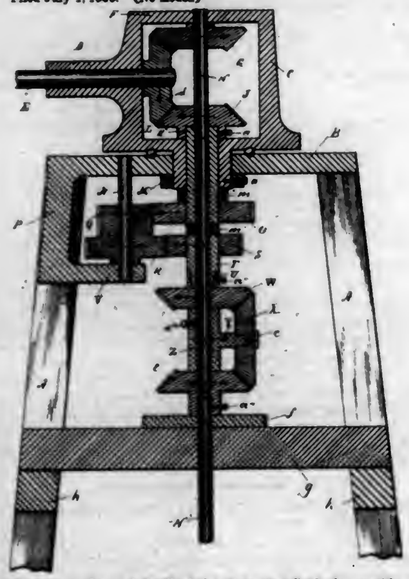
7. The head provided with the clamp and the tarret, having tools with grooves therein, as specified, and the standard having the groove k^2, combined with the tool-guide provided with the stem, the jaws, and the rearward extension, substantially as and for the purpose set forth.

328,724. FENCE-BARB. GEORGE H. PATTISON, Freeport, Ill. Filed Sept. 11, 1882. (No model.)



Claim.—The combination of a fence-wire and a two-point wire barb whose body lies in contact with and practically parallel to the fence-wire, one end of the barb projecting at right angles to its body, and the other end bent at right angles to the body and wrapped about the main wire and the body of the barb, substantially as shown and described.

328,725. WINDMILL-GEARING. GEORGE H. PATTISON, Freeport, Ill. Filed July 1, 1885. (No model.)



Claim.—1. In a windmill of the class described, the combination of the turn-table of the mill, a wind-wheel shaft journaled therein, two suitably-journaled central vertical shafts, and a third vertical shaft journaled in the tower of the mill, and gearing connecting said wind-wheel shaft and said vertical shafts, whereby the rotation of the wind-wheel shaft in its bearing rotates said central vertical shafts in the same direction.

2. In a windmill of the class described, the combination, with a rotating turn-table, of a wind-wheel shaft journaled therein, a vertical shaft driven by gearing from said wind-wheel shaft, a sleeve on the vertical shaft, and connected by gearing with the wind-wheel shaft, a loose gear having its axis coincident with the vertical axis of the mill and rotating freely about its axis, and gearing connecting said loose gear with said vertical shaft and said sleeve, whereby the rotation of the wind-wheel shaft rotates said sleeve and said loose gear at different rates of speed.

3. In a windmill of the class described, the combination, with a rotating turn-table, of a wind-wheel shaft journaled therein, a loose gear having its axis coincident with the vertical axis of the mill, a loosely-mounted gear engaging with said loose gear and free to rotate on its own axis and to revolve about the vertical axis of the mill, three vertical shafts arranged substantially as shown and described, and a vertical sleeve having its axis coincident with the vertical axis of the mill, and gearing connecting said wind-wheel shaft, said vertical shafts, and said sleeve, whereby the rotation of the turn-table rotates said sleeve and said loose gear at different rates of speed.

4. In a windmill of the class described, the combination of a turn-table free to rotate about the vertical axis of the mill, a wind-wheel shaft journaled in said turn-table, three vertical shafts arranged substantially as shown and described, and a train of gearing connecting the wind-wheel shaft and the three vertical shafts, one element of said train of gearing being a loosely-mounted gear-wheel free to rotate about its own axis and to revolve about the vertical axis of the mill, substantially as and for the purpose set forth.

5. In a windmill of the class described, the combination of a rotating turn-table, a wind-wheel shaft journaled therein, two independently-journaled vertical shafts adapted to transmit the power of the mill to other mechanism, a third vertical shaft journaled in suitable bearings attached to the tower of the mill, and gearing, substantially as shown and described, connecting said wind-wheel shaft and said vertical shafts, whereby the rotation of the wind-wheel shaft in its bearing does not tend to rotate the turn-table, and the rotation of the turn-table does not tend to rotate the wind-wheel shaft in its bearing.

6. In a windmill of the class described, the combination of a rotating turn-table, a wind-wheel shaft journaled therein, two independently-rotating vertical shafts adapted to transmit the power of the mill to other mechanism, a third vertical shaft journaled in bearings attached to the tower of the mill, and a train of gearing connecting said wind-wheel shaft and said vertical shafts, one element of said train of gearing being a loosely-mounted gear free to rotate about its own axis and to revolve about the vertical axis of the mill, whereby the resistance of the work to be performed by the mill tends to retard the rotation of the wind-wheel shaft in its bearing, but not to rotate the turn-table.

7. In a windmill of the class described, the combination of a rotating turn-table, a wind-wheel shaft journaled therein, a loose gear having its axis coincident with the vertical axis of the mill, a loosely-mounted gear engaging with said loose gear and free to rotate about its own axis and to revolve about the vertical axis of the mill, the three vertical shafts arranged substantially as shown and described, and gearing connecting said loose gear, said loosely-mounted gear, said three vertical shafts, and the wind-wheel shaft, whereby, during the simultaneous rotation of the turn-table about the vertical axis of the mill, and of the wind-wheel shaft in its bearing, the power transmitted by said vertical shafts bears a constant ratio to the speed of rotation of the wind-wheel shaft.

8. In a windmill of the class described, the combination of a rotating turn-table, a wind-wheel shaft journaled therein, two vertical power-transmitting shafts one above the other, gearing connecting the upper end of said upper vertical shaft with the wind-wheel shaft, loosely-mounted gear connected with said upper vertical shaft near its lower end, and having a rotation on its own axis and a bodily rotation about said vertical shafts, and gearing connecting said loosely-mounted gear with the lower vertical power-transmitting shaft and with the wind-wheel shaft, whereby the rotation of the wind-wheel shaft in its bearing rotates said vertical shafts in the same direction, but at different rates of speed.

9. In a windmill of the class described, the combination of a wind-wheel shaft, a vertical shaft connected directly by gearing with said wind-wheel shaft, a loose gear free to rotate about its own axis and about the axis of rotation of its support, and connected by a supporting-arm with said vertical shaft, and gearing connecting said loose gear with the wind-wheel shaft, whereby the rotation of the wind-wheel shaft in its bearing rotates said loose gear about its own axis and about the vertical axis of the mill.

10. In a windmill of the class described, the combination of a rotating turn-table, a wind-wheel shaft journaled therein, a vertical power-transmitting shaft, and a sleeve mounted loosely on said shaft, said vertical shaft and said sleeve being both geared directly to the wind-wheel shaft, a loose gear free to rotate on its own axis and about the vertical axis of the mill, and connected with said vertical shaft by means insuring their uniform rotation, and gearing, substantially as shown and described, connecting said loose gear and said sleeve.

11. In a windmill of the class described, the combination, with the wind-wheel shaft, of a vertical shaft, N, journaled in bearings attached to the tower of the mill, gearing connecting said shaft with the wind-wheel shaft, a gear adapted to transmit power to mechanism to be operated by the mill, and gearing connecting the vertical shaft N with said power-transmitting gear, substantially as shown and described, and for the purpose set forth.

12. The combination of the wind-wheel shaft E, the vertical shafts H H', the gear *e*, attached to the shaft H', the gear W, loosely mounted on the shaft H, the gear X, engaging with the gears *e* and W and rotating bodily with the shaft H, gearing connecting the wind-wheel shaft E with the vertical shaft H, and gearing, substantially as shown and described, connecting the wind-wheel shaft with the gear W, whereby the rotation of the wind-wheel shaft in its bearing rotates the two shafts H H' in the same direction.

13. The combination of the wind-wheel shaft E, the vertical shaft H, and gearing connecting the shaft H with the wind-wheel shaft, the loose gear W, rotating freely on the shaft H, the loose gear X engaging the gear W, and having a rotation on its own axis and a bodily rotation in unison with the rotation of the shaft H, and gearing connecting the wind-wheel shaft E with the loose gear W, whereby the rotation of the wind-wheel shaft in its bearing rotates the shaft H and the gear W at different rates of speed, substantially as shown and described, and for the purpose set forth.

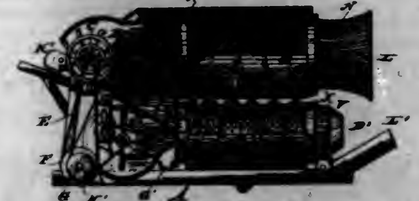
14. The combination of the wind-wheel shaft E, journaled in the turn-table of the mill, the vertical shaft H, and the sleeve K, rotating freely thereon, the gear I on the wind-wheel shaft, and the gears G J, engaging the gear I, and mounted on the shaft H and sleeve K, respectively, the gear-wheel O, mounted on the lower end of the sleeve K, and engaging with gearing whose shaft is journaled in bearings attached to the tower, the loosely-mounted gear X, rotating on its own axis, and having a bodily rotation about the shaft H and in unison with the rotation of said shaft, the gears W S, connecting the gear X with the gearing whose shaft is pivoted in the tower, and the gear *e*, engaging with the gear X, and adapted to transmit power to other mechanism, substantially as shown and described, and for the purpose set forth.

15. The combination of the wind-wheel shaft E, journaled in the turn-table of the mill, the two vertical power-transmitting shafts H H', and the gears I G J O Q R S W *e*, connecting the wind-wheel shaft with the shafts H H', whereby the rotation of the turn-table rotates the upper bat not the lower of the two shafts H H', substantially as shown and described, and for the purpose set forth.

16. The combination of the wind-wheel shaft E and gear I, the vertical shaft H and gear G, the gears J O Q R S W, and the loose gear X, mounted on a shaft, Y, rigidly connected with the shaft H, substantially as shown and described, and for the purpose set forth.

17. The combination of the wind-wheel shaft E and the train of gearing I G J O Q R S W X *e*, all connected and combined substantially as shown and described, and for the purpose set forth.

323,726. THRASHER AND SEPARATOR. FRANK PAYNE, East Portland, Oreg. Filed Oct. 16, 1884. (No model.)



Claim.—1. The combination of the revolving carrier constructed of longitudinal slats, internal metallic bands, and external flanged hoops, a series of rollers mounted upon longitudinal shafts, and the cone friction-gearing, substantially as specified.

2. The combination, with the thrashing mechanism, the inclined grate, and the straw-carrier and its external propeller-screw and trough, of the rotating separator located below the straw-carrier, and the inclined partition whereby the grain is directed into the separator, substantially as specified.

3. In a thrashing-machine, the combination, with the thrashing-cylinder, inclined grate, trough T, and rotating thrashing-cylinder L, provided with an external propelling-screw, of the inclined plane U, separating-receptacle V, and the gearing whereby the whole is operated, substantially as specified.

4. The combination, with the blast-fan and the tubular separating-receptacle V, composed of an inner and an outer perforated shell adjustable upon each other to regulate the size of the escape-openings, of the perforated head D', for the escape of the unthrashed heads of grain, substantially as specified.

5. The combination, with the rotating separating-receptacle V, provided on its exterior with right and left screw-blades, perforated head D', and the trough C' below said receptacle, of the rotating straw-conveyer L, provided on its exterior with a propeller-screw, the trough T below said conveyer, inclined plane U, and the gearing whereby the whole is operated, substantially as described.

323,727. TOOL-HOLDER. ANDREW J. PEAVEY, Boston, Mass. Filed May 25, 1885. (No model.)

Claim.—1. In a tool-holder, the turning and stationary parts A B of the handle, containing an operating screw-nut, H, in combination with separate gripping-jaws C, which are located in the stationary part of the handle, are hinged to a common carrier-block, E, screwing into said screw-nut, and at their gripping ends are adapted to be projected

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from and to be drawn into the handle, and thus to open and to close them, and all fastened together, substantially as described, for the purpose specified.

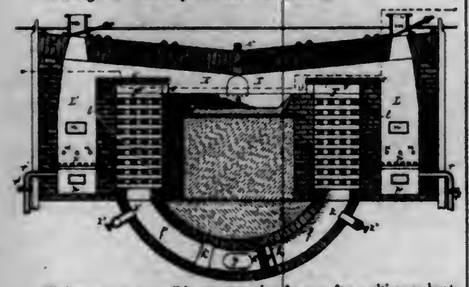
2. In a tool-holder, the turning and stationary parts A B of the handle, containing an operating screw-nut, H, and separate gripping-jaws C, which are located in the stationary part of the handle, are carried by a common carrier or block, E, screwing into said screw-nut, and at their gripping ends are adapted to be projected from and to be drawn into the handle, and thus to open and to close them, and all fastened together, and provided with a passage, R, which leads through them from end to end of the holder, substantially as described, for the purpose specified.

3. In a tool-holder, the turning and stationary parts A B of the handle, containing an operating screw-nut, H, of external polygonal shape, fitting within a corresponding shape of the turning part of the handle, in combination with separate gripping-jaws C, which are located in the stationary part of the handle, and are carried by a common carrier or block, E, screwing into said screw-nut H, and at their gripping ends are adapted to be projected from and to be drawn into the handle, and thus to open and to close them, substantially as described, for the purpose specified.

4. In a tool-holder, the turning and stationary parts A B of the handle, containing an operating screw-nut, H, and separate gripping-jaws C C, which are located in the stationary part of the handle, are hinged to a common carrier or block, E, screwing into said screw-nut, and at their gripping ends are adapted to be projected from and to be drawn into the handle, and thus to open and to close them, and all fastened together, and provided with a passage, R, which leads through them from end to end of the holder, substantially as described, for the purpose specified.

5. In a tool-holder, the turning and stationary parts A B of the handle, containing an operating screw-nut, H, secured thereto by a screw-nut, M, and separate gripping-jaws C C, which are located in the stationary part of the handle, are carried by a common carrier or block, E, screwing into said screw-nut and at their gripping ends, and are adapted to be projected from and to be drawn into the handle, and thus to open and to close them, substantially as described, for the purpose specified.

323,728. FURNACE FOR MELTING GLASS, &c. John Pedder, Pittsburg, Pa. Filed Sept. 22, 1883. (No model.)



Claim.—1. A reversible regenerative furnace for melting or heating glass or other substances, having a regenerator at each end of and adjoining the furnace-bed and inclosed under the same roof or arch therewith, substantially as and for the purposes set forth.

2. A reversible regenerative furnace for melting or heating glass or other substances, having a regenerator at each end of and adjoining the furnace-bed, and on or above the floor-level of the furnace, substantially as and for the purposes set forth.

3. A reversible regenerative furnace for melting or heating glass or other substances, having a regenerator at each end of and adjoining the furnace-bed, and on or above the floor-level of the furnace, and flues on or above the floor-level leading from the regenerators to the stack, substantially as and for the purposes set forth.

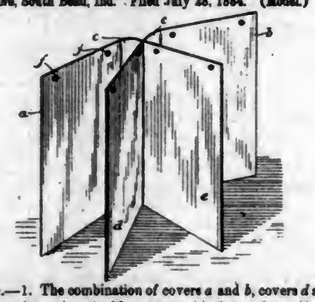
4. A reversible regenerative furnace for melting or heating glass or other substances, having a furnace-bed, an air-regenerator at each end of and adjoining said bed, and gas-producers beyond said air-regenerators, and extending above the floor-level of the furnace, substantially as and for the purposes set forth.

5. A reversible regenerative furnace for melting and heating glass and other substances, having a furnace-bed, an air-regenerator at each end and adjoining said bed, and gas-producers beyond said air-regenerators, all being inclosed under the same roof, substantially as and for the purposes set forth.

6. A regenerative-furnace roof formed of one or more cases of key brick or tile hung or supported from above the roof over the furnace-bed, and courses of brick-work supported by said key-course and the furnace-walls, substantially as and for the purposes set forth.

7. In a regenerative furnace, the roof *c*, formed of the course of long key-bricks *c'*, having holes in their upper ends, and supported by a brace-rod passing through said holes, and the courses of bricks built on either side thereof, substantially as and for the purposes set forth.

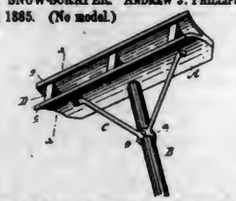
323,729. COMBINED PETIT LEDGER AND BLOTTER. Walter B. Pershing, South Bend, Ind. Filed July 28, 1884. (Model.)



Claim.—1. The combination of covers *a* and *b*, covers *d* and *e*, flexible back *c*, and a series of tablets removably fastened to said covers, and each composed of a cover, *j*, having an erasable marking surface, several parcels of blank bill-forms, and separating-leaves bearing different letters of the alphabet and forming a marginal index, all substantially as and for the purpose specified.

2. In a petit ledger, the combination, with a pair of stiff exterior covers joined by a flexible back, of a pair of interior stiff covers, also joined to said flexible back, whereby a book is formed having two compartments, substantially as specified.

323,730. SNOW-SCRAPER. Andrew J. Phillips, Fentonville, Mich. Filed Jan. 2, 1885. (No model.)



Claim.—1. A head for snow-scrapers, consisting of the head A provided with the wings *c*, braced apart in any suitable manner, substantially as and for the purposes described.

2. In combination with the head A, provided with the wings *c*, the wedge-blocks D, substantially as set forth.

3. A snow-scraper consisting of the head A, provided with the wings *c*, wedge-blocks D, and handle B, when constructed, arranged, and operating substantially in the manner and for the purposes specified.

323,731. PACKING FOR VESSELS, &c. George R. Phillips, Providence, R. I. Filed Apr. 23, 1885. (No model.)



Claim.—1. An improved packing composed of elastic material attached to a rigid metal frame having extensions to inclose the elastic material laterally, as set forth.

2. The rigid frame A, formed with the extensions *a*, as described.

3. The combination, with the rigid frame A, formed with the extensions *a*, of the elastic blocks or strips B, as specified.

323,732. ICE-CREAM FREEZER. Albert L. Platt, Bowling Green, Mo., assignor to William B. McAlister, James R. McAlister, and James M. Hawkins, all of same place. Filed May 1, 1885. (No model.)

Claim.—1. A freezing-cylinder having a hollow trunnion fitted to admit the refrigerant and provided with a hopper supported on and revolving with the said trunnion, substantially as set forth.

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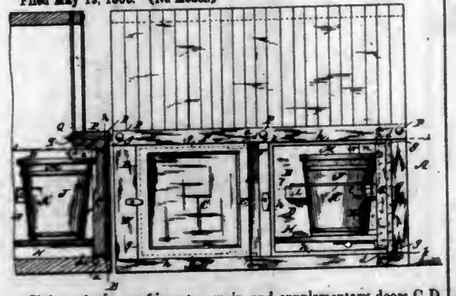


2. As an article of manufacture, the hollow freezing-cylinder herein described, having trunnions at its opposite ends, one of said trunnions having an opening fitted to discharge water, and the other having an opening fitted to admit the refrigerant, and having its outer end flared, forming a hopper, substantially as set forth.

3. The combination of the supports C, the cylinder, and the concave having its ends provided with flanges hooked over the supports C, and having side plates projecting up on opposite sides of the cylinder, substantially as set forth.

4. The combination of the main frame, the cylinder supported therein and having hollow trunnions, one of which is adapted to permit the infeed of the refrigerant and the other the discharge of water, and legs secured at one end to the main frame, and provided at their other ends with feet adapted to be journaled to a support, whereby the device may be turned upon its side, substantially as set forth.

323,733. REFRIGERATOR. Abraham L. Potter, Boston, Mass. Filed May 19, 1885. (No model.)



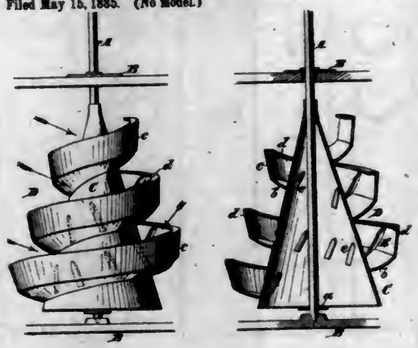
Claim.—1. In a refrigerator, main and supplementary doors C D, hung at the inner edge of the door-jamb, in combination with a recess, *f*, of the outside wall of the refrigerating-compartment, to receive the hinged edge of said doors, substantially as described.

2. In a refrigerator, main and supplementary doors C D, hung a the inner edge of the door-jamb, and provided with an inner vertical strip N, in combination with a recess, *f*, of the outside wall of the refrigerating-compartment, to receive the hinged edge of said doors, substantially as described.

3. In a refrigerator, main and supplementary doors C D, hung at the inner edge of the door-jamb, and provided with projecting flange *g*, in combination with a recess, *f*, of the outside wall of the refrigerating-compartment, to receive the hinged edge of said flange of said doors, substantially as described.

4. In a refrigerator, main and supplementary doors hung to be opened and closed, in combination with a shelf, H, and attachable and detachable strap K, substantially as described, for the purpose specified.

323,734. WATER-WHEEL. Lewis L. Randall, Hawkinsville, Ga. Filed May 15, 1885. (No model.)



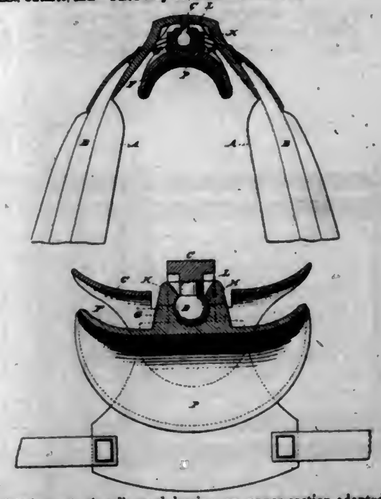
Claim.—1. A turbine consisting of a hollow conical body having openings for the escape of dead-water, a spiral water-way surrounding said conical body, and buckets placed at intervals in said water-way, substantially as described

2. A turbine consisting of a hollow conical body having openings for the escape of dead-water, a spiral water-way surrounding said conical body, and having a concaved bottom and flaring sides, and buckets placed at intervals in said water-way, substantially as described.

3. In a turbine water-wheel, the combination of the cone C, fixed to a shaft, and provided with openings *e e*, the spiral water-way D, secured to the outer side of said cone, and provided with a concaved bottom, *b*, and flaring side *c*, and the V-shaped buckets E E, substantially as described.

4. In a turbine water-wheel, the combination of the cone C, fixed to a shaft, and provided with openings *e e*, the spiral water-way D, secured to the outside of said cone, and provided with a concaved bottom, *b*, flaring side *c*, and flanged rim *d*, and the buckets E E, arranged in said water-way, substantially as described.

323,735. HORSE-COLLAR PAD. Darius C. Rice and Jerome Rossman, Ontario, Ind. Filed May 28, 1885. (No model.)



Claim.—1. A collar-pad having an upper section adapted to be connected to the collar or hames, and a lower section carrying the soft pad, and connected to the upper section by ball-and-socket joint, substantially as specified.

2. The combination, with the collar-bridge having a ball-bearing, of the lower casting having a socket-boss and cap-plate, and adapted to receive the soft pad, substantially as specified.

323,736. EYEGLASSES. Jacob W. Reglander, New York, N. Y. Filed Apr. 23, 1885. (No model.)

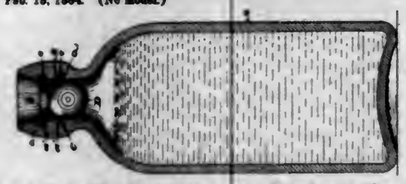


Claim.—1. The combination, with a pair of eyeglasses having attached studs *a a* and *b b*, of the bridge-spring A, having slots *d*, and formed integral with the nose-springs B and supporting-springs C, the latter being loosely connected with the studs *a*, and rigidly attached to the studs *b*, and having their upper ends loosely engaging the slots in the bridge-piece, substantially as described.

2. The combination, with a pair of eyeglasses having attached T-headed studs *a a* and studs *b b*, of the bridge-spring A, having slots *d*, and formed integral with the nose-springs B and supporting-springs C, the latter being secured to the studs *b*, and having slots *h*, loosely engaging the studs *a*, and provided at their upper ends with T-heads *c*, engaging the slots in the bridge-piece, substantially as described.

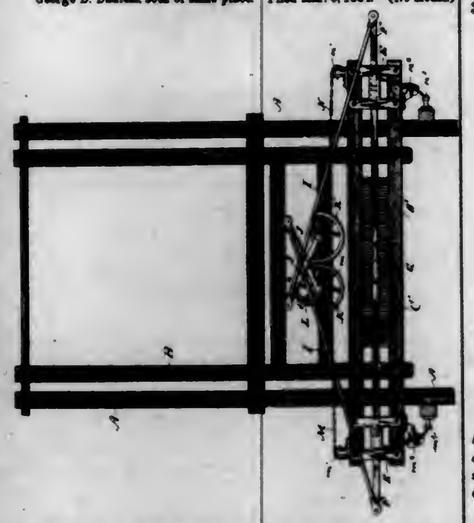
3. The combination, with the bridge-spring A and the nose-pieces B B, of supporting-springs C C, having T-heads *c c*, formed to engage with slots *d d* in the bridge-spring, the studs *b b*, and screws *j j*, for connecting the supporting-springs rigidly to said studs, and the studs *a a*, formed to produce yielding connections for the supporting-springs, substantially as shown and described.

323,737. BOTTLE-STOPPER. WILLIAM L. ROORBACH, Philadelphia, Pa., assignor of one-half to S. Twitchell & Brother, same place. Filed Feb. 18, 1884. (No model.)



Claim.—A bottle formed with a groove, B, in its neck, the same having two inclined faces, *a' a'*, and top and bottom walls, *a a*, and provided with a rubber packing, C, having both its inner and outer faces inclined respectively in opposite directions to conform to the groove B, the top edge of said packing being inclosed by the upper wall, *a*, of said groove, and the outer face of said packing flush with the inner face of the neck of the bottle, substantially as and for the purpose set forth.

323,738. POSITIVE SHUTTLE-MOTION FOR LOOMS. CHARLES B. RUMSEY, Homer, N. Y., assignor of two-thirds to Charles A. Skinner and George D. Daniels, both of same place. Filed Mar. 6, 1884. (No model.)



Claim.—1. A vibrating lathe and means for imparting motion to it, reciprocating shuttle-carrier arms mounted on the lathe, crank-arms also mounted on the lathe and geared together so as to vibrate simultaneously in opposite directions, connections between the crank-arms and shuttle-carrier arms, and means, substantially as described, for vibrating the cranks by the back and forth movements of the lathe, as set forth.

2. The combination of the stationary loom-frame, the lathe, and means for vibrating it, the reciprocating shuttle-carrier arms, the gear-sectors geared together and provided with the crank-arms, the connecting pitmen, the cam on one of the sectors, and the chains connected to the cam and to the stationary loom-frame, substantially as described.

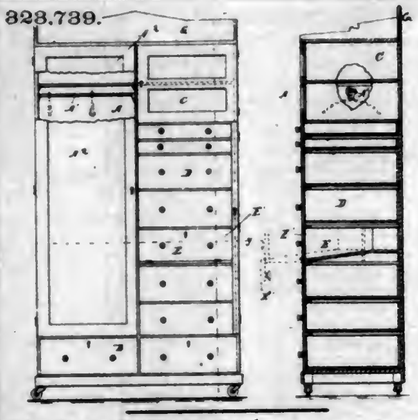
3. The combination of the stationary loom-frame, the lathe, and means for vibrating it, the shuttle-carrier arms, the gear-sectors geared together and having the crank-arms, the pitmen connecting the crank-arms to the shuttle-carrier arms, the cam on one of the gear-sectors, the two chains connected at one end to the cam and at the other to the stationary frame, and the several guide wheels and pulleys, substantially as described.

323,739. DRESSING-CASE. ROCKWELL SAYER, Chicago, Ill. Filed July 15, 1882. (No model.)

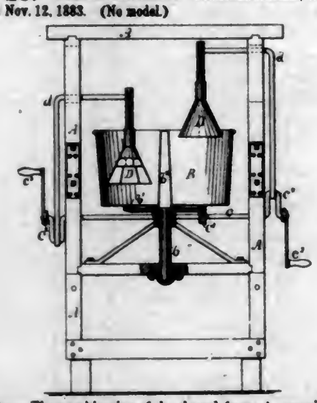
Claim.—1. An article of furniture comprising, first, a full-length wardrobe, A, having a door with a full-length mirror in its front; and, second, a chiffonier arranged at the side of the wardrobe and provided with the sliding dressing-table E, having the hinged drawer-front E', substantially as and for the purposes described.

2. The chiffonier containing the drawers D, of ordinary construction, and the drawer E, having a sloping bottom, and the front E', hinged to the bottom, substantially as and for the purpose described.

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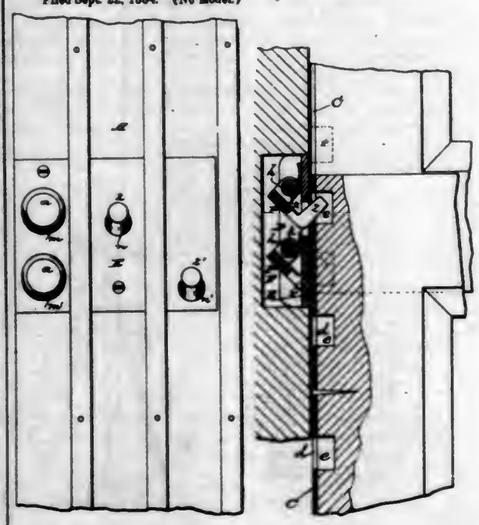


323,740. WASHING-MACHINE. JONATHAN SCHARR, Warwick, R. I. Filed Nov. 12, 1883. (No model.)



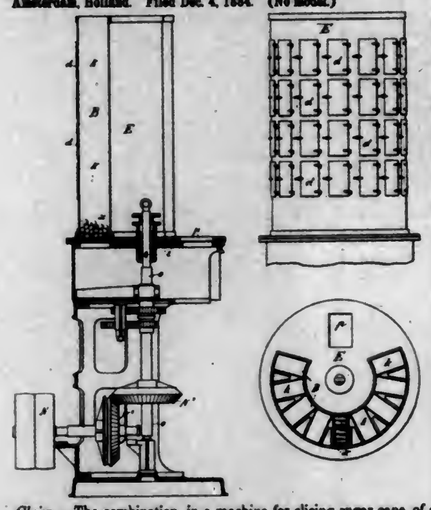
Claim.—The combination of the slotted frame A, carrying the shaft *b*, of the shaft *c*, mounted in said frame and carrying the gear *c'*, the rods *d*, carrying the pounders D, the cranks c^3 c^3, the tub B with its gear *b'* and the projection b^3, all of said parts being constructed and arranged to operate as set forth.

323,741. SASH-FASTENER. ANTON SCHNACKEFA, Birmingham, Ala. Filed Sept. 22, 1884. (No model.)



Claim.—The combination, with the serially-bored sashes and the wear-plates thereof, of the recessed jamb and the lock-plate thereof having inner apertures, *m m'*, and spur-apertures *n n'*, and the elongated latches P P', pivoted to spring bearing-rods secured to said plate, having spurs working obliquely upward through the apertures *n n'*, and keys working in a similar manner through the apertures *m m'*, substantially as specified.

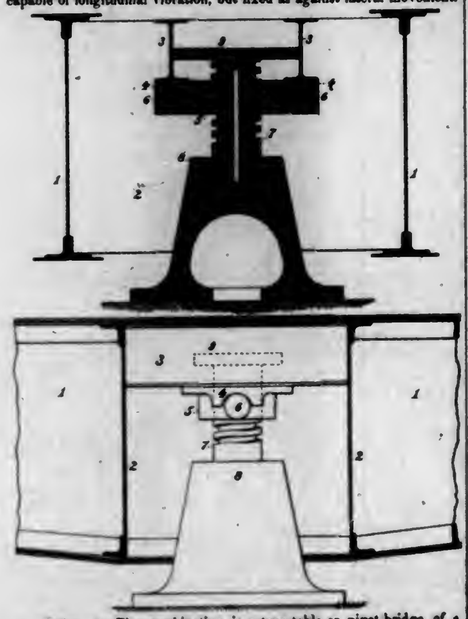
323,742. MACHINE FOR SLICING SUGAR-CANE. ERNST SCHULER, Amsterdam, Holland. Filed Dec. 4, 1884. (No model.)



Claim.—The combination, in a machine for slicing sugar-cane, of a hopper divided into vertical compartments, and having lateral openings provided with doors, and a cutter to slice the cane as it passes from said hopper, substantially as described.

323,743. CENTER FOR TURN-TABLES AND BRIDGES. JOHN W. SEAVER, Pittsburg, Pa., assignor of one-half to Ritter & Conley, same place. Filed Oct. 30, 1884. (No model.)

Brief.—A collar vertically adjustable on the central pivot forms the bearing for the turn-table in such manner that the same may be capable of longitudinal vibration, but fixed as against lateral movement.

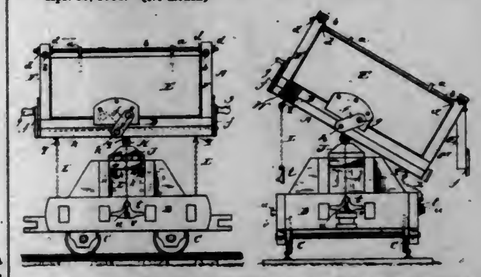


Claim.—1. The combination, in a turn-table or pivot-bridge, of a central pivot, a collar mounted and capable of vertical adjustment thereon, journals fixed upon said collar in the transverse central plane of the main supporting-girders, and bearings connected to said girders and resting upon said journals, substantially as set forth.

2. The combination, in a turn-table or pivot-bridge, of a central pivot, a collar mounted with the capacity of vertical adjustment thereon, bearings connected to the main supporting-girders and resting upon journals on the collar, and a removable stop-plate connected to the pivot and abutting against bearing-surfaces fixed to the main girders, so as to prevent rotation of the pivot independently thereof, substantially as set forth.

3. The combination, in a turn-table or pivot-bridge, of a pair of main girders, a pair of cross-girders secured thereto, a pair of bearing-bars connecting the cross-girders on opposite sides of their longitudinal central plane, bearings which are segmentally recessed on their lower sides and secured to the bearing-bars with their recesses concentric with the transverse central plane thereof, a central pivot having an external screw-thread and fitting in a stop or bearing, a collar having an internal central thread engaging the thread of the pivot, and a pair of journals fitting freely in the bearings, and a removable stop-plate connected to the pivot and fitting at its ends against the bearing-bars, substantially as set forth.

323,744. DUMPING-CAR. THOMAS F. SHERY, Boston, Mass. Filed Apr. 30, 1885. (No model.)



Claim.—1. A dumping-car having a body with four opening and closing sides, and supported upon the truck or other suitable support of the car only at its center, and to be tilted thereon in the direction of either its said four opening and closing sides, in combination with means, substantially as described, to fasten and hold the body at each of its sides against accidental tipping, and released on either side to permit the body to be tipped only in the direction of the side opposite thereto, substantially as described, for the purpose specified.

2. A dumping-car having a body with one or more opening and closing sides attached to the truck or suitable support of the car, to be tilted thereon in the direction of either of its said opening and closing sides, and said support for the body constructed and arranged to be adjusted vertically independently of the tilting of the body, substantially as and for the purposes described.

3. A dumping-car having opposite sides of its body adapted to be opened and closed, in combination with fastenings applied to each of said opening and closing sides, and carried by a common operating-rod arranged for the fastening of either of the so opening and closing sides, to be operated through its said rod at the side of the car directly opposite to such fastening, substantially as described, for the purpose specified.

4. A dumping-car having a body with three or more opening and closing sides, E, and centrally suspended by a vertical loop or eye, G, from a vertical loop or eye, H, of the truck or other suitable support of the car, so that it can only upset in directions or lines practically at right angles to each other, and is incapable of rotation upon its said support, in combination with devices adapted to fasten the body against accidental upsetting, substantially as described, for the purpose specified.

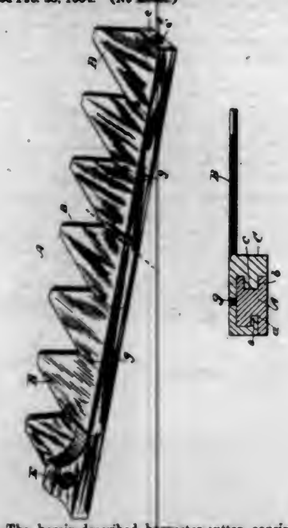
5. The dumping-car having one or more of the sides of the body adapted to be opened and closed, and the body attached to a standard, J, to be upset in the direction of either of its opening and closing sides, which standard is provided with a series of holes, *m*, arranged in a vertical socket, K, of the truck or other body support of the car, in combination with rods *k*, which pass loosely through the holes *m* of said standard and the holes *l* of the walls of said socket, and are secured in place, substantially as described, for the purpose specified.

6. A dumping-car having opposite sides adapted to be opened and closed, in combination with button-fastenings *f* for each of said opposite sides, attached to a common operating-rod, A, turning in suitable bearings of the car-body, substantially as described, for the purpose specified.

7. A dumping-car having one or more of the sides of its body adapted to be opened and closed, and the body arranged upon its truck or other support therefor of the car, and otherwise adapted to be upset in the direction of either of its said opening and closing sides, and to be adjusted in height, and secured at its so adjusted height, in combination with flexible connections between the sides of the body and its support or truck,

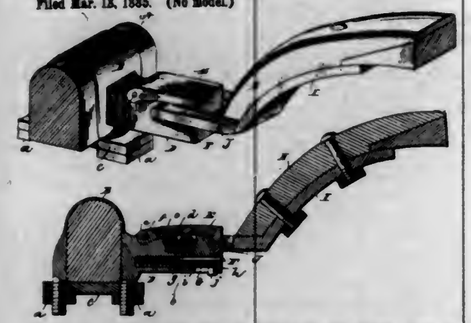
adapted to be lengthened and shortened, substantially as described, for the purpose specified.

323,745. HARVESTER-CUTTER. George R. Sigler and William G. Sigler, Decatur, Pa., assignors of one-half to Clark Barkholder, same place. Filed Feb. 23, 1884. (No model.)



Claim.—The herein-described harvester-cutter, consisting of the cutter-bar A, having the longitudinal grooves *a* and *b* and screw *f*, in combination with the knife-blades B, provided with the flanges C, having the ribs *c*, and the L-shaped flanges D, the washer *e*, and nut *e'*, substantially as set forth.

323,746. THILL-COUPLING. Edward H. Smith, Rutherford, Cal. Filed Mar. 18, 1885. (No model.)



Claim.—1. The combination, with the draw-iron having a seat, of a plate having a loop, a hinged or pivoted lid, and a spring-actuated bolt sliding in the draw-iron and engaging an opening or its equivalent in the lid, thereby automatically locking said lid in a closed position, substantially as set forth.

2. The combination, with a draw-iron having a seat upon its upper side, a lid having an extension formed with a hole or opening, and a sliding spring-actuated bolt moving longitudinally in the draw-iron under the seat to engage said opening, and having the operating-pin projecting through the slot at the bottom of the draw-iron, of a plate formed with a loop, substantially as set forth.

323,747. UPRIGHT PIANO. Freeborn G. Smith, Brooklyn, N. Y. Filed June 22, 1885. (No model.)

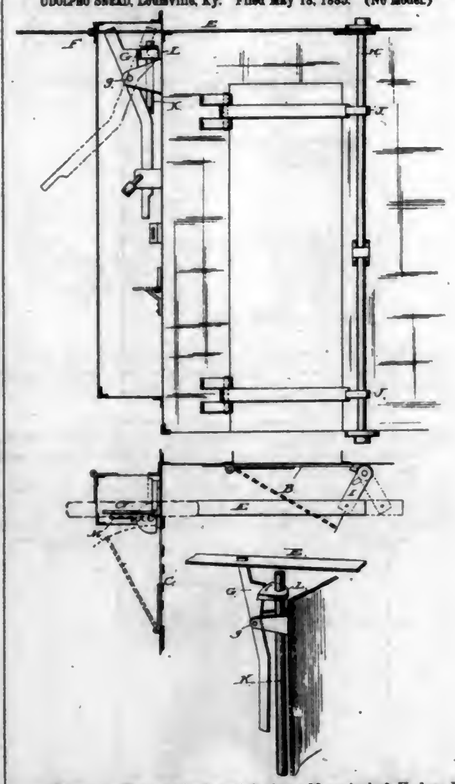


Claim.—1. In an upright piano, an improved music-desk, composed of a movable panel fitted to an opening in the front of the piano-case and provided with a music-rest on its front, and two pairs of links, the lower pair longer than the upper, attached to the ends of said movable panel and the end walls of said opening by pivotal screws for supporting the music-desk in effective position out of contact with the woodwork of the piano-case, substantially as herein specified.

2. The combination, substantially as herein specified, of a movable panel having a rabbeted edge, an opening to which said panel is fitted, and two pairs of links, the lower pair longer than the upper, attached by pivotal screws at their respective ends to the ends of said panel behind the projecting margin of its edge and to the end walls of said opening, for the purpose set forth.

3. The combination, substantially as herein specified, of a movable panel provided with a music-rest and having a rabbeted edge, an opening to which said panel is fitted, links attached by pivotal screws at their respective ends to the ends of said panel behind the projecting margin of its edge and to the end walls of said opening, and washers of leather or felt on said screws, for the purpose set forth.

323,748. LOCKING DEVICE FOR JAILS. Charles S. Snead and Udolpho Snead, Louisville, Ky. Filed May 18, 1885. (No model.)



Claim.—1. The combination of the lever M, rock-shaft K, dogs L, N, and O, and lock P, all constructed and arranged substantially as and for the purpose set forth.

2. The levers G and M and rock-shafts H and K, in combination with the sliding bar E and dogs J, N, and O, all constructed and arranged to operate substantially as and for the purpose set forth.

3. The combination, with the sliding bar E, of the lever G, the rock-shaft K, and the dog L, substantially as and for the purpose herein described.

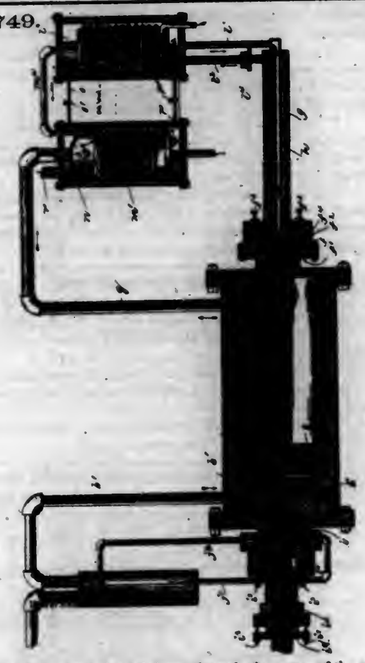
323,749. COMPRESSOR FOR ICE-MACHINES. Frederick Stitzel, Louisville, Ky., assignor of two-thirds to Adolph Reutlinger and Moses Schwartz, both of same place. Filed Nov. 3, 1884. (No model.)

Claim.—1. The combination of a pump-cylinder, its piston having an oil-chamber in its rim, and an oil-circulating mechanism, substantially as shown and described.

2. The combination, with the pump-cylinder, its piston having an oil-chamber in its rim, and induct and educt therefor, of the secondary pump connected with said oil-chamber, an oil-reservoir therefor, stuffing-boxes for the pumps, an oil-holder, and connecting circulating-pipes, substantially as shown and described.

3. The combination, with a gas-pump and mechanism, substantially

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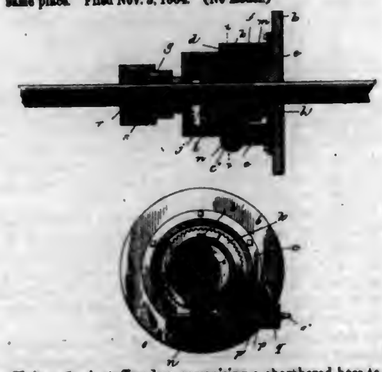
as described, for circulating lubricant through the same, of the gas-receiving tank provided with a bell, and surrounding coil of cooling-pipe constituting a separator for dissociating the mingled oil and gas as they come from the pump, substantially as set forth.

4. The combination of the lubricant-tank, the pump, and its chambered piston with the tube *h* and pipe *d*, the tube *g* and pipe *e*, the valved pipe *f*, and the gas-tank, substantially as described.

5. The combination, with a pump, of a stuffing-box having its packing compressible by means of a gland, and set-screws connected with said gland to move it, and projecting out of the bonnet for adjusting such gland exteriorly of the pump, substantially as described.

6. The combination, with a pump, of a double stuffing-box having its packing compressible by means of inner and outer glands, and set-screws connected with said glands and projecting outside for adjusting the glands exteriorly of the surrounding chamber, substantially as described.

323,750. STUFFING-BOX. Frederick Stitzel, Louisville, Ky., assignor of two-thirds to Adolph Reutlinger and Moses Schwartz, both of same place. Filed Nov. 3, 1884. (No model.)



Claim.—1. A stuffing-box comprising a chambered boss to receive packing, a gland therein, one or more worm-wheels and its or their operating worm or worms, and connections between said worm-gearing and gland whereby said gland is adjusted longitudinally to tighten up the packing, substantially as set forth.

2. A stuffing-box comprising a chambered boss on the cylinder-head to receive packing for the piston-rod, a gland fitted on the packing in the chamber of said boss, and worm-gearing connected with said gland, and operated from outside the box to move said gland to tighten up the packing, substantially as set forth.

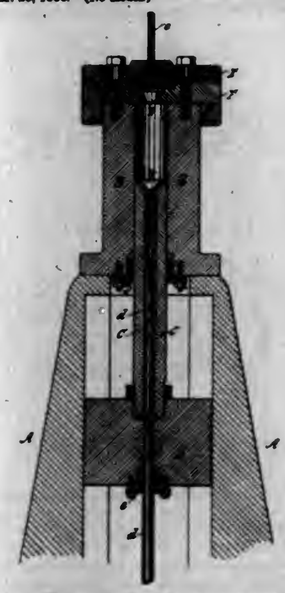
3. A stuffing-box comprising a boss chambered to receive packing, a gland therein operated from outside the box through the medium of worm-gearing, a bonnet inclosing the boss and gland, and extended beyond the same into a chambered boss having packing therein, and a gland, and means, substantially as set forth, for moving said gland longitudinally without detaching the parts, substantially as described.

4. The combination of the chambered boss provided with packing to engage the piston-rod passing through it, a gland to keep said packing in place, a nut engaging said gland to hold it in place, a worm-wheel and worm-shaft co-operating with said nut to adjust the gland, and an inclosing-casing through which the worm-shaft is readily accessible, substantially as and for the purpose described.

5. The combination of the annular chambered exteriorly-threaded boss, packing and superposed gland therein, flanged nut engaging the boss and gland, an annular worm-wheel engaging said nut to turn it and yet leave it free to move longitudinally as it is turned, a worm-shaft for turning the worm-wheel, a shouldered bonnet, and a band, between which last two the worm-wheel is secured, substantially as set forth.

6. The combination of the chambered boss, packing and superposed gland therein, a nut engaging said gland and movably fixed to the boss, a worm-wheel engaging said nut to rotate it and at the same time permit it to move longitudinally through it, and a worm-shaft meshing with the worm-wheel, substantially as set forth.

323,751. GAS-COMPRESSOR. John B. Storaeus, Newark, N. J. Filed Mar. 23, 1885. (No model.)



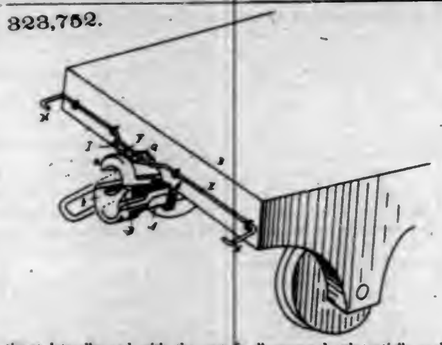
Claim.—1. The combination, in a gas-compressor, of a vertically-arranged cylinder having at one end a stuffing-box and at the opposite end a cylinder-head provided with an upwardly-opening valve, a discharge-pipe extending from the cylinder-head, a hollow reciprocating piston closely fitting the bore of the cylinder and having at its inner end an upwardly-opening valve, and a gas-supply pipe extending into and fitting the outer end of the piston, and on which pipe the piston reciprocates, substantially as described.

2. The combination, in a gas-compressor, of a cylinder, B, a hollow plunger, C, closely fitting the bore of the cylinder and provided at its top with an upwardly-opening valve, *a*, a cylinder-head, F, with an upwardly-opening valve, *b*, a cross-head, G, to which the hollow plunger is adjustably connected, and a gas-supply pipe fixed to the frame of the machine and passing through the cross-head into the hollow plunger, substantially as described.

323,752. CAR-COUPLING. David Sturgis, Harrison, Mich., assignor of four-fifths to William H. Wilson, Farwell A. Wilson, Wm. Henry Wilson, and Edgar Durfee, same place. Filed Jan. 21, 1885. (No model.)

Claim.—1. In a car-coupling, a horizontally-divided draw-head having its lower section stationary and its upper section or jaw pivotally secured thereto, in combination with the crank-shaft F, adapted to be

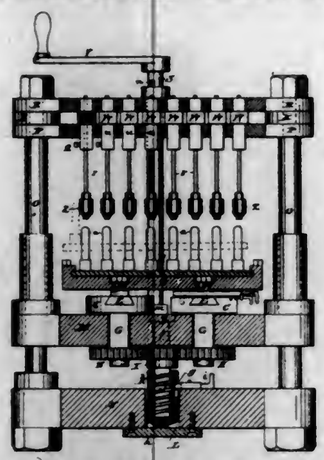
323,752.



thrust laterally, and with the rest I, all arranged substantially as described.

2. In a car-coupling, a horizontally-divided draw-head having its lower section stationary and its upper section or jaw pivotally secured thereto, a rearwardly-inclined tooth, D, in the lower section, a stop with a projecting arm in the upper jaw, a crank-shaft engaging with a loop or bail on the upper jaw, and a rest, I, all arranged and operating substantially as described.

323,753. CAPSULE-MACHINE. HARRISON H. TAYLOR, Detroit, Mich., assignor to Fred A. Hubel, same place. Filed Dec. 8, 1882. (No model.)



Claim.—1. In a machine for greasing capsule mold-pins, the combination of the following elements, viz: a plate carrying a series of greased swabs at intervals corresponding to the intervals between the mold-pins, a plate carrying a series of mold-pins, a bed adapted to support the mold-plates, and mechanism adapted to move said bed horizontally and vertically, substantially as and in the manner described and shown.

2. The combination, with a series of greased swabs mounted on shafts which are attached to pinions whereby said swabs can be rotated, of a plate carrying mold-pins, a bed adapted to carry the mold-plate and mounted upon cranks secured in a plate mounted upon a screw-shaft, mechanism for simultaneously actuating the pinions which carry the swabs, the cranks which carry the bed-plate and the screw-shaft, and mechanism for throwing the screw-shaft in and out of gear at will, substantially as described.

3. A machine for greasing capsule mold-pins, consisting of a series of greased swabs held at intervals corresponding to the intervals between the mold-pins, a mold-plate resting on a bed, provided with means for raising and lowering the same, and mechanism, substantially as described, adapted to rotate the mold-pins around the corresponding swabs, substantially as shown and described.

4. In a capsule-greasing machine, the combination of a series of greased swabs hung on spring-arms and arranged at regular intervals, a plate carrying mold-pins arranged at like regular intervals, and a bed-plate adapted to support said mold-plate and supported on one or more cranks, whereby each mold-pin can be rotated around the corresponding swab, substantially as and for the purposes set forth.

5. In a machine for greasing capsule-molds, the combination, with the swabs and molds, of the screw J, nut *k*, and latch *i*, substantially as described.

6. In a machine for greasing capsule-molds, the combination of devices for raising and lowering the mold-plate, consisting of the shaft S, pinion T, intermediate gear, H, gear I, screw J, and nut *k*, with the swabs and devices for operating them, substantially as described.

7. In a greasing-machine for gelatine-molds, the shaft S, provided with crank-handle V, and the two pinions T and Y, for the purpose of imparting a simultaneous motion to the swabs and to the mold-pins, substantially as described.

8. In a machine for greasing gelatine-capsule molds, the combination of a mold supported in a plate, a swab adapted to hold the grease, and mechanism for causing the mold to move vertically while it is moving around the swab, all substantially as described.

323,754. CONDENSED PEPTONIZED MILK. WALTER H. THEW, Liverpool, County of Lancaster, England. Filed Nov. 12, 1884. (No specimens.) Patented in England Jan. 12, 1884, No. 1,313.

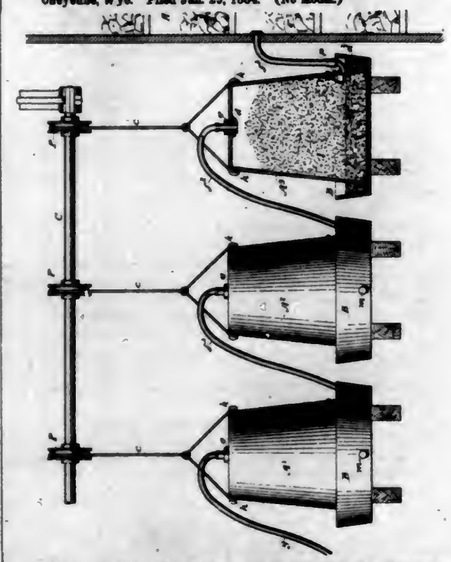
Claim.—1. Condensed peptonized milk as a new article of manufacture.

2. Condensed peptonized milk containing phosphate of soda.

3. Condensed peptonized milk containing milk-sugar in substantially the proportion stated.

4. Condensed peptonized milk containing phosphate of soda and milk-sugar in substantially the proportion stated.

323,755. APPARATUS FOR THE SEPARATION OF GOLD FROM ITS ORES BY CHLORINATION. EDWARD P. THOMPSON, Elizabeth, N. J., assignor of three-fourths to Edward P. Roberts and G. H. Pierce, both of Cheyenne, Wyo. Filed Jan. 29, 1884. (No model.)

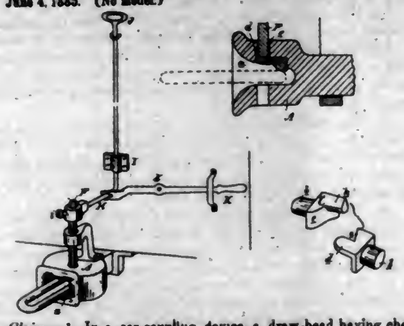


Claim.—1. The bell-shaped vat A, formed with inlet-aperture *d* at its closed end, adapted to receive successive charges of ore, chlorine, air, and water, and an exit, *d'*, located in the side of the vat at a point above the water-seal, and provided with shield *p*, and the receiving-pan B, having outlet in and adapted to contain and seal the open end of the vat A, and when said vat is raised to receive and contain the entire charge for further treatment, substantially as set forth.

2. In an apparatus for chloridizing gold ore, the combination of an inverted air-tight vat, A, provided with an inlet-opening at its closed end, through which the ore, and afterward the chlorine, is charged, and an exit located near the bottom and in the side of said vat, and a receiving-pan adapted to contain and seal the lower end of the inverted vat, and when said vat is removed to receive and contain the entire charge for subsequent treatment, substantially as set forth.

3. In an apparatus for chloridizing gold ore, the combination, with the inverted air-tight vat A, formed with charging-aperture at its closed end, and an exit, *d'*, located in the side of the vat at a point above the water-seal, and provided with suitable protecting-shield, of the receiving-pan B, having suitable outlet, and adapted to contain and seal the open end of the vat A, and when said vat is raised to receive and contain the entire charge for further treatment, and mechanism for raising the vat, and thereby discharging its contents into the receiving-pan, substantially as described.

323,756. CAR-COUPLING. LYMAN VAN CAMP, Howell, Mich. Filed June 4, 1885. (No model.)

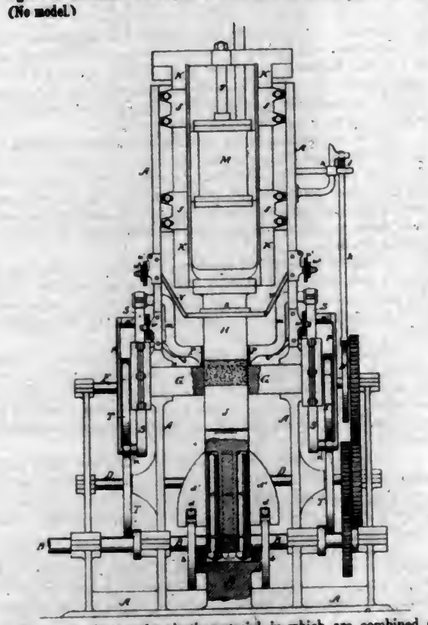


Claim.—1. In a car-coupling device, a draw-head having cheeks let into recesses formed on each side of the path of the link and actuated by springs, one of such cheeks having a ledge to support the pin, and the other having a cheek which will rest upon the end of the link when the latter is engaged with the pin, substantially as and for the purposes described.

2. A car-coupling device consisting of the draw-head A, having recesses formed therein on each side of the path of the link, cheeks B and C, inclosed within said recesses and actuated by springs D, such cheeks having the ledges *d* and *h*, the pin E, and link F, the parts being constructed, combined, and operating substantially as and for the purposes specified.

3. In a car-coupling of the character described, the L-shaped lever H, provided with a sleeve adapted to embrace the coupling-pin, and the set-screw *i*, combined with the lever K, pivoted at *k*, and having a forked end to embrace the lever H, substantially as and for the purposes specified.

323,757. PRESS FOR PLASTIC MATERIAL FOR BUILDING BLOCKS. C. IRVINE WALKER and FRANK J. JERVEY, Charleston, S. C., assignors to the Stoney Landing Company, same place. Filed Mar. 16, 1885. (No model.)



Claim.—1. A press for plastic material, in which are combined a mold, a dropping plunger, and a plunger-lifting ram acted upon by fluid under pressure, substantially as specified.

2. A press for plastic material, in which are combined a fixed mold, a movable ejector-plunger, a dropping compacter-plunger, and a plunger-lifting ram acted upon by fluid under pressure, substantially as set forth.

3. A press for plastic material, in which are combined a mold, a compacting-plunger, and a feed-box movable vertically from and toward the mold and in line with the same, substantially as specified.

4. A press for plastic material, in which are combined a mold, a compacting-plunger, a feed-box movable from and toward the mold, and a cut-off or scraper working between the mold and feed-box when the latter is moved away from the mold, substantially as specified.

5. The combination, in a press for plastic material, of a mold, a compacting-plunger, a feed-box movable vertically from and toward the mold, and operating mechanism whereby the feed-box is moved away from the mold, while the compacting-plunger presses the surplus material from said feed-box, all substantially as set forth.

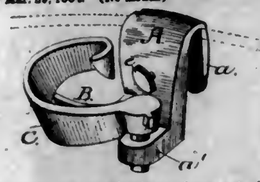
6. The combination of the mold, the lower ejector-plunger, the upper compacting-plunger, the feed-box movable from and toward the mold, and the scraper working between the mold and feed-box, all substantially as specified.

7. The combination of the mold and the compacting-plunger with a scraper and the wiper independent thereof, and movable across the acting face of the plunger to clean the same, all substantially as specified.

8. The combination of the mold, the ejector-plunger, the compacting-plunger, the feed-box movable from and toward the mold, and the scraper working between the mold and the feed-box, and having a strip whereby the face of the ejector-plunger is cleaned on the backward movement of the scraper, all substantially as set forth.

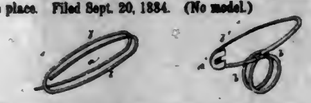
9. The combination, in a press for plastic material, of the mold, the compacting-plunger, and the ejecting-plunger, the latter having a seat upon the frame of the machine during the compacting of the block in the mold, all substantially as set forth.

323,758. MOP-WRINGER. JAMES F. WALTER, Waterloo, Iowa, assignor, by direct and mesne assignments, to W. H. Leavitt, same place. Filed Mar. 29, 1884. (No model.)



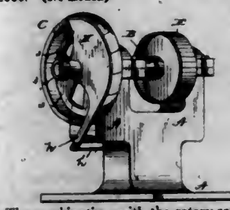
Claim.—As a new article of manufacture, the herein-described mop-wringer, which consists of the casting A, perforated on its inner face, as shown, and provided with a projecting step, *a'*, and a short curved arm, B, in combination with the movable casting C, constructed substantially as shown, and for the purpose herein set forth.

323,759. COMBINED SAFETY PIN AND BUCKLE. JAMES M. WETHERELL, Chicago, Ill., assignor of one-half to Dr. Alice B. Stockham, same place. Filed Sept. 20, 1884. (No model.)



Claim.—A combined safety pin and buckle formed of a single piece of wire, one end of which is provided with a keeper and the other pointed and detachably engaged therewith, one portion of the pin being bent to form two spiral coils at or near the center of the main body, substantially as and for the purpose set forth.

323,760. TRIMMING-MACHINE. JOSEPH C. WETHERBY, Lynn, Mass., assignor to Aaron F. Smith, same place. Filed Apr. 19, 1884. Renewed June 22, 1885. (No model.)

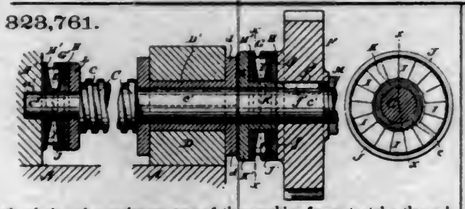


Claim.—The combination, with the rotary cutter-head and its shaft, of the guard mounted upon the projecting end of said shaft, provided with an edge overlapping the cutting-rib *e*, and constructed as described, and having an extension, *h*, provided with an arm, *h'*, secured to the frame of the machine, whereby it is held in a stationary position adjacent to the face of the cutter-head, so as to protect the upper of the boot or shoe from chafing, substantially as specified.

323,761. MACHINE FOR DRAWING RODS OR BARS. B. CLARK WHITE, Chicago, Ill., assignor to Samuel S. Chisholm, same place. Filed Aug. 27, 1884. (No model.)

Claim.—1. The combination, with a screw-shaft of a drawing-machine, of an anti-friction roller-bearing located between a shoulder upon

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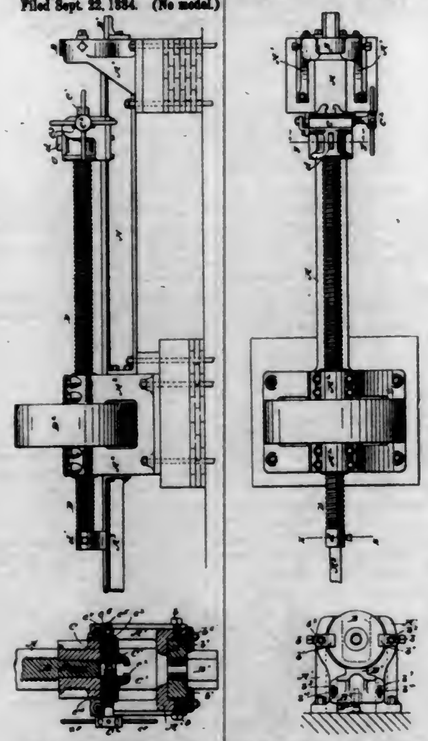


the shaft and a stationary part of the machine-frame, to take the end-thrust of the shaft, substantially as described.

2. The combination, with a screw-shaft of a drawing-machine, of an anti-friction roller-bearing located between a shoulder upon the shaft and a stationary part of the machine-frame, and comprising two opposing disks, a series of rollers interposed between the disks, and a sleeve, K, interposed between the disks and the shaft, substantially as and for the purpose set forth.

3. The combination, with a screw-shaft of a drawing-machine, of an anti-friction roller-bearing located between a shoulder upon the shaft and a stationary part of the machine-frame, and comprising two opposing disks, a series of rollers interposed between the said disks, and a sleeve, K, surrounding the shaft and provided with a flange, K', substantially as and for the purpose set forth.

323,762. MACHINE FOR DRAWING RODS AND SHAFTING. B. CLARE WHITE, Chicago, Ill., assignor to Samuel S. Chisholm, same place. Filed Sept. 22, 1884. (No model.)



Claim.—1. The combination, in a rod-drawing machine, of a non-rotating draft-screw, a rotating nut on said screw, a support or supports for the nut, two ways extending beneath and parallel with the screw on opposite sides of the nut-support, a draw-head secured to each end of the screw and fitted to said ways, and a die-support at the outer end of each way, substantially as described.

2. The combination, with the non-rotating draft-screw and its rotating nut provided with a pulley, of a counter-shaft provided with oppositely-rotating loose clutch-pulleys, with a clutch-gland, and with a fixed pulley geared with the draft-screw, substantially as described.

3. The combination, with the way or ways and draw-head of a rod-drawing machine, of a die-block, a die-head, a support for the said die-block, constructed to move bodily in a vertical direction, means for moving said support and holding it in its changed position, and means for clamping and holding said die-block in position for operation, substantially as and for the purpose set forth.

4. The combination, in a die-head of a rod-drawing machine, of a die-block, lateral supports for the die-block, a support for the die-block, constructed to move bodily in a vertical direction, an adjusting-screw applied to raise and lower said support, and means for clamping and holding the die-block in operative position, substantially as and for the purpose set forth.

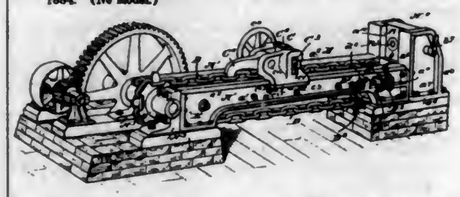
5. The combination, with a die-head of a rod-drawing machine, of a die-block, a support for the die-block, constructed to move bodily in a vertical direction, means for laterally adjusting the die-block, and means for clamping and holding said die-block in position for operation, substantially as and for the purpose set forth.

6. The combination, with the way or ways of a rod-drawing machine arranged parallel with the die-axis, of a draw-head fitted to said way or ways, transversely-sliding jaws on said draw-head, and suitable means for opening and closing said jaws, substantially as described.

7. The combination, with the fixed die-head and way or ways of a rod-drawing machine, of a draw-head provided with transversely-sliding jaws, and a right-and-left-threaded longitudinally-fixed screw engaged with the jaws and stationary parts of the draw-head, substantially as described.

8. The combination, with the draw-head and transversely-sliding jaws thereon, of a right-and-left-threaded screw engaged with the jaws, the oppositely-threaded parts of said screw being of unequal diameter, but having threads of equal pitch, as set forth, and said screw being provided with a solid head at the larger end, substantially as described.

323,763. MACHINE FOR DRAWING RODS. B. CLARE WHITE, Chicago, Ill., assignor to Samuel S. Chisholm, same place. Filed Sept. 22, 1884. (No model.)



Claim.—1. In a rod-drawing machine, the combination, with a die-block constructed to hold the die, and a recessed die-head constructed to hold the die-block, of cylindric slides fitted to rotate and slide in transverse openings in the sides of the die-head, said slides having eccentrics at their inner ends constructed to engage the die-block when rotated in their inner position, substantially as specified.

2. The combination, with a die-head for holding a die-block in a fixed position in the frame, ways on said frame arranged parallel with the axis of the die, and a draw-head engaged with the ways, of an endless chain, D, sprocket-wheel D', constructed to engage the chain, means for actuating said sprocket-wheel, and a guide and tension pulley for the chain at the opposite end of the machine, substantially as and for the purpose described.

3. The combination, with the frame, a die-head for holding the die-block, a draw-head, ways for the draw-head, an endless chain, a sprocket-wheel, a tension-pulley, D^2, and shaft D^3, of sliding bearing-blocks D^4 and adjusting-screws D^5, substantially as and for the purpose set forth.

4. The combination, with the frame, the die, means for holding said die in a fixed position in the frame, ways, draw-head, and means for actuating said draw-head, of slides C^9, having jaws C', right-and-left screw c^3, having a collar, c^{11}, and a central slotted block, C^8, fixed in the draw-head and engaged with the collar of the screw, substantially as and for the purpose set forth.

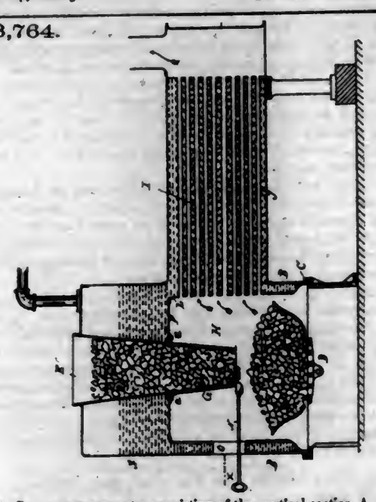
5. The combination, with ways a^2, draw-head, and means for actuating said draw-head, of a die-head having a recess constructed to receive and hold the die-block, and provided with a web, a^3, a table, B', provided with a screw, b^4, and nuts b^7 and b^8, substantially as and for the purpose specified.

6. The combination, with a die-head, ways, draw-head, means for actuating said draw-head, and a die-block, of means for holding the die-block vertically and laterally and the rotatable sliding clamp-bars b^4, provided with eccentrics b^3, substantially as and for the purpose specified.

323,764. MAGAZINE-BOILER. JOSEPH WHITE, Port Huron, Mich. Filed Oct. 22, 1884. (No model.)

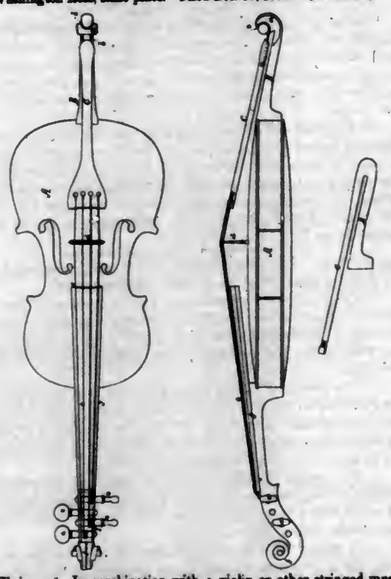
Claim.—1. A steam-generator having a magazine composed of two sections, the lower one of which extends into the combustion-chamber and is removably secured to the crown-sheet, substantially as described, such generator being cylindrical in form and having a flat crown-sheet, in combination with the horizontal portion of the boiler and its flues, substantially as specified.

323,764.



2. In a steam-generator consisting of the vertical section A, water-legs B, grate C, magazine E G, the part G being removably secured to the crown-sheet F, combustion-chamber H, fine-sheet L, horizontal section J, and flues I, and the cut-off bottom M, provided with the lever N, the parts being constructed, arranged, and operating substantially as and for the purposes described.

323,765. VIOLIN. MAURICE W. WHITE, West Somerville, Mass., assignor, by mesne assignments, to said Maurice W. White and George Washington Rose, same place. Filed Dec. 19, 1884. (No model.)



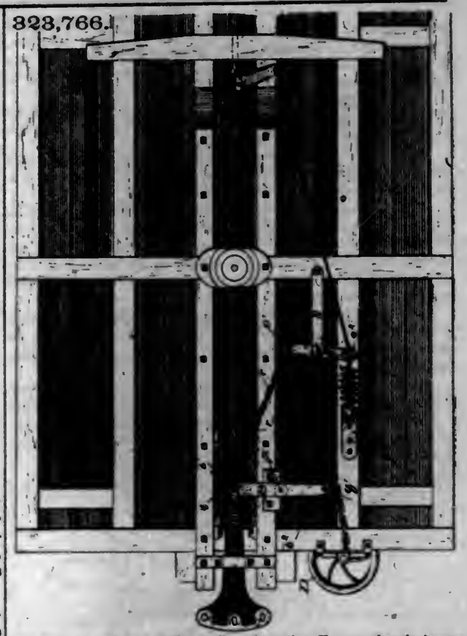
Claim.—1. In combination with a violin or other stringed musical instrument of like character to be played on by a bow, an arm projecting from the rear of the body, and the string-supporting tail-piece extended over such arm and connected to it at or near its outer end, all being substantially as set forth.

2. In combination with a violin or other stringed musical instrument of like character to be played on by a bow, an arm projecting from the rear of the body of the instrument, and having at or near its outer end a connection with the strings of the instrument.

323,766. AUTOMATIC CAR-BRAKE. WILLIAM A. WILDE, Chicago, Ill. Filed June 18, 1884. (No model.)

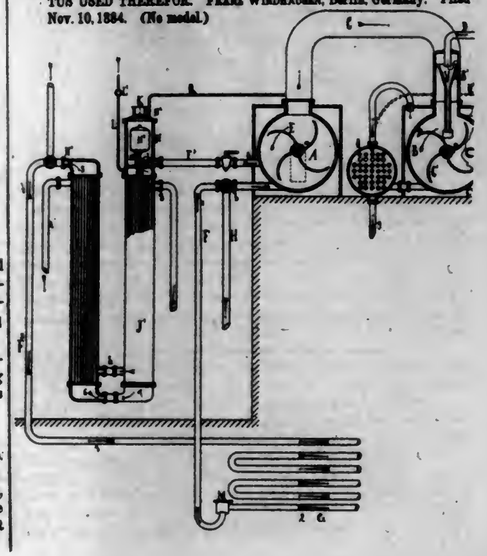
Claim.—1. The combination, with the sliding draw-bar A of a car, of a lever, B, fulcrumed toward its center and secured at one end to the said draw-bar, a lever, C, fulcrumed toward its center and connected at one end with both ends of the bar B, and a spring, E, secured to the bottom of the car and connected with one end of the lever C, which is connected with the brakes, the whole being constructed and arranged to operate substantially as described.

323,766.



2. The combination, with the sliding draw-bar of a car, of a lever, B, fulcrumed toward its center at one side of the draw-bar and secured to the draw-bar at one end, a lever, C, fulcrumed toward its center upon the support s, secured to the under side of the car, a chain or rope, r, connecting the end of the lever B, secured to the draw-bar with one end of the lever C, a chain or rope, q, connecting the opposite end of the lever B with the end of the lever C at which the chain or rope r is connected, hand-brake mechanism D, connected with the chain or rope q by means of a chain or rope, q', spring E, connected at one end to the under side of the car and at its opposite end to the free end of the lever C, and a rod or chain, o, connecting the lever C at its last-named end with the brake-lever, the whole being constructed and arranged to operate substantially as described.

323,767. REFRIGERATING ROOMS AND LIQUIDS AND APPARATUS USED THEREFOR. FRANZ WINDHAUSEN, Berlin, Germany. Filed Nov. 10, 1884. (No model.)



Claim.—1. In combination with a salt-water cooler, A, the pipe E, backstroke-valve M in the cooling-conduit, series of pipes G, coolers J and J', chamber N, with float-gage N', piston-slide N², alarm inlet-valve K, and pipe F², the whole being arranged to operate in the manner and for the purpose substantially as described.

2. The combination of a tube-cooler, O, with the absorber B, and wing-wheel C', connected by suitable pipes, substantially as described, and for the purpose set forth.

3. In combination with an absorber, B, the acid-catching apparatus B', with funnel V under the steam-escaping pipe D, in the manner and for the purpose described.

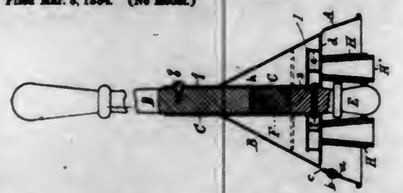
4. In combination with the stuffing-box of the steering-shaft in the salt-water cooler A and absorber B, the rubber ring *v*, pressed between the stuffing-box neck and the stuffing-box gland *u*, and the second rubber ring, *v'*, fixed on the shaft and pressed by the spiral spring *z* and nut *y* to the surface of the stuffing-box gland *u*, substantially as described, and for the purpose set forth.

5. The arrangement of the acid-pump A' at such a relative height to the level of the acid in the absorber B that sufficient space is left above this level that the fluid cannot approach the stuffing-box, substantially as and for the purpose described.

6. In combination with the piston-rod of the acid-pump, the shade or plate T, substantially in the manner and for the purpose described.

7. In combination with the stuffing-box of the acid-pump, the funnel-shaped cap-piece Z, filled with acid, water, or oil, as and for the purpose described.

323,768. CLOTHES-WASHER. THEODORE F. WOOD, Vernon, N. J. Filed Mar. 3, 1884. (No model.)

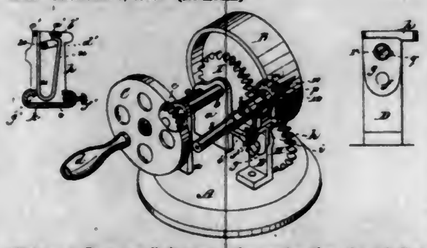


Claim.—1. In a clothes-pounder, the combination, with the pan A, having the holes *c*, of the cone B, formed with lugs *a*, secured to the pan by rivets *b*, substantially as set forth.

2. The combination, with the pan A, cone B, and handle D, of the pressers H, provided with the rubber thimbles H', substantially as shown and described.

3. The combination, with the pan A, provided with the holes *d* and lugs *e*, bent upward, as described, of the cone B and the movable disk I, arranged and operated as herein shown and described.

323,769. PENCIL-SHARPENER. SHEPHERD S. WOODCOCK, Boston, Mass. Filed Mar. 7, 1885. (No model.)



Claim.—1. In a pencil-sharpener, the combination of a grinding-wheel, a pencil-holder adapted to revolve in bearings in a suitable support, and connected by gears with the grinding-wheel or its shaft, and having a lateral movement in a horizontal plane, a spring for moving the holder in one direction, and keeping the point of the pencil in contact with the grinding-wheel with a yielding pressure, and a stop for automatically arresting the lateral movement of the pencil-holder, and preventing the further grinding away of the pencil as soon as a proper point has been formed thereon, substantially as set forth.

2. In a pencil-sharpener, the combination, with the grinding-wheel B, of a rotating tubular pencil-holder, G, mounted in bearings on a laterally-swinging pivoted support, *k*, and provided with a gear or pinion, *m*, the gears H I, and the spring *u*, adapted to produce a yielding pressure of the pencil-point against the grinding-wheel, all operating substantially in the manner and for the purpose set forth.

3. In a pencil-sharpener, the combination of the grinding-wheel B, the gear I on the shaft *b*, the intermediate gear, H, the pencil-holder G, adapted to revolve in bearings, and having at one end a gear, *m*, engaging with the gear H, the carrier-plate *k*, pivoted to a plate, *h*, made adjustable upon the standard D, the spring *u*, spring-arm *p*, and a stop for arresting the horizontal movement of the plate *k* and pencil-holder when the point of the pencil has been sufficiently ground off, all operating substantially in the manner and for the purpose described.

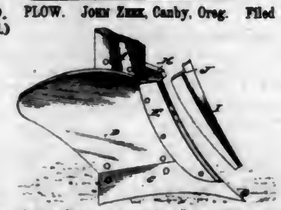
4. In a pencil-sharpener, the combination, with the rotating pencil-holder G, provided with a gear, *m*, and supported in bearings *l l* on the plate *k*, of the spring-arm *p*, having the bent end 10, and a shoulder, 12, projecting out in front of the gear *m*, whereby the pencil-holder is kept in place and prevented from moving longitudinally in its bearings, substantially as set forth.

5. In a pencil-sharpener, the combination, with the standard D, of the base-plate *h*, having an arm, *g*, pivoted at *f* to the standard, and made adjustable thereon by means of the screw *r* and slot *q*, the carrier-plate *k*, pivoted to the plate *h*, the rotating pencil-holder G, mounted in bearings on the plate *k*, and the spring *u*, all operating substantially in the manner and for the purpose described.

6. In a pencil-sharpener, the combination, with the base-plate *h*, of the pencil-holder carrying-plate *k*, provided with a slot, *c'*, and pivoted to said plate *h* by means of a screw, *i*, passing through the said slot, the adjusting-screw *f'*, adapted to bear against the screw *i*, and the spring *u*, all operating substantially as and for the purpose set forth.

7. In a pencil-sharpener, the combination of the base-plate *h*, having the projection *a'*, spring *u*, and slot *d'*, with the carrier-plate *k*, pivoted to the plate *h*, and provided with the stops *b' c'*, and the screw 20, passing through the slot *d'*, all constructed to operate substantially in the manner and for the purpose described.

323,770. PLOW. JOHN ZEEK, Canby, Oreg. Filed Feb. 24, 1885. (No model.)



Claim.—1. As an improvement in plows, the combination of the standard, the landside, share, and mold-board, the false shin-plates secured, respectively, to the mold-board and share and to the landside, and a cutter arranged detachably between the said shin-plates and resting upon the upper edge of the plow-point, substantially as and for the purpose set forth.

2. In a plow, the combination of the standard having a forwardly-projecting bracket at its upper end, the landside, mold-board, and share, the point of which latter is beveled on its upper edge, the false shin-plates arranged as herein described, and the detachable cutter arranged between said shin-plates and having dovetailed lower end, and provided at its upper end with a beveled notch, substantially as and for the purpose herein set forth.

323,771. MANUFACTURE OF PAPER-PULP. STEPHEN M. ALLEN, Duxbury, Mass. Filed Apr. 6, 1885. (No specimens.)

Claim.—1. In the manufacture of pulp or paper stock from woods having the characteristics specified, the improvement consisting in slowly steaming or vaporizing the same at a suitable stage in the process, and then working into pulp or paper in any ordinary way, substantially as described.

2. The process of making paper-pulp from wood or vegetable fiber of the kind specified by properly cutting, stripping, and reducing the same, then treating with steam or vapor, or steeping in a bath, then washing out the coagulative matter and continuing its manufacture into pulp in any suitable way, substantially as described.

3. The process described of making paper-pulp by reducing the wood, vaporizing, steaming, or steeping the same, washing and grinding, and finally adding to the mass a sizing made of non-volatile oil and resinous matter, substantially as set forth.

4. A pulp or paper stock made from the above-named or similar woods, shrubs, or plants, the same being the product of the above process and having the characteristics described.

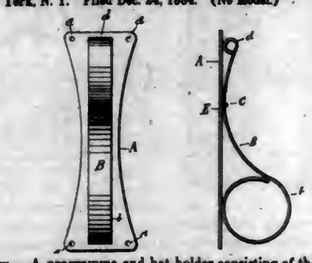
323,772. COAL-SCREEN. WILLIAM P. C. ALLEN, Hoosierville, Ind. Filed June 1, 1882. (No model.)



Claim.—1. In a coal-screen, the combination, with the sides of steam-pipes connecting said sides, inlet and outlet pipes, and a series of grate-bars supported on the steam-pipes, as set forth.

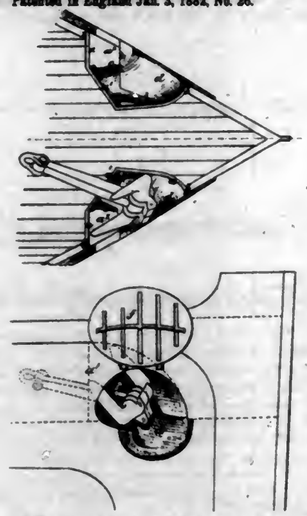
2. In a coal-screen, the combination, with a series of steam-pipes, C C', and the pipes D, connecting said pipes C C', of a series of grate-bars supported on the pipes C C', as set forth.

323,773. PROGRAMME AND HAT HOLDER. JONATHAN BADGER, New York, N. Y. Filed Dec. 24, 1884. (No model.)



Claim.—A programme and hat holder consisting of the supporting-strip A and the elastic strip B, the latter being secured to the supporting-strip intermediate of its ends to form the clamps *b d*, one having a different diameter from the other, substantially as shown and described, for the purpose set forth.

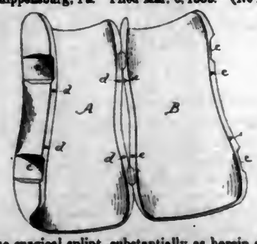
323,774. FITTING FOR AND METHOD OF SEATING SHIPS' ANCHORS. SAMUEL BAXTER, London, England. Filed Nov. 6, 1884. (No model.) Patented in England Jan. 3, 1882, No. 26.



Claim.—1. The combination, with the ship, of the recess formed therein having an opening of sufficient size to receive the flukes of the anchor, and a floor gradually decreasing in abruptness from front to rear, and the hawse-pipe opening into said recess, as set forth.

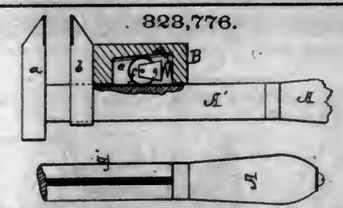
2. The combination, with the ship having the recess therein, of the hawse-pipe consisting of the casting *c* and the casting *d*, forming the floor of the recess, gradually increasing in vertical inclination from the mouth of the hawse-pipe to the mouth of the recess, substantially as set forth.

323,775. PLASTER-OF-PARIS SPLINT. JOHN W. BENDER and JAMES C. HINKLE, Shippensburg, Pa. Filed Mar. 6, 1885. (No model.)



Claim.—The surgical splint, substantially as herein described, consisting of the segmental sections molded internally to the shape of the limb, and provided on their meeting edges with interlocking projections and sockets, and having coincident strap-grooves formed in their outer sides, substantially as set forth.

323,776. AUTOMATIC SELF-SETTING WRENCH. BENJAMIN P. BENNETT, Lockport, N. Y. Filed Aug. 1, 1884. (No model.)



Claim.—In a wrench, in combination with the bar A' and movable bar B, having the inclined chamber *c*, with upper groove therein, the frictional roller *f*, having the central projecting teeth thereon, and the bar A', provided with corresponding teeth in the central upper surface thereof, all substantially as and for the purpose specified.

323,777. WATCH-MOVEMENT. ALBERT D. BINGHAM, New Haven, Conn. Filed Aug. 16, 1884. (No model.)

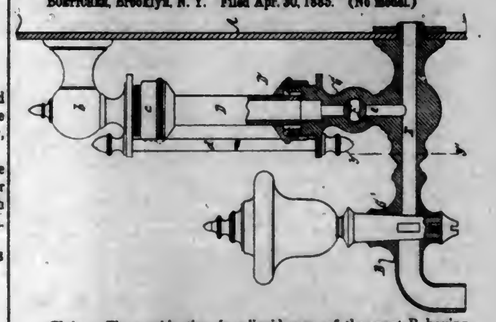


Claim.—1. In a watch-movement, the dial-wheels driven from the minutes-arbor through frictional connection therewith, and having the cannon-pinion and the sleeve of the hours-wheel journaled axially within and passing through the mainspring-arbor, substantially as and for the purpose set forth.

2. In a watch-movement, in combination with the dial-wheels placed immediately below the front or pillar plate, the minutes-arbor, a frictional connection between such arbor and wheels through which the wheels are driven from the arbor, and the sleeve for the hours-hand, and the barrel of the cannon-pinion for the minutes-hand passing forward axially through the mainspring, substantially as and for the purpose described.

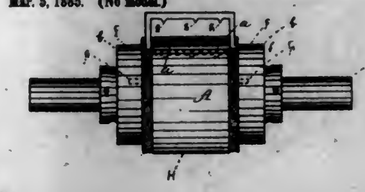
3. In a watch-movement, in combination with the removable bridge attached to the back of the pillar-plate, the intermediate dial-wheel journaled wholly upon and removable with the bridge, substantially as and for the purpose described.

323,778. COMBINED WATER GAGE AND FAUCET. JOHN G. L. BOETTCHER, Brooklyn, N. Y. Filed Apr. 30, 1885. (No model.)



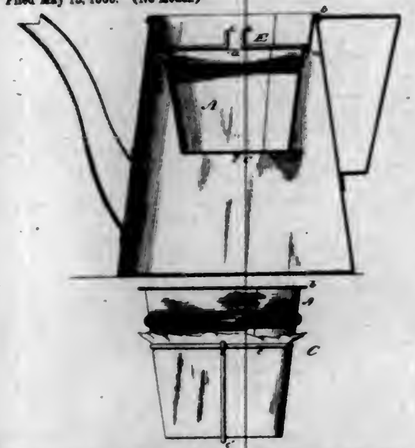
Claim.—The combination, in a liquid-gage, of the spout B, having the longitudinal chamber E, of a diameter less than the internal diameter of the spout, and provided with a lateral branch, G, the glass D, connected with the latter, a stop-cock, F, between the glass and the chamber, and a valve, G, in the spout in advance of the chamber, substantially as described.

323,779. BUFFING-ROLL. SYLVESTER B. BREED, Lynn, Mass. Filed Mar. 5, 1885. (No model.)



Claim.—In a buffing-roll, and in combination substantially as described, the disks *b b*, having cam-grooves *c*, the buffer-roll A, and the clamp B, having pintles *f f*, and arranged to operate substantially as described.

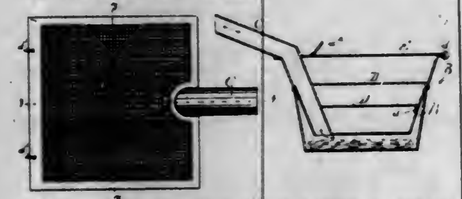
323,780. COFFEE-STRAINER. William D. Brown, Le Roy, Ill. Filed May 13, 1885. (No model.)



Claim.—1. In a coffee-strainer, the combination, with the body A, having unfastened overlapping edges, and a bead or groove near its top, of the cloth B, and a spring-ring, C, whereby the said cloth is held in position, substantially as described.

2. In a coffee strainer or filter, the combination, with the body A, having loose overlapping edges, and the spring-ring C, and filtering cloth B, held in position on the strainer by said ring C, of the spring-ring E, fitting within said body and adapted to expand the same outwardly, substantially as described.

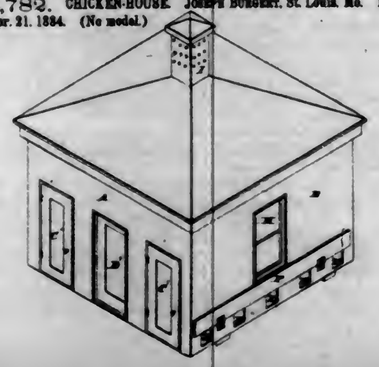
323,781. STEAM FRUIT-DRIER. Mary M. Burchfield, Kingston, Ill. Filed Nov. 24, 1884. (No model.)



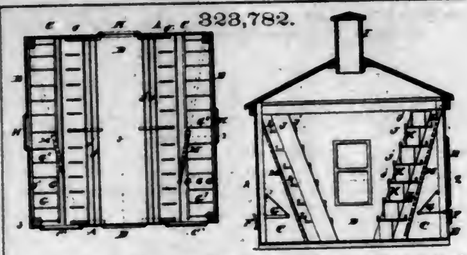
Claim.—1. The combination of the outer water-pan, A, inner drying-vessel, B, having a hinged perforated cover, E, provided with shoulders *b*, and bent steam-pipe C, secured to said inner vessel to serve as a handle for the same, said steam-pipe opening into the space between said inner and outer vessels, substantially as specified.

2. The combination of water-pan A, drying-pan B, provided with shoulder *b*, and perforated cover E, with the steam-escape C and perforated shelves D, to permit the vapor from the lower apartments to pass freely through said shelves, substantially as specified.

323,782. CHICKEN-HOUSE. Joseph Burgert, St. Louis, Mo. Filed Apr. 21, 1884. (No model.)



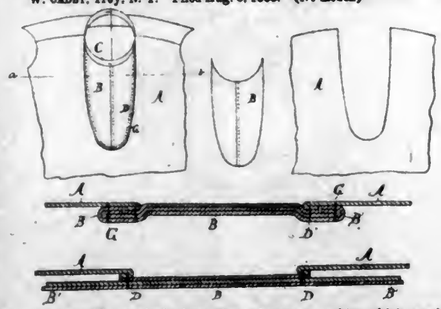
323,782.



Claim.—1. In a chicken-house, the combination of the inclined partitions J, containing nests open to both sides of the partition and arranged in horizontal courses, and each course overhanging the course beneath, leaving trough-spaces *j*, and the gates K, closing the inner ends of the nests.

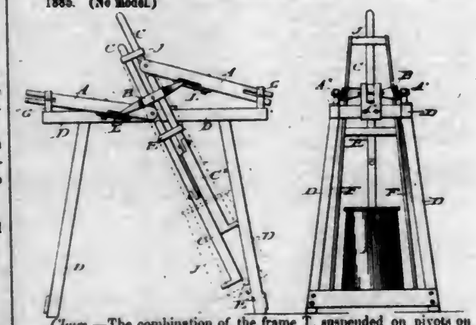
2. An improved chicken-house consisting of the frame A B, provided with the inclined partitions J, containing nests open to both sides of said partitions and arranged in horizontal courses projecting the one over the other, and the hinged perch-frames G.

323,783. METHOD OF ATTACHING BOSOMS TO SHIRTS. John W. Cadby, Troy, N. Y. Filed Aug. 8, 1883. (No model.)



Claim.—The method of securing a bosom to a shirt which consists in first placing the inner ply of bosom upon the shirt material at the bosom-opening and stitching the two together; secondly, turning back the edges of the shirt-opening upon the extended plies of the bosom-edge; thirdly, folding in the said extended plies of the bosom-edge to abut against the sewed edges of the inner ply and the shirt material, and, fourthly, stitching the said folded edge through the body of the shirt upon the boundary-line of the bosom, as set forth.

323,784. CHURN. John W. Cady, Hamilton, R. I. Filed Mar. 12, 1885. (No model.)

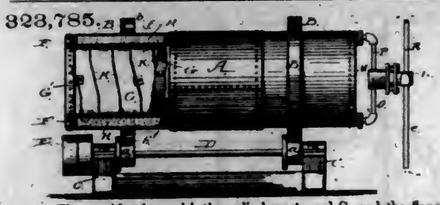


Claim.—The combination of the frame T, suspended on pivots on the frame D, with the walking-beam B, slotted levers A A, connected to said beam, and dashers C C, connected to said levers, substantially as herein described, and for the purpose set forth.

323,785. DRIER. Caleb H. B. Carter and William S. Johnson, Omaha, Nebr. Filed Apr. 14, 1885. (No model.)

Claim.—1. The combination, with the horizontal cylinder A, having the annular track B, and the interior cylinder, G, having closed ends, with an inlet, G', and a discharge, *d*, of the spiral conveyer K, the flanged head F, to which the ends of both cylinders are bolted, the steam-space H, and the oppositely-placed inlet and exhaust pipes entering and discharging at the same end of the cylinder, substantially as herein described.

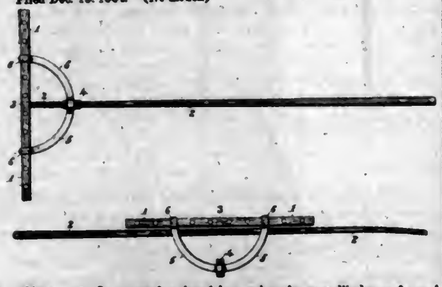
323,785.



2. The combination, with the cylinders A and G, and the flanged head by which they are bolted together, of the steam-pipes entering and exhausting at the same end of the cylinder, the cylinders L and M, one located within the other, and each provided with communicating inlet and outlet passages, substantially as herein described.

3. In a machine for drying shot, grain, &c., the combination, with the horizontal cylinders A and G, and means for rotating the same, of the telescopic cylinders L and M, suitable communicating inlet and outlet passages formed in said cylinders, an annular flanged packing, S, bolted to one of the cylinders, and suitable steam and exhaust pipes, substantially as and for the purpose herein described.

323,786. HAND HAY-RAKE. Charles C. Carter, Burton, Ohio. Filed Dec. 15, 1884. (No model.)



Claim.—1. In a wooden hand hay-rake, the metallic brace formed with a bow, 5, a cylindrical ferrule, 4, at the center of the bow, and squared flattened hooks 6 at the ends of the bow.

2. In a wooden hand hay-rake, the combination, with the head 1, having socket 3, and the handle 2, inserted in said socket, of the metallic brace formed with a bow, 5, a cylindrical ferrule, 4, at the center of the bow, and squared flattened hooks 6 at the ends of the bow.

323,787. HAND HAY-RAKE. Charles C. Carter, Burton, Ohio. Filed Dec. 15, 1884. (No model.)



Claim.—1. In a wooden hand hay-rake, the metallic frame formed with a bow, 4, a central socket or ferrule, 2, to receive the end of the handle, hooks 6 on the ends of the bow, and an arm, 3, extending from the ferrule and having a hook, 5.

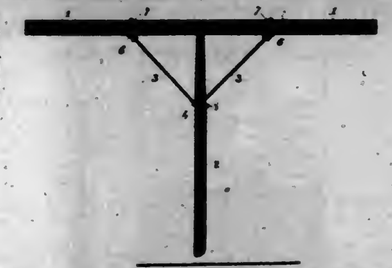
2. In a wooden hand hay-rake, the combination, with the head and handle, of the metallic frame formed with bow 4, ferrule 2, bow-hooks 6, arm 3, and arm-hook 5.

323,788. HAND HAY-RAKE. Charles C. Carter, Burton, Ohio. Filed Dec. 15, 1884. (No model.)

Claim.—The combination of the rake-head 1, having holes 5, handle 2, inserted in said head, and wire brace formed with body 3, coil 8 around the handle, loops 7, passed through the holes, and end coils, 6, to lock the loops to the body.



323,788.



323,789. MECHANICAL MOVEMENT. Louis Chevallier, Brooklyn, N. Y. Filed Dec. 31, 1884. (No model.)

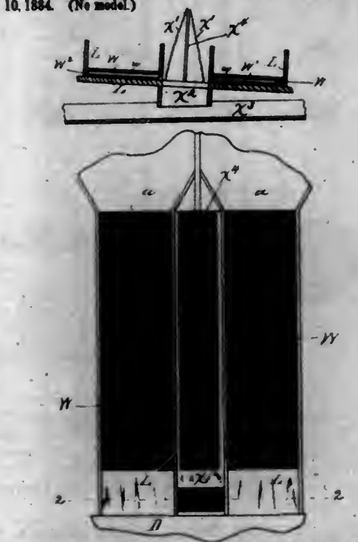


Claim.—1. The combination, substantially as hereinbefore described, of two shafts, one being the driving-shaft and the other the driven shaft, an eccentric mounted on the driving-shaft, an eccentric wrist-pin secured to the driven shaft, a pitman connecting the eccentric of the driving-shaft with the wrist-pin of the driven shaft, an eccentric or cam on the driving-shaft, and a lever vibrated by the eccentric or cam and loosely connected with the pitman intermediate the eccentric on the driving-shaft and the wrist-pin on the driven shaft.

2. The combination, substantially as hereinbefore described, of two shafts, one being the driving-shaft and the other the driven shaft, an eccentric mounted on the driving-shaft, an eccentric wrist-pin secured to the driven shaft, a pitman connecting the eccentric of the driving-shaft with the wrist-pin of the driven shaft, and a rock-shaft supported between the driving and the driven shaft, and having a transverse opening, through which the pitman freely reciprocates.

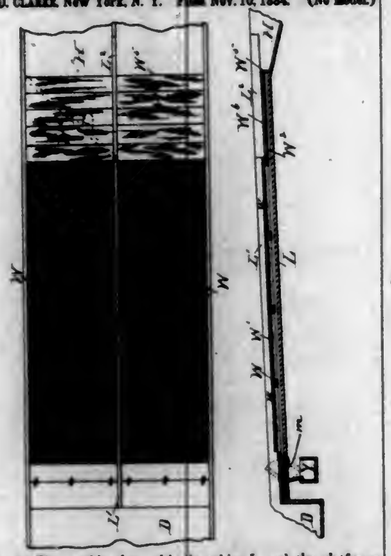
3. The combination, substantially as hereinbefore described, of two shafts, one being the driving-shaft and the other the driven shaft, an eccentric mounted on the driving-shaft, an eccentric wrist-pin secured to the driven shaft, a pitman connecting the eccentric of the driving-shaft with the wrist-pin of the driven shaft, a rock-shaft between the driving-shaft and the driven shaft, and provided with a transverse opening, through which the pitman freely reciprocates, a forked lever extending from the rock-shaft, and an eccentric mounted on the driving-shaft and acting on the forked lever.

323,790. APPARATUS FOR CLEANING FILTERS OF ORE-CONCENTRATORS. Alexander D. Clarke, New York, N. Y. Filed Nov 10, 1884. (No model.)



Claim.—The combination, with the tables L and the filters thereon, of the space or sluice X and the supports in said sluice or space for the filters, substantially as specified.

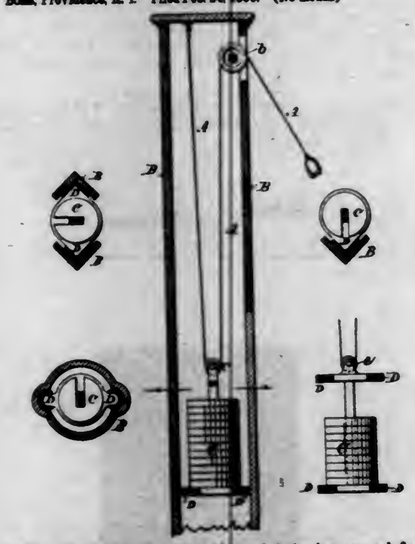
323,791. FILTERING-TABLE FOR ORE-CONCENTRATORS. Alexander D. Clarke, New York, N. Y. Filed Nov. 10, 1884. (No model.)



Claim.—1. The combination, with the tables L and the platforms and filters thereon, of the vertically-hinged gate L^2 and strips W^3, shutting off the water from the tables and from the passages between the tables and filters, substantially as specified.

2. The combination, in an ore-concentrator, with tables L and the filters thereon, having the discharge-channels W^2 formed between them, of tank H and a gate for shutting off the water from the tables while the filters are being cleaned, substantially as set forth

323,792. EXERCISING-MACHINE. William L. Coop and Joseph C. Bond, Providence, R. I. Filed Feb. 24, 1885. (No model.)

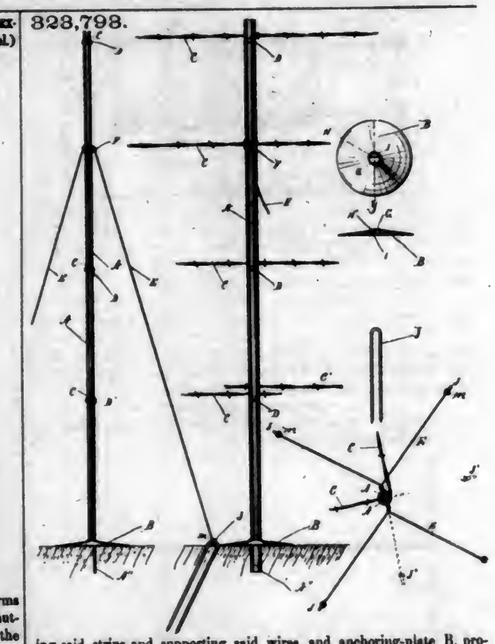


Claim.—The combination, with the cord A, having one end fixed and the other passed over a pulley, *b*, to a movable handle, while its intermediate portion is formed into a depending loop, of the weight-carrier having its pulley *c* hung in said loop, the projections D of said weight-carrier, and the vertical guides for said projections, substantially as described.

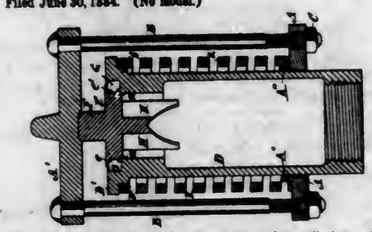
323,793. FENCE-POST. Edwin R. Copeland, Monroe, Wis. Filed Apr. 2, 1884. (No model.)

Claim.—The combination of the post A, consisting of two metallic strips, wires C, passing between said strips, bolts or rivets D, connecting said strips and supporting said wires, and anchoring-plate B, provided with socket H, step I, and opening G, one of said strips resting on said step and the other passing through said opening, substantially as shown and described, and for the purpose set forth.

323,798.

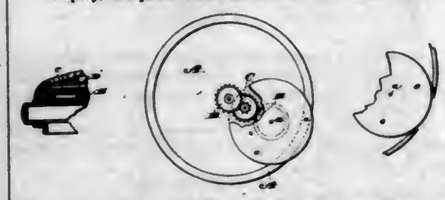


323,794. POP SAFETY-VALVE. James E. Davis, Boston, Mass. Filed June 30, 1884. (No model.)



Claim.—A pop safety-valve consisting of a cylinder or body, D, valve E, the spring K, placed on the outside of the body D, the ring A, and cap A', connected together by the adjusting bolts and screws B C, substantially as shown and described.

323,795. HAND-SETTING MECHANISM FOR WATCHES. William E. Doolittle, New Haven, Conn., assignor to the New Haven Watch Company, same place. Filed June 21, 1884. (No model.)



Claim.—1. In a watch, in combination with the dial train or wheels, a rotary disk having its edge projecting beyond the dial-edge, but concealed by the bezel, and connecting gearing or devices by which the dial-wheels can be turned by rotation of the disk, substantially as and for the purpose described.

2. In a watch, in combination with the dial-wheels, a setting-wheel by which the dial-wheel can be rotated, and a rotary disk connected with the setting-wheel and having its edge projecting beyond the dial-edge, but concealed by the bezel when the same is down or closed, substantially as and for the purpose described.

323,796. HAND-SETTING ATTACHMENT FOR TIME-PIECES. William E. Doolittle, New Haven, Conn. Filed July 16, 1884. Renewed July 13, 1885. (No model.)



Claim.—1. In a watch, in combination with the dial-wheels, a rotary disk or wheel journaled so that its edge projects beyond the edge of the dial, and intermediate gearing driven by such disk or wheel and adapted to be shifted into or out of gear with one of the dial-wheels without shifting of the disk, substantially as and for the purpose described.

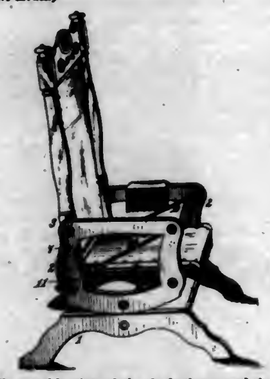
2. In a watch, in combination with the dial-wheels, a rotary disk or wheel journaled below the dial, so that its edge projects beyond the dial-edge, but is hidden by the bezel when the latter is down or shut, intermediate gearing driven by the rotary disk or wheel and adapted to be shifted into or out of engagement with one of the dial-wheels without shifting of the driving-disk, substantially as and for the purpose described.

3. In a watch, in combination with the dial-wheels, a rotary wheel or disk journaled below the dial, so that its edge projects beyond the dial-edge, the yoke pivoted on the same pin with the disk, the gear-wheel attached to the disk, and the pinion journaled on the yoke and adapted by the swinging of the yoke to be shifted into or out of mesh with one of the dial-wheels, substantially as and for the purpose described.

4. In combination with the dial-wheels of a watch, a pivoted yoke which carries a thumb-wheel and contains within a recess an intermediate wheel that is rotatable by the rotation of said thumb-wheel and may be caused to engage with one of said dial-wheels by the oscillation of said yoke, substantially as and for the purpose set forth.

5. A hand-setting attachment for watches in which setting-wheels are held in engagement with the dial-wheels by means of a spring and are removed from such engagement by the bezel when closed, substantially as and for the purpose shown and described.

323,797. CHAIR. Percy E. Down, Black River, N. Y. Filed Apr. 6, 1885. (No model.)



Claim.—The combination of the body-frame and the sliding seat with the back-frame pivoted to the body-frame, and having downward extensions provided with a lug or catch and pivoted to the seat, and a toothed rod or catch-bar pivoted to the body-frame and extending downward and rearward to engage the lug or catch on the back-frame, substantially as described.

323,798. ORNAMENTAL COMB. John G. Ebbelt, Philadelphia, Pa. Filed Mar. 27, 1885. (No model.)

Claim.—1. As a new article of manufacture, a comb composed of two segmental sections, B B, secured together at one end, and provided with the spring C and inwardly-projecting teeth *b b*, substantially as shown and described.

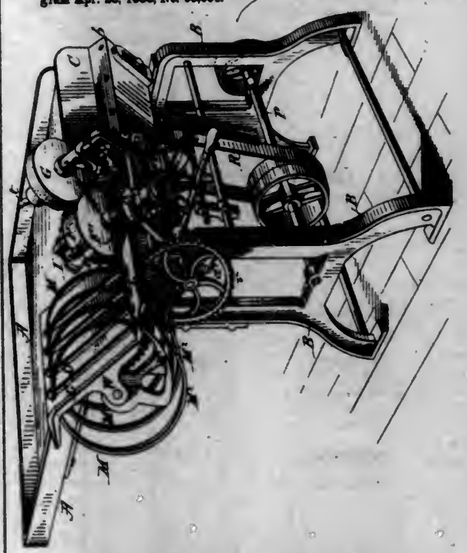
2. As a new article of manufacture, a comb composed of two segmental sections, B B, hinged together at one end, and provided with the

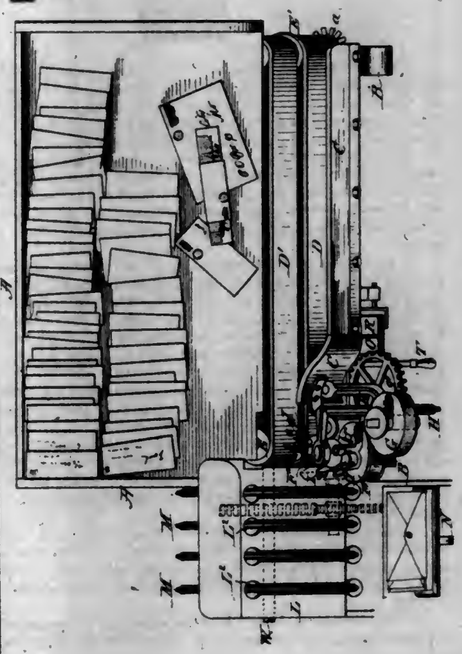
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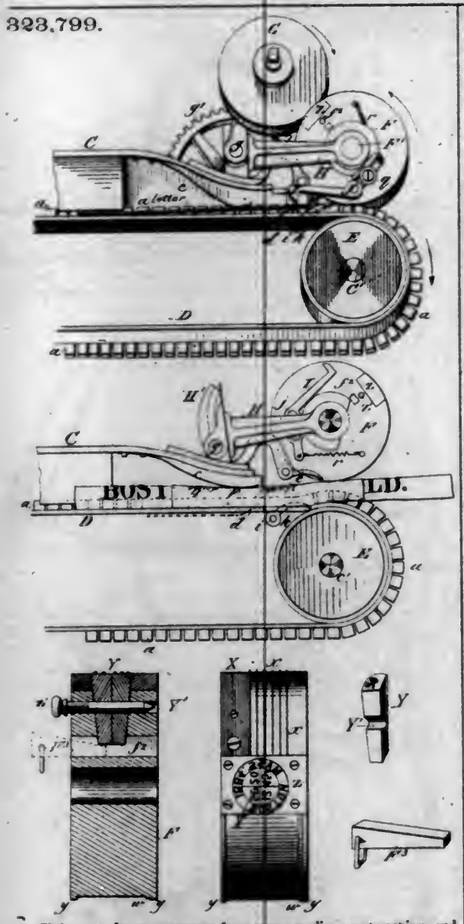
spring C, and inwardly-projecting teeth *b b*, and upwardly-curved teeth *b' b'*, substantially as shown and described.

323,799. MACHINE FOR STAMP-CANCELING AND POSTMARKING. Martin V. B. Etheridge, Boston, Mass., assignor to Andrew J. Bailey, same place. Filed July 3, 1885. (No model.) Patented in Belgium Apr. 28, 1885, No. 68,681.





323,799.



Claim.—1. In an apparatus for stamp-canceling, postmarking, and like purposes, an inclined moving support for the letters, cards, or other mail matter to be acted upon, said support being provided on its lower edge with projections for automatically adjusting or aligning the several letters, cards, or other pieces, substantially as described.

2. In a postmarking and stamp-canceling apparatus, a hopper or receptacle having one side formed by a moving inclined support, provided on its lower edge with projections, as *a*, adapted to receive and align the several letters or other pieces of mail matter and convey them, consecutively, to the printing and canceling mechanism, substantially as described.

3. In a stamp-canceling, postmarking, or other printing machine, the combination of an inclined moving support for aligning and conveying the letters or other articles to be printed, an automatically-adjustable printing-cylinder, an impression-roll, a timing-lever controlled separately by each letter, card, or other piece to be marked or printed, and mechanism, substantially as described, for conveying each letter separately past the timing-lever, whereby the impression of the printing-dies is made with accuracy and at the proper points, substantially as described.

4. The combination of the inclined traveling bands adapted to support and adjust letters, cards, or like objects placed thereon, an elevating-guide arranged between said bands, a pressure-guide suspended above said bands, a timing-lever, an adjustable printing-cylinder, an impression-roll, and mechanism, substantially as described, for conveying each letter or other article past the timing-lever at interrals, substantially as described.

5. The combination of an inclined moving support for letters, cards, and like objects, an automatic printing mechanism, a delivery table or tray, and a series of cams adapted to propel the letters, cards, or similar articles in a continuous line along said delivery-table, substantially as described.

6. The combination, with a printing-cylinder, an impression-roll, and a moving support for letters or cards, said cylinder, roll, and moving support being arranged in an inclined position, of a hopper having one side inclined at an angle with the moving support and provided with an internally-projecting horizontally-inclined lip or flange, *b*, substantially as described.

7. The combination, with the inclined bands D D', having projections *a a*, of a spring-pressure arm or guide, *c*, substantially as described.

8. The combination, with the inclined bands D D', having projections *a a* and the suspended timing-lever *e*, of a letter-elevating guide, *d*, projecting up between said bands and adapted to slightly raise a card or thin package and so direct it surely to and against said timing-lever, substantially as described.

9. The combination of the inclined traveling bands D D', a downward projecting pivoted timing-lever, *e*, adapted to temporarily arrest the progress of each letter placed on said bands, and provided with a spring, *f*, for returning it to its normal position after the letter has passed, and mechanism, as I I, for carrying each letter separately past said timing-lever, substantially as described.

10. The combination, with the movable bands D D', arranged in an inclined position and provided with projections *a a*, of the upper guide or pressure arm, *c*, the letter-elevating guide *d*, the timing-lever *e*, an automatically-adjustable printing-cylinder, F, and an impression-roll, E, substantially as described.

11. The combination, with the adjustable printing-cylinder F, of the pivoted clamping-feet I I, having a cam-roller, *q*, and spring *r*, the rocker-frame H, having cam K, and mechanism, substantially as described, for lowering the printing-cylinder and its frame into printing position, said mechanism being actuated by the letter or card about to be marked or printed, substantially as described.

12. The combination, with the rocker-frame H, shaft F', and printing-cylinder F, of the friction-roller *f'* and the cam F^2 on the cylinder-shaft, whereby the rocker-frame and printing-cylinder are automatically raised, substantially as described.

13. The combination of the rocker-frame H, the arm H', carrying a spindle, G', the inking-roll G, mounted loosely on said spindle, the printing-cylinder F, mounted rigidly on a shaft, F', journaled in the rocker-frame, and the spring *m'*, for holding the inking-roll and printing-cylinder in frictional contact, substantially as described.

14. The combination, with the printing-cylinder F, having steel treads *w* and *y y*, of the inking-roll G, having a steel tread, *v*, substantially as described.

15. The combination, with the printing-cylinder F, having a radial recess for movable type and a transverse rectangular opening, f^2, of a perforated steel die, Z, and type Y, the bases of which project into said opening and are secured by a pin, Z', whereby the type may be dislodged by inserting a wedge in the opening f^2 after the locking-pin has been withdrawn, substantially as described.

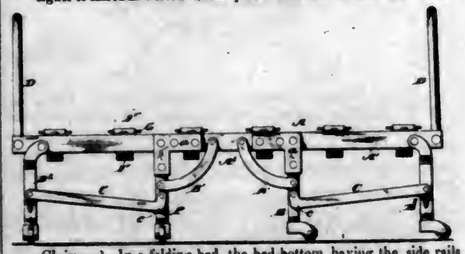
16. The combination, with the inclined impression-roll E and the inclined traveling bands D D', having projections *a a*, of an inclined printing-cylinder carrying detachable postmarking and stamp-canceling dies, substantially as described.

17. The combination, with traveling bands D D', having projections *a a*, the impression-roll E, and the printing-cylinder F, said bands, roll, and cylinder being arranged in a laterally-inclined position, of a stationary and horizontal tray, L, having at one end an incline, L', substantially as described.

18. The combination, with the tray L, having one end provided with a slotted incline, L', of the cams M M, adapted to pack letters and cards delivered on the incline by the printing mechanism and propel them along the tray to the sorting-table, substantially as described.

19. The combination, with the tray L, having an incline, L', provided with slots L^2, of the yielding support N and the cams M, having stocks M' and curved elastic fingers M^2, substantially as described.

323,800. FOLDING BED. Charles Fenton, New York, N. Y., assignor to Aaron H. Vescelius, same place. Filed Oct. 8, 1883. (No model.)

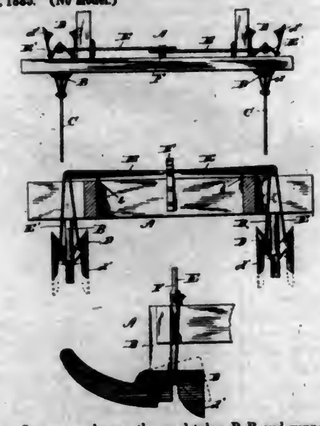


Claim.—1. In a folding bed, the bed-bottom having the side rails formed of angle-iron, the rigid bars F, resting beneath the horizontal flanges of the side rails, slats F', resting above such horizontal flanges, rivets passing through both bars F F' and securing them to the side rails, and springs G, substantially as described.

2. In a folding bed, the bed-bottom having the side rails each composed of three sections of angle-iron, the angle-plates *a*, secured to the middle sections of the side rails, the middle legs, B, secured at one end to said angle-plates, the curved braces B', connecting said legs to said middle sections, the pivoted end legs, B^2, and the pivoted bars C, connecting the end and middle legs, substantially as described.

3. In a folding bed, the bed-bottom having the side rails, each composed of three sections of angle-iron, the angle-plates *a*, secured to the middle sections of the side rails, the rigid legs B, the legs B^2, curved at their upper ends and pivoted to the said angle-plates and bent inward at their lower end, and the braces C, curved and pivoted at one end to the legs B and at the other end pivoted to the legs B^2, above their lower bent portions, substantially as described.

323,801. CORN-PLANTER. John J. Fraikin, Fort Wayne, Ind. Filed Apr. 27, 1885. (No model.)



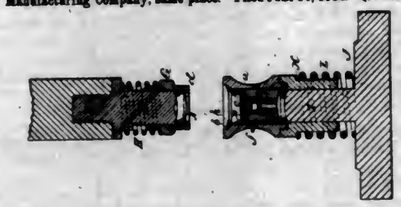
Claim.—In a corn-planter, the seed-tubes B B and runners C C, in combination with the adjustable coverers D D, consisting of the arms *d* and concave blades *d'*, hinged to the foot of the seed-tubes, and provided with adjusting-levers E E, substantially as shown and described.

323,802. MUSTACHE-PROTECTOR. Lewis B. France, Denver, Colo. Filed Mar. 27, 1885. (No model.)



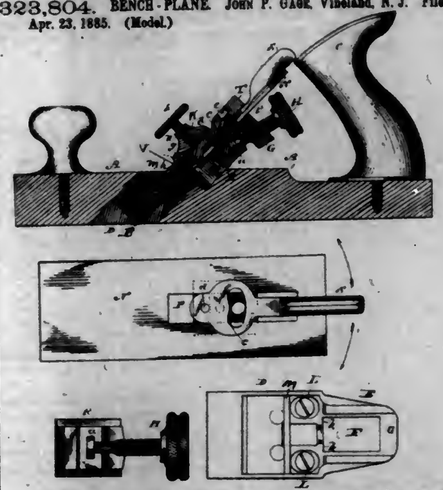
Claim.—A mustache-protector for spoons, consisting of the plate B, conforming on one side to the shape of edge of the bowl of a spoon and cut away longitudinally at *b*, and having the lugs D D and slitted spring shank E, provided with the lugs *c' c'*, substantially as shown and described.

323,803. APPARATUS FOR MANUFACTURING COVERED BUTTONS. Henry W. French, Waterbury, Conn., assignor to the Lane Manufacturing Company, same place. Filed June 30, 1884. (No model.)



Claim.—In a machine for making buttons, the combination of a stud, I, sleeve K, supported upon a spring around said stud, the follower E, sleeve G, and spring H, surrounding said follower, concentric with and arranged to move in line with said stud I, the removable die *a*, with its follower *e*, said die and follower *e* constructed to receive the back and filling parts of the button, and the sleeve G, to receive the cap or front, substantially as described.

323,804. BENCH-PLANE. John P. Gage, Vineland, N. J. Filed Apr. 23, 1885. (Model.)

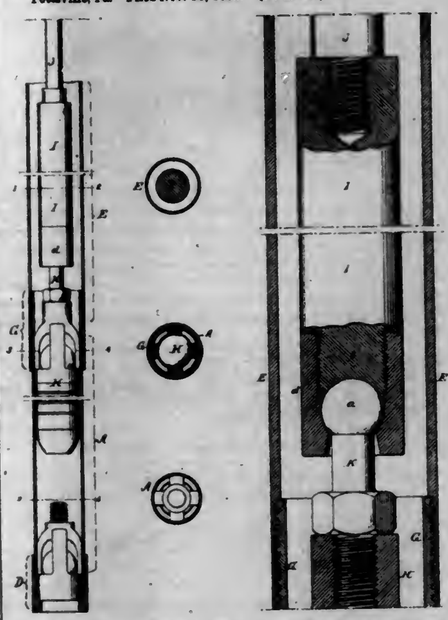


Claim.—1. In a plane, the combination of the slotted cutter, the under bearing, R, having a stud, *d*, and operated by means of the adjusting-screw, the fellow plate, screw connecting the fellow plate and bearing R, lever S, and its fulcrum-bearing *c*, arranged in the slot of the cutter, substantially as specified.

2. The combination of the slotted cutter, a bearing arranged beneath the same, with a stud passing through the slot of the said cutter, a fellow plate connected with the said under bearing, the finger-lever, and its fulcrum-bearing, as *c*, arranged in the slot, whereby lateral deviations of the cutting-edge may be corrected, substantially as specified.

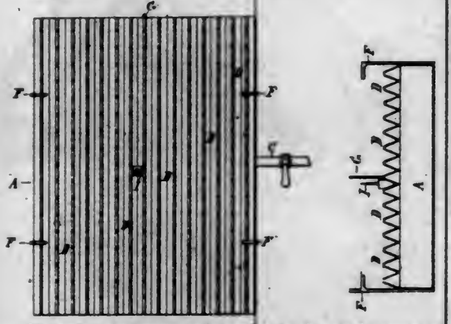
3. A plane having a lever adapted to correct deviations in the edge of the cutter, which lever has its lower end pivoted in a longitudinal slot of the cutter, and provided with a stud to engage and move laterally a fulcrum-bearing in the said slot, substantially as specified.

323,805. DEEP-WELL PUMP. Lewis Gregson and John P. Gregson, Pottsville, Pa. Filed Nov. 16, 1883. (No model.)



Claim.—The combination of the tubing, bucket, and sucker-rod of a deep-well pump, with weighted bar I, rigidly attached to the lower end of the sucker-rod to obviate buckling of the rod on the downstroke, substantially as set forth.

323,806. APPARATUS FOR COOLING TIN PLATES IN CRYSTALLIZATION. CHARLES R. H. M. HARDENBERG, New York, N. Y., assignor to the Tin-Plate Decorating Company, same place. Filed July 31, 1884. (No model.)



Claim.—1. An apparatus for cooling tin plates in the process of crystallization, consisting of a water-distributing chamber provided at its top with a series of parallel ridges, having perforations along its top edge, and inclined side walls, forming continuous passage-ways between the ridges for the escape of water issuing from the tops of the ridges, substantially as described.

2. An apparatus for cooling tin-plates in the process of crystallization, consisting of a water-distributing chamber provided at its top with parallel ridges perforated along their top edge, and having continuous sides forming passage-ways intermediate of the ridges, and side brackets for supporting a plate above said ridges, substantially as described.

3. An apparatus for cooling tin plates in the process of crystallization, consisting of a water-distributing chamber provided at its top with perforated ridges, and side brackets for supporting a plate above the ridges, the brackets on at least one side of the chamber being step-shaped, substantially as described.

4. The combination, with chamber A, having perforated ridges D, of side brackets, F, gage G, and support I, substantially as described.

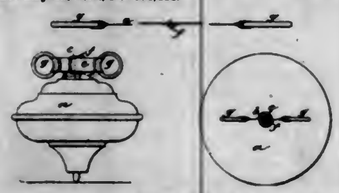
323,807. MOLD FOR CASTING ROLLS AND OTHER ARTICLES. WILLIAM HAINSWORTH, Pittsburg, Pa. Filed May 21, 1885. (No model.)



Claim.—1. A mold having in combination a retaining shell or cylinder, a series of separately-molded sections arranged within said shell and forming the mold cavity or matrix, and a series of metal blocks arranged between the shell and the molded sections, substantially as set forth.

2. A mold having in combination a retaining shell or cylinder, a series of separately-molded sections arranged within said shell, a series of metal blocks arranged between the shell and molded sections, and means for preventing the expansion of the retaining-shell, substantially as set forth.

323,808. SPINNING-TOP. WILLIAM H. HALL, Brighton, County of Sussex, England. Filed July 7, 1884. (No model.) Patented in England Mar. 19, 1884, No. 5,135; in Germany May 4, 1884, No. 30,964, and in France May 28, 1884, No. 162,421.

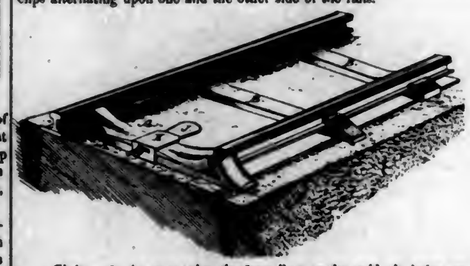


Claim.—1. A spinning-top the winding-spindle of which is provided with retaining-disks *c c*, and stops, substantially as described, in combination with a winding-tape having a cross-bar midway between its ends to engage with said stops, whereby the tape may be wound flatly on the spindle and upon itself from the cross-bar to its ends, all substantially as shown and described.

2. A spinning-top the winding-spindle of which is provided with retaining-disks *c c*, having grooves *h h*, in combination with a winding-tape having a cross-bar midway between its ends to engage in said grooves, and whereby the tape may be wound flatly on the spindle and upon itself from the cross-bar to its ends, all substantially as shown and described.

323,809. RAILWAY-TIE AND TRACK-FASTENING. WILLIAM B HEDDENS, Waterloo, Ind. Filed May 8, 1884. (No model.)

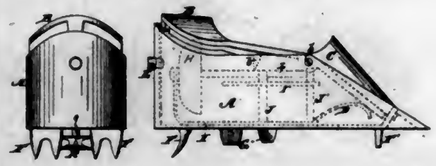
Brief.—Joint-ties are formed in sections, the lower having outside chair-bearings, the upper the inside. The latter is in two sections endwise adjustable to clamp the rails. Intermediate ties are combined with these, having rail-seats in the ends and overhanging clips to apply to the same side of both rails, said ties to be placed reversely with said clips alternating upon one and the other side of the rails.



Claim.—1. An expansion-tie for railways, the said tie being sectional and adjustable in its parts, the lower plate or section having supports at each end for securing the grip to the outer sides of the rails, and having short sections extending from the inside of the rails toward the center of the tie, and the said short sections of the said tie being forced or drawn against the rails by a bolt, key, bar, or spring, thereby securing a firm grip and support of the rails, substantially as and for the purposes hereinbefore set forth.

2. The combination, with an expansion railway-tie, of intermediary ties having a rail-seat and base-clutch at each end for reverse sides of the rails, the said intermediary ties being laid with like ends reversed, thereby securing, in connection with the expansion-tie, a rigid and conjoined structure of ties and track, substantially as and for the purposes set forth.

323,810. BURGLAR-ALARM. HIRAM HERRICK and WILLIAM L. BABCOCK, Toledo, Ohio. Filed Mar. 24, 1885. (Model.)



Claim.—1. In a portable burglar-alarm, a case, A, with its sharp projections F F, foot F', and guard projections G G, &c., in combination with a pivoted lid, B, pivots *b b*, incline plane C, and stop-pin *l*, retained in desired position by the springs D and E, as described and specified.

2. In a portable burglar-alarm, the combination of a case, A, lid B, pivots *b b*, incline plane C, springs D and E, stop-pin *l*, sharp sloping projections F F, foot F', guard projections G G, with the alarm-movement consisting of plates I I, bell H, shaft Q, bar R, spur-wheel N, ratchet P, spring S, pinion *m*, escapement-wheel M, pallet K, rocking shaft J', striking-arm L, guide-pins T T, and screw V, as described and specified.

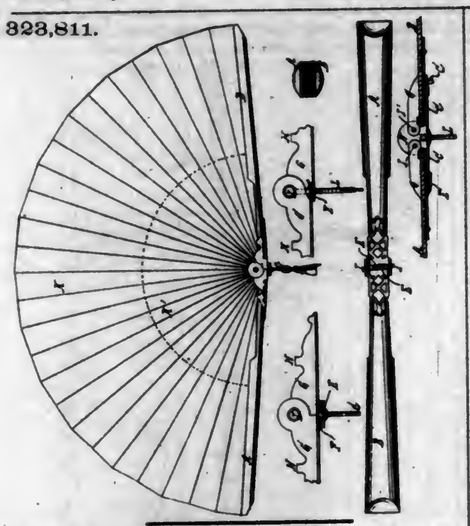
323,811. FAN. ERNEST W. HOUPLE, New York, N. Y., assignor to Schemer & Brother, same place. Filed Mar. 12, 1885. (Model.)

Claim.—1. The combination, with the pivoted side pieces, A and B, of a folding fan, of a catch, E, connected with the pivoted end of one side piece, and a locking device connected with the pivoted end of the other side piece, with which locking device the catch engages when the fan is unfolded, substantially as and for the purpose described.

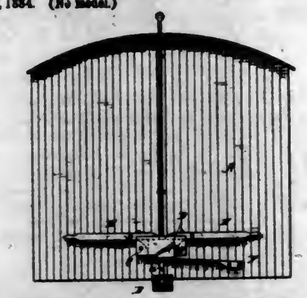
2. The side pieces, A B, having catches E, formed by tail-pieces or lugs engaging with a groove in the locking device C for locking the fan in its open position, substantially as set forth.

3. The combination, with the side pieces, A B, of a handle, D, having a common pivot with said side pieces, substantially as set forth.

323,811.



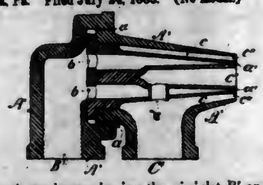
323,812. CAR-COUPLING. REUBEN R. HUNT, Lexington, Ky. Filed Nov. 28, 1884. (No model.)



Claim.—1. In a car-coupling, a link-operating device consisting of a bar entering the draw-head to the rear of the pin-hole, a movable spring-retained block to which said bar is attached, and a pivoted lever or levers extending toward the sides of a car and operating to depress said block, substantially as and for the purpose specified.

2. In a car-coupling, a pin-operating device consisting of a shaft extending across the end of a car and carrying a lever or arm, to which the pin is attached, said shaft being provided with hand-pieces for operating it and kept normally in position by a spring, substantially as and for the purpose specified.

323,813. HEAT-GENERATING GAS-BURNER. HIRAM A. KIMBALL, Philadelphia, Pa. Filed July 24, 1883. (No model.)



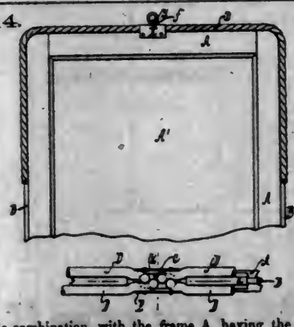
Claim.—1. A gas-burner having the air-inlet B' and passages *b b*, in combination with the gas-inlet C' and gas-outlets *c'* and *c''*, all substantially as and for the purpose shown and described.

2. A gas-burner having the central gas-outlets, *c'*, surrounded by the air-outlets *a'*, and the whole encircled by another gas-outlet, *c''*, in combination with the gas-inlet C' and air-inlet B', all substantially as shown and described.

323,814. FRAME FOR SLATES. LOUIS KLUEBER, East New York, N. Y. Filed Jan. 22, 1885. (No model.)

Claim.—1. The combination, with the frame A, having the tongue projecting centrally from its top edges, of two separate and disconnected muffling-cords, D, arranged, respectively, on opposite sides of the tongue, each cord having its ends connected with the frame, substantially as described.

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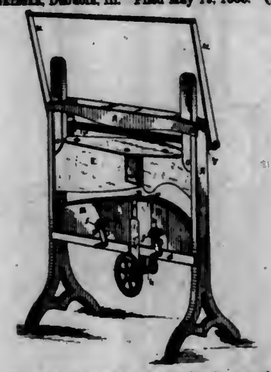


2. The combination, with the frame A, having the tongue B and recess C, of two separate muffling-cords, D, arranged, respectively, on opposite sides of the tongue, and having their ends secured in the recess, substantially as described.

3. The combination, substantially as hereinbefore described, with a frame for a slate or similar article, of a tongue, B, rising from the middle of its edges, the muffling-cord D, secured on opposite sides of said tongue, a recess, C, formed in the frame and adapted to receive the ends of the muffling-cords, and a cap, E, which is secured to a frame and covers said recess.

4. The combination, substantially as hereinbefore described, with a frame for a slate or similar article, of a tongue, B, rising from the middle of its edges, the muffling-cords D, secured on opposite sides of said tongue, a recess, C, formed in the frame and adapted to receive the ends of the muffling-cords, a cap, E, which is secured to the frame and covers said recess, and a ring, *g*, secured to the cap.

323,815. CRIMPING-MACHINE FOR BOOT OR SHOE UPPERS. LEONARD KNETTNER, Dunnein, Ill. Filed May 19, 1885. (No model.)



Claim.—1. In combination, in a boot-crimping machine, a matrix and a cruciform former arranged to co-operate with a corresponding die or matrix having two stretching-planes adapted to simultaneously stretch the leather both transversely and longitudinally, substantially as set forth.

2. The matrix-plates B B, provided with the transverse gap *m*, combined with a former, E, provided with a transverse or cross blade, *n*, adapted to enter said gap and stretch the leather laterally at the same time the former E is stretching the same leather longitudinally.

3. The matrix-plates B B, combined with the adjustable spring *h* and the screw *k*, substantially as set forth.

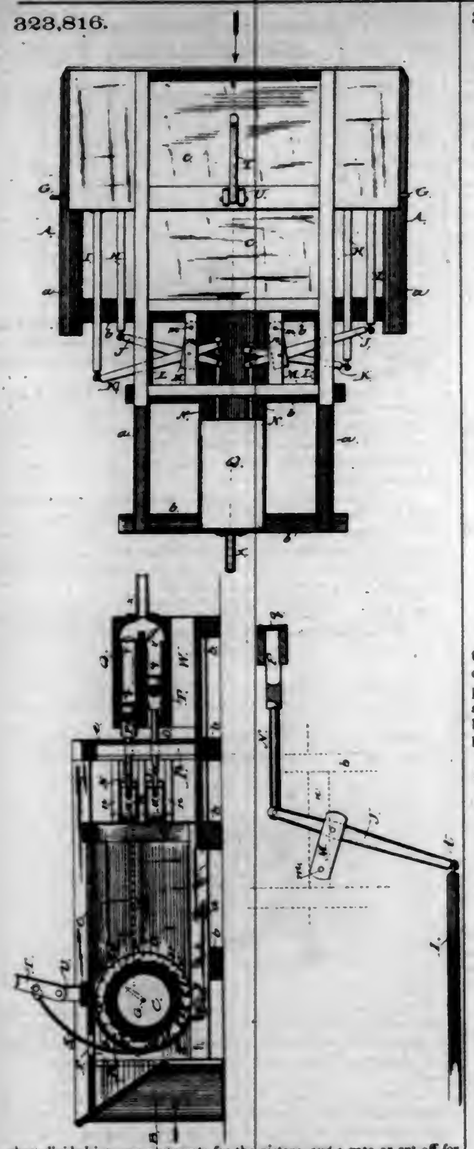
4. In combination, to constitute a crimping-machine, the frame A, matrix-plates B B, provided with gap *m*, former E, with cross-blade *n*, racks *p*, and shaft *r*, provided with pinions *q*.

323,816. DEVICE FOR PUMPING OR ELEVATING WATER. JOHN J. LAMB and JUDSON A. LAMB, Waterloo, Iowa. Filed Nov. 19, 1884. (No model.)

Claim.—1. In an apparatus for raising water, the frame A, a water-wheel, C, and a shaft having a double series of cranks upon each side of the frame, in combination with a double series of horizontally-reciprocating rods, H and I, and suitable levers, J and K, of different lengths, engaging the rods and operating the pistons, substantially as herein described.

2. The frame, the undershot wheel, and the shaft having two or more cranks upon each side and exterior to the sides of the frame, in combination with a double series of alternately-operating and horizontally-arranged levers and pistons having movable fulcrums, a water-

323,816.



chest divided into compartments for the pistons, and a gate or cut-off for regulating the flow of water through the frame, substantially as herein described.

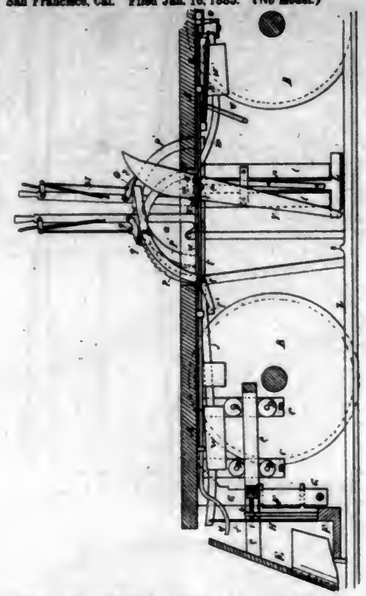
3. The frame A, having a flaring end, and a water-chest divided into compartments for the pistons, in combination with said pistons, having the valves *q*, the piston-rods N and O, the levers J and K, having fulcrums in movable blocks M, and the crank-shaft G for operating the pistons, substantially as set forth.

4. In an apparatus for raising water, the frame A, wheel C, and crank-shaft G, in combination with the connecting-bars H and I, the levers J and K, and the movable blocks M, substantially as herein described.

5. The water-chest Q, having a series of compartments or chambers in which the pistons work, and having a discharge-pipe, X, a series of valves, V, and a sluiceway, W, in combination with the piston and means for operating the same, substantially as described.

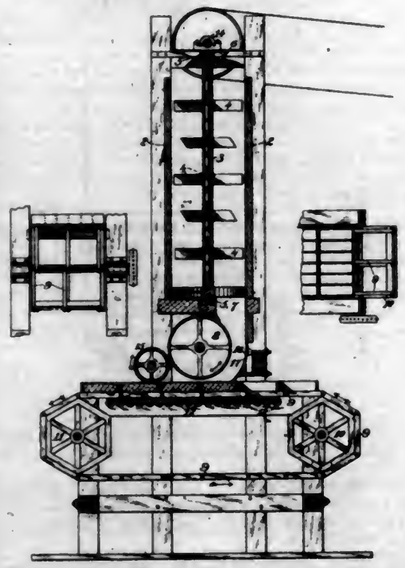
6. In an apparatus for raising water, the frame A, crank-shaft G, levers J and K, rods N and O, and pistons P, in combination with the water-chest Q and a sluiceway for the escape of surplus water, substantially as herein described.

323,817. GRIP-CAR FOR CABLE RAILWAYS. Frank P. H. Lofte, San Francisco, Cal. Filed Jan. 16, 1885. (No model.)



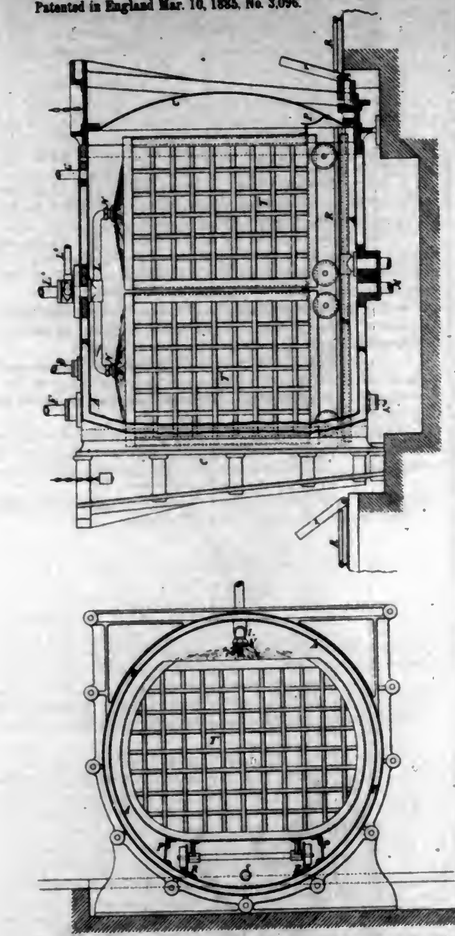
Claim.—In a grip-car for cable railways, the grip-lever Q, having the rack-engaging pawl *q*, in combination with the independent pivoted curved arm R, adapted to raise the pawl and force the lever, for the purpose described, and the pivoted lever Y, having a cam-head, *y*, adapted to bear against and raise the arm R, the lower end of said lever being adapted to come in contact with a lug or projection in the road-bed, substantially as and for the purpose herein described.

323,818. BRICK-MACHINE. William M. Logan, Etna, Pa. Filed May 18, 1885. (No model.)



Claim.—In a brick-machine, the combination of a tempering-mill, a pressing-roller, and endless belt, and a series of molds made in the form of polygonal boxes open at the top but closed at the sides and bottom, said belt being movable to carry molds removably placed thereon under the discharge-orifice of the tempering-mill and under the periphery of the pressing-roller, substantially as and for the purposes described.

323,819. APPARATUS FOR DYEING, &c. William Mather, Salford, County of Lancaster, England. Filed Mar. 27, 1885. (No model.) Patented in England Mar. 10, 1885, No. 3,096.



Claim.—1. The combination of the vessel A, provided with a track, R, a lattice or open-framed truck, T, to run over said track, and a sliding wedge-shaped sluice-valve door, C, to close the opening at the end of the vessel, substantially as described.

2. The combination of the vessel A, provided with a track, R, a truck, T, to run over said track, and a partition, P, in the lower part of the vessel about the truck, substantially as described.

3. The combination, with the vessel A, of the lattice or open-framed truck T within the vessel, the partitions P in the lower part of the vessel about the truck, and pipes L, provided with nozzles N, and the exit-pipe M for maintaining a circulation of liquid through the vessel, substantially as described.

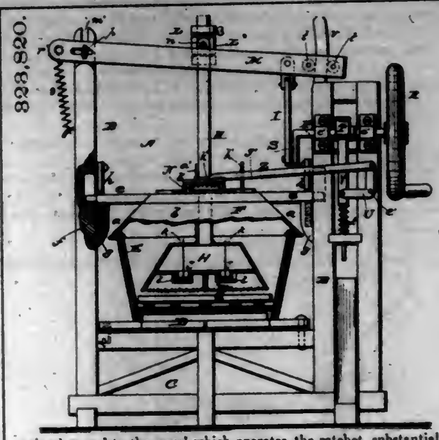
323,820. WASHING-MACHINE. Bropford A. Maurine and Robert E. Gibbons, Gunnison, Colo., assignors of one-third to William Wiglesworth, same place. Filed Aug. 5, 1884. (Model.)

Claim.—1. The combination, with the tub and removable slat-base frame, of the spring-elevated lid having sloping flanges, its end bearings and latches, the circular face ratchet and its guard-plate, the reciprocating plunger-rod having a spline to engage the ratchet, the valved air-compressing plunger, the pawl, and mechanism, substantially as described, whereby the pawl and plunger are operated from the same shaft, substantially as specified.

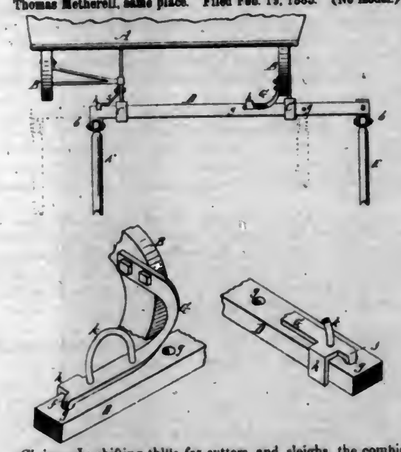
2. The combination, with a rotary plunger operated by ratchet and pawl, of a transverse lever carrying a pivoted sleeve-coupling for the plunger-rod, and a pitman connected to a crank-shaft, a cam on the crank-shaft, a reciprocating spring-bar engaging said cam, and a crank-lever pivoted centrally to the main frame, and, by its ends, respectively, to the spring-bar and to the pawl which operates the ratchet, substantially as specified.

3. The combination, with the spring elevated lid carrying a ratchet and the splined plunger-rod, of a yielding main lever and a crank-shaft carrying cam, whereby rotating and reciprocating motions are given to the plunger, substantially as specified.

323,820.

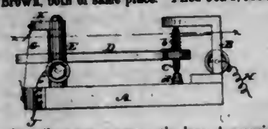


323,821. SHIFTING THILL FOR SLEIGHS. William H. Metherell and Andrew Keiser, West Brighton, N. Y.; said Keiser assignor to Thomas Metherell, same place. Filed Feb. 19, 1885. (No model.)



Claim.—In shifting thills for cutters and sleighs, the combination, with the bar D, resting in sockets C C and provided with holes *g g*, of the curved spring G, constructed with a horizontal length extending longitudinally over the bar, a downwardly-turned point, *f*, which enters the holes *g g*, a lug, *h*, at the rear that rests behind the bar, and a handle, *k*, for operating the spring, the spring serving the double purpose of a lock to hold the bar and a presser to press it downward and forward in its socket, as herein shown and described.

323,822. LIGHTNING-ARRESTER FOR LINE-WIRES. George W. Miegle, Philadelphia, Pa., assignor of two-thirds to E. Ward Wilkins and William T. Brown, both of same place. Filed Oct. 1, 1884. (No model.)



Claim.—1. In a lightning-arrester, the base A, provided with binding-posts B and E, in combination with a shaft having suitable bearings, a lever rigidly attached to said shaft, a spring actuating said shaft, a frame having an insulating-post and attached to said base, and wires attached to said frame and base, substantially as described.

2. A lightning-arrester consisting of the base A, provided with the binding-posts B and E, shaft C, having pivotal bearings in horizontal arm of the post B, and bearing *d*, lever D, secured to said shaft C, coiled

spring *b*, operating said lever D, insulating-post F, cross-piece K, and wires G, said wires being secured to said cross-piece K and base A, all of said parts being combined and operating substantially as set forth.

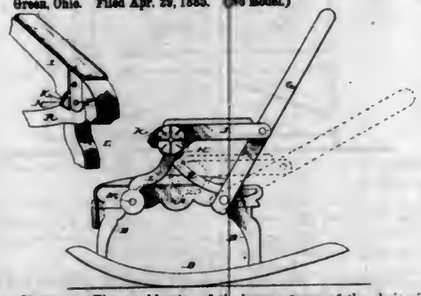
323,823. METHOD OF IMITATING OBJECTS OF MAJOLICA-WARE.

Johann G. Müller, Schlossberg, Prussia, Germany. Filed Feb. 5, 1885. (No model.)

Claim.—A process for the production of enameled metal surfaces resembling majolica, such process consisting in the impression of designs with raised border-lines in fire-proof porcelain color on enameled metal plates or surfaces of vessels made of enameled metal, and the introduction and burning therein within and between such border-lines of enamel.

323,824. RECLINING-CHAIR.

George W. Munshower, Bowling Green, Ohio. Filed Apr. 29, 1885. (No model.)



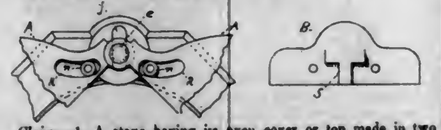
Claim.—1. The combination of the bottom frame of the chair with the back hinged thereto, the arms I, pivoted to the back, said arms being provided with the semicircular recesses K at their outer ends, and the arms L, pivoted to the frame of the chair, having the rounded upper portions fitting in the recesses K, and the rearwardly-extending shoulders N, for bearing against the under sides of the arms I, substantially as described.

2. The combination of the bottom frame of the chair with the back hinged thereto, the pivotal rod E, having the thumb-screw F, the jointed arms I, secured to the back and to the bottom frame of the chair, and the curved bars R, pivoted to the arms at their joints, and extending between the side bars and the body of the chair, substantially as described.

3. The combination, with the bottom frame of the chair, of the back, pivotal rod E, for securing the back to the bottom frame, the thumb-screw F on the rod E, the bearing-castings H, the jointed arms hinged to the back and to the body of the chair, and the pivoted rods R, having their free ends passed between the castings H and the side bars of the back, substantially as described.

323,825. STOVE-OVEN COVER.

Oscar W. Noble, Lynn, Mass. Filed June 6, 1884. (No model.)



Claim.—1. A stove having its oven cover or top made in two parts or wings, said parts being hinged together at one end and arranged to turn on separate pivots and be opened outward horizontally, as set forth, and means adapted to automatically raise the outer ends of said parts, and thus to overcome their sag when opened, substantially as described.

2. The stove, the parts or wings A A, hinged together at one end and provided with the slots *a a*, and suitable pivot-pins, *n n*, all in combination, substantially as and for the purposes described.

3. The combination, with a stove-top having the slot *f* and pivot-pins *n*, of the wings having slots *a*, engaging the pivot-pins, the said wings being extended beyond the slots and pivoted together by the pin *e*, and the cap having the inclined rib S, as set forth.

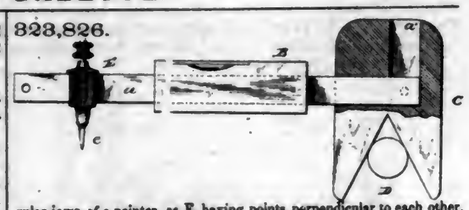
4. The wings A A, having slots *a a*, the cap B, the studs or pins *n n*, and bolts *t t*, all in combination, substantially as and for the purposes described.

323,826. SHAFT-LINER.

Walter J. S. Osborn and James Madden, Shelby, Ohio. Filed July 25, 1884. (No model.)

Claim.—1. In a device for aligning and truing shafts, the combination, with a body and a leveling device, of a V-shaped notch adapted to receive the shaft and to locate its center, as set forth.

2. The combination, with the body and adjustable head having angular jaws, of a pointer, as E, having points perpendicular to each other, as and for the purposes set forth.



3. The combination, with the body and sliding level, of the head having sockets, as *a' b*, arranged at right angles to each other, and having the angular jaws to receive the shaft, as set forth.

4. The combination, with the body and sliding level, of the head having a V-shaped notch whose apex is on a line with upper side of the body, and adapted to engage shafts of various diameters and locate their centers, as set forth.

5. The combination, with the body and level, of the head having sockets, as *a' b*, arranged at right angles to each other, and the set-screw *c'*, arranged at the junction of the two sockets, as set forth.

6. The combination, with the body, sliding level, and adjustable head, of the pointer E, having socket *h* and set-screw, and having points *e* and *g*, arranged at right angles to each other and to the body, as and for the purposes set forth.

7. The body *a*, having square F and the sliding level B, combined with the head C, having sockets *a' b* and inclined jaws, the pointer E, having points *e g*, and the set-screws, as and for the purposes set forth.

323,827. BRUSH OR BROOM SUPPORT.

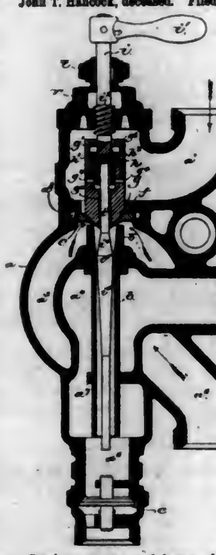
Andrew L. Pritchett, Maryville, Mo. Filed Jan. 5, 1885. (No model.)



Claim.—The flaring slotted broom-holder having the side walls incurved at their upper portions, substantially as specified.

323,828. INJECTOR.

Thomas P. Proctor, Boston, Mass., executor of John T. Hancock, deceased. Filed Jan. 23, 1885. (Model.)



Claim.—1. In an injector, the combining-tube and main steam-nozzle, combined with the main valve containing a lifting-nozzle, and the controlling-spindle passing through the main valve and into the combining-tube, substantially as described.

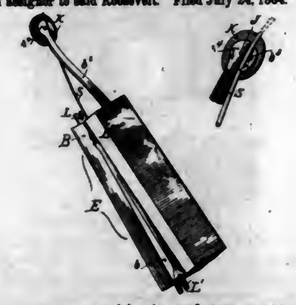
2. In an injector, the combining-tube having a converging inlet-opening, and the main steam-nozzle, combined with the main steam-valve having a lifting-nozzle formed therein, and the controlling-spindle passing through the main valve and into the combining-tube, the said spindle being provided with a collar operating to move the main valve with relation to the main nozzle, substantially as described.

3. In an injector, the combining-tube having a converging inlet-opening, and the main steam-nozzle, combined with the main steam-valve having a lifting-nozzle formed therein, and the controlling-spindle passing through the main valve and into the combining-tube, the said spindle being provided with a collar operating to move the main valve with relation to the main nozzle, and the said spindle also having diverging and converging portions controlling the passage through the combining-tube, substantially as set forth.

4. In an injector, the main casting having inlet and discharge openings at its ends, and a liquid-inlet chamber and secondary or overflow chamber inclosed therein, combined with a steam-nozzle at one end of the water-chamber, and a combining-tube passing from the water-chamber through the secondary chamber, the inlet-opening of the said combining-tube communicating with the inlet-chamber, and the discharge-opening of said tube communicating with the secondary or overflow chamber and with the discharge-opening of the injector, substantially as described.

323,829. PNEUMATIC ACTION FOR ORGANS.

Hilborne L. Roosevelt, New York, N. Y., and Charles S. Haskell, Philadelphia, Pa.; said Haskell assignor to said Roosevelt. Filed July 24, 1884. (No model.)



Claim.—1. As a new article of manufacture, a pneumatic bellows for the wind-chest of an organ, the movable board of which is provided with an arm which projects beyond the hinged extremity of said board and is equipped with a pallet, and the fixed board of which is provided with a spring which projects beyond the hinged extremity of said board and functionally operates to deflect the pallet-carrying arm and movable board in such manner as to distend the bellows, substantially as described.

2. In combination with the wind-chest of an organ, equipped with a pipe and adapted to be supplied with or exhausted of wind, a pneumatic bellows so applied within said wind-chest as to be internally and at will supplied with or exhausted of wind, the fixed board of which bellows is provided with a spring which projects beyond the hinged extremity of said board, and the movable board of which is provided with an arm which projects beyond the hinged extremity of said board and is equipped with a pallet adapted to close the opening leading to the pipe, the arrangement being such that under an equilibrium of internal and external pressures the spring functionally operates to deflect the pallet-carrying arm and movable board in such manner as to retain the pallet seated upon the pipe-opening and the bellows distended, substantially as set forth.

3. As a new article of manufacture, a pneumatic bellows for the wind-chest of an organ, the movable board of which is provided with an arm which projects beyond the hinged extremity of said board, is provided with a guard, and equipped with a pallet, and the fixed board of which is provided with a spring which projects beyond the hinged extremity of said board, is crossed with and finds a bearing upon the arm, is retained in position with respect to its said bearing by the guard of the arm, and functionally operates to deflect the pallet-carrying arm and movable board in such manner as to distend the bellows, substantially as set forth.

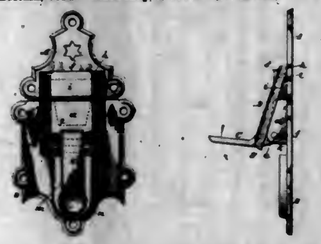
4. As a new article of manufacture, a removable pneumatic bellows for the wind-chest of an organ, the movable board of which is provided with an arm which projects beyond the hinged extremity of said board and is equipped with a pallet, and the fixed board of which is provided at each extremity with a forked cleat, and with a spring which projects beyond the hinged extremity of said board, and functionally operates to deflect the pallet-carrying arm and movable board in such manner as to move the movable board from the fixed board and in such manner distend the bellows, substantially as described.

5. In combination with the wind-chest of an organ, the partition bar or side of which is provided with a pipe-duct leading to the pipe, with a windway in communication with the pallet-box, with a fixed screw below the pipe-duct, and with a socket for a removable screw, and which chest is provided with a removable bottom board, a removable pneumatic bellows provided with a pallet-carrying arm and spring as hereinbefore set forth, the fixed board of which bellows is provided with two forked cleats at its extremities, one of which, when the bottom board is removed, is adapted to be engaged with the fixed screw, and the other to receive a removable screw adapted to be entered and engaged within the socket, substantially as described.

6. As a new article of manufacture, a pneumatic bellows for the wind-chest of an organ, the movable board of which is provided with an arm which projects beyond the hinged extremity of said board and is equipped with a pallet, and the fixed board of which is provided with a slot on its under surface, and with a spring which projects beyond the hinged extremity of said board, plays in said slot, and functionally operates to deflect the pallet-carrying arm and movable board in such manner as to distend the bellows, substantially as set forth.

323,830. BOX OR TRUNK FASTENER OR CATCH.

Henry A. Seymour, Washington, D. C., assignor to the Corbin Cabinet Lock Company, New Britain, Conn. Filed May 9, 1885. (No model.)



Claim.—1. In a trunk-fastener, the combination, with two plates, of a loop or hasp connected to one plate and adapted to be detachably secured to the other plate, and a locking device pivotally connected to the hasp-plate, and adapted to move one end of the loop or hasp past the pivotal center of the locking device in fastening and unfastening the loop or hasp, substantially as set forth.

2. In a trunk-fastener, the combination, with two plates provided with interlocking dowel and socket, of a loop or hasp and a lever for imparting an endwise movement to said loop or hasp in fastening and unfastening the same, and for carrying it past the pivotal center of the lever to retain it against displacement, substantially as set forth.

3. The combination, with two plates provided with interlocking dowel and socket, and each constructed with a projection, of a loop or hasp pivoted to a lever connected to one plate and adapted to be locked over said projections, substantially as set forth.

4. The combination, with two plates, each provided with a projection, the projection on one plate being undercut at one end, of a lever pivoted to one of the plates and a loop or hasp pivoted to said lever, and adapted to be swung over said projections and then moved endwise, to carry one end thereof into engagement with the undercut or grooved end of one projection, and to have its opposite end carried past the pivotal center of said lever to lock it against displacement, substantially as set forth.

5. The combination, with two plates adapted to be attached to the lid and body of a trunk or box, respectively, one plate being provided with an undercut projection, of a loop or hasp and a lever pivotally connected to one of the plates and to one end of the loop or hasp, and adapted to impart an endwise movement to the loop or hasp in locking and unlocking the same, and to carry it past the pivotal center of the lever, substantially as set forth.

6. In a trunk-fastener, the combination, with two plates adapted to be fastened to the lid and body of a trunk, respectively, said plates being provided with interlocking dowel and socket, of a loop or hasp and a lever connected therewith to impart a cam or eccentric movement to said loop or hasp in locking the same, whereby the two plates are drawn together and the loop or hasp carried past the pivotal center of the lever in locking and unlocking the same, substantially as set forth.

7. In a trunk-fastener, the combination, with two plates, each being provided with a locking projection, of a lever pivoted to one end of the projection on one plate, and a loop or hasp pivotally connected to said lever and adapted to engage the projection on the other plate, substantially as set forth.

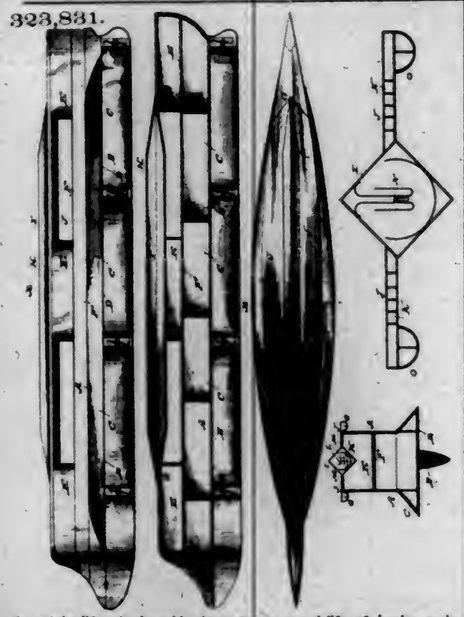
323,831. CONSTRUCTION OF SHIPS.

Edward Swindell, Apalachicola, Fla. Filed Apr. 3, 1885. (No model.)

Claim.—1. The combination of the hull of a vessel, provided at its ends and at its middle with cabins or saloon structures having their tops formed into seats, with a life-raft consisting of a central longitudinal body and laterally-extending wings, the seats in the roofs of the saloon structures corresponding in shape to the parts of the life-raft resting upon the same, as and for the purpose shown and set forth.

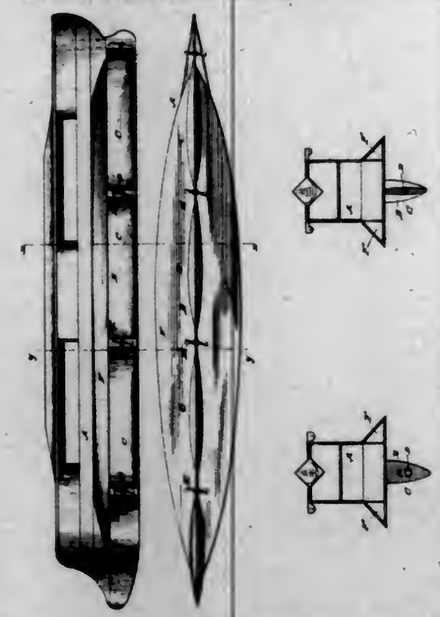
2. The combination, with the life-raft having the central body, I, and wings J, of the vessel having the saloon structures E E E at the ends and middle of its decks formed with seats G in their tops for the recep-

323,831.



tion of the life-raft, the said saloon structures and life-raft having registering-openings provided with suitable water-tight doors or hatchways for effecting communication between the saloons and the raft, as and for the purpose shown and set forth.

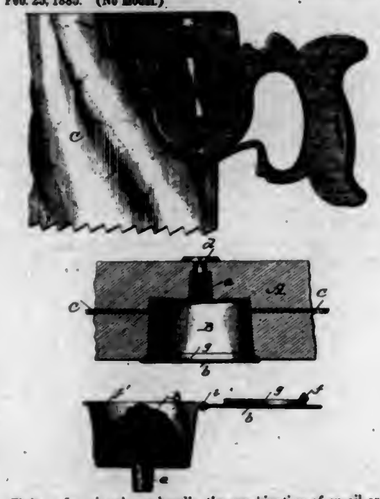
323,832. CONSTRUCTION OF SHIPS. EDWARD SWINDELL, Apalachicola, Fla. Filed Apr. 3, 1885. (No model.)



Claim.—1. The combination of a hull having longitudinal laterally-extending bulk-heads, having their bottoms on a level with the bottom of the hull, with a keel composed of a series of sections tapering at both ends, as and for the purpose shown and set forth.

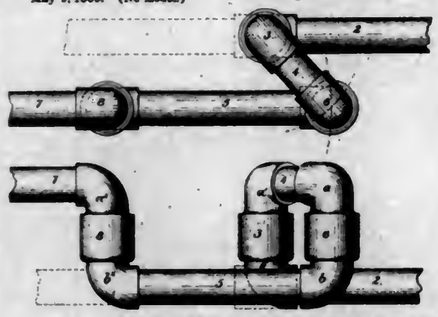
2. As an improvement in the construction of ships, the combination of the hull having longitudinal laterally-extending bulk-heads, the bottoms of which are on a level with the bottom of the hull, the keel composed of a series of sections tapering at their front and rear ends, the propeller shaft or shafts journaled longitudinally in the said sections, and the propellers mounted on said shafts between or at the rear ends of the keel-sections, substantially as and for the purpose herein set forth.

323,833. SAW-HANDLE. WILLIAM R. TOWER, Columbus, Ohio. Filed Feb. 25, 1885. (No model.)



Claim.—In a hand-saw handle, the combination of an oil or grease cup, B, having a rearwardly-projecting nut, *e*, in combination with the handle-bolt *d*, substantially as and for the purpose described.

323,834. EXPANSION-JOINT FOR GAS-PIPES. WINFIELD S. TURNER, Pittsburg, Pa., assignor of one-half to Ely Wicoff, same place. Filed May 9, 1885. (No model.)



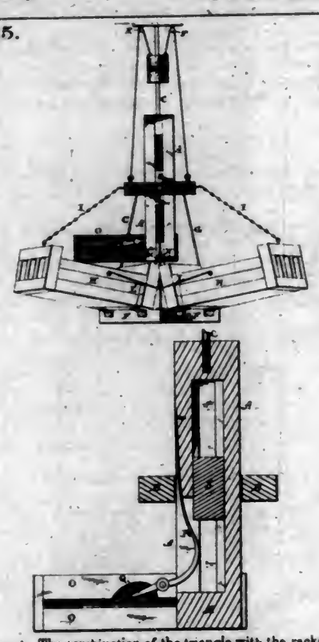
Claim.—1. In a gas-conduit, as a device for taking up expansion and contraction of two connected gas-pipes without breaking connection between the two, the combination of the said pipes and a connecting-pipe joined to each of said gas-pipes by joints which are capable of turning on axes situate on a different plane than the axes of the gas-pipes, substantially as and for the purposes described.

2. In a gas-conduit, as a device for taking up expansion and contraction of two connected gas-pipes without breaking connection between the two, the combination of the said pipes and several connecting-pipes joined to the gas-pipes and to each other by joints capable of turning on axes situate on a different plane than the axes of the gas-pipes, substantially as and for the purposes described.

3. As a rotatory joint for gas pipes, the combination of a sleeve, *f*, screwing upon an exterior right-hand thread on one of two adjacent sections of pipe and upon a left-hand thread upon the other section, a bead or stop, *h*, on one of the sections, *a*, an exterior sleeve screw-threaded so as to screw upon said bead, and provided with a foot, *k*, which rests upon the other section, *b*, outside of the sleeve *f*, said sections being screwed together with a right-hand screw-thread, and washers for interposing between the ends of said pipe-sections and between the bead and foot and the sleeve *f*, substantially as and for the purposes described.

323,835. COMBINED POOL-RACK AND BALL-SPOTTER. THOMAS M. WALKER, Bellefontaine, Ohio, assignor of one-half to John W. Miller, same place. Filed Mar. 12, 1885. (No model.)

323,835.



Claim.—1. The combination of the triangle with the racks attached to opposite sides thereof and a suitable support for the racks and triangle, the support being adapted to be raised and lowered, carrying the racks and triangle with it, substantially as shown.

2. The combination of the slotted support, the slide, the counter-weight with the triangle and the racks, which are secured to opposite sides thereof, substantially as described.

3. The combination of a suitable support, the triangle, the two racks connected thereto, and the wires which act as stops to keep the balls in place in the racks, substantially as set forth.

4. The combination of the slotted support, the slide and block, which move vertically thereon, the spring, the dog connected to the lower end of the spring, and the notched slide placed in the register, substantially as specified.

5. The combination, in a single apparatus, of an automatic game-register, a triangle, the ball-racks connected thereto, and a counter-weight for holding these parts suspended in any desired position, substantially as shown.

323,836. PLOW. THOMAS WARD, Harper's, N. C. Filed Nov. 17, 1884. (No model.)



Claim.—1. The plow-standard A, formed with downwardly-projecting lip L, beveled on its under face, and the flanges I, inclining backwardly on opposite sides of the standard, and a double-inclined extension below said flanges formed with a hole to receive a bolt to secure a point to said extension, substantially as described.

2. The combination, in a shovel-plow, with a standard, A, formed with a downwardly-projecting lip, L, beveled on its under face, and the flanges I, inclining backwardly on opposite sides of the standard, and a double-inclined extension below said flanges formed with a hole to receive a bolt, of a double-inclined mold-board, J, formed with beveled upper and lower edges and bearing on the two flanges I, and the double-inclined point K, secured to said extension by a bolt, M, and having a beveled upper edge overlapping the lower beveled edge of the mold-board, substantially as described.

3. The double-inclined plow-point formed to fit upon a double-inclined standard, and with an upper beveled edge to fit over the lower beveled edge of a double-inclined mold-board and with a bolt-hole, substantially as described.

4. The combination, with the sweep-holder having a wing formed with a concave face, of a sweep having a convex back fitting in said concave face, whereby the sweep may be adjusted bodily from end to end in the arc of a circle, as set forth, substantially as and for the purposes described.

5. The combination of the standard, an arm extending below the same, a sweep-holder adjustable on said arm and provided with side wings having concave faces, and sweeps having convex backs fitting in said concave faces and adjustable on said wings, whereby said sweep-holder and sweeps may each be adjusted, as set forth, substantially as and for the purposes described.

6. The combination of the standard, the arm extending below the same and provided with the side flanges, the adjustable sweep-holder resting on said flanges and provided with wings, and sweeps secured to said wings, substantially as and for the purposes described.

7. The combination of the sweep, sweep-holder, a support for the same, the sole-bar, the removable sole, and the bolt passed through the sole, bar, and sweep-holder to secure said parts, substantially as and for the purposes described.

8. The combination of the standard, the bar extending below the same, the ear projecting from said bar and formed with an elongated slot, and on one side with transverse serrations and a groove, and the perforated plate formed with a tooth to engage with said serrations, and a lug to fit in said groove, substantially as and for the purposes described.

323,837. REVOLVING FIRE-ARM. DANIEL B. WESSON and JOSEPH H. WESSON, Springfield, Mass. Filed Feb. 5, 1885. (No model.)



Claim.—1. In a fire-arm, a lever pivoted at one end on the rear outside of the handle of the arm, and constituting substantially the outer bearing-surface of the handle, having its free end passing through an opening in the latter and terminating behind the hammer, a hammer having a groove in its side to receive the end of said lever, and a spring to throw the free end of the latter to one side of the open end of said groove, combined and operating substantially as set forth.

2. In fire-arm-lock mechanism, a firing-pin, substantially as described, pivoted to the frame in front of the hammer, a sear pivoted on the trigger by the side of said firing-pin, and engaging with the latter, substantially as described, and a spring located between the pawl and the sear to swing the latter toward the hammer, combined and operating substantially as set forth.

3. In a fire-arm-lock mechanism, a tripping-pin located on the frame of the arm forward of the hammer, and a sear having a movement toward said pin, and carried against the latter when the hammer swings to full-

cock, combined with the hammer and the trigger, substantially as set forth.

4. In combination, the trigger pivoted in the frame of the arm, the sear pivoted on the trigger, and having a groove in its side adjoining the firing-pin, the spring *x*, attached to the rear side of the pawl and its free end pressing against the lip *z* on the sear, the pivoted firing-pin having a pin on its side engaging in said groove in the sear, and the hammer, substantially as set forth.

323,838. SAFETY-LOCK MECHANISM FOR FIRE-ARMS. DANIEL B. WESSON, Springfield, Mass. Filed Feb. 5, 1885. (No model.)



Claim.—The combination, with the hammer of a fire-arm, of a two-armed lever pivoted in the handle behind the hammer, a lever pivoted by one end on the rear outside of the handle of the arm, and there constituting substantially the bearing-surface thereof, having its free end penetrating the handle and engaging with said two-armed lever, and a spring bearing upon the latter, substantially as set forth.

323,839. SAFETY-LOCK MECHANISM FOR FIRE-ARMS. DANIEL B. WESSON, Springfield, Mass. Filed Feb. 5, 1885. (No model.)



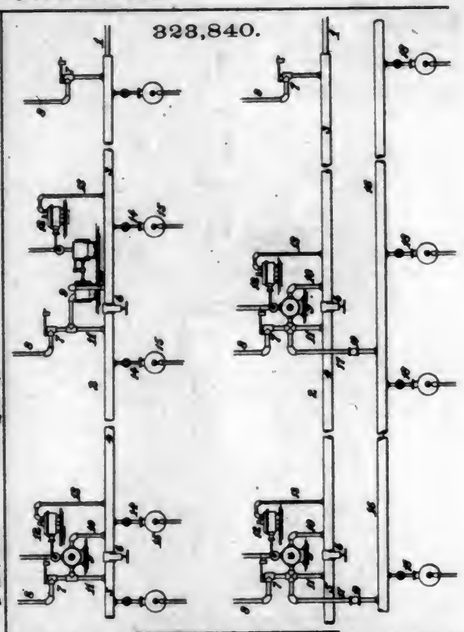
Claim.—The combination, with the mainspring of a fire-arm, of a hook, substantially as described, pivoted within the arm to vibrate by the side of and engage with said mainspring, a spring to swing said hook toward the latter, and a lever pivoted by one end on the outer rear side of the handle, having its free end penetrating the latter and bearing upon the end of said hook above its pivot, substantially as set forth.

323,840. METHOD OF CONVEYING AND SUPPLYING GAS. GEORGE WESTINGHOUSE, Jr., Pittsburg, Pa. Filed Feb. 3, 1885. (No model.)

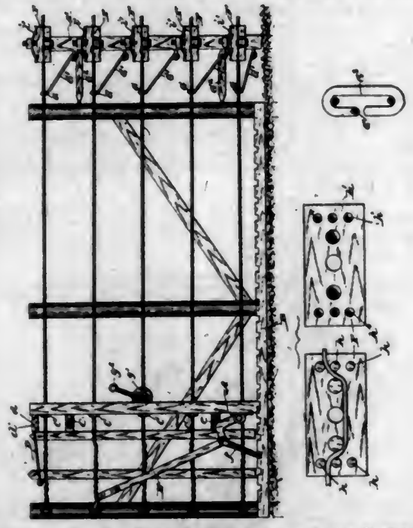
Claim.—1. The improvement in the method of conveying and delivering gas, which consists in supplying gas under pressure to a conducting-main divided into a series of longitudinal sections or compartments, reducing the average pressure therein by exhausting gas from the delivery end of one section and forcing it into the receiving end of an adjacent section, the rate of exhaustion being varied proportionately with variations in pressure in the main, and delivering the gas at regulated pressure from the compartments of the main, substantially as set forth.

2. The improvement in the method of conveying and delivering gas, which consists in supplying gas under pressure to a conducting-main divided into a series of longitudinal sections or compartments, reducing the pressure therein to an average below the pressure of the atmosphere by exhausting gas from the delivery end of one section and forcing it into the receiving end of an adjacent section, forcing gas at increased pressure from the receiving ends of the sections into an auxiliary main in which a pressure above that of the atmosphere is maintained, and delivering gas at such relatively-increased pressure or a regulated proportion thereof to desired points of supply, substantially as set forth.

323,840.



323,841. FENCE-MAKING MACHINE. JACOB WILLIAMS and JOSIAH REYNOLDS, Dublin, Ind. Filed June 1, 1885. (No model.)



Claim.—1. In a fence machine, the support having the stepped lower end and the twisting head or heads, with their operating mechanism, in combination with the rack or notched bar and means to hold in position the upper end of said support, substantially as shown and described.

2. In a fence-machine, the stepped support having the twisting-heads, with their operating mechanism, in combination with the loop or bail connected to the upper end of said support, and the rack or notched bar, substantially as shown and described.

3. In a fence-machine, the stepped bar or support having the twisting-heads, with their operating mechanism, in combination with the loop or bail connected to the upper end of said bar or support, the cushions or buffers, also applied to said bar or support, and the rack or notched bar, substantially as shown and described.

4. In a fence-machine, the combination, with the twisting-head support and the rack or notched bar, of the elbow or bell-crank lever with its lower end pivoted to the said support and having a pivoted fulcrum

adapted to rest in said rack or notched bar, substantially as shown and described.

5. In a fence-machine, the tension-plates connected together in pairs upon the sides of an upright or post, and having nodules or protuberances and corresponding cavities or depressions for the purpose specified, and springs pressing on said tension-plates, substantially as shown and described.

6. In a fence-machine, the tension-plates connected together in pairs upon the sides of an upright or post, one plate of a pair having nodules or protuberances and the other plate having cavities or depressions to receive said nodules or protuberances, substantially as shown and described.

7. In a fence-machine, the tension-plates connected together in pairs upon the sides of an upright or post, and having the connecting-bolt passing centrally through a spring pressing upon the upper plate of a pair, one of the plates having nodules or protuberances and the other plate having cavities or depressions which receive said nodules or protuberances, substantially as shown and described.

8. In a fence-machine, the guide-loops having each an open eye and a rod, the eye being vertical and the rod obliquely disposed to said eye, in combination with the tension-plates connected to the sides of an upright or post, substantially as shown and described.

9. In combination with the base-bar of a fence-machine, the bracket having a hook to fit over the top edge of a base-board, and having a recess to receive the bar, substantially as shown, and for the purpose described.

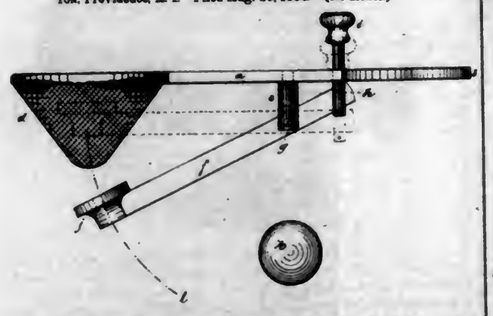
10. In a fence-machine, the combination, with the rack or notched bar which receives the stepped twisting-head support, of the bracket having a hook to fit over the top edge of a base-board, and having a recess to receive the rack, substantially as shown and described.

323,842. TOBACCO-PIPE. ADNA C. WINNING, Boston, Mass. Filed Mar. 9, 1885. (No model.)



Claim.—In a stem for tobacco-pipes, in attachable and detachable sections, the combination of the saliva drip-chamber E, having a clean-out opening and closing-stopper F, the filtering-chamber B', provided with wire-gauze disks D D, and a filtering material located between and confined by the disks, substantially as described.

323,843. TOY BALL-THROWING DEVICE. WILLIAM W. ARMINGTON, Providence, R. I. Filed Aug. 25, 1884. (No model.)



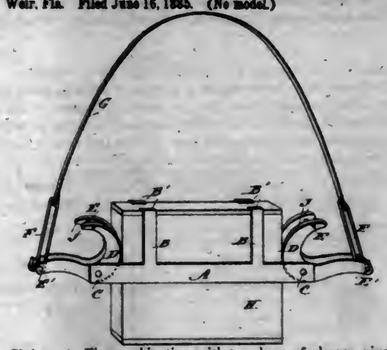
Claim.—1. The combination, with rod *a* and shallow bag attached hereon, of a lever arranged on said rod and adapted to project a ball lying in said bag, substantially as set forth and shown.

2. In combination in a toy, a handle, a hoop, and bag to receive a ball, and a lever connected to said handle having an operating end arranged beneath said bag and adapted to be raised to strike a ball lying in said bag, substantially as set forth.

3. In combination, the handled rod, a bag secured at the end opposite the handle thereof, a lever fulcrumed on the under side of said rod, and a rod, *h*, or plunger adapted to operate said lever, all said parts being arranged and operating substantially as and for the purposes set forth.

4. In combination, the perforated rod *a*, the hoop adjusted at the end thereof, a bag, a lever, a fulcrumal stud, and a rod, *h*, having a handle, *i*, and attached to the lever to throw the same, said parts being arranged and operating substantially as and for the purposes set forth.

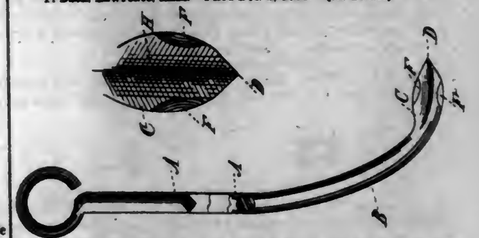
323,844. DEVICE FOR HANDLING BOXES. ALFRED AYER, Lake Weir, Fla. Filed June 16, 1885. (No model.)



Claim.—1. The combination, with two bars, of clamps pivoted to the same at the ends, clevises on the clamps, and a band or strap uniting the clevises, substantially as herein shown and described.

2. The combination, with the side bars, A, having upwardly-bent arms B, having their upper ends bent toward each other, clamps pivoted to the ends of the bars, and a band or strap uniting the clamps, substantially as herein shown and described.

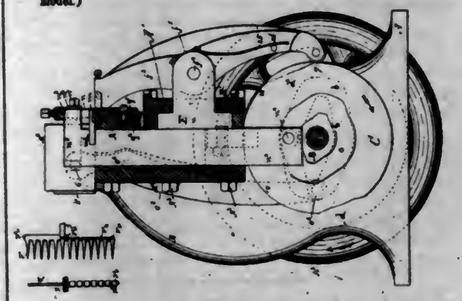
323,845. COMBINED STOVE LIFTER, RAKE AND POKER. JAMES P. BECK, Lawrence, Kans. Filed Dec. 2, 1884. (No model.)



Claim.—1. The poker A, having the curve B, of the form described, and the end formed as a lid-lift, C, substantially as specified.

2. The poker A, having the curve B, of the form described, the point D, and the part C, formed as a lid-lifter, substantially as specified.

323,846. MACHINE FOR FORMING HEADS ON SHOE-NAIL STRIPS. MATTHIAS BROCK, Boston, Mass., assignor to McKay & Copeland Lasting Machine Company, Portland, Me. Filed Aug. 4, 1884. (No model.)



Claim.—1. In a machine for upsetting and forming heads on comb nail-strips, a stationary clamping member, a lever, *f*, and attached movable clamping member to clamp the web of the comb nail-strip between them, and a carriage on which the said lever is mounted, combined with means, substantially as described, to operate the said lever and carriage, whereby the strip may be clamped and fed, substantially as described.

2. The clamping members and the spring-held strip-support, combined with the gage, to operate substantially as described.

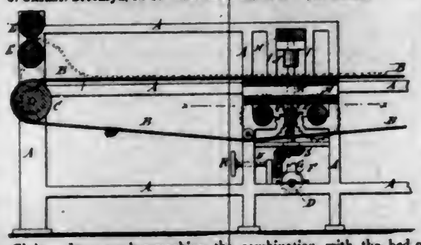
3. The jaws to clamp the web of the strip, and an upsetting-tool to indent and upset parts of the web at intervals, leaving a projection at one side of the said upset portion, combined with a cutter to cut away the said projections, substantially as described.

323,847. METHOD OF FORMING HEADS ON NAIL-STRIPS. Matthias Brock, Boston, Mass., assignor to McKay & Copeland Lasting Machine Company, Portland, Me. Filed Mar. 9, 1885. (No model.)



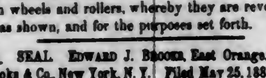
Claim.—The herein-described method of forming heads on a nail-strip, which consists in indenting or upsetting portions of the edge of the web of the strip at measured intervals, and thereafter cutting out the projection left between adjacent upset portions to a point below the tops of the adjacent heads, substantially as described.

323,848. CRACKER-MACHINE. William H. Bromley and Philip J. Gately, Brooklyn, N. Y. Filed Mar. 19, 1885. (No model.)



Claim.—In a cracker-machine, the combination, with the bed or plate over which the apron passes and upon which the cutting is done, of two eccentric rollers mounted under said bed and bearing directly against it their entire length, but not connected with said plate or bed, worm-wheels on the shafts of said eccentric rollers, and a single worm for turning both wheels and rollers, whereby they are revolved in opposite directions, as shown, and for the purposes set forth.

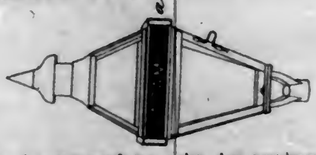
323,849. SEAL. Edward J. Brooks, East Orange, N. J., assignor to E. J. Brooks & Co., New York, N. Y. Filed May 25, 1885. (No model.)



Claim.—1. In combination with a soft-metal seal-disk, a detector-shackle of fine single wire of hard metal, having permanent sharp angular bends in a single plane, forming short rigid withdrawal-resisting portions at opposing angles, or zigzag, as herein specified, for the purposes set forth.

2. The within-described improved seal, comprising a fine single wire of hard metal, having a zigzag threading end formed by permanent sharp bends in a single plane, and a straight end provided with a bent-up anchoring enlargement, in combination with a soft-metal seal-disk cast fast on said straight end around said anchoring enlargement, and having a threading-hole to receive said threading end, substantially as herein specified.

323,850. STREET-LAMP SIGN. William P. Butler, Chicago, Ill. Filed Mar. 18, 1884. (No model.)



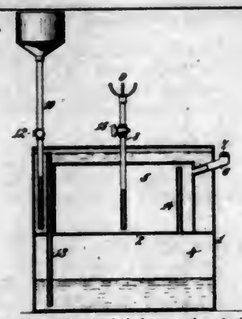
Claim.—As a new manufacture, a plate-glass street-lamp sign having white translucent letters and a dark opaque ground surrounding the letters, both being burned into the glass, substantially as described.

323,851. VAPOR-BURNING LAMP OR STOVE. William P. Butler, Chicago, Ill. Filed Feb. 5, 1885. (No model.)

Claim.—1. In a lamp, the combination of a water-reservoir, an air-compressing chamber connected therewith, and an oil-reservoir connected with the air-chamber and located entirely within the water-reservoir, substantially as described.

2. In a lamp in which the feed of the oil is aided or accomplished by the air-pressure due to a column or body of water, the combination, with the water-reservoir, of an oil-reservoir entirely located therein, a burner, and a supply-tube for a burner passing through a part of the water-

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reservoir, whereby the oil-reservoir is kept cool and the conduction of heat by the burner supply-tube obviated, substantially as described.

323,852. WATCH-PLATE. Sewall T. J. Byam, New Haven, Conn. Filed Aug. 21, 1884. (No model.)



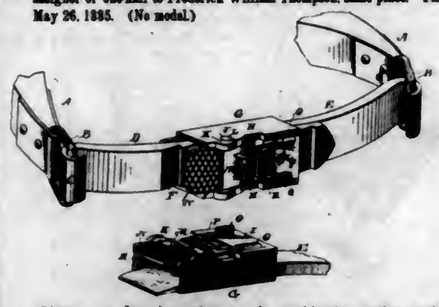
Claim.—1. As an improvement in watch-movements, a balance-bridge which has its ends conformed to and adapted to fit within recesses or notches that are formed within a movement-plate, whereby said bridge is held in position and prevented from movement in a direction parallel with the plane of said plate, substantially as and for the purpose specified.

2. As an improvement in watch-movements, a balance-bridge which is secured in lateral position with relation to a movement-plate by the engagement of its ends with said plate, substantially as and for the purpose hereinbefore shown.

3. As an improvement in watch-movements, a balance-bridge which is connected with a movement-plate by the engagement of its ends therewith, and by such engagement is held in lateral and vertical position thereon or therein, substantially as and for the purpose set forth.

4. As an improvement in watch-movements, a balance-bridge which is connected with a movement-plate by the engagement of its ends with the latter, and is moved into or out of such engagement in a line perpendicular to the plane of said plate, substantially as and for the purpose shown and described.

323,853. HAME-FASTENER. Milton E. Campany, Muskegon, Mich., assignor of one-half to Frederick William Thompson, same place. Filed May 26, 1885. (No model.)

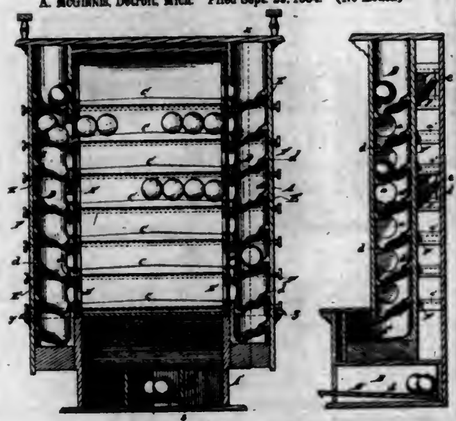


Claim.—1. In a hame-fastener, the combination, with a toothed strip hinged to one hame and having inwardly-facing teeth, of a strip hinged to the other hame, and having a box upon the face of its outer portion, having its outer portion open at the top and formed with bearings in the edges of the sides of the box, having a bail-shaped spring secured at its inner ends upon the top of the box, and having an outwardly-projecting lip at the outer edge of the top of the box, and a catch-lever pivoted with its laterally-projecting trunnions in the bearings upon the sides of the box, having its outer end formed as a thumb-piece, and having an inwardly-bent lip upon the upper side of its inner portion engaging the transverse end piece of the spring, the said catch-lever engaging the ratchet-teeth of the other strip with its inner end, as and for the purpose shown and set forth.

2. In a hame-fastener, the combination of the part E, having the box formed with sides H H, provided with bearings J J, having tongues K and top piece, I, covering the inner portion of the open top of the

box, and having outwardly-projecting lip P and spring-clamping lips Q Q, the bail-shaped spring R, having its ends clamped by the lips Q, and the catch-lever pivoted with its laterally-projecting trunnions in the bearings upon the side pieces of the box, having its outer end formed into a thumb-piece serrated upon its upper side, having its inner end cut off straight, and having an inwardly-bent flat lip, O, upon the upper side of its inner portion, the said box being formed of malleable metal, as and for the purpose shown and set forth.

323,854. POOL-BALL CABINET. Leon H. F. Coquard and Francis A. McGinnis, Detroit, Mich. Filed Sept. 29, 1884. (No model.)



Claim.—1. In a pool-ball cabinet, the combination of a removable triangular drawer, having slots near its base and a removable inclined bottom, sliding and taking in such slots, substantially as described.

2. In combination with a pool-ball cabinet, a removable triangular drawer having a removable inclined bottom, substantially as described.

3. In combination with a pool-ball cabinet, a spiral runway, communicating with the shelf or shelves thereof, substantially as described.

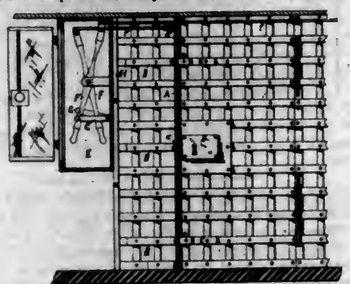
4. In a pool-table cabinet, the combination of one or more inclined shelves and a spiral runway communicating with the inclined shelf or shelves, for delivering the balls thereon at one point or in one receptacle, substantially as described.

5. In a pool-ball cabinet the combination of one or more inclined shelves, a runway communicating with said shelves, and a series of independent valves controlling said communication, and adapted to be controlled seriatim or singly, at the option of the operator, substantially as described.

6. In a pool-ball cabinet, the combination of one or more shelves communicating with a spiral runway, a spiral runway and reciprocating slides, the communication between said shelves and said runway controlled by said reciprocating slides, said slides controlled by an operating-bar connected therewith, substantially as described.

7. In a pool-table cabinet, the combination of one or more inclined shelves communicating with a runway, a winding runway, and a drawer at the base of said runway for receiving the balls from the shelves passing down the runway, substantially as described.

323,855. PRISON-DOOR BOLT. William Corey, Cincinnati, Ohio, assignor to Joseph L. Hall, same place. Filed Nov. 13, 1884. (No model.)

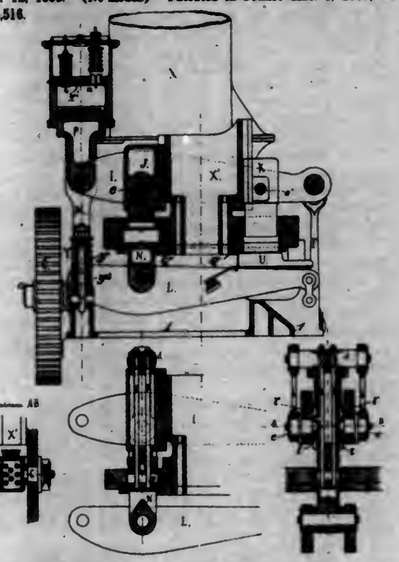


Claim.—1. A guarding device for cell-doors, consisting of a bar notched or cut away as shown, and journaled in such position, with relation to the door, that when partly rotated in one direction one wall of said notch will overlap the door, and when revolved in the opposite direction said notch will be turned from over the door and permit the door to be opened, in combination with the door and a lock to prevent the overlapping wall of the notch from being moved from over the door, substantially as described.

2. The revolving bar or shaft A, cut away as shown, and journaled parallel to one edge of the door, the cut-away portion permitting the door to open when the shaft is partially revolved in one direction, and the wall of the notch overlapping the edge of the closed door (or projections thereon) when partially revolved in the reverse direction, in combination with connecting-rods and lever to rotate said bar, substantially as described.

3. In mechanism for guarding prison-doors, the combination of a bar or shaft fitted to turn in a plane parallel with one edge of the door, said bar being notched or cut away to overlap the door or bars secured thereto, and also mortised to receive the bolt of a lock secured to the door, with the door-lock, a hand-lever, and connecting mechanism, whereby the said bar may be rotated to release the door from the guard-room or corridor when the lock-bolt is retracted, substantially as specified.

323,856. MACHINE FOR AGGLOMERATING COAL AND OTHER MATERIALS. Gustave J. P. Couffinhal, St. Etienne, France. Filed Feb. 12, 1885. (No model.) Patented in France Mar. 1, 1880, No. 135,516.



Claim.—1. In a pressing and molding machine, the combination, with a mold in which the articles are compressed, of upper and lower beams carrying pivoted pressing-plungers, the pivots of one of the plungers serving as a fulcrum for its beams to oscillate upon, cheek-pieces yoking the two sets of beams together, and gearing and intermediate connections by which motion is imparted to the working parts, substantially as described.

2. In a pressing and molding machine, the combination, with a mold and upper and lower beams yoked together and provided with pivoted pressing-plungers, the pivot of one plunger serving as a fulcrum for its beams to oscillate upon, of a spring carried by the lower beams to aid in restoring them to their normal positions, substantially as described.

3. In a pressing and molding machine, the combination, with a mold and upper beams carrying a pivoted plunger, the pivot thereof serving as a fulcrum for said beams to oscillate upon, of lower beams carrying a pressing-plunger, cheek-pieces connecting the two sets of beams together, and pivoted links securing said lower beams to the main frame, so as to allow said beams to have a horizontal play, substantially as described.

4. In a pressing and molding machine, the combination, with a mold and upper and lower beams carrying pivoted pressing-plungers and yoked together by cheek-pieces, of an ejecting-plunger pivoted to and carried by said upper beams, substantially as described.

5. In a pressing and molding machine, the combination, with a mold and upper and lower beams having ejecting and pressing plungers pivoted thereto, of the spring Y, sleeve y', embracing a rod fixed to the main frame of the machine, and the cross-bar y^2, sliding on said rod and connected with the lower beams, substantially as described.

6. In a pressing and molding machine, the combination, with a mold and upper and lower beams having pivoted pressing-plungers, of the cheek-pieces connecting the upper and lower beams together, having slots therein, as described, a pivot-bar to the upper beams working in said slots,

and a piston pivoted on said bar, and means for automatically releasing the piston when the desired or maximum pressure has been attained, substantially as described.

7. In a pressing and molding machine, the combination, with a mold and upper and lower beams carrying pivoted plungers, of the cheek-pieces connecting said beams, slotted to receive a pivot-bar of the upper beams, a piston pivoted to said bar, a hydraulic cylinder mounted upon the cheek-pieces, within which the piston works, and means, substantially as described, for retaining the fluid in the cylinder and automatically releasing it when the desired or maximum pressure is attained, substantially as specified.

8. In a pressing and molding machine, the combination, with the upper and lower beams carrying the pivoted plungers, and cheek-pieces yoking the beams together, of the piston *p*, mounted on the pivot-bar O, working in slots *a a* of the cheek-pieces, the cylinder T, divided into two parts by the partition T', and the spring-seated valve *m*, working the upper chamber to release the fluid in the lower chamber when the desired or maximum pressure has been attained, substantially as described.

9. The combination, with the upper and lower beams carrying the pivoted plungers, the slotted cheek-pieces connecting the beams together, and pivot-bar O, working in slots *a a*, of the piston *p*, cylinder T, partition T', and the spring-seated valves *m* and *n*, working oppositely to each other, substantially as described.

10. The combination, with the upper and lower beams, yoked together as described, and carrying pivoted pressing-plungers, of the punches extending through the upper plunger and working in advance thereof, substantially as described.

11. The combination, with the upper and lower beams carrying the pivoted pressing-plungers J N, and yoked together by cheek-pieces M M', of the punches *g g*, extending through plunger J and secured to the cross-beam *d*, the connecting-rods *b b*, and pivots *c c*, all constructed and operating substantially as described.

12. The combination, with the upper and lower beams carrying the pivoted pressing-plungers J K, and yoked together by the cheek-pieces M M, of the punches *g g*, cross-beam *d*, connecting-bars *b b*, pivots *c c*, slides *l l*, and grooves *l' l'*, substantially as described.

13. In a pressing and molding machine, the combination, with a mold-wheel having molds formed therein and provided with depending cams, of a revolving drum having a cam-groove therein for engaging with the cams on the mold-wheel to actuate the same, substantially as described.

14. The combination, with a mold-wheel having molds formed therein and provided with cams or rollers, as described, of a revolving drum having a cam groove or grooves composed of alternate straight and curved faces, substantially as specified.

15. The combination of the mold-wheel Q, cams or rollers S S, drum R, having cam-groove S', the beams I I', L L', yoked together by cheek-pieces M M', and the pivoted plungers J K N, all constructed and arranged substantially as described.

16. The combination, with the mold-wheel Q, stationary plate Q', drum R, having groove S', and the cams or rollers S S, of the distributer V, blades V', mixer X, central shafts working in said mixer and distributer, and gear-wheels W W, substantially as described.

17. The combination, with the rotary mold-wheel, upper and lower beams yoked together by cheek-pieces M M', and plungers J K, pivoted to the upper beams, of the guide-piece X', fixed to the main frame, the lower portion thereof forming the axis of the mold-wheel, substantially as described.

18. The combination of the rotary mold-wheel Q, upper and lower beams, I I', L L', pivoted plungers J, K, and N, cross-head H, connecting-rods F F', crank-disks E E', shafts D D', gear-wheels C C', pinion B, and main driving-shaft A, substantially as described.

19. The combination of the beams I I', L L', cheek-pieces M M', plungers J K N, mold-wheel Q, plate or disk Q', cams or rollers S S, drum R, having cam-groove S', shafts D D', gear-wheels C C', pinion B, and main driving-shaft A, substantially as described.

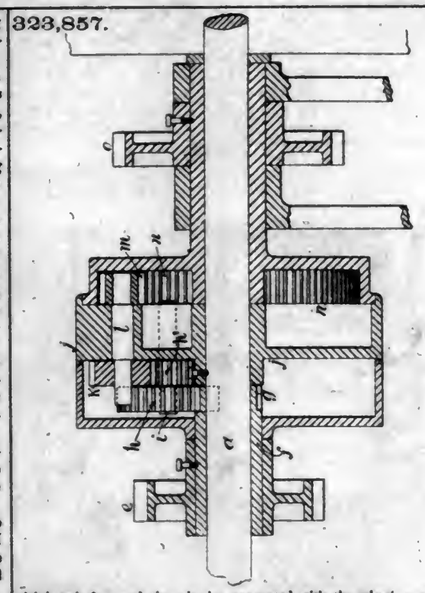
20. The combination of rotary mold-wheel Q, plate or disk Q', distributer V, blades V', mixer X, central shafts to the mixer or distributer, gear-wheels W W, and gear G, substantially as described.

323,857. ROVING-FRAME, &c. Richard Curtis and William H. Rhodes, Manchester, County of Lancaster, England. Filed Sept. 26, 1884. (No model.) Patented in England Nov. 6, 1880, No. 4,560.

Brief.—The differential-motion mechanism usually employed to impart a decreasing speed to the bobbins of roving and other frames is replaced by the improved mechanism set forth in the claim.

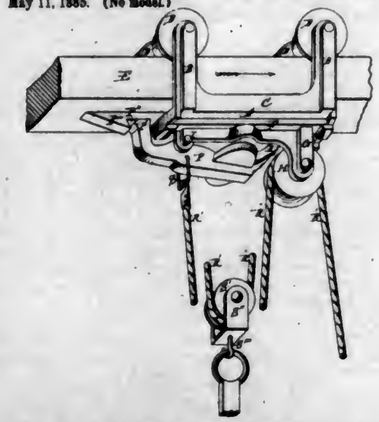
Claim.—The combination, with the driving-shaft *a*, and the disk *j*, fixedly secured thereon, and provided with a stud, *i*, and shaft *l*, of the wheel *e*, loosely mounted on the drive-shaft *a*, a wheel, *g*, connected therewith, means for rotating said wheel *e* and its wheel *g*, the double carrier-wheel *k k'* on stud *i*, the wheels *k m* at opposite ends of the shaft *l*, the wheel *g* operating the wheel *k*, and the wheel *k'* operating the wheel *k*, the internally-toothed wheel *n*, mounted loosely on the

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driving-shaft *a*, and the wheel *o*, connected with the wheel *n*, substantially as set forth.

323,858. HAY-CARRIER. John P. Davis, Rockford, assignor to Robert Harvey, David P. Greenlee, and Henry List, Belvidere, Ill. Filed May 11, 1885. (No model.)



Claim.—1. The combination, with the swiveled rope-carrying portion of the carrier and with the double-inclined stop having a central notch, with its base projecting beyond the under side of the beam to which it is secured, of a double pawl-lever having a heel engaging said double-inclined stop, substantially as set forth.

2. The combination, with the double-inclined stop having a central notch, with its base projecting beyond the under side of the beam to which it is secured, and with the rope-sheave, of a double pawl-lever to engage the hoisting-rope, and the double-inclined stop, substantially as set forth.

323,859. CHEMICAL FIRE-EXTINGUISHER. Ralph Dowson and John Taylor, Bolton, County of Lancaster, England. Filed Mar. 19, 1885. (No model.) Patented in England Jan. 21, 1884, No. 1,313.

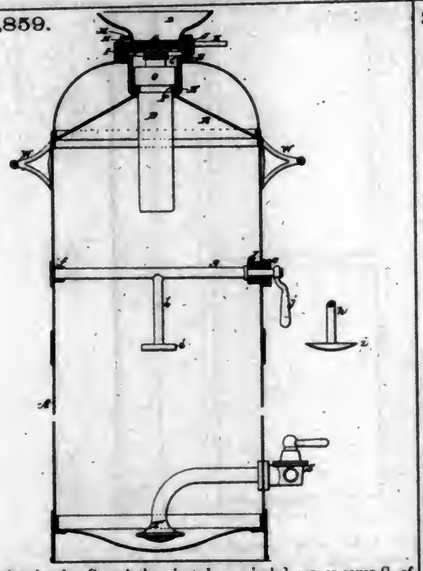
Claim.—1. The combination, in a fire-extinguisher, of the nozzle B, having cavity-chamber C, the swiveling or sliding cap or cover G, and the india-rubber ring or valve F, substantially as described.

2. The combination, in a fire-extinguisher, of the nozzle B, having cavity-chamber C, the cap or cover G, pivoted to said nozzle, the india-rubber ring or valve F, and the projection J on the upper part of the nozzle, under which the cover G slides and is held against upward pressure, substantially as described.

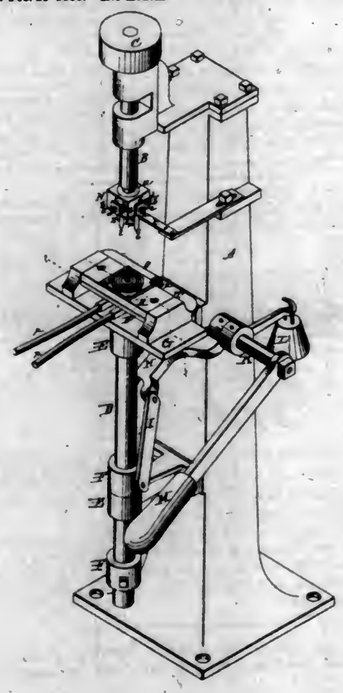
3. In a fire-extinguisher, the combination, with the nozzle B, having cavity-chamber C, and the pivoted or swiveled cap or cover G, of the spring *a*, secured to the nozzle B, having the lipped point *c* and the pin *b* secured to an extension or handle, *k*, of the cover G, whereby said cover is held securely in place by the pin *b* engaging with the point *c* of spring *a*, substantially as described.

4. In a fire-extinguisher, the combination, with the acid-bottle D, having a recess or cavity, and an india-rubber ring, P, fitting therein, forming a cushion to prevent accidental breakage of the bottle when inserted in the nozzle, of the nozzle B, having cavity-chamber C, provided with annular projection E, to receive and hold the bottle in position, substantially as described.

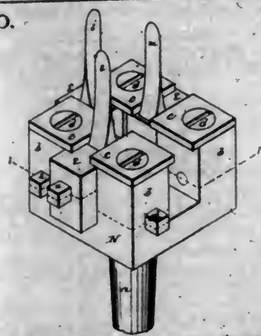
323,859.



323,860. MACHINE FOR CUTTING WASHERS. Michael V. Doyle, Rockford, Ill., assignor of one-half to Clarence E. Sovereign, same place. Filed Feb. 25, 1885. (No model.)



323,860.



Claim.—1. In a leather-cutting machine, the combination, with a rotary cutter-head provided with grooves radial with relation to the axis of rotation of said cutter-head, of cutter-holders in said grooves, vertically-adjustable cutters in said holders, and means, substantially as described, for fixing said cutters in adjusted position, as set forth.

2. In a leather-cutting machine, the combination, with a rotary cutter-head provided with grooves made in lines crossing each other and radial with relation to the axis of rotation of said cutter-head, cutter-holders adjustable in said grooves, and means, substantially as described, for fixing said cutter-holders in adjusted position in said grooves, as set forth.

3. In a leather-cutting machine, the combination, with a rotatable cutter-head provided with grooves radial with relation to the axis of rotation of said cutter-head, of an adjustable cutter-holder, and means, substantially as described, for fixing said holder in adjusted position, and an adjustable knife or cutter in said holder, as set forth.

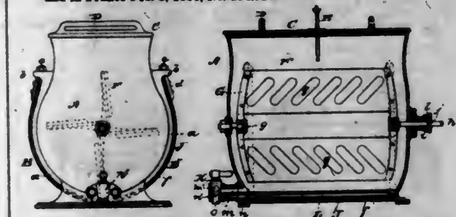
4. In a leather-cutting machine, the combination, with the cutting and operating mechanism, of a main table, and a work-supporting tablet supported above said main table to leave an open space beneath the tablet to permit the use of the grasping mechanism for the work-holding pin, as set forth.

5. In a leather-cutting machine, the combination, with the cutter and operating mechanism, of the work-supporting tablet supported on the main table substantially as described, and a holding-pin and grasping mechanism to hold said pin, as and for the purpose set forth.

6. The combination, with the standard of the machine, and with the work-supporting tablet, and suitable mechanism for elevating the same, of a spring supported from the standard and adapted to bear upon the work to prevent accidental displacement, substantially as set forth.

7. In a leather-cutting machine having a vertically-movable work-supporting table, the combination, with the standard thereof, of a spring-arm adjustably connected with said standard, and adapted to bear upon the work when the table is elevated, substantially as set forth.

323,861. CHURN. John Durkoop, Brunswick, Germany. Filed Sept. 13, 1884. (No model.) Patented in Germany Jan. 29, 1879, No. 6,920, and in France Feb. 5, 1880, No. 134,930.



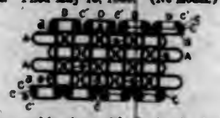
Claim.—1. In combination with the cast-iron churn-body A, formed with bands *a* and lugs *b* for the purpose set forth, the sheet-iron jacket B and straps and bolts for holding the same in place, substantially as herein shown and described.

2. The improved churn, having therein beaters F, adapted to be revolved in the milk-chamber, and having around the body A a jacket, B, held away from said body by bands *a*, whereby a water-chamber or space is formed, and a three-way cock having apertures *m' n'*, which communicate with passages *m n*, leading to the milk and water chambers, respectively, and the central outlet, *o*, all said parts being arranged and combined substantially as herein set forth, for the purposes stated.

3. The improved churn, combining therein the cast-iron body A, having rounded interior corners where the bottom and sides connect, and bands *a*, formed on the outer ends or edges thereof, which terminate in lugs *b*, a jacket secured on said bands and forming a water-chamber with the body A, a covering, *f*, beaters F, and a cover, all said parts

being arranged and operating substantially as and for the purposes set forth.

323,862. ORNAMENTAL CHAIN. BENJAMIN F. EVANS, Attleborough Falls, Mass. Filed May 18, 1885. (No model.)

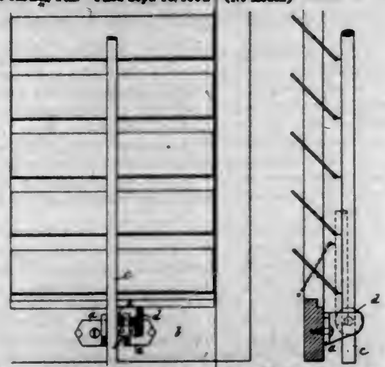


Claim.—1. The combination, with the beads A, of the rings C C', the fastening-pins B, secured to said rings and the caps D, secured to the rings and having their central portions bent or forced inwardly, whereby the ends of the fastening-pins are concealed and the edges of the chain are made to appear as though beads extended along said edges, substantially as set forth.

2. The combination, with the beads A, of the rings C C', the fastening-pins B, bent at their ends over upon said rings, and the caps D, secured to said rings by tangs *d*, bent inwardly under the rings, substantially as set forth.

3. The combination, with the beads A, of the rings C C', having grooves *c c'*, the fastening-pins B, bent over the rings in said grooves, and the caps D, covering the rings and the bent ends of the fastening-pins, and centrally perforated, substantially as set forth.

323,863. FASTENING FOR BLIND-SLATS. GEORGE F. EVANS, Corpus Christi, Tex. Filed Sept. 16, 1884. (No model.)



Claim.—1. A blind-slat fastener consisting of the brackets *a*, adapted to be secured to the lower rail of the blind and to receive the slat-rod between them and the binding-screw *d*, projecting through one of the said brackets, substantially as herein shown and described.

2. In a blind-slat stop, the brackets *a*, provided with the lug *f*, in combination with the screw *d* and the plate *e* on the end of the lug, substantially as herein shown and described.

323,864. MILK OR CREAM CAN. GEORGE W. EVANS, Baltimore, Md. Filed May 13, 1885. (No model.)

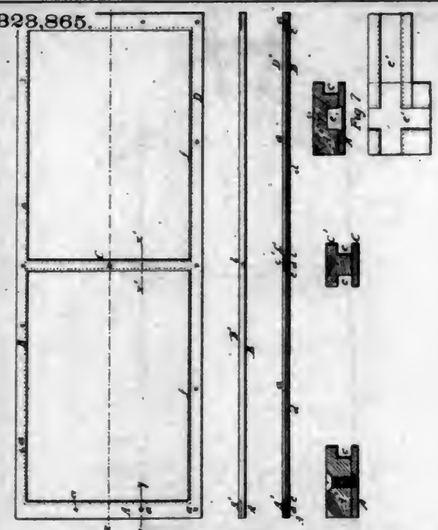


Claim.—The combination of the milk-can, the cast-metal collar surrounding the neck of the same and having L-shaped recesses on diametrically-opposite sides, a lock-spring receptacle extending laterally from one of said recesses, and a bottom flange extending outwardly below the latter recess, the surrounding rim having elbow-slots, the lock-spring arranged as herein described, and the cover having two collars arranged to fit, respectively, inside the neck and outside the rim of the can, the said outer collar being provided on its inside with inward-extending lugs and having a vertical slot adjoining one of the said lugs, substantially as herein described, for the purpose set forth.

323,865. CARRIAGE-WINDOW. FREDERICK FORDER and CHARLES FORDER, Wolverhampton, England. Filed May 15, 1885. (No model.)

Claim.—1. A sash-frame for a carriage-window, constructed of a metal frame, in combination with a frame of wood or other light material of sufficient strength for the purpose, substantially as and for the purposes set forth.

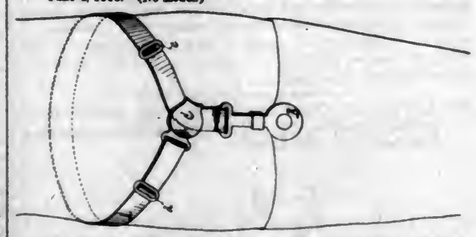
323,865.



2. The rabbet *c*, formed in the edge of the wood frame or other frame of light material, in combination with a metal frame against such rabbeted edge, substantially as and for the purpose set forth.

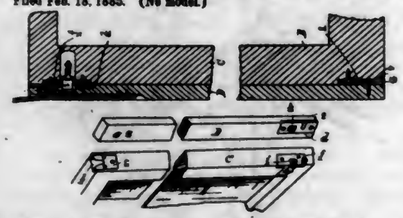
3. The dovetail grooves *c' c'*, in combination with nuts *e*, substantially as and for the purpose set forth.

323,866. GARTER. ALBERT E. FURBUSH, Mount Vernon, N. Y. Filed June 4, 1885. (No model.)



Claim.—As an improved article of manufacture, a garter consisting of the web or tape A, folded upon itself at each end to form two loops, *a b*, the stocking-supporting clasp B, secured in one of said loops, and the bent spring-clamp C, secured in the other loop, and through which clamp the web or tape passes, substantially as shown and described.

323,867. WINDOW-SASH. LUCINDA FULLER and HARRIET FULLER, Detroit, Mich., assignors of one-fourth to Harriet L. Fraer, same place. Filed Feb. 18, 1885. (No model.)

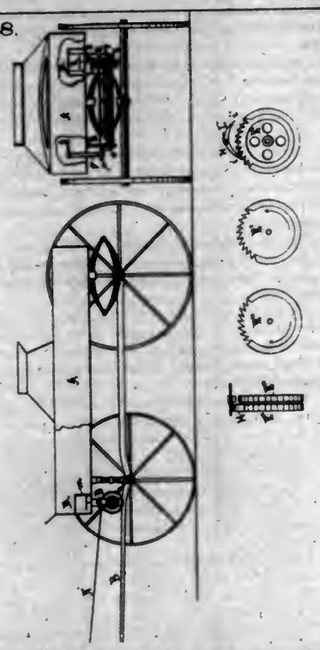


Claim.—1. The piece C, provided at one end with the plate *c*, having slot *b*, undercut on its inner face, in combination with the piece D, provided at one end with the stop *a* and means for securing the other end, substantially as and for the purpose specified.

2. The combination, with the piece C, having at one end the plate *c*, provided with slot *b* and at the other end the plate having stop *f* and spring-bolt *i*, of the piece D, provided with stop *a* at one end and at the other with the plate *d*, having slot *e* and hole *h*, substantially as and for the purposes specified.

323,868. DEVICE FOR STOPPING RUNAWAY HORSES. PAUL GUMBINNER, New York, N. Y. Filed July 1, 1885. (No model.)

323,868.



Claim.—1. The combination, with a vehicle, of rotatable drum C spring G, pawl H, ratchet-wheel E, treadle-bar K, and reins N, substantially as and for the purposes set forth.

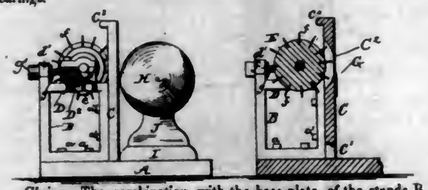
2. The combination, with a vehicle, of rotatable drum C, double-acting ratchet-wheel E' E², double-acting pawl H, and treadle-bar K, substantially as and for the purposes set forth.

3. The combination, with a vehicle, of rotatable drum C, spring G, ratchet-wheel E, pawl H, treadle-bar K, and guard M, and supplemental reins N, substantially as and for the purposes set forth.

4. The combination, with a vehicle, of rotatable drum C, spring G, ratchet-wheel E, pawl H, treadle-bar K, crank R, shaft Q, and wheels P and O, substantially as and for the purposes set forth.

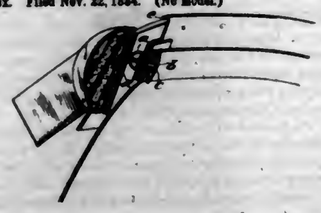
323,869. MECHANISM FOR SHEARING CAPS. THOMAS HANFORD and JOHN E. MCLOUGHLIN, Utica, N. Y., assignors to the Mohawk Valley Scotch Cap Factory, same place. Filed June 23, 1884. (No model.)

Brief.—The guard-plate is provided with a central opening the length of the rotary cutter, a ledger-blade being secured to its lower side. The rotary cutter is adjusted to said blade by means of sliding bearings.



Claim.—The combination, with the base-plate, of the stands B B, provided at the top with the way D and a slotted extension, *a'*, the bolts for securing the stands to the base-plate, the guard-plate having a central opening, C², and resting upon the base-plate and secured to the stand, and the ledger-blade, substantially as and for the purpose set forth.

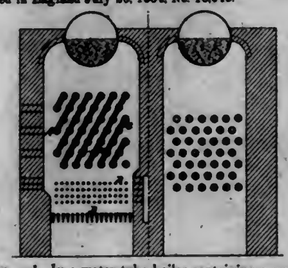
323,870. NECKTIE-FASTENING. BENJAMIN F. HUTCHES, Jr., Galveston, Tex. Filed Nov. 22, 1884. (No model.)



Claim.—1. In a necktie-fastener, the combination, with an apertured collar button, of the disk *d*, provided with the spring-loop *c*, the said disk being adapted to be secured to the back of the cravat-shield with the loop projecting through an aperture in the same, substantially as herein shown and described.

2. The spring-loop *c*, attached on a disk, *d*, combined with a button, *a*, having apertures *b* with flaring inner opening, substantially as described.

323,871. BOILER-FURNACE. CHARLES A. KNIGHT and GEORGE W. THOM, Glasgow, County of Lanark, Scotland, assignors to the Babcock & Wilcox Company, New York, N. Y. Filed Jan. 6, 1885. (No model.) Patented in England July 26, 1884, No. 10,646.



Claim.—1. In a water-tube boiler containing a nest of horizontal or inclined tubes, a filling of refractory material interposed between the tubes of each vertical series that will form regenerative flue-spaces for the passage of the furnace-gases, as set forth.

2. The combination, with the tubes, of a series of refractory or heat-absorbing blocks, disposed between vertical adjacent tubes, so as to form with the tubes regenerative flue-spaces, substantially as described.

323,872. SOFA. FREDERICK KOSKUL, St. Louis, Mo. Filed Dec. 29, 1883. (No model.)



Claim.—The combination, with a sofa or lounge having a rigid back, the latter being provided on its front face with a recess, of the section C, pivoted near its lower end within said recess, and a cross-bar secured to the back near the lower edge of the recess and running transversely across the same, for holding the section C in a horizontal position, substantially as set forth.

323,873. LOCK FOR FIRE-ARMS. JOHN S. LANDERS and DANIEL B. WESSON, Springfield, Mass., assignors to Smith & Wesson, same place. Filed May 18, 1885. (No model.)

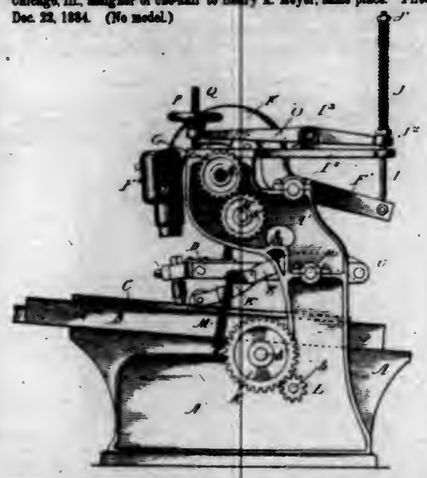


Claim.—1. In a revolving fire-arm, the firing-pin bushing *c*, having a cross-slot therein, combined with the frame *a*, having a bushing-socket therein opening on the recoil-plate, and the pin *e*, passing transversely into the frame and engaging in said slot in the bushing, substantially as set forth.

2. In a revolving fire-arm, the firing-pin bushing perforated to receive the firing-pin, and having the cross-slot *w* therein, and a shoulder around its interior near its rear end, combined with the firing-pin having the collar *x* thereon, the spring *o*, located between said collar and the end of the spring-chamber in the bushing, the frame *a*, the pin *e*,

engaging with the latter and said bushing, and the hammer *c*, substantially as set forth.

323,874. FILE-CUTTING MACHINE. HERMANN F. W. LIEBMANN, Chicago, Ill., assignor of one-half to Henry K. Meyer, same place. Filed Dec. 22, 1884. (No model.)



Claim.—1. The combination, with the main supporting-frame, of lever F F', notched as described, shaft N', rod I, spring J, lever O, and shaft *h*, provided with cam *q*, substantially as and for the purpose described.

2. The combination, with the main supporting-frame, of lever F F', notched as described, weight F^2, shaft N', rod I, spring J, lever O, and shaft *h*, provided with cam *q*, substantially as and for the purpose described.

3. The combination of the lever O, pivoted at I^2, the rod I, pivoted to lever F F', and provided with spring J, nut J', screw-shaft Q, and nut P, substantially as and for the purpose described.

4. The combination of the shaft *h*, provided with gear-wheel G, shaft *s*, provided with gear-wheel H, and cam-wheel s^2, adapted to convey the revolving motion of shaft *h* and convert it into vertical reciprocating motion in the link *s*, and with it the chisel-arm, substantially as described.

5. The combination of the shaft *s*, provided with cam-wheel s^2, and the link *s*, having flange s^3, a diagonal slot in its upper end, and slot s^4 in its lower end, substantially as and for the purpose described.

6. The described chisel-arm, mounted on shaft *s*, in two parts, D and D', jointed together by headed bolt D^6 in such a manner as to turn a little upon the adjacent parts, to enable part D' to impart a proper inclination of the chisel-holder to the upper side or edge of the file-blank, substantially as described.

7. The combination of the plate D^7, fastened to part D', the headless screw D^7, the nut D^8, and the spiral spring D^9, adapted to adjust the tension of the spring and to render the joint of parts D and D' a yielding one, substantially as described.

8. The combination of the chisel-arm D D', provided with headed screw-bolt s^4 and the link *s*, provided with vertical slot s^5, and with a diagonal slot for shaft *s'*, and adapted to furnish an adjustable connection between the chisel-arm and shaft *s'* and impart the motion of the latter to the chisel-arm, substantially as described.

9. As a device for holding the chisel-arm, with the holder and cutter, down steadily to the file-blank, the combination of the pin K', fixed in the chisel-arm, the spiral spring *k*, seated upon it, and the bar *j*, substantially as described.

10. The frame E, swinging on the journal-bar *e*, turning in the main frame, and having the spiral springs M attached to it, as at E', at their upper ends and to the main frame at their lower ends, adapted to hold down with an elastic pressure upon the file-blank a roller or any device like those shown in Figs. 6, 7, 8, or 9, substantially as described.

11. The combination of the bar S, pivoted to lever R at its upper end, and provided with a hook at its lower end, and the frame E, adapted to raise the frame and its pressure-roller E^2 up off the blank when required, substantially as described.

12. The devices shown in Figs. 7 and 8, adapted to be screwed into and operated by the frame E, in combination with that frame, adapted to hold down file-blanks in different forms and positions, substantially as described.

13. The combination of the platform B, provided on its lower side with cogs b^2, with pinion b^3, gear-wheel K on shaft b', pinion L on shaft *b*, and slotted arm Z, having pawl Y and ratchet-wheel T, adapted to convey the feed motion from the lever Z to platform B, substantially as described.

14. The combination of the shaft *h*, provided with cam *q*, adapted to operate the lever F F', with the cam-wheel *i*, connecting-rod *a*, provided with its yoke-bearing *c*, and slotted lever Z, the whole adapted to transmit the feed motion from the shaft *h* to shaft *b*, substantially as described.

15. The combination of the shaft *b* with the slotted lever Z, fastened thereon, and having slot Z' and ways for the bearing-piece *c*, and fastened at any desired adjustment on the lever by means of pin *d* and holes *d'* at graduated distances from the shaft, substantially as and for the purpose described.

16. The combination of the ratchet-wheel T, fastened upon shaft *b*, with the described friction-brake for the same, consisting of the curved plates *y'* and the thumb-screw y^2 and its nut, substantially as and for the purpose described.

17. The combination of the platform B, the upper surface of which is hollowed out, as shown, and the support C, the under surface of which corresponds to the upper surface of the platform, and which support is provided with a series of holes, C^4, and grooves *n'*, substantially as and for the purpose described.

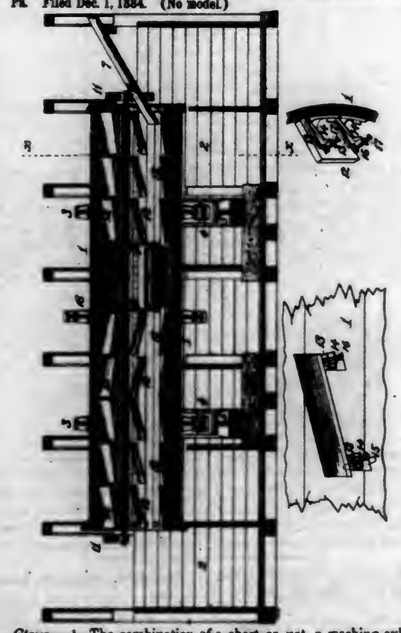
18. The combination of the pins C^3 and the bearings for them in the platform, and springs n^3, adapted to hold the pins in the holes C^4 and keep the support C to any lateral adjustment required, substantially as and for the purpose described.

19. The described platform-bed, the upper face of which is adapted to receive the file-blanks of the different forms shown in Figs. 14, 15, 16, 17, 18, and 19, while the lower side edges are adapted in size and form to enter and be held by the grooves *n'* in the support C, substantially as described.

20. The described band-shifting device, consisting of post U, having bearings X on the frame, spring W, lever V, spring-plate *e*, having catch *e'*, stud *f*, and the arm U', having loop U^2, substantially as and for the purpose described.

21. The combination of the hollow arch *r*, having sliding spring-case *r'*, with rubber spring r^2, the screw-shaft r^3, and the lever F F', substantially as and for the purpose described.

323,875. ORE-WASHER. GEORGE W. LYON, Pennsylvania Furnace, Pa. Filed Dec. 1, 1884. (No model.)



Claim.—1. The combination of a chest or vat, a washing-cylinder adapted to rotate therein, a series of inclined elevating and conveying shelves secured to the inside of said cylinder, and a crushing-roller journaled in arms upon a suspending-shaft within said cylinder and adapted to rotate eccentrically thereto, substantially as set forth.

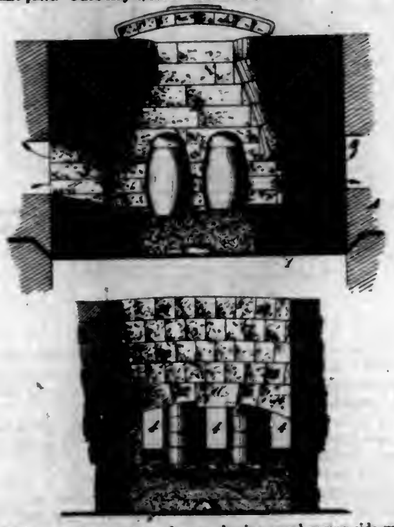
2. The combination of a chest or vat, a series of flanged rollers mounted in bearings therein, a washing-cylinder provided with external bearing-rings which are supported upon said rollers, said cylinder having a central opening at its supply end and being open throughout its delivery end, a crushing-roller suspended within said cylinder eccentrically

to its axis, a feed-spout leading into the opening of the supply end of the cylinder, and a series of elevating and conveying shelves secured to the inside of the cylinder, the shelves between the supply end and crushing-roller being inclined toward said roller, one or more circumferential series of shelves on the opposite end of said roller being reversely inclined and the remainder of the shelves similarly inclined to those at the supply end of the cylinder, substantially as set forth.

3. The combination of a washing-cylinder and a series of elevating and conveying shelves, each connected at one end to a plate secured by a single bolt to the cylinder and at the other to a plate secured to the cylinder by a bolt passing through a slot therein curved concentrically to the center of the bolt of the opposite end plate, substantially as set forth.

4. The combination of a washing-cylinder, a series of elevating and conveying shelves, a series of plates, one of which is secured to the lower side of each shelf near each end thereof, and is pivoted to a supporting-plate on the cylinder, and a series of adjusting-bolts each passing through a shelf-plate at the end farthest from its pivot and engaging a thread in its supporting-plate, substantially as set forth.

323,876. CRUCIBLE-FURNACE. THOMAS MCBRIDE, FRANK. B. SMITH, and ANDREW J. LEDOUX, Allaghany, Pa., assignors to Smith, Sutton & Co., same place. Filed May 4, 1885. (No model.)



Claim.—1. In a melting-furnace having overhanging side walls, the arch forming the bottom or foundation of such wall and the top of the intake-flues composed of a series of brick arranged in horizontal planes, substantially as set forth.

2. A melting-furnace having the arch forming the top of its intake-flues composed of a series of brick arranged in horizontal planes, said brick having their base or outer ends broader than their inner or furnace-chamber ends, whereby an arch in a horizontal plane is formed by said series of brick, substantially as set forth.

3. A melting-furnace having the top of each of its intake-flues formed of a single brick, said brick a member of the arch spanning all the flues on one side of the furnace, substantially as set forth.

4. In a melting-furnace, the arch forming the top of its intake-flues, composed of a series of brick arranged in horizontal lines, in combination with the supporting-piers, the top of each pier being formed of a single brick having its top surface shaped to correspond with the under surface of the arch, and lying in a horizontal plane, substantially as set forth.

5. In a melting-furnace having the top of its flues formed of a series of brick, the bricks 8 and 9 forming the tops of the piers on each side of the central flue, and having notches or recesses at their inner corner, in combination with the brick 11, provided with the lugs or projections 13, adapted to fit within said recesses, substantially as set forth.

6. In a melting-furnace having the top of its flues formed of a series of brick, the combination of the bricks 8 and 9, forming the tops of the piers, and the brick 11, said bricks being so constructed that the inner end of the brick 11 is dropped down sufficiently to bring the top of the central to the same height as the side flues, substantially as set forth.

7. In a melting-furnace, a series of brick constituting the top layer or finishing course so shaped and arranged as to form an arch in both a horizontal and vertical plane, substantially as set forth.

8. In a melting-furnace, a series of brick forming the wall above the intake-flues, being suitably constructed and arranged to form an arch in a horizontal plane, in combination with key-bricks forming the division-walls of the furnace, substantially as set forth.

323,877. BILL-FILE CASE. CHARLES H. MOULTON, Washington, D. C. Filed Dec. 12, 1884. (No model.)



Claim.—1. In combination with a file-case, a locking-bar extending across the file-box receptacles of the file-case and journaled in the side walls or pieces thereof, and adapted to engage with the file-box by being turned on its axis, substantially as described, and for the purpose stated.

2. In combination with a file-case, a locking-bar extending across the file-box receptacles of the file-case and journaled in the side walls or pieces thereof, and adapted to engage with the file-box by being turned on its axis, and the lever applied to the end of the locking-bar to throw it in and out of engagement with the file-box, substantially as described.

3. In combination with a file-case, a locking-bar mounted to rotate on bearings in the case and extending across the file-receptacles therein, and a file-box having its side walls or pieces formed with notches in the outer edges to be engaged with the locking-bars, substantially as described, and for the purpose stated.

4. In combination with a file-case, two or more locking-bars mounted to rotate on bearings in the case and extending across each series of file-receptacles therein, a vertical rod pivotally connecting the locking-bars, a multiple of file-boxes formed with notches in the outer edges of their side pieces, and a lever attached to one of the locking-bars, whereby the bars may simultaneously be rotated and thrown in and out of engagement with the file-boxes, substantially as and for the purpose stated.

5. In combination with a file-case and the file-boxes thereof, two or more locking-bars mounted to rotate on bearings in the case and extending across each series of file-receptacles, vertical rods connecting the locking-bars, and a lever attached to one of the locking-bars, whereby the bars may simultaneously be rotated and thrown in or out of engagement with the file-boxes, substantially as described, and for the purpose stated.

6. In combination with a file-case and a file-box formed with notches in the outer edges of its side pieces, a locking-bar mounted on bearings across the file-case and adapted to engage notches in the file-box by being rotated on its axis, means, substantially as described, for turning said bar on its axis, and a lock to hold the bar in engagement with the file-box, substantially as described, and for the purpose stated.

323,878. ROTARY CHURN. LEWIS W. MUNCH, Racine, Wis. Filed Apr. 1, 1885. (No model.)

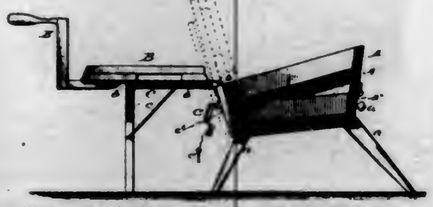


Claim.—1. In a rotary churn, a dasher formed of end pieces having the opposite cutting sides beveled to an edge, outer stretchers slightly oval on the outside, and with inner oval surfaces on one edge and flat reduced surfaces on the other, one or more inner oval diagonally-arranged stretchers, washer-bearings recessed in but extending slightly beyond the end pieces, and a tie-rod connecting the outer and inner stretchers, substantially as described.

2. The combination of the churn-body, the divided band, clamps, each having a slot through which the end of the band is passed, and a recess in which said end is turned back, a screw-bolt engaging said clamps, and clamps for securing the band to the upper portion of the churn-body, each provided with projections which enter the body, recesses for receiving the band, and perforations through which screws are passed, substantially as described.

3. The combination, with a churn-body, of a divided band, means for clamping and securing the same at the lower ends, and clamps having projections *t t*, which enter the body, recesses *s s'*, and perforations *n n'*, through which latter screws are passed for securing the clamps to the churn, substantially as described.

323,879. BUTTER-WORKER. Lewis W. Munch, Racine, Wis. Filed Apr. 1, 1885. (No model.)



Claim.—A butter-worker comprising frame A, having legs *a a*, tray A', provided with opening a^2, and plug a^3, a follower, B, hinged to frame A by hinges *b' b'*, and having eyes-pieces *b b*, handle B', supporting leg C, provided with brace-hook *c*, and clamp C', and drawer A^2, with handle *a'*, and a suitable lock, all constructed and arranged substantially as described, and for the purposes set forth.

323,880. CUTTING APPARATUS FOR HARVESTING-MACHINES. Silas R. Owen, St. Joseph, Mo. Filed Dec. 31, 1883. (No model.)



Claim.—In the improved connecting-gear, the combination of stirrup R, the cross-bar S, the shaft L, bevel-gear M, chain-wheel P, casting V, boxes T, chain-belt N, chain-wheel K, shaft F, pinion H, and drive gear-wheel E, substantially as described, and for the purposes set forth.

323,881. STEAM-GENERATOR. Nathaniel W. Pratt, Brooklyn, assignor to the Babcock & Wilcox Company, New York, N. Y. Filed Jan. 13, 1885. (No model.)

Claim.—1. A convex drum-head having a flat projection raised at an angle of forty-five degrees to its axis, substantially as set forth.

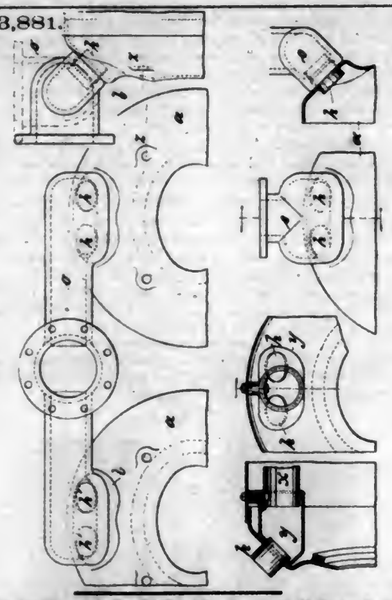
2. A convex drum-head provided with a man-hole opening surrounded by a re-enforcing ring, of larger internal diameter, to include the man-hole plate and leave a bearing or seat for said plate directly upon the head, substantially as described.

3. An elbow-connection in which the axis of the two branches make an angle of one hundred and thirty-five degrees, constructed with one flanged or threaded end and one fitted to receive one or more expanded nipples, substantially as described.

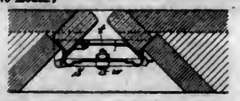
4. A pipe-connection with elbows of forty-five degrees' angle, each fitted to receive one or more expanded nipples, combined with one or more outlet-openings, the axis of which make an angle of one hundred and thirty-five degrees to the plane of said elbow, substantially as described.

5. An interposed steam-fitting forming a connection of the dry-pipe and steam-pipe, that can be reversed to cause the connected pipe to stand in either a vertical or horizontal plane when desired.

323,881.



323,882. STEAM-GENERATOR. Nathaniel W. Pratt, Brooklyn, assignor to the Babcock & Wilcox Company, New York, N. Y. Filed Jan. 13, 1885. (No model.)

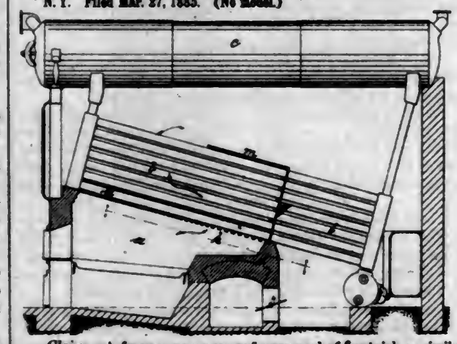


Claim.—1. A door frame-work for the purpose specified, consisting of vertical members of V cross-section, joined to horizontal top and base plates, adapted to form a portion of an outwardly-flaring opening, and secured in the brick-work, substantially as described.

2. A door frame-work having a vertical flange cast with the upper cross-piece, combined with a recessed beam, substantially as and for the purpose specified.

3. A door frame-work adapted to form a portion of an outwardly-flaring opening, as described, provided with an outer door and an inner protecting door or shutter, both opening outwardly, said doors being fitted to open clear of the passage, and so arranged that the outer door is incapable of closing previous to the closing of the inner door, as described.

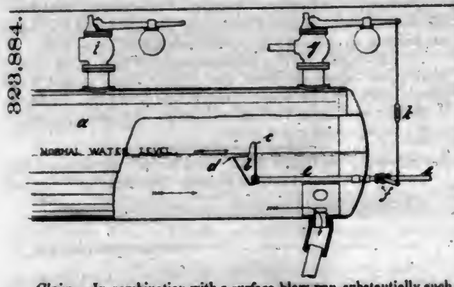
323,883. FURNACE FOR STEAM-GENERATORS. Nathaniel W. Pratt, Brooklyn, assignor to the Babcock & Wilcox Company, New York, N. Y. Filed Mar. 27, 1885. (No model.)



Claim.—A furnace crown or roof composed of fire-brick or similar substance, supported by the adjacent heating-tubes, the front portion of said crown or roof made solid and the rear portion made with openings of equal or increasing size toward the bridge-wall, as set forth.

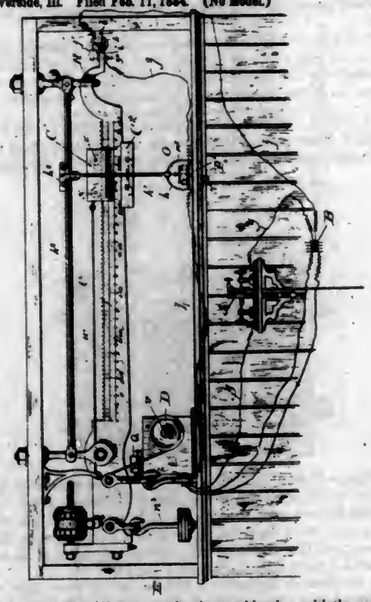
323,884. SURFACE-BLOW FOR STEAM-GENERATORS. Nathaniel W. Pratt, Brooklyn, assignor to the Babcock & Wilcox Company, New York, N. Y. Filed Mar. 27, 1885. (No model.)

323,884.



Claim.—In combination with a surface blow-pan substantially such as described, a safety-valve adjusted to act at a given pressure and connected to automatically and simultaneously operate the blow-off valve of said pan, for the purpose set forth.

323,885. RECORDING WEIGHING-SCALE. Edwin R. Puffer, Riverside, Ill. Filed Feb. 11, 1884. (No model.)



Claim.—1. In a platform-scale, the combination, with the movable poise and platform, of mechanism operated by the weight of a body moving across the platform to cause the poise to register the weight of such moving body automatically upon the scale-beam, substantially as described.

2. In a platform-scale, the combination, with mechanism actuating the poise to move and register automatically upon the scale-beam the weight of a body moving across the platform, of mechanism operating automatically, at the instant the poise reaches the point of equilibrium upon the scale-beam, to record the weight of the body moving across the platform, substantially as described.

3. In a platform-scale, the combination, with mechanism actuating the poise to move and register automatically upon the scale-beam the weight of a body moving across the platform, and with mechanism operating automatically, at the instant the poise reaches the point of equilibrium upon the scale-beam, to record the weight of the said body moving across the platform, of mechanism operating automatically to stop the motion of the poise at or beyond the point at which the weight of the said moving body is registered, substantially as described.

4. In a platform-scale, the combination, with the platform and poise, and with an electric generator, of mechanism operated by weight of a body moving across the platform to close and open an electric circuit, and mechanism actuated by the electric current to move the poise upon the scale-beam backward from its vibratory end until it shall register automatically thereon the weight of the said body moving across the platform, substantially as described.

5. In a platform-scale, the combination, with the platform and poise, and with an electric generator having two circuits, of mechanism operated by weight of a body moving across the platform to close and open one electric circuit, mechanism actuated automatically by the electric current traversing the said circuit to move the poise upon the scale-beam backward from its vibratory end until it shall register thereon the weight of the said body moving across the platform, mechanism actuated automatically by the electric current traversing the said circuit to close and open the second electric circuit, and mechanism operating, the instant the poise shall register upon the scale-beam the weight of the moving body, to record the same, substantially as described.

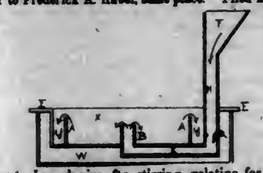
6. In a platform-scale, the combination, with the platform and poise, and with an electric generator having two circuits, of mechanism operated by the weight of a body moving across the platform to close and open one electric circuit, mechanism actuated automatically by the electric current traversing the said circuit to move the poise upon the scale-beam backward from its vibratory end until it shall register thereon the weight of the said body moving across the platform, mechanism to close and open the second electric circuit, mechanism actuated automatically by the electric current traversing the second circuit; at the instant the poise registers upon the scale-beam the weight of the said moving body, to record the same, and mechanism actuated by the last-named electric current to stop the motion of the poise at or beyond the point at which the weight of the said moving body is registered, substantially as described.

7. In a platform-scale, the combination, with the poise C', and with an electric generator having two circuits, of mechanism operated by the electric current to move the poise upon the scale-beam C, pawl or finger M, engaging with a ratchet-wheel, K, finger or hook M^2, having a notch, *b*, toward one end to sustain the finger M when disengaged from the wheel K, and mechanism actuated by an electric current to free the finger M when so engaged, to permit the same to re-engage, at the proper moment, with the wheel K, all being constructed and arranged to operate substantially as described.

8. In a platform-scale, the combination, with the poise C' and an electric generator having two circuits, of mechanism actuated by an electric current to record a weight moving across the platform, said mechanism comprising a frame, O, suspended from a guide, h^2, upon a beam, A^3, suitably supported by a rod, *h'*, passing between and directed by guide-pins *g* upon the poise-guide C^2, electro-magnet L', marker P, and adjustable armature *n'*, to actuate the marker P, the whole being constructed and arranged to operate substantially as described, and for the purpose set forth.

9. The combination, with the scale-beam C of a platform-scale, an electric generator having two circuits, and mechanism actuated by the current traversing one of the said circuits to actuate the poise C', of mechanism for momentarily closing and opening the other electric circuit, said mechanism comprising the part *i*, of non-conducting material, plate *i'*, of conducting material, frame *l*, suitably supported, wheels *k*, sustained by the said frame, and rods *j* upon the said wheels, the plate, frame, wheels, and rods being formed of conducting material, and the whole being constructed and arranged to operate substantially as described.

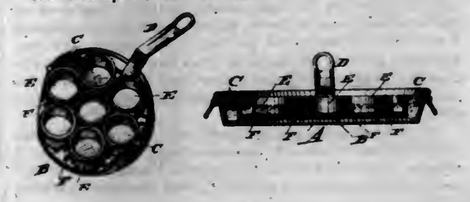
323,886. CAPSULE-MACHINE. Frank J. Reinhold, Detroit, Mich., assignor to Frederick A. Hubel, same place. Filed May 30, 1885. (No model.)



Claim.—1. In a device for stirring gelatine for molding gelatine capsules, the combination of a dipping-dish, X, an overflow-dish, Y, an inclosing water-dish, W, and a supply-dish, F, located at a higher level than the dipping-dish, and connected with the bottom of the latter through pipes H K, substantially as described.

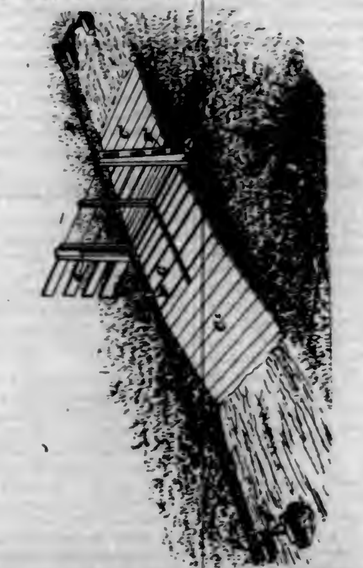
2. In a device for stirring melted gelatine for molding gelatine capsules, the combination of the dipping-dish X, the overflow-dish Y, the supply-dish F, and the pipe H K, having therein the valve *a* and means for operating the same, substantially as shown and described.

323,887. COOKING UTENSIL. Hannah J. Rutter, Oakland City, Ind. Filed Apr. 16, 1885. (No model.)



Claim.—The improved culinary utensil herein shown and described, the same consisting of the disk B, having a suitable handle, in combination with the removable rings or annular chambers E, said disk being provided with apertures F in the open spaces not inclosed by the rings when the same are placed in their proper position upon the disk, substantially as and for the purpose set forth.

323,888. AUTOMATIC GATE. ORLA J. SCOTT, Carthage, Ind., assignor of two-thirds to Elward Scott and James H. Hill, both of same place. Filed June 13, 1884. (No model.)



Claim.—1. In an automatic gate, the combination of the gate A, pivoted near its bottom, the posts B and B', between which said gate is mounted, the push-bar D, connected to the trip-rods F by the connecting-rods E, and the springs D^2, connected at one end to the push-bar and at their other ends to the gate just above its pivot-point, substantially as described, and for the purposes specified.

2. The combination, in an automatic gate, of the pivoted gate A, the post B, the push-bar D, mounted in a bracket on the inside face of said post and adapted to slide therein, the connecting-rods E, connecting the ends of said push-bar to the trip-rods, one of said connecting-rods being divided and a ratchet-wheel, E, interposed, one end of each part of said divided connecting-rod being connected to said ratchet-wheel, said wheel being pivoted at its center in the standard E^2, the trip-rods F, to which the ends of the connecting-rods are attached, and the springs D^2, secured at one end to the push-bar D on each side of the gate and at their other ends to said gate, substantially as set forth.

3. In an automatic gate, the combination of the gate A, post B, push-bar D, mounted in a bracket on said post and provided with a cam-lug, *d*, on that portion which passes the post as said bar is operated, the rods E, the trips F, the catch G, pivoted on the post B and adapted to engage with a latch, a^2, upon the gate, said catch being provided with an arm, *g'*, and the vertical rod G', mounted on the post B and connected at its top end to said arm *g'* and adapted to engage at its lower end with the trip *d* upon said push-bar, substantially as set forth.

4. The combination, in an automatic gate, of the gate A, horizontally pivoted near its bottom on appropriate frame-work and provided at one end with a crank-arm, *a'*, the push-bar D and its operating mechanism, and the springs D^2, one end of each being attached to said push-bar and the other end of each being attached to said crank-arm *a'*, substantially as described, and for the purposes specified.

5. The combination, in an automatic gate, of the horizontally-pivoted gate A, push-bar D, adapted to slide in suitable bearings at one end thereof and connected thereto, trip-rods F, and the connecting-rods E, connecting the ends of said push-bar to said trip-rods, their outer ends being provided with slots *e*, by which they are connected to the trip-rods, whereby said trip-rods are permitted to stand in a vertical position regardless of the position of the push-bar, except when operated, substantially as set forth.

6. In an automatic gate, the combination of the gate A, horizontally pivoted near its bottom on appropriate frame-work, the push-bar D, connected thereto, the trip-rods F, journaled in bearings in the blocks *f*, one block being provided with a spring, *f''*, which is connected to said trip-rod, and the connecting-rods E, connecting the ends of said push-bar to said trip-rods, all arranged and operating substantially as set forth.

7. The combination of a horizontally-pivoted gate, A, the sides of which extend beyond the pivots, the weights *a*, rigidly secured to said extended sides, and thus serving to counterbalance said gate, a push-rod, D, springs connecting said rod and said gate, a latch, and a cam-lug, *d*, on said rod for operating said latch.

323,889. BARBER'S COMB. JOHN W. SMITH and CHARLES L. HOLLAND, Boston, Mass. Filed Nov. 10, 1884. (No model.)

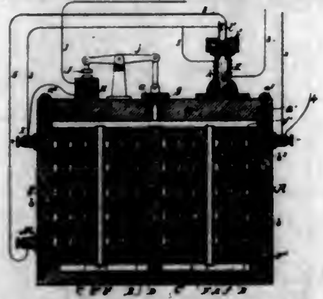


Claim.—1. A barber's hair-dressing comb in one piece of material, and provided at one edge with a set of combing-teeth and at the other with one of very much shorter or stub teeth, all being substantially as set forth.

2. A barber's hair-dressing comb having several of its teeth near one end of it in one plane with each other, and arranged so that their points shall range in a convex curve, as set forth, the remainder of the set having their points in a straight line, or substantially so, as represented.

3. A barber's hair-dressing comb in one piece of material, and provided at one edge with a set of teeth and at the other with a set of very much shorter or stub teeth, as described, extending from one end only to or about the middle of the comb, all substantially as represented.

323,890. SECONDARY OR STORAGE BATTERY. ELI T. STARR and E. EUGENE STARR, Philadelphia, Pa., assignors to the Starr Electric Storage Company, Camden, N. J. Filed Dec. 31, 1881. (No model.)



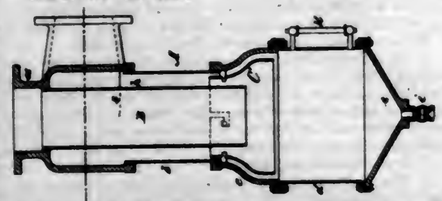
Claim.—1. In a secondary battery, a compound element or electrode having two or more perforated plates, and porous active material interposed between said plates, substantially as described, whereby the plates securely retain the active material between them, while the perforations of said plates facilitate the accumulating action of the battery by permitting ready access to the active material.

2. An electrode for secondary batteries, having one or more receptacles wherein the active material is placed, and provided with holes or perforations in the walls of said receptacles, substantially as described.

3. In a secondary battery, a perforated battery-plate having formed therein, in addition to its perforations, receptacles or recesses for the reception of active material, and having active material placed in said recesses, substantially as described.

4. A compound element for secondary batteries, having a mass of finely-divided active material supported at its sides between two or more open plates or supports, substantially as described, (in contradistinction to finely-divided active material applied to the sides of a solid or non-porous plate and held thereon by sheets of felt or cloth,) whereby the battery-fluid may penetrate through or saturate the active mass from side to side without meeting solid obstruction, substantially as described.

323,891. STEAM-SEPARATOR. E. PLATT STRATTON, College Point, assignor to the Stratton Separator Company, New York, N. Y. Filed Jan. 29, 1885. (No model.)



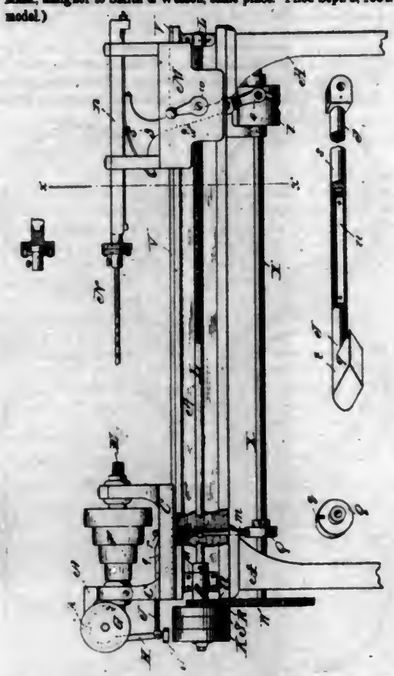
Claim.—1. In a steam-separator having a suspended curtain and arranged to secure a centrifugal action of the steam, as described, an enlarged chamber below the bottom of said suspended curtain, substantially as and for the purposes specified.

2. In a steam-separator arranged to secure a centrifugal action to the steam, a shield surrounding the lower portion of the suspended curtain, to prevent any moisture which may adhere to the external sides from being picked up by the steam and carried into the circulation, substantially as described.

3. A steam-separator consisting of a head-piece with tangential opening, a straight body, an internal suspended curtain, a flaring waist, and an enlarged chamber, substantially as described.

4. A steam-separator consisting of a head-piece with tangential opening, a straight body, an internal suspended curtain, an enlarged chamber, and a shield within the expanded waist, substantially as described.

323,892. DRILLING-MACHINE. JOSEPH H. WESSON, Springfield, Mass., assignor to Smith & Wesson, same place. Filed Sept. 8, 1884. (No model.)



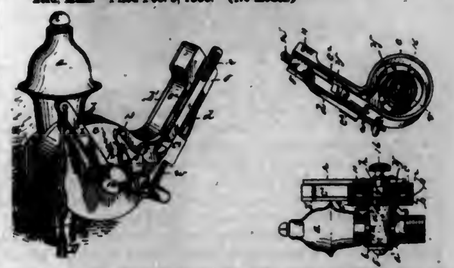
Claim.—1. The within-described improved machine for chucking or drilling, consisting of a frame and bed, a head-stock, as C, a constantly-revolving chuck-spindle, E, a tail-stock adapted to move over the machine-bed, a drilling-tool combined with said tail-stock and adapted to be reciprocated therein, a shaft journaled in the machine-frame, connected with said tail-stock and adapted to feed it over the bed, an auxiliary cam-bearing shaft, X, journaled in the machine-frame parallel to the feed-shaft, means for revolving said shafts, a cam splined to shaft X to revolve it, means from the tail-stock for carrying the said cam with it upon shaft X in its movement over the machine-bed, means connected with the tail-stock, the tool, and with the cam upon shaft X, and adapted to convert the rotation of the latter to a reciprocation of the tool, and means, substantially as shown and described, in operative connection with the chuck-spindle for alternately stopping the feed and auxiliary shaft, and for permitting the rotation of one while the other is at rest, as and for the purpose set forth.

2. The within-described improved machine for chucking or drilling, consisting of a machine frame and bed having at one end a head-stock supporting a chuck-spindle, as E, a tail-stock supporting a drill and adapted to move over said bed, a feed-shaft operatively connected with said tail-stock and journaled in the machine-frame, an auxiliary shaft, X, journaled in the frame parallel to the feed-shaft, a cam, Z, splined upon shaft X and connected to the tail-stock to slide upon said shaft, a lever, 3, pivoted to the tail-stock, to have one end in operative connection with cam Z, and its other, substantially as shown, with the drill, and adapted to reciprocate the drill by its vibration, a revolving chuck-spindle, E, and means for revolving it, a sectional pulley containing differential gears O P, the one pulley operatively connected with the feed-shaft, and the other with shaft X, substantially as shown, a belt, I, for driving said pulleys, and mechanism, substantially as shown and described, in operative connection with the chuck-spindle and belt I, and adapted to cause the revolution alternately of the feed-shaft and shaft X, and to hold the latter shaft while the former is revolved, for the purpose set forth.

3. In machinery for chucking and drilling, the combination, with a feed-shaft, L, and shaft X, operatively connected with the tail-stock, substantially as shown, and their ends with gearing U W and driving-pulleys K R, arranged, as shown, respectively with shafts L and X, and with a belt, I, of shipping-lever H, cam G, worm-gears *s s'*, and revolving spindle E, all combined and operating substantially as shown and described, and arm J, rod *m*, and wheel Q, having a stop upon its periphery operated by the vibration of lever H, for the purpose set forth.

4. In a chucking and drilling machine, the combination, with rod *m*, adapted to bear upon the periphery of wheel Q and in the indentation therein, and having a lifting-head projecting above the machine, as shown, of a reciprocating arm, J, adapted to pass under said head to lift the rod *m* at one stage of its reciprocation and upon the reverse to pass over said head to leave it undisturbed, substantially as shown and described, and for the purpose set forth.

323,893. PERCUSSION GAS-LIGHTER. JOSEPH H. WESSON, Springfield, Mass. Filed Feb. 5, 1885. (No model.)



Claim.—1. The combination, with the barrel and plug of a gas-burner cock, said plug having a neck thereon, of a screw constituting a removable extension of said neck, a cup-shaped ribbon-case hung on said extension, having a hollow arm on one side thereof, a fulminate-ribbon, substantially as described, a spring-hammer attached to the ribbon-case, a two-armed lever pivoted on said neck-extension at the side of said case, a spring-pawl secured to one arm of said lever, having its free end entering said hollow arm, a hammer-lever pivoted on said case, having one end engaging with the hammer and provided with a sear-notch at its opposite end, a sear pivoted on said two-armed lever and engaging with the hammer-lever, and a sear-tripping pin on said case, substantially as set forth.

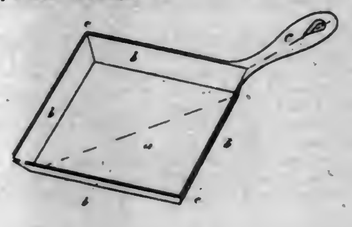
2. The pawl-and-ratchet case *b*, pawl c^2, the plug a^2, having a ratchet-wheel fixed thereon, the ribbon-case *c*, having a spring-hammer hung thereon, the extension-screw 16, lever *h*, the pawl *w*, the lever *n*, sear 10, spring 12, slot *x*, and pin x^2, and pin 13, combined with the burner *a*, and operating substantially as set forth.

3. In combination with the burner *a*, plug a^2, and the barrel *a'*, the case *b*, the spring *z*, secured to said case and said barrel, the pawl c^2, ratchet *e*, the case *c*, carrying the fulminate-ribbon *y*, the hammer *o*, pawl *w*, lever *n*, sear 10, spring 12, slot *x*, pin x^2, and lever *h*, substantially as set forth.

4. In a percussion gas-lighting device, the lever *h*, pawl *w*, hammer *o*, lever *n*, sear 10, spring 12, slot *x*, and pin x^2, and the ribbon-case *c*, combined with the burner *a*, case *b*, having the arm *b'* thereon, and operating substantially as set forth.

5. In combination, the burner *a*, the cock-barrel *a'*, having the usual gasway through it, the plug a^2, having the transversely-intersecting gasways 14 through it, the cases *b* and *c*, the ratchet-wheel *e*, the pawl c^2, lever *h*, spring *z*, pawl *w*, hammer *o*, lever *n*, sear 10, spring 12, slot *x*, and pin x^2, and the ribbon-case *c*, substantially as described.

323,894. SPIDER. HORACE C. WHITTEN, Plymouth, Mass. Filed July 5, 1883. (No model.)



Claim.—1. A rectangular spider having the straight sides *b* and the handle *c*, projecting from one corner thereof, all substantially as and for the purposes described.

2. A rectangular spider having the bottom *a*, inclined straight sides *b* and handle *c*, projecting from one corner, as specified, all substantially as and for the purposes described.

323,895. **GUIDE-RAIL CLAMP.** William P. Wyly, Patterson, Ga. Filed July 10, 1884. (No model.)

Brief.—A rail-clamp for securing guide-rails to the main rails, consisting of a base-plate having inturned end flanges to hold the rails, and a removable block secured to its center between the rails, having flanges of different widths. A fastening-wedge is interposed between the flanges of the base-plate and the rails.

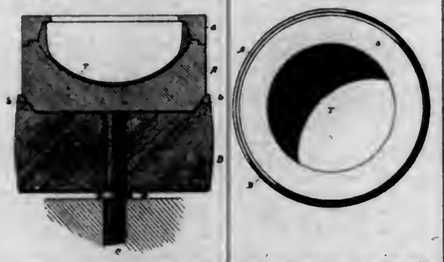


Claim.—1. A rail-clamp for securing guide-rails immovably in position, consisting of a base-plate having inturned end flanges adapted to impinge against the outside faces of the guide-rail and adjacent main-line rail, respectively, and a removable block attached to the center of said base-plate, and having at its lower portion straight side faces and lips or flanges, one of less width than the other, to adapt said block to impinge against the inner flanged portion of said rails and clamp them in position, substantially as and for the purpose set forth.

2. A guide-rail clamp having a base-plate formed in two parts, each portion having an inturned lip or flange adapted to engage the outer faces of the rails, and an outwardly-extending attaching-flange, the inner ends of the respective parts of the base-plate being adapted to lock together, substantially as and for the purpose set forth.

3. Jointly with a guide-rail having a cut-away base, a guide-rail clamp consisting of a base-plate having at or near each end an inturned lip or flange to grip the outer faces of the rails, a central block detachably bolted to said base-plate, and having side faces or edges adapted to impinge against and grip the inner flanges and faces of the main-line rail and the cut-away portion of the base of the guide-rail, respectively, and a key or wedge for the purpose of clamping guide-rails of varying sizes and shapes in position, substantially as set forth.

323,896. **APPARATUS FOR THE MANUFACTURE OF FLYING TARGETS.** Charles F. Stock, Peoria, Ill., by N. Grier Moore, administrator, assignor to Edward H. Walker, same place. Filed July 5, 1884. (No model.)



Claim.—1. A concave circular mold and a removable centrally-apertured cover therefor, in combination with means for rotating said mold upon a vertical axis, whereby liquid solutions or fusions poured into said mold are made to conform thereto by centrifugal force until sufficiently hardened to retain the impressed shape, substantially as set forth.

2. The mold A and its removable centrally-apertured cover D, in combination with a pulley adapted to hold removably said mold, and a vertical axis for said pulley, substantially as and for the purpose specified.

3. The mold A, having conical lower edges, in combination with the pulley B, having conical flanged edges *b*, adapted to fit the conical edge of said mold, and a vertical axis for said pulley, substantially as and for the purpose specified.

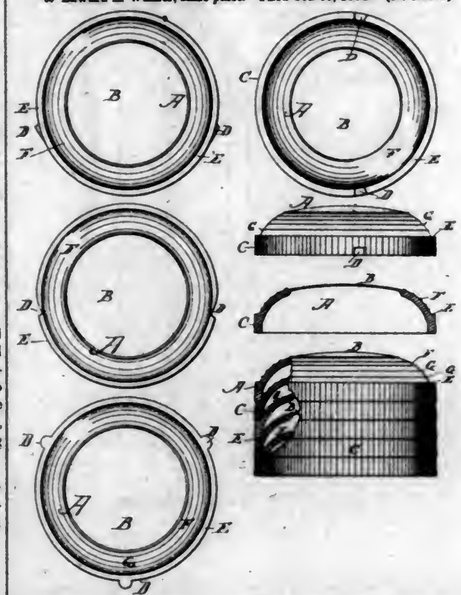
4. The mold A, having conical lower edge, and the removable centrally-apertured cover D for said mold, in combination with the pulley B, suitably recessed in its upper face to receive the conical edge of said mold, and an axis and means for revolving said pulley, as set forth.

5. A horizontal table, a central vertical axis or shaft for said table, and molds arranged upon said table equidistant from said axis or shaft, and adapted to revolve upon individual vertical axes, in combination with mechanism arranged to keep all but one or more of said molds in rotation, and, as said table is turned, to release the revolving molds one at a time and set in motion those previously quiet, for the purpose described.

6. A horizontal table, a central vertical axis or shaft for said table, and molds arranged upon said table equidistant from said axis or shaft, and adapted to revolve upon individual vertical axes, in combination with a pulley situated without said table, and an endless cord or belt passing about said pulley and all but one or more of said molds, substantially as and for the purpose specified.

7. The table M, a central axis or shaft for said table, pulleys B, arranged upon said table equidistant from its said axis or shaft, and the molds A, adapted to be held removably by said pulleys, in combination with a pulley having bearings without said table, and an endless cord or belt passing about said pulley and all but one or more of said pulleys B, as and for the purpose described.

323,897. **FLYING TARGET.** Charles F. Stock, Peoria, Ill.; N. Grier Moore (administrator of said Charles F. Stock, deceased) assignor to Edward H. Walker, same place. Filed Oct. 13, 1884. (No model.)



Claim.—1. The circular convex target made of fragile material, having its thickest portion in cross-section at its periphery, and provided with two or more lugs or notches on said periphery, as and for the purpose specified.

2. The fragile flying target A, when provided with thin central portion, B, convex portion F, ridges G, lugs or notches D on the periphery of the target, and ledge or shoulder E, substantially as shown, and for the purpose specified.

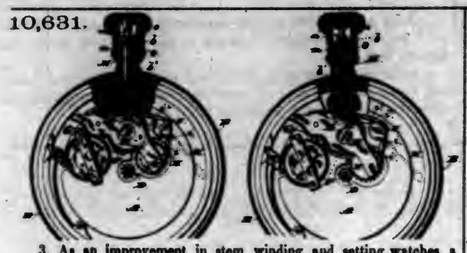
REISSUES.

10,631. **STEM-WINDING WATCH.** Duane H. Church, Waltham, Mass., assignor, by mesne assignments, to Royal E. Robbins, Boston, Mass., and Thomas M. Avery, Chicago, Ill., trustees. Filed Mar. 14, 1885. Original No. 280,719, dated July 3, 1883.

Claim.—1. As an improvement in stem winding and setting watches, a winding and hands-setting train which is adapted to be placed in engagement with the winding-wheel or the dial-wheels by the longitudinal movement of a stem-arbor that has no positive connection with said train, substantially as and for the purpose specified.

2. As an improvement in stem winding and setting watches, a winding and hands-setting train which is adapted to be placed in engagement with the winding-wheel or the dial-wheels, and is normally in engagement with said dial-wheels, substantially as and for the purpose shown.

10,631.



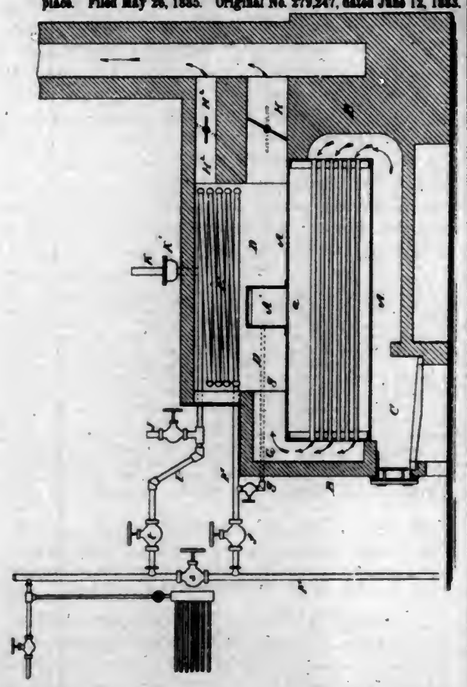
3. As an improvement in stem winding and setting watches, a winding and hands-setting train which is adapted to be placed in engagement with the winding-wheel or the dial-wheels by the longitudinal movement of a stem-arbor, and is normally in engagement with said dial-wheels, substantially as and for the purpose set forth.

4. As an improvement in stem winding and setting watches, a winding and hands-setting train which is normally in engagement with the dial-wheels, in combination with a rotatable stem-arbor that has no positive connection with said train, and is adapted to be moved longitudinally within the case-stem to cause said winding and hands-setting train to engage with the winding-wheel and to be simultaneously disengaged from said dial-wheels, substantially as and for the purpose shown and described.

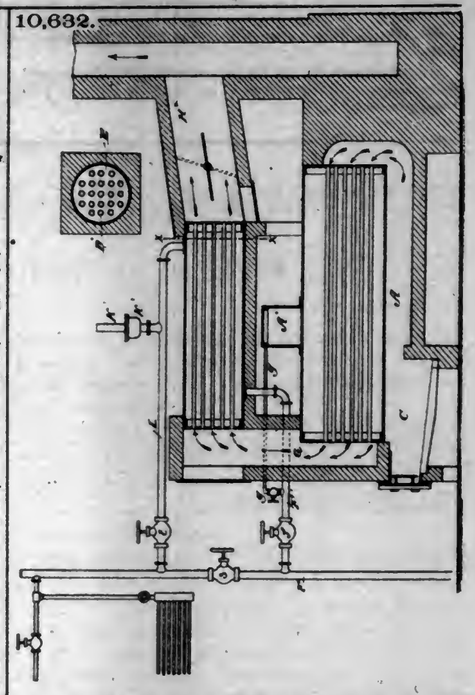
5. As an improvement in stem winding and setting watches, a winding and hands-setting train which is normally in engagement with the dial-wheels, in combination with a rotatable longitudinally-movable stem-arbor that has no positive connection with the watch-movement, and when moved longitudinally to the inner limit of its motion will cause said winding and setting train to be disengaged from said dial-wheels and engaged with the winding-wheel, and when moved longitudinally to the outer limit of its motion will permit said train to be disengaged from said winding-wheel and engaged with said dial-wheels, substantially as and for the purpose specified.

6. As an improvement in stem winding and setting watches, the combination of a winding and hands-setting train which is normally in engagement with the dial-wheels, a stem-arbor having no positive connection with said train, and an intermediate device which is adapted to communicate the longitudinal inward movement of said stem-arbor to said winding-train and cause the same to engage with the winding-wheel, substantially as and for the purpose shown and described.

10,632. **HEATING EXHAUST AND SUPERHEATING LIVE STEAM.** Levi Hussey, New York, N. Y., assignor to George W. Donaldson, same place. Filed May 26, 1885. Original No. 279,247, dated June 12, 1883.



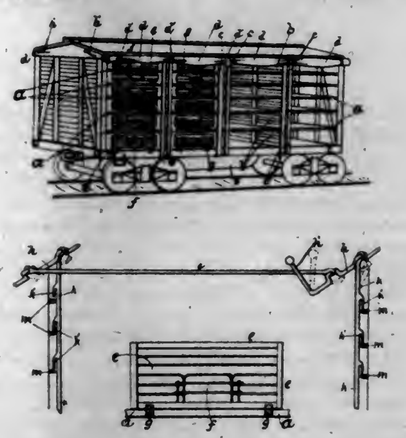
10,632.



Claim.—1. The combination, with a steam-boiler, of a vertical flue at one end thereof, a flue or flues above the boiler, an exhaust-steam-reheating device within or around said flue or flues, a valved exhaust-steam pipe, a pipe connecting said exhaust-steam pipe with the reheating device, a valved live-steam pipe connecting the reheating device with the steam-boiler, and a pipe that conducts the reheated exhaust-steam or the superheated live steam from said heating device to the place of use, substantially as described.

2. In a device for reheating exhaust-steam and superheating live steam by the heated products of combustion while passing from the steam-generator to the uptake, the combination of enlargement or chamber D, located in the discharge-flue, a series of heating-pipes arranged in said chamber or enlargement, and suitable pipes and tubes for conducting and regulating the flow of exhaust-steam from the engine or other device and live steam from the boiler to and from the heating-pipes, substantially as and for the purpose set forth.

10,633. **LIVE-POULTRY CAR.** William P. Jenkins and James L. Streeter, Muncie, Ind. Filed July 6, 1885. Original No. 304,005, dated Aug. 26, 1884.



Claim.—1. A live-poultry car having decks or floors *a*, in combination with side doors, *e*, doors *f*, and strips *c*, all for the purpose set forth.

2. In a live-poultry car, the floors *a*, in combination with doors *e*, doors *f*, strips *c*, portable partitions *b*, and storm-curtains *d*, all for the purpose set forth.

3. In a live-poultry car, the combination of lock-rods *h h'*, cross-rod *i*, drop-rods *k*, catch-pins *k'*, staples *m*, and doors *e*, all for the purpose set forth.

4. In a live-poultry car, the floors *a*, partitions *b*, doors *e f*, lock-rods *h i k k'*, and staples *m*, in combination with the feed-troughs and storm-curtains, all for the purpose set forth.

PHOTO-LITH NORRIS PETERS WASHINGTON D.C.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF UNITED STATES COURTS IN PATENT CASES.

DECISIONS OF THE U. S. COURTS.

U. S. Circuit Court—Southern District of New York.

NEW YORK BUNG AND BUSHING COMPANY *v.* DOELGER.

Decided March 7, 1885.

1. Reissued Letters Patent No. 10,368, (the second reissue,) for an improvement in bushings for faucet-holes, which in the first claim limited the invention to a "wooden" bushing, is not anticipated by Letters Patent No. 107,473; but said patent, in connection with the other proof, defeats the reissued patent for want of invention.
2. It is held that there is no infringement, because what the defendant uses is covered by the broad claim of Reissue Patent No. 8,483, (the first reissue,) which has been judicially declared to be void. (20 Blatchf. C. C., 3.)

Mr. Louis W. Frost and *Mr. Wyllys Hodges* for the complainant.

Mr. Henry Brodhead and *Mr. Philip R. Voorhees* for the defendant.

COXE, *J.:*

This is an equity action for infringement, founded upon Reissued Letters Patent No. 10,368, granted to the complainant August 14, 1883, for an improvement in bungs and bushings. The original Patent No. 141,473 was granted to Samuel R. Thompson, August 5, 1873, for an improvement in bushings for faucet-holes. It was first reissued No. 8,483, to McKean, Jackson, and Brown, November 12, 1878. This reissue having been pronounced invalid, as containing an unlawfully expanded claim, the patent was again reissued in form substantially like the original, except that the inventor limits the construction of the bushing to wood. This second reissue is the one in controversy. The inventor declares:

> The present invention relates to certain new and useful improvements in bushings for faucet-holes of barrels, &c., having for their principal object the production of a simple, economical, and effective bushing that will admit of the easy adjustment and withdrawal of the faucet without injury to the barrel, and that may be readily and cheaply replaced when worn.
>
> My improvements consist, mainly, of a bushing of wood, &c., constructed and arranged, as will be hereinafter more fully described, so as to receive and allow of the yielding either way of a faucet, which, when slightly struck, is readily withdrawn from the bushing without detriment to the barrel. * * * In my original specification I mentioned the use of other material than wood for the bushing *a*. This I desire now to disclaim and confine my invention to wood alone, in combination with the protecting-casing *b*, or to the casing *a*, of wood alone, when made with the interior bevels.

The first claim of the reissue, the second of the original, is the only one in controversy, and is in these words:

> The combination of a wooden bushing, *a*, and casing *b*, constructed and arranged as described, and for the purposes specified.

In the original the word "wooden" is omitted.

The defenses are want of novelty and invention, non-infringement, and invalidity of the reissue as a reissue. As bearing upon the first of these defenses, the defendant offered in evidence Letters Patent No. 107,473, granted to Vincent Fountain, Jr., September 20, 1870, for an improvement in bungs. The description contains these words:

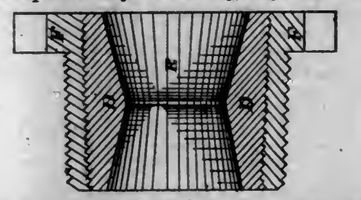
> The nature of my invention consists in the construction of a bung which has an opening through its center applicable for receiving not only a faucet for drawing off the contents of a barrel, but also for a stopper, which is inserted from the inside, as will be hereafter more fully described. * * * F is a bush of the ordinary construction. D is a bung, which has an opening extending through its center beveled from each side toward the line E.

The claim is as follows:

> A bung having an opening through its center, one side of which is applicable for receiving a cork or stopper, G, and the other for receiving a faucet, in the manner and for the purposes set forth.

Here is a perfect description, in general terms, at least, of the complainant's device, and if the word "wooden" were inserted before the word "bung" it can hardly be doubted that it would amount to a complete anticipation. A skilled mechanic reading such description would make precisely what Thompson made. The similarity will appear most clearly by placing the two drawings in juxtaposition.

Thompson's Bung and Bushing, August 5, 1870.



Fountain's Bung and Bushing, September 20, 1870.



The same letters have been used to indicate corresponding parts on each of these drawings. D represents the double-beveled bung, and F the bushing. In Fountain's specification the material of neither is designated. That this patent is an anticipation cannot be successfully maintained; but it seems equally clear that in connection with the other proof it defeats complainant's patent for want of invention. Thus it must be conceded that after Fountain nothing remained upon which mechanical ingenuity could operate, except the choice of materials. If choosing wood for the bung was invention, choosing copper or brass for the bushing would be equally so. There is nothing in Fountain's patent which necessarily precludes the idea of wood being used. For aught that appears from the patent itself wood was the very material he had in

mind. If lead, or cork, or rubber had been named, there would have been greater scope for the ingenuity of others. The question then is this: Did Thompson become an inventor because he made Fountain's bung of wood? If there were any doubt as to how this question should be answered, an examination of the proofs bearing upon the state of the art makes a negative answer alone possible. At the date of Thompson's application wooden bungs with double conical holes through them, bungs inclosed in bushings having beveled openings through the center to receive the faucet, iron bushings, and wooden plugs in iron bushings, were all old. It was also well known that the elasticity of wood presented a suitable yielding bearing to hold a faucet.

With the theater of invention thus crowded to its utmost capacity, with scarcely room for another actor on the stage, can it be said that he who merely suggests the change in an old device of one known material for another, which had been previously used for kindred purposes, possesses what the Supreme Court defines as "that intuitive faculty of the mind put forth in the search for new results or new methods, creating what had not before existed, or bringing to light what lay hidden from vision." (*Hollister* v. *Manufacturing Co.*, 112 U. S.)

The mere substitution of one known material for another has been decided over and over again to be insufficient to sustain a patent.

In *Hotchkiss* v. *Greenwood* (11 Howard, 248) porcelain was substituted for wood or metal in the manufacture of door-knobs. Mr. Justice Nelson, speaking for the court, says:

> Now, it may very well be that by connecting the clay or porcelain knob with the metallic shank in this well-known mode an article is produced better and cheaper than in the case of the metallic or wood knob; but this does not result from any new mechanical device or contrivance, but from the fact that the material of which the knob is composed happens to be better adapted to the purpose for which it is made. The improvement consists in the superiority of the material, and which is not new, over that previously employed in making a knob; but this, of itself, can never be the subject of a patent. No one will pretend that a machine made in whole or in part of materials better adapted to the purpose for which it is used than the materials of which the old one is constructed, and for that reason better and cheaper, can be distinguished from the old one, or, in the sense of the patent law, can entitle the manufacturer to a patent. The difference is formal and destitute of ingenuity or invention. It may afford evidence of judgment and skill in the selection and adaptation of the materials in the manufacture of the instrument for the purposes intended, but nothing more.

In *Hicks* v. *Kelsey* (18 Wall., 670) the change from wood to iron in a wagon-reach; in *Palmenburg* v. *Buchholz* (21 Blatchf., C C. R., 162) the substitution of papier-maché for the wire of the frame of a lay figure; and in a case referred to in *Hotchkiss* v. *Greenwood* (supra) "the substitution of wood for bone as the basis of a button covered with tin" were held, respectively, to be wanting in patentable novelty. (See also *Collins Co.* v. *Coes*, 21 Fed. Rep., 38; *Brown* v. *Piper*, 91 U. S., 37; *Roberts* v. *Ryer*, Id., 150; *Smith* v. *Nichols*, 21 Wall., 112; *Pickering* v. *McCullough*, 104 U. S., 310; *Welling* v. *Crane*, 14 Fed. Rep., 571; Walker on Patents, sec. 28; Simonds on Patents, page 31.) The case of *Smith* v. *Goodyear Dental Vulcanite Co.* (93 U. S. 486) has been examined, and it is thought that it enunciates no principle in conflict with the position here taken. It must therefore be decided, in the language of *Palmenburg* v. *Buckholtz*, (supra,) that "although the device may have been mechanically new it was not intellectually novel."

But upon the question of infringement the difficulties which confront the complainant are almost equally as numerous and insurmountable. In the case of this complainant v. *Hoffman*, (20 Blatchf. C. C. 3,) this court decided in substance that the first reissue was void, because it sought to do precisely what complainant now seeks to do—viz., to cover, broadly, a hollow wooden bung inside an iron or rigid bushing. The court was unquestionably right in holding that this reissue, if valid, was infringed. To hold, however, that the defendant's device infringes the original or second reissue is quite a different proposition. What the defendant uses is covered by the broad claim of the first reissue; but the court, in the Hoffman case, decided that the patentee was not permitted to claim "any form of a wooden bushing in an iron one," but that he must be confined to the particular form and combination described in the original patent. It was further decided that the form of the wooden bushing or bung, with the double conical opening through the center, was "the very essence of that part of the invention," and could not be disregarded. How, then, does the defendant infringe? His bung is not bored through, it has no bevels, it is not screwed into the iron bushing, the iron bushing has no interior screw-threads, and the bung has no exterior screw-threads. If the complainant had a valid claim broadly covering a hollow wooden bung inside an iron bushing, the defendant would be compelled to pay tribute; but, confining the claim within the narrow limits indicated, it must be held that he does not infringe.

The bill is dismissed.

U. S. Circuit Court—Southern District of New York.

NEW YORK BUNG AND BUSHING COMPANY v. FOEHRENBACH.

The decision in *New York Bung and Bushing Company* v. *Doelger* disposes of this action also.

The bill is dismissed.

U. S. Circuit Court—Southern District of New York.

KAPPES *et al.* v. HARTUNG.

Letters Patent No. 87,853, for an improved mosaic floor, relating to a new manner of constructing the lower soft-wood layer—namely, of narrow parallel strips, tongued and grooved, with strips of equal thickness fastened transversely across their ends—are void for want of invention. Experience had demonstrated that such a construction was valuable in resisting the tendency of the wood to shrink and swell, and it was an exercise of mere mechanical skill to apply it to mosaic floorings.

Messrs. Briesen & Steele and *Mr. Antonio Knauth* for the complainants.

Mr. Ludwig Semler, Mr. Edward C. Schaffer and *Messrs. Frost & Coe* for the defendant.

COXE, *J.:*

This suit is brought by the complainants, as representatives of J. George Kappes, deceased, for infringement of Letters Patent No. 87,853, granted to him March 16, 1869, for an improved mosaic floor. The patentee says:

> This invention relates to a new manner of arranging the lower soft-wood layer of that kind of mosaic floors in which the ornaments are produced from very thin pieces of hard wood; and the invention consists in constructing the said soft-wood layer of narrow pieces or bars, which are grouped together in such manner that the separate plates composed of such groups will not be able to shrink, so as not to displace the hard-wood covering which is glued upon them.

A number of narrow parallel strips of soft wood, *b b*, are connected by tongues and grooves. To the ends of these are fastened, in like manner, transverse strips *c c*, of equal thickness, the grain of the end and parallel strips running at right angles. Upon the top of the plates thus constructed the mosaic flooring *a* is laid. The claim is as follows:

> The combination of the parallel bars *b b*, cross-bars *c c*, and the upper layer, *a*, connected together in the manner described, the whole forming squares for mosaic floors, as herein set forth and shown.

The defenses are prior use and lack of invention. It therefore becomes necessary to ascertain what was known prior to the patent with reference to flooring of this character and other kindred subjects.

The complainants' expert testifies that—

> the tongued and grooved arrangement between the center strip is so old and well-known a device in carpentry as to be in no sense an element of the invention in question.

The patentee admits in the description that sectional marquetry flooring laid upon single pieces of soft wood was old. The defendant proved by uncontradicted testimony that the precise construction of the lower layer, as shown in the specification, was very old, and had before been used in pastry-boards, drawing-boards, doors, wainscoting, portable sectional floors, table-tops, mirror-backs, wash-tub lids, door-jamb heads, desk-tops, drawer-fronts, fire-place inclosures, church-pew backs, counter-fronts, and, in many instances, as a foundation for hard-wood veneer.

The defendant also proved that in 1864 the firm of Ziegler & Co. imported from Vienna designs of marquetry flooring similar in every respect to the construction shown in the patent; that they remained as samples in the possession of the firm till 1879, when they were sold, with the rest of the stock, at public auction. During this time they were openly and frequently exhibited to customers. It is by no means certain that the defendant has not succeeded in proving a complete anticipation by the evidence relating to the Vienna designs. (*Parker* v. *Ferguson*, 1 Blatchf., C. C. R., 407.) But let it be assumed that the record shows nothing more than this; that both the mosaic flooring and the soft-wood foundation were well known; that the former had previously been laid in sections on single pieces of soft wood, and that the latter had been used as a foundation for hard-wood veneer. In the light of all this knowledge is the person who simply laid hard-wood marquetry on soft-wood strips tongued and grooved together entitled to the rewards of an inventor? Doubtless a floor constructed on the principle of the lower layer described in the patent would preserve a carpet or an oil-cloth longer than an ordinary one; but is he who first lays down an oil-cloth on such a floor entitled to a monopoly? To a patent for a combination of the oil-cloth with the flooring? The men who placed the old swiveling car-truck under the forward end of a locomotive, who substituted the figured roller for the plain one, who attached the mirror to the front hood of a street-car, displayed, respectively, as much ingenuity as he who placed the old soft wood foundation under the old mosaic flooring. (*Penn. Railroad* v. *Locomotive Truck Co.*, 110 U. S., 490; *Stimpson* v. *Woodman*, 10 Wall., 117; *Stephenson* v. *Brooklyn Cross-Town R. Co.*, 14 Fed. Rep., 457.) Giving to the evidence the most favorable interpretation for the complainants, it shows that Kappes exercised mechanical skill merely. The problem was to produce a suitable foundation for an inlaid floor. Experience had demonstrated that strips of soft wood, tongued and grooved and provided with end pieces, would, for many purposes, resist the tendency to shrink and swell. This Kappes knew. He constructed a square in the well-known manner, and said, "Lay the flooring on that." This was not invention. It was what any skilled cabinet-maker would say. To adopt the language of the Supreme Court, in the recent case of *Hollister* v. *Manufacturing Company*, the idea seems—

> not to spring from that intuitive faculty of the mind put forth in the search for new results or new methods, creating what had not before existed, or bringing to light what lay hidden from vision; but, on the other hand, to be the suggestion of that common experience which arose spontaneously and by a necessity of human reasoning in the minds of those who had become acquainted with the circumstances with which they had to deal. * * * It is but the display of the expected skill of the calling, and involves only the exercise of the ordinary faculties of reasoning upon the material supplied by a special knowledge, and the facility of manipulation which results from its habitual and intelligent practice, and is in no sense the creative work of that inventive faculty which it is the purpose of the Constitution and the patent laws to encourage and reward.

There should be a decree for defendant.

U. S. Circuit Court—Southern District of New York.

JENNINGS *et al.* v. KIBBE *et al.* SAME v. THOMAS DOLAN *et al.*

Decided January 10, 1885.

1. In Design Letters Patent No. 10,448, for a design for a fringed lace fabric, the novelty of the patented design appertains to the fringe, and not to the rest of the fabric. It is therefore not infringed by nubias having such fringes, in which, however, the similarity arises from the body of the nubias rather than from the fringe.
2. Letters Patent No. 218,032, for an improvement in lace purling, held to be valid. The sole anticipation relied on is a sample in a book of samples belonging to the defendant, which is shown to have been put in the book since controversy about this invention began, and concerning the identity of which there is so much doubt as to bring the whole proof below the degree of certainty requisite to defeat a patent.

Mr. Antonio Knauth and *Mr. A. v. Briesen* for the plaintiff.

Mr. John R. Bennett for the defendant.

WHEELER, *J.:*

These suits are brought upon Design Letters Patent No. 10,448, dated February 12, 1878, and granted to Warren P. Jennings for a design for a fringed lace fabric, and Letters Patent No. 218,032, dated July 29, 1879, and granted to Abraham G. Jennings and Warren P. Jennings for an improvement in lace purling. The design patent has before been adjudged to be valid in this court between the same parties to one of these cases, but upon different infringing articles. (*Jennings* v. *Kibbe*, 20 Blatchf., C. C. R. 353.) The design is for a lace fabric having a fringe made of a series of stems connected to the fabric and not to each other, "with loops at both sides of a central stem or rib along its entire extent." The infringing articles are nubias having such fringes of stems; but the stems have two central ribs, with loops projecting alternately at the sides, and not on both sides along its entire extent. There are so many of these things that the differences are necessarily small, and small differences make different designs. The patent is not for a design for a nubia, but of a fringed lace fabric, and the novelty of the patented

design appertains to the fringe, and not to the rest of the fabric, by the terms of the patent. Nubias with this fringe might appear to be the same as those with the patented fringe, if the fringe should not be observed as such; but observation of that would discover the difference readily. The similarity would arise from the body of the nubias, rather than from the fringe, and as fringed fabrics the designs as to the fringes appear to be different. This patent is not, therefore, infringed by this article.

The novelty of the invention described in the other patent is denied. The anticipation relied upon is a sample in a book of samples of the defendant, Dolan, purporting to contain samples of books made and sold before that invention. No article of that manufacture is shown beside the sample, and that is shown to have been put in the book since the invention and since controversy about it. The evidence of the defendants tends to show that the same one was taken out and replaced. The appearance of the book indicates that a sample of different color and size had been in that place. The force of the evidence depends upon the identity of that sample. So much doubt is thrown about it upon the whole proof as to bring it below the degree of certainty requisite to defeat a patent. After repeated examinations serious doubts remain about the production of that article as claimed. The proof should overcome these doubts in order to invalidate the patent, and as it does not the patent stands as valid.

The infringement seems to be clear unless the patent is limited to the particular mode of reticulation described. The pillars of the fabric appear to be precisely like those of the patent. The reticulation appears to be in all respects the equivalent of that of the patent. The pillars are really the principal things, and the substance of the invention appears to be taken.

Let there be a decree for the orators accordingly for an injunction and account in each case without costs, except on the accounting.

U. S. Circuit Court—District of Minnesota.

DEERING *v.* WINONA HARVESTER WORKS *et al.*

Decided June 19, 1885.

1. CONSOLIDATION OF SUITS.

Where separate suits are brought at different times by the same complainant against the same defendant, charging infringement of separate patents covering different devices embodied in the same machine, the suits may be consolidated, and for purposes of answer, proofs and hearing treated as one and the same suit.

2. MULTIFARIOUSNESS.

If a bill charge infringement of separate patents in one machine, it will not be rendered multifarious by the mere fact that the several inventions relate to different and distinct parts of the machine.

Messrs. Banning & Banning for the complainant.

Messrs. Dyrenforth & Dyrenforth for the defendants.

NELSON, *J.:*

The defendants are engaged in manufacturing and selling grain harvesters and binders, both operated conjointly as one machine. The complainant files his bill May 5, 1885, alleging an infringement of two of the patents issued for improvements in grain-binders, both relating to the cord-holding mechanism, and on June 10, 1885, he files another bill against the same defendants for an infringement of five patents relating to grain binding and harvesting machines. All of the mechanical devices which are alleged to be infringed are used in one machine. On June 18, 1885, a motion is made by defendants' solicitors that the two suits be consolidated, and for the purposes of answer, proofs, and hearing be treated as one and the same suit; also, that the time to answer both bills of complaint be extended to the first rule-day in September.

The motion is opposed by the complainant's solicitors, on the ground that the several alleged infringements of seven different patents could not be joined in the same bill, as it would be on demurrer bad for multifariousness. Second, that the voluminous testimony in the consolidated cases would tend to confusion on the hearing and seriously inconvenience the court. The charge of multifariousness against a bill counting upon infringements of the seven separate patents embraced in the two bills would not be sustained. The principles announced in *Nourse* v. *Allen*, (3 Fisher's Patent Cases, 63,) and followed in *Gillespie* v. *Cummings*, (3 Sawyer, 260,) and other cases would permit such joining of separate and distinct causes of action. The defendants are engaged in the manufacture of harvesting and binding machines containing mechanism infringing all the patents, if the allegations of the complainants in both bills are true.

I think the convenience of the court will be served if the two suits proceed as one, and certainly the labor of the solicitors of both parties will be lightened. The delay asked for by defendants is reasonable and cannot prejudice the complainant.

The motion to consolidate and for time to answer is granted, and it is so ordered.

THE OFFICIAL GAZETTE OF THE United States Patent Office.

[BY AUTHORITY OF CONGRESS.]

VOL. 32—NO. 6. TUESDAY, AUGUST 11, 1885. PRICE—$5 per year.

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The Official Gazette of July 7.

Arrangements having now been made for the publication of the OFFICIAL GAZETTE of July 7, it will probably be mailed to subscribers on or about the 20th instant.

Indexes to Patents on Electricity.

Appendix No. 2 to the index to patents relating to electricity, covering the period of time from July 1, 1882, to June 30, 1883, has been issued, and is now for sale. These indexes, arranged alphabetically, numerically, and by classes, are completed to June 30, 1883, and comprise the following volumes:

Vol. 1. Index to patents relating to electricity granted by the United States prior to June 30, 1881, with an appendix, July 1, 1881, to June 30, 1882. One volume, 250 pages. In paper covers, $3; bound, $5.

Vol. 2. Appendix No. 2, July 1, 1882, to June 30, 1883. One volume, 50 pages. In paper covers, $1.50.

Vol. 3. Appendix No. 3, July 1, 1883, to June 30, 1884. One volume, 60 pages. In paper covers, $1.50.

Attorneys.

DEPARTMENT OF THE INTERIOR,
OFFICE OF THE SECRETARY,
Washington, D. C., August 3, 1885.

SIR: I am directed by the Secretary to inform you that he has ordered that William H. Scott, of Holly, Oakland county, Michigan, be not recognized from and after this date as attorney in the prosecution of any claim or other matter before the Department of the Interior or any bureau thereof.

I am, sir, very respectfully, your obedient servant,

GEO. M. LOCKWOOD,
Chief Clerk.

The Commissioner of Patents.

Issue of August 11, 1885.

Patents	450	No. 323,898 to No. 324,347, inclusive.
Designs	9	No. 16,194 to No. 16,202, inclusive.
Trade-Marks	23	No. 12,485 to No. 12,507, inclusive.
Labels	15	No. 4,540 to No. 4,554, inclusive.
Reissues of patents	1	No. 10,634.
Total issue	498	

32 O G—6—i

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks and Labels.	States.	Patents and Designs.	Trade-Marks and Labels.
Alabama	1		Nebraska	3	
Arizona Territory			Nevada		
Arkansas	2		New Hampshire	2	
California	13		New Jersey	16	
Colorado	4		New Mexico Territ'y		
Connecticut	24		New York	72	9
Dakota Territory			North Carolina	3	
Delaware	1		Ohio	28	1
District of Columbia	3		Oregon	1	
Florida			Pennsylvania	50	14
Georgia	6		Rhode Island	7	
Idaho Territory	1		South Carolina	2	
Illinois	43		Tennessee	1	
Indiana	5		Texas	7	1
Iowa	9	2	Utah Territory	2	
Kansas		1	Vermont	3	
Kentucky	2	1	Virginia	2	4
Louisiana	3		Washington Territ'y		
Maine	4		West Virginia	3	
Maryland	5		Wisconsin	8	1
Massachusetts	48	2	Wyoming Territory		
Michigan	19		United States Army		
Minnesota	4		United States Navy		
Mississippi					
Missouri	8		Total to citizens of the United States	415	36
Montana Territory					

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Labels.	Countries.	Patents and Designs.	Trade-Marks and Labels.
Australia			France	1	
Austria-Hungary			Germany	4	
Barbadoes			Holland		
Belgium			Italy		
Bermuda			Mexico		
Brazil			Netherlands	2	
Canada	10		Russia		
Cape of Good Hope			Scotland	1	
Colombia, U. S. of			Sweden		
Cuba			Würtemberg		1
Denmark					
Egypt			Total to citizens of foreign countries	44	2
England	26	1			

DESIGNS.

16,194 and 16,195.—PLATE FOR CARRIAGE-STEPS.—*James H. Alexander*, Philadelphia, Pa., assignor to *Thomas Devlin & Co.*, same place. Applications filed June 8, 1885. Term of patents 14 years.

16,196.—STOVE.—*James Dwyer* and *John W. Herrick*, Detroit, Mich. Application filed June 15, 1885. Term of patent 7 years.

16,197.—BADGE.—*Charles Holyland*, Pittsburg, Pa. Application filed May 2, 1885. Term of patent 7 years.

16,198.—TROLLING-SPOON.—*William T. J. Lowe*, Buffalo, N. Y. Application filed June 8, 1885. Term of patent 14 years.

16,199.—EASEL FRAME OR HOLDER.—*Henry L. Palmer*, Brooklyn, N. Y. Application filed February 12, 1885. Term of patent 14 years.

16,200.—BOTTLE.—*Edward Clifford Wadsworth*, Brooklyn, N. Y. Application filed June 23, 1885. Term of patent 7 years.

16,201.—COOK-STOVE.—*Joseph Léon Gatteville*, Cleveland, Ohio. Application filed May 6, 1885. Term of patent 7 years.

16,202.—RANGE.—*William S. Whitman*, Bangor, Me., assignor to *The Bangor Foundry and Machine Company*, same place. Application filed February 17, 1885. Term of patent 14 years.

TRADE-MARKS.

[Certificates of registration of Trade-Marks numbered 8,191 and upward are registered under the act of March 3, 1881.]

12,485.—CORN-FLOUR.—*Glen Cove Manufacturing Company*, Glen Cove, N. Y. Application filed July 15, 1885.

"The word or symbol or combination of letters 'MAIZENA' in quotation-marks."

12,486.—CORN-FLOUR.—*Glen Cove Manufacturing Company*, Glen Cove, N. Y. Application filed July 15, 1885.

"An allegorical picture representing persons engaged in the cultivation of corn, the preparation of flour from the corn, and the cooking of the corn-flour."

12,487.—CORN-FLOUR.—*Glen Cove Manufacturing Company*, Glen Cove, N. Y. Application filed July 15, 1885.

"An allegorical picture representing persons engaged in the cultivation of corn, the preparing of flour from the corn, and the cooking of the flour, and the combination of letters forming the design or word 'MAIZENA.'"

12,488.—CORN-FLOUR.—*Glen Cove Manufacturing Company*, Glen Cove, N. Y. Application filed July 15, 1885.

"An allegorical picture representing persons engaged in the cultivation of corn, the preparation of flour from the corn, and the cooking of the corn-flour, associated with the word or symbol 'MAIZENA,' the name 'DURYEA,' and the words 'UNITED STATES OF AMERICA.'"

12,489.—PLUG CHEWING-TOBACCO.—*B. F. Gravely & Sons*, Leatherwood, Va. Application filed July 17, 1885.

"The words 'B. F. GRAVELY, SUPERIOR.'"

12,490.—PLUG CHEWING-TOBACCO.—*B. F. Gravely & Sons*, Leatherwood, Va. Application filed July 17, 1885.

"The word-symbol 'GRAVELY.'"

12,491.—PLUG CHEWING-TOBACCO.—*B. F. Gravely & Sons*, Leatherwood, Va. Application filed July 17, 1885.

"The letters and word 'B. F. GRAVELY.'"

12,492.—HARMONICAS.—*Matthias Hohner*, Trossingen, Würtemberg, Germany. Application filed February 20, 1885.

"Representations of the obverse and reverse faces of the medals of the Wien and Philadelphia expositions, and four circles inclosing the words and figures 'Ulm,' '1871,' 'Stuttgart,' '1881.'"

12,493.—WHISKY.—*Samuel B. Hopkins*, Dallas, Tex. Application filed July 15, 1885.

"The arbitrary words 'CLUB OF KENTUCKY.'"

12,494.—ARTIFICIAL PRECIOUS STONES.—*E. E. & A. W. Kipling*, New York, N. Y. Application filed July 3, 1885.

"The words 'BRAZILIAN ROSES.'"

12,495.—GINGER-ALE.—*Klee, Coleman & Co.*, Louisville, Ky. Application filed July 18, 1885.

"The words 'SOUTHERN CHOICE' and the representation of a bottle with the cork flying out."

12,496.—BITTERS.—*Otto A. Krauss*, New York, N. Y. Application filed July 20, 1885.

"The word 'TANNHÄUSER.'"

12,497.—COATS, VESTS, AND PANTALOONS.—*David Marks & Son*, New York, N. Y. Application filed July 9, 1885.

"The figure or representation of a horseshoe."

12,498.—SMOKING AND CHEWING TOBACCO, CIGARS, AND CIGARETTES.—*Pace & Sizer*, Richmond, Va. Application filed July 2, 1885.

"The words 'BLUE & GRAY UNITED VETERANS.'"

12,499.—CIGARS.—*Juan F. Portuondo*, Philadelphia, Pa. Application filed July 3, 1885.

"The picture of two figures—one a matadore, the other an Indian, highly colored, and arranged on the right and left, respectively, of a circle which incloses a harvest-scene representing workmen in colored shirts, and wagons loaded with the harvested product, with store-houses in the background."

12,500.—CIGARS.—*Juan F. Portuondo*, Philadelphia, Pa. Application filed July 3, 1885.

"The words 'LA FLOR DE PORTUONDO.'"

12,501.—BRAIDS AND CORDS.—*Schloss & Sons*, New York, N. Y. Application filed July 9, 1885.

"The representation of a castle."

12,502.—PIANOS.—*Thomas F. Scanlan*, Boston, Mass. Application filed June 29, 1885.

"The arbitrarily-adopted fanciful name 'GILBERT & CO.'"

12,503.—LINIMENT OR BALSAM.—*Charles Speicher*, Scranton, Pa. Application filed June 25, 1885.

"The picture or engraving of Charles Speicher."

12,504.—BROOMS.—*Andrew Stephen* and *Fred. B. Hemingway*, Clinton, Iowa. Application filed July 3, 1885.

"An old woman in a basket with a broom and crescent."

12,505.—TAPESTRY CARPET.—*Stinson Bros. & Kurlbaum*, Philadelphia, Pa. Application filed June 22, 1885.

"A series of longitudinal threads in the back of the carpet, imparting color thereto in its entire width, and having no reference to the color of the pattern."

12,506.—BLACKING FOR LEATHER.—*Swan & Hovland*, Boston, Mass., and New York, N. Y. Application filed July 9, 1885.

"The word 'IMPERIAL,' in connection with the figure of a lion's head."

12,507.—SHEEP-DIPPING POWDER OR INSECTICIDE.—*William Cooper & Nephews*, Berkhamstead, England. Application filed June 30, 1885.

"An escutcheon or shield bearing three dogs or three other animals in the act of running, with the arbitrary device beneath, 'I UNDERTAKE AND I PERFORM.'"

LABELS.

4,540.—Title: "GATES" (FOR A REMEDY FOR DIPHTHERIA.)—*Menzo E. Gates*, Cadolt, Wis. Application filed April 23, 1885.

4,541.—Title: "CORN HUSKER'S SALVE."—*A. Gay*, Concordia, Kans. Application filed July 6, 1885.

4,542.—Title: "DR. HAND'S GENERAL TONIC FOR CHILDREN."—*D. B. Hand*, Scranton, Pa. Application filed July 21, 1885.

4,543.—Title: "DR. HAND'S PLEASANT PHYSIC FOR CHILDREN AND INVALIDS."—*D. B. Hand*, Scranton, Pa. Application filed July 21, 1885.

4,544.—Title: DR. HAND'S CHAFING POWDER FOR CHILDREN AND ADULTS."—*D. B. Hand*, Scranton, Pa. Application filed July 21, 1885.

4,545.—Title: "DR. HAND'S DIARRHŒA MIXTURE FOR CHILDREN."—*D. B. Hand*, Scranton, Pa. Application filed July 21, 1885.

4,546.—Title: "DR. HAND'S TEETHING LOTION FOR INFANTS."—*D. B. Hand*, Scranton, Pa. Application filed July 21, 1885.

4,547.—Title: "DR. HAND'S COLIC CURE FOR CHILDREN."—*D. B. Hand*, Scranton, Pa. Application filed July 21, 1885.

4,548.—Title: "DR. HAND'S COUGH AND CROUP MEDICINE FOR CHILDREN."—*D. B. Hand*, Scranton, Pa. Application filed July 21, 1885.

4,549.—Title: DR. HAND'S WORM ELIXIR FOR CHILDREN."—*D. B. Hand*, Scranton, Pa. Application filed July 21, 1885.

4,550.—Title: "C. P. JADWIN'S PINE TAR SYRUP."—*Charles P. Jadwin*, Scranton, Pa. Application filed July 18, 1885.

4,551.—Title: "ANDREW JOHNSON'S PAIN LINIMENT,"—*Andrew Johnson*, Atlantic, Iowa. Application filed July 15, 1885.

4,552.—Title: "IMPROVED LITITZ BRETZEL."—*John M. Kissinger*, Lititz, Pa. Application filed July 18, 1885.

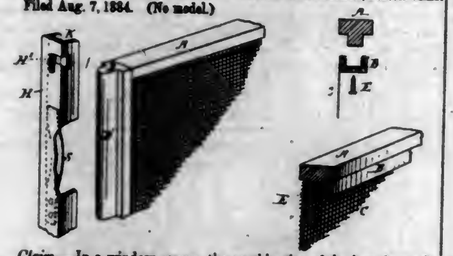
4,553.—Title: "LLOYD'S COLORLESS HYDRASTIS."—*Lloyd Bros.*, Cincinnati, Ohio. Application filed July 18, 1885.

4,554.—Title: "B. PAYN'S SON'S TOBACCO CO'S LITTLE HAVANA." *B. Payn's Son's Tobacco Company*, Albany, N. Y. Application filed July 20, 1885.

PATENTS

GRANTED AUG. 11, 1885.

323,898. WINDOW-SCREEN. WILLIAM G. ANDERSON, Boston, Mass. Filed Aug. 7, 1884. (No model.)



Claim.—In a window-screen, the combination of the iron frame B, having a groove extending entirely around its outer edge, with the frame of wood inclosing the same, said frame of wood having a tongue which is pressed into the groove of the iron frame, while the netting is firmly held in place and the iron of the frame is prevented from coming in contact with the wood-work of the window, substantially as described, and for the purposes set forth.

323,899. SUPPORT FOR PANTALOONS. FRANK ASHTON, Washington, D. C. Filed Jan. 31, 1885. (No model.)



Claim.—1. The combination of the webs *a a'*, the buckles *b*, and the wire *c*, in combination with and attached to the band *d*, as a means of supporting pantaloons, as shown and set forth.

2. In combination with the waistband of a pair of pantaloons, the spring-band *d*, attached thereto, and provided with stops *o* for limiting the engagement of the suspender-hooks, as set forth.

3. In combination with the waistband of a pair of pantaloons, the buckle *e*, and the loops *h*, as a means of attaching the spring-band *d* to the waistband, as shown and set forth.

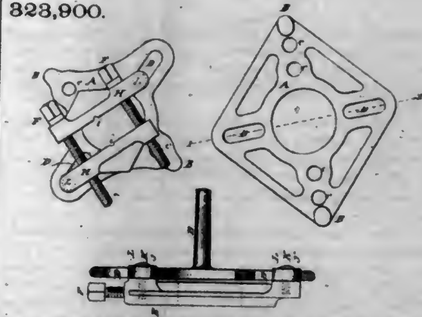
323,900. LATHE-DOG. CHARLES S. BEACH, Cleveersville, N. Y. Filed Nov. 28, 1884. (No model.)

Brief.—The power is applied at the points B B and transmitted through the connecting-bolts at D D to the work-holding device.

Claim.—1. An equalizing plate or device, substantially as described, attached to and forming a part of a lathe-dog, having provisions, substantially as shown, through which power and motion may be transmitted to two opposing points of driving contact of that member of the device attached to the work, substantially as described, for the purposes set forth.

2. The described lathe dog or clamp, in combination with the described equalizing-plate, having holes for the reception of common bolts,

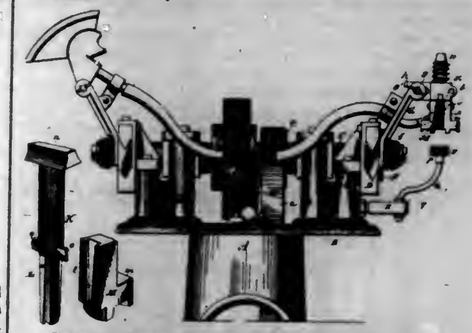
323,900.



as a provision for attaching said plate to the face-plate of the lathe, substantially as specified.

3. The combination, in one tool, of a driving-dog, and a device attached thereto for equalizing the power and motion transmitted through the same to the work on its opposite sides, substantially in the manner described and set forth.

323,901. BURNISHING-MACHINE FOR BOOTS OR SHOES. CALEB J. BLAKELY, Janesville, Wis., assignor of two-thirds to David E. Filield and Lucius Nathan Williamson, same place. Filed Nov. 22, 1884. (No model.)



Claim.—1. In an attachment for burnishing-machines, the combination, with a shank adapted to be attached to a burnishing-machine and a support journaled in said shank, of separable and independent burnishing-irons secured to said support on opposite sides thereof, substantially as set forth.

2. The combination, with a shank, a rotary support journaled in said shank, and a spring encircling said support at one end and resting on the shank, of separable burnishing-irons secured to the other end of the support on opposite sides thereof, substantially as set forth.

3. The combination, with a tool-holder shank having a slotted face, a support journaled in said shank and provided with lugs registering with the slots on the shank, and a spring encircling one end of the support and bearing against the shank, of separable burnishing-irons secured in diametrically-opposite position on the same end of the support, substantially as set forth.

4. The combination, with a shank having a slotted face, a support journaled in said shank and provided with lugs registering with the slots on the shank, and a spring encircling one end of the support and bearing against the shank, of a burnishing-iron secured to said support.

b; In a burnishing-machine, the combination, with a reciprocating slide and a shank secured to said slide, of a tool-support journaled in said shank, devices for locking said support at every half-turn, and separable burnishing-irons secured on diametrically-opposite sides of the same end of the support, substantially as set forth.

323,902. GALVANIC BATTERY. HORATIO J. BREWER, New York, N. Y. Filed July 25, 1884. (No model.)



Claim.—1. The improved electro-negative element shown, consisting of two parts of different materials, one part being of a rod of comparatively good conducting material and the other of wings or projections of a comparatively good depolarizing material, substantially as described.

2. The combination, in an electro-negative element, of a central supporting-core consisting of a compound composed substantially of pure carbon, and having attached to it and integral therewith three or more ribs or plates projecting radially from the center and formed of a compound more strongly electro-negative than carbon, substantially as described.

3. The combination, in an electro-negative element, of a central supporting-core consisting of a compound composed substantially of pure carbon, and having attached to it and integral therewith three or more ribs or plates projecting radially from the center and formed of a compound more strongly electro-negative than carbon, with a zinc rod located between the said ribs, substantially as described.

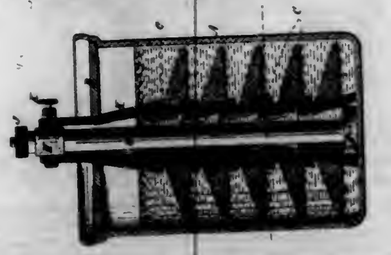
4. The combination, in an electro-negative element, of a central supporting-core consisting of a compound composed substantially of pure carbon, and having attached to it and integral therewith three or more ribs or plates projecting radially from the center and formed of a compound more strongly electro-negative than carbon, and provided at its upper extremity with a binding-cup attached to the carbon-support by an intermediate lead filling, substantially as described.

5. The improved electro-negative element shown, which consists of a central rod of relatively good conductivity surrounded by three or more projecting plates formed of a conglomerate made in whole or in part of carbon, substantially as described.

6. The combination of a zinc rod, C, and inclosing porous casing W, for the purpose of preventing contact of the zinc rod with the carbon element of a battery, substantially as described.

7. The combination of the zinc rod, porous casing embracing said rod, and the electro-negative element provided with projecting wings, the said zinc being arranged between the wings, substantially as described.

323,903. GALVANIC BATTERY. HORATIO J. BREWER, New York, N. Y. Filed Mar. 16, 1885. (No model.)



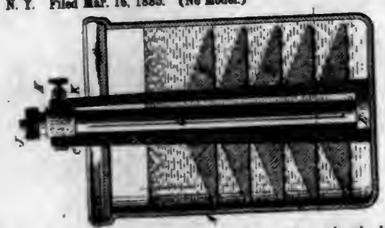
Claim.—1. The improved electro-negative element shown, which consists of a series of hollow conical bodies placed one upon the other to form a single element, substantially as described.

2. The improved electro-negative element shown, which consists of the hollow conical bodies C, provided with the electro-negative disks F, substantially as described.

3. The combination of two or more tubular carbon bodies, C, having interior corrugated surfaces, substantially as described.

4. The combination of the separable annular carbon bodies C C C, forming a single element, with the internal centrally-located zinc G, substantially as described.

323,904. GALVANIC BATTERY. HORATIO J. BREWER, New York, N. Y. Filed Mar. 16, 1885. (No model.)



Claim.—1. The electro-negative element for galvanic batteries shown, which consists in the combination of a hollow carbon having a slightly-conical exterior surface with the electro-negative disks having corresponding internal apertures fitted thereto, substantially as described.

2. The combination of the hollow carbon having a tapering exterior, and provided with channels at the bottom, electro-negative disk fitting the exterior of said carbon, a zinc electrode inside the carbon, and insulating-washers between the zinc and carbon, substantially as described.

3. The combination of the zinc rod G, hollow carbon C, and the electro-negative disks F, attached thereto, substantially as described.

323,905. GALVANIC BATTERY. HORATIO J. BREWER, New York, N. Y. Filed Mar. 16, 1885. (No model.)



Claim.—1. The combination of a central conical conducting-rod with surrounding disks, substantially flat and circular, composed in whole or in part of carbon, substantially as described.

2. The combination of a conical conducting-rod with surrounding disks having conical holes therein, themselves composed in whole or in part of carbon, thereby insuring a good contact between the disks and the center conducting-rod, substantially as described.

3. The combination of the rod A and disks B, provided with projecting lips E, thereby enabling the disks to fit tightly upon each other, substantially as described.

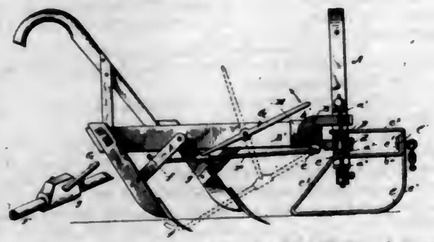
323,906. VEHICLE-SPRING. APPLETON S. BRIDGES, St. Louis, Mo. Filed June 29, 1885. (No model.)



Claim.—1. A vehicle-spring composed of the springs S S, attached to the spring-bar P at or near its center, the spring-bar P, supported at each end by the cushions N N, and the bar B, substantially as above described.

2. In a vehicle-spring, the cushions N N, attached to the spring-bar P at its ends and forming a support for the same, in combination with said spring-bar P.

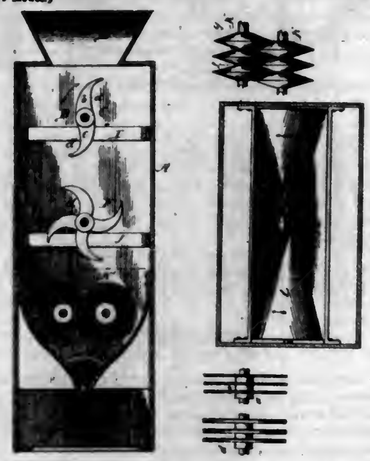
323,907. CULTIVATOR. EDWARD F. BUNN, Westborough, Mo. Filed Dec. 30, 1884. (No model.)



Claim.—1. In a cultivator, the combination, with the arch A, constructed as shown, of the adjusting-sleeves D, loosely secured to the rods *b*, and provided with the thumb-screws *d*, the runners C, formed of a single piece of metal, compressing the bearing *c*, curved portion *c'*, brace c^2, horizontal arms c^3 c^4, one above the other, the latter provided with the vertical flange adapted to be secured to the front portion of the runner, and the former bent rearwardly parallel with the portion c^4, and perforated to receive the bolt *b*, by which said runner is pivoted to the arch, as shown and described, and for the purposes specified.

2. The combination, with the cultivator and runners, constructed as shown and described, of the arch A, constructed of three straps of metal secured to one another, bent downwardly and then laterally into horizontal arms a' a^2 a^3, to receive the horizontal portions c^3 c^4 of the runners, and having the perforations as shown, and provided with the coupling rods or pins *b*, each having the sliding sleeve provided with the thumb-screws, as shown and described.

323,908. MACHINE FOR REDUCING CLAY. WALFRID BURKMAN, Chicago, Ill., assignor to Charles H. Frost, same place. Filed Jan. 6, 1885. (No model.)



Claim.—1. In a machine for reducing clay and other substances, the combination of the stationary grate formed of horizontal parallel bars, and the horizontal revolving shaft having a series of curved cutters or knives secured thereto and operating between the bars of the grate, with the casing and feed-hopper arranged above the horizontal grate, substantially as described.

2. In a machine for reducing clay and other substances, a series of cutters or knives having their cutting-edges curved longitudinally, and a grate between the bars of which the cutters rotate, in combination with a second series of similar cutters and a second grate, substantially as and for the purposes specified.

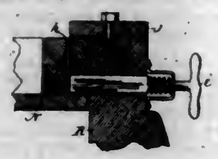
3. In a machine for reducing clay and other substances, one or more series of cutters, D, and one or more grates, between the bars of which the cutters rotate, in combination with pulverizing-rolls K K', formed with indentations and projections, all substantially as and for the purposes specified.

4. In a machine for reducing clay and other substances, the combination of the bi-conical roll L with the inclined guards M, forming a central discharge-opening, *i*, substantially as described

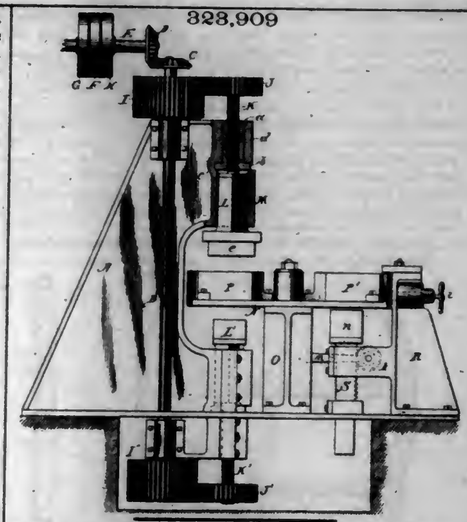
323,909. BRICK-MACHINE. WALFRID BURKMAN, Chicago, Ill., assignor to Charles H. Frost, same place. Filed Jan. 6, 1885. (No model.)

Claim.—1. In a brick-machine, the combination of the vertical shaft B, having long spur-wheels I I', the screw-spindles K K', provided with pinions J J', and the plungers L L', with the frame A and mold adapted to be brought in line with the plungers, substantially as described.

2. In a brick-machine, the combination, with the frame A, and upper and lower plungers, L L', operated by screws and pinions, substantially as described, with a rotary horizontal mold frame or wheel, P P', having movable bottoms, and the lifting-bar S *n* for raising said movable bottom, substantially as described.



323,909



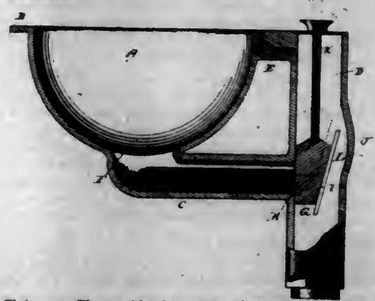
323,910. WEDGE FOR VEHICLE-WHEELS. HENRY G. CADY, Pine Bluff, Ark. Filed May 29, 1885. (No model.)



Claim.—1. A hollow metallic felly-wedge having beveled flanges extending along the outer edges of its inclined faces, adapted to lap over the outer edges of the contiguous ends of the felly-sections, and having its larger end provided with a cap, substantially as described.

2. The within-described hollow felly-wedge having beveled flanges extending along the outer edges of its inclined faces, adapted to lap over the outer edges of the contiguous ends of the felly-sections, and having its larger end provided with a cap having a shoulder upon its under side adapted to fit within the hollow interior of the wedge, substantially as and for the purpose specified.

323,911. WASH-BASIN, &c. WILLIAM J. CAHILL, Lenox, Mass., assignor of one-half to William B. Bull, same place. Filed May 15, 1885. (No model.)



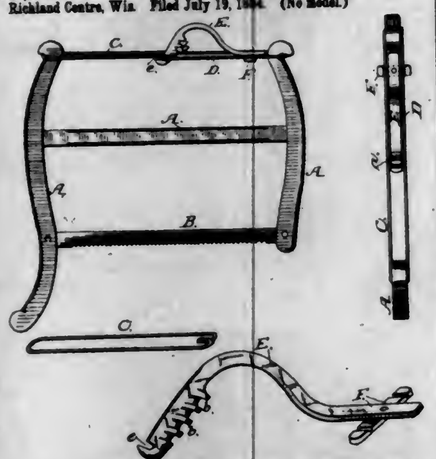
Claim.—1. The combination of a wash or other bowl or tub having a suitable discharge-opening and connecting with the waste-pipe, and an overflow-opening connecting the bowl and waste-pipe at a point above the top of the plug-valve, a waste-pipe, a wedge-shaped plug-valve adapted to fit a portion of the sides of the waste-pipe and partly close the same, and having a perpendicular face adapted to close the bowl-discharge opening, and a plunger connected to the plug-valve, all substantially as and for the purpose set forth.

2. The combination, with a wash-bowl or similar water-reservoir having horizontally-extending discharge and overflow passages connecting with the waste-pipe, the overflow-passage connecting with the waste-pipe at a point above the top of the plug-valve, of a waste-pipe of in-

creased circumference at the part thereof opposite the bowl-discharge opening, and a wedge-shaped plug-valve adapted to partly close the waste-pipe and having a perpendicular inner face and a convex top, and a suitable plunger-rod, substantially as and for the purpose set forth

3. The combination, with a wash-bowl or similar water-reservoir having suitable discharge and overflow passages connecting with the waste-pipe, the overflow-passage connecting the bowl and waste-pipe entering said waste-pipe at a point above the top of the plug-valve, of a waste-pipe having an enlarged portion opposite the bowl-discharge and wedge-shaped ways, and a wedge-shaped plug-valve having a perpendicular inner face, and a suitable plunger-rod, and adapted to partly close the waste-pipe, substantially as and for the purpose set forth.

323,912. MEANS FOR ADJUSTING SAWS. ROYAL W. CLARKE, Richland Centre, Wis. Filed July 19, 1884. (No model.)



Claim.—1. The combination, with a saw and frame, of the loops C and D and a notched lever fulcrumed in said loops, and having its free end secured by a clamp which engages one of the loops, substantially as described.

2. The combination, with a saw and frame, of a lever adapted to engage suitable loops, and a clamp whereby one end of the lever is secured to one of the loops, substantially as herein described.

3. In combination with the frame, the blade, and a lever, the loops or bands C and D, having one end secured to the frame, and the other extending inwardly and overlapping each other, to form an opening for the lever, substantially as and for the purpose herein set forth.

4. The combination, with a saw-frame and the loops C and D, constructed and arranged substantially as set forth, of a lever provided with a series of notches on one side and one or more notches on the opposite side, and a clamp pivotally secured to said lever, for the purpose set forth.

323,913. MANUFACTURE OF RAKES. ALANSON P. CLARKE, Auburn, N. Y. Filed Dec. 27, 1883. (No model.)



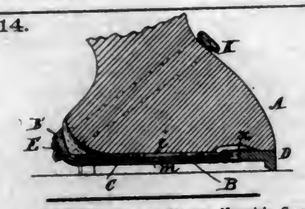
Claim.—The process herein described of forming rakes, which consists in first producing a blank of triangular cross section, then splitting the head-plate from the center inward, and also splitting it at right angles thereto in the direction of each end, but leaving such ends intact, then bending out and drawing out the split portions to form braces, and welding their ends together to form a tang, as specified.

323,914. HOOF-PAD. EUGENE F. COLLINS, Anson, Me. Filed Oct. 8, 1884. (No model.)

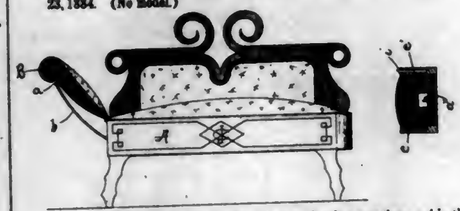
Claim.—1. A flexible hoof-pad composed of a single piece of felted material, the upper portion thereof being loosely felted, and the lower portion being hardened, substantially as described.

2. A flexible hoof-pad composed of a single piece of felted material, the upper portion thereof being loosely felted, and the lower portion being hardened, said pad being provided with means for attaching it to the hoof, substantially as described

323,914.



323,915. LOUNGE. JOHN T. COLLINS, Norwich, Conn. Filed Oct. 23, 1884. (No model.)



Claim.—The combination, with a lounge having mortises *e e'* in the upper edges of both sides, of the removable back having tenons *h*, adapted to fit in said mortises, and the border adapted to overset and conceal the mortises on the side opposite to that at which the back is secured, and to be folded away from the back on the opposite side, substantially as specified.

323,916. BOBBIN FOR SEWING-MACHINE SHUTTLES. DANIEL W. COREY, Galena, Ill. Filed Feb. 2, 1885. (No model.)



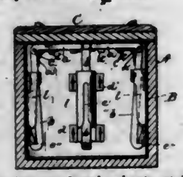
Claim.—1. A bobbin for sewing-machine shuttles, consisting of a bobbin proper having a hollow sleeve and end flanges, and a holder on which said bobbin proper is secured, having a single or undivided central spindle fitting loosely in said sleeve, and having also heads secured to said spindle, substantially as set forth.

2. A bobbin for sewing-machine shuttles, consisting of a bobbin proper having a hollow sleeve and end flanges, and a holder having a central spindle fitting loosely in said sleeve, and heads provided with annular lips projecting over the flanges of the said bobbin proper, substantially as set forth.

3. A bobbin for sewing-machine shuttles, consisting of a bobbin proper having a hollow sleeve and end flanges, and a holder having a central spindle fitting loosely in said sleeve, and heads secured to said spindle, one or both of said flanges and heads being provided with holes, substantially as set forth.

4. A bobbin for sewing-machine shuttles, having end heads of greater diameter than the bobbin proper, the latter being loosely connected with said heads, and thus adapted to rotate independently thereof, substantially as set forth

323,917. GRAVE-VAULT. WILLIAM CORBETT, Smith's Falls, Ontario, Canada. Filed May 23, 1885. (No model.)



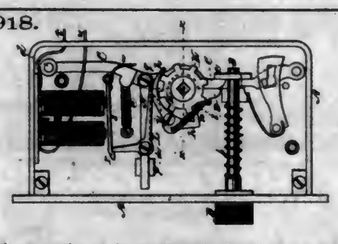
Claim.—1. The improved spring hook-catch for securing the lid of a burial vault or casket, consisting of a slotted plate for securing the same to the lid, a downwardly-extending hook-arm hinged to said fastening-plate, and a curved slotted spring secured to the slotted arm of the spring-hook and having its free end bearing against the hook-arm, as shown and described.

2. The improved catch-holding lug herein described, consisting of the tubular portion *e*, with the longitudinal slit *e'*, the inclined hook-catch plate *e''*, and fastening-plates *d*, substantially as shown and described.

323,918. LOCKING AND UNLOCKING MECHANISM FOR ELECTRIC LOCKS. CHARLES H. CROCKETT and CHANCELLOR C. ALLEN, Boston, Mass. Filed June 1, 1885. (No model.)

Claim.—1. The combination, in a door-lock having a swivel knob-spindle composed of two independently-rotating parts, of a tumbler con-

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nected with one portion of the spindle and adapted to actuate the bolt-retracting lever, a notched or toothed wheel connected with the other portion of said spindle and normally free to rotate without operating the lock, and a dog or catch lever controlled by an electro-magnet and adapted to be thrown into and out of engagement with the notched or toothed wheel, whereby the latter is connected with and disconnected from the tumbler at the desired times, substantially as and for the purpose set forth.

2. The combination, with the operative parts of a door-lock having a swivel knob-spindle, of a notched or toothed wheel connected with that portion of the spindle to which one knob is attached, and normally free to rotate without operating the lock, a dog or catch lever adapted to engage said notched wheel and pivoted to the bolt-operating tumbler connected with the other portion of the spindle to which the other knob is attached, a device for holding said dog out of engagement with the notched wheel, and an electro-magnet for releasing the said device, whereby the dog is caused to engage with the notched wheel, and thereby connect the latter with the tumbler, substantially as described.

3. The combination, with the operative parts of a door-lock having a swivel knob-spindle, of a notched or toothed wheel connected with one portion of the spindle to which one knob is attached, and normally free to rotate without operating the lock, a tumbler connected to the other portion of the spindle to which the other knob is attached, a lever operated by said tumbler against the resistance of a spring to retract the bolt, a dog pivoted to the tumbler and adapted to engage with the notched wheel, a device connected with the lever operated by said tumbler for holding the dog out of engagement with the notched wheel, and an electro-magnet for releasing the said device, the parts being so arranged that when the magnet is energized the dog will be released and brought into engagement with the notched wheel to temporarily connect the same with the tumbler, whereby the bolt may be retracted by turning the outside knob, substantially as set forth.

4. In an electric door-lock, the combination of a sliding bolt, a swivel knob-spindle composed of two independently-rotating parts, a tumbler connected with one portion of the spindle, a notched or toothed wheel connected with the other portion of the spindle, a lever actuated by said tumbler for retracting the bolt, a dog pivoted to the tumbler and adapted to engage with the notched wheel, a slide or carrier connected with the tumbler-lever, a bell-crank lever pivoted to said slide, one arm of the bell-crank lever being engaged by a detent or catch controlled by an electro-magnet and armature, the other arm bearing upon the dog and holding the same out of engagement with the notched wheel, the arrangement being such that when the bell-crank lever is released by the closing of the circuit through the magnet the dog will be released and brought into engagement with the notched wheel to connect the latter with the tumbler, and the bell-crank lever automatically reset by the movement of the tumbler-lever, substantially as described.

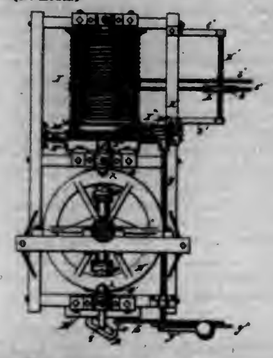
5. In an electric lock, the combination of a sliding bolt, a swivel knob-spindle, a tumbler connected with one portion of the spindle, a pivoted lever between the tumbler and bolt provided with a retracting-spring, a notched or toothed wheel connected with the other portion of the spindle, a dog pivoted to the tumbler and adapted to engage with the notched wheel, and having a spring for actuating the same when released, a slide or carrier pivoted to the tumbler-lever, and a bell-crank lever pivoted to the slide and controlled by an electro-magnet and armature, and adapted to bear upon the dog and normally hold it out of engagement with the notched wheel, the parts being so arranged that after the bell-crank lever has been released by the armature of the magnet the movement of the tumbler-lever will automatically reset the bell-crank lever and cause the latter to positively disengage the dog from the notched wheel and hold it out of contact therewith until again released by the closure of the circuit through the electro-magnet, substantially as set forth.

6. In an electric lock, the combination of the sliding bolt B, the lever C, pivoted at *d* and provided with a spring, *e*, the tumbler D, swivel-spindle G, notched or toothed wheel K, dog *h*, pivoted to said tumbler and adapted to be brought into engagement with the notched wheel K by the spring *l*, the slide or carrier N, pivoted to the lever C, the bell-crank lever L, pivoted to said slide and bearing on the dog *h*, the armature *s*, having a catch or detent, *r*, for holding the upper arm of the bell-crank lever L, and the electro-magnet Q, with its conducting-wires, all constructed and arranged to operate substantially in the manner and for the purpose described.

7. The combination, with the electro-magnet and its armature provided with a detent or catch, of a spring exerting no pressure upon said armature when the latter is being attracted to the magnet, and adapted by the movement of a lever or arm acting thereon to exert a pressure on the armature to withdraw it from the magnet after the circuit is broken, substantially as and for the purpose described.

8. The combination, with the lever C, the magnet Q, and the armature *s*, of the spring *w*, secured to the armature at or near the pivoted end and lying out of contact with the lever C and without tension during the movement of the armature toward the magnet, and adapted to be brought into action to exert a pressure upon the armature to withdraw it from the magnet by the movement of the lever, substantially as and for the purpose set forth.

323,919. ELEVATOR. LEVI DADO, Montpelier, Ohio. Filed Sept. 27, 1884. (No model.)



Claim.—1. The combination, in a power-transmitting mechanism, of a shaft, pinions loose thereon, a master-wheel engaging the pinions, clutches mounted on said shaft for engaging and disengaging the pinions, a longitudinally-sliding shaft, and arms rigidly secured to the sliding shaft and engaging the clutches, substantially as described.

2. The combination of a shaft, pinions loose thereon, a master-wheel engaging the pinions, clutches mounted on said shaft for engaging and disengaging the pinions, a longitudinally-sliding shaft, extended arms rigidly secured to the latter and acting on the clutches, a cam engaging the sliding shaft, and a lever for operating the cam to move the shaft and operate the clutches, substantially as described.

3. The combination, with a winding-drum provided with a ratchet-wheel mounted upon a shaft, of pinions loosely mounted upon said shaft, clutches mounted upon said shaft and adapted to be thrown into or out of engagement with said pinions, a driving-wheel to engage with said pinions, pawls to engage with said ratchet-wheel, and mechanism, substantially such as described, for operating said clutches and said pawls.

4. The combination, with a winding-drum provided with a ratchet-wheel and mounted upon a shaft, of pawls to engage upon either side with said wheel, pinions loosely mounted upon said shaft, clutches mounted upon said shaft and adapted to engage with said pinions alternately and to be disengaged therefrom, means, substantially such as described, connected with said clutches and adapted to operate said pawls, and a driving-wheel to mesh with said pinions, the construction being such that said clutches may be thrown alternately into engagement with said pinions and out of engagement with both, and the pawls to be operated correspondingly therewith, substantially as and for the purpose described.

5. The combination, with a winding-drum having a ratchet-wheel mounted upon a shaft, of pawls adapted to engage with said wheel, pinions loosely mounted upon said shaft, a driving-wheel adapted to mesh with said pinions, clutches mounted upon said shaft adapted to engage alternately with said pinions and to be disengaged therefrom, said clutches connected with an operating-shaft, and mechanism connected with said shaft adapted to engage alternately with said pawls, substantially as described.

6. The combination, with a winding-drum having a ratchet-wheel mounted upon a shaft, of pawls adapted to engage with said wheel, pinions loosely mounted upon said shaft, a driving-wheel adapted to mesh with said pinions, clutches mounted upon said shaft adapted to engage alternately with said pinions and to be disengaged therefrom, an operating-bar connected with said clutches, a slide connected with said shaft and adapted to engage alternately with said pawls as said shaft is reciprocated, and mechanism for reciprocating said shaft, substantially as described.

7. The combination, with a winding-drum, of a guided and sliding brake having a head, the rocking bar having one end eccentrically connected directly with the head to slide the brake to and from the drum, a

weighted lever at the other end of the rocking bar, and a lever for operating the bar, substantially as described.

8. The combination, with a winding-drum, of a guided and sliding brake having a head provided with a slot, the rocking bar having one end eccentrically engaging the slot in the brake-head, and a lever for rocking the bar, substantially as described.

9. The combination, with a winding-drum provided with a ratchet-wheel mounted upon a shaft, of pawls adapted to engage with said wheel, pinions loosely mounted upon said shaft, a driving-wheel to engage with said pinions, clutches mounted upon said shaft adapted to engage alternately with said pinions and to be disengaged therefrom, and an operating-shaft connected with said clutches and provided with means, substantially such as described, to alternately operate said pawls, said shaft connected with an operating-lever to reciprocate the same, substantially as and for the purpose described.

10. The combination, with a hoisting-drum having elevator or hauling cables wound thereon in opposite directions, provided with ratchet mechanism and mounted upon a shaft, of pinions loosely mounted upon said shaft, a driving-wheel to engage with said pinions, clutches to engage alternately with said pinions and to be disengaged therefrom, and mechanism, substantially such as described, to operate said clutches and said ratchet mechanism, the construction being such that the drum may be turned alternately in opposite directions while the driving-wheel is continuously operated in the same direction, substantially as described.

11. The combination of the shaft J, winding or rope drum I, master-wheel N, bevel gear-wheels O and O', sliding clutches P and P', shaft Q, sliding cam R, roller *q*, and sliding bar T, with the frame K and sweep U, substantially as described.

12. The combination of the shaft *y*, having the cam y^3, and weighted arm *y'*, and the sliding brake-shoe *z*, with the winding or rope drum having a rim adapted to engage with the brake-shoe, substantially as described.

323,920. ELECTRIC CONDUCTOR. Russel A. Denison, Providence, R. I. Filed May 8, 1885. (No model.)



Claim.—1. As an improved article of manufacture, the cable hereinbefore described, consisting of a central conducting-wire initially covered with a layer of non-conducting semi-plastic material or composition, a layer or coating of mica and asbestus immediately surrounding said initial coat, and a non-conducting external coating covering the whole, substantially as set forth.

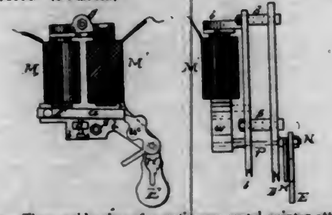
2. In an insulated cable, the combination, with a central conducting-wire having two or more coats or layers or suitable insulating material, of a layer of mica and asbestus intermediate of the inner and outer coats, substantially as shown and described.

3. The improved insulated wire cable A herein described, consisting of the central wire, *a*, the semi-plastic non-conducting coatings *b b'*, covering the wire, and a layer of mica and asbestus embedded in said semi-plastic material, substantially as shown and set forth.

4. The combination, in an insulated wire cable provided with the conducting-wire *a*, and non-conducting coatings *b b'* around the same, of the combined mica and asbestus strip or strips *c* wound spirally around said coating *b*, substantially as shown, and for the purpose set forth.

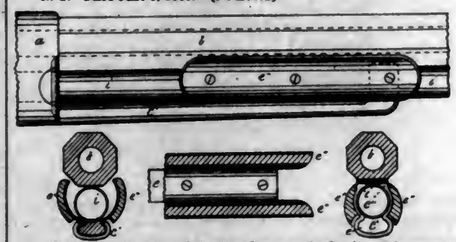
5. The improved insulated wire cable A herein described, consisting of the central conducting-wire, *a*, the non-conducting coating or layer *b*, composed of cowdie-gum and mineral pitch tempered with mineral oil immediately surrounding said wire, the layer *c* of mica and asbestus paper covering the coating *b*, and the external coating, *b'*, also of cowdie-gum and mineral pitch, continuously covering the wire and said coats *b c*, the whole combined and arranged substantially as shown, and for the purpose set forth.

323,921. ANNUNCIATOR. Charles E. Dey, Denver, Colo. Filed Sept. 1, 1884. (No model.)



Claim.—The combination of a stationary metal pointer attached to the dial-plate with numbers painted on the dial-plate just below the end of the pointer, and a movable metal cover covering the pointer and number, which can be turned to one side and operated by an electro-magnetic arrangement behind the dial-plate, making an indicator, as shown, for the purpose set forth.

323,922. MAGAZINE FIRE-ARM. William H. Elliot, Brooklyn, N. Y. Filed June 5, 1885. (No model.)



Claim.—1. In a breech-loading fire-arm, the fixed rest *c'*, supported at each end by a suitable connection with the under side of the arm to form a rest for the same, and provided with the grooves *e'* in its upper side, and in combination therewith the reciprocating connecting-strap *e* for operating the breech mechanism, adapted to slide in said grooves, and provided at its forward end with the divided reciprocating handle *e'*, substantially as shown and described.

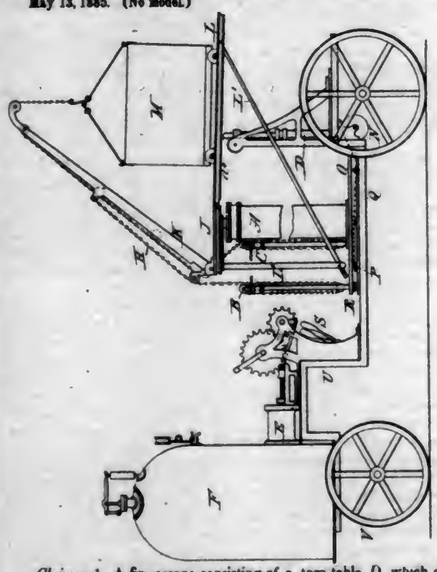
2. In a magazine fire-arm, a fixed rest, *c'*, supported at its rear end by a suitable connection with the under side of the arm, and at its forward end provided with the upturned part *c''*, said part being fitted to or around the magazine-tube and provided with the grooves *e* in its upper side, and in combination therewith the reciprocating connecting-strap *e* for operating the breech mechanism, adapted to slide in said grooves, and provided at its forward end with the divided oscillating handle *e''*, whereby a fixed support for the arm and a guide for the oscillating devices is provided, substantially as set forth.

323,923. BUTTON-FASTENER. Edward O. Ely, Boston, Mass. Filed May 4, 1885. (No model.)



Claim.—The staple having its points beveled inwardly, combined with a metallic washer notched at its edges, and provided at its center with a perforation or recess for the reception of the points of the staple-legs, substantially as described.

323,924. FIRE-ESCAPE. Wilhelm A. Evers, Edgewood, Ga. Filed May 13, 1885. (No model.)



Claim.—1. A fire-escape consisting of a turn-table, O, which carries large extensible cylinders A A, and the smaller extensible cylinders B B and C C, the platform J, crane K, and car M, substantially as shown and described.

2. In a fire-escape, the extensible air-cylinder D, provided with rack and gear, the axle of the gear being connected by chain or band with a roller, N, which connects with turn-table O by the chains Q Q', all arranged and operating to revolve said turn-table, substantially as described.

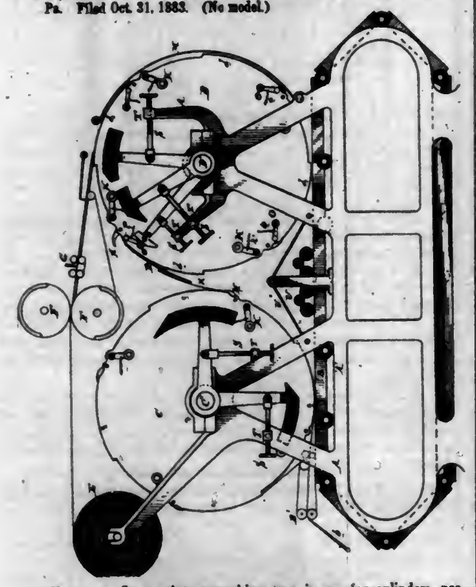
3. In a locomotive fire-escape, the combination of the carriage-frame U, air or steam pump E, reservoir F, and air-cylinders A A, B B, C C, and D, arranged to be operative by the air or steam generated in the engine E, substantially as shown, and for the purpose described.

4. In a fire-escape mechanism, a cylinder, A, whose interior is a telescopic arrangement of concentric cylinders or pistons, flanged at either end, and extensible under the force exerted by the admission of compressed air or steam, substantially as shown and described.

5. In a fire-escape, the combination of a car, M, and its pivotal railway L L, said car being operated by means of chains G and H, whose lengthening or contraction is governed by the lowering or raising of roller-carrying cylinders actuated by compressed air or steam, substantially as shown and described.

6. In a fire-escape, the combination of a turn-table, extensible cylinders, as A A, mounted thereon and carrying a platform, a railway-track pivoted to said platform, a car adapted to run on said track, and connected by chains to rollers carried by extensible cylinders, as B B and C C, and means for supplying steam or compressed air to actuate the cylinders A, B, and C, substantially as described.

323,925. PRINTING-MACHINE. Henry P. Foster, Philadelphia, Pa. Filed Oct. 31, 1883. (No model.)



Claim.—1. In a printing-machine, two impression-cylinders provided each with one or more impression-surfaces, in combination with a series of type-forms arranged to be passed in succession in contact with said cylinders, one of which cylinders prints from alternate type-forms, and the other of which prints from those omitted, nippers arranged upon said cylinders, mechanism, substantially as described, to operate said nippers to catch and deliver the sheets, transfer-frames, substantially as described, pivoted to one of said cylinders and adapted to swing the tail end of the sheet over to the other cylinder, where it is caught by the nippers before the sheet has left the first impression-cylinder, and mechanism, substantially as described, to operate said transfer-frames at the proper instant, substantially as and for the purpose specified.

2. In a printing-machine, two impression-cylinders provided each with one or more impression-surfaces, in combination with a series of type-forms arranged to be passed in succession in contact with said cylinders, one of which cylinders prints from alternate type-forms, and the other of which prints from those omitted, nippers arranged upon said cylinders, mechanism, substantially as described, to operate said nippers to catch and deliver the sheets, transfer-frames, substantially as described, pivoted to one of said cylinders and adapted to swing the tail end of the sheet over to the other cylinder, where it is caught by the nippers before the sheet has left the first impression-cylinder, mechanism, substantially as described, to operate said transfer-frames at the proper instant, and devices, substantially as described, to adjust the time of operation of the transfer-frame mechanism, substantially as and for the purpose specified.

3. In a printing-machine, two impression-cylinders provided each with one or more impression-surfaces, in combination with a series of type-forms arranged to be passed in succession in contact with said cylinders, one of which cylinders prints from alternate type-forms, and the other of which prints from those omitted, nippers arranged upon said cylinders, cams to operate said nippers to catch and deliver the sheets, transfer-frames, substantially as described, pivoted to one of said cylinders and adapted to swing the tail end of the sheet over to the other cylinder, where it is caught by the nippers before the sheet has left the first impression-cylinder, mechanism, substantially as described, to operate said transfer-frames at the proper instant, and adjusting devices, substantially as described, to regulate the time of operation of nipper-cams, substantially as and for the purpose specified.

4. In a printing-machine, two impression-cylinders provided each with one or more impression-surfaces, in combination with a series of type-forms arranged to be passed in succession in contact with said cylinders, one of which cylinders prints from alternate type-forms, and the other of which prints from those omitted, nippers arranged upon said cylinders, cams to operate said nippers to catch and deliver the sheets, transfer-frames, substantially as described, pivoted to one of said cylinders and adapted to swing the tail end of the sheet over to the other cylinder, where it is caught by the nippers before the sheet has left the first impression-cylinder, cams to operate said transfer-frames at the proper instant, and adjusting devices, substantially as described, to regulate the time of operation of the said transfer-frame and nipper-cams, substantially as and for the purpose specified.

5. The combination of impression-cylinder D, nippers H, pivoted cam L to operate said nippers, screw S, nut T, and frame A, substantially as and for the purpose specified.

6. The combination of two impression-cylinders, each provided with one or more impression-surfaces, two or more type-forms arranged to be passed in contact with said impression-surfaces, which impression-surfaces on one cylinder print from certain type-forms, and those of the other cylinder print from the type-forms omitted by the first, the impression-surfaces on said cylinders being adapted to pass close to each other and in opposite directions, and mechanism, substantially as described, consisting of a transfer-frame carried by one cylinder, and nippers upon each cylinder, the said parts being so arranged that the transfer-frame moves one end of the sheet within reach of the nippers upon the second cylinder, and by which it is caught at or about the time it is freed by the nippers upon the other or first cylinder, to automatically transfer the sheet printed on one side directly from one cylinder to the other, and without being received and supported by intermediate stationary devices, substantially as and for the purpose specified.

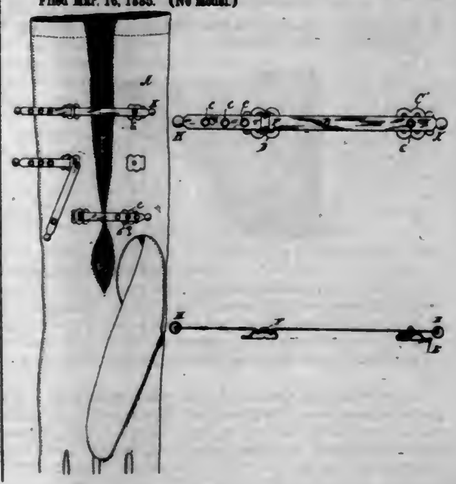
7. The combination of impression-cylinders C and D, provided with nippers H, cranks K, pivoted cams Q, L, N, R, and R', transfer-frames P, cranks O, adjusting-screws S, nuts T, frame A, and type-form-carrying devices, substantially as described, substantially as and for the purpose specified.

8. The combination of cylinder D, having a grooved periphery, as at D^2, a transfer-frame, P, consisting of arm P' and adjustable cross-bar P^2, rod *p*, crank O, and cam Q, substantially as and for the purpose specified.

9. The combination of cylinder D, having a grooved periphery, as at D^2, a transfer-frame, P, consisting of arm P' and adjustable cross-bar P^2, having notches p^3, rod *p*, crank O, and cam Q, substantially as and for the purpose specified.

10. The combination of an impression-cylinder and its nippers, cranks K, cams to operate said cranks pivoted to the axis of the cylinder, socket-piece S', adjusting screw-rod S, pivoted nut T, and frame A, substantially as and for the purpose specified.

323,926. GLOVE-FASTENING. John C. Field, New York, N. Y. Filed Mar. 16, 1885. (No model.)



Claim.—In a fastening for gloves or other articles, the combination, with the eyeleted braid with a knob at each end, of a loop in one side of the opening of the glove or other article, and a retaining pin or stud upon the opposite side, all arranged and operating substantially as set forth.

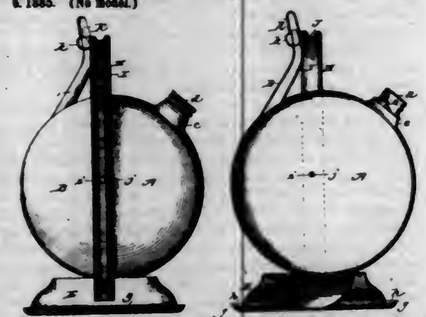
323,927. MANUFACTURE OF JEWELERS' FINDINGS. GEORGE H. FULLER, Pawtucket, R. I. Filed Dec. 17, 1884. (No model.)



Claim.—1. In jewelers' findings, a cup-joint consisting of an elongated metallic cup having a flanged base formed from a piece of sheet metal, for the uses set forth, and substantially as specified.

2. The combination of the cup *b*, the flange *a*, bar *c*, and pin-stem *d*, substantially as specified.

323,928. OIL-CAN. GREGORY GERDOM, West Troy, N. Y. Filed June 6, 1885. (No model.)



Claim.—1. The combination, with a base having an upwardly-extending bail, of an eccentrically-pivoted can having a spout adapted to strike the upper end of the bail, and be held in position thereby, as set forth.

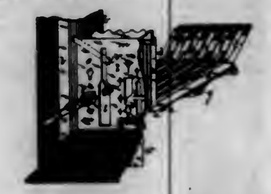
2. The combination, with an oil-can, of a base depressed to form an oil-cup, and an oil-receiver formed by turning the lower edge of the base upwardly, substantially as set forth.

3. The combination, with a base depressed to form an oil-cup, of strips secured to said base and extending upwardly therefrom, said strips being connected at their upper ends, a can eccentrically pivoted between said strips, and the spout on the can, adapted to bear against the strip connecting the sides, as set forth.

4. The combination, with a base having the depressed portion, and having its lower edge turned upwardly to form a circumferential cup or receiver, of strips secured to said base and extending upwardly therefrom, a can eccentrically pivoted between said strips, and a stop, for the purpose set forth.

5. The combination, with a base, of a bail consisting of the sides connected at their upper ends, and an oil-can eccentrically pivoted between the vertical sides of said bail, so that its spout will bear against the strip connecting the upper ends of the side, for the purpose set forth.

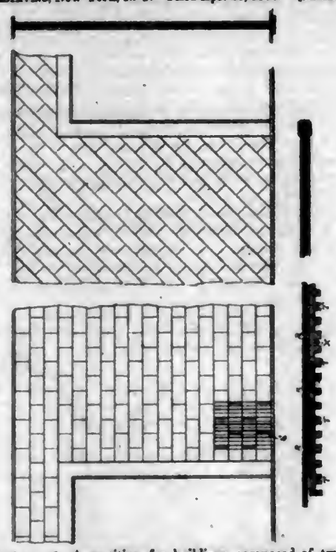
323,929. SHAKING-GRATE. THOMAS J. GRAFF, Pittsburg, Pa. Filed May 28, 1884. (No model.)



Claim.—1. In combination with the stationary grate-basket having the backwardly-extending base-bars *d*, the rocking frame mounted under the grate and having a series of bars, *e*, fitting between the stationary bars *d*, and a rocker-arm, *k*, the shield *m*, having the slot *l*, provided with the handle-entrance *n*, opposite the rocker when in its normal position, and the handle *s*, substantially as and for the purposes set forth.

2. In combination with the stationary grate-basket and the rocking frame therein, provided with the rocker *k*, the shield *m*, having the slot *l* and recess *l'*, and the handle *s*, engaging with the rocker, and having the rib *t*, substantially as and for the purposes set forth.

323,930. CONSTRUCTION OF FIRE-PROOF BUILDINGS. RAFAEL GUASTAVINO, New York, N. Y. Filed Apr. 21, 1885. (No model.)



Claim.—1. A partition for buildings composed of two or more layers of brick tiles laid up with their broad faces vertical, united to each other by cement or plaster-of-paris, substantially as set forth.

2. A partition for buildings composed of two or more layers of brick tiles laid up with their broad faces vertical, united together, so as to break joints, by cement or plaster-of-paris, substantially as set forth.

3. A partition for buildings composed of two or more layers of brick tiles, the tiles of one layer arranged in horizontal lines, while those of the other or others are arranged in diagonal lines, substantially as set forth.

4. A partition for buildings composed of two or more layers of brick tiles, the tiles of one or more layers being smooth on the exposed surface, while those of the other layer have alternate elevations and depressions on the exposed surface, substantially as and for the purpose set forth.

323,931. GATHERING AND SHIPPING CAN. HENRY HAAK, Prescott, Pa. Filed Apr. 17, 1885. (No model.)



Claim.—1. The combination of ice-box I, having pipes J^3, with float H, having pipes H^3, arranged to register with said pipes J^3, substantially as specified.

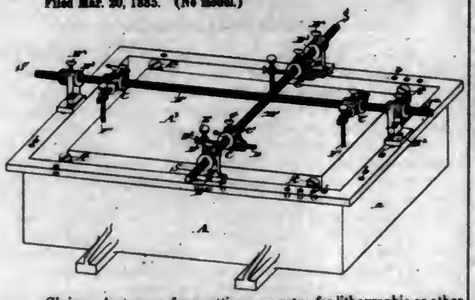
2. The combination of receptacle B, having cover G, provided with ventilators G^3, ice-box I, having pipes J^3, and float H, having pipes H^3, said ventilators and pipes being arranged to register with each other, substantially as specified.

3. The can or receptacle B, having the cylindrical body portion C, the packing of non-conducting material D, the flange E, disk E', and strips E^2, substantially as specified.

4. The combination of the air-tight float having the central opening, H^3, and pipes H^3, the receptacle B, having the non-conducting packing D, arranged around the same, the flange E, disk E', strips E^2, and cover G, having the ventilator G^3, with the outer casing, A, substantially as shown and described.

5. The combination of the receptacle B, having the sheet-metal body portion C, packing D, flange E, disk E', strips E^2, hoop E^3, support F, the air-tight float H, having the funnel-shaped top H', and opening H^2, and air-pipes H^3, and the outer casing, A, having the cover G and outlets G^2, substantially as shown and described.

323,932. APPARATUS FOR SETTING LITHOGRAPHIC STONES. JOHN T. HAWKINS, Taunton, Mass., and RICHARD PRESTON, Brooklyn, N. Y. Filed Mar. 20, 1885. (No model.)



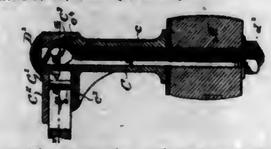
Claim.—A stone or form setting apparatus for lithographic or other printing presses, consisting of supporting-standards, as B, adjustably and detachably located upon the type or stone bed of the press, and carrying a bar, as B', adjustably secured thereto, said bar having mounted thereon pointing or indicating rods, as E, arranged to be adjustable longitudinally, laterally, and vertically, and to be secured in any such adjusted position, whereby each of a series of stones or forms may be successively adjusted, as to level and register, to conform to the position of its preceding form or stone, or to that of a primary form or stone, substantially as and for the purposes set forth.

323,933. LAST. JOSEPH R. HOLMES and JOHN F. EGAN, Elgin, Ill. Filed Sept. 8, 1884. (No model.)



Claim.—The combination of the socket or tube *b*, having the vertical slot *f* and apertured top piece, *h*, the bolt *d*, having its bearing in said apertured top piece, and provided with a prong, *e*, extending through the slot *f*, and the spring *g*, encircling the upper part of the bolt and arranged within the socket *b*, with the lower last-section having a socket for the bolt, and the upper section having a transverse opening for the insertion of a bolt-releasing device, substantially as described.

323,934. CIRCLE-IRON FOR WAGONS. NATHAN L. HOLMES, Racine, Wis. Filed Nov. 24, 1884. (No model.)



Claim.—1. The combination, with the hounds of a wagon, of two circle-posts for supporting the rear part of the circle from the hounds, and a circle comprising two side bars connected at their front ends with the hounds and at their rear ends with the said posts, and a transverse bar attached at its ends to the said posts, substantially as and for the purpose set forth.

2. The combination, with the hounds and a circle made in two or more parts, of a circle-post provided with a longitudinal bolt-aperture and with recesses to receive the adjacent ends of the parts of the circle, a bolt, and a vertically-movable cap located over said recesses and apertured to give passage to the bolt, substantially as and for the purpose set forth.

3. The combination, with the hounds, of a circle made in two or more parts and a circle-post provided with a longitudinal bolt-aperture and with wings *c'*, and a cap, C', provided with depending flanges c^3, adapted to form, with the said wings, recesses to receive the ends of the parts of the circle, and with an aperture to give passage to the bolt, substantially as and for the purpose set forth.

4. The combination, with the hounds, a circle, and a holding-bolt, of a circle-post provided with a longitudinal bolt-aperture and a vertically-movable cap provided with an aperture to give passage to the bolt, the post being provided with an upwardly-projecting part, C^3, adjacent to the bolt-aperture, adapted to engage a corresponding recess in the cap, substantially as and for the purpose set forth.

5. The combination, with the hounds, a circle, and a holding-bolt, of a circle-post provided with a longitudinal bolt-aperture and a vertically-movable cap provided with an aperture to give passage to the bolt, the said post being provided with a projecting part, C^3, at one side of the bolt-aperture, having an inclined outer surface adapted to operate in connection with a correspondingly-inclined surface upon the cap, whereby the upper end of the bolt is clamped between the said projection and the opposing surface of the cap when the parts are placed together, substantially as described.

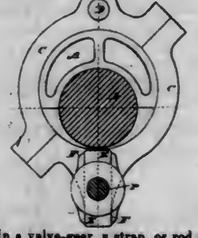
6. The combination of the hound, a circle-iron provided with a notch, *b*, a circle-post provided with a vertical bolt-aperture, and with a recess having a vertical rib, c^4, upon its side wall adapted for engagement with the notch *b*, a bolt, and a vertically-movable cap located over said recess and apertured to give passage to the bolt, substantially as and for the purpose set forth.

7. The combination, with the hounds, circle, and a holding-bolt, of a post having a longitudinal bolt-aperture, and provided with wings *c'* and an upwardly-projecting part, C^3, at one side of the bolt-aperture, and a cap, C', apertured to receive the bolt, and provided with a part or flange, c^4, extending around the projection C^3, substantially as and for the purpose set forth.

8. The combination, with the hounds, circle, and a holding-bolt, of a post with a longitudinal bolt-aperture and provided with wings *c'*, and a cap, C', provided with depending flanges c^3 and cross-flanges c^5, uniting the opposite flanges, c^3, at their inner ends, substantially as and for the purpose set forth.

9. The combination, with the hounds and a circle having its forward ends bent downwardly, of means for attaching the ends of the circle to the hounds, consisting of castings E, each having a vertical aperture adapted to receive the downwardly-bent end portion of the circle, said aperture being enlarged at its lower portion, and the circle end secured therein by riveting, substantially as described.

323,935. VALVE-GEAR. CONSTANTIN P. HOLST, Amsterdam, Holland, assignor of one-half to John R. Planten, Brooklyn, N. Y. Filed Feb. 9, 1885. (No model.) Patented in England July 15, 1884, No. 10,180.



Claim.—1. In a valve-gear, a strap, or rod and strap, of an eccentric or crank having a fixed fulcrum at a point diametrically opposite its driving-point, and connected with said fulcrum by suitable devices, substantially as herein described, for effecting perfect symmetry in the distribution of the steam or other piston-impelling fluid, in the manner set forth.

2. In a valve-gear, a strap, or rod and strap, of an eccentric or crank having a fixed fulcrum at a point diametrically opposite its driving-point, and connected with said fulcrum by a guide-block rigidly attached to the former, and an oscillating guide-piece having said fixed fulcrum as its center, substantially as herein described, for the objects stated.

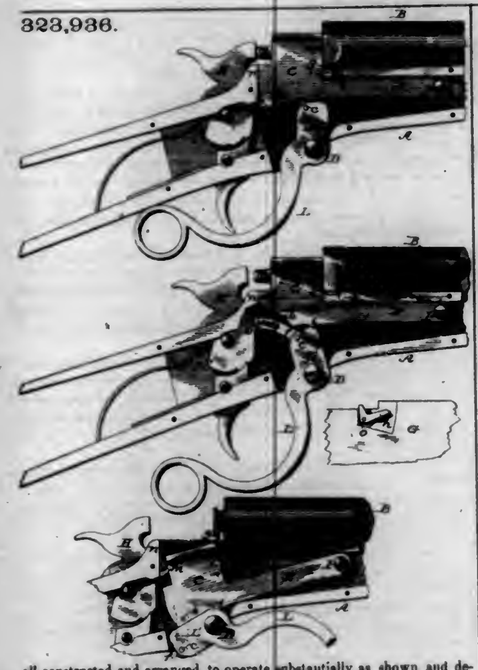
3. In a valve-gear, the combination, substantially as herein specified, of a fixed fulcrum, an eccentric fast on the engine-shaft, an eccentric-strap carrying a driving-pin and provided, diametrically opposite to said driving-pin, with a straight guide-block, and a guide-piece within which said guide-block is free to reciprocate, and which in turn oscillates freely on said fixed fulcrum, for the purposes set forth.

323,936. BREECH-LOADING GUN. OTIS W. HOLT, Chicopee Falls, Mass. Filed May 25, 1885. (Model.)

Claim.—1. The combination, in a breech-loading gun, of the recessed or box frame A, having the barrel B secured thereto, the sliding extractor *g*, provided with the lateral projection *l*, the elbow-lever *k*, pivoted to the frame A, and the swinging breech-piece C, provided with the projection or pin *a*, all constructed and arranged to operate substantially as described.

2. The combination, in a gun, of the breech-piece C, pivoted underneath and in front of the rear end of the barrel, as shown, the lever L, pivoted to the frame and provided with the extension or arm L', the slotted link *f*, having one end pivoted to the arm L' and the other end arranged to work through a slot in the breech-piece, and the hammer H,

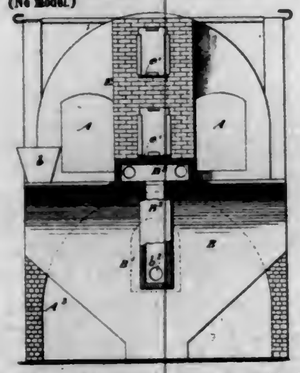
323,936.



all constructed and arranged to operate substantially as shown and described.

3. The combination, in a fire-arm, of the sliding extractor *g*, the elbow-lever *h*, pivoted to the frame below the extractor and so as to engage therewith, the swinging breech-piece C, provided with the projection *a*, the lever L, L', pivoted to the frame, the slotted link *f*, and hammer H, said link being arranged to connect the lever and breech-piece, and also operate on the hammer to force it back to half-cock as the breech is opened, all being constructed and arranged to operate substantially as shown and described.

323,937. GLASS-FURNACE. LUC HOUZE, Meadville, Pa. Filed Mar. 13, 1885. (No model.)



Claim.—1. In a glass-furnace, the combination, with the melting-chamber A and fire-box B, of the conductor E, having one median and two side flues opening near each other into the said melting-chamber, the median flue connecting with the fire-box and the side flues with an air-supply, as shown, whereby the products of combustion from the fire-box may receive an additional supply of oxygen as they enter the melting-chamber, for the purpose specified.

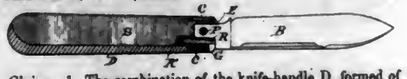
2. The combination, with the melting-chamber A and fire-box B, of the conductor E, having smoke-flue *e* and air-flues e^2 e^3, arranged side by side and discharging into the melting-chamber at the same time, as and for the purpose specified.

3. In a glass-furnace, the combination, with the melting-chamber having melting-pots A' and the fire-box B, of the conductor E, having partitioned chamber *e* and dampers *c'* *c''*, whereby the products of combustion may be distributed, as set forth.

4. In a glass-furnace, the combination, with the melting-chamber, of the trunk B', open at *b'*, the flue B^2, and the flues e^2 e^3, arranged substantially as and for the purpose specified.

5. The combination, in a glass-furnace, with the melting-chamber, of the flues C C, running thereunder, and the flues e^2 e^3 in the conductor E, as and for the purpose described.

323,938. POCKET-KNIFE. CLARENCE H. KAHLER, Wilmington, Ill. Filed Jan. 12, 1885. (Model.)

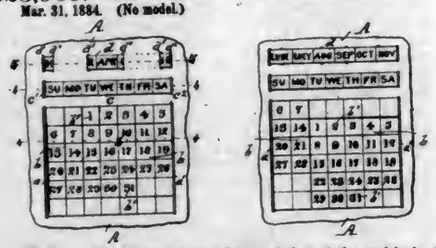


Claim.—1. The combination of the knife-handle D, formed of one piece of material, as shown and described, having the knife-channel S, tubular pin P, U-shaped spring R, having the depending lug G, knife-blade B, and bolster *c*, formed of one piece of metal and attached to the handle D by being cast or pressed thereon, substantially as set forth.

2. As a new article of manufacture, a knife constructed and arranged substantially as shown and described, having its handle and its bolsters each respectively formed of one piece of material, and having its blade spring or springs formed U-shaped and placed within the handle so one of its prongs will engage the tang of the blade, as set forth.

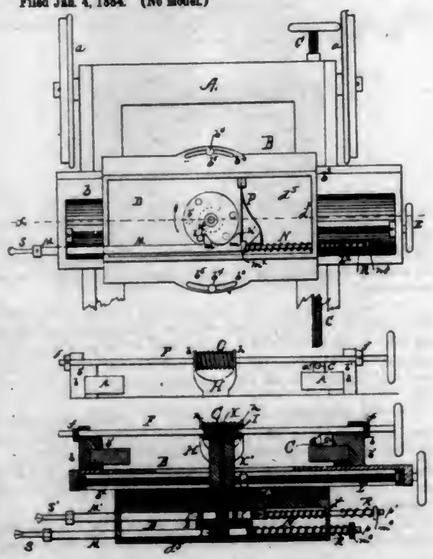
3. In the knife constructed substantially as shown and described, the U-shaped spring R, having the depending lug G, in combination with the handle D and blade B, as and for the purpose set forth.

323,939. CALENDAR. ALBERT J. KLETZKER, St. Louis, Mo. Filed Mar. 31, 1884. (No model.)



Claim.—The improved calendar consisting of the card body A, having slits at *a a'*, and fitted to move in same, the endless band *b*, having upon its front and rear faces the numerals from 1 to 31, designating the days in a month, the slits at *c' c²*, also made in the card A for the endless band *c*, having upon its front and rear faces the abbreviated names for the days of the week, the further slits d' d^2 d^3 d^4 d^5 d^6, and the endless band *d*, having upon its entire face all the names of the months in a year, occupying the full two sides of said band, all said parts arranged relatively to each other substantially in the manner and for the purposes set forth.

323,940. MINING-MACHINE. THOMAS E. KNAUSS, Nelsonville, Ohio. Filed Jan. 4, 1884. (No model.)



Claim.—1. In a mining-machine, non-rotating drills placed side by side, parallel and in close juxtaposition, forming practically one cutter, in combination with means, such as described, for alternately operating such drills, whereby the holes made by the drills are merged into one, as set forth.

2. In a mining-machine, the combination of the carriage B, the rod F above and lengthwise the carriage, the worm G on said rod, yoke H, embracing the worm, wheel I, engaging the worm, shaft K, extending from the wheel I and carrying the wheel L, the wheel L, and the chisels and their stocks, such wheel L engaging such stocks, as set forth.

323,941. PERMUTATION-PADLOCK. JOHN KUHLER, Hot Springs, Ark., assignor to Frank Gross, same place. Filed May 21, 1885. (Model.)



Claim.—1. In a permutation-padlock, the combination of a head, a slotted cylindrical shell carried thereby, lugs upon the exterior of the shell, stationary collars encircling the shell and provided with an internal notch coincident with the slot of the shell, and also with a notch to engage the lugs on the latter, tumblers mounted upon the shell and likewise provided with a notch, a second head, a toothed bolt carried thereby, adapted to slide within the shell, and a bar or rod carried by the second head and adapted to fit into a recess in the first head, as set forth.

2. The head A, having slotted shell C, provided with lugs *c* and collars F, in combination with the head B, having toothed bolt D and bar E, and the tumblers G, all arranged as shown.

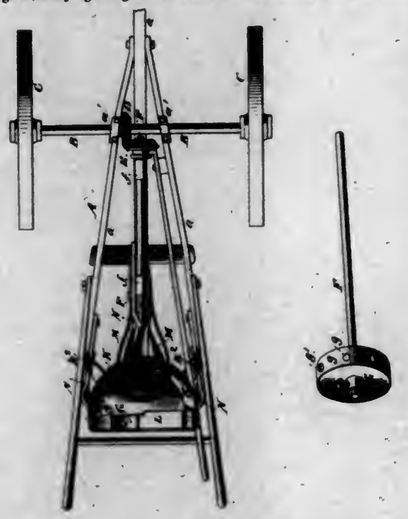
3. The herein-described lock, consisting of a head carrying a shell, slotted and provided with lugs, tumblers, and stationary collars encircling said shell, and a longitudinally-sliding head provided with a toothed bolt within the shell, and with a connecting-bar adapted to reach from one head to the other when the lock is closed.

4. In a lock such as described, the head B, provided with bolt D, having head or disk *b*, and shell C, provided with a stop-pin, *h*, to limit the movement of said disk.

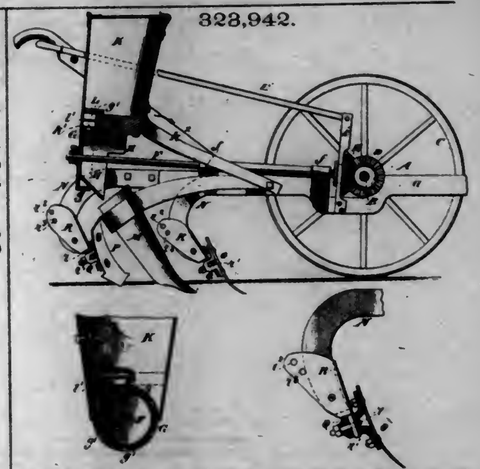
5. The herein-described lock, consisting of head A, shell C, provided with lugs *c*, slot *a*, and set-screw *h*, head B, provided with bar E, toothed bolt D, and head or disk *b*, collars F, and tumblers G, all arranged as shown.

323,942. CORN-PLANTER. FRANCIS M. LUCAS, York, Nebr. Filed Oct. 27, 1884. (No model.)

Claim.—1. In a seed-planter, the three-beamed frame A, provided with the top bearings, *a' a' f f*, the axle B, arranged loosely in said bearings *a'*, carrying the ground-wheels C C, and having a crown-wheel



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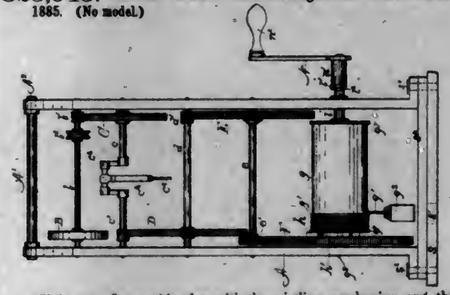


between said bearings *a' a'*, and the longitudinal shaft F, arranged loosely in the bearings *f f*, all combined and arranged as shown, and for the purpose of operating the dropper-wheel.

2. In a seed-planter, the combination of a hopper, K, having the bottom *k* and outlet *k'*, a dropper-wheel, G, having the right-angled flange *g* perforated at *g'*, and the chute H, made fast to the hopper-bottom *k*, inclined forwardly as well as downwardly and cut out where the chute comes under the hopper-outlet *k'*, as and for the purpose specified.

3. In a seed-planter, the combination, with the three-beamed frame A and hopper K, of the three braces k^2 k^2 k^2, connecting it with each of the beams *a a a*, and all co-operating to support it in the rear of as well as above the frame A, as and for the purpose set forth.

323,943. MOTOR. ANDREW MARCK, Lexington, Mo. Filed June 26, 1885. (No model.)

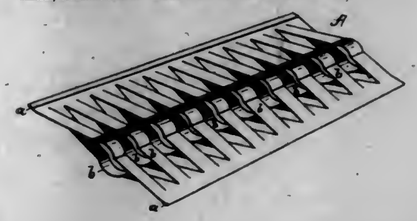


Claim.—1. In combination with the winding mechanism and the intermediate motive train, crank-shaft *c*, having crank c^4 located at about the center of its length, and carrying pinion *c'* and gear C, shaft *b*, located above the entire train, and carrying fly-wheel B, belt-pulley b^2, and pinion *b'*, substantially as described, and for the purposes herein set forth.

2. In a motor, the combination of the drum *g*, rigidly connected to the main shaft, a ratchet-wheel, *h'*, revolving with said drum, and provided with a recess, g^4, upon its outer face, washer g^4, located in said recess and fitted with a pin, h^3, main gear F, having a pawl, *h*, pivoted thereto, and an arm which projects from said pawl and is engaged by said pin, substantially as described.

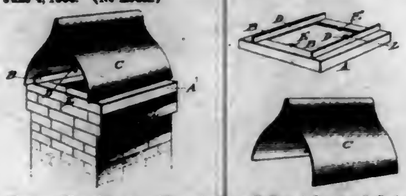
3. The combination, with the main shaft provided with a transversely-projecting pin, *i'*, of the crank N, formed with a socket, and with a spiral surface and a shoulder, substantially as described.

323,944. SPIRAL CONVEYER. WILLIAM C. MARR and NAHUM C. MARR, Onawa, Iowa. Filed June 16, 1885. (No model.)



Claim.—A conveyer consisting of a plate, A, slitted into strips *b* of any required width, sprong apart in opposite directions, in combination with the shaft B, inserted between the strips of the plate, which is twisted and fastened upon the shaft forming continuous double flights, substantially as and for the purpose described.

323,945. CHIMNEY-TOP. David L. McCaran, Baltimore, Md. Filed June 4, 1885. (No model.)



Claim.—The plate A, with projections E E and flanges B B, having perforated projections D D, in combination with Gothic hood C and bolts passing through said hood and the projections D D, all substantially as shown and described.

323,946. RAILWAY RAIL AND JOINT. Samuel McCarty, Aurora, Ill. Filed May 7, 1885. (No model.)



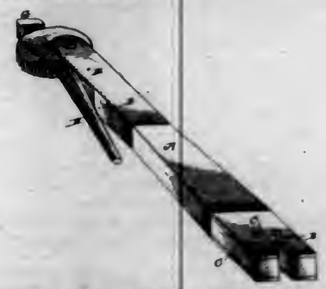
Claim.—1. In a railway-track, rails permanently secured at their centers to a strong cross-tie, and having oblong bolt-holes of graduated lengths near each end, as described, in combination with side plates and flat connecting-bolts, the combination being, as set forth, such as to compel the expansion and contraction of the rail from the center toward both its ends to prevent creeping and accommodate the fish-joint.

2. The rail-joint consisting of the following combination, namely: rails having their adjacent ends made with overlapping bevels *a*, and having oblong slots *d e*, of graduated lengths, as set forth, near the ends of the rail, side plates having oblong slots all of the same size, but shorter than those in the rail, and key-bolts *f*, oblong in cross-section, fitting tightly all the slots in the side plates, but not fitting fully the slots in the rail, all as set forth.

3. In combination with the rails having the long and short oblong slots *d e*, as set forth, and having the upper and lower flat seats, *b b'*, the side plates, slotted as described, and adapted to fit between and bear upon such seats, and key-bolts fitting snugly all the slots of the side plate.

4. In combination with rails and with side plates, all having oblong slots therein, as set forth, key-bolts adapted for such slots, and provided with washers or cap-pieces *i*, having oblong recesses *i'* and tightening-nuts *h*, all as and for the purposes set forth.

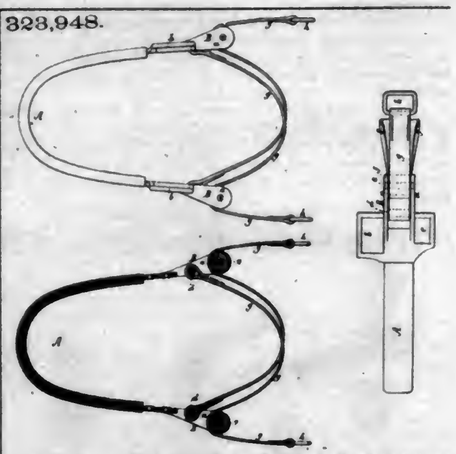
323,947. WIRE-STRETCHER. Levi S. McMeen, Cold Springs, Tex. Filed May 25, 1885. (No model.)



Claim.—The wire-stretcher consisting of the bar notched at one end to receive a barbed wire, and provided with a ferrule at its opposite end, having the short arm E and the long arm F, the stud G, serrated on its inner side at the outer end of the arm F, and the serrated cam-lever H, pivoted between the arms, the bar being adapted to be used as a lever in connection with a fence-post as a fulcrum, substantially as described.

323,948. DRIVING-CHECK FOR HORSES. Erastus L. Metcalf, Franklin, Mass. Filed June 8, 1885. (No model.)

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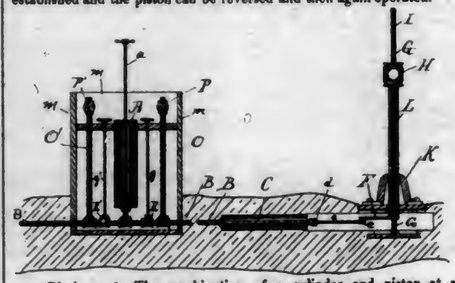


Claim.—1. The combination of the nose-band and its forks provided with the cross-bars and friction-rollers, as described, with the two rein-straps extending in opposite directions between the forks and crossing each other, and each connected with one and going through the other of such forks, all being substantially and to operate as and for the purpose as set forth.

2. The combination of the nose-band bow, formed essentially as described, with two straps fastened to it near its ends and extending in opposite directions across and through it and crossing each other in their passage across it, all being substantially as set forth.

323,949. SIGNAL. Mortimer B. Mills and William Hawley, Chicago, Ill. Filed June 23, 1884. (No model.)

Brief.—Between the main operating-cylinder and the signal cylinder is a pipe with an air-valve, whereby, should one up or down stroke not prove sufficient to throw the signal, connection with the air can be established and the piston can be reversed and then again operated.



Claim.—1. The combination, of a cylinder and piston at an operating-post, a pipe connecting with said cylinder and leading to a cylinder and piston of less dimensions, a pipe with a valve at its upper end, and at its lower end connected with the pipe communicating with the two cylinders, and mechanism, substantially as described, connecting the piston of small cylinder with a revolving shaft containing signals to operate a reciprocating to-and-fro movement by atmospheric or fluid pressure, all substantially in and for the purposes set forth.

2. The combination of cylinder A and piston *a*, pipe B, cylinder C, and piston *c*, jointed rod *d*, pivot *e*, crank F, shaft G, signals H and I, pipes O and O', valves P and P', rods *q* and *q'*, and valves R and R', all being constructed substantially as hereinbefore described, to operate signals in any direction, as substantially set forth.

323,950. CAR-COUPLING. Henry Mooers, Toledo, Ohio. Filed June 24, 1885. (No model.)

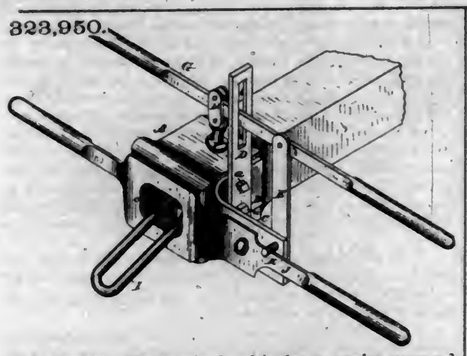
Claim.—1. The combination, with a draw-head and a plate secured thereto and extending outwardly therefrom, of an arm secured near the outer end of said plate, a lever pivoted to the upper end of said arms, and plates pivoted to the coupling-pin and lever, substantially as set forth.

2. The combination, with a draw-head, of a bracket consisting of the plate C, arm E, and standard D, of a lever pivoted to the arm E and working in a slot in the standard, and plates pivotally connecting the coupling-pin and lever, substantially as set forth.

3. The combination, with a draw-head, of a pivoted lever having an opening to correspond with the opening in the draw-head, said lever being adapted to raise the link in a manner and for the purpose set forth.

4. The combination, with a draw-head, of a pivoted lever located

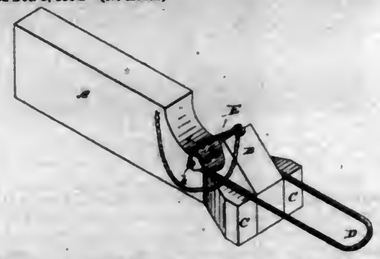
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on the front side of the draw-head, and having an opening corresponding to the mouth or opening in the draw-head, and a stop to prevent said lever from dropping below a horizontal position, as set forth.

5. The combination, with a draw-head having an outwardly-extending plate secured thereto, of a lever pivoted to said plate, and having an opening corresponding to that of the draw-head, and a stop, substantially as set forth.

323,951. CAR-COUPLING. William H. Newlon, Beaver Falls, Pa. Filed Dec. 3, 1884. (No model.)



Claim.—1. In a car-coupler, the draw-bar A, having at its front end the rearwardly and upwardly inclined hook, and the lateral extensions C C at the base of said hook, in combination with the coupling-loop pivoted to the draw-bar in the rear of said hook and arranged to be supported by said lateral extensions, substantially as described.

2. In a car-coupler, the draw-bar A, provided at its front end with the rearwardly-inclined hook, and lateral projections from the front end of the bar for supporting a coupling-loop, in combination with the coupling-loop pivoted behind the hook, and the pin having an oblique socket provided for it behind the hook, substantially as described, and for the purpose set forth.

323,952. STORE-SERVICE APPARATUS. Selden G. North, Philadelphia, Pa., assignor to the Transit Apparatus Company, (Limited,) same place. Filed June 29, 1885. (No model.)



Claim.—1. The combination, in a store-service apparatus, of a rail, a continuation of the same, and means for causing the rail and its continuation to approach, and for maintaining them in their approximated relation.

2. In a store-service apparatus, the combination of a track-bar or fixed portion of a track, a wire rail forming a continuation thereof, and means for tightening up the wire rail with respect to the fixed portion of the track, and for maintaining it in position when tightened up, substantially as set forth.

3. In a store-service apparatus, the combination of a track-bar or fixed portion of a track, a wire rail forming a continuation thereof, and connected with a connecting-plate which forms a continuation both of the track-bar and of the wire rail, and means for tightening up the connecting-plate and its connected wire rail with respect to the track-bar, and for maintaining them in position when tightened up, substantially as set forth.

4. In a store-service apparatus, the combination of a track-bar or fixed portion of a track, a wire rail forming a continuation thereof and connected with a connecting-plate which forms a continuation both of the track-bar and of the wire rail, a suspender or bracket for sustaining the track-bar and its connecting-plate, a slotted lug connected either with the connecting-plate or with the track-bar, and a threaded adjusting rod and nut connected with either the track-bar or the connecting-plate and operating in connection with the slotted lug, substantially as described.

5. In a store-service apparatus, the combination of the track-bar, the forked suspender bracket or support, the longitudinally-adjustable connecting-plate, a portion of which is adapted to be filed or dressed off, the wire rail connected with said connecting-plate, the threaded adjusting rod and nut, and the log or abutment, substantially as and for the purposes set forth.

323,953. ATTACHMENT FOR GRAIN-DRILL TEETH. John Outram, Easton, Md. Filed June 2, 1885. (No model.)



Claim.—1. The combination, with a drill-tooth, of the shoe-supporting bar, the brace adjustably connected to the bar, and the shoe pivoted midway of its length to the rear end of the bar, substantially as described.

2. The combination, with a drill-tooth, of the shoe-supporting bar, the brace adjustably connected to the bar, and the shoe pivoted midway of its length to the rear end of the bar, and means, substantially as described, for limiting the tilting or rocking of the shoe on its pivot.

3. The combination, with a drill-tooth, of a rearwardly-extending shoe-supporting bar, a shoe or runner pivoted midway of its length to the rear end of the bar, and means, substantially as described, for attaching the bar to the drill-tooth.

4. The combination, with a drill-tooth, of the shoe-supporting bar, the brace adjustably connected to the bar, the shoe pivoted midway of its length to the rear end of the bar, and provided on its under side with the rearwardly-converging ridges, and means, substantially as described, for connecting the bar and brace to the drill-tooth.

5. The combination, with the drill-tooth, of the pivoted rearwardly-extending shoe-supporting bar, the brace pivoted at the top of the tooth and adjustably connected at its lower end with the bar, the shoe pivoted midway of its length to the rear end of the bar, and provided with the converging ridges on its under side and the guard on its forward end, and means, substantially as described, for detachably connecting the shoe-bar and its brace to the drill-tooth.

6. The combination, with the drill-tooth, of the rearwardly-extending pivoted shoe-supporting bar, the pivoted brace adjustably connected to the bar, the shoe pivoted midway of its length to the rear end of the bar, and provided with means, substantially as described, to limit its rocking or tilting movement on its pivot, and having the ridges on its under side and the guard on its upper front end, and the means described for detachably connecting the supporting-bar and its brace to the drill-tooth.

323,954. HARVESTER. Geo. W. Packer, Rock Falls, and Chas. M. Grim, Piercyville, Ill. Filed Apr. 28, 1884. (No model.)

Claim.—1. The combination of the bell-crank lever O, clutch I, rod O', and the collar O^2 upon the rod O', whereby such rod can be partially withdrawn from such lever, to permit the engagement of the clutch I with the gear H, substantially as shown, and for the purpose mentioned.

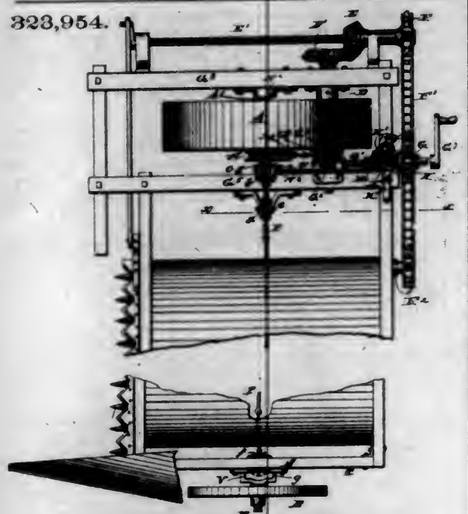
2. The combination of the rack N^2, pinion N', lever O, rod O', and clutch I, such rod O' being provided with a collar, O^2, substantially as shown, and for the purpose named.

3. The combination of the axle A', pulleys *b* and *d*, chain P, yoke S, provided with the pulley *f*, the plate V, stud V', beam T, and wheel B, substantially as shown, and for the purpose specified.

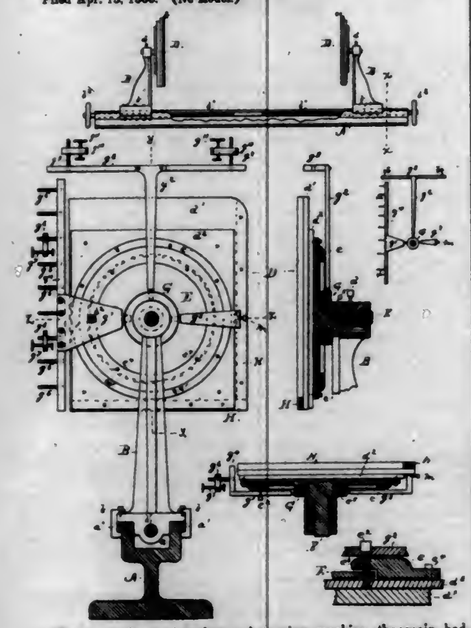
4. In combination with the axle A, the chain P, loose collared at one end on said axle and passing transversely under the grain-platform, and attached at its opposite end to a vertically-sliding plate, V, and means for operating the chain, whereby the inner and outer sides of the machine are simultaneously raised and lowered, substantially as described.

5. The combination of the yoke S, rigidly attached to the outer side of the frame, the plate V, adapted to slide vertically in said yoke, and the chain P, substantially as shown, and for the purpose specified.

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323,955. CLAMPING-MACHINE. Edward K. Patten, Utica, N. Y. Filed Apr. 13, 1885. (No model.)



Claim.—1. In a clamping and turning machine, the main bed-piece, the uprights, and the stationary hubs rigidly secured to the uprights, in combination with the revolving disk provided with brackets and clamps to the stationary hub upon which they revolve, and the clamps for centering and securing the article to be turned, secured to a sleeve back of said disks, and clamping the articles between the disks, substantially as set forth.

2. In a clamping and turning machine, the main bed-piece, the horizontally-adjustable uprights screw-threaded in opposite directions and provided with a shaft which adjusts the same, and which is correspondingly screw-threaded in opposite directions from its center, in combination with the stationary hubs rigidly secured to the upright, the revolving disk mounted thereon, and the clamps and brackets for securing the article to be turned, with means for rigidly holding the disks to the hubs substantially as shown.

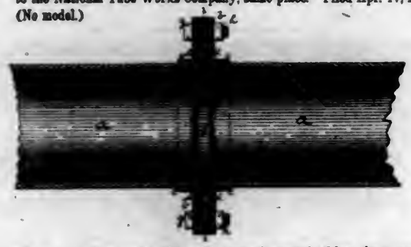
3. In a clamping and turning machine, the main bed-piece, and the horizontally-adjustable uprights screw-threaded in opposite directions, and provided with a shaft which adjusts the same, and which is correspondingly screw-threaded in opposite directions from its center, in combination with stationary hubs rigidly secured to the uprights, the revolving disks mounted on the hubs, the clamps and brackets for securing the article to be turned in place, the sleeve G on the hub E, and the equalizing-arm g^3, rigidly secured to said sleeve, simultaneously moved with the clamping-disk, with stay-bolt *m*, substantially as shown.

4. In a clamping and turning machine having bed-piece, uprights, hubs, and clamping-disks mounted thereon, to be rotated as shown, in combination with the brackets on the face of the clamping-disk, with arms pivoted to the uprights, constructed and mounted to simultaneously rotate with clamping-disk, with means for centering and holding the article against the brackets on the face of the clamping-disks, substantially as shown.

5. In a clamping-machine having a bed-piece, two uprights supporting stationary hubs and in combination with clamping-disks mounted on the hubs, constructed to rotate thereon, with locking device for securing the disk to the hubs, substantially as shown

6. In a clamping and turning machine constructed as shown, the combination of the adjustable uprights simultaneously moved by the shaft and screw-threads, as shown, with clamping-disk mounted on the uprights to be simultaneously rotated, substantially as shown, for the purposes stated.

323,956. PIPE-JOINT. Peter Patterson, McKeesport, Pa., assignor to the National Tube Works Company, same place. Filed Apr. 17, 1885. (No model.)

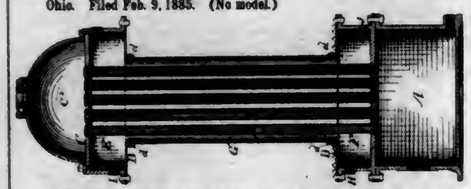


Claim.—1. In combination with wrought-metal tubing, the wrought-metal connecting-flanges welded thereto, and having the thin yielding portion *d* therein, substantially as and for the purposes set forth.

2. In combination with wrought-metal tubing, the wrought-metal connecting-flanges, each provided with the annular lip *c*, welded to the tubing, the thick body *e*, and the thin yielding portion *d*, between the body and lip, substantially as and for the purposes set forth.

3. In combination with wrought-metal tubing, the wrought-metal connecting-flanges, each provided with the annular lip *c*, welded to the tubing, the thin yielding portion *d*, and the thick body *e*, extending in front of said thin portion, and the ring *l*, fitting between said thin portions *d* within the joint, substantially as and for the purposes set forth.

323,957. FEED-WATER HEATER. James W. Pearce, Cleveland, Ohio. Filed Feb. 9, 1885. (No model.)



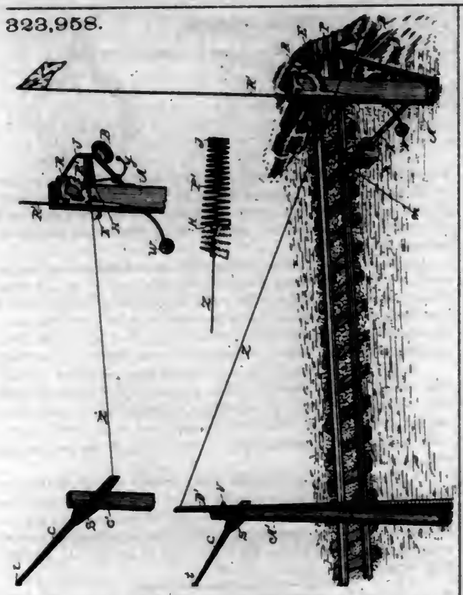
Claim.—In a boiler-feed heater, the combination, with the chamber A, flues B B, and chambers E F, and dome C', of the ring-plates D D and reduced cylinder G, whereby the expansion or stretching of the flues operates upon the said ring-plates, substantially as and for the purpose specified.

323,958. AUTOMATIC RAILWAY-SIGNAL. Jas. M. Pierce, Joliet, Ill. Filed July 9, 1884. (No model.)

Brief.—The train strikes the arm *c*, thus giving a vibratory motion to D' and through the connecting-wire to the spring D. At each forward vibration P engages one of the teeth upon the segment-ratchet, which is fastened to the flag-arm, and thus lowers it, where it is held in position by the trigger-bar E until released by the train passing over the treadle *m*.



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Claim.—1. In the railroad-signal described, the combination of post A, having the ratchet-segment R pivoted thereto, flag-bar R', spring-arm D', bell B, pawl P, and latch E, with post A', having the lever *c* and arm D', connected with arm D by the wire Z, and adapted to operate to lower the flag-bar and ring the bell, in the manner and for the purpose set forth.

2. In the railroad-signal described, the post A, having the segment-ratchet R pivoted thereto, flag-bar R', having the weight W, and the latch E, in combination with the ground-lever K, pivoted to the block *n*, and having the foot *m* and finger F, and adapted to disengage latch E from the teeth of segment-ratchet R to permit the flag-bar R' to rise, in the manner specified, and for the purpose set forth.

3. In the railroad-signal described, the segment-ratchet R, having the flag-bar R' attached thereto, in combination with the pawl, as described, and adapted to operate the flag-bar by means of lever *c* and wire Z, substantially as and for the purpose set forth.

4. In the railroad-signal described, the lever K, pivoted to the block *n* and finger F, and having the foot *m*, adapted to be depressed by the wheels of a passing train to raise the finger F to disengage latch E from ratchet R, in the manner and for the purpose set forth.

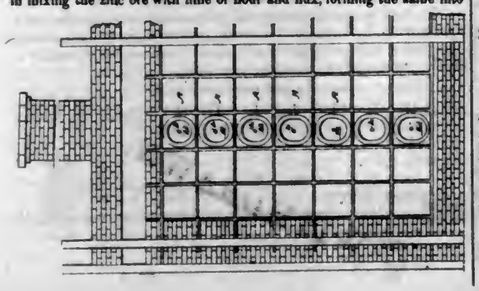
5. In the railroad-signal described, the lever *c*, connected with post A' by means of the conical spring S, and adapted to have universal movement, as specified, and for the purpose set forth.

6. In the railroad-signal described, the combination of the lamp L, having the hooked arms *d d'*, post A, and tilting flag-bar R', as and for the purpose set forth.

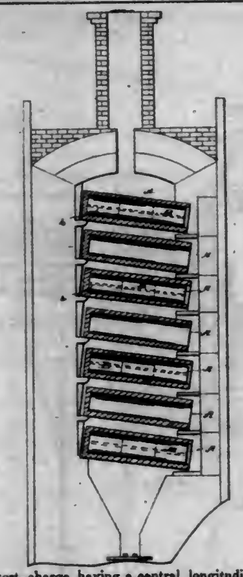
7. In the railroad-signal described, the post A', having the arm D', lever *c*, and spring S attached thereto, in combination with the post A, having the pawl-and-ratchet mechanism, as shown, connected with arm D' by the wire Z, and adapted to lower the bar R' and ring the bell B in the manner and for the purpose specified.

323,959. PROCESS OF PREPARING THE CHARGE FOR SPELTER-FURNACES. Enoch Phillips and Thomas Jones, Pulaski, Va. Filed Mar. 23, 1885. (No model.)

Claim.—The method of distilling zinc from fine ores, which consists in mixing the zinc ore with lime or flour and flux, forming the same into



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a cylindrical retort-charge having a central longitudinal flue, and subjecting these cylinders in suitable zinc-retorts to the action of external heat, as and for the purpose set forth.

323,960. DEVICE FOR SLICING VEGETABLES. William Popp, Pittsburg, Pa. Filed Nov. 3, 1884. (No model.)



Claim.—1. In vegetable-cutters, the combination, with the cutter-board, of one or more knives pivoted therein, and provided with lugs at each end, and sliding plates having inclined ways, on which said lugs rest, substantially as set forth.

2. In vegetable-cutters, the combination, with the cutter-board, of the guide-plates *f*, having guide-lugs f^2, one or more knives pivoted therein and having lugs *e*, and the sliding plates *g*, having slots fitting over the guide-lugs f^2, and having inclined ways *k*, substantially as and for the purposes set forth.

3. In vegetable-cutters, the combination, with the cutter-board, of one or more knives pivoted therein, and having lugs *e*, the sliding plates *g*, having inclined ways *k*, and the springs *l*, substantially as and for the purposes set forth.

4. In vegetable-cutters, the combination, with the cutter-board having one or more knives pivoted therein, and the sliding adjusting-plates, of the cross-plate *m*, nut *n*, and screw-bolt *r*, substantially as and for the purposes set forth.

5. In vegetable-cutters, the combination, with the cutter-board having one or more knives pivoted therein, and the sliding adjusting-plates, of the cross-plate *m*, carrying the nut *n* and bearing *p*, the partially-threaded bolt *r*, spring *s*, and pivot-plate *t*, substantially as and for the purposes set forth.

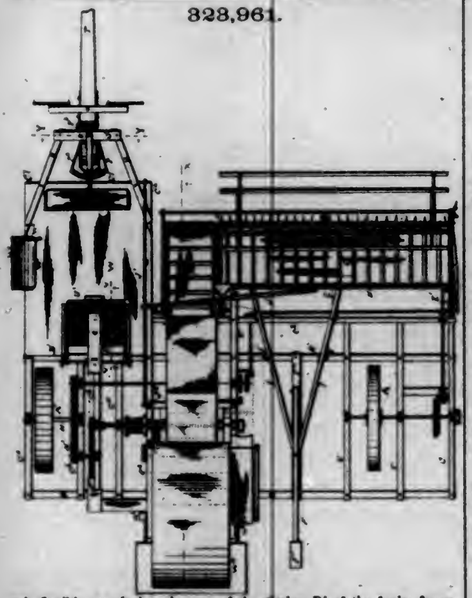
6. The knife for vegetable-cutters, formed of the side ribs, *c'*, and strip c^3, formed in one piece, and the thin steel blade riveted thereto, substantially as and for the purposes set forth.

323,961. COMBINED HEADER AND THRASHER. Thos. Powell, Stockton, Cal., assignor, by direct and mesne assignments, to the Stockton Combined Harvester and Agricultural Works, same place. Filed Jan. 19, 1884. (No model.)

Claim.—1. The frame carrying the thrasher, composed of the main timbers, in combination with the cross-timbers C, sustaining the axle of the wheel A, and the cross-timbers sustaining the axle of the wheel A', and the gearing connected therewith, two of the said cross-timbers sustaining the axle of said wheel A', and connections being extended and connected at their free ends, substantially as and for the purpose specified.

2. The balancing-lever, with its weight at the rear, and its front end flexibly attached to the timber F^2, in combination with the diverging levers *f f*, fulcrumed upon posts upon the timber B', and their free

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ends flexibly attached to the rear of the timber D′ of the feeder-frame, substantially as and for the purpose specified.

3. The combination, with the main frame-timbers and cross-timber F^3, of the timber D′ of the header-frame, the balancing-lever with its foot attached to timber F^3, and the diverging levers *f f*, attached at their front ends to the timber D′ and at their rear ends to said balancing-lever, substantially as and for the purpose specified.

4. The combination of the hand-lever J, pivoted at its inner end to the lever J′ and at its outer end to the timber D′, and fulcrumed on a post attached to the front end of the timber C′, substantially as and for the purpose specified.

5. The combination of the timber O′, connected to the platform W by the diagonal braces O O, the pole T, attached to the front of the timber O′, the plate P^2, located beneath and attached to the timber O′, the standard P′, carrying the steering-wheel P, the adjustable tiller S, the forked iron R, the rod S′, and the yoke P^1, substantially as and for the purpose specified.

6. The combination of the timber O′, the plate P^2, secured thereto, the timbers O O, the platform W, the pole T, and the standard P′, carrying the wheel P and seated in a hole through the plate P^2 and timber O′, substantially as and for the purpose specified.

7. The combination, with the pole T, of the yoke P^1, secured to the rear end of said pole and provided with the forked iron R, encompassing the steering-wheel P, and attached to the axle of the same, and having a tongue adapted to engage the notches in the yoke P^1, substantially as and for the purpose specified.

8. In a combined header and thrasher, the combination, with the receiving-draper G and feeding-draper H, arranged at right angles to each other, of the horizontal triangular board D^2, attached to the timber D′ and girder E at their intersections, substantially as and for the purpose specified.

9. The combination of the platform W, the receiving-box W′, having the drop-leaf W^2, and hand-lever W^3, substantially as and for the purpose specified.

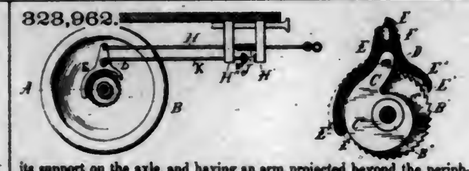
10. In a combined traveling thrasher and header, the sack-tender's platform W, having the sack-discharging apparatus at its outer edge, in combination with the timbers C^2, C^3, and C′, the thrasher and separator located upon said frame and between the timbers C′ and C^3, and resting upon the timbers B and B′, the timbers C^1, the timber C^2, uniting said timbers C, C′, and C^3, and the header-frame having the girders E, E′, and F^2 hinged to said timber C^2, substantially as and for the purpose specified.

328,962. CAR-STARTER. JOSHUA C. PEKE, Taylorsville, assignor of one-half to Augustin W. Wright and Freeman P. Roach, Chicago, Ill. Filed May 26, 1885. (No model.)

Claim.—1. A car-starter consisting of two ratchet-disks rigidly secured to the car-axle, and a rack or pawl pivotally supported above them on a cam disengaging lever journaled on the axle, substantially as shown and described.

2. In a car-starter, a lever provided with an enlargement back of its support on the axle, and having an arm projected beyond the periphery of the disks on the axle, and having an eye formed in the outer end of said arm, and a yoke mounted on said arm and secured thereto by a pin passing through the yoke and said eye in the arms, as and for the purposes specified.

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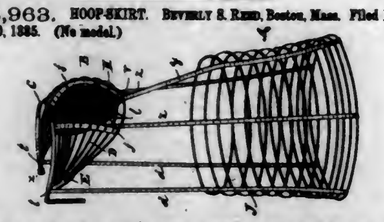


3. In a car-starter, an operating-yoke, constructed substantially as shown and described, having a socket in its under face for the admission of the yoke-support and provided with three radial arms, one of said arms being provided with an eye for the insertion of the end of the draw-bar, another with ratchet-teeth, and the third with a lug, which forms a bearing for the yoke when the same is at rest, substantially as set forth.

4. The combination of the two ratchet-disks secured on the car-axle, one of which is provided with an annular projection encircling the axle, a lever supported on the annular projection between the two disks, and the operating-yoke fitting over the upper end of the lever and pivotally secured thereto, substantially as shown, and for the purposes set forth.

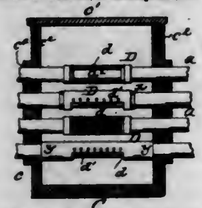
5. The combination, with the yoke pivotally secured on the projecting end of the fulcrum-lever and provided with teeth to engage the teeth on fixed disks, of the draw-bar attached to the eye of the yoke, a stop-bar having its rear end pivoted to the yoke, and a yielding cushion or bumper arranged to engage the forward end of the stop-bar, substantially as and for the purposes set forth.

328,963. HOOP-SKIRT. BEVERLY S. REED, Boston, Mass. Filed May 20, 1885. (No model.)



Claim.—In a hoop-skirt provided with a bustle and having a diaphragm or partition, the tapes *z z*, carrying the skirt, and extending upwardly between the ribs of the bustle and said partition, and having their upper ends attached to the waistband, substantially as and for the purpose set forth.

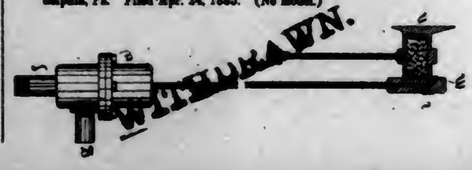
328,964. UNDERGROUND CONDUIT FOR ELECTRICAL CONDUCTORS. WILLIAM B. ROGERS, Philadelphia, Pa. Filed Sept. 27, 1884. (No model.)



Claim.—1. In an underground system of electric lines, the rectangular tapping-box C, having a removable cover, *c′*, lateral openings c^2, admitting main pipes A, and end opening, c^3, admitting branch pipes *f*, in combination with open-section pipes A, provided with open-section sleeves D, perforated so that wires may pass from the main pipes into the branch pipes, substantially as shown and described.

2. In an underground system of electric lines, the combination, with tapping-boxes C, of line-pipes *a*, having open sections a^2, and provided with rotating open-section sleeves D, whose length equals the width of the box, substantially as shown and described.

328,965. STEAM AND GAS GOVERNOR. THOMAS SHAW, Philadelphia, Pa. Filed Apr. 24, 1885. (No model.)

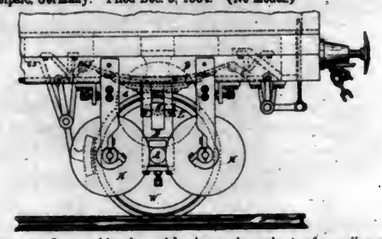


Claim.—1. The combination, with the gas-chamber having inlet and outlet pipes, of a float-valve controlling the passage of the gas, and a heat-pressure appliance for controlling the valve, substantially as described.

2. The combination, with a gas-chamber having inlet and outlet pipes, of a valve controlling the passage of the gas, a fluid pressure-chamber, connected to the gas-chamber, to control the valve, the said fluid-pressure being controlled by heat generated by the gases passing through the gas-chamber, substantially as described.

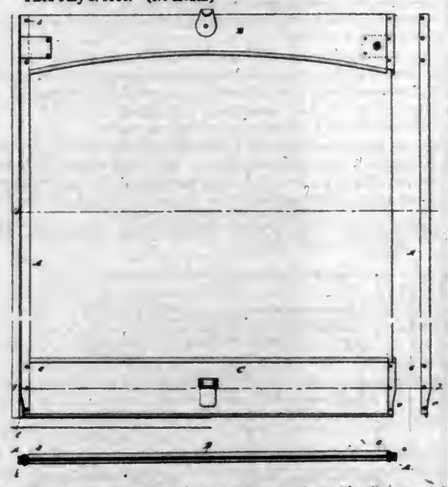
3. The combination of the gas-chamber *a b*, having inlet and outlet pipes *g f*, a float-valve, *d*, therein controlling the flow of gas through said chamber, a fluid-pressure chamber, *m*, connected to the gas-chamber by pipe *i*, and a pipe, *k*, connected to the fluid-pressure chamber and adapted to control the pressure in accordance with the heat generated by the gases flowing through the gas-chamber, substantially as described.

328,966. ANTI-FRICTION AXLE-BEARING. AUGUST W. SPATHER, Leipsic, Germany. Filed Dec. 5, 1884. (No model.)



Claim.—In combination with the main axle A of a railway-car, steam-engine, or other machine, the central friction-roller, G, and the side friction-rollers, H H, supported in adjustable bearings or frames L, and acted upon by set-screws N, in the manner and for the purpose described.

328,967. CAR-WINDOW SASH. JOHN STEPHENSON, New York, N. Y. Filed July 3, 1885. (No model.)



Claim.—1. A tram-car having window-sashes with stiles of metal in channel-bar form, and the rails of wood, as and for the purpose set forth.

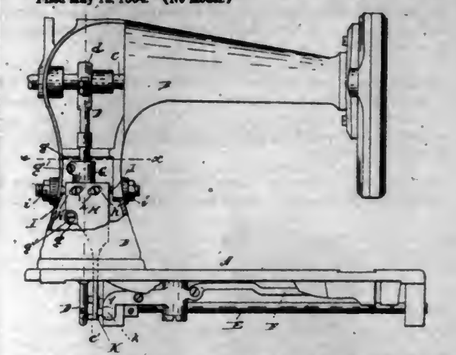
2. A tram-car having window-sashes with metal stiles, the ends of the top and bottom rails being inserted into the channels and there secured by screws or rivets passing through the flanges of the channel-bars and into the wood rails, as and for the purpose set forth.

3. A car-window sash with stiles of metal channel-bars, holding the ends of the top and bottom rails, with the end grains of the wood in contact with the bottoms of the channels, as and for the purpose set forth.

4. A car-window sash having metal stiles of channel-bar form, the channels filled with india-rubber corresponding to the channel, and the face of the rubber at the open side of the channel having a groove to receive the window-glass, as and for the purpose set forth.

5. A car-window sash having stiles of metal channel-bars, with the lower ends of each metal stile shaped angular to fit the corner-block of the pillar at its junction with the belt-rail, as and for the purpose set forth.

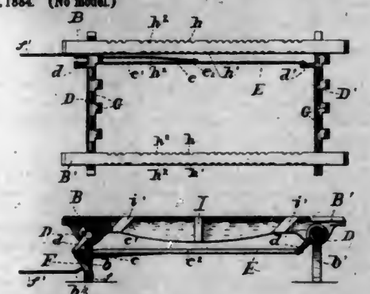
328,968. SEWING-MACHINE. WILLIAM J. STEWART, Belleville, Ill. Filed May 12, 1884. (No model.)



Claim.—1. In a sewing-machine, the combination, with the main shaft and feed-shaft and the pitman-lever connecting the two, of the guide embracing the pitman-lever and adjustably secured to an oscillating shoe mounted on suitable pivots, substantially as and for the purposes specified.

2. In a sewing-machine, the combination, with the main shaft and feed-shaft and the pitman-lever connecting the two, of a guide embracing the lever and adjustably secured to a shoe mounted on suitable pivots, and having a finger arranged to engage with and operate the shuttle-lever, substantially as and for the purposes specified.

328,969. SHAKING-GRATE. EDWARD H. STONE, West Bay City, Mich., assignor of one-half to Robert S. Hannah, same place. Filed Dec. 11, 1884. (No model.)



Claim.—1. In a shaking-grate, the combination, with movable bars having side teeth and a rock-shaft on which said bars are seated, of an exterior side bar having interior side teeth arranged at an angle to the teeth on the contiguous side of the movable bar next to it in the series, substantially as set forth.

2. In a shaking-grate, the combination, with stationary outside bars having, respectively, a smooth top and teeth on the interior side, and a rock-shaft, of a series of smooth-top movable bars mounted on said shaft, the bars next to said outside bars having teeth on their sides contiguous to said outside bars, said teeth arranged at an angle to the contiguous teeth of the outside bars, substantially as set forth.

3. In a shaking-grate, the combination, with a rock-shaft and a movable bar provided with lateral vertical teeth, of a movable bar provided with lateral oblique teeth, said vertical and oblique teeth located oppositely and contiguously to each other, substantially as set forth.

4. A grate-bar with a smooth top, having lateral teeth on both its sides, said teeth on one side of said bar being vertical, and said teeth on the other and opposite side of said bar being oblique, substantially as set forth.

5. In a shaking-grate, the combination, with a rock-shaft, of a series of movable bars, each bar having one of its sides provided with a series of oblique teeth, and its other side provided with a series of vertical teeth, said bars so located in relation to each other that the oblique teeth of one bar will be contiguous and opposite to the vertical teeth of its adjoining bar, and so on through the series, substantially as set forth.

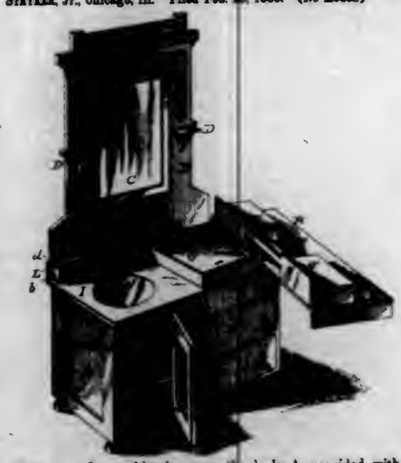
6. A grate-bar having a downward central swell, and provided on each of its sides with a central bearing-shoulder, said two shoulders being opposite to each other on a cross-line, and said bar also being provided near each of its ends with additional shoulders, said latter shoulders on one side of said bar being vertical, and those on the other and opposite side being oblique, substantially as set forth.

7. In a shaking-grate, the combination, with rock-shafts D D′, having, respectively, the two series of alternating cogs G, as described,

of a series of movable grate-bars, C, each bar having open eyes h^3 h^4, with hooked points h^5, one of said eyes located nearer to its end of the bar than is the other eye to its end of the bar, said bars seated upon the shafts alternately with each other in reference to the said location of the eyes, substantially as set forth.

8. In a shaking-grate, the combination of rock-shafts D D', lever-rod E, having its rear end pivoted to ear d' on D', and its forward end, d', pivoted to lug d on D, and arm e pivoted to lever-shaft F, said lever-rod so pivoted in its different parts as to bring the corresponding cogs on each respective shaft into corresponding directions to each other, substantially as set forth.

323,970. COMBINED WASH-STAND AND BUREAU. James M. Stryker, Jr., Chicago, Ill. Filed Feb. 25, 1885. (No model.)



Claim.—1. In combination with the body A, provided with stationary back B and glass C, tank K, and bowl J, horizontally-swinging top R, independent of the upright back and glass and adapted to cover or uncover the tank and bowl at will.

2. In combination with the body A, having bowl J, tank K, and tray P, swinging top R, provided with recess or chamber s and strip g.

3. The combined bureau and wash-stand, consisting of body A, provided with back B, having glass C and tray P, drawers E, compartment C, slab I, bowl J, tank K, pipe M, faucet N, and swinging top R, having recess E, all constructed, combined, and arranged to operate substantially as described.

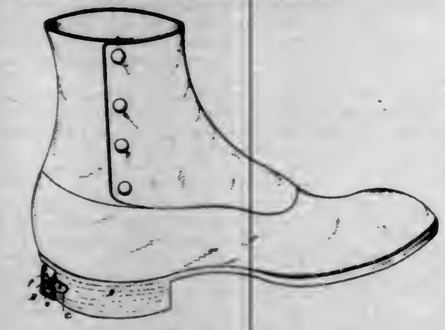
4. In combination with body A and tank K, provided with socket A, pin or stem T, secured within said socket, and swinging cover R, provided with depending journals S, having socket l to receive the pin or stem T, substantially as and for the purpose explained.

5. In combination with body A, provided with bowl J and water-tank K, towel-rack L, consisting of vertical plate a and end plates, b b, substantially as shown.

6. In combination with body A, having back B, provided with opening d, bowl J, tank K, and towel-rack L, located in front of opening d, as and for the purpose set forth.

7. In combination with bureau-body A, the top cast in one piece, and consisting of slab I, bowl J, and tank K.

323,971. SPRING-HEEL FOR BOOTS OR SHOES. George E. Swan, Beaver Dam, Wis. Filed Dec. 22, 1884. (No model.)

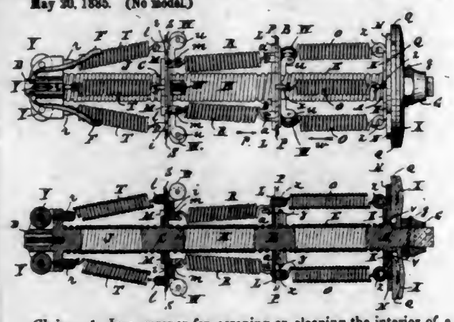


Claim.—1. The herein-described cushion attachment for boots or shoes, consisting of an elastic cushion having the re-enforcing rib and a bracket for its attachment, substantially as set forth.

2. The herein-described cushion attachment for boots or shoes, consisting of an elastic cushion having the seat upon its outer face and a bracket for its attachment, substantially as set forth.

3. The combination, with the heel of a boot or shoe, of an elastic cushion having a re-enforcing rib at its lower end, and a shoulder having an opening near its upper end, said rib and shoulder forming a seat for a bracket adapted to fit said seat, substantially as set forth.

323,972. SCRAPER. David H. Sweney, Fitchburg, Mass. Filed May 20, 1885. (No model.)

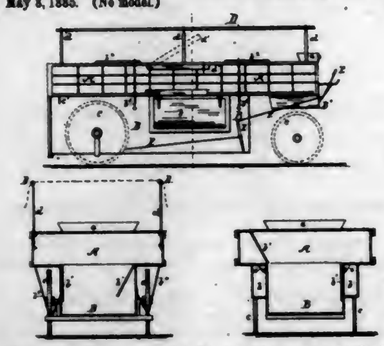


Claim.—1. In a scraper for scraping or cleaning the interior of a water-pipe, the combination of the following instrumentalities, to wit: a flexible body consisting of a base-piece, a head-piece, and one or more flanged body-pieces connected by coiled springs, a series of hinged scrapers arranged radially around the body piece or pieces, springs adapted to draw or keep the hinged scrapers at right angles to the body when in use, guard-wheel for keeping the scrapers out of close contact with the interior of the pipe, guide-springs attached to the head-piece for centering the same, and a suitable packing disposed at the rear of the scraper, against which the water presses in forcing the scraper through the pipe, substantially as described.

2. In a scraper for scraping or cleaning the interior of a water-pipe, the base-piece A, provided with the flange K, hinged arms N, scrapers Q, and packing-disk X, the flanged body-pieces B C, provided with the hinged scrapers S P, the head-piece D, and springs O R T E H J, combined and arranged to operate substantially as set forth.

3. In a scraper for scraping or cleaning the interior of a water-pipe, the wheels W, journaled in brackets on the hinged scrapers P, in combination with the pieces A B D, springs for flexibly connecting said pieces, and a suitable packing for the scraper, substantially as described.

323,973. WAGON-BODY. William H. Tees, Allegheny, Pa. Filed May 8, 1885. (No model.)



Claim.—1. The combination, in a moving-wagon, of the beds A and B with the standards d d and the pole D, substantially as described and shown.

2. The combination of the beds A and B, doors b', chains b^3, and slides b^2, substantially as described and shown.

323,974. ELECTRIC PRIMER. Richard H. S. Thompson, New York, N. Y. Filed Nov. 28, 1884. (No model.)

Claim.—1. As a new article of manufacture, an electrical igniter for cartridges, consisting of a non-conducting body, and a conductor embedded therein and arranged to make contact with the firing-electrodes, the igniter being constructed to be applied to and removed from the priming-recess of an ordinary cartridge, substantially as described.

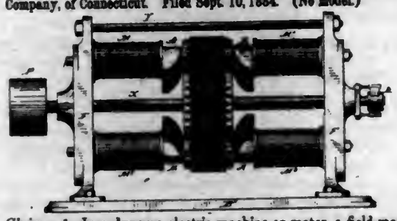
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2. An electrical igniter consisting of a body of non-conducting material having electric conductors embedded therein, and having a recess in its forward end containing the explosive or fulminate, the whole being adapted to fit the priming-recess of an ordinary cartridge, substantially as described.

3. An electrical igniter for cartridges, consisting of a body of non-conducting material, electric conductors embedded in such material, the outer ends of the conductors being bent and curved, as described, and a mass of fulminating material held in a recess in front of the igniter, in which the forward parts of the conductors are embedded, substantially as described.

323,975. DYNAMO-ELECTRIC OR ELECTRO-DYNAMIC MACHINE. Elihu Thomson, Lynn, Mass., assignor to the Thomson-Houston Electric Company, of Connecticut. Filed Sept. 10, 1884. (No model.)



Claim.—1. In a dynamo electric machine or motor, a field-magnet core having an extension, as a, and sheet-iron plates secured to said extension and forming the pole-pieces acting on the armature.

2. In a dynamo-electric machine or motor, a field-magnet pole-piece constructed from a number of superimposed sheet-iron plates, which are each bent in a plane parallel to the plane of the rotation and having a curved edge presented to the armature.

3. The combination, with the field-magnet core, of the perforated extension a, and a series of thin sheet-iron plates bolted to said extension and forming the field-of-force pole-piece.

4. In a dynamo-electric machine or motor, an armature having a series of magnets supported in a suitable frame and revolved bodily around the axis of said frame, each of said magnets having a core composed of a number of H-shaped pieces of iron mounted so that the edges of their legs shall form the poles of the magnets.

5. In a dynamo-electric machine or motor, an armature consisting of a frame carrying a series of electro-magnets, each consisting of a bundle or pile of H-shaped iron plates wound with insulated wire.

6. An armature-core mounted on a revolving carrier with its magnetic axis transverse to the plane of rotation, and provided with spaces, as s s, extending radially through its poles for the passage of bolts, whereby it may be fastened to its carrier.

7. The combination, with the armature-magnets mounted on a suitable frame with their magnetic axes parallel to the shaft, by which said frame is revolved, of fastening-bolts passing radially through openings in polar extensions of said magnets into the frame, as and for the purpose described.

8. The combination, with a non-magnetic carrier mounted on a suitable shaft, of a series of magnets having their axes parallel to the shaft, the insulated plates or washers L L, and the fastening-bolts passing transversely through the magnet-poles and the plates L, as and for the purpose described.

9. The combination, with the magnet-core, made up of a series of thin H-shaped pieces of iron, of the side plates, D, having rounded body, and retaining-flanges to keep the armature-coils in place.

10. The combination, with a series of armature-magnets mounted on a suitable frame, of connecting-links, as V, for the purpose described.

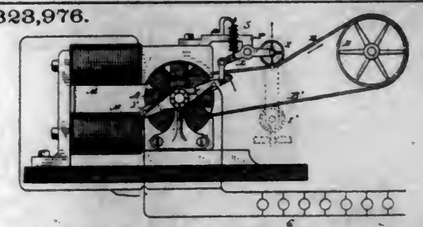
11. The combination, with the series of armature-magnets having laterally-projecting pins, of retaining-links strung on said pins, as and for the purpose described.

12. The combination, with a series of armature-magnets mounted on the periphery of a suitable frame and parallel to the armature-shaft, of bolts passing transversely through the poles of the magnets for securing them to the frame, and a retaining-band, G, less in width than the length of the magnet-cores, so as to permit the easy removal of an armature magnet or magnets, as and for the purpose described.

323,976. AUTOMATIC COMMUTATOR-ADJUSTER FOR DYNAMO-ELECTRIC MACHINES. Elihu Thomson, Lynn, Mass. Filed Apr. 2, 1885. (No model.)

Claim.—1. The combination, substantially as described, of an adjustable commutator and a load or strain detector combined with said commutator and controlling the adjustment thereof in accordance with the shifting in position of the neutral line, so that on a shifting of the

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neutral line by difference in strain or load the commutator shall be automatically set or adjusted to follow such shifting.

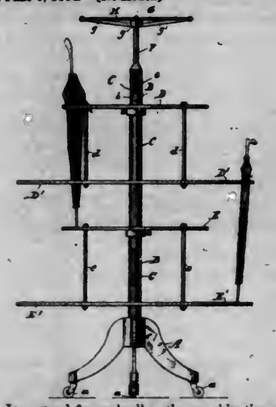
2. The combination, with a dynamo-electric machine, of an adjustable commutator, a load or strain detector, and devices controlled thereby for varying the set or adjustment of the commutator in the proper directions to compensate for the shifting of the neutral line.

3. The combination, with a dynamo-electric machine whose armature supplies electric lamps or other devices in multiple arc, of an adjustable commutator, a load or strain detector, and mechanism operated thereby and connected with the commutator, as described, and controlling the set or adjustment of the same, in the manner described, so as to follow the shifting of the neutral line.

4. The combination, with a dynamo-electric machine or generator supplying lamps or other devices in multiple arc, and having its field-magnet coils in a derived circuit, of an adjustable commutator, a load or strain detector, and mechanism connected with the same and with the commutator, in the manner described, to cause an adjustment in a forward direction, to compensate for a shifting forward of the neutral line when an increase in the current delivered by the armature takes place.

5. The combination, with the armature and its driving shaft or pulley, movable with relation to one another in an angular direction, of an intermediate spring or springs and a commutator-cylinder loose upon the driving-shaft, and connected with said shaft through devices whereby it may be adjusted in a backward direction on an increase of load.

323,977. UMBRELLA SHOW-STAND. Theodore M. Tosch, Concord, N. H. Filed June 9, 1884. (No model.)



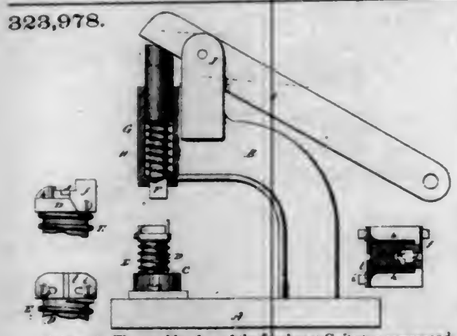
Claim.—1. In a stand for umbrellas, the combination of the holders D D', connected together by suitable rods, d, with the disk E and ring E', connected together by suitable rods, e, all constructed substantially as described, the holder D and disk E being fastened adjustably to a central vertical rod or tube projecting from a suitable base for the purpose of displaying umbrellas in annular tiers, as set forth.

2. In a stand for umbrellas, the tube C, carrying the parts D D' E E', constructed substantially in the manner described, provided at its top with a suitable plug, which is bored as set forth, in combination with the rod B, having cone-point b, upon which said tube may revolve, as and for the purpose specified.

323,978. PRESS FOR SETTING LACING-HOOKS. Edgar H. Train, Union City, Conn. Filed Dec. 26, 1884. (No model.)



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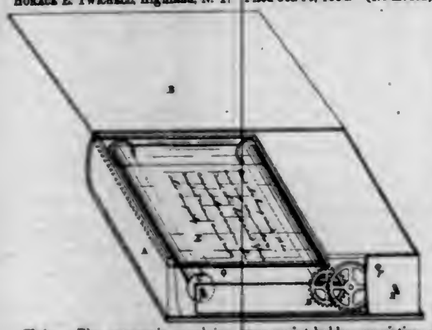


Claim.—1. The combination of the fixed post C, its top corresponding to the face of the hook, and constructed to form a shoulder, *a*, as a stop for the nose of the hook, the sleeve D, surrounding said post, and having an opening in its top, constructed with sides corresponding to and constituting supports for the several prongs of the hook, a spring arranged to support said sleeve with its said sides above the end of the post, and a vertically-movable follower in line with the said post, and having cavities in its face corresponding to the respective rongs of the hook, substantially as and for the purpose described.

2. The combination of the fixed post C, having its upper face corresponding to the face of the hook to be set, and constructed with a shoulder, against which the nose of the hook will rest, a sleeve surrounding said post, having an opening in its upper end, constructed with sides corresponding to and constituting supports for the several prongs of the hook, and a spring arranged to support said sleeve with the said opening above the post, and a vertically-movable follower in line with said post, constructed with cavities upon its face corresponding to the several prongs, and an adjustable guide, *b*, arranged upon said sleeve, substantially as and for the purpose described.

3. The combination of the fixed post C, having its upper face recessed corresponding to the face of the hook, and constructed with a shoulder, *a*, against which the nose of the hook will bear, a sleeve, D, movable on said post, constructed with an opening in its upper end, constructed with sides correspooding to and constituting supports for the several prongs of the hook, a spring arranged to support said sleeve, with the said opening above the end of the post, and a vertically-movable follower in line with said post, its under face constructed with cavities corresponding in number to the prongs of the hook, each cavity inclined from the face of the follower inward and upward, the inner end of the cavity curved downward to the face of the follower, substantially as and for the purpose described.

323,979. AUTOMATIC REVOLVING MANUSCRIPT-HOLDER. Horace E. Twichell, Highland, N. Y. Filed Oct. 16, 1884. (No model.)



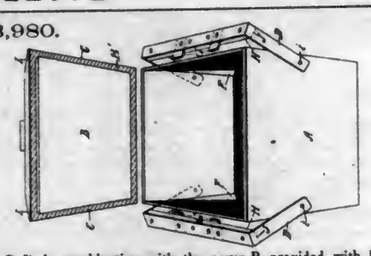
Claim.—The automatic revolving manuscript-holder, consisting of the body A, made in the form of a book, and having the cover B opening at one side, lens E, supported beneath cover B, and rollers C and C', the roller C' having a toothed wheel, D, engaging with the spring-train, said train being provided with the stop F, the whole combined and arranged to operate substantially as shown and described.

323,980. AIR-TIGHT PACKAGE FOR BUTTER. Cyrus D. Van Allen, Brussels, Ontario, Canada. Filed Nov. 1, 1883. (No model.) Patented in Canada June 16, 1883, No. 14,938.

Claim.—1. As a new article of manufacture, a package, A, provided with beveled corners F F, substantially as shown and described, and for the purpose specified.

2. The clamps H H, provided with beveled sides J J and pivotal

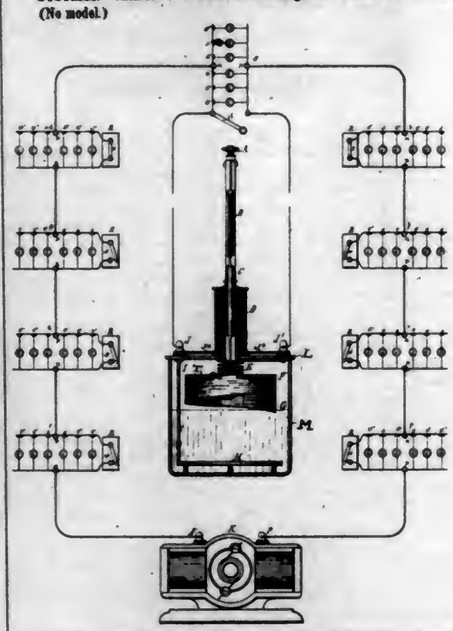
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bands D D, in combination with the cover B, provided with beveled edges I I, and package A, substantially as shown and described, and for the purpose specified.

3. The combination of the package A, provided with beveled corners F F and water-proof casing or lining E, with pivotal bands D D, clamps H H, cover B, packing C, and straps G G, substantially as shown and described, and for the purpose specified.

323,981. REGULATOR FOR INCANDESCENT ELECTRIC LIGHTING SYSTEMS. Charles J. Van Depoele, Chicago, Ill. Filed Apr. 18, 1884. (No model.)



Claim.—1. In a system of electric lighting by incandescence, a series of groups of lamps or other working-resistances arranged in multiple arc, each group being provided with a regulator consisting of a solenoid in multiple arc from the lamps and suitable intervening mechanism controlled and operated by said solenoid, and adapted to divert more or less current through a fluid or liquid by-pass in case of danger to the lamps, substantially as described.

2. In a system of electric lighting by incandescence, a series of groups of such lamps all in circuit with a generator of electricity of proper current strength provided with automatic regulation, each group of lamps being also provided with means, as described, for automatically shunting more or less current through a branch or derivation from said lamps, the branch consisting of water slightly acidulated, substantially as described.

3. In a system of electric lighting by incandescence, a series of groups of lamps, substantially as described, each group including an automatic device consisting of a movable contact operating through a conducting fluid and actuated by a helix through which the current circulates parallel with the lamps, to allow a larger or smaller portion of the main current to be shunted through said fluid, in order to maintain the normal brilliancy of the lamps in each group, whether one or all of the lamps therein are in operation, as described and set forth.

4. In a system of electric lighting by incandescence, a series of groups of lamps placed in circuit with a proper generator of electricity, each group being provided, first, with a hand-switch for cutting the lamps out by giving an easier path through said switch than through the lamps;

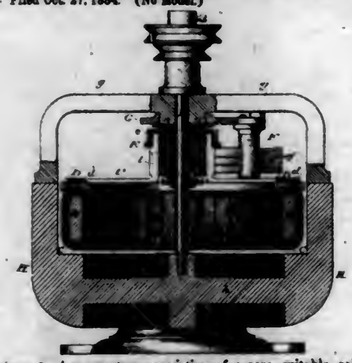
second, an electro-magnetic device consisting of a solenoid and core, said solenoid having the same resistance as each individual lamp in said groups, and placed in circuit parallel with said lamps; and, third, with a by-pass or branch through a liquid consisting of acidulated water or its equivalent, the amount of current diverted from the lamps through the liquid being regulated by means of two properly-connected conducting-plates arranged to be brought closer to or farther from one another while immersed in the fluid by means of the above-named solenoid, said conducting-plates being connected one with the positive terminal of its own group and the other with the negative terminal of the same group, substantially as and for the purpose herein specified.

5. In a system of electric lighting by incandescence, the combination of a multiple-arc group of such lamps with a solenoid operating a liquid by-path, said solenoid having the same or nearly the same resistance as each individual lamp, and being connected parallel with the group, a vessel containing acidulated water in which the conducting-plates connected parallel to the groups of lamps are arranged to be approached or withdrawn from each other by the action of the above-named solenoid, according to the amount of current flowing through the lamps in each individual group, and a hand-switch by means of which the current can be entirely diverted from the lamps when not needed, substantially as described.

6. In a system of electric lighting by incandescence, where the lamps are placed in a series of groups, a current-controller consisting of a solenoid placed in a derivation from the lamps of a group, said solenoid acting upon a core to which is attached a contact-plate suspended over a vessel containing acidulated water, and a second contact-plate so arranged and disposed that whenever the current in the lamps becomes abnormal said core will either raise or lower the suspended contact-plate, thus allowing more or less current to be sent through the lamps in its group, in order to keep their brilliancy constant, substantially as described.

7. The combination, with a group of working-resistances arranged in multiple arc, of an automatic current-regulator therefor, consisting of the fixed plate H, liquid G, movable contact-plate F, and supporting disk or frame T therefor, constituting a by-pass parallel to the group, and a solenoid also arranged and connected parallel with the group, a movable core mechanically connected to the plate F, and an adjustable tension-spring for modifying the action of said core, substantially as set forth and described.

323,982. ELECTRIC MOTOR. Charles J. Van Depoele, Chicago, Ill. Filed Oct. 27, 1884. (No model.)



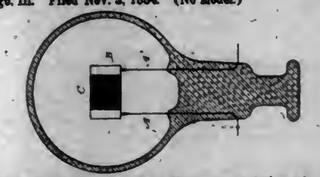
Claim.—1. An armature consisting of a core, suitable coils upon said core, an insulated ring, to which each of said coils is attached by a loop extending therefrom, and a commutator formed of metallic segments sufficiently elongated to be adapted, when permanently secured by their outer ends to the loops of the armature-coils, to form spokes radiating from the commutator and supporting said coils, substantially as described.

2. The combination of an insulating-hub secured to the driving-shaft, L-shaped metallic strips, the shorter arms of which are embedded in the surface of the hub, an insulated cap, *c*, for retaining the outer ends of said short arms, and a series of armature-coils provided with loops, to which the longer and radiating arms are permanently secured, substantially as described.

3. In an electric motor, a field-magnet having a substantially diamond-shaped core, and pole-pieces extending from the extremities thereof at right angles thereto.

4. In an electric motor, the combination of a U-shaped field-magnet having a centrally-enlarged or diamond-shaped core, and pole-pieces extending at right angles therefrom, a commutator mounted upon a shaft journaled vertically between said pole-pieces and having conducting-arms integral with the commutating segments, and extending radially at right angles therefrom, and an armature the coils of which are secured to and supported by their respective conducting-arms.

323,983. INCANDESCENT LAMP. Charles J. Van Depoele, Chicago, Ill. Filed Nov. 3, 1884. (No model.)

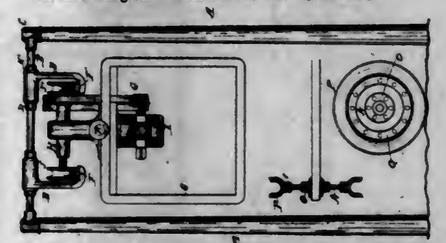


Claim.—1. An incandescing filament consisting of a non-homogeneous aggregation of carbonized fibers, substantially as described.

2. An incandescing filament composed of an indefinite number of small individual fibers not necessarily continuous throughout the entire length of the filament, but intermingling with each other and affording numerous conducting-passages through the conducting medium, substantially as set forth.

3. An incandescing filament composed of an aggregation of short fibers interlaced so as to form numerous continuous passages throughout the entire filament, said fibers being united at their extremities, whereby the filament is adapted to be connected by suitable clamps with the line-wires entering the lamp, substantially as set forth.

323,984. SUSPENDED ELECTRICAL CONVEYER. Charles J. Van Depoele, Chicago, Ill. Filed Mar. 10, 1885. (No model.)



Claim.—1. In a system of suspended electrical conveyers, the combination, with two supporting-conductors and an electromotor traveling thereon, of two supporting-wheels running on said conductors, one of said wheels being in electrical connection with one pole of the motor and the other wheel with the other pole of the same, and each supporting-wheel having an axle running in a bearing arranged above the conductors and connected to and supporting a car below the same, substantially as described.

2. In a system of suspended electrical conveyers, the combination, with two supporting-conductors and an electromotor traveling thereon, of two wheels running on said conductors and supporting a car, one of said wheels being in electrical connection with one of the poles of the motor and the other with the other pole thereof, and carrying a car below the conductors by a connection passing between the same, substantially as described.

3. In a system of suspended electrical conveyers, the combination, with two supporting-conductors, of a car and a motor both suspended below and by said supporting-conductors, and axle carrying supporting and driving wheels, one of which acts as an electrical connection between the supporting-conductor and the motor, and intermediate connections, substantially as described, between the motor and the axle passing between the conductors for transferring motion from the motor to the axle, substantially as described.

4. In a system of suspended electrical conveyers, the combination of the uprights A, cross-bar B, the hangers D, the conductors supported on said hangers and insulated from the cross-bar, and the car G, hung below said conductors by standards passing between them, and carrying bearings for the supporting and driving axles.

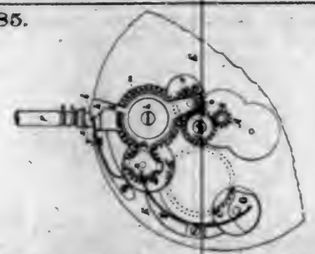
5. In a system of electric cable conveyance, and in combination with the car and electric motor thereof, the posts A, the cross-bar B, the hangers D, insulating-sleeves E, and the cables F F', substantially as described.

323,985. STEM WINDING AND SETTING WATCH. Nicholas R. Varney, Waltham, Mass. Filed Jan. 12, 1885. (No model.)

Claim.—The combination of the yoke D, its operative spring F and bevel-gears *b* and *m'*, and the key *p*, having the shoulder or fixed collar *x*, the grooves *u* and *v*, and their latch or latches *t*, with the arm *i*

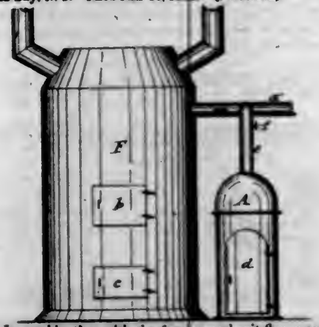


323,985.



and its notched cam *k*, and the spring *m*, provided with the ear *y*, such ear being to extend under and bear against the said shoulder, and such spring *m* being fixed to the pillar-plate, and such arm *i* being extended from the yoke, and all being to operate substantially as set forth.

323,986. ASH-RECEPTACLE FOR FURNACES. ELISHA W. VIDGER, Alexandria Bay, N. Y. Filed Jan. 10, 1885. (No model.)



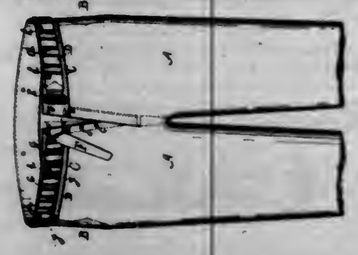
Claim.—In combination with the furnace and exit flue, a case separate and detached from the furnace and its ash-pit, a pipe leading from said case to the exit-flue, and an ash-receptacle removably inclosed in the case, substantially as set forth and shown.

323,987. HUNTING-JACKET. FRANK WALLOCH, New York, N. Y., assignor to Isaac Walloch, same place. Filed Jan. 17, 1885. (No model.)



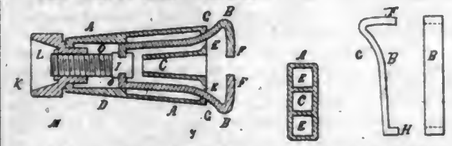
Claim.—As a new article of manufacture, a hunting-jacket provided with a belt made in two sections, the inner one of which is secured to the jacket to form a waistband thereto, and the outer section gathered to form continuous pockets of different sizes, the smaller ones of which are closed at the bottoms and the larger ones open at the top and bottom, said belt having formed therewith an extension or strap to engage a buckle, as shown and described.

323,988. PANTALOONS FOR HUNTERS, &c. FRANK WALLOCH, New York, N. Y., assignor to Isaac Walloch, same place. Filed Jan. 17, 1885. (No model.)



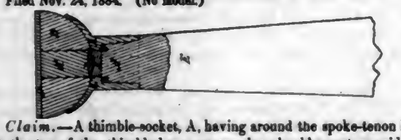
Claim.—The combination, with the waistband of a pair of pantaloons, of a belt secured thereto, as described, said belt having its body portion gathered and forming pockets of different sizes, the smaller ones of which are closed at the bottoms and the larger ones open at the top and bottom, whereby cartridges of different sizes may be inserted therein, as shown and described.

323,989. BIT-STOCK. WILLIAM S. WASHBURN, East Bridgewater, Mass. Filed Oct. 8, 1884. (No model.)



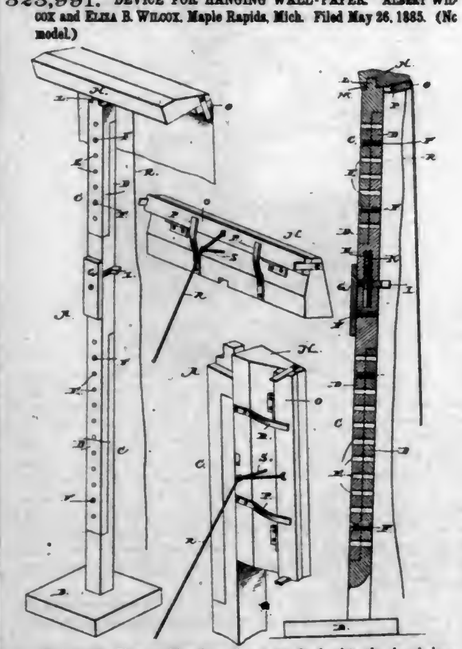
Claim.—In a bit-stock having a rectangular tapering socket in the head for holding the tang of the bit, the combination of the screw-spindle located in the hollow recess of the stock, at the opposite end to the tang-socket, said spindle being provided at its upper end with the limiting-pin K and the nut L and at its lower end with the slots I, with the jaws B B passing through apertures on either side of the tang-socket and engaging, by their hooks H, with the slots I of the spindle, substantially as described.

323,990. SPOKE-SOCKET. M. SCOTT WELLER, Charlestown, W. Va. Filed Nov. 24, 1884. (No model.)



Claim.—A thimble-socket, A, having around the spoke-tenon hole *b*, at the top of the thimble-bone, an annular shoulder-rest, *c*, said annular rest also forming the base of the counter-curving arms of the united felly-clamp *h*, and also furnished with the interchangeably substitutive socket-cap F, having a sharp-edged spur-rib, *n*, rising from its top surface, substantially as and for the purposes herein specified.

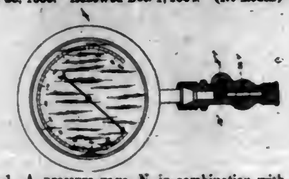
323,991. DEVICE FOR HANGING WALL-PAPER. ALBERT WILCOX and ELISHA B. WILCOX, Maple Rapids, Mich. Filed May 26, 1885. (No model.)



Claim.—1. The combination of the standard with the head, having means for securing one end of the paper, said standard being composed of the perforated pieces, which are adapted to slide one upon the other, and screws, bolts, or pins passing through the openings in the sliding pieces and securing them together, substantially as described.

2. The combination, with the standard and the head, having means for securing one end of the paper, the standard being composed of the upper and lower sections, which are each composed of the sliding pieces having a series of openings and screws for securing them together, of the screw H on one section for entering an opening formed in the other section, the thumb-nut on the screw, and the button G, substantially as described.

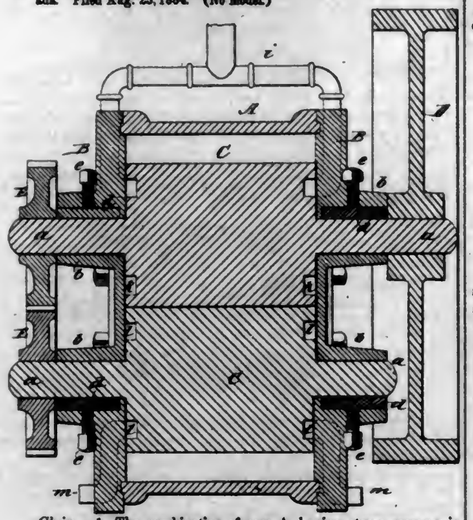
323,992. PRESSURE-GAGE. STEPHEN WILCOX, Brooklyn, N. Y. Filed Oct. 25, 1883. Renewed Dec. 1, 1884. (No model.)



Claim.—1. A pressure-gage, N, in combination with a self-acting valve, *n'*, and with a contracted aperture adapted to allow the movement of a fluid freely and rapidly in one direction and only very slowly in the opposite direction, as herein specified.

2. The adjustable cock or valve N', in combination with the freely-opening valve *n'*, and with suitably connected passages to a pressure-gage, N, adapted to allow the pressure in the gage to change freely in one direction, and under variably-retarded conditions in the other direction, as herein specified.

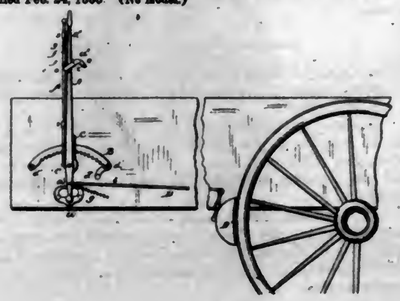
323,993. ROTARY ENGINE. ADMA WILDERN, Vienna, Ontario, Canada. Filed Aug. 23, 1884. (No model.)



Claim.—1. The combination of case A, having steam-passages in its heads, and rollers C, formed with pistons *f* and grooves *g*, and having passages *k l* in their ends, substantially as described, for operation as specified.

2. In a rotary engine, the combination, with the case A and the shafts *a*, carrying the cylindric cores, of the half-boxes *d*, adjustable upon the said shafts by adjusting or set screws *e*, inserted through boxes of the heads of the case A, and bearing upon said half-boxes, substantially as and for the purpose set forth.

323,994. BRAKE-LEVER. EDWIN B. C. WILLSON, Wind Ridge, Pa. Filed Feb. 24, 1885. (No model.)

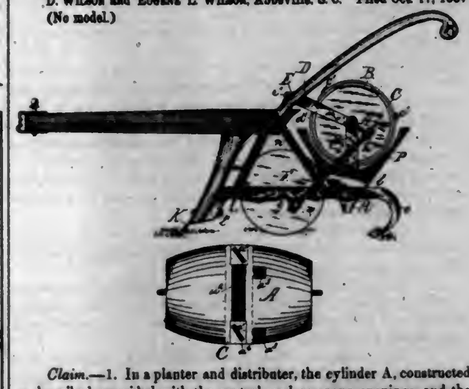


Claim.—1. The combination, in a brake mechanism for vehicles, consisting of the main lever, the auxiliary clutching-lever provided with lateral projections, and the bifurcated foot-operating lever arranged to operate the auxiliary clutching-lever by contact with the lateral projections of the same.

2. The combination, in a brake mechanism for vehicles, consisting of the main lever, the toothed segment and clutch, the auxiliary lever provided with lateral projections, the spring for releasing the clutch, and the bifurcated foot-operating lever arranged to operate the auxiliary clutching-lever by contact with the lateral projections of the same, as set forth.

3. In a brake mechanism for vehicles, the combination, with the bar B, having portion *b* and the standards by which said bar is secured, of the slotted main lever moving on the bar and having fulcrum with enlarged base, the detent formed of the part 1 and the upwardly-extending oblong portion that embraces the bar, the bifurcated auxiliary lever embracing the bar and pivoted to the portion 1 of the detent, and provided near its upper end with the wings *f f f f* and coiled spring *g*, and the foot-lever E, formed of the part *e'* and the bifurcated end *e*, all constructed and arranged to operate substantially as described.

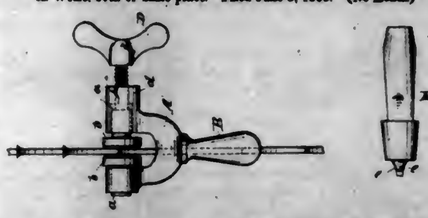
323,995. COTTON-PLANTER AND GUANO-DISTRIBUTER. HENRY D. WILSON and EUGENE L. WILSON, Abbeville, S. C. Filed Oct. 17, 1884. (No model.)



Claim.—1. In a planter and distributer, the cylinder A, constructed as described, provided with the central seed or guano openings, and the additional apertures a^2, for dropping the seed in hills, having covers a^4, in combination with adjustable band C, the furrow-wheel F, and the crank-axles by which the cylinder is rotated, the hopper, the bracket D, provided with the arms and braces by which both the cylinder and the hopper are supported, and the frame provided with the covering-plows, substantially as described.

2. In a planter and distributer, the fertilizer and seed containing cylinder provided with the separate apertures a^2 and their adjustable covers, for the discharge of the seed in hills, substantially as described.

323,996. SAW-SWAGE. HARVEY R. WOLFE, Louisville, Ky., assignor to Brennan & Co. South Western Agricultural Works and Charles A. Wolfe, both of same place. Filed June 3, 1885. (No model.)



Claim.—1. In a saw-swage, circular revoluble tooth-clamping jaws having their adjacent edges beveled to form tapering swaging-recesses, substantially as described.

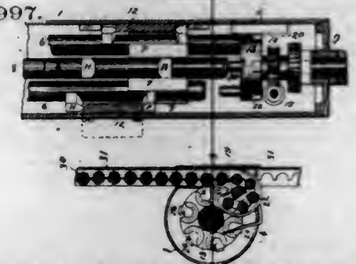
2. The combination, with circular revoluble tooth-clamping jaws having their adjacent edges beveled to form a taper recess, of a notched male die or tool so shaped as to fit into the aforesaid taper recess, substantially as described.

3. The forked carrier A, having the recessed arms, as shown, in combination with the circular revoluble tooth-clamping jaws, the stems of which are fitted into the recesses in the arms, and the clamping-screw D, all constructed substantially as described.

323,997. MACHINE-GUN. HENRY ALLENDER, Detroit, Mich. Filed May 9, 1885. (No model.)

Claim.—1. In machine-guns, the combination, with a barrel-inclos-

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ing case, of a ring-cam inclosed by and attached to said case, a series of rotating barrels receiving longitudinal movement from said cam, and a rotating breech-block fixed against longitudinal movement, having a flange-holding recess for a cartridge-head in line with each barrel.

2. In a machine-gun, the combination, with a rotating breech-block having recesses for the cartridge-heads, of a rotating star-wheel cartridge-carrier, and a transfer-finger adjacent to the star-wheel and block, by which the cartridges are transferred to the recesses in the breech-block, as set forth.

3. The combination, with the open hopper and a sliding cartridge-carrying case therein, of the star-wheel positively driven by the driving mechanism of the gun and having its teeth extending into the hopper and feed-case, and a guide extending into the hopper and partially surrounding the star-wheel, whereby the cartridges are guided to said star-wheel, as set forth.

4. In combination with the hopper, guide, and star-wheel relatively arranged as described, a cartridge-feed case having the cartridges removably clamped near their heads and points by supporting-pieces which hold them a little distance from the base thereof, whereby the guide may enter between the cartridges and their case, as set forth.

5. The cartridge-feed case consisting of a plate with turned-up edges and two notched disks secured to the plate, one at a little distance from each end and parallel with the turned-up edges.

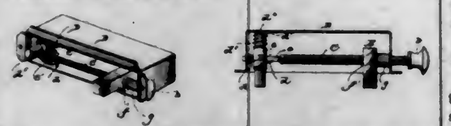
6. The combination, with the hopper and guide of a machine-gun, of the two star-wheels side by side on the same shaft, driving mechanism therefor, and a curved transfer-finger in the space between the wheels, substantially as described.

7. The combination, with a series of barrels and supporting mechanism, substantially as described, of a rotating breech-block having undercut recesses for the cartridge-heads, said recesses opening radially toward the periphery of the block, substantially as described.

8. In combination with the rotating breech-block having undercut recesses opening radially, the stationary finger arranged in front of and in proximity thereto, extending obliquely across the front face of the block to serve as a shell-ejector, as set forth.

9. In combination with the rotating shaft carrying the breech-block, the shaft-driving gear, a counter-shaft and gears to rotate the same synchronously with the main shaft, star-wheels on the counter-shaft, and a transfer-finger in proximity thereto and inclined to follow the curve of the breech-block, substantially as described.

323,998. SASH-FASTENER. JOHN I. BARINGER, Waterford, N. Y. Filed Mar. 14, 1885. (No model.)



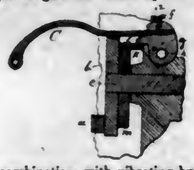
Claim.—1. In a combined sash holder and lock, the casing, in combination with a rod journaled therein and having both a longitudinal and a rotary movement, a locking-bolt arranged on the rod and actuated by the longitudinal movement thereof, and a second locking-bolt independent of the rod and operated by the partial turning of the same, as set forth.

2. In a combined sash holder and lock, the combination, with a casing, of a rod having a bolt mounted thereon, and a spring on said rod between the bolt and casing, said rod having an endwise movement, substantially as set forth.

3. In a combined sash lock and holder, the combination, with a casing, of a rod having bearing therein, a bolt on said rod, a pinion mounted on a squared portion of the rod, and a bolt having bearing in the sides of the casing, and a series of teeth to engage the pinion, substantially as set forth.

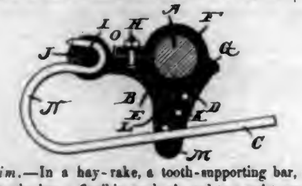
4. In a combined sash holder and lock, the combination, with a casing, of a threaded rod mounted therein and adapted to be moved endwise, a bolt on said rod, a spiral spring bearing against said bolt, a pinion mounted on a squared portion of the shaft, pins bearing against the sides of the pinion, a bolt having a series of teeth to engage the pinion, and a spring bearing against said bolt, substantially as set forth.

323,999. TAKE-UP DEVICE FOR SEWING-MACHINES. AUGUST BEKKER, Arlington Heights, Ill. Filed Sept. 11, 1883. (No model.)



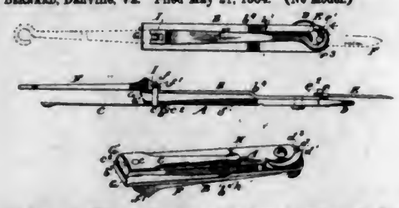
Claim.—The combination, with vibrating hub *g*, provided with lug *j* and mounted on screw *h*, provided with spring *i*, and take-up lever C, removably mounted in said hub, of disk *b*, provided with cam-surface *m*, and lever *l*, located between cam-surface *m* and lug *j*, said lever being pivoted in plate D and entirely independent of the take-up lever, as set forth.

324,000. HORSE HAY-RAKE. FREDERICK BENTEL, Hamilton, Ohio, assignor to John W. Sohn, same place. Filed Aug. 18, 1884. (No model.)



Claim.—In a hay-rake, a tooth-supporting bar, a tooth-holder clamped to the bar, a flexible tooth pivoted to a wrist supported by said tooth-holder, a pair of lugs straddling the tooth to the rear of said wrist, and adjustable supports above and below the tooth at said lugs, combined substantially as specified.

324,001. COMBINED NAIL AND EAR CLEANER. WILLIAM A BERNARD, Danville, Va. Filed May 21, 1884. (No model.)



Claim.—1. The combination of the base A, spring-arm B, having conical recess *h'*, and slot H, as shown, and the spoon C, as and for the purposes set forth.

2. The combination of the base A, spring-arm B, as described, the spoon C, having ridge c^2, and the stud I, as and for the purposes set forth.

3. The combination of the arm B, bent at b^1, and the blade E, with the pivot e and hook F, the said pivot serving as a lock-stop for said hook, as set forth.

4. The combination of the part A, cut away at *b*, and having recess *b'*, the hook D, having shoulder *d'*, and the arm B, as set forth.

5. The combination of the base A, having slot b^2 and cutter G', the spring-arm B, having cutter G, the spoon C, having ridge c^2, the stud I, and the button-hook F, as and for the purposes set forth.

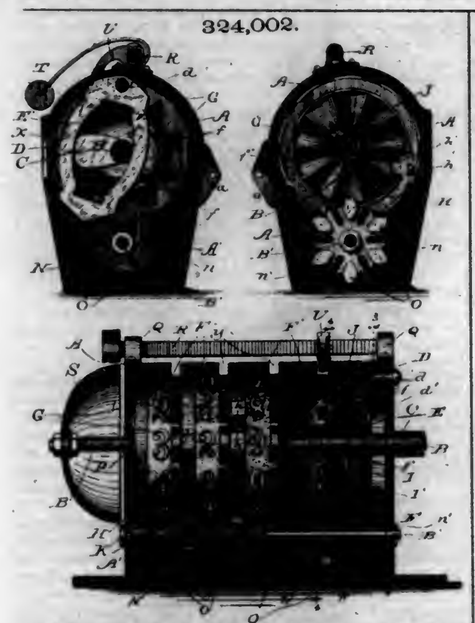
6. The combination of the base A, having files S, slot H, and cutter G', the arm B, having cutter G, the spoon C, having ridge c^2, the stud I, hook F, pivot *f*, blade E, and pivot e, as and for the purposes set forth.

324,002. COUNTER FOR PRINTING-PRESSES, &c. CHARLES T. BROWN, Chicago, Ill., assignor to Flora L. Brown, same place. Filed Dec. 8, 1884. (Model.)

Claim.—1. In a counter, shaft B, having wheel F, turning loosely thereon, and yoke or collar D, having pallets E E', vibrating on pin *d*, in combination with internal teeth, *f f*, on wheel F, all constructed, operated, and controlled substantially as described, and for the purpose specified.

2. In a counter, shaft B, having wheel F and eccentric C, turning loosely thereon, and yoke or collar D, having pallets E E thereon, vibrating on pin *d*, in combination with internal teeth, *f f*, on wheel F, all constructed, operated, and controlled substantially as described, and for the purpose set forth.

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3. In a counter, shaft B and wheels F F', &c., placed loosely on said shaft, in combination with springs L, having arms *l l*, constructed as described, and secured to wheels F', the said arms of each of said springs formed as described, and pressing against radial grooves on the sides of the next adjacent wheel, all substantially as described, and for the purpose set forth.

4. In a counter, the combination of shaft B, wheel F, and eccentric C, all placed loosely on said shaft B, and yoke or collar D, having pallets E E', placed thereon and engaging with internal teeth, *f f*, on wheel F, in combination with radial grooves K on wheel F, and wheel F', having spring L secured thereto, with arms *l l*, all constructed, operated, and controlled substantially as described, and for the purposes specified.

5. In a counter, the combination of eccentric C, yoke or collar D, pallets E E', teeth *f f*, wheel F, pin *h*, recess *h'*, rim or periphery H, shaft B and B', transmitter M, wheel F', having teeth *f*, and spring L, all constructed, operated, and controlled substantially as described, and for the purpose set forth.

6. In a counter, the combination of a yoke or collar having pallets thereon engaging with internal scape-teeth placed on the first or units wheel, substantially as described, and an eccentric whereby said yoke or collar may be rocked, all substantially as described, and for the purpose specified.

7. In a counter, the combination of the locking and transmitting wheel N, having surfaces *n n*, interstices *n'*, and teeth O thereon, and placed loosely on shaft B', with wheel F, having surface H and pin *h* thereon, acting as a driving-wheel, and wheel F', having teeth K thereon, constituting a driven wheel, wheels F and F' being also placed loosely on shaft B, substantially as described, and for the purpose set forth.

324,003. MECHANICAL MOVEMENT. CHARLES T. BROWN, Chicago, Ill., assignor to Flora L. Brown, same place. Filed May 1, 1885. (No model.)

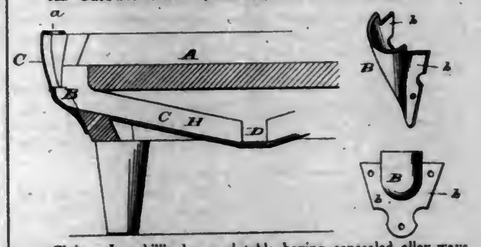


Claim.—1. The combination of an eccentric, a wheel having inside teeth therein, and a yoke or collar having a pawl or dog placed thereon, as described, and for the purpose set forth.

2. Yoke C, having dog or pawl E thereon, in combination with eccentric B and wheel A, having teeth *a a* therein, substantially as described, and for the purposes specified.

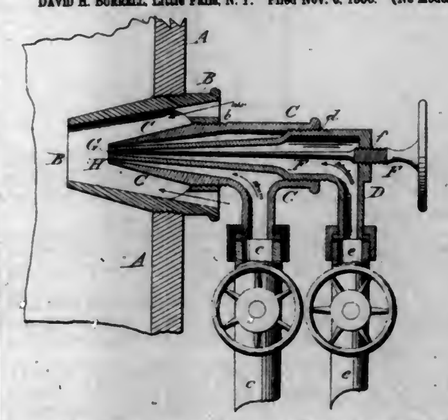
3. In a mechanical movement, wheel A, having teeth *a a* therein, in combination with yoke C, having dog or pawl E placed thereon, substantially as described, and for the purposes set forth.

324,004. BILLIARD-TABLE. EMANUEL BRUNSWICK, San Francisco, Cal. Filed Dec. 4, 1884. (No model.)



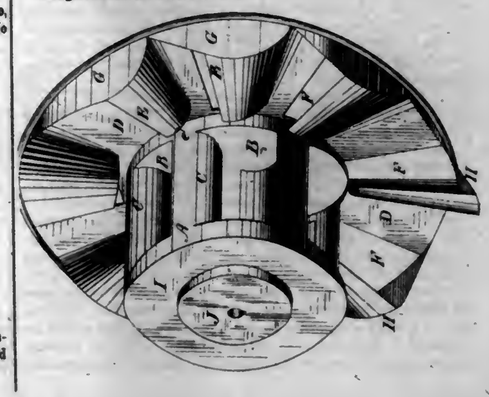
Claim.—In a billiard or pool table having concealed alley-ways, the combination, with a sustaining-rim, *a*, of metallic corner pockets, B, having side wings or flanges, *b b*, at right angles to each other, and the covering C, of soft material, and metallic side pockets, B, likewise covered with soft material, and having side wings, *b b*, in line with each other, substantially as described.

324,005. FURNACE FOR BURNING LIQUID AND GASEOUS FUEL. DAVID H. BURRELL, Little Falls, N. Y. Filed Nov. 6, 1880. (No model.)



Claim.—In an apparatus for burning liquid or gaseous fuel, the combination of the conical nozzle B, having internal screw-threaded ring *b*, the steam-pipe C, and oil-pipe D, arranged concentrically within said nozzle, and the stem F, passed longitudinally through the oil-pipe, all substantially as and for the purpose specified.

324,006. ROTARY FAN. GEORGE M. CAPELL, Passenham, County of Northampton, England. Filed June 9, 1884. (No model.) Patented in England June 22, 1883, No. 3,117.

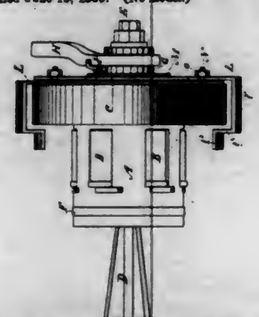


Claim.—1. In an exhaust or blast fan or fan-wheel, the combination of a collecting-cylinder, A, closed at one end, and provided with port-holes B and blades C, joining the edge of one side of the ports and dipping toward the axis, the curve of said blades corresponding (or nearly so) with the radius of the cylinder in which the ports are formed, a disk, D, provided with ports F, blades E, and scalloped peripherical band G, for collecting or inducing currents of air, as herein set forth and illustrated.

2. In an exhaust or blast fan or fan-wheel, the combination of a disk, D, provided with ports F, blades E, and scalloped peripherical band G, for collecting or inducing currents of air, with a central collecting-cylinder, A, provided with ports B and blades C, all as herein set forth and illustrated.

3. In exhaust or blast fans or fan-wheels of the herein-described construction, the combination, with the collecting-cylinder A, of a disk, D, provided with ports F and wings E on the same side as the collecting-cylinder A, for inducing currents of air, as herein set forth and illustrated.

324,007. BOILER-TUBE EXPANDER. Michael Cashin, San Francisco, Cal. Filed June 15, 1885. (No model.)



Claim.—1. In a boiler-tube expander, an adjustable guard pivoted on the expander, and adapted to bear against the tube-sheet to limit the insertion of the implement into the tube, substantially as and for the purpose herein described.

2. In a boiler-tube expander, a guard pivoted on the expander and adapted to bear against the tube-sheet, said guard being extensible and contractible to adapt it to avoid adjacent tubes, substantially as herein described.

3. In a boiler-tube expander, the extensible and contractible guard L, pivoted on the head or portion of the expander without the tube, and provided with lips l^2, for bearing against the tube-sheet, substantially as herein described.

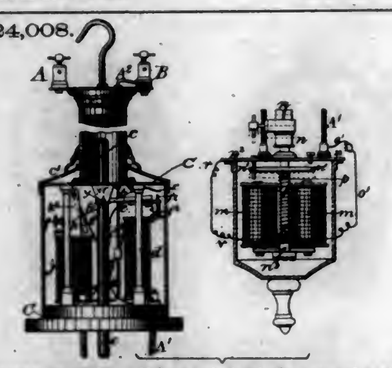
4. In a boiler-tube expander, and in combination with the head C of the expander, the extensible and contractible guard L, consisting of two plates slotted loosely on the hub of the head, and provided with lips l^2, adapted to bear against the tube-sheet, and a means for fixing the guard where set, substantially as herein described.

5. In a boiler-tube expander, and in combination with the head C, the extensible and contractible guard L, consisting of the plates slotted loosely on the hub of the head, and having slots l^3 and lips l^2, adapted to bear against the tube-sheet, and the bolts N, passing through the slots l^3 from the inner plate, and nuts n, for fixing the guard where set, substantially as herein described.

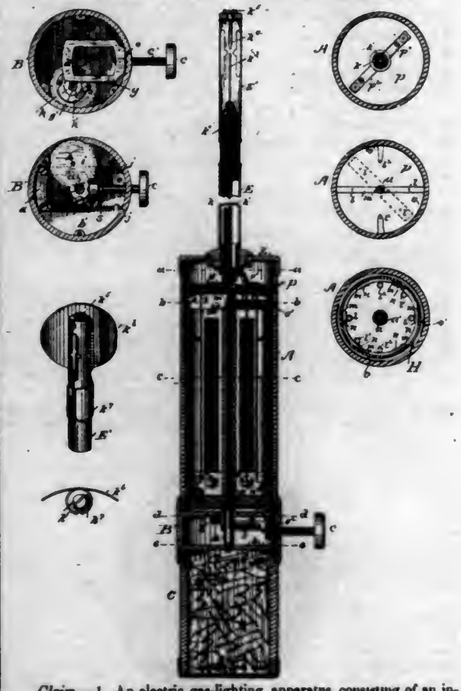
6. In a boiler-tube expander, the head C and the guide-disk M around its hub, in combination with the adjustable guard L, consisting of two plates slotted on the hub and guided by the disk, said plates having lips l^2, for bearing against the tube-sheets, and slots l^3, and the bolts N and nuts n, by which the guard is fixed where set, substantially as herein described.

324,008. ELECTRIC-ARC LAMP. Joseph E. L. Clark and William J. K. Clark, Brixton, County of Surrey, and Robert D. Bowman, Leytonstone, County of Essex, England. Filed Dec. 15, 1883. (No model.) Patented in England Mar. 5, 1883, No. 1,162.

Claim.—In electric-arc lamps, the combination, with the upper carbon rod, of a feeding mechanism consisting of two electro-magnets, as j and d, both in shunt-circuits, a pendulum-armature, as k, suspended above one of said electro-magnets, with a contact-spring, i', and a restraining-spring, k^3, attached thereto, said armature electrically connected to the coil of said electro-magnet and to the framing of the lamp, a contact-screw, l, mounted on an insulated bracket opposite of said armature and electrically connected to an insulated contact-sheet, x, a fulcrum-lever, as b, and a spring, as o, secured thereto, which bears against the carbon rod, a clutch-ring, as b', integral with said lever, and an armature-bar attached thereto for the other electro-magnet, an insulated contact-screw mounted on said lever and electrically connected to the said other electro-magnet, the positive binding-post A, electrically connected to the carbon rod, the negative post B, electrically connected to one end of each electro-magnet, the combination, with the lower carbon rod, g, which is sleeved in the framing, of mechanism for drawing the arc, consisting of a coarse-wire magnet, as m, which is electrically connected with one wire end to the lower carbon rod, and with the other end to the negative binding-post, by means of the connections c' A' B' B^3 A^3, an armature, as n', attached to the lower carbon rod, a helical spring, as p, sleeved over said rod and supporting the same with said armature, the guiding-screw n^3, sleeved into said armature, and the screw n^4, limiting the play of the same upward, all for the purpose set forth, and substantially as shown and described.



324,009. PORTABLE ELECTRICAL GAS-LIGHTING APPARATUS. Charles L. Clarke, Manchester, County of Lancaster, England, assignor to the Domestic Electrical Manufacturing Company, Boston, Mass. Filed July 12, 1884. (No model.) Patented in England Dec. 31, 1883, No. 5,992; in France May 19, 1884, No. 16,227; in Belgium May 20, 1884, No. 65,211; in Italy July 18, 1884, No. 17,143; in Spain Nov. 20, 1884; in Austria-Hungary Nov. 21, 1884, and in Germany May 8, 1885.



Claim.—1. An electric gas-lighting apparatus consisting of an inductive generator of electricity, a motor mechanism to revolve the moving parts thereof, an actuating push-button for the said motor, and disconnecting-gear adapted to release the said motor from the control of the push-button after a single impulse, whereby a protracted operation

of the generator may be developed from a single motive impulse, together with igniting points or electrodes connected by means of suitable conductors with the said generator, whereby sparks may be produced in a continuous stream and be directed to any desired point, substantially as described.

2. A portable electrical gas-igniting apparatus consisting of an inductive generating-machine, conducting wires and electrodes therefor, an actuating mechanism for the said machine, and a drying-chamber filled with a textile fabric impregnated with chloride of calcium or similar compound, the generating device, actuating mechanism, and drying compound being inclosed in the handle of the instrument in the manner specified, and the said actuating mechanism being provided with a starting knob or button, the shank of which passes through the casing, but which is itself fixed upon the outside thereof, whereby the same hand that grasps the handle may operate the generator.

3. A portable electrical gas-igniting apparatus or electric torch consisting of a rotary inductive generator of high-tension electricity, conducting wires and electrodes for said generator inclosed in a tube of desired length, an actuating mechanism for the said generator adapted to be manually operated from the outside, and provided with a push-button whereby the mechanism may be actuated to rotate the generator-cylinder, and an inclosing-case formed of vulcanite or similar dielectric divided into separate compartments, one of which serves to inclose the motor mechanism, while the other serves to inclose the generator, and also constitutes the outer cylinder of said generator, the entire case being also adapted to serve as a handle for the complete lighting apparatus, substantially as described.

4. An electric torch for igniting gas or inflammable vapor, consisting of the combination, in a single case or handle, of an inductive generating device, an actuating mechanism therefor adapted to be operated by the same hand that carries the torch, leading-out wires inclosed in an extension-tube and terminating in spark-points, a condenser interposed between the said wires, and a chamber filled with a suitable drying or absorbent substance whereby the interior of the apparatus is maintained perfectly dry and the efficiency of the instrument insured.

5. An electric gas-lighting apparatus consisting of four detachable sections adapted to be screwed together to form one portable instrument, one section composed of a tube inclosing the terminal wires, sparking-points, and a condenser, the second section inclosing an electrostatic inductive generating device, the third an actuating mechanism for the said induction-machine, capable of being set in action from the outside by means of a press-button projecting through the casing, and the fourth section comprising a drying-chamber inclosing textile fabric or blotting-paper impregnated with calcic chloride, substantially as described.

6. The combination, with the lighting-tube E of a portable electrical gas-igniting apparatus, of the detachable cap-piece F, carrying the screen k, for the purposes described.

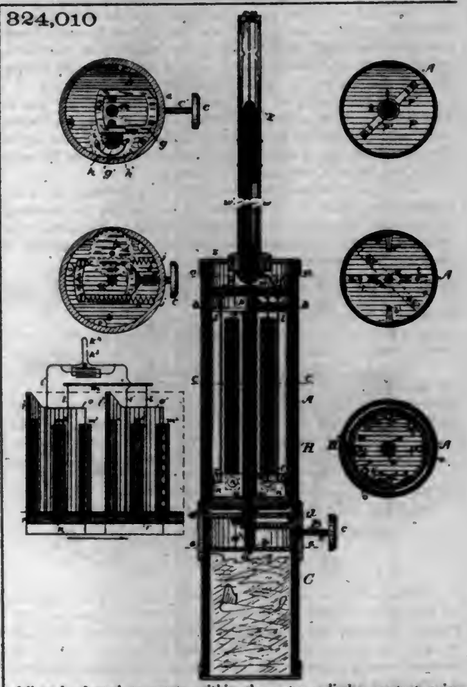
7. In a portable electric gas-igniting apparatus, an electrostatic inductive generating device of cylindrical form comprising an outer cylinder of ebonite or similar material supporting armatures or inductors of metal foil, an inner cylinder of like material adapted to rotate on bearings or pivots and supporting carriers of metal foil, contact-springs whereby the charges induced upon the said carriers are redistributed, and means, as indicated, whereby one of the said cylinders may be rotated with reference to the other, conducting wires and electrodes inclosed in a tube of suitable length, whereby the disruptive discharges of the generator when operated may be directed to the required point, and an inclosing-case for the working parts constituting a handle for the lighter, a portion of which case incloses the motor mechanism, while a second portion constitutes the outer cylinder of the generator.

324,010. ELECTRIC GENERATOR OR SPARK-PRODUCING APPARATUS. Charles L. Clarke, Manchester, County of Lancaster, England, assignor to the Domestic Electrical Manufacturing Company, Boston, Mass. Filed Dec. 10, 1884. (No model.) Patented in England Dec. 31, 1883, No. 5,992; in France May 19, 1884, No. 16,227; in Belgium May 20, 1884, No. 65,211; in Italy July 18, 1884, No. 17,143; in Spain Nov. 20, 1884; in Austria-Hungary Nov. 21, 1884, and in Germany May 8, 1885.

Claim.—1. A convection-induction machine or electrostatic inductive generating device constructed in a cylindrical form and comprising an outer cylinder of ebonite or similar material, supporting armatures or inductors of metal foil, an inner cylinder of like material supported on pivots or journals and adapted to rotate within the outer cylinder, and supporting carriers of metal foil, contact-springs mechanically attached to the outer cylinder and extending within the inner cylinder, so as to make contact successively with the carriers when said inner cylinder is rotated, whereby the electrical charges induced on said carriers are redistributed, and leading-out wires or electrodes electrically connected with two of the said contact-springs and serving as terminals of the generator, substantially as hereinbefore described.

2. An electrostatic inductive generating apparatus constructed in cylindrical form, and comprising an outer cylinder of hard rubber or similar material, supporting on its interior surface armatures or inductors of metal foil, an inner cylinder of like material supporting carriers of metal

324,010

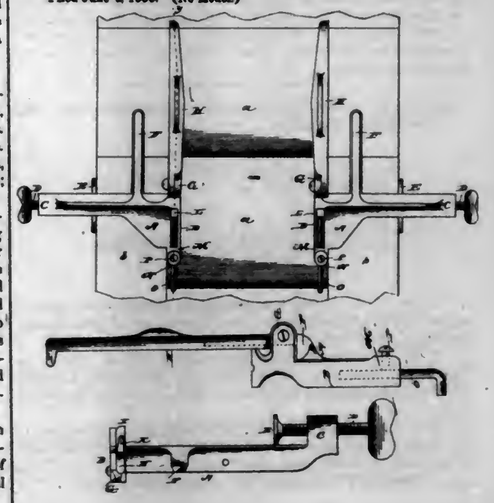


foil and adapted to rotate within the outer cylinder, contact-springs whereby the charges induced upon the said carriers are redistributed, and means, as indicated, whereby the said inner cylinder may be rotated with reference to the outer, substantially as described.

3. In an electrostatic machine substantially of the character described herein, the inclosing-case of ebonite, vulcanite, or like dielectric, supporting on its inner surface the inductive armatures of said machine, and adapted when rubbed on its external surface to re-excite the said machine should it become discharged.

4. The combination, with the hereinbefore-described electrostatic generator, comprising two concentric cylinders, one of which is adapted to be rotated within the other, of the mechanism for revolving the internal cylinder, consisting of a rack actuated by a push-button from the outside of the outer cylinder and reacted upon by springs, together with accelerating gear, and a ratchet and pawl, substantially as and for the purposes specified.

324,011. CLAPBOARD-GAGE. Jehiel W. Danly, Attica, N. Y. Filed June 4, 1885. (No model.)

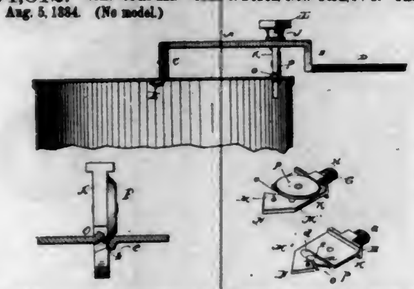


Claim.—1. A bracket having the flange B at its inner end, provided with a gage for bearing against the lower sides of the secured clapboard, the thumb-screw D, for clamping the bracket to the end board, and the arm F, rising from the upper side of the bracket, for holding the clapboard that is being applied, substantially as described.

2. The combination of the bracket A, having the flange B at its inner end, and the gage, the thumb-screw D, for clamping the bracket to the end board, and the pivoted arm or scriber H at the inner end of the bracket, one edge of said arm being exactly in line with the inner edge of the flange B, substantially as described.

3. The combination of the bracket A, having the flange B, the adjustable gage therein, the thumb-screw D, for clamping the bracket to the end board, the vertical arm F, and the pivoted scriber-arm H at its inner end, one edge of said arm being on a line with the inner edge of the flange B, substantially as described.

324,012. CAN-OPENER. JOHN C. DODGE, New York, N. Y. Filed Aug. 5, 1884. (No model.)



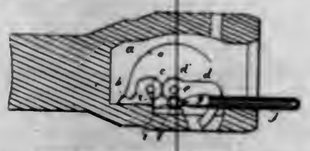
Claim.—1. In a can-opener, the combination, with the shank or bar constructed substantially as described, of a knife adjustable longitudinally on said bar, and a transverse slot cut through one side of the knife nearly to the opposite side, the bottom wall of the slot having an upwardly-extending projection or point to act against the under face of the can-top, as set forth.

2. In a can-opener, the combination, with the shank or bar, of the adjustable knife adapted to penetrate the can-top, a blade provided on the knife to act against the under side of the can-top, and a cutter-wheel working above this blade against the upper face of the top, arranged and operating substantially as described, so that the blade will turn one wall of the slit upward and the cutter-wheel turn the other wall downward, and thus leave a clean cut, as set forth.

3. In a can-opener, the combination, with a bar having a fulcrum-tongue at one end and a handle at the other end, of a knife adjustable longitudinally on said bar and having its end pointed to penetrate the can-top, a slot cut through the knife above the pointed end, and a cutter-wheel journaled to the knife above the slot and working against the can-top, as set forth.

4. In a can-opener, the combination, with a bar having a fulcrum-tongue at one end and a handle at the other, of a knife longitudinally adjustably on said bar and having its end pointed to penetrate the can-top, a slot cut through the knife above the pointed end from one side of the knife nearly to the other, the lower wall of said slot having an upwardly-extending point or projection, and tapering downward from said projection to provide an enlarged mouth for the slot, and a cutter-wheel journaled to the side of the knife and working against the projection, for the purpose set forth.

324,013. CAR-COUPLING. JOHN H. EARLE, Denver, Colo. Filed June 26, 1885. (No model.)



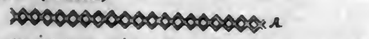
Claim.—1. In a railway-car coupling, the combination of trigger *a*, supporting-bolt *o*, adjusting-cam *b*, hook *d*, with head *d'*, guide-claw *g*, and clasp *f*, substantially as described, and for the purpose set forth.

2. In a railway-car coupling, the combination of shaft *c*, with levers *l* and *n*, foot *i*, with legs *i'*, and guide-claw *g*, all placed within a suitable draw-head, substantially as described and shown, and for the purpose set forth.

3. In a railway-car coupling, the combination of a draw-head A, the trigger *a*, with catches *a'*, bolt *o*, adjusting-cam *b*, hook *d*, with head *d'*, supported by shaft *c*, guide-claw *g*, clasp *f*, spring *h*, and foot *i*, with legs *i'*, substantially as described, and for the purpose set forth.

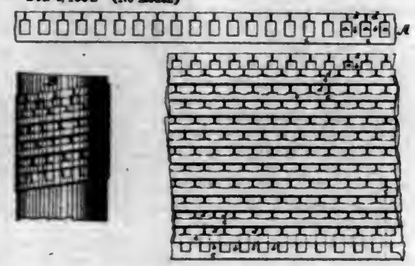
4. In a railway-car coupling, the combination of hook *d*, with head *d'*, guide-claw *g*, and spring *h*, substantially as described, and for the purpose set forth.

324,014. METALLIC FABRIC. WM. C. EDER, Newark, N. J. Filed Dec. 4, 1884. (No model.)



Claim.—The fabric composed of the perforate strips A and of the strips B, having prongs *a*, which prongs are passed through the apertures of the strip A and clinched above said strip, substantially as described.

324,015. METALLIC FABRIC. WM. C. EDER, Newark, N. J. Filed Dec. 4, 1884. (No model.)



Claim.—The fabric composed of stripe A, having lower continuous bars, *c*, posts *b*, apertures *a*, and heads *d*, the heads *d* of one strip being introduced through and anchored in the apertures *a* of the next adjoining strip, substantially as herein shown and described.

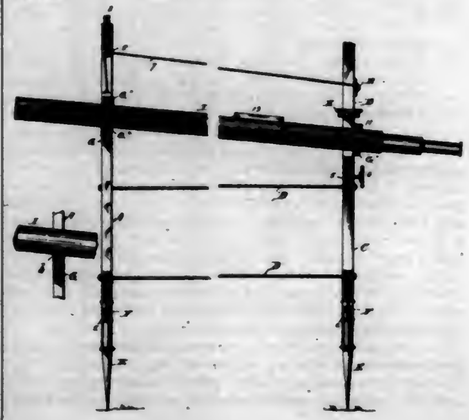
324,016. CHAIN. WM. C. EDER, Newark, N. J. Filed Apr. 10, 1885. (No model.)



Claim.—1. The chain-link A, constructed with the lips *a a*, which traverse the link at the open part thereof, as described.

2. A chain composed of links A and B, that are placed at right angles to one another, each of such links having lips *a a*, around which the adjoining link is placed, substantially as herein shown and described.

324,017. AIR-LINE-SURVEYING INSTRUMENT. JOHN A. FLOWER and ERWIN B. RUDDOCK, Campton, Ill. Filed Mar. 28, 1885. (No model.)

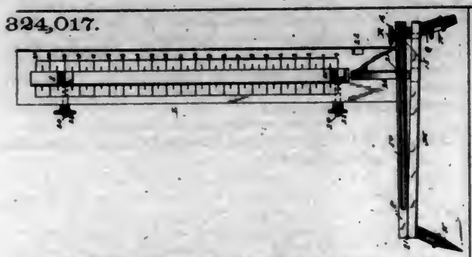


Claim.—1. The combination, with the telescopic instrument having a telescope adjustable in vertical and transverse horizontal planes, of a pointer or block connected with said telescope, an upright scale for said block or pointer to move over, and a frame carrying a staff adjustable sidewise and having adjustable targets thereon, substantially as described.

2. The combination, with the frame, of the telescope or sighting appliance pivoted thereto at one end and the cords and pulleys for raising and lowering the opposite end, substantially as described.

3. The combination, with the front upright and the telescope having its front end supported in said upright, of the rear upright having an adjustable upper part to which the telescope is pivoted, substantially as described.

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4. The combination, with the telescope and its supports, of the legs connected by cross-pieces at the top, each cross-piece being adjustably connected with the said supports, substantially as described.

5. The combination, with the telescopic instrument having a telescope movable about a transverse axis, a scale placed at a given distance from said axis, and a pointer or block connected with the telescope and movable with reference to the scale, of the staff having the two adjustable targets, substantially as described.

6. The staff provided with adjustable targets, in combination with an adjustable stand for said staff, substantially as described.

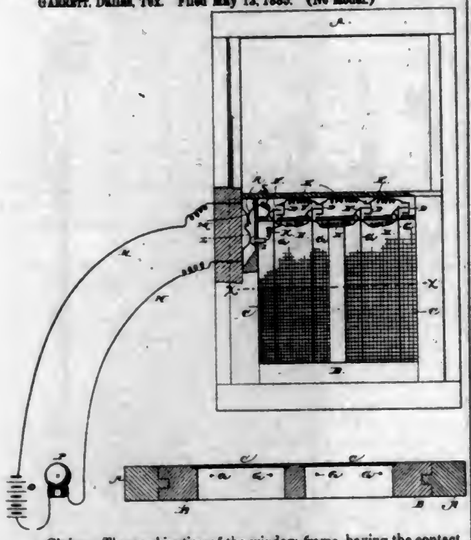
7. The staff provided with a spirit-level, in combination with a stand, also provided with a level, and means—such as set-screws—for adjusting the staff to a vertical position with the aid of said levels, substantially as described.

8. The combination, with the stand, of the staff supported in an upright position on said stand in ways thereof, so that it can be moved sidewise, substantially as described.

324,018. LUBRICATING COMPOUND. GEORGE P. FRENCH, Rochester, N. Y. Filed Dec. 14, 1883. Renewed Jan. 15, 1885. (No specimens.)

Claim.—The lubricating compound herein described, consisting of petroleum, sal-soda, potash, borax, cream of tartar, paraffine-wax, bay or green wax, unctuous oil, and plumbago, substantially in the proportions specified.

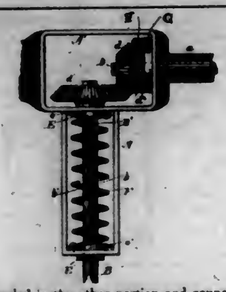
324,019. ELECTRICAL ALARM FOR WINDOW-SCREENS. HENRY GARRETT, Dallas, Tex. Filed May 13, 1885. (No model.)



Claim.—The combination of the window-frame, having the contact springs L M connected in open circuit with an electrical alarm, with the screen or frame in the window-frame, having the double contact-points D, the contact-springs F, and the wires G, the contact-point I, bearing against the spring L, and the contact-spring R, bearing against the spring M, the point I, spring R, double contact-points D, and the contact-springs F being connected together in open circuit, whereby an alarm will be sounded either by raising the screen or frame, by cutting one of the wires G, or by pushing one of the wires G aside, substantially as described.

324,020. WIND-MOTOR. CHARLES A. GEIGER and BENJAMIN BEALE, Springfield, Ohio, assignors to the Springfield Machine Company, same place. Filed June 23, 1884. (No model.)

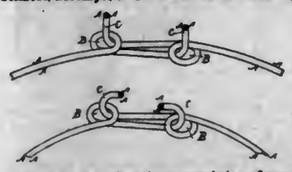
Claim.—1. In a wind-motor, a divided shaft interposed between the wind-wheel and the machinery actuated thereby, one portion of said shaft being journaled in the other portion and connected therewith by a spiral spring, substantially as described.



2. In a wind engine or motor, one of the gears connecting the driving with the driven shaft, in combination with a backing-ratchet, permitting the machinery actuated thereby to continue to move after the motion of the wind-wheel is checked, substantially as described.

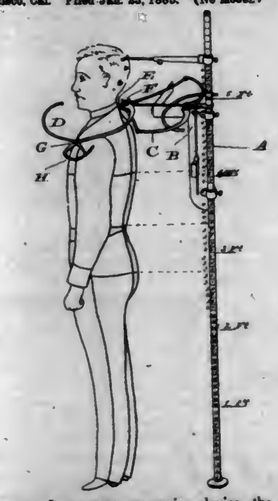
3. The combination, in a wind-motor, of the divided shaft, the spring connecting the two parts of said shaft, and the backing-ratchet connecting one of the gear-wheels with its shaft, said parts being interposed between the wind-wheel and the machinery or device actuated thereby, substantially as and for the purpose described.

324,021. HOOP FOR BARRELS, &c. ISIDOR S. HAGENBACHER and ABRAM STRAUSS, Brooklyn, N. Y. Filed Jan. 30, 1885. (No model.)



Claim.—The above-described hoop, consisting of one or more wires or strips of metal having the ends united by means of a loop or eye formed near each end, respectively, into which pass from the inside outwardly the extreme opposite ends of the wires or strips, respectively, which are then bent back to lock the ends together, the ends of the wires or strips, when the hoop is completed, being both on the outer side of the hoop, substantially as and for the purposes set forth.

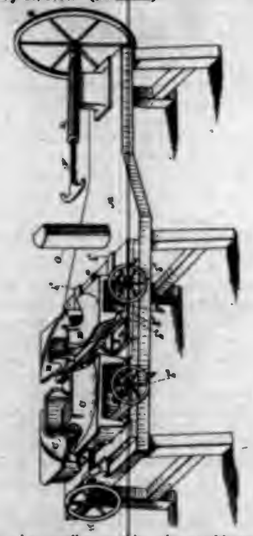
324,022. TAILOR'S MEASURING DEVICE. JOHN S. HAND, San Francisco, Cal. Filed Jan. 23, 1885. (No model.)



Claim.—1. In a tailor's measuring device, the combination, with the vertical rod A, adjustable bracket B, and lazy-tongs C, of the calipers D, attached by one arm to the lazy-tongs, substantially as shown, for the purpose set forth.

2. In a tailor's measuring device, the combination, with a vertically-adjustable support, of the lazy-tongs C, pivoted to said support, and the calipers D, attached by one arm to said lazy-tongs and provided with a graduated arc, H, substantially as and for the purposes described.

324,023. APPARATUS FOR FORMING HORSE-COLLARS. THOMAS HARRIS, Sacramento, Cal., assignor to A. A. Van Voorhies & Co., same place. Filed May 11, 1885. (No model.)



Claim.—1. In a horse-collar machine, the combination of a two-part block or jaw, C, each part of which is disconnected from the other, and moves in an opposite direction, and a two-part block or jaw, B, whereby both the top or neck of the collar and the throat or bottom are expanded laterally, substantially as herein described.

2. In a horse-collar-forming apparatus, the laterally-expanding two-part block or jaw for the top of the collar, adapted to have a longitudinal and transverse movement upon suitable guide-tracks, substantially as described.

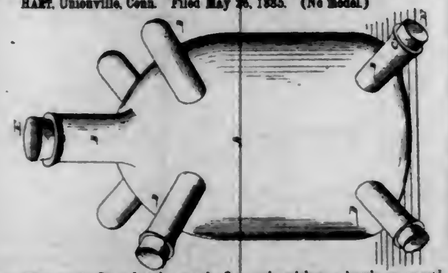
3. In a horse-collar-forming apparatus, the combination of the two-part adjustable blocks or jaws, the three adjusting-screws, whereby the block may be adjusted to various-sized collars, and the longitudinal and transverse guide-rails upon which the blocks B and C move, substantially as described.

4. In a horse-collar-forming apparatus, the guide-plate b' on the bench, having tracks b^2, the carriage-plate b^3 on said tracks, itself having tracks b^4, and the two-part block or jaw B on tracks b^4, in combination with a screw adapted to actuate the carriage-plate longitudinally, and a screw adapted to expand the block or jaw laterally, substantially as herein described.

5. In a horse-collar-forming apparatus having laterally-expanding two-part blocks or jaws to receive the collar, the filling-in plates E in the spaces between the parts, and the curved saddle-plates H, fitted on the plates E, substantially as herein described.

6. In a horse-collar-forming apparatus, the combination of the adjustable blocks, the dovetail tracks on which they move, the washer-plate I, fitted against said tracks, and the adjusting-screw i, substantially as herein described.

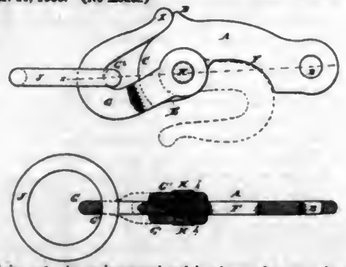
324,024. HAND-GRENADE FIRE-EXTINGUISHER. HUBERT C. HART, Unionville, Conn. Filed May 26, 1885. (No model.)



Claim.—1. In a hand-grenade fire-extinguisher, a bottle or vessel consisting of a body having an open-mouthed neck and provided with a series of radiating projections or extensions, several of which form feet or supports for the said body, and all of which form handles whereby it may be conveniently grasped or manipulated, substantially as and for the purpose set forth.

2. In a hand-grenade fire-extinguisher, the combination, with a bottle or vessel having one or more open-mouthed necks, of a stopper composed of any easily-inflammable and rapidly-combustible material which shall be capable of retaining the fire-extinguishing charge safely in the vessel when not exposed to the action of the fire, substantially as and for the purpose set forth.

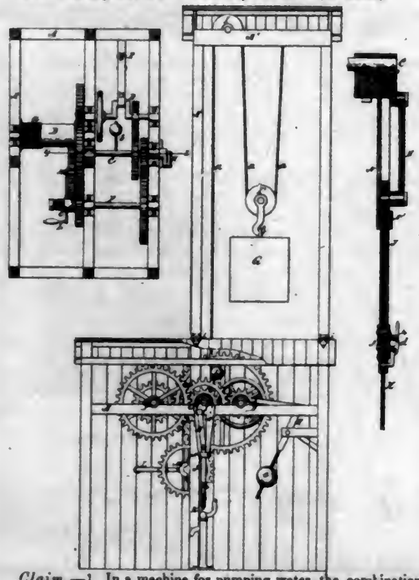
324,025. HOOK. CHARLES F. HARTMAN, Keller's Church, Pa. Filed Apr. 11, 1885. (No model.)



Claim.—1. As an improved article of manufacture, a hook consisting of the shank A, having the recessed back F, circular curved part C, and part E cut away, in combination with the pivoted hook G, the point of which is adapted to run close to or against the curved part C, and which when turned back fits into the recess F, substantially as and for the purpose specified.

2. As an improved article of manufacture, a hook consisting of the shank A, having the two pivot-lugs H, a stop, D, formed integral therewith, in combination with the hook G, having yoke G', provided with holes to receive said pivots, the parts being formed of malleable metal and united by hammering the yoke over the pivot, substantially as set forth.

324,026. PUMPING-MACHINE. CHARLES HOFFMAN and HENRY R. LYMAN, Flemingville, Iowa. Filed May 11, 1885. (No model.)



Claim.—1. In a machine for pumping water, the combination of weight G, cord or chain a, drum or cylinder B, crank-shaft C, having counter-balance b, pendulum E, having adjustable ball e, operated by crank D through a suitable connecting-rod, and all constructed and arranged substantially as set forth.

2. In a machine for pumping water, the combination of weight G, cord or chain a, drum or cylinder B, shaft F, having loose gear and a ratchet-clutch, c, main shaft C, having a crank to reciprocate the pump-rod, an auxiliary shaft having crank D, connecting with pendulum E e, by a suitable connecting-rod, said shafts being provided with interconnecting gear-wheels, and all constructed, arranged, and adapted to operate substantially as specified.

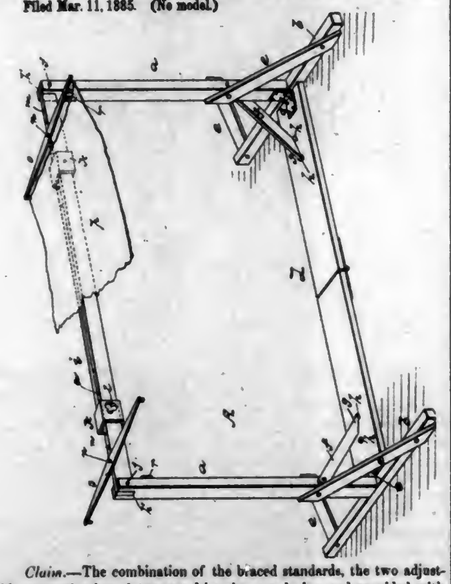
3. In a machine for pumping water, the combination of the pump-rod, connecting-rod, and crank-shaft with mechanism adapted to impart uniform motion to said crank-shaft through the power exerted by a heavy weight regulated by a pendulum in a manner similar to clock-work, and substantially as specified.

4. In a machine for pumping water, the combination of pump-rod J, connecting-rod H, crank and shaft C, counter-balance b, auxiliary crank D, connecting with pendulum E e, shaft F, having loose gear and a clutch, c, adapted to hold said gear in one direction, drum or cylinder B, cord or chain a, pulleys I I', weight G, and idle winding-up gear M, together with frame A and tower A', all substantially as set forth.

5. In a pumping-machine, the pump-rod guide N N', in combination with frame A and pump-rod J, substantially as specified.

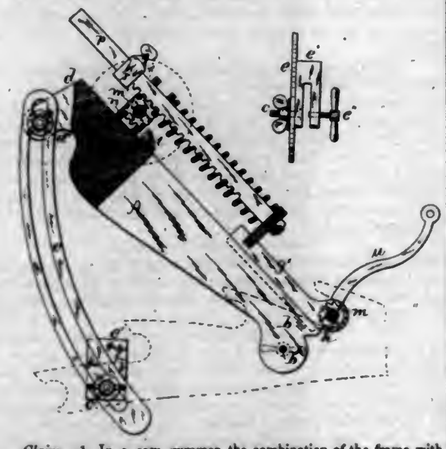
6. In a pumping-machine, the pump-rod coupling consisting of the double socket f, having lateral lugs, the pivoted dog d, and spring h, substantially as shown and described.

324,027. HAMMOCK-SUPPORT. JOHN W. HORNER, Lake City, Minn. Filed Mar. 11, 1885. (No model.)



Claim.—The combination of the braced standards, the two adjustable supporting-bars i, connected by clasps and pins, and provided with holes m, and the pivoted cross-bars O, having pins n, substantially as described, whereby the length of the top supporting-bars can be adjusted without changing the length of the canopy.

324,028. SAW-GUMMER. HENRY IBBEN, Allegheny City, Pa. Filed June 15, 1885. (No model.)



Claim.—1. In a saw-gummer, the combination of the frame with the carriage, the rack-bar, the spring, and the pinion, substantially as shown and described.

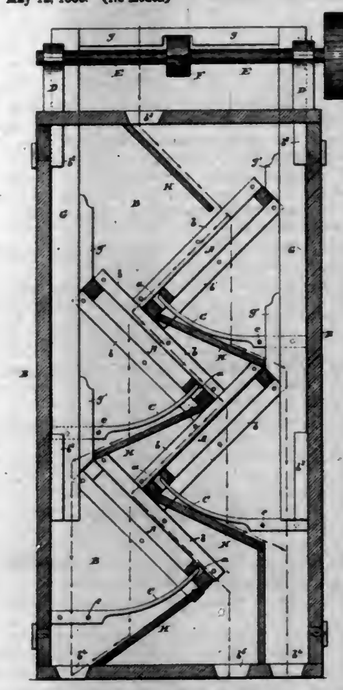
2. In a saw-gummer, the combination of the frame with the carriage, the rack-bar, the pinion, the spring, and adjustable collar on the bar, substantially as shown and described.

3. In a saw-gummer, the combination of the frame with the carriage, the rack-bar, the pinion, the spring, and the catch, substantially as shown and described.

4. In a saw-gummer, the combination of the frame with the slotted support for the tail-piece, the tail-clamp, and their clamping nuts and screws, whereby the supporting-piece may be adjusted at either end, substantially as shown and described.

5. In a saw-gummer, the combination of the frame with the cutter-carriage, the rack-bar, the pinion, the spring, the slotted support for the tail-piece, the tail-clamp, and their clamping nuts and screws, substantially as shown and described.

324,029. FLOUR-BOLT. JOHN KOELNER, Terre Haute, Ind. Filed May 12, 1885. (No model.)

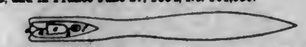


Claim.—1. In a flour-bolt, the combination of a series of sieves, A, arranged, substantially as shown, at acute angles with one another, the casing B, provided with diagonal guides b for supporting the sieves, the springs C, upon which the lower ends of the said sieves rest, and the knockers g', substantially as described and shown, and for the purpose set forth.

2. In a flour-bolt, the combination of a series of sieves arranged diagonally within it and oppositely inclined with respect to each other, the springs C, blocks b', and screws c, said springs having their lower ends firmly secured by said screws and blocks, and with their upper ends curved upward for the bottom ends of the sieves to rest on, substantially as described and shown, and for the purpose set forth.

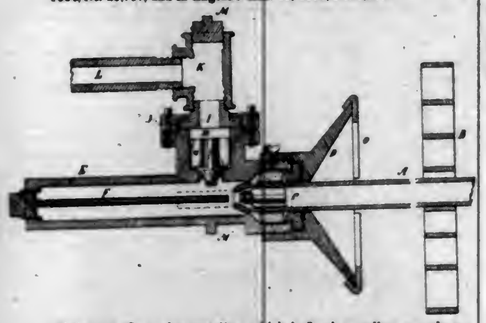
3. In a flour-bolt, the combination of the sieves A, the casing B, provided with diagonal guides b and blocks b', the springs C, the cam F, secured upon revolving shaft E, the frame G, provided with cross-bar g and knockers g', and the gather-boards H, substantially as described and shown, and for the purpose set forth.

324,030. NEEDLE. ERNST KRATZ, Marburg, Germany. Filed Nov. 8, 1884. (No model.) Patented in Germany May 11, 1883, No. 25,424; in England Mar. 20, 1884, No. 5,221; in Belgium Mar. 31, 1884, No. 64,583, and in France June 27, 1884, No. 161,069.



Claim.—As an article of manufacture, the sewing-needle herein described, the same consisting of a needle having the slotted head a, eye c, hole e below the same, and connected with the said eye by a slit, b, as set forth.

324,031. COUPLING FOR CONNECTING PIPES. JOHN J. LACEY, San Francisco, assignor to Lacey Automatic Coupling Company, Oakland, Cal. Filed May 12, 1884. (No model.) Patented in Germany Mar. 18, 1884, No. 28,717, and in England Mar. 19, 1884, No. 5,125.

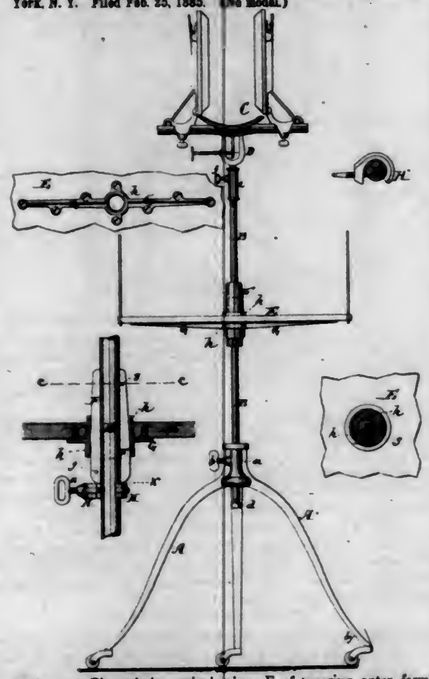


Claim.—1. In a pipe-coupling which is fixed to railway-carriages, a funnel-shaped mouth with the extension E directly in the rear, into which the pipe A from the opposite car may be received, valves C and G in the chamber H and pipe A, which are opened when a connection is made, as shown, in combination with a swivel-joint, I J, connecting with the main pipe L, pivot-pins M and M', about which this portion of the coupling may turn without disturbing pipe L, and a strap, N, substantially as herein described.

2. The funnel-shaped mouth D in a pipe-coupling, with its elastic cap or covering O, substantially as herein described.

3. In a pipe-coupling for railway-carriages, the funnel-shaped receiving-mouth, the extension-pipe in the rear, provided with a pivot-pin, M', chamber H, provided with stops P, gland I, coupling K, provided with pin M, and a strap or support, N, substantially as herein described.

324,032. SWIVEL FOR BOOK-HOLDERS. ROBERT M. LAMBIE, New York, N. Y. Filed Feb. 25, 1885. (No model.)



Claim.—1. The tabular swivel-piece F of tapering outer form, combined with the post B and with the shelf E, having tapering collar A, substantially as herein shown and described.

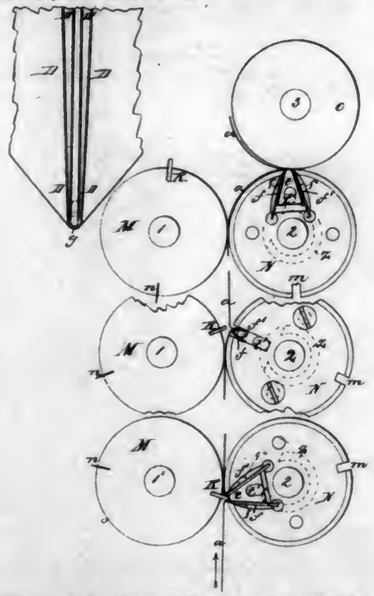
2. The tapering swivel-piece F, made in two separable halves, combined with the post B and with the shelf E, having tapering collar A, substantially as herein shown and described.

3. The tapering swivel-piece F, combined with the post B, which it embraces, with the tapering collar A, which surrounds it, shelf E, and brace G, said brace and collar being rigidly united, substantially as herein shown and described.

4. The tapering swivel-piece F, combined with the post B, tapering collar A, shelf E, and adjustable clamp H, substantially as and for the purpose herein shown and described.

324,033. WITHDRAWN.

324,034. PAPER-FOLDING MECHANISM. ALBERT F. MADDEN, New York, N. Y., assignor to himself and Oscar Edwin Madden, Boston, Mass. Filed May 23, 1884. (No model.)



Claim.—1. In a paper-folding machine, the combination of two co-operating rolls, one of which is provided with gripping-jaws having a movable tongue between them, and the other of which is provided with a tooth which operates to insert a fold of paper between the gripping-jaws and at the same time displace the movable tongue and permit the jaws to close upon the fold of paper upon its withdrawal, substantially as described.

2. In a paper-folding machine, the combination of two co-operating rolls, one of which is provided with gripping-jaws having a movable tongue between them, and a device, substantially as described, for projecting said tongue, and the other of which is provided with a tooth which operates to insert a fold of paper between the gripping-jaws and at the same time displace the movable tongue and permit the jaws to close upon the fold of paper upon its withdrawal, substantially as described.

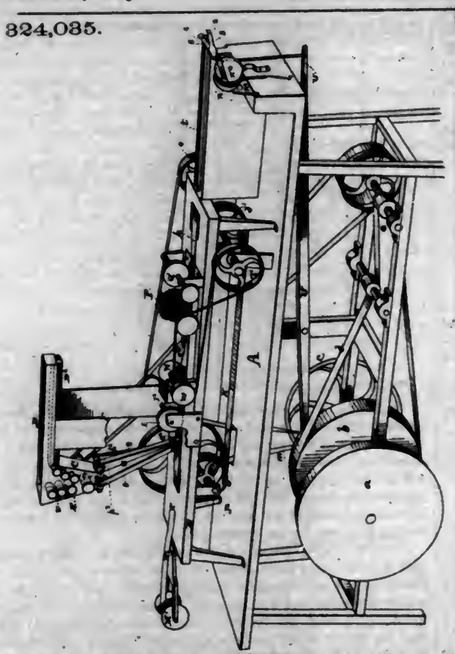
3. In a paper-folding machine having rolls arranged to revolve together and advance paper pressed between them, the combination of one roll provided with jaws and a tongue, and a cam which advances the tongue between said jaws to release their hold of the double of paper between them, substantially as described, with another roll provided with a tooth revolving with it, arranged to throw back the said tongue and press a double of paper into the bite of the jaws and leave a fold of paper held between them by revolving out of contact with said jaws, all constructed and arranged to operate substantially in the manner and for the purposes set forth.

324,035. CIGARETTE-MACHINE. JUAN W. MCCOY, San Francisco, Cal., assignor, by mesne assignments, to the Wood Tip Cigarette Company of California. Filed Mar. 7, 1882. Renewed May 2, 1884. (No model.)

Claim.—1. In a cigarette-machine, the endless traveling band or belt K, passing around pulleys J J', so that one portion moves above while the other portion moves below the table, said belt having the flexible forming-belt *k* lying upon it, and attached to it along its middle line, in combination with the horizontal guides L L and upright curved guides L^2 L^2, substantially as above described.

2. In a cigarette-machine, the flexible belt *k*, attached to and carried by the underlying belt K between the upright curved guides L^2 L^2, said flexible belt carrying the continuous cigarette-wrapper *m* consecutively under the constructing device, in combination with hopper G, pressure or forming roller I, pasting-disk N, folding lips or flanges *o o'*, and brush P, substantially as above described.

324,035.

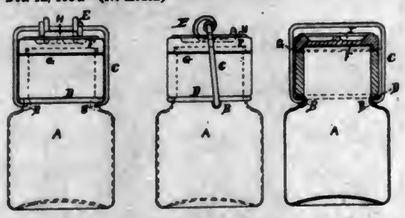


3. In a cigarette-machine, the tobacco-feeding device consisting of the endless travelling belt D^2, double series of conveying-rollers E, toothed roller or picker F, hopper G, with its four downwardly-moving sides, *g g g g*, and spout or chute G^2, substantially as above described.

4. The paste-box M, mounted directly over the curved guides L^2 L^2, in combination with the endless belt for carrying the paper, said paste-box having a slot in its bottom and one side, through which the periphery of the pasting wheel or disk N passes, so that the periphery of the wheel or disk will carry and apply the paste to the upturned edge of the paper as it passes between the guides L^2 L^2, substantially as above described.

5. The cigarette-cutter consisting of the double-edged shear-blades S, with their cutting-notches S', and having slotted handles S^2, in combination with the wheel R^2, carrying a pawl, the revolving disks R' having teeth and pins engaging with the slots S^2 in the shear-handles, and the pawl-operating mechanism, whereby the blades cut in each direction and change places after each cut, substantially as above shown.

324,036. FRUIT-JAR. WILLIAM C. MOODY, Oakland, Cal. Filed Dec. 12, 1884. (No model.)



Claim.—1. A fruit-jar having indentations or pockets B on one side of the center and protected by the metallic band D, so arranged as to prevent the hooks of the bail from coming in contact with the glass sides of the pockets, but said band receiving and sustaining the whole force of the bail when locked, substantially as set forth.

2. A fruit-jar having indentations or pockets B on one side of the center, the metallic band D, the bail C, and double rocker-cam E, having the projection H, in combination with a cover having a recess, I, so formed as to present a shoulder against which the projection H on the cam will press when locked, substantially as described.

324,037. BRUSH. SAMUEL MORLEY, Stockton-on-Tees, County of Durham, assignor to Whitaker Brothers, Horsforth, England. Filed Jan. 5, 1885. (No model.) Patented in England Mar. 13, 1884, No. 4,803.



Claim.—In a brush, the combination of a head, A, composed of sections B C D, metallic chamber E, embedded in said head between the sections C and D, provided with supply-opening F, and delivery-tubes *e*, extending through section B, and hollow handle G, communicating with the opening F, substantially as and for the purpose set forth.

324,038. INCANDESCENT ELECTRIC LAMP. OTTO A. MOSES, New York, N. Y. Filed July 30, 1884. (No model.)



Claim.—1. In an incandescent electric lamp, the combination, substantially as hereinbefore set forth, of a transparent chamber having its neck formed of two sections of homogeneous glass cut apart and welded together with the metallic conductors leading through the joint thus formed, and a seal at or near the end of the neck consisting of a platinum stopper around which the glass of the neck is closed.

2. In an incandescent electric lamp, the combination, substantially as hereinbefore set forth, of an inclosing-chamber for the filament, conductors leading through the wall of the chamber, and an independent stopper of platinum closing the evacuating opening of the chamber and constituting the seal.

3. In an incandescent electric lamp, the combination, substantially as hereinbefore set forth, of the inclosing-chamber, the conductors leading into the same, and an independent metallic wire passing through the wall of the chamber, to which wire the glass of the wall is mechanically united.

4. In an incandescent electric lamp, in combination with the conductors leading to the filament, a seal consisting of an independent platinum wire passing through the walls of the chamber, at the outer end of which wire there is formed a hook or loop, substantially as described.

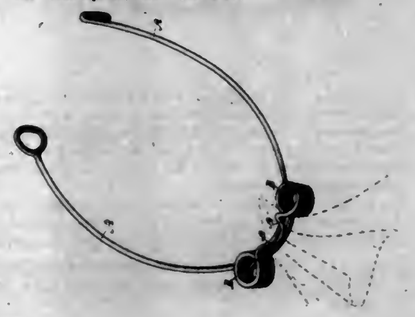
5. In an incandescent electric lamp, a platinum wire passing through the wall of the inclosing-chamber, which wire is freed from occluded gases by being coated with a film of glass *in vacuo* before being applied to the lamp.

6. In an incandescent electric lamp, a platinum conductor freed from occluded gases and passing through the wall of the inclosing-chamber, which wire has been coated with a film of glass by being heated *in vacuo* while surrounded by glass, substantially as described.

7. In an incandescent electric lamp, an inclosing globe for the filament, having its neck formed from two sections of the same piece of transparent material which have been cut apart for the insertion of metallic conductors and replaced after such conductors have been inserted.

8. In an incandescent electric lamp, a glass inclosing-chamber for the filament formed in two sections which are sealed or welded together under the influence of heat, and conductors leading through the walls of one section, which conductors are sunk into the edge of that section under the influence of heat, substantially as described.

324,039. NAPKIN-SUPPORTER. WILLIAM C. NELSON, Santa Rosa, Cal. Filed Apr. 20, 1885. (No model.)



Claim.—An improved napkin-holder consisting of the curved arms or extensions A, the front portions of which cross each other and form an elastic holding device, and the coils B, the said coils being united at their bottoms by the continuation of the wire, substantially as herein described.

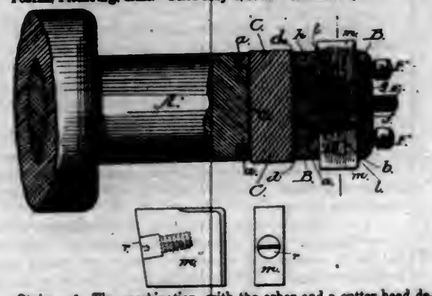
324,040. BOTTLE-STOPPER. WILLIAM PARKER, Baltimore, Md., assignor of one-half to Lewis R. Latrer, same place. Filed Apr. 9, 1885. (No model.)



Claim.—1. An elastic stopper combined with a rigidly-attached covering of some fibrous material saturated or coated with a neutral substance—such as paraffine or some other resistant body—substantially as and for the purpose set forth.

2. An elastic rubber stopper having a covering of some fibrous material vulcanized thereto and saturated or coated with some neutral non-corrodible body, substantially as and for the purpose set forth.

324,041. CUTTER-HEAD. SALMON W. PUTNAM and WILLIAM A. FOSTER, Fitchburg, Mass. Filed May 4, 1885. (No model.)

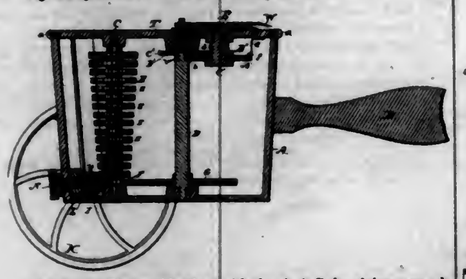


Claim.—1. The combination, with the arbor and a cutter-head detachably secured to the arbor, of suitable adjustably-secured radial cutters, substantially as herein described.

2. In combination with the arbor and cutter-head, a series of cutters which admit of a radial adjustment from a common center, both universally and independently, substantially as herein described.

3. The combination, with the arbor and cutter-head, of cutters attached to said cutter-head and means, substantially as described, whereby one or more of the cutters may be adjusted to cut in advance of the remaining cutters, substantially as and for the purpose described.

324,042. SPEED-INDICATOR FOR SHAFTS, PULLEYS, AND AXLES. SYLVANUS C. SHEPARD, Akron, Ohio, assignor of one-half to John Rawling, same place. Filed Jan. 21, 1885. (No model.)

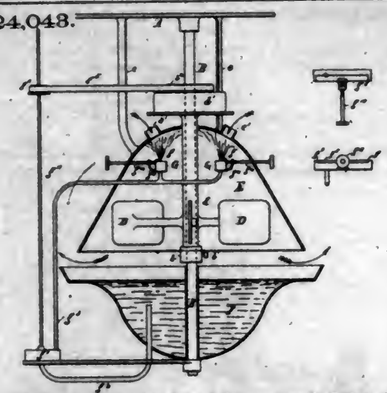


Claim.—1. The combination, with the shaft C, its pinions and adjustable driving mechanism, of the shaft D, having a ferrule or sleeve, the spur-wheel G, gearing with the pinion on the shaft C, the ferrule or sleeve V, provided with a tooth, *b*, and the pinion-wheel A', whereby at each revolution of the shaft D the pinion A' is moved around one notch, substantially as specified.

2. The box or bearing L, carrying the worm-shaft H and wheel K, adapted to be raised and lowered in guides in the box, in combination with the set-screw N, index-finger S, and index-plate R, as set forth.

324,043. APPARATUS FOR MOISTENING THE AIR IN COTTON-MILLS, &c. MONTGOMERY SHERMAN, Lowell, Mass. Filed Aug. 3, 1884. (No model.)

324,048.



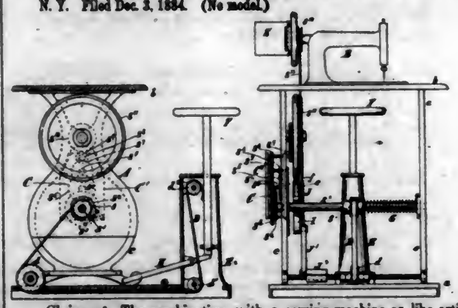
Claim.—1. The combination of the downwardly-flaring chamber provided with air-inlets, a reservoir adapted to contain water or other liquid and placed beneath and concentric with said chamber, and a fan adapted to rotate within said chamber and to draw air through said inlets into said chamber, and to expel said air from the bottom of said chamber into contact with the liquid contained in said reservoir and out between said chamber and reservoir, to moisten said air by contact with said liquid, as and for the purpose specified.

2. The combination of the downwardly-flaring chamber provided with air-inlets, a reservoir adapted to contain water or other liquid, and placed beneath and concentric with said chamber, and having an outwardly-flaring top, and a fan adapted to rotate within said chamber, and to draw air through said inlets into said chamber, and to expel said air from the bottom of said chamber into contact with the liquid contained in said reservoir and out between said chamber and reservoir to moisten said air by contact with said liquid, as and for the purpose specified.

3. The combination of a downwardly-flaring chamber provided near its top with air inlets, spray-producing valves placed within said chamber beneath said inlets, a fan placed within said chamber and adapted to rotate therein, and to draw the air into said chamber through said inlets, and to expel the same from the bottom of said chamber, and a reservoir placed beneath and concentric with said chamber, and having a top larger than the bottom of said chamber, and adapted to catch the drip from said chamber, as and for the purpose specified.

4. The combination of a downwardly-flaring chamber provided with air-inlets, a fan adapted to revolve within said chamber, a reservoir adapted to contain a liquid, arranged concentrically below said chamber and having a top larger than the bottom of said chamber, a pump, a pipe connecting said pump to said reservoir, and another pipe proceeding from said pump into said chamber and provided with spray-producing valves arranged within said chamber, as and for the purpose specified.

324,044. MEANS FOR OPERATING SEWING-MACHINES. CHRISTIAN G. SPENGLER, Hoboken, N. J., assignor to George Fuick, New York N. Y. Filed Dec. 3, 1884. (No model.)



Claim.—1. The combination, with a sewing-machine or like article, of a support for an operator adapted to descend under the influence of the weight of the operator, a strap connected at one end to the support and at the other to the end of a shaft, so as to transmit motion to the latter, a train of wheels deriving motion from the shaft, and a connection between the train of wheels and the sewing-machine, substantially as specified.

2. The combination, with a sewing-machine or like article, of a support for an operator adapted to descend under the influence of the weight of the operator and transmit motion to the sewing-machine or like article, and an adjustable fan for regulating the speed of the sewing-machine or other article.

3. The combination, with a sewing-machine or like article, of a support for an operator adapted to descend under the influence of the weight of the operator, a train of wheels serving to transmit motion to the sewing-machine, a connection between the train of wheels and the support, and a lever independent of the connection between the support and the train of wheels, by which the operator may raise the support when desired, substantially as described.

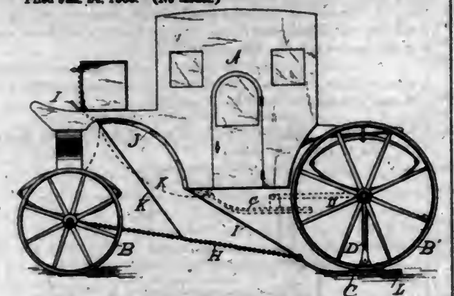
4. The combination, with a sewing-machine or like article, of a support for an operator adapted to descend under the influence of the weight of the operator, and a lever whereby the sewing-machine or like article may be started and stopped.

5. The combination, with the wheel s^{11}, of a shaft upon which said wheel is mounted, the lever I, treadle J^3, link J', and spring J.

6. The combination, with the wheel s^{11}, of a shaft upon which said wheel is mounted, the lever I, having a yielding extensible section, the treadle J^3, and the link J'.

7. The combination, with the wheel s^{11}, of the shaft upon which said wheel is mounted, the lever I, having a spring-actuated extensible section, a spring for operating the lever in one direction, the treadle J^3, and the link J'.

324,045. WAGON-BRAKE. FREDERIK STALDER, Allegheny City, Pa. Filed Jan. 24, 1885. (No model.)



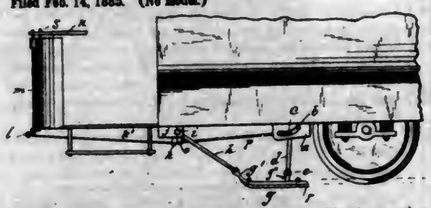
Claim.—1. In combination with the swing-lever D, hung to the axle near one wheel, and provided with a brake-shoe, C, adapted to be swung down to come under the opposite wheel, the lifting-strap I, attached to the forward end or toe of the shoe, and a central guide for the strap, such strap and guide serving to raise the lever and the shoe to substantially a horizontal position midway between the wheels.

2. In combination, the lever D, hung on the axle in the position described, the shoe C, the strap I, connected to its forward end or toe, and the adjusting chain or cord H, all operating substantially as described.

3. In combination, the lever D, the shoe C, strap I, and chain or cord H, both attached to the toe of the shoe, and the strap or cord K, connecting the strap I to the chain H, all as and for the purposes set forth.

4. In combination with the brake-shoe C, arranged to be held up beneath the center of the carriage and to be let down to come under one wheel of the carriage, the threaded and removable pin M, and a threaded hole in the shoe for the same, all substantially as shown and described.

324,046. CAR-BRAKE. FREDERK STALDER, Allegheny City, Pa. Filed Feb. 14, 1885. (No model.)

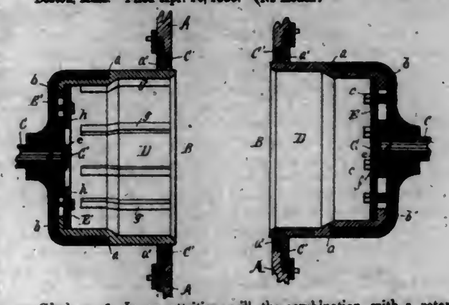


Claim.—1. A brake for horse-cars having in combination brackets *a*, provided with slots *b*, curving downward and forward, cross-bar *c*, working in such slots and adapted to be operated by link and crank connections from the platform of the car, and forming part of a brake-frame, and brake-shoes on such frame adapted to be forced down upon the rails forward of the front wheels, all substantially as set forth.

2. In combination, the slotted brackets *a b*, a brake-frame hung thereon, brake-shoes on said frame, links *h*, crank-rod *i*, links *p*, link *k'*, and the operating crank-shaft *m*, all substantially as and for the purposes set forth

3. In combination, the slotted brackets *a b*, a brake-frame, rod *i*, brake-shoes hung and operating as described, and crossing stay-rods connecting the shoes and the rod *i*, all substantially as and for the purposes set forth.

324,047. ROTARY HEAD FOR GRINDING-MILLS. THOMAS L. STURTEVANT, Framingham, assignor to the Sturtevant Mill Company, Boston, Mass. Filed Apr. 16, 1885. (No model.)



Claim.—1. In an attrition-mill, the combination, with a rotary shaft and its head, of the bushing partially inclosed by the head, and a clamping-plate, substantially as herein described.

2. In an attrition-mill, the combination, with the rotary head and its shaft, of the cap covering and clamping-plate, substantially as set forth.

3. In an attrition-mill, the combination, with the bushing D, interiorly provided with the lugs or partitions *g g*, of the rotary head B, partially inclosing said bushing, and to which the latter is secured, the cap covering, and the clamping-plate, substantially as stated.

324,048. CONDENSING PEPTONIZED MILK. WALTER H. THEW, Liverpool, County of Lancaster, England. Filed Aug. 20, 1884. (No specimens.) Patented in England Jan. 12, 1884, No. 1,313.

Claim.—1. The process of manufacturing peptonized milk, which consists in heating the milk to about 55° centigrade, then adding pancreatic liquid in substantially the proportions stated, then heating sufficiently to destroy the ferment when the required amount of conversion into peptones has been effected, and then condensing the product, substantially as described.

2. The process of manufacturing peptonized milk, which consists in heating the milk to about 55° centigrade, then adding phosphate of soda and pancreatic liquid in substantially the proportions herein specified, then heating sufficiently to destroy the ferment when the required amount of conversion into peptones has been effected, and then condensing the product, substantially as described.

3. The process of manufacturing peptonized milk, which consists in heating the milk to about 55° centigrade, then adding pancreatic liquid in substantially the proportions stated, then heating sufficiently to destroy the ferment when the required amount of conversion into peptones has been effected, maintaining a continual motion of the milk during such conversion, and then condensing the product.

324,049. CONDENSED PEPTONIZED MILK WITH COCOA. WALTER H. THEW, Liverpool, County of Lancaster, England. Filed Dec. 4, 1884. (No specimens.) Patented in England Nov. 13, 1884, No. 14,965.

Claim.—1. Condensed peptonized milk with cocoa, as a new article of manufacture.

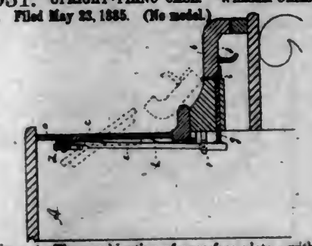
2. Condensed peptonized milk with cocoa and phosphate of soda, as a new article of manufacture.

324,050. CONDENSED PEPTONIZED MILK WITH COFFEE. WALTER H. THEW, Liverpool, County of Lancaster, England. Filed Dec. 4, 1884. (No specimens.) Patented in England Nov. 13, 1884, No. 14,965.

Claim.—1. Condensed peptonized milk with coffee, as a new article of manufacture.

2. Condensed peptonized milk with coffee and phosphate of soda, as a new article of manufacture.

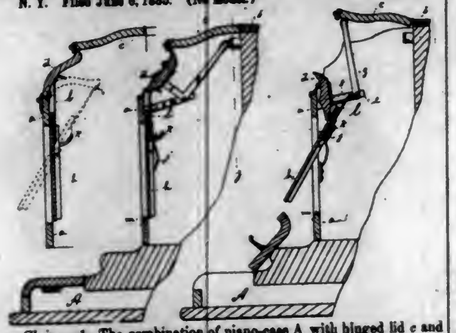
324,051. UPRIGHT-PIANO CASE. WILHELM UHLAND, New York, N. Y. Filed May 23, 1885. (No model.)



Claim.—1. The combination of open face-plate *a* with panel *c*, lid *b*, lever *e*, spring *h*, and pin *g*, substantially as specified.

2. The combination of open face-plate *a* with panel *c*, lid *b*, stop *d*, lever *e*, spring *h*, and pin *g*, and cross-piece *f*, substantially as specified.

324,052. UPRIGHT-PIANO CASE. Wilhelm Uhland, New York, N. Y. Filed June 6, 1885. (No model.)



Claim.—1. The combination of piano-case A with hinged lid *c* and panel *d*, all being constructed, substantially as described, so that on raising the lid the panel is automatically lowered, substantially as specified.

2. The combination of front *a*, having arms *e*, with panel *d*, having arms *f g*, and with lid *c*, all constructed and arranged substantially as described, whereby lid *c* is opened by arms *g* when panel *d* is lowered, substantially as specified.

3. The combination of front *a* with pivoted panel *d* and pivoted plate *h*, having curved rod *l*, all being constructed, substantially as described, so that by opening panel *d* the plate *h* is oscillated on its pivots, substantially as specified.

4. The combination, in a piano-case, of hinged lid *c*, with pivoted plate *h*, pivoted panel *d*, and with springs *j* and stop *k*, substantially as specified.

5. The combination, in a piano-case, of the following elements: front *a*, having arms *e*, with panel *d*, having arms *f g*, and with lid *c*, plate *h*, rod *l*, spring *j*, and stop *k*, substantially as and for the purpose specified.

324,053. BUTTON-FASTENING STAPLE. John H. Ventos, Boston, Mass., assignor to the Peninsular Novelty Company, Grand Rapids, Mich. Filed Mar. 31, 1885. (No model.)

Brief.—Improvement on Patent No. 312,986, dated February 24, 1885.



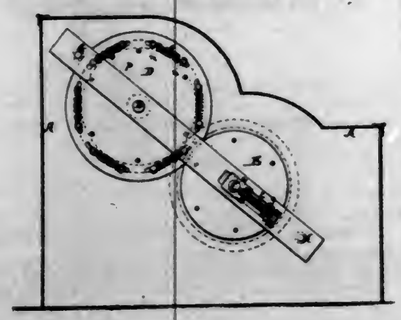
Claim.—1. As an article of manufacture, a button-fastening staple composed of wire the legs of which are provided with V-shaped points broader than the diameter of the wire from which the staple is made, the cutting-edges of both of said points being substantially at right angles to the length of the staple-head, substantially as described.

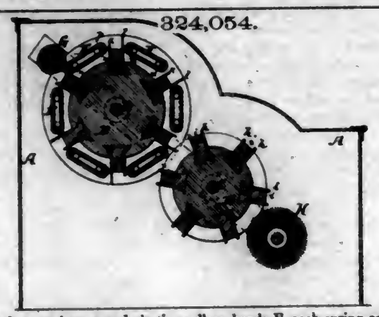
2. A staple-fastener for leather work, it having V-shaped points spread wider than the diameter of the wire, and set at one side of the center of the wire forming the legs above the points, to thus compel the staple to clinch uniformly in the desired direction, substantially as described.

324,054. MACHINE FOR SEPARATING FIBERS FROM PLANTS. John B. Vogel, New Orleans, La., assignor to himself, Emmanuel Dreifus, and Charles L. A. De Varx, same place, Mrs. Samuel Goldstein, Sallis, Miss., and William Lloyd Bowron, New York, N. Y. Filed Nov. 20, 1884. (No model.)

Claim.—1. The roller D, having scraping-blades, in combination with intermediate endless cushions, F, that are drawn over pins *n n*, substantially as described.

2. The roller D, having slotted end flanges, *p*, in combination with





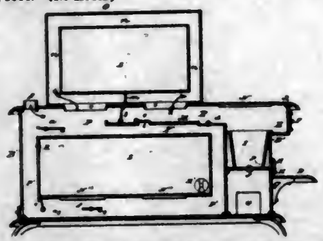
the rods *n*, springs *o*, and elastic endless bands F, each spring connecting with two of the springs, substantially as described.

3. The roller D, having slotted end flanges, *p*, in combination with the rods *n*, springs *o*, elastic endless bands F, and scrapers *k l*, as specified.

4. The roller E, having dovetail grooves, combined with the dovetail ribs *i* set in said grooves, and with the blades *h*, which are attached to the faces of said ribs, substantially as described.

5. The combination of the roller E, having blades *h* and dovetailed ribs *i*, with the roller D, having blades *k l*, intervening endless cushions F, and with the brushes G H, as specified.

324,055. COOKING-STOVE. John R. Webb, St. Joseph, Mich. Filed June 24, 1880. (No model.)



Claim.—1. In combination with the passages P, P′, and P″, arranged as shown with reference to the oven L and the fire-space I, the plate M and the dampers *a* and *d*, substantially as and for the purposes set forth.

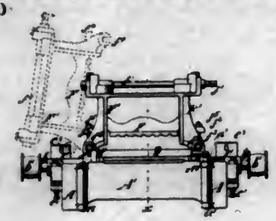
2. In combination with the passage P′, leading beneath the oven, and with the pot-hole N″ in the oven-bottom, the deflector *f*, Fig. 3, arranged in said passage and beneath said pot-hole, substantially as and for the purposes set forth.

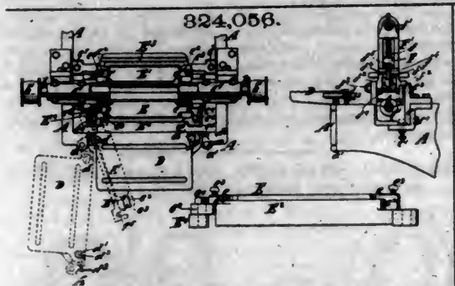
3. The detachable oven O, adapted to set over two neighboring pot-holes of a stove in the line of the air-passage from the fire-pot to the escape-passage of said stove, said oven having a passage, *n*, around the baking-chamber L′, and having also openings *o o*, coincident with the stove pot-holes, and a dividing-plate or partition, *m*, in the said passage between the said holes *o o*, combined with the stove having a deflector, *b*, located as shown, to close the direct passage beneath the top plate of the stove between the pot-holes, and to deflect the products of combustion through the passage *n* of the oven, substantially as described.

4. In combination with the plate M, arranged as described, to divide the passage P from the passage P″ over the oven L, and provided with the opening *i*, the dampers *b* and *c*, arranged as shown, and for the purposes set forth.

5. The stove described, combining the fire-box I, the escape S, the oven L, the passages P, P′, and P″, and the dampers *a d* and deflector *c*, all arranged and operating substantially as shown and described.

324,056. WOOD-PLANING MACHINE. James F. Welch, Alfred B. Hutchinson, and William H. Gray, Brooklyn, N. Y., assignors to the Glen Cove Machine Company, (Limited,) same place. Filed June 10, 1885. (No model.)





Claim.—1. The combination, with the under cutter-head, its boxes and side frames, and a presser above the cutter-head, of an end girth pivoted at one end to swing outward, and a bar or mouth-piece independent of the swinging girth and presser and supported by the cutter-head boxes, substantially as herein described.

2. The combination, with the under cutter-head, its boxes and side frames, and a presser above the cutter-head, of an end girth pivoted at one end to swing outward, a table movable with and pivoted to the girth so as to swing independent thereof, and a bar or mouth-piece independent of the swinging girth, table, and presser and supported by the cutter-head boxes, substantially as herein described.

3. The combination, with the under cutter-head and its boxes, of a bar-holder pivoted to one box to swing outward, and having a detachable connection with the other box, and a bar or mouth-piece adjustable in and carried by the swinging bar-holder, substantially as herein described.

4. The combination, with the lower cutter-head and its boxes C, of the bar-holder E, constructed with pockets or housings e^3, the plate or piece E^4, with which one end of the bar-holder has a slotted connection, and which is pivoted to one of said boxes C at e^4, a detachable connection between the other end of said bar-holder and the other box C, and the bar E, adjustable in the pockets or housings e^3, all substantially as herein described.

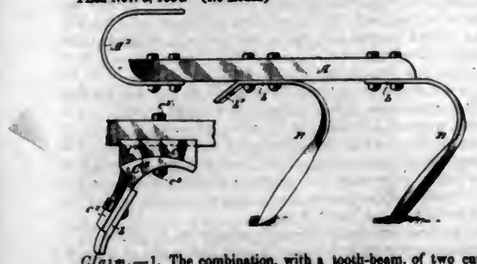
5. The combination, with the under cutter-head, its boxes, and the side frames, of an end girth pivoted at one end to swing outward, a bar-holder, also pivoted at one end to swing outward independently of the girth, and a bar or mouth-piece carried by the swinging bar-holder, and also independent of the girth, substantially as herein described.

6. The combination, with the under cutter-head, its boxes, and the side frames, of a bar-holder pivoted at one end to swing outward, and carrying a bar or mouth-piece, a girth independent of the bar or mouth-piece, and a top platen or presser hinged at one end to swing upward and outward, substantially as herein described.

7. The combination, with the under cutter-head, its boxes, and the side frames, of an end girth pivoted at one end to swing outward, a bar or mouth-piece supported by the cutter-head boxes and independently of the girth, and a top platen or presser hinged at one end to swing upward and outward, substantially as herein described.

8. The combination, with the under cutter-head, its boxes, and the side frames, of an end girth pivoted at one end to swing outward, a bar-holder, also pivoted at one end to swing outward independently of the girth, a bar or mouth-piece carried by said bar-holder independently of the girth, and a top platen or presser hinged at one end to swing upward and outward, substantially as herein described.

324,057. HARROW. Ephemer E. Whipple, Eaton Rapids, Mich. Filed Nov. 5, 1884. (No model.)



Claim.—1. The combination, with a tooth-beam, of two curved and twisted teeth secured to the beam, one behind the other, with their points rearwardly directed, and having their end portions arranged obliquely beneath the beam at opposite angles thereto, and having their working-faces rearwardly, laterally, and downwardly inclined, substantially as and for the purpose set forth.

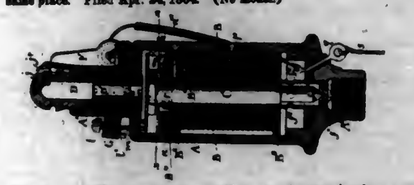
2. The combination, with a tooth-beam, of a reversible curved and twisted tooth, and means, substantially as described, for securing said tooth to the beam with its working-point directed either forward for deep digging or to the rear for surface cultivation, substantially as set forth.

3. The combination, with a tooth-beam and a reversible curved and twisted tooth adapted for attachment to the beam with its point directed either forward or to the rear, said tooth having a shank constructed for attachment to the beam, so as to sustain the tooth with its point forwardly directed for deep digging, of an angular casting for connecting the said shank with the beam when the tooth is reversed for surface cultivation, substantially as set forth.

4. The combination, with a tooth-beam and a reversible curved and twisted tooth adapted for attachment to the beam with its point directed either forward or to the rear, said tooth having its shank adapted for attachment to the beam, so as to sustain the tooth with its point directed forwardly for deep digging, of means, substantially as described, for adjustably connecting the said shank with the beam when the tooth is reversed for surface cultivation, whereby the angle of the working-edge of the tooth with reference to the ground may be varied, substantially as set forth.

5. The combination, with a tooth-beam and a reversible curved and twisted tooth adapted for attachment to the beam with its point directed either forwardly or to the rear, said tooth having a shank adapted for attachment to the beam, so as to sustain the tooth with its point directed forwardly, of an angular casting for connecting the said shank with the beam when the point of the tooth is directed rearwardly, said casting consisting of two parts, C^3 and C^4, having their contact-faces curved, and means, substantially as described, for securing said parts together and to the beam, whereby the inclination of the tooth with reference to the beam may be varied, substantially as set forth.

324,058. ELECTRIC GAS-LIGHTING APPARATUS. Le Roy S. White, Waterbury, Conn., assignor to the Electric Appliance Company, same place. Filed Apr. 24, 1884. (No model.)



Claim.—1. The combination, with a gas-burner having a case wherein is arranged an electro-magnet coil, of a core movable vertically within the coil of the electro-magnet, and carrying a valve for controlling the flow of gas to the burner-tip, sparking devices, and a connection through which the core operates upon them as it rises to produce sparking, a locking device for holding the core elevated and the valve open, and a second electro-magnet for unlocking the locking device and allowing the core to fall to close the valve, substantially as herein described.

2. The combination, with a gas-burner having a case wherein is arranged an electro-magnet coil, of a core movable vertically within the said coil, and carrying a gas-valve, and provided above the said coil with a head or laterally-extending flange, sparking devices, and a connection through which the core operates upon them as it rises to produce sparking, an independent electro-magnet arranged above the main electro-magnet, and a laterally-movable armature and a stop which serves to hold the core elevated and the valve open, and which, when attracted by the independent electro-magnet, will withdraw the stop from below the head of the core and allow the core to fall and close the valve, substantially as herein described.

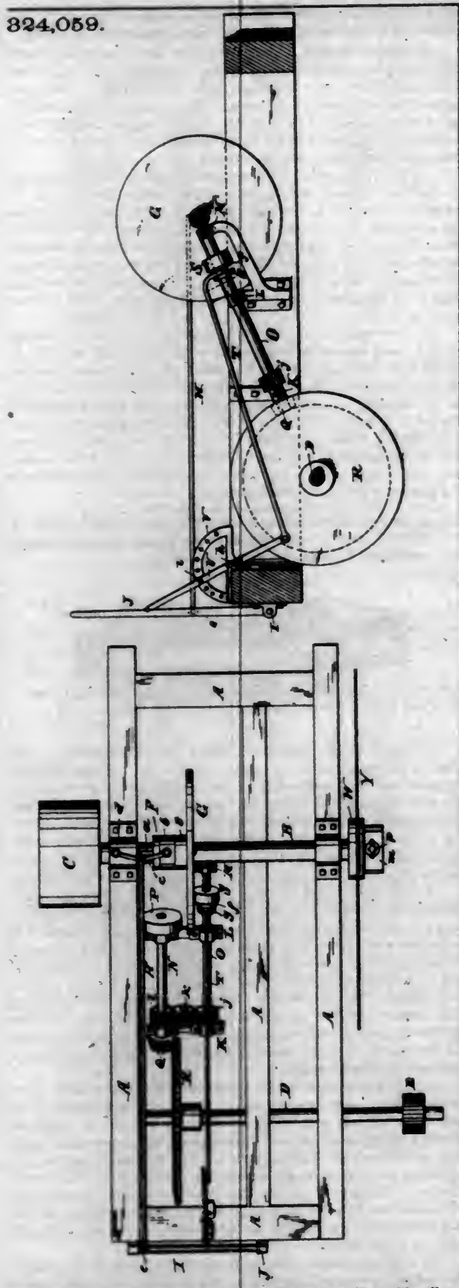
3. The combination, with a gas-burner and a case wherein is arranged a main electro-magnet coil, of a core movable vertically in the coil, and carrying a gas-valve, sparking devices, and a connection through which the core operates upon them in rising to produce sparking, an independent electro-magnet, and two armatures connected together, so as to move simultaneously, and carrying a stop for locking the core in its elevated position, one of said armatures being arranged to be attracted by a current through the main electro-magnet coil, and the other by a current through the independent electro-magnet, substantially as herein described.

4. The combination, with the burner-casing having a valve-seat at the bottom, the electro-magnet composed of a tube, B′, coil B, central movable core, C, and armature D, all within the said case, the valve *f* at the lower end of the said core, and the broad core-head C′ on the other end of said core, of the electro-magnet E, arranged within the said casing above the first-named electro-magnet, the two connected armatures *n* and *r*, placed on opposite sides of the said core C, and the locking-pin *h*, attached to one of said armatures, all substantially as herein described.

324,059. FEED MECHANISM FOR SAW-MILL CARRIAGES. Harvey R. Wolfe, Louisville, Ky., assignor to Brennan & Co. South Western Agricultural Works, same place. Filed Apr. 18, 1885. (No model.)

Claim.—1. In a saw-mill, the combination, with the carriage-pro-

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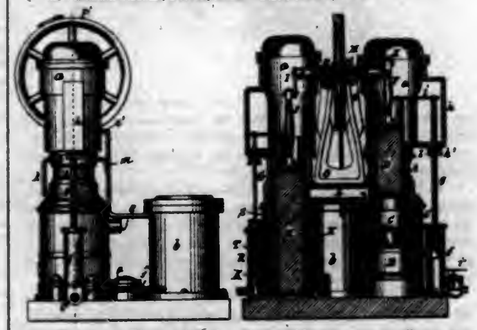


polling shaft, of two shafts geared therewith and provided with rollers, and a disk mounted and free to slide upon the saw-arbor between said rollers, with connecting and operating mechanism, whereby upon bringing said disk into contact with one of said rollers the carriage is fed forward, and upon bringing said disk into contact with the other of said rollers the carriage is retracted, substantially as described.

2. The combination, with the disk G, free to slide upon the saw-arbor, of the rollers P S, mounted upon shafts N O and connected by gearing with the feed-shaft D, substantially as described, the latter of which rollers, S, is adjustable in or out upon the surface of the disk G, as and for the purpose specified.

3. The combination of the shaft D, bevel-wheel R, mounted thereon, the shafts N O, carrying at one end the pinions *j l*, meshing with the intermediate pinion, *k*, and the bevel-pinion, Q, meshing with the bevel-wheel R, the rollers P S, mounted upon the other ends of said shafts N O, the latter of which rollers is adjustable on its shaft, the intermediate disk, G, and mechanism for causing said disk to slide on the saw-arbor to cause its engagement with either of the rollers S or P, substantially as described.

324,060. HOT-AIR ENGINE. JAMES A. WOODBURY, JOSHUA MERRILL, and GEORGE PATTEN, Boston, Mass. Filed June 5, 1877.



Claim.—1. The combination of a working or power cylinder provided with a heating apparatus located beneath it, a cooling-cylinder located at one side of and parallel, or nearly so, with said working-cylinder and having free communication therewith through a connecting-passage, a piston fitted to work tightly in each of said cylinders and connected together by a shaft and suitable cranks and connecting-rods, and adapted to be worked by alternately heating the air under one piston and cooling it under the other, the upper ends of both of said cylinders being tightly closed to adapt the chambers above the pistons to contain air, gas, or gaseous fluid at a pressure greater than that of ordinary atmospheric air, substantially as described.

2. The combination of a working or power cylinder provided with a heating apparatus located beneath it, a cooling-cylinder located at one side of said working-cylinder, having free communication therewith through a connecting-passage, a piston fitted to work tightly in each of said cylinders and connected together by a shaft and suitable cranks and connecting-rods, and adapted to be worked by alternately heating air under one piston and cooling it under the other, a chamber above each of said pistons adapted to contain gas or gaseous fluid at a pressure greater than that of the ordinary atmosphere, a pipe or pipes leading from the chambers above said pistons to the chamber beneath the piston in the cooling-cylinder, and a check-valve adapted to permit the passage of air, gas, or gaseous fluid from the chambers above the pistons to the space beneath the pistons and prevent its return, substantially as described.

3. The combination of a working-cylinder provided with a reciprocating piston, an air-pump adapted to force air into said cylinder under pressure, a heating apparatus for applying heat to said working-cylinder to heat the air contained therein, and a cooling or refrigerating device, all arranged and adapted to operate substantially as and for the purposes described.

4. The combination of a working-cylinder provided with a heating apparatus, a cooling-cylinder having free communication with the working-cylinder, a piston fitted to move in each of said cylinders and adapted to be operated by the alternate heating and cooling of the body of air contained beneath said pistons, the receiver *b*, having free communication through the pipes *c*, *c'*, and *c²* with the chambers *a a* above the pistons, and through the pipes *d d'* and check-valve *e* with the spaces below the pistons, substantially as and for the purposes described.

5. In combination with a working or power cylinder provided with a heating apparatus, a cooling-cylinder having free communication with the working-cylinder, their respective pistons, and a receiver filled with compressed air and communicating with closed chambers upon both sides of said pistons, an air-pump connected by a suitable pipe or pipes with said receiver and adapted to force air into it under pressure, substantially as and for the purposes described.

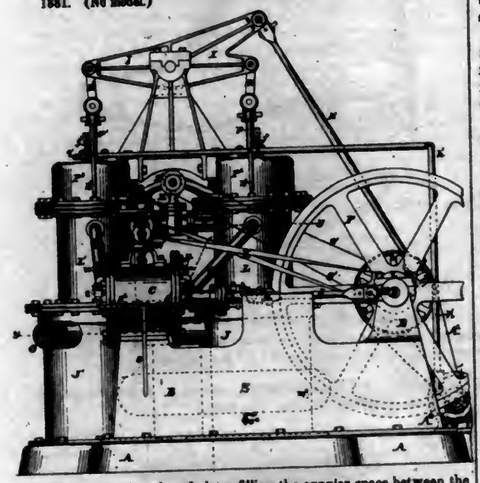
6. In combination with an engine adapted to be worked in an artificial atmosphere by the alternate heating and cooling of the compressed air upon one side of the piston or pistons and the constant pressure of air compressed to the same density upon the other side of said piston or pistons, a receiver adapted to supply compressed air to both sides of the piston or pistons, an air-pump to force air into the receiver, and a relief-valve adapted to serve as a discharge for said pump when the pressure in the receiver is maintained at the desired point, substantially as described.

7. The combination of a working-cylinder of an air-engine and its piston adapted to be operated by alternately heating and cooling the air contained upon one side of said piston, an air-pump adapted to force air into said cylinder under pressure, a receiver or reservoir placed between said pump and the working-cylinder and having communication with the chamber above the working-piston, a pipe leading from said receiver to the chamber beneath said working-piston, and a check-valve adapted to permit the free passage of air from the receiver to the chamber beneath the working-piston and prevent its return, substantially as described.

8. The combination of a working-cylinder of an air-engine and its piston adapted to be operated by alternately heating and cooling the air contained upon one side of said piston, an air-pump adapted to force air into the chamber above the piston of said cylinder under pressure, a pipe leading from the chamber above said piston to the chamber beneath it, and a check-valve adapted to permit the free passage of air from the upper side of said piston to its under side and prevent its return, substantially as described.

9. In combination with an air-engine adapted to contain and be operated by air under pressure, a pump for forcing air into said engine, and a relief-valve adapted to control the pressure in the engine, substantially as described.

324,061. HOT-AIR ENGINE. JAMES A. WOODBURY, JOSHUA MERRILL, GEORGE PATTEN, and EDWARD F. WOODBURY, Boston, Mass. Filed Apr. 4 1881. (No model.)



Claim.—1. A series of plates filling the annular space between the reverser-cylinder and the regenerator-cylinder and extending to the lower part of the heater, substantially as described.

2. In an air-engine, the combination of a heater, a cylinder extending into said heater, and a series of plates placed in the space or spaces between said cylinder and heater, substantially as described.

3. In an air-engine provided with one or more reverser-cylinders, a reverser-piston provided with a packing-ring, substantially as described.

4. The combination of the working-cylinder C, the air-pump T, the air-pipes *a*, *a'*, and *a²*, and the check-valves *t t*, all arranged and adapted to operate substantially as and for the purposes described.

5. In an air-engine arranged to use the same body of air over and over without exhausting it, the combination of a working-cylinder, a reverser, a heater, a cooler, and means of circulating air around said cooler, substantially as described.

6. In an air-engine, the combination of a working-cylinder, two reverser-cylinders connected by suitable pipes with the working-cylinder, a heater, and a furnace or other means of applying heat beneath each of said reverser-cylinders, a passage from the furnace beneath one reverser-cylinder to the space beneath the other reverser-cylinder, and a passage thence to the chimney; all arranged and adapted to operate substantially as and for the purposes described.

7. As a means of slowing, stopping, or regulating an air-engine, the combination of two reverser-cylinders, a pipe connecting said cylinders, and a valve in said pipe arranged and adapted to control and regulate the passage of air from one cylinder to the other, substantially as described.

8. In an air-engine provided with a double-acting working-cylinder and two reverser-cylinders, a pipe or passage-way arranged to permit communication between the chambers at the ends of the working-piston, in combination with a valve arranged in and adapted to open and close said passage, as a means of regulating, slowing, or stopping the engine, substantially as described.

9. In an air-engine, the combination of two reverser-cylinders connected by a pipe, a valve adapted to close the passage through said pipe, and a governor connected with and adapted to operate said valve, as a means of regulating the speed of the engine, by controlling the difference in the pressure acting upon the ends of the working-piston, substantially as described.

10. In an air-engine, the combination of a working-cylinder, two reverser-cylinders, a pipe connecting said reverser-cylinders, a valve in said pipe, a governor connected to and adapted to operate said valve, and a second governor connected to and operating a throttle-valve to regulate the admission of air to the working-cylinder, substantially as described.

11. In an air-engine, a heater provided with a series of tubes having their upper ends closed and their lower ends opening into the combustion-chamber, substantially as described.

12. In an air-engine, a heater provided with a series of tubes having their upper ends closed and their lower ends opening into the combustion-chamber, in combination with a filling-block provided with corresponding openings to receive said tubes and form annular spaces around the same for the passage of air from one end of the reverser-cylinder to the other, substantially as described.

13. In an air-engine, the combination of a heater and a filling-block provided with a series of holes extending from its upper to its lower side, and arranged within said heater and in such a relation to its bottom as to form a space between said block and the heater-bottom for the passage of air, substantially as described.

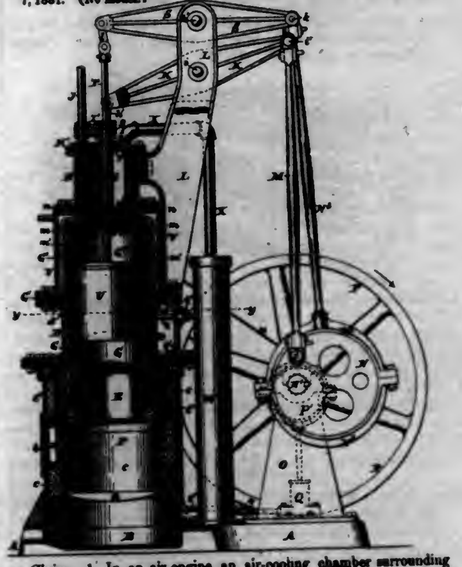
14. The combination, in an air-engine, of a working-cylinder, a reverser-cylinder, and a regenerator-cylinder, arranged, as set forth, to form an annular regenerator-space between them, and a pipe leading from the upper end of the regenerator-space to the working-cylinder, substantially as described.

15. In an air-engine, a cooler or heater composed of a series of tubes, each divided longitudinally by a partition, substantially as described.

16. In an air-engine operated by compressed air, mechanism for automatically controlling the passage of air to or from the air-pump, so that whenever the air in the engine or receiver is raised to the desired pressure the pump shall be relieved from the labor due to compressing the air, substantially as described.

17. In an air-engine operated by compressed air, the combination of the air-pump T, the cylinder U, connected through the pipe *a'* with the air-pump, the piston a^2, rod a^4, lever b', weight b^2, lever c', and cock or valve c^3, all arranged and adapted to operate substantially as and for the purposes described.

324,062. AIR-ENGINE. JAMES A. WOODBURY, JOSHUA MERRILL, GEORGE PATTEN, and EDWARD F. WOODBURY, Boston, Mass. Filed June 7, 1881. (No model.)



Claim.—1. In an air-engine, an air-cooling chamber surrounding and inclosing a portion of the periphery and a portion of one end of the reverser-cylinder, substantially as and for the purposes described.

2. In an air-engine having a working-cylinder and a reverser-cylinder arranged to use the same body of air over and over, a reverser-

piston provided with a packing-ring to move therewith, in combination with a cooling-chamber surrounding and inclosing that portion of the reverser-cylinder in which said packing-ring moves, substantially as and for the purposes described.

3. A reverser-cylinder divided transversely into two parts at a point below the lowest position of the packing-ring of the reverser-piston, substantially as described.

4. A reverser-cylinder divided transversely at or near the middle of its length, in combination with air-cooling pipes extending from said division of the reverser upward, and communicating with the interior of said reverser at or near its top end, substantially as described.

5. The combination of a reverser-piston provided with a packing-ring, a cooler surrounding and inclosing that portion of the reverser-cylinder in which said packing-ring moves, and a regenerator communicating with said cooler and with the chamber below the reverser-piston, substantially as described.

6. The combination, in an air-engine, of a reverser-cylinder, a regenerator, and a cooler around and outside of the upper portion of the periphery of said cylinder, and leading from said regenerator to the interior of said reverser-cylinder, substantially as described.

7. In a single-acting air-engine, a passage connecting the chambers on opposite sides of the working-piston, in combination with a governor and a valve connected therewith for controlling the passage of air from one of said chambers to the other, substantially as described.

8. In a single-acting air-engine, a passage leading from the chamber at one end of the working-piston to the chamber at the opposite end of the working-piston, in combination with a valve and governor for controlling the passage of air from the chamber above the working-piston to the chamber below the same, and a check-valve for controlling the passage of air from the supply-tank to the chamber below the working-piston, substantially as and for the purposes described.

9. The combination of the tubular piston-rod I, having secured to one end thereof the piston H^3 of the working-cylinder, and to the other end the cross-head I', the guide-rod J, the piston-rod T, having its bearing in said tubular rod I, and connected at its lower end to the reverser-piston U, and the cupped packing *f*, all arranged and adapted to operate substantially as described.

10. In combination with a working-cylinder and a reverser-cylinder arranged end to end, with their axes in the same line, and each provided with a reciprocating piston, two beams, arranged one above the other, with their pivotal bearing in the same stand, and adapted to oscillate in the same vertical plane, and means of connecting said beams to said pistons, substantially as described.

11. In combination with two beams arranged one above the other, with their pivotal bearings in the same stand, and adapted to oscillate in the same vertical plane, the eccentric N, and rod N^2, connecting with one beam, and the crank-pin *j*, set in the side of the eccentric N, and the rod M, leading from said pin to the other beam, substantially as described.

324,063. THRASHING-MACHINE. Charles Woolnough, Henham, County of Suffolk, England. Filed Feb. 24, 1885. (No model.) Patented in England Dec. 19, 1884, No. 16,711.



Claim.—1. The combination, in a thrashing-machine, with the shaft and drum-heads B, formed with recesses C, of the hollow beater-cylinders A, having roughened or ribbed surfaces, and having their ends fitted into the recesses C, the bolts D, passing through the beater-cylinders and heads, and their nuts E, for clamping and holding said beaters A between the drum-heads B, substantially as specified.

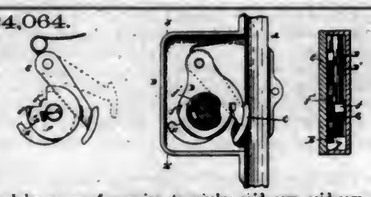
2. The combination, in a thrashing-machine, with the frames of the concaves formed with recesses C, of the hollow beater-cylinders A, having their ends fitted into recesses C, the bolts D, passing through the beater-cylinders and heads, and their nuts E, substantially as specified.

324,064. WHIP-SOCKET. Marlon M. Zellers, Kent, Ohio. Filed Aug. 30, 1884. (No model.)

Claim.—1. The combination, with a whip-socket, of a pawl connected therewith, arranged to engage the whip therein, and a cam actuated by a spring and arranged to follow the forward movement of and retain said pawl, all arranged and constructed substantially as shown, and for the purpose specified.

2. The combination, with a whip-socket, of a locking-pawl, a cam which actuates the same, and a disk mounted on the same part, and arranged by means of a spring to revolve said cam, said cam and disk each free to make a partial rotary movement independent of the other, substantially as shown, and for the purpose specified.

3. The herein-described whip-socket, consisting of the socket A, pawl C, tumblers D D', cam E, disk F, and spring *e d'*, all constructed and arranged substantially as shown, and for the purpose specified.

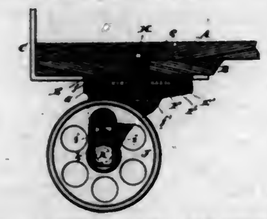


324,065. SPRING-SHANK FOR BOOTS OR SHOES. Charles E. Andrews, Boston, Mass. Filed Dec. 20, 1884. (No model.)



Claim.—The combination, with a boot or shoe sole, of a spring, E, attached at one end to the end of a bar or strap, F, and the interposed V-spring G H, substantially as and for the purpose set forth.

324,066. WAREHOUSE-TRUCK. George F. Armstrong, Philadelphia, Pa. Filed Dec. 19, 1884. (No model.)



Claim.—1. A caster for a truck, which consists of a base-plate having an annular bearing-face, in combination with a cup-shaped oil-holding plate secured to said base-plate by a pivot-joint at its center, and having an axle-pin located to one side of its center, and a loose wheel journaled upon said axle-pin, substantially as and for the purpose specified.

2. A caster for a truck, which consists of a base-plate having an annular bearing-face, in combination with a cup-shaped oil-holding plate secured to said base-plate by a pivot-joint at its center, and having an axle-pin located to one side of its center, the central part of said oil-holding plate being raised so as to cause the oil to flow down to the bearing-faces, and a loose wheel journaled upon said axle-pin, substantially as and for the purpose specified.

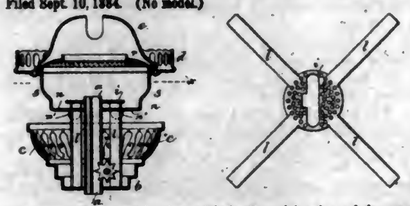
3. A caster for a truck, which consists of a base-plate having an annular bearing-face, in combination with a cup-shaped oil-holding plate secured to said base-plate by a pivot-joint at its center and secured rigidly therein, and a loose wheel journaled upon said axle-pin, substantially as and for the purpose specified.

4. The combination of plate E, having annular bearing-face E', with cup-shaped oil-plate F, having bearing-face F', and raised edges *f*, and provided with an axle or journal under or nearly under the said bearing-face E', a loose wheel carried by said axle, and a pin, H, to pivot the plates E and F together, substantially as and for the purpose specified.

5. The combination of plate E, having annular bearing-face E', with cup-shaped oil-plate F, having bearing-face F', and raised edges *f* and center *f'*, provided with an axle or journal under or nearly under the said bearing-face E', a loose wheel carried by said axle, and a pin, H, to pivot the plates E and F together, substantially as and for the purpose specified.

6. The side plates, I, having strengthening-ribs *i*, in combination with pin or axle K, made rigid therein by having its ends riveted between the said ribs, and a loose wheel having a wide bearing working on said axle-pin and held from lateral motion by the said plates, substantially as and for the purpose specified.

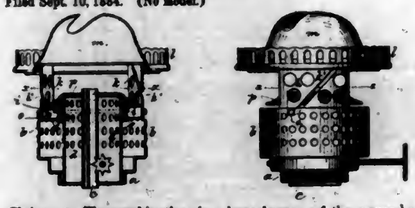
324,067. LAMP-BURNER. Lewis J. Atwood, Waterbury, Conn. Filed Sept. 10, 1884. (No model.)



Claim.—1. The combination, with the flat wick-tube and the screw-base connected to the same, of a disk, *i*, around the upper part of the wick-tube, vertical bars connecting the same with the base, a slider around the bars, a chimney-holder, and arms extending from the slider to such chimney-holder, substantially as set forth.

2. The combination, in a lamp-burner, of a screw-base, a flat wick-tube, a range of vertical bars around the wick-tube, the disk *i*, connecting the upper ends of the bars and the wick-tube, a slider having yielding frictional bearings upon such bars, a chimney-holder, and arms connecting the same to the slider and the perforated air-distributer *r*, and the deflector *e* above the air-distributer, substantially as specified.

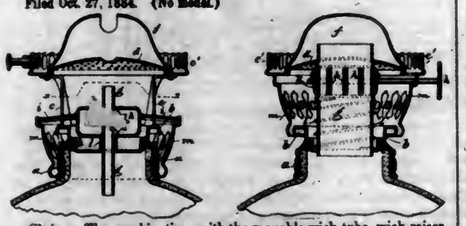
324,068. LAMP-BURNER. Lewis J. Atwood, Waterbury, Conn. Filed Sept. 10, 1884. (No model.)



Claim.—1. The combination, in a lamp-burner, of the screw-base *a*, perforated body *b*, guide-cylinder *d*, ring *e*, connections *k*, extending upwardly from the edges of the ring *d*, and having inclined indentations or slots, the projections *o*, and the chimney-holder *l*, substantially as set forth.

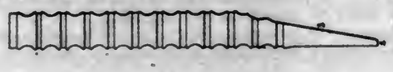
2. The chimney-holder *l* and deflector, in combination with the incline connections *k*, ring *e*, cylinder *d*, wick-tube *c*, and air-distributer connected with the upper end of the cylinder *d*, substantially as set forth.

324,069. LAMP-BURNER. Lewis J. Atwood, Waterbury, Conn. Filed Oct. 27, 1884. (No model.)



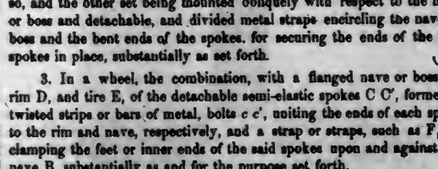
Claim.—The combination, with the movable wick-tube, wick-raiser, and ratchet-case with lateral extensions, of the skirt attached to the said extensions, the chimney-holder, air-distributer, and cone, the standards supporting the chimney-holder, and the burner-base, substantially as set forth.

324,070. SHOE-NAIL. Lewis J. Atwood, Waterbury, Conn., assignor to the Plume & Atwood Manufactering Company, same place. Filed Mar. 21, 1885. (No model.)



Claim.—The wire shoe-nail having a sleuder tapering point that is plain and rounding on one side and flat on the other side and terminates approximately in a straight chisel-edge, a body that is parallel and corrugated circumferentially, said corrugations also surrounding and forming burrs at the shoulder between the body and point portions, substantially as set forth.

324,071. CARVING-FORK. Alfred F. Bannister, Newark, N. J. Filed Mar. 17, 1885. (Model.)



Claim.—The improved carving-fork, consisting, essentially, of a fork having a perforation in the shank with a straight or approximately straight bearing and stop at the opposite ends thereof, a disk pivoted in said perforation having a guard and supports extending therefrom and a radial chamber formed therein, a spring-actuated plunger arranged in said radial chamber and rotating with said disk and pressing against said straight bearing, said plunger co-operating with the stop and bearing to hold the pivotal piece in position, substantially as and for the purposes set forth.

324,072. VEHICLE-WHEEL. Henry J. Barrett, Kingston-upon-Hull, County of York, England. Filed Oct. 2, 1884. (No model.) Patented in England Aug. 14, 1882, No. 3,873; in Cape of Good Hope Nov. 22, 1882, and in Natal Mar. 30, 1883.

Claim.—1. A wheel having detachable metal spokes C C', with ends bent over laterally and connecting the nave or boss B with the rim or felly D, the spokes being arranged in two series, one of which series is set on an incline with reference to the plane of motion of the wheel, and the spokes of the two series being secured to the nave or boss by detachable divided metal straps encircling the nave or boss and the bent ends of the spokes, substantially as set forth.

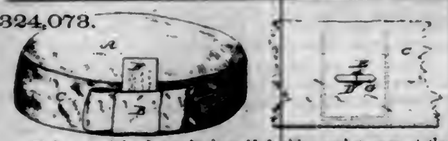
2. A metal wheel having detachable spokes C C' connecting the nave or boss B with the rim or felly D, and having their inner ends bent over laterally, one set or series of spokes being vertical, or nearly so, and the other set being mounted obliquely with respect to the nave or boss and detachable, and divided metal straps encircling the nave or boss and the bent ends of the spokes, for securing the ends of the said spokes in place, substantially as set forth.

3. In a wheel, the combination, with a flanged nave or boss, B, rim D, and tire E, of the detachable semi-elastic spokes C C', formed of twisted strips or bars of metal, bolts *c c'*, uniting the ends of each spoke to the rim and nave, respectively, and a strap or straps, such as F, for clamping the feet or inner ends of the said spokes upon and against the nave B, substantially as and for the purpose set forth.

4. In a wheel, the combination, with the metal nave B, felly D, and tire E, of the detachable spokes C C', secured alternately to opposite sides of the nave or boss and connecting the felly with the said nave, the said spokes having bent and flanged outer ends, which fit against the edge of the felly, and bolts *c c*, with taper heads uniting each spoke with the rim and tire, and means, substantially as described, for securely clamping the inner ends of the detachable spokes to the nave B, as and for the purpose set forth.

324,073. HAT OR CAP. Nathan Baruch, Schwerssez, Germany, and Owen L. Williams, Portsmouth, County of Hants, England. Filed May 11, 1885. (No model.)

324,073.

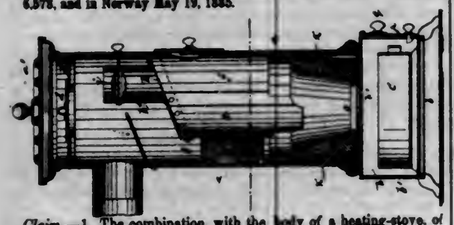


Claim.—1. A head-covering provided with a pocket open at the exterior thereof and of a width to receive and retain a railway-ticket, but not wide enough to permit said ticket to fall over or pass out of sight.

2. In combination with hat or cap A, pocket B, forming a part of a bow and secured to the hat or cap, as shown, to receive a ticket or card.

3. In combination with hat or cap A, pocket B, secured thereto and provided with hole or opening D and fastening G passing through the same, as and for the purpose set forth.

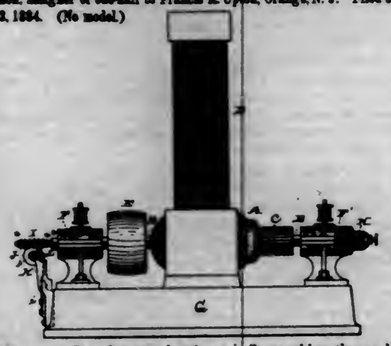
324,074. HEATING-STOVE. MARINUS JAN SCHUURBEQUE BORTE, Zwolle, Overyssel, Netherlands. Filed Nov. 12, 1884. (No model.) Patented in Belgium Aug. 16, 1884, No. 65,201; in Sweden Dec. 24, 1884; in France Jan. 12, 1885, No. 164,023; in Germany Feb. 5, 1885, No. 30,335; in Austria Mar. 1, 1885, No. 39,833; in Spain Mar. 11, 1885, No. 6,573, and in Norway May 19, 1885.



Claim.—1. The combination, with the body of a heating-stove, of a vertical segmental partition extending into the fire-pot and dividing the interior of the body into a filling shaft or magazine on one side and a crescent-shaped combustion chamber or flue on the opposite side, a plate covering the top of said filling-shaft and provided with a dampered opening, an exit-flue leading from said body near the top thereof, and an inclined plate attached to said body between said exit-flue and said filling-shaft, said plate being located over said crescent-shaped flue, substantially as described.

2. The combination, with the body of a heating-stove, of a vertical segmental partition extending into the fire-pot and dividing the interior of said body into a filling shaft or magazine on one side and a crescent-shaped combustion chamber or flue on the opposite side, said crescent-shaped combustion chamber or flue being divided by a vertical partition extending between said segmental partition and the body of the stove, a plate covering the top of said filling-shaft and provided with a dampered opening, an exit-flue leading from said body near the top thereof, and an inclined plate attached to said body between said exit-flue and said filling-shaft, said plate being located over said crescent-shaped flue, substantially as described.

324,075. DYNAMO-ELECTRIC MACHINE. JAMES J. BRADLEY, Harrison, assignor of one-half to Francis R. Upton, Orange, N. J. Filed July 23, 1884. (No model.)



Claim.—1. In a dynamo-electric or similar machine, the combination, with the shaft of the machine, balanced in its bearings, of an automatically-acting device intermittently giving such shaft a positive longitudinal movement, substantially as set forth.

2. In a dynamo-electric machine, the combination, with the armature-shaft having a pulley on one side of the field-magnet, and a spring at the opposite end of the shaft balancing the attractive force exerted by the magnet upon the pulley, of an automatically-acting device intermittently giving such shaft a positive longitudinal movement, substantially as set forth.

3. In a dynamo-electric or similar machine, the combination, with the shaft of the machine, having a spring at one end, of an automatically-acting device located at the opposite end of said shaft, and intermittently giving such shaft a positive longitudinal movement, substantially as set forth.

4. In a dynamo-electric or similar machine, a mechanically-operated device acting upon the shaft of the machine to give it a positive longitudinal movement, substantially as and for the purpose set forth.

5. In a dynamo-electric or similar machine, the combination, with a balanced shaft, of a mechanically-operated device acting upon said shaft intermittently to give it a positive longitudinal movement, substantially as set forth.

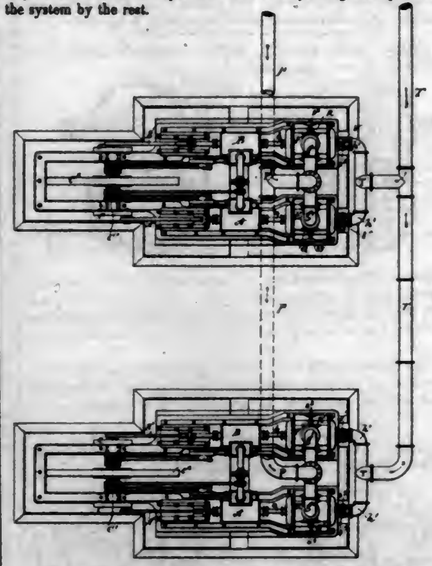
6. In a dynamo-electric or similar machine, the combination, with the shaft of the machine, of a mechanical device receiving movement from said shaft, and acting thereon to give it a positive longitudinal movement, substantially as set forth.

7. The combination, with a shaft, of a worm secured thereto, a worm-wheel, and a device resisting the movement of such worm-wheel at intervals, substantially as and for the purpose set forth.

8. The combination, with a shaft, of the worm, the worm-wheel, the stud, and the resisting-spring, substantially as and for the purpose set forth.

324,076. ENGINE FOR PNEUMATIC SYSTEMS. CHARLES L. BROADBENT, New York, N. Y., assignor to the George F. Blake Manufacturing Company, Boston, Mass. Filed Mar. 31, 1884. (No model.)

Brief.—Branch pipes between the air-cylinders and compression and exhaust pipes are provided with openings to the outer air and valve-seats and valves, such that a cylinder end may be put in communication with either the pipe or the outer air, whereby one or more cylinders may be withdrawn from operation without suspending the operation of the system by the rest.



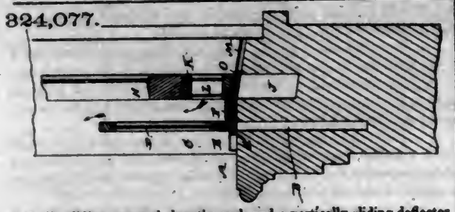
Claim.—1. The combination, with two air cylinders, pistons, and valves, of the pipes P T and their branch connections, one for compressed air and the other for exhaust in a pneumatic system, and the valves Q, R, U, and V, each constructed, substantially as specified, so as to either close the pneumatic pipe and open the branch to the external atmosphere, or the reverse, and thereby provide for either of the cylinders to act as an air-compressor or an air-exhauster, substantially as set forth.

2. In a pneumatic apparatus operated by compressed air and suction, the combination of two steam-engines, connecting-rods, cranks, and fly-wheels, and four air-cylinders, the compressed-air pipe T and branch connections A', the exhaust-pipe P and branch connections g', and the valves Q R U V and Q' R' U' V', constructed and arranged substantially as specified, whereby the air-cylinders can be used for either compression or exhaust, as required, substantially as set forth.

324,077. WINDOW-SCREEN AND VENTILATOR. JOHN G. BRONSON, Chicago, Ill. Filed Mar. 23, 1885. (No model.)

Claim.—1. The combination, with a sill having a pocket below the sash and a pocket a short distance to the inside from the sash, of a vertically-sliding screen below the sash and a vertically-sliding deflector, substantially as herein shown and described.

324,077.

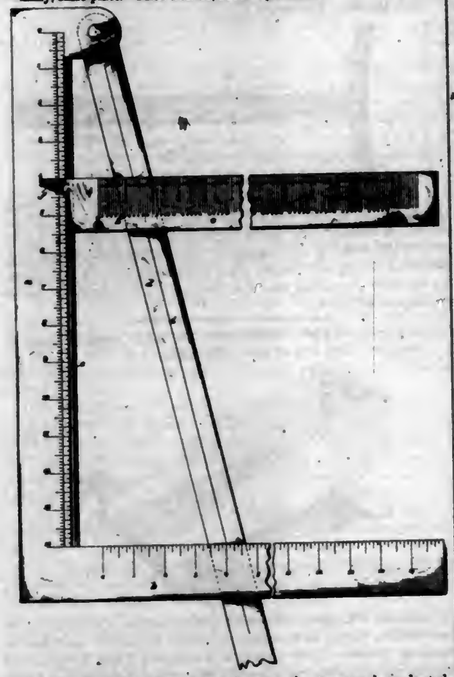


2. The combination, with a sill having a pocket below the sash and a pocket a short distance to the inside from the sash, of a vertically-sliding screen below the sash, a vertically-sliding deflector, and of strips for closing the tops of the pocket, substantially as herein shown and described.

3. The combination, with the sill having the pockets B J, and the jambs C, having the grooves E and M, of the sliding screen K, the sliding deflector D, and the sliding strips G O, guided by the grooves E and M, substantially as herein shown and described.

4. A ventilator and deflector comprising the sill having pockets B J, the jambs C, having the horizontal grooves E and the horizontal inclined grooves M, the sliding strip G, the sliding strip O, having its ends inclined to fit the inclined grooves M, as described, the vertically-sliding screen K, working in the pocket J, and the vertically-sliding deflector D for the pocket B, substantially as set forth.

324,078. MECHANICAL BOARD-MEASURE CALCULATOR. ROBERT H. BULLOCH, Savannah, Ga., assignor of one-half to Frank C. Germany, same place. Filed Dec. 11, 1884. (No model.)

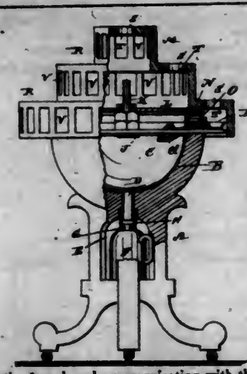


Claim.—In a board-measure calculator, the two fixed graduated arms at right angles one to the other, and a third graduated arm at right angles to one and parallel with the other and movable in parallel planes with relation to the latter, the said latter arm having its units of measurement equal in length to a number of subdivisions of the movable arm corresponding with the number of units on the arm to which the movable arm is connected, combined with an index or pointer intersecting the movable arm and the arm, to which it is parallel, substantially as and for the purpose described.

324,079. FLOWER-STAND. NANCY E. BURCH, Carthage, Mo. Filed Dec. 13, 1884. (Model.)

Claim.—1. In a flower-stand, the combination, with a standard, of a funnel in the body of the same, and a revolving top having steps or offsets above the funnel and communicating with the said funnel, substantially as herein shown and described.

324,079.



2. In a flower-stand, the combination, with the standard A and the funnel C in the body of the same, of the revolving top M and the rollers O, journaled in supports in the said standard, substantially as herein shown and described.

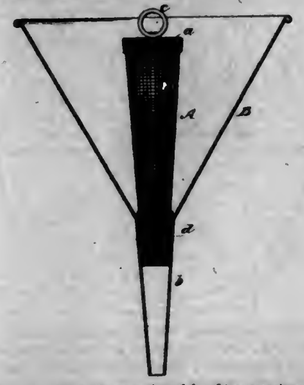
3. In a flower-stand, the combination, with the standard A and the funnel C, of the cross-pieces J, the annular outer gutter, P, on the ends of the same, the radial gutters Q, and the revolving top M, substantially as herein shown and described.

4. In a flower-stand, the combination, with the standard A, having the recess E, of the funnel C, the tube D, the vessel F in the recess E, the coupling H, and the flower-pot-supporting top M on the top of the standard and communicating with said funnel, substantially as herein shown and described.

5. In a flower-stand, the combination, with the standard A and funnel C, of the top M, having holes S, and of the apertured plates T below the holes S, substantially as herein shown and described.

6. In a flower-stand, the combination, with the standard A, having funnel C, and provided with the rollers O, of the flower-supporting top M, pivoted above the standard and having the track N, substantially as shown and described.

324,080. STRAINER FOR FUNNELS, &c. FRANCIS O. BUTTERFIELD, Lynn, Mass. Filed June 1, 1885. (No model.)



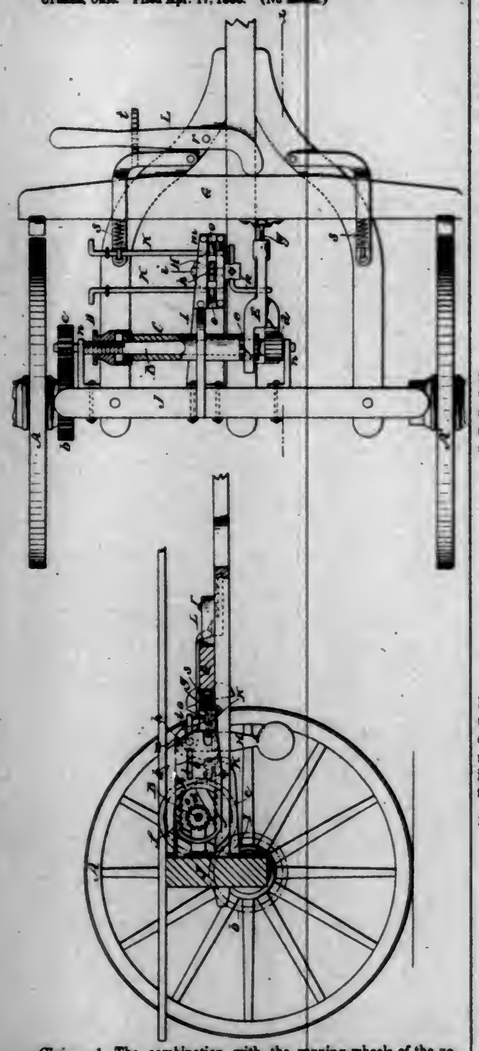
Claim.—1. As an improved article of manufacture, a strainer for ordinary funnels consisting of the tubular tapering wire-cloth strainer A and the tubular tapering thimble *d*, inclosing the lower end of the strainer, open at both ends, and adapted by its taper to fit the spouts of various-sized funnels, the taper of the said thimble and strainer being less than the taper of a funnel, whereby, when placed in a funnel, a space will be left between said strainer and funnel to receive the liquid, substantially as set forth.

2. A strainer for ordinary funnels, consisting of the tubular tapering wire-cloth strainer A of less taper than an ordinary funnel, a cap, *a*, closing the upper end of said strainer, and the tubular tapering thimble *d*, open at both ends and inclosing the lower open end of the strainer, thereby strengthening the same, whereby the entrance of unstrained liquid through the top of the strainer will be prevented and the tapering thimble allow of the strainer being used with various-sized funnels.

3. The strainer herein shown and described, consisting of the slightly-tapered tubular wire-cloth A, the closed cap *a* thereon, the ring *c*, secured to said cap, and the tubular tapering thimble inclosing and

strengthening the lower open end of the strainer, substantially as and for the purpose set forth.

324,081. WAGON-BRAKE. Minor Cantrell and Nelson Bayliss, Urbana, Ohio. Filed Apr. 17, 1885. (No model.)



Claim.—1. The combination, with the running-wheels of the vehicle to which the brake is to be applied, of a shaft geared to rotate in a reverse direction to said wheels, a barrel on said shaft for operation by friction therewith, reverse ratchets arranged, respectively, on said shaft and on the barrel, a rising and falling draw-bar provided with an upper and lower series of reverse ratchet-teeth arranged to engage with either of said ratchets and to be disengaged from both of them, a brake-beam connected with said bar, a weighted pendulum with attached crank for controlling the draw-bar to actuate the brake-beam, and a spring or springs for releasing said beam from the wheels of the vehicle, substantially as specified.

2. In an automatic brake for wagons and other vehicles, the combination, with the tapering brake-actuating shaft B and the internally correspondingly-tapered barrel C, of the nut D, arranged to fit a screw-thread on said shaft and to engage with said barrel for regulating the tension of the brake, substantially as described.

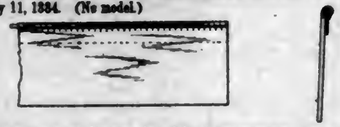
3. The combination, with the vehicle-wheels A A', of the gears *b c*, arranged for actuation by the one wheel, the tapering shaft B, the tension or friction barrel C, the reverse ratchets *d e*, the double-jawed rising and falling draw-bar E, having reverse ratchet-teeth for engagement with and disengagement from said ratchets, the weighted pendulum H, with attached crank, arranged to raise and lower the draw-bar, and the brake-beam G, substantially as specified.

4. In combination with the rising and falling toothed draw-bar E of the brake and its controlling weighted pendulum H, the crank *k*, connecting said pendulum and draw-bar, adjustable in relation with the pendulum to vary its control of the draw-bar, essentially as and for the purpose herein set forth.

5. The cut-off spindles K K, having attached toes *o o*, in combination with the weighted pendulum H, by which the engagement and disengagement of the draw-bar of the brake with its actuating devices is controlled, substantially as specified.

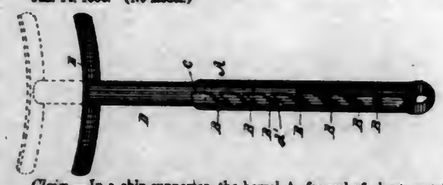
6. In an automatic brake having combined with it a weighted pendulum for controlling its action, the pendulum H, and its shaft *i*, on or around which it is made adjustable, in combination with the crank *k* and the swinging draw-bar E, substantially as described.

324,082. HAT-SWEAT. Henry Charnbury, Newark, N. J. Filed July 11, 1884. (No model.)



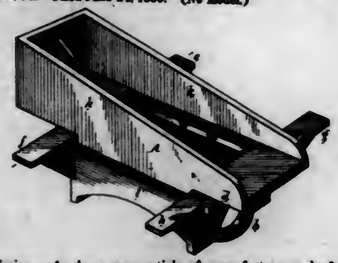
Claim.—As an improved article of manufacture, a sweat-leather for hats, having the leather *k*, the reed inclosed in a loop fabric, and at the side of said leather along the edge thereof, and a finishing-cord, *f*, arranged to cover the edge of the said leather, said edge, said cord, and said inclosed reed all being bound together by encircling stitches or stitching *j*, substantially as shown and described.

324,083. CHIN-REST. Joseph H. Clarke, Springfield, Ohio. Filed Jan. 14, 1885. (No model.)



Claim.—In a chin-supporter, the barrel A, formed of sheet metal having a rounded lower end, as described, and provided with the central slot, *c*, extending the entire length of the barrel, and the slots B, cut into the metal at one side of slot *c*, in combination with the chin-rest rod D, having the chin-rest piece E, and provided with the projecting pin *d'*, to engage the slots B in the barrel, substantially as and for the purpose described.

324,084. DRAFT APPARATUS FOR CARS. John W. Cloud, Altoona, Pa. Filed June 24, 1885. (No model.)



Claim.—1. As a new article of manufacture, a draft-casting for railroad-cars, having downwardly-projecting surfaces or shoulders for receiving thrusts and pulls through a draw-spring placed between such surfaces and shoulders, or surfaces for transmitting such thrusts and pulls to the car-framing, said casting being adapted to be secured to such framing by clamping, and without any bolts passing through the casting, substantially as shown and described.

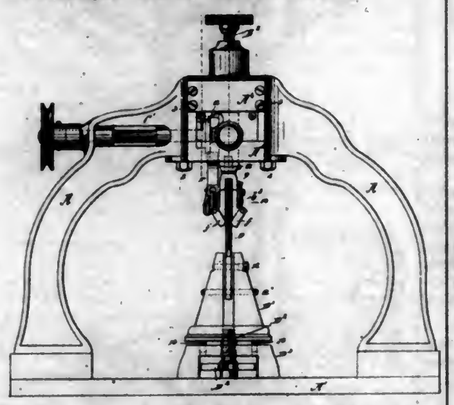
2. The combination, with the end sill of a railway-car, of the draft-casting having shoulders or abutting surfaces *a b c d*, to receive and transmit the thrusts of the draw-spring, and straps or ties to transmit the buffing thrusts on the casting to the end sill, all so arranged that all pushing or pulling strains are transmitted directly to the end sill, substantially as shown and described.

3. The combination, with the end sill and under framing of a railway-car, of the draft-casting secured to the under framing by straps, and without any bolts passing through the casting, and having shoulders or abutting surfaces *a b c d*, to receive and transmit the thrusts of the draw-spring, and straps or ties to transmit the abutting thrusts to the end sill, all so arranged that all pushing or pulling strains are transmitted directly to the end sill, substantially as shown and described.

4. The combination of the draft-casting A and the end sill, D, with the cross-bar E and straps or ties G, all substantially as and for the purpose shown and described.

5. The combination of the draft-casting R, having lugs *e f g h*, and the end sill, D, with the cross-bars E and F and straps or ties G, all substantially as and for the purpose shown and described.

324,085. SEAM-RUBBING MACHINE. Charles W. Collyer and William C. Collyer, Lynn, Mass., assignors of one-third to Charles H. Ward, same place. Filed May 4, 1885. (No model.)



Claim.—1. In a machine for rolling down and finishing seams in leather-work, a horn or work-support, combined with a reciprocating head having a shaft and wheel or roller, and means, substantially as described, to rotate the roller to roll down the seam while the head and roller move in one direction, and to feed the material over the horn while the head and wheel are moved in the opposite direction, substantially as described.

2. In a machine for rolling down and finishing seams in leather-work, a vertically-adjustable horn or work-support, combined with a reciprocating head having a shaft and wheel or roller, and means, substantially as described, to rotate the said roller to roll down the seam while the head and roller move in one direction, and to feed the material over the horn while the head and wheel are moved in the opposite direction, substantially as described.

3. In a machine for rolling down and finishing seams, a horn or work-support, a tool provided with a wheel or roller, and means, substantially as described, to rotate the said roller, and a cross head or slide to carry the said tool, combined with a rotating shaft and a crank and crank-pin to reciprocate the said cross head or slide, substantially as described.

4. In a machine for rolling down and finishing seams, a horn or support for the work, the shaft C', its attached crank and pin, and the guide A^2 and cross-head supported therein, and the tool composed of a head and wheel or roller, combined with a spring acting upon the guide A^2, to regulate the pressure of the tool upon the material, substantially as described.

5. The head and the wheel or roller and its shaft b^2, provided with ratchet-teeth 14, combined with the detent to operate it, substantially as described.

6. The head, the shaft b^2, and the wheel or roller thereon, and the ratchet-wheel, combined with the pawl and pawl-carrier to rotate the said wheel intermittingly, substantially as described.

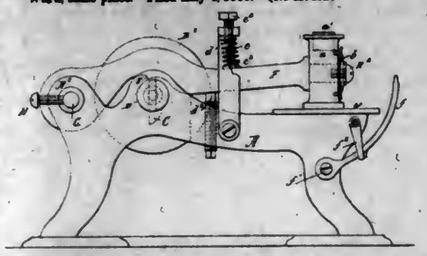
7. The shaft C', its attached crank and crank-pin, the reciprocating cross-head *b*, shaft b^2, the wheel *b'*, ratchet *c*, and the pawl-carrier *c'* and its pawl, combined with a pivoted link, *d*, connected with the pawl-carrier, and having its fulcrum at one side of the tool, substantially as described.

8. The head *b* for the tool, combined with the pivoted clamps or holders *f*, substantially as described.

9. In a machine for rolling down seams in leather-work, a reciprocating head, a shaft therein provided with ratchet-teeth, and a roller fast on the said shaft, combined with a ratchet-wheel, also fast thereon, and with a pawl-carrier and pawl to engage and rotate the said ratchet and shaft and wheel intermittingly, the said pawl and ratchet effecting the rotation of the wheel while the head is moved in one direction, the detent preventing the rotation of the wheel when the head is moved in the opposite direction, the pawl of the pawl-carrier at such time clicking or clipping back over the ratchet-teeth, substantially as described.

10. The head, and the pivoted clamps or holders *f*, and the springs, combined with the horn or work-support, substantially as described.

324,086. SEAM-BEATING MACHINE. Charles W. Collyer and William C. Collyer, Lynn, Mass., assignors of one-third to Charles H. Ward, same place. Filed May 4, 1885. (No model.)

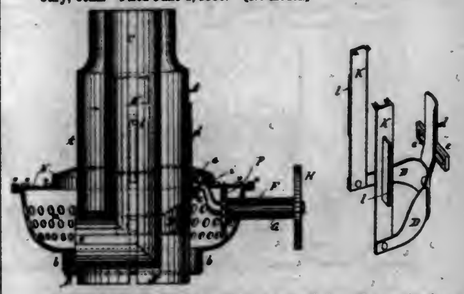


Claim.—1. The frame-work, its shaft and adjustable cam, and the work-support, combined with the hammer carrier or lever, its attached hammer, and a spring to depress the said lever or carrier, substantially as described.

2. The frame-work, its shaft and cam, and the work-support, and the lever or carrier, combined with the reversible hammer, substantially as described.

3. The frame-work, the work-support, the lever or carrier, and the hammer actuated by it, combined with a turning device to assist in turning the material right side out preparatory to hammering or bending and finishing the seam, substantially as described.

324,087. WICK-RAISER FOR LAMPS. Abel Combs, Philadelphia, Pa., assignor to the Plume & Atwood Manufacturing Company, Waterbury, Conn. Filed June 1, 1885. (No model.)



Claim.—1. In combination with an Argand lamp-burner having a wick-tube provided with slots, a slider within the wick-tube, and a plate outside the same and connected to the slider, a shaft and crank, and a connection between the crank and slider, spring-arms connected to the slider, and having claws to engage the wick, and provided with projections extending out through the slots in the wick-tube, substantially as specified.

2. In combination with an Argand lamp-burner having a wick-tube provided with slots, a slider within the wick-tube, and a plate connected to such slider outside the wick-tube, a shaft and crank, and a connection between the crank and slider, spring-arms connected to the slider having claws to engage the wick, and provided with projections extending out through the slots in the wick-tube, and a cam-plate to act upon the spring-arms, substantially as specified.

3. The combination, with the Argand burner having an air-tube and a wick-tube, of a slider, spring-arms having claws within the wick-tube, a crank-shaft, and connection with the slider outside the wick-tube, a cam-ring around the wick-tube, having a gear-connection forming a part of the same, and a pinion on the crank-shaft to engage with and revolve the cam-ring, substantially as set forth.

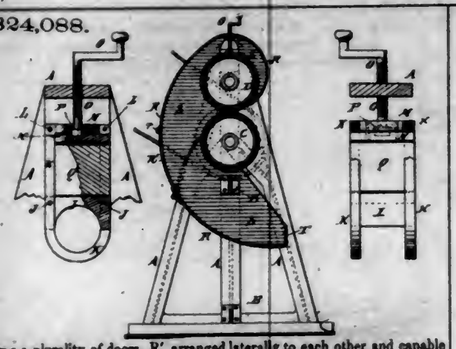
324,088. IRONING-MACHINE. Frank Corbett, New York, N. Y. Filed July 3, 1884. (No model.)

Claim.—1. The combination, with the ironing-rolls, of the return-guide extended up on the rear side of the rolls to a point above the plane of contact thereof, and having its lower end extended and inclined forward below such rollers, and a plate, T, projected upward from the forward lower edge of the guard, forming a pocket whereby to retain the ironed articles, substantially as set forth.

2. In an ironing-machine, the combination, with the end frames, A, and the hollow journals of the upper roller, D, of the half-bearings I, the perforated plates K, the swivel-plates M N, the crank-screws O, and the springs Q, substantially as herein shown and described, whereby the said upper roller can be readily adjusted to give any desired pressure to the goods, as set forth.

3. The combination, with the ironing-rolls, of the return-guide hav-

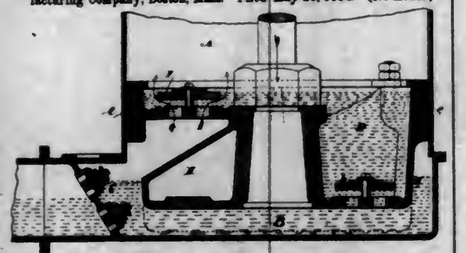
324,088.



ing a plurality of doors, R', arranged laterally to each other and capable of being independently operated, whereby articles passed simultaneously through the machine may be delivered one to the front of and the other discharged in the rear of the machine, substantially as set forth.

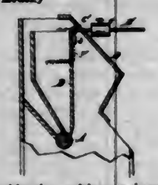
4. In an ironing-machine, the combination, with the lower roller and the guide having a doorway or opening, and provided at the upper end of said opening with a stop, *r*, of the door R', hinged at its lower edge to the lower edge of the opening in the guide, and having its other edge adjustable against the stop *r* or against the lower roller, the hinge of said door being located in a vertical plane midway between those of the roller and the stop *r*, whereby it will remain by gravity in either of its adjustments, substantially as set forth.

324,089. AIR-PUMP. MYERS CORYELL, New York, N. Y., and FREDERICK M. WHEELER, Montclair, N. J., assignors to George F. Blake Manufacturing Company, Boston, Mass. Filed May 26, 1884. (No model.)



Claim.—In an air-pump for the water of condensation, the combination, with the pump-cylinder and the pump-well below such cylinder and the lateral inlet and foot valves, of a piston having a packing within the cylinder, valves above openings in the piston, and a displacer below the piston that passes down into the pump-well, and having lateral openings to allow air and water to escape through the valve-seats in the piston, substantially as specified.

324,090. FEEDING DEVICE. JOHN W. CRAIG, Detroit, Mich. Filed Aug. 23, 1884. (No model.)



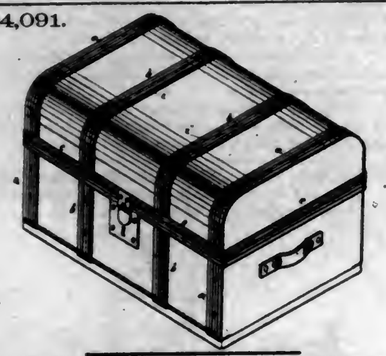
Claim.—1. The combination, with a stationary case, of a feeding-roller, a swinging hopper having its upper portion suspended within the case so as to leave it free at its lower end to oscillate by the weight of the stock in the hopper, and an adjustable counter-balance connected with the hopper for returning it to its position, substantially as described.

2. The combination of the hopper B and the axis or shaft C, having the weight-arm E and spring-arm F, said axis passing or being fitted to the upper front side of the hopper, with a feed-roller, A, and a support or casing having bearings for the shaft C, substantially as described.

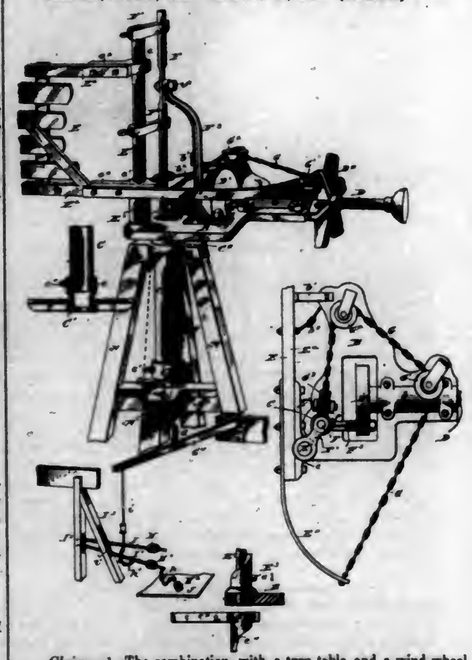
324,091. TRUNK. GEORGE CROUCH, New York, N. Y. Filed Feb. 16, 1885. (No model.)

Claim.—A trunk constructed substantially as herein described, and provided with the sheet-metal valance and strengthening-bands which encircle the body and cover, all of said metallic parts being corrugated longitudinally, as set forth.

324,091.



324,092. WINDMILL. ALEXANDER R. DEMPSTER and CHARLES B. DEMPSTER, Beatrice, Nebr. Filed Nov. 10, 1884. (No model.)



Claim.—1. The combination, with a turn-table and a wind-wheel mounted thereon, of a vane pivoted to said turn-table on a vertical axis and constructed to slide vertically upon its pivot, a circular projection or sleeve secured upon the turn-table concentric with the pivotal axis of the vane, and having an inclined upper surface and a depending part upon the vane adapted to rest upon the inclined surface of the sleeve, said parts being so constructed that the weight of the vane tends to turn the wheel out of the wind, and a weight or weights applied to draw the vane into position to hold the wheel into the wind, substantially as described.

2. The combination, with a turn-table and a wind-wheel mounted thereon, with its axis of rotation at one side of the vertical axis of the turn-table, of a vane pivoted to said turn-table on a vertical axis and constructed to slide vertically upon its pivot, a circular projection or sleeve secured upon the turn-table concentric with the pivotal axis of the vane, and having an inclined upper surface, and a depending part upon the vane adapted to rest upon the inclined surface of the sleeve, said parts being so constructed that the weight of the vane tends to turn the wheel out of the wind, and a weight or weights applied to draw the vane into position to hold the wheel into the wind, substantially as described.

3. The combination, with a turn-table and wind-wheel mounted thereon, with its axis of rotation at one side of the vertical axis of the turn-table, of a vertical pivot-rod, E', fixed upon the turn-table, a sleeve, E^2, located upon the turn-table concentric with the pivot-rod and having an inclined upper surface, and a vane, E, pivoted to the rod by bearings

constructed to slide upon the latter and provided with a depending tubular projection, *e'*, having an inclined face engaged with the corresponding face upon the sleeve, the said inclined faces being so arranged that the weight of the vane tends to turn the wheel out of the wind, and a weight or weights applied to draw the vane into position to hold the wheel into the wind, substantially as and for the purpose set forth.

4. The combination, with a turn-table and a wind-wheel mounted thereon, of a vane pivoted to said turn-table on a vertical axis and constructed to slide vertically upon its pivot, a circular projection or sleeve secured upon the turn-table concentric with the pivotal axis of the vane, having an inclined upper surface, a depending part upon the vane resting upon the said inclined surface of the sleeve, whereby the weight of the vane will tend to retain the latter parallel with the wind-wheel, a chain connected with the said vane, a weight or weights attached to said chain for drawing the vane into position at right angles to the wheel, and suitable guide-pulleys upon the turn-table for the said chain, substantially as and for the purpose set forth.

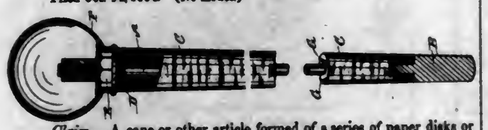
5. The combination, with a turn-table and a wind-wheel mounted thereon, with its axis of rotation at one side of the vertical axis of the table, of a vane pivoted to said turn-table, a chain connected with said vane and adapted to move the latter so as to bring the wheel-face to the wind, suitable guide-pulleys for the chain upon the turn-table, and a series of weights connected with the chain and adapted to come successively into action as the latter is drawn upwardly by the pressure of the wind upon the wheel, substantially as and for the purpose set forth.

6. The combination, with a turn-table and wind-wheel mounted thereon, with its axis of rotation at one side of the vertical axis of the table, of a vane pivoted to said turn-table upon a vertical axis and constructed to slide vertically upon its pivot, a curved projection or sleeve upon the turn-table concentric with the axis of the vane, having an inclined upper surface, a depending part or projection upon the vane resting upon the said inclined surface, whereby the weight of the vane tends to throw the said vane into a position parallel with the wheel, and the latter out of the wind, a chain connected with the vane adapted to move the latter so as to bring the wheel-face to the wind, and a series of weights connected with the chain and adapted to come successively into action as the latter is drawn upwardly by the pressure of the wind upon the wheel, substantially as described.

7. The combination, with a turn-table and a wind-wheel mounted thereon, of a vane mounted upon the turn-table, a chain, G, connected with the vane for moving the latter, suitable guide-pulleys for the chain upon the turn-table, one or more levers, as I I', pivoted one above another to a stationary support, the upper lever being connected with the said chain G, adjustable weights upon the said levers, and a chain, *h'*, joining the levers, substantially as and for the purpose set forth.

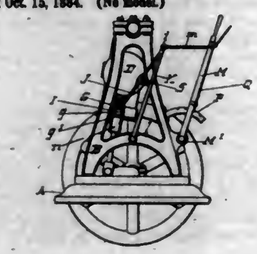
8. The combination, with a turn-table and a wind-wheel mounted thereon, of a vane mounted upon the turn-table, a chain, G, connected with the vane for moving the latter, suitable guide-pulleys upon the turn-table for the chain, one or more levers, as I I', pivoted one above the other to a stationary support, the upper lever being connected with the chain G, adjustable weights upon said levers, a chain, *h'*, joining the levers, and a weight, H^2, connected by a chain with the lower lever, and a stationary support for the said weight H^2, substantially as and for the purpose set forth.

324,093. CANE. JOHN DIEKES and THOMAS B. KAIL, Harlan, Iowa. Filed Oct. 14, 1884. (No model.)



Claim.—A cane or other article formed of a series of paper disks or wads provided with stripes on the surfaces and mounted on a rod, the disks being pressed together or united by adhesive substances, whereby is produced upon the cane or article an ornamented outer surface, substantially as herein shown and described.

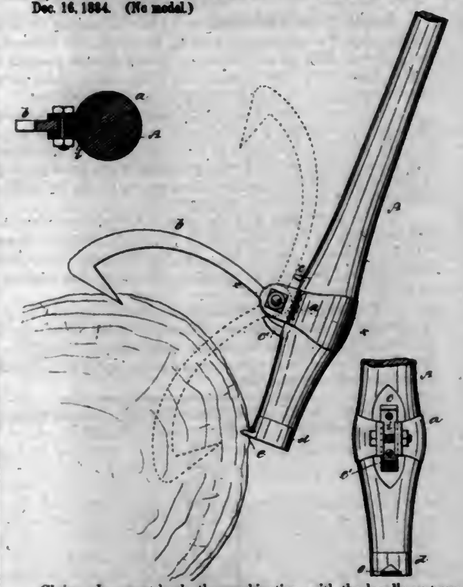
324,094. VALVE-GEAR. WALTER H. DONALDSON, San Francisco, Cal. Filed Oct. 15, 1884. (No model.)



Claim.—1. The combination, with the hand-lever and the parallel-moving lever connected thereto, of the adjustable radius-rod and means for connecting the same with the valve-rod, substantially as specified.

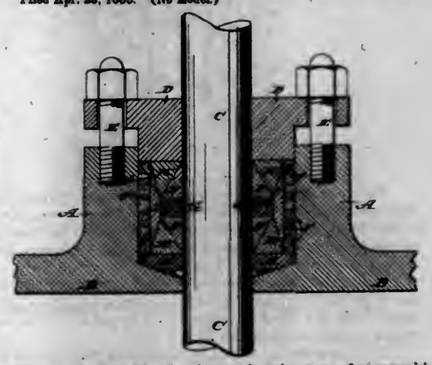
2. The herein-described valve-gear for oscillating-cylinder engines, consisting of the lever-arm K, connected to the frame at a center of movement, *l*, the radius-rod J, connecting the point I of this arm with the valve-stem, the guide for the valve-stem, and the hand-lever M and link *m*, and a locking mechanism for holding said hand-lever, substantially as described and shown.

324,095. CANT-HOOK. AARON DROWN, South Barton, Vt. Filed Dec. 16, 1884. (No model.)



Claim.—In a cant-hook, the combination, with the handle or lever and the hook, with its retaining-collar, of the plate disposed opposite the inner end of the hook, being let into recess in the lever and provided with studs at its ends to limit the movement of the said hook, substantially as and for the purpose set forth.

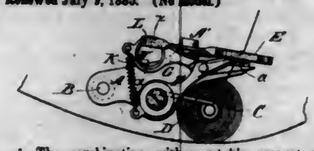
324,096. PISTON-ROD PACKING. JOHN W. DUDLEY, Portland, Oreg. Filed Apr. 23, 1885. (No model.)



Claim.—1. A packing for piston-rods, valve-stems, &c., comprising split metal rings having inclined meeting faces, causing their lateral expansion under pressure, and placed around the piston-rod or valve-stem, and a fibrous or equivalent elastic packing placed outside the metal packing-rings, next to the wall of the stuffing-box, one of said rings having double inclined inner faces and an outer flat face furnishing an unbroken or continuous bearing for the inner surface of said fibrous packing, substantially as herein set forth.

2. A packing for piston-rods, valve-stems, &c., comprising split metal rings F H I, having inclined meeting faces causing their lateral expansion under pressure, and a fibrous packing, J, placed outside the ring I and next to the wall of the stuffing-box, and either with or without the metal rings G or K, substantially as herein set forth.

324,097. ATTACHMENT FOR STOP-MOTIONS OF KNITTING-MACHINES. OLIVER H. EDWARDS, New York, N. Y., assignor, by mesne assignments, of one-half to Frederick H. McCOMB, same place. Filed Nov. 2, 1883. Renewed July 9, 1885. (No model.)



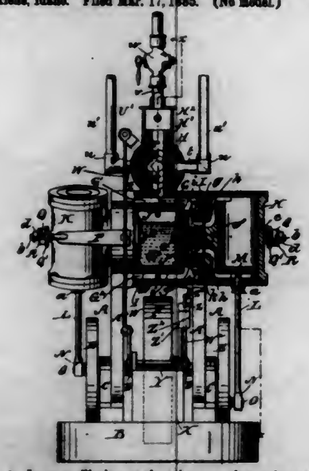
Claim.—1. The combination, with a suitable support, of cutting-blades mounted on said support, a spring for closing the blades, and a lever pivoted above the said blades, and having one end provided with a yarn-guide and its other engaging one of the cutting-blades for holding the same open, substantially as herein shown and described.

2. The combination, with a suitable support, a standard projecting from the support, a pair of cutting-blades mounted on said support, and a spring for closing said blades, of a lever pivoted to the said standard, and having one end provided with spring-shanks and its other end with a downwardly-projecting portion engaging one of the cutting-blades, substantially as herein shown and described.

3. The combination, with the plate A, having the standard A', of the fixed blade F, the pivoted blade G, the lever E, pivoted on the standard A', and having one end bent over and the other end projecting downward, and the spring K, secured to the blades F G, substantially as herein shown and described.

4. The combination, with the plate A and the standard A', of the pivoted lever E, having a downwardly-projecting end, L, provided with a notch, *b*, the fixed blade F, and the pivoted blade G, having an aperture, H, provided with a rounded edge, and the spring K, substantially as herein shown and described.

324,098. OSCILLATING STEAM-ENGINE. WILLIAM ELDER, Fort Coeur d'Alene, Idaho. Filed Mar. 17, 1885. (No model.)



Claim.—1. In an oscillating engine, the reversing-valve constructed, substantially as shown and described, with T-shaped steam-ports connecting the ingress-steam chest and the steam-chests of the trunnion-box alternately, whereby the steam is conducted to the cylinders, and the engine can be reversed, as set forth.

2. In an oscillating engine, the cylinders constructed with trunnions having the alternating cut-off ports *g*, in combination with the apertured steam-chests and the oil-chamber G^3, substantially as shown and described, and for the purpose set forth.

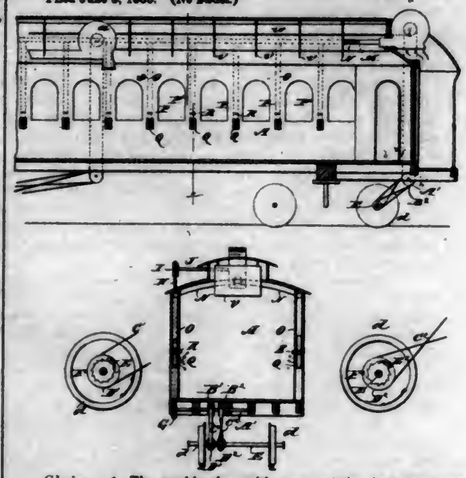
3. In an oscillating engine, the combination, with trunnion-box G, having steam-chests S S', and the valve-chest H, having steam-passages i i' i^2, and exhaust *t*, of the valve U, having T-shaped ports S.

4. In an oscillating engine, the trunnion-box G, adapted to receive the trunnions of the cylinders, and formed with the steam-chests S S', oil-chamber G^3, and having steam-ports m m' n n', substantially as shown and described.

5. In an oscillating engine, the combination of the trunnion-box G, the bars P, the cross-bar Q for supporting the cylinders, and the spring R, substantially as shown and described.

6. In an oscillating engine, the combination, with the oil-chamber G^3, of the cylinders K, provided with the trunnions J, projecting into the oil-chamber and having oil-passages on their peripheries, substantially as herein shown and described.

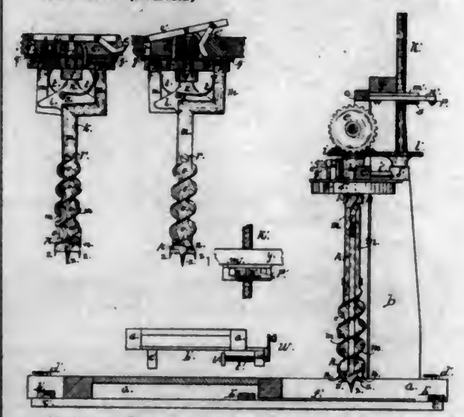
324,099. CAR-VENTILATOR. ALFRED S. EMERSON, Charleston, S. C. Filed June 3, 1885. (No model.)



Claim.—1. The combination, with a car, of the shaft A', driven from the axle and provided with a pulley, G, the shaft J on top of the car, the pulley I on said shaft, the belt H within the walls of the car and connecting the pulleys G H, the air-forcing blower operated by said shaft J, the series of wings V, pivoted in the upper part of the car, and the rod W, connected with the shaft J and with said wings V, substantially as set forth.

2. The combination, with a car, of the shaft A', the pulleys B' B^2, the loose pulleys D' D^2 on the axle E, the ratchet-wheels F' F^2 on the axle, the pawls E' E^2, pivoted on the pulleys D' D^2, the plain belt C', the crossed belt C^2, the pulley G on the shaft A', the shaft J, the pulley I, the belt H, and a blower operated by the shaft J, substantially as herein shown and described.

324,100. BORING-MACHINE. JOHN ERNST, Bay City, Mich. Filed Jan. 3, 1885. (No model.)



Claim.—1. In a boring-tool, the central part, *k*, having on its upper portion the laterally-extending arms *l*, and at its lower end the leading-screw *x* and cutting-edges *z*, the levers *m*, attached to the said part *k* by the pivot *r*, and provided at their upper ends with the rollers *p*, in combination with the plate *q*, provided with the cam-groove *a''*, adapted to engage with the said rollers *p* and cause the said levers *m* to oscillate, substantially as and for the purpose set forth.

2. In a boring-tool, the central part, *k*, provided with a leading-screw and cutting-edges at its lower end, and with its upper end attached to the socket *j*, and mechanism for revolving the same, in combination with the levers *m*, pivoted to the said part *k*, and provided at their lower ends with the cutters *n*, and at their upper ends with the rollers *p*, substantially as described, and for the purpose set forth.

3. In the within-described boring-tool, the combination of the central part, *k*, having the arms *l* near its upper end, and the levers *m*, pivoted to the said part *k* and provided at their lower ends with the cutters *n* and at their upper ends with the rollers *p*, with the springs *t*,

secured to the said part *k* and adapted to push outward the upper ends of the said levers *m*, substantially as and for the purpose set forth.

4. In a boring-machine, the gate *c*, having the plate *q'* rigidly attached to the bottom part thereof, and the cam-plate *q*, located just beneath the said plate *q'*, and provided on its under side with the cam-groove *a''*, in combination with the standard *d''*, rigidly secured to the said plate *q'*, the lever *c''*, pivoted at one end to the said standard and provided with the spring *f''* and the prop *e''*, and the bolts *u*, having one end pivoted to the said lever *c''*, and the opposite end adapted to pass through holes in the said plates *q'* and *q*, substantially as specified, and for the purpose set forth.

5. In a boring-machine, the combination of the bed-pieces *a* with the guide *f*, attached to the cross-piece supporting the said bed-pieces *a*, and extending beyond the boring-tool, and with one edge, *h'*, in alignment with one side of the said boring-tool, and having a pointer, *g'*, projecting from the said edge *h'*, all arranged substantially as and for the purpose set forth.

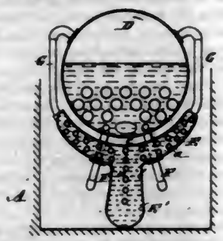
6. The combination, in the within-described boring-tool, of the central part, *k*, provided with cutting-edges and leading-screw at its lower end, of the oscillating levers *m*, pivoted to the sides of the said part *k*, and provided at their lower ends with the cutters *n*, with a spiral groove, *o*, cut into the said part *k* and levers *m*, alternately, in such a manner as to form a continuous spiral groove around all of the said parts, substantially as and for the purpose set forth.

7. In a boring-machine, the bed-pieces *a*, the standards *b*, the gate *c*, sliding vertically on the said standards, the shaft *f*, carrying the cranks *g* and miter-gear *e*, the vertical shaft *h*, having the socket *j* at its lower end and gear-wheel *i* at its upper end, in combination with the cam-plate *q*, attached horizontally to the lower part of the gate *c*, the central part, *k*, attached to the socket *j*, and provided at its lower end with cutting-edges and leading-screw, the springs *t*, and the levers *m*, pivoted to the said part *k*, and provided at their lower ends with the cutters *n*, and at their upper ends with the rollers *p*, substantially as and for the purpose set forth.

8. In a boring-machine, the gate *c*, carrying the shaft *h* and gear *i*, and having the extended portion *i'* and box *j''*, the screw *k'*, supported in the said box *j''*, and carrying the gear-wheel *l'*, arranged to engage with the wheel *i*, in combination with the plate *m'*, secured to the upper cross-piece *y*, the levers *n'*, pivoted to the said plate *m'* and provided with the threaded recesses *o'*, adapted to engage with the screw *k'*, the spring-catch *p'*, rigidly attached to one of the levers *n'*, and adapted to catch over the other lever, *n'*, and the supporting-piece *s'*, substantially as described, and for the purpose set forth.

9. In a boring-machine, the bed-pieces *a*, in combination with the slotted cross-pieces *b'*, the bolts *c'*, provided with the nuts *d'*, the guide-pieces *e'*, secured to the cross-pieces *b'* and extending below the same, substantially as and for the purpose specified.

324,101. STEAM-BOILER. GEORGE FOX, New York, N. Y. Filed Apr. 16, 1885. (No model.)



Claim.—1. The combination, with the main boiler, of a lower supplementary boiler, both boilers being arranged wholly within the furnace, and with the concaved surface of one boiler separated from the opposite surface of the other boiler by a flame or heat space or passage, substantially as shown and described, and for the purpose specified.

2. The supplementary boiler E, made concaved in shape, placed below the main boiler to leave space *c*, and connected with the main boiler, substantially as described.

3. The supplementary concaved boiler E, placed in the furnace below the main boiler and connected therewith by pipes F G, an intermediate space being provided between the two boilers, substantially as described.

4. The combination, with the main boiler D, of the supplementary boiler E, placed in the furnace to form space *c* between the two boilers, and connected with the main boiler by inlet-pipes F and return-pipes G, the former reaching below the supplementary concaved boiler, the latter entering the main boiler near its upper portion, substantially as described.

5. The supplementary boiler E, placed in the fire-box and connected with the main boiler, and formed with a downwardly-projecting pocket, substantially as and for the purposes set forth.

324,102. PORTABLE BASKET-GRATE. HENRY FRIEDRICH and CHARLES W. CARSON, Port Chester, N. Y. Filed Apr. 18, 1884. (No model.)



Claim.—1. In a portable basket-grate, the legs for the grate-frame having dowels at their upper ends, and the grate-frame cast around such dowels and holding said legs, and dovetailed lugs upon the surface of the grate-frame, in combination with the end pieces, *q*, of the basket-grate having dovetailed projections fitting between such lugs, the bars *l*, intermediate ornaments *m*, and screws *o*, substantially as set forth.

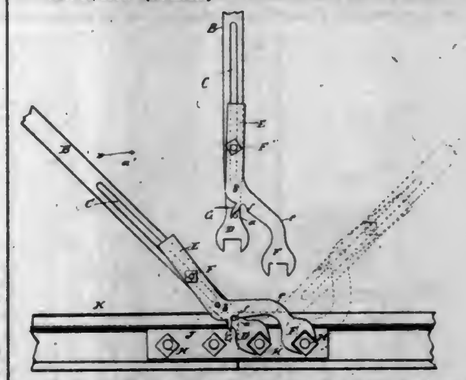
2. The end pieces, *q*, having notches upon their inner faces, in combination with the back plate, *r*, passing vertically into such notches, and having hook *s* passing down outside the end pieces, and the grate-frame *a*, to which the end pieces are connected, substantially as specified.

324,103. PROCESS OF MAKING A FERTILIZER FROM TANK-WATERS. CHARLES GIBSON, Chicago, Ill., assignor to himself and the North Western Fertilizing Company, same place. Filed July 8, 1884. (No specimens.)

Claim.—1. The hereinbefore-described process of preparing fertilizing material from the tank-waters of slaughter-houses and other establishments, which consists in adding acid sulphate of an alkali, aluminous cake, or sulphate of alumina to the waters, then boiling down to expel the surplus water, agitating the mass together with a carbonate, oxide, or hydrate of an alkali or alkaline earth, and finally cooling and grinding, substantially as described.

2. The hereinbefore-described process of extracting the solid or animal matters held in solution in the tank-waters from slaughter-houses and similar establishments, which consists in the addition to the waters of acid sulphate of an alkali, aluminous cake, or sulphate of alumina, evaporation to remove the excess of water, the addition to the residue of a carbonate, oxide, or hydrate of an alkali or alkaline earth, and agitation of the mass to insure the thorough intermixture, the neutralization of the sulphate, and the consequent reduction of the mass to a solid by formation of alums, as specified.

324,104. WRENCH. WILLIAM D. GOODSON, Eufaula, Ala. Filed Mar. 30, 1885. (No model.)



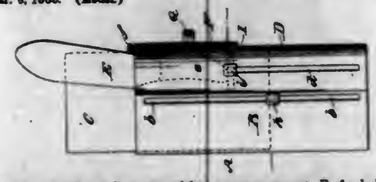
Claim.—1. In a lever-wrench, the combination, with a bar having a key formed on its end, of an additional bar held on the first-mentioned bar and also provided with a key on its end, substantially as herein shown and described.

2. In a lever-wrench, the combination, with a straight bar having a key formed on its end, of a bar having a curve and held on the straight bar, which curved bar has a key formed on its end, substantially as herein shown and described.

3. In a lever-wrench, the combination, with the straight bar B, provided with the longitudinal slot C, on the end of which bar the key D is formed, of the bar E, provided with a curve, *e*, and the key F at the end, and of the bolt F', passed through the bar E and the slot C of the bar B, substantially as herein shown and described.

4. In a lever-wrench, the combination, with the bar B, having the slot C and forming the key D, of the bar E, forming the key F and provided with a prong or lug, G, and recess *f*, the stud or pin *a* on the bar B, and the bolt F', substantially as herein shown and described.

324,103. TOBACCO-BOX. Albert M. Gutton, Broad Top, Pa. Filed Mar. 6, 1885. (Model.)



Claim.—A tobacco-box comprising a compartment, B, for holding the tobacco-plug, and provided with a side slot, *b*, a compartment, D, for holding the knife E, and provided with a slot, *d*, slides H I, fitted, respectively, in compartments B D, and having neck portions passing through the slots *b d*, and forming push-knobs *h i*, for operating the slides, and a hinged cover, F, closing both compartments B D, substantially as herein set forth.

324,106. HEATING AND VENTILATING APPARATUS. John L. Hamilton, St. Joseph, Mo. Filed Feb. 25, 1885. (No model.)

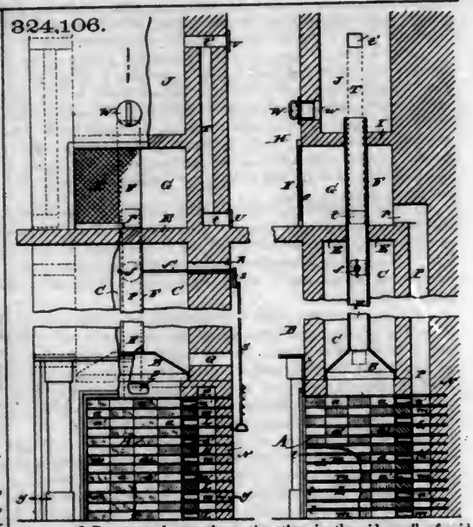
Claim.—1. In heating and ventilating apparatus, the fire-place A, built with hollow walls forming an air-space, M, a series of plates, L, set across space M and cut away alternately at the ends to form a circuitous passage, *m*, provided with an air-inlet, and the exposed wall of the fire-place provided with hollow air-chambers *a'*, substantially as herein set forth.

2. In heating and ventilating apparatus, the combination, with the fire-place A, constructed with hollow walls forming an air-space, M, a series of plates, L, set across space M and cut away alternately to form a circuitous passage, *m*, having a cold-air inlet, and the air-chamber *a'*, built in the fire-place wall of the air-flue P, communicating with passage *m*, and leading to an upper room to discharge hot air therein, substantially as herein set forth.

3. In heating and ventilating apparatus, the combination, with the fire-place A, built with hollow walls forming an air-space, M, a series of plates, L, set across space M and cut away alternately to form a circuitous passage, *m*, having a cold-air inlet, an air-flue, P, leading upward from passage *m*, an air-chamber, G, in the upper room, into which the flue P discharges the hot air, and the smoke-flue F, leading from the fire-place A and passing through chamber G, whereby the air escaping from passage *m* is further heated by the flue F on its way to room H, substantially as herein set forth.

4. In heating and ventilating apparatus, the combination, with the fire-place A, hood B, fixed therein, and smoke-flue F, of the air-chamber C, inclosing flue F above the fire-place, and the hot-air-circulation

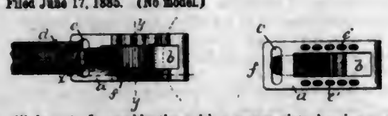




passages Q R, arranged one above the other in the side wall of said chamber, connecting it with the lower room, substantially as herein set forth.

5. In heating and ventilating apparatus, the ventilating-flue T, made in the heated wall along the hot-air chamber G and smoke-flue J, and communicating by the lower passage, *t*, with the upper room, H, and by upper passage, *t'*, with room H and flue J, substantially as herein set forth.

324,107. SHOE-CLASP. Joseph C. Hammond, Jr., Rockville, Conn. Filed June 17, 1885. (No model.)

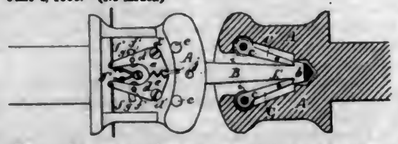


Claim.—1. In combination with a tongue-plate bearing a series of engaging sockets, a hook-shaped tongue pivotally connected to the plate, movable along it when raised, and having pivots with engaging lugs or shoulders, that co-operate with the sockets in the tongue-plate in holding the tongue when closed, all substantially as described.

2. In combination, a tongue-plate, *a*, with central openings, *b*, and upper and lower leaves, *a' a²*, in which are formed pivot-sockets *e* and *e'*, and the tongue *f*, with the integral pivots *f'*, located between the several side bars, and having the lugs *f²*, adapted to engage in the sockets in the side bars, all substantially as described.

3. In combination, a tongue-plate, *a*, with central opening, *b*, in which the tongue is located, and having two or more pivot-sockets in each of the upper and lower leaves of the side bars, and a hook-shaped tongue with integral pivots adapted to engage the respective sockets, and whereby the tongue is movable between the two leaves of each side bar when the tongue is raised, and engages in sockets when the latter is closed, all substantially as described.

324,108. CAR-COUPLING. Martin Harmon, East St. Louis, Ill. Filed June 4, 1885. (No model.)

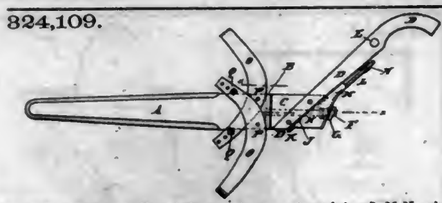


Claim.—In a car-coupling, the wings C C, pivoted and turning on the pins *c c*, levers *d d*, provided with teeth *d'*, and pivoted and turning on pins *d² d²*, spring *g'*, rods *f*, slot *g* in the draw-head A, and the draw-bar B, all combined substantially as herein shown and described, and for the purpose set forth.

324,109. REVERSIBLE PLOW. William C. Haulbrook, Homer, Ga. Filed June 2, 1885. (No model.)

Claim.—1. In a reversible plow, the combination, with the plow-beam A, having V-shaped recess B, and the block C, having V-shaped forward end and beveled rear end and provided with handles, of the rod F, having a cross-head upon its outer end, the wedge H, slotted for

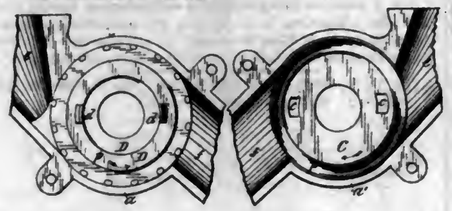
324,109.

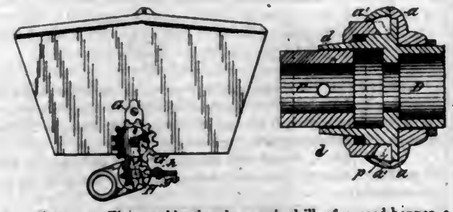


the passage of the rod F, and the arm, lever, and catch-bar L M N, substantially as herein shown and described, whereby the said beam can be readily locked in place and released, as set forth.

2. In a reversible plow, the combination, with the handle-block C, having beveled rear end, the rod F, passing through said block and attached to the plow-beam, and the wedge H, of the plate K, attached to the beveled rear end of the said handle-block, and the L-flanges J, formed upon or attached to the said wedge, substantially as herein shown and described, whereby the said wedge is kept from turning upon the said rod and handle-block, as set forth.

324,110. GRAIN-DRILL. Adam C. Hendricks, Shenandoah Junction, W. Va., assignor of one-half to Henry St. John Shepherd, same place. Filed Mar. 14, 1885. (Model.)





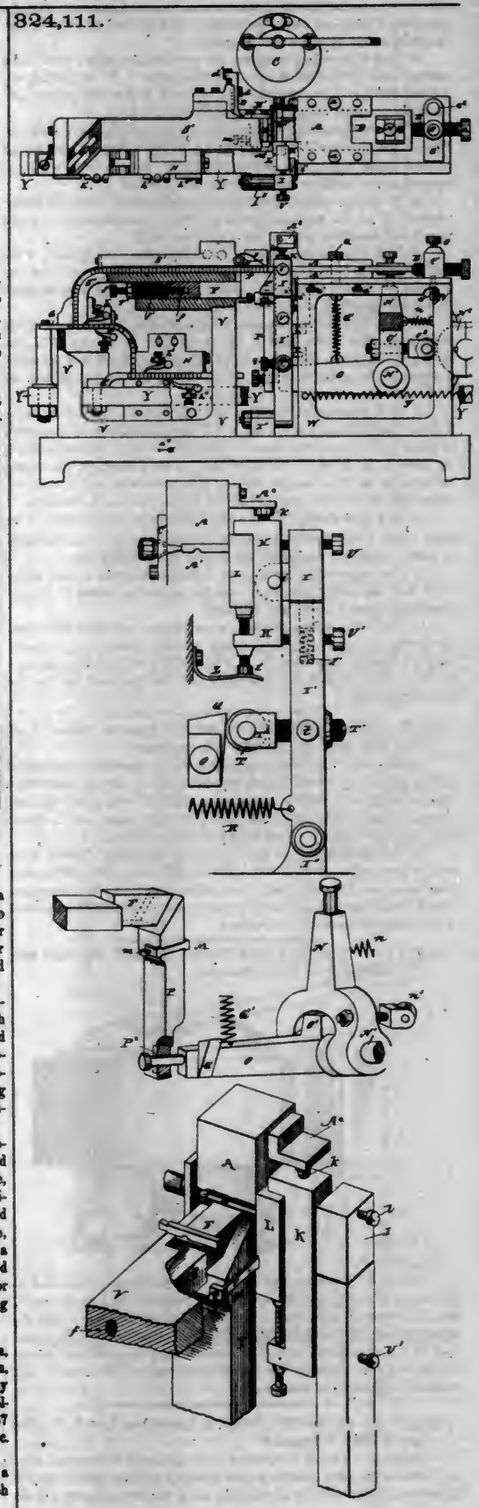
Claim.—1. The combination, in a grain-drill, of a seed-hopper, a discharge-spout which is provided with a circular perforation attached to the bottom of the seed-hopper, a ring which is provided with arms or prongs within the circular perforation, and an adjustable ring-cap or regulating-valve which is provided with perforations which correspond to and are engaged by the arms or prongs upon the ring.

2. The combination, in a grain-drill, of a revoluble shaft, and a discharge-spout which is composed of two vertically-arranged sections which are placed face to face, as described, one of the sections having combined with it a central horizontal ring or cylinder which is provided with projecting arms which extend through the opposite side of the discharge-spout, and the other section having within its central horizontal opening a regulating-valve which is provided with perforations which are engaged by the arms upon the horizontal ring, substantially as set forth.

3. The combination, in a grain-drill, of a revoluble shaft, a discharge-spout which is composed of two vertically-arranged centrally-perforated sections which encircle the revoluble shaft and are placed face to face, as described, one of the sections having combined with it a central horizontal ring or cylinder which is provided with arms which extend through the opening in the other section and project beyond the same, and the other section having within its central horizontal opening a regulating-valve which is provided with perforations which are engaged by the arms upon the horizontal ring, and mechanism, as set forth, for indicating the rate at which the contents of the feed-hopper are being discharged.

324,111. TYPE-FOUNDING MACHINE. John M. Hepburn, London, England, assignor to the Bauer'sche Giesserei, Frankfort-on-the-Main, Germany. Filed Aug. 17, 1883. (No model.) Patented in Germany Feb. 27, 1883, No. 24,780; in England May 21, 1883, No. 2,531; in Belgium June 30, 1883, No. 61,630; in Austria Aug. 16, 1883, No. 21,167 and No. 35,871; in France Sept. 27, 1883, No. 155,933, and in Italy Dec. 6, 1883, No. 15,752.

Claim.—1. In a type-casting machine, the combination, with a mold, of the slide B, the adjusting-screw E, the pivoted block *d'*, in which



the screw is held, and means for holding the said block in position, substantially as herein shown and described.

2. In a type-casting machine, the combination, with a mold and a cutting-knife, of the slide B and the guide-plates E' E², for holding and guiding the type, when pushed out of the mold, to the cutting-knife, substantially as herein shown and described.

3. In a type-casting machine, the combination, with the mold, the slide B, and the slide P, forming one side of the said mold and having beveled upper end, of the sliding platform F, having its forward end beveled, substantially as herein shown and described.

4. In a type-casting machine, the combination, with the sliding platform F, of the regulating-screws F' and *f*, substantially as herein shown and described, and for the purpose set forth.

5. In a type-casting machine, the combination, with a mold, of the oscillating lever I', the head I, stepped in the oscillating lever, the matrix-box K, pivoted to said head, and its matrix L, substantially as herein shown and described, and for the purpose set forth.

6. In a type-casting machine, the combination, with a mold, of the oscillating lever I', the head I, the matrix-box K, the matrix L, the spring *z'*, the arm *i*, the screws U U' and *k*, the spring Z, and the screw *z*, substantially as herein shown and described, and for the purpose set forth.

7. In a type-casting machine, the combination, with a mold and a pivoted matrix-support, of the slides B P, the pivoted lever N, connected to the slide B, the pivoted lever O, having the arm O' and connected to the slide P, the levers N O being pivoted on the same shaft, and means, substantially as described, for rocking the said levers and the matrix-support on their pivots, substantially as herein shown and described.

8. In a type-casting machine, the combination, with a mold, of the slides B and P, the register M, and the regulating-screw *m*, substantially as herein shown and described, and for the purpose set forth.

9. In a type-casting machine, the combination, with a mold, of the slides B P, the sliding platform F, and the regulating-screws F' *f'*, substantially as herein shown and described.

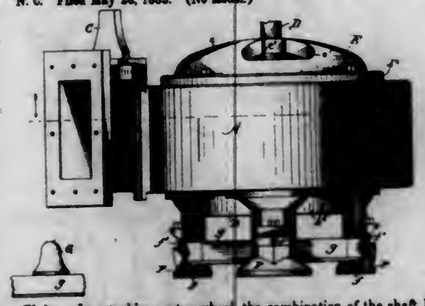
10. In a type-casting machine, a melting-pot provided with a piston having an opening communicating with the melting-pot, and containing a tubular valve-stem, *b'*, provided with a slot, through which a pin, *b²*, passes, substantially as herein shown and described, and for the purpose set forth.

324,112. MANUFACTURE OF BETON. Henry A. Hudson, Lyndhurst, N. J. Filed May 25, 1885. (No specimens.)

Claim.—1. The beton composition herein described, composed of sand or gravel and cement united and solidified by mixing therewith a chemical solution formed of water, resin, oxide of iron, oxide of manganese, hydrofluosilicic acid, gum-arabic, alum, plumbago, and hydraulic fatty lime, substantially as and for the purpose set forth.

2. The herein-described liquid compound, consisting of water, resin, oxide of iron, oxide of manganese, hydrofluosilicic acid, gum-arabic, alum, plumbago, and hydraulic fatty lime, substantially in the proportions named, for the purpose of producing the crystallization and carbonization of the beton composition, as described.

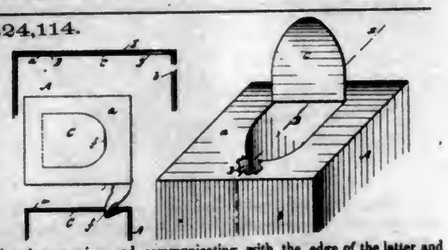
324,113. TURBINE WATER-WHEEL. Barnet V. Idol, Idol's Mills, N. C. Filed May 26, 1885. (No model.)



Claim.—In a turbine water-wheel, the combination of the shaft D, the flanges b^2 and b^3, and the extension b^5 thereon, the curved arms b', located between the said flanges and extending from points a little distance from the shaft to points outside of the flanges, forming the projections b^3, and the vertical buckets b^4, located in the flange b^3, and the extension b^5 within a smaller circumference than that of the arms b', substantially as shown and described.

324,114. PAPER BOX. Gustav L. Jaeger, New York, N. Y. Filed June 18, 1885. (No model.)

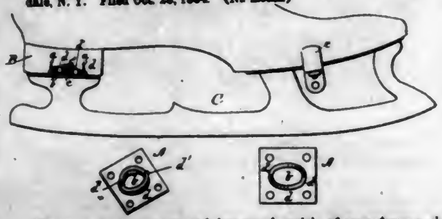
Claim.—1. A paper box having a charging and discharging opening in one of its sides, a cover to said opening, a finger-hole in one side of the box and at one side of both the cover and the charging and discharging opening and communicating with the edge of the latter and with the interior of the box, and a closing-sheet pasted over the cover and the finger-hole, the construction being substantially such, as described, that a finger can be passed through the closing-sheet to the interior of the box against the under side of the cover for removing the latter, as set forth.



2. A paper-box having a charging and discharging opening, a finger-hole communicating with this opening, a cover fitting said opening, an extension formed on the cover and made to fit the finger-hole, and a closing-sheet pasted over the cover and the finger-hole, substantially as shown and described.

3. A paper box having a charging and discharging opening in one of its sides, a finger-hole in an adjoining side and communicating with said opening, a cover fitting the opening, and a closing-sheet pasted over the cover and the finger-hole, substantially as shown and described.

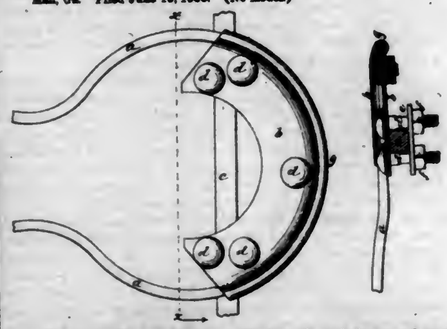
324,115. HEEL-PLATE FOR SKATES. John B. James, Jr., Riverdale, N. Y. Filed Oct. 28, 1884. (No model.)



Claim.—1. As a new and improved article of manufacture, the heel-plate A, formed with an opening, *b*, and shallow flange *d*, surrounding the opening *b*, the said opening and flange being oblong or elliptical in form, substantially as shown and described.

2. The plate A, formed with oblong opening *b*, and flange or collar *d*, inclined to form the side cams, *d' d'*, substantially as and for the purposes set forth.

324,116. FIFTH-WHEEL FOR VEHICLES. Allen G. Johnson, Quitman, Ga. Filed June 18, 1885. (No model.)



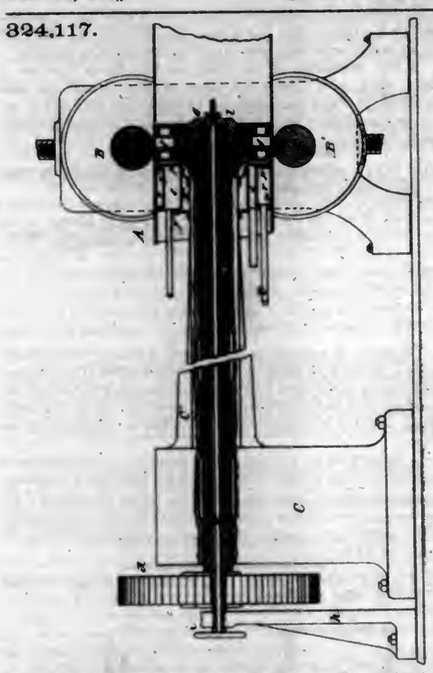
Claim.—1. The combination, with the axle and the curved reach, of the matching plates forming an inclosed semicircular guideway for the reach, secured together and to the axle, substantially as herein set forth.

2. The fifth-wheel plates having each a similar edge-curved conformation adapted to meet at their edges in forming a semicircular guideway for the reach, fastened at their ends to the axle by bolts and eliptics, as described.

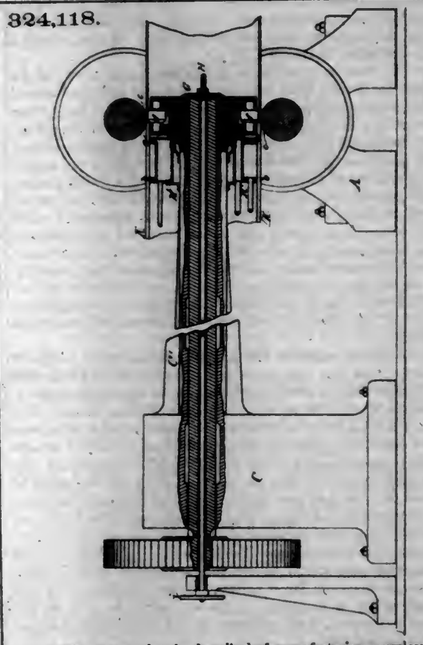
324,117. MACHINERY FOR ROLLING TUBES. Charles Kellogg, Buffalo, N. Y. Filed May 13, 1884. (No model.)

Claim.—1. In an apparatus for rolling tubes and other hollow cylindrical articles, the combination of a series of revolving rolls connected with a suitable mandrel-head and adapted to rotate against one surface of the ingot, pile, or billet and reduce the same, a mandrel-shaft, a support for the mandrel and shaft between the bearings and the mandrel and in juxtaposition to the exterior rolls to bear or support the weight of the mandrel, and exterior rolls arranged to operate against the opposite surface of the ingot, pile, or billet, substantially as specified.

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2. The combination of a series of revolving rolls connected with a suitable mandrel-head and adapted to rotate against one surface of the ingot, pile, or billet and reduce the same, a mandrel-shaft supported in a hollow arm between the bearings of the shaft in the standard and the mandrel, so as to sustain the weight of the mandrel-head and rolls, and exterior rolls arranged to operate against the opposite surface of the ingot, pile, or billet, substantially as described.

3. The combination of a mandrel-head and shaft, the revolving rolls *f*, arranged to rotate against and reduce the internal surface of the ingot, pile, or billet, the sleeve or housing C', and suitable external rolls for operating against the exterior surface, substantially as described.

4. The combination and arrangement of the internal revolving reducing-rolls *f*, connected with a suitable mandrel-head, with the external rolls, B B', and swage-blocks E', substantially as described.

5. In combination with the rolls *f* and blocks F, the wedge G and its operating device for setting the said rolls, substantially as described.

6. In combination with the devices for rolling the ingot, pile, or billet, the rack-bars provided with suitable grips for driving the ingot through the rolls and supporting the same, substantially as described.

7. In an apparatus for forming tubes from hollow ingots, piles, or billets, a furnace connected with the apparatus and arranged to heat the ingot, pile, or billet from the inside as it is fed to the rolls, substantially as described.

8. In combination with a system of rolls for rolling hollow ingots, piles, or billets into tubes and similar articles, a furnace arranged to heat the ingots, piles, or billets from the inside uniformly and as fast as the same is fed to the rolls, substantially as described.

324,118. PROCESS OF MANUFACTURING TUBING. Charles Kellogg, Buffalo, N. Y. Filed Feb. 27, 1885. (No model.)

Claim.—1. The process herein described of manufacturing seamless tubes and other hollow cylindrical articles, which consists in subjecting the ingot from which the tube is to be formed to the simultaneous rolling action of external and internal rolls acting upon the outside and inside surfaces of the tube and at right angles to each other.

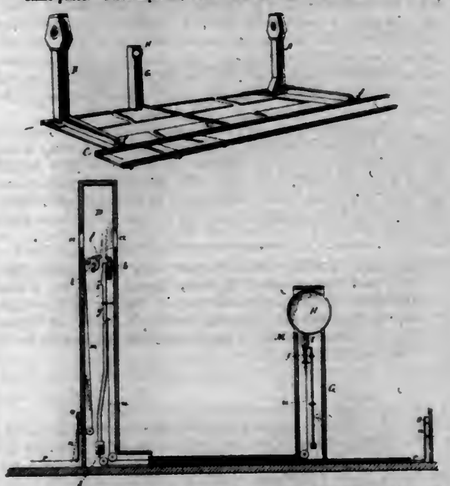
2. The process herein described of manufacturing seamless tubes, &c., which consists in forming a hollow ingot, and then rolling the said ingot into a tube by reducing the thickness of its walls by means of internal rolls acting opposite to and in line with external sustaining-rolls.

3. The process herein described of manufacturing tubes, &c., which consists in casting a hollow ingot of the required external diameter and less than the required internal diameter of the tube, and then forming the ingot into a tube by rolling its internal surface and reducing the same, and thereby increase the internal diameter.

4. The process herein described of manufacturing seamless tubes, &c., which consists in heating the ingot pile or billet of metal only so fast as the rolling progresses, and then subjecting the heated portion to the action of internal and external rolls acting opposite each other.

5. The process herein described of manufacturing seamless tubes and other hollow cylindrical articles, consisting in casting an ingot hollow, then heating the ingot gradually as it passes to the rolls, and then rolling the ingot into a tube by means of external and internal rolls acting against opposite surfaces of the ingot, substantially as specified.

324,119. RAILROAD BLOCK SIGNALING APPARATUS. Frank N. Kelsey, New Haven, Conn., assignor of one-half to James B. Rathburn, same place. Filed Apr. 13, 1885. (No model.)



Claim.—1. A signal-post having a chambered head provided with an opening, *a*, combined with a disk, *b*, hung within said chamber, a lever extending from said post to the rail, one arm of said lever adapted to be depressed by a wheel running upon said rail, the other arm extending into the post, a connecting-rod, *g*, between said lever and said disk, the said connecting-rod constructed in two parts, the one part attached to the said lever, the other part to the said disk, whereby the lower part may descend with the lever independent of the upper part,

the said upper part constructed with a shoulder, *i*, and the dog *l* within said post, and adapted to engage said shoulder on the rod when the disk is raised, substantially as described.

2. In a railway block system, the combination of a post at the termination of the one block, said post constructed with a chambered head and with an opening, *a*, from said chamber, a disk, *b*, hung within said chamber, a lever hung between said post and the rail, the rail end of the arm adapted to be depressed by a wheel on the track, a connecting-rod, *g*, between the post end of the lever and said disk, a dog adapted to engage said connecting-rod and support the disk in its raised position, a second post, G, carrying a gong, a lever hung between said second post and rail, the rail end of said lever adapted to be depressed by wheels passing on the rail and thereby raise the post end of the lever, a hammer adapted to strike said gong, the said hammer arranged in a movable support, and a connection between said movable support and the connecting-rod of the first post, substantially as described, and whereby, as said rod of the first post is raised, the hammer of the gong will be brought into action under the movement of the lever at that post, substantially as described.

3. In a block system for railroads, the combination of a series of posts distant from each other according to the extent of the blocks, each post constructed with a chambered head, with an opening therefrom in the direction in which the signal is to appear, a disk hung in each of said chambers and adapted to cover or uncover said opening, a lever hung between each of said posts and the rail, the rail end of the lever adapted to be depressed by passing wheels, connecting-rod *g* between the post end of the lever and said disk, the said connecting-rod constructed in two parts the lower part attached to the lever independent of the upper part, and the upper part hung to the disk independent of the lower part, but so that the upward movement of the lower part will produce corresponding vertical movement of the upper part, and the dog *l*, arranged to engage said upper part of the rod when in its raised position, with a connection between said dog of one post and the mechanism of the next post, substantially as described, and whereby, as the lever at the said next post is depressed, it will withdraw the dog of the first post and release the rod and disk.

4. In a block system, the combination of a series of posts arranged distant from each other according to the extent of the blocks, each post constructed with a chamber, with an opening made therefrom in the direction in which the signal is to appear, a disk, *b*, hung in each of said chambers and adapted to cover or uncover said opening, a lever hung between each of said posts and the rail, the rail end of the lever in the path of passing wheels and so as to be depressed thereby, a connection between the post end of said lever and the disk, a dog in each post arranged to support said disk in its position of closing the opening with a connection from said dog in one post to the mechanism of the next post, an auxiliary post between the principal posts, said auxiliary post carrying a gong, a lever between said auxiliary posts and the rail, the rail end of the lever arranged to be depressed by the passing wheels, a hammer arranged to be actuated by said lever to sound the gong, and a connection between said hammer and the mechanism of the next post, substantially as described, and whereby, when the disk is raised, said hammer is brought into engagement with the lever of its post, and relieved from such engagement when the disk is dropped, substantially as described.

5. The combination of the post G, gong H, arranged thereon, movable slide I, spring J, supporting said slide, hammer M, hung to said slide, lever N between said post and the rail, an extension from the post end of the lever toward the hammer, and a connection extending from said slide to a distant point, substantially as described, and whereby said slide may be depressed to bring the hammer within the action of said lever.

324,120. HEATING FEED-WATER. JOHN KIRKALDY, West India Dock Road Poplar, County of Middlesex, England. Filed Nov. 4, 1884. (No model.) Patented in England Aug. 13, 1884, No. 11,241, and Sept. 19, 1884, No. 12,519; in France Aug. 21, 1884, No. 163,869; in Belgium Aug. 21, 1884, No. 66,083; in New South Wales Dec. 30, 1884, and in Italy Dec. 21, 1884, No. 195.



Claim.—1. The combination of a casing, *a*, with end covers, *b*, each having a tubular neck, *b'*, extending outward from it, and with hollow or dished covers *c*, forming annular chambers *c'* surrounding these necks, and with nuts *e*, screwing onto the ends of the tubular necks to form tight joints between the tubular necks and the covers *c*, and with coiled pipes *d* passing from one annular chamber *c'* to the other, and with an inlet or outlet from each chamber, substantially as described.

2. The combination of the casing *a*, tubular necks *b'*, covers *c*, flanged nuts *e*, coiled pipes *d*, and three-way cock D, with two inlet water-ways by which feed-water can be supplied to the casing *a*, and so to the steam-boilers, either from the feed-pump of the engines or from a pump worked by a separate donkey-engine.

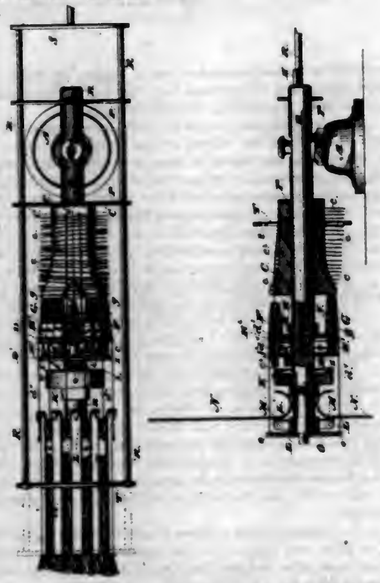
324,121. SCREW-DRIVER. GEORGE F. KOLB, Philadelphia, Pa. Filed May 2, 1885. (No model.)



Claim.—1. A screw-driver provided with a blade of unequal thickness for a portion of its length, thereby forming shoulders G at a distance from the point of the blade a little less than the length of the jaws C, clamping-jaws C, connected to the sleeve D, and sleeve E, the said sleeve D being limited in its operation by said shoulders G, substantially as described.

2. A screw-driver provided with a clamping device consisting of jaws connected with a sleeve which slides on the blade, and a tightening-sleeve which tightens on the jaws, the blade having shoulders at a distance from the point thereof a little less than the length of the said jaws, for limiting the forward motions of said jaws, substantially as and for the purpose set forth.

324,122. GRAIN-BINDER. ISRAEL LANCASTER, Chicago, Ill. Filed Nov. 28, 1883. (No model.)



Claim.—1. In combination with the series of bars pivoted to swing in planes radial from the same center, each one at its pivoted end turned up at or near a right angle, the ring adapted to slide over the bars, and provided with teeth or projections to extend between the bars as the ring passes over them, means for reciprocating the ring over the bars, and means for feeding a prepared band into position in front of the ring, so as to be carried along thereby, substantially as and for the purpose described.

2. The notched disk on the fixed shaft, adapted to limit the swing of the pivoted bars inward toward each other, in combination with the bars pivoted to swing in radial planes from the fixed shaft and bent up at right angles at their pivoted ends, the internally-toothed ring, and means for forcing it over said bars to their ends and off again, substantially as shown and described.

3. In combination with the notched stop-disk, the pivoted hooked bars, the disk on the same fixed shaft with the stop-disk and beyond the hooked ends of the bars, the wires attached to the edge of such disk and extending to the periphery of the stop-disk, means for feeding a prepared bend up into place on these wires, and the traveling ring adapted to force the band along over these wires and the pivoted bars onto the gavel compressed between the latter, substantially as and for the purpose described.

4. In combination with the series of prepared bands strung upon a wire or cord, means for taking one of these bands from its wire or cord and feeding it up into position to be engaged by the carrier-ring and forced along over the gavel-compressing bars, substantially as and for the purpose described.

5. In combination with the wire or cord carrying the prepared bands strung thereupon at certain distances apart, means for feeding said wire or cord along so that a new band will be engaged by the band-feeding mechanism for each bundle bound, substantially as shown and described.

6. In combination with the wire carrying the bands, the feed-wheel to which one end of the wire is attached, in combination with means for turning it so as to feed the wire along to bring a new band to the band-feeding mechanism for each bundle bound, substantially as shown and described.

7. The spirally-grooved spindle on the hollow shaft, provided at its smaller end with a hook adapted to take the bands in succession from the wire upon which they are strung and pass them over the spindle, to be engaged by the grooves thereon as the wire is pulled through the hollow shaft by the mechanism provided therefor, substantially as shown and described.

8. In combination with the band-feeding spindle, the feed-wheel for the wire upon which the prepared bands are strung, driven through suitable connecting mechanism from the shaft of the spindle, substantially as and for the purpose set forth.

9. In combination with the spirally-grooved band-feeding spindle provided with the separating-hook, the rotating shaft of the spindle, the feed-wheel for the band-carrying wire or cord, and suitable connecting mechanism between the spindle-shaft and the wheel, whereby the wheel is driven at such a rate that the feed-wire is pulled along to bring a new band within reach of the separating-hook at each revolution of the spindle, substantially as and for the purpose described.

10. The combination of the spirally-grooved spindle, having the band-separating hook at its small end, its hollow shaft with screw-threaded portion, the pinion adapted to engage with its teeth this threaded portion of the shaft, and the teeth on the feed-wheel, to which is attached the end of the band-carrying wire which passes through the hollow spindle-shaft, substantially as shown and described.

11. In combination with the spirally-grooved band separating and feeding or conveying spindle, the series of rotating grooved spindles, adapted to bring the band into a circular form as it is carried along over them and aid the spirally-grooved spindle in bringing the band into position to be acted upon by the mechanism for forcing it over the gavel, substantially as and for the purpose described.

12. In combination with the spirally-grooved band separating and conveying spindle, the series of rotating spindles circumferentially grooved for a portion of their length, and at their large ends provided with spiral grooves of quick pitch, as shown and described, and means for rotating half of the spindle in one direction and half in the other, substantially as and for the purpose described.

13. In combination with the spool upon which the bands are placed, the wires attached at one end to said spool and extending over the bands to keep them in place on the spool, and at their free ends lying alongside of and a little below the plane of the upper surface of the spindle, so as to insure the engagement of the bands by the grooves of the latter, substantially as shown and described.

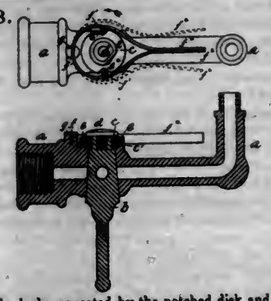
14. In combination with the fixed supporting-shaft, the two disks or plates fixed thereon, the series of band feeding or conveying spindles on shafts journaled in the plates, the rotating shaft journaled within the fixed shaft and provided with a gear-wheel and pulley upon its end between the disks, the pinion on the shaft of one of the spindles driven through suitable mechanism from the gear on the shaft, and the band-pulleys on the shafts of the other spindles driven from the pulley on the shaft by means of a suitable band, substantially as shown and described.

15. In combination with the rods or bars carrying the band-placing ring, and actuated by any suitable connection with the harvester or delivery mechanism, the guide-arms through which the rods pass fixed upon the stationary shaft supporting the gavel-compressing and band-feeding mechanism, substantially as shown and described.

16. In combination with the feed wire or cord, the prepared bands for use in a grain-binder, strung upon and attached to the wire or cord, substantially as and for the purpose described.

17. The prepared bands for grain-binders, strung upon a wire or cord, and fastened thereto by paste or glue, substantially as and for the purpose described.

324,123. SAFETY ATTACHMENT FOR GAS-COCKS. HESTER LAUDE, New York, N. Y. Filed June 21, 1884. (No model.)



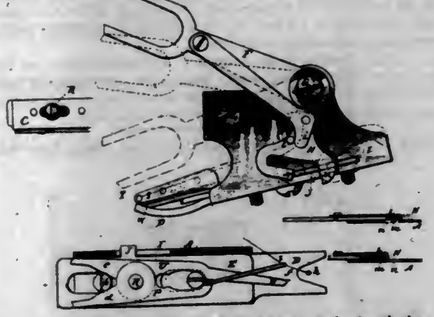
Claim.—1. The combination, with the body and plug of a gas-burner, of a notched disk carried by the plug, and a spring secured at one end to the body, operated by the notched disk and extending some distance beyond the same, substantially as and for the purpose set forth.

2. In a safety gas-cock, in combination, the plug *b*, notched disk *e*, and spring *f*, having projections f^* f^* and extended ends f^2 f^2, substantially as and for the purpose set forth.

3. In combination, the plug *b*, flanged washer *c*, fitted to rotate therewith, the holding-screw *d*, the notched disk *e*, fitted in the washer *c* so as to partly rotate thereon, and the spring *f*, secured to the body *a* and actuated by the disk *e*, substantially as and for the purpose set forth.

324,124. EMBROIDERING ATTACHMENT FOR SEWING-MACHINES. JOSEPH P. LAVERTY, New Haven, Conn., assignor to Jane Halliwell, same place. Filed May 18, 1885. (No model.)

Brief.—The embroidery-thread is carried by a finger back and forth across the path of the needle, so that one stitch is laid upon one side of the embroidery-thread and the other on the other side, the embroidery-thread being laid in the form of loops upon the surface of the work, the extent of the loop depending on the amount of the embroidery-thread delivered. As a tension, and whereby only a predetermined amount of thread may be fed to the embroidery-thread carrier, a spring-clamp is arranged on the outside of the short arm of the bell-crank lever.



Claim.—1. The combination of the body A, having the base C formed thereon, terminating in a presser-foot and constructed for attachment to the presser-foot bar, a slide, E, arranged on said base, free for longitudinal reciprocating movement toward and from the needle, a lever, one arm of which is adapted to engage the needle-bar, the other arm extending downward, and constructed with a longitudinal slot, L, and with shoulders M N opening from said slot, the said slide constructed with a stud adapted to be engaged by the shoulders and slot of the said arm H, levers P U, hung upon said slide, and so as to swing in horizontal planes, the one lever, P, extended to form a thread-carrying finger, S, the other extended to form a looper, W, the adjacent faces of the said levers constructed with cam-shaped edges in front and in rear of the pivot, and stationary studs *a b*, the one in front and the other in rear of the pivot on which the levers are hung, substantially as and for the purpose described.

2. The combination of the base C, terminating in a presser-foot, D, and constructed for attachment to the presser-foot bar, slide E, arranged on said base for longitudinal reciprocating movement toward and from the needle, a lever, one arm of which is adapted to engage the needle-arm and to partake of its up-and-down movement, a second arm extending downward and adapted to engage said slide, and whereby, through the up-and-down movement of the needle-bar, a corresponding advance and retreating movement is imparted to said slide, a pair of levers hung upon a pivot on said slide, and so as to move therewith and swing on said pivot in planes parallel with said slide, the one of said levers extending forward and terminating in an embroidery-thread-carrying finger, S, the other extending forward and terminating in a corresponding looper, W, the adjacent faces of said levers constructed of cam shape both for-

ward of and in rear of the pivot upon which they are hung, and stationary studs between the said levers, one forward of and the other in rear of the pivot, substantially as described, and whereby, under the reciprocating movement of said slide, a corresponding horizontal vibratory movement is imparted to said fingers across each other and across the path of the needle.

3. The combination of the base C, terminating in a presser-foot, D, and constructed for attachment to the presser-foot bar, slide E, arranged on said base for longitudinal reciprocating movement toward and from the needle, a lever, one arm of which is adapted to engage the needle-arm and to partake of its up-and-down movement, a second arm extending downward and adapted to engage said slide, and whereby, through the up-and-down movement of the needle-bar, a corresponding advance and retreating movement is imparted to said slide, a pair of levers hung upon a pivot on said slide, and so as to move therewith and swing on said pivot in planes parallel with said slide, the one of said levers extending forward and terminating in an embroidery-thread-carrying finger, S, the other extending forward and terminating in a corresponding looper, W, the adjacent faces of said levers constructed of cam shape both forward of and in rear of the pivot upon which they are hung, and stationary studs between the said levers, one forward of and the other in rear of the pivot, the spring thread-clamp *i*, arranged upon the lever, a stud, *m*, extending from said clamp through the lever, and a slot, *n*, inside the lever, into which said stud may enter in the swinging movement of the lever, substantially as and for the purpose described.

324,125. BRACELET. THOMAS LEBOURDAIS, Newark, N. J. Filed Dec. 13, 1884. (No model.)



Claim.—1. The bracelet herein shown and described, having sides for the back and front or upper and lower sides of the wrist, of which sides the upper, as a whole, lies diagonally across the lower, forming edge spaces, substantially as set forth.

2. In a bracelet, hinged sections, as *a a*, having catches and lugs to engage therewith, said sections overlapping each other, and being held together by a link or bar, said parts being arranged and combined substantially as and for the purposes set forth and shown.

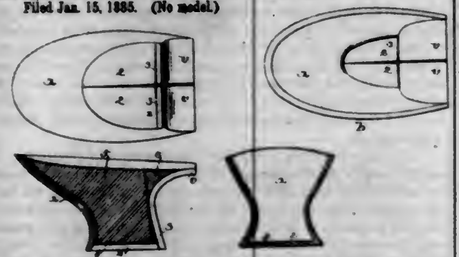
324,126. SHOE-NAIL. EDWARD J. LE GAY, Boston, Mass. Filed Nov. 15, 1884. (No model.)



Claim.—1. A nail formed with two arms and a flattened and broadened head, and with a supporting-rib formed beneath the head and uniting with the arms of the nail, substantially as specified.

2. A nail formed with two parallel arms united by an inclined or oblique head flattened transversely, substantially as specified.

324,127. BOOT OR SHOE HEEL. EDWARD J. LE GAY, Boston, Mass. Filed Jan. 15, 1885. (No model.)

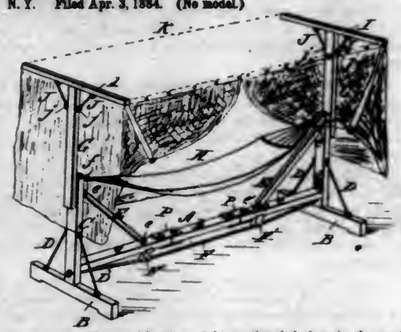


Claim.—1. A boot or shoe heel shell or wall formed of thick leather or analogous moldable material, molded, shaped, and set to form to comprise the sides, rear, and breast of the heel, with the ends of the blank suited at the breast thereof, substantially as specified.

2. A boot or shoe heel shell or wall formed of thick leather or analogous moldable material, molded, shaped, and set to form to comprise the sides, rear, breast, and bottom of the heel, with the meeting edges of the bottom and breast of the blank arranged at the longitudinal vertical center of the heel, substantially as specified.

3. A boot or shoe heel formed with an outer shell or wall, substantially as described, and having a duly-formed block of wood loosely fitted therein and secured in place by an adhesive hard-drying material interposed between the wall and block and filling the spaces between the same, substantially as specified.

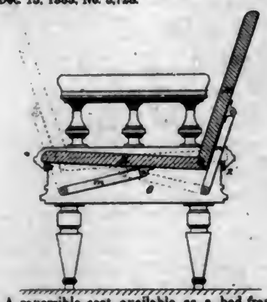
324,128. HAMMOCK-SUPPORT. CHARLES A. LINDBLOM, New York, N. Y. Filed Apr. 3, 1884. (No model.)



Claim.—1. The combination of the sectional tie-bar A, the uprights C C, interlocking plates for securing said uprights to the tie-bar, the foot-pieces B B, in which the lower ends of the uprights are tenoned, and the side stays with the truss F, secured to the uprights below the tie-bar, and blocks F' F' between the tie-bar and truss, substantially as set forth.

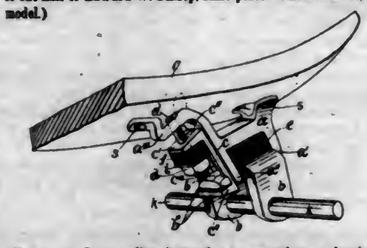
2. In a hammock of the character described, the combination, with the hammock and supporting-frame, of the removable upper structure comprising the extension-uprights G G, cross-bars I I, stays J J, the canopy K, and the mosquito-netting detachably secured to the canopy, substantially as set forth.

324,129. REVERSIBLE SEAT OR BED FRAME. JAMES LIVESEY and FERNANDO H. W. LIVESEY, Victoria Mansions, Westminster, County of Middlesex, England. Filed Apr. 22, 1885. (No model.) Patented in England Dec. 13, 1883, No. 5,728.



Claim.—A reversible seat available as a bed-frame, consisting of two equal parts, M and N, connected together, and linked, respectively, by equal radius-rods *m n* to a stationary framing having on it laths or slops R R', constructed and arranged substantially as and for the purposes herein set forth.

324,130. ROLLER-SKATE. NATHAN H. LOSE, Muncie, Ind., assignor of one-half to Edward W. Bishop, same place. Filed Mar. 13, 1885. (No model.)



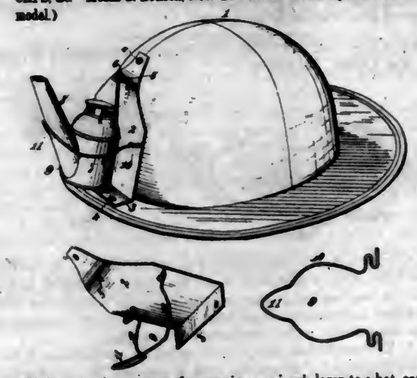
Claim.—1. In a roller-skate, the hanger-plate *a*, having a knee, *a'''*, and stud *a''''* on its upper part, all for the purpose set forth.

2. In a roller-skate, the hanger *b*, provided with a stud, *b'''*, and a T-headed stud, *b' b''*, in combination with bar *c*, rubber *f*, washer *i*, and screw *d*.

3. In a roller-skate, the bar *c*, having outward-turned ends *c' c''* and slot *c'''*, in combination with the rubber *f*, screw *d*, and T-head *b' b''*.

4. In a roller-skate, the hanger-plate *a*, having lugs *a' a''*, knee *a'''*, and stud *a''''*, and hanger *b*, having T-head *b' b''* and stud *b'''*, in combination with bar *c c' c'' c'''*, washer *i*, rubbers *e f*, and screw *d*.

324,131. MEANS FOR SECURING MINERS' LAMPS TO HATS, CAPS, &c. MOSES S. LORSCH, New York, N. Y. Filed Apr. 22, 1885. (No model.)

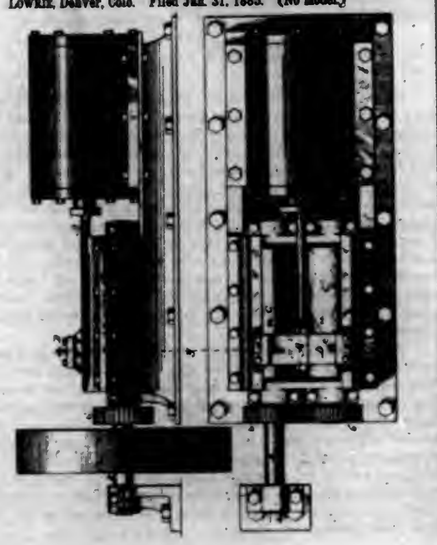


Claim.—1. As a means for securing a miner's lamp to a hat, cap, or other object, the combination, with a supporting-plate, of a bail-shaped frame comprising two lateral curved branches adapted to grasp the body of the lamp, said lateral branches being joined in front by converging arms formed to receive the wick-tube and having inner S-shaped terminals connected with the supporting-plate, an aperture formed in the latter, and a hook rigidly mounted upon the lamp and engaging with said aperture, substantially as described.

2. The combination, with a miner's hat or cap, of a metallic supporting-plate having a flanged lower edge and provided with openings or sockets, a bail-shaped frame having its arms converging outwardly and their inner ends, formed as hooks, engaging the openings or sockets of the metallic plate, and a lamp embraced by the bail and having its wick-tube extending between and supported by the converging arms of the bail, substantially as described.

3. The combination of the metallic supporting-plate having openings or sockets and a laterally-projecting flange at its base with the bail-shaped frame for embracing the lamp-body and having its arms converging outwardly to receive and support the wick-tube of the lamp, and the inner ends of the arms provided with hooks engaging the openings or sockets in the supporting-plate, substantially as described.

324,132. MECHANISM FOR CONVERTING MOTION. HARVEY C. LOWRIE, Denver, Colo. Filed Jan. 31, 1885. (No model.)



Claim.—1. The combination, substantially as hereinbefore described, of the pair of cam-cylinders, the gearing by which they are coupled together and caused to rotate in harmony, the reciprocating rod, and the cross-head having parallel studs or pins which engage with the cam-grooves or flanges of said cylinders.

2. The combination of the parallel cam-cylinders coupled by gearing, the reciprocating rod, and the cross-head overlying said cylinders and provided with parallel studs or pins, each of which continuously engages with its cam-cylinder in the vertical plane of its axis, substantially as described.

3. The combination of the parallel cam-cylinders geared together, the cross-head provided with studs or pins engaging with said cylinders, and guides upon said cylinders for limiting the cross-head studs to their proper paths, substantially as described.

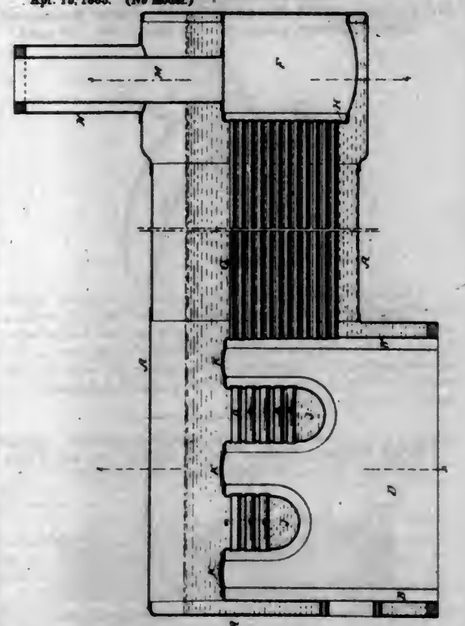
324,133. GLASS ORNAMENTATION. GEORGE A. MACBETH, Pittsburg, Pa. Filed Mar. 24, 1885. (No model.)



Claim.—1. The method of affixing trade-marks, labels, or ornamental designs to lamp-chimneys or other glass articles by stamping or printing the mark or design desired on each chimney or other article with a quickly-drying bronzing material, substantially as set forth.

2. As a new article of manufacture, a lamp-chimney or other like article having a trade-mark, label, or other design of bronze stamped or printed thereon, substantially as set forth.

324,134. STEAM-BOILER. WILLIAM MALAM, Edge Moor, Del. Filed Apr. 15, 1885. (No model.)



Claim.—1. The combination of the casing and tubed cylindrical barrel of a boiler of the locomotive type with a fire-box casing having tubed transverse water-legs in the upper portion of the combustion-chamber, as set forth.

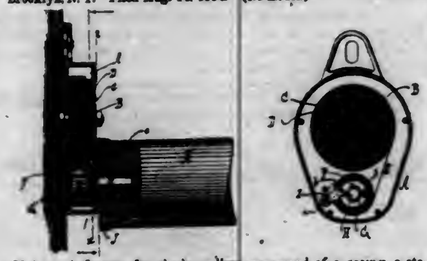
2. The combination of the casing and tubed cylindrical barrel of a boiler of the locomotive type with the fire-box casing having tubed transverse water-legs J and crown-plates K, as set forth.

3. The combination of the casing and tubed barrel of a boiler of the locomotive type with a fire-box casing having tubed transverse water-legs in the upper portion of the combustion-chamber, the forward leg being deeper than the rear leg, as set forth.

4. The combination of the fire-box casing having tubed transverse water-legs, the tubes G, the smoke box and stack, and the boiler-casing extended to inclose the smoke-box and lower portion of the stack, and having a drum, N, inclosing the upper part of the stack, as set forth.

5. The combination of the tube-sheet, the smoke-stack, and the smoke-box having a corrugated casing, with the casing A of the boiler having an expanded front sheet inclosing the smoke-box, as set forth.

324,135. SPRING-ROLLER FOR CURTAINS. PETER E. MALMSTRÖM, Brooklyn, N. Y. Filed Aug. 14, 1884. (No model.)



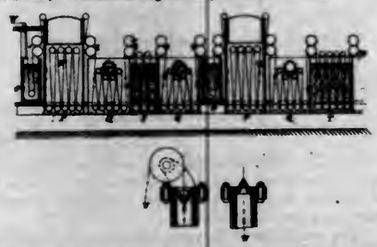
Claim.—A fixture for shade-rollers composed of a casing, a stationary axle fixed in said casing, a drum which revolves freely on this axle, a convolute spring, one end of which is secured to the stationary axle, while its other end is fastened to the interior of the drum, a revolving shaft which has its bearings in the heads of the casing, a square, polygonal, or oval stem extending from said shaft through the casing, a take-up roller the diameter of which is smaller than that of the drum, and which is made integral with or mounted firmly on the shaft, a tape or flexible strip of sheet metal extending several times round the drum, and having one end fastened thereto, while its other end is fastened to the take-up roller, one or more notches formed in the take-up roller, and a click which bears upon the circumference of the take-up roller, all constructed substantially as and for the purpose shown and described.

324,136. HORSE-COLLAR FASTENER. GODFREY MARSHALL and ERASTUS S. LAFFERTY, Indiana, Pa. Filed June 11, 1885. (No model.)



Claim.—In a collar-fastener, the loop portion A, having supplemental loops *a*, with projecting tongues *a'* formed integral therewith, a cross-bar forming the front portion of the main loop and located below the plane of the other members, in combination with the lever D, having bent portions *f f*, adapted to partially encircle the bar *d*, and outwardly-projecting portions *g*, the parts being organized substantially as shown, and for the purpose set forth.

324,137. APPARATUS FOR CONTINUOUS BLEACHING. WILLIAM WATHER, Manchester, County of Lancaster, England. Filed Mar. 13, 1885. (No model.) Patented in England May 19, 1884, No. 7,909.

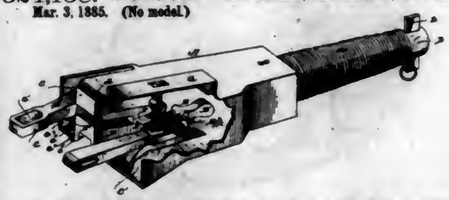


Claim.—1. In an apparatus for bleaching fibers and fabrics continuously, the combination of the liquor-compartments O, the compartments P for gases, the washing-compartments Q, the alkaline-compartments S, and souring-compartment T, and the rollers around or between which said fabrics pass in the progressive bleaching process, substantially as specified.

2. In an apparatus for bleaching fibers and fabrics continuously, the combination, with the compartments O P S T, of the washing-compartments Q, the rollers *q'*, provided with elastic tines or brushes, and the rollers around or between which said fabrics pass in the progressive bleaching process, substantially as specified.

3. In an apparatus for bleaching fibers and fabrics, the combination, with the compartments O Q S T, of the gas-compartment P, having walls with passages between them for the fabrics, the elastic lips surmounting said walls, one pair of lips being directed downward and one pair upward, said lips acting to press tightly against the fabric and prevent the escape of gas, substantially as specified.

324,138. CAR-COUPLING. JOHN MCGEHEE, Shawneetown, Ill. Filed Mar. 3, 1885. (No model.)



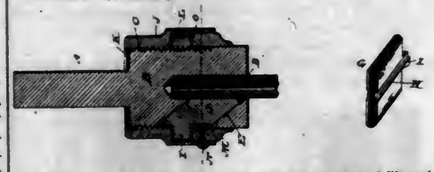
Claim.—1. The combination, with a draw-head, of the pivoted latch E, having the weighted arm E' and the wing or abutment E², against which the coupling-link or draw-bar strikes, and the pivoted head-block F, adapted to swing over the head of the latch and lock the same to secure the draw-bar or link, substantially as described.

2. The combination, with a draw-head, of the pivoted latch E, having the weighted arm E' and the wing or abutment E², against which the coupling-link or draw-bar strikes, the pivoted head-block F, adapted to swing over the head of the latch and lock the same to secure the draw-bar or link, and means for tilting the head-block to release the latch and cause the latter to release the draw-bar or link, substantially as described.

3. The combination, with the draw-head having guiding-cleat H, provided with the raised portion *f'* and seat *f²*, of the pivoted latch for engaging with the draw-bar or link, and the head-block for securing the latch in a locked position to retain the draw-bar or link, substantially as described.

4. The draw-head having the compartments C and C', a draw-bar or link secured in compartment C, the pivoted latch E, having the weighted end E', and the wing or abutment E², against which the draw-bar or link of the adjacent car strikes, and the head-block F, for securing the latch in a locked position, the latch and head-block being located in compartment C', substantially as described.

324,139. DRILL-CHUCK. EDDY T. MCKAIG, Chicago, Ill. Filed July 6, 1885. (No model.)



Claim.—1. In a drill-chuck, the combination of the drill-stock having a head at its outer end formed with an external screw-thread extending to near its outer end, having its outer end smooth, and having a number of radiating recesses opening from its outer threaded periphery into its axial bore, the said recesses converging toward the outer end of the head, jaws sliding in the said recesses and having outwardly-projecting lugs upon their outer ends, a sleeve fitting with its reduced inner threaded portion upon the threaded portion of the head, and having an outwardly-facing shoulder at the outer end of its threaded portion, and a wider bore at its outer end, and a collar fitting and turning upon the smooth portion of the head and secured with its inner end within the outer end of the sleeve, the inner end of the said collar and the shoulder of the sleeve confining the lugs upon the jaws, as and for the purpose shown and set forth.

2. In a drill-chuck, the combination of the drill-stock having a head at its end, screw-threaded at its inner portion and smooth at its outer portion, and having a number of radiating recesses opening into its axial bore and provided with ribs upon their side, the said recesses converging toward the outer portion of the axial bore, jaws fitting in the said recesses and having grooves in their sides sliding upon the ribs in the recesses and provided with outwardly-projecting lugs upon their outer ends, and a sleeve and collar turning upon the head and forming an annular recess confining the lugs upon the jaws, the said sleeve and collar drawing the jaws in or out as it is drawn in or out, as and for the purpose shown and set forth.

324,140. SULKY. THOMAS J. MCMURRAY and WILLIAM B. FISHER, Marion, Ohio. Filed Apr. 11, 1885. (No model.)

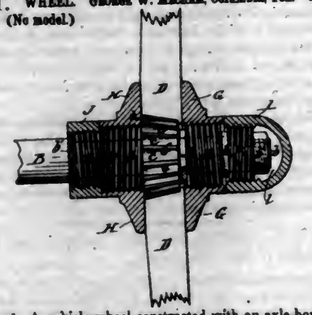


Claim.—1. In a sulky, the combination of the arched axle, the bar clipped to the front side of the same, and the top plate bolted to the said axle and cross-bar, and having a central downwardly-extending boss or collar, substantially as and for the purpose set forth.

2. In a sulky, the combination, with a frame having an upwardly and rearwardly extending curved cross-piece secured thereto, suitable outer and inner braces, and a pair of span-braces secured to the rear part of the frame and to the axle at points within and above the points where they are secured to the frame, substantially as and for the purpose set forth.

3. In a sulky, the combination of the axle, the clips at the outer ends of the same for the attachment of suitable braces or ties, and the plates U, inserted under the clip-plates and having bulging portions W, bearing against the collars at the inner ends of the spindles, substantially as and for the purpose set forth.

324,141. WHEEL. GEORGE W. MERHAN, Columbia, Tex. Filed May 7, 1885. (No model.)



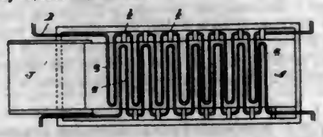
Claim.—1. A vehicle-wheel constructed with an axle-box, A, provided with a tapering spoke-supporting collar, C, notched at *c*, and right and left hand screw-threads E F and I K, the spoke-clamping collars G H, and lock-nuts L J, in combination with spokes D, socketed felly N, and tire O, substantially as herein set forth.

2. A vehicle-wheel constructed with an axle-box, A, provided with a tapering spoke-supporting collar, C, notched at *c*, right and left hand screw-threads E F and I K, spoke-clamping collars G H, and lock-nuts L J, and the inner end of the axle-box being counterbored to receive the end of the axle, and the nut L being closed to form a dust-cap and nut-protector at the outer face of the wheel, in combination with spokes D, socket-felly N, and tire O, substantially as herein set forth.

3. As an improved article of manufacture, the axle-box A, made with tapering spoke-supporting collar C, having notches *c*, and right and left hand screw-threads E F and I K, substantially as herein set forth.

4. An improved wheel-hub consisting of the box A, provided with the tapering and notched collar C, and having a right and left hand screw-thread, E I F K, on each side of the said collar, the flanged collars G H, and the lock-nuts L J, the nut L having a cavity, *l*, to receive the end of the axle, substantially as herein shown and described.

324,142. SALT-GRAINER. CHARLES A. MERRILL, Bay City, Mich. Filed May 13, 1885. (No model.)



Claim.—1. In a salt-grainer, a system of steam heating-pipes movably secured in the brine and connected with operating mechanism, substantially as described.

2. In a salt-grainer, one or more systems of steam-pipes forming a series of lateral loops in the brine and journaled at the base of the loops, in combination with suitable operating mechanism connected to the top of one or more loops and arranged to give the steam-pipes a vertically-oscillating movement in the brine, substantially as described.

3. In a salt-grainer, two systems of steam-pipes forming a series of lateral loops alternating with each other and journaled near the base of the loops upon opposite sides of the grainer, in combination with operating mechanism for alternately oscillating the pipes up and down in the brine, substantially as described.

4. The combination of the grainer A, steam-pipes B, forming loops *a*, journal-blocks *b*, counter-shaft C, and eccentrics *c c*, all arranged and combined substantially as described.

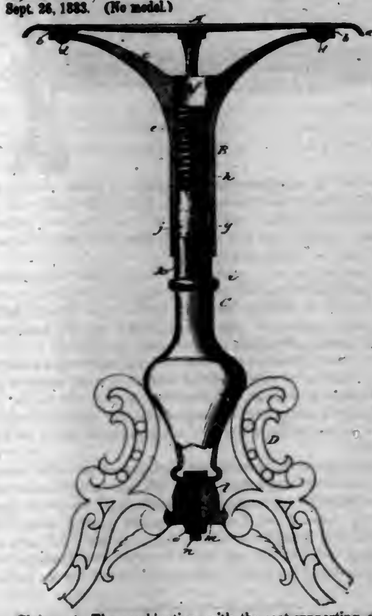
5. In a salt-grainer, the combination of an endless-scraper device consisting, substantially, of the grooved rolls F G, ropes H, and cross-slats *g*, with the vibrating frame L, having hooked arms K, all arranged substantially as described.

6. In a salt-grainer, the combination of two or more scraper devices consisting, substantially, of endless belts or ropes and cross-slats, with two or more vibrating frames, L, having hooked arms K, and connecting-rods M, all arranged substantially as described.

7. In a salt-grainer, a closed chamber inclosing the grainer and its operating mechanism, and having an exhaust-fan, substantially as and for the purposes specified.

8. A salt-grainer comprising the following devices: a grainer having steam-pipes movably secured therein and connected with the operating mechanism, an endless-scraper device moving intermittently through the brine to scrape out the salt collecting at the bottom of the grainer, a chamber inclosing the grainer, and an exhaust-fan for reducing the atmospheric pressure within the chamber, all arranged substantially as described.

324,143. PIANO-STOOL. HIRAM T. MERRILL, Chicago, Ill. Filed Sept. 26, 1883. (No model.)



Claim.—1. The combination, with the seat-supporting sleeve provided with a chamber, *g*, of the screw-threaded standard provided with a shoulder, *k*, adapted to work in said chamber, substantially as and for the purpose described.

2. The combination, with the standard provided with screw-threads, a shoulder, *k*, and ring *i*, cast thereon, of a screw-threaded seat-supporting sleeve working on said standard and provided with a chamber, *g*, substantially as described.

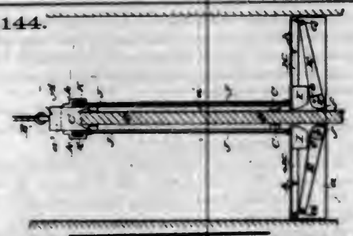
3. The combination, with the standard provided with a hollow bearing, *l*, of the legs D, having lugs *m*, fitting in said bearing, and the bolt *n* and the set-screw *o*, substantially as described.

324,144. SAFETY-BRAKE FOR ELEVATORS. JOHN W. METZ, Manchester, Ohio. Filed June 5, 1885. (No model.)

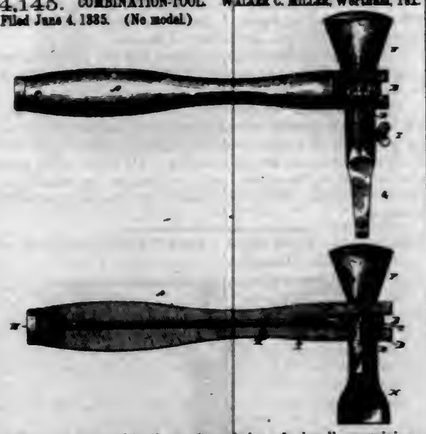
Claim.—1. A safety-brake for elevators, consisting of the levers E, pivoted at their inner ends to the carriage, and having cam-heads F, for engaging guide-posts, the weighted levers H, pivoted a little at one side of the center of their length, the links G, connecting the outer ends of the said levers, and the pull-cords J, attached to the inner ends of the levers H, substantially as herein shown and described.

2. The combination, in a safety-brake for elevators, and with the carriage A and its guide posts or ways D, of levers E H, pull-cords J, pulleys K, and hand-grasp L, substantially as herein set forth.

324,144.



324,145. COMBINATION-TOOL. Walker C. Miller, Wortham, Tex. Filed June 4, 1885. (No model.)



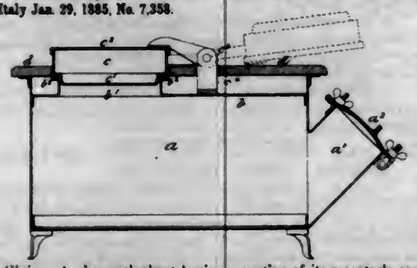
Claim.—1. A combination-tool consisting of a handle containing a pawl-retained ratchet-wheel, a spindle moved by the handle and attached to the ratchet-wheel, and having one end squared or similarly shaped, and a hammer-head attached to the other end of the spindle, substantially as and for the purpose specified.

2. A combination-tool consisting of a handle with a ratchet-wheel and a reversible pawl, a spindle passing through said wheel and having one end squared or similarly shaped, a hammer-head attached to the other end, and a screw-driver and a wrench-socket normally attached to the spindle, substantially as and for the purpose specified.

3. In a combination-tool, a reversible ratchet consisting of a ratchet-wheel in a handle, a rod with a beveled enlargement and spring at one end and flattened at the other, and extending through said handle, and a tap entering the handle and receiving the flattened end of the rod in a recess in it, said tap being free to turn, substantially as and for the purpose specified.

4. A combination-tool consisting of a handle, a ratchet-wheel therein, a rod with a beveled enlargement at one end, and spring retained and flattened at the other end, extending therethrough, a tap with a recess receiving the flattened end of the rod, a spindle passing through the ratchet-wheel and squared or similarly shaped at one end, a hammer-head attached to the other end, and a screw-driver and wrench with sockets for receiving the spindle, substantially as and for the purpose specified.

324,146. APPARATUS FOR THE RECEPTION AND DEODORIZATION OF HUMAN EXCRETA, &c. Richard Nicholls, Hendon, County of Middlesex, England. Filed Dec. 29, 1884. (No model.) Patented in Italy Jan. 29, 1885, No. 7,358.



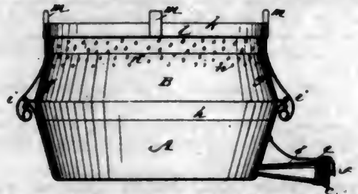
Claim.—1. An earth-closet having a portion of its receptacle covered by a perforated tray, *b*, and a portion formed into an opening, *b'*, covered at will by a hollow cover, *c*, containing a powdered disinfecting or deodorizing material, and having a perforated bottom, the said cover being supported or pivoted on a post, *c'*, secured to the tray *b*, and the whole adapted to serve as and for the purposes set forth.

2. The combination of the receptacle *a*, as described, having the tray *b*, with post *c'* secured thereto and projecting upward through the top *d*, with the cover *c*, containing a powdered disinfectant, and pivoted to the top of said post, and having a chamber with a perforated bottom, all arranged and adapted to serve as set forth.

324,147. WATER-COLOR. Charles F. Nicholson, Rochester, N. Y. Filed May 17, 1884. (Specimens.)

Claim.—A semi-plastic water-color consisting of a dry color in a finely-powdered condition thoroughly mixed and incorporated with a solution composed of glucose, gum-arabic, and sirup, substantially as herein described.

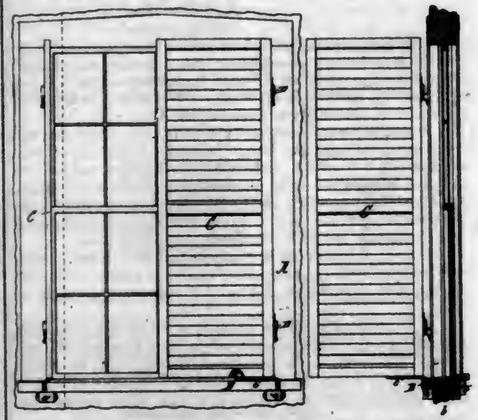
324,148. COMBINED MILK-PAN AND CURD OR CHEESE MOLD. Sarah J. Nordell, Corpus Christi, Tex. Filed Jan. 14, 1885. (Model.)



Claim.—1. The combination, with the milk-pan A, having a lower stoppered spout, *b*, of the detachable hollow cover B, provided with a screen, *l*, and with legs or supports arranged to project beyond said screen, said cover, with its attachment, serving both as a strainer to the milk and also as a curd or cheese mold removable from the pan, substantially as shown and described.

2. The detachable hollow cover B, having shelving sides *g*, a joint-closing curtain, *h*, at its larger or mouth end, a rim, *k*, at its opposite end, a screen, *l*, arranged within said rim, legs *m*, projecting beyond said rim and screen, and side fastenings, *i*, in combination with the milk-pan A, having a stoppered spout, *b*, substantially as shown and described, and for the purposes specified.

324,149. SHUTTER-WORKER. Harden Palmer, Everett, Mass. Filed Nov. 17, 1884. (No model.)



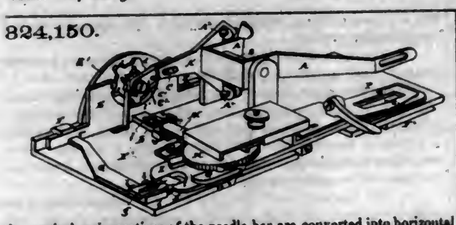
Claim.—The casing or box *a*, secured exteriorly of the building beneath the sill B, and containing the vertical worm-wheel *e* and meshing worm-gear *d*, combined with the boot lever *c*, having bearings in the casing or box, and engaged by the worm-wheel, and connected to or with the shutter, and the rod or shaft *b*, extended through the side of the house, and having bearings in the casing or box and engaging the worm to operate it, all constructed and arranged substantially as shown and described.

324,150. BUTTON-HOLE ATTACHMENT FOR SEWING-MACHINES. John H. Palmer, Philadelphia, Pa. Filed Jan. 9, 1885. (Model.)

Brief.—A horizontal sliding plate operates a lever pivoted to the base-plate. The adjustable short arm of said lever serves to vibrate the clamp bearing levers or slides.

Claim.—1. In a button-hole attachment for a sewing-machine, a horizontal reciprocating plate, in combination with a vertical reciprocating needle-bar, cam mechanism, substantially as set forth, to reciprocate said plate, jointed lever mechanism, substantially as shown, by which

324,150.



the vertical reciprocations of the needle-bar are converted into horizontal reciprocations of the said plate, a cloth-clamp, lever mechanism therefor, and connecting devices, substantially as shown, connecting said horizontally-reciprocating plate with said lever mechanism, substantially as and for the purpose specified.

2. The cam D, having an uneven number of projections, *d*, having curved faces made concentric with the axis of the cam, so that the working-faces are of sufficient length to allow for wear and loose play in the parts, in combination with a sliding plate, E, having two fixed points, *e*, working on the face of the cam and separated a distance substantially equal to the pitch diameter of the cam, the cloth-clamp, its operating-levers, substantially as set forth, mechanism and connecting mechanism, substantially as described, whereby the cloth-clamp-operating levers are operated by the reciprocating sliding plate, substantially as and for the purpose specified.

3. The cam D, having an uneven number of projections, *d*, having curved faces made concentric with the axis of the cam, so that the working-faces are of sufficient length to allow for wear and loose play in the parts and a ratchet-wheel, *c*, secured to the cam and having twice as many teeth as the cam projections, and pawl mechanism to intermittently rotate said ratchet-wheel one tooth at a time, the cloth-clamp, its operating-levers, substantially as set forth, mechanism and connecting mechanism, substantially as described, whereby the cloth-clamp-operating levers are operated by the reciprocating sliding plate, substantially as and for the purpose specified.

4. The combination of the needle-bar with lever A, lever A', having stops A^2, lever C^0, having pawl C', ratchet-wheel *c*, cam D, sliding plate E, the cloth-clamp, its operating-levers, substantially as set forth, mechanism and connecting mechanism, substantially as described, whereby the cloth-clamping-operating levers are operated by the reciprocating sliding plate, substantially as and for the purpose specified.

5. The combination of the needle-bar with lever A, lever A', having adjustable stops A^2, lever C^0, having pawl C', ratchet-wheel *c*, cam D, sliding plate E, the cloth-clamp, its operating-levers, substantially as set forth, mechanism and connecting mechanism, substantially as described, whereby the cloth-clamp-operating levers are operated by the reciprocating sliding plate, substantially as and for the purpose specified.

6. The combination of reciprocating plate E, levers L M, adjustable connections *m m'*, a feed-wheel, and connecting mechanism by which the oscillations of the lever M rotate the feed-wheel, substantially as and for the purpose specified.

7. The combination of reciprocating plate E with lever G, adjustable part *g'*, and pivoted cloth-holding levers, substantially as and for the purpose specified.

324,151. COCK. Bruno E. Parker, Philadelphia, Pa. Filed Mar. 28, 1885. (No model.)



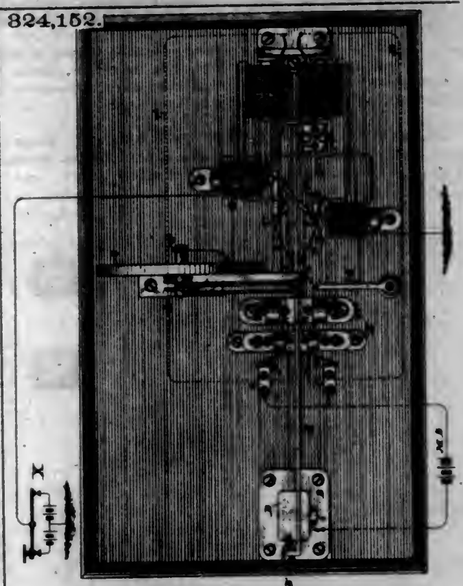
Claim.—1. A cock for fluids having an outer valve provided with different-sized ports and an inner valve adapted to close the ports of the outer valve, devices for limiting the motion of said valves, and a screw whose point has a seat on the end of the outer valve serving to adjust or regulate the flow of the fluid, said parts being arranged, combined, and operated substantially as described.

2. A cock for fluids having the casing A, rotary valve B, provided with ports C and C', of different sizes, inner valve, D, handle E, thumbpiece F, screws J and J', and a screw, G, whose point is located adjacent to the bottom of the valve B as a seat substantially as described.

324,152. VIBRATING ELECTRIC MOTOR. Albert L. Parcelle, Boston, Mass., assignor to the National Electrical Company, New York, N. Y. Filed Sept. 1, 1884. (No model.)

Claim.—1. The combination of an electrically-actuated vibrator, the

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vibrator-magnets having their poles arranged opposite the end of said vibrator outside the curve of vibration, and in a plane transverse to its longitudinal axis, a source of electric energy, and electric circuits and connections.

2. The combination of an electrically-actuated vibrator, an armature on the end thereof lying in a plane substantially at right angles to the longitudinal axis of the vibrator, vibrator-magnets having their poles arranged opposite said armature outside the curve of vibration and in a plane substantially parallel therewith, a source of electric energy, and electric circuits and connections.

3. The combination of an electrically-actuated vibrator, vibrator-magnets, a source of electric energy and circuits, circuit-completing devices by which the circuits of the motor-magnets are alternately completed as the vibrator vibrates, and additional circuit-completing or switch devices actuated by the vibrator to alternately close the circuit of one motor-magnet and open that of the other, as set forth.

4. The combination, substantially as set forth, of an electrically-actuated vibrator, its motor-magnets, source of electric energy and circuits, and the anchor-lever which is struck by the vibrator and moved in both directions.

5. The combination, substantially as set forth, of an electrically-actuated vibrator, its motor-magnets, source of electric energy and circuits, the anchor-lever rocked by the vibrator, and a yielding device, M, for steadying the anchor-lever.

6. The combination of an electrically-actuated vibrator, its motor-magnets having their poles arranged opposite the end of the vibrator in a plane transverse to its longitudinal axis and outside of its curve of vibration, a source of electric energy, circuits and connections, and devices mechanically actuated by the vibrator.

7. The combination of an electric motor, a distant source of electric energy, and a key or manual current-transmitting device operated at will, electro-magnetic controlling devices at the motor in the circuit of the distant source of energy for throwing the local electro-motive power of said motor into and out of action at will, when an impulse from the distant source of energy is received at the motor, and independent local motor-driving devices for continuously actuating the motor when once started until a stopping impulse is received from the distant source of energy to throw the local electric motor-driving devices out of action.

8. The combination of an electrically-actuated vibrator, its motor-magnets, source of electric energy and circuits, contacts *c' d'*, the electro-magnets for moving said contacts to start and stop the motor, and suitable switch devices, E.

9. The combination of the vibrator, its motor-magnets, the contact-fingers *c' d'*, the pivoted arms on which they are mounted, the link *c*, and the spring which tends constantly to keep the contact-fingers in their proper normal position.

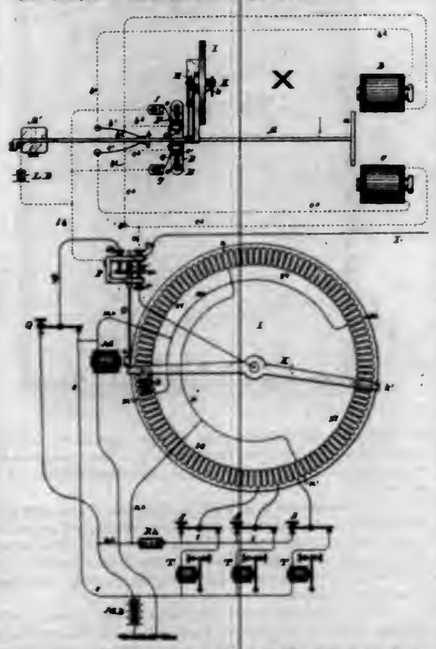
10. The combination of a vibrator, its motor-magnets, the contact-fingers *c' d'*, the pivoted arms on which they are mounted, the pivoted link which connects said arms, the controlling-magnets which operate upon said arms to move the contact-fingers *c' d'* toward or from the vi-

brator, and the spring which tends to restore them to their proper and normal position.

11. The combination of an electrically-actuated vibrator, its split or two-part support, a screw, B', for adjusting the vibrator endwise in its support to vary its normal rate of vibration, and a clamp-screw, *b*, for clamping the vibrator firmly in its adjusted position.

324,153. ELECTRICAL SYNCHRONOUS MOVEMENT.

ALBERT L. PARCELLS, Boston, Mass., assignor to the National Electrical Company, New York, N. Y. Filed Oct. 4, 1884. (No model.)



Claim.—1. The combination of the main line, independently-actuated vibrators at each end of the main line, rotating apparatus at each end of the line controlled by said vibrators, local correcting devices at one end of the line for correcting the speed of the vibrator and apparatus at that station solely by their own action, and means by which a current of electricity is transmitted over the line to release or free the vibrator and apparatus from said correcting action.

2. The combination of the main line, independently-actuated vibrators at each end of the main line, rotating apparatus at each end of the main line controlled by said vibrators, local correcting devices at each station for correcting the speed of either vibrator when it runs out of time with the other solely by the action of the correcting devices at the particular station, and means by which currents of electricity may be sent from either station to the other to release the vibrators from said correcting action.

3. The combination of a main line, independently-actuated apparatus at each end of the main line, a vibrator at one end of the main line for controlling the apparatus at that station, correcting devices by which the vibrator is automatically corrected at said station solely by the action of the correcting devices at that station when the apparatus at said station runs out of time with the apparatus at the distant station, and means for transmitting a correcting impulse of electricity over the line to release or free the vibrator from said correction.

4. The combination of a main line, independently-rotating apparatus at each end of the line, a vibrator at one station for actuating or controlling the apparatus at that station, a local circuit for correcting the action of the vibrator, means by which the rotating apparatus at the vibrator-station completes said correcting circuit when the apparatus runs out of time with the apparatus at the distant station, and means for transmitting an impulse of electricity over the line to release the vibrator from said correcting action when the apparatus at the two stations come into proper relative position.

5. The combination of the main line, an independently-actuated vibrator at each end of the line, rotating apparatus controlled by said vibrators, a local circuit at each station for correcting the speed of the vibrator, means at each station for completing said local circuit whenever the apparatus at either station runs out of time with that at the distant station, and means for transmitting a current of electricity over the line to release either of said apparatus when both apparatus come into corresponding positions.

6. The combination of a main line, a table of contacts and a rotating arm which traverses said table at each end of the main line, a detent or circuit-changer located in the path of said traveling arm at one station, with which said arm makes contact when it runs ahead of the other arm at the distant station, and electric devices for transmitting a current of electricity from the distant station to separate said arm and circuit-changer when the two apparatus come into corresponding positions, for the purpose set forth.

7. The combination of the main line, the independently-actuated apparatus at each end of the main line, synchronously-rotating devices actuated by said apparatus, a detent or circuit-changer located in the path of said rotating apparatus at each station, and a local circuit at each station thrown into operation by said detent or circuit-changer to control the speed of the independently-actuated apparatus at that station.

8. The combination of the main line, independently-actuated apparatus at each end of the main line, synchronously-rotating devices actuated by said apparatus, a detent or circuit-changer at each station, which normally lies in the path of said rotating devices, a local circuit at each station for controlling the independently-actuated apparatus, which circuit is thrown into operation whenever the synchronously-rotating devices come in contact with said detent, and electro-magnetic devices for periodically and alternately removing the detent from the path of the rotating apparatus at each station by means of an impulse of electricity transmitted from the distant station.

9. The combination of a main line, independently-actuated apparatus at each end of the main line, synchronously-rotating devices actuated by said apparatus, the circuit-completer or trailing-finger at each station, normally connected with the main line, a table of contacts over which said finger traverses, a detent or circuit-changer normally located in the path of the rotating devices at each station, a local circuit at each station controlled by said circuit-changer for correcting the speed of the independently-actuated apparatus, and the battery and ground contacts at each station.

10. The combination of a main line, synchronously-rotated apparatus at each end of the main line, trailing-fingers or circuit-completers carried by said rotating devices, a table of contacts at each station, over which said circuit-completers traverse, means, substantially such as described, for maintaining the synchronous rotation of said devices, and the ground and battery contacts placed at irregular intervals in the table of contacts at each station.

11. The combination of the main line, synchronously-actuated apparatus and a table of contacts at each end of the main line, rotating arms having circuit-completers which traverse said tables of contacts, actuated by said synchronously-moving apparatus, said rotating arms occupying positions when moving synchronously substantially at right angles to each other, the ground and battery contacts placed at irregular intervals in the table of contacts, and means, substantially such as described, for maintaining the synchronous movement of the apparatus at the two stations.

12. The combination of the main line, rotating apparatus at each end of the main line, a detent in the path of the rotating apparatus at each station, and means, substantially such as described, for alternately removing said detents from the paths of the rotating apparatus, to insure their equal and uniform movement.

13. The combination of the main line, rotating apparatus at each end of the main line, a detent or circuit-changer in the path of the rotating apparatus at each station, with which either of said rotating apparatus makes contact to correct its speed only when it runs ahead of the other apparatus, and means, substantially such as described, for alternately removing said detents from the paths of said rotating apparatus, substantially as set forth.

14. The combination of the main line, the rotating apparatus at each end of the main line, a detent in the path of said rotating apparatus at each station, ground and battery contacts at each station, over which a circuit-completer on the rotating apparatus moves, and electric circuits and devices for alternately and periodically removing said detent from the path of the rotating apparatus at each station.

15. In a synchronous system of electrical movements, substantially such as herein described, the combination of rotating circuit-completers, a table of contacts over which said circuit-completers move, and ground and battery contacts placed at irregular intervals in said tables of contacts.

16. The combination of the main line, the independently-actuated vibrator at each end of the main line, the motor-magnets, circuits, contacts, and switch devices of each vibrator, shunts around the switch devices in the circuits of the motor-magnets, the synchronously-rotating devices actuated by said vibrators, a detent or circuit-changer located in the path of said rotating devices at each station, contacts by means of which said circuit-changer or detent closes the shunts in the motor-circuits whenever the rotating devices at one of the stations comes in contact with the detent, and means, substantially such as described, whereby the detents are periodically alternately removed from the paths of the rotating devices.

17. In a system of synchronous movement, substantially such as herein described, the combination of the rotating arms, the yielding detents, and the ground and battery contacts.

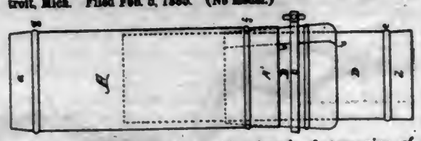
18. The combination of the main line, rotating apparatus at each end of the main line, a yielding detent in the path of the rotating apparatus at each station, and means, substantially such as described, for alternately removing said detents from the paths of the rotating apparatus.

19. In electrically-connected rotating apparatus, the combination of the rotating arm and the yielding detent for acting on said arm, for the purpose set forth.

20. The combination of the main line, synchronously-rotating apparatus at each end of the main line, a detent in the path of the rotating apparatus at each station, electro-magnets for removing said detents from the paths of said rotating apparatus, and a key and battery at each station for transmitting an impulse of electricity to the distant station for removing the detent from the path of the rotating apparatus.

324,154. STOVE-PIPE.

LOUIS PARÉ and HENRY REICHENBACH, Detroit, Mich. Filed Feb. 5, 1885. (No model.)



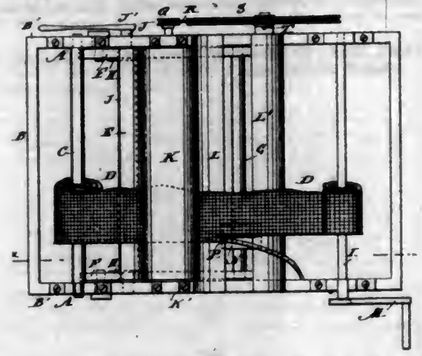
Claim.—1. The combination, with a length of stove-pipe, of a pipe-section of larger diameter fitting thereon, and having one end contracted, as shown, and a tapering compressible ring fitting over the smaller section of pipe and entering the larger section, substantially as described.

2. The combination, with a length of stove-pipe, D, and a section, A, of larger diameter fitting thereon and having a contracted end, *a*, of a compressible ring, B, formed of a tapering piece of pipe loosely bent into a frustum of a cone, and having at its base an inwardly-extending flange, F, substantially as described.

3. The combination, with a length of stove-pipe, D, and a section, A, of greater diameter fitting thereon and having a contracted end portion, *a*, of a compressible ring, B, formed of a tapering piece of pipe loosely bent into a frustum of a cone, and the clamp C, having therein screw E, substantially as described.

324,155. MACHINE FOR MEASURING AND TRIMMING FABRICS.

GEORGE W. PARSONS, Burlington, Iowa. Filed May 14, 1885. (No model.)



Claim.—1. The combination, with a fabric-roll and a bar for winding the fabric, of a tension-bar over which the fabric is passed, levers on which the said bar is secured, a shaft and eccentric disks on the same for raising the levers, and of a knife, substantially as herein shown and described.

2. The combination, with a fabric-roll and a bar for winding the fabric, of a tension-bar, levers on which it is secured, mechanism for raising the levers, and a knife at the free ends of the levers, substantially as herein shown and described.

3. The combination, with a fabric-roll and a bar for winding the fabric, of a pressure-bar, levers on which it is secured, a knife at the free ends of levers, and a measuring-roller, under which the fabric is passed, substantially as herein shown and described.

4. The combination, with a fabric-roll and a bar for winding the fabric, of a pressure-bar, levers to which it is secured, a shaft on the free ends of the levers, a clamp on the shaft, and a knife on the clamp, substantially as herein shown and described.

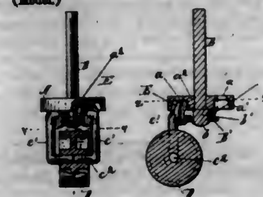
5. The combination, with the fabric-roll C and the fabric-winding bar I, of the quarter-round pressure-bar E, the measuring-roller K, the bars L L^2, and the knife or blade P, substantially as herein shown and described.

6. The combination, with the fabric-roll C and the fabric-winding bar I, of the quarter-round pressure-bar E, the measuring-roller K, the bars L L^2, the levers F, and the knife P, substantially as herein shown and described.

7. The combination, with the fabric-roll C and the fabric-winding bar I, of the bar E, the measuring-roller K, the bars L L^2, the levers F, the knife P, the pulley S, and the pointer T, substantially as herein shown and described.

324,156. CASTER.

JOSEPH R. PAYSON, Jr., Chicago, Ill., assignor to Edward Payson and William F. Main, both of same place. Filed Mar. 11, 1885. (Model.)



Claim.—1. The hereinbefore-described caster-yoke, constructed of a single piece of wire, and forming the caster-horns, the axle-bearings for anti-friction rollers, and the loop or swivel for the caster-stem, substantially as and for the purposes specified.

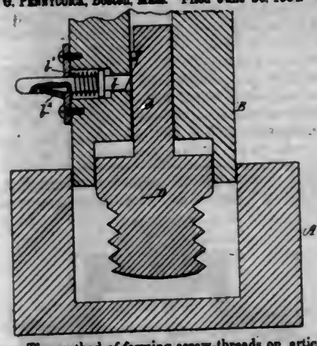
2. The combination, with the caster-stem and floor-roller, of a yoke or saddle connecting the two, and constructed of a single piece of wire, substantially as and for the purposes specified.

3. In a caster, the yoke C, formed of a single piece of wire, and having bearings for the floor and anti-friction rollers, and swiveled on the central stem, substantially as and for the purposes specified.

4. The combination, with the caster-stem B and floor-roller D, of the yoke C, formed of a single piece of wire having a loop, *c*, to receive the stem B, and an axial portion, c^2, to receive the floor-roller D, substantially as and for the purposes specified.

324,157. METHOD OF FORMING SCREW-THREADS ON GLASS.

JAMES G. PENNYCUICK, Boston, Mass. Filed June 26, 1884. (No model.)



Claim.—The method of forming screw-threads on articles of glass or like material hereinbefore described, consisting in molding the articles in contact with a screw-threaded plunger and annealing the articles before withdrawing the plunger, substantially as set forth.

324,158. SAND SEPARATING AND WASHING MACHINE.

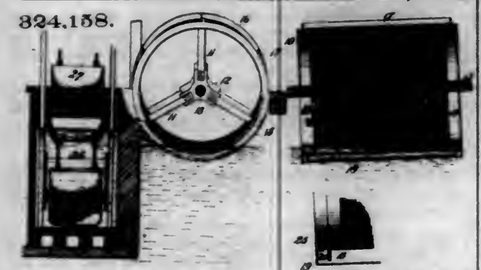
PHILIP M. PFEIL, Pittsburg, Pa. Filed Apr. 25, 1885. (No model.)

Claim.—1. The combination of a cylindrical screen, arranged to revolve with its lower part in the surface of an open unconfined body of water, such screen being slightly inclined downward toward its delivery end and having an unobstructed discharge, a concave sand-catching pan beneath, and wings on the screen adapted to sweep the sand out of the pan, substantially as set forth.

2. A cylindrical screen arranged to revolve with its lower part in the surface of an open unconfined body of water, such screen being slightly inclined downward toward its delivery end, and having an unobstructed discharge, in combination with a concave sand-catching pan beneath, wings on the screen adapted to sweep the sand out of the pan, and an elevator constructed to collect and discharge the sand into chutes suitably arranged for delivery into the screen, substantially as set forth.

3. A revolving screen provided with peripheral flanges 16, in combination with a concave sand-catching pan arranged below the screen,

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said pan being provided with end flanges overlapping the flanges 16, and having an inwardly-projecting ledge, 20, whereby the sand is prevented from being washed out of the pan at its ends, substantially as set forth.

4. A cylindrical screen provided with longitudinal wings 17, in combination with a concave sand-catching pan arranged beneath the screen, a sand-collecting box located at one side and in convenient proximity to the pan, and a conduit for conducting overflow from said box, substantially as set forth.

324,159. SAND SEPARATING AND WASHING MACHINE. PHILIP M. PFEIL, Pittsburg, Pa. Filed Apr. 25, 1885. (No model.)

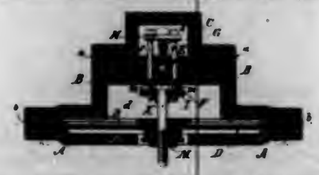


Claim.—1. In a sand-washing machine, a cylindrical screen arranged to revolve with its lower part in the surface of an open unconfined body of water, such screen being slightly inclined downward toward its delivery end, and having an unobstructed discharge, in combination with a sand-catching pan beneath said screen, and rotary screw-conveyers for removing the sand from the pan, substantially as set forth.

2. In a sand-washing machine, a cylindrical screen arranged to rotate with its lower part partially submerged below the surface of a body of water, in combination with a sand-catching pan beneath said screen, a sand box or receptacle, and rotary screw-conveyers for transferring the sand from the pan to the box, substantially as set forth.

3. In a sand-washing machine, a cylindrical screen arranged to rotate with its lower part partially submerged below the surface of a body of water, in combination with a sand-catching pan beneath said screen, a sand box or receptacle, rotary screw-conveyers for transferring the sand from the pan to said box, and a sand-washing basin arranged intermediate between the pan and box, substantially as set forth.

324,160. PRESSURE-REGULATOR FOR CARBURETORS, &c. ABRAHAM H. PHILLIPPI, Reading, Pa. Filed July 19, 1884. (No model.)



Claim.—1. In a gas-regulator, the main frame composed of the central chambered casting, B, and the upper and lower castings, C A, bolted thereto, the casting A serving to hold the diaphragm D and the casting C being formed with chamber *c*, substantially as shown and described.

2. The casting B, having a passage to receive a pipe, F, the same entering plug E and communicating with duct *c*, and the plug E, formed with passages *m*, in combination with chambered casting C, diaphragm D, and needle-valve G, arranged over duct *c* and connected with the diaphragm D by yokes and rods, the latter passing through passages *m*, substantially as shown and described.

3. The combination of the chambers *c* and *d*, communicating by means of the holes *m m*, the inlet-duct *c*, leading to said chamber *c*, the needle-valve G, and spring L, attached to the yoke H, the supports *r r*, extending from said yoke H through the holes *m m* to the yoke I, the diaphragm D, situated within the chamber *d* and connected with said yoke I by means of the nut M and adjusting-screw K, and the outlet N, leading from said chamber *d*, the whole arranged and operating substantially as set forth.

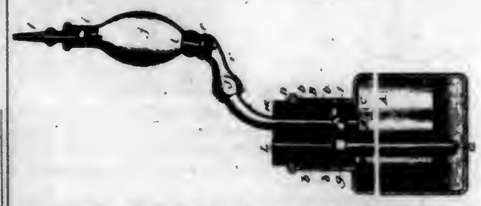
4. The diaphragm D, provided with nut M, in combination with screw-rod K, fitted in nut M and attached to the yoke I of the valve-actuating devices, so that the valve may be adjusted by turning rod K, substantially as described.

5. The chambered casting B, formed or provided with the bridge-piece or plug E, having duct *e*, communicating with a passage to receive gas-pipe F, and formed with the side passages, *m m*, for the rods that connect the valve-yoke to the diaphragm, substantially as and for the purposes set forth.

6. The valve G, attached to yoke H and inclosed by the chamber *c*, and the rods *r*, attached to the yoke and passing loosely through the holes *m* in plug E, and attached to the lower yoke, I, in chamber *d*, in combination with diaphragm D, connected to yoke I by rod K, substantially as described.

324,161. INHALER. JOSEPH F. POND, Cleveland, Ohio. Filed Apr. 3, 1882. (No model.)

Brief.—The cork is divided and carries in its lower part two tubes, one containing a ball-valve, and in its upper division two tubes, one of which carries at its outer end an enlargement for connection to a syringe-bulb.

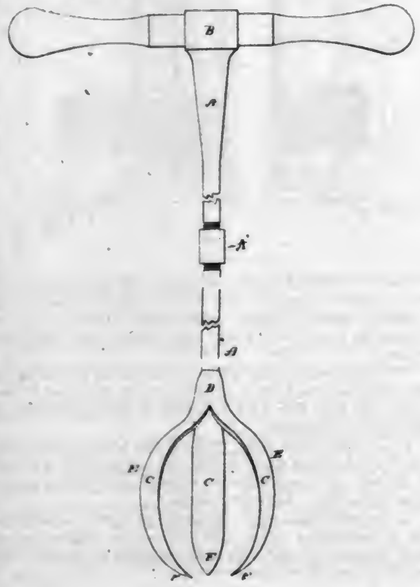


Claim.—1. The cork E, having pipes or tubes G H, the tube H having valve I, their upper portions extending slightly above the upper portions of said cork E, and each having enlargements, combined with the movable cork Y, having openings L J, arranged to register with the pipes G H.

2. In an inhaler and injector, the tube-supporting cork E, having tubes G H, the tube H having ball-valve I, the movable cork Y, having mouth-tube J, in combination with the bottle A, having ledges C and D, the bulb *j*, and connecting-tube *r*, for the purposes set forth.

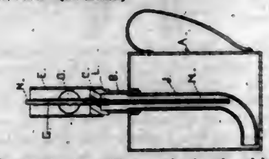
3. The combination of the cork E, provided with tubes G H, valve I, each tube having an enlargement at its upper end, the cork Y, provided with tubes L and J, the latter being provided with an enlargement at its upper end, and the bulb *j*, with valves and interchangeable nozzle connected by the flexible tube *r* to the tube J, all as and for the purpose set forth.

324,162. EARTH-AUGER. THOMAS PORTER, Abilene, Tex. Filed Apr. 27, 1885. (No model.)



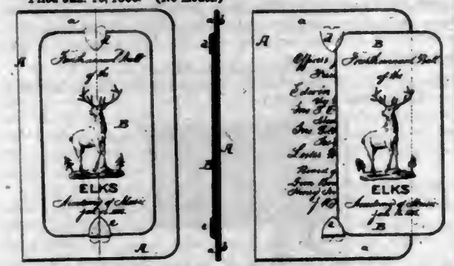
Claim.—An earth-auger composed of a two-part shaft having screw-threaded connecting ends and an interiorly-screw-threaded thimble or nut for removably connecting said sections together, and at its upper end an eye to receive a sweep or handle, and blades or cutters welded to the lower ends of said shaft, substantially as set forth.

324,163. PAINT-BREAMER. THOMAS POTHER, San Francisco, Cal. Filed July 25, 1883. (No model.)



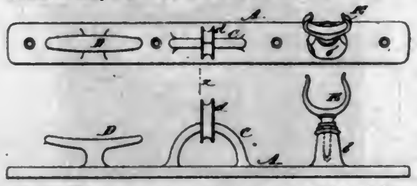
Claim.—The combination, with a can having the wick-tube B, provided with the cap C, of the chamber E, inclosing the upper end of said cap and having openings D, the gas-tube J, separably connected with the wick-tube, the rod G, having the groove L, threaded as shown, said rod being located within the tube J and extending into the chamber E, and a filling-opening, substantially as set forth.

324,164. ORNAMENTAL EMBOSSED CARD. GEORGE A. RANDEL, Brooklyn, N. Y., assignor of one-half to Philipp Hake, Hoboken, N. J. Filed Jan. 16, 1885. (No model.)



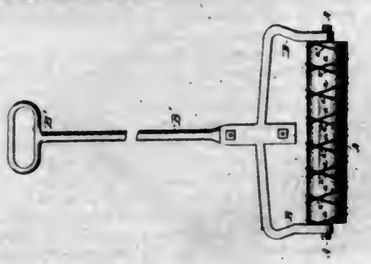
Claim.—The card A, having oppositely-placed lugs *d e* cut out of the body of the card, and printed matter between said lugs, all located within the face of said card, in combination with the face-piece B, having other printed matter on its face, and adapted to be slid into position between said lugs and held by them on the card A to cover the printed matter thereon, as described.

324,165. COMBINED STERN-SHEET-BLOCK TRAVELER, OAR-LOCK, AND CLEAT FOR BOATS AND OTHER VESSELS. JOHN RICHARDSON, St. Mary's, Ga. Filed Dec. 24, 1884. (Model.)



Claim.—The plate attachment A, having mounted on it for position at the stern of the boat, as described, a stern-sheet-block traveler, C, a cleat, D, for securing said sheet, and an oar-lock, E, essentially as described.

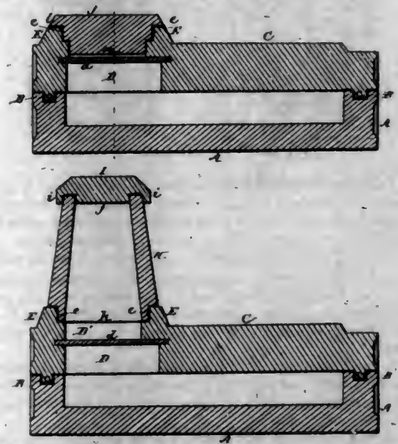
324,166. COMBINED ROLLER AND TILE-RULER FOR MARKING CONCRETE SURFACES. BARTHOLOMEW RIORDAN, Washington, D. C. Filed Mar. 3, 1885. (No model.)



Claim.—1. A roller for forming a net-work of grooves or creases with elongated diamond-shaped blocks or fields between them in concrete or cement pavements having grooves or markers formed upon it, one set of which extends in a line spirally around the roller from end to end, and the other set extending spirally around the roller from end to end in an opposite direction and at a reversed inclination, whereby the surface of the roller is divided into elongated diamond-shaped portions or fields, substantially as set forth.

2. A concrete or cement pavement divided by grooves into elongated diamond-shaped fields or blocks of small area having their greater length in a direction with a line at right angles with the curb, said grooves being in one continuous length and at an inclination only slightly divergent from a right angle with the curb and being formed all around the fields by the passage of the roller in one direction, whereby said grooves form clear unobstructed water-conveyers for the water which falls upon the small fields, and whereby the fields are compacted and well defined, substantially as set forth.

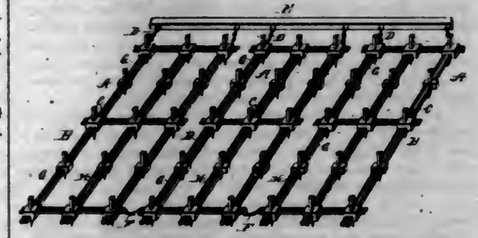
324,167. GRAVE COFFIN-RECEPTACLE. JACOB H. ROBEY, Hartford, Ind. Filed May 12, 1885. (No model.)



Claim.—1. The herein-described water-proof air-tight burial receptacle, consisting of the receptacle, the lid having an opening surrounded by a raised rabbeted rim, a glass cover for said opening molded in said lid below the rim, and a rimmed cap fitting within the raised rabbeted rim above the glass, the three parts being joined and sealed by cement, as shown and described.

2. The water-proof air-tight burial-receptacle consisting of the receptacle and a lid having an opening surrounded by a raised rabbeted rim, a glass cover for said opening molded in said lid below the rim, in combination with a removable tubular column having a tongue, A, fitted within the rabbeted rim, and a removable rimmed cap fitting over and outside of the upper end of said column, the said parts being joined, as shown and described.

324,168. HARROW. ENOCH J. ROGERS, Memphis, Mich. Filed May 2, 1885. (No model.)

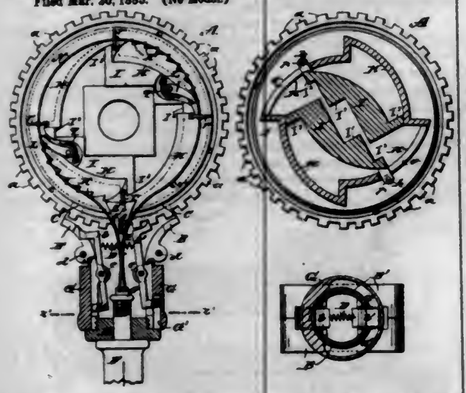


Claim.—1. In a harrow, the combination, with a cross-beam, of a series of front sections secured thereto, the front ends of said sections being connected by a cross-bar and the rear ends disconnected, and a series of rear sections connected at their front and rear portions by cross-bars, and connected at their rear portions to each other and at their front portions to the front sections, all of said sections being provided with a number of clips and teeth, substantially as and for the purpose set forth.

2. In a harrow, the combination, with a cross-beam, of a series of front sections secured thereto, each of said sections being composed of links consisting of parallel bars closed at both ends and secured together

by means of cross-bars at their front ends, a series of rear sections composed of links consisting of parallel bars closed at their front ends and secured together at their front and rear portions by cross-bars, all of said sections being provided with clips and teeth, and links for connecting said sections, substantially as and for the purpose set forth.

324,169. RATCHET-WRENCH. ALBERT H. ROLLIN, Coldwater, Mich. Filed Mar. 20, 1885. (No model.)



Claim.—1. In a wrench, the combination, with the head A, having grooves *c*, of the plates B and B′, carrying handle F, and having lugs C, which work in the grooves *c*, the said plates B B′ being secured together by screws *d*, substantially as and for the purpose specified.

2. In a wrench, the combination, with the head A, having teeth *a*, of the pawls *b* and *b′*, having angular projections b^2, and working through slots in the semicircular plates B and B′, and pivoted at *e*, said pawls being thrown into and out of engagement by means of a spring, D, and collar G, having reduced portion G′, substantially as and for the purpose specified.

3. In a wrench, the head A, having teeth *a*, in combination with the pawls *b* and *b′*, and the collar G, having recessed portion G′, to receive the angular projections b^2 on the pawls *b* and *b′*, substantially as and for the purpose specified.

4. In a wrench, the combination, with the head A, having a series of cams, H, of the jaws I, each provided with a shoulder, I′, and lugs I^2 I^3, substantially as herein shown and described.

5. In a wrench, the combination, with the head A, cams H, and jaws I, of the semicircular holder J, sliding in the groove *i*, and having short bars *j*, passing through slots *i′* and into slots *m* in the jaws I, substantially as and for the purpose specified.

6. In a wrench, the combination, with the head A, cams H, and jaws I, of the lugs *k*, projecting through slots *o*, and having eyes to receive pins *p*, substantially as and for the purpose specified.

7. In a wrench, the head A, having a groove, *i*, and slots *i′*, to receive the semicircular holder J and radial bars *j*, in combination with the jaws I, having lugs *k*, projecting through slots *o*, and pins *p*, inserted into eyes in the lugs *k*, substantially as and for the purpose specified.

8. In a wrench, the combination with the jaws I, resting against cams H, and adapted to be held in position by means of semicircular holder J, having radial bars *j*, and held to the cams H by lugs *k* and pins *p*, of the pawls L, having contact-springs *q*, said pawls engaging the teeth K in the head A, substantially as and for the purpose specified.

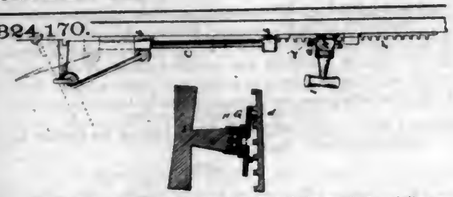
9. In a wrench, the combination, with the pawls L, of the spring N, held to head A by hooks *r*, and passing through open slots M in the pawls L, the said spring being fastened to handle F by means of screw-plug O, substantially as and for the purpose specified.

10. In a wrench, the combination, with the pawls L, spring N, and movable handle F, of the wedge-shaped releaser S between plate B′ and head A, and having slot *s*, to receive a pivot projection, *s′*, and a spring, *t*, the releaser S being operated by means of spring N, substantially as and for the purpose specified.

324,170. TRANSOM-LIFTER. GEORGE H. SARGENT, New York, N. Y., assignor to Sargent & Co., New Haven, Conn. Filed June 1, 1885. (No model.)

Claim.—1. The herein-described improvement in transom-lifters, consisting in the lifting-rod constructed with a toothed rack, F, combined with a worm supported in a bearing for rotation, said worm adapted to work in the teeth of the said rack, and whereby, under the rotation of the worm, vertical movement is imparted to the said rod, and with a connection between said rod and transom, whereby vertical movement of the rod will impart opening or closing movement to the transom, substantially as described.

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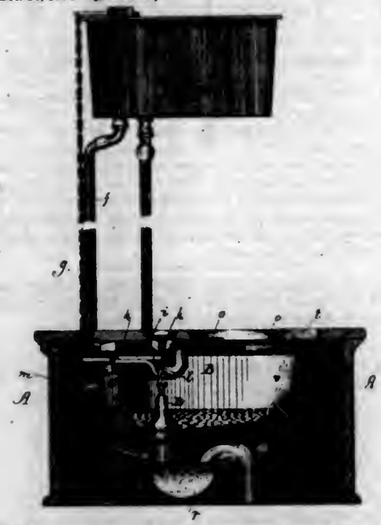
2. In a transom-lifter, the combination of the vertical rod C, constructed with a toothed rack, F, the disk G, constructed with a spiral or worm-like rib, *d*, upon its inner face, and arranged in a bearing outside the said rack, the axis of the bearing inclined to the plane of the rack and so that the rib on the disk may work in the teeth of the rack, the said disk provided with a suitable handle for imparting rotation to it, and connection between said rod and the transom, whereby vertical movement imparted to the rod will be communicated to the transom, substantially as described.

324,171. METAL-TIPPED ELECTRIC CORD. WILLIAM H. SAWYER, Providence, R. I. Filed Feb. 16, 1885. (No model.)



Claim.—A flexible electric conductor having a non-conducting covering and a metallic stem or needle projecting endwise beyond the same, the covering being surrounded immediately adjacent to the stem or needle by a metallic shell secured to the said covering by a non-metallic cement, as set forth.

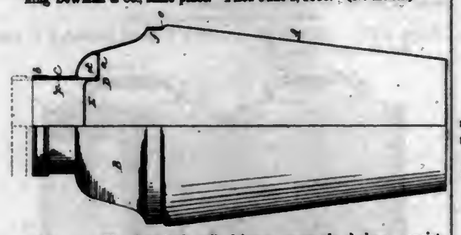
324,172. WATER-CLOSET. ROCKWELL SAYER, Chicago, Ill. Filed Dec. 30, 1884. (No model.)



Claim.—1. A water-closet soil-receptacle, B, comprising, in combination, the main or bowl portion *v*, a plunger-chamber, *s*, formed within the said receptacle without partition from the said main or bowl portion, a flushing-rim, *o*, extending entirely around the said bowl portion and plunger-chamber, overflow-outlet *p*, formed toward a lower side of the said receptacle, an overflow-chamber, C, provided with a vent, *m*, and communicating with the said plunger-chamber through the said overflow-outlet *p*, and leading to the waste-pipe, and provided with a wall, *q*, extending above the said overflow-outlet, the whole being constructed and arranged to operate substantially as described.

2. A water-closet comprising, in combination with the frame A and seat *t*, the following elements, viz: a soil-receptacle, B, containing the main or bowl portion, *v*, and the plunger-chamber *s*, formed within it without partition from the said main or bowl portion, and provided with a flushing-rim, *o*, extending entirely around it, overflow-outlet *p*, formed toward a lower side of the said receptacle, an overflow-chamber, C, provided with a vent, *m*, and communicating with the said receptacle through the said overflow-outlet *p*, and leading to a trap, *r*, connected to a suitable waste-pipe, and provided with a wall, *q*, extending above the said overflow-outlet, plunger D within the said plunger-chamber, means for operating the said plunger, a suitable water-supply, E, communicating with the said flushing-rim and valve mechanism within the said reservoir and connected with the said plunger, whereby the manipulation of the latter shall permit and prevent the introduction of water into the said receptacle, the whole being constructed and arranged to operate substantially as described.

324,173. SHAKER. MICHAEL SHIPS, Meriden, Conn., assignor to Manning Bowman & Co., same place. Filed June 1, 1885. (No model.)



Claim.—1. The herein-described improvement in shakers, consisting of the cover B, adapted to be set upon the vessel containing the ingredients to be shaken, constructed with a horizontal disk, D, upon its inside, and with an opening in the top of the cover, the disk constructed with openings *a* near its outer edge, and the cover constructed with a flange, C, around the opening outside the disk, combined with a tubular gate arranged within said flange and adapted to be moved toward or from the disk to close or open communication from the inside of the cover through the said openings *a* to the opening in the top of the cover, substantially as described.

2. The cover B, constructed with an opening in its top surrounded by a flange, C, and also constructed with a horizontal disk, D, upon its inside, having a central outward projection, E, formed therein, concentric with the opening in the flange of the cover, the said disk also constructed with openings *a* near its edge or outside the said projection, combined with a tubular gate within said flange and adapted to set over said projection, substantially as described.

3. A shaker-cover, B, constructed with an opening in the top surrounded by a flange, C, horizontal disk D within said cover, said disk constructed with an outward projection, E, concentric with the opening in the cover, and with a series of openings, *a*, outside said projection, combined with a tubular gate, F, within said flange, adapted to pass down and embrace said extension, the said gate made movable outward and inward, and provided with a rim by which it may be moved, and with a stop to prevent its entire removal, substantially as described.

324,174. NUT-LOCK. WILLIAM W. SHAILER, Iverytou, Conn., assignor of two-thirds to Simon W. Shailer, same place. Filed May 18, 1885. (No model.)



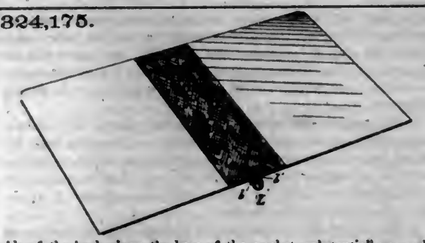
Claim.—The combination of the washer A, constructed with a concentric channel, *a*, spring C in said channel, the ring D upon the said spring, its upper surface constructed with angular depressions corresponding to the angles of a flat-faced nut, the intermediate surface of the ring between said depressions inclined toward the respective depressions, substantially as described.

324,175. METHOD OF FORMING A PENCIL-POCKET AT THE BACK OF A BOOK. JAMES G. SHAW, New York, N. Y. Filed Sept. 11, 1884. (No model.)

Claim.—In blank or other books, an improved method of forming a pencil-pocket at the back of the book, by looping the material of the back and securing the same by a strip of cloth or other material pasted in-

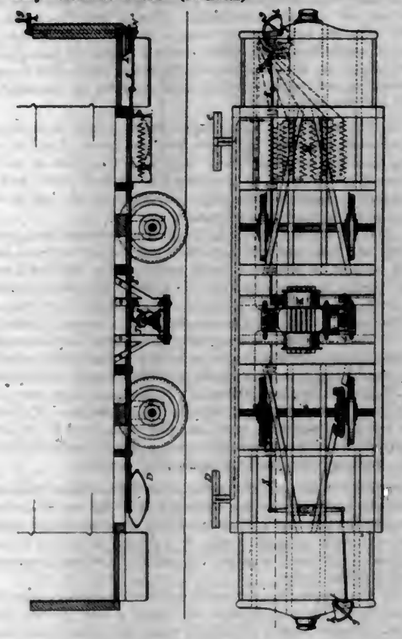


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side of the back along the base of the pocket, substantially as and for the purpose described.

324,176. ELECTRIC RAILWAY. ERNST W. SIEMENS, Berlin, Germany. Filed Dec. 9, 1884. (No model.)



Claim.—1. In an electric railway, the combination, with the conductor from the stationary dynamo-electric machine, of a series of resistances, a switch, and a rocking frame actuating the contact-brushes of the commutator to the electro-dynamic motor on the car, arranged and operating, as herein described, for introducing resistances into or eliminating them from the electrical circuit, according as the motion of the car requires to be stopped, started, or reversed.

2. The combination, substantially as herein shown, of an electro-magnetic motor and its commutator with two sets of contact-brushes and a series of resistances, one set of contact-brushes being so adjusted as to produce rotation of the motor in one direction, and the other set so adjusted as to produce rotation in an opposite direction.

3. The combination, substantially as herein described, of an electrical dynamic motor with two sets of contact-brushes, a series of resistances, and a lever adapted to throw one of the two sets of contact-brushes into contact with the commutator and the other set out of contact therewith by a single movement.

4. The combination of an electro-dynamic motor and its commutator with two sets of contact-brushes, a series of resistances, and a lever capable of being placed in a position for throwing the brushes, for producing a direct motion, into contact with the commutator, of removing all contacts from the commutator, and of throwing brushes, for producing a reversed motion of the motor, into contact with the commutator, as and for the purposes herein described.

5. The combination, substantially as herein set forth, of an electro-dynamic motor and its commutator with two sets of commutator-brushes, adjusted, respectively, to produce direct and reversed motion of the motor, a series of resistances, and a reciprocating rod or bar operated by levers attached at either end thereof.

6. The combination, substantially as herein set forth, of an electro-

dynamic motor and its commutator, two sets of commutator-brushes arranged to produce either a direct or reversed motion of the motor, a sliding rod or bar adapted to throw one set of brushes into contact with the commutator and the other set out of contact with the commutator, a series of resistances, and devices for adjusting the position of the shifting or sliding bar.

7. The combination, substantially as herein shown, of an electro-dynamic motor and its commutator, mounted in a depending frame beneath the car, with two sets of commutator-brushes, one of which is so adjusted in relation to the commutator as to produce rotation of the motor in one direction, and the other of which is so adjusted as to produce rotation in the opposite direction.

8. The combination, substantially as set forth, of an electro-dynamic motor and its commutator supported by suspended beams, with two sets of contact brushes or devices, respectively adjusted to produce direct and reverse motion, and a shifting-rod passing along underneath the car and connected with the rocking frame of the commutator-brushes.

9. The combination, substantially as set forth, of an electro-dynamic motor and its commutator, suspended by beams from the bottom of the car, with two sets of contact brushes or devices, respectively adjusted to produce direct and reversed motion, a shifting-rod passing along underneath the car and connected with the rocking frame of the commutator-brushes, and vertical spindles at each end of the car, connected by levers with the shifting-rod.

10. The combination, substantially as herein set forth, of an electro-dynamic motor, suspended by bearers from the bottom of the car, and having upon its axle a pitch-wheel, a large pitch-wheel upon the axle of the car-wheel, and a pitch-chain passing over the small pitch-wheel on the axle of the motor and the large pitch-wheel on the axle of the wheels, as and for the purposes described.

11. In an electric railway, the combination, substantially as herein set forth, of a frame suspended beneath the car, having resistances connected together in series, a series of contact-plates electrically connected together, and a contact-lever which makes the same connection with the contact-plates when moved a certain distance from 0 point in one direction as when moved a certain distance in a reversed direction.

12. The combination of the contact-plates, the resistance-frame, and the contact-lever connected by a rod to the rocking frame which actuates the contact-brushes of the commutator, as and for the purposes described.

13. The combination, substantially as described, of an electro-dynamic motor suspended from the bottom of the car, the frame T, pivoted to the axle of the suspended motor, carrying spring-arms W, the arms X, that carry the contact-brushes and swing on pins X', fixed to the frame of the electro-dynamic motor, and brushes P P' and Q Q'.

14. The combination, substantially as set forth, with an electro-dynamic motor and its commutator suspended below the car, of movable commutator-brushes, and a circuit-controlling lever capable of closing the circuit on the commutator when in a position to produce a direct movement of the motor, or when in a position to produce a reversed movement of the motor.

15. The combination, substantially as herein described, of an electro-dynamic motor suspended beneath the bottom of a car, a series of resistances arranged beneath the floor of a car, and a circuit-controlling lever or switch capable of including or excluding the resistances in or from the circuit.

16. The combination, substantially as herein shown, of a conducting-rail mounted on the side of the track, springs fastened by means of metallic bars at the side of the car, an electro-dynamic motor, and conducting connections between the said springs and motor, having a series of resistances therein.

17. The combination, substantially as herein set forth, of conducting-rails mounted on the side of the track, contact-springs fastened to the side of the car, an electro-dynamic motor and its commutator electrically connected to the contact-springs, two sets of contact-brushes, and a lever adapted to throw one of the two sets of contact-brushes into contact with the commutator and the other set out of contact therewith.

18. The combination, substantially as herein set forth, of conducting-rails mounted on the side of the track, contact-springs fastened to the side of the car, an electro-dynamic motor and its commutator, a conducting connection between said springs and motor, and a lever capable of breaking or closing the circuit between the springs and motor.

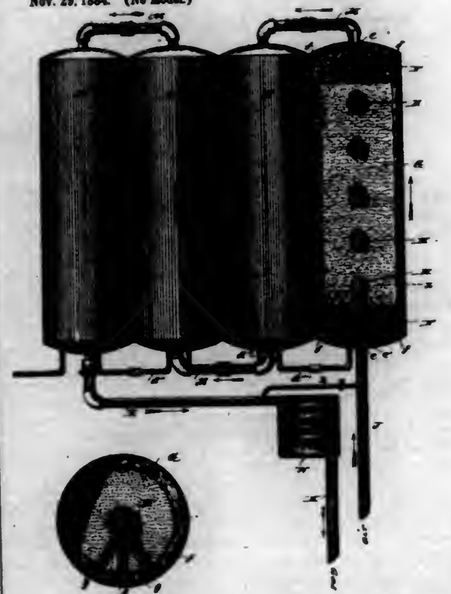
19. In an electric-railway car, a lever having two arms, N and N', the former of which operates to open and close the circuit, and the latter of which operates, by means of suitable mechanical connections, the vibrating brushes of the motor, and thus serves to determine the direction in which the car is to move.

20. The combination, substantially as herein set forth, of conducting-rails mounted on the side of the track, contact-springs fastened to the side of the car, a series of resistances, and a conductor connecting the springs with the series of resistances.

21. The combination, substantially as set forth, of connecting-rails mounted on the side of the track, contact-springs fastened to the side of the car, a series of resistances, and a circuit-controlling lever capable of introducing the resistances successively into the circuit or eliminating them therefrom.

22. In an electric railway, the combination of a wheeled vehicle having an electro-dynamic motor mounted thereon, which is included in a circuit of conductors from a stationary dynamo-electric machine, a circuit-controlling device placed upon said vehicle, and a series of resistances, as and for the purposes described.

324,177. CARBURETOR. WILLIAM F. SINGER, Carthage, N. Y. Filed Nov. 29, 1884. (No model.)



Claim.—1. In a carburetor, a carbureting-chamber having a lining of cotton, the portion of the interior intermediate of the ends filled with sawdust, and a series of sponges attached to the lining by means of wicks, substantially as and for the purpose specified.

2. A carbureting-chamber having its inner sides lined with cotton, the openings at its ends covered with metallic screens, a packing of coke at each end, the portion of the chamber intermediate of the ends filled with sawdust, and having a series of sponges or other absorbent material arranged within the body of the sawdust, the sponges being attached to the lining of the carburetor by means of wicks, substantially as and for the purpose specified.

3. A series of detachable carburetors communicating with each other at their ends by means of pipes, having an air-inlet pipe, a pipe for the passage of gas from the carburetor, and a vent-pipe, each of the carburetors having its inner side lined with cotton, the openings at the ends covered with a screen, the ends packed with coke, the portion of the interior intermediate of the ends filled with sawdust, and having a series of sponges of equivalent absorbent material arranged within the body of the sawdust and attached to the cotton lining by means of capillary material, substantially as described.

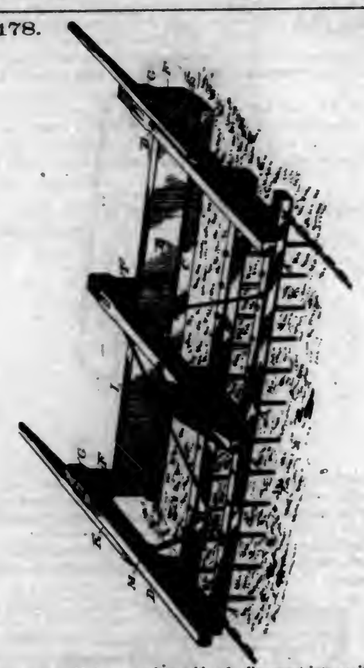
4. The combination of a series of detachable carburetors communicating with each other by means of pipes, having an air-inlet pipe, a gas-exit pipe, and a vent-pipe, each of the carburetors having its inner sides lined with cotton, the openings at the ends covered with a screen, the ends packed with coke, the portion of the interior intermediate of the ends filled with sawdust, having a series of sponges or equivalent absorbent material arranged within the body of the sawdust and attached to the cotton lining by means of wicks, with an air-tight storage-tank provided with an air-inlet pipe having an air-tight cover, a series of gage-pipes, and an outlet-pipe, substantially as and for the purpose specified.

324,178. ROAD GRADER AND LEVELER. JOHN SKINNER, Newman, Ill. Filed Feb. 2, 1885. (No model.)

Claim.—1. In a scraper, the combination, with the main frame, of a shoe, I, pivoted at one end thereto, and having its other end adjustable up and over onto said frame or down in position to engage the ground, substantially as set forth.

2. The combination of the main frame, the harrow and the scraper supported thereby, a shoe, I, pivoted at one end to the framing and adjustable up thereon or down in position to engage the ground, and the

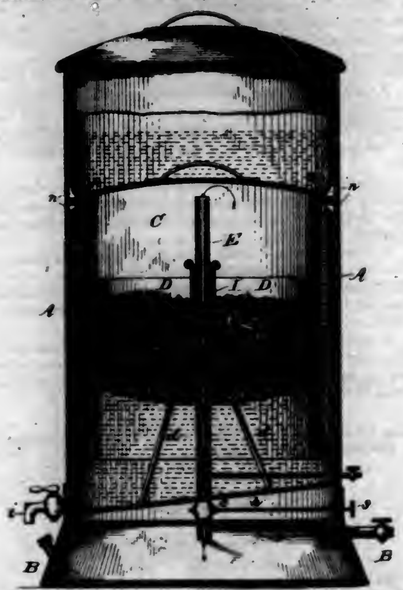
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levers pivoted to said frame and capable of adjustment into position to engage the ground, substantially as set forth.

3. The combination, in a scraper, of the main frame provided with a hook, M, a lever, E, and a chain connected with said lever and adjustable into engagement with the hook M, all arranged and operating substantially as set forth.

324,179. PROCESS OF GENERATING HYDROGEN GAS. BYRON SLOPER, New York, N. Y. Filed Apr. 11, 1885. (No model.)



Claim.—1. The process of generating hydrogen gas by subjecting iron or zinc to the action of dilute acid and maintaining the activity of the acidulated water by adding thereto an alkaline carbonate, whereby one charge of acid-water may be used for a much longer time and the yield of gas may be more uniformly maintained.

2. The process of obtaining a uniform yield of hydrogen gas and economizing acid used in the generation, which consists in subjecting iron or zinc to the action of dilute acid containing in solution an alkaline carbonate for freeing the acid-water from floating or mixed particles of sulphate of iron or zinc.

3. In the manufacture of hydrogen gas, the method of maintaining the yield or volume of gas generated and economizing acid, which consists in subjecting iron or zinc to the action of acidulated water and adding to such water carbonate of soda and carbonate of ammonia for freeing it from floating or mingling particles of sulphate of iron or zinc.

4. In the generation of hydrogen by the action of dilute acid upon iron or zinc, the method of precipitating floating particles of sulphate of iron or zinc, which consists, in adding to the dilute acid carbonate of soda or carbonate of ammonia, or both, whereby the dilute acid is rendered more active and can be used an increased period of time.

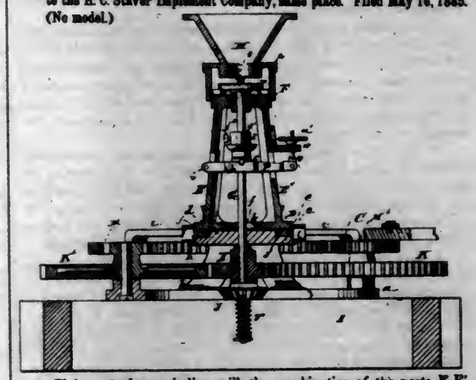
324,180. PROCESS OF MAKING CARRIAGE-BOLTS. FREDERICK A. SMITH, Cleveland, Ohio, assignor to the Hotchkiss & Upson Company, same place. Filed Sept. 11, 1884. (No model.)



Claim.—1. The process herein described of forming the head and shank of a carriage-bolt from a heated cylindrical blank, and consisting, essentially, first, in compressing a portion of the blank in suitable dies, so as to form a long shank square in cross-section, with the sides in a lateral direction less than the diameter of the blank, and after such compressing upsetting the end of the blank projecting beyond the dies into a head; second, upsetting the compressed shank into a suitable cavity in the dies, forming a shorter and larger shank square in cross-section, and with sides at least equal to the diameter of the blank, and at the same operation compressing and finishing the head, substantially as set forth.

2. The process hereinbefore described of forming the shank and head of a carriage-bolt from a heated cylindrical blank without reheating, and consisting, essentially, in the following steps: first, compressing a portion of the blank in suitable dies, forming a shank square in cross-section, and the sides laterally less than the diameter of the blank, and by the same operation compressing a head by the action of the plunger; second, upsetting the compressed shank into a suitable recess or chamber in the dies, and forming a shank square in cross-section, and with sides at least equal to the diameter of the blank, substantially as set forth.

324,181. GRINDING-MILL. GEORGE K. SMITH, Chicago, Ill., assignor to the H. C. Staver Implement Company, same place. Filed May 16, 1885. (No model.)



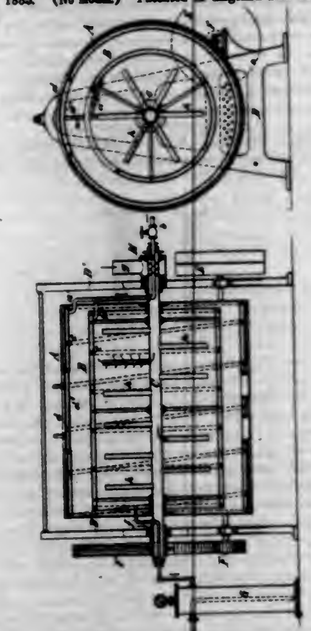
Claim.—1. In a grinding-mill, the combination of the posts E E', carrying the upper grinding-disks and attached to or formed with the disk D, the spindle G, carrying the lower grinding-disk, the master-wheel C, and the frame B, consisting of the ring *a*, arms *b*, and horizontal part *c*, substantially as described.

2. In a grinding-mill, the combination of the main frame B, master-wheel C, disk D, posts E E', case F, spindle G, grinding-disks *n o*, and lever P, adapted to carry the weight of the spindle, substantially as and for the purposes specified.

3. In a grinding-mill, the combination, with the posts E E', carrying the upper grinding-disks, *o*, and the spindle G, carrying the lower grinding-disk, *n*, of the divided lever P, pivoted in one of the posts E E', sleeves *c' d'*, and collars *e'*, substantially as described.

4. A grinding-mill comprising the supports E E', carrying the upper grinding-disk, the disk D, the spindle G, carrying the lower grinding-disk, the frame B, master-wheel C, pinion I, and bevel-wheel J, secured to spindle G, and bevel-wheel N, secured to shaft O and meshing with wheel J, substantially as described.

324,182. GRAIN-DRIER. HERMANN STOLLWERCK, Cologne-on-the-Rhine, Prussia, Germany, assignor to Gebr. Stollwerck, same place. Filed Jan. 8, 1885. (No model.) Patented in England Dec. 11, 1884, No. 16,313.



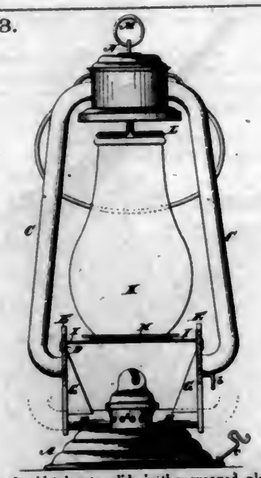
Claim.—1. In a steam roasting or drying apparatus, the combination of the hollow rotating shaft C, the drum A, and chambered drum B, fitted one within the other, and both connected with shaft C to rotate therewith, the steam-inlet pipe entering the hollow shaft and having a lateral branch communicating with the steam-space of chamber B, and the steam-exit pipe leading out from said space through the hollow shaft, substantially as described.

2. In a steam roasting and drying apparatus, the combination, with drum A and chambered drum B, a hollow shaft carrying the said drums, and steam inlet and exit pipes entering said shaft and communicating with the steam-chambers of the drum, of the air-chamber surrounding the end of the shaft and the air-discharge pipes located within the drum B to rotate therewith and communicating with said air-chamber, substantially as described.

3. In a steam roasting or drying apparatus, the combination, with the drum A, and chambered drum B, and the hollow shaft carrying the same, and the inlet and exit pipes communicating with the chambers of said drum, of the reservoir K, communicating with the inlet-pipe by pipe *k*, and the receptacle L, connected with the exit-pipe and communicating with reservoir K through pipe *i*, substantially as described.

4. In a steam roasting or drying apparatus, the combination, with the drum A and chambered drum B, having an inlet and an exit pipe to its chamber, of the reservoir K, communicating with the chamber of drum B, and receptacle L, communicating with reservoir K and exit-pipe of drum B, and provided with a perforated serpentine pipe, *v*, connected with a steam-pipe having a cock, *u*, and stop-cock *t*, an air-valve, a rod connected to said valve and to stop-cock *t*, and a float, *o*, connected with said rod to control said air-valve and stop-cock, substantially as described.

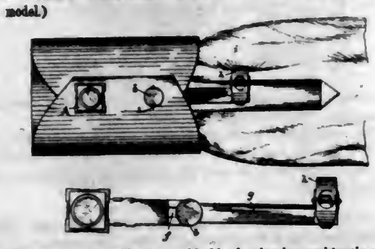
324,183. TUBULAR LANTERN. JOHN H. STONE, Hamilton, Ontario, Canada. Filed Mar. 17, 1884. (No model.)



Claim.—1. In a tubular lantern, the combination, with an oil-cup base and globe-plate, of the sectional air-tubes, the plates attached to one section of said tubes, and the way-plates attached to the other sections for the reception of the first-named plates, substantially as described.

2. In a tubular lantern, the combination of sectional air-tubes, grooved plates formed with vertical slots and attached to one section of the tubes, the grooved braces to said plates, the plates attached to the other section of said tubes to slide in the grooved plates, and the wire connected with a globe-plate and passed through the slotted plates and braces and secured to the sliding plates, substantially as described.

324,184. CUFF BUTTON AND HOLDER. JOHN A. STUART, Austin, and JOHN P. WOODMANSEE, Flatonia, Tex. Filed May 25, 1885. (No model.)



Claim.—1. A cuff button and holder having in combination a shank-plate, two buttons, one attached at each end of the shank-plate, and a clamp-bar, one end of which is for attachment to the shirt-sleeve, and the other end having a device to couple with said shank-plate, as set forth.

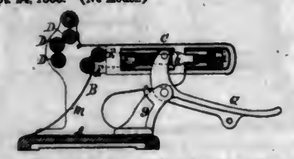
2. A cuff button and holder having in combination a shank-plate composed of two parts which slide endwise or are extensible with respect to each other, two buttons, one attached at each end of said extensible shank-plate, and a holder-bar for attachment to the shirt-sleeve, as set forth.

3. A cuff button and holder having in combination a shank-plate, a front button rigidly attached at one end of the shank-plate, and a back button hinged to the other end, and a holder-bar for attachment to the shirt-sleeve, as set forth.

4. A cuff button and holder having in combination a shank-plate, a front button rigidly attached at one end of the shank-plate and a back button hinged to the other end, and a holder or clamp bar for attachment to the shirt-sleeve, having a device to couple with said shank-plate, as set forth.

5. A cuff button and holder having in combination a front and back button connected by a shank-plate provided with a slot, and a holder or clamp bar for attachment to the shirt-sleeve, having a T-shaped end for insertion in the slot, as set forth.

324,185. CIGAR-MACHINE. GEORGE W. TANNER, Providence, R. I. Filed Sept. 24, 1883. (No model.)

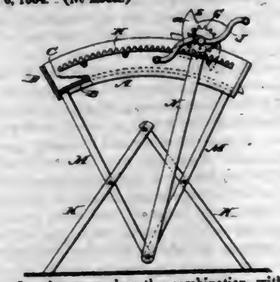


Claim.—1. The combination, with a frame carrying a table and a series of fixed rolls, of a series of movable rolls mounted upon a slide working beneath said table, the lower movable and fixed rolls constituting the bed of the mold, substantially as set forth.

2. The combination, with a frame carrying a table and a series of fixed rolls, of a series of movable rolls mounted upon a slide working beneath said table, the said table extending beneath the upper fixed roll, and the lower fixed and movable rolls constituting the bed of the mold, substantially as specified.

3. The combination, with the base A, the standards B B, the table C, and the fixed rollers D, of the sliding rollers E, the stems F, the springs, the cross-frame A, mounted beneath the table, and the lever G, bearing against the cross-frame and drawing the rollers outward, substantially as described.

324,186. BUTTER-WORKER. JAMES H. TAYLOR, Westfield, Mass. Filed Nov. 6, 1884. (No model.)



Claim.—1. In a butter-worker, the combination, with a box having its end pieces projecting below the bottom, of a folding frame, the upper ends of the bars of which rest against the downwardly-projecting parts of the end pieces, substantially as herein shown and described.

2. In a butter-worker, the combination, with a box having a rack on one side, of a swinging frame, a fluted roller journaled in the same, the handle J, and the pinion G on the shaft, and a spring-catch for holding the roller-shaft on one of the bars of the swinging frame, substantially as herein shown and described.

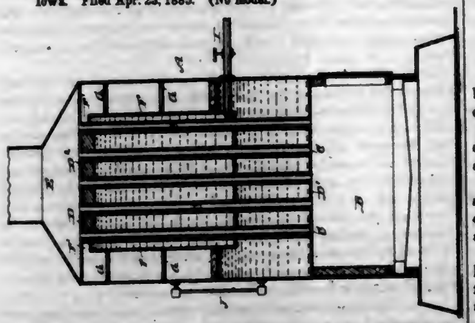
3. The combination, with the box A, of the pivoted legs K, the bars M, pivoted to each other and to the legs K, the bars N, the roller E, the rack H, and the pinion G on the roller, substantially as herein shown and described.

324,187. FLOUR-BOLT REEL. VANDIVER TEAGUE, Lenoir, N. C. Filed May 28, 1885. (No model.)



Claim.—A flour-bolt reel consisting of a central shaft having radial spokes, longitudinal bars formed in sections, the bolting-cloth, bushings, and screws for tightening the cloth, slotted angle-plates, and thumb-screws for connecting the ends of the bars to the reel-head, substantially as and for the purpose set forth.

324,188. UPRIGHT STEAM-BOILER. GUSTAV A. THODE, Holstein, Iowa. Filed Apr. 23, 1885. (No model.)

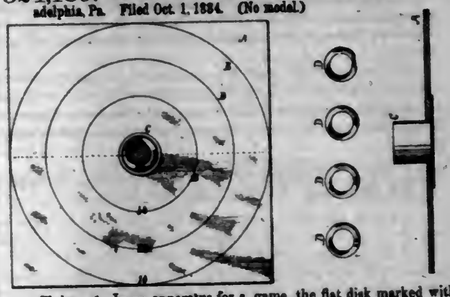


Claim.—1. A steam-boiler containing a reservoir inclosing the upper parts of the boiler-flues, substantially as herein shown and described.

2. A steam-boiler containing a reservoir suspended between the top and bottom plates of the boiler, and inclosing the upper parts of the boiler-flues, substantially as shown and described.

3. A steam-boiler containing a reservoir suspended between the bottom and top plates of the boiler, and inclosing the upper parts of the boiler-flues, the open top of the reservoir reaching within a short distance of the top plate of the boiler, substantially as shown and described.

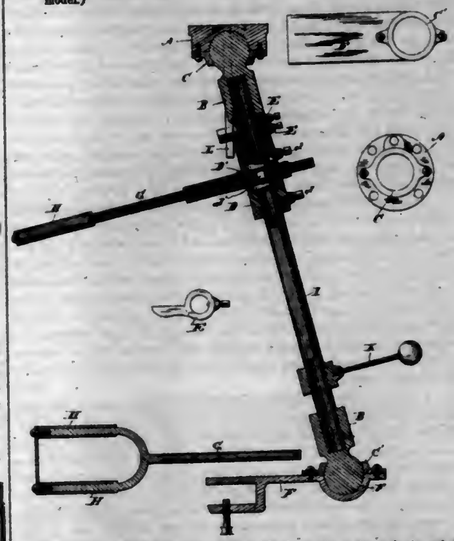
324,189. PARLOR GAME APPARATUS. MARLOW S. THOMAS, Philadelphia, Pa. Filed Oct. 1, 1884. (No model.)



Claim.—1. In an apparatus for a game, the flat disk marked with concentric lines, in combination with the central open cup projecting up above the surrounding flat surface, substantially as and for the purpose described.

2. As a complete game apparatus, a flat disk marked with concentric lines, and provided with a central cup which projects up above the surrounding flat surface, and rings or quoits, which, as well as the cup and lines, are numbered, substantially as and for the purpose specified.

324,190. BELT-SHIFTER. ALBERT R. TIFFANY, Dayton, Ohio, assignor of one-half to John J. Leland, same place. Filed July 1, 1885. (No model.)



Claim.—1. The combination, with the main rod or shaft and the belt-shifter arm, of the universal-joint connection at the upper and lower ends of the said rod, substantially as described.

2. The combination, with the rod or shaft and the belt-shifting arm of the universal-joint connection above and the universal-joint connection and clamp below, substantially as described.

3. The combination, with the rotatable shaft or rod and the belt-shifting arm, of the universal-joint connection above and below and the clamp for securing the device to the table of the machine, substantially as described.

4. The combination of the rod or shaft, the sockets at the upper and lower ends provided with the ball-heads, the upper and lower bearings for the heads of said sockets, and the clamp connected to the bearing for the lower ball-head, substantially as described.

5. The combination, with the rotatable shaft or rod and the belt-shifting arm, of the stops for regulating the extent of rotation of said shaft or rod, substantially as described.

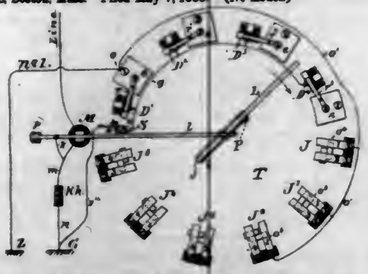
6. The combination of the shaft or rod having the universal-joint connection at the upper and lower ends, the adjustable sleeve mounted thereon and having the sleeve for the passage of the shank of the shifter-arm, and the means for securing said shank to said last-mentioned sleeve, substantially as described.

7. The combination of the shaft or rod having the universal-joint connection at the upper and lower ends, the adjustable sleeves, and the shifting-arm having the friction-sleeves on its forked or bifurcated portion, substantially as described.

8. The combination, with the forked or bifurcated shifter-arm and its friction-sleeves, of the bar or strap secured to the fork and operating to hold the friction-sleeves in place, as well as to prevent the escape of the belt.

9. The combination, with the shaft or rod having the universal joints above and below, of the clamp attached to the lower bearing and the adjustable bifurcated belt-shifter arm, the handle for operating and the adjustable stops for limiting the motion of the same, substantially as described.

324,191. TELEPHONE CIRCUIT AND APPARATUS. THEODORE N. VAIL, Boston, Mass. Filed May 7, 1885. (No model.)



Claim.—1. A telephone-exchange system comprising a main central station, a subsidiary or auxiliary central station, a series of sub-station lines converging to the latter, a trunk line extending between the main and auxiliary central stations, a double series of circuit-changers for the lines terminating at the subsidiary station, one of the said series being arranged to effect the removal and replacement of the ground-terminals of the several lines, and the other providing for the connection of any of the two lines together, a rotating lever operated by a suitable clock-motor and adapted to select and actuate any of the said circuit-changers, and an electro-magnet in the trunk-line circuit provided with an armature-lever controlling the said rotating lever and its clock-motor, substantially as described.

2. In a subsidiary telephone-exchange system, the combination, substantially as hereinbefore described, of a trunk-line circuit extending to a distant station, an electro-magnet included in the said circuit and provided with an armature and lever therefor, a pivoted lever adapted to be rotated by clock-work, but at all times in contact with and connected by the said armature, a series of sub-station lines converging to a common terminal-wire, and suitable connections, through both of the said levers, whereby the several sub-station lines are by their common terminal-wire connected normally to earth, and whereby they are disconnected from earth when the pivoted lever is in the act of rotation, for the purposes specified.

3. In an auxiliary telephone-exchange, a series of sub-station line-circuits provided with removable earth-connections, and with normally-open extensions branched from a point on said lines external to said ground-connections, and each extension leading by sub-branches to a series of connecting points or springs, each of the said connecting points or springs being adjacent to a similar point or spring of one other of the series of line-circuits, combined with movable connection-pieces, whereby any two adjacent springs representing any two circuits may be connected together to constitute a compound circuit for the purpose of intercommunication, substantially as hereinbefore specified.

4. The combination, substantially as hereinbefore described, in an auxiliary telephone central-office system, of a series of lines converging to said stations, a series of circuit-changers therefor arranged in a circle, each sub-station line being represented in the said series by a single earth-terminal circuit-changer, and also by a series of separate connecting circuit-changers, one for every line in the system, a trunk line extending from a distant central station, an automatic selecting and connecting apparatus located at the auxiliary station, fixed at the center of the circuit-changer circle and consisting of a rotating arm actuated by a clock-train motor, and adapted to traverse the edge of the said circle within range of the several circuit-changers, a stop or unison adapted to arrest the motion of the rotating arm and clock-motor at the end of each revolution, and an electro-magnet provided with an armature and armature-lever, and included in a separate main-line circuit extending from a distant station, the said electro-magnet being adapted, as herein shown and described, to control at all times the rotating arm for the purposes specified.

5. The combination, in an auxiliary telephone-exchange system, of two or more sub-station lines converging to a central point, each provided at its sub-stations with telephones and signaling apparatus, and each having in branch circuit at the said central point a mechanical ground-switch and a series of mechanical connecting-switches equal in number to the total number of converging sub-station lines less one, with a trunk line connecting said point of convergence with a distant central station, an electro-magnet included in the said trunk-line circuit, and apparatus comprising a revolving arm, a motor to revolve the same, and a lever actuated by the electro-magnet to control the said arm, whereby the ground-switch of any sub-station line may be automatically operated, and whereby any pair or number of pairs may be automatically connected together at the will of the operator at the distant central station.

6. The combination, with a lever adapted to be rotated in a horizontal plane and to rock on a pivot in a vertical plane, an electro-magnet, an armature, and an armature-lever controlling the vertical rocking movement of the said rotatable lever by a bearing thereon at a point immediately above the center of rotation, of a series of mechanical circuit-changers or switches arranged in circular series in the orbit of revolution of the said rotatable lever and within range of the longer arm thereof, the said arm being brought alternately into juxtaposition with each circuit-changer by its rotation, and being caused to operate any desired one in passing by its rocking movement under the actuation of the controlling-lever and electro-magnet, substantially as hereinbefore described.

7. The combination, in an auxiliary central station, of a main or trunk line, a series of sub-station lines, a ground-terminal including a high resistance permanently connected with the main line, and normally serving the sub-station lines also, and means, as indicated, actuated by an electro-magnet included in the main-line circuit for disconnecting the several sub-station lines from the said ground-terminal, substantially as described.

8. The combination, in a subsidiary telephone-exchange, of a lever supported on a vertical rotatable shaft, so as to be rotated by a suitable motor in a horizontal plane and hung on pivots at a point nearer to one end than the other, so that the longer arm is normally depressed, and so that it may rock on the said pivots in a vertical plane, a stop or unison post against which the said longer arm rests to normally arrest the rotary motion thereof, the said post being electrically connected with the common terminal-wire of a number of circuits, a controlling-lever furnished with an armature and operated by an electro-magnet in a main circuit, the said lever at its free end resting lightly upon the rocking lever at a point in the same vertical plane as its center of rotation, and a ground-wire, including a rheostat or other suitable resistance, attached to the said controlling-lever, whereby the several circuits connected by the common terminal-wire with the said unison-post are completed to the earth through the said rheostat when the apparatus is at rest through the conducting substance of the said post, the two levers, the ground-wire, and resistances, whereby the said circuits may be disconnected from the said earth-terminal, and reconnected to earth direct by releasing the rotating lever from the said post, substantially as herein specified.

9. The combination of a series of mechanical switches or circuit-changers arranged round the circumference of a circle, each consisting of contact-springs suitably mounted upon base-blocks, and of metal plates mounted on arbors or pivots, so that when turned in one direction they may be caused to make contact with the said springs, and when turned in the other direction they may be freed from such contact, with a traveling arm supported upon a vertical shaft actuated by a suitable motor to pass round the circle of circuit-changers within range thereof and passing each successively, and actuated by an armature-lever, and an electro-magnet in an independent circuit to fly upward and strike when passing any desired circuit-changer to operate the same, as specified.

10. The combination of a selecting mechanism at a subsidiary exchange, with a series of ground-switches, each representing a separate sub-station circuit, and each comprising a contact-spring mounted on a metal block, and a tilting ground-plate therefor, a trunk line, and an electro-magnet included therein, controlling the said selecting mechanism, the said trunk line extending between the subsidiary exchange and a central station, a source of electric energy located at the said central station, and a key or other circuit-closer, whereby the current from such source may be directed momentarily to the line to set in motion the selecting mechanism, and again when the selecting mechanism arrives at the desired circuit to throw the ground-connection from the said circuit, and to signal the same by repeated contacts with the metal base-block of the ground-switch, substantially as specified.

11. The combination of a ground-switch, a metal supporting and signaling block, a connecting-switch, a revolving arm, a motor to actuate the same past the said block and switch, and a separate lever operated by an electro-magnet to start the motor and to bring the revolving arm in contact with the said instrumentalities as it passes them all at an auxiliary exchange, with a trunk line from said auxiliary exchange to a distant central station, and a source of electric energy, a circuit-closing key, and an indicator adapted to rotate synchronously with the said revolving arm all at a main station, whereby the current from such source may be directed to line momentarily, to start the motor and revolving arm again, when the desired circuit is reached, to throw off the ground-plate; a third time, to send signals to the sub-station by striking the rotating arm any number of times against the call-block as it passes the same; and, finally, to operate the connecting-switch and connect the two lines together, substantially as hereinbefore described.

12. A mechanical switch or circuit-changer consisting, substantially as hereinbefore described, of a non-conducting base-block or support, two contact-springs affixed thereto and supported thereon, each of the said springs constituting a separate circuit-connection, and a conducting block or plate having a broad upper surface, the said plate being balanced on a pivot so as to tilt in either direction, in combination with a movable actuating-arm, whereby, when erect, said plate may be caused to impinge upon both circuit-springs and unite the same electrically, and when tilted in either direction by said arm it may be disconnected from the said springs, opening the circuit between them.

13. A mechanical switch or circuit-changer, consisting, substantially as herein shown and described, of a contact-spring attached to a metal base and connected by wire with one part of the circuit, and a conducting block or plate connected by wire with the other part of the circuit, and pivoted at its center so as to be tilted in either direction, in combination with a movable actuating-arm, whereby said plate is adapted, when tilted in one direction, to impinge upon the said contact-spring and to make frictional contact therewith and close the circuit, and when tilted in the other direction by said arm to be freed from such contact, opening the circuit.

14. The combination, in an auxiliary central station, of a main or trunk line extending from a distant central station, a series of sub-station lines, each provided at the point of convergence of all the lines with two branches, one of the said branches terminating in a ground-connection and the other extending to a series of normally-open sub-branches, each of which ends in a connecting-spring placed in close contiguity to a spring representing some other circuit, the said ground-connections and connecting-springs being all arranged in circular form, a common ground-terminal for main and sub-station lines, an electro-magnet included in the main line, and means, consisting, substantially as described, of a clock-rotated lever revolving within the circle of ground-connections, and line-connectors controlled by the said electro-magnet, and operated over the trunk line from the distant station, whereby the ground-connection may be removed from any one or more of the sub-station lines, and whereby one or more pairs of the sub-station lines may be connected together, substantially as hereinbefore described.

15. The combination, in an auxiliary exchange system, substantially as hereinbefore described, of a main or trunk line circuit connecting with a distant central station, an electro-magnet included therein, and a ground-terminal wire therefor, including a suitable resistance, with a rotatable rocking lever, a clock-motor therefor, a stop or unison post, against which the rotatable lever normally rests, a controlling-lever attached to an armature governed by the said electro-magnet, and resting at its free end upon the rotatable lever at a point in the same vertical plane with its center of rotation, whereby the said controlling-lever is enabled to control at any time the rocking movement of the said rotatable lever, a connecting-wire from the said controlling-lever to a point on the main-circuit ground-wire between the electro-magnet and the resistance, and a series of sub-station circuits, converging to a common terminal-wire leading to the stop-post, whereby, when the apparatus is at rest, the several sub-station lines and the main or trunk line are provided with a common ground-terminal and resistance, and whereby the said sub-station lines may be disconnected from the same when the rotatable lever is by the depression of the controlling-lever released from the stop-post, for the purposes described.

16. The combination, in an auxiliary central station, of a main or trunk line, a series of sub-station lines, each having in circuit a suitable resistance, a ground-terminal, likewise including a resistance, the said ground-terminal being permanently connected with the main line, and normally serving as the common ground-terminal of the several sub-station lines also, and means, as indicated, actuated by an electro-magnet included in the main-line circuit for disconnecting the several sub-station lines from the said ground-terminal when desired, substantially as specified.

17. The combination, in an auxiliary telephone-exchange, with a series of ground-switches of the character herein described, each representing the terminal of a sub-station line, and a series of metallic base or call plates to which such ground-switches are attached, the whole being arranged round the segment of a circle, of a trunk line extending between the station where the said appliances are located and a distant central station, signal-sending apparatus at said distant station, and a rotating line-selecting arm operated by an electro-magnet included in the trunk-line circuit, the said arm also being in a branch circuit from the said trunk line and adapted to pass the several ground-switches and call-plates successively, and to be brought into contact with the same when desired, whereby the call-signals transmitted from the said central station may be directed by means of the said arm and call-plate to the desired sub-station, and whereby the trunk line may be temporarily united with any of the said sub-station lines for listening purposes or for telephonic communications, substantially as herein described.

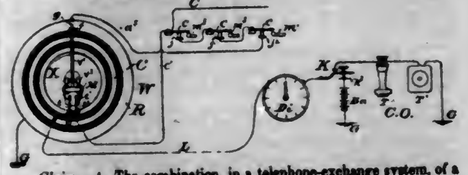
18. The combination of a series of sub-station lines converging to a subsidiary exchange, a series of sub-stations, one or more located on each line, and provided with call signal-transmitting devices, a central station and call-receiving instruments located thereat, a trunk line extending between the central and subsidiary exchanges, and a series of resistances included in the trunk line and sub-station circuits, the said sub-station circuits being normally connected as a joint or compound branch circuit of the said trunk line, whereby call-signals transmitted from any of the sub-stations are prevented from being dissipated over the other sub-station lines, and may be caused to operate the call-receiving instruments at the central station.

19. The combination, substantially as hereinbefore described, of a series of sub-station lines converging to a subsidiary central station, a trunk line connecting said subsidiary station to a main central station, a selecting and connecting mechanism located at the said subsidiary exchange and comprising an electro-magnet in the trunk-line circuit, and rotating lever and controlling-lever in a branch circuit of said trunk line, whereby the action of the main station said rotating lever may connect itself with one of the sub-station lines, opening each of the others, a battery, key, and indicating-dial at said central station, whereby the selecting device may be operated by means of the electro-magnet, and a switch-board also at the central station, whereby the trunk line and through it the line united thereto at the subsidiary exchange, may be connected with any other line entering the said central station, for the purposes specified.

20. The combination, substantially as hereinbefore described, of a lever placed on a vertical shaft and actuated by a clock-train motor to rotate in a horizontal plane, but fixed unequally on pivots, so as to rock in a vertical plane, a stop or unison post with which the longer arm of said lever is normally in contact, and which by such normal contact maintains the quiescence of the said motor, a controlling-lever furnished with an armature, and normally being in light contact with the rocking lever at a point in the same vertical plane as the center of rotation thereof, so that the rocking movement of the rotating lever is at all times under the control of the said controlling-lever irrespective of the position of the former in its orbit of horizontal rotation, and an electro-magnet in a main circuit adapted, when energized, to attract the said armature, and to depress thereby the free end of said controlling-lever, whereby the rotating lever may be released from its stop, the motor permitted to move and to rotate the said rotating lever, and also whereby the short arm of the rotating lever may be depressed and the longer arm correspondingly elevated at any desired point in the sphere of its revolution, for the purposes specified.

21. The combination, in an auxiliary central station, of a main or trunk line, a series of sub-station lines, a ground-terminal including a high resistance permanently connected with the main line, and normally serving the sub-station lines also, a separate and direct ground-terminal, means, as indicated, actuated by an electro-magnet included in the main-line circuit for disconnecting the several sub-station lines from the said first ground-terminal, and other means, as described, for thereupon connecting them automatically to the direct ground, substantially as described.

324,192. CENTRAL AND SUBSIDIARY TELEPHONE-EXCHANGE SYSTEM, CIRCUIT, AND APPARATUS. THEODORE N. VAIL, Boston, Mass. Filed May 7, 1885. (No model.)



Claim.—1. The combination, in a telephone-exchange system, of a main central station, a subsidiary or branch central station, a trunk line connecting the said two stations, a series of sub-station lines converging to said branch central station, a selecting mechanism comprising a rotatable arm or lever, located at the branch central station and controlled by an electro-magnet in the trunk line from the main central station, whereby any of the sub-station lines may be selected and united to the trunk line or connected with any other converging sub-station line, and means, substantially as indicated, whereby any of the said sub-station lines may unite itself to the trunk line, disconnecting simultaneously the branch-exchange ground-terminals of both of the said lines, substantially as hereinbefore described.

2. In a telephone-exchange system, the combination, substantially as hereinbefore described, of a main central station, a subsidiary or branch central station, a trunk line connecting the said two stations, a series of sub-station lines converging to said branch central station, a selecting mechanism located at the branch central station, and comprising a clock-motor, an electro-magnet included in the trunk-line circuit and mounted on a vertical shaft driven by said motor, an armature and lever-arm therefor, a series of ground-switches, one for each convergent line, a series of circuit-closers, one for each pair of convergent lines, and a self-acting commutator adapted to connect the trunk line through the electro-magnet successively with each convergent line, for the purposes specified.

3. The combination, in a telephone-exchange system, of a main central station, a subsidiary or branch central station, a trunk line connecting the said two stations, a series of sub-station lines converging to said branch central station, a selecting, governing, and connecting mechanism located at the branch central station and controlled from the central station by an electro-magnet in the trunk-line circuit, substantially as indicated, a polarized relay and armature therefor included in each sub-station line, and contact points and springs for the said armature, one of the said contacts being connected with the normal ground-terminal of the said sub-station line, and the other forming part of the normal circuit of the trunk line, whereby the sub-station line is enabled to connect itself through the said polarized relay with the trunk line, as and for the purposes specified.

4. In a branch or subsidiary telephone-exchange, a series of converging sub-station lines terminating at such branch exchange, a polarized relay for each of the said lines, having its helices and armature both included in the circuit, a contact-spring normally in contact with the armature and constituting a portion of the normal ground-extension of the sub-station line, a trunk line leading from the branch exchange to a point external thereto, and normally extended at the branch exchange through a series of contact springs and points, one contact at each relay, so that the relay-armature, when deflected from its normal position, is enabled to make contact with the trunk-line by means of the said contact-spring, disconnecting simultaneously the ground-terminals of both lines, substantially as hereinbefore described.

5. In a branch or subsidiary telephone-exchange, a series of converging sub-station lines terminating at such branch exchange, a polarized relay for each of the said lines, having its helices and armature both included in the circuit, a contact-spring normally in contact with the armature, and constituting a portion of the normal ground-extension of the sub-station line, a trunk line leading from the branch exchange to a point external thereto, and normally extended at the branch exchange through a series of contact springs and points, one contact at each relay, so that the relay-armature, when deflected from its normal position, is enabled to make contact with the trunk line by means of the said contact-spring, disconnecting simultaneously the ground-terminal of both lines, and a continuity-preserving device attached to the armature of the polarized relay, whereby the said armature is enabled to make contact with the trunk-line spring before the normal contact with its own ground-spring is broken, as hereinbefore described.

6. The combination, substantially as hereinbefore described, in a branch or subsidiary telephone-exchange, of a series of converging sub-station lines terminating at such branch exchange, a trunk line extending between the said branch exchange and a distant central station, the said line being normally grounded at the branch exchange, and a series of electro-magnetic switches at the branch exchange, comprising polarized relays, one for each sub-station line, and included in the circuit thereof, the armatures of said relays being in each case controlled by the sub-station line, and adapted to transfer the circuit of said sub-station line and also of the trunk line from their original ground-terminals to a new connection or union with each other, thus constituting a compound through line from the main central exchange to the sub-station, as specified.

7. In a branch or subsidiary telephone-exchange, a trunk line extending between the said branch exchange and a distant central station, the said line being normally grounded at the branch exchange, an annunciator or an equivalent signal-receiving instrument in circuit with said trunk line at the distant end thereof, a series of sub-station lines converging to and terminating at the branch exchange and extending therefrom to sub-stations, a series of electro-magnetic switches or circuit-changers, one for each sub-station line and included in the circuit thereof, the said switches being in each case controlled by currents in the sub-station line, and adapted to turn in one direction and connect the said sub-station line with the trunk line, removing the normal ground-terminals of both lines when a current passes over the sub-station line in one direction, and to turn reversely and disconnect the said lines, reinstating the ground-connections when a current of opposite direction traverses the sub-station line, and signal-sending apparatus at each sub-station adapted to transmit at will currents of either direction, whereby when currents of definite direction are transmitted over the sub-station line the first pulsation thereof is adapted to operate the electro-magnet switch at the branch exchange and connect the sub-station and trunk lines, and the succeeding pulsations to operate the annunciator at the central station, and whereby, when currents of opposite direction are transmitted, the said switch may be operated reversely to restore the normal conditions, substantially as hereinbefore set forth.

8. The hereinbefore-described selecting, circuit-changing, and connecting apparatus, consisting of an electro-magnet, armature, and armature-lever supported as a whole upon a rotatable shaft, a suitable motor adapted to revolve the said shaft, the stop mechanism for said motor, and rotatable magnet comprising the grooved bed-plate, with which the curved end of the armature-lever is adapted to engage, a series of ground-springs placed in a portion of the stop-grooves, and a series of circuit-closers in another portion of the said stop-grooves, and adapted to be actuated by the lever end as it falls into the said grooves, a main line terminating in a circular contact-plate, a series of segmental plates arranged in a circle concentric with the main-line plate but insulated therefrom, each of the said segments constituting a terminal of a separate circuit or branch line, contact-springs, each constituting one of the terminals of the electro-magnet, one of which is adjusted to trail over and in contact with the circular main-line plate, the other being similarly adjusted to trail over the segmental plate, whereby the main line is successively connected through the electro-magnet with the several branch circuits or lines.

9. The combination, in a selecting and connecting apparatus at a branch exchange, of the circular metal plate provided with a unison stop-groove, a series of ground-spring stop-grooves, and a series of paired connecting stop-grooves, a series of ground-springs, and a series of circuit-closers, an electro-magnet mounted at the center of said bed-plate, and an armature and pivoted lever attached thereto, the said lever having its end bent at right angles, as shown, and being sufficiently long to rest upon the bed-plate projections between the grooves, but adapted to engage with and fall in any of the said grooves upon passing the same, and thus to actuate the ground-spring or circuit-closer of said groove, unless at that moment the armature is attracted by the electro-magnet, a suitable motor to rotate the magnet and attachments, the said motor being held normally at rest by the engagement of the lever-arm with the unison-groove, adapted to move and rotate the magnet when the lever is released from the said groove and to be stopped at any desired groove by allowing the said lever to fall therein, a continuous circular contact-plate constituting the terminal of a main line, and a circular series of segmental conducting-plates arranged concentrically with the main-line ring-plate, each of the said segments being connected electrically with a separate branch or separate circuit, and contact-springs constituting the terminals of the actuating-magnet, one of the said springs being adapted to trail constantly upon and in contact with the circular main-line plate, the other being similarly adjusted to trail over the segmental series, whereby the main line is successively connected through the actuating-magnet with the several branch lines, the several conducting-segments being so arranged with respect to the ground-springs and circuit-closers in the bed-plate grooves that at the moment the end of the rotating lever is acting upon or opposite any one of the ground springs or connectors the second trailing spring is also in contact with a segment having connection with the sub-station or branch line or pair of branch lines controlled by such ground-spring or circuit-closer, for the purposes specified.

10. The combination, in a selecting and connecting apparatus at a branch exchange, of the circular metal bed-plate provided with a unison stop-groove, a series of ground-spring stop-grooves, and a series of paired connecting stop-grooves, a series of ground-springs, and a series of circuit-closers, an electro-magnet mounted at the center of said bed-plate, and an armature and pivoted lever attached thereto, the said lever having its end bent at right angles, as shown, and being sufficiently long to rest upon the bed-plate projections between the grooves, but adapted to engage with and fall in any of the said grooves upon passing the same, and thus to actuate the ground-spring or circuit-closer of said groove unless at that moment the armature is attracted by the electro-magnet, a suitable motor to rotate the magnet and attachments, the said motor being held normally at rest by the engagement of the lever-arm, with the unison-groove adapted to move and rotate the magnet when the lever is released from the said groove, and to be stopped at any desired groove by allowing the said lever to fall therein, a continuous circular contact-plate constituting the terminal of a main line, and a circular series of segmental conducting-plates arranged concentrically.

11. In a branch or subsidiary telephone-exchange, a series of converging sub-station lines terminating at such branch exchange, a polarized relay for each of the said lines having its helices and armature both included in the circuit thereof, a contact-spring normally in contact with the armature and constituting a portion of the normal ground-extension of the sub-station line, a trunk line leading from the branch exchange to a point external thereto, and extending at the branch exchange through a series of contact springs and points, one contact at each relay, so that the relay-armature when deflected from its normal position is enabled to make contact with the trunk line by means of the said contact-spring disconnecting simultaneously the ground-terminal of both lines, and a series of permanent normally-open branches extending from the trunk line and terminating in limit-screws in the rear of the trunk-line contact-spring, so that the said spring, when forced backward by the relay-armature, shall make contact therewith, whereby the succeeding main-line contacts are short-circuited and the interference of other sub-station lines prevented.

12. The combination, in an automatic auxiliary telephone-exchange apparatus, of a circular metallic bed-plate and a ground-wire connected thereto, the interior edge of said plate being cut into by any desired number of single or paired grooves, an armature-lever mounted at the center of said bed-plate on a motor, so as to rotate in a horizontal plane, the arm of said lever being of suitable length to slide over the projections between the said grooves and to fall into the said grooves, if not otherwise prevented, an electro-magnet in a main-line circuit and an armature therefor controlling the said lever and adapted to lift the lever end from the groove or to prevent it from falling therein, a continuous metal ring united permanently with the said main line, a second ring concentric with the first, but formed of segmental metal pieces insulated from one another and each connected with a separate branch circuit, and a pair of trailing springs forming the terminals of the electro-magnet and adapted to trail on the concentric rings, whereby control of the said electro-magnet is at all times maintained irrespective of its position in its circle of rotation, substantially as described.

13. The combination, in an automatic auxiliary telephone-exchange apparatus, of a circular metal bed-plate, grooved as described, and constituting, by means of an attached ground-wire, the common earth-terminal of a number of circuits, the ground-springs and circuit-closers herein described, affixed to the under side of said bed-plate and projecting into the several grooves, the rotatable actuating-arm adapted, when brought near to a special groove and released, to fall therein and actuate the ground-spring or circuit-closing bar attached thereto, the electro-magnet controlling the same, and the concentric continuous and segmental contact-plates therefor, whereby by means of trailing-spring terminals the said electro-magnet is permanently connected with the main line and successively with all of a series of branch lines, as and for the purposes specified.

14. The combination, in an automatic auxiliary telephone-exchange apparatus, of a circular metal bed-plate, grooved as described, and constituting, by means of an attached ground-wire, the common earth-terminal of a number of circuits, the ground-springs and circuit-closers herein described, affixed to the said bed-plate within the said grooves, the rotatable actuating-arm adapted, when brought near to a special groove and released, to fall therein and actuate the ground-spring or circuit-closing bar attached thereto, the electro-magnet and motor therefor controlling the said bar, and the concentric continuous and segmental contact-plates forming the main and branch line terminals, as described, with a battery-key, and an indicating-dial adapted to run synchronously with the rotating arm, all at the distant central station, whereby the progress of the rotating arm can be there noted and its action controlled, as herein specified.

15. The combination, in a sub-station line, of a series of successive spring-contacts, each consisting of a contact-spring resting normally on a contact pin or anvil, the said pin being connected with the next succeeding spring, as described, a polarized relay-switch, and a ground-connection, the said ground-connection being detachable and placed at a given point in an automatic apparatus operated over a main line from a distant station, and a normally-open branch wire diverging from said line at a point external to the said contacts and terminating in a metal segment placed in the said automatic apparatus at a point having a definite relation to the position of the ground-connection, whereby, when the said normal ground-connection is removed by the action of the apparatus, a new connection is simultaneously made connecting the sub-station line through the branch and segment with the main line leading to the distant station.

16. The combination, in an automatic line-connecting apparatus, of the grooved circular bed-plate connected with a ground-wire, the ground-springs or circuit-closers attached thereto and fitted below the grooves thereof, and the rotary arm adapted to rotate upon a shaft at the center of the circular bed-plate to engage with the said grooves and to operate the said ground-springs and circuit-closers, as described.

17. In combination with a main line and a series of branch lines, a rotating electro-magnet, a suitable motor therefor, an armature-lever adapted to control the said motor, a continuous metal contact ring or plate constituting the terminal of the main line, a number of segmental conducting-plates in series with but insulated from one another, arranged in circular form concentric to the continuous ring and forming terminals for an equal number of branch lines or circuits, and spring-contact terminals for the electro-magnet, adjusted to maintain frictional contact one with the continuous ring and the other with the segmental ring, whereby the said electro-magnet is maintained at all times in a circuit composed of the main line and some one of the branch lines, as herein described.

18. The combination of the electro-magnet adapted to rotate on a given center, the lever-arm actuated thereby, and the trailing contact-spring terminals therefor, with the continuous circular contact-plate constituting the terminal of a main line, the series of conducting-segments arranged in a circle concentric with the continuous plate and having their ends overlapping one another, as described, each segment being the terminal of a branch line, a ground-extension, or a pair of branch lines, and an additional conducting-segment concentric with a portion of the said segmental circle and connected to earth through a high resistance, one of the electro-magnet contact-springs being adjusted to trail over and remain in permanent contact with the main-line plate, and the other being sufficiently wide to overlap and trail over and in contact with the concentric branch line and ground-segments, whereby an earth is at all times maintained for the main line through the electro-magnet, substantially as specified.

19. The combination, in a telephone-exchange system, of a series of sub-station lines, each passing at the converging station through a series of successive spring-contacts, at each of which it is in close juxtaposition with a similar spring-contact of some other sub-station, so that each and every sub-station line of the series is brought into close contiguity through such pairs of springs with every other line of the series, substantially as and for the purposes specified.

20. The combination, in a telephone-exchange system, of a series of sub-station lines, each passing at the converging station through a series of successive spring-contacts, the said spring-contacts of the several lines being brought by pairs into close contiguity with similar contacts of every other line of the system, with an electro-magnet in a local circuit for each pair of contact-springs, and means, as indicated, actuated by such electro-magnet to lift the two contact-springs of any such pair from their original contact-anvils and into contact with one another, whereby any two lines may be electrically united, substantially as described.

21. The combination, in a telephone-exchange system, of a series of sub-station lines, each passing at the station of convergence through a series of successive spring-contacts, the said spring-contacts of the several lines being brought by pairs into close contiguity with similar contacts of every other line of the system, with an electro-magnet in a local circuit for each pair of contact-springs, an armature and armature-lever therefor, and a conducting cross-bar affixed to the end of said armature-lever and lying across and below the pair of contact-springs, so that when the said local electro-magnet is energized and its armature attracted the said cross-bar is correspondingly elevated and is enabled to raise the contact-springs of both lines from their normal contact-anvils and to connect them electrically through its own substance, whereby any two lines may be united for intercommunication, substantially as described.

22. The combination, substantially as hereinbefore described, in an auxiliary telephone-exchange, of two or more sub-station lines, each passing at the said exchange through a series of successive spring-contacts, the said spring-contacts of the several lines being brought together in close contiguity to form pairs with similar contacts of every other line of the system, an electro-magnet in a local-battery circuit for each of the said pairs, an armature, and armature-lever therefor, a metal cross-bar affixed to the end of said armature-lever and lying below and across the pair of contact-springs, and a circuit-closer in the said local circuit, whereby the said circuit may be closed, the magnet energized, and the two lines represented by the contact-springs united through the cross-bar, for the purposes specified.

23. In an auxiliary telephone-exchange, two or more sub-station lines, each passing at the said exchange through a series of successive spring-contacts equal in number to the number of converging lines less one, the said spring-contacts of the several lines being brought together in close contiguity to form pairs with similar contact-springs of every other line in the system, an electro-magnet in a local-battery circuit for each of the said pairs, an armature and an armature-lever, and a conducting cross-bar carried by the said lever in position to lift the said pair of springs upon the energization of the electro-magnet, combined with a circuit-closer for the said local circuit, consisting of a tilting bar and contact points or cups, an automatic actuating device therefor operated by a clock-motor, and an electro-magnet in a main trunk-line circuit controlled from a distant central station, substantially as hereinbefore described.

24. In an auxiliary telephone-exchange, two or more line-circuits, each passing at the said exchange through a successive series of spring-contacts equaling in number the entire number of converging lines less one, the said contacts of the several lines being grouped in pairs, one contact of each line in close proximity with a similar one of each line, an electro-magnet, armature, armature-lever, and cross-bar for each pair of springs, the said electro-magnet being, as indicated, controlled by a normally-open local circuit, all in combination with a circuit-closer consisting of a tilting lever and contact points or cups, a rotary lever-arm adapted to strike the same and open or close the said local circuit, an electro-magnet in a main circuit, and a motor to actuate the said arm, a metallic bed-plate, with a pair of guide-grooves for each circuit-closer, and a key and a dial moving synchronously with the magnet-motor at the distant central station, whereby the movements of the rotary lever are indicated and controlled as specified, substantially as hereinbefore described.

25. The combination, in a branch telephone-exchange, of the several pairs of connecting contact-springs, whereby each line is brought into the near proximity of each other line, as described, the connecting cross-bars therefor, and their actuating electro-magnets, armatures, and armature-levers, and the local circuits and circuit-closers, with the automatic connecting and supervising apparatus herein described, comprising a rotary arm adapted to select and actuate any desired circuit-closer, an electro-magnet controlling the same, a pair of trailing terminal-springs therefor, the continuous metal ring forming the main-line terminal in permanent connection with one of the said springs, a series of conducting-segments arranged as described, and equal in number to the circuit-closers, a series of connecting-wires extending from the connecting cross-bars to the said segments, so as to electrically connect each cross-bar with one of the segments, each of the said segments being so placed as to be in contact with the remaining magnet trailing spring while the lever-arm is operating the circuit-closer belonging thereto, whereby when any two sub-station lines are connected together by the cross-bars a branch circuit leading to the central station is simultaneously constituted, for the purposes specified.

26. The combination of any two subscribers' lines, the connecting cross-bars therefor, the electro-magnetic operating mechanism for bringing the said cross-bar into action, the local circuit for such mechanism provided with a circuit-closer, a trunk or main line, an automatic connecting and supervising apparatus at the junction of such subscribers' lines and trunk line, controlled by an electro-magnet included in the circuit of the latter, apparatus at a distant central station, substantially as herein indicated, whereby the said automatic apparatus may be operated and controlled over the trunk line, and means, as indicated, whereby the said automatic apparatus is enabled to operate the circuit-closer and connect any desired two lines together and simultaneously establish a branch circuit from the two lines so connected through its own actuating-magnet to the trunk lines, so that the central station may send call-signals or establish telephonic communication, if desired, with the two connected lines, substantially as described.

27. The combination of the local connecting-circuit, the electro-magnet m, included therein, the armature-lever, and cross-bar therefor, all arranged as and for the purposes described, with the circuit-closer v and the branch listening and calling circuit leading from the cross-bar through the fulcrum-post to a contact-segment having a definite relation in position to the circuit-closer, and the automatic actuating device X, arranged to operate the circuit-closer and simultaneously to connect a main line through its own controlling-magnet to said contact-segment, substantially as specified.

28. The combination of the local circuit, the magnet m, the armature-lever and cross-bar therefor, the branch circuit leading from the metal cross-bar, armature-lever, and fulcrum-post to a normally-open segment adapted to be brought into connection with the main line at the moment when the local circuit is closed, and the ground branch wire connected with the limit-post N, and constituting a normal earth-terminal for the said branch circuit, for the purposes described.

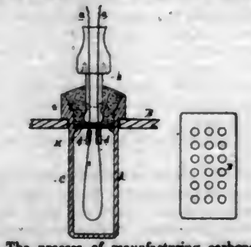
29. The combination of a main line, a series of branch wires, m^2, a circular contact-plate permanently connected with the main line, a series of conducting-segments, s^2, each united by wire with one of the said branch wires, an electro-magnet permanently in contact with the main line, and adapted to rotate so as to place itself in contact successively with the segments connected with the branch lines, so that the main line may thereby be successively extended through the said segments with the several branch lines, a series of local circuits provided with circuit-closers, a rotary lever-arm operated by the main-line electro-magnet and adapted to select and actuate any of the said circuit-closers, a series of electro-magnets, one for each of the said local circuits, each provided with and actuating connecting devices for connecting two lines together, the said devices being united through the branch wires m^2 with the conducting-segments s^2, and a ground-wire for each connecting device, all arranged as shown, and for the purposes described.

30. The combination of a series of local circuits, each including an electro-magnet and a mechanical circuit-closer, a common battery therefor, a series of sub-station lines, each having a contact-spring in proximity to a similar spring of every other such line, a series of metallic connecting devices operated by said electro-magnets, and each adapted to disconnect said contact-springs from their normal connections and to unite them to one another, a main line, an automatic rotary device controlled through said main line from a distant central station and adapted to close or open any or all of the said circuit-closers, as described, a branch circuit extending from each metallic connecting device to a contact-plate, said plate being, through the agency of the automatic rotary device, connected with the main line while the circuit-closer belonging thereto is being operated, and a ground-wire normally connected with said branch circuit while the local connecting-circuit is open, but withdrawn therefrom when said circuit is closed, all as and for the purposes specified.

31. The combination of the main line L, a series of sub-station lines, A B C, &c., a polarized-relay switch, P, whereby any of the said sub-station lines may connect themselves with said main line, the spring-contacts of such sub-station lines, and the ground-wire and ground-spring g^2, attached by a non-conducting link to the contact-spring, whereby when any contact-spring is lifted from its normal connection the said normal connection may be grounded, whereby an earth-terminal is provided for the main line in case the polarized-relay switch should be left out of its normal position.

32. A complete system of telephonic intercommunication, consisting of a central station, a branch or subsidiary central station, a trunk or main line extending between and uniting the said stations, a series of sub-station lines converging to and normally grounded at the subsidiary station, a polarized relay constituting an electro-magnetic switch for each sub-station line, having its helices and armature both included in the circuit of said line, a system of spring-contacts controlled by each relay and including the normal main-line terminal and also at each relay the normal terminal of its own line, so that the main-line terminal passes through the contacts of all the relays, whereby each sub-station line may connect itself with the main line when unoccupied, a normally-open main-line shunt-circuit round the several relay-contacts adapted to be closed and to short-circuit intervening circuits to prevent interference when the main line has been engaged by any sub-station line, a series of successive spring-contacts in each sub-station line, at each of which contacts a similar spring of one of the other lines is placed in close contiguity, a connecting metal bar for each pair of springs operating to lift said pair of springs unitedly from their normal position and to unite them to one another, thus connecting the two lines, an electro-magnet in a normally-open local circuit actuating the said metal connecting-bar by means of its armature and armature-lever to which said metal bar is attached, a circular grooved ground-plate, a series of ground-springs, one for each sub-station circuit, and a series of tilting-lever circuit-closers, one for each pair of sub-station lines, adjusted in the grooves of said ground-plate, a rotating lever centered at the center of said circular ground-plate and extending outwardly to the edge thereof, so that the end of said lever is adapted to slide over the projections of the same between the grooves and to fall into the said grooves and actuate the several ground-springs and circuit-closers, a clock-work motor actuating the said lever-arm, an electro-magnet in the main-line circuit controlling the said lever-arm and motor and determining the engagement of the said arm with any special groove, the said magnet participating in the rotation of the motor and lever-arm, concentric contact-plates, one of which is continuous and permanently connected with the main line, the other being composed of insulated segments, the said segments being each united by branch wires with the several sub-station circuits and with the connecting devices for any such pairs of circuits, trailing contact-spring terminals for the electro-magnet, one of which is adjusted to maintain permanent contact with the main-line plate, while the other traverses successively the segments or branch-line plates, whereby the main line is maintained at all times in connection through the electro-magnet with some one of the branch lines, and whereby the central station may send signals and participate in or supervise communications with any single sub-station line or any connected pair of such lines, substantially as hereinbefore specified.

324,198. PROCESS OF MAKING INCANDESCENTS. Charles J. Van Depoele, Chicago, Ill. Filed Dec. 23, 1882. (No model.)



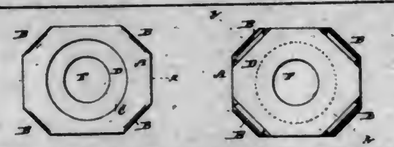
Claim.—The process of manufacturing carbons for electric incandescent lamps, consisting of first preparing vegetable fiber with a coating of lamp-black and varnish; second, attaching said fiber to the conducting platinum wires by means of a vegetable collar which embraces the adjacent ends of the fiber and the wires, and filling said collar with a compound of lamp-black and varnish, and, third, uniting the platina wires to the fiber by subjecting said wires, fiber, and collar to a heat sufficient to carbonize vegetable tissue, substantially as set forth.

324,194. NUT-LOCK. Isaac Van Kuran, Omaha, Nebr. Filed Mar. 23, 1885. (Model.)

Claim.—1. In a washer for locking nuts, the combination, with a bed-plate having lips or ledges at the corners, of a top plate over the corners of which the lips or ledges are bent, substantially as herein shown and described.

2. In a washer for locking nuts, the combination, with a base-plate

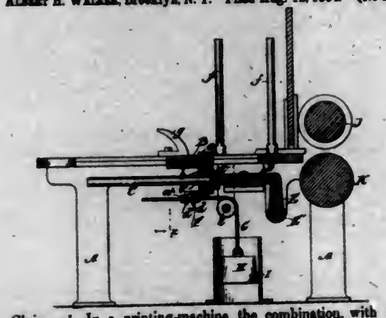
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having lips or ledges at the corners, of a top plate having diagonal beveled edges, over which the lips or edges on the base-plate are bent, substantially as herein shown and described.

3. In a washer, the combination, with a base-plate having the corners cut off diagonally, and lugs or ledges on said diagonal edges, of a top plate having the corners cut off diagonally, the lips or ledges on the base-plate being bent over the diagonal edges of the top plate, substantially as herein shown and described.

324,195. MECHANISM FOR FEEDING BOARDS TO BE PRINTED. Albert H. Walker, Brooklyn, N. Y. Filed Aug. 12, 1884. (No model.)



Claim.—1. In a printing-machine, the combination, with a feed-dog, of a crank, a rod connected with the crank, and provided with a projection for abutting against the feed-dog in order to move it rearwardly, and a weight having a connection with the feed-dog, but unconnected with said rod and crank, except by the bearing the feed-dog has against said projection, and serving to move the feed-dog forward, substantially as specified.

2. In a printing-machine, the combination, with a feed-dog, B, of a rod, C, the nut c, a crank, E, for imparting a backward movement to said rod, the hook F, the rope or chain G, and the weight H, connected to the feed-dog for imparting a forward movement to it, substantially as specified.

324,196. COMBINED VEHICLE-SEAT AND END-GATE. William P. Walling, Albany, Wis. Filed Apr. 7, 1885. (No model.)



Claim.—1. A moving seat, in combination with a tail-gate separately connected to a vehicle-body and provided with a step, said seat having connection with the said tail-gate and operating the same, substantially as and for the purpose specified.

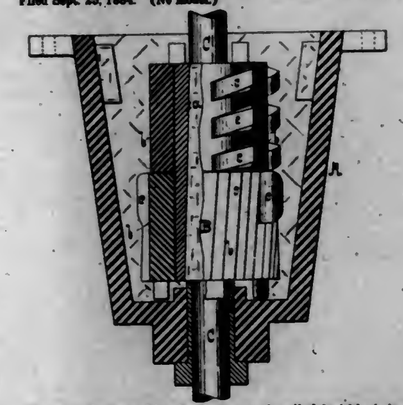
2. A seat pivoted or hinged to a vehicle-body, in combination with a tail-gate separately pivoted or hinged to the body and provided with a step, said seat having connection with and operating the tail-gate, substantially as and for the purpose specified.

3. A seat pivoted or hinged at one end to a plate on a vehicle-body and guided by a pin engaging in a slot in said plate, in combination with a movable tail-gate provided with a step, said tail-gate being connected to the seat and operated thereby, substantially as and for the purpose specified.

4. A movable seat guided and supported by a slotted plate secured to a vehicle-body, in combination with a tail-board provided with a step, the seat being connected to the tail-board and operating it, substantially as and for the purpose specified.

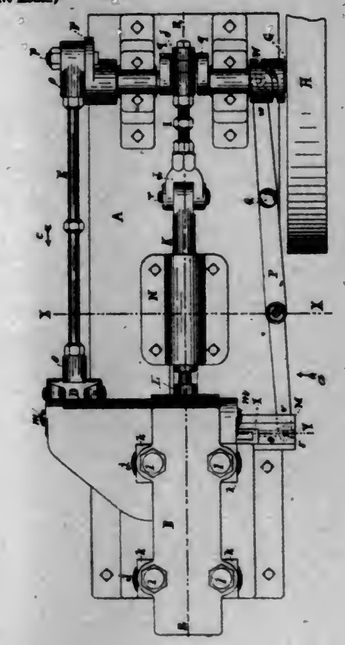
5. A seat pivoted at one end to a slotted plate, by which the said seat is guided, and provided with a rest, in combination with a tail-gate hinged to the body and provided with a step at its free end, said seat being connected to and operating the tail-gate, and engaging with stops on the body when in proper relation thereto for use, substantially as and for the purpose specified.

324,197. ORE-CRUSHING MACHINE. Wilson Warne, Colora, Md. Filed Sept. 25, 1884. (No model.)



Claim.—In a crushing-head, a central cylindrical block having a series of tapered dovetailed grooves extending longitudinally thereof, combined with a covering having an outer conical surface formed of segments, each one of which has a tapering dovetailed tongue adapted to fit in a groove in the said block, and provided exteriorly with the usual crushing projections, substantially as specified.

324,198. TUBE-MACHINE. William Wattie, Worcester, Mass., assignor to the Knowles Loom Works, same place. Filed June 29, 1885. (No model.)



Claim.—1. In a machine for making metal tubes, the combination, with mechanism constructed and arranged to automatically feed forward the metal blanks at stated intervals, and mechanism constructed and arranged to push the metal blanks between the forming-dies, of mechanism constructed and arranged to form the tubes, substantially as described.

2. In a tube-machine, the combination, with the forming-dies and a core, and means for operating the same, substantially as described, of mechanism for feeding in the blanks to the dies, and mechanism, substantially as described, for pushing the blanks between the forming-dies, all constructed and operated substantially as shown and described.

3. The combination, with toggle-frame B, toggles *h h*, connector *i*, and means for operating the same, substantially as described, of the forming-dies *d* and *f* and core C, substantially as described.

4. The combination, with reservoir or holding-case X and feed-slide O, of a lever, P, constructed and operated substantially as described.

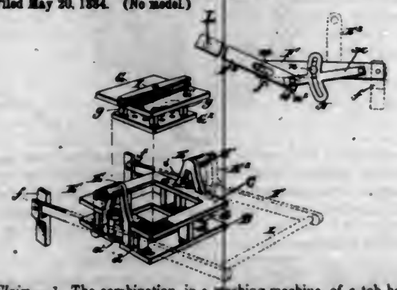
5. The combination, with the feed-slide O, of the lever P, pivoted on stud Q, and hinged on safety-stud *t*, provided with a safety-spring, *u*, for the purpose stated, and operated by a grooved cam, substantially as described.

6. The combination, with forming-dies, of the push L and push-holder K, adjustably connected to and operated by the crank *q*, substantially as set forth.

7. The combination, with the toggles *h h*, toggle-connector *i*, and toggle-arm D, of the connecting-rod E, bearing-boxes *o o*, and toggle-crank F, constructed and arranged substantially as described.

8. The combination, with the toggle-frame B, bearing-blocks *k k*, and adjusting-screws *l l*, of the toggles *h h*, pins *j j*, connector *i*, and block *e*, constructed and arranged substantially as described.

324,199. WASHING-MACHINE. HENRY W. WEBSTER, Nashua, N. H. Filed May 20, 1884. (No model.)



Claim.—1. The combination, in a washing-machine, of a tub having a perforated false bottom, a vertically-reciprocating dasher composed of an upper and a lower diaphragm with a water-space between, and a central removable gate forming part of said dasher, said gate having an upper and a lower plate, forming, practically, continuations of the upper and lower diaphragm thereof, the latter plate only being perforated, substantially as and for the purpose set forth.

2. The combination, in a washing-machine, of a tub, a vertically-reciprocating dasher substantially fitting said tub and composed of a double diaphragm, with a water-chamber between, a central removable gate in said dasher, having an upper and lower plate which practically form continuations of the upper and lower diaphragm in the dasher, and a turn-bar mounted upon said gate and engaging by its forked ends with lugs upon the pintle-lugs of the dasher, substantially as and for the purpose set forth.

3. The combination, in a washing-machine, with a vertically-reciprocating dasher, of an actuating-lever having an extension-arm coupled thereto, and an intermediate arm having a slotted segment and set-screw, whereby the extension-arm may be adjusted and retained at any required angle with the actuating-lever, substantially as and for the purpose set forth.

4. The combination, in a washing-machine, with a vertically-reciprocating dasher, of an actuating-lever pivoted to ears upon the tub, an arm pivoted to said lever near its point of attachment, and having a segment-plate provided with a slot through which a set-screw passes into the lever, an extension-arm having a slot which engages with a stud upon the outer end of said lever, and a forked end which engages with a stud-pin upon a projection from the segment-plate, substantially as and for the purposes set forth.

5. The combination, in a washing-machine, with a tub having a perforated false bottom, B, supported upon cleats, of a dasher composed of a solid upper diaphragm, C G', and a lower diaphragm, D G², having a central portion of its area perforated, feather-bars engaging with notches upon the edges of both diaphragms, and a pivoted lever by which vertical movement is imparted to the dasher, substantially as and for the purpose set forth.

6. The combination, with the dasher having an upper and a lower diaphragm, of a removable gate composed of the solid upper plate, G', and the perforated lower plate, G², the former being provided with the turn-bar I, which engages with lugs *i*, formed upon the pintle-lugs E, substantially as and for the purpose set forth.

324,200. MANUFACTURE OF WHITE LEAD. WM. H. WETHERILL, Philadelphia, Pa. Filed Feb. 16, 1885. (No specimens.)

Claim.—The improvement in the manufacture of white lead by the Dutch process, which consists in replacing the tan-bark usually accumulated around the pots containing the acid and buckles of lead with a layer of ground or fibrous spent licorice-root.

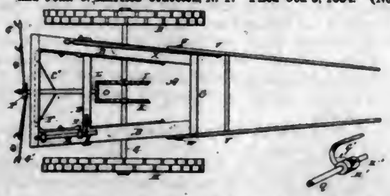
324,201. BOX-FASTENER. JOSEPH F. WHITTINGHAM, Cleveland, Ohio, assignor to Hugh McConnell, same place. Filed July 19, 1884. Renewed June 18, 1885. (No model.)



Claim.—1. The combination, with the thimble, the hook-bolt swiveled on the thimble, and a lever for operating the bolt, of a tumbler located within the thimble and provided with an arm, a spring seated within the tumbler adapted to force the said arm into engagement with the hook-bolt, and a knob attached to the tumbler for releasing it from the hook-bolt, substantially as set forth.

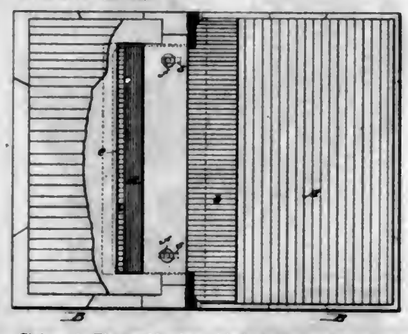
2. The combination, with a hook-bolt swiveled on the thimble a^2 and provided with a thumb-lever extending through the casing, by means of which the bolt may be turned to lock or unlock the hasp, of a tumbler provided with a thumb-knob extending forward through the thimble, so that it may be actuated from the front of the casing and pressed to the rear to release the bolt, and provided with the shank d', operating in the slot a^5 of the thimble, by means of which the tumbler is held in position so that it moves only forward and rearward, substantially as set forth.

324,202. POTATO-DIGGER. FRANCIS O. WILLIAMS, AARON MATTICE, and JOHN C. MATTICE Cohocton, N. Y. Filed Oct. 3, 1884. (No model.)



Claim.—The combination, with the reel having the radial spokes, of the fingers G', attached to said spokes, and means for permitting the fingers to partially rotate thereon, substantially as described.

324,203. BOOK-COVER. THOMAS F. WILLIAMSON, Chicago, Ill. Filed Feb. 2, 1885. (Model.)



Claim.—1. The combination, with the book A and its strapping *b*, of the attached flaps or slides C C, the covers B B in sliding connection with said flaps, and stops for limiting said sliding movement and for permanently connecting the book with its cover or covers, substantially as specified.

2. The combination, with the book A and its strapping *b*, of the attached flaps or slides C C, having face-strips *d*, and the board or stiff covers B B, having recesses *c* and openings *e*, essentially as and for the purposes herein set forth.

324,204. SKATE-CLAMP. SAMUEL WINSLOW, Worcester, Mass. Filed Jan. 24, 1885. (No model.)

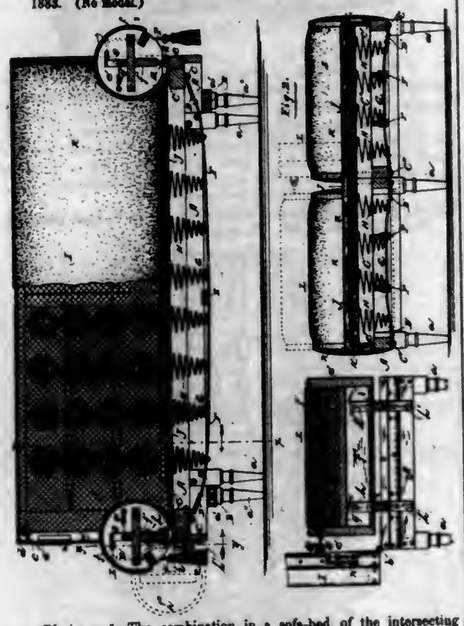
Claim.—1. The combination, with the foot-plate of a skate, of a pair of laterally-movable clamps arranged under the foot-plate, at the front and rear portions thereof, and each pair of clamps pivoted together at the inner ends, a lever pivoted to the front clamps and having a short arm projecting past the pivot and carrying a swiveled screw-block, a swiveled screw-block on the pivoted ends of the rear clamps, and a right and left screw connecting the swiveled blocks, substantially as described.

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2. In a skate, the sole-plate having permanent headed guide studs or rivets on its under side, and the sliding arms of the sole and heel clamps provided with guide-slots with enlargements at their inner ends, whereby said arms can be readily attached and removed without removing the rivets or studs on the sole-plate, in combination with lever mechanism for operating the clamp, substantially as described.

324,205. SOFA-BED. EDWARD YEOMAN, Chicago, Ill. Filed Dec. 11, 1883. (No model.)



Claim.—1. The combination, in a sofa-bed, of the intersecting metal strips F and G, the springs D' D', the springs H H, the woven-wire mattress J, turned or bent at an angle along its two longer edges, the mattress-supporting wires K K, passing along under the said mattress at the said angles, and the supporting-frame, substantially as and for the purposes specified.

2. The combination, in a sofa-bed, of a seat-frame, a back-frame hinged to the seat-frame, and a woven-wire mattress attached to the said frames and extending continuously across the line of junction of the said frames, substantially as specified.

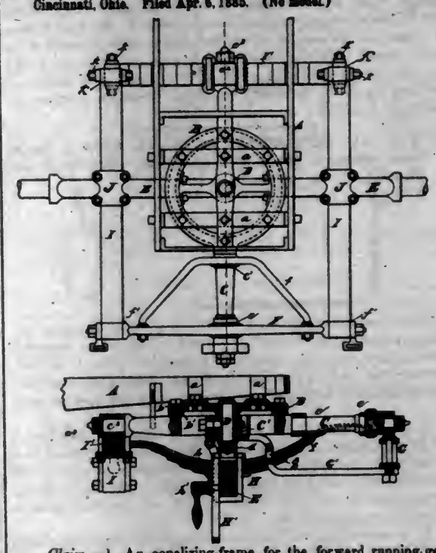
3. The combination, in a sofa-bed, of a seat-frame, a back-frame hinged to the seat-frame, a woven-wire mattress attached to and extending continuously across both of the said frames, and mattress-supporting springs attached to the said frames, substantially as specified.

324,206. COTTER-PIN. JOHN ADT, New Haven, Conn. Filed July 1, 1885. (No model.)



Claim.—The herein-described improvement in the manufacture of cotter-pins, consisting in bending the ends of the legs outward, so as to form a V-shaped recess at the ends between the two, then cutting away the outer surface of the bent portion to form a conical-shaped point, substantially as described.

324,207. RUNNING-GEAR FOR VEHICLES. CHRISTOPHER ARENDS, Cincinnati, Ohio. Filed Apr. 6, 1885. (No model.)

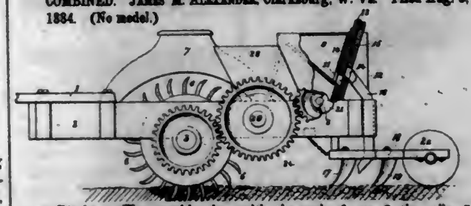


Claim.—1. An equalizing-frame for the forward running-gear of wheeled vehicles, consisting of the yielding members I I and I' and the stiff member F, in combination with the relatively rigid member C, upon which the members I' and F are mounted in journal-bearings, substantially as described.

2. The combination of the reach C, having secured to it the lower half of the fifth-wheel B, and having journal-bearings *c c²* upon the opposite ends thereof, and the equalizing-bar F and back spring, I', arranged to turn upon said journal-bearings, for the purpose and substantially as described.

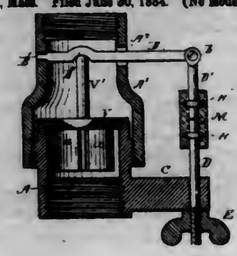
3. In an equalizing-frame for wheeled vehicles, substantially as described, the equalizing-bar F, provided with the brace *f*, and having journal-bearings *f''* at both extremities, in combination with the reach C, provided with journal-bearings *c c'*, upon which bearings the parts F *f* turn, for the purpose described.

324,208. CULTIVATOR AND SEED DROPPER OR PLANTER COMBINED. JAMES M. ALEXANDER, Clarksburg, W. Va. Filed Aug. 8, 1884. (No model.)



Claim.—The combination, with the main frame 2, the roller 5, supporting the same and having cutting-teeth 6, and the seed-hopper 9, supported by said main frame and having the spout 16, of the supplemental frame 18, flexibly connected to said main frame in rear of the roller 5 and having the opening-share 17, the delivery end of the seed-spout 16, located directly behind said opening-share, the covering-shares 19, located behind and on each side of the said spout, and the roller 20, located behind said covering-shares, substantially as and for the purpose set forth.

324,209. AUTOMATIC FIRE-EXTINGUISHER. EDWARD H. ASHCROFT, Lynn, Mass. Filed June 30, 1884. (No model.)



Claim.—The combination, with the coupling A', provided with the openings A^3 and B', and the pipe A, having the lateral arm C, of the valve V, having wing-guides *a a* and valve-stem V', the lever B, having a socket for the reception of said valve-stem, the link formed of the part D', secured to the lever B, the part D, passing through arm C, said parts being provided with the collars H H', the part M, of fusible material, and the nut E, for holding the parts normally in position, substantially as described.

324,210. STORE-SERVICE APPARATUS. George A. Badger, Quincy, assignor to John H. Lakin, Boston, Mass. Filed Sept. 30, 1884. (No model.)



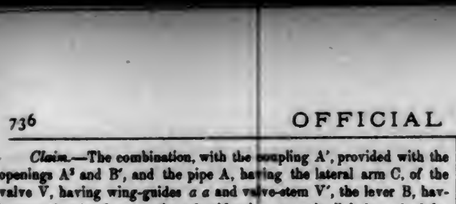
Claim.—1. The combination, with a store-service apparatus comprising a movable track fixed at one end and provided at the other with a suitable raising-cord, of a connection, substantially as herein set forth, extending from the fixed end of the tract and operating the track-lowering mechanism at the opposite or movable end of the track, as specified.

2. The combination, with a store-service apparatus comprising a track having one end movable, a carrier adapted to run thereon by gravity, and pull-up and pull-down cords, each connected with and operated from the movable end of the track, of a second or additional lowering-cord operated from the fixed end of the track and connected across to the movable end, as set forth.

3. In combination with a store-service apparatus comprising a track movable at one end, a carriage adapted to run thereon by gravity, and raising and lowering cords, a double-grooved pulley, *t*, a single-grooved pulley, *m*, and a connection, H A, all substantially as set forth.

4. In a store-service apparatus having a way fixed at one end and adapted to be raised and lowered at the other, the combination, with a hook or detent at the movable end of the way and adapted to hold it when raised, of means of releasing the hook or detent from the fixed end of the way, said means consisting of a connection extending from the hook or detent to the fixed end of the way, as set forth.

324,211. PIPE-COUPLING. James M. Bailey, Pittsburg, Pa. Filed Mar. 13, 1885. (No model.)



Claim.—A coupling-socket consisting of an internally-threaded central portion and end chambers having contracted mouths, in combination with pipe-sections having exteriorly-threaded ends and an enlargement in the rear of and adjacent to the threaded portions, said enlargements being adapted to fit within the end chambers of the socket, substantially as set forth.

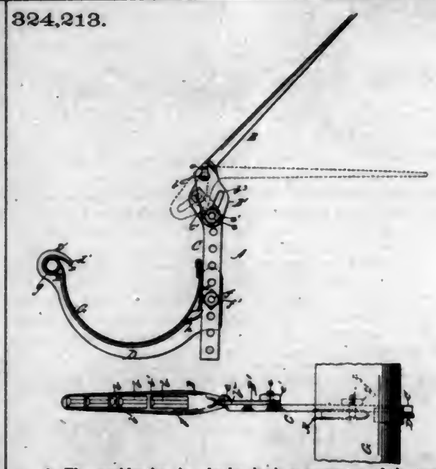
324,212. BUTTON AND FASTENING THEREFOR. Frank M. Baker, Birmingham, Conn. Filed Jan. 2, 1885. (No model.)

Claim.—A button having a concentric opening, *a*, with a flange, *b*, on the back around said opening, combined with a fastening consisting of the tube *d*, corresponding in diameter to the opening *a* through the button, the tube constructed with a flange, *e*, at one end, and the said flange with a groove, *f*, corresponding to the flange *b* on the back of the button, the said tube adapted to extend through the fabric and through the opening in the button and be set upon the surface of the button around the opening, substantially as described.

324,213. EAVES-TROUGH HANGER. William H. Benner, Philadelphia, Pa. Filed Mar. 14, 1885. (No model.)

Claim.—1. The tang of a leader-hook, having elongated nail-openings with internally-beveled edges, substantially as and for the purpose set forth.

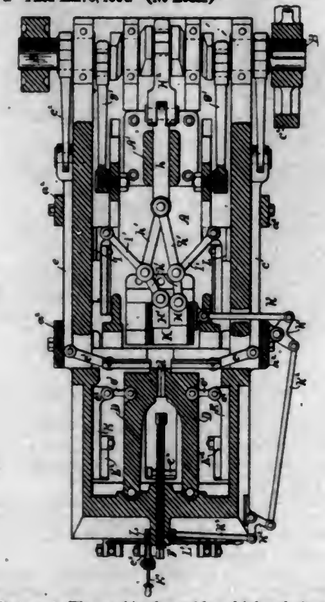
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2. The combination, in a leader hook or supporter, of the tang B, having opening b^2, and slot b^3, with bar C, having hook or fulcrum *c*, and slot *c*, and bolt and nut *c c'*, substantially as shown and described.

3. A leader-supporter having its outer terminal formed with a hook for the reception of the curled or rolled edge of a leader, and having a notch or opening, *h*, for the reception of a fastening device, H, for the inner edge of the leader, substantially as shown and described.

324,214. BOLT-HEADING MACHINE. Irving W. Bliss, Providence, R. I. Filed Mar. 3, 1884. (No model.)



Claim.—1. The combination, with a driving-shaft, a transversely-moving slide, and a longer and a shorter header mounted in said slide, of jointed links connecting the headers with the driving-shaft, substantially as and for the purposes specified.

2. The combination, with the driving-shaft and a transversely-moving slide carrying a longer and a shorter header, of jointed links for connecting the headers with the shaft, and a lever and connections for operating the slide, as described.

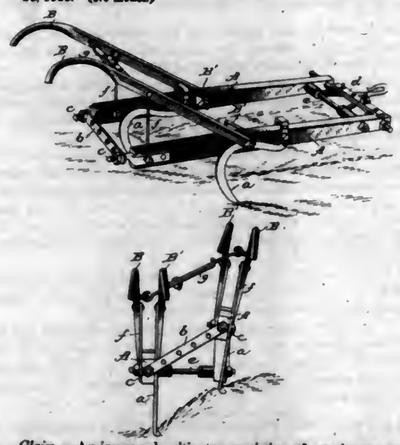
3. The combination, with the header, the shaft having the cranks, and the arms connecting the header with the shaft, of the levers E', having the rests e^3, the pivoted levers U', arranged to lock the levers E', and the rods and bell-cranks interposed between the levers and the slide, substantially as and for the purposes described.

4. The combination, with the frames A and C, the slide K, the crank-shaft B, and the headers H H', with their links h' and arms I', of the forming-dies, blank-holders, and levers and slides for operating the links and slide K, as specified.

5. The combination, with the bed-frame carrying the shaft B and frame C, of the heading-dies mounted in the transversely-moving slide K, the sliding frame G, and slides I, the rods, arms, links, and pitmen connecting slides I K, frame G, and the forming-dies with the shaft B, as described.

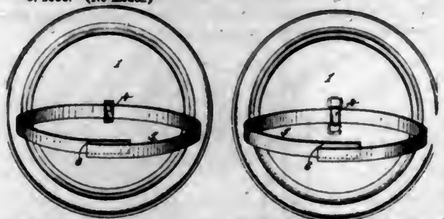
6. The combination, with the bed-frame carrying the crank-shaft B, frame C, the holding-arms, and slide K, of heading-dies with their links, the forming-dies with their links, the slides for operating said links and arms, the sliding frame G, the levers for operating the slides, the pitmen and arms for actuating the heading and forming dies, and the gage F, as set forth.

324,215. CULTIVATOR. John T. Bond, Bond's Mill, Ga. Filed Apr. 23, 1885. (No model.)



Claim.—An improved cultivator consisting of two beams carrying suitable shovels, adjustable bars *b d*, connecting the beams at front and rear, respectively, said bars being in line with the said beams, a bar, *e*, at the front for attachment of the clevis, and handles extending upward from the beams, supported thereon by stay-rods *f*, and connected together by an adjustable bar, all substantially as described.

324,216. FLUE-STOP. George Booth, Philadelphia, Pa. Filed Feb. 5, 1885. (No model.)



Claim.—1. A flue-stop consisting of a flattened disk, 1, having a centrally-attached loop, 4, and a spring-ring, 5, loosely passing through and slidable in the loop, and provided with a division, 6, forming free and disconnected ends to the ring, whereby the ring can be slid from the loop and laid edgewise on the disk, as and for the purposes set forth.

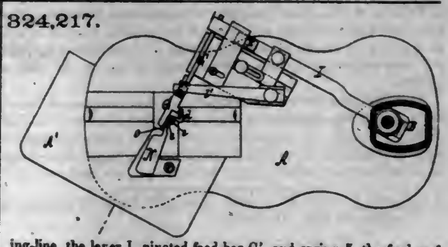
2. A flue-stop consisting of a disk formed integral with a central loop and a surrounding bead adjacent to the margin to constitute a seat, an exterior imperforate disk secured in the seat with its edge against the surrounding bead, and the spring-ring secured in the loop, substantially as described.

324,217. SEWING-MACHINE. Thomas W. Bracher, Woodbridge Township, Middlesex County, N. J., and Thomas Webb, New York, N. Y., assignors to said Bracher. Filed Oct. 13, 1880. Renewed June 10, 1884. (No model.) Patented in England Dec. 11, 1880, No. 5,134

Brief.—The machine is adapted, among others, to sewing-machines for manufacturing the sweats for hats or caps, such as shown and described in patent granted July 13, 1880, No. 229,949, to Thomas W. Bracher.

Claim.—1. In a sewing-machine substantially as described, and in combination with the two needles and concomitant parts, a feed mechanism arranged obliquely to the plane of the needles, and formed, as shown, with two movable feed-surfaces, F G, one above and one below the sewing-line, the lever I, pivoted feed-bar G', and spring *l'*, the feed-surface G being roughened, and the feed-surface F being smooth, as and for the purpose set forth.

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2. The combination, in a sewing-machine, of two reciprocating needles, two co-operating feed-surfaces, one above and the other below the sewing-line, and mechanism for imparting to both feed-surfaces a positive motion in an oblique direction to the plane of the needles, substantially as described.

324,218. HUB FOR VEHICLE-WHEELS. Alfred Bradley, Dayton, Ohio. Filed Dec. 1, 1884. (Model.)



Claim.—In a wheel, the combination of the hub-body made of wood provided in its periphery with spoke-sockets having parallel side walls, and the spokes provided with tenons having their sides tapering outward in straight lines from the base of the tenons to the extremity thereof, said tenons being compressed and inserted in the sockets of the wooden body, and held by the expansion of their extremities, whereby, such expansion occurring in the interior of the hub, the splitting thereof will be prevented, substantially as set forth.

324,219. COMBINED CULTIVATOR AND PLOW. David W. Benner, Mercersburg, Pa. Filed May 12, 1885. (No model.)



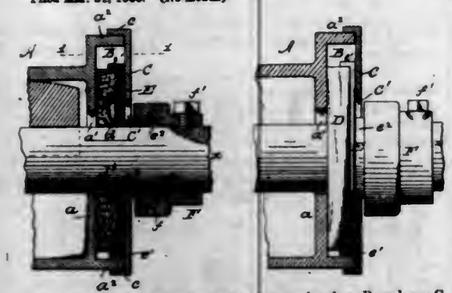
Claim.—1. The combination, with the arch having elliptical-shaped plates at the ends, of short axles or spindles with extensions provided with flat rings, the rings and plates being held adjustably in contact by bolts or similar securing devices, substantially as and for the purpose specified.

2. The combination, with the arch having elliptical-shaped plates

at the ends, of short axles or spindles with extensions provided with flat rings, levers secured to the extensions on the spindles, ratchets or similar adjusting devices for the levers, and bolts or pivots holding the plates and rings adjustably in contact, substantially as and for the purpose specified.

3. In combination with an adjustable bail, a plow supported thereby and a grass-roller supported by a hanger pivoted in a frame, to which the bail is secured, said hanger having an integral arm projecting from the pivotal point on the same side thereof as is the hanger, and connecting to the bail, substantially as and for the purpose specified.

324,220. CAR-AXLE BOX. George M. Brill, Philadelphia, Pa. Filed Mar. 31, 1885. (No model.)



Claim.—1. An axle-box having rear open chamber, B, and cap C, in combination with a block, D, plate E, and collar F, substantially as shown and described.

2. A dust-shield for a car-axle box, composed of a block, D, and holder E, having hub e^3, substantially as shown and described.

3. The axle-box A, having rear end flanged chamber, B, having outside lugs, *b*, in combination with cap C, block D, plate or holder E, and collar F, substantially as shown and described.

4. The axle-box A, having chamber B and cap C, in combination with block D and plate E, having lips e' and hub e^3 projecting through cap C, substantially as and for the purpose set forth.

5. A dust-shield for car-axle boxes, composed of a non-rotating block and holder mounted on the car-axle and inclosed in a rear end chamber of the box, and having a hub projecting beyond said chamber, substantially as shown and described.

6. The combination, with box A, having end chamber, B, and cap C, having axial opening C', of block D, holder E, having hub e^3, and collar F, substantially as and for the purpose set forth.

324,221. METALLIC FENCING. John J. Brickerhoff, Auburn, N. Y. Filed Aug. 12, 1884. (No model.)



Claim.—1. The combination, with a flat metal strip and a wire twisted together, of a suitable body or device coiled around or mounted upon the wire or the strip, whereby the wire and strip are separated at such point or points.

2. The combination, with a flat metal strip and a wire twisted together, of a suitable body or device coiled around or mounted upon the latter, whereby the wire and strip are separated at such point or points.

3. The combination, with a flat metal strip and a wire twisted together, of a wire looped or coiled around the latter and having its ends extending outward crosswise of the strip and bearing upon it near its edges only.

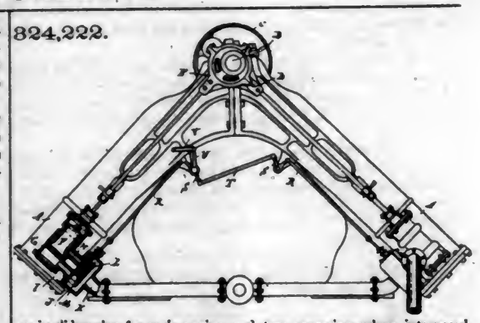
4. The combination, with a flat metal strip and a wire twisted together, of a suitable body or device interposed between the two and a staple driven down upon the raised wire and into the post.

5. The combination, with a flat metal strip and a wire twisted together, of bodies or devices interposed between the two at intervals, raising the wire off the strip at intervals, forming projecting portions in the wire, and causing it to deviate from a regular spiral course.

324,222. REVERSING-VALVE. Wm. A. Campbell, East Saginaw, Mich., assignor of one-half to A. F. Bartlett & Co., same place. Filed Apr. 29, 1885. (No model.)

Claim.—1. The combination, with twin engines arranged at right angles to each other to form two sides of a triangle, with a single supply-pipe at the base, and a single main shaft at the apex, as shown, of a

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main slide-valve for each engine, and two reversing-valves interposed between the supply-pipe and the main valve, and arranged with their gear to counterbalance each other, as set forth.

2. In a twin-cylinder engine, the combination of the reversing slide-valves M M, connecting-rods R R T, and the bell-cranks S S, arranged in two connecting sets, each adapted to counterbalance the other, with a single actuating hand-lever, W, substantially as described.

3. In a twin-cylinder engine having valves F operated from a single shaft, the balanced reversing piston slide-valves M M, each arranged to counterbalance the other, and each having a cylindrical seat open at both ends, and provided with ports N O P, combined with the steam-chests J, forming a steam-passage to both ends of the valve, and with a single operating mechanism for moving both valves simultaneously in the same direction, as set forth.

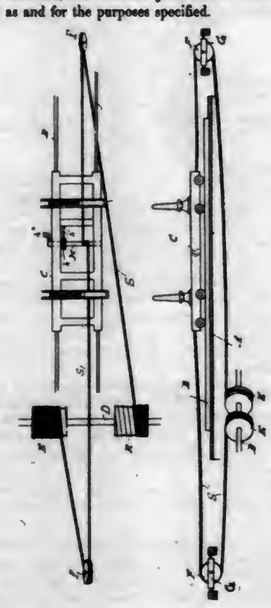
4. The combination of the steam-balanced reversing slide-valves M, with their connecting-gear arranged to counterbalance the weight of valves and gear, all arranged substantially as described.

5. In a twin-cylinder engine having a single main shaft and feed-pipe, the combination, with the valves E and connections with the main shaft, of the balanced reversing-valves M, the rods R R T, bell-crank levers, and operating mechanism, as U V W, arranged to counterbalance, as set forth.

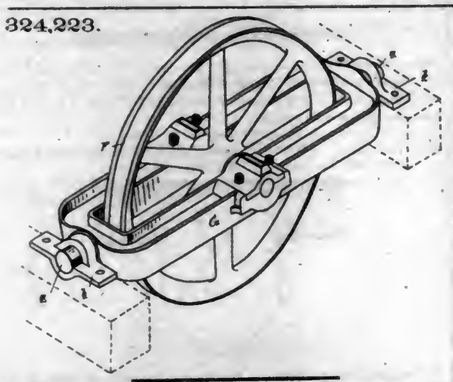
324,228. FEED MECHANISM FOR SAW-MILL CARRIAGES. Wm. A. Campbell, East Saginaw, Mich., assignor of one-half to A. F. Bartlett & Co., same place. Filed Apr. 29, 1885. (No model.)

Claim.—1. In a saw-mill, substantially as described, the combination, with a reciprocating carriage, of a sheave, as F, journaled in bearings in a rocking frame, and a rope passing over said sheave and operating said carriage, as set forth.

2. In a saw-mill, the combination, with a reciprocating carriage and an operating-rope connected therewith, of an oscillating oblong frame provided with a pintle at each end, journaled in boxes secured to the frame of the machine, and a sheave journaled in said oscillating frame, substantially as and for the purposes specified.

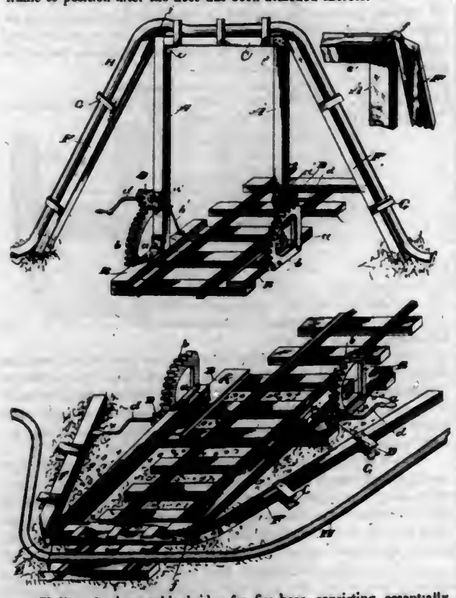


324,223.



324,224. FIRE-HOSE BRIDGE FOR RAILROAD-TRACKS. George F. Cannipp, Jr., Cleveland, Ohio. Filed Nov. 1, 1884. (No model.)

Brief.—A hose-bridge consisting of a central frame for bridging the track, detachable legs or end pieces, and foot-plates provided with toothed sectors, which are engaged by pinions on the uprights, for raising the frame to position after the hose has been attached thereto.



Claim.—1. A portable bridge for fire-hose, consisting, essentially, of a central frame for spanning the track, and end pieces adapted to be removably secured to the opposite ends of the upper portion of said central frame.

2. A portable bridge for fire-hose, consisting, essentially, of a central frame for spanning railroad-track, said frame composed of detachable sections, and end pieces adapted to be removably secured to the opposite ends of the upper portion of said central frame, substantially as set forth.

3. A portable fire-hose bridge consisting, essentially, of a frame with the parts more or less detachable and hinged to suitable bed-pieces or sills, and means for securing a fire-hose to the frame, and suitable mechanism for tilting the same, substantially as set forth.

4. In a bridge for supporting fire-hose over a car-track, a tilting frame hinged to suitable bed-pieces, and the latter provided with toothed sectors, and the frame with crank-shafts, and pinions mounted thereon arranged to engage the said sectors, substantially as set forth.

324,225. SUPPORT FOR ELECTRIC CABLES. Edwin M. Carhart, Providence, R. I., assignor of one-half to Edwin Holmes, Brooklyn, N. Y. Filed Aug. 12, 1884. (No model.)

Claim.—1. A clip for supporting a cable from a suspending wire or bunch of wires, made of sheet metal, and consisting of two separate approximately circular resilient portions having hooks or catches on the same, whereby they may be secured together after having been placed

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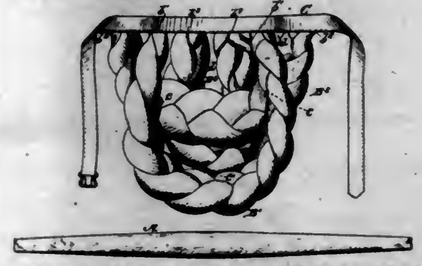


about the cable and supporting wire or bunch of wires, substantially as specified.

2. A clip consisting of the portion C, provided with hooks *b*, and the portion D, provided with hooks *d*, substantially as specified.

3. A clip consisting of the portion C, provided with hooks *b* and the hooks *e*, and the portion D, provided with the hooks *d* and the slots *f*, substantially as specified.

324,226. BUSTLE. Charles C. Carpenter, New York, N. Y. Filed May 16, 1885. (No model.)



Claim.—1. A bustle composed of tubes of flexible fabric filled with elastic material, as wool, said tubes being closely braided together and secured to a band to give to the bustle the shape desired, as set forth.

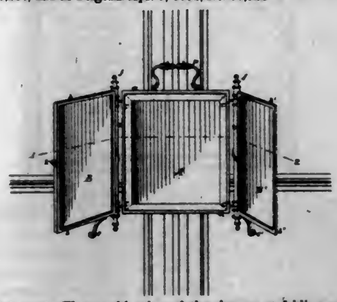
2. A bustle composed of flexible tubes stuffed with elastic fiber or hair, the said tubes being braided together and bent, as set forth.

3. A bustle composed of flexible stuffed tubes formed into braids and the braids arranged and secured together to give to the whole the desired contour, as set forth.

4. A bustle composed of tubes stuffed with elastic material and braided together, each tube being of greatest diameter at the center, and the braid being bent and secured, as set forth.

5. The bustle described, consisting of the tubes A, stuffed with elastic fiber and braided together to form braids B' B^2 B^3, the said braids being bent and secured to the band C at points b' b^2 b^3, and the braids caught together at points c c', all combined, arranged, and operating as and for the purposes set forth.

324,227. LOOKING-GLASS. Eugene N. Carpentier, Paris, France. Filed July 19, 1883. (No model.) Patented in France Apr. 1, 1882, No. 148,216, and in Belgium Apr. 3, 1882, No. 57,524



Claim.—1. The combination of the three-part folding mirror, each part having hinging-collars, with rods carried by the collars, ferrules on the rods between the collars, and nuts by which the parts are held together.

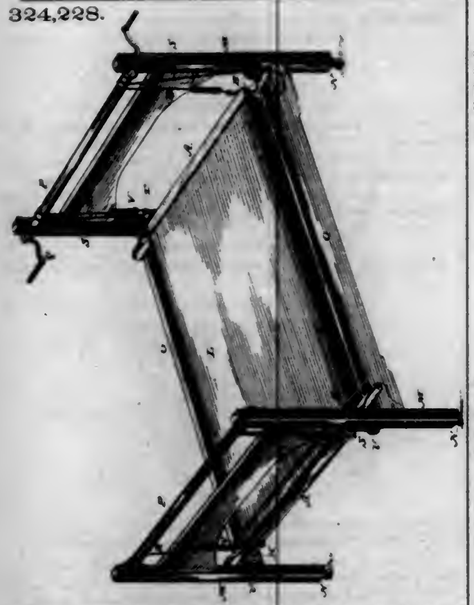
2. The herein-described three-part folding mirror, the central part having a suspension handle, *p*, and the side parts carrying feet e e'.

324,228. STRETCHER. James D. Charles, Leonidas H. Charles, and Casius M. Charles, Litchfield, Ill. Filed Mar. 28, 1884. (No model.)

Claim.—1. The combination, in a stretcher, of the longitudinal roller, with a bail hinged at its ends to the ends of the roller, said having its straight portion parallel with the roller, as and for the purpose shown and set forth.

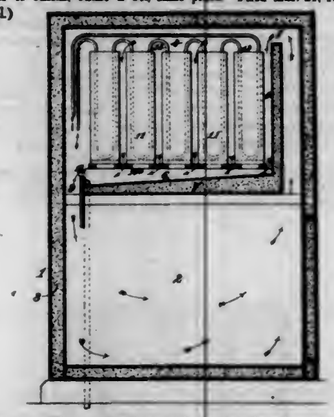
2. The combination, in a stretcher, of the longitudinal side rollers having bails hinged with their ends at the ends of the rollers, and with their straight portions parallel with the rollers, with a sheet or blanket having its side edges folded double over the straight portions of the bails,

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and wound partly on the said rollers, as and for the purpose shown and set forth.

324,229. REFRIGERATOR. ANDREW J. CHASE, Boston, Mass., assignor to Childs, Chase & Co., same place. Filed Mar. 21, 1885. (No model.)



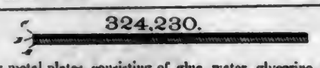
Claim.—1. The combination, with a preserving-chamber, of a condensing-chamber having inner insulated walls, a series of tanks or vessels arranged within the inner insulated walls of the condensing-chamber and adapted to hold a circulating and refrigerating agent, and passages formed between and around said tanks or vessels and between the inner and outer walls of the condensing-chamber, substantially as herein set forth.

2. The combination, with a preserving-chamber, of a series of tanks or open vessels adapted to contain water to be converted into ice, pipes traversing said vessels for the circulation of a freezing agent, and passages formed between and around said ice-forming vessels for the circulation of air, substantially as herein set forth.

3. The combination, with a preserving-chamber and a condensing-chamber having inner insulated walls and an inclined insulated bottom of a series of vertical tanks or vessels arranged within the inner insulated walls of the condensing-chamber and adapted for the circulation of a refrigerating agent, and passages formed between and around said tanks or vessels and between the inner and outer walls of the condensing-chamber, substantially as herein set forth.

324,230. MIXED PAINT. GEORGE T. CLARK, Jersey City, N. J. Filed Apr. 19, 1884. (Specimens.)

Claim.—The herein-described composition for forming a printing-surface for metal plates, consisting of glue, water, glycerine, blanc fixe, and clay, in substantially the proportions named, and adapted to be applied, as set forth, over a coating of varnish and oil, with a colored pigment, for the purpose specified.



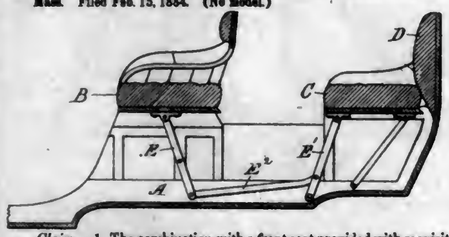
324,231. APPARATUS FOR CLEANSING GAS. AARON CLARK, Jersey City, N. J. Filed May 20, 1885. (No model.)



Claim.—1. In a device of the character herein set forth, the two dampers for retarding the current of gas and directing it over one and under the other, said dampers being located within the enlarged chamber having the opening at bottom, said dampers being connected with each other and arranged to be simultaneously operated from the exterior of the sediment-chamber, substantially as and for the purposes set forth.

2. The herein-described apparatus, composed of the section for joining with the gas-pipe, the chamber or receptacle for receiving the deposit, the simultaneously-movable dampers, and the operating-levers connected therewith, substantially as shown and described, and for the purposes set forth.

324,232. JUMP-SEAT CARRIAGE. JOSEPH T. CLARKSON, Amesbury, Mass. Filed Feb. 15, 1884. (No model.)



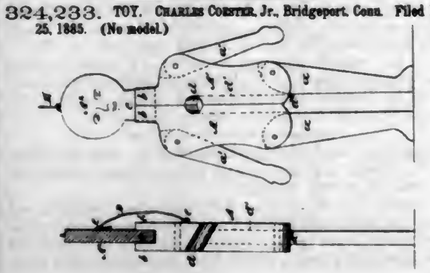
Claim.—1. The combination, with a front seat provided with requisite devices and arranged to be jumped to a forward position to serve as the front seat of the vehicle, and to be jumped to a central position to serve as the sole seat of the vehicle, of a rear seat adapted and arranged to be automatically operated by connecting-rods from the front seat, substantially as specified.

2. The combination, with a seat capable of being arranged in a forward position to serve as the front seat of the vehicle, and also in a central position to serve as the sole seat of the vehicle, of a seat capable of being arranged to serve as a rear seat when the front seat is in a forward position, and to be dismounted or lowered when said forward seat is centrally arranged to serve as the sole seat, substantially as specified.

3. The combination, with the front and rear seats capable of being arranged as specified, of a body-back constructed and arranged to serve as the back of the rear seat when in position for use, substantially as specified.

4. The combination of seat B, arranged to be jumped to and utilized in either a front or central position, seat C, adapted to be arranged and utilized in a rear position and to be dismounted or lowered when the front seat is in a central position, and body-back D, adapted to serve as the back of said seat C when it is in position for use, substantially as specified.

324,233. TOY. CHARLES COSTER, Jr., Bridgeport, Conn. Filed Mar. 25, 1885. (No model.)

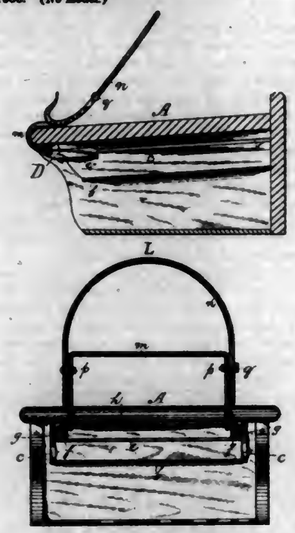


Claim.—1. A toy composed of sections secured together, so that they can be easily separated, and having a cavity for a fire-cracker, substantially as specified.

2. A toy composed of sections secured together by friction, and provided with a cavity for a fire-cracker, substantially as specified.

3. A toy composed of sections secured together so that they can be easily separated, having a cavity for a fire-cracker, and a string connecting them, substantially as specified.

324,234. BOOK-HOLDER. WILLIAM H. COLE, Marysville, Ohio. Filed May 25, 1885. (No model.)



Claim.—1. In combination with a desk or other suitable support, a book-holder connected to a sliding attachment on the under side of said desk or support, whereby the book-holder is slid out from under the support and turned up over the same, substantially as described.

2. In combination with a desk or suitable support, the book-holder provided with turned-up arms to hold the book or other article, and a support beneath said desk, to which the said book-holder is hinged, whereby the book-holder is turned up over the edge of the desk or support and adapted to rest thereon, substantially as described.

3. In combination with a desk or similar article and a book-holder, a shelf secured to the under surface of the desk-top, and within which shelf the book-holder is slid, substantially as described.

4. A desk or table, in combination with the book-holder composed of two parts, the lower part, *m*, made of two arms united at their top and curved at their lower ends, so as to embrace the front edge of the support, and the upper part, *n*, bent down over the lower part and secured thereto, and terminating in arms turned up to form a holder, and a support beneath the top of the desk, to which said holder is pivotally secured, substantially as described.

5. A desk or other suitable support provided on its under surface with a shelf, in combination with the sliding bracket D within said shelf, comprising the side and bottom pieces, the side pieces provided with tongues, which adapt the bracket to be slid in slots within the side pieces of the shelf, the horizontal rod *h*, and the book-rest L, secured to said rod *h* and adapted to swing thereon, substantially as described.

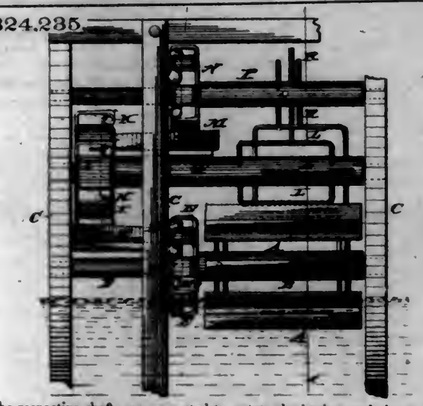
6. In combination with a suitable support, the book-rest L, made in two parts, *m* and *n*, the upper part, *m*, provided with the curved arms to hold the book open, pivoted to the lower part, in combination with the means for adjusting and holding the said upper part containing the book at the desired angle for reading, substantially as described.

324,235. WATER-ELEVATOR. HENRY S. DAGGETT, Gypsum, Colo. Filed Sept. 25, 1884. (No model.)

Claim.—1. In a water-elevator, the combination of the bucket-wheels having longitudinal buckets and mounted upon parallel shafts, intermeshing power-wheels mounted on the said shafts and receiving motion from the water-wheel shaft, and the intermediate troughs, whereby the water is conveyed at successive steps from a stream or other water supply to a tank or distributing-reservoir, substantially as specified.

2. The combination, with the water-wheel mounted on a shaft provided with a wheel carrying a series of tangential buckets and the successive shafts and elevating bucket-wheels arranged above the same, of the intergearing radial frames and the intermediate troughs, whereby

324,235.

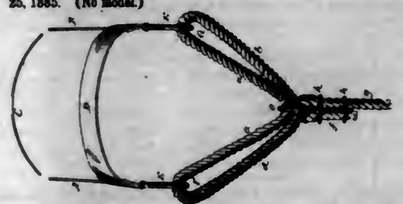


the respective shafts are separated to rotate the buckets and elevate the water, substantially as specified.

324,236. MIXED PAINT. ROBERT W. DAVIS, Elmira, N. Y., assignor to the Carbonate Mining Company, same place. Filed July 21, 1884. (No specimens.)

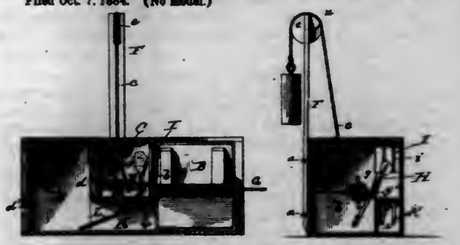
Claim.—A paint composed of shell-marl, oil, and oxide of zinc, combined substantially as set forth.

324,237. HALTER. ERNEST DEMING, Middletown, Conn. Filed June 25, 1885. (No model.)



Claim.—A halter composed of a head-strap, C, with cheek-straps B, extending downward therefrom, said straps each terminating in a ring, E, and also connected by a suitable nose-strap, the hitching-rope doubled through the two cheek-rings to form loops F G, the end of the rope and the two runs of the loop brought together at the center and secured to the body and to each other by rigid clasps, substantially as described.

324,238. ANIMAL-TRAP. JOSHUA M. DEHART, Hillsborough, Ill. Filed Oct. 7, 1884. (No model.)

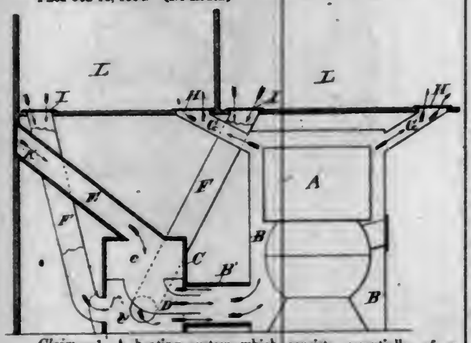


Claim.—1. In an animal-trap, a box cut away at its corner and top, as shown, and provided with a horizontal shaft and rotating mechanism, wings B', attached to said shaft, so as to rotate in a compartment, a spring bait-hook, H, supporting the bait in front of an opening above the horizontal beams B' of the rotating platform, and bent at its center to form a shoulder to engage a projection on said windlass-shaft to lock the same and its wings in position, a passage-way, K, and compartment D, the parts being combined and organized substantially as shown, and for the purpose set forth.

2. In an animal-trap, a receptacle, A, having the sides and ends cut away, as shown, and provided with a hinged top of less length than the major portion of the top, said receptacle being divided into three compartments, a shaft, E, provided within the central compartment with a cylindrical portion, and pins *g*, adapted to engage with a spring-hook secured to the wall of said compartment, as shown, a revolving platform consisting of wings rigidly attached to the shaft, and a cord, *c*, weighted at its end, and upright F, passage-way K, having trap-door I, suspended

from the upper portion thereof, and opening l, adjacent to the upper end of the bait-hook, the parts being combined and organized substantially as shown, and for the purpose set forth.

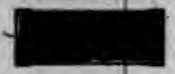
324,239. HOT-AIR FURNACE. Hosea B. Dewey, Milwaukee, Wis. Filed Oct. 10, 1884. (No model.)



Claim.—1. A heating system which consists, essentially, of an upper apartment, a lower apartment, a furnace or heater within the lower apartment, a warm-air chamber inclosing the heater, a pipe which leads from the warm-air chamber to the upper apartment, an equalizing air-receptacle in the lower apartment, a partition in the air-receptacle, a pipe which extends from the space outside the building to the space within the air-receptacle at one side of the partition, a pipe which connects with and conducts air from the upper apartment to the space upon the opposite side of the partition, and passages which connect the two distinct spaces in the air-receptacle with the warm-air chamber which incloses the heater

2. In a heating system, the combination, with the furnace A and casing B, of the pipe G, the register H, the apartment L, the air box or receptacle C, having compartments c and c', the pipe F, leading from apartment L to the compartment c', pipe E, leading from outside the building to the compartment c, a passage leading from the compartment c' to the casing B, and a passage leading from the compartment c to the casing B, substantially as and for the purposes set forth.

324,240. THREAD-CASE FOR SEWING-MACHINES. Algernon Dewhurst, Skipton, County of York, England. Filed June 23, 1885. (No model.) Patented in England Apr. 29, 1885, No. 5,328.



Claim.—1. A thread-case for sewing-machines, provided on the inside with a free passage or channel for the thread, said channel being formed in one of the sides of said case, and extending from the center to the periphery thereof, substantially as described.

2. A case for containing a coil of thread, the same comprising end disks, one of which has a thread passage or channel extending from its center to its edge, and a strip connecting said disks and forming the periphery of the case, substantially as described.

3. A cylindrical thread-case having in one of its circular ends a channel or passage for the thread running from the center to the edge thereof, the periphery of said case being also provided with a channel or passage forming a continuation of that in the end of the case, substantially as described.

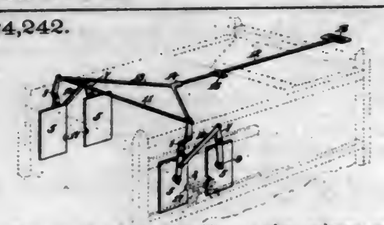
4. A thread-case comprising two disks of card-board or similar material, one having a gap extending from its center to its edge, a disk of paper placed over said disk, and a connecting-strip formed of a card-board strip and a paper strip, the former being shorter than the circumference of the case, so as to leave a thread-passage communicating with that in the end of the case, substantially as described.

324,241. MARKING SPOONS, &c. Fred W. Dexter, Pawtucket, R. I. Filed Mar. 10, 1884. (No model.)



Claim.—Table-ware—such as knives, forks, and spoons—marked by a raised initial or other designating character struck up in the metal, substantially as set forth.

324,242. BLAST-REGULATOR FOR FANNING-MACHINES, &c. C. Dickinson, Chicago, Ill. Filed Nov. 25, 1884. (No model.)

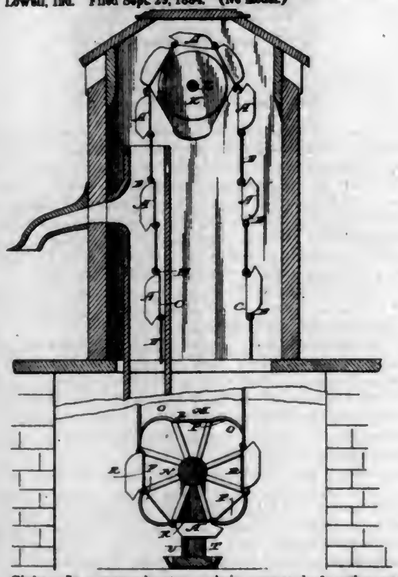


Claim.—1. In a fanning, thrashing, or other analogous machine, the combination, with the fan or blower, of sliding valves or gates and a casing having air-openings upon each side of the machine, pivoted levers and toggles or links, said pivoted levers having their ends connected to said valves and connected to each other above and below their pivotal points by said toggles or links, substantially as described.

2. In a fanning, thrashing, or other analogous machine, the combination, with the fan or blower, a casing having air-openings, and a shaft which projects through said air-openings in each side of the casing, of sliding valves or gates, slotted levers pivoted to suitable supports and having their slotted ends connected with said valves, toggle bars or links connecting said levers above and below their pivotal points, a transverse rod connected to the corresponding opposite extended levers, and a centrally-arranged actuating-rod, substantially as described.

3. In a fanning, thrashing, or other analogous machine, the combination, with a casing provided with air-openings, and sliding valves or gates arranged upon each side of the fan-shaft, of the slotted pivoted levers 7 and 8, studs upon the valves, a toggle, 10, pivoted to the levers above and below their points of support, a transverse rod, 11, connecting the corresponding levers upon opposite sides of the machine, an actuating-rod, 12, and a yoke, 13, substantially as described.

324,248. CHAIN-PUMP. Henry Dickinson and Cyrus F. Dickinson, Lowell, Ind. Filed Sept. 29, 1884. (No model.)



Claim.—In a water-elevator, a chain composed of sections consisting each of two links, one of which has recesses in its lower corners, and the other provided with eyes on its upper end fitting in said recesses and having its lower part bent outward and upward, in combination with the bucket provided with rearwardly-projecting sleeves sliding upon the sides of said links, substantially as and for the purpose set forth.

324,244. GAS-ENGINE FOR RAILWAY-CARS. Henry P. Fenster, Philadelphia, Pa. Filed Jan. 5, 1884. (No model.)

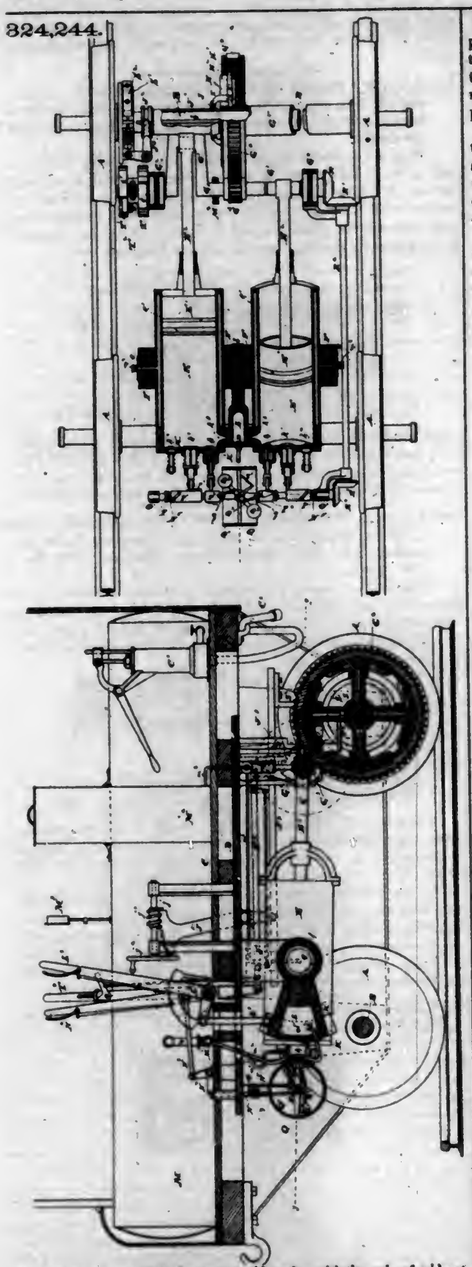
Claim.—1. In a tram vehicle or car, a reservoir to contain and carry an explosive mixture or gas under pressure, and a gas engine or motor, in combination with pinion G^3, spur-wheel G^4, provided with an inner smooth face having wooden pieces g', split ring H', shoes H^2, keys K, toggles I I', sleeve J', having cone-face J, and axle B, to which said toggles are secured, substantially as and for the purpose specified.

2. A vehicle or car provided with a reservoir to contain and carry an explosive mixture or gas under pressure, a gas engine or motor, brake mechanism to connect or disconnect said engine with the axle of said car, and simultaneously, or thereabout, remove or apply said brakes, substantially as and for the purpose specified.

3. A car or vehicle provided with a reservoir or receptacle to contain an explosive gas or vapor, a gas engine or motor, devices to connect or disconnect said engine with the axle of the car, and mechanism to adjust the position of the engine-crank without moving the car, substantially as and for the purpose specified.

4. A car or vehicle provided with a reservoir or receptacle to contain an explosive gas or vapor, a gas engine or motor, brake mechanism, devices to connect or disconnect said engine with the axle of the car and operate said brakes, and mechanism to adjust the position of the engine-crank without moving the car, substantially as and for the purpose specified.

324,244.

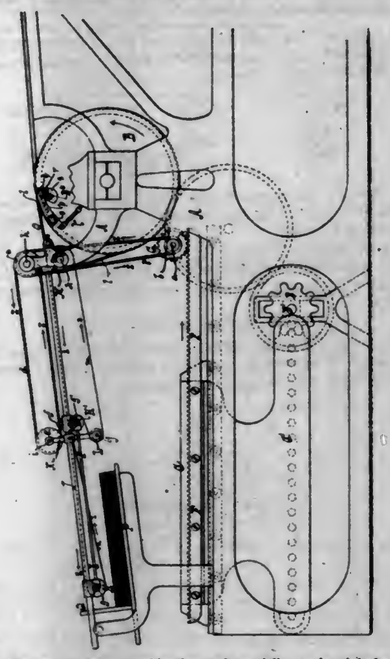


5. A car or vehicle provided with a reservoir to contain an explosive gas or vapor, a gas engine or motor to propel the said car, devices to connect or disconnect said engine with the axle of the car, mechanism to adjust the position of the engine-crank without moving the car, and means to reverse the motion of said engine, substantially as and for the purpose specified.

6. A car or vehicle provided with one or more reservoirs to contain an explosive gas or vapor, a two-cylindered gas engine or motor adapted to propel said car, and a governor arranged between the valve mechanism of the two cylinders and acting upon both simultaneously to control the flow of gas in its passage from the reservoir to the engine-cylinders, substantially as and for the purpose specified.

7. A car or vehicle provided with one or more reservoirs to contain an explosive gas or vapor, a two-cylindered gas engine or motor adapted to propel said car, and a governor arranged between the valve mechanism of the two cylinders and acting upon both simultaneously, and mechanism operated by hand to oppose or assist the action of the said governor, as desired, substantially as and for the purpose specified.

324,245. SHEET-DELIVERY APPARATUS. George P. Fenner, New London, Conn. Filed Dec. 18, 1884. (No model.)



Claim.—1. The combination, substantially as hereinbefore described, with the impression-cylinder and the type-bed, of the tape-roll M, means, substantially such as described, for imparting to this tape-roll a continuous revolving motion in one and the same direction, the tape-carriage I, carried by guides, and mechanism, substantially such as described, for imparting to this tape-carriage a reciprocating motion in the line of travel of the tapes.

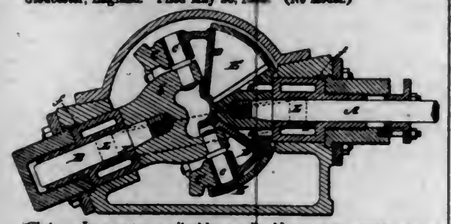
2. The combination, substantially as hereinbefore described, with the impression-cylinder and the type-bed, of the sheet-delivery tapes *m*, passing over the rolls M L, which revolve in fixed bearings, and over the rolls H H', which have their bearings in the tape-carriage I, the belt *l*, for imparting to the tape-roll M a continuous revolving motion in the same direction, and mechanism, substantially such as described, for imparting to the tape-carriage a reciprocating motion.

3. The combination, substantially as hereinbefore described, with the impression-cylinder and the type-bed, of the sheet-delivery tapes *m*, passing over the rolls M L, which revolve in fixed bearings, and over the rolls H H', which have their bearings in the tape-carriage I, means, substantially such as described, for imparting to tape-roll M a continuous revolving motion, mechanism, substantially such as described, for imparting to the tape-carriage a reciprocating motion, the sheet-guides O, and the sheet-lifters *n*.

4. The combination, substantially as hereinbefore described, with the impression-cylinder and the type-bed, of the tape-carriage I, the endless chains *d*, to which the tape-carriage is attached, the endless chain *b'*, for imparting to chains *d* a reverse motion, the tape-rolls M and L,

mounted in fixed bearings, and the belt *l*, for imparting a continuous revolving motion to the roll M.

324,246. ROTARY MOTOR. John Fielding, Gloucester, County of Gloucester, England. Filed May 25, 1885. (No model.)



Claim.—In a motor applicable as a liquid meter or pump, two revolving shafts inclined to each other and connected by a universal joint, and the gimbal-ring of the joint carrying pistons working in cavities on the shaft, having the form of bent tubes, these cavities having passages for admission and emission of fluid, governed by stationary slides, all combined substantially as described.

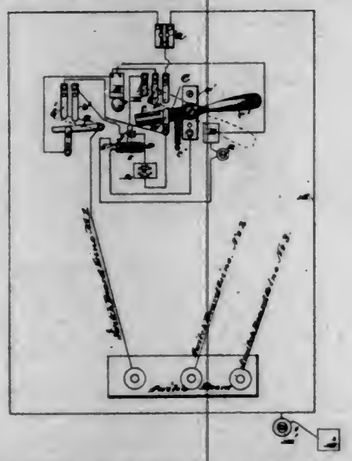
324,247. COMBINED PRESSER-FOOT AND CLAMP FOR HOLDING SEWING-MACHINE ATTACHMENTS. Frank L. Goodrich, Chicago, Ill. Filed Dec. 24, 1883. (Model.)



Claim.—1. A presser-foot made from a single piece of material, having its lower extremity bent back upon itself to form a clamp, substantially as described.

2. A presser-foot made from a single piece of material, bent as shown and described, in combination with a clamp or jaw, *b b'*, and set-screw *c*, for securing other attachments in position, substantially as specified.

324,248. ELECTRIC SWITCH. Henry K. Goodwin, Cleveland, Ohio, assignor of ten-elevenths to the Ohio Molecular Telephone Company, same place. Filed Mar. 9, 1885. (No model.)



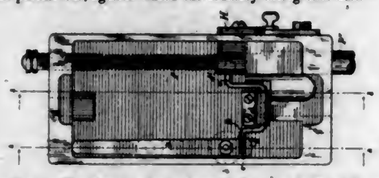
Claim.—1. The combination, with the contact-spring F, connected with the call-up line, and contact-springs H G, included in the circuit with the bell and receiver, of the lever C, plate C', contact on the lever for connecting springs H G, and the contact-spring D, the latter in the circuit including the transmitter, substantially as set forth.

2. In a telephone system consisting of a call-up line and subscribers' lines, the lever C, provided with insulated band *c*, in combination with the contact-springs G and H, arranged to engage the band, and the spring F, to engage the lever on the one side, and the spring D, arranged to engage the lever when reversed, and connecting-wires, substantially as set forth.

3. The combination, with the lever C and plate C', contact-springs D and F, arranged on opposite sides of the lever, and connected as shown, and a spring, *c'*, for holding the lever in contact with spring D, of a spring connected with the bell, and arranged to engage or disengage the spring D, according to the position of the lever C, substantially as set forth.

324,249. TENSION DEVICE FOR SEWING-MACHINES. Julius C. Goodwin, Philadelphia, Pa., assignor to the American Button Hole, Overseaming and Sewing Machine Company, same place. Filed Oct. 29, 1884. (No model.)

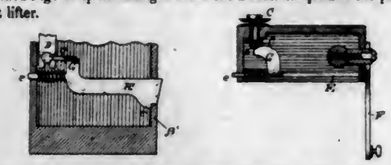
Brief.—The tension-release rock-shaft is secured to the wall of the head of the machine out of the way of the needle-bar and its actuating devices. It may be actuated by means of the incline on the presser-foot bar as the latter rises and falls; or the end of said rock-shaft may project beyond the presser-bar and be acted on by the block attached to the presser-bar, against which the ordinary lifting-cam acts.



Claim.—The combination, substantially as set forth, of the tension-disks, their spring and spindle, the crank or rock-shaft mounted on the wall of the head-piece of the machine, and means for actuating said shaft to loosen the tension of the disks when the presser-foot bar is thrown up.

324,250. TENSION-RELEASE FOR SEWING-MACHINES. Julius C. Goodwin, Philadelphia, Pa., assignor to the American Button Hole, Overseaming and Sewing Machine Company, same place. Filed May 1, 1885. (No model.)

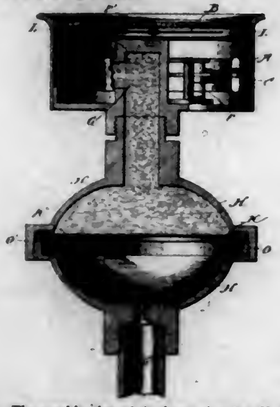
Brief.—The release of the tension is effected by means of the presser-foot lifter instead of by the presser-foot bar. The tension-release bar is mounted in the head of the machine, and has a projecting inclined edge or lip extending without the head in the path of the presser-foot lifter.



Claim.—1. The combination of the tension devices, the tension-spring, the tension-release bar or plate mounted in bearings in the head of the machine, its inclined edge against which the presser-foot lifter works, and its tension-release arm G.

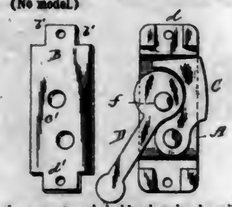
2. The combination, substantially as set forth, of the sewing-machine head, the presser-foot lifter pivoted and working on the outside of the sewing-machine head, the tension-disks, their spring, and the end-wise-moving tension-release bar mounted in the head of the machine and having a projecting inclined edge or lip which projects from the head in the path of the presser-foot lifter.

324,251. PRESSURE-GAGE. Abraham V. Hartwell, Chicago, Ill. Filed Feb. 7, 1885. (No model.)



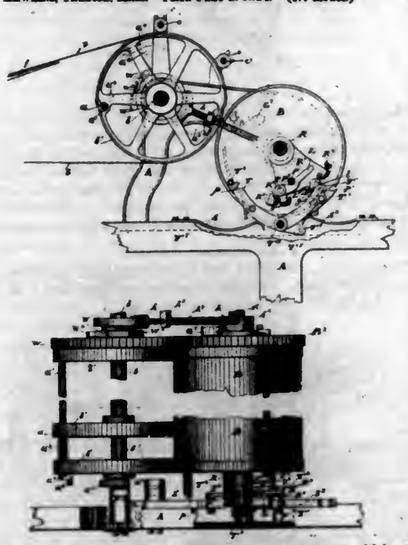
Claim.—The combination of the large chamber H, having the diaphragm K, and filled, as described, with mercury or a similar substance, with a Bourdon pressure-gage, to prevent incrustation in the latter, substantially as shown and described.

324,252. SASH-HOLDER. Abel Hasking, Chicopee, Mass. Filed Apr. 23, 1885. (No model.)



Claim.—The improved sash-holder herein described, consisting of a casing or covering plate, A, having a central recess with projecting pins *c c*, raised corner pieces, *b*, between which are located perforations *d d*, the rear covering-plate, B, having the corners thereof cut away, between which cut-away portions are located perforations *d'* and openings *c'*, into which the ends of the pins *c* project, a dog having an angular projecting portion, C', the inner edge of said dog being curved, as shown, and a pivoted lever having a cam formed on its inner end, the parts being combined substantially as shown, and adapted to be secured to each other and to the sash-frame by the same screws, for the purpose set forth.

324,253. OSCILLATING-CYLINDER PRINTING-MACHINE. John T. Hawkins, Taunton, Mass. Filed June 2, 1884. (No model.)

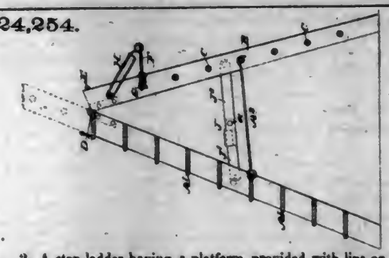


Claim.—1. In an oscillating-cylinder printing-press in which an impression-cylinder, as B, runs freely on an eccentrical rock-shaft, as R, the combination of the following-named parts for automatically operating the grippers of said impression-cylinder, raising and lowering said impression-cylinder and locking it in its raised and lowered positions, respectively, namely: an arm, as R^3, secured to said eccentrical rock-shaft, carrying two lever-arms, as L L', both secured to a rock-shaft carried in said arm, one of said levers, L', engaging a roller, as g^3, on an arm secured to the gripper-shaft, the other lever, L, engaging a stationary stud and roller, as P' P^2, a V-shaped stud, as *l*, secured in said arm R^3, engaging two notched levers, as T and T', oscillating on a fixed fulcrum, as T^2, a stud and roller, as T^4, carried in said impression-cylinder B, engaging a cam, as T^3, secured to said lever T', a roller on one end of the said lever T, engaging an inclined surface, as T', on the type-bed, a stud, as R^5, carried in said impression-cylinder B, engaging two impact-screws, as R^3 R^4, carried in said arm R^3, and two springs reacting upon the said two levers T T', all coacting to automatically raise and lower said impression-cylinder B, to operate said grippers *g'*, and lock the eccentrical rock-shaft in either of its two respective positions, substantially as set forth.

2. In an oscillating-cylinder printing-press, in combination with an oscillating impression-cylinder, as B, an intermittently-rotated cylinder or cylinders, as *b'*, provided with grippers, and having their peripheries of two different radii, substantially as and for the purposes set forth.

324,254. STEP-LADDER. Edward L. Henderson, Gloucester, N. J. Filed May 28, 1885. (No model.)

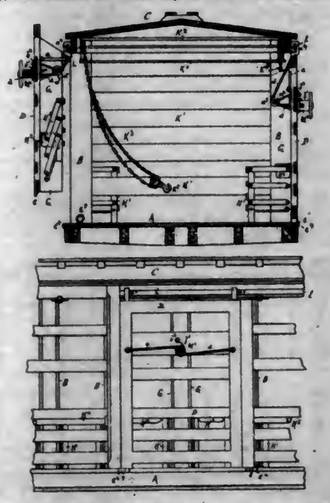
Claim.—1. A step-ladder having a hinged prop and a folding platform which is provided with pivoted arms hung from one of the rounds, and lips which connect with another round, substantially as and for the purpose set forth.



2. A step-ladder having a platform provided with lips on one side thereof and pivotally secured to a loop-arm connected to an upper round, substantially as described.

3. A step-ladder having a platform provided with lips, and pivotally connected to supporting-arms having loops at their upper ends, and a brace composed of sectional parts, substantially as described.

324,255. DOOR FOR STOCK OR FREIGHT CARS. Henry C. Hees, Minneapolis, Minn., assignor to the American Live Stock Express Company, New York, N. Y. Filed May 12, 1885. (No model.)



Claim.—1. In a stock or freight car, doors and horizontal tracks attached to the car above the doorways, in combination with sliding bars which embrace said tracks and slide thereon, and suspension-rods pivoted to said sliding bars at their upper ends, and to the inner sides of the doors at their lower ends, substantially as set forth, whereby the doors may be swung bodily outward and then be moved parallel with the sides of the car.

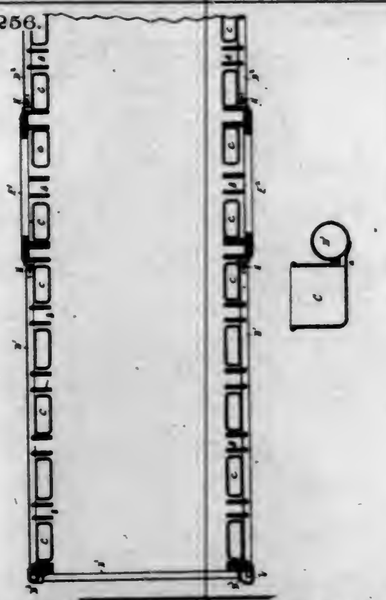
2. In a stock or freight car, doors, horizontal tracks attached to the car above the doorways, sliding bars which embrace said tracks and slide thereon, and suspension-rods pivoted to said sliding bars at their upper ends and to the inner sides of the doors at their lower ends, in combination with a windlass mounted on the exterior of each door, and cables which pass through the door, and are attached at one end to the windlass and at the other end to the upper parts of said suspension-rods, substantially as set forth.

3. The combination, with a stock or freight car, of horizontal tracks L L, attached to said car above its doorways, sockets *c' c'* in the floor of said car opposite its doorways, doors D D, having studs *e e* fitting into said sockets when said doors are closed, jointed suspension-rods *a a'*, connecting said doors with said track, windlass M', and chains or cables *d d*, substantially as set forth.

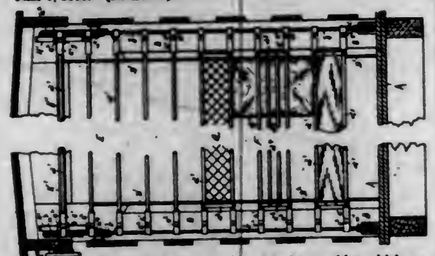
324,256. STOCK-CAR. Henry C. Hees, Minneapolis, Minn., assignor to the American Live Stock Express Company, New York, N. Y. Filed May 12, 1885. (No model.)

Claim.—In a stock-car, watering-troughs arranged at suitable intervals along both sides of the car, in combination with two supply-pipes extending around opposite ends of the car, each extending along both sides of the car to the doors thereof, said pipes being arranged in a substantially-horizontal position, with their bottoms below the level of the bottoms of the troughs, downwardly-inclined branch pipes connecting the troughs with said supply-pipes, and upright branch feed-pipes connected to each of said supply-pipes, substantially as set forth.

324,256.



324,257. STOCK-CAR. Henry C. Ness, Minneapolis, Minn., assignor to the American Live Stock Express Company, New York, N. Y. Filed June 5, 1885. (No model.)



Claim.—1. In a stock-car, a series of endless cables which run over suitable sheaves, and rods connected to each pair of said cables at equal intervals, which rods constitute the stall-bars across the car, in combination with disks or wheels provided with notches in their peripheries, in which notches said rods engage, substantially as set forth, whereby the rotation of said disks elevates and lowers said bars.

2. The combination, in a stock-car, of the stanchions B, arranged in pairs and having a set of sheaves, a' a^2 a^3 a^4, to each pair of said stanchions, an endless cable, *b*, running over each of said sets of sheaves, rods *d'*, connected to said cable by clamps c' c^2, and a disk, H', having notches *g*, adapted to engage with said rods *d'* or their clamps, and means for revolving said disks, substantially as and for the purpose set forth.

3. The combination, in a stock-car, of the stanchions B, arranged in pairs and having the angle-iron guides D' D^2, attached to the adjacent faces of each pair of stanchions, a set of sheaves, a' a^2 a^3 a^4, to each pair of said stanchions, an endless cable, *b*, running over each of said sets of sheaves, rods *d'*, connected to said cables by clamps c' c^2, and disk H', having notches *g*, adapted to engage with said rods *d'*, or their clamps, and means for revolving said disks, substantially as and for the purpose set forth.

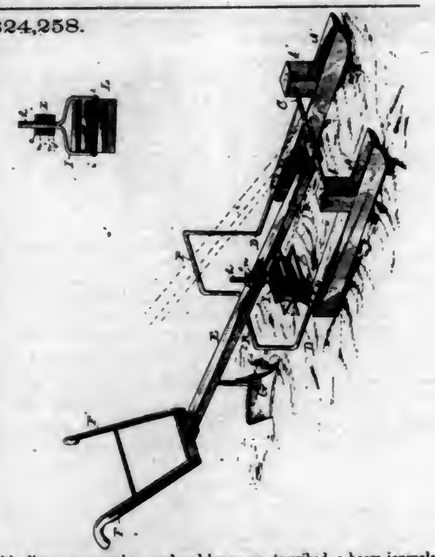
4. The combination, with a stock-car frame composed of floor A, roof C, and stanchions B, arranged in pairs and connecting said floor and roof, a set of sheaves, a' a^2 a^3 a^4, to each pair of said stanchions, endless cables *b*, running over each set of said sheaves, a serrated plate, M^2, attached to said car-frame opposite to each of said sheaves a^2, and provided with bolt n^2, a frame, M', supporting each of said sheaves a^2, and having a slot, *n'*, through which said bolt n^2 fits, and having serrations corresponding to the serrations in said plate M^2, substantially as and for the purpose set forth.

324,258. CANE-SCRAPER. Taylor P. Hebel, Labadieville, La. Filed May 18, 1885. (No model.)

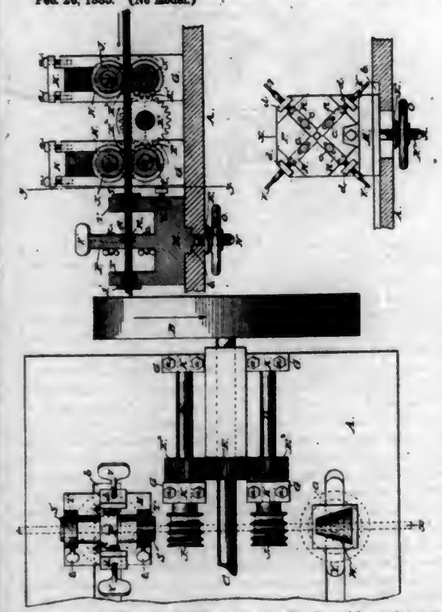
Claim.—1. In combination with a pair of runners connected at suitable distances apart by a rod and brace, as described, a beam journaled to the aforesaid rod, and a scraper and supporting-wheel connected with said beam, substantially as described, and for the purpose set forth.

2. In combination with the pivoted beam E, provided with supporting-wheel L and scraper G, as described, the runners A A', connecting-rod C, and brace D, the latter having rests P R, for supporting the beam at different elevations, substantially as and for the purpose specified.

324,258.



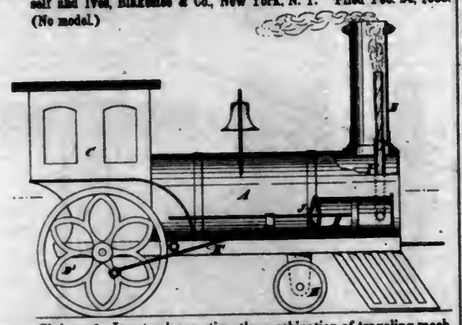
324,259. MACHINE FOR LONGITUDINALLY GROOVING RODS FOR DOWELS. Theodore Hofstatter, Jr., New York, N. Y. Filed Feb. 26, 1885. (No model.)



Claim.—1. The combination, in a dowel-rod machine, with two or more pairs of parallel rollers geared to rotate in unison, and each formed with one or more circumferential grooves, and with a head-block or standard mounted in front of the rollers, parallel therewith, of a series of cutter-bars fitted in said head-block to move radially toward a central point at the intersection of a plane passing horizontally between the upper and lower rollers, with a plane passing through the grooves at right angles to the rollers, and whose inner ends are armed with serrations or cutting-teeth to cut parallel longitudinal grooves in a rod forced between them by the rotation of the rollers, all substantially in the manner and for the purpose herein set forth.

2. The combination, in a dowel-rod machine, with parallel rollers geared to rotate in unison, and each formed with a series of circumferential grooves of varying diameters, of an adjustable base-plate, M, mounted to traverse in front of the rollers in line parallel with their axes, and which is fitted with a head-block, P, carrying a series of radial cutter-bars, and with guide-tubes S S', fixed thereon on either side of said head-block, whereby the head-block and guides may be moved together into line with either set of grooves in the rollers, substantially in the manner and for the purpose herein set forth.

324,260. TOY. Edward R. Ives, Bridgeport, Conn., assignor to himself and Ives, Blakeslee & Co., New York, N. Y. Filed Feb. 24, 1885. (No model.)



Claim.—1. In a toy locomotive, the combination of traveling mechanism, an air-pump operated by the traveling mechanism, and a holder for a cigarette or like article with which the air-pump communicates, substantially as specified.

2. In a toy locomotive, the combination of an air-pump, a holder for a cigarette or like article with which the air-pump communicates, and a smoke-stack for receiving and emitting smoke, substantially as specified.

324,261. RUFFLING OR GATHERING ATTACHMENT FOR SEWING-MACHINES. Allen Johnston, Ottumwa, Iowa. Filed Mar. 29, 1884. (Model.)



Claim.—1. In combination with a ruffler-blade, operating mechanism comprising two reciprocatory parts, stops upon one of them, and an interposed pivoted contact device carried by the other of said parts and adjustable with respect to both stops to vary the amount of lost motion, and also to a less extent the forward limit of the blade's motion, so that said blade is advanced farther in making full than in making scant gathers, substantially as described.

2. In a ruffling or gathering attachment wherein the motion is conveyed to the ruffling device or blade through stops and an interposed contact device with more or less lost motion, according to adjustment, a lever turning on a fixed center or pivot and having in the side thereof a recess of varying width, the edges of which recess form stops, in combination with a contact device extending into said recess, and adjusting means whereby the relative position of the stops and contact device can be regulated, substantially as described.

3. The combination, with the ruffler-blade and ruffler-frame, of the two levers pivoted at a common point to the ruffler-frame, stops on one lever, and an adjustable interposed contact device carried by the other, substantially as described.

4. The ruffling device or blade and the levers enlarged at their inner ends, in combination with the plate forming part of the ruffler-frame, to which said levers are pivoted, an inclosed device adjustable to vary the stroke of said ruffling device or blade, and a projecting journal-pin, through which said device may be adjusted, substantially as described.

5. The combination, with a ruffling device or blade, two reciprocatory parts, and stops on one of said parts, of a journaled or pivoted contact device interposed between the stops and adjustable by turning on its journal or pivot, substantially as described.

6. In a ruffler or gatherer, a lever forming part of the operating mechanism and comprising two arms adjustably connected, in combination with the ruffler-blade and adjusting means—such, for example, as an adjustable stop or an adjustable contact device interposed between stops—for regulating the stroke of said blade, the adjustment of the two arms aforesaid operating to regulate independently the position of the ruffler-blade at its forward limit of motion, substantially as described.

7. The combination, with the ruffler-blade, mechanism for reciprocating the same, and means—such, for example, as adjustable stops or an adjustable contact device between stops—for regulating the stroke and at the same time changing the forward limit thereof, so that the ruffler-blade is advanced farther in making full than in making scant gathers, of additional independent means—such, for example, as the adjusting-screw described—for regulating the position of the ruffler-blade at its forward limit of motion, substantially as described.

8. The combination, with the movable ruffling-blade, the ruffler-frame, the operating mechanism, the means—such, for example, as adjustable stops or an adjustable contact device between stops—for regulating the stroke of the said blade, and also for regulating the forward limits of the blade's motion, of a separator, an attaching plate or shank for securing it to the ruffler-frame, a clamping screw or nut for holding said plate or shank, and means—such, for example, as the walls of the groove which receives the said attaching-plate, or the lugs on the said plate—for preventing the separator from turning when attached, substantially as described.

9. A ruffler or gatherer comprising in combination the following elements: a ruffler-frame, of which a presser-foot forms part, said presser-foot having a transverse slot or groove under the heel thereof, a separator carried at the end of a flat spring-arm and detachably connected with said ruffler-frame by a flat shank or attaching plate fitting in said slot or groove, a ruffling device or blade, a pair of levers pivoted to an upright plate or frame forming part of the ruffler-frame, and means for conveying motion to the ruffling device or blade through said levers, and for regulating the stroke of said ruffling device or blade, to cause it to move farther forward for full than for scant gathers, the regulating means being carried by said levers, substantially as described.

10. A ruffling or gathering attachment comprising, in combination with a ruffler-blade and mechanism for reciprocating the same, regulating means—such, for example, as the adjustable contact device between stops and the adjusting-screw—for giving the three adjustments described, to wit: one to regulate the fullness of the gather, a second to carry the blade farther forward in making full than in making scant gathers, and the third for regulating the forward position of the ruffler-blade independently of the length of stroke, substantially as described.

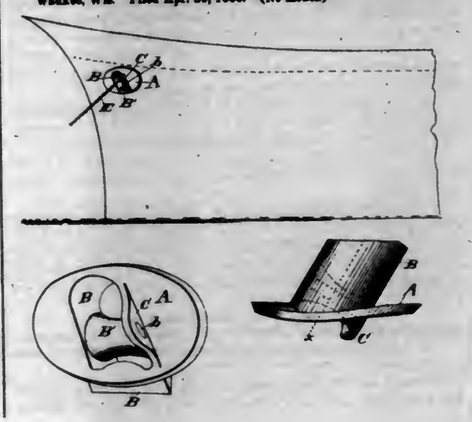
11. A ruffling or gathering attachment provided with a detachable separator, and comprising, also, in combination with the ruffler-blade, mechanism for reciprocating the same, and regulating means for giving the three adjustments described.

12. The two levers for moving the ruffling device or blade, one of said levers comprising two arms adjustably connected with each other, in combination with the said ruffling device or blade, the stops on one lever, and the interposed contact device on the other, substantially as described.

13. The combination, with the ruffler-blade and the reciprocatory part for receiving motion from the sewing-machine, the said part being in the form of a lever with two arms adjustably connected, of a reciprocatory part receiving motion from said lever and communicating it to the ruffler-blade, the stops carried by one of said reciprocatory parts, and the interposed contact device carried by the other, substantially as described.

14. The combination, with the ruffler-blade and the lever for receiving motion from the sewing-machine, the said lever having two arms adjustably connected, of a second lever for communicating motion from said former lever to the ruffler-blade, the stops on one of said levers, and the adjustable interposed contact device carried by the other, substantially as described.

324,262. HAWSE-PIPE FOR VESSELS. Hermann H. Kramer, Milwaukee, Wis. Filed Apr. 29, 1885. (No model.)



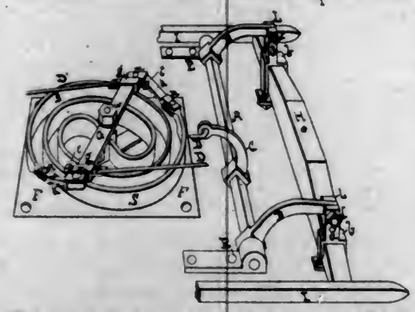
324,262.



Claim.—In a hawser-port, the combination of the housing B, outer plate, A, having anti-cramping guide C, projecting from the plate A, axle *b*, extending from the guide C, outside of the housing, obliquely to the line of the plate to within the said housing, and the sheave B, mounted on said axle and wholly above the throat of the housing, as set forth.

324,263. WAGON-SPRING. THOMAS R. LA DUE, Carson City, Mich. Filed Dec. 5, 1884. (No model.)





Claim.—1. In combination with a buggy-box, an equalizing-bar journaled in bearings at each end thereof, mechanism, substantially such as described, adapted to cause said equalizing-bars to rotate when the box moves in a vertical direction, a lever rigidly fastened to each equalizing-bar, a coil-spring fastened to the buggy-box, and a connecting-rod fastening each of said levers to the free end or ends of said spring, substantially as shown and described.

2. In combination with a buggy-box, an equalizing-bar at each end thereof, journaled in bearings secured to the box, two levers rigidly secured to each equalizing-bar and having their outer ends pivoted to clips secured to the bolsters, and a lever rigidly secured to each equalizing-bar, and having its end connected with the free end of a coil-spring secured to the under side of the box, substantially as shown and described.

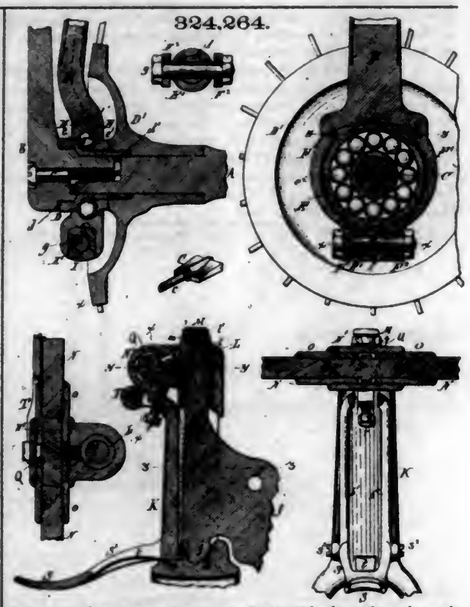
3. The combination, with a buggy-box, of a coil-spring secured thereto, and having its free end connected with an equalizing-bar at each end of the box, substantially as shown and described.

4. The combination of the box W, lugs E E', equalizing-bars A A', levers B B', clips *b b* and swinging links L L, levers C C', connecting-rods D D', lever G, and spring S, substantially as shown and described.

5. The combination of the levers C C', connecting-rods D D', adjustable clips *g g*, pivoted lever G, and spring S, substantially as shown and described.

6. The combination of the box W, plate F, spring S, pivoted lever G, pivoted connecting-links K K, adjustable clips *g g*, with set-screws *t t*, connecting-rods D D', levers C C', equalizing-bars A A', lugs E E', levers B B', bolsters H H, clips *b b b b*, and swinging links L L, pivoted to the clips on one of said bolsters, substantially as shown and described.

324,264. BICYCLE. ERNST G. LATTA, Friendship, N. Y., assignor to the Pope Manufacturing Company, Hartford, Conn. Filed Apr. 29, 1884. (No model.)



Claim.—1. The combination, with the axle and crank provided with interlocking parts, of a connecting-sleeve provided with differential screw-threads engaging, respectively, with the axle and crank, whereby the axle and crank are adjusted toward or from each other by turning the sleeve, substantially as set forth.

2. The combination, with the hub of a wheel, of the central part, A, of the axle secured thereto, a crank, B, provided with an end portion, *b*, which interlocks with the end *a* of the central part, A, of the axle, and a screw-sleeve, D, which embraces the interlocking ends *a b* and secures the crank to the hub and axle, substantially as set forth.

3. The combination, with the axle and crank, both provided with overlapping inclined ends, of a wedge interposed between said overlapping ends, substantially as set forth.

4. The combination, with the axle and crank, provided with overlapping inclined ends *a b*, of the interposed wedge C and screw *c*, substantially as set forth.

5. The combination, with the axle and crank, provided with overlapping inclined ends, of a wedge interposed between said overlapping ends, and a sleeve provided with differential screw-threads, whereby the axle and crank are connected together, substantially as set forth.

6. The combination, with the axle and crank, of a screw-sleeve connecting the axle with the crank, and serving to adjust the cone of the bearing, substantially as set forth.

7. The combination, with the axle and crank, of a screw-sleeve connecting the axle with the crank, and formed with a cone, a cone through which the sleeve passes, balls interposed between the cones, and a bearing-box in which the balls are contained, substantially as set forth.

8. The combination, with a bearing-box, of a fork constructed with a bifurcated lower end embracing the box, and secured to the box below the axle by a bolt passing through the box and through the jaws of the fork, substantially as set forth.

9. The combination, with the fork constructed with the bifurcated lower end, of a box arranged between the jaws of the bifurcated lower end of the fork, and attached to the fork below the axle by a swiveling connection, so that the fork can twist on the box or spring in or out at the upper end of the box, substantially as set forth.

10. The combination, with the fork, of the bearing-box pivoted at its lower end to the fork by a horizontal pivot arranged at right angles to the axle and provided at its upper end with a projection having cylindrical front and rear sides and a spherical top, which projection is seated in a correspondingly-shaped recess in the fork, whereby the fork is enabled to spring in and out on the box by turning on the lower pivot, substantially as set forth.

11. The combination, with the fork provided at its lower end with jaws F', of the bearing-box E, provided at its upper end with a projection having cylindrical front and rear sides, having a spherical upper surface seated in a correspondingly-shaped recess in the fork, a cylindrical lug, E', formed at the lower end of the box E and arranged between the lower ends of the jaws F', a pivot, I, arranged in the lug E', and a horizontal bolt, *g*, passing through the lower end of the jaws F', lug E', and pivot I, substantially as set forth.

12. The combination, with the upper center-bearing provided with an oil-duct opening outwardly, of a dust-cap, M, which covers the end of the center-bearing and the opening of the oil-duct in the same, and which is provided with a central screw-stem, *m*, which enters the center-bearing, substantially as set forth.

13. The combination, with a steering-head and handle-bars provided with a flat-sided block, Q, of the wedge R, whereby the handle-bars are secured in place, substantially as set forth.

14. The combination, with the steering-head and adjustable center bearing L, of the handle-bars provided with a flat-sided part, Q, and a wedge interposed between said flat-sided part and the adjustable center-bearing, substantially as set forth.

15. The combination, with the screw-threaded handle-bar lug and the screw-threaded handle-bars, of coupling-sleeves provided with differential screw-threads engaging, respectively, with the threads of the handle-bar lug and handle-bars, whereby the handle-bars are secured to the handle-bar lug, substantially as set forth.

16. The combination, with the steering-head provided with a hollow lug or socket, N', of the handle-bars N N, having inclined inner ends, an intermediate block having inclined outer ends, and screw-threaded sleeves O, whereby the handle-bars are secured to the steering-head, substantially as set forth.

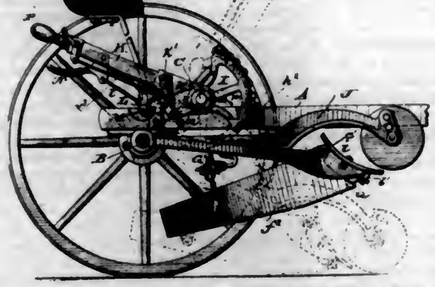
17. The combination, with the steering-head having a hollow lug or sleeve, N', of handle-bars N N, intermediate block, P, provided with flat-sided collar Q, screw-threaded sleeves O, and wedge R, substantially as set forth.

18. The combination, with the steering-head, of the brake S, provided with a bifurcated rear portion pivoted to opposite sides of the steering-head, substantially as set forth.

19. The combination, with the steering-head, of the brake S, having a bifurcated rear portion, S', and a spring, *t*, arranged within the bifurcated rear portion of the brake, substantially as set forth.

20. The combination, with the steering-head and brake, of a spring seated with its rear end in a mortise in the steering-head and bearing with its front end against a depression on the under side of the brake, substantially as set forth.

324,265. CULTIVATOR. GEORGE W. LEPPER, St. Albans, Vt. Filed Oct. 30, 1884. (No model.)



Claim.—1. In a cultivator, the combination, with the beams, of the shovels pivoted at their forward ends, and provided with the vertical rod near their opposite ends, the transversely-curved rod, and the socket carrying set-screws, whereby the said shovels may be both vertically and laterally adjusted, substantially as specified.

2. The combination, with the main frame and its axle, of the shovel beams or arms journaled thereon, the transverse shaft C, the segments at opposite ends thereof, the collar-lug keyed to the said shaft, and the hand-lever having devices adapted to engage the adjacent segment and collar-lug, whereby either or both of the shovel-arms may be raised, substantially as specified.

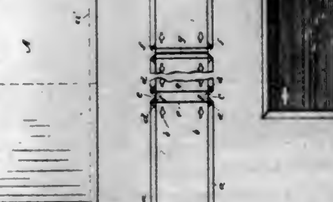
3. The combination, with the main frame, its axle, and plow-beams, of the segments and chains connecting the same with the said beams, the transverse shaft, hand-lever having pawls adapted to engage the loose segment and keyed collar-lug independently and alternately or simultaneously to raise the plows in a similar manner, substantially as specified.

4. The combination, with the transverse shaft having at one end a loose segment and at the opposite end a fixed segment connected, respectively, with the plow arms or beams, of the collar-lug keyed on the said shaft, and the hand-lever having pawls to engage the loose segment and collar-lug, and a spring-actuated pivoted hook to engage a hook-lug on the main frame, whereby both or either of the plows may be secured in a raised position, substantially as specified.

5. The combination, with the transverse shaft, of the hand-lever arranged loosely thereon, the pawls on the opposite lower sides of the said lever, the angle-levers pivoted above the wires connecting the pawls with the angle-levers, and the swiveled tip having lateral studs adapted to engage the said angle-levers alternately, substantially as specified.

6. In a cultivator, the combination, with the axle, of the shovel arms or beams having the inwardly and rearwardly directed brace-arms, and the outer curved portion, *a*, having the concave face to seat the point *i*, and the roller-carrying arm secured to the said beam, and curved upwardly and forwardly in advance of the plow-point, substantially as shown and described.

324,266. MARINE MOTIVE POWER. FERDINANDO LUCHINI, Natchitoches, La. Filed Oct. 14, 1884. (No model.)



Claim.—1. The combination, with the weighted oscillating beam, of the cross-bar, the dependent serrated hangers, the ratchet-wheels and their shafts and journal-bearings, the intergearing cog-wheels mounted on the journals at one side, and the drum mounted on one of the journals at the other side, the whole arranged to operate substantially in the manner and for the purpose specified.

2. The combination, with the uprights and the weighted oscillating beam, of the slotted yoke adapted to be adjusted and clamped upon said uprights to regulate the throw of the beam, substantially as specified.

3. The combination, with the slotted yoke and the oscillating beam, of the springs to take up the shock of the beam at the ends of its stroke, substantially as and for the purposes specified.

324,267. MANUFACTURE OF PAPER CUFFS. ALFRED K. MERRILL, Brooklyn, assignor to Gustavus A. Goldsmith, New York, N. Y. Filed Nov. 11, 1884. (No model.)

Claim.—The improvement in the manufacture of paper cuffs from a strip in the roll, which consists in first pasting and folding said strip along its longer edges, then at proper intervals (determined by the length of cuff required) nicking said strip and half-cutting the folded longer edges so as to separate from the main folds those parts which would otherwise overlap when the ends of the cuff are folded, cross-cutting the strip, and finally pasting and folding the ends of the cuff, after removing the pieces separated from the longer folds *a* by the half-cuts, substantially as hereinbefore set forth.

324,268. CONVERTIBLE CHAIR AND BED. HENRY MOWER, Chicago, Ill. Filed Apr. 24, 1885. (No model.)

324,268.



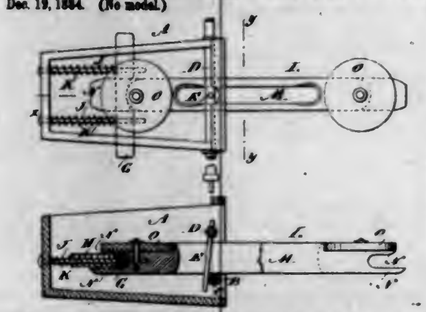
Claim.—1. The combination, with frames D G, of wheels A and stationary pieces E, connected by cross-bar F, such pieces arranged to form the front legs of a chair and the push-handle of a carriage, as set forth.

2. The combination, with frames D G, hinged together and mounted on wheels A, and frame G, provided with pins *d*, of slotted arms H and notched and pivoted arms K K', as set forth.

3. The combination, with frames D G, mounted upon wheels A, and the former provided with hooks *j* of frame L, provided with slots *k*, as set forth.

4. The combination, with frames D G, mounted upon wheels A, and the former provided with hooks *j* and a suitable screw-threaded socket, of frame L, provided with slots *k* and thumb-screw *m*, as set forth.

324,269. CAR-COUPLING. PHILO J. NORTON, Bristol, N. Y. Filed Dec. 19, 1884. (No model.)



Claim.—1. In a car-coupling, the combination, with the draw-head A, of the rod B, the sleeve C, the buffer-bar G, and the springs J, substantially as herein shown and described.

2. A coupling-link having a disk pivoted on the upper surface at each end, substantially as herein shown and described.

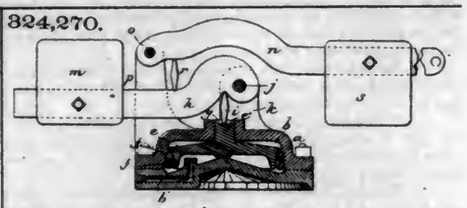
3. A coupling-link provided with a longitudinal slot from top to bottom and two horizontal prongs at each end, substantially as and for the purpose set forth.

4. A coupling-link provided with a longitudinal slot, two prongs at each end, and a disk pivoted on the upper surface at each end, substantially as herein shown and described.

324,270. DAMPER-REGULATOR. JOHN C. PARK, Stoneham, Mass., assignor of one-half to George A. Osgood, same place. Filed June 1, 1885. (No model.)

Claim.—1. In a damper-regulator, the combination of the casing having the chamber or space *b*, adapted to be connected with a steam-boiler, the piston adapted to move in said casing, the rolling packing ring or rings interposed between said piston and the surrounding surface

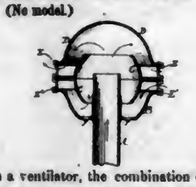
324,270.



of the chamber, and the damper-operating devices supported by the piston, as set forth.

2. The combination of the casing having the chamber or space *b*, adapted to be connected with a steam-boiler, the piston in said chamber having a central boss projecting into an opening in the casing, the levers *h n*, fulcrumed at opposite sides of the center of the casing and extending in opposite directions across the casing, as shown, whereby the apparatus is counterbalanced, and the links *i r*, supporting the levers, as set forth.

324,271. VENTILATOR. WILLIAM H. PAYNE, Camden, N. J. Filed Mar. 10, 1885. (No model.)



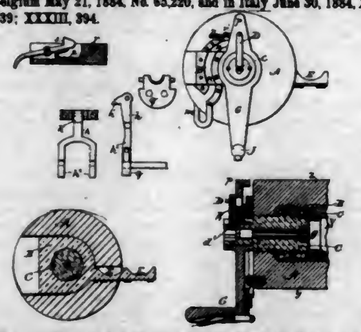
Claim.—1. In a ventilator, the combination of the concave lower disk, B, inverted concave upper disk, D, and the double internal conical deflector, C, surrounding the internally-projecting flue or pipe A, arranged and operating substantially as described.

2. In a ventilator, the combination of the concave lower disk, B, provided with openings F F, inverted concave upper disk, D, and a double internal conical deflector, C, surrounding the internally-projecting flue or pipe A, all arranged and operating substantially as described.

3. In a ventilator, the combination of the vertically-opposite concave disks B and D, the concave surfaces of which face each other, separated, as shown, and the intermediate double conical deflector or shield C, open above and below, the upper open end of which is above the plane of the lower periphery of the upper cone, D, and the lower opening of which is below the plane of the upper periphery of the disk B, substantially as described.

4. In a ventilator, the combination of the vertically-opposite concave disks B and D, the concave surfaces of which face each other, separated, as shown, and the intermediate double conical deflector or shield C, open above and below, the upper open end of which is above the plane of the lower periphery of the upper cone, D, and the lower opening of which is below the plane of the upper periphery of the disk B, and the flue A, passing upward closely through lower disk, B, and freely into the lower part of the double conical deflector C, the lower opening in which is so much larger in diameter than the outer diameter of flue A as to leave a free air-space around the flue at its point of entry into the deflector C, substantially as described.

324,272. LOCK FOR BREECH-LOADING ORDNANCE. GEORGE QUICK, Chipping-Campden, County of Gloucester, England. Filed June 11, 1884. (No model.) Patented in England Jan. 10, 1884, No. 1,115; in Germany Mar. 2, 1884, No. 30,592; in France Apr. 28, 1884, No. 161,774; in Belgium May 21, 1884, No. 65,220, and in Italy June 30, 1884, XVIII, 16,939; XXXIII, 394.



Claim.—1. The combination, with a gun having a horizontal slideway extending transversely to the bore about one caliber from the extreme rear end of the breech of the gun, the said slideway being of reduced size at one side of the gun and provided upon its upper and lower

sides with grooves, of a sliding carriage having one end of a reduced size to fit into the said slideway, into which grooves keys are fitted, the said carriage having a loading-tray at its reduced end, and a breech-screw fitting into said carriage, the said breech-screw gearing also in its rear part into the metal of the gun in the rear of the slideway, the said breech-screw being adapted to close the powder-chamber, all substantially as set forth.

2. The combination, with a gun having a breech-screw and having a primer-chamber or vent in said breech-screw, of a sliding shutter working in grooves in said breech-screw and upon the breech-screw lever, the said shutter having a pin passing and projecting through a slot in said lever, which pin gears into an eccentric slot or guide on the gun, which, as the lever is moved, causes the said shutter to advance over and cover the said primer-chamber or vent as the breech of the gun is closed, and to recede from and uncover the primer-chamber as the breech is opened, the said shutter having an orifice therein, through which the firing-pin of a friction-primer may pass, substantially as described.

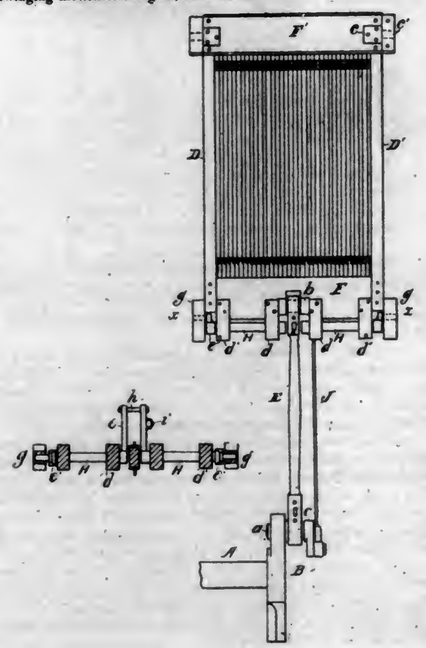
3. The combination, with a gun having a breech-screw with a primer-chamber therein, a sliding shutter for said primer-chamber, and an eccentric guide for such shutter, of a lever with a long and a short arm at right angles to each other, the lever being over the primer-chamber or vent, the long arm of which lever forms part of the primer-chamber, and by the movement of which the primer is extracted when the short arm of the lever is acted on by a catch in the said shutter, substantially as described.

4. The combination, with the vent-shutter, of the eccentric guide for actuating the pin on such shutter, of a slide forming a portion of the said guide and having a spring-catch, *s*, a guard screwed to the gun immediately above the slide, said catch and guard serving to hold the said slide in position, but permitting the said slide to be moved so as to open the guide to allow the vent-shutter to be drawn back by hand and uncover the vent and extract the primer in case of misfire, substantially as described.

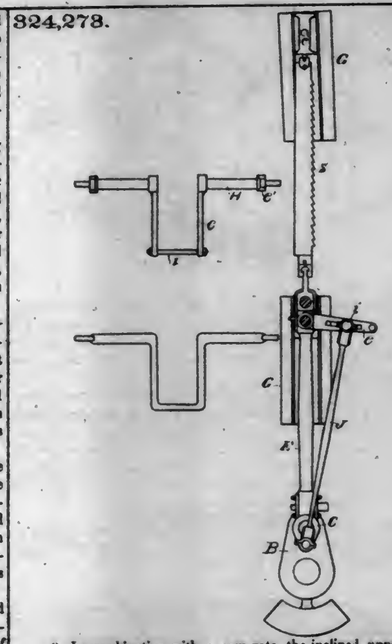
5. The combination, with a metal gas-ring fitting in the rear end of the powder-chamber and adapted to be forced backward by the pressure of the gas and having a conically-shaped seating at its rear end, of a breech-screw having a corrugated metal face and having a corresponding conically-shaped periphery to fit into said seating in the metal gas-ring, substantially as described.

324,273. RECIPROCATING-SAW MILL. ALEXANDER RODGERS, Muskegon, Mich. Filed Apr. 27, 1885. (No model.)

Claim.—1. The combination of a saw-gate and means for reciprocating the same, with a rock shaft or shafts journaled to said gate and provided at their outer ends with short vertical cranks, the pins of which are pivoted in guide-blocks, and at the opposite end or ends with a horizontal lever adjustable by a pitman to a return crank or eccentric to give a swinging motion to the gate, as set forth.



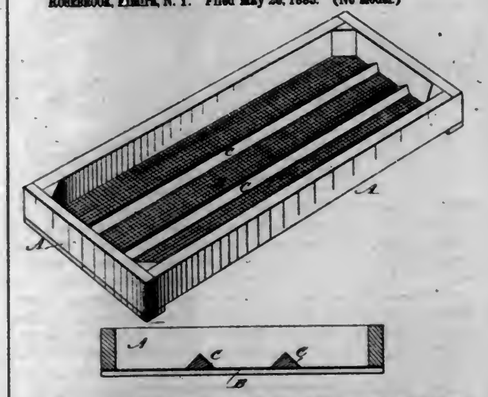
324,278.



2. In combination with a saw-gate, the inclined upper slides and pivoted blocks attached to the gate and reciprocating therein, the vertical lower slides, the rock-shafts journaled to said gate and carrying guide-blocks which reciprocate in the vertical slides, and the devices shown and described for oscillating said rock-shaft, arranged and operating substantially as specified.

3. In the mechanism of a gang-saw gate, the combination of crank B for reciprocating said gate, return-crank C, adapted to oscillate the same, the pitmen E and J, rock-shafts H, having slotted levers *e* and cranks *e'*, for communicating the motion of said cranks B and C to the gate, with guides G G', adapted to receive the guide-blocks C' and *g*, all arranged to control the movement of the saws, substantially as set forth.

324,274. REMOVABLE EGG-TRAY FOR INCUBATORS. FRANK ROSEBROOK, Pimira, N. Y. Filed May 26, 1885. (No model.)

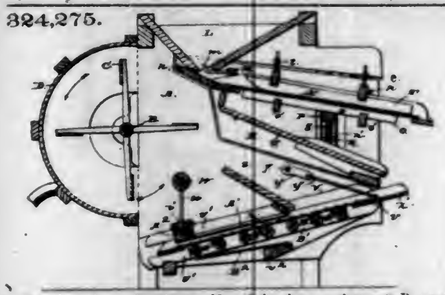


Claim.—A removable egg-tray for incubators, consisting of a frame, wire-netting, secured to the same and forming the bottom thereof, and beveled strips secured in the frame and on the top of said netting and dividing the tray into compartments, the said strips being separated from each other a distance equal to the length of an egg, substantially as herein shown and described.

324,275. FLAXSEED-CLEANER. THOMAS R. ROSIER, San José, Cal. Filed Mar. 19, 1885. (No model.)

Claim.—1. The combination of the frame or casing, the reciprocating shoe, the sieve located in the shoe and adjustable therein, the cleaning-rack arranged under the sieve, the supporting-beam P therefor,

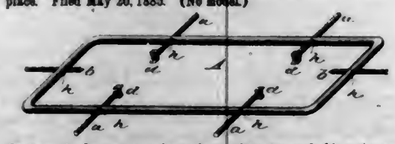
324,275.



passing through openings in the sides of the shoe, vertical rods R, passing through the ends of the beam P, springs on the rods to support the beam P, stirrups S', suspending-chains S^2 and hooks S^3, and means for supporting the hooks, the lower ends of the springs bearing on the stirrups, substantially as described.

2. The combination of the frame or casing, the reciprocating shoe, the sieve located in the shoe and adjustable therein, the stationary cleaning-rack arranged under the sieve, a supporting cross-beam therefor passing through openings in the sides of the shoe, vertical rods secured to the casing and passing through the ends of the cross-beam, springs on the rods to support the rack, and means for regulating the tension of the springs, substantially as described.

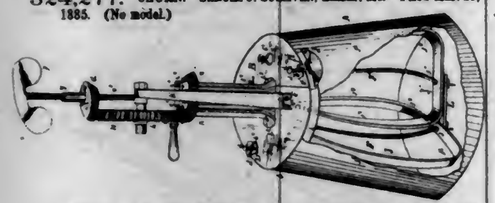
324,276. SPECTACLE-FRAME-SOLDERING CLAMP. James H. Scribner, Atlantic, Iowa, assignor of one-half to Otto E. Weber, same place. Filed May 20, 1885. (No model.)



Claim.—1. In a spectacle and eyeglass frame holder, the combination of the screws *a a a a*, having swiveled to them the clutches *d d d d*, with the frame A, having threaded apertures, substantially as set forth, and for the purposes specified.

2. The combination, in a spectacle and eyeglass frame holder, of the frame A, with its spirally-grooved perforations *h h h h h h* and screws *b b*, with the screws *a a a a*, having swiveled to them the clutches *d d d d*, all substantially as set forth.

324,277. CHURN. Samuel J. Sullivan, Lamar, Mo. Filed Mar. 23, 1885. (No model.)



Claim.—1. In combination with an A-shaped support, E, having legs *e e* and screw-threads *h'* and bridge e^3, having screw-threads e^3 e^4, foot-pieces *e' e'*, a drive-wheel, H, having an axle-pin, *h*, pinions K K', supporting-rods F F', cross-piece L, dashers J J', cover B, having a beveled slot, b^2, plates b^3, and elbow-shaped catches *d*, having thumb-screw *d'* and handle d^2, all substantially as shown and described.

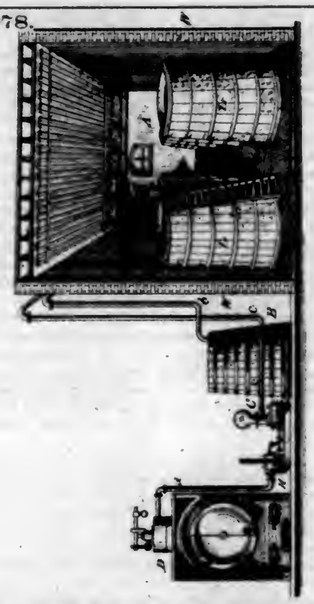
2. In combination with a vessel and cover, an elbow-shaped hinged catch and handle, D, an A-shaped support, E, composed of legs *e e*, feet *e' e'*, and bridge e^3, said support having extension e^3, pinion G, and fan I, drive-wheel H, pinions K K', dashers J J', supporting-rods F F', and cross-piece L, all substantially as and for the purpose set forth.

324,278. REFRIGERATING APPARATUS FOR HOUSES. Johann Stuber and Jacob Stuber, Syracuse, N. Y. Filed June 17, 1885. (No model.)

Claim.—1. In combination with a cellar or room to be cooled, a coil of pipe located therein, a tank containing a refrigerating-mixture composed of chloride of sodium, chloride of ammonium, chloride of calcium, and ice and water, a force-pump, and suitable connecting-pipes, whereby the cold fluid containing all these ingredients may be circulated through the coils and back to the tank.

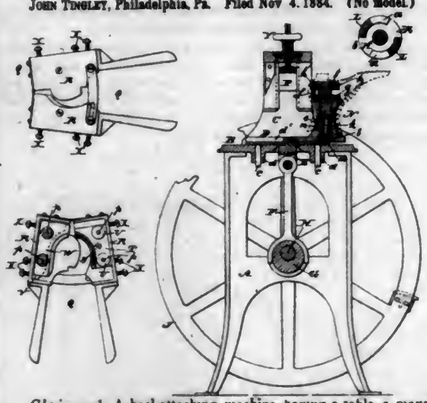
2. The method of producing refrigeration in buildings, consisting of forcing a freezing-mixture containing ice through a system of pipes in said building, substantially as set forth.

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3. In combination with a refrigerating apparatus, a tank containing a refrigerating-fluid charged with a freezing-mixture composed of chloride of sodium, chloride of ammonium, and chloride of calcium, with ice, in suitable proportions, for the purpose described

324,279. MACHINE FOR ATTACHING BOOT OR SHOE HEELS. John Tingley, Philadelphia, Pa. Filed Nov 4, 1884. (No model.)



Claim.—1. A heel-attaching machine having a table, a movable platform, a sliding last working in a groove on said platform, a stirrup connected to said table, and a clamp-receiver adjustably attached to said stirrup, all of said parts being arranged and combined substantially as and for the purpose set forth.

2. A table in combination with a platform, means for raising and lowering the platform, a sliding last working in a groove on said platform, a stirrup secured to said table, and a clamp-receiver adjustably attached to said stirrup, all of said parts being arranged and combined substantially as and for the purpose set forth.

3. In a heel-attaching machine, the platform D, provided with a sliding last, in combination with the rod F, eccentric G, shaft H, having flanges *b*, provided with projections *a*, and the wheel J, having lugs L, being of less circumferential length than the distance between the ends of the projection *a*, whereby the wheel J may have a limited backward motion, when locked with the disk, without rotating the shaft H in the same direction, substantially as and for the purpose set forth.

4. A heel-attaching machine, in combination with a heel-clamp composed of an outer shell, a heel-socket and springs, and a leather guard, said guard resting on said springs and adjustably attached to said heel-socket, which rests in said outer shell and is secured thereto, substantially as and for the purpose set forth.

5. A heel-attaching machine, in combination with a heel-clamp having the following parts: a shell composed of two sections united by a spring-hinge, a heel-socket having flanges securely attached to the inner part of said shell, springs, iron plates provided with wings or downwardly-extending projections, said plates resting on said springs, all of said parts being combined and arranged substantially as and for the purpose set forth.

6. In a heel-attaching machine, a sliding last having the following parts: a nail-driver support, drivers, a nail-block, a nail-block cap, springs, and means, substantially as described, for adjusting the distance between the nail-block and the nail-driver support to accommodate heels of different heights, substantially as and for the purpose set forth.

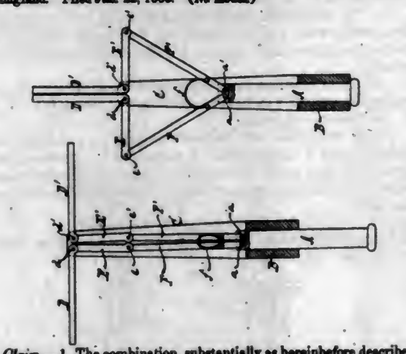
7. The table or bed B, having bosses *d*, and a central opening, in combination with grooved platform D, having studs *c*, and a sliding last, substantially as and for the purpose set forth.

8. The frame A, in combination with a bed, B, grooved platform D, means, substantially as described, for raising and lowering said platform, adjustable sliding last N, stirrup C, adjustable clamp-receiver P, and heel-clamp Q, substantially as and for the purpose set forth.

9. In a heel-attaching machine, a table, in combination with an adjustable sliding last resting on a platform, means for raising and lowering said platform, a stirrup, a clamp-receiver, substantially as described, and an adjustable heel-clamp, substantially as and for the purpose set forth.

10. A sliding last, in combination with a vertically-movable platform, a rod pivotally connected to said platform, a table having an opening through which said rod operates, an eccentric mounted on a driving-shaft and supporting a bifurcated arm of said rod, a driving-shaft, a wheel, and a clutch mechanism mounted on said shaft, the said clutch mechanism permitting a limited backward motion of the wheel without a motion of the shaft, substantially as and for the purpose set forth.

324,280. MECHANICAL MOVEMENT. Charles F. Vett, London, England. Filed Jan. 22, 1885. (No model.)



Claim.—1. The combination, substantially as hereinbefore described, with the reciprocating rod, and with the guide for said rod, of two wings pivoted to a suitable support, the arms extending from said wings, and links connecting the arms to the reciprocating rod.

2. The combination, substantially as hereinbefore described, with the reciprocating rod, and with the guide for said rod, of two wings pivoted to a suitable support, arms extending from said wings, links connecting the arms to the reciprocating rod, and a spring acting on the links.

324,281. COMBINED ORNAMENTAL CHAIN-LINK AND CIGAR-CUTTER. Charles F. Vett, London, England. Filed Feb. 28, 1885. (No model.)



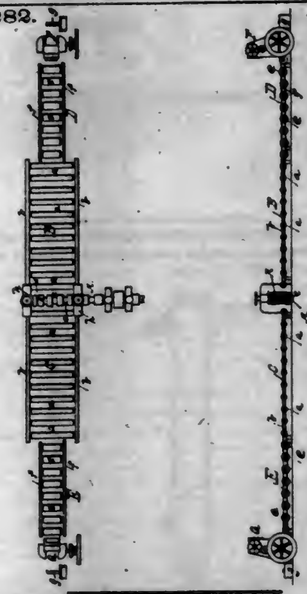
Claim.—A chain-link composed of a tubular casing provided with one or more holes, a suspension-loop secured to one end of the casing, a spring-supported loop fitted in the other end of said casing, and a knife secured to or formed on the spring-supported loop, substantially as shown and described.

324,282. ROLLING-MILL. Jacob T. Wainwright, Homestead, Pa. Filed May 29, 1885. (No model.)

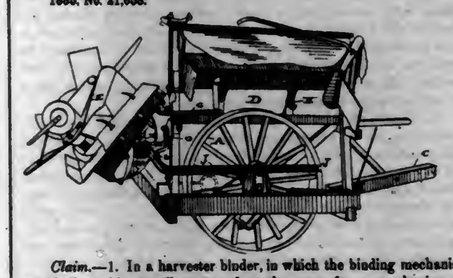
Claim.—1. The combination of a rolling-mill and two or more shears with rollers connecting said mill and shears, as set forth.

2. The herein-described apparatus, consisting of a rolling-mill, rollers extending out from it in opposite directions, and a shear at each outer end of the said lines of rollers.

324,282.



324,283. HARVESTER-BINDER. John G. Watson, Ayr, Ontario, Canada. Filed Sept. 25, 1884. (No model.) Patented in Canada May 12, 1885, No. 21,658.



Claim.—1. In a harvester binder, in which the binding mechanism and binding-table are all connected to the same frame, mechanism arranged to support the said frame on the main frame of the machine, in the manner substantially as described, whereby the said frame and its mechanism may be moved bodily from the side of the machine to its rear.

2. A rod, G, connected to the frame B and extending from the side to the rear of the machine, in combination with the hooked brackets F, arranged to detachably connect the frame of the binding-table E to the main frame of the machine.

3. The hooked brackets F, near the top side of the frame of the binding-table E, the bracket or brackets H, connected near the bottom side to the frame of the binding-table E, and preferably provided with friction-rollers, in combination with the rod G and track J, substantially as and for the purpose specified.

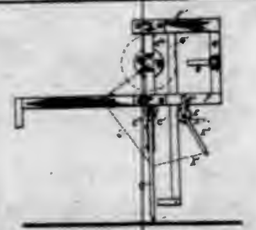
4. The bracket H, fastened to the frame of the binding-table E and provided with a friction-roller, I, arranged to rest upon and roll on the angle-iron track J, in combination with a hook end, *d*, arranged to fit over the top edge of the track J, substantially as and for the purpose specified.

5. The bracket O, having a slot through which the bolt passes which connects it to the main frame of the machine, in combination with the hub *d*, formed on a sprocket-wheel, M, and having a groove through which the forked end *b* of the bracket O fits, substantially as and for the purpose specified.

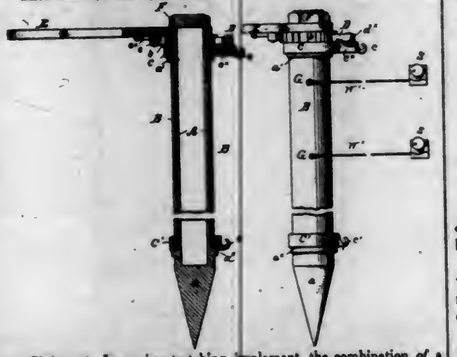
324,284. WINDMILL. Richard F. Wilson, Stockton, Cal. Filed Feb. 2, 1885. (No model.)

Claim.—A device for normally retaining the tail of a windmill in a line with the wind, consisting of a fixed arm with a forked end, an arm with a forked end which is pivoted to the fork of the other arm, and a spring contained within the forked ends and acting upon the pivoted arm which has connection with the said tail, substantially as and for the purpose specified.

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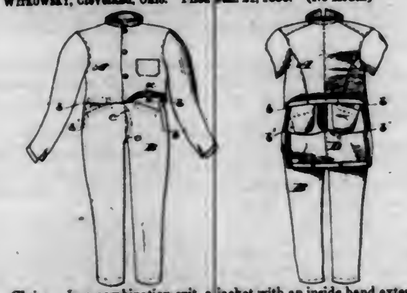
324,285. IMPLEMENT FOR STRETCHING WIRE. JAMES WITHINGTON, Trenton, N. J., assignor to the Trenton Iron Company, same place. Filed Jan. 21, 1885. (No model.)



Claim.—1. In a wire-stretching implement, the combination of a central body, core, or stem, a sleeve mounted to rotate thereon, and provided with a ratchet-face and with pins or hooks, hook-collars adapted to be connected with a fixed point of support and so to maintain the implement in a fixed position, a stop-pawl, and a ratchet-actuating lever provided with an actuating-pawl which engages with the ratchet-face of the tubular sleeve, substantially as described.

2. The combination, in a wire-stretching implement, of a body, core, or stem having a tapering or pointed lower extremity and provided with a shoulder or step, a tubular sleeve mounted so as to rotate upon said core or body and resting upon said step, two hook-provided collars mounted upon said tubular sleeve, one of which is provided with a stop-pawl adapted to engage the ratchet-face formed upon the sleeve, and a ratchet-actuating lever mounted upon the implement and provided with a spring-controlled actuating-pawl engaging with the ratchet of the tubular sleeve, substantially as set forth.

324,286. COMBINED BLOUSE AND PANTALOONS. ABRAHAM WITKOWSKY, Cleveland, Ohio. Filed Jan. 21, 1885. (No model.)

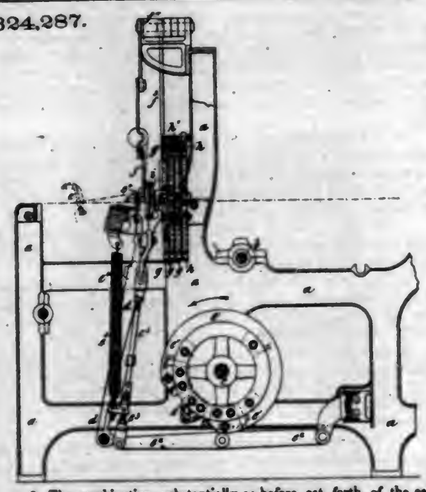


Claim.—In a combination-suit, a jacket with an inside band extending around the garment for the attachment of the lower garment, the lower garment, pants or overalls, as the case may be, arranged with buttons to engage the band, and provided with side openings, and a fly in front that is permanently closed at the upper end, substantially as set forth.

324,287. LOOM FOR WEAVING CHENILLE OR FUR PILE FABRICS. WILLIAM ADAM, Kidderminster, County of Worcester, England. Filed Feb. 9, 1883. (No model.) Patented in England June 30, 1882, No. 3,067.

Claim.—1. The combination, substantially as before set forth, of the reed of the loom with cams constructed with two falling grades and two rising grades, whereby two falls and two rises are imparted to the reed for each insertion of chenille.

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2. The combination, substantially as before set forth, of the cams d', constructed and operating as described, with the levers d^3, connecting-links d^4, springs d^4 d^4, and reed e.

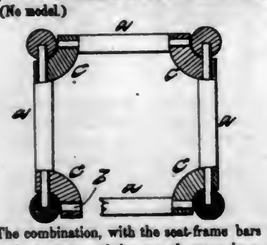
3. The combination, substantially as before set forth, of the catcher-warp needles with the guide-reed, which is set close to the track of said needles so as to steady the ground-warp threads and insure the entrance of said needles in the spaces between said ground-warp threads.

4. The combination, substantially as before set forth, of the catcher-warp needles with a cam constructed with three grades, whereby the descent of the said needles is divided into three falls, substantially as described.

5. The combination, substantially as before set forth, of the cam f', constructed with three cam-grades, the lever f^2, connecting-rod f^3, lever f^4, and catcher-warp needles f f.

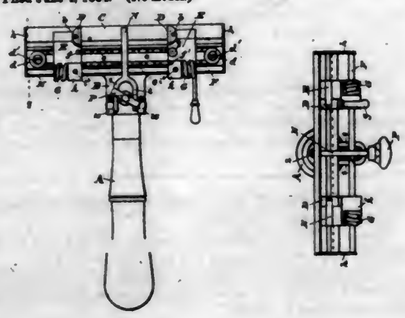
6. In combination with the leaves or shafts g g g of heralds, the extra leaf or shaft h, and projection or projections h', extending over and operated by some or all of the leaves or shafts g g g or by projections therefrom, substantially as herein shown and described, and for the purpose stated.

324,288. CHAIR. WILLIAM ATWATER, Coldwater, Mich. Filed June 19, 1885. (No model.)



Claim.—The combination, with the seat-frame bars provided with the projecting ends or tenons, of the carved corner-irons provided with the openings to receive said tenons, as shown and described, and for the purpose specified.

324,289. BOOKBINDER'S PALLET. SAMUEL AULT, Baltimore, Md. Filed June 4, 1884. (No model.)



Claim.—1. In a lettering-pallet, the combination, with the type-bed, of type-clamping jaws each pivoted at its back, whereby the jaws are adapted to turn as may be required to set squarely against the type, as set forth.

2. A lettering-pallet having type-clamping jaws and means for moving the jaws, consisting of a pulley at each end of the pallet, and a chain passing over the pulleys, as set forth.

3. In a lettering-pallet, the combination of type-clamping jaws adapted to move back and forth over the type-bed, a ratchet-bar fixed to the head and extending lengthwise of the type-bed, and a dog connected, as described, with each jaw and adapted to engage with the ratchet-bar, as set forth.

4. In a lettering-pallet, the combination of type-clamping jaws adapted to move back and forth over the type-bed, a ratchet-bar fixed to the head and extending lengthwise of the type-bed, dogs adapted to engage with the ratchet-bar, a piece, E, connecting each jaw and one of the dogs, and a spiral cam turning in a socket or eye integral with the said connecting-piece, and adapted to act on the dog, as set forth.

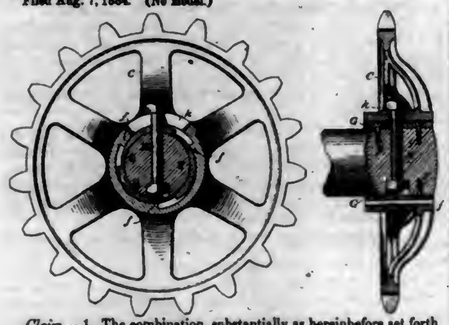
5. In combination with the type-clamping jaws, a ratchet-bar, H, dogs I, adapted to engage with the ratchet, a rock-shaft, F, a piece, E, connecting each jaw and one dog, and a spiral cam, G, attached to each piece, both arranged to slide along the rock-shaft, as set forth.

6. The combination, in a lettering-pallet, of a ratchet-bar, H, a dog, I, to engage therewith, having an inclined face, *o*, a pin, *p*, projecting through the wall of the dog-recess, and a spiral cam, G, having its spiral cut away on one part, as set forth.

7. In a lettering-pallet, the combination, with a type-bed and clamping-jaws, of a presser-arm to bear against the body of the type to keep them from bulging away from the bed, as set forth.

8. In a lettering-pallet, the combination of a type-bed, a screw having two shoulders with a groove between them, and a pivoted arm having a part which sets in the groove on the screw, whereby it is operated, and having its free end in position to bear against the type in the bed, as set forth.

324,290. HARVESTER-REEL. WILLIAM R. BAKER, Chicago, Ill. Filed Aug. 7, 1884. (No model.)



Claim.—1. The combination, substantially as hereinbefore set forth, of the wooden shaft, the wedged wear-plates secured circumferentially thereon, the wheel having internal teeth in its hub to match with said wear-plates, and the bolt passing through a slot in the hub and into the shaft to prevent lateral movement of the wheel.

2. The combination, substantially as hereinbefore set forth, of the wooden shaft, the wedged wear-plates independently secured about its periphery, the wheel having inclines or teeth in the bore of its hub to match said wear-plates, the bolt passing through a circumferential slot in the hub, and the inclined seat for the head of said bolt.

3. The combination, substantially as hereinbefore set forth, of the wooden shaft, the wedged wear-plates independently secured about its periphery, the nut confined in a seat in said shaft by one of the wear-plates, the wheel having internal teeth or inclines in its hub to match and engage with the wear-plates, and the bolt passing through the shaft to engage with the nut in said shaft.

4. The wedged wear-plate, formed to embrace a portion of the periphery of the shaft, and having a central perforation for the passage of the clamping-bolt.

5. The driving sprocket or gear wheel formed, substantially as hereinbefore set forth, with internal friction teeth or inclines in the bore of its hub, a circumferential slot through said hub, and an inclined seat along the length of said slot, opposed in its action to the action of the internal friction-teeth.

324,291. WINDOW-GARDEN. JOHN M. BENNETT, Cincinnati, Ohio, assignor to Saml. C. Tatum & Co., same place. Filed Mar. 16, 1885. (No model.)

Claim.—1. A window-garden or flower-box consisting of the extensible sections C and D, having mortises or recesses in their outer ends, and the end sections, A and B, having vertical flanges for engaging a window-frame and provided with hooked projections detachably engaging said mortises or recesses, substantially as described.

2. A window-garden or flower-box consisting of the extensible sections C and D, having mortises or recesses in their outer ends, and the end sections, A and B, having bottom notches and vertical flanges for engaging a window-frame, and provided with hooked projections detachably engaging the mortises or recesses, the said sections having lugs *c* for holding the bottom of the box, substantially as described.

3. The box-sections A D and B C, connected together by hooked tenons engaging with mortises, and provided with flanges and abutting-lugs 10 11, substantially as herein specified.

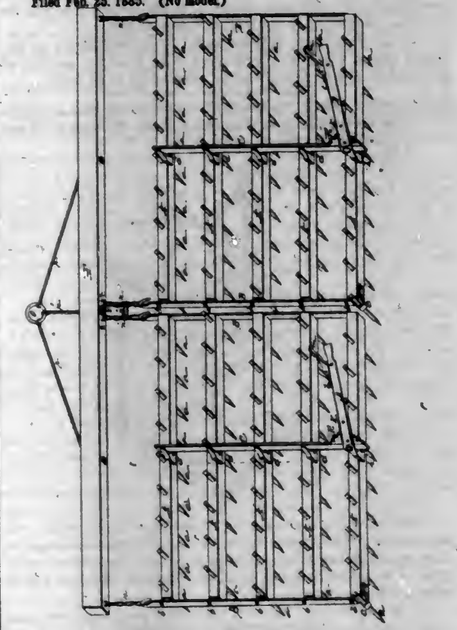
4. The sections A B, detachably connected to the middle sections, C D, and provided with notches 4 in their bottom edges to engage with a window-stool, and flanges 1 at their inner edges engaging with the cleats of a window-frame, substantially as described.

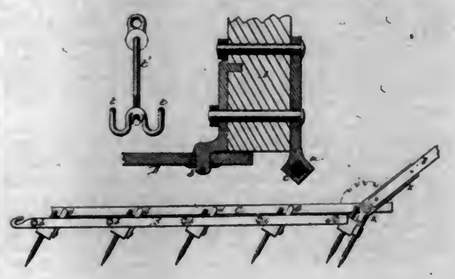
5. In combination with the sections A B, the detachable and adjustable central sections, C D, the outer section, D, being provided with bolts *d d*, having nuts *e e*, and the inner section, C, having slots *i* for the reception of the bolts *d*, whereby said central sections are firmly locked in position, substantially as described.

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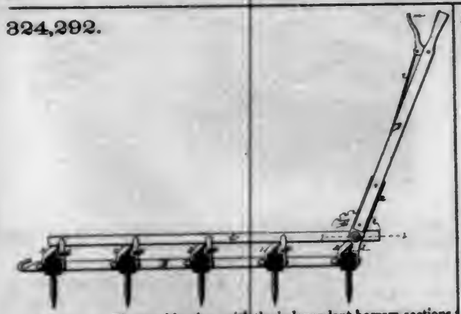


324,292. HARROW. JOHN T. BIRD and ROBERT SIMONS, Rochelle, Ill. Filed Feb. 25, 1885. (No model.)





324,292.



Claim.—1. The combination, with the independent harrow-sections having the central hooked end bars, of two independent parallel chains connecting said hooked end bars with the draft-bar, and a central uniting-link for said chains, as set forth.

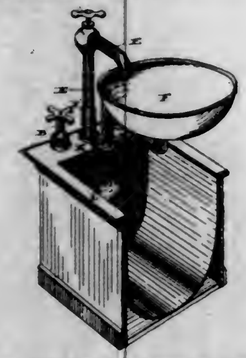
2. The combination, with the end bars and tooth-beams, of brackets secured to the rear sides of said tooth-beams and formed with a stud-journal to enter bearings in the controlling-bar, and separate brackets secured on the front side of the tooth-beams, extending to the opposite side of the controlling-bar and secured to the end of the stud-journal, as set forth.

3. The combination, with the end bars and tooth-beams, of brackets secured to the front sides of said beams and formed with stud-journals to enter bearings of said bars, a controlling-bar, and separate brackets securing the rear sides of the tooth-beams thereto, and an adjusting hand-lever having its lower end secured to the tooth-beam, a toothed segment, and securing-detent, as set forth.

4. The combination, with the draft-bar, and with the central connecting-links, of a twin hook screw-nut to connect the links with the draft-bar, substantially as and for the purpose set forth.

5. The combination, with the central hooked end bars of the harrow-sections, of a twin hook screw-nut and its eyebolt, a central draft link or chain, and a central draft-ring, substantially as set forth.

324,293. BATH. GEORGE BOOTH, Toronto, Ontario, Canada, assignor to Booth & Son, same place. Filed Sept. 22, 1884. (No model.) Patented in Canada Sept. 20, 1884, No. 20,305.



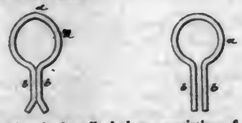
Claim.—1. The drain-pipe H, overflow-pipe G, connecting with the interior of the bath through the plug-hole I, and the pipe D, arranged to discharge into the bath through the said plug-hole I, in combination with a plug, J, seated in the plug-hole I below the point where the pipe D connects with the said hole.

2. In combination with a tub, its overflow-pipe, and a basin supported over said tub, the waste-pipe K, connected to the basin F, and elbow-socket L, arranged to support the pipe K, and connect the same with the tub overflow-pipe, substantially as and for the purposes specified.

3. In combination with a bath-tub having a basin suspended thereover, a swiveled drain-pipe, as K, supporting said basin and connecting the same with the drain-pipe of the tub, substantially as and for the purposes described.

4. The pipe A, provided with extensions *a a* and *b b*, said extensions *b b* being provided with a valve, B, as described, said pipe A having also orifices *c d*, the latter communicating with the pipe D, and the former internally threaded, in combination with the casting *d'*, provided with openings for the passage of water and the stem of the valve C, the pipe E, connected with said casting, and the two-faced valve C, provided with two seats, one above the pipe D and the other formed on said casting, substantially as described.

324,294. CLASP. JOHN G. BROTHWELL, Torrington, Conn., assignor to the Turner & Seymour Manufacturing Company, same place. Filed June 15, 1885. (No model.)



Claim.—The herein-described clasp, consisting of the divided ring-shaped body, its ends extending radially from the body to form fingers *b b*, the ring-shaped body indented from the inside outward to close the fingers, substantially as described.

324,295. NUT-LOCK. FREDERICK S. D. BROUGHTON, Sunbury, Pa., assignor of one-half to S. P. Walverton, same place. Filed Sept. 5, 1884. (No model.)



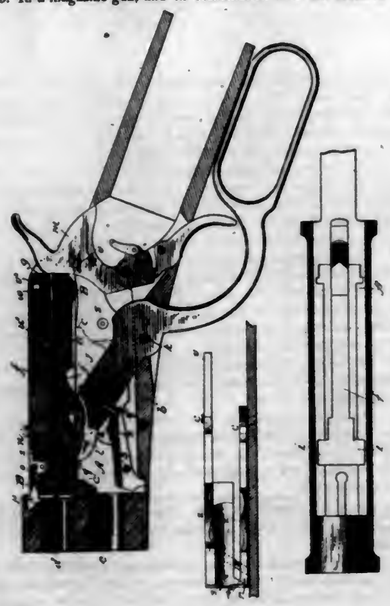
Claim.—A nut-lock composed of a base-plate adapted to serve as a washer, a locking-plate adapted to bear against the end of a nut, and having a hook lapping over the edge of the base-plate, and a key formed with a head, and adapted to pass through both plates and have its ends bent down upon the locking-plate, substantially as described.

324,296. MAGAZINE-GUN. JOHN M. BROWNING and MATTHEW S. BROWNING, Ogden City, Utah, assignors to the Winchester Repeating Arms Company, New Haven, Conn. Filed Mar. 5, 1885. (No model.)

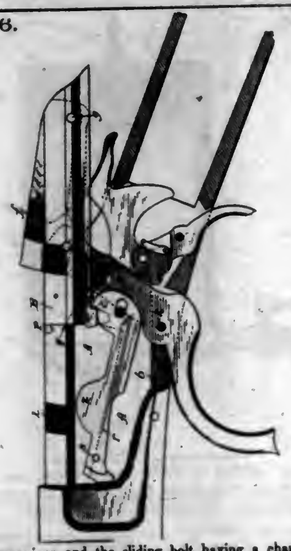
Claim.—1. In a magazine-gun, the combination, with a sliding bolt, of a chamber therein, a locking-piece fitting within said chamber and pivoted to the bolt at the rear end thereof, lateral extensions on said locking-piece adapted to fit into recesses in the sides of the receiver, and an operating-lever to which the said locking-piece is pivoted, substantially as described.

2. In a magazine-gun, the combination, with a sliding bolt, of a chamber in the top thereof, a locking-piece pivoted within said chamber to the bolt, lateral extensions on the forward end of the locking-piece adapted to corresponding recesses in the walls of the receiver, and an operating-lever connected to said locking-piece by a pin-and slot connection, substantially as described.

3. In a magazine-gun, and in combination with the recessed side



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walls of the receiver, and the sliding bolt having a chamber therein, the locking-piece *f*, pivoted within the said chamber at the rear end thereof and having lateral extensions on its forward end adapted to the recesses of the receiver, the operating-lever pivoted to the said locking-piece at the forward end thereof, and a spring contained in said locking-piece adapted to keep the forward end down, and through it the lever, substantially as described.

4. In combination with the sliding bolt, the firing-pin made in two parts, one of said parts being carried in the forward end of the said bolt, the locking-piece fitted to a recess in the sliding bolt and carrying the other part of the firing-pin, and the operating-lever, all the parts being constructed and arranged whereby the section *n* of the pin is moved out of alignment with the section *o* when the breech begins to open, and is in alignment therewith when the breech is fully closed, substantially as described.

5. In a magazine-gun, the combination, with a sliding bolt, operating-lever, and extractor, of the ejector-pins *g g'*, one of said pins being carried in the sliding bolt and the other in the operating-lever, and adapted to operate in connection with each other in the manner described.

6. In a magazine-gun, the combination, with a sliding bolt and operating-lever, of a two-part carrier provided with extensions on the upper rear portion thereof adapted to be struck by shoulders on the bolt, and extensions on the upper front portion thereof adapted to grasp the cartridge, one part of said carrier being pivoted on a pin projecting through the wall of the receiver and passing through a slot in the rear thereof, and the other part being pivoted on a similar pin to turn without sliding, all substantially as described.

7. In a magazine-gun, the combination, with a sliding bolt and operating-lever, of the two-part carrier *r s*, the diagonal screw or pin 3, and the extensions 2 in the upper front portion of said carrier, whereby, when the bolt is retracted, the part *r* of the carrier is moved longitudinally and laterally on the pin 3 toward the part *s* to grasp the cartridge, all substantially as described.

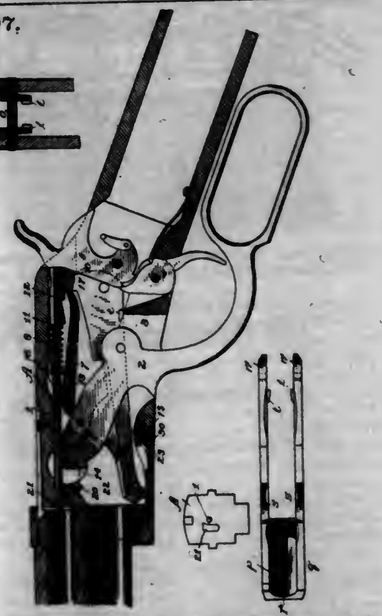
8. In a magazine-gun, the combination, with a sliding block and operating-lever, of a two-part carrier, one of said parts being provided with a rear extension, *v*, projecting upward into a recess in the bolt, the said recess terminating in a shoulder, *u*, which is adapted to strike and depress the extension *v* to slightly raise the forward end of the carrier to arrest the cartridge next to that on the carrier, and the projection *c'* on the forward end of the bolt, adapted in the continued movement of the bolt to act upon the projection *c* above the pivotal point of the carrier to elevate the said carrier and present the cartridge to the bore of the gun.

9. In a magazine-gun, the combination, with a sliding bolt, of an extractor having a shank fitted to a recess extending downward through the end of the bolt and a spring on said shank, substantially as described.

10. In a magazine-gun, the combination, with a sliding bolt, of an extractor, a shank extending at an angle thereto and fitted to an inclined hole in the bolt end, and a spring on said shank, substantially as described.

324,297. MAGAZINE FIRE-ARM. JOHN M. BROWNING and MATTHEW S. BROWNING, Ogden City, Utah, assignors to the Winchester Repeating Arms Company, New Haven, Conn. Filed May 26, 1885. (No model.)

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Claim.—1. The combination, in a breech-loading fire-arm, of the sliding bolt, a firing-pin having an enlarged rear end and shoulder, 11, said pin being fitted to the longitudinal bore of the breech-bolt, a lever, 7, pivoted to the bolt and having an upward extension, the rear end being adapted to a notch in the firing-pin and the forward end being in the line of movement of and operated by the lever 2, and a spring in the firing-pin having one end bearing upon the shoulder of the pin and the other end bearing on the upward projection of the lever 7, whereby the rear end of the lever is elevated, all substantially as described.

2. The combination, in a breech-loading fire-arm, of the breech-bolt having a longitudinal bore, the firing-pin borne therein, having an enlarged rear end and flattened front end, the safety-lever pivoted to the bolt and fitted to a notch in the firing-pin, the spring in the firing-pin, the slotted upward extension of the lever, through which the firing-pin passes and upon which the spring bears, and the slotted upper end of the lever 2, all substantially as described.

3. In a magazine fire-arm, a carrier composed of two side pieces loosely pivoted at their rear ends upon a pin and pivoted to each other at their front ends to permit lateral rocking motion, in combination with inclined projections on the inner lower surfaces of said side pieces, at the rear thereof, and the operating-lever, the said lever spreading the upper part of the sides in advancing and closing the same in retracting the bolt, substantially as described.

4. A magazine fire-arm of substantially the form described, a carrier composed of two parts having the rear projections, *t t*, the ears *s s*, at the forward upper part, adapted to the lever, whereby the parts may be spread, the front thicker portions formed to grip the cartridge, one overlapping the other, and the longitudinal pivot *r*, connecting the two parts and permitting a rocking motion, all substantially as described.

5. In a breech-loading fire-arm, a safety spring-valve in the bottom of the receiver, consisting of a valve, 23, pivoted upon a pin, 30, and having a rear projection adapted to receive the pressure of the spring 15, fitted in a cavity in the receiver, whereby the said valve is kept normally closed, but is adapted to open outward when the pressure from within exceeds the pressure of the spring.

324,298. COMBINED BURNER AND BOILER-FURNACE. CHRISTOPHER T. BURRELL, Au Sable, Mich. Filed May 21, 1885. (No model.)

Claim.—1. The combination, with a series of suspended cylindrical boilers, of a combustion-chamber provided with a grate and a chute communicating with the top of said chamber, one of said boilers shortened to permit the engagement of said chute, substantially as described.

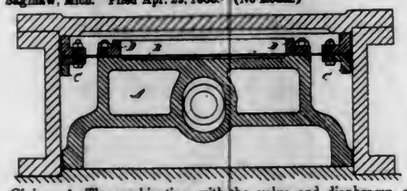
2. The combination, with a furnace-wall, of carrier cross-beams supported thereby, a series of boilers suspended by said cross-beams, a combustion-chamber beneath the boilers, and a chute communicating with said combustion-chamber, substantially as described.

3. The combination, with a furnace-wall and uptake, of a series of cross-beams supported upon said walls and a series of boilers supported by said cross-beams by intervening rods, one of said boilers shortened to permit the engagement of a chute, said chute arranged to communicate with the top of the combustion-chamber, substantially as described.

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324,299. BALANCE SLIDE-VALVE. William A. Campbell, East Saginaw, Mich. Filed Apr. 29, 1885. (No model.)



Claim.—1. The combination, with the valve and diaphragm, of a reversible frame, C, as and for the purposes set forth.

2. The frame C, made in two similar parts and arranged reversely and clamping the diaphragm B between them, combined with the said diaphragm, the valve A, and chest, and adapted to be reversed when worn, as set forth.

324,300. PANNIER OR PANNIER-SKIRT. Charles C. Carpenter, New York, and George W. Lockwood, Brooklyn, N. Y.; said Lockwood assignor to said Carpenter. Filed May 26, 1885. (No model.)



Claim.—1. A pannier or form for hoop-skirts, comprising two series of springs, each series arranged at an incline upon one side of the pannier and upon a horizontal plane upon the opposite side, and the two series arranged reversely, as set forth.

2. In a pannier or form for hoop-skirts, the two series of wires, B B', having inclined portions to resist downward pressure, and horizontal portions to allow folding, the said wires being arranged in reverse series and secured to tapes $x\ x'\ x^2$, as and for the purposes set forth.

3. A pannier formed of springs arranged at an incline upon one side of the pannier to resist the pressure of drapery and held torsionally upon the opposite side to provide horizontal portions which exert a constant force to hold the springs down to the limits of their holding-tapes, as set forth.

4. The pannier described, formed of springs B B', each series so arranged as to provide inclined portions on the one side and horizontal portions on the other side, and the ends of said springs held by tapes $b\ b'$ and $x\ x'$, substantially as described.

5. The pannier-skirt described, consisting of the body A, the tapes $x\ x'\ x^2$, the springs B B', tapes $b\ b'$, the leaves C, having eyelets c, and lacing-cord D, the springs being secured as described, and the whole combined to serve as set forth.

324,301. MEASURING-PUMP. Herman M. Cole, Anamosa, Iowa. Filed Nov. 15, 1884. (No model.)

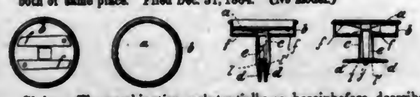
Claim.—In a device for elevating and measuring oils and other liquids, the combination, with the measure having a discharging-faucet and a float therein having a graduated stem, of the inclosing-vessel C, having a screw-cap and return-tube, and the guides L at the top of the side wall of the measure, substantially as specified.



324,301.



324,302. BUTTON OR STUD. Léon P. Conard, London, England, assignor of one-half to Charles Ferdinand Veit and George Dickman, both of same place. Filed Dec. 31, 1884. (No model.)



Claim.—The combination, substantially as hereinbefore described, with the hollow button-head b and the hollow or slotted shank c, of the spring-supported disk a, which fits the hollow head and can move therein in the direction of the shank, the leaves $d\ d$, hinged to the shank, and the forked rod s, to which the leaves are pivoted, and which connects said leaves with the spring-supported disk.

324,303. BUTTON. Léon P. Conard, London, England, assignor of two-thirds to Charles Ferdinand Veit and George Dickman, both of same place. Filed Jan. 23, 1885. (No model.)



Claim.—1. The combination, substantially as hereinbefore described, with the button-head B and the shank A, of a spring-pressed shell, C, which fits over or in the button-head, and is capable of rotary motion, the leaves D D', hinged to the shank, the projections $e\ e'$, formed on said leaves, the cam E, adapted to engage the projections on the leaves, and the rod f, which connects the cam with the shell.

2. The combination, substantially as hereinbefore described, with the button-head B and the shank A, of a spring-pressed shell, C, which fits over or in the button-head, and is capable of rotary motion, a projection, h, in the shell, and a depression in the button-head for locking the shell, the leaves D D', hinged to the shank, the projections $e\ e'$, formed on said leaves, the cam E, adapted to engage the projections on the leaves, and the rod f, which connects the cam with the shell.

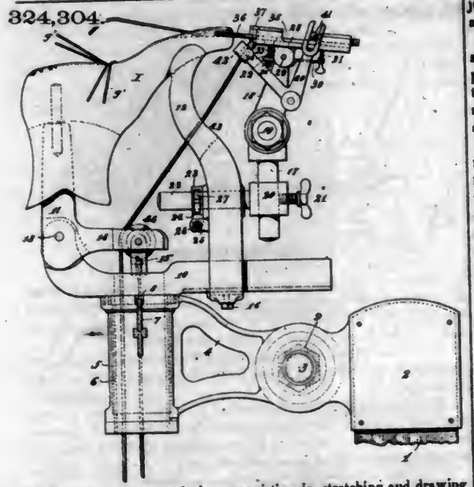
324,304. LASTING THE UPPERS OF BOOTS OR SHOES. Wm. C. Cross, Boston, Mass. Filed June 8, 1885. (No model.)

Claim.—1. In that process of lasting boot and shoe uppers in which the edge of the upper is gathered and drawn over upon the bottom of the last by a draw-cord, as hereinbefore specified, the method of facilitating the gathering of the upper over the heel and toe or other sharp curves or edges of the last and of preventing the upper from binding upon such parts of the last before being drawn into place by means of pressure applied through the instrumentality of a temporary former during the lasting operation beneath the inturned portions or edges of the upper, substantially as and for the purposes hereinbefore set forth.

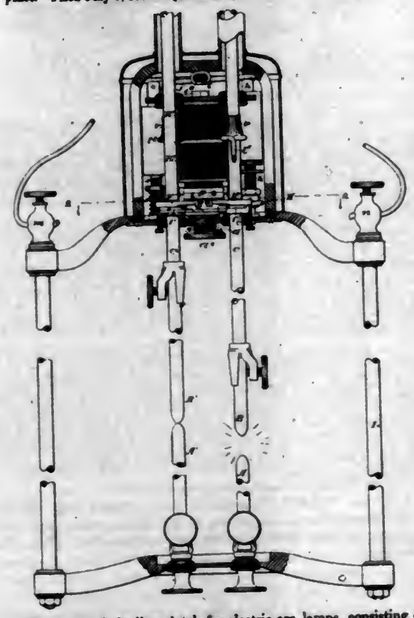
2. The hereinbefore-described improvement in the art of lasting the toes of uppers of boots and shoes, consisting in stretching and drawing the upper over the last by means of pressure applied beneath the inturned portion of the upper, and then, while said portion is maintained stretched and taut, wiping it down from the outside upon the bottom of the last and securing it in place thereon, substantially as and for the purposes hereinbefore set forth.



324,304.



324,305. ELECTRIC-ARC LAMP. Elisha R. Cutten, Pittsburg, Pa., assignor to the Electrical and Mechanical Developing Company, same place. Filed July 7, 1884. (No model.)



Claim.—1. A feeding-clutch for electric-arc lamps, consisting of a ring pivoted within a tilting lever, substantially as set forth.

2. In an arc lamp, the combination, with the carbon-holding rod, of a feeding-clutch consisting of a ring loosely fitting said rod, and a lever surrounding said ring and to which it is pivoted on a pivotal axis extending longitudinally of said lever, and the armature of the regulating-magnet, in connection with and adapted to tilt said lever, substantially as set forth.

3. In an arc lamp, the combination of the carbon-holding rod, a clutch consisting of a ring pivoted within a tilting lever on a pivotal axis extending longitudinally thereof, the armature of the regulating-magnet connected to one arm of said lever and adapted to lift or depress it, suitable adjustable stops for limiting the motion of the armature, and an adjustable support for the opposite arm of said tilting lever, substantially as set forth.

4. A feeding-clutch for an arc lamp, consisting of a ring having diametrically-opposite pivots, and a clutch-lever within which said ring is pivoted, and having bearings for said pivots extending from a longitudinal to a transverse position, whereby the ring may be turned within said lever and be thereby rendered operative or impotent at pleasure, substantially as set forth.

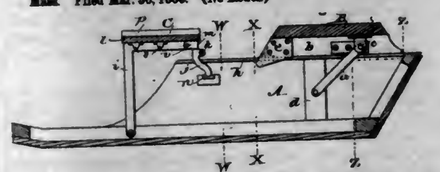
5. In a duplex electric lamp, the combination, with the regulating-magnet and the two carbon-holding rods, of two feeding-clutches, one for each rod, and each consisting of a clutch-lever with a ring pivoted within it and capable of being turned with its pivotal axis longitudinally or transversely of the lever, and with means, substantially as described, for turning said rings, so arranged that when the pivotal axis of one extends longitudinally that of the other extends transversely of its lever, thereby rendering one clutch operative and the other impotent, substantially as set forth.

6. In a duplex electric lamp, the combination, with the regulating-magnet and the two carbon-holding rods, of two feeding-clutches, one for each rod, and each consisting of a clutch-lever with a ring pivoted within it and capable of being turned with its pivotal axis longitudinally or transversely of the lever, thereby rendering the clutch operative or impotent, the clutch for feeding the first pair of carbons being primarily operative and that for the second pair primarily impotent, with a shifting mechanism, substantially as specified, adapted to act automatically upon the burning out of the first pair of carbons to shift the clutches, and thereby render that for the second pair operative and the first impotent, substantially as set forth.

7. In a duplex electric lamp, the combination, with the regulating-magnet and the two carbon-holding rods, of two feeding-clutches, one for each rod, and each consisting of a clutch-lever with a ring pivoted within it and capable of being turned with its pivotal axis longitudinally or transversely of the lever, thereby rendering the clutch operative or impotent, the clutch for feeding the first pair of carbons being primarily operative and that for the second pair primarily impotent, with a spring-actuated shifting-lever adapted, when released, to shift said clutches and render the first impotent and the second operative, a spring-catch adapted to retain said lever when set, and electro-magnetic means, substantially as described, for withdrawing said catch, all adapted to operate substantially as set forth.

8. In a duplex electric lamp, the combination, with the regulating-magnet and the two carbon-holding rods, of two feeding-clutches, one for each rod, and each consisting of a clutch-lever with a ring pivoted within it and capable of being turned with its pivotal axis longitudinally or transversely of the lever, thereby rendering the clutch operative or impotent, the clutch for feeding the first pair of carbons being primarily operative and that for the second primarily impotent, with a spring-actuated shifting-lever adapted, when released, to shift said clutches and render the first impotent and the second operative, and a shunt operated by said lever and adapted to admit the current to the second pair of carbons, substantially as set forth.

324,306. JUMP-SEAT CARRIAGE. Charles N. Dennett, Salisbury, Mass. Filed Mar. 30, 1885. (No model.)



Claim.—1. A carriage-seat having a pair of jumping-irons connected therewith, and adapted to raise one edge or part thereof, and an automatic guiding and locking device secured to the opposite edge, whereby the seat is in part raised by the jumping-irons, and is located or positioned thereby when in place, and is guided when being jumped by the irons that lock the front edge when in position for use, substantially as specified.

2. The locking-irons e, formed with stud f and flange g, and arranged to clamp cap-iron h when the seat rests thereon, and to slide freely thereon when the seat is being raised and jumped, substantially as specified.

3. The combination of seat B, jumping-irons $a\ a$, locking and guiding irons $e\ e$, and cap-irons $h\ h$, all constructed and combined to operate substantially as specified.

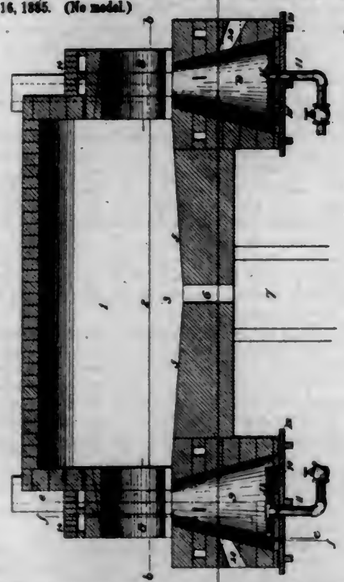
4. The combination, with front seat, C, and its front standards, i, rigidly secured thereto and pivotally connected with the body, and the socket n, secured to the panel, of rear standards, j, formed with angle m, and pivoted to the seat at the front end thereof, and a bar, k, rigidly uniting said standards, to insure their simultaneous vibratory movement, substantially as specified.

5. A carriage-seat formed with a supplemental or upper bed or bottom transversely divided, and adapted and arranged to be extended and retracted on each side of the seat, substantially as specified.

6. The combination of lower seat-bottom, *l*, upper sections, *p p*, rods *q*, and eyebolts *t*, all substantially as specified.

7. In combination with bottom *l* and upper sections, *p p*, the rods *q*, transversely divided and offset or arranged out of line, substantially as specified.

324,307. GLASS-FURNACE. Henry L. Dixon, Pittsburg, Pa. Filed Apr. 16, 1885. (No model.)



Claim.—1. In a glass-furnace, the combination of the combustion-chamber 9, having a contracted opening leading into the arched chamber 8, the arched chamber 8, situate directly above the combustion-chamber at the end of the furnace, said chamber 8 having a greater diameter or area in cross-section than the opening from the chamber 9, and a less diameter or area in cross-section than the melting-chamber of the furnace, and opening directly into the melting-chamber at the end thereof, substantially as and for the purposes specified.

2. In a glass-furnace, the combination of the conical combustion-chamber 9, the arched chamber 8, situate directly above the chamber 9 and at the end of the furnace, said chamber 8 being substantially circular in cross-section and of a greater diameter than the opening from the combustion-chamber D, and a melting-chamber situate next adjacent to the chamber 8 and greater in cross-sectional area than the said chamber, substantially as and for the purposes specified.

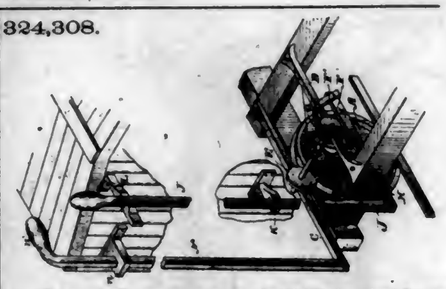
3. In a glass-furnace, the combination of the chamber 9, the circular chamber 8, situate at the end of the furnace above the level of the floor of the melting-chamber, with an air-flue entering the wall at the side of the combustion-chamber, extending up over the crown and opening into a horizontal flue, which extends around the combustion-chamber, and is provided with lateral flues leading into the combustion-chamber, substantially as and for the purposes described.

4. In a glass-furnace, the combination of the chamber 9, the circular chamber 8, situate at the end of the furnace above the level of the floor of the melting-chamber, with air-flues entering the wall at the opposite sides of the combustion-chamber, extending up over the crown and opening into the horizontal flues which extend around the opposite sides of the combustion-chamber, and are provided with lateral flues leading into the latter, substantially as and for the purposes described.

5. In a glass-furnace, the combination of the chamber 9, the circular chamber 8, situate at the end of the furnace above the level of the floor of the melting-chamber, with an air-flue entering the wall at the side of the combustion-chamber and opening into a flue which extends around the combustion-chamber, and is provided with lateral flues leading into the latter, said latter flues increasing in size as they occur at greater distances from the point at which the air-flue enters the horizontal flue, substantially as and for the purposes described.

324,308. CAR-BRAKE. Arthur C. Dodge, Gardiner, assignor of one-half to Albert W. Reynolds, Machias, Me. Filed July 19, 1884. (No model.)

324,308.

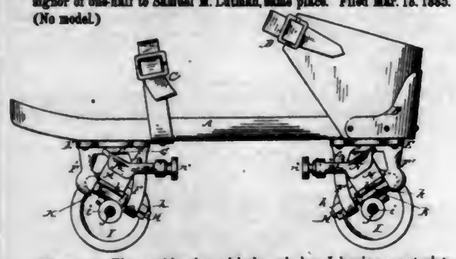


Claim.—1. The car-brake composed of the friction-wheel E, raised and lowered by the spring-bar C, and the rod N, the ratchet-wheels G F, pawls G′ and F′, operated by the bar H, and lever J, fitting into the notch or socket L, substantially as shown and described.

2. In a car-brake, the combination of friction-wheel E, spring-bar C, shaft B, ratchet-wheels F G, and pawls F′ G′, substantially as shown and described.

3. In a car-brake, the friction-wheel E, working against the car-wheel, combined with the ratchet-wheels F G and pawls F′ G′, whereby the motion acquired by the wheel E is retained and applied to setting up the brakes, substantially as described and shown.

324,309. ROLLER-SKATE. Charles H. Dott, Columbus, Ohio, assignor of one-half to Samuel M. Latman, same place. Filed Mar. 18, 1885. (No model.)

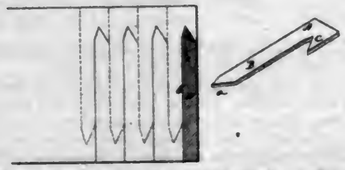


Claim.—1. The combination, with the axle-box J, having a seat-plate connected therewith, and the bracket-plate E, having the guide-ridge G, of the tension-plate N and the cushioning-block, the said tension-plate provided with a bifurcated end, and the support F, provided with lugs *f*, and means for advancing the plate N parallel to the plate E, as and for the purposes set forth.

2. The combination, with the axle-box and the foot-rest bracket connected therewith by suitable bearings, of the rubber block seated upon the axle-box and a tension-plate seated upon said block rigidly supported upon a bracket-guide at one end and upon the bracket-arm lugs at its other end against the upward pressure of the rubber block, and a screw for moving said tension-plate in a line parallel to the foot-rest, substantially as described, for the purpose specified.

3. In a roller-skate, a tension-plate having a bifurcated end and a slotted arm, in combination with the cushion and a foot-rest plate having a guide-ridge and a pendent bracket-support passing through the slotted arm of said tension-plate, and provided with lugs bearing upon the arms of said plate as a means for guiding and taking the strain off the plate in its adjusting movement, and a screw passing through the slotted arm of said plate into a threaded opening in said bracket-support, substantially as described.

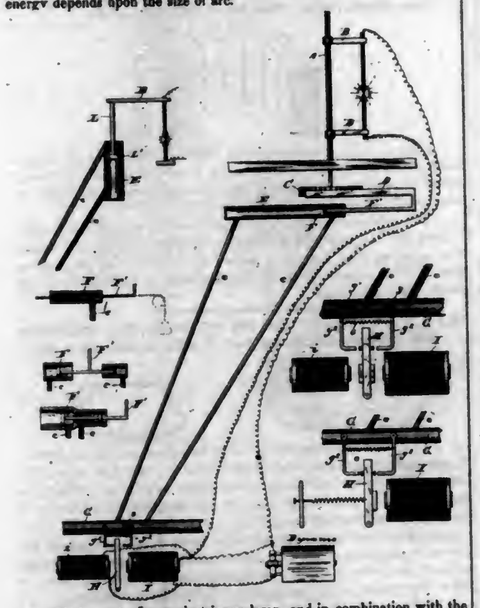
324,310. BARBED-WIRE-FENCE NAIL. Patrick Dunn, Côte St. Paul, Quebec, Canada, and Thomas Harris, Seymour, Conn.; said Dunn assignor to Carlos French, Seymour, Conn. Filed July 1, 1885. (No model.)



Claim.—The herein-described barbed-wire-fence nail, consisting of the head A, the principal leg, B, extending therefrom, in width substantially half the width of the head, the side of the head opposite the leg parallel with the outside of the leg, the point of the nail V-shaped, and the space between the two legs at the head end corresponding to the V shape of the point, substantially as described.

324,311. ARC-LAMP-REGULATING MECHANISM. Bradley A. Fiske, Washington, D. C. Filed Feb. 26, 1885. (No model.)

Brief.—Fluid is admitted under pressure to either one side or the other of the piston, to preserve the arc. The entrance and exit of the fluid to and from the cylinder are controlled by electro-magnets, whose energy depends upon the size of arc.



Claim.—1. In an electric-arc lamp, and in combination with the carbon-carrying mechanism thereof, a motor or propelling device driven by a fluid maintained under pressure, a fluid-supply pipe, an exhaust-aperture, a valve, and an automatic governor controlling the admission and escape of the fluid in the motor, substantially as described.

2. In combination with the carbon-carrying mechanism, the fluid motor or propelling device applied thereto, a fluid-supply reservoir, a conduit connecting said reservoir and motor, an escape-orifice, and an automatic governor interposed between the motor and reservoir controlling the induction and eduction passages, substantially as described.

3. In an electric-arc lamp, and in combination with the carbon-carriers thereof, a fluid-reservoir, a conduit leading therefrom, a cylinder connected at both ends to said conduit, a piston in said cylinder whose piston-rod is connected to the mechanism for actuating the carbons, a valve system for controlling the admission and escape of the fluid-pressure in the cylinder, and electro-magnetic devices for actuating said valve system, substantially as described.

4. In an electric-arc lamp, and in combination with the carbon-carrying devices thereof, a motor adapted to be driven by a fluid maintained under pressure, and consisting, essentially, of a cylinder, a piston working therein and having operating faces of unequal area, a fluid-pressure supply acting continuously upon one face of the piston, a valve mechanism controlling the admission and discharge of the fluid to the other face of the piston, and an automatic electric governor included in the lamp-circuit controlling the said valve mechanism, substantially as described.

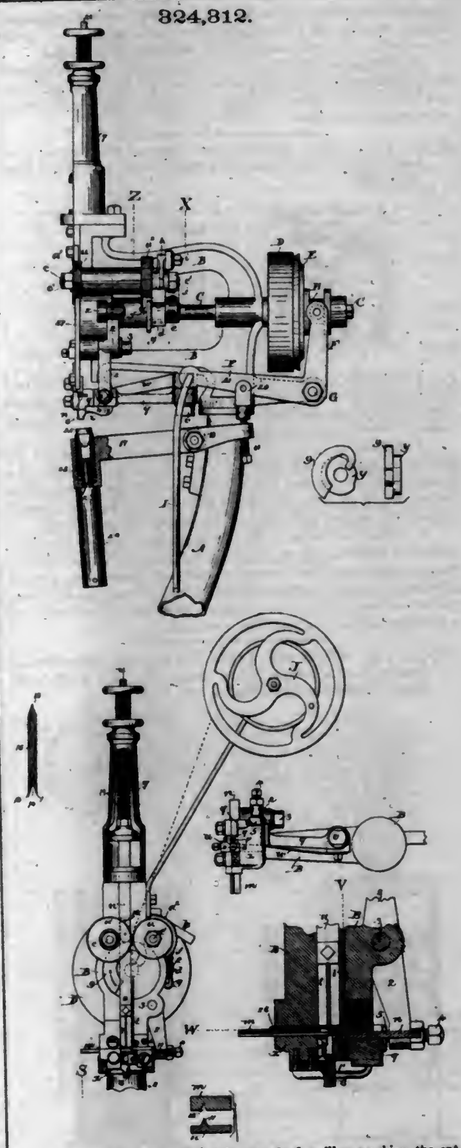
5. As a means for controlling the application of fluid-pressure to the actuating mechanism in accordance with the strength of current traversing an electric circuit, the combination, with the fluid-motor and the supply-reservoir, open connections between the reservoir and both faces of the piston of the motor, and a valve mechanism controlling the admission and escape of the fluid from one face of the piston, said valve mechanism being operated and controlled by electro-magnetic devices, substantially as described.

324,312. BOOT AND SHOE NAILING MACHINE. Walter S. Fitzgerald, Boston, Mass. Filed Mar. 23, 1885. (No model.)

Claim.—1. The combination of the supporting-arm 17, body 24, its stem 23, anvil 22, threaded on said stem, and cushioning-spring 25, mounted on said stem and arranged to exert its force between said arm and anvil, substantially as specified.

2. In a boot and shoe nailing machine, the combination, with the pivotal anvil-supporting arm with its adjusting-screw 19, of stop 20, pivoted to angle-lever F, actuated through the treadle-rod, substantially as specified.

324,312.



3. In combination with a duly-organized nailing-machine, the cutters *m n*, the former having the longitudinal groove 12 and the latter the corresponding raised groove, 11, substantially as specified.

4. In a boot and shoe nailing machine, the combination, with the wire feeding and crimping wheels *a a′*, of toothed wheel a^2, mounted on the axle of one of said feeding-wheels, lever *d*, with a controlling-cam and carrying trundle *e*, pawl *f* and its engaging spring, and the actuating-cam *j*, arranged to engage trundle *e*, all substantially as specified.

5. In a boot and shoe nailing machine, the combination, with pivotal jaw *g*, of lever 2, with its roller *z*, cam *y*, and adjusting-screw arranged to engage said lever with said jaw, all substantially as specified.

6. In a boot and shoe nailing machine, the combination, with vibrating feed-lever *d*, of an adjustable frictionally-retained lever-cam, *h*, arranged to regulate the extent of return movement of said feed-lever when it is liberated from its actuating-cam, substantially as specified.

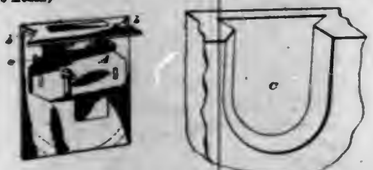
7. In a nailing-machine, the combination, with stationary cutter *m*, of cutter *n* and a reciprocating holder arranged to move in a straight horizontal path parallel with the plane of cutter *m*, substantially as specified.

8. In a boot and shoe nailing machine, the combination of the anvil

mounted on a pivotal support, the clutch-actuating lever, and connecting devices, whereby said anvil-support is actuated to raise the anvil by the movement of the clutch-actuating lever, substantially as specified.

9. The combination, with cutter *m*, formed with a longitudinal opening for the passage of the nail-driver *t*, of cap 26, secured on said cutter and formed with a passage to admit and laterally support the driver, substantially as specified.

324,313. LOCK. EMANUEL G. GORY, Cincinnati, Ohio, assignor to the Corbin Cabinet Lock Company, New Britain, Conn. Filed July 3, 1883. (No model.)

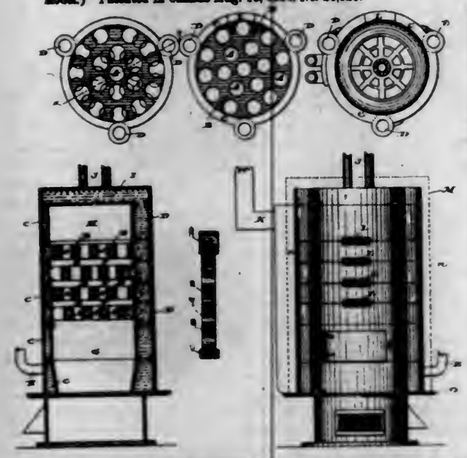


Claim.—1. A lock-case having its top plate constructed to project over and beyond the cap-plate, and the ends of the top plate and sides of the lock-case constructed and adapted to interlock with the side walls of a routed cavity, substantially as set forth.

2. A lock-case having its cap-plate extended laterally beyond the sides of the lock-case, and adapted to interlock with the side walls of a routed cavity, and provided with a top plate constructed to project over and beyond the cap-plate, and its ends formed to fit within and interlock with the side walls of said routed cavity, substantially as set forth.

3. A lock-case having its front plate, cap-plate, and top plate constructed to interlock with the side walls of a routed cavity, and thereby be prevented from either forward or backward displacement, the top plate being formed to project over and beyond the cap-plate and cover and conceal that portion of the routed cavity formed for the reception of a projecting key-post, substantially as set forth.

324,314. STEAM AND WATER BOILER. EDWARD GURNEY and CHARLES SELLERS, Toronto, Ontario, Canada. Filed May 8, 1885. (No model.) Patented in Canada Aug. 18, 1884, No. 30,029.



Claim.—1. In a steam or water furnace or boiler for house-heating purposes, in which the heating-surface is enlarged by a series of hollow cast-iron cylindrical sections placed over one another, as specified, a section having vertical heat-flues A, water-spaces B, which connect with a hollow ring, C, the water-legs D, open above and below to connect with adjacent similar sections, and the ring C, being of greater depth than the water-chambers B, all formed in a single piece, and adapted to serve as set forth.

2. In a steam or water furnace or boiler for house-heating purposes, in which the heating-surface is enlarged by a series of hollow cast-iron cylindrical sections placed over one another, as specified, two or more sections cast with flues A, water-chambers B, rings C, of greater depth than the water-chambers, and water-legs D, open above and below to connect the interiors of adjacent sections, the flues A of one section being arranged to break joints with the adjacent sections, while the water-legs D correspond, all arranged to serve as set forth.

3. The boiler and furnace described, formed of whole horizontal sections cast and arranged to provide fire-box G, vertical flues A, which break joints with adjacent sections, horizontal heat-chambers which separate the water-chambers in adjacent sections, and a smoke-chamber above, the interior of the several sections being connected by water-legs D, and the rings C of the middle sections resting fairly upon each other to make a close structure, as and for the purposes set forth.

324,315. FURNACE. EDWARD GURNEY and CHARLES SELLERS, Toronto, Ontario, Canada. Filed May 14, 1885. (No model.)



Claim.—1. In a furnace having a fire-pot surrounded by a metal water-jacket, the interior wall, A, having a series of inwardly-projecting hollow metal ribs, *a*, arranged to form retaining-spaces for the bricks B, substantially as and for the purpose specified.

2. In a furnace having a fire-pot surrounded by a metal water-jacket, a metal wall, A, made with a series of inwardly-projecting hollow metal ribs, *a*, having sides converging toward the center of the pot, so as to form dovetail recesses to receive the fire-bricks B, substantially as and for the purpose specified.

324,316. FUSIBLE LINK FOR AUTOMATIC FIRE-EXTINGUISHERS. OSBORN B. HALL, Malden, Mass. Filed May 25, 1885. (No model.)



Claim.—1. A securing-link for automatic fire-extinguishers, formed in two parts, of brass or other suitable material, each half being bent into bow-like form, then overlapped and united by soldering with fusible metal or alloy, which will give way at the danger-point in the rise of temperature, substantially as specified.

2. In a securing-link for automatic fire-extinguishers, having the halves overlapped and united by fusible metal or alloy, the overlapping arms of the halves of the link perforated to receive the fusible metal or alloy that secures the halves together, substantially as specified.

3. In a securing-link formed with two bow-like halves united by fusible alloy, the outer half extended to overlap the curved portion of the other half to allow an accumulation of the uniting alloy beneath the ends of said outer half, substantially as specified.

4. A securing-link for automatic fire-extinguishers, formed in two bow-like parts, with one part or half of wire, and the other tubular, to overlap the other half, the two being secured together by fusible metal or alloy, substantially as specified.

324,317. VELOCIPEDE. J. HARRINGTON, Coventry, England. Filed Mar. 27, 1885. (No model.) Patented in England Dec. 29, 1882, No. 6,217.



Claim.—The combination, with a front-steering tricycle or velocipede, of an auxiliary frame coupled thereto and provided with an extra wheel, a pedal crank-axle, a seat or saddle for the rider, and a handle-bar, substantially as described, the said auxiliary frame having both a transverse and a vertical joint or hinge, whereby the frame is allowed to rise and fall with the inequalities of the ground and to trail as a caster, substantially as set forth.

324,318. CAN SEAMING AND CRIMPING MACHINE. CHARLES L. HART, Brooklyn, N. Y. Filed Apr. 8, 1885. (No model.)

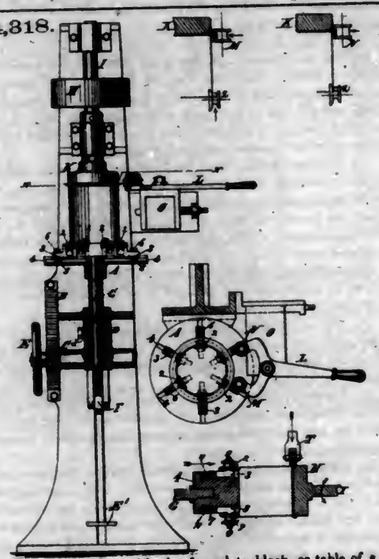
Brief.—The can-body and the bottom are rotated together by means of a chuck. Tools are brought against the rotating body and bottom and seam them together. At the same time the non-rotating plate carrying the rollers is raised and turns over the edge of the can.

Claim.—1. The combination, with the rotary chuck of a can-seaming machine, of a non-rotating face-plate, block, or table, and a series of rolls mounted on said face-plate, block, or table, substantially as described.

2. The combination, with the rotary chuck of a can-seaming machine, of a non-rotating face-plate, block, or table, and a series of grooved rolls mounted on said face-plate, block, or table, substantially as described.

3. The combination, with the non-rotating face-plate, block, or table of a can-seaming machine, of a series of rolls journaled in adjustable bearing blocks or supports mounted on said face-plate, substantially as described.

324,318.



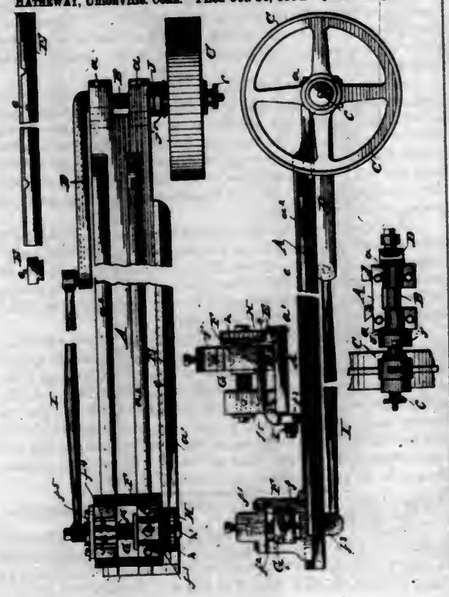
4. The combination, with the face-plate, block, or table of a can-seaming machine, of a series of rolls carried by movable bearings mounted on said face-plate, substantially as described.

5. The combination, with the face-plate, block, or table provided with a series of radial undercut grooves, of bearing-blocks arranged to slide in said grooves, curling-rolls mounted in said blocks, and clamping means for holding said blocks stationary, substantially as described.

6. The combination, in a can-seaming machine, of the mandrel and its chuck, with mechanism for seaming a can, and a face-plate or block provided with a series of curling-rolls for curling or turning over the metal at the mouth thereof, substantially as described.

7. The combination, in a can-seaming machine, with the rotary chuck for revolving the can, and mechanism for seaming the bottom joints thereof, of a face-plate or table provided with a series of rolls on which the mouth-edge of the can rests, and means for pressing the rolls against the edge of the can, whereby the formation of the bottom seam and the curling over or wire-edging of the can may be performed simultaneously, substantially as herein set forth.

324,319. MARKING OR GRADUATING MACHINE. WILLIAM E. HATHEWAY, Unionville, Conn. Filed Oct. 30, 1884. (No model.)



324,319.



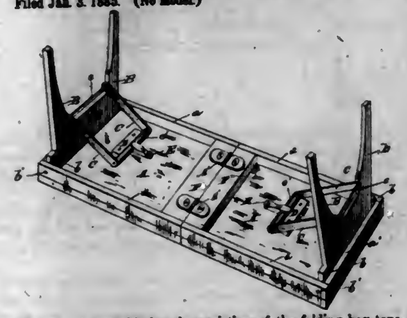
Claim.—1. In a machine to mark rules, the combination, with the frame of the same, a head-block sliding thereon, a rule-bed fixed to the frame, and a marking-roller arranged to pass over and mark the rule on the bed, and fixed to one end of a shaft having bearings in the sliding head, of a rod or pitman connecting the other end of said shaft with a crank-arm fixed to the driving-shaft, which carries a driving-pulley, and mechanism whereby said shaft and pulley may be alternately engaged or coupled for one half-revolution and disengaged for one whole revolution, the pulley rotating continuously, substantially as specified.

2. In a machine to mark rules, the combination, with the frame A, driving-shaft B, detent-bar *b*, spring b^2, and sliding bar b^4, of the driving-pulley C, sliding collar *c*, detent c^2, spring-pin c^3, collars J and j^7, springs j^3, and detent-bars j^5, substantially as specified.

3. In a machine to mark rules, the combination, with the frame A, sliding head-block F, shaft G, and marking-roller H, of the journal-box *f* and f^3, cap f^7, coil-spring f^2, fork f^4, and proper means to reciprocate the head-block on the frame, substantially as specified.

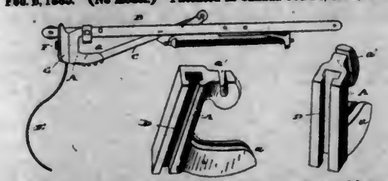
4. In a machine to mark rules, the combination, with the marking-roller H, provided with the groove *h* and notch h^7, and fixed to the shaft G, turning in bearings in the sliding head F, of the bed-block E, provided with the fence *e*, and a strip of wood similar to but larger than the rule, which strip lies on the inner side of the fence while the rule lies on the outer side, substantially as specified.

324,320. FOLDING WASH-BENCH. FREEMAN HANSON, Bar Mills, Me., assignor to James W. Meserve and George W. Hanson, same place. Filed Jan. 3, 1885. (No model.)



Claim.—A portable bench consisting of the folding box-tops A A, folding legs, the abutments *a' a'* therefor, the folding braces pivoted thereto, the undercut cleats D D, and the turn-buttons E E, all constructed substantially as and for the purposes described.

324,321. COMBINED SEEDING AND DRILLING MACHINE. JAMES S. HEATH, Brantford, Ontario, Canada, assignor to Jesse Oldfield Wisner, Wareham Sheldon Wisner, and Edward Lyman Gould, same place. Filed Feb. 5, 1885. (No model.) Patented in Canada Oct. 24, 1883, No. 17,693.



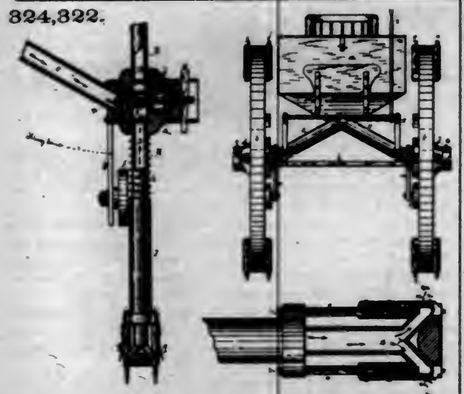
Claim.—1. In a seeding-machine, the combination, with the drag-bar and suitable locking mechanism, of independent interchangeable head-blocks having dovetailed recesses, and a recess to receive the pivot of the drag-bar, as set forth.

2. The interchangeable head-blocks A, having dovetailed sockets D and transverse slots *a'*, constructed and adapted to serve with drag-bar B, suitable locking mechanism, and implements, as E H, as set forth.

3. The head-block A, having dovetailed recess D, arm *a*, and slot *a'*, combined with the drag-bar B, brace C, tooth E, bolt F, and cap G, as and for the purposes set forth.

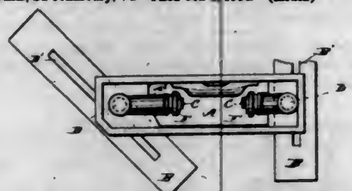
324,322. SULKY CORN AND SEED PLANTER. CHARLES C. HENDERSON, Warren, Pa., assignor of one-half to Orren C. Allen and George H. Higgins, same place. Filed Feb. 4, 1885. (No model.)

324,322.



Claim.—A planting-machine, with combination of hollow axle, hollow hubs, and hollow spokes, arranged and connected as described, so as to receive the seed to be planted from a reservoir above the axle and conduct the same to the ground.

324,323. COMBINED TRY-SQUARE AND BEVEL. Leonard D. Howard, St. Johnsbury, Vt. Filed Oct. 2, 1884. (Model.)



Claim.—1. The combination, with the slotted head, of the tilting clamping-bolt, arranged as described, and provided at its outer end with the catch or lip, and means for securing the said tilting bolt in its operative position.

2. The combination, with the slotted head, of the tilting clamping-bolt, arranged as described, and provided at its outer end with the catch or lip, and the spiral spring, arranged as described, substantially as set forth.

3. The combination, with the slotted head, of the tilting clamping-bolt, arranged as described, and provided at its outer end with the catch or lip, and having its inner end formed with an exterior screw-thread, and the nut arranged to work upon the said screw-threaded end, and adapted to secure the tilting bolt in its operative position, substantially as described.

4. The combination, with the slotted head, of the tilting clamping-bolt, arranged as described, and provided at its outer end with the catch or lip, and having its inner end formed with an exterior screw-thread, the spiral spring, arranged as described, and the nut working upon the screw-threaded end of the tilting clamping-bolt, all constructed and arranged to operate in the manner and for the purpose shown and set forth.

5. The combination, with the stock having the inclined or slanting horizontal slot in one of its ends, of the tilting clamping-bolt, arranged as described, and provided at its outer end with the slanting catch or lip, and means for securing the tilting bolt in its operative position.

6. The combination, with the stock having the inclined or slanting horizontal slot in one of its ends, of the tilting clamping-bolt, arranged as described, and provided at its outer end with the slanting catch or lip, and the spiral spring, arranged as described, substantially as set forth.

7. The combination, with the stock having the inclined or slanting horizontal slot in one of its ends, of the tilting clamping-bolt, arranged as described, and provided at its outer end with the slanting catch or lip, and having its inner end formed with an exterior screw-thread, and the nut arranged to work upon the said screw-threaded end, and adapted to secure the tilting bolt in its operative position, substantially as described.

8. The combination, with the stock having the inclined or slanting horizontal slot in one of its ends, of the tilting clamping-bolt, arranged as described, and provided at its outer end with the slanting catch or lip, and having its inner end provided with an exterior screw-thread, the spiral spring, arranged as described, and the nut working upon the said screw-threaded end of the tilting clamping-bolt, all constructed and arranged to operate in the manner and for the purpose shown and set forth.

9. The combination, with the stock provided at one end with the inclined or slanting horizontal slot, and having at the other end the straight horizontal slot, of the tilting clamping-bolts, arranged as described, and provided at their outer ends, respectively, with the slanting and straight catches or lips, and means for securing the said tilting bolts in their operative positions, substantially as described.

10. The combination, with the stock provided at one end with the inclined or slanting horizontal slot and having at the other end the straight horizontal slot, of the tilting clamping-bolts, arranged as described, and provided at their outer ends, respectively, with the slanting and straight catches or lips, and having their inner ends formed with the exterior screw-thread, the spiral springs, arranged as described, and the nuts working upon the screw-threaded inner ends of the tilting clamping-bolts, all constructed and arranged to operate in the manner and for the purpose shown and set forth.

11. The combination, with the slotted head, of the tilting and sliding bolt, arranged as described, and provided at its outer end with the catch or lip, and means for securing the said tilting and sliding bolt in its operative position.

12. The combination, with the slotted head, of the tilting and sliding bolt, arranged as described, and provided at its outer end with the catch or lip, and the spiral spring, arranged as described, substantially as set forth.

13. The combination, with the slotted head, of the tilting and sliding bolt, arranged as described, and provided at its outer end with the catch or lip, and having its inner end formed with an exterior screw-thread, and the nut arranged to work upon the said screw-threaded end, and adapted to secure the tilting and sliding bolt in its operative position, substantially as described.

14. The combination, with the slotted head, of the tilting and sliding bolt, arranged as described, and provided at its outer end with the catch or lip, and having its inner end formed with an exterior screw-thread, the spiral spring, arranged as described, and the nut working upon the screw-threaded end of the tilting and sliding clamping-bolt, all constructed and arranged to operate in the manner and for the purpose shown and set forth.

15. The combination, with the stock having the inclined or slanting horizontal slot in one of its ends, of the tilting and sliding clamping-bolt, arranged as described, and provided at its outer end with the slanting catch or lip, and means for securing the tilting and sliding bolt in its operative position.

16. The combination, with the stock having the inclined or slanting horizontal slot in one of its ends, of the tilting and sliding clamping-bolt, arranged as described, and provided at its outer end with the slanting catch or lip, and the spiral spring, arranged as described, substantially as set forth.

17. The combination, with the stock having the inclined or slanting horizontal slot in one of its ends, of the tilting and sliding clamping-bolt, arranged as described, and provided at its outer end with the slanting catch or lip, and having its inner end formed with an exterior screw-thread, and the nut arranged to work upon the said screw-threaded end, and adapted to secure the tilting sliding bolt in its operative position, substantially as described.

18. The combination, with the stock having the inclined or slanting horizontal slot in one of its ends, of the tilting and sliding clamping-bolt, arranged as described, and provided at its outer end with the slanting catch or lip, and having its inner end formed with an exterior screw-thread, the spiral spring, arranged as described, and the nut working upon the said screw-threaded end of the tilting and sliding clamping-bolt, all constructed and arranged to operate in the manner and for the purpose shown and set forth.

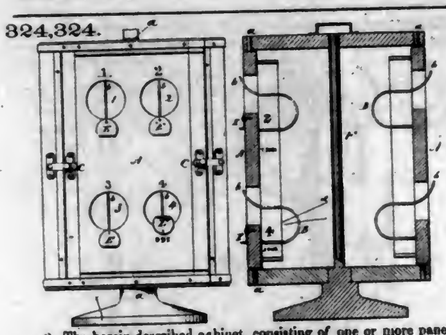
19. The combination, with the stock provided at one end with the inclined or slanting horizontal slot and having at the other end the straight horizontal slot, and the tilting and sliding clamping-bolts, arranged as described, and provided at their outer ends, respectively, with the slanting and straight catches or lips, and means for securing the said bolts in their operative positions, substantially as described.

20. The combination, with the stock provided at one end with the inclined or slanting horizontal slot and having at the other end the straight horizontal slot, of the tilting and sliding clamping-bolts, arranged as described, and provided at their outer ends, respectively, with the slanting and straight catches or lips, and having their inner ends formed with the exterior screw-threads, the spiral springs, arranged as described, and the nuts working upon the screw-threaded inner ends of the tilting and sliding clamping-bolts, all constructed and arranged to operate in the manner and for the purpose shown and described.

324,324. FILING-CABINET. Fried W. Hott, Birmingham, Conn. Filed Mar. 30, 1885. (No model.)

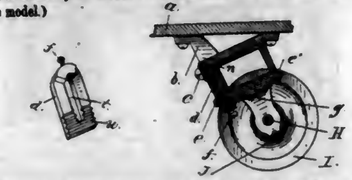
Claim.—1. The herein-described cabinet, consisting of one or more panels, each panel constructed with one or more openings, combined with a hook for each opening, fixed on the reverse side, each hook turned outward to present its point through its opening, substantially as described.

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2. The herein-described cabinet, consisting of one or more panels, each panel constructed with one or more openings, combined with a hook for each opening, fixed on the reverse side, each hook turned outward to present its point through its opening, with an indicator adapted to be turned over the opening or away from it, as the case may be, substantially as described.

324,325. ROLLER-SKATE. Franklin B. Hunt, Richmond, Ind., assignor to Henry W. Meudenhall, agent, same place. Filed Feb. 6, 1885. (No model.)



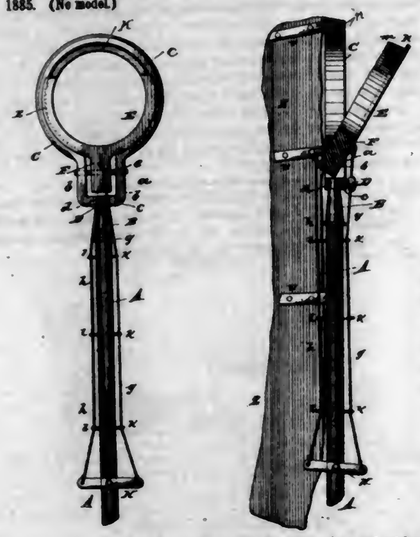
Claim.—1. In combination with the bracket *b* and hanger *g*, the slotted and corrugated slide *d*, substantially as set forth.

2. The bracket *b*, provided with the flanges *b'* and V *n*, in combination with the corrugated slide *d*, for the purpose specified.

3. The slide *d*, provided with the corrugations *n* and set-screw *f*, in combination with the bracket and hanger, substantially as set forth.

4. The rubber cushion *r*, interposed between the hanger and bracket, in combination with the slide *d*, provided with corrugations at one end and a set-screw at the other, substantially as set forth.

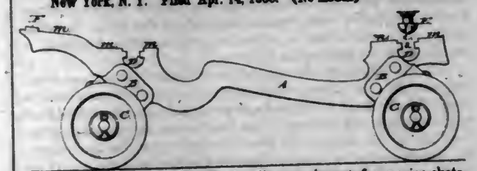
324,326. FRUIT-GATHERER. Peter Hutcherson and John W. Hutcherson, Sandy Ridge, N. C. Filed June 3, 1884. Renewed June 27, 1885. (No model.)



Claim.—1. A fruit-gatherer having its fixed bow formed with an offset, *a*, to which the socket B is secured by a thumb-screw, and to which the shank F of the movable bow is pivoted, the upper and lower cords, *g* and *h*, and the handle-lever H, by which these cords are operated to open and close the movable bow, substantially as specified.

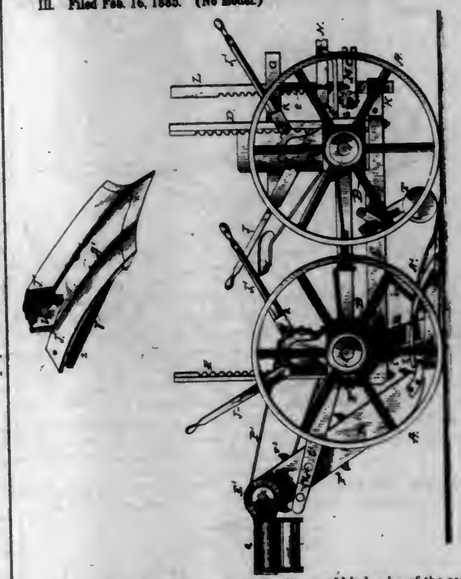
2. In a fruit-gatherer, the combination, with the pole A, its socket B, the handle-bar H, and the operating-cords *g h*, of the fixed bow C, having an offset, *a*, and bevel edge *n*, the movable bow E, having the curved knife K and shank F, and the cloth conductor Z, connected to the pole by loops, substantially as specified.

324,327. ROLLER ATTACHMENT FOR SKATES. John H. Jacoby, New York, N. Y. Filed Apr. 14, 1885. (No model.)



Claim.—The herein-described roller attachment for an ice-skate, the same consisting of a flat plate or bar, A, confined edgewise in roller-brackets B B, and having inwardly-enlarged recesses D D' formed at either end thereof, and a lug or tenon, F, at its forward end, in combination with suitable supporting-surfaces, *m m m*, to receive, and, in connection with suitable bolts, E E', secure, the detachable toe, heel, and clamping-plates K, G, L, and P of the ice-skate, all substantially in the manner and for the purpose herein set forth.

324,328. DITCHING-MACHINE. George H. Kanman, Champaign, Ill. Filed Feb. 16, 1885. (No model.)



Claim.—1. In combination with the front and hind axles of the carriage, provided with vertical sleeves, and having gear-wheels mounted on journals on the top of the carriage-axles provided with actuating-levers, the plow having the beam formed or provided with upright rack-bars projected through the sleeves on the axles and meshing with the said gears, substantially as set forth.

2. In combination, the lever pivoted to a standard on the front axle of the carriage and formed with an aperture in the front end, and having means for holding it to the standard in a desired position, a double-tree clevis suspended from the weight end of the lever and formed with a vertical slot having a cog-wheel journaled therein, and a rack-bar projected through the slot in the double-tree clevis and through the aperture in the actuating-lever, substantially as set forth.

3. In combination with the front axle of the carriage and the plow-beam, the lever pivoted to the standard on the front axle, and formed with an aperture in its weight end, the tongue formed with an aperture in its rear end and having a bearing and support on the braces *d*, a double-tree clevis suspended from the actuating-lever and having a gear-wheel journaled in its rear end, and a rack-bar having its lower end connected to the plow-beam and projected through the apertures of the double-tree clevis, the tongue, and the actuating-lever, substantially as described.

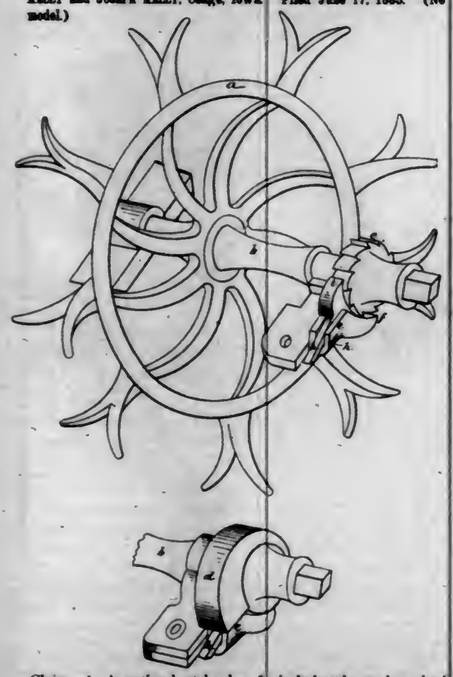
4. The mold-board for a ditching-plow, the plate whereof is arched longitudinally, and in cross-section has its upper face raised in the cen-

ter and its sides turned up, forming longitudinal depressions on each side of the central elevation, and having its rear end slotted to receive the plow-standard, substantially as described.

5. The plow herein described, consisting of the beam provided with upright rack-bars secured to each end thereof, the standard having secured thereto the double share having elongated shank, and the mold-board, the plate whereof is arched longitudinally, and in cross-section has its upper face raised in the center and its side edges turned up, forming longitudinal depressions on each side of the central elevation, and having its rear slotted to receive the plow-standard, substantially as described, and for the purpose set forth.

6. In combination, the carriage provided with a driving gear-wheel on one of the hind wheels, a shaft carrying a gear-wheel on one end to mesh with the gear on the carriage-wheel, and a sprocket-wheel fixed to the other end and mounted on bearings fixed on the upper face of the hind axle of the carriage, the plow adjustably secured to the carriage, the elevator having its lower end journaled to the rear extensions of the mold-board and provided with a shaft in its upper end carrying a sprocket-wheel on one end, connected by a sprocket-chain to the sprocket-wheel on the axle of the carriage, and a gear-wheel on the other, and supported by bars having their ends pivotally secured to the rear face of the hind axle of the carriage, and the delivering spout or trough secured across the upper end of the elevator in an inclined position, and the journal of its upper spool extended and provided with a gear-wheel to mesh with the gear on the elevator, substantially as described.

324,329. PAWL AND RATCHET FOR CHAIN-PUMPS. Henry Kelly and Joseph Kelly, Osage, Iowa. Filed June 17, 1885. (No model.)



Claim.—1. A sectional ratchet-box for inclosing the ratchet-wheel for chain-pumps, the upper section having the side overhanging hood or housing, and the lower section produced with the side projection having flange *e h*, groove *g*, and seat *f*, forming the inclined way for the slide-dog having a handle, as herein set forth.

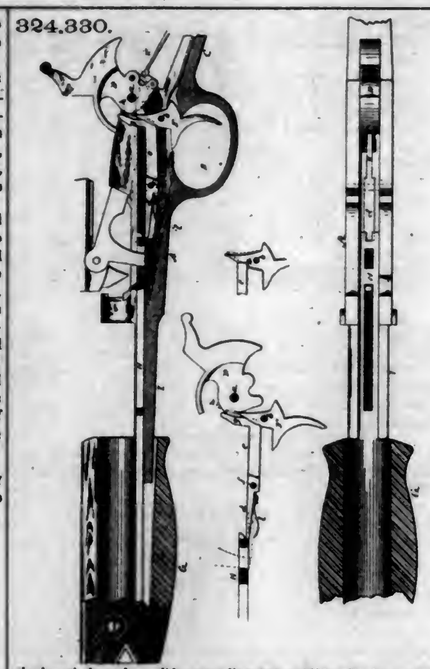
2. The combination of the ratchet-wheel for chain-pumps with the slide-dog having a handle and a straight shank, and an inclined grooved slideway having the bottom seat, *f*, as set forth.

3. The combination of the ratchet-wheel for chain-pumps with a slide-dog having a toothed end, a straight shank, and a handle, and a slideway therefor having an outer flange or lip and inner flange, forming an inclined groove and an opening at its top end and a seat at its bottom, all constructed as shown and described.

324,330. MAGAZINE FIRE-ARM. Franklin F. Knox, Hartford, Conn., assignor to the Colts Patent Fire Arms Manufacturing Company, same place. Filed June 15, 1885. (No model.)

Claim.—1. In a magazine fire-arm in which the mechanism of the arm is operated by a handle arranged to move longitudinally beneath

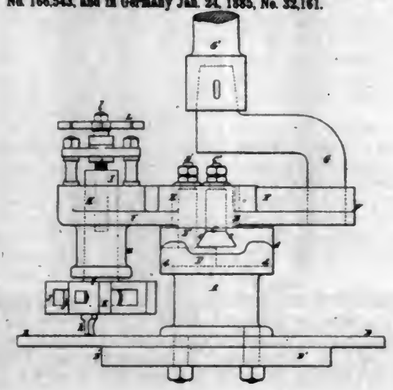
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the barrel through a slide extending from said handle into connection with the breech mechanism, the combination therewith of a locking-dog hung in the receiver, one arm of which is adapted to engage said slide when the breech-piece is in its closed position, the other arm extending toward the lock mechanism, and a cam on said lock mechanism, substantially as described, and whereby when the hammer is in its closed position the said dog is thrown out of engagement with the breech mechanism, but is thrown into engagement by the rear or opening movement of the hammer.

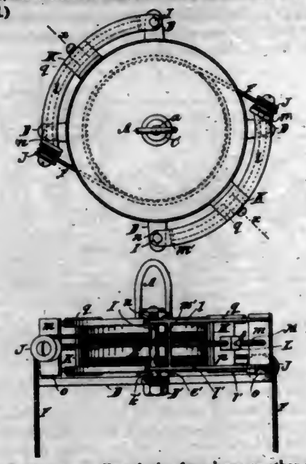
2. In a magazine fire-arm in which the mechanism of the arm is operated by a handle arranged to move longitudinally beneath the barrel, with a slide extending from said handle into connection with the breech mechanism, the combination therewith of the two-armed dog *d e*, hung in the receiver in rear of said slide, the one of said arms, *d*, adapted to engage the said slide when the breech-piece is in its closed position, the other arm extending rearward, the hammer constructed with a cam, *h*, adapted to operate upon said rear arm of the dog substantially as described, and whereby when the breech-piece is closed and the hammer in its closed position the said cam will force and hold the said dog from engagement with the said slide, but on the opening movement of the hammer the said cam will release the said dog to permit it to engage said slide, substantially as specified.

324,331. MACHINE FOR CUTTING METAL OVALS. John Lyall Govan, County of Lanark, Scotland. Filed Feb. 2, 1885. (No model.) Patented in England Apr. 19, 1884, No. 6,574; in France Jan. 20, 1885, No. 166,543, and in Germany Jan. 24, 1885, No. 32,161.



Claim.—The combination of the tool-carrying arm F, bush E, bolts or slides C D, and grooved center block, A, substantially as and for the purpose set forth.

324,332. SUSPENSION DEVICE FOR LAMPS, &c. Charles H. Lyman, Amouia, Conn., assignor to the Amouia Brass and Copper Company, same place, and Wolcott A. Hull, New York, N. Y. Filed Dec. 12, 1884. (No model.)



Claim.—1. In a suspending device for a lamp or other article, the combination of a vertical arbor, a frame supported by said arbor, a drum adapted to rotate upon the arbor, a spring for rotating the drum in one direction, cords or chains wound upon the drum, levers fulcrumed upon upright standards upon the frame and movable toward and from the periphery of the drum, non-rotary brakes upon the levers, and guides upon said levers for receiving said cords or chains, and from which the cords or chains pass to the lamp or other article to be suspended, substantially as specified, whereby the weight of the lamp or other article upon the cords or chains will operate the brakes through the levers, and when said weight is removed from the cords or chains the brake will be released.

2. In a suspending device for a lamp or other article, the combination of an arbor, a frame supported by said arbor, a drum adapted to rotate upon the arbor, sheet-metal flanges on the drum, having broadened rims on their peripheries, a cord or chain wound upon the drum, a lever fulcrumed upon the frame and movable toward and from the periphery of the drum, a brake upon the lever, and a guide upon said lever for receiving the cord or chain, and from which the cord or chain passes to the lamp or other article to be suspended, substantially as specified, whereby the weight of the lamp or other article upon the cord or chain will operate the brake through the lever, and when said weight is removed from the cord or chain the brake will be released.

3. In a suspending device for a lamp or other article, the combination of an arbor, a frame supported by said arbor, a drum adapted to rotate upon the arbor, cords or chains wound upon the drum, levers fulcrumed upon the frame, guides upon said levers for receiving the cords or chains, and from which the cords or chains pass to the lamp or other article to be suspended, and movable bearing-pieces upon said levers, substantially as described.

324,333. CARRIAGE-BODY. Osgood Morrill, Salisbury, Mass. Filed Apr. 9, 1885. (No model.)



Claim.—The combination, with a carriage-body having cut-down side panels, of sections fitting in and corresponding to said cut-down spaces, and pivoted at their front upper corner and arranged to be opened and closed independently each of the other, substantially as specified.

324,334. METHOD OF MANUFACTURING INCANDESCENT ELECTRIC LAMPS. Otto A. Mohrs New York, N. Y. Filed Oct. 29, 1883. (No model.)

Claim.—1. The hereinbefore-described method of sealing the vacuum-chamber of an incandescent lamp, which consists in inserting a

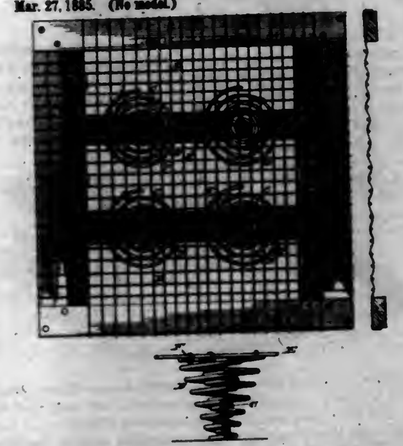
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metal stopper into the neck of said chamber and softening or compressing the glass of the neck around said stopper.

2. The hereinbefore-described method of sealing the vacuum-chamber of an incandescent lamp, which consists in inserting a metal stopper into the neck of said chamber, softening and compressing the glass of the neck around said stopper, and plunging the neck with the stopper into molten lead or other like fusible metal, whereby the glass is softened and annealed and the molten metal alloyed with the stopper and chemically united with the glass.

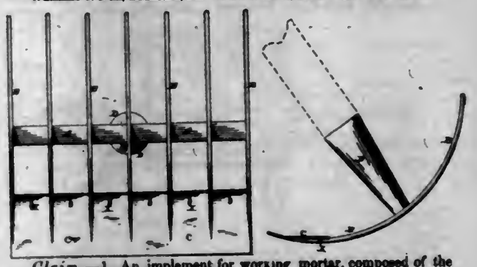
324,335. SPRING-SEAT. George W. Murray, Bluffton, Ohio. Filed Mar. 27, 1885. (No model.)



Claim.—1. The combination of two series of springs, one normally shorter than the other, a plane base for both series to rest on, and two series of slightly-flexible bars interwoven with each other in the form of wire-cloth connecting and secured to the tops of both series of springs, substantially as shown and described.

2. The combination of two springs, one normally shorter than the other, a plane base secured to both, and a connection securing the tops of both springs together in a plane variable above their base, substantially as shown and described, whereby the two springs at first oppose each other and then assist each other, as set forth.

324,336. IMPLEMENT FOR MIXING AND WORKING MORTAR. William C. Nye, Bradford, Pa. Filed June 2, 1885. (No model.)



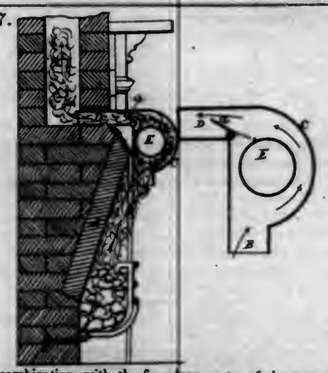
Claim.—1. An implement for working mortar, composed of the head A, teeth B, and blade C, having the projections X on its outer side, substantially as shown.

2. The combination of the head, the teeth, the blade, and the socket for the handle, the teeth being made to form ribs or ridges on the outer side of the blade, substantially as set forth.

324,337. HOT-AIR FIRE-PLACE. James Phelps, Nashville, Tenn. Filed Feb. 27, 1885. (No model.)

Claim.—1. The fire-place air-heater herein described, consisting of the semicircular hood C, having a flat back, a horizontal top draft-pipe, D, a contracted mouth, B, the interior open drum, E, and the damper *a*, and constructed for attachment over the throat of an open-grate fire-place.

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2. The combination, with the fire-place grate, of the mantel-hood air-heater having the interior horizontal open drum, E, the top horizontal draft-pipe, D, and the damper *a*, arranged to close the latter, and also the passage between said drum and the inner back wall of the hood, whereby to cause all the products of combustion to pass around the drum at the front of said hood, said heater forming an attachment upon the outside wall of a fire-place, as shown.

324,338. BUSTLE. MARY PHILLIPS, New York, N. Y., assignor to Chas. C. Carpenter, same place. Filed May 28, 1885. (No model.)



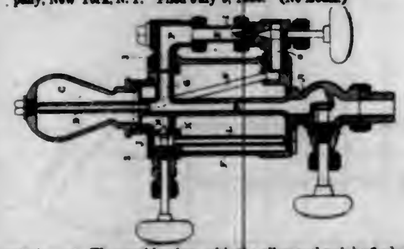
Claim.—1. In a bustle, the combination, with a flexible spring-body, B, of a brace secured to the under surface of said body, near the center, said brace being arranged to be adjusted at different angles with relation to the wearer and the body B, to vary the swell or contour of the body, as set forth.

2. The combination, with the plate B, apron C' C², and brace D, of the cushion E, as and for the purposes set forth.

3. In a bustle, the open brace D, formed of textile fabric made into pockets and stuffed with spring fiber, combined with and arranged to support a spring-body, and to be adjusted at different angles to vary the form or extent of swell, as set forth.

4. The open-work plate B, having eyelets *f'*, and open spring-brace D, having eyelets *f*, combined with the apron C' C², the cushion E, and lacing-cords F G, as and for the purposes set forth.

324,339. LUBRICATOR. ROBERT RUDDY, Mount Vernon, and LEOPOLD KACHANDER, New York, assignors to the Nathan Manufacturing Company, New York, N. Y. Filed July 9, 1885. (No model.)

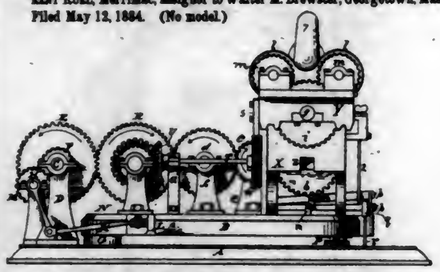


Claim.—1. The combination, with the oil-cup, the sight-feed glass, and its connections, of the main steam-conduit A and the channel B, located within and cast in one with the body of the oil-cup and extending vertically and centrally from the bottom to the top of the oil-cup, having no direct communication with the oil-space of the lubricator, substantially as hereinbefore set forth.

2. The combination of the following instrumentalities, viz: the oil-cup, the sight-feed glass and its connections, the main steam-conduit A, the channel B, located within and formed in one with the body of the oil-cup and extending vertically and centrally from the bottom to the top of the oil-cup, having no direct communication with the oil-space of the lubricator, the condenser C, and the steam-pipe D, screwed into the top of the channel B and forming its straight continuation to the upper part of the condenser, substantially as hereinbefore set forth.

3. The channels B and D, forming one single vertical steam-passage through the oil-cup into the upper part of the condensing-chamber, the lower portion of which passage, located within the oil-cup, communicates with the upper connection of the sight-feed glass by a horizontal branch channel, G, substantially as and for the purposes hereinbefore set forth.

324,340. MACHINE FOR MAKING FELT BOOTS, SHOES, &c. LAURENT RUEL, Merrimac, assignor to Walter M. Brewster, Georgetown, Mass. Filed May 12, 1884. (No model.)



Claim.—1. In a machine for making felt boots, shoes, or stockings, the table B, carrying the carriage Y, and rollers *l l*, in combination with operative mechanism therefor, said carriage and rollers being adapted to move longitudinally at a different speed from the table, substantially as and for the purpose set forth.

2. In a machine for making felt boots, shoes, or stockings, the rollers *l l*, provided with the gears *m m*, the shaft *g*, having the spline *k*, and provided with the gears *i h*, and the carriage Y, having the rack 5, in combination with the gears W W', shaft Z, gear *b*, and operative mechanism, substantially as specified.

3. In a machine for making felt boots, shoes, or stockings, the shipping-bar *q*, provided with the studs *r r*, in combination with the stops *t t*, shipping-levers *p p*, gears W W', rack 5, and operative mechanism, substantially as and for the purpose set forth.

4. In a machine for making felt boots, shoes, or stockings, the following instrumentalities, to wit: a cone or former for receiving the sliver or felting material from the card, a pair of rollers adapted to receive and support the cone and give it rotary movement, a carriage in which the rollers are mounted, and a table for supporting the carriage, in combination with operative mechanism by which the table, carriage, and rollers are moved back and forth as the sliver is deposited on the cone, the longitudinal movement of the rollers not being in unison with the like movements of the table or support on which the carriage or the rollers are supported, substantially as and for the purpose set forth.

5. In a machine for making felt boots, shoes, or stockings, a pair of rollers for supporting the cone on which the boot, shoe, or stocking is formed, said rollers being mounted in a carriage or support, and moving longitudinally in the same direction with that of the table on which the carriage is supported, and at a rate of speed which is not uniform with that of the table, substantially as described.

6. In a machine for making felt boots, shoes, or stockings, the shaft H, crank J, pitman K, gear M, shaft C, gears E F, shaft Q, gears S S, shafts T T, gears U U W W' *d e*, table B, and means for supporting and operating the rollers *l l*, substantially as set forth.

7. In a machine for making felt boots, shoes, or stockings, the cone 6, for receiving the sliver, said cone having the leg-pieces 8, joined at 9, and provided with feet 7, projecting in opposite directions, in combination with rollers for revolving said cone, substantially as specified.

8. In a machine for making felt boots, shoes, or stockings, the carriage Y, provided with the rack 5, the rollers *l*, provided with the gears *m*, and the shaft *g*, provided with the gear *i*, in combination with means for giving said carriage longitudinal reciprocating movements on the head-stock X, substantially as set forth.

9. In a machine for making felt boots, shoes, or stockings, the shafts T T, each provided with a gear adapted to engage the rack 5 at regular intervals, in combination with operative mechanism, substantially as specified.

10. In a machine for making felt boots, shoes, or stockings, the table B, pivoted at N, and provided with the head-stock X, carriage Y, and rollers *l l*, in combination with operative mechanism therefor, substantially as set forth.

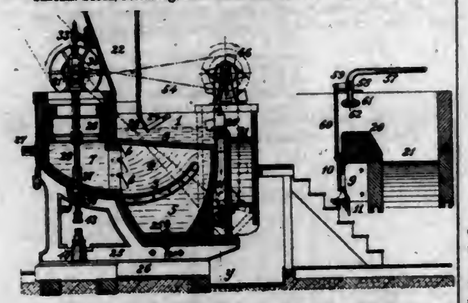
11. In a machine for making felt boots, shoes, or stockings, a cone or former for receiving the sliver or felting material from the card, in combination with means for supporting and revolving said cone, and means for giving it longitudinal reciprocating movements in the arc of a circle, substantially as specified.

12. A cone or former for felt boots, shoes, or stockings, having a groove, 9, to aid in cutting the bat, substantially as set forth.

13. In a machine for making felt boots, shoes, or stockings, the table B, pivoted at one end and provided at its opposite end with a supporting wheel or wheels, P, in combination with a cone on which the bat is formed, means for supporting and revolving said cone, and means for producing reciprocating vibratory movements of the table in the arc of a circle, substantially as specified.

14. In a machine for making felt boots, shoes, or stockings, a table pivoted to swing in the arc of a circle, and so arranged that its pivoted end is nearest the card from which the sliver is taken, said table being provided with a carriage moving differentially thereon and carrying a cone or former, in combination with means for rotating the cone, causing the carriage to traverse, and giving the table movements, substantially as set forth.

324,341. COAL WASHING OR SEPARATING MACHINE. SEBASTIAN STOTZ, Pittsburg, Pa. Filed Dec. 10, 1884. (No model.)



Claim.—1. In a coal-washing machine, the combination of a separator box or chest having a slate-chamber on one of its sides and a piston-chamber on the other, and a series of standards having horizontal members adapted to rest upon a suitable foundation, and bearing-surfaces on their upper sides extending continuously beneath and fitting against the bottoms of the slate, sediment, and piston chambers and the side of the sediment-chamber which adjoins the piston-chamber, substantially as set forth.

2. In a coal-washing machine, the combination of a separator-box, a piston-chamber connected therewith, a piston fitting said chamber, a piston-rod secured to said piston, a stuffing-box located in the bottom of the chamber, through which said piston-rod passes, a series of supporting-standards resting upon a foundation, and having bearing-surfaces on their upper sides extending continuously beneath and fitting against the bottoms of the separator-box and piston-chamber, and a buffer fixed to a foundation below the piston-chamber in line with the piston-rod, substantially as set forth.

3. In a coal-washing machine, the combination of a separator-box, a lateral piston-chamber, a piston-rod carrying a piston fitting said chamber, a guide fitting the piston-rod above said chamber, a guide fitting the piston-rod and fixed in the bottom of the chamber, and a stuffing-box located at the outer end of said bottom guide, substantially as set forth.

4. In a coal-washing machine, the combination of a separator-box, a lateral piston-chamber, a piston fitting said chamber, a piston-rod secured to said piston and passing through the bottom of the chamber, a removable shoe connected to the lower end of the piston-rod, and a buffer fixed to a foundation below and in line with the rod, substantially as set forth.

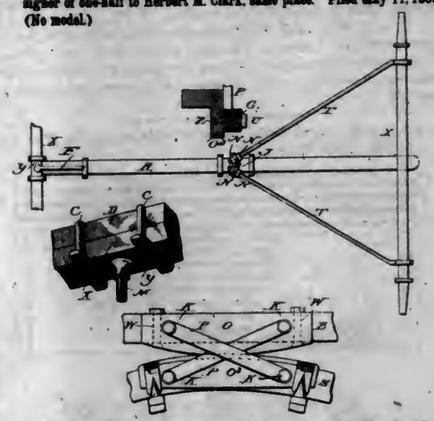
5. In a coal-washing machine, the combination of a separator-box, a slate-chamber, a conveyer adapted to rotate adjacent to the bottom of the slate-chamber, an elevator-casing communicating with the delivery end of the conveyer, an independent elevator working in said casing, and driving pulleys or gears for operating said elevator independently of the conveyer, substantially as set forth.

6. In a coal-washing machine, the combination of a separator-chamber, a slate-chamber, an elevator-casing communicating with the slate-chamber, an elevator working in said casing, and a series of discharge-plates fitted to rotate with the upper sprocket-wheels of the elevator, substantially as set forth.

7. In a coal-washing machine, the combination of a piston-chamber, a piston fitting said chamber, a piston-rod secured to the piston and extending above and below the same, a lifting-yoke secured to the upper end of the piston-rod, a cam working said lifting-yoke, and a buffer fixed to a foundation below the piston-chamber and in line with the piston-rod, substantially as set forth.

8. In a coal-washing machine, the combination of a series of separating-chambers, a series of communicating slate-chambers, a conveyer common to the series of slate-chambers and adapted to rotate adjacent to the bottom thereof, an elevator-casing into which said conveyer discharges, an independent elevator working in said casing, and driving pulleys or gears for operating said elevator independently of the conveyer, substantially as set forth.

324,342. SPRING-WAGON. HENRY C. SWAN, Oshkosh, Wis., assignor of one-half to Herbert M. Clark, same place. Filed May 11, 1885. (No model.)



Claim.—1. The reach-coupling J, having the projecting lips I, in combination with the brace T, adjustable in said lips by means of nuts N.

2. The oscillator-plates O O², for attaching the front end of the wagon-body to the running-gear, having convex surfaces for rolling one upon the other and connected by the diagonally-arranged arms P, pivotally connected to the opposite sides of the oscillating plates.

324,343. MANUFACTURE OF MATERIAL FOR COVERING AND DECORATING WALLS AND FOR OTHER PURPOSES. JAS. A. TURNER, West Gorton, near Manchester, County of Lancaster, England. Filed Apr 8, 1885. (No specimens.) Patented in England Feb. 19, 1885, No. 2,904.

Claim.—A covering for walls and other purposes, consisting of an ornamented woven fabric and a backing of paper or its equivalent secured thereto by water-proof cement of the character set forth.

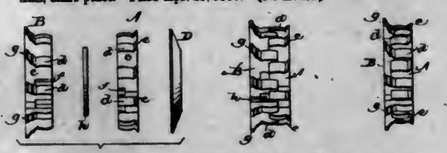
324,344. BOWLING-HOOP. JAMES H. VENNERS, Philadelphia, Pa. Filed Dec. 15, 1884. (No model.)



Claim.—1. A bowling-hoop provided with an indicator-tripper on its inner peripheral surface within the uninterrupted open space circumscribed by the hoop, for use in connection with a speed-indicating propelling-handle, substantially as specified.

2. The combination, with the bowling-hoop A, having an indicator-tripper, *b*, on its inner peripheral surface within the uninterrupted open space circumscribed by the hoop, of the detachable hooked or crooked propelling-handle B, provided with a bell, *c*, and spring-hammer *d*, essentially as shown and described.

324,345. TELESCOPIC ROTARY SOLE-TRIMMING CUTTER. EDWARD F. WHITE, Weymouth, Mass., assignor of one-third to William A. Hall, same place. Filed Apr. 23, 1885. (No model.)



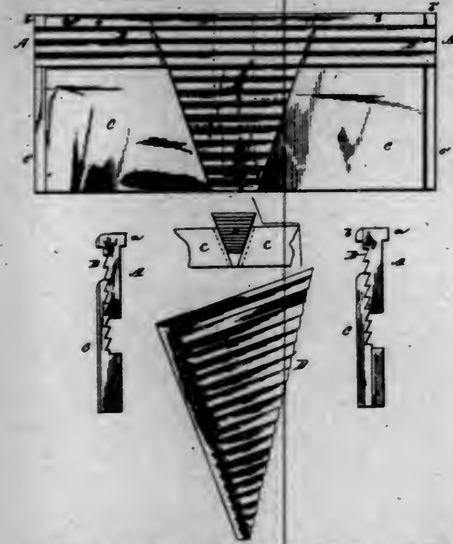
Claim.—1. A sole-edge-trimming cutter formed in two parts or sections, A B, having teeth *c* arranged on each said section with spaces to receive freely the teeth of the other half, said teeth in each half being also formed with a cutting-edge and a fraction of a complete lineal contour, which, when the halves are united and duly adjusted, serves to cut the desired configuration upon the sole edges of different thicknesses, substantially as specified.

2. In a rotary sole-edge cutter, the sections A B, each having cutting-teeth arranged to enter the spaces between the teeth of the other section, the teeth of one of said sections being formed with bed *d* and

rand-lip *e*, and the teeth of the other section having bed *d* and guard *g*, and adapted to be telescopically expanded and contracted to trim soles of different thickness, substantially as specified.

3. In a rotary cutter, the combination, with sections A B, having, respectively, teeth *c*, arranged with spaces between them to receive freely the teeth of the other section for telescoping, as described, and also formed with internal recesses, *f*, of disk *h*, fitting in said recesses, substantially as specified.

324,846. STOVE-BACK. Thomas W. Wood, Atlanta, Ga. Filed Nov. 1, 1884. (No model.)

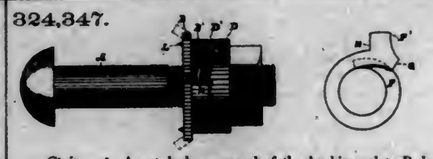


Claim.—1. In a fire-back for stoves, the sections A A and C C, provided at their front inner portions with beveled edges, in combination with a wedge-shaped section, D, substantially as shown, and for the purpose set forth.

2. In a fire-back for stoves, the sections A A, having a front projecting flange beveled at its inner edge and longitudinal corrugations B, the lower sections, C, provided on their inner sides with corrugations and angular beveled edges, in combination with a wedge-shaped central section having beveled edges and transverse corrugations, substantially as shown, and for the purpose set forth.

324,847. NUT-LOCK. George S. Wynn, Huntsville, Ohio. Filed Feb. 13, 1885. (No model.)

324,847.

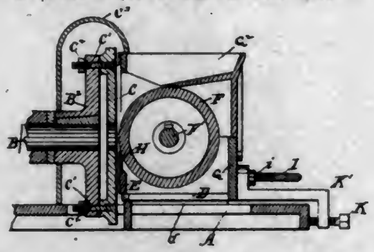


Claim.—1. A nut-lock composed of the backing-plate B, having projections L thereon to prevent it turning, the plate D, adapted to fit on the nut and having the ratchet-face D′, and the spring-lock F, having shoulders G and H, substantially as set forth.

2. The combination, with an ordinary bolt and nut, of the plate B, rim B′, having offset C, and spring F, and the plate D, having teeth D′, and countersink or collar E, as and for the purpose set forth.

REISSUES.

10,684. GRINDING-MILL. Walter C. Whitaway, Beloit, Wis. Filed June 29, 1885. Original No. 309,226, dated Dec. 16, 1884.



Claim.—1. The combination of a rotary grinding-disk with an opposing roller and a stationary grinding-plate, substantially as described.

2. The combination, with a horizontal arbor and grinding-disk mounted thereon, of an opposing roller, a stationary grinding-plate, and a clearing-knife, as set forth.

3. The combination, with a horizontal arbor and a grinding-disk mounted thereon, and the driving mechanism provided with friction gear-wheel G^3, of the roller F and its shaft, and a friction-wheel adapted to yield in the direction of the length of the shaft, substantially as and for the purpose set forth.

4. The combination of lever I and its connections with the supporting-frame, slide D, grinding-plate, the roller, the slide-bracket, arm K′, and bolt *k*, substantially as set forth.

5. The combination, with the supporting-frame and hopper M, having bracket L^2, a shaft journaled in said bracket, and an eccentric, L^3, carried thereby, of the apron N, having bushing *n*, provided with extensions *n′ n′*, and the adjustable suspending device P, substantially as shown and described, and for the purpose set forth.

PHOTO-LITH. NORRIS PETERS WASH. D.C.

FOREIGN PATENT LAWS.

PATENT LAWS OF HAWAII.

CIVIL CODE.

Section 255. The Minister of the Interior may, with the approval of the King, issue a patent to the inventor or improver of any machine, manufacture, or other work of art calculated to promote the interests of science, agriculture, or manufactures, and may therein grant to such inventor or improver the exclusive use and benefit of his invention or improvement for any term of years, not exceeding ten, that may be specified in such patent.

Sec. 256. Every such inventor or improver shall, before receiving a patent, deliver to the Minister of the Interior a full and clear description in writing of his invention or improvement, together with the mode of using or applying the same to the purpose for which it is intended, and the manner and process of making, constructing, or compounding the same, and in case of any machine he shall also furnish, in addition to the written description, accurate drawings and a complete model thereof.

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Act of August 29, 1884, to regulate the issuing of patents.

Be it enacted by the King and the Legislative Assembly of the Hawaiian Islands, in the Legislature of the Kingdom assembled:

Section 1. All patents shall be issued in the name of his Majesty the King, under the seal of the Interior Department, and shall be signed by the Minister of the Interior and countersigned by the Commissioner of Patents, and they shall be recorded, together with the specifications, in the office of the Interior Department in books kept for that purpose.

Sec. 2. Every patent shall contain a short title or description of the invention or discovery, correctly indicating its nature and design, and a grant to the patentee, his heirs or assigns for the term of ten years, of the exclusive right to make, use, and vend the invention or discovery throughout the Hawaiian Islands, referring to the specification for particulars thereof. A copy of the specifications and drawings shall be annexed to the patent and be a part thereof.

Sec. 3. Any person who has invented or discovered any new and useful art, machine, manufacture, process, or composition of matter, or any new and useful improvement thereof not known or used by others in this country, and not patented (or described in any printed publication) in this or any foreign country before his invention or discovery thereof, may, upon payment of the fees required by law and other due proceedings had, obtain a patent therefor: *Provided, however*, That any person who has invented or discovered any new and useful art, machine, manufacture, process, or composition of matter, or any new and useful improvement thereof, and has received a patent or patents therefor from any foreign government, may also obtain a patent therefor in this country as provided above, unless the thing patented has been introduced into public use in the Hawaiian Islands for more than one year prior to the application for a patent. But every patent granted for an invention which has been previously patented in a foreign country shall be so limited that it shall not continue longer than the time of the expiration of such foreign patent, or if there are several foreign patents it shall not continue longer than the time of the expiration of the one with the shortest unexpired term, and in no case shall it be in force more than ten years.

Sec. 4. Before any inventor or discoverer shall receive a patent for his invention or discovery he shall apply therefor in writing to the Minister of the Interior, and shall file in the office of the Interior Department a written description of the same and of the manner and process of making, compounding, and using it, in clear, concise, and exact terms, and in case of a machine he shall explain the principle thereof and of the manner in which he has applied that principle, so as to distinguish it from other inventions, and he shall particularly point out and distinctly claim the part, improvement, or combination which he claims as his invention or discovery. When the nature of the case admits of drawings, the applicant shall furnish them, as set forth in section 2. When the invention or discovery is of composition of matter, the applicant shall furnish a specimen of ingredients and of the composition, sufficient in quantity for the purpose of experiment. In all cases which admit of representation by model the applicant shall, if required, furnish a model of convenient size to exhibit advantageously the several parts of his invention.

Sec. 5. The applicant shall make oath that he believes himself to be the original and first inventor or discoverer of the art, machine, manufacture, composition, or improvement for which he solicits a patent, and that he does not know or believe that the same was ever before known or used, and shall state of what country he is a citizen.

Sec. 6. On filing of any such application and the payment of the fees required by law, the Commissioner of Patents shall examine the alleged new invention or discovery, and if upon such examination it shall appear that the claimant is justly entitled to a patent under the law, and that the same is sufficiently useful and important, he shall report accordingly to the Minister of the Interior, who shall cause a patent to be issued therefor.

Sec. 7. Any person who makes any new invention or discovery, and desires further time to mature the same, may on payment of the fees required by law file in the Interior Department a caveat setting forth the design thereof and its distinguishing characteristics, and praying protection of his right until he shall have matured the invention. Such caveat shall be preserved in secrecy and shall be operative for the term of one year from the filing thereof.

Sec. 8. The Commissioner of Patents shall be appointed by the Minister of the Interior, and shall examine and report on all applications for patents, and shall receive for such services a fee of twenty dollars for each application examined and reported by him, which fee shall be paid by the applicant in advance. In addition to this fee the following fees shall be charged all applicants for patents: upon filing each original application for a patent, five dollars; and upon issuing a patent, five dollars; and five dollars shall be charged for the filing of a caveat.

Sec. 9. This Act shall take effect and become a law from and after its publication, and "An Act to amend sections 255 and 256 of the Civil Code, and add a new section to the Civil Code to be numbered Section 256A," approved the 22d day of June, A. D. 1868, is hereby repealed.

Approved this 29th day of August, A. D. 1884.

KALAKAUA REX.

PATENT LAW OF TASMANIA.

No. XXII.

An Act to regulate the granting of letters patent for inventions.

November 5, 1885.

Whereas, it is expedient to promote and encourage the discovery and use of new manufactures, and to afford greater facilities for obtaining for a limited period the exclusive enjoyment thereof by means of letters patent:

Be it therefore enacted by His Excellency, the Governor of Tasmania, by and with the advice and consent of the Legislative Council and House of Assembly in Parliament assembled, as follows:

1. In the construction of this act the following expressions shall have the meanings hereby assigned to them, unless such meanings are repugnant to or inconsistent with the context: "Law Officer" shall mean Her Majesty's Attorney-General or Solicitor-General for the time being of the Colony of Tasmania; "invention" shall mean any manner of new manufacture the subject of letters patent and grant of privilege within the meaning of this act; "petition," "declaration," "specification," "appointment to hear application," "warrant," and "letters patent," respectively, shall mean instruments in the form and to the effect in the schedule, subject to such alterations as may, from time to time, be made therein under the powers and provisions of this act.

2. It shall be lawful for the Governor, with the advice of the Executive Council, in the name and on behalf of Her Majesty the Queen, to make and issue, in the manner hereinafter mentioned, letters patent and grants of privilege for any term not exceeding fourteen years from the date thereof of the sole working or making of any manner of new manufactures within this Colony to the true and first inventor of such manufactures, which others at the time of making such letters patent and grants do not use, so as also they be not contrary to law nor mischievous to the community by raising prices of commodities, or hurt of trade, or generally inconvenient.

3. It shall be lawful for the Governor, with the advice of the Executive Council, from time to time, to make such rules and regulations, not inconsistent with the provisions of this act, as may appear to be necessary and expedient for the purposes of this act, and all such rules and regulations shall be laid before both Houses of the Parliament of Tasmania within fourteen days after the making thereof, if Parliament is then sitting, and if Parliament is not then sitting, then within fourteen days after the next meeting of Parliament.

4. Every application for the grant in this Colony under this act, of letters patent for invention, shall be made by petition to the Governor, the allegations of which petition shall be supported by a declaration, to be made and subscribed by the applicant that he is the true and first inventor and that the article has not, to his knowledge or belief, been before made or used in this Colony; and such petitions and declarations shall be lodged at the office of the Colonial Secretary, and shall be in the form in the schedule or to the like effect.

5. The applicant for letters patent for an invention shall, at the time of lodging such petition and declaration as aforesaid, deposit at the said office of the Colonial Secretary an instrument in writing under his hand and seal, hereinafter called a "specification," particularly describing and ascertaining the nature of the said invention, and in what manner the same is to be performed, which specification shall be mentioned in and annexed to the declaration, and shall also then deposit at the said office a copy of such instrument, and of the drawings accompanying the same, if any; and the day of the deposit of every such specification shall be recorded at the said office and indorsed on such specification, and a certificate thereof given to such applicant or his agent, and thereupon subject and without prejudice to the provisions hereinafter contained, and the said invention shall be protected under this act for the term of six months from the day of such deposit, and the applicant shall have during such term the like powers, rights, and privileges as might have been conferred upon him by letters patent for such invention issued under this act and duly sealed as of the day of such deposit; and during the continuance of such powers, rights, and privileges under this provision such

invention may be used and published without prejudice to any letters patent to be granted for the same, and where letters patent are granted in respect of such invention such letters patent shall be conditioned to become void if such specification does not particularly describe and ascertain the nature of the said invention and in what manner the same is to be performed: *Provided always*, That in case the title of the invention or the said specification is too large or insufficient, it shall be lawful for the Law Officer during the said term of six months, and before the grant of the letters patent to allow or require the same to be amended, or another and sufficient specification to be deposited in lieu of such specification as aforesaid, and every such mended or new specification shall have the same force, effect, and operation as if it had been originally deposited in its amended or new state.

6. Every such specification shall be in the form in the schedule or to the like effect, and shall be written upon parchment upon both sides, and every page thereof shall be of the exact size of twenty inches in length by fifteen inches in breadth, leaving a margin of at least one inch and a half on each side of every such page in order and to the intent that the same may be bound into books for safe custody; but the drawings accompanying such specification, if any, may be made upon larger sheets of parchment, leaving a margin of the size and for the purpose aforesaid; and every copy of any such specification as aforesaid, and of the drawings accompanying the same, if any, shall in like manner be written upon paper of the size and with the margin aforesaid.

7. In case of any application for letters patent for an invention, and the obtaining of protection for the same by reason of the deposit of any such specification as aforesaid, in fraud of the true and first inventor, any letters patent granted to the true and first inventor shall not be invalidated by reason of such application or of such protection as aforesaid, or of any use or publication of the invention subsequent to such application and before the expiration of the said term of protection.

8. The applicant, so soon as he thinks fit after the deposit of such specification as aforesaid, and of the drawings and models accompanying the same, if any, may give notice in writing at the office of the Law Officer of his intention to proceed with his application for letters patent for the said invention, stating in such notice the title of said invention, and the day on which the specification thereof was deposited at the office of the Colonial Secretary, and shall, at the time of giving such notice, produce the said certificate of deposit; and thereupon the Law Officer shall deliver to the applicant or his agent an appointment to hear the application in the form in the schedule, or to the like effect; and such applicant or agent shall cause the said appointment to be published once in the *Gazette* and twice in some newspaper published in Hobart Town and Launceston; and any person having an interest in opposing the grant of letters patent for the said invention shall be at liberty to leave particulars in writing of their objections to the said application at the office of the Law Officer within such time, not being less than one month, as the Law Officer by such appointment may direct.

9. At the time and place named in the said appointment the applicant shall produce the *Gazette* and newspaper containing the same, and the Law Officer shall thereupon hear and consider the said application, and all objections to the same mentioned in the said particulars, if any, and for that purpose shall obtain from the office of the Colonial Secretary the copy of the specification and of the drawings and models accompanying the same, if any; and the Law Officer may call to his aid such scientific or other person as he may think fit, and may cause such remuneration to be paid to such person as he thinks proper: *Provided, always*, That the applicant, the objectors, and their respective witnesses and evidence, shall be respectively heard, examined, and considered separately and apart from and in the absence of the other and his witnesses and evidence.

10. It shall be lawful for the Law Officer, if he sees fit, by certificate under his hand, to order by and to whom the cost and expenses of any hearing or inquiry upon any objection, or otherwise in relation to the grant of such letters patent, shall be paid and in what manner and by whom such costs are to be ascertained; and if any costs so ordered to be paid are not paid within four days after the amount thereof is so ascertained, it shall be lawful for such Law Officer to make an order for the payment of the same, and every such order may be made a rule of the Supreme Court.

11. It shall be lawful for the Law Officer, after such hearing and consideration as he may think fit, to issue a warrant under his hand and seal for the sealing of letters patent for the said invention, and such warrant shall set forth the tenor and effect of the letters patent thereby authorized to be granted, and shall direct the insertion in such letters patent of all such restrictions, conditions, and provisions as the Law Officer may deem usual and expedient in such grants, or necessary in pursuance of the provisions of this act; and the said warrant shall be the warrant for the making and sealing of letters patent under this act according to the tenor of the said warrant; and every such warrant shall be in the form in the schedule or to the like effect.

12. The writ of *scire facias* shall lie for the repeal of any letters patent issued under this act in the like cases as the same would lie in England for the repeal of letters patent which may now be issued under the Great Seal; and in case the grantee does not reside in this Colony, it shall be sufficient to file such writ in the proper office of the Supreme Court, and serve notice thereof in writing at the last known residence or place of business of such grantee.

13. Nothing herein contained shall extend to abridge or affect the prerogatives of the crown in relation to the granting or withholding the grant of any letters patent; and it shall be lawful for the Governor in Council to direct such Law Officer to withhold such warrant as aforesaid, or that any letters patent for the issuing whereof he may have issued a warrant as aforesaid shall not issue, or to direct the insertion in such letters patent of any restrictions, conditions or provisos in addition to or in substitution of any restrictions, conditions or provisos which would otherwise be inserted therein under this act; and it shall also be lawful for the Governor in Council to direct the specification in respect of the invention described to be cancelled in any case in which letters patent may have been refused to be granted, and thereupon the protection obtained by the deposit of such specification shall cease.

14. All letters patent for inventions granted under this act shall be in the form in the schedule or to the like effect, and be made subject to the condition that the same shall be void, and that the powers and privileges thereby granted shall cease and determine at the expiration of three years and seven years, respectively, from the date thereof, unless there is paid before the expiration of the said three and seven years, respectively, the sum or sums of money in that behalf by this act required to be paid; and the Colonial Treasurer shall issue under his hand a certificate of such payment, and shall indorse a receipt for the same on the letters patent.

15. The Colonial Secretary, so soon after the receipt by him of the said warrant as he is required by the applicant, shall cause to be prepared letters patent for the invention according to the tenor of the said warrant; and it shall be lawful for the Governor in Council to cause such letters patent to be sealed with the seal of the Colony; and such letters patent shall be made applicable to this Colony, and shall be valid and effectual within the same.

16. Save as hereinafter mentioned, no letters patent shall issue on any warrant granted as aforesaid unless application is made to seal such letters patent within three months after the date of the said warrant, nor shall any letters patent be issued or be of any force or effect unless such letters patent are granted during the continuance of the protection conferred under this act by reason of such deposit as aforesaid.

17. Where letters patent have not been sealed during the continuance of such protection as aforesaid, and the delay in such sealing has arisen from accident and not from the neglect or wilful default of the applicant, it shall be lawful for the Governor, if he thinks fit, to seal such letters patent at any time not being more than one month after the expiration of such protection, and where the applicant for letters patent dies during the continuance of such protection as aforesaid, such letters patent may be granted to the executors or administrators of such applicant during the continuance of such protection, or at any time within three months after the death of such applicant, notwithstanding the expiration of the term of such protection; and the letters patent so granted by virtue of this section shall be of the like force and effect as if they had been granted to such applicant during the continuance of such protection; and in case any letters patent are destroyed or lost, other letters patent of the like tenor and effect, and sealed and dated as of the same day, may, subject to such regulations as the Governor in Council may direct, be issued under the authority of the warrant in pursuance of which the original letters patent were issued.

18. Notwithstanding any law to the contrary, all letters patent to be issued in pursuance of this act shall be sealed and bear date as of the day of the deposit of such specification as aforesaid; and such letters patent shall be of the same force and validity as if they had been sealed on the day as of which the same are expressed to be sealed and bear date; and after any letters patent have been issued under this act it shall not be necessary or material to inquire or ascertain whether such appointment to hear the application as aforesaid has or has not been delivered and published in the manner hereinbefore mentioned and directed.

19. Where upon any application made under this act letters patent are granted for or in respect of any invention first invented in parts out of this Colony, and a patent or the like privilege for the monopoly or exclusive use or exercise of such invention in any part out of this Colony is there obtained before the grant of such letters patent in this Colony, all rights and privileges under such letters patent shall, notwithstanding any term in such letters patent limited, cease and be void immediately upon the expiration or other determination of the term during which the patent or like privilege obtained in such part out of this Colony continues in force, or where more than one such patent or like privilege is obtained abroad, immediately upon the expiration or determination of the term which first expires or is determined of such several patents or like privileges: *Provided, always*, That no letters patent for or in respect of any invention for which any such patent or like privilege as aforesaid has been obtained abroad, granted in this Colony after the expiration or determination of the term for which such patent or privilege was granted or was in force, shall be of any validity.

20. No letters patent for any invention granted in pursuance of this act shall extend to prevent the use of such invention in any foreign ship or vessel, or for the navigation of any foreign ship or vessel, which may be in any part of this Colony, or in any of the waters within the jurisdiction of any of Her Majesty's courts in this Colony, where such invention is not so used for the manufacture of any goods or commodities to be vended within or exported from this Colony: *Provided, always*, That this enactment shall not extend to the ships or vessels of any foreign state the laws of which authorize subjects of such foreign states having patents or like privileges for the exclusive use or exercise of inventions within its territories to prevent or interfere with the use of such inventions in British ships or vessels, or in or about the navigation of British ships or vessels while in the ports of such foreign state, or in the waters within the jurisdiction of its courts, where such inventions are not so used for the manufacture of goods or commodities to be vended within or exported from the territories of such foreign state.

21. Every specification deposited at the office of the Colonial Secretary as aforesaid, and the drawings and models accompanying the same, if any, and all such petitions and declarations as aforesaid, shall forthwith after the grant of the letters patent, or if no letters patent are granted then immediately on the expiration of six months from the time of such deposit, or upon the specification being so cancelled as aforesaid, be transferred to, kept, and filed in such office as the Governor in Council from time to time appoints for that purpose, and the copies of such specifications, and the drawings and models, if any, accompanying the same, shall also be forwarded to and kept at the same office.

22. Any person who obtains letters patent under this act, or in case such person departs with the whole or any part of his interest by assignment, such person, together with the assignee, if part only has been assigned, or the assignee alone if the whole has been assigned, may apply to the Law Officer for leave to enter a disclaimer of any part of either the title of the invention or of the specification, or a memorandum of any alteration in the said title or specification, not being such a disclaimer or such an alteration as extends the exclusive right granted by the said letters patent, and thereupon the Law Officer shall deliver to such applicant or his agent an appointment to hear such application in the form in the schedule or to the like effect, and such applicant or his agent shall thereupon cause such disclaimer, stating the reason for the same, or such memorandum of alteration, to be written at the foot of the said appointment, and cause the same respectively to be published in the manner hereinbefore required with respect to the publication of the appointment, to hear an application for letters patent, and any person having an interest in opposing the said application shall be at liberty to leave particulars in writing of their objections to the same at the office of the Law Officer, within such time not being less than one month as the Law Officer by such appointment may direct: *Provided, always*, That where such application as aforesaid is for leave to enter a disclaimer of any part of the title of the said invention, or a memorandum of any alteration in such title, the Law Officer may dispense with such appointment and publication, and in that case shall certify in the fiat hereinafter mentioned that he has dispensed with the same.

23. At the time and place named in such appointment the said applicant shall produce the *Gazette* and newspapers containing the same, and the said disclaimer or memorandum of alteration at the foot thereof, and the Law Officer shall thereupon hear and consider the said application, and all objections to the same mentioned in said particulars, if any, and all such power and authority shall and may be exercised upon that occasion by the Law Officer as by virtue of the provisions hereinbefore contained can and may be exercised in relation to the hearing and considering an application for letters patent and objections to the same, and shall and may be enforced in like manner.

24. After such hearing and consideration, or without such hearing and consideration where the said appointment and publications have been dispensed with as aforesaid, such applicant may by leave of the Law Officer, to be certified by a fiat under his hand to be written at the foot of the same parchment with the disclaimer or memorandum, enter such disclaimer, stating the reason for the same or such memorandum of alteration; and such disclaimer or memorandum of alteration and fiat shall be filed in the office in which specifications are appointed to be filed as aforesaid, with the specification of the invention to which the same relate; and such disclaimer or memorandum of alteration, being so filed in such office, shall be deemed and taken to be part of the letters patent in the specification, and subject to the several incidents thereof, in all courts whatever, and shall be valid and effectual in favor of any person in whom the rights under the said letters patent may then be or thereafter become legally vested, and such filing of any disclaimant or memorandum of alteration in pursuance of the leave of the Law Officer, certified as aforesaid, shall, except in cases of fraud, be conclusive as to the right of the party to enter such disclaimer or memorandum or alteration under this act, and no objection shall be allowed to be made in any proceeding upon or touching such letters patent, specification, disclaimer, or memorandum of alteration on the ground that the person entering such disclaimer or memorandum of alteration had not sufficient authority in that behalf: *Provided, always*, That no action shall be brought upon any letters patent in which, or on the specification of which, any disclaimer or memorandum of alteration has been filed in respect of any infringement committed prior to the filing of such disclaimer or memorandum of alteration, unless the Law Officer certifies in his said fiat that any such action may be brought, notwithstanding the entry or filing of such disclaimer or memorandum of alteration, and that no such disclaimer or memorandum of alteration shall be receivable in evidence in any action or suit, save and except in any proceeding by *scire facias* pending at the time when such disclaimer or alteration was filed as aforesaid, but in every such last-mentioned action or suit the original title and specification alone shall be given in evidence, and be deemed and taken to be the title and specification of the invention for which the letters patent have been granted: *Provided, also*, That when any such fiat has been issued under this act, it shall not be necessary or material to inquire or ascertain whether such appointment as last aforesaid has or has not been delivered and published or dispensed with in accordance with this act.

25. All specifications, and the drawings and models accompanying the same, if any, and all petitions, declarations, disclaimers, and memoranda of alterations filed in the office appointed for filing specifications under and in pursuance of this act, and also the copies of the specifications, and drawings and models accompanying the same, if any, kept at the said office, shall be open to the inspection of the public at all reasonable times, subject to such regulations as the Governor in Council may appoint in that behalf.

26. If any person having obtained letters patent under this act, or in case such person has departed with his whole or any part of his interest by assignment, if such person, together with the assignee where part only has been assigned, or if the assignee alone where the whole has been assigned, six months before the expiration or other determination of such letters patent, presents to the Government a petition for the extension of the term in such letters patent mentioned, and sets forth in such petition that he has been unable to obtain a due remuneration for his expense and labor in perfecting such invention, and that an exclusive right of using and vending the same for some further period, to be named in such petition, in addition to the said term, is necessary for his reimbursement and remuneration, it shall be lawful for the Governor in Council to refer the consideration of the said petition to commissioners to be appointed for that purpose in the manner hereinafter mentioned.

27. If in any suit or action it is proved or specially found by the verdict of a jury that any person who has obtained letters patent for any invention or supposed invention was not the first inventor thereof, or of some part thereof, by reason of some other person having invented or used the same or some part thereof in this Colony before the date of such letters patent, or if such patentee or his assigns discover that some other person had, unknown to such patentee, invented or used the same or some part thereof in this Colony before the date of such letters patent, such patentee or his assigns may petition the Governor to confirm the said letters patent, or to grant new letters patent, and it shall be lawful for the Governor in Council to refer the consideration of said petition to commissioners to be appointed for that purpose in the manner hereinafter mentioned.

28. For the purpose of considering any such petition as aforesaid, it shall be lawful for the Governor in Council, if he thinks fit, to issue and direct a commission in the name of Her Majesty to five or more persons, of whom the judges of the Supreme Court shall be two, reciting such petition and requiring or authorizing such persons, or any three of them, of whom one of the said judges shall be one, to meet at some time, not being less than two months from the publication of the said commission in the *Gazette*, and at some place to be fixed in the said commission, and then and there to consider the said petition and to report to the Governor in case the petitioner prays for an extension of the term in the letters patent mentioned, whether any, and if any, what further extension of the said term should be granted, or in case the petitioner prays for a confirmation of the letters patent, or for a grant of new letters patent, whether such confirmation or grant should be made, and upon what, if any, conditions the prayer of any such petition should be complied with.

29. Two months at least before the time named in the commission for the consideration of any such petition as aforesaid the petitioner shall cause an advertisement of the said commission, in the form in the schedule, or to the like effect, to be published in the same manner as hereinbefore required with respect to the publication of the appointment to hear an application for letters patent; and any person having an interest in opposing the said petition shall be at liberty to enter a caveat against the same at the office of the Colonial Secretary at any time, not being less than one week before the time named in the commission for the execution thereof.

30. At the time and place fixed in the commission for that purpose the commissioners shall meet and proceed to consider such petition, and the petitioner shall be heard by his counsel and witnesses to prove his case, as stated in such petition, and the publication of the said last-mentioned advertisement as required by this act; and the persons entering caveats shall likewise be heard by their counsel and witnesses; and all such witnesses shall be examined upon oath, which oath any one of the commissioners is hereby authorized and required to administer; and the proceedings before the said commissioners may be adjourned from time to time as may be necessary.

31. If upon hearing and inquiry of the whole matter the commissioners, in case the petitioner prays for an extension as aforesaid, are of opinion and so report that a further extension of the said term should be granted, it shall be lawful for the Governor in Council, if he thinks fit, to grant to the petitioner new letters patent for the said invention for any term not exceeding fourteen years after the expiration of the term of the first letters patent, anything hereinbefore contained to the contrary in anywise notwithstanding; and if the commissioners, in case the petitioner prays for a confirmation or grant as aforesaid, upon examining the said matter, and being satisfied that such patentee, as aforesaid, believed himself to be the first and original inventor, and that such invention or part thereof had not been publicly and generally used in this Colony before the date of the first letters patent, report their opinion that the prayer of such petition ought to be complied with, the Governor in Council may, if he thinks fit, grant such prayer; and the said letters patent shall be available at law and in equity to give such petitioner the sole right of using, making, and vending such invention as against all persons whatsoever, anything hereinbefore contained to the contrary notwithstanding: *Provided*, That any person party to any former suit or action touching any such first letters patent, as in this section are mentioned, shall be entitled to have notice in writing of the time and place fixed, as aforesaid, for the first meeting of the said commissioners to consider the said petition; and that after any such report has been made it shall not be material or necessary to inquire or ascertain whether any such advertisement as last aforesaid has or has not been published, or whether any such notice as last aforesaid has or has not been given in the manner hereinbefore directed in that behalf.

32. It shall be lawful for the Governor in Council to insert in any such new letters patent as in the preceding section are mentioned any restrictions, conditions, and provisions which may be recommended by the commissioners in their report, or which to the Governor in Council may seem proper, and such new letters patent shall be sealed and bear date as of the day after the expiration of the term of the first letters patent.

33. The Governor may cause indexes to all specifications, petitions, declarations, disclaimers, and memoranda of alterations deposited and filed as aforesaid to be prepared in such form as may be thought fit, and such indexes shall be open to the inspection of the public, subject to the regulations to be made by the Governor.

34. There shall be kept in the office appointed for filing specifications as aforesaid a book, to be called "The Register of Patents," wherein shall be entered and recorded in chronological order all letters patent granted under this act; the deposit and filing of specifications, disclaimers, and memoranda of alterations filed in respect of such letters patent; all amendments in such

letters patent and specifications; all confirmations and extensions of such letters patent, the expiry, determination, vacating, or canceling of such letters patent, with the dates thereof, respectively, and all such other matters and things affecting the validity of such letters patent as the Governor in Council may direct, and such register or a copy thereof shall be open at all convenient times to the inspection of the public, subject to such regulations as the Governor may make in that behalf.

35. There shall be kept at the same office a book entitled "Register of Proprietors," wherein shall be entered in such manner as the Governor directs the assignment of any letters patent, or of any share or interest therein, any license under letters patent, and the district to which such license relates, with the name or names of any person having any share or interest in such letters patent or license, the date of his or their acquiring such letters patent, share, and interest, and any other matter or thing relating to or affecting the proprietorship in such letters patent or license, and a copy of any entry in such book, certified as hereinafter mentioned, shall be given to any person requiring the same, and shall be *prima facie* proof of the assignment of such letters patent or share or interest therein, or of the license or proprietorship, as therein expressed, and such register, or a copy thereof, shall be open to public inspection subject to such regulations as the Governor may make; *Provided, always*, That until such entry has been made the grantee of the letters patent shall be deemed and taken to be the sole and exclusive proprietor of such letters patent and of all the licenses and privileges thereby given and granted.

36. It shall be lawful for a larger number than twelve persons to have a legal and beneficial interest in letters patent granted under this act.

37. The Governor may cause a seal to be made for the purposes hereinafter mentioned, and all courts, judges, and other persons whomsoever shall take notice of such seal, and receive impressions thereof in evidence in like manner as impressions of the seal of the Colony are received in evidence; and copies or extracts certified and sealed with such seal, of letters patent, specifications, disclaimers, memoranda of alterations, and all other documents or books recorded, filed, and kept in pursuance of this act, shall be received in evidence in all proceedings relating to letters patent for inventions in all courts and by all judges and other persons whomsoever.

38. If any person willfully makes, or causes to be made, any false entry in the said register of proprietors, or willfully makes or forges, or causes to be made or forged, any writing falsely purporting to be a copy of any entry in the said book, or produces or tenders, or causes or suffers to be produced or tendered in evidence any such writing, knowing the same to be false or forged, he shall be guilty of a misdemeanor, and shall be liable to be imprisoned, with or without hard labor, for any term not exceeding two years, or be fined or imprisoned at the discretion of the court.

39. If any person deems himself aggrieved by any entry made under color of this act in the said registry of proprietors, it shall be lawful for such person to apply to the Supreme Court in term time, or by summons to a judge of such court in vacation, for an order that such entry may be expunged, vacated, or varied, and upon any such application such court or judge, respectively, may make such order for expunging, vacating, or varying such entry, and as to the cost of such application, as to such court or judge may seem fit, and the officer having the care and custody of such register, on the production to him of any such order, shall expunge, vacate, or vary the said entry according to the requisition of such order.

40. If any person writes, paints, prints, molds, casts, carves, engraves, stamps, or otherwise marks upon anything made, used, or sold by him, for the sole making or selling of which he has not obtained letters patent, the name or any imitation of the name of any other person who has obtained letters patent for the sole making and vending of such thing, without leave in writing of such patentee or his assigns, or if any person upon such thing, not having been purchased from the patentee, or some person who purchased it from or under such patentee, or not having had the license or consent in writing of said patentee or his assigns, writes, paints, prints, molds, casts, carves, engraves, stamps, or otherwise marks the word "Patent," the words "Letters Patent," or the words "By the Queen's Patent," or any words of the like kind, meaning, or import, with a view of imitating or counterfeiting the stamp, mark, or other device of the patentee, he shall for every such offense forfeit and pay the sum of one hundred pounds, one half to Her Majesty and the other half, with full cost of suit, to any person who sues for the said penalty by action of debt: *Provided, always*, That nothing herein contained shall be construed to extend to subject any person to any penalty in respect of stamping or in way marking the word "Patent" upon anything made for the sole making or vending of which letters patent before obtained have expired or been otherwise determined.

41. In any action for the infringement of letters patent the plaintiff shall deliver with his declaration particulars of the breaches complained of in the said action, and the defendant on pleading thereto shall deliver with his pleas, and the prosecutor in any proceeding by *scire facias* to repeal letters patent shall deliver with his declaration, particulars of any objections on which he means to rely at the trial in support of the pleas in the said action, or of the suggestions of the said declaration in the proceeding by *scire facias* respectively; and at the trial of such action or proceeding by *scire facias* no evidence shall be allowed to be given in support of any alleged infringement, or of any objection impeaching the validity of such letters patent which are not contained in the particulars delivered as aforesaid: *Provided, always*, That the place at or in which and in what manner the invention is alleged to have been used or published prior to the date of the letters patent shall be stated in such particulars: *Provided, always*, that it shall and may be lawful for any judge at chambers to allow such plaintiff or defendant or prosecutor, respectively, to amend the particulars delivered as aforesaid, upon such terms as to such judge seems fit: *Provided, also*, That at the trial of any proceeding by *scire facias* to repeal letters patent the defendant shall be entitled to begin and to give evidence in support of such letters patent; and in case evidence is adduced on the part of the prosecutor impeaching the validity of such letters patent the defendant shall be entitled to the reply.

42. In any action for the infringement of letters patent it shall be lawful for the court, if the court is then sitting, or if the court is not sitting then for a judge, on the application of the plaintiff or defendant, respectively, to make such order for an injunction, inspection, or account, and to give such direction respecting such action, injunction, inspection, and account, and the proceedings therein, respectively, as to such court or judge may seem fit.

43. In taxing the cost in any action for infringing letters patent, regard shall be had to the particulars delivered in such action, and the plaintiff and defendant, respectively, shall not be allowed any cost in respect of any particular unless certified by the judge before whom the trial was had to have been proved by such plaintiff or defendant, respectively, without regard to the general cost of the cause; and it shall be lawful for the judge before whom any such action is tried to certify on the record that the validity of the letters patent in the declaration mentioned came in question; and the record with such certificate being given in evidence in any suit or action for infringing the said letters patent, or in any proceeding by *scire facias*, to repeal the letters patent, shall entitle the plaintiff in any such suit or action, or the defendant in such proceeding by *scire facias*, on obtaining a decree, decretal order, or final judgement, to his full costs, charges, and expenses taxed as between attorney and client, unless the judge making such decree or order, or the judge trying such action or proceeding, certifies that the plaintiff or defendant, respectively, ought not to have such full costs.

44. There shall be paid in respect of letters patent applied for or issued under or in pursuance of this act, the depositing of specifications, the filing of disclaimers and memoranda of alterations, certificates, entries, and searches, and other matters and things respectively mentioned in the schedule such fees as are enumerated in the schedule; and such of the said fees as are thereby made payable to the Law Officer shall and may be received and retained by such Law Officer for his own proper use; and the residue of the said fees shall form part of the general revenue, and shall be forthwith paid into the colonial treasury by the persons receiving the same in pursuance of this act.

45. All letters patent which are granted in the United Kingdom of Great Britain and Ireland after the 30th day of June, 1859, for an invention, shall, so far as the same relate to this Colony, be utterly void and of none effect, and in no wise be put in execution; but all such letters patent granted in the said United Kingdom on or before that day, and which if this act had not been passed would have been valid in this Colony, shall be deemed and taken to have been granted under this act, and may be dealt with accordingly.

46. The Governor in Council may, if he thinks fit, vary and alter the several forms in the schedule as occasion may require.

47. In referring to the act it shall be sufficient to use the expression "The Patent Law Act."

PATENT LAW OF VICTORIA.

No. DCCCVIII.

AN ACT to amend the laws concerning letters patent for inventions.

December 12, 1884.

Be it enacted by the Queen's Most Excellent Majesty, by and with the advice and consent of the Legislative Council and the Legislative Assembly of Victoria in this present Parliament assembled, and by the authority of the same, as follows—that is to say:

1. This act may for all purposes be cited as "The Patents Act 1884," and shall be read and construed as one with "The Patents Statute 1865," (hereinafter referred to as the "Principal Act") as amended by the Act No. CCCCXXXII, except so far as such construction would be inconsistent with or repugnant to the provisions of this act.

2. In this act and the principal act the word "Patentee" shall mean the person for the time being entitled to the benefit of any letters patent in Victoria, and the words "the true and first inventor" shall mean the person who is the actual inventor or his nominee or assignee, and shall not include the unauthorized importer of an invention from elsewhere.

3. The acts specified in the first schedule hereto shall be and the same are hereby repealed to the extent specified in the third column of the said schedule: Nothing herein contained shall affect any proceedings or things lawfully taken, done, or commenced, or any letters patent granted, or any protection or right conferred, or any register or appointment made, or any notice or particulars given or published, or any warrant issued, or caveat entered under any of the repealed portions of the said acts before the passing of this act; and all such proceedings and things shall be as valid and may be continued, and all such letters patent protections, rights, registers, appointments, notices, particulars, warrants, and caveats shall have the same force and efficacy as if this act had not been passed. When letters patent have been granted to any person before the passing of this act, or shall in respect of any application made before the passing of this act be hereafter granted to any person for any invention, such person shall with respect to all matters and things which might lawfully have been done, and with respect to all fees which might lawfully have been paid after the passing of this act, be entitled to avail himself of the provisions of this act as if this act had been passed before the grant of such letters patent.

Mode of Obtaining Letters Patent.

4. In section 6 of the principal act the words "twelve months" shall be substituted for the words "six months," wherever the same occur in the said section.

5. For the purpose of the hearing and consideration of any application in accordance with the provisions of section 10 of the principal act, the Law Officer may by summons under his hand require the attendance of all such persons as he thinks fit to call before him for examination, and may under his hand order to be paid by the applicant or objector to such persons such remuneration for their attendance as to him may seem reasonable. In opposed cases where applicants and objectors consent the Law Officer may hear all the parties in the presence of one another.

6. If any person whose attendance has been so required and on whom any such summons has been served by the delivery thereof to him or by the leaving thereof at his usual place of abode, neglect or fail to appear or refuse to make answer to such questions as are put to him touching such application as aforesaid, such person shall forfeit and pay a penalty not exceeding twenty pounds, to be recovered by any person authorized so to do by the Law Officer in a summary way before a justice of the peace.

7. If any applicant for a grant of letters patent be dissatisfied with the refusal of the Law Officer to issue his warrant for the granting of letters patent, such applicant may appeal to the Supreme Court, and the mode of such appeal and all matters relating to pleading, practice, and procedure therein shall be in accordance with rules of court for the time being in force. For the purpose of regulating such appeals the Supreme Court may at any time, with a concurrence of a majority of the judges thereof present at any meeting for that purpose held, make rules of court, and may from time to time annul any such rules and make further or additional rules; and the Supreme Court may direct a warrant for the granting of letters patent, and such warrant shall be to all intents and purposes as valid and effectual as though it were a warrant for the granting of letters patent for an invention under the hand and seal of the Law Officer.

8. Notwithstanding anything in any act of Parliament contained, where any patent or like privilege for the monopoly or exclusive use or exercise in any parts out of Victoria and its dependencies has been obtained for or in respect of any invention first invented in parts out of Victoria and its dependencies, letters patent may be granted for or in respect of such invention at any time within one year from the date of the granting of the first of any such patents or privileges for such monopoly, exclusive use, or exercise as aforesaid, notwithstanding that such invention has been used or published in Victoria within such period of one year, and such letters patent, when granted, shall have the same force and effect as if such prior publication or use had not taken place: *Provided, however*, That if such use or publication have been made in Victoria with the consent of the inventor, such inventor shall not be entitled to a grant of letters patent under the authority of this section.

9. (1.) If the Governor in Council is pleased to make any arrangement with the government or governments of any Australian colony, or with the government of the colony of New Zealand, or of the colony of Fiji for the mutual protection of inventions, then any person who has applied for the protection of any invention in any such colony shall be entitled to a patent for his invention under this act in priority to other applicants, and such patent shall have the same date as the date of the protection obtained in such colony: *Provided*, That his application is made within six months from his applying for protection in the colony with which the arrangement is in force: *Provided*, That nothing in this section contained shall entitle such person to recover damages for infringements happening prior to the date of the actual acceptance of his complete specification in Victoria.

(2.) The publication in Victoria during the period aforesaid of any description of such invention, or the use therein during such period of the invention, (whether with or without the consent of such person as aforesaid,) shall not invalidate the patent which may be granted for the invention.

(3.) The application for a grant of a patent under this section must be made in the same manner as an ordinary application under this act.

(4.) The provisions of this section shall apply only to such of the colonies aforesaid with respect to which the Governor shall from time to time by order in Council declare them to be applicable, and so long only in the case of each colony as the order in Council shall continue in force with respect to that state.

10. Where Her Majesty has by order in Council applied the provisions of section 103 of an act of the Imperial Parliament, called "The Patents, Designs, and Trade-Marks Act, 1883," or any portion thereof, to Victoria, the provisions of the last preceding section may, by order of the Governor in Council, be applied for the protection of inventions patented in the United Kingdom or Isle of Man: *Provided*, That such order in Council may be at any time revoked.

Extension of Term and Continuation of Invalid Patents.

11. Where any commissioners have been appointed by the Governor in Council, under Part III of the principal act, to consider the petition of any person for the confirmation of letters patent, or for the grant of new letters patent, or for an extension of the term in any letters patent mentioned, such commissioners may, if in their report to Her Majesty, her heirs and successors, they recommend that such confirmation, grant, or extension should not be made, also recommend that all the costs and expenses of or relating to the consideration of such petition by the commissioners, and of and relating to the appearance of the Law Officers of the crown and the crown solicitor to oppose the prayer of such petition, shall be borne by such petitioner; and the Governor in Council may thereupon make an order that such costs and expenses, or any part thereof as he thinks fit, shall be borne by such petitioner.

Miscellaneous Provisions.

12. Any person who writes, paints, prints, molds, casts, carves, engraves, stamps, or otherwise marks upon anything made, used, or sold by him, and for the sole making or selling of which he has not obtained letters patent, the name or any imitation of the name of any other person who has, as patentee, obtained letters patent for the sole making and selling of such thing, without leave in writing of such patentee or his assigns, or who, upon such thing not having been purchased from the patentee or some person who purchased it from or under such patentee, or not having had the license or consent in writing of such patentee or his assigns, writes, paints, prints, molds, casts, carves, engraves, stamps, or otherwise marks the word "Patent" or "Patented," or the words "Letters Patent," "Royal Letters Patent," or "Queen's Patent," or any word or words of like import, with the intent of counterfeiting or imitating the stamp, mark, or device of the patentee, or of deceiving the public and inducing them to believe that the thing in question was made or sold by or with the consent of the patentee, or who puts to sale as patented any article not patented in Victoria, for the purpose of deceiving the public, shall be guilty of a misdemeanor, and on conviction thereof be liable to a fine not exceeding one hundred pounds or imprisonment for a period not exceeding three months.

13. Whenever, through inadvertence, accident, or mistake, and without any willful default or intent to defraud or mislead the public, any person who has, as patentee, obtained letters patent for the sole making and selling of anything, has (in his specification) claimed to be the true and first inventor or discoverer of any material or substantial part of the thing patented of which he was not the true and first inventor as aforesaid, every such patentee, his executors, administrators, and assigns, whether of the whole or any interest in such letters patent, may maintain a suit at law or in equity for the infringement of any part thereof which was *bond fide* his own, provided it be a material and substantial part of the invention in respect of which the letters patent were rightfully granted, and that it be definitely distinguishable from the parts so claimed without right as aforesaid, notwithstanding the specifications may embrace more than that of which such patentee was the true or first inventor or discoverer; but in every such case in which judgment is given or a decree is made for the plaintiff, no costs shall be recovered unless the proper disclaimer has been entered at the chambers of the Law Officer before the commencement of the action or suit, nor shall he be entitled to the benefit of this section if he have unreasonably neglected or delayed to enter said disclaimer.

14. A patent shall have to all intents the like effect as against her Majesty the Queen, her heirs, and successors, as it has as against a subject, but the minister at the head of any department of the public service may use for the public service any patented article or any patented manufacturing process on such terms as may be agreed on with the patentee of such article or process, or in default of such agreement on such terms as may be settled by arbitration conducted under regulations to be made by the Governor in Council.

Revocation.

15. (1.) The proceeding by *scire facias* to repeal a patent is hereby abolished.

(2.) Revocation of a patent may be obtained on petition to the Supreme Court.

(3.) Every ground on which a patent might, at the commencement of this act, be repealed by *scire facias* shall be a ground of revocation.

(4.) A petition for revocation of a patent may be presented by—

(*a.*) The law officer;

(*b.*) Any person authorized by the law officer;

(*c.*) Any person alleging that the patent was obtained in fraud of his rights, or of any person under or through whom he claims;

(*d.*) Any person alleging that he, or that any person under or through whom he claims, was the true inventor of any invention included in the claim of the patentee;

(*e.*) Any person alleging that he, or any person under or through whom he claims an interest in any trade, business, or manufacture, had publicly manufactured, used, or sold, within this realm, before the date of the patent, anything claimed by the patentee as his invention.

(5.) The plaintiff must deliver with his petition particulars of the objections on which he means to rely, and no evidence shall, except by leave of a judge of the court, be admitted in proof of any objection of which particulars are not so delivered.

(6.) Particulars delivered may be from time to time amended by leave of the court in which such action is pending or a judge thereof.

(7.) The defendant shall be entitled to begin, and give evidence in support of the patent, and if the plaintiff gives evidence impeaching the validity of the patent the defendant shall be entitled to reply.

(8.) Where a patent has been revoked on the ground of fraud the Law Officer may, on the application of the true and first inventor made in accordance with the provisions of this act, grant to him a patent in lieu of and bearing the same date as the patent so revoked; but the patent so granted shall cease on the expiration of the term for which the revoked patent was granted.

Legal Proceedings.

16. (1.) In an action for infringement of a patent, the judge who is trying the action may, if he thinks fit, and shall on the request of either of the parties to the proceeding, call in the aid of an assessor specially qualified and try and hear the case wholly or partially with his assistance. The action shall be tried without a jury, unless the court shall otherwise direct.

(2.) A judge of any court having jurisdiction to deal with matters and things relating to letters patent may, if he sees fit, in

any proceeding before him call in the aid of an assessor as aforesaid.

(3.) The remuneration, if any, to be paid to an assessor under this section shall be determined by the judge or judges who have called such assessor to his or their aid, and be costs in the cause.

17. (1.) In an action for infringement of a patent the plaintiff shall deliver with his statement of claim, or by order of a judge of the court in which such action is brought at any subsequent time, particulars of the breaches complained of.

(2.) The defendant on pleading thereto shall deliver with his statement of defense, or by order of the Supreme Court or a judge thereof at any subsequent time, particulars of any objections on which he relies in support thereof.

(3.) If the defendant disputes the validity of the patent, the particulars delivered by him must state on what grounds he disputes it, and if one of those grounds is want of novelty, must state the time and place of the previous publication or user alleged by him.

(4.) At the hearing no evidence shall, except by leave of the judge, be admitted in proof of any alleged infringement or objection of which particulars are not so delivered.

(5.) Particulars delivered may be from time to time amended by leave of the court in which the action is then pending or a judge thereof.

(6.) On taxation of costs, regard shall be had to the particulars delivered by the plaintiff and by the defendant; and they, respectively, shall not be allowed any costs in respect of any particular delivered by them unless the same is certified by the court in which the action was tried, or a judge thereof, to have been proven, or to have been reasonable and proper, without regard to the general costs of the case.

18. In an action for infringement of a patent, the court in which such action is pending, or a judge thereof, may, on the application of either party, make such order for an injunction, inspection, or account, and impose such terms and give such directions respecting the same and the proceedings thereon as the said court or such judge may see fit.

19. In an action for infringement of a patent, the court in which the action was tried, or a judge thereof, may certify that the validity of the patent came in question, and if such court or judge so certifies, then in any subsequent action for infringement the plaintiff in that action, on obtaining a final order or judgment in his favor, shall have his full costs, charges, and expenses, as between solicitor and client, unless such court or judge before whom the action was tried certifies that he ought not to have the same.

20. Every patent may be in the form in the second schedule to this act, and shall be granted for one invention only, but may contain more than one claim; but it shall not be competent for any person in an action or other proceeding to take any objection to a patent on the ground that it comprises more than one invention.

21. If a person possessed of an invention dies without making application for a patent for the invention, application may be made by and a patent for the invention granted to his legal representative. Every such application must be made within six months of the decease of such person, and must contain a declaration by the legal representative that he believes such person to be the true and first inventor of the invention.

22. The exhibition of an invention at an industrial or international exhibition, or the publication of any description of the invention during the period of the holding of the exhibition, or the use of the invention for the purpose of the exhibition in the place where the exhibition is held, or the use of the invention during the period of the holding of the exhibition by any person elsewhere without the privity or consent of the inventor, shall not prejudice the right of the inventor or his legal personal representative to apply for and obtain provisional protection and a patent in respect of the invention or the validity of any patent granted on the application: *Provided*, That both the following conditions are complied with, namely:

(a.) The exhibitor must, before exhibiting the invention, give the Law Officer one month's notice of his intention to do so; and,

(b.) The application for a patent must be made before or within twelve months from the date of the opening of the exhibition.

23. The Governor in Council may, subject to the provisions of this act, from time to time, make, alter, and repeal rules and regulations to regulate the issue of licenses to persons to practice as agents for the procuring and taking out of letters patent for inventions, and fixing the amount or fee to be charged for each such license per annum.

24. The second and third schedules to this act shall be respectively substituted for the sixth and third schedules to the principal act.

25. The fees set out in the fourth schedule to this act shall be payable for and in respect of the matters and things therein mentioned in lieu of the fees prescribed by the ninth schedule to the principal act, and the said fourth schedule hereto shall be substituted for the said ninth schedule to the principal act.

Notwithstanding anything in the principal act contained, a fee due in respect of letters patent for any invention at the expiration of the third or seventh year from the date therefrom, may be paid at any time within six months of such due date on payment of an additional fee by way of penalty of two pounds and ten shillings, and may be paid at any time within twelve months of such due date on payment of an additional fee by way of penalty of ten pounds; and on payment of such fee and penalty the powers and privileges granted by such letters patent shall be as good and effectual to all intents and purposes as though such fee had been paid on such due date as aforesaid.

THE OFFICIAL GAZETTE

OF THE

United States Patent Office.

[BY AUTHORITY OF CONGRESS.]

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The Official Gazette of July 7.

Arrangements having now been made for the publication of the OFFICIAL GAZETTE of July 7, it will probably be mailed to subscribers on or about the 20th instant.

The Official Gazette.

The OFFICIAL GAZETTE is published every Tuesday, simultaneously with the weekly issue of patents. From January 1, 1872 (the commencement of its publication,) to June 30, 1883, it was published and bound in semi-annual volumes; since July 1, 1883, in quarterly volumes. All subscriptions must commence with the beginning of a volume; none taken for less than three months. Terms: To all subscribers within the United States and Canada, $5 per annum; to foreign subscribers, $7; single copies, 10 cents; bound semi-annual volumes, (prior to June 30, 1883,) full sheep, $4 per volume; bound quarterly volumes, (subsequent to July 1, 1883,) full sheep, $2.75 per volume. No club rates. *Payment in advance.* All orders should be addressed to "The Commissioner of Patents, Washington, D. C."

Indexes to Patents on Electricity.

Appendix No. 2 to the index to patents relating to electricity, covering the period of time from July 1, 1882, to June 30, 1883, has been issued, and is now for sale. These indexes, arranged alphabetically, numerically, and by classes, are completed to June 30, 1883, and comprise the following volumes:

Vol. 1. Index to patents relating to electricity granted by the United States prior to June 30, 1881, with an appendix, July 1, 1881, to June 30, 1882. One volume, 250 pages. In paper covers, $3; bound, $5.

Vol. 2. Appendix No. 2, July 1, 1882, to June 30, 1883. One volume, 50 pages. In paper covers, $1.50.

Vol. 3. Appendix No. 3, July 1, 1883, to June 30, 1884. One volume, 60 pages. In paper covers, $1.50.

Indexes to Foreign Patents.

The following indexes to foreign patents have been translated, compiled, and published under the authority of the Commissioner of Patents, and may be obtained as a Patent Office publication at the prices given below.

INDEX TO FRENCH PATENTS, 1791 to 1876, inclusive, (subject-matter,) one volume, 935 pp., bound in cloth $10 00

INDEX TO ITALIAN PATENTS, 1848 to May 1, 1882, (subject-matter,) one volume, 120 pp.—

Bound half-turkey	2 50
Bound in cloth	1 25
Paper covers	1 00

32 O G—7—i

Issue of August 18, 1885.

Patents	446	No. 324,348 to No. 324,793, inclusive.
Designs	7	No. 16,203 to No. 16,209, inclusive.
Trade-Marks	20	No. 12,508 to No. 12,527, inclusive.
Labels	8	No. 4,555 to No. 4,562, inclusive.
Reissues	4	No. 10,635 to No. 10,638, inclusive.
Total issue	485	

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks and Labels.	States.	Patents and Designs.	Trade-Marks and Labels.
Alabama			Nebraska	1	
Arizona Territory			Nevada		
Arkansas			New Hampshire	4	
California	10		New Jersey	20	
Colorado	5		New Mexico Territ'y		
Connecticut	23		New York	97	9
Dakota Territory	1		North Carolina	1	
Delaware	1		Ohio	29	
District of Columbia	4		Oregon	1	
Florida			Pennsylvania	36	
Georgia			Rhode Island	2	
Idaho Territory	1		South Carolina	2	
Illinois	41	10	Tennessee	1	
Indiana	14		Texas	6	
Indian Territory			Utah Territory	2	
Iowa	13		Vermont	1	
Kansas	8		Virginia	2	
Kentucky	4		Washington Territ'y		
Louisiana	4		West Virginia	4	
Maine			Wisconsin	10	
Maryland	5	2	Wyoming Territory		
Massachusetts	42	2	United States Army		
Michigan	7	1	United States Navy		
Minnesota	5				
Mississippi	2		Total to citizens of the United States	418	26
Missouri	9	2			
Montana Territory					

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Labels.	Countries.	Patents and Designs.	Trade-Marks and Labels.
Argentine Republic			Germany	8	1
Austria-Hungary	1		Italy	1	
Barbadoes			Mexico		
Belgium	1		Norway		
Bermuda			Russia		
British Columbia			Scotland		
Canada	12		Spain	1	
Chili			Sweden		
Colombia, U. S. of			Switzerland	1	
Cuba			West Indies		
Denmark	1				
Ecuador			Total to citizens of foreign countries	35	2
England	6				
France	3	1			

DESIGNS.

16,203.—FOLDING BEDSTEAD.—*Quimby S. Backus*, Winchendon, Mass. Application filed July 10, 1885. Term of patent 14 years.

16,204.—OYSTER-PLATE.—*Edwin Haviland*, Plainfield, N. J. Application filed September 12, 1884. Term of patent 7 years.

16,205.—ORNAMENTATION OF HARDWARE.—*Hermann Jaworski*, New Haven, Conn., assignor to *Sargent & Co.*, same place. Application filed March 23, 1885. Term of patent 14 years.

16,206.—TABLE-WARE.—*Elijah Mountford*, Trenton, N. J. Application filed May 21, 1884. Term of patent 7 years.

16,207.—PICTURE-HANGER.—*Palo W. Miller*, Grand Junction, Iowa. Application filed May 26, 1885. Term of patent 7 years.

16,208.—RUBBER BOOT OR SHOE.—*E. Bruce Preston*, Chicago, Ill. Application filed June 15, 1885. Term of patent 7 years.

16,209.—ORNAMENTATION OF FISH-PAILS.—*Silas Kilbourn*, Grand Haven, Mich. Application filed June 22, 1885. Term of patent 7 years.

TRADE-MARKS.

[Certificates of registration of Trade-Marks numbered 8,191 and upward are registered under the act of March 3, 1881.]

12,508.—BRAIDS AND LACES.—*Balas Frères*, Chamond, France. Application filed March 29, 1884.
"The representation of a bee."

12,509.—REMEDY FOR RHEUMATISM.—*John Davis Beardsley*, Ithaca, N. Y. Application filed May 21, 1885.
"The word 'RHEUMATICINE,' with a bar or band crossing behind the said word, with a dragon's head represented attached to each end of the said bar or band."

12,510.—CIGARS.—*Gustave Davidson*, Kansas City, Mo. Application filed June 15, 1885.
"The arbitrary words 'KANSAS CITY CABLE LINE.'"

12,511.—REMEDY FOR CERTAIN INDICATED DISEASES.—*Farbwerke, vormals Meister, Lucius & Brüning*, Höchst-on-the-Main, Germany. Application filed July 3, 1885.
"The words 'DR. KNORR'S ANTIPYRINE.'"

12,512.—SMOKING AND CHEWING TOBACCO.—*G. W. Gail & Ax*, Baltimore, Md. Application filed July 16, 1885.
"A parallelogram formed by a double nonpareil border, in black upon blue paper, having imprinted therein the words 'SMOKE,' 'CHEW,' 'NAVY,' 'G. W. GAIL & AX,' 'BALTIMORE,' and 'MD.,' and our heretofore-registered trade-mark—*i. e.*, a diamond-shaped figure having the letter 'G' in the center, and the picture of an ax inclosed by the outline of the said letter 'G.'"

12,513.—PLUG-TOBACCO.—*Gem City Tobacco Works*, Quincy, Ill. Application filed June 30, 1885.
"The word 'OYSTER' or the representation of an oyster."

12,514.—EYE-SALVE.—*Howard Bros.*, Fredonia, N. Y. Application filed July 2, 1885.
"The figures of an eagle and an eye."

2,515.—PRINTING, WRITING, AND WRAPPING PAPER.—*J. W. Butler Paper Company*, Chicago, Ill. Application filed July 28, 1885.
"The word 'WELLAND.'"

12,516.—ELECTRIC BATTERIES.—*The Leclanché Battery Company*, New York, N. Y. Application filed May 20, 1885.
"The letters or word 'GONDA.'"

12,517.—HAIR-TONIC.—*Letitia C. Morris*, New York, N. Y. Application filed July 23, 1885.
"The word 'MACASSARINE.'"

12,518.—GIN.—*Clarence M. Roof*, New York, N. Y. Application filed July 8, 1885.
"A windmill, whether represented pictorially or by the word 'WINDMILL,' with the letter-symbol 'V. V x Z.'"

12,519.—REFINED PETROLEUM-OIL.—*Albert F. Sise*, Boston, Mass. Application filed July 17, 1885.
"The words 'GOOD LUCK' and a representation of a horse-shoe associated."

12,520.—SPECTACLES AND EYEGLASSES.—*Spencer Optical Manufacturing Company*, New York, N. Y. Application filed July 25, 1885.
"The representation of a lozenge or diamond."

12,521.—SPECTACLES AND EYEGLASSES.—*Spencer Optical Manufacturing Company*, New York, N. Y. Application filed July 25, 1885.
"The representation of a crescent."

12,522.—SPECTACLES AND EYEGLASSES.—*Spencer Optical Manufacturing Company*, New York, N. Y. Application filed July 25, 1885.
"The arbitrary word 'DIAMOND.'"

12,523.—SMOKED MEATS.—*Thomas Stokes*, New York, N. Y. Application filed July 28, 1885.
"The arbitrary word 'DUTCHESS.'"

12,524.—STOVE-POLISH IN POWDERED FORM.—*Jane Taylor*, Fall River, Mass. Application filed May 1, 1885.
"The word 'CLIMAX.'"

12,525.—WHIPS.—*Edward K. Warren*, Three Oaks, Mich. Application filed July 21, 1885.
"The word 'FEATHERBONE.'"

12,526.—MUSTARD.—*Henry Wichert*, Chicago, Ill. Application filed July 16, 1885.
"The representations of two lions standing upright, with their front paws resting upon a shield, and a crown."

12,527.—REMEDY FOR CERTAIN NAMED DISEASES.—*Wooden & Melvill*, Kansas City, Mo. Application filed July 28, 1885.
"The word 'PAX.'"

LABELS.

4,555.—Title: "POST BOY" (FOR A LAUNDRY SOAP.)—*James S. Kirk & Co.*, Chicago, Ill. Application filed June 17, 1885.

4,556.—Title: "WHITE RUSSIAN SOAP."—*James S. Kirk & Co.*, Chicago, Ill. Application filed June 11, 1885.

4,557.—Title: "ARGENTA" (FOR SOAP.)—*James S. Kirk & Co.*, Chicago, Ill. Application filed June 11, 1885.

4,558.—Title: "EBONY HARNESS SOAP."—*James S. Kirk & Co.*, Chicago, Ill. Application filed June 11, 1885.

4,559.—Title: "EUTOCA" (FOR TOILET SOAP.)—*James S. Kirk & Co.*, Chicago, Ill. Application filed June 17, 1885.

4,560.—Title: "REVENUE" (FOR LAUNDRY SOAP.)—*James S. Kirk & Co.*, Chicago, Ill. Application filed June 17, 1885.

4,561.—Title: "OUR UNION SOAP."—*James S. Kirk & Co.*, Chicago, Ill. Application filed June 17, 1885.

4,562.—Title: "PEAR PHOSPHATES" (FOR A BEVERAGE.)—*Lilly, Rogers & Co.*, Baltimore, Md. Application filed July 24, 1885.

PATENTS

GRANTED AUG. 18, 1885.

324,348. ADJUSTABLE BALE-TIE. GRIFFIN S. ACKLEY, Towanda, Pa. Filed May 1, 1885. (No model.)



Claim.—1 An adjustable bale-tie consisting of an elastic cushion provided with a central hole, in combination with a wire band passed around said elastic cushion and twisted upon itself, whereby when the free end of the band is passed around the bale and through said central hole, for the purpose of securing the same, the said band is prevented from breaking from any strain by the yielding action of the cushion, substantially as described.

2. In an adjustable bale-tie, a ring provided with a hole at or near its center and the bale-wire, in combination with a small wire passed through said hole in the ring with its ends doubled and bent back and twisted within the twist of the loop of the bale-tie, whereby the said ring is securely held in place within the loop, substantially as described.

324,349. MATTRESS. ALOIS ALTMANN, Manitowoc, Wis. Filed Oct. 11, 1883. (No model.)



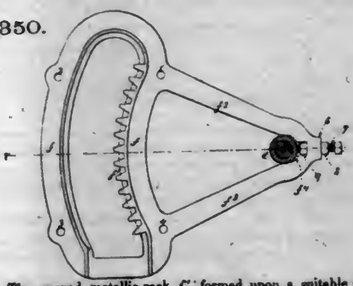
Claim.—1. The combination of the mattress-frame consisting of side rails and cross-bars, corner-posts E' E' E' E', rounds G G, series of longitudinally-arranged elastic slats E E, secured at or near their ends to rounds G G, and central supporting spiral springs H, all substantially as and for the purpose specified.

2. The combination of the side rails, A A, detachable cross-bars B B and C C, posts E' E' E' E', rounds G, fitted to turn in the upper ends of said posts, series of elastic slats E E, cross-bars J J, and spiral springs H, interposed between said bars J J and bars B B, all substantially as and for the purpose specified.

324,350. HARVESTER. JOHN F. APPLEBY, Minneapolis, Minn., assignor to the Minneapolis Harvester Works, same place. Filed Nov. 25, 1884. (No model.)

Claim.—1. In a harvester-frame, a metallic yoke and means for adjusting the same, whereby the proper distance is maintained between the center of the drive-wheel and the center of the counter-shaft through which power is transmitted from the drive-wheel.

2. A metallic rack-standard and yoke, substantially such as herein described, provided with suitable bolt-holes for the reception of the bolts by which it is secured to the frame of the harvester, and adapted to embrace the box *e*, in which the counter-shaft *c'* has its bearing, and provided with the adjusting screw-bolt 7, inserted through the bight of the yoke for the purpose of centralizing the journal formed in the box *e* relatively to the curved rack *f*



3. The curved metallic rack *f*, formed upon a suitable standard adapted to be bolted to the frame of a harvester and cast or otherwise formed in one piece with a yoke the bight of which is provided with an adjusting screw-bolt, substantially such as described, in combination with box *e*, which affords the bearing for the counter-shaft through which power is transmitted from the driving-wheel gear.

324,351. SHUTTLE AND SHUTTLE-HOLDER FOR SEWING-MACHINES. SATTERLEE ARNOLD, Brooklyn, N. Y., assignor to Anna M. Arnold, same place. Filed June 28, 1884. (No model.)

Brief.—The tension-spring is attached to the axis of the cover and swings with it. The holder-arm permits the loop of thread to pass between it and the lower portion of the bed-plate, which is slightly recessed for holding the shuttle.



Claim.—1. A sewing-machine shuttle-shell having a bobbin-cavity at one end, a tapering loop-spreading portion at the other end, and a wedge-shaped loop-divider, as a^2, on its loop-approaching side at its larger or bobbin end, substantially as set forth.

2. A sewing-machine shuttle-shell having flattened upper and lower faces, a bobbin-cavity at one end, a tapering loop-spreading portion at the other end with straight and convex sides, and a wedge-shaped loop-divider, as a^2, on its loop-approaching side at its larger or bobbin end, substantially as set forth.

3. The combination, with a sewing-machine shuttle-shell having a bobbin-cavity and an opening or recess in its side adjacent to said cavity, of a swinging tension-spring projecting normally within said cavity, but entering said recess when swung aside, and a swinging holder connected with said spring, and thus adapted to retain the latter in its operative position and to be swung aside therewith, substantially as set forth.

4. The combination, with a sewing-machine shuttle-shell, of a swinging cover for retaining the bobbin therein and a tension-spring attached to the part forming the axis of the said cover, substantially as set forth.

5. The combination, with a sewing-machine shuttle-shell, of a swinging cover for retaining the bobbin therein and a tension-spring connected with said cover and arranged to bear directly on the thread of the bobbin, substantially as set forth.

6. The combination, with a sewing-machine shuttle-shell having a bobbin-cavity and a tension-spring opening or recess adjacent thereto, of a swinging cover for retaining the bobbin in place and a tension-spring which is connected with said cover so that, when swung aside with the latter, it may pass into said opening or recess, and thus be out of the way

of the flanges of the bobbin which is to be removed from or inserted into the shuttle-shell, substantially as set forth.

7. The combination, with the shuttle-shell A, having slots *a* and *a'*, of the swinging cover C, having hub *c'*, and the tension-spring D, attached to said hub, substantially as set forth.

8. In a sewing-machine, the combination, with a stationary shuttle—such, for example, as is herein shown—of a horizontally-arranged holder for the same, which is entirely open or unobstructed on one side, substantially as set forth.

9. In a sewing-machine, the combination, with the work-plate thereof and a horizontally-arranged shuttle-holder placed beneath the same and having an open side and arms on its other side by which it is attached to said work-plate, of a stationary shuttle—such, for example, as is herein shown—loosely supported in said holder and having a depth slightly greater than that of the latter, so that its upper surface will be above the lower side of the work-plate, substantially as set forth.

324,352. BOOT OR SHOE AND WELT THEREFOR. WILLIAM B. ARNOLD, North Abington, Mass. Filed May 13, 1885. (No model.)

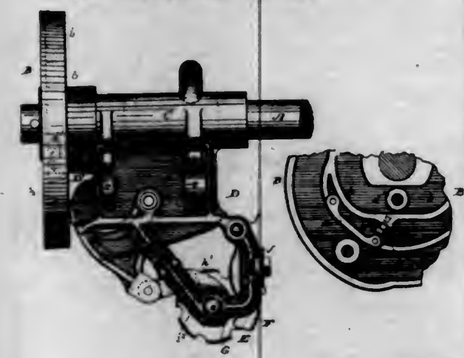


Claim.—1. A shoe or boot welt composed of the flat piece *a*, to extend across the toe of the shoe, and of two separate flanking portions, *b*, to extend from such flat portion along the sides of the shoe, such three portions being scarfed and lapped on one another and cemented together between the laps, substantially as set forth.

2. A boot or shoe provided with a toe-piece, substantially as described, serving as part of the welt, and also to form with the insole a pocket to receive the front portion of the filling-piece encompassed by the welt.

3. The combination, with a shoe upper and insole, of a welt composed of a flat toe portion and two flanking-strips separate and extending therefrom, and scarfed together as set forth, the toe portion being extended across the insole and forming therewith a pocket to receive the toe portion of a filling-piece when placed between the flanking portions of the welt.

324,353. CORD-HOLDER FOR GRAIN-BINDERS. WM. R. BAKER, Chicago, Ill., assignor to the McCormick Harvesting Machine Company, same place. Filed Apr. 18, 1883. (No model.)



Claim.—1. The combination, with a cord-holder, of an actuating-lever and a cam-track controlling said lever having an adjustable section corresponding with the effective portion of its track in the impelling movement of the lever, whereby loss by wear may be compensated for.

2. The combination, substantially as hereinbefore set forth, of the holder-disk, a spring-pressed shoe therefor, a ratchet-wheel upon the hub or pivot of said disk, a driving-pawl, a cam-track upon a rotating wheel, mechanism intermediate between said pawl and track, and an adjustable section in said track, which causes the impelling movement of the pawl, and whereby wear may be compensated for and the point of the pawl always brought to the same position in its stroke.

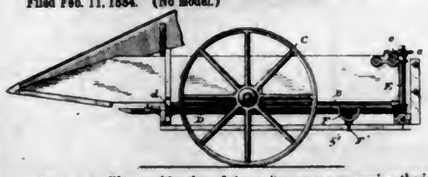
3. The combination, substantially as hereinbefore set forth, of the holder-disk, its shoe and ratchet-wheel, the pawl engaging with said ratchet-wheel, the bell-crank lever to which said pawl is pivoted, the coiled spring between the pawl and bell-crank lever, the cam-track receiving a roller from the adjacent arm of the bell-crank lever, and the adjustable section in said cam-track.

4. The combination, substantially as hereinbefore set forth, of the holder-disk, its shoe and ratchet-wheel, the pawl engaging with said ratchet-wheel and pivoted to one arm of a bell-crank lever, the pin-jointed rod and coiled spring between said pawl and arm, the cam-track on the face of the revolving disk, into which a roller from the adjacent arm of the lever takes, a hinged section in said cam-track, the screw-rod pin-jointed to said section and passing through lugs on the face of the wheel, and the nut on said rod.

5. The combination, substantially as hereinbefore set forth, with the cam-track controlling the instrumentalities for revolving the holder-disk, of the hinged section flush with the fixed portion of the track at its hinged end, and at the opposite end having a screw-rod pin-jointed thereto, which rod takes through stationary lugs on the face of the cam-wheel and receives between such lugs a nut for its adjustment.

6. The combination, substantially as hereinbefore set forth, of the pivoted holder-frame, its vertical arm, the cam-groove in the face of the revolving wheel, into which a roller from said arm takes, the holder-disk, pivoted in said frame, the bell-crank lever and pawl for operating said disk, and a second cam-groove in the face of the revolving wheel circumscribing the first, into which a roller from the adjacent arm of the bell-crank lever takes, whereby the holder-frame is raised and lowered, and the cord-holder operated by the revolutions of the wheel.

324,354. HARVESTING-MACHINE. WILLIAM R. BAKER, Chicago, Ill., assignor to the McCormick Harvesting Machine Company, same place. Filed Feb. 11, 1884. (No model.)



Claim.—1. The combination of the endless apron or carrier, the idle-roller supporting it at one end, the sliding box in which said roller turns, the ropes, bands, or cables affixed individually to each of said boxes, the single vertical winding-drum or winch, to which both cables are led, and its ratchet and check-pawl.

2. The combination, substantially as hereinbefore described, of the endless apron or carrier, the idle drum or roller which supports it at the divider end, the sliding boxes in which said roller turns, the cable attached to the front box and led therefrom over a pulley at the end of the front sill and alongside the divider-board, the cable attached to the rear box, and the vertical winding-drum or winch located at the rear outer corner of the platform in line with the rear box and receiving both cables.

3. The combination, substantially as hereinbefore set forth, with the apron-tightening cable, of the tension-bridge and its eyebolt and nut.

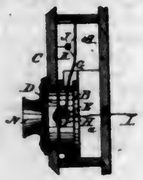
4. The tension-bridge constructed substantially as herein set forth—that is to say, formed with eyes or recesses to receive the cable, and having between its legs an eyebolt adapted to grasp the cable midway between said legs, and provided with a nut, whereby it can be moved in and out transversely to a line drawn between said eyes to take up or let out slack.

324,355. DASH-BOARD. PHILO M. BARNES, Lockport, N. Y. Filed Mar. 27, 1884. (No model.)



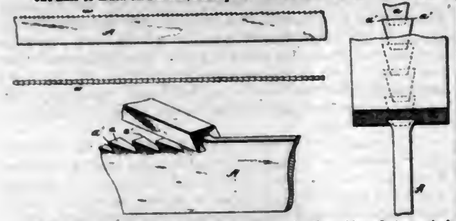
Claim.—A dash-board consisting of a metallic frame covered with a layer of heavy, strong, sized canvas, with a layer of heavy paper secured to each side of the canvas, and a binding of sheet metal, the whole being rendered water-proof, substantially as and for the purposes described.

324,356. ACOUSTIC TELEPHONE. WILLIAM T. BLACK, Canton, Ohio. Filed Dec. 20, 1884. (No model.)



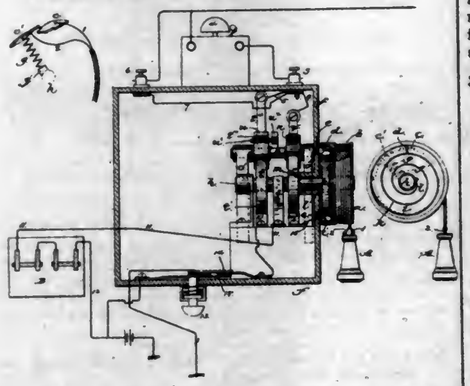
Claim.—The bolt or screw E, provided with the call plate or button F and the eye O, in combination with the diaphragm D and the knob or mallet H, substantially as and for the purpose specified.

324,357. SAW. MATHEW BROWN, Bridgeport, Conn., assignor of one-half to Adin M. Barber, same place. Filed Jan. 13, 1885. (No model.)



Claim.—A saw having small teeth gradually widened from their bases to their cutting-edges, substantially as described.

324,358. TELEPHONE-SWITCH. JOHN A. CABOT, New York, N. Y. Filed Sept. 15, 1884. (No model.)



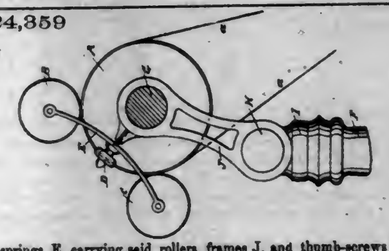
Claim.—1. The combination, with a telephone-receiver, of a grooved pulley mounted on a metallic shaft carrying the conductors of the receiver, one end of each of which is connected with the metallic plates arranged on the base of the groove of the pulley and in the positive and negative poles of the circuit, a convolute retracting-spring arranged on one side of the grooved pulley, the said spring adapted to rotate the grooved pulley automatically, substantially as shown and described.

2. The combination, with a telephone-receiver, of the circuit maker and breaker consisting of a disk of insulating material having mounted upon its periphery a metallic ring having frictional contact with the periphery of a smaller disk of insulating material, and having a part of its periphery covered with a metallic strip, a projecting lug integral with the periphery of the smaller disk, adapted to strike against the stop when rotated, the metallic surface of both disks in contact with metallic springs connected with conductors, forming the circuit when the respective plates of the disks are in contact with each other, substantially as shown and described.

3. The combination, with the bell-circuit of a telephone-receiver, of a circuit maker and breaker composed of a disk of insulating material mounted on the shaft of the grooved pulley, a part of the periphery covered with a metallic strip making frictional contact with a metallic strip on a smaller disk in contact with a metallic spring in circuit with the bell, and the metallic spring in contact with the periphery of the disk of the pulley-shaft.

4. In combination with a telephone-receiver, the pulley *a*, carrying the metallic disk *c'*, electrically connected with one end of the spiral metallic spring *g*, the other end of the spring electrically connected with a metallic block, *g'*, in contact with the metallic shaft *h*, the whole placed in electrical circuit, substantially as shown and described.

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C, springs E, carrying said rollers, frames J, and thumb-screws D, for attaching said springs to the frames and regulating the pressure of the rollers on the cylinder, substantially as shown and described.

3. In a copy-holder, the combination of cylinder A, provided with handles N, rollers B and C, springs E, carrying said rollers, frames J, having journals G, in which cylinder A revolves, thumb-screws D, cross-bar H, and stand F, having junction-piece I, substantially as described and shown, and for the purpose set forth.

4. In a copy-holder, the combination of cylinder A, covered with absorbent material and provided with handles for rotating it, rollers B and C, also covered with absorbent material, springs E, carrying said rollers, frames J, and thumb-screws D, for attaching said springs to the frames and regulating the pressure of the rollers upon the cylinder, substantially as shown and described, and for the purpose set forth.

324,360. MANUFACTURE OF HORSESHOES. LOUIS G. CLAUDE, New York, N. Y., assignor, by mesne assignments, to the Russell Horse-shoe Company, same place. Filed Dec. 19, 1884. (No model.)



Claim.—1. The improvement in the manufacture of horseshoes, which consists in punching from a plate of rolled metal a succession of curved blanks, their outline coinciding with or approximating that of the finished shoe, and the plate being presented to the punching-dies with the grain of the metal extending longitudinally of the shoe-blank, whereby the blanks have a parallel grain extending from toe to heel, substantially as set forth.

2. The improvement in the manufacture of horseshoes, which consists in punching from a rolled plate having a longitudinal central stripe of iron flanked by stripes of steel a succession of curved blanks of a shape approximating that of a finished shoe, with the said stripe of iron crossing the toe portion of each blank, substantially as set forth, whereby the subsequent formation of the toe-clip is facilitated.

3. The improvement in the manufacture of horseshoes, which consists in punching from a rolled plate having a longitudinal stripe of iron flanked by steel a succession of curved blanks of a shape approximating that of a finished shoe, the toe portion of each of which is formed with a projection, *e*, the said blanks being cut with said stripes of iron crossing their toe portions medially, substantially as set forth.

4. The improvement in the manufacture of horseshoes, which consists in punching from a rolled plate having a central longitudinal stripe of iron two parallel stripes of steel on opposite sides thereof, and opposite stripes of iron flanking the steel, a succession of shoe-blanks of a shape approximating that of a finished shoe, with the said central stripes of iron crossing the middle of the toe portion, the steel stripes extending longitudinally through the legs, and the iron flanks forming the outer sides of the legs, substantially as set forth.

5. The improvement in the manufacture of horseshoes, which consists in punching from a rolled plate a successive series of curved shoe-blanks of an outline approximating that of the finished shoe, the plate being presented to the punching-dies with its grain extending longitudinally of the shoe-blank, and the successive blanks being struck out toe to heel, substantially as set forth.

6. The improvement in the manufacture of horseshoes, which consists in first punching out a curved shoe-blank from a rolled plate, with the grain extending longitudinally of the blank, and subsequently welding a toe-calk to said blank transversely of the grain of the blank, substantially as set forth.

324,359. COPY-HOLDER AND BLOTTER. WILLIAM H. CLARKSON, New York, N. Y. Filed Jan. 23, 1884. Renewed Jan. 7, 1885. (No model.)

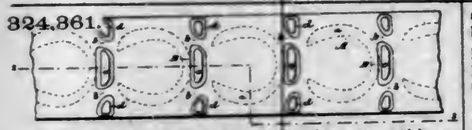
Claim.—1. In a copy-holder, the combination, with the revolving cylinder A, of the rollers B and C, connected to the frames J by the springs E, and adapted to be operated by the movement of the said cylinder, substantially as shown and described, and for the purpose set forth.

2. In a copy-holder, the combination of cylinder A, rollers B and

324,361. MANUFACTURE OF HORSESHOES. LOUIS G. CLAUDE, New York, N. Y., assignor, by mesne assignments, to the Russell Horse-shoe Company, same place. Filed Dec. 20, 1884. (No model.)

Claim.—1. The improved method of manufacturing horseshoes, which consists in rolling a bar or plate of metal with transverse projecting ribs or calks relatively arranged to form the respective calks on the shoe, and punching the shoes from such bar with the grain of the metal extending longitudinally of the shoes, substantially as set forth.

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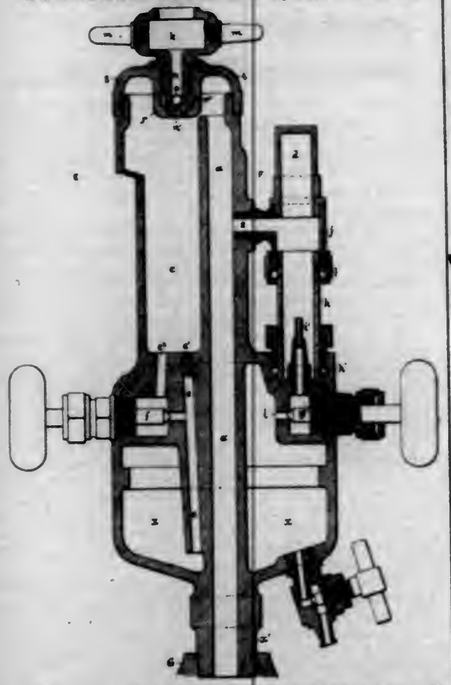
2. The improved method of manufacturing horseshoes, which consists in rolling a bar or plate of metal with transverse projecting ribs or calks relatively arranged to form the respective toe and heel calks on the shoes, and punching the shoes successively from such bar with the toe of each shoe between the heels of the next, substantially as set forth.

3. The improved method of manufacturing horseshoes, which consists in rolling a bar or plate of metal with transverse toe-calks *c c* and separate heel-calks *d d* projecting from its surface, relatively arranged to form the respective toe and heel calks on the shoes, and punching the shoes from said bar in such relation, as described, that each shoe punched out shall be provided with a toe-calk at its toe and heel-calks on its heels, substantially as set forth.

4. The improved method of manufacturing horseshoes, which consists in punching the shoes from a bar having transverse ribs or calks with the heels of the shoes spread apart, and subsequently pressing the sides of the shoes toward each other to the desired shape, substantially as set forth.

5. The improved method of manufacturing horseshoes, which consists in rolling a bar or plate with transverse projections at intervals, and with a succession of concaves, *a a*, and punching out shoes from such plate in such positions that the concaves *a a* shall appear on the upper inner side of each shoe, substantially as set forth.

324,362. LUBRICATOR FOR STEAM-ENGINES. John W. Cloud and Samuel Porcher, Altoona, Pa. Filed July 9, 1885. (No model.)



Claim.—1. A sight-feed lubricator for steam-engines, provided with means for attachment at its base only, a main condenser, and an auxiliary condenser above and communicating with the sight-feed glass, in combination with a single passage extending from said base upward, both for supplying steam to the two condensers and for conducting the lubricant downward, substantially as and for the purposes hereinbefore set forth.

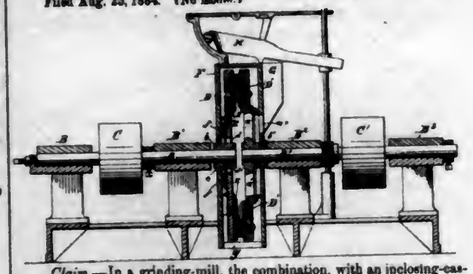
2. The combination of the oil-reservoir, the main condenser, the sight-feed glass and its connections, the auxiliary condenser above the outlet of the sight-feed glass, and the passage *a*, extending from the base of the lubricator up into the main condenser and communicating directly with both condensers, substantially as and for the purposes hereinbefore set forth.

3. The combination of the globe-valve provided with independent and separate passages, one for oil and steam and one for steam only, the lubricator provided with the passage *a*, communicating only with the oil-passage of the globe-valve, and a pipe communicating with the steam-passage of the globe-valve and extending up through the passage *a*, substantially as and for the purposes hereinbefore set forth.

4. A sight-feed lubricator for steam-engines, provided with means for attachment at its base only, and having an upwardly-extending passage, *a*, in combination with the screw-cup *k*, applied to the top of the condenser, and constructed and arranged, substantially as described, so that it may be used at will as a seal to the condensing-chamber or as a means by which lubricant can be supplied through the condenser and passage *a* in case the sight-feed should become disabled, substantially as hereinbefore set forth.

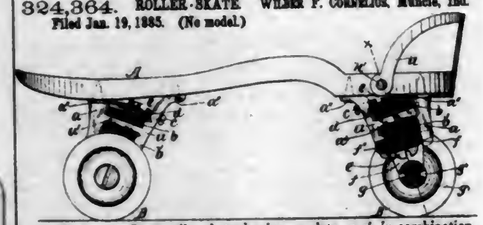
5. In a sight-feed lubricator, the combination, with the oil-cup, the main condenser, and the sight-feed chamber, of an auxiliary condenser, *d*, arranged above the outlet-passage of said chamber so as to be wholly available as a condenser, and adapted to continuously supply the sight-feed chamber with clear water, substantially as hereinbefore set forth.

324,363. GRINDING-MILL. Mortimer C. Cogswell, New York, N. Y. Filed Aug. 25, 1884. (No model.)



Claim.—In a grinding-mill, the combination, with an inclosing-casing provided with an opening for the introduction of grain to the mill, of two separate shafts rotating in opposite directions, and opposing grinding-disks D D', mounted thereon, one of said disks being provided with an opening for the introduction of grain, and the other having an opening near its center for the admission of air into the space between the disks, as and for the purpose specified.

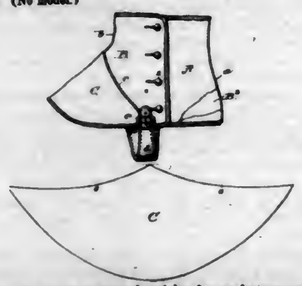
324,364. ROLLER-SKATE. Wilber F. Cornelius, Muncie, Ind. Filed Jan. 19, 1885. (No model.)



Claim.—1. In a roller-skate having a plate, *a a'*, in combination with hanger *f*, studs *f''*, beveled hole *s'*, axles *g*, nut *g' g''*, rubbers *b b'*, screw *c*, cap *d*, bottom A, and wheels B, all for the purpose set forth.

2. The heel-rim *n*, secured to the wood bottom A by a rivet, *n'*, passing through the said bottom from side to side and secured at rear by a rivet passing through the under-turned part, all as shown.

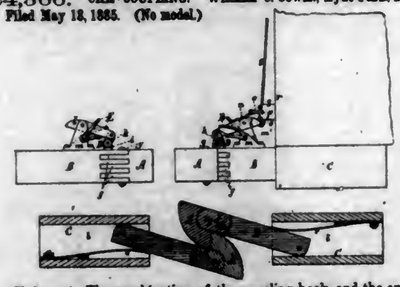
324,365. OVERGAITER. Edmund Cowan, Boston, Mass. Filed June 27, 1885. (No model.)



Claim.—1. As an improved article of manufacture, an overgaiter consisting of two quarter-pieces united by a heel-seam, *a*, a button-piece, B, united to one of the said quarter-pieces by a seam, *b*, a vamp, C, formed in one piece and of a shape substantially as described, united to one of the quarter-pieces and to the button-piece B by a seam extending diagonally in a curve from the instep portion to the shank, and a strap attached to the lower edges of the overgaiter at the ends of the seam *c*, all substantially as shown, and for the purposes set forth.

2. In an overgaiter, the quarter-pieces A B' and button-piece B, connected therewith, combined with a vamp, C, having curved edges 6 6, and attached to the said quarter-pieces and button-piece, and a strap and buckle attached to the overgaiter at the ends of the seam *c*, substantially as described.

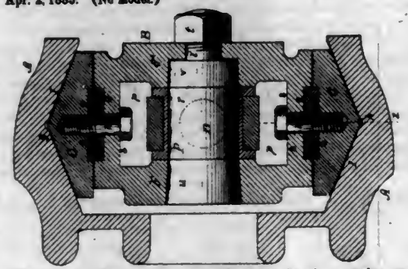
324,366. CAR-COUPLING. William C. Cowen, Hyde Park, Mass. Filed May 13, 1885. (No model.)



Claim.—1. The combination of the coupling-hook and the swing-bar jointed together, as set forth, the draw-bar chambered to receive the swing-bar and pivoted thereto, and provided with a spring to bear against such swinging bar, and the pin going through the swing-bar and the shank of the hook, and mechanism for effecting the lifting of such pin and sustaining it in its raised position, all being substantially as set forth.

2. The combination for not only sustaining in its raised position the pin D for holding the coupling-hook A or A' from turning in the swing-bar B, but for effecting the lifting of such pin, the said combination consisting of the standard *m*, its shoulder *m'*, the link *k*, two levers, *l* and E, the chain *n*, the double-cranked rock-shaft *p*, and the stop *y* for the double crank *o* when forced backward to bear or rest on, all being substantially as set forth, and such crank-shaft being provided with means of turning it, and connected to the car, essentially as specified.

324,367. ENGINE CROSS-HEAD. William J. Crehlman, Rochester, N. Y., assignor to the Woodbury Engine Company, same place. Filed Apr. 2, 1885. (No model.)



Claim.—1. The combination, with the body of an engine cross-head, of the adjustable gibs C, wedge-shaped in cross-section, bearing upon slides having V-shaped grooves, the adjustable wedges or keys *d*, between the body of the cross-head and the said gibs, and the clamping-screws *n*, substantially as and for the purpose set forth.

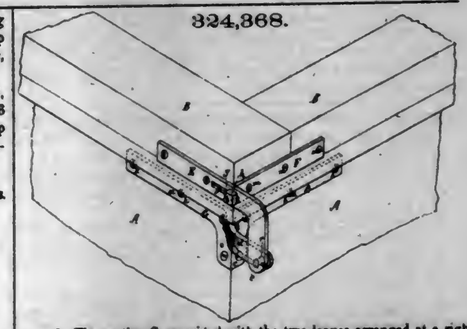
2. The combination, with the body of an engine cross-head and the adjustable gibs C working in grooved slides, of the wedges or key *d* between the body of the cross-head and the said gibs, the adjusting-screws *k*, by means of which the said wedges or keys are moved in the direction of their taper, and the clamping-screws *n*, substantially as set forth.

3. The body of an engine cross-head having grooves formed in its opposite sides, and the gibs C, having grooves formed in their sides, in combination with slotted tapering keys or wedges *d*, fitting in said grooves and moved in the direction of their taper by means of adjusting-screws *k*, and the clamping-screws *n*, which are passed through the respective walls *s* of the cross-head and the slots in the keys and threaded in the gibs, substantially as set forth.

324,368. HINGE FOR SCUTTLES, SKYLIGHTS, &c. Patrick J. Curley, Boston, Mass. Filed June 15, 1885. (No model.)

Claim.—1. The scuttle-hinge, substantially as described, composed of the section G, provided with the pivotal perforated ear, the section E, having the journal to enter such ears, and the section F, arranged at a right angle to the section E, and connected thereto so as to be adjustable lengthwise thereof, all being essentially as set forth.

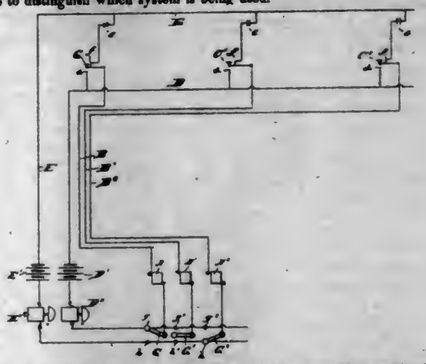
324,368.



2. The section G, provided with the two leaves arranged at a right angle to each other and having at their junction a pivotal ear and downward extensions, as set forth, in combination with the section E, provided with the pivot to enter the ear, and with the section F, arranged at a right angle to the section E and connected thereto so as to be adjustable lengthwise thereof, all being substantially as set forth.

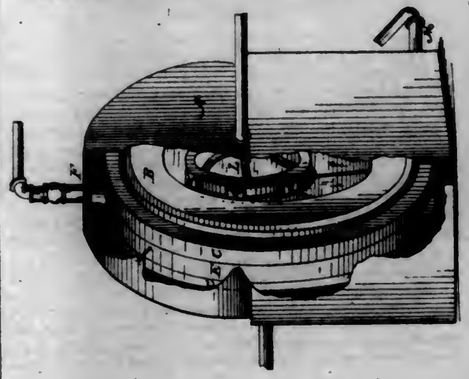
324,369. ELECTRICAL ANNUNCIATOR. Robert Edwards, New York, N. Y. Filed Dec. 8, 1884. (No model.)

Brief.—To the annunciator system a burglar-alarm is attached which will ring a different bell but operate the same indicator as the annunciator system. The bell may be of different tone or construction, so as to distinguish which system is being used.



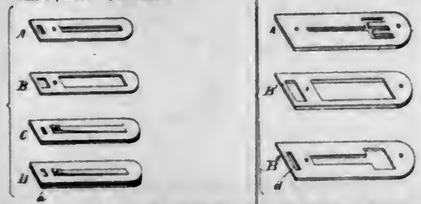
Claim.—In an electric call-bell and alarm system, the combination, with the direct wires leading from the office-indicator of the building to the several apartments, provided with push-buttons and contact-plates within said apartments, of two or more return-conductors adapted to form two return-circuits from each apartment, one to complete the circuit through the call-bell and the other to complete the circuit through the alarm-bell, and both connected to operate the same indicating device, substantially as and for the purpose set forth.

324,370. ROTARY STEAM AND AIR PUMP. Lewis Fox, Middleburg, N. Y., assignor to Frank W. Fox, same place. Filed Mar. 17, 1885. (No model.)



Claim.—In a rotary steam or air pump, the wheel B, provided with flanges C C, channel D, chambers H, and plate E, in combination with the wheel L, provided with a groove, K, automatic slides J, and a series of hinged piston-rods, I, constructed and arranged to operate substantially as herein shown and described.

324,371. ORGAN-REED. MERRITT GALLY, New York, N. Y. Filed Mar. 27, 1885. (No model.)



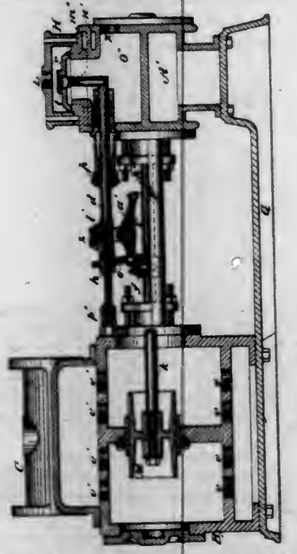
Claim.—1. A musical reed-block composed of separate superposed sheets of thin material having a slot for the play of the tongue therethrough.

2. A musical reed-block having an opening or slot corresponding to the tongue and a separate re-enforcing plate having a larger opening, as set forth.

3. A musical reed-block composed of thin plates superposed one over the other and an intermediate layer of non-resonant material, as set forth.

4. A musical reed-block composed of thin plates superposed and having an aperture for the draw-hook extending through the re-enforce only, as set forth.

324,372. DUPLEX PUMPING-ENGINE. HARVEY F. GASKILL, Lockport, N. Y. Filed June 4, 1885. (No model.)

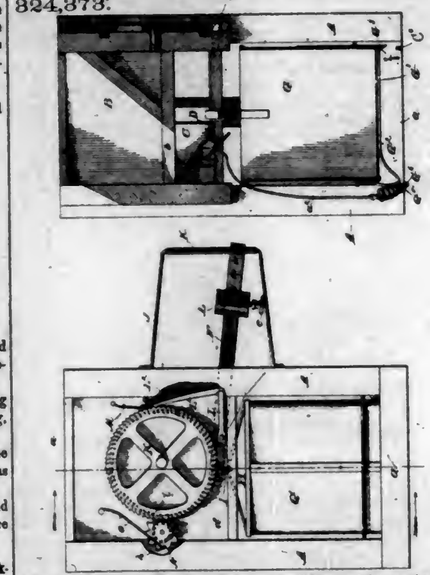


Claim.—1. In a duplex pumping-engine, the method of controlling the admission of steam to the cylinders by causing each piston, through the medium of a single valve-rod having longitudinal and rotary reciprocating motions, to cut off the admission of steam to its own cylinder and move the steam-valve so as to admit steam to one end and exhaust it from the opposite end of the other cylinder, substantially as herein specified.

2. The method of admitting steam to the cylinders of a duplex pumping-engine by imparting to a single valve common to both cylinders four rectangular movements, two movements in a direction parallel with the axes of the pump-cylinders and two movements in a line approximately at right angles with the axes of the cylinders, as herein specified.

324,373. AUTOMATIC GRAIN-WEIGHER. GABRIEL J. GIBBONS, Hayes, Kans. Filed Mar. 23, 1885. (Model.)

Claim.—1. The combination, with a frame, of a casing, C, arranged near the upper end thereof, a box, G, arranged below said casing, said box and casing having hinged bottoms, a rock-shaft journaled in the frame, a scale-beam secured to the rock-shaft, the box G being suspended

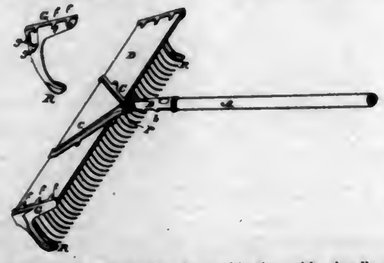


from the inner end of said scale-beam, a sliding weight on the scale-beam, a rod extending outwardly from the bottom of the lower casing, a rod connecting said arm with the bottom of the upper casing, catch devices on the bottom of the box G, the arm G^6, and the spiral spring G^3, arranged and operating for the purpose set forth.

2. The combination, with the casings having the hinged bottoms, and arranged one below the other, the lower casing being suspended from a weighted scale-beam supported upon a rock-shaft, of an arm extending outwardly from the bottom of the lower casing, a rod connecting said arm with the bottom of the upper casing, catch devices on the bottom of the lower casing, and a spring for returning the bottom of the lower casing to a closed position, and simultaneously opening the drop of the upper casing when the grain has been removed, as set forth.

3. The combination, with a frame, of a rock-shaft carrying a weighted scale-beam, from which is suspended a box or casing, a toothed wheel, an arm, I, rigidly connected with the rock-shaft, a hooked arm, L', pivoted to arm L and engaging the teeth of the ratchet-wheel, a spring bearing against the outer side of arm L', the spring M, for preventing the backward movement of the ratchet-wheel, the notched wheel N, having squared portions, a spring bearing against the same, and a pin projecting from wheel K to engage wheel N, as set forth.

324,374. LAWN-RAKE. LEWIS GIBBS, Canton, Ohio. Filed May 22, 1885. (No model.)



Claim.—1. In a lawn-rake, the combination, with a handle-socket having a short shank, of braces removably secured to the opposite sides of said shank, substantially as set forth.

2. In a lawn-rake, a skeleton handle-socket semicircular in cross-section and provided with a semi-annular rib, and a handle adapted to the socket and provided with an annular groove, as shown and described, and for the purpose set forth.

3. In a lawn-rake, the combination, with braces C C, adapted for engagement with the wood-work and provided at their free ends with the ledges *f f*, forming a socket for the reception of the shank, of the handle-socket B and means by which these parts may be held in engagement, as described, and for the purpose set forth.

4. In a lawn-rake, an end tooth, G, terminating in an enlarged

bearing or runner and provided with the lips *f* and tongueiets *g*, substantially as set forth.

5. In a lawn-rake, the combination, with the braces C, adapted for engagement with the wood-work and provided at their free end with serrated disks, of a skeleton handle-socket terminating in serrated disks adapted for engagement with the braces, and means for securing them in the desired working position, as described, and for the purpose set forth.

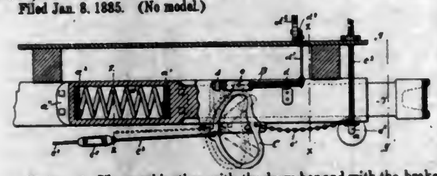
6. In a lawn-rake, the combination, with the braces adapted for engagement with the wood-work, of a skeleton handle-socket, as described, and means of adjusting the angle of the teeth and securing them in such adjustment, as described and set forth.

7. In a lawn-rake, the head-piece E, provided with a longitudinal groove, *l*, intersecting transverse grooves *l'*, and the clamping-piece E, as shown and described, and for the purpose set forth.

8. In a lawn-rake, the head-piece E, having one side formed in concave and provided with a series of transverse grooves, *l'*, the wire teeth *k*, the shanks of which are bent to conform to the grooves, and the convex clamping-piece E, as described, and for the purpose set forth.

9. In a lawn-rake, the combination of the head-piece having a series of transverse grooves, longitudinal grooves connecting the transverse grooves, the clamping-piece, and the board D, all of the above parts combined substantially as set forth.

324,375. AUTOMATIC CAR-BRAKE. PAUL HANSON, St. Paul, Minn. Filed Jan. 8, 1885. (No model.)



Claim.—1. The combination, with the draw-bar and with the brake mechanism proper, of the crank-arm and the cam-lever co-operating with each other and with said bar and mechanism, respectively, to control automatically the setting of the brakes, substantially as described.

2. The combination, with the spring draw-bar having roller-bearing, of the cam-lever, the crank-arm intermediate said bar and lever and engaging the same, and the brake-rod and beam, substantially as described.

3. The combination, with the winding-post and chain and with the brake-rod, of a pivoted lever connecting the same, said lever being directly and detachably joined to the automatic mechanism for setting the brakes by movement of the draw-bar, substantially as described.

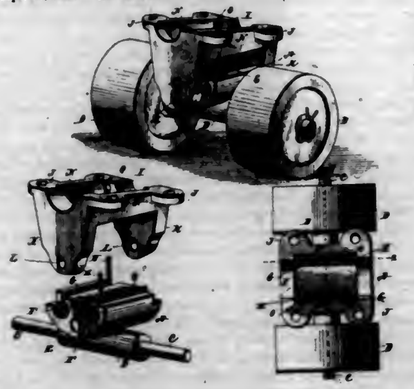
4. The combination, with the spring draw-bar having pin b^2, of the crank-arm B, having slotted end *b* to engage said pin, the cam-lever C, bearing against a stud of the crank-arm B, the brake-rod c^2, and brake-beam, substantially as described.

5. The combination, with the pendent lever C, of the radius-bar D and means, substantially as described, to rotate the same in its bearings, substantially as set forth.

6. The combination, with the lever C and with the brake-beam, of the brake-rod adjustably joining the same together, substantially as described.

7. The combination, with the spring draw-bar, the crank-arm, and the cam-lever, of the brake-rod adjustably joining said lever to the brake-beam, substantially as described.

324,376. ROLLER-SKATE. HUBERT C. HART, Unionville, Conn. Filed Apr. 24, 1885. (No model.)



Claim.—1. In a truck for roller-skates, a body piece or barrel having one or more springs within said barrel, and arranged to strain in opposite directions at right angles to the length of the coil against a suitable yoke or holder, substantially as and for the purpose herein set forth.

2. In a truck for roller-skates, the combination, with a yoke, of a pivoted body-piece or barrel, and a spring arranged in the said barrel, and having its ends arranged to bear against the sides of the said yoke, substantially as and for the purpose set forth.

3. In a truck for roller-skates, a body piece or barrel having a pair of longitudinal recesses for the reception of a pair of separate springs, substantially as and for the purpose set forth.

4. In a truck for roller-skates, the combination, with a suitable yoke or holder, of a pivoted body having a pair of longitudinal recesses, and coiled springs seated in the said recesses, and having arms bearing against the sides of the yoke, substantially as and for the purpose set forth.

5. In a truck for roller-skates, the combination of a yoke or holder, friction-rollers mounted in the inner sides of the side pieces of said yoke, a pivoted body having an axle carrying the wheels or rollers, and a spring or springs arranged longitudinally in the said body, and having arms arranged to bear against the friction-rollers in the yoke, substantially as and for the purpose herein set forth.

324,377. ROLLER-SKATE. HUBERT C. HART, Unionville, Conn. Filed June 12, 1885. (No model.)

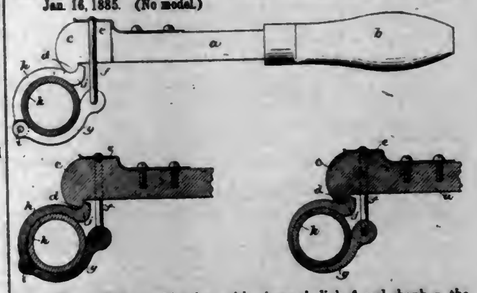


Claim.—1. In a truck for roller-skates, the combination of the yoke or hanger, the pivoted body-piece or roller-carrier having a suitable socket, and a bent flat spring seated in the said socket, with its wings or leaves bearing against the sides of the yoke or hanger, substantially as and for the purpose herein set forth.

2. In a truck for roller-skates, the combination, with the yoke or hanger, of the pivoted body-piece or roller-carrier having a suitable longitudinal socket, and a flat bent or approximately U-shaped spring seated in the said socket, and having an enlarged lower portion or head, substantially as herein described, for the purpose set forth.

3. In a truck for roller-skates, the combination of a yoke or hanger, a pivoted body-piece or roller-carrier having a longitudinal socket, a bent flat spring seated in said socket with its wings or leaves bearing against the sides of the yoke or carrier, and a rubber block or cushion seated in the said spring, substantially as and for the purpose herein set forth.

324,378. PIPE-WRENCH. JAMES T. HAYDEN, Boston, Mass. Filed Jan. 16, 1885. (No model.)

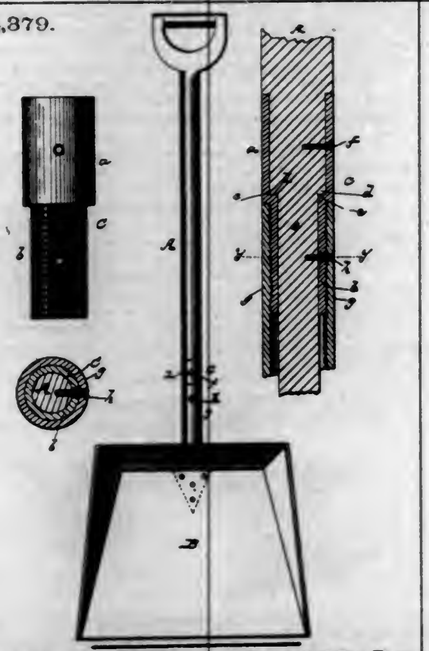


Claim.—The combination, with clamp *h*, link *f*, and shank *a*, the latter being formed with a groove or seat for said link, of spring *e*, attached to said shank and arranged to secure the link in place thereon, substantially as specified.

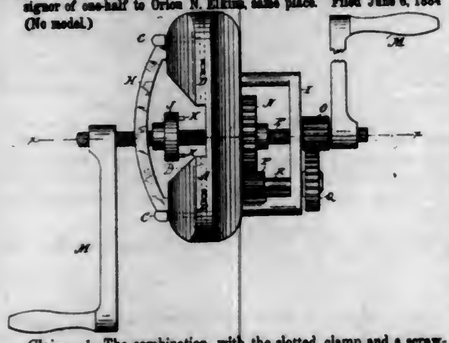
324,379. TOOL-HANDLE. JOHN C. HIRST and EDWARD DEKER, South Oil City, Pa. Filed Mar. 20, 1885. (No model.)

Claim.—The combination, with the handle-socket *g*, provided with the perforation and internal threads, of the ferrule C, having the enlarged upper portion, *a*, perforated to admit the screw *f*, and provided with annular shoulder *c* and reduced portion *b*, externally screw-threaded from said shoulder to the lower end thereof, and having the perforation which registers with the perforation in the socket, said perforation receiving the screw *h*, and the threads on the reduced portion engaging the threads in the socket, as shown and described.

324,379.



324,380. SAW-GUMMER. JAMES R. B. HUNT, North Troy, Vt., assignor of one-half to Orion N. Elkins, same place. Filed June 6, 1884. (No model.)

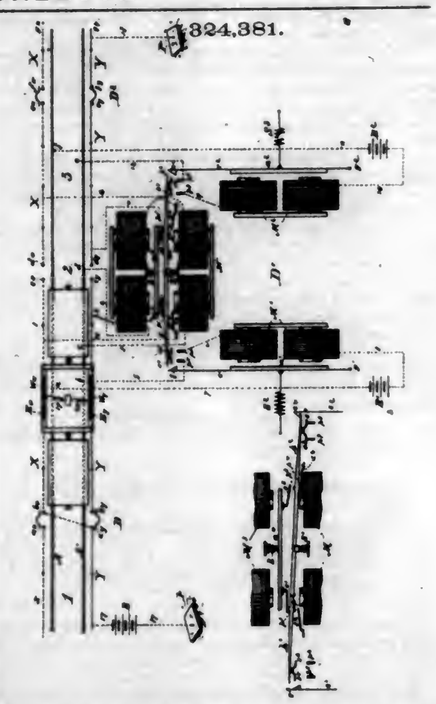


Claim.—1. The combination, with the slotted clamp and a screw-threaded sleeve which is fixed as to longitudinal movement, of the screw-threaded shaft working therein, and having the cutter-head fixed thereon, substantially as shown and described, whereby the rotation of said shaft not only revolves the cutter-head, but advances it against the saw, as specified.

2. The combination of the clamp, an internally-threaded sleeve therein, the shaft having a cutter-head secured thereto, which shaft screws into said sleeve, and the system of gears connected with said shaft for regulating the action of the same, substantially as shown and described.

324,381. RAILWAY-TELEGRAPH. EDWARD B. IVES, New York, N. Y., and CHARLES W. WILLIAMS, Cave City, Ky. Filed June 17, 1884. (No model.)

Claim.—1. The combination, with two sections of the main and auxiliary conductors and two sections of the rails, of the described switch-block, which consists of two electro-magnets, their described connections, two armatures and their attachments, and two independent contact-pieces and their connections, one of said magnets being connected to one section of one of said rails, the other to the adjacent section of said rail, both connected together, and each provided with an armature, to one of which armatures are secured contact-pieces $s' s^2$, connected with the said respective sections of the main conductor, and upon the other of which armatures are contact-points $p' p^3$, adapted to make contact with said last-named contact-pieces, and other contact-points, $p^2 p^4$, adapted to make contact with the said independent contact-pieces $s^2 s^4$, which are respectively connected with the said two sections of the auxiliary conductor, and a car on the track carrying a battery, the poles of which



are respectively in electrical connection with different points of the track upon which the car is running, all arranged and combined, as described, whereby, when one of the poles of said battery is in electrical connection with one section of the track and the other with an adjacent section of the same, the said magnets will be charged and will attract their respective armatures, thereby breaking the existing connection between the adjacent ends of the said two sections of the main conductor and closing the connection between the adjacent ends of said sections of the auxiliary conductor, all as and for the purpose specified.

2. The combination of a main-line conductor, connected with a battery and properly grounded, and an auxiliary conductor, both running parallel with a railway-track, all divided into suitable corresponding insulated sections, and provided at each point of division with the described switch-block and wire-connections for breaking and closing the circuit at such points, and a railway-car on the track provided with suitable means for establishing and maintaining constant electrical connection between said line-conductors through the car, and the described means for automatically operating said switch-blocks by the movement of the car to break the connection between the adjacent sections of the main conductor and close that between the adjacent sections of the auxiliary conductor while the train is passing said switch-block, and to make connections between the end of the section of the main conductor last passed over and the adjacent end of the succeeding section of the auxiliary conductor, and break the connection between the adjacent sections of the auxiliary conductor as soon as the entire train is upon the succeeding section of the system, all as and for the purpose specified.

3. The combination of a main-line conductor connected with a battery and properly grounded and an auxiliary conductor, both running parallel with a railway-track, all divided into suitable corresponding insulated sections, and provided at each point of division with the described switch-block, and wire-connections for breaking and closing the circuit at such points, and a railway-car on the track provided with suitable means for establishing and maintaining constant electrical connection between said line-conductors through the car, and the described means for automatically operating said switch-blocks by the movement of the car to break the connection between the adjacent sections of the main conductor and close that between the adjacent sections of the auxiliary conductor while the train is passing a switch-block, and as soon as the entire train is upon the succeeding section of the system to make connection between the end of the section of the main conductor last passed over and the adjacent end of the succeeding section of the auxiliary conductor and between the adjacent ends of the main conductor at the point of division next preceding that last passed over, and immediately thereafter to break the existing connection between the adjacent ends of the auxiliary conductor at the switch-block last passed over and

that between the main and auxiliary conductors at the preceding switch-block, all as described, and for the purpose specified.

4. The combination, with two adjacent insulated sections of the rails of a railway, of an electro-magnet, the respective ends of the coil of which are connected to the two sections of said rail, respectively, and having an armature provided at one end with contact-pieces, two posts so placed that said contact-pieces will make contact therewith when the armature is drawn to its magnet, one of said posts being connected to a second electro-magnet and to one section of the rail, a second electro-magnet provided with an armature attached to a lever pivoted to vibrate in the plane of movement of the armature of the first magnet, and having a catch adapted to engage the end of said armature, a battery one of the poles of which is connected to the said second electro-magnet and the other to the other rail of the section with which the contact-post aforesaid is connected, and the wheels and axle of a car having thereon a battery whose poles are electrically connected to the track, as described, all arranged and combined as described, so that when said car rests upon two adjacent sections of said rails the circuit of the battery on the car is closed through the first magnet, which is thereby charged and attracts its armature, causing it to make contact between the contact-pieces and posts, as described, thus completing the circuit of the local battery through the second magnet, which is thereupon charged and attracts its armature, carrying the lever provided with the catch, and causes said catch to engage and hold the end of the armature of the first magnet, as and for the purpose specified.

5. The combination, with the two rails of a section of a railway, of an electro-magnet, a local battery, two contact-posts, with electrical connection between one pole of the battery and the magnet and the other pole and one of the said rails, and between one of the contact-posts and said magnet and the other contact-post and the remaining rail of the same section of the railway, a lever provided with contact-pieces in contact with said posts and each other, said magnet being provided with an armature attached to a lever pivoted to vibrate in a plane of movement of the first lever, and having a catch adapted to engage and hold the end of said first lever, and the wheels and axles of a car on said section of the rails, whereby the circuit through said magnet is completed, and the magnet is charged and holds its armature, keeping the catch on one lever in engagement with the other lever so long as any part of the car remains on the sections of the rails with which the connections are made, all as and for the purpose specified.

6. In a railway-telegraph, the combination of one section of the main conductor and the succeeding section of the auxiliary conductor, a vibrating armature having thereon contact-points arranged to make contact, respectively, with contact-pieces, one in connection with said section of the main conductor and the other with the said section of the auxiliary conductor, said contact-pieces, contact-posts with electrical connection between one of them and an electro-magnet and the other, and the rail in the section corresponding to that of the auxiliary conductor, contact-pieces upon the said vibrating armature electrically connected and arranged to make contact with said posts, and a spring arranged to put and hold one contact-point on said armature against the contact-pieces in connection with the main conductor, an electro-magnet provided with an armature, attached to which is a lever pivoted to vibrate in the plane of movement of the first vibrating armature, and having a catch adapted to engage and hold the end of said first armature, a battery connected to said magnet and the other rail of the section, and the wheels and axle of a car thereon, whereby the circuit through said magnet is completed, and the magnet is charged and holds its armature, keeping the catch on its lever in engagement with the end of the first armature-lever, and thereby maintains the circuit from one section of the main conductor to the succeeding section of the auxiliary conductor so long as any part of a car remains on the section of the rails with which the connections are made, all as described, and for the purpose specified.

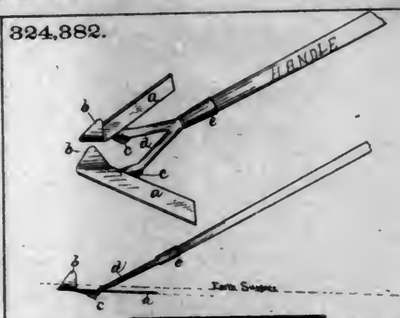
7. The combination, with the described catch-levers, of a vibrating armature provided with contact-pieces, and attached to a spring pivoted and arranged relatively to said catch-levers as described, whereby when either end of said armature is held by engagement with the catch-lever adjacent thereto such end of the armature is held in electrical connection with the described auxiliary conductor, and the contact-piece on said end of the armature is held in contact with contact-posts in its vicinity, the other end of said armature being held meanwhile in electrical connection with the adjacent section of the main-line conductor, all as and for the purpose described.

8. The combination, with two sections of the conductors X and Y, of the described switch-block, comprising the armatures $a^3 a^4$, having contact-points $p' p^2 p^3 p^4$, and contact-pieces $s' s^2 s^3 s^4$, and wire-connections between s^3 and conductor X at ax s^4, and conductor X at bx s', and conductor Y at ay and s^3, and conductor Y at by, as and for the purpose specified.

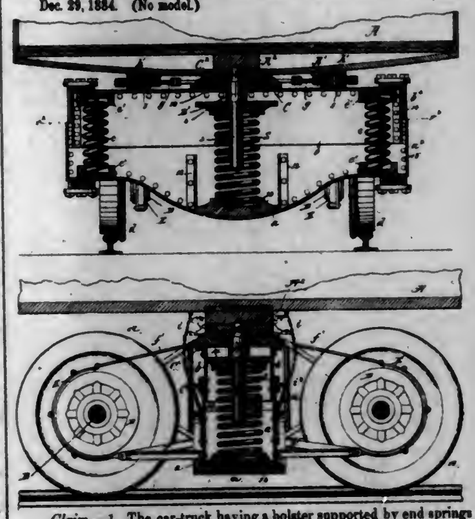
324,382. WEEDING IMPLEMENT. JOHN JENKINS, Pilot Grove, Ind. Filed July 21, 1884. (No model.)

Claim.—In a weeding-hoe, the combination of blades *a a*, having turned-up portions *b b*, with the forked shank *d*, provided with lugs *c*, as and for the purpose specified.

324,382.



324,383. CAR-TRUCK. LUTHER K. JEWETT, Boston, Mass. Filed Dec. 29, 1884. (No model.)



Claim.—1. The car-truck having a bolster supported by end springs and a centrally-located independent spring, D, and the king-bolt B', sustained by it, combined with the car-body and its rocker, and with center plates C C', attached to the body and bolster and held in place by the king-bolt, substantially as described.

2. In a car-truck, a bolster having its central part bent down below the load of the axles, combined with the car-body, a central spring, and a king-bolt supported by the said spring and receiving a part of the weight of the car-body, substantially as described.

3. The car-body and the truck having a bolster supported by end springs, combined with center plates and with the curve-plates, and springs co-operating therewith to take a portion of the load of the car and act as cushions between the car-body and truck outside the center plates, substantially as described.

4. The car-body provided with a rocker, the truck having a bolster provided with end springs, and a centrally-located spring and king-bolt sustained by it and receiving part of the weight of the car-body and the center plates, combined with curve-plates and cushioning-springs co-operating therewith, substantially as described.

5. The rigid bolster member *a*, having the braces 12, the foot-plate 13, center spring S, king-bolt B^3, plate B', on which the head of the bolt rests, and the movable member *b* of the bolster, and center plates C C^2, combined with the car-body and its rocker, substantially as described.

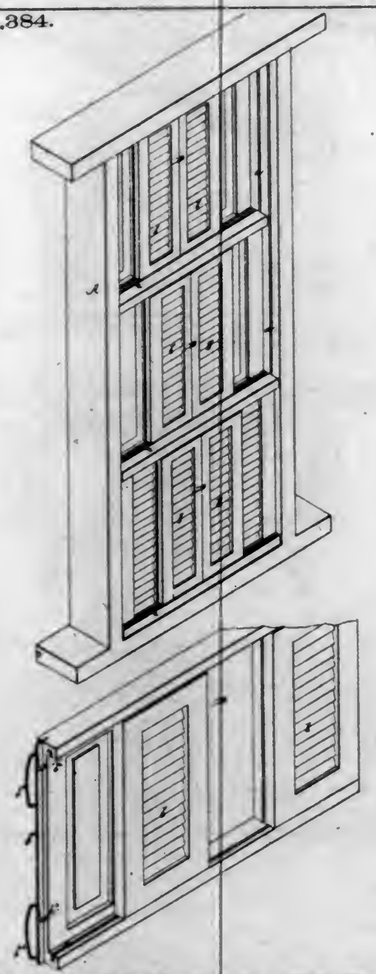
6. The truck having a bolster provided with end springs, the spring-supported king-bolt, and the car-body, combined with chains to keep the car-body down upon the truck, substantially as described.

7. The bolster and the braces *p* to support the brake shoes or strape E, combined with the braces *r*, connecting the brace *p* with the bolster, substantially as described.

8. The car-truck having a two-part bolster provided with end springs, combined with the braces *t*, connected at their centers with the bolster and at their ends with the box-supporting side frames or bars of the car-truck, substantially as described.

324,384. SLIDING BLIND. NATHAN JEWETT, Toledo, Ohio. Filed Feb. 2, 1885. (No model.)

324,384.



Claim.—1. A vertically-sliding blind-section provided with one or more laterally-sliding panels, substantially as and for the purpose set forth.

2. A sliding window-blind having its top and bottom rails grooved, and one or more panels sliding past each other in said grooves, substantially as and for the purpose set forth.

3. A friction-spring for blind-sections formed of wire, having a point for insertion in the blind and a slightly-curved spring-arm running longitudinally of the section, substantially as and for the purpose set forth.

324,385. SLIDING BLIND. Nathan Jewett, Toledo, Ohio. Filed Feb. 13, 1885. (No model.)

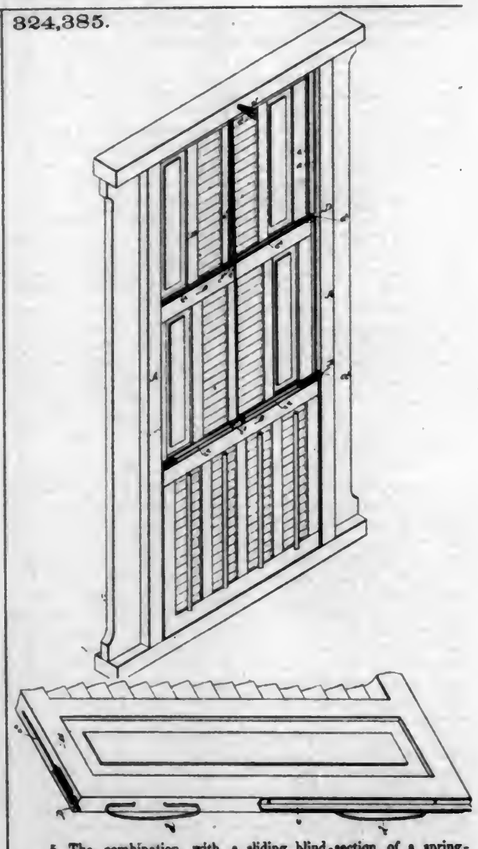
Claim.—1. The combination, with a window frame formed with grooves in its sides and provided with a pulley in its upper end, of a series of blind-sections each provided with guides on its edges, sliding in the grooves of the frame, and each suspended by a rope or chain passed over the pulley in the frame, whereby the sections are operated without moving the window-sash, substantially as and for the purpose set forth.

2. A vertically-sliding blind-section provided on its edge with a guide formed of wire bent into somewhat the form of a staple, substantially as shown and described.

3. A vertically-sliding blind-section provided on its edge with a staple-like guide of wire having its outer side bent in a convex form to form a spring-bearing, substantially as and for the purpose set forth.

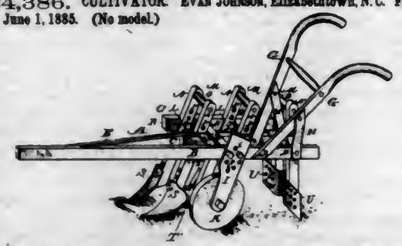
4. The combination, with a window-frame having a pulley in its upper end and a series of blind-sections sliding vertically in said frame, of a pair of spring-latches upon the edges of each section engaging the window-frame and connected by a cord or chain, and a supporting cord, chain, or wire connected to the other at its center and passed over the pulley, substantially as and for the purpose set forth.

324,385.



5. The combination, with a sliding blind-section, of a spring-actuated catch for locking it in a closed position, and a suspending cord or chain attached to the latch and passed around a guide upon the blind, whereby the latch is drawn back and the sliding blind lifted by the same action, substantially as shown and described.

324,386. CULTIVATOR. Evan Johnson, Elizabethtown, N. C. Filed June 1, 1885. (No model.)



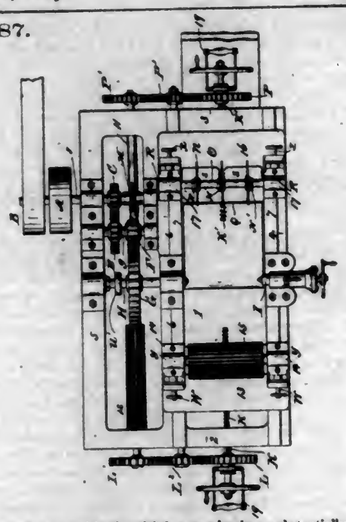
Claim.—1. The combination of the frame consisting of the beam B, the bars C C, both upon one side, the connecting transverse bars D, and brace A, with the supporting-wheel K, attached to the beam B, and the cultivators or shovels attached to the bars C, substantially as described.

2. The combination of the frame A, consisting of the beam B, the parallel bars C, and the connecting transverse bars D, with the frames M, bolted between the bars D, and having the shovels or scrapers S, the plows T, the curved wings U or sweeps, and the standard I, bolted to the beam B and having the wheel K, substantially as described.

324,387. SPLINT-CUTTING MACHINE. John D. Jones, Topeka, Kans. Filed Nov. 1, 1884. (No model.)

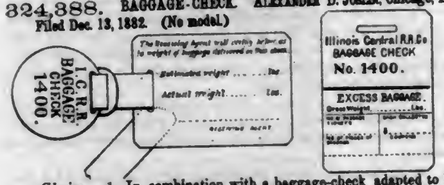
Claim.—The combination of the gears L' P', driven by the operating mechanism, the cutter-supporting slides 13 and 16, arranged on opposite sides of the work, the screws K K', the gears L P, geared normally with wheels L' P', the said gears L P being keyed on and movable along their respective screws, whereby they may be independently

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thrown out of gear with the driving mechanism, substantially as set forth.

324,388. BAGGAGE-CHECK. Alexander D. Joslin, Chicago, Ill. Filed Dec. 13, 1882. (No model.)



Claim.—1. In combination with a baggage-check adapted to be attached to the trunk, an identifying-check to be delivered to the passenger, capable of being written upon, and provided with blanks for the entry of memoranda as to excess baggage by the dispatching agent, and other blanks for the entry of like memoranda by the receiving agent, both baggage and identifying check having the same serial number, substantially as specified.

2. The combination of a numbered metal check to be attached to the trunk with a passenger's identifying-check, having a corresponding number, made of material adapted to be written upon, having two blanks for entry of memoranda as to excess baggage by both dispatching and receiving agents, and provided with an opening and a strap upon which both of said checks are strung when not in use, substantially as specified.

3. A duplicate baggage-check to be given to the passenger to enable him to claim baggage at destination, having thereon blanks for the entry of particulars of excess-baggage collections, and the certificate as to weight to be made by the agent at the destination-point, substantially as specified.

324,389. RASP. Thomas Judge and Thomas Clayton, Philadelphia, Pa. Filed Sept. 10, 1884. (No model.)



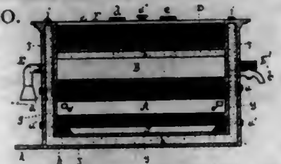
Claim.—1. In a rasp, the combination of a series of blades having serrated edges, all of which blades are pivoted at their inner ends, so as to allow them to be opened for the purpose of being sharpened, substantially as shown.

2. In a rasp, the combination of a series of serrated plates, the bolts *b*, and the washers *c*, which serve to separate the plates, substantially as described.

324,390. INCUBATOR. Louis Kuehner, Decatur, Ill. Filed June 20, 1884. (No model.)

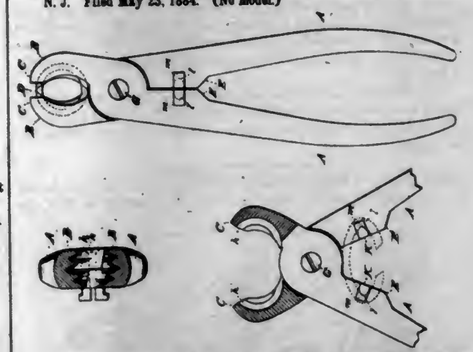
Claim.—1. The combination, with the drawer A, having the bottom of netting, and rollers journaled in said drawer at the ends thereof, of bands connecting said rollers, slats *q*, secured to the bands and extending downwardly therefrom, and the stripe A', secured to the bands *p* adjacent to the rollers *o*, as set forth.

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2. The incubator herein described, comprising a casing, a moisture-pan resting on the floor of said casing, an egg-drawer supported above the moisture-pan, inlet and outlet pipes controlled by valves and communicating with the egg-chamber, a water-tank, B, a hot-air pipe traversing the same, a brooder located above tank B, pipes *c d*, controlled by valves and communicating with the tank and brooder, and the valve-controlled pipes *i'*, located as shown, substantially as set forth.

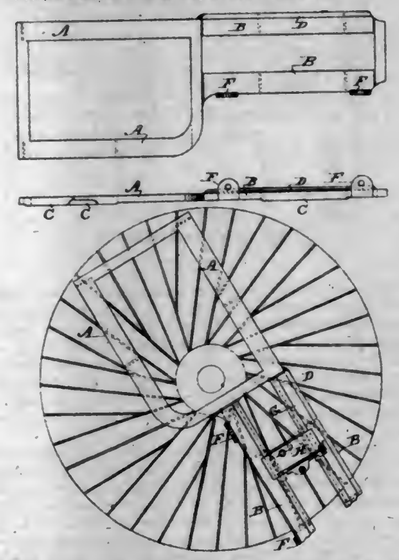
324,391. HOG-RINGING PINCHER. Joe. H. Lindsley, White House, N. J. Filed May 23, 1884. (No model.)



Claim.—1. A pair of hog-ringing pinchers consisting of the two lever-handles A A, having their concave jaws provided with the angular grooves *h*, and at the rear of the fulcrum-point the lateral stud-bearings K K, having guide-flanges *m*, substantially as shown and described.

2. A pair of hog-ringing pinchers having on the lever-handles rounded stud-bearings having above their rounded outer edges guide flanges or projections *m*, substantially as specified.

324,392. DEVICE FOR DRESSING MILLSTONES. Edwin W. Lockwood, Nevada, Iowa. Filed May 9, 1885. (No model.)



Claim.—A portable base for millstone-dressing machines, consisting of a four-sided frame adapted to be passed over the spindle of a millstone, and an auxiliary frame extending from the end of the main frame, and provided with a flange at one side or edge, and screw-threaded lugs.

on the opposite edge for fastening the base of a dresser-machine, and elongated flat feet near the opposite ends of the complete device, substantially as and for the purposes stated.

324,393. INKSTAND. Rhodes Lakewood, Boston, Mass. Filed Apr. 27, 1885. (No model.)

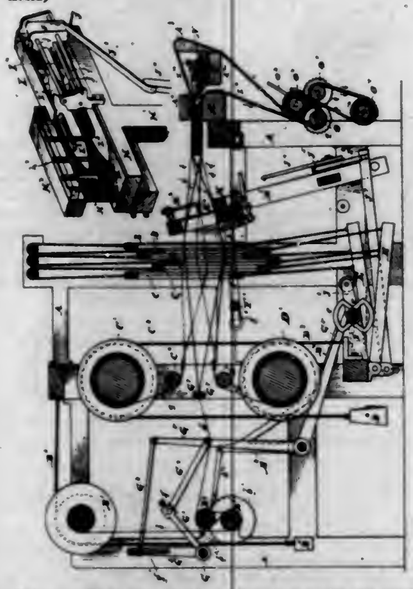


Claim.—1. An inkstand composed of a flexible ink-well, a top piece having one or more arms or tappets, a screw-threaded annulus embracing the said arms or tappets and free to rotate thereon, and a bottom plate having one or more projections co-operating with the arms or tappets of the top piece and engaging the said screw-threads, substantially as described.

2. The top piece provided with the pin 2 and the flexible ink-well having its neck in the neck of the top piece, and the ink-receiver placed in the neck of the ink-well and provided with the projection 3, combined with the cap or cover applied to the neck of the top piece, substantially as described.

3. The top piece provided with the arms or tappets and notched at 8, and the screw-threaded annulus, combined with the bottom plate provided with the projection and engaging the screw-threads, substantially as described.

324,394. LOOM FOR WEAVING DOUBLE PILE FABRICS. Robert Mair and William H. Royal, Philadelphia, Pa. Filed Dec. 14, 1882. (No model.)



Claim.—1. Three sets of heddles, means for operating said heddles to divide the ground-warps into two sheds, one for each shuttle-race, and divide the plush-warps into one shed, which shall take in both shuttle-races, and three warp-beams, in combination with a lathe having two shuttle-races, cutting mechanism to divide the double woven fabric, a whip-roll for the middle warp, means for operating the whip-roll and varying its movements, cloth-receiving rollers, and means for operating the lathe and cloth-receiving rollers, substantially as and for the purpose specified.

2. Three sets of heddles, means for operating said heddles, and three warp-beams, in combination with a feed device for the middle warp, a whip-roll for the middle warp, adjustably hinged to its supporting-axle, means for operating said whip-roll and varying its movements, a lathe having two shuttle-races, cutting mechanism adapted to divide the double-woven fabric, cloth-receiving rollers, and means for operating the lathe and cloth-receiving rollers, substantially as and for the purpose specified.

3. Three warp-beams and three sets of heddles, in combination with a lathe having two shuttle-races, two shuttles, mechanism to actuate said shuttles, heddles, and lathe, a whip-roll for the middle warp, a rock-shaft having arms G′, to which said whip-roll is attached, and an arm, G^3, a rod or link, G^4, a bell-crank, and a cam to actuate said bell-crank, and mechanism to stop the action of the loom should either the upper or both shuttles fail to enter their boxes, substantially as set forth.

4. Three warp-beams and three sets of heddles, in combination with a lathe having two shuttle-races, two shuttles, mechanism to actuate said shuttles, lathe, and heddles, a whip-roll for the middle warp, a rock-shaft having arms G′, to which said whip-roll is attached, and an arm, G^3, a rod or link, G^4, a bell-crank, and a cam to actuate said bell-crank, and mechanism to stop the action of the loom should the yarns of either the upper or lower shuttles break, substantially as and for the purpose specified.

5. A lathe having two shuttle-races, and a shuttle-box at each end having two shelves, in combination with a picker-block having two arms to project into said box above each shelf, a guide for said block consisting of three stationary rods, means to reciprocate the picker-block, and two shuttles, substantially as and for the purpose specified.

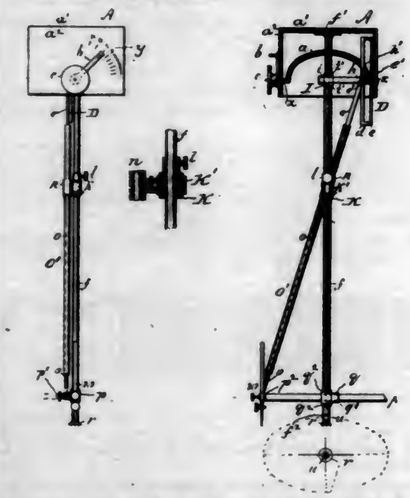
6. The combination of heddles B, C, and D, means to actuate said heddles, warp beams or cylinders C′ D′, means to retard the rotation of said beams, a pile warp-beam or cylinder, B′, a feed-roll for said pile-warp, means to intermittently rotate said rolls, rods G^7, whip-roll G^8, a rock-shaft having arms G′, to which said whip-roll is attached, and an arm, G^3, a rod or link, G^4, a bell-crank, and a cam to actuate said bell-crank, a lathe having two shuttle-races, cutting mechanism to divide the cloth, cloth-receiving rollers, and means to operate the lathe and cloth-receiving rollers, substantially as and for the purpose specified.

7. The combination of heddles B, C, and D, means to actuate said heddles, rollers C^2 D^2, warp beams or cylinders C′ D′, means to retard said beams in their revolution, pile-warp beam or cylinder B′, means to feed said pile-warp, rods G^7, whip-roll consisting of rod G^8, arms G′, and shaft G, and means to actuate the same, with a lathe having two shuttle-races, mechanism to stop the action of the loom should either or both the shuttles fail to enter their boxes, mechanism to stop the action of the looms should either or both of the filling-yarns become broken, cloth-receiving rollers, and means for operating the lathe and cloth-receiving rollers, substantially as set forth.

8. Mechanism to weave a double fabric, in combination with cutting mechanism N, frame A′ A^2 A^3 A^4, rollers O O′ O^2 O^4, gears *o*, means for operating roller O, and guides O^3, substantially as and for the purpose specified.

9. Mechanism to weave double fabric such as set forth and shown, in combination with plate N′, mechanism having guide-teeth to insure cutting in the right place, cutters N^4, levers *n*′, slide-bar N^5, and means to reciprocate said bar, substantially as and for the purpose specified.

324,395. ELLIPSOGRAPH. Arthur Marshal, Philadelphia, Pa. Filed June 9, 1885. (No model.)



Claim.—1. An ellipsograph having a fixed leg and a circle or ring adapted to be inclined to the plane of projection, a rotating leg pivoted to a sleeve sliding or adjustable on said fixed leg, and having connection at one end with a yoke engaging with said ring, and at the other with a bar adapted to hold a scribing pen or pencil, substantially as shown and described.

2. In an ellipsograph, substantially as herein shown and described, the pivoted or swinging ring *a*, adapted to be inclined to the plane of projection, as set forth.

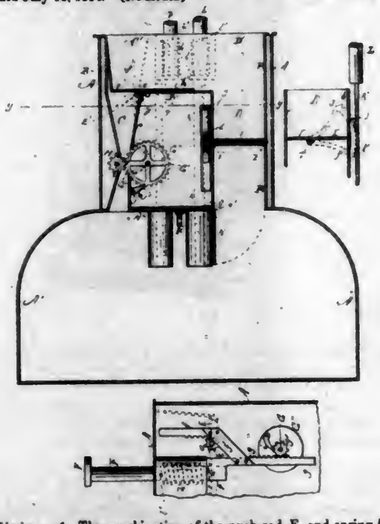
3. In an ellipsograph, the combination of non-rotating leg *f*, having box A, pivoted or swinging ring *a*, having set or locking nut *c*, the adjustably pivoted or swinging and rotating leg O′, yoke D, and bar *p*, arranged for operation substantially as shown and described.

4. In an ellipsograph, the combination, with pivoted or swinging ring *a*, provided with handle *b* and locking-nut *c*, of the graduated scale *y*, substantially as and for the purpose set forth.

5. The combination, with an ellipsograph having swinging or pivoted ring *a*, legs *f* and O′, yoke D, and bar *p*, of a center, *r*, having a stud adapted to fit in a socket in the end of leg *f*, to hold it in a fixed position, substantially as shown and described.

6. An ellipsograph comprising a leg, *f*, having box A and pivoted or swinging ring *a*, yoke D, engaging with said ring and a rotating leg, O′, pivoted to leg *f*, and a pen or pencil bar, *p*, in engagement with leg O′, substantially as shown and described.

324,396. FARE-BOX REGISTER. Frank F. Mattoon, Boston, Mass. Filed July 18, 1884. (No model.)

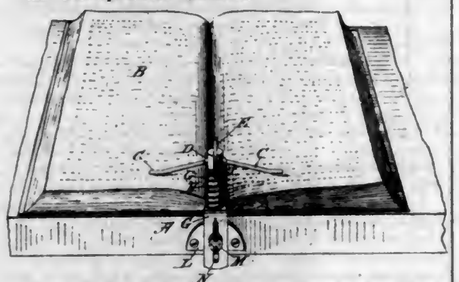


Claim.—1. The combination of the push-rod F and spring A, the rack *g*, and arm *f*′, provided with the rack *f*, the damper E and pinion *e* on the same shaft, and the tube C, for the admission of the tickets, substantially as and for the purpose set forth.

2. The combination of the push-rod F, provided with the spring A, and rack *g*, the pinion *g*′, wheel G″, pawl *i*, and shaft G, the canceling-wheels G′ H, and tube C, substantially as and for the purpose described.

3. The combination of the push-rod L and rack K, the damper I and toothed segment fixed to the same shaft, damper N and pinion O, fixed to the same shaft, and the tube D, substantially as and for the purpose specified.

324,397. BOOK-LEAF HOLDER. Jesse D. McClure, Jeffersonville, Ind. Filed Apr. 2, 1885. (No model.)



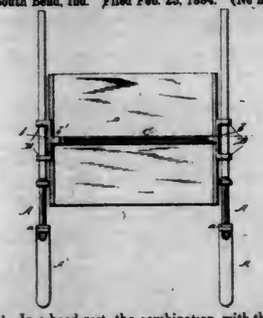
Claim.—1. The combination, with the standard G, bifurcated at its upper end, and means of securing it to a table or other support, of the sector E, pivoted in the fork of the standard and provided with a stem, Q, the spring H around the standard, the shoe J between the spring and sector, and the arms C, secured upon the stem of the sector, substantially as shown and described.

2. The combination, with the standard G, bifurcated at its upper end, the head D, and two arms, C, rigidly secured therein, the sector E, having the headed stem Q inserted and secured loosely in the head D, and the spring H between a portion of the standard and the sector, substantially as shown and described.

3. The combination of the standard G, bifurcated at its upper end and slotted along its lower portion, the arms C, secured in the standard by a universal joint, the securing-piece L, and the screw M, passing through the slot in the standard into the said piece L, substantially as shown and described.

4. As an article of manufacture, a book-leaf holder comprising a standard slotted in its lower portion and bifurcated in its upper portion, a securing-piece and screw therefor, a pair of arms universally jointed to the top of the standard, and a spring acting between the standard and the universal joint, substantially as shown and described, whereby the post may be secured upon a table or other support and be capable of vertical adjustment, and the said arms can rock to adapt themselves to a book whose two open pages are out of level, and the arms can be held either upon the book or away therefrom, as required.

324,398. HEAD-REST. Donald G. McDiarmid and Carrie J. McDiarmid, South Bend, Ind. Filed Feb. 25, 1884. (No model.)



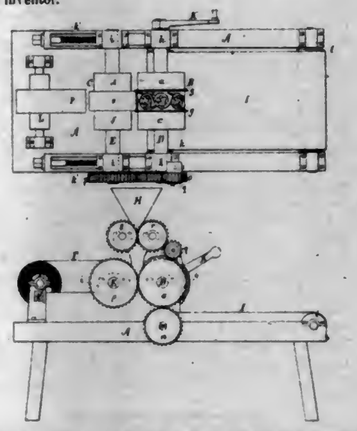
Claim.—1. In a head-rest, the combination, with the two main supports provided with clamps for engaging the seat-back, of two castings sliding upon said standards and connected by a flexible fabric, springs upon said castings bearing against the standards to retain the rest in position, and a brace hinged to one of these castings and having its end detachably secured to the other, substantially as and for the purpose set forth.

2. The standards A, having curved extension A′ and lugs *a a*, one of which is provided with a slot, in combination with the auxiliary foot A^2, swiveled in one lug and passing through the slot in the other, and the eccentric a^2, substantially as and for the purpose set forth.

3. In a head-rest, the standards A, swiveled portion A^2, and eccentric a^2, in combination with the sliding frames B B, having the springs *b*, the hinged brace C, and the flexible fabric D, substantially as and for the purpose set forth.

324,399. MACHINE FOR MOLDING OR EMBOSSING PLASTIC MATERIAL. Hugh McHugh and Thomas L. Manchester, New Bedford, Mass. Filed June 22, 1885. (No model.)

Brief.—Improvement on Patent No. 318,010, dated May 19, 1885, to same inventor.



Claim.—1. The combination of the molding and embossing roll and its fellow or bed roll with circular knives applied to the ends of the

embossing-section and projecting beyond its periphery, and lapping on the ends of the next adjacent part of the said bed-roll, such rolls having mechanism for operating or simultaneously revolving them, as set forth.

2. The combination of the paper-delivery beam or roll with the molding or embossing roll and its fellow roll, and with circular knives applied to the ends of the embossing part or section of such embossing-roll, and projecting beyond its periphery and lapping on the ends of the next adjacent part or section of the said fellow roll, such fellow and embossing rolls having mechanism for simultaneously revolving them, as specified.

3. The combination of the hopper and feed-rolls, the molding or embossing roll, and its fellow roll with the circular knives applied to the ends of the embossing section or part of such embossing-roll, and projecting beyond its periphery and lapping on the ends of the next adjacent section or part of the fellow roll, all being arranged substantially as set forth.

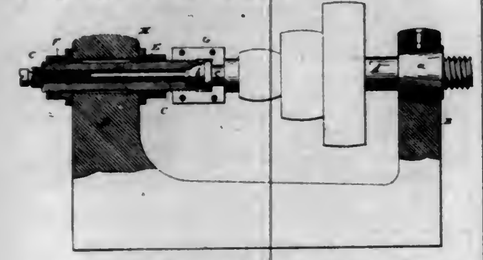
4. The combination of the hopper, the feed-roll, the molding or embossing roll, its fellow or bed roll, the circular knives applied to the ends of the embossing section or part of the embossing-roll, and lapping on those of the next adjacent section of the bed-roll, with the paper-supporting beam or roll, arranged therewith substantially as set forth.

5. The combination of the endless carrying-apron, arranged below the embossing-roll, with it and its fellow roll, and the circular knives applied to the embossing section or part of the embossing-roll, and to extend therefrom and lap on the ends of the next adjacent section of the fellow roll.

6. The combination of the paper-supporting beam or roll, the embossing-roll and fellow roll, the circular knives applied to the ends of the embossing section or part of the embossing-roll, and extending therefrom and lapping on the ends of the next adjacent section of the fellow or bed roll, and the endless apron, such apron being arranged below the embossing-roll, and with it and the fellow roll provided with mechanism for revolving them, substantially as described.

7. The combination of the hopper and feed-rolls, the embossing and bed rolls, the circular knives of embossing-roll, the paper-supporting beam or roll, and the endless apron, all being arranged, and the said feed-rolls, embossing and bed rolls, and endless apron being provided with mechanism for revolving or moving them and the circular knives, and the latter being applied to the ends of the embossing section or part of the embossing-roll, and to extend therefrom and lap on the ends of the next adjacent section or part of the fellow or bed roll, all being substantially as specified and represented.

324,400. SHAFT-BEARING. Ottmar Mergenthaler, Baltimore, Md. Filed May 19, 1885. (No model.)



Claim.—1. The shaft or spindle having the two journals tapered in the same direction and seated in suitable supports, in combination with the device, substantially as described, engaging the shaft at the end toward which the bearings taper, whereby the elongation of the shaft is caused to loosen its forward journal.

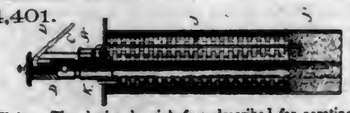
2. In combination with suitable supports, B D, the spindle provided with the tapered bearing-surfaces *a b*, the support or bearing C, adjustable endwise, and the coupling G, by which the spindle is secured against end motion, and thus held to its place in the bearings.

3. The spindle provided with the conical bearing-surfaces *a b*, as described, in combination with the threaded tube C, its nuts, the central adjusting-rod H, and the coupling G.

4. In combination with suitable supports, B D, the spindle provided with tapered bearing-surfaces *a* and *b*, a longitudinally-adjustable support or bearing, C, and the coupling G, adapted to engage the circumferential groove in the spindle, and adjustable endwise independently of the bearing *b*.

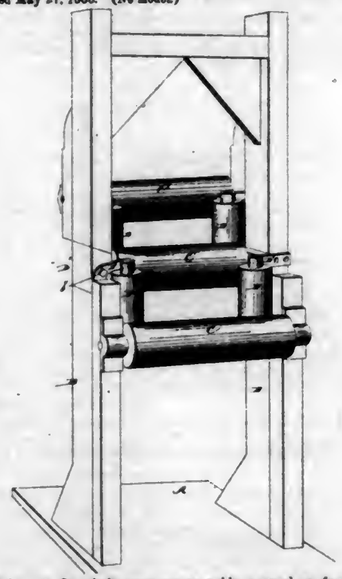
5. The spindle having the tapering bearing *b* and the groove *c*, in combination with the bearing C and the coupling G, adjustable longitudinally on support C and adapted to engage the groove of the spindle, as described.

324,401. PUMP. Eli A. Miller, Conneaut, and William H. Brown, North Kingsville, Ohio. Filed Feb. 5, 1885. (No model.)



Claim.—The device hereinbefore described for aerating water in wells, consisting of an air-pump and a discharge-tube extended downward from the air-cylinder, and adapted to enter the water in the well, and having its lower end turned upward, substantially as and for the purposes set forth.

324,402. BELT-CONVEYER. Reuben F. Miner, Clam Falls, Wis. Filed May 27, 1885. (No model.)



Claim.—1. In a belt conveyer or guide, a stand or frame placed between the driving-pulleys, in combination with a series of horizontal and vertical rollers, between which the belt is guided, substantially as and for the purpose set forth.

2. In a belt conveyer or guide, the base A and uprights B B, one of which is provided with a removable portion, in combination with the horizontal rollers C C′ C² and vertical rollers D D, between which the belt is guided, substantially as and for the purpose set forth.

324,403. BRISTLE-BUNCHING TOOL. Paul Morgos, Passaic, N. J. Filed Aug. 25, 1884. (Model.)

Claim.—1. In apparatus for bunching and doubling bristles, a suitably-supported stationary tubular arm and a longitudinally-yielding tube or nozzle, in which the end of the said tubular arm is loosely inserted, in combination with a reciprocating notched pusher for pushing the bight of the loop or tuft of bristles through the said stationary tubular arm, and through the said yielding tube or nozzle, substantially as shown and described.

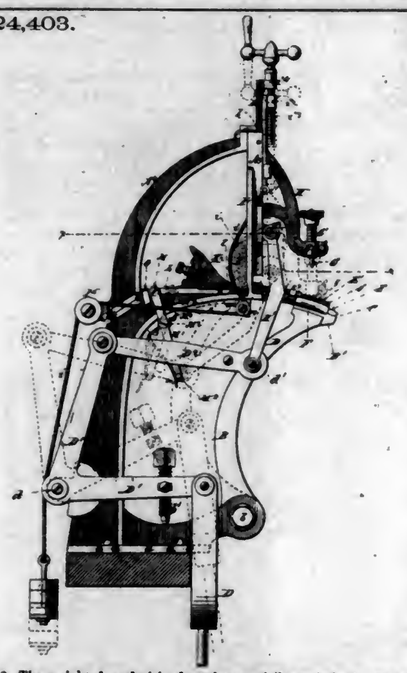
2. The combination, substantially as herein described, of a reciprocating notched pusher, a stationary tubular arm, and a longitudinally-yielding tube or nozzle, in which the end of the said stationary tubular arm is loosely inserted, and a reciprocating tuft-stop for holding the tuft stationary in the said tubular arm while the brush-back is being pressed against the end of the said yielding tube or nozzle, for the purpose of effecting the deposit of the bight of the tuft in one of the holes in the brush-back and then releasing the tuft, as and for the purpose set forth.

3. The combination, substantially as herein described, of the reciprocating notched pusher, the tubular arm through which said pusher works, a magazine for supporting and feeding a mass of bristles transversely toward the path of the reciprocating pusher in the rear of the tubular arm, and an adjustable gage for gaging the quantity of bristles allowed to drop or be crowded into and across the path of the notched pusher.

4. The oscillating doubling-lever B, in combination with the rocking frame M and the sliding bars L L, having their forward ends backwardly and downwardly inclined, as and for the purpose set forth.

5. The sliding bars L L, in combination with the stop-lever O, adapted to hold the said bars stationary, as and for the purpose set forth.

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6. The weighted cords *i i*, adapted to partially encircle the mass of bristles I, in combination with the reciprocating hooks *i′ i′* to which the upper ends of the said cords are attached, respectively, as and for the purpose set forth.

7. The combination of the weighted cords *i i*, the reciprocating hooks *i′ i′*, and the adjusting-screw *i³*, as and for the purpose set forth.

324,404. CLOTH-CUTTING APPARATUS. Robert O. Monday, Dallas, Tex., assignor of one-half to George Tyng Atkins, same place. Filed Aug. 23, 1884. (Model.)

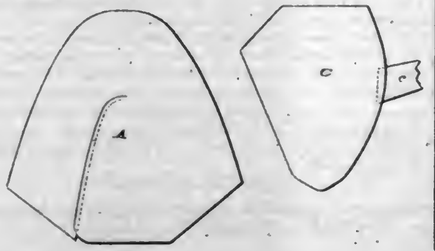


Claim.—1. The combination, with a suitable frame, of cutting-disks arranged to revolve therein, rubber disks arranged adjacent to said cutting-disks for feeding the material being operated upon to the cutters, and a gear-wheel for operating said cutting-disks, as set forth.

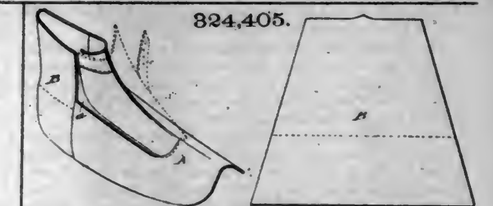
2. The combination, with the cutting-disks mounted upon suitable shafts, of a plate loosely mounted at one end, its other end being adapted to be tightened to regulate the friction of the disks, substantially as set forth.

3. The combination, with a suitable frame, of cutting-disks mounted upon shafts having bearing in said frame, rubber disks mounted upon said shafts, said cutting-disks being grooved as shown, and a wheel for operating the cutting-disks, as set forth.

324,405. SHOE. James Morton, Le Roy, N. Y. Filed May 9, 1885. (No model.)

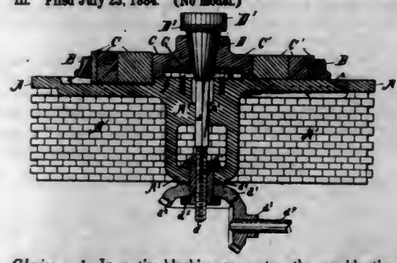


324,405.



Claim.—A boot or shoe the upper of which is composed of the parts A, B, and C, arranged and connected substantially as shown and described.

324,406. TIRE-EXPANDING MACHINE. James Munton, Maywood, Ill. Filed July 23, 1884. (No model.)



Claim.—1. In a tire-blocking apparatus, the combination of a table, A, having alternate high and low segments, with a series of blocking segments or liners, C C′, having inclined or wedging ends, substantially as specified.

2. The combination of a blocking-table with a series of blocking segments or liners having inclined or wedging ends, and a wedge or plug, D, for expanding the same, substantially as specified.

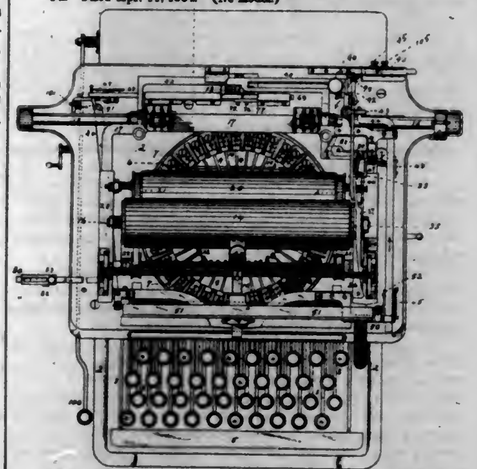
3. The combination of table A, having central hub or enlargement, A′, with segments or liners C C′, wedge D, square shaft *d*, having threaded end, sleeve *d′*, gear *d²* and *d³*, and driving-shaft *d⁴*, substantially as specified.

4. The combination, with a blocking-table and its segments, of a plug or wedge for expanding the same, threaded shaft *d*, threaded sleeve *d′*, gears *d²* and *d³*, and a stop to limit the movement of said plug or wedge, substantially as specified.

5. The combination of table A with segments C C′, plug or wedge D, provided with shoulder or stop D′ and adjusting-rings D², and means for operating said wedge, substantially as specified.

6. The combination, with the table A, provided with headed bolts or pins G, of blocking liners or segments C C′, provided with radial slots or grooves for the head of said bolts, substantially as specified.

324,407. TYPE-WRITING MACHINE. James R. Murphy, Crafton, Pa. Filed Apr. 11, 1884. (No model.)



Claim.—1. In a type-writer, the combination of a paper-carrying carriage, a pivoted rack connected with the carriage, operating mechanism, substantially as described, and a movable retaining dog or bar

engaging with the rack for the purpose of retaining the rack in contact with the operating mechanism, substantially as specified.

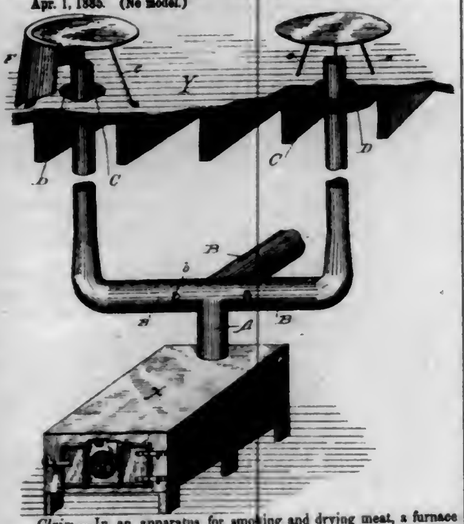
2. In a type-writer, the combination of a paper-carrying carriage, a pivoted rack connected with the carriage, operating mechanism, substantially as described, a lever for rotating the paper-roller, and a retaining dog or bar engaging with the rack and connected with the lever, substantially as and for the purpose specified.

3. In a type-writer, the combination of a paper-carrying carriage, a rack and actuating-pawl, substantially as described, a sliding bar operated by a spring or weight and arranged to disengage the pawl, and a retaining-dog arranged to engage with the sliding bar, so as to retain the same from the pawl until released, substantially as and for the purpose specified.

4. In a type-writer, the combination of a paper-carrying carriage, a rack and actuating-pawl, substantially as described, a free bar arranged to engage with the pawl so as to release the pawl, a bar connected with actuating mechanism, substantially as described, and arranged to impart motion to the free bar, and a retaining-dog arranged to engage with the free bar and retain the same until the actuated bar has been withdrawn, substantially as and for the purpose specified.

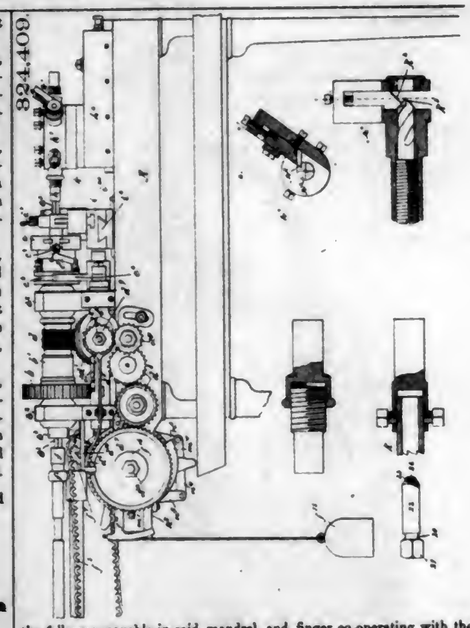
5. In a type-writer, the combination of a paper-carrying carriage, actuating mechanism, substantially as described, a releasing-bar for releasing the carriage from the actuating mechanism, a lever for withdrawing the releasing-bar from the actuating mechanism, and an arm connected with the carriage and arranged to engage with the free end of the withdrawing-lever, substantially as and for the purpose specified.

324,408. SMOKE-HOUSE. Nicholas Murphy, Chicago, Ill. Filed Apr. 1, 1885. (No model.)



Claim.—In an apparatus for smoking and drying meat, a furnace placed outside of the smoking and drying chamber, having flues or conduits, with dampers therein, leading from said furnace into said drying-chamber, in combination with caps and slides or hoods adjustable around said caps, all substantially as described, and for the purpose set forth.

324,409. LATHE. Luther M. Cutting, Concord, N. H. Filed May 20, 1885. (No model.)



Claim.—1. In a turret-lathe, the combination of the hollow spindle, with wire-feeding mechanism consisting of a rotary movable mandrel, bearings therefor, a guide-rod upon which the bearings are free to slide, and actuating mechanism for moving the said parts on the said guide-rod, substantially as described.

2. The hollow spindle, chuck, and chuck-actuating slide-bar, combined with the rod-feeding devices and actuator therefor, and the locking device for said actuator, operated by the said slide-bar that actuates the chuck, substantially as described.

3. The combination, with the hollow spindle, of the mandrel for the rod or wire, adapted to pass into the said spindle-bearing for said mandrel, and the guide upon which said bearing may slide, combined with a catch, whereby the bearing is caused to accompany the mandrel along the guide until positively arrested at the end thereof, after which the bearing is disengaged by the catch and the mandrel permitted to move forward through said bearing and into the hollow spindle, substantially as described.

4. The hollow spindle and mandrel supporting one end of the rod or wire to be fed, and adapted to enter the said spindle, combined with the follower movable in said mandrel, and finger co-operating with the said follower and mandrel, substantially as described.

5. The combination, with devices supporting one end of the rod or wire to be operated upon, having a sliding movement by which the said rod is fed forward, of a feed-chain and actuator therefor, and ratchet-and-pawl connection between said feed-chain and actuator, and means, actuated by the mechanism of the lathe, whereby sufficient force is stored in the actuator between the successive feeding movements for a single feeding movement, substantially as described.

6. The chuck and its sliding jaws, combined with screws engaging said jaws, and provided with pinions, toothed arms engaging said pinions, a sliding collar connected with said arms, and slide-bar and clutch for actuating the said collar, substantially as described.

7. The rotating spindle and worm thereon, and chuck connected with the said spindle, combined with the worm-gear, its shaft, and shouldered clutch member loose thereon, and the clutch member splined on said shaft, and shipper and controlling-arm therefor, and the slide-bar provided with shoulders co-operating with those of the loose clutch member, the said bar being operatively connected with the chuck, substantially as described.

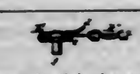
8. The combination, with the hollow rotating spindle adapted to have a rod or wire fed longitudinally therethrough, of the feed-chain, its actuating pulley, and ratchet connected with the arbor thereof, and the pawl-carrier and actuating-arm therefor, and mechanism for moving the said arm between the feeding movements back into position for the next feeding movement, substantially as described.

9. The combination of the hollow rotating spindle and chuck and chuck-operating mechanism with the feed-chain for the rod or wire, its actuating-pulley and locking-disk connected with the arbor thereof, and the locking-lever co-operating with said disk and actuated by the chuck-operating mechanism, substantially as described.

10. The rotating spindle and chuck thereon, and sliding collar operatively connected with the said chuck, combined with the shouldered slide-bar connected with the said collar, the continuously-rotating clutch member and the loose clutch member adapted to be engaged and rotated thereby, provided with shoulders co-operating with those of the slide-bar, and the yielding holding device for said loose clutch member, whereby the latter is held in proper position previous to its engagement with the continuously-rotating member, substantially as described.

11. The rotating spindle and revolving tool-carrying turret, combined with a toothed segment and toothed plate oscillated thereby around the axis of the turret, the pawl on the said plate for turning the turret in the movement of the plate in one direction, and the stop and locking device for the said turret and disengaging device therefor operated by the said toothed plate in its movement in the other direction, substantially as described.

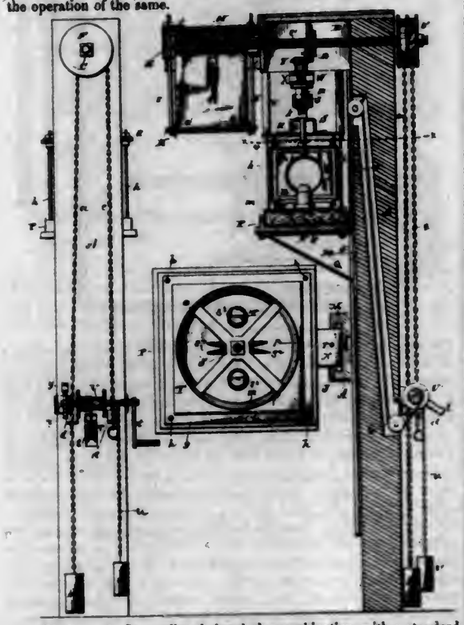
324,410. CONNECTOR FOR ELECTRIC BATTERIES. Gustav Otto, Jersey City, N. J. Filed Apr. 23, 1885. (No model.)



Claim.—The spring-clip E, having perforated arms *d e*, the apertures whereof are in line, as and for the purpose set forth.

324,411. RAILROAD-SIGNAL. James R. Park, Lavergne, Tenn. Filed Apr. 30, 1884. (No model.)

Brief.—A support moving vertically in a grooved standard, upon which is seated a lamp. A rotating casing surrounds the lamp, to which is secured a vertical shaft, which engages with a vertical shaft geared with a horizontal shaft journaled in the upper end of the standard. A shaft passes through a box secured to the top of the casing, on one end of which is secured a flag running in guides and covered by a shield when wound up. The vertically-movable support and the flag and lamp casing rotating shafts are counterbalanced by weights, which assist in the operation of the same.



Claim.—1. In a railroad-signal, the combination, with a standard having a guideway in one face thereof, a support adapted to move vertically in said guideway, a lamp seated on said support, a rotating casing surrounding the lamp, a vertical shaft rigidly secured to the casing, and devices for vertically elevating the support, of a horizontal shaft journaled in the upper end of the standard, devices for rotating the horizontal shaft, and a vertical shaft geared with the horizontal shaft and adapted to engage the vertical shaft of the lamp-casing, substantially as set forth.

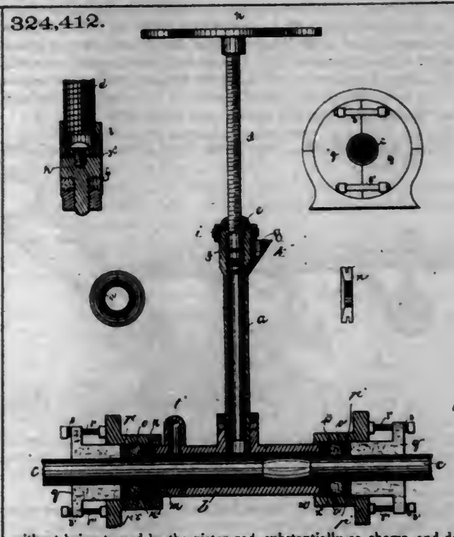
2. In a railroad-signal, the combination, with a lamp-support, lamp, and lamp-casing, a drum having a flag thereon, and a horizontal shaft for winding and unwinding the flag and rotating the lamp-casing, of a rope or chain secured to the lamp-support and passing upwardly over a pulley, and secured at its lower end to a winding-drum, and a counterbalance suspended from said drum, substantially as set forth.

3. The combination, with a base and top respectively provided with upwardly and downwardly projecting flanges, of a lamp-casing suspended between the base and top, and provided with flanges fitting within or around said former flanges, and means for rotating said casing, substantially as set forth.

4. The combination, with a support, of a box or casing secured to the top thereof, a shaft passing through the latter, and provided on one end with a flag and on the other with a pulley, means for turning the shaft and winding or unwinding the flag, guides for the flag to move in, and a shield secured to the guides, and adapted, when the flag is wound up, to conceal the same, substantially as set forth.

324,412. HYDROSTATIC TESTING-MACHINE FOR TELEGRAPH-CABLES. William R. Patterson, Chicago, Ill., assignor to the Western Electric Company, same place. Filed Mar. 22, 1884. (No model.)

Claim.—1. In a hydrostatic press, the combination, with the barrel, of the screw-threaded piston-rod, the nut and the piston connected to said rod by a swivel-joint, whereby the piston may be forced down



without being turned by the piston-rod, substantially as shown and described.

2. In a hydrostatic press, the combination, substantially as hereinbefore set forth, of the barrel and piston, said barrel being provided with an opening, as described, whereby water may be turned into the barrel directly under the piston when raised, substantially as and for the purpose specified.

3. The combination, with the vertical barrel of a hydrostatic press, of the sectional cylinder placed horizontally and provided with packing-boxes at each end, substantially as and for the purpose specified.

4. The combination, with a hydrostatic press provided with the piston attached to the piston-rod, as described, of the vertical barrel, the cylinder composed of sections, unbroken rubber rings, and sectional metallic rings, and glands, as described, whereby the press may be placed about a joint of pipe substantially as and for the purpose specified.

5. In a packing-box, a continuous rubber ring, in combination with concave sectional metallic rings and a sectional gland and means for pressing said gland against the outer concave ring and thereby making a tight joint, substantially as and for the purpose specified.

324,413. TERMINAL FOR ELECTRIC-LIGHT CABLES. William R. Patterson, Chicago, Ill., assignor to the Western Electric Company, same place. Filed Sept. 22, 1884. (No model.)



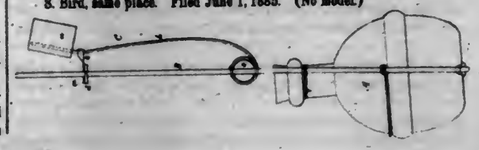
Claim.—1. The combination, with the cable and bare splice, of the rubber sleeve and rubber rings, or packing *k*, placed about the outside wire, said sleeve being tied to the cable and outside wire, substantially as and for the purposes specified.

2. The combination, with the sleeve of insulating material secured at one end to the cable and at the other to the outside wire by tight joints, of the naked splice *h*, whereby an air-space, *f*, is formed and moisture prevented from penetrating to the insulating material of the conductor, substantially as and for the purposes specified.

3. The combination, with the insulating material coated with shellac at *g*, of the sleeve secured at its ends to the cable and wire, respectively, whereby a dead-air space is formed about the splice, substantially as and for the purposes specified.

4. The combination, with the rubber sleeve secured to the end of a telegraph-cable, of a hood projecting below the upper end of said sleeve and united to the lead pipe of the cable by solder, substantially as shown and described.

324,414. FIRE-EXTINGUISHING GRENADE. Myron H. Piper, Walpole, Mass., assignor, by mesne assignments, to himself and Charles S. Bird, same place. Filed June 1, 1885. (No model.)



Claim.—The grenade A, in combination with the bail B, the latter encompassing and supporting the former, said grenade being a portion of the stationary structure, with the bail, and the hammer C, consisting of a spring, *b*, and head *a*, and the fusible fastening holding the hammer to the bail, whereby the grenade is protected from accidental breakage, and the hammer is the only movable part, as set forth.

324,415. PLOW. LEWIS C. REED, Girard, Mich. Filed May 7, 1885. (No model.)



Claim.—The combination, with the plow-standard, of the parallel bars *a a*, having the offsets *b b*, and provided with the horizontal wheel *d*, arranged and operating as shown and described.

324,416. LATHE. GEORGE T. REID, Hamilton, Ohio, assignor to the Niles Tool Works, same place. Filed Oct. 8, 1884. (No model.)



Claim.—1. In a lathe, the combination of a head-stock, a nose projecting therefrom, a geared face-plate fitted to revolve upon said nose, a back shaft geared to said face-plate, and a slide-rest removably bolted to said nose, substantially as and for the purpose set forth.

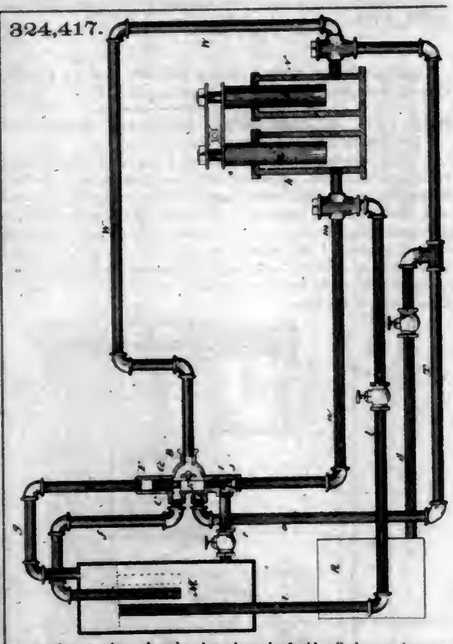
2. In a lathe, the combination of a head-stock, a nose projecting therefrom, a geared face-plate fitted to revolve thereon, a back shaft geared to said face-plate, an arm projecting from said slide-rest toward said back shaft, a pinion mounted at the extremity of said arm, shafts and gearing connecting said arm-pinion with the feed-screw of the slide-rest, and a pinion on the back shaft adapted to be engaged by said arm-pinion when the slide-rest is secured to the nose of the head-stock, substantially as and for the purpose set forth.

3. In a lathe, the combination of a head-stock, a nose projecting therefrom, a geared face-plate fitted to revolve upon said nose, a back shaft geared to said face-plate, a slide-rest bolted to said nose, a feed-screw, *j*, in said slide-rest, a shaft, *g*, in said slide-rest disposed parallel to said screw and geared thereto, an arm projecting from the slide-rest toward said back shaft, a pinion at the end of said arm engaging a pinion on the back shaft, a splined shaft disposed within said arm and bevel-geared to the pinion carried at the extremity of the arm, a bevel-gear, *i*, fitted to slide upon said arm-shaft and engage with a bevel-gear upon the shaft *g*, and a cam adapted to slide said bevel-gear upon said arm-shaft, substantially as and for the purpose set forth.

324,417. AUTOMATIC FEED FOR STEAM-BOILERS. HOPKINS A. SANFORD, New Haven, Conn., assignor to the Automatic Safety Boiler and Engine Company, same place. Filed Oct. 13, 1884. (No model.)

Claim.—1. The combination of the valve-chamber A, having an inlet-passage, B, and an outlet-passage, C, a valve, E, arranged in said chamber, and movable therein to open or close said outlet-passage C, two cylinders arranged in line with said valve-chamber, one at one end and the other at the opposite end, that at one end larger than the one at the opposite end, and a piston in each of said cylinders, arranged to bear upon said valve and impart to the said valve a reciprocating movement, whereby the said outlet-passage is opened and closed, each of said cylinders provided with an opening to the face of the piston, and the cylinder of smaller diameter provided with an outlet-passage, L, opened or closed by the movement of the said piston, substantially as described.

2. The combination of the valve-chamber A, constructed with the inlet-passage B, the two outlet-passages C D, the valve E, arranged in said chamber and movable therein to open either of said outlet-passages and close the other, two cylinders arranged the one at one end of said valve-chamber, the other at the opposite end, that at one end larger than the



one at the opposite end, and a piston in each of said cylinders, and arranged to bear upon the valve, each of said cylinders provided with an opening to the face of the piston, the cylinder of smaller diameter provided with an outlet-passage, L, and so as to be opened or closed by the movement of the piston in said smaller cylinder, substantially as described.

3. The combination of the cylindrical valve-chamber A, constructed with the inlet-passage B, and with the outlet-passage C, the valve E, arranged in said cylindrical chamber, having a working-face corresponding to the inner surface of said chamber, the said valve constructed with a longitudinal groove upon its back, a fixed stud, *d*, in said chamber standing in said groove as a guide for the movement of said valve, and two cylinders, one at one end and the other at the opposite end of said valve-chamber, and substantially concentric therewith, that at one end of larger diameter than the one at the opposite end, each cylinder provided with a piston movable therein, each cylinder constructed with an opening to the face of the piston, each piston arranged to bear upon its respective end of said valve, and the cylinder of smaller diameter constructed with an outlet-passage, L, substantially as described.

4. The combination of the cylindrical valve-chamber A, constructed with the inlet-passage B, the two outlet-passages C D, the valve E, arranged in said chamber and movable therein to open either of said outlet-passages and close the other, having a working-face corresponding to the inner surface of said chamber, the said valve constructed with a longitudinal groove upon its back, a fixed stud, *d*, in said chamber standing in said groove as a guide for the movement of said valve, and two cylinders, one at one end and the other at the opposite end of said valve-chamber, and substantially concentric therewith, that at one end of larger diameter than the one at the opposite end, each cylinder provided with a piston movable therein, and each cylinder constructed with an opening to the face of the piston, each piston arranged to bear upon its respective end of the said valve, and the cylinder of smaller diameter constructed with an outlet-passage, L, substantially as described.

5. The combination of the valve-chamber A, provided with the inlet B and outlets C D, the valve E, arranged in said chamber and movable therein to open either of said outlet-passages and close the other, the cylinder F, piston G, arranged therein and so as to bear upon one end of the valve, said cylinder in connection with the boiler to receive the steam therefrom upon the face of the cylinder, the cylinder I of less diameter than the cylinder F, the piston J therein arranged to bear upon the opposite end of said valve, a passage from said cylinder I to the boiler below the water-level, a feed-pump on its draft in connection with the feed-water supply, and also from the valve-chamber through the outlet D, and in its force in connection with the valve-chamber through the inlet B, said valve-chamber through the outlet C in connection with the boiler, and a second pump, *h*, on its draft in connection with the boiler at water-level, and on its force in connection with the cylinder I below the piston J, substantially as described.

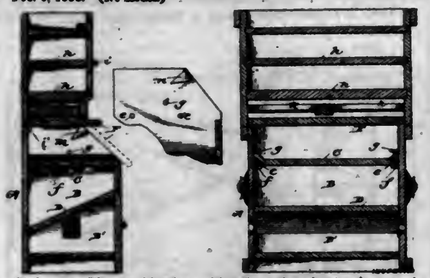
6. The combination of the valve-chamber A, having an inlet-passage, B, and an outlet-passage, C, a valve, E, arranged in said chamber

and movable therein to open or close said outlet-passage C, a cylinder, I, in line with said valve-chamber, piston in said cylinder arranged to bear upon one end of the valve, and a resistance at the opposite end of the valve, equal at least to the boiler-pressure, the said cylinder I provided with an outlet-passage, L, said passage opened or closed by the movement of said piston, substantially as described.

324,418. REMEDY FOR HOG-CHOLERA. GEORGE W. SAXTON, Sterling, Kans. Filed Dec. 27, 1884. (No specimens.)

Claim.—The herein-described composition of matter, to be used for the prevention and treatment of hog-cholera, consisting of alcohol, oil of tar, sulphuric acid, carbolic acid, tincture of iron, and turpentine, in about the proportions specified.

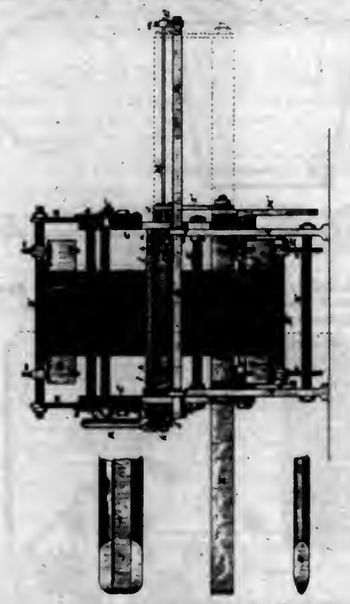
324,419. FLOUR-CHEST. DAVID SHULER, New Dover, Ohio. Filed Feb. 6, 1885. (No model.)



Claim.—1. The combination, with a flour-chest having lugs or pins on its inner sides, of a kneading-board having channels or grooves to receive the same, stop-pins on the chest, and stop-cleats on the under side of the kneading-board, as set forth.

2. A flour-chest comprising in its construction a frame divided into two compartments by a slanting partition-board, lugs or pins on the inner sides of the chest, a kneading-board having channels to receive the pins or lugs, stop-pins on the chest, and stop-cleats on the under side of the kneading-board, the upper compartment of the chest being provided with inclined front sides, a lid or cover having pins at its rear corners, and stops *m* on the inner sides of the chest to engage the same, substantially as set forth.

324,420. MACHINE FOR OPENING THE EYES OF LOOM-HARNESS. JOSEPH SLADEN, Lawrence, Mass. Filed Nov. 20, 1884. (No model.) Patented in England Dec. 15, 1884, No. 16,483.



Claim.—1. An organized machine for opening the heddle-eyes of loom-harness, containing, essentially, the following elements, viz: supports for the harness-shafts, and devices, substantially as described, for operating the same for stretching the heddle-twines taut, a lease-bar for separating the two sets of heddle-eyes, pressure-bars, and means, substantially as described, for operating the same to deflect said heddle-twines and clamp them to said lease-bar, and a pair of needles, each arranged to pierce and open all the eyes in one set by a single endwise movement thereof, as set forth.

2. The levers B B, rod B', and hooks *a a*, in combination with the levers E E, rod E', and hooks *c c*, the set-screws *b b* and *d d*, the shaft H, lever H', and the cams G G, all arranged and adapted to operate substantially as and for the purposes described.

3. The lease-bar J, provided with the two grooves *e e* and beveled upper and lower edges and its front end rounded and beveled, as shown and described, for the purposes specified.

4. The lease-bar J, in combination with the bar I, and the frames A, provided with bearings to receive and guide said bar I, substantially as described.

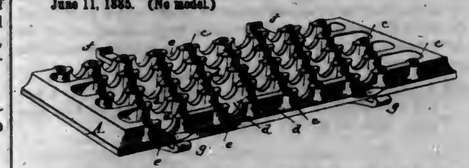
5. The combination of the lease-bar J, provided with beveled surfaces upon its upper and lower edges, the bar I, and plate I', for carrying and guiding said lease-bar, with the four clamping-bars *l'*, the gears *f'*, *g'*, *h'*, and *i'*, the shafts *f*, *g*, *h*, and *i*, the levers *j* and *k*, and pin *k'*, for operating said clamping-bars in unison to deflect the heddle-twines and clamp them to said beveled surfaces, substantially as described.

6. The combination, with the lease-bar J, the bar I and plate I', the needle-carrying bars L L L', and log L^2, of the needles M M, arranged, as set forth, upon opposite sides of the lease-bar J, and adapted to open all of the eyes of the heddles upon each side of said lease-bar by a single endwise movement, substantially as described.

7. The needle-carrying bars L L L' and the needles M M, provided with the slots *m'*, in combination with the guide-trucks P P, arranged and adapted to operate substantially as and for the purposes described.

8. The combination of the lease-bar J, the bar I, and plate I', the clamping-bars *l'*, the rocker-shafts *f*, *g*, *h*, and *i*, the segmentally-toothed gears *f'*, *g'*, *h'*, and *i'*, and the slotted arms *j* and *k*, and pin *k'*, with the needles M M, the needle-carrying bars L L and L', the studs N N, the arms or rods O O, and the guiding-trucks P P, all arranged and adapted to operate substantially as described.

324,421. FURNACE-GRATE. JOHN SHEAD, Toledo, Ohio. Filed June 11, 1885. (No model.)



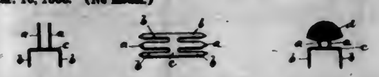
Claim.—1. A grate for furnaces, consisting of one or more plates or sections, A, provided with a series of ribs or projections on its upper surface, with vertical holes extending through said plates and the ribs or projections thereon, substantially as shown and described.

2. The plate or section A, provided with the ribs *d*, having hole *c* formed therein and provided with the locking-lugs *g* on one edge, substantially as and for the purpose set forth.

3. A grate for furnaces, consisting of a plate, A, having a series of ribs, *d*, on its upper surface, with holes *c*, formed in and extending through said ribs and plate and having a series of strengthening-ribs formed on the under side of said plate, substantially as shown and described.

4. A grate consisting of a plate, A, having a series of ribs, *d*, or equivalent projections, formed on its upper surface, with holes *c* extending vertically through said projections and plate, and having cavities between said ribs or projections on the upper side of said plate for the reception of ashes or other protecting material, as set forth.

324,422. BUTTON. FRANKLIN A. SMITH, Jr., Providence, R. I. Filed Mar. 16, 1885. (No model.)



Claim.—The combination, with a button-head, of a fastening device cut from sheet metal and bent or formed as specified, and consisting, essentially, of a table or base having penetrating-prongs projecting in one direction from the sides thereof and out of line with the center of said table, and prongs projecting from said central portion in an opposite direction to that of the penetrating-prongs and secured in the button-head, substantially as shown and described.

324,423. PROCESS OF MANUFACTURING ELASTIC-FACED PRINTING-TYPES. E. HALE SMITH, Springfield, Mass. Filed July 22, 1881. (No model.)

Claim.—1. The process of manufacturing elastic-faced printing-types, consisting of molding and vulcanizing a thin coating of elastic

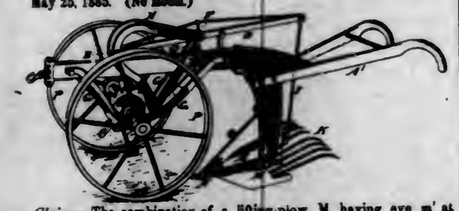
324,423.



compound upon the printing characters of a series of hard printing-type by securing said compound between said type and a matrix in register therewith, and subjecting the whole to heat while firmly compressed together, and finally separating the type one from the other with the elastic printing-face vulcanized to each, substantially as described.

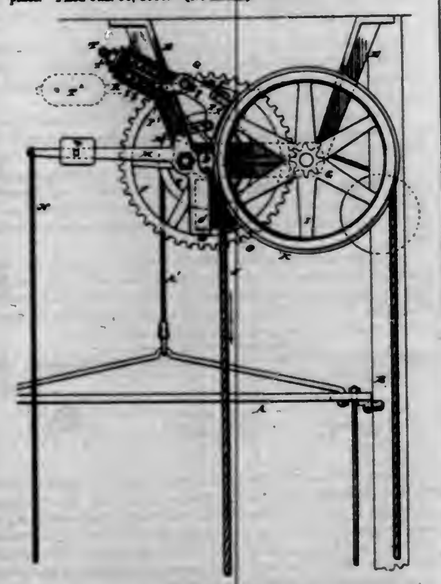
2. The method of manufacturing and producing elastic-faced printing-types, consisting of vulcanizing a sheet of elastic compound to the printing characters of a series of hard type by securing said sheet between said type and a matrix made therefrom, and subjecting the same to heat while firmly compressed together after said type have been prepared and compacted by securing them in a frame and subjecting the type and frame to heat and allowing the same to cool, and again firmly clamping the type in the frame to take up the shrinkage caused by the greater contraction of the type in cooling, and afterward separating the type one from the other with the elastic printing-face vulcanized to each, substantially as described.

324,424. POTATO-DIGGER. JACOB SPRING, Bridgewater, N. Y. Filed May 25, 1885. (No model.)



Claim.—The combination of a lifting-plow, M, having eye m' at the median front end of a double mold-board, the notched screw x, and the point N, having a perforated vertical flange, through which the screw passes, and a heel that passes under the plow-front, as and for the purpose described.

324,425. HOISTING-MACHINE. JOHN SPROGELL and HARRY S. HASKINS, Philadelphia, Pa., assignors to Edwin Harrington, Son & Co., same place. Filed Jan. 30, 1885. (No model.)



Claim.—1. In an elevator, the combination of a brake-wheel, brake-shoe O O', lever M, cord N, weight m, link M^2, shoe P, having heel-extension P', and a spring or weight to press said shoe P toward the brake-wheel and the shoe O O' away from said brake-wheel, substantially as and for the purpose specified.

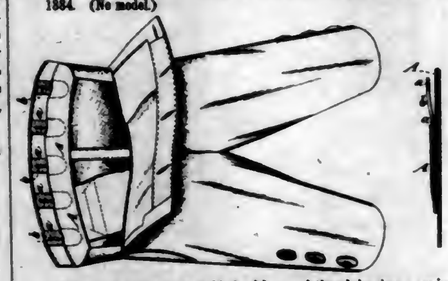
2. The combination of brake-wheel K, shoe P, having heel-extension P', piston *t* T, spring S', and cylinder or case S, substantially as and for the purpose specified.

3. The combination of brake-wheel K, shoe P, having heel-extension P', piston *t* T, adjusting-nut T', spring S', and cylinder or case S, substantially as and for the purpose specified.

4. The combination of brake-wheel K with shoe P, having a heel-extension, P', made adjustable upon said shoe, substantially as and for the purpose specified.

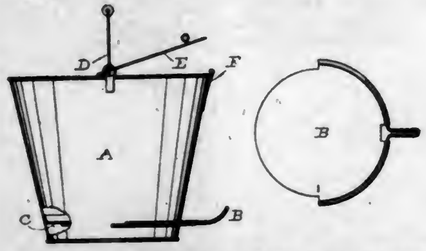
5. In an elevator, two brake-shoes coupled together so that when one is applied the other is removed, in combination with weights or springs, or both, acting upon each of said shoes and opposing each other, their normal action being to remove both shoes from the brake-wheel, and an operating-cord, substantially as and for the purpose specified.

324,426. ELASTIC GARMENT-SUPPORT. JACOB A. STEINAU, New York, N. Y., assignor to Samuel H. Sahlein, same place. Filed Oct. 9, 1884. (No model.)



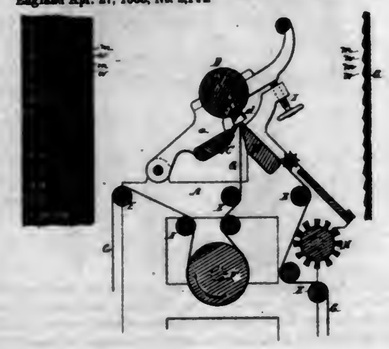
Claim.—A garment provided with a waistband having a series of elastic supporting-strips secured thereto, the said waistband being made with a lining folded from the bottom upward and inclosing the strips, which are secured within the folded bottom thereof by through-and-through stitches, but which pass up the sides of the strips, outside thereof, forming guides or pockets, giving free play longitudinally to the strips, but preventing lateral movement thereof, substantially as set forth.

324,427. COAL-BUCKET. JOHN A. STEINBACH, Dayton, Ohio, assignor of one-half to Joseph Steinbach, same place. Filed Jan. 23, 1885. (No model.)



Claim.—The circular sliding bottom B, with an inner semicircular edge, and an outer semicircular edge of greater diameter, wired, with a loop for a handle, substantially as set forth.

324,428. MACHINERY FOR SHEARING CLOTH. DWIGHT C. SUMNER, Worcester, Mass. Filed Dec. 5, 1883. (No model.) Patented in England Apr. 27, 1883, No. 2,144.



Claim.—1. A revolver or shearing-cylinder for cloth-shearing machines, having a single longitudinally-arranged blade, as described, combined for action with a ledger-blade and cloth-guiding support, disposed in the manner shown, for the purpose set forth.

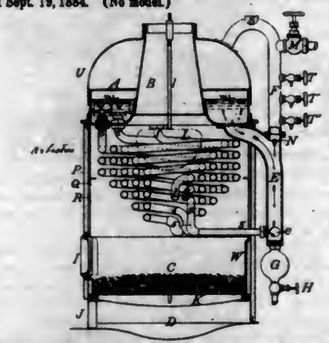
2. A cloth-shearing machine provided with the single-bladed revolver D *d*, the ledger-blade, the cloth-support, the roll or rolls for guiding and feeding forward the fabric, and means, such as shown and described, for imparting motion to said revolver and feed-rolls, in combination, for the purpose set forth.

324,429. SYRINGE. JAMES SUYDAM, Milwaukee, Wis. Filed Apr. 27, 1885. (No model.)



Claim.—As a new article of manufacture, a reversible syringe-tube having the larger rounded injection end *a* and the smaller rounded injection end *b*, each of said ends adapted to be inserted into and retained in an elastic opening, substantially as and for the purposes set forth.

324,430. STEAM-BOILER. JOHN A. SVEDBERG, Washington, D. C. Filed Sept. 19, 1884. (No model.)



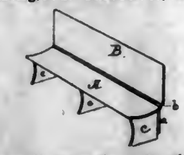
Claim.—1. A coiled water-tube for steam-boilers generated on the frustum of an inverted cone, the coil thus formed having a uniform increase in diameter, and a uniform pitch or rise, thereby producing a natural and perfect circulation without artificial helps, substantially as described.

2. In a water-tube coil-boiler, the combination of a series of several coiled tubes, the upper coils of shorter and varying length of pipe, and consequently smaller diameter of coils, than the lower ones, thereby occupying the entire available heating capacity of the fire-box, substantially as described.

3. In a steam-boiler, the combination of one or more cono-helical coils generated on the frustum of a cone, the large diameter turned up and connected with water and steam space, the lower end connected with feed and water circulation tube, substantially as described.

4. In a steam-boiler, the combination of the steam and water drum A with the cono-helical water-tubes, the larger diameters of said coils turned upward, provided with feed-water and circulation pipes E and *e e'*, substantially as described.

324,431. FOLDING SETTEE OR BENCH. JAMES A. TAYLOR and JOHN P. KNAPP, Hamburg, N. Y. Filed Feb. 19, 1885. (No model.)



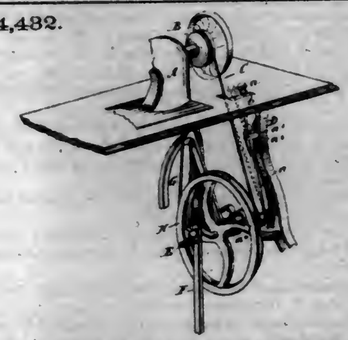
Claim.—1. In a movable settee, the combination of the hinged seat A, back stays or posts *a a a*, back B, and the hinged inwardly-folding legs *c c c*, all substantially as and for the purpose specified.

2. In a folding-up settee, in combination with the back B *b a a a*, the hinged inwardly-folding legs *c c c*, and hinged seat A, the latter having the grooves *d d d*, or equivalent, in or on the under side of said seat, all substantially as and for the purpose specified.

324,432. BELT-APPLYING DEVICE FOR SEWING AND OTHER MACHINES. EDDY T. THOMAS and ALLEN SCHENCK, New York, N. Y. Filed May 20, 1885. (No model.)

Claim.—1. The belt-wheel made at one edge to form a book or point, and the table and its frame or legs, combined with the belt-controller, one end of which is extended above the table to be in easy reach of the operator, substantially as described.

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2. The table, the legs or stand D, and the notched belt-wheel and its shaft, combined with a belt-controller having its point or fulcrum arranged substantially as described, whereby the belt-controller, obeying the law of gravity, normally stands with its belt-fork opposite and in line with the groove of the belt-wheel, substantially as described.

3. The table or legs supporting a pivoted band-controller, combined with the belt-wheel, made at one edge to form a book or point, as and for the purpose specified.

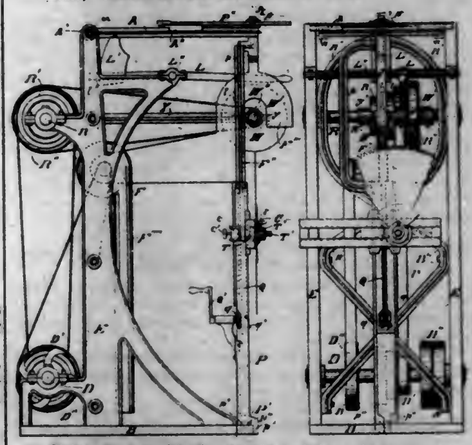
324,433. PROCESS OF MANUFACTURING STEEL FORGINGS AND CASTINGS. ADAM TIEDEL, Philadelphia, Pa. Filed Apr. 11, 1885. (No specimens.)

Claim.—1. In the manufacture of steel forgings and castings, the process of subjecting steel forgings or castings containing substantially .20 to .35 of one per cent. of carbon to heat at a temperature of substantially 1,800° Fahrenheit, and in then treating said heated steel in a bath of oil, substantially as and for the purposes set forth.

2. In the manufacture of steel forgings or castings, the process which consists, first, in subjecting steel forgings or castings containing substantially 20 to .35 of one per cent. of carbon to heat at a temperature of about 1,800° Fahrenheit; second, in again subjecting said steel after it has become cold to heat at a temperature of about 1,800° Fahrenheit; and, third, in treating said heated steel in a bath of oil, substantially as and for the purposes set forth.

3. In the manufacture of steel forgings or castings, the process which consists in subjecting steel forgings or castings containing substantially .20 to .35 of one per cent. of carbon, and which have been heated to a temperature of about 1,800° Fahrenheit and cooled to heat at a temperature of about 1,800° Fahrenheit, and in then treating said heated steel in a bath of oil, substantially as and for the purposes set forth.

324,434. MACHINE FOR SHARPENING AND GUMMING SAWS. JAMES H. TOTHAM, Desaronto, Ontario, Canada. Filed Nov. 24, 1884. (No model.) Patented in Canada Dec. 19, 1884, No. 20,754.



Claim.—1. A machine for gumming and sharpening saws, consisting of the combination of the frame-work A A' B B' E, driving-shaft D, fast and loose pulleys D'', fan-pulley D''', cone-pulleys D' and R', sleeved loose pulley R'', rocking shaft E, swing-frame Y, having fork-arms *y'*, secured by set-screws, emery-wheel shaft W', with pulley W'', and emery-wheel W, counterbalanced lever L, shaft L'', and link *l*, the post P, screw Q, handle Q', and connecting miter-gear, cross-bar C, with

cross-slide, saw-arbor T', lever P', pins p'''', notched segment A'', fan F, discharge-tube F'''', suction-mouth and guard F'' F''', and bolt *f*.

2. The post P, cranked at *p*, in combination with the lever P'', pins p'''', flat foot P, semicircular pivot *p'*, quadrantal step, pin *p''*, semicircular groove p'''', screw Q, miter-gear *q q'*, handle Q', and cross-bar C.

3. The cranked post P, having flat foot P', with semicircular pivot *p'*, in combination with a step in the bed-plate B, having the front half or three-quarters cut away, pin *p''*, and semicircular groove p'''', concentric with the pivot *p'*.

4. The cranked post P, in combination with the triangular frame A, wheel-guard F''', and bolt *f*.

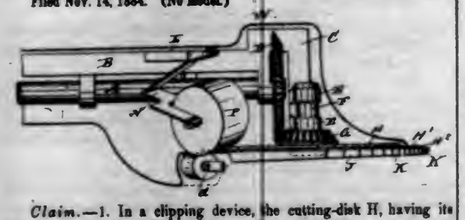
5. The longitudinally-slotted cross-bar C, in combination with the slide-block T, adapted to receive saw-arbor T', screw Q, miter-wheels *q q'*, and handle Q'.

6. The combination of the driving-shaft D, the rocking shaft R, emery-wheel shaft W, swing-frame Y, and fan F.

7. The combination of the driving-shaft D, cone-pulley D', rocking shaft R, sleeved loose cone-pulley R' R'', the hubs of the swing-frame Y, emery-wheel shaft W'. and pulley W''.

8. In combination with an emery-wheel, W, shaft W', swing-frame Y, and counterbalanced lever I, the fan F, suction-mouth and guard F'' F''', the suspension-bolt *f*, the upper journal of post P, and discharge-tube F''''

324,435. HAIR-CLIPPER. WALTER H. UNDERWOOD, Denver, Colo. Filed Nov. 14, 1884. (No model.)



Claim.—1. In a clipping device, the cutting-disk H, having its edge portion, H', reduced in thickness, and provided with a cutting-edge, H^2, substantially as herein shown and described.

2. In a clipping device, the combination, with a cutter, of an abrading-disk having its abrading-edge parallel with and in contact with the beveled cutting-edge, whereby the cutter will be automatically sharpened, substantially as herein shown and described.

3. In a clipping device, the combination, with a cutter, of an abrading-wheel in contact with the upper surface, and a roller in contact with the lower surface, substantially as herein shown and described.

4. In a clipping device, the combination, with the bar B, provided with the arm L and the cutter H, of devices for revolving the cutter, the arm N, and the abrading-wheel P, held on the free end of the said arm and resting on the cutter H, substantially as herein shown and described.

5. In a clipping device, the combination, with the bar B and cutter H, of devices for revolving the said cutter, of the arm L, projecting from the bar B and having a segmental slot, M, the arm N, pivoted on the arm L, the pin O, projecting from the arm N through the slot M in the arm L, and of the abrading-wheel P, held on the arm N and resting on the edge of the cutter H, substantially as herein shown and described.

6. In a clipping device, the combination, with the bar B, having an elbow, C, of the shaft A, carrying the cog-wheel D, the shaft F, pivoted in the elbow C and carrying the pinion G, the finger-plate J, the circular cutter-disk H, secured on the end of the shaft F, and the abrading-wheel P, resting on the edge of the cutter H, substantially as herein shown and described.

324,436. STAND AND TILTER FOR CASKS. JOHN T. VAUGHAN, Leicester, England. Filed May 11, 1885. (No model.)

Claim.—1. In a thrall and tilter for casks and the like, the combination, with the jointed strap C, carried by trunnions I in bearings B, of the tension device C' K L, for the purpose of adapting the strap to casks or vessels of various sizes.

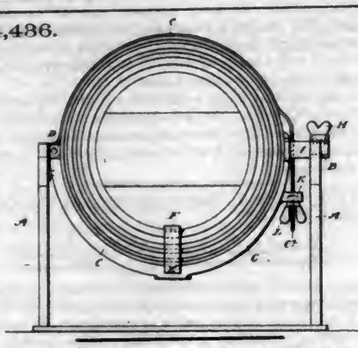
2. In a thrall and tilter for casks and the like, the combination, with the strap C, having trunnions I, of the bearing B, provided with adjustable cap G, for the purpose specified.

3. In a thrall and tilter for casks and the like, the combination, with the jointed strap C, of the hooked arm E F, for the purpose specified.

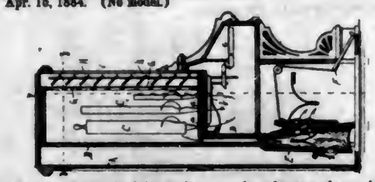
4. In a thrall and tilter for casks and the like, the combination, with the belt C C', of the divided log K, having a conical recess, and the conical nut L, substantially as specified.



324,486.



324,437. PIPE-ORGAN. ARTHUR WALES, Minneapolis, Minn. Filed Apr. 15, 1884. (No model.)



Claim.—1. An air-tight casing, a series of organ-pipes within said casing, an opening for admitting air into said casing through said pipes, and an exhaust bellows or pump for drawing the air from said casing, substantially as and for the purpose set forth.

2. An air-tight casing, a diaphragm of rubber cloth or other similar suitable material forming part of said casing, a series of organ-pipes within said casing, an opening for admitting air into said casing through said pipes, and an exhaust bellows or pump for drawing the air from said casing, substantially as and for the purpose described.

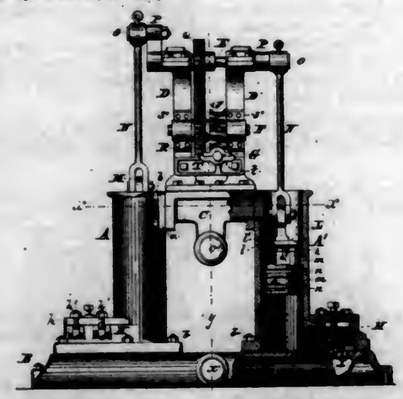
3. The combination of the air-tight casing B, pipes C, exhaust-bellows E, valves *b*, and keys *c*, substantially as shown.

4. The combination of the air-tight casing B, having the diaphragm G, pipes C, exhaust-bellows E, valves *b*, and keys *c*, substantially as described.

5. The combination of the air-tight casing B, pipes C, exhaust-bellows E, valves *b*, registers *a*, and keys *c*, substantially as set forth.

6. The combination of the casing B, having the diaphragm G, pipes C, exhaust-bellows E, and swell-shutters H, substantially as and for the purpose specified.

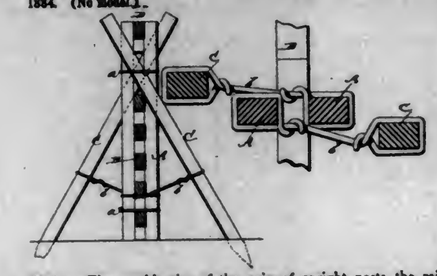
324,438. BILGE-PUMP. MICHAEL WATERS, Buffalo, N. Y. Filed July 6, 1885. (No model.)



Claim.—1. The combination, with the bed-piece and pump-cylinders, of the connecting-duct C, standards D, secured to and upon said connecting-piece C, connecting-brackets T, and the mechanism consisting of the worm G', worm-wheel S, shaft G, spur-wheel R, pinion Q, shaft E, with cranks P, and connecting-rods N, with pistons K, the whole being constructed and combined substantially as and for the object specified.

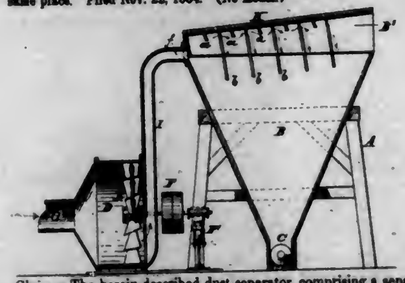
2. In bilge and other pumps, the combination, with the pump-cylinders, of two standards secured to or formed in one piece with the connecting discharge-duct, a worm-wheel mechanism, and the spur-wheel and pinion connection for giving motion to the crank-shaft, substantially in the manner as and for the object specified.

324,439. FENCE. ISAAC N. WATSON, Defiance, Ohio. Filed July 23 1884. (No model.)



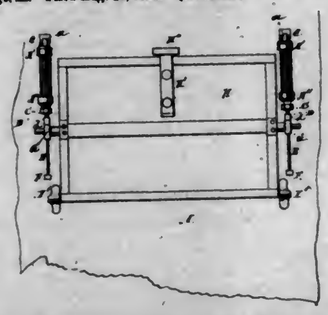
Claim.—The combination of the pairs of upright posts, the rails laid one upon the other between them, the wire bands passed around the posts between the rails, the braces driven into the ground and having their upper ends crossed above the upper rail and confined by wire passed around them and the posts, and the wire connecting each brace near its lower end to the upright post on the opposite side of the fence, substantially as shown and described.

324,440. MACHINE FOR SEPARATING DUST FROM AIR. WILLIAM C. WHEELER, Lockport, N. Y., assignor of one-half to Oliver C. Wright, same place. Filed Nov. 22, 1884. (No model.)



Claim.—The herein-described dust-separator, comprising a separating-chamber approximating in side elevation the shape of an inverted cone, and provided with alternate series of fixed slats and oblique adjustable slides located in its upper portion, a fan-blower, and the conveyer, substantially as described, and for the purposes set forth.

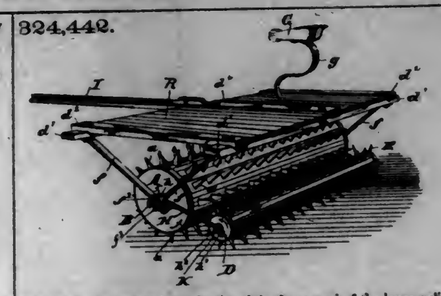
324,441. SAFETY DEVICE FOR RANGE-DOORS. STEPHEN WILKE, Chicago, Ill. Filed Aug. 19, 1884. (No model.)



Claim.—The combination, with a range-door, H, having a pintle, *d*, of a swinging safety device formed of an air-cylinder, A, piston B, rod C, frame D E F, and slide G, substantially as and for the purpose specified.

324,442. HARROW. THOMAS J. WILLIAMS, Mount Lookout, Ohio, assignor of one-half to Charles C. Grace, same place. Filed Sept. 12, 1884. (No model.)

Claim.—1. In a harrow, the large-toothed cylinder A and small-toothed cylinder D, the latter being located close behind cylinder A and resting on the ground, both cylinders being turned by their contact with the ground and revolving independently of one another, the teeth of one cylinder passing between those of the other, the small cylinder being drawn by yielding connections which leave it free to follow the undulations of the ground independently of the frame and of the large cylinder, substantially as and for the purposes specified.



2. In a harrow, the large cylinder A and cylinder D, the latter resting on the ground immediately in rear of cylinder A, the teeth of the one cylinder passing between the teeth of the other cylinder, each cylinder being free to follow the undulations of the ground independently of the other cylinder, and each cylinder being turned by the ground alone and independently of the other cylinder, the journals or axis of cylinder D being connected to the journals or axis of cylinder A by connecting rods or links, substantially as and for the purposes specified.

3. The combination of toothed cylinder A, shaft B, main draft-frame, supports *f*, meeting in journal-bearings, as *f''*, links H, having eye A on shaft B between journal-bearings *f''*, and the cylinder A, and toothed cylinder D, having shafts K, the links H, each having eye A', secured pivotally on shaft K, the teeth of cylinder A engaging between the teeth of cylinder D, substantially as and for the purposes specified.

324,443. POCKET FISHING-TACKLE BOX. F. CORTEZ WILSON, Chicago, Ill. Filed May 29, 1885. (No model.)



Claim.—1. In a pocket fishing-tackle box, a movable partition or leaf extending beyond the outer line of the two halves of the box, substantially as and for the purpose specified.

2. In a pocket fishing-tackle box, a movable partition or leaf provided with a series of loops or pockets to receive pieces of cork for holding fish-hooks, substantially as specified.

3. In combination with the halves of a pocket fishing-tackle box, a movable partition provided with a series of loops or pockets to receive pieces of cork to hold hooks, and a recess to hold the snells of fish-hooks, substantially as specified

324,444. LOCK-HINGE. JOSEF WOLF, Hoboken, N. J. Filed Dec. 10, 1884. (No model.)

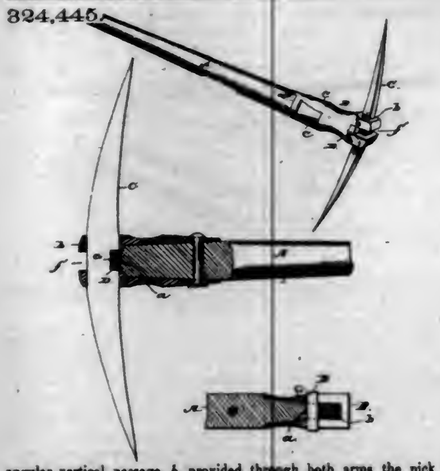


Claim.—The combination of a leaf having a notched cam, a second leaf hinged to the first leaf and provided with a guide-socket, a locking-bolt guided in said socket, a disk guided in the socket, a spiral spring interposed between the locking-bolt and disk, and a set-screw bearing on the disk for adjusting the tension of the spring, substantially as set forth.

324,445. PICK. ALEXANDER WOMACK, Falk's Store, Idaho. Filed Mar. 28, 1885. (No model.)

Claim.—1. The handle A, in combination with the hollow head B, provided with longitudinal plates C, which are shaped to fit the handle, plates a^2, connecting the ends of the plates C, the front end of the head being provided with an interior enlargement, forming a seat, *a*, for the end of the handle, a transverse slot or passage, *f*, provided at the front end of the head, so as to divide the latter into two parallel arms, a rect-

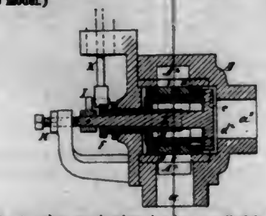
324,445.



angular vertical passage, *b*, provided through both arms, the pick C, having its central portion flattened or made rectangular to closely fit the passage *b*, a rectangular transverse seat or recess, *c*, provided in the pick, and a wedge or key passing through the seat *c* and slot *f*, and having its ends resting on the two arms of the head, as set forth.

2. The handle A, in combination with the head B, provided with a seat, *a*, for the handle, a transverse slot or opening, *f*, provided at the front end of the head, so as to divide the latter into two parallel arms, a rectangular vertical passage, *b*, provided through both arms, the pick C, having its central portion flattened or made rectangular to fit the passage, a rectangular seat or recess, *c*, provided in the pick, and a wedge or key, D, passing through the seat *c* and slot *f*, and having its ends resting on the two arms of the head, for the purpose set forth.

324,446. GOVERNOR-VALVE. EDWARD WRIGHT, Worcester, Mass., assignor to the Wright Machine Company, same place. Filed Nov. 20, 1884. (No model.)



Claim.—1. A valve mechanism having a cylindrical valve-seat, a central operating spindle or valve-stem, and a cylindrical valve connected with said spindle by an intermediate coupling-piece arranged substantially as set forth, whereby lateral self-adjustment of the valve is permitted, while it is rotatively confined to move with said spindle.

2. The combination, with the valve-seat B and spindle E, of the valve C and the coupling-piece D, having lugs for engaging said valve and spindle, substantially as and for the purpose set forth.

3. The combination of the chambered casing A, provided with the valve-seat B, having ports *b*, the internally-tapered bushing F, the tapered spindle E, having cross-head *e*, the valve C, having recesses c^2, and the coupling-piece D, having projections *d* and recesses d^2, substantially as and for the purpose set forth.

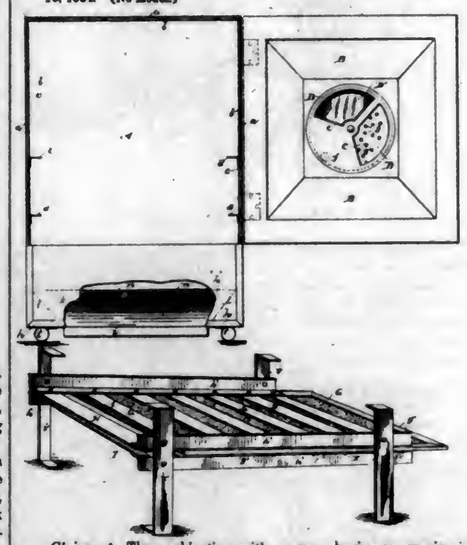
324,447. ELECTRICAL APPARATUS FOR THE PROPULSION OF VEHICLES. FRANK WYNNE, Westminster, England. Filed Apr. 20, 1885. (No model.) Patented in England Apr. 9, 1883, No. 1,791.



Claim.—1. The apparatus consisting of the conductor A, the non-continuous bar C, metallic conductor D, non-continuous road-bar E, and metallic brush F, in combination with the carrier or contact-maker B, for applying electricity for the propulsion of vehicles on rails, substantially as described, and for the purposes set forth.

2. The movable carrier or contact-maker B and motor H, constructed substantially as herein referred to, and employed in combination with discontinuous bars C, in the manner and for the purposes substantially as herein described.

324,448. OVEN. W. HARRISON ALBACH, Mansfield, Ohio. Filed Aug. 16, 1884. (No model.)



Claim.—1. The combination, with an oven having an opening in the bottom thereof, of a hot-air chamber secured within said oven and closing the opening in the bottom thereof, and provided with an open bottom and perforated top, and a movable plate for closing the perforations in said top.

2. The combination, with an oven provided with an opening and with perforations in its bottom, of a hopper-shaped hot-air chamber open at its bottom and seated within the opening in the bottom of the oven, and forming a hot-air space between said chamber and the sides of the oven, the said hot-air chamber being provided with openings in the top and a plate for closing the openings, substantially as set forth.

3. The combination, with an oven having two openings located side by side in one wall thereof, of a disk secured to said wall and provided with a perforated section and with an opening having a transparent plate therein, the perforated portion and transparent plate of the disk corresponding in shape to the openings in the wall, substantially as set forth.

4. The combination, with an oven-wall provided with two openings located side by side, of a plate pivoted to said wall, having a solid or imperforate portion, a perforated portion, and an opening covered by a transparent plate, whereby either one of the openings in the oven-wall can be covered or concealed while the transparent portion of the plate covers the other, substantially as set forth.

5. In an oven, the combination, with a grate provided with two sets of legs of different lengths, of a shield coated with asbestus, substantially as set forth.

6. In an oven, the combination, with a double grate, of a shield coated with asbestus, constructed to be held between the sections of the double grate, for the purpose substantially as set forth.

7. In an oven, the combination, with a double grate provided with two sets of legs of different lengths, of a shield constructed to be supported between the sections of the grate, substantially as set forth.

8. In an oven, the combination, with a shield consisting of paper prepared with asbestus and bound with sheet metal, of devices for holding the shield at different distances from the bottom and sides of the oven, substantially as set forth.

324,449. BOTTLE-STOPPER. JOSEPH ALEXANDER, Chicago, Ill. Filed Mar. 5, 1885. (No model.)



Claim.—1. The combination, with a bottle and a spring-bail formed with two free ends, situated upon the same side of the loop formed by the bail, of a stopper secured to such bail intermediate of the ends, as set forth.

2. The combination, with bottle A and stopper B C, of bail D, provided with two free ends situated upon the same side of the loop formed by such bail, the stopper secured to the bail intermediate of its ends.

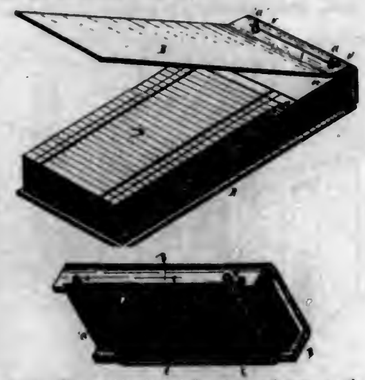
324,450. FISHING-ROD. ROBERT W. ANDREWS, Staffordville, Conn. Filed June 6, 1884. (No model.)



Claim.—1. The within-described improved joint for fishing-rods, consisting of a cylindrical wooden stock, *a*, and a, metallic covering, *b*, combined and slotted as set forth, and an elastic plug, *d*, all arranged, substantially as shown and described, to form a compressible ferrule, in combination with a corresponding socket of smaller diameter, and adapted to compress the movable sections of said ferrule upon their plug when combined therewith.

2. In a fishing-rod joint, a ferrule formed of a cylindrical wooden stock, *a*, and a metallic covering, *b*, prolonged and upset to form a lining to a counterbore within the end of said stock, both stock and cover being slotted, and a rubber plug, *d*, arranged within said metal-lined counterbore, in combination with a corresponding socket of smaller diameter, and adapted, as described, to compress said ferrule-sections upon the plug.

324,451. TEMPORARY BINDER. JOHN W. APPLEBY, Kalamazoo, Mich. Filed Jan. 6, 1885. (No model.)

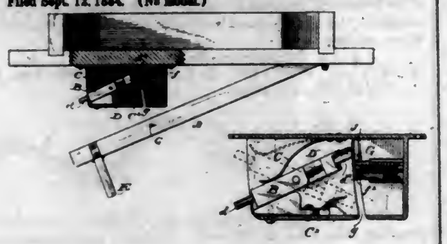


Claim.—1. The combination of the cover and contents, the fastener provided with the arms passed through the holes in the cover, one of the arms jointed and both perforated at the free end, the horizontal bar of the fastener being buried in the cover, and a rod passed through the perforated free ends of the arms, substantially as set forth.

2. The combination of the cover, the fastener having the arms passed through holes in said cover, one of the arms jointed and both having a series of adjusting-holes in their free ends, and a rod passed through said holes, substantially as set forth.

3. The combination of the cover, the horizontal bar provided with the arms extending through the cover, one arm jointed, and a rod forming detachable contact with the free ends of the arms, substantially as set forth.

324,452. DOOR-CHECK. NATHAN O. BOND, Fairfax Court-House, Va. Filed Sept. 12, 1884. (No model.)



Claim.—1. A device for preventing the slamming of doors, consisting of a pivoted arm backed by a buffer-spring and having movable catches at each end of said arm, the outer one of which is adapted to engage a projection on the door at the first impulse and to clear it at the second, and an automatic device located in the path of one of said catches and liberated by said first impulse, whereby the outer catch is placed in position to allow the closing of the door, substantially as described.

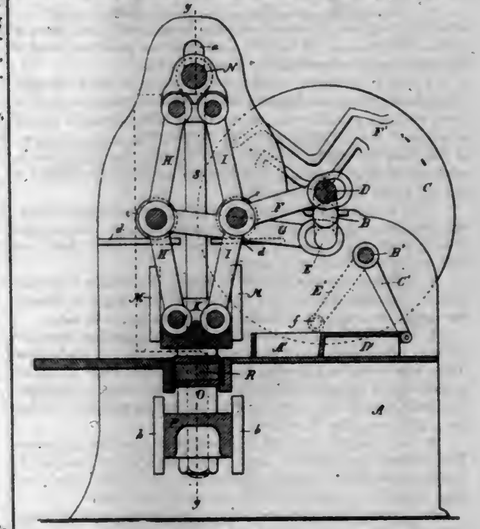
2. In a door-check, the combination, with the pivoted arm B, buffer-spring C, and a shaft, D, passing through the pivoted arm and carrying catches at each of its extremities, of the trigger F, having heel *f*, and a suitable pin, G, substantially as set forth.

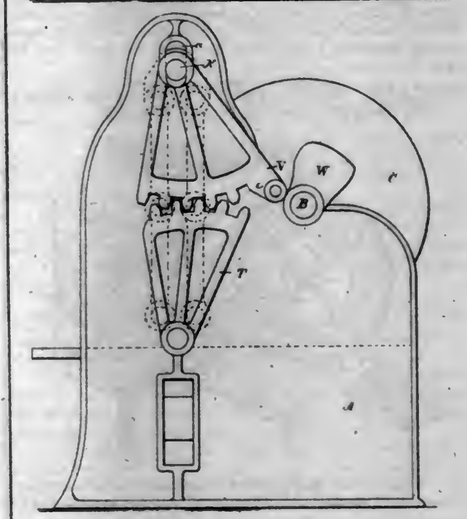
3. In a door-check, the pivoted arm B and buffer-spring C, in combination with the supplementary buffer-spring, C', for the purpose set forth.

4. In a door-check, the trigger F, having heel *f'*, for the purpose set forth, in combination with the pin G, slot *g*, and the pivoted arm B, substantially as described.

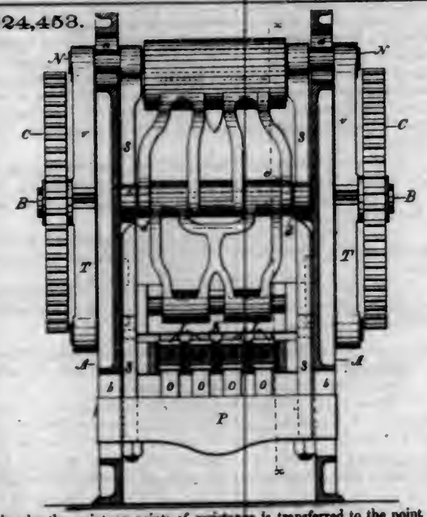
324,453. BRICK-MACHINE. JOHN J. BREWIS, Minneapolis, Minn., assignor of two-thirds to J. A. Boyd, same place, and H. R. Dickinson, Keokuk, Iowa. Filed Dec. 19, 1884. (No model.)

Claim.—1. In a machine for compressing substances into form, a toggle-lever or series of toggle-levers carrying compression-plungers and having a movable fulcrum or pivotal point, to which the lower plunger or plungers are connected by a cross-head and rods, as described, and mechanism, substantially such as set forth, for operating the toggles,





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whereby the point or points of resistance is transferred to the point or points of compression, and the sides or frame of the machine relieved of the strain incident to pressing the material into form.

2. In a brick-machine, a series of toggle-levers, to which the upper compression-plungers are attached, said toggles being connected at their upper ends to a movable cross-head or fulcrum, which in turn is secured or connected to a cross-head supporting the lower compression-plungers, as described, and suitable mechanism for operating the toggle-levers, whereby the thrust or point of resistance and compression is confined to the clay within the mold, as set forth.

3. In a brick-machine, a series of toggle-levers carrying compression-plungers, in combination with the pitman-rods and a continuously-rotating crank-shaft, whereby the toggle-levers are moved back and forth in opposite directions, as set forth.

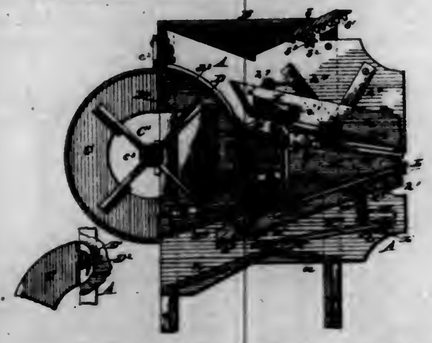
4. In a brick-machine, a series of toggle-levers having a movable fulcrum, in combination with the friction-rolls *c* and ledges *d*, whereby the toggles are supported in the frame of the machine, as set forth.

5. In a brick-machine, a series of toggle-levers carrying the upper plungers, connected to a movable cross-head or fulcrum, in combination with a lower cross-head carrying the lower plungers, which are joined or connected to the upper cross-head by means of hooked or separable bars, said separable bars serving to draw up the lower plungers during the pressing operation, as set forth.

6. The sectors T T, pivoted to the sides of the machine, the sectors U U, constructed as described and secured to the movable cross-head N, in combination with the cams or eccentrics W, whereby the lower cross-head is raised to eject the brick from the mold, as set forth.

7. In a machine for pressing substances into form, a series of toggle-levers, pitmen, and plungers, operated as described, in combination with the cam-sectors and devices for operating them, whereby the entire pressing mechanism is raised when the articles are ejected from the mold.

324,454. GRAIN-SEPARATOR. George Brooks and Solomon B. Pike, Detroit, Mich. Filed June 12, 1884. (No model.)



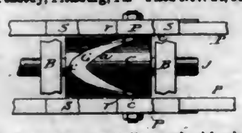
Claim.—1. In a fanning-mill, the combination, with the frame A, of the drum C, provided with the hooks D' D', fitting over the pins D^2 D^2, fixed to the frame, and the detents c^3 c^3, pivoted to the front of the said frame above the drum and engaging the upper surface of the said drum, substantially as specified.

2. In a grain-separator, the combination, with the frame A, drum C, fan C', screen-frame H, and mechanism for actuating the same, of the blast-conveyer pivoted within the frame, the springs e and F', and the doors E and F, substantially as specified.

3. In a grain-separator, the combination, with the frame A, drum C, fan C', screen-frame H, and mechanism for actuating the same, of the lever G, the pivoted blast-conveyer D, the set-screw d^3, the doors E and F, the springs *e* and F', and the rods *e'* and G', substantially as specified.

4. In a fanning-mill, the combination, with the screen-frame H, vibrated laterally, of the screen K, having fixed to its lower surface the bar *k*, provided with the roller *k'*, and the rod M, provided with a similar roller or rollers, m^2, substantially as shown and described.

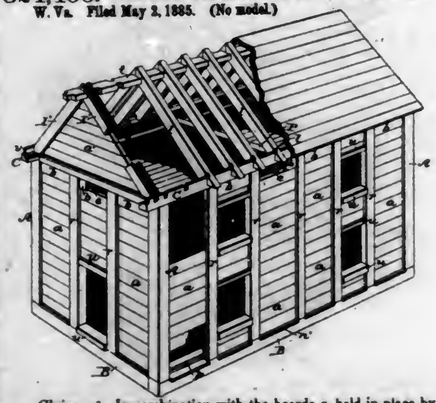
324,455. GEARING. Robert Campbell, Allegheny, assignor to George L. Peabody, Pittsburg, Pa. Filed Nov. 24, 1884. (No model.)



Claim.—1. In gearing, a spindle or wheel having four or more reverting curves and eight or more inclines or bearings, substantially as set forth, and for the purposes described.

2. In gearing, the combination of one or more piston-rods or connecting-rods, furnished with one or more anti-friction rollers, with a spindle or wheel having four or more reverting curves with inclines or bearings, substantially as set forth and described, and for the purposes alleged.

324,456. PORTABLE BUILDING. Thomas R. Carskadon, Keyser, W. Va. Filed May 2, 1885. (No model.)



Claim.—1. In combination with the boards *a*, held in place by the grooved posts or uprights, as set forth, the screw-bolts *c*, arranged to operate upon the boards *a* and press them together, substantially as and for the purpose set forth.

2. In a portable building, the combination of the rafters I, provided with notches, as shown, the notched strip *t*, and the vertically-arranged projections *v* on the plate C, all being constructed and arranged substantially as set forth.

3. In combination with the floor-boards of a portable building, the draw-bolts *p* or equivalent screw-rods for pressing the boards composing the floor tightly together, substantially as shown and described.

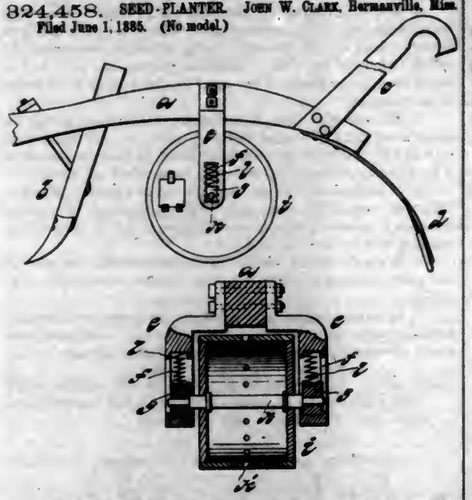
4. The combination, in a portable building, of the grooved vertical posts, the transverse boards *a*, having their ends resting in the grooves of the posts, the screw-bolts *c*, arranged to press upon the upper edge of the boards, and the external boards or pieces *b* to cover the open space occupied by the screw-bolts, all constructed and arranged substantially as shown and described.

324,457. COTTON-GIN. Jos. E. Carver, Bridgewater, Mass. Filed May 16, 1885. (No model.)



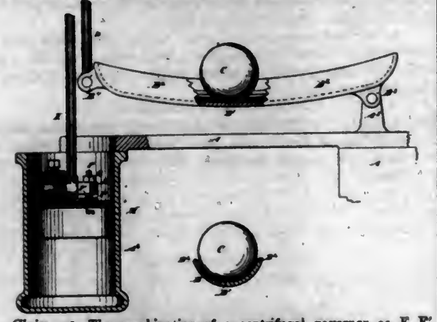
Claim.—A cotton-gin rib formed with a flange, E, at one side, the projecting piece *d*, and the cut-away *e*, whereby a single channel or offset is provided for the free escape of the seed, and the width of the rib lessened, as set forth.

324,458. SEED-PLANTER. John W. Clark, Hermanville, Miss. Filed June 1, 1885. (No model.)



Claim.—The herein-described seed-planter, consisting of the cylinder *c'*, having the perforations *k'*, and provided with the axle *k*, the angular arms *e e*, having the slideway *f*, bearing-block *g*, and spring *l*, and secured to the beam *a*, having the coverer and furrow-opener, and handle *c*, the whole constructed and arranged to operate as described.

324,459. GOVERNOR FOR STEAM-ENGINES. George H. Corliss, Providence, R. I. Filed June 13, 1885. (No model.)

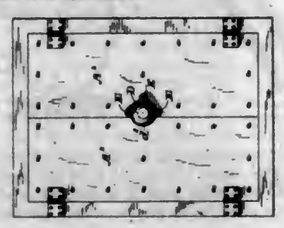


Claim.—1. The combination of a centrifugal governor, as F F' G H, with a lever, as B, and a rolling ball, as C, and a piston, M, having an adjustable opening, *m*, working easily in a cylinder, A^2, containing liquid, all arranged for joint operation, as herein specified.

2. The adjusting-disk P, and means, as P' Q, for varying its distance from the piston M, an opening, *m*, in combination therewith and with the cylinder A^2, lever B, shifting weight, as C, and a centrifugal governor, all arranged for joint operation, as herein specified.

3. In combination with a centrifugal governor and steadying-piston, M, having opening *m*, working in a cylinder, A^2, containing an inelastic fluid, the disk P, stem P', and confining-nut Q, eye N, and pin N', the latter serving the double function of a wrist for the rod K and a support for the disk, as herein specified.

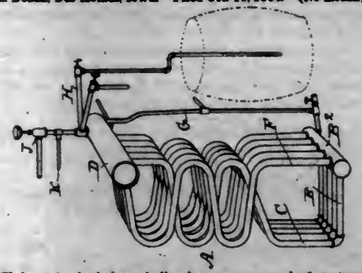
324,460. SHUTTER-FASTENER. William Dilano, Brooklyn, N. Y. Filed June 27, 1885. (No model.)



Claim.—1. The combination, in fastening devices of the class described, of a knob projecting outside and a permanent casing inclosing the knob, substantially as and for the purpose set forth.

2. The combination, in a shutter-fastener comprising a transverse pivoted bar adapted to be operated from the inside, of a knob connected with the outer end of the pivot of the bar and a casing inclosing said knob, substantially as and for the purpose set forth.

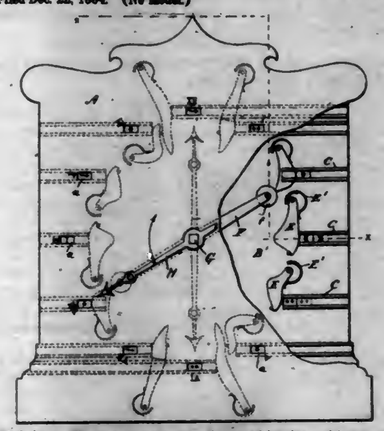
324,461. SKELETON FURNACE AND STEAM-GENERATOR. Lucius A. Doble, Des Moines, Iowa. Filed Oct. 11, 1884. (No model.)



Claim.—1. A skeleton boiler-furnace composed of straight and serpentine tubes, substantially as shown and described, for the purposes specified.

2. The boiler-furnace composed of the tubular grate-bars B, the water-chamber B^2, the serpentine tubes C and F, arranged as shown and adapted to receive an oven, the steam-chamber D, a water-induction tube, and one or more steam-eduction tubes, the jacket or wall L, substantially as shown and described, to operate in the manner set forth, for the purposes specified.

324,462. GAME APPARATUS. Wm. F. C. Dunklau, Chicago, Ill. Filed Dec. 22, 1884. (No model.)



Claim.—1. In game apparatus, the combination, with a series of card-receptacles, of a rotating discharge-arm for moving the cards successively from the receptacles, substantially as described.

2. In game apparatus, the combination, with a series of card-receptacles, of a series of discharge-plates for moving the cards, and a rotating discharge-arm for operating the discharge-plates, substantially as described.

3. In game apparatus, the combination, with a series of card-receptacles having followers for forcing the cards to the fronts of the receptacles, of discharge-plates for moving the cards from the receptacles, and a rotating discharge-arm for operating the discharge-plates, substantially as described.

4. In a game apparatus, the combination, with a series of card-receptacles provided with followers for forcing the cards to the front of the receptacles, of the guideways at the ends of the receptacles, the discharge-plates, and the rotating discharge-arm, substantially as described.

5. In game apparatus, the combination, with the series of card-receptacles provided with followers for forcing the cards to the front of the receptacles, of spring-acting discharge-plates, and a rotating discharge-arm for operating said plates, substantially as described.

6. In game apparatus, the combination, with the series of card-receptacles having followers to force forward the cards, the guideways at the fronts of said receptacles, the discharge-plates, the rotating discharge-arm, and the driving-shaft for said arm, substantially as described.

7. In game apparatus, the combination, with the main face-plate having sight-openings therein, of a series of card-receptacles arranged in circular order, and a rotating discharge-arm for successively moving the cards in front of the sight-openings, substantially as described.

8. In game apparatus, the combination, with the series of card-receptacles arranged in circular order, of the pivoted spring-acting discharge-plates having cam-shaped edges, and a rotating discharge-arm for operating said discharge-plates, substantially as described.

9. In game apparatus, the combination, with the series of card-receptacles arranged in circular order, of a rotating discharge-arm and rotating indicator-pointer, arranged to move with said discharge-arm, substantially as described.

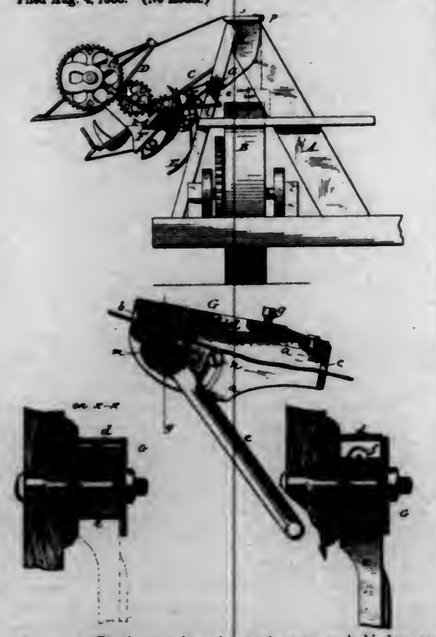
10. In game apparatus, the combination, with the main face-plate having sight-openings therein, of the series of card-receptacles arranged in circular order, the discharge-plates, the discharge-arm, the indicator-pointer, and the rotating shaft, substantially as described.

324,463. FEATHER-RENOVATOR. HENRY ELDRIDGE, Toronto, Ontario, Canada. Filed Apr. 23, 1885. (No model.)



Claim.—In a device for renovating feathers, the combination of the receptacle A', provided with steam-drums at each end thereof, with connecting-pipes S between said drums, the shield or apron O, located over said drums and pipes, the cover A, provided with a steam-chamber, V, at each of its ends and extending over a portion of its top, pipes for the admission of steam connected with the several steam-chambers, an agitator, W', and ventilating-ports *r* and *d*, covered with wire net-work and located, respectively, in the side and top of the cover.

324,464. GRAIN-BINDING MACHINE. WM. H. FRITTS, Plano, Ill. Filed Aug. 4, 1883. (No model.)



Claim.—1. The improved tension device for a grain-binder, consisting of a tension-spring, and a tension-lever provided with the cord-confining surface and a projection to act upon the spring, substantially as described, whereby the lever is caused in one position to confine the cord against the spring and when in another position to lift the spring from the cord.

2. In combination with the plate having the two eyes or guides at opposite ends, the flat tension-spring, and the pivoted lever provided with a bearing-surface to act upon the cord, and with the eye *f*, adapted to serve the twofold purpose of guiding the cord and of lifting the spring therefrom.

3. In a tension device, the combination of the tension-lever having the eccentric end, devices, substantially as shown, to vibrate said lever through a fixed arc, and the tension-spring adjustable circumferentially around the end of the lever, as described, whereby the lever may be caused to apply the tension at an earlier or a later period in the course of its movement.

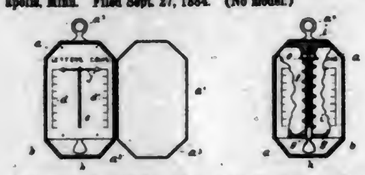
4. The supporting-plate, in combination with the lever having the eccentric end to act on the cord, the spring having one end fixed and the opposite end arranged to press the cord against the lever, and the screw *g*, for adjusting the tension of the spring, as described and shown.

5. In combination with the tension-lever, the adjustable plate provided with cord-guides, means, substantially as described, for securing said plate in position, and the tension-spring secured to the plate and co-operating with the lever, as described.

6. In a grain binding and harvesting machine, the open grooved cord-guide extending across the top of the elevator, substantially as described.

7. In the combined harvester and bieder, the grooved board or guide extending across the top of the elevator-frame, in combination with means, substantially as described, for securing the cord therein.

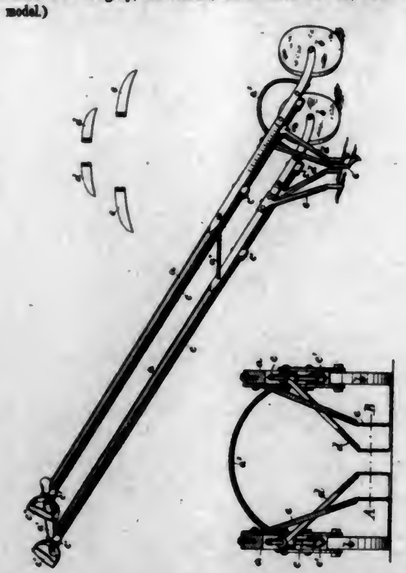
324,465. COMBINED LOCKET AND COIN AND LETTER SCALE. ERNST FUCHS, Chicago, Ill., assignor of one-half to Karl Schrimpf, Minneapolis, Minn. Filed Sept. 27, 1884. (No model.)



Claim.—1. In a locket, a letter or coin weighing scale comprising a tube bearing a pointer and provided with spring-jaws at its lower end, a guide-rod within said tube, and a plate within the locket provided with scales of weights, substantially as set forth.

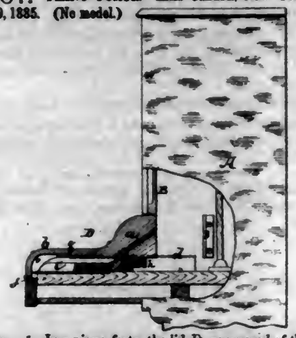
2. The combination, with a locket having casing *a* and cover *a'*, constructed as described, of scale-plate *b*, rod *i*, spring *f*, and tube *e*, provided with spring-jaws *h* and bearing pointer *j*, substantially as and for the purpose set forth.

324,466. WHEEL-HOE. SOLOMON FULLER, Danvers, Mass., assignor to William M. Currier, same place, Charlotte J. Bowker, Boston, and James J. H. Gregory, Marblehead, Mass. Filed Nov. 24, 1884. (No model.)



Claim.—In a wheel-hoe, the wheeled frame and its laterally adjustable and movable weeders *d d*, adapted to be moved to or from each other while the hoe is being propelled, in combination with the stationary weeders *e e*, as and for the purpose set forth and described.

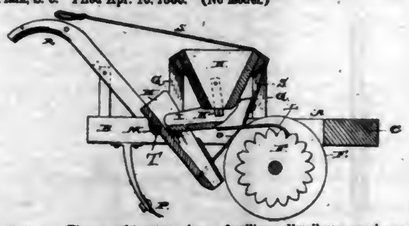
324,467. PIANO-FORTE. EMIL GABLER, New York, N. Y. Filed Mar. 9, 1885. (No model.)



Claim.—1. In a piano-forte, the lid D, composed of the sliding back portion, *a*, and curved hinged front portion, *b*, the back portion, *a*, being thicker at the rear than in front, to close the opening beneath the face-plate B when the instrument is not to be used, as set forth.

2. In a piano-forte, the combination of the case A and its face-plate B, rails *d*, stop or stops *g*, secured to the side pieces of the case A, stop *h*, that is secured to the under side of the back portion, *a*, of the lid, and fixed bar, *i*, with the sliding lid D, having curved hinged front portion, *b*, which when folded back will constitute a music-rest, substantially as and for the purpose herein shown and described.

324,468. DISTRIBUTER AND PLANTER. GEORGE W. GOODWIN, Plain, S. C. Filed Apr. 10, 1885. (No model.)



Claim.—The combination, in a fertilizer-distributer and seed-planter, of the hopper, the shoe I, suspended below the hopper, and having the arms L, the toothed wheel for vibrating the arms, and the shoe, the spout N, fulcrumed in rear of the vibrating shoe, the upper end of the spout communicating with the discharge end of the shoe, and the rod O, connecting the lower end of the spout with the shoe, whereby the spout and the shoe are vibrated, and the arms L are forced against the latter by the springs T bearing against the spout, substantially as described.

324,469. MALT-DRIER. FRITZ GRATHWOHL, Covington, Ky. Filed Mar. 6, 1885. (No model.)



Claim.—1. In a malt-kiln, a perforated malt-floor, a chamber below such floor having a perforated floor, a perforated receiver suspended from the first-mentioned floor, openings with doors through the upper malt-floor into the receiver, and openings at the bottom of the receiver, combined substantially as and for the purpose set forth.

2. In a malt-kiln, a perforated malt-floor, a receiver with perforated walls disposed beneath said floor continuously near its margin, openings with doors through said floor, in communication with the receiver, doors at the bottom of the receiver, and a perforated floor below the receiver, combined substantially as and for the purpose set forth.

3. In a malt-kiln, a perforated floor, a receiver with perforated walls disposed below said floor, openings with doors through said floor, in communication with the receiver, doors at the bottom of the receiver, a perforated pipe disposed within the receiver, and an outlet-pipe system connected with said perforated pipe, combined substantially as and for the purpose set forth.

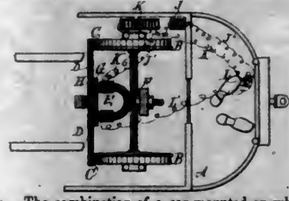
4. In a malt-kiln, a perforated malt-floor, a receiver with perforated walls disposed below said floor, openings with doors in said malt-floor, in communication with the receiver, doors at the bottom of the receiver, a perforated inner pipe disposed within the receiver, and a pipe system leading from said perforated pipe and discharging immediately below said malt-floor, combined substantially as set forth.

5. In a malt-kiln, a perforated malt-floor, a tight sub-floor below the same, a receiver with perforated walls disposed below said floors, openings with doors in said malt-floor, in communication with the receiver, doors at the bottom of the receiver, a perforated pipe disposed within the receiver, and a pipe system leading from said perforated pipe and discharging into the chamber between the malt-floor and the tight floor, combined substantially as and for the purpose set forth.

6. In a malt-kiln, the combination of perforated floor B, tight floor D below the same receiver C below said two floors, openings and doors J, placing the receiver in communication with the malt-chamber above the perforated floor, sliding dampers I, serving to cut off such communication at a point level with the tight floor, doors L at the bottom of the receiver, perforated pipes F within the receiver, and outlet-pipe system H, connected with said perforated pipes, substantially as and for the purpose set forth.

7. The combination of receiver C, provided with passages upward through the floors D and E, doors J in floor B at such passages, slide-dampers I in floor D at such passages, and rods K, reaching upward through the receiver and adapted to engage the doors J, substantially as and for the purpose set forth.

324,470. ELECTRO-MAGNETIC CAR-BRAKE. EDWARD B. HESS, Louisville, Ky. Filed May 18, 1885. (No model.)



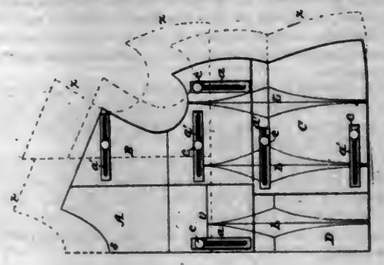
Claim.—The combination of a car mounted on wheels and having a platform for the driver, a brake hung freely opposite to the wheels, an armature fixed to the hanging brake, a horseshoe-magnet fixed to the car opposite to the said armature, two batteries of different power located on the car, a commutator pivoted to the car within reach of the driver, an electric connection between the said pivot and one arm of the horseshoe-magnet, electric connections between the other arm of the said horseshoe-magnet and one of the poles of each battery, the terminal of the other pole of each battery located in the path of the said pivoted commutator, one terminal to form electric connection with the commutator when the latter is at one end of its path, and the other terminal to form electric connection with the said commutator when the latter is at the other end of its path, substantially as shown and described, whereby the car-driver may readily apply the power of either the weaker or the stronger battery to the brakes, for the purpose set forth.

324,471. EXTRACTION OF PHOSPHATE OF SODA FROM SLAGS. LUIGI IMPERATORI, Duesseldorf, Prussia, Germany. Filed May 26, 1885. (No specimens.)

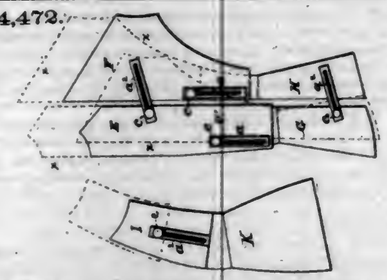
Claim.—The process for obtaining phosphate of potash or soda from Thomas Gilchrist process for producing slags or other phosphatic materials, which consists in first smelting the same with sulphate of potash or soda and carbon and subsequently treating the product with carbonic acid, substantially as described.

324,472. ADJUSTABLE PATTERN FOR DRAFTING GARMENTS. MARTHA JACOBSEN, Lyons, Iowa. Filed Nov. 24, 1884. (No model.)

Claim.—In adjustable patterns for drafting garments, the combination of the front and under arm-plates, A B C D, having the vertical and horizontal slots *a a'*, the measuring-point *s*, and the line *v*, the back

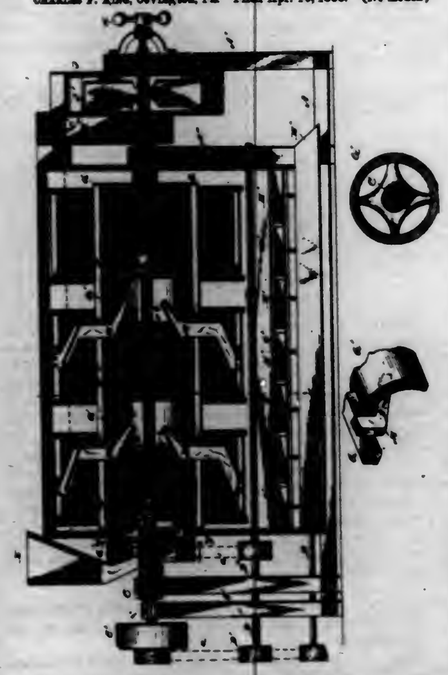


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plates, E F G H, provided with the vertical and inclined slots a a^2 and the measuring-line v', and the side plates, I K, having the inclined slot a^2, the said plates being adjustably connected together by means of set-screws in the slots, substantially as and for the purpose described.

324,473. COMBINED GRINDING-MILL, BOLT, AND PURIFIER. CHARLES F. KING, Covington, Pa. Filed Apr. 10, 1885. (No model.)



Claim.—1. In a grinding-mill, the combination, with a series of cylinders and a series of grinding-disks, of a bolting-reel and an elevating-spout attached to one of the ribs of said reel, substantially as and for the purpose specified.

2. In a grinding-mill, the combination, with the bolting-reel, the disk or stone forming an end thereof, a series of cylinders, and a series of grinding-disks arranged within said reel, of a series of elevating-spouts attached to the ribs of said reel, substantially as and for the purpose specified.

3. In a grinding-mill, the combination, with the bolting-reel, the disk or stone forming an end thereof, a series of cylinders, and a series of grinding-disks arranged within said reel, of a series of inclined elevating-spouts extending into said cylinders, substantially as and for the purpose specified.

4. In a grinding-mill, the combination, with the main shaft journaled in suitable bearings in the frame thereof, of the reel provided with hollow bearings and revolving independent of said main shaft, substantially as and for the purpose described.

5. In a grinding-mill, the combination, with a series of grinding-disks carried by the main shaft, and a bolting-reel provided with a series of cylinders and revolving at a less rate of speed than said disks, of a series of air-trunks, an air-chamber communicating with said air-trunks, and a suction-fan secured to said main shaft, substantially as and for the purpose specified.

6. In a grinding-mill, the main shaft carrying two or more grinding-disks, the bolting-reel provided with hollow bearings and revolving independent of said main shaft at a less rate of speed, a grinding-cylinder, ribs connecting said bearings and stone, and the inclined elevator-spouts rigidly secured to said ribs, all combined, arranged, and operating substantially as set forth.

7. In a grinding-mill, the combination of a rotary sieve, a bolting-reel arranged within said sieve, and a grinding stone or disk carried by the main shaft within said reel, substantially as herein shown and described.

324,474. VEHICLE-COUPLING. JOHN KLEHX, Philadelphia, Pa., assignor of one-half to Samuel H. Haas, same place. Filed Dec. 31, 1884. (No model.)

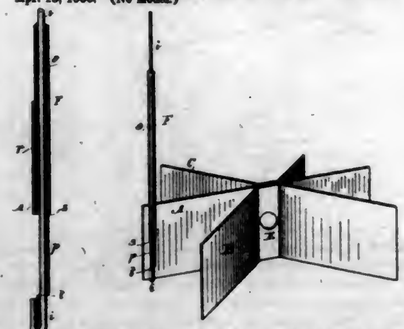


Claim.—1. A coupling-pin provided with a threaded shank, a cross-piece pivoted in its head, and a spring-follower in engagement with such cross-piece to hold it in given position, substantially as described.

2. The pin a, having the collar b, pivoted cross-piece c, set in a recess in the head of the pin, a follower-block, f, acting on said cross-piece, and its spring i, substantially as shown and described.

3. The pin a, having the spring-held cross-piece c, combined with the coupling-irons of a street-car for connecting the pole or tongue, substantially as shown and described.

324,475. GALVANIC BATTERY. WM. T. LYMAN, Ansonia, Conn., assignor to the Ansonia Brass and Copper Company, same place. Filed Apr. 13, 1885. (No model.)



Claim.—1. The combination, with the copper plate in a galvanic battery, having a hole through said plate, of a wire conductor and an insulating-covering thereto, that extends down the copper plate to about half its width, and said wire passing through such hole and secured, substantially as set forth.

2. The combination, in a galvanic battery, of a copper plate containing a groove for the reception of the wire, and having holes through such plate for the passage of said wire, and a conductor having an insulating-covering extending down the copper plate about half its width, and the wire passed into such holes, substantially as set forth.

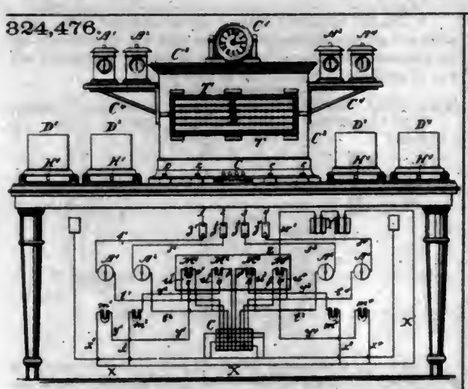
3. In a galvanic battery, a copper plate perforated and grooved for the reception of the copper conductor, said conductor passing through the perforation and down below the lower edge of the copper plate, and being secured by the lower end of the conductor being turned up, substantially as specified.

324,476. ELECTRIC RAILWAY-CONTROLLING SYSTEM. CHAS. A. MATRHOFER, Vienna, Austria-Hungary, assignor of one-half to Carl Diener, same place. Filed Nov. 20, 1884. (No model.) Patented in France Sept. 27, 1884, No. 164,517; in Belgium Oct. 20, 1884, No. 66,642; in England Oct. 30, 1884, No. 14,377, and in Austria-Hungary Apr. 3, 1885, No. 39,135 and No. 18,521.

Claim.—1. In an electric railroad-controlling system, in combination, a line-circuit adapted to be closed by a moving train, an electro-magnet in said line-circuit, a local circuit, an endless-carrier belt and index carried thereby, a train of gearing for moving said carrier-belt controlled by the electro-magnet, a shunt for shunting the electro-magnet out of the line-circuit, and actuating mechanism, substantially such as described, adapted to be operated by hand for controlling the movements of the index-belt and cause the index thereof to indicate the line-circuit closures, for the purpose specified.

2. In an electric railroad-controlling system, in combination, a line-circuit adapted to be closed by a moving train, an electro-magnet in said line-circuit, a local circuit, an electro-magnet in said local circuit

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controlled by the electro-magnet in the line-circuit, a style, a fillet of paper having time and distance indices, and a clock movement for imparting continuous motion to said fillet of paper, said parts being controlled by the electro-magnet in the local circuit, as described, for the purpose specified.

3. In an electric railroad-controlling system, in combination, a line-circuit adapted to be closed by a moving train, an electro-magnet in said line-circuit, a circuit-closer controlled thereby, a local circuit, an endless-belt carrier, an index secured thereto, and a clock-movement in said local circuit controlled by the line-circuit magnet to intermittingly move said carrier, an electro-magnet and a style controlled thereby, also in the local circuit and controlled by the line-circuit magnet, a fillet of paper, and a clock-movement for imparting a continuous motion to said fillet of paper, as described, for the purpose specified.

4. In an electric railroad-controlling system, in combination, a line-circuit adapted to be closed by a moving train, an electro-magnet in said line-circuit, an index adapted to indicate the line-circuit closures controlled by the electro-magnet, a galvanometer-needle, and shunt for shunting the electro-magnet out of the line-circuit and shunting the galvanometer-needle into said line-circuit, whereby said needle is made to indicate the line-circuit closures instead of the index, for the purposes specified.

5. In an electric railroad-controlling system, in combination, a line-circuit adapted to be closed by a moving train, an electro-magnet in said line-circuit controlled by said electro-magnet, a galvanometer-needle, a shunt for shunting the electro-magnet out of the line-circuit and for shunting the galvanometer-needle into the same, and actuating mechanism for controlling the index by hand, whereby the closures of the line-circuit are indicated by the galvanometer-needle, and whereby said closures may be indicated by the index by manual control, for the purposes specified.

6. In an electric railroad-controlling system, in combination, a line-circuit adapted to be closed by a moving train, an electro-magnet in said circuit, a fillet of paper, an independent power for moving the same, a style adapted to make a permanent record of the closures of the line-circuit upon said fillet of paper, said elements being controlled by the electro-magnet, and controlling mechanism for controlling the movements of the fillet of paper independently of said electro-magnet to impart to the fillet of paper a continuous movement, for the purposes specified.

7. The combination, with the electro-magnet M' in a line-circuit, its armature A, armature-lever L, a circuit-closer controlled thereby, a clock-movement, and the wheel W thereof, of the shaft S', crown-wheel W', pulleys W^2 f', an endless carrier-belt, a pointer secured thereto, the slotted table T, and a local circuit in which said parts are included and controlled by the electro-magnet M, as described, for the purpose specified.

8. The combination, substantially as herein described, with the shaft S', the index-carrier F', a train of gearing for operating said carrier, and the electro-magnet M', that controls the operation of the carrier, of an escapement for locking and releasing the train of gearing controlled by said electro-magnet, for the purposes specified.

9. The combination, substantially as herein described, with the shaft S', the index-carrier F', a train of gearing for operating said carrier, and the electro-magnet M', that controls the movements of the carrier, of an escapement consisting of the notched disk D, carrying pins d', the lever B, controlled by the electro-magnet, and the lever E, controlled by the lever B, said parts being arranged for operation, for the purposes specified.

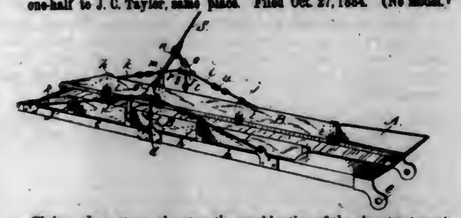
10. The combination, substantially as herein described, with the electro-magnet M' in the line-circuit, a fillet of paper, and a clock-movement in a local circuit controlled by said electro-maguet and adapted to respond to the electric impulses influencing said magnet, and a shunt for shunting said clock-movement out of control of said electro-magnet, whereby said movement is maintained in continuous operation, of a friction-brake for arresting the motion of the clock-movement by hand, for the purposes specified.

11. The combination, substantially as herein described, with the electro-magnet M' in the line-circuit, a fillet of paper, and a clock-movement in a local circuit controlled by said electro-magnet and adapted to respond to electric impulses influencing the said magnet, and a shunt operating automatically to shunt the clock-movement out of the control of the electro-magnet, of a friction-brake adapted to be operated by hand for arresting the motion of the clock-movement, for the purposes specified.

12. In an electric railroad-controlling system, the combination, substantially as described, of a vertically-adjustable moving contact with a series of superposed stationary contacts arranged in the path of the moving contact, a corresponding series of line-circuits, each comprehending a pointer adapted to indicate the electric impulses sent to line, controlled by the moving contact, a shunt, a galvanometer, and electric connections, whereby the pointer may be shunted out of and the galvanometer shunted into said line-circuit, for the purposes specified.

13. In an electric railroad-controlling system, the combination, substantially as described, of a vertically-adjustable moving contact with a series of superposed stationary contacts arranged in the path of the moving contact, a corresponding series of line-circuits, each comprehending a pointer adapted to indicate the electric impulses sent to line, and a recording-instrument in a local circuit, both controlled by the moving contact, a shunt, a galvanometer, and electrical connections, whereby said pointer may be shunted out of and the galvanometer shunted into said line-circuit, for the purposes specified.

324,477. FOLDING CONVEYER-TROUGH FOR STRAW-STACKERS. JONATHAN J. MOORE and JAMES A. BALL, Thorntown, Ind., assignors of one-half to J. C. Taylor, same place. Filed Oct. 27, 1884. (No model.)



Claim.—In a straw-elevator, the combination of the elevator-trough having vertical sides adapted to fold inward upon said trough, and a sling flexibly connected to said sides, adapted to support said trough and to fold inward thereon, whereby said folding sides are raised and lowered by the raising and lowering of said sling, substantially as specified.

324,478. INDIVIDUAL HOLDER OR REST FOR TABLE-SERVICE ARTICLES. KATE E. NICHOLS and EMMA V. W. HALE, Leominster, Mass. Filed Mar. 30, 1885. (Model.)



Claim.—1. As an improvement in table-service ware, a combined knife, fork, and spoon holder or rest for individual use, consisting of the stand A, provided at its top with V-shaped notches or recesses d d d, within which rest the inner ends of the handles of said articles, the outer ends of the handles resting on the table or cloth thereon, substantially as shown and described.

2. A table-service device for individual use, consisting of a hollow stand, A, having upright walls a a b c, the two side walls, a a, and rear wall, b, being flat and provided with notches d, for supporting a knife, fork, and spoon, and the front wall, c, being curved outwardly and inclosing a tooth-pick receptacle, n, as set forth.

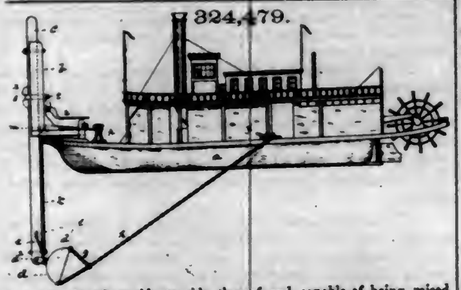
3. The cushion or guard h, in combination with the knife, fork, and spoon holder or notched stand A, as and for the purpose specified.

324,479. DREDGE. GEORGE M. O'DONNELL, Pittsburg, Pa., assignor of one-half to the Western Improved Dredging Company, same place. Filed Aug. 25, 1884. (No model.)

Brief.—A transverse scoop, extending across the width of a vessel and worked by the motion of the vessel, has its ends braced, respectively, to the sides of the vessel. Its vertical adjustment may be by a cable; or it may be pivoted to and linked to slots in a spar moved vertically in a guide by a lift-chain and held by a brake-band and lever.

Claim.—1. In a dredge-boat, the combination of a scoop arranged to be operated by the movement of the boat, situate at one end of the

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boat, extending from side to side thereof, and capable of being raised and lowered, a spar or cable extending from the boat to the scoop for raising and lowering the same, and spars or cables extending from the ends of the scoop to the sides of the boat forward of the stern or aft of the bows, so as to equalize the strain when the scoop is in operation, substantially as and for the purposes specified.

2. In a dredge-boat, the combination of a spar rigidly secured in a slide at one end of the boat and capable of moving in said slide in a vertical longitudinal direction, a scoop pivotally secured to the lower end of the spar, so as to be operated by the movement of the boat, devices, substantially as described, for raising and lowering the spar, and braces extending from the scoop to the sides of the vessel aft of the bows or forward of the stern, substantially as and for the purposes specified.

3. In a dredge-boat, the combination of the spar *c*, slide *b*, scoop *d*, arranged to be operated by the movement of the boat, brace *e* and slot *f*, and cables *h* and *k*, substantially as and for the purposes specified.

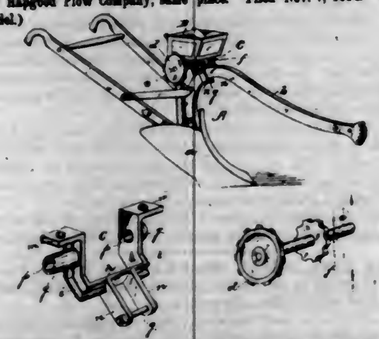
4. In a dredge-boat, the combination of the spar *c*, slide *b*, scoop *d*, arranged to be operated by the movement of the boat, devices, substantially as described, for raising and lowering the spar, and a brake-band, *t*, operated by a suitable lever, substantially as and for the purposes specified.

324,480. PLANTING-PLOW. Thomas Paten, Alton, Ill., assignor to the Hapgood Plow Company, same place. Filed Aug. 12, 1884. (No model.)



Claim.—In a planting-plow, the covering-blades C, consisting of thin steel, having their front ends bent inwardly, and provided with long slotted holes *d*, adapted to receive both legs of the U-bolt *h*, the sides of said blades bent rearwardly and downwardly and curved inwardly, as shown, in combination with the U-bolt *h* and pipe *b*, all constructed, arranged, and adapted to operate substantially as and for the purpose set forth.

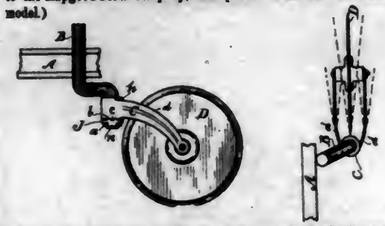
324,481. PLANTING-PLOW. Thomas Paten, Alton, Ill., assignor to the Hapgood Plow Company, same place. Filed Nov. 7, 1884. (No model.)



Claim.—1. In a planting-plow, the bracket C, having a U-shaped frame with arms *m m* for attachment to the seed-box, and legs *n n* for attachment to the beam, and the sides of said frame provided with perforations *p*, for journal-bearings adapted to support the operating-shaft *e*, all substantially as and for the purpose set forth.

2. The cast malleable bracket C, having U-shaped frame, with a closed end and parallel sides, said sides provided with perforations *p* and the perforated arms *m m*, said closed end provided with perforated legs *n n*, all substantially as and for the purpose set forth.

324,482. CASTER-COLTER. William S. Paten, Alton, Ill., assignor to the Hapgood Plow Company, same place. Filed Mar. 21, 1885. (No model.)



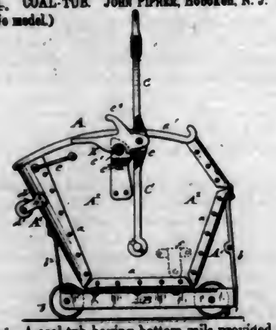
Claim.—In a caster-colter having the cranked standard constructed with an offset, as shown, the yoke C, having the perforated hub *h*, provided with a series of clutch-teeth, the washer J, provided with clutch-teeth adapted to engage with the clutch-teeth upon the said hub, and the said hub and washer pivotally attached to the bottom end of the said standard in a manner permitting a limited lateral vibration-play of the colter-blade, all substantially as and for the purpose set forth.

324,483. HAY-RACK ELEVATOR. James P. Pike, North Pelham, Ontario, Canada. Filed Oct. 8, 1884. (No model.)



Claim.—In a hay-rack elevator, the shaft H, having rigidly attached to it the ratchet-wheel and pulley E *g*, staples *i i*, in combination with hinged dog *k*, ropes *v v'*, pulleys *p p p' p'*, hooks *o o*, and poles *t t*, all substantially as specified.

324,484. COAL-TUB. John Pipper, Hoboken, N. J. Filed Feb. 24, 1885. (No model.)



Claim.—1. A coal-tub having bottom rails provided with front and hind wheels and front straps and rear braces for connecting the rails to the body of the tub, substantially as set forth.

2. The combination of a coal-tub having a front roller, bottom rails having front and hind wheels, and front straps and rear braces connecting the bottom rails with the body of the tub, substantially as described.

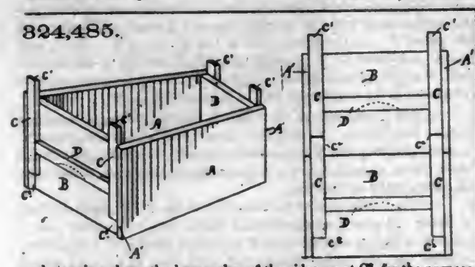
3. The combination of a coal-tub, a bail pivoted to the side walls of the same and provided with an enlarged slotted part, a gravity-latch pivoted to said slotted part, and a fixed lug attached to the side wall of the tub and having an anti-friction roller, substantially as set forth.

4. The combination of a coal-tub, a bail pivoted to the side walls of the same and having an enlarged slotted part at one side thereof, a gravity-latch pivoted to said slotted part, a fixed lug attached to the side wall and provided with an anti-friction roller, and a fixed stop attached to the rear part of the tub, substantially as set forth.

324,485. PACKING-BOX. Omar Place, Brooklyn, N. Y., assignor of one-fourth to Lewis W. Hyde, same place. Filed May 7, 1885. (No model.)

Claim.—1. A packing-case provided with sides A, extending beyond the ends B, as at A', and having against each end face B within the extending sides, the frame composed of vertical bars or cleats C C and cross-cleat D, the vertical bars extending above the sides, as at C',

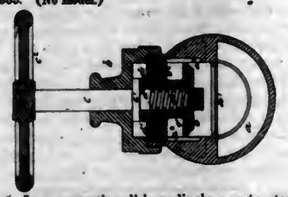
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and stopping above the lower edge of the sides, as at C', for the purpose set forth.

2. In combination with a case having sides A', the cleats or bars C, extending upward, as at C', and admitting of the space C³ at the bottom of the case, essentially as shown and described.

324,486. STOP-VALVE. Patrick Reilly, Brooklyn, N. Y. Filed Mar. 6, 1885. (No model.)



Claim.—1. In a supporting disk or diaphragm for stop-valves, the combination of a sheet-metal flexible disk having a sleeve formed at its central part, integral therewith, with a soft-metal bearing fitted around the sleeve of the disk, substantially as and for the purpose set forth.

2. In a stop-valve, in combination, the spindle *c*, provided with the collar *c'*, the supporting disk or diaphragm composed of the sheet-metal flexible disk *d* and soft-metal bearing *d'*, secured thereto, the cover *b*, and the body *a*, substantially as and for the purpose set forth.

3. In a stop-valve, in combination, the spindle *c*, provided with the collar *c'*, and having a screw-thread formed on its lower end, the supporting disk or diaphragm composed of the flexible sheet-metal disk *d* and soft-metal bearing *d'*, secured thereto, the valve *e*, provided with wings e^3 e^3, and having a screw-thread formed in its upper part, the cover *b*, and the body *a*, provided with grooves a^3 a^3, substantially as and for the purpose set forth.

324,487. CASTER. George H. Rice, Brooklyn, N. Y. Filed Dec. 20, 1884. (No model.)



Claim.—The pivot-pin B, having one or more cutting-edges, B', a cavity, *b*, a screw-threaded shank, B^2, collar B^3, and operating-head B', in combination with the horn C C', and two wheels, E E, arranged to serve relatively to each other and to a leg, A, of an article of furniture, as herein specified.

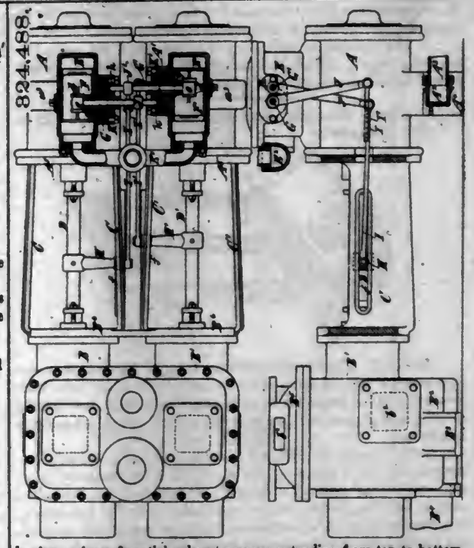
324,488. DUPLEX PUMPING-ENGINE. Thomas J. Rider, New York, N. Y., assignor of one-half to Cornelius H. De Lamater, George H. Robinson, and William De Lamater, all of same place. Filed June 18, 1885. (No model.)

Claim.—1. In a duplex pumping-engine having separate valve chests mounted upon its steam-cylinders, the combination, with two valves arranged one in each chest, and rock-shafts for operating the valves extending laterally through the inner sides of the steam-chests and across the space between the chests, of arms depending from said rock-shafts, arms projecting laterally inward from the piston-rods, and rods extending between the two steam-cylinders, and by which the arms upon the two piston-rods are connected each with the rock-shaft arm of the other engine, substantially as herein described.

2. In a duplex engine, the combination, with the two steam-chests E E' and their valves, of bonnets secured to the inner sides of the steam-chests and constructed with stuffing-boxes, rock-shafts G G', each extending through and journaled in one bonnet, and having its outer end fitting a bearing in the other bonnet, arms J J', depending from the rock-shafts, arms H H', extending laterally from the piston-rods, and rods I I', whereby the arms H H', are respectively connected with the rock-shaft arms J' J, substantially as herein described.

3. In a duplex engine, the combination, with steam-cylinders, each

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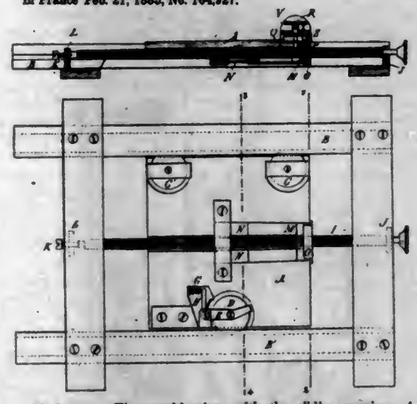


having a circumferential exhaust-passage extending from top to bottom, of a cross exhaust-pipe, A^2, connecting the cylinders and communicating with the exhaust-passages, and forming feet whereon the cylinders are supported, substantially as herein described.

4. In a duplex engine, the combination, with two steam-cylinders consisting of separate castings, each having an exhaust-passage extending from top to bottom, and an exhaust-pipe connecting the cylinders, and constructed with supporting feet or standards, of two water cylinders or chambers formed in the same integral casting, and trunks or braces connecting the steam-cylinders with their opposite water cylinders or chambers, substantially as herein described.

5. In a duplex engine, the combination, with two steam-cylinders, A A', consisting of separate castings, each having the circumferential exhaust-passage a^2, and the connecting exhaust-pipe A^2, with its feet or flanges A^4, of the water chambers or cylinders B B', formed in one integral casting, and the trunks or braces C C', also formed in one integral casting, and connecting the cylinders A A' with the chambers or cylinders B B', substantially as herein described.

324,489. PHOTOGRAPHIC CAMERA. François Roussel, Villefranche, Rhone, France. Filed June 5, 1885. (No model.) Patented in France Feb. 21, 1885, No. 164,927.



Claim.—1. The combination, with the sliding carriage A and frame, of the screw I in bearings in the frame and passing beneath the carriage, the spring-arms N, and half-nut M, a latch to hold the half-nut against the screw, and a push-button and its stem, whereby the operation of the push-button releases the latch and forces the half-nut away from the screw I, so that the carriage A can be moved freely in focusing, substantially as specified.

2. The combination, with the sliding carriage A and frame and the adjusting-screw I, of the rollers C C' upon one side of the sliding carriage, the roller D upon the other side of the carriage, its frame E, arm

H, and spring G, whereby the roller D is held against the frame by the spring, for the purposes and substantially as specified.

3. The combination, with the sliding carriage A and screw I, of the spring-arms N, half-nut M, button R, and stem U, bridge Q, plate T, pivoted latch P, and its flange O, substantially as specified.

324,490. SOFA-BED. Amos Schryver, Chicago, Ill. Filed July 24, 1883. (No model.)



Claim.—1. A folding sofa-bed frame having its seat and back portions provided with an upholstering consisting of an elastic wire fabric stretched over and secured at its ends to the folding frame, and a stuffed covering applied upon and secured to the said wire fabric, substantially as described.

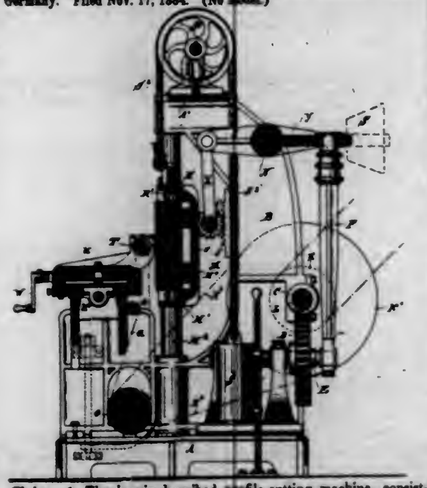
2. The hinged seat and back sections of a sofa-bed frame, constructed with the longitudinal rails A, A', and E, and centrally-hinged cross-rails having their upper surfaces elevated above the intervening parts of said longitudinal rails, in combination with the upholstering, consisting of an elastic wire fabric secured at its ends to said cross-rails and a stuffed covering permanently applied to the fabric and having its margins extended over upon and secured to the rails A and E, substantially as described.

3. The combination, with the horizontal seat-frame of a sofa-bed, provided with bolt-apertures and a folding back, B, of bolts F' upon said back, located in position to engage said apertures, and folding legs F, secured to the bolts F', substantially as and for the purpose set forth.

4. The combination, with the horizontal seat-frame of a sofa-bed, of a folding back, B, lugs H upon said frame, provided with bolt-apertures, sleeves G, secured to said back, bolts F', placed in said sleeves and located in position to engage the apertures of the lugs, and legs F, rigidly attached to the bolts F', substantially as and for the purpose set forth.

5. The combination, with the horizontal seat-frame of a sofa-bed, provided with lugs H, having bolt-apertures, of the folding portion B, provided with sleeves G, having spiral grooves *g*, bolts F', inserted in said sleeves and provided with pins *f*, constructed to engage said grooves, and legs F, secured to said bolts, substantially as and for the purpose set forth.

324,491. PROFILE-CUTTING MACHINE. Hugo Schumann, Leipsic, Germany. Filed Nov. 17, 1884. (No model.)



Claim.—1. The herein-described profile-cutting machine, consisting of the combination of the driving-shaft C with worm-wheel L, the wheel D, working in the worm-wheel L and provided with a crank-pin, E, the connecting-rod F, lever Y, attached to shaft N, the levers Z Z, attached to said shaft N, rods X, attached to levers Z and carrying pinions 1 1' at their ends, working into stationary racks 2 2', attached to the frame B, and into racks 3 3', attached to the reciprocating frame H, and the reciprocating frame H, to which the work is attached, together with the pulley K', and the driving-shaft C, belt K^3, pulley K^2, roller D, with belt G, and cutter-bar T, provided with suitable knives, Q, and fore cutters, S, supported on a universal support, U, the whole being arranged to operate in the manner and for the purpose as specified.

2. The combination of the frame H, which receives reciprocating motion from pinions 1 1', with the vertically-adjustable cross-pieces R' and the centering-pins R in said cross-pieces R', all so arranged that the work can be adjusted vertically and horizontally, as desired, in the frame H, substantially as described.

3. The combination of the frame H with the stud *k'*, toothed wheel *s*, disk *k*, and plate *l*, mounted on said stud *k'*, and, with sliding rack *r*, adapted to engage with the teeth *s'* on toothed wheel *s*, all being so constructed that the toothed wheel *s* and plate *l* can be revolved around their center and locked in any desired position, substantially as described.

4. The combination of the reciprocating frame H with cords S^2, attached to said frame and passing over rollers or loose pulleys S^3, and weights S', attached to the ends of said cords S^2 to counterbalance the frame H, together with the balance-weights S on the ends of the operating-levers to counterbalance the moving and operating gearing, substantially as set forth and described.

5. The combination of the frames P, swinging on centers or shaft *a*, with a reciprocating frame, H, the distance-bars *t t*, connecting the lower ends of the frames P and rollers *m m* at the ends of the bars *t*, the eccentric cam *g*, with pinion *g'*, turning on a fixed center attached to the main frames B, the lever *f'*, turning on a center attached to the frame P, with segment at one end working into the pinion *g'* and attached to rods *f* at its other end, provided with movable stops *d d*, in connection with the reciprocating frame H, the whole being arranged to operate in combination with the cutter-bar T and its knife Q, substantially in the manner and for the purpose set forth.

324,492. GAS-TRAP COVER FOR WASH-BASINS. Nathan Schwab, New York, N. Y. Filed June 22, 1885. (No model.)



Claim.—1. A gas-trap cover for wash-basins having an inclined or conical projection on its under side with a corrugated elastic band secured thereto, substantially as shown, and for the purpose set forth.

2. The combination, in a gas-trap cover for a wash-basin, of a cover having a flange with an inclined or conical projection on the under side thereof, with a groove at its upper edge, and an elastic band reenforced at its upper edge and adapted to fit into said groove with its lower portion extended over the inclined projection, as set forth.

3. The combination, in a gas-trap for wash-basins consisting of a cover having an inclined or conical projection on its under side, with a groove at the upper edge of the projection and a corrugated elastic band re-enforced or thickened at its edge to fit said groove, with its lower portion extended over the inclined projection, substantially as shown, and for the purpose set forth.

4. A gas-trap cover for wash-basins having an inclined or conical projection on its under side with a groove at the upper edge and on the under side of the projection, and an elastic corrugated band re-enforced at its edges and adapted to be stretched over the projection and fit into said grooves, substantially as shown, and for the purpose set forth.

5. In combination with a gas-trap cover for wash-basins, consisting of a cover having an inclined projection on its under side with a groove at the upper edge, and on the under side of the projection having a re-enforced elastic band in said grooves and over the projection, of a weight secured to the under side of the cover, as set forth.

6. A gasket for a cover of a wash-basin, consisting of a corrugated elastic band re-enforced at its edges, as shown, and for the purpose set forth.

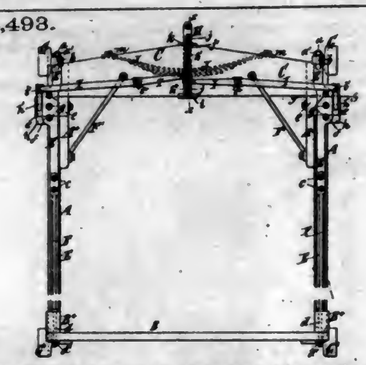
324,493. ELEVATOR-CAGE AND SAFETY APPLIANCE. Alonzo B. See, Brooklyn, N. Y. Filed Jan. 6, 1885. (No model.)

Claim.—1. The combination, with an elevator-cage, of upper and lower slides independent of any safety appliances, and safety jaws or forks between the said upper and lower slides, and each comprising a safety-wedge movable upon one jaw or side of the fork, and operating in connection with the other jaw or side of the fork to clamp the upright guide along which the cage moves, substantially as herein described.

2. The combination, with the elevator-cage, comprising the uprights A, of the plates or pieces *e*, and bolts *g*, whereby they are secured to opposite sides of said uprights, the safety-wedges *h*, and spring-actuated safety appliances for operating the wedges, substantially as herein described.

3. The combination, with the uprights A, recessed or notched on opposite sides, of the safety-plates *e*, fitting the recesses or notches, the re-enforcing straps E, widened at *f* to form cheek-pieces for supporting

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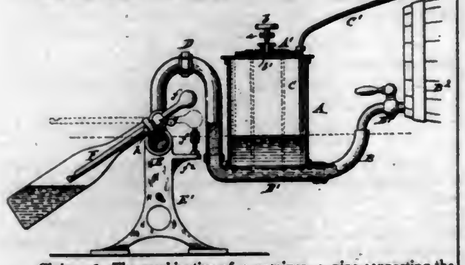
the outer sides of the plates *e*, the bolts *g*, inserted through the straps and plates, the safety-wedges *h*, movable upon one of said plates, and safety appliances whereby said wedges are thrown into action, substantially as herein described.

4. The combination, with the uprights A, the safety-plates *e*, and bolts *g* for securing the plates to opposite sides of the uprights, of the wedges *h*, and hooks or hangers *h'* for supporting them each upon one plate *e* of a pair, and safety appliances for raising the wedges into action, substantially as herein described.

5. The combination, with the elevator-cage and its safety-jaws *e e*, and the safety-wedges *h*, each movable on a jaw *e* and operating in conjunction with the opposite jaw to clamp the guide along which the cage travels, of the levers I for operating the wedges, the hoisting-connection H, and its rod *j*, and the safety-spring J, substantially as herein described.

6. The combination, with the cage and its safety-wedges *h*, and levers I, connected with the wedges at one end, of the hoisting shackle or connection H, and its rod *j* and safety-spring J, and the adjusting springs k' k^2, and nut *j'*, substantially as herein described.

324,494. BOTTLING-MACHINE. Richard Shay, New York, N. Y. Filed June 19, 1885. (No model.)



Claim.—1. The combination of a receiver, a pipe connecting the bottom of the same with the faucet of the barrel, a vent-tube connecting the receiver with the bung-hole or vent of the barrel, a tightly-closing lid having a vent-hole and a screw-plug for opening or closing said vent-hole, a horizontal distributing-tube arranged at or about the level of the lower end of the vent-tube, a siphon connecting the bottom of the receiver with the distributing-tube, and a number of valved filling-tubes communicating with said distributing-tube, substantially as set forth.

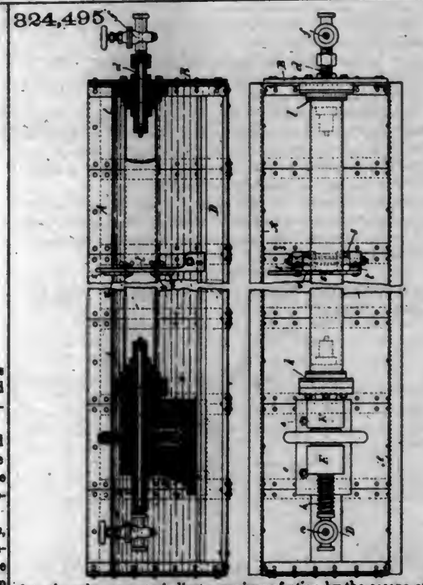
2. The combination of a receiving-vessel having a bottom with a diametrical trough or depression, a tightly-closing lid, having a vent-hole and a screw-plug for opening or closing said vent-hole, a pipe for connecting the bottom of the receiver with the faucet of the barrel, a vent-tube connecting the receiver with the vent of the barrel, a horizontal distributing-tube arranged at or about the level of the lower end of the vent-tube, a siphon connecting the bottom of the receiver with said distributing-tube, and a series of oscillating filling-tubes pivoted to valve-casings of the distributing-tube, substantially as set forth.

324,495. METHOD OF TESTING METALLIC TUBES. Frank G. Stone, New York, N. Y., and Wm. R. Walton, Ansonia, Conn., assignors to the Ansonia Brass and Copper Company, Ansonia, Conn. Filed Nov. 19, 1884. (No model.)

Brief.—In carrying out the method may use conical stoppers having elastic surfaces or stoppers having cylindrical offsets of varying sizes, having elastic rings on their shoulders.

Claim.—1. The method herein specified of testing metallic tubes, consisting in immersing the tube in a liquid, closing the ends, blowing out the water in the tube, and forcing air or gas under high pressure

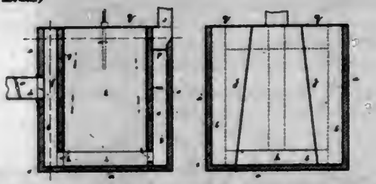
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into the tube, so as to indicate any imperfection by the escape of the air or gas into the water, substantially as set forth.

2. The method herein specified of testing metallic tubes, consisting in closing the two open ends of the tubes by pressure upon yielding material, and forcing air or gas under high pressure into such tube while immersed in a liquid, substantially as set forth.

324,496. PAPER-MATRIX DRIER. Ernst Stoeck, Stettin, Germany, assignor to Henry Hartt, Chicago, Ill. Filed Apr. 16, 1883. (No model.)



Claim.—1. In a drying apparatus for stereotype-matrices, the combination, with the heating-chamber provided with the partitions *g* and *m*, of the chamber or chambers for containing the matrices, located within the heating-chamber, substantially as described.

2. In a drying apparatus for stereotype-matrices, the combination, with the heating-chamber provided with the partitions *g* and *m* and the retarding-plate *p*, of the chamber or chambers for containing the matrices, located within the heating-chamber, substantially as described.

3. In a drying apparatus for stereotype-matrices, the combination, with the heating-chamber, a valve for regulating the amount of hot air or steam admitted, and partitions or abutments for preventing the direct passage of the steam or hot air through the chamber, of the chamber or chambers for containing the matrices, located within the heating-chamber, substantially as described.

4. A frame for supporting stereotype-matrices, consisting of the two sections provided with the retaining hooks or teeth and adapted to support the matrix between them and at the edges only, substantially as described.

5. A frame for supporting stereotype-matrices, consisting of the two sections hinged together, provided with retaining hooks or teeth, and adapted to support the matrix between them and at the edges only, substantially as described.

6. A frame for supporting stereotype-matrices, consisting of two sections hinged together at one edge, and one provided with teeth, and the other provided with co-operating perforations, substantially as described.

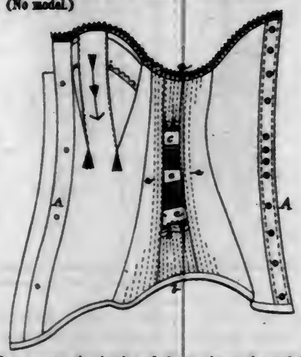
7. A frame for supporting stereotype-matrices, consisting of two sections hinged together at one edge, the one provided with the cross-bar and handle and the perforations, as shown, and the other section hinged to the former and provided with the teeth or projections co-operating with the perforations in it to hold the matrix at the edges only, substantially as described.

8. The combination, with the heating-chamber in which the hot air or steam circulates, of the series of drying-chambers for containing the matrices, located within the heating-chamber, and the frames for supporting the matrices at their edges only, adapted to be suspended within the drying-chambers, substantially as described.

9. The combination, with the heating-chamber, of the drying-chamber located within it and containing the matrix, the frame for supporting the matrix at the edges only, placed in a vertical position, whereby the two sides of the matrix will be heated and dried equally, and it will be prevented from warping, substantially as described.

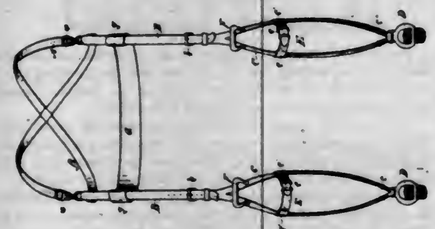
10. The combination, with the heating-chamber, of the drying-chamber located within it and adapted to contain the matrix, having the slot in its top for permitting the insertion and removal of the matrix-frame, substantially as described.

324,497. CORSET. HENRY S. STRAUSS, New York, N. Y. Filed Apr. 20, 1883. (No model.)



Claim.—In a corset, the back and front pieces thereof formed of inelastic material, provided with stays extending above, below, and across the waist-line, and arranged at a distance from the stays of the back and front openings, said back and front pieces being connected at the top under the arm and at the bottom over the hip by inelastic pieces *a b*, in combination with elastic material joined to the vertical edges of the back and front pieces, and uniting them at the waist intermediate of said inelastic pieces *a b*, substantially as described.

324,498. OBSTETRICAL SUPPORTER. JOSEPH T. SURBAUGH, Modesto, Cal. Filed Feb. 9, 1885. (No model.)



Claim.—1. In an obstetrical supporter, the combination of the shoulder-straps A, the side body-straps, B, forming a part thereof, the two-part or forked leg-straps C, the knee-straps E on the leg-straps, and the stirrups D and handles F, all arranged substantially as herein described.

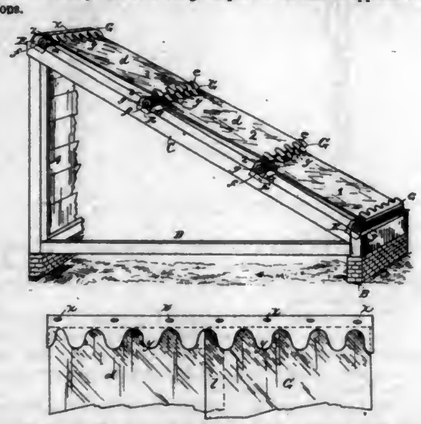
2. In an obstetrical supporter, the shoulder-straps A, side body-straps, B, two-part or forked leg-straps C, having stirrups D and the knee-straps E, secured to the leg-straps, and adapted to be adjusted thereon, substantially as herein described.

3. In an obstetrical supporter, the shoulder-straps A, side body-straps, B, and leg-straps C, having stirrups D, in combination with the back-supporting strap G, having loops *g* on each end, through which the side body-straps loosely pass, substantially as herein described.

4. An obstetrical supporter consisting of the combination of the adjustable shoulder-straps A, the adjustable side body-straps, B, secured to straps A, the two-part or forked adjustable leg-straps C, secured to straps B, the stirrups D, secured to the leg-straps, the adjustable knee-straps E, and the handles F on the leg-straps, and the adjustable back-supporting strap G, secured to and between the side body-straps, all substantially as and for the purpose herein described.

324,499. GLAZING. THOMAS W. TAYLOR, Worcester, Mass., assignor to himself and Bernard Lynch, same place. Filed Apr. 25, 1884. (No model.)

Brief.—Consisting of a grooved sash-bar, in which is secured a rubber tube or pipe, upon which the glass rests, and is held in place by a metallic clamp, the teeth being adapted to be bent in opposite directions.

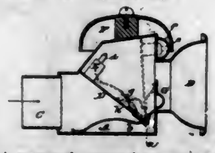


Claim.—1. In a glazed roof or skylight substantially such as described, a sash-bar having an elastic cushion or bearing for the glass, and provided with a serrated metallic clamp having teeth adapted to be bent in opposite directions, substantially as and for the purpose set forth.

2. The rubber pipe *g*, in combination with the sash-bar E, having the groove *f*, projection *z*, and shoulder *a*, substantially as specified.

3. In a glazed roof or skylight, the sash-bar E, having the groove *f*, the clamp G, provided with the teeth *s y*, the rubber pipe *g*, and panes *d d*, combined and arranged to operate substantially as specified.

324,500. PNEUMATIC ANNUNCIATOR. WM. THOMAS, Jersey City, N. J. Filed June 19, 1884. (No model.)



Claim.—1. A pneumatic annunciator comprising a casing, a gong or bell mounted on the same, an aperture in the casing adjacent to said bell, a pivoted valve arranged within the casing, and a hammer mounted on the free end of said valve and adapted, when the valve is thrown forward, to strike the bell through said aperture, combined and operating substantially as set forth.

2. A pneumatic annunciator comprising a casing, a gong or bell mounted thereon, an aperture in the casing adjacent to said bell, a pivoted valve arranged within the casing, a hammer mounted on the free end of said valve and adapted to strike the bell through said aperture, and a spring, *g*, adapted to throw back the valve and hammer after the bell is struck, all combined and arranged to operate substantially as set forth.

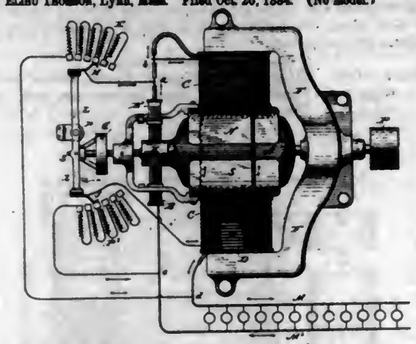
3. In a pneumatic annunciator, the combination, with the casing provided with a small aperture, *e*, for the hammer to strike through, of the gong or bell F, mounted on the casing with its rim in close proximity to the aperture *e*, and the valve D, hinged in the casing and provided with the pointed hammer E, all arranged to operate substantially as set forth.

4. In an annunciator, the combination of the casing provided with a mouth-piece proper, the valve E, hinged within the casing, and the indicator hinged within the casing and adapted to come in contact with the valve D and to be thrown forward by the forward movement thereof, whereby said indicator is caused to show itself in the mouth-piece, substantially as set forth.

5. In a pneumatic annunciator, the combination, with the casing, of the valve hinged at its lower edge to said casing and arranged within the same, the spring *b*, arranged to support the valve in its normal inclined position, the crank *c* on the axis of the valve for depressing the latter, the hammer, and the gong, all arranged to operate substantially as set forth.

6. In a pneumatic annunciator, the combination, with the casing provided with an aperture for the bell-hammer to strike through, of the bell mounted on the casing, the valve hinged in the casing and at its lower edge, the hammer mounted on the free end of said valve, an indicator, G, hinged at its lower edge inside the casing, and adapted, as shown and described, to be thrown forward by the forward movement of the valve, and an air-hole, *h*, in the valve, substantially as set forth.

324,501. REGULATOR FOR DYNAMO-ELECTRIC MACHINES. ELIHU THOMSON, Lynn, Mass. Filed Oct. 20, 1884. (No model.)

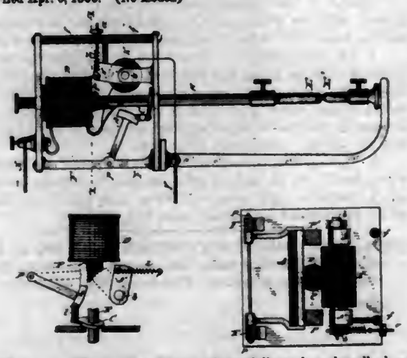


Claim.—1. The combination, with a compound-wound dynamo-electric machine, of means for simultaneously varying the flow of exciting-current on the main and derived circuit, as described, and controlling devices responsive to changes in the speed of the armature, whereby the flow of exciting-current may be varied correspondingly with variations in the speed.

2. The combination, in a dynamo-electric machine having a main and a derived exciting-circuit, of means for simultaneously decreasing the exciting-current in the main circuit and increasing the resistance in the derived circuit, or vice versa, and controlling devices responsive to changes in the speed of the machine, as and for the purpose described.

3. The combination, in a shunt-wound dynamo-electric machine, of a variable resistance in a shunt around the main circuit-coils, a variable resistance in circuit with the derived-circuit coils, and a speed indicator or governor controlling the devices, whereby the resistances are adjusted in the manner described, so as on an increase of speed in the machine to shunt current from the main-circuit coils while simultaneously increasing the resistance in the derived circuit.

324,502. ELECTRIC-ARC LAMP. ELIHU THOMSON, Lynn, Mass. Filed Apr. 6, 1885. (No model.)



Claim.—1. The magnet system substantially such as described, and consisting, essentially, of a main-circuit electro-magnet operating upon regulating appliances of the lamp, and a derived-circuit magnet applied in the manner described, so as to constitute a magnetic shunt to the main-circuit magnet of varying power, corresponding to the variations in the amount of current flowing in the derived-circuit coil.

2. In an electric-arc lamp, the combination, with the regulating mechanism, of a main-circuit magnet acting upon the mechanism for effecting the feed and adjustment of the carbons, and a derived-circuit magnet magnetically shunting the main-circuit magnet, the poles of the two magnets being movable to and from each other under the varying strength of current in the derived-circuit magnet.

3. The combination, in an electric-arc lamp, of an electro-magnet and armature for regulating the feed and adjustment of the carbons, and a magnetic shunting bar or magnet applied to the former, the unlike poles of the two magnets presented to one another.

4. The combination, in an electric-arc lamp, of a main-circuit magnet, an armature for regulating the feed, and a magnetic shunting bar or magnet applied to the feed-regulating magnet, and having wound upon it a coil in the derived circuit around the arc, unlike poles of the two magnets being presented to one another.

5. The combination, in an electric lamp, of a main-circuit magnet, regulating appliances governed thereby, and a derived-circuit magnet, said magnets having unlike poles presented to one another, and one or the other movable as respects its poles, whereby under the mutual attraction of the two magnets the poles may approach and the short-circuiting of the magnetism of the main-circuit magnet be enhanced.

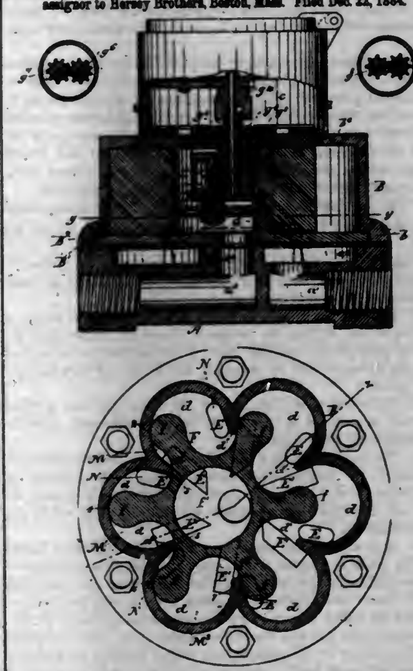
6. The combination, in an electric lamp, of a main-circuit magnet and an adjustable derived-circuit magnet having its poles arranged to attract the poles of the main-circuit magnet, thereby acting as a magnetic shunt to the latter.

7. In an electric lamp, the combination, with a main-circuit magnet, of a bar of magnetic material for directing mechanism from the main-circuit magnet, said bar being magnetized in varying amount, corresponding to the variations in the length of the electric arc.

8. The combination, with a main-circuit magnet, of a short-circuiting armature having magnetizing-coils in a derived circuit around the arc, and connected, as described, so as to divert the magnetism of the main-circuit magnet, as and for the purpose described.

9. In a regulating-magnet system, the combination, with a main-circuit magnet, of a magnetic shunting-bar or magnet, the poles of the main-circuit magnet and shunting-bar being movable to and from each other in response to the varying strength of current in a derived circuit.

324,503. ROTARY FLUID-METER. JAMES A. TILDEN, Hyde Park, assignor to Hersey Brothers, Boston, Mass. Filed Dec. 22, 1884. (Model.)



Claim.—1. In water meters, pumps, or motors, a piston-chamber having the measuring spaces or recesses described, each of which has a separate inlet-port and a separate outlet-port directly connected therewith, as specified, in combination with a piston having a lobe or projection entering each of said spaces or recesses, and adapted to be brought in contact with the walls of the chamber by the excess of pressure from behind, whereby the lobes are given the successive movements in their respective spaces or recesses indicated, all as set forth.

2. In a water meter, pump, or motor, a chamber having measuring recesses or spaces opening therefrom, in combination with a piston having a separate lobe or projection entering each of said recesses or spaces, and adapted to be brought in contact with the walls thereof, and to be held in contact therewith during the movement of the piston by the direct pressure exerted upon the piston, as specified, all substantially as set forth.

3. In water meters, pumps, or motors, the combination of a piston-chamber having measuring spaces or recesses opening therefrom, each of which has an inlet-port and an outlet-port, with a piston having a lobe or projection entering each space or recess adapted to control the

exhaust-port thereof and to maintain a contact with the wall of the space or recess, which contact is maintained by the excess of direct pressure in the piston-chamber, as described, all substantially as set forth.

4. In a water meter, motor, or pump, the piston-chamber having measuring recesses or spaces forming a part thereof, a piston, F, having a projection or lobe entering each of said spaces or recesses, which projections or lobes are adapted to be brought successively into contact with the walls of said spaces or recesses, and to be moved therein, and the contact maintained during the discharge of the liquid from each space or recess by the direct pressure in the piston-chamber, as specified, a register, and devices connecting the piston with the register, all substantially as and for the purposes set forth.

5. In a water meter, motor, or pump, the piston-chamber having measuring spaces or recesses forming a part thereof, a distributing-chamber having an inlet, a', the passages or inlet-ports E, connecting the distributing-chamber with the measuring spaces or recesses of the piston-chamber, a piston having a separate or distinct lobe or projection which enters each of said measuring spaces or recesses and is operated or moved and the contact maintained by the excess of pressure, as herein set forth, all substantially as and for the purposes described.

6. In a water meter, motor, or pump, the combination of the distributing-chamber a^3, its inlet a', the piston-chamber D, having measuring recesses or spaces d, the uncontrolled ports or passages E, connecting the distributing-chamber a^3 with the recesses or spaces d, the outlet-ports E', and escape-passages connected therewith, and the piston F, having the lobes or projections f, one for each of the measuring spaces or recesses d, and operated or moved therein to maintain contact during the discharge of the liquid from each space or recess by the direct pressure in the piston-chamber, as specified, all substantially as described.

7. In a water meter, motor, or pump, the independent or separate base-section containing the inlet-passage a', the distributing-chamber a^3, and the outlet-passage a^2, with the independent or separate section B, containing the piston-chamber D, with the measuring recesses or spaces d, connected with the distributing-chamber and outlet-passage, as described, and the piston F, having a lobe or projection for each of said spaces or recesses, and the bolts for fastening the two sections of the meter together, all substantially as and for the purposes described.

8. The combination of the section A, having the distributing-chamber a^3, the section B, and the removable port-plate B^2, having the ports E.

9. In a meter, motor, or pump, the combination of the section A, having the distributing-chamber a^3, the section B, containing the measuring-chamber, the port-plate B^2, and the packing-ring B'.

10. In a water-meter as a means for communicating the motion of the piston to the register, the mechanism described, consisting of the stationary gear g^3, the revolving gears g^7 g^8, adapted to be revolved around the stationary gear by the piston, and the gear g^9 upon the connecting-spindle.

11. The combination of the piston F, the disk G, the drum or frame g^3, pivoted, as described, to be revolved, and the differential gears inclosed within said drum or case.

12. The combination, in a water-meter, of the piston-chamber D, the piston F, the reducing mechanism or gearing for transmitting the motion of the piston to the registering device contained in a recess in the piston, and the registering mechanism, all substantially as and for the purposes described.

13. In a water meter, motor, or pump, a piston-chamber having measuring spaces or recesses, and a loosely-fitted piston having lobes or projections extending into said spaces or recesses to form by contact with the walls thereof successive discharge-spaces, the said walls being shaped to provide the surface of the piston within the contacting lines of the discharge-spaces with less area than the remainder of the piston, subjected to the direct action of the pressure from behind, whereby the piston or valve may be loosely fitted in the piston-chamber, and by the excess of pressure caused by the difference in area is brought in contact with the walls of the measuring spaces or recesses, maintained in contact therewith, and rotated, all substantially as described.

324,504. PENCIL OR CRAYON HOLDER. Charles Walpuski, New York, N. Y. Filed Sept. 11, 1884. (No model.)

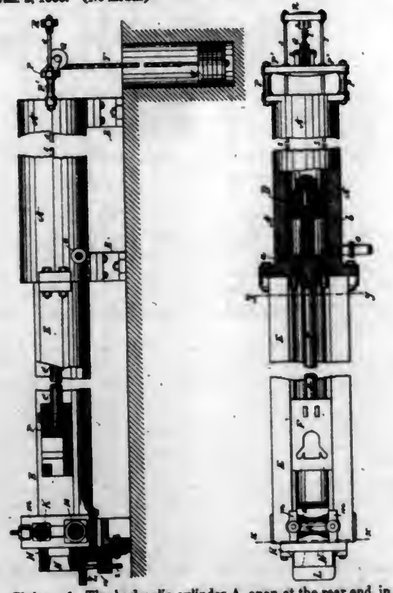


Claim.—The combination of an outer tubular shell having a conically-tapering lower end, an inner tube having a split lower end, the inner tube being guided by a pin at its upper end in a spiral slot of the shell, and a cap surrounding the upper end of the outer shell and secured to the pin, so as to move the inner tube in the outer shell and contract or expand the split end of the inner tube, substantially as set forth.

324,505. PROCESS OF REFINING OR PREPARING COPPER FOR CASTING. William R. Walton, Ansonia, Conn., assignor to the Ansonia Brass and Copper Company, same place. Filed Dec. 22, 1884. (No specimens.)

Claim.—The process herein specified of treating copper to promote the density, malleability, and ductility of the metal when cast, consisting in melting such copper and adding upon the surface of the metal as it melts carbon mixed with zinc in the form of an oxide or carbonate, substantially as set forth.

324,506. DRAW-BENCH. William R. Walton, Ansonia, Conn., assignor to the Ansonia Brass and Copper Company, same place. Filed Jan. 2, 1885. (No model.)

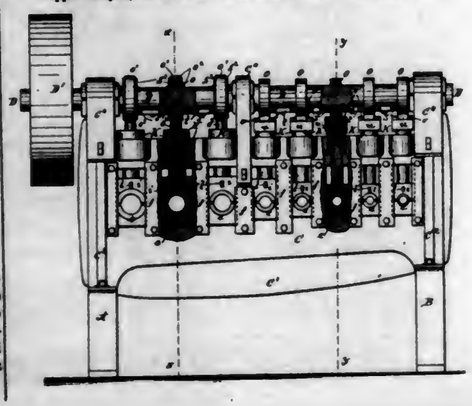


Claim.—1. The hydraulic cylinder A, open at the rear end, in combination with the piston, piston-rod, head-block, bed and die, and the rods s s, cross-heads, chain, pulley, and weight, substantially as set forth.

2. The combination, in a draw-bench, of a support for the die, a hydraulic cylinder, piston, and piston-rod for drawing the tube or rod through the die, a weight and connections to the piston, whereby the weight is raised as the draw-bench is operated, and the weight returns the parts to the place of beginning, when the water is allowed to escape from the cylinder, substantially as set forth.

3. The combination, with the cylinder and piston, and mandrel, in a draw-bench, of a die through which the mandrel and tube are drawn, and two rollers to apply pressure at two or more places upon the tube, for the purposes and substantially as set forth.

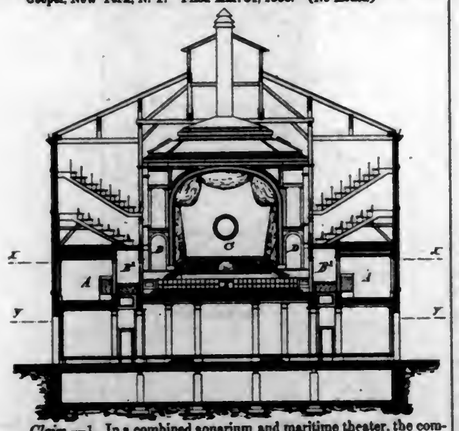
324,507. MACHINE FOR CONTRACTING THE END OF A TUBE. William R. Walton, Ansonia, Conn., assignor to the Ansonia Brass and Copper Company, same place. Filed June 4, 1885. (No model.)



Claim.—1. The combination, with a range of swaging-dies, s i, and the plungers K, for actuating the same, of the frame C, having openings to receive the dies and plungers, the driving-shaft D, the eccentrics or cams O, and the springs for raising the plungers and upper dies, substantially as set forth.

2. The combination, with the range of swaging-dies, the plungers, springs, cams or eccentrics, and main shaft for actuating the same, of the frame C, having openings to receive the swaging-dies, plungers, and springs, and the plates f, bolted to the surface of the frame C, and adapted to be removed for giving access to the swaging-dies, substantially as set forth.

324,508. COMBINED AQUARIUM AND MARITIME THEATER. Jerome Wenmaekers, Antwerp, Belgium, assignor to himself and Paul Goepel, New York, N. Y. Filed Mar. 31, 1883. (No model.)



Claim.—1. In a combined aquarium and maritime theater, the combination of a series of aquarium-tanks with a main tank or maritime stage arranged in front of a permanent stage, and with a connecting-channel, alongside of which the aquarium-tanks are arranged, substantially as set forth.

2. In a combined aquarium and maritime theater, the combination of a permanent stage with a main tank or maritime stage arranged between the permanent stage and the auditorium, substantially as set forth.

3. In a combined aquarium and maritime theater, the combination, with a permanent stage, of a maritime stage arranged between the permanent stage and the auditorium, and of a channel that connects one end of the maritime stage with the other, substantially as set forth.

4. In a combined aquarium and maritime theater, the combination of the permanent stage C and maritime stage B, extending in front of the same, between it and the auditorium, said maritime stage having supplementary proscenium-wings B', substantially as described.

5. The combination, in a combined aquarium and maritime theater, of a permanent stage, C, with a maritime stage, B, in front of the same, between it and the auditorium, said maritime stage having supplementary proscenium-wings B' and a connecting-channel that extends below the galleries of the auditorium from one end of the maritime stage to the other, substantially as specified.

6. In a combined aquarium and maritime theater, the combination of the permanent stage C, a maritime stage, B, in front of the same, a connecting-channel, B^2, extending below the galleries of the auditorium from one end of the maritime stage to the other, the bottom part of the maritime stage and the connecting-channel being constructed of glass panels or plates that form the ceiling of the story below, substantially as and for the purpose specified.

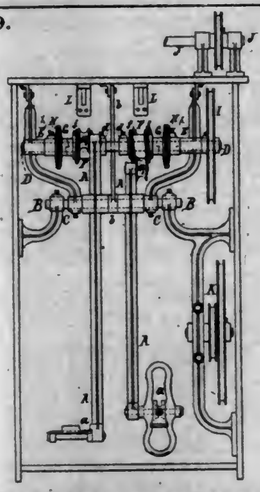
324,509. POWER-TRANSMITTING MACHINERY. Edwin Wiams, New York, N. Y. Filed Apr. 15, 1885. (No model.)

Claim.—1. The combination of the circular or concentric wedges f and g with two or more portions of a friction-coupling, whereby pressure is brought to bear upon the faces of the coupling and cause the same to act, substantially as set forth.

2. The combination of a shaft, the fixed portion of the friction-coupling attached thereto, a movable half of a friction-coupling having circular or concentric wedge or wedges attached thereto, and movable spool, gear-wheel, or pulley having circular or concentric wedge or wedges attached thereto and mating those of the movable half of the friction-coupling, whereby pressure is brought to bear upon the concentric or circular wedges, and thence upon the friction-coupling, and by the reverse movement or action the friction-coupling released, substantially as set forth.

3. The combination, in a friction-coupling, of a fixed portion or face,

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a loose portion or face having engaging wedge or wedges concentric with operation of coupling, a spool, gear-wheel, or pulley having concentric wedge or wedges mating those of loose portion of coupling, whereby pressure is brought to bear upon and operate the friction-coupling and connected shafting, substantially as set forth.

4. The combination, with a friction-coupling, substantially as set forth, of a vibrating lever, a treadle, and shaft upon which the lever is operated, and a belt whereby motion is transmitted from the vibrating lever to spool or pulley and friction-faces of coupling, substantially as set forth.

5. The combination of a treadle, substantially as shown, a lever or vibrating arm, a rock-shaft upon which the vibrating arm or lever is suspended and rocks, a belt operating in connection with the lever, and a spool mechanism or pulley, whereby the spool is caused to revolve in either direction, and through the concentric wedges operating the friction-coupling cause the friction-coupling to revolve or release the operating-shaft, substantially as set forth.

6. In combination with a treadle, vibrating arm or lever, a rock-shaft upon which the vibrating lever or arm is caused to operate or rock, a double-arm connection of said lever, upon which sheaves for belting are fixed, a belt communicating with and operating a spool or pulley, and a collar upon which the thrust of the spool or pulley is taken in its movement upon the concentric wedge or wedges of the coupling, substantially as and for the purposes specified.

7. In combination with a treadle, vibrating arm or lever, a rock-shaft upon which the vibrating lever or arm is caused to operate or rock, a double-arm connection of said lever, upon which a rack is fixed or attached, a pinion operated by the attached rack, and a collar, upon which the thrust of the spool or pulley is taken in its movement upon the concentric wedge or wedges of the coupling, substantially as and for the purposes specified.

8. In combination with a shaft upon which they operate, the fixed portion of coupling H, the loose portion of coupling G, having its concentric wedge or wedge projections, the spool or pulley F, to which are attached concentric wedge projections mating with and operating upon those of the intermediate loose portion, G, the collar d, fixed upon the shaft to take the thrust of spool or pulley against the wedges of the friction-coupling, and a belt intermittently operated to and fro, substantially as set forth.

9. The combination of the shaft D and pulley I, the portions H and G of a friction-coupling, the spool or pulley F, the collar d, the operating-belt M, the sheaves a', the forked lever A or A^2, and the rock-shaft or fulcrum B, substantially as set forth.

10. The combination of two or more sets of the following details of mechanism: the fixed portion of friction-coupling H, the loose portion G, having one or more concentric wedges, g g, thereto attached, the flanged spool or pulley F, having one or more concentric wedges, f f, thereto attached and mating those of loose portion G, the fixed collar d, the shaft D, the belt M, and the lever or arm A, A', or A^2, whereby a steady revolution is effected of the shaft D and its communicating pulley I through the alternate operation of the several levers or arms in the combination, substantially as set forth.

11. In combination with a friction-coupling, substantially as described, the lever A', provided with an operating-link, upon which the sheaves a' a' are carried, and the belt M', substantially as set forth.

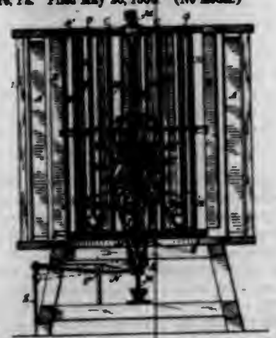
12. In combination with a friction-coupling, substantially as set forth, the lever A^2, having the belt M^2, running directly from and at-

tached to both arms of the lever, and over and about the spool or pulley F, substantially as set forth.

13. In combination with a shaft upon which they operate, the fixed portion of friction-coupling H, the loose portion G, having one or more concentric wedges mating with those of the gear-wheel or pinion F', and the radial rack M³, operated to and fro, substantially as set forth.

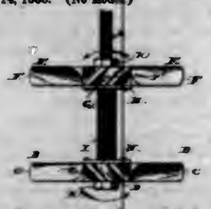
14. The combination of two or more sets of the following details or elements of mechanism: the fixed portion of friction-coupling H, the loose portion G, having one or more concentric wedges, *g g*, thereto attached, the pinion F', having one or more concentric wedges, *f f*, thereto attached and mating those of loose portion G, the fixed collar *d*, the shaft D, the radial rack M³, and the lever-arm A³, whereby a steady and continuous revolution is effected of the shaft D through the alternate operation of the several levers or arms in combination, substantially as set forth.

324,510. WIND-ENGINE. Jonah W. Wood and Frank E. Wood, Beaver Centre, Pa. Filed May 20, 1884. (No model.)



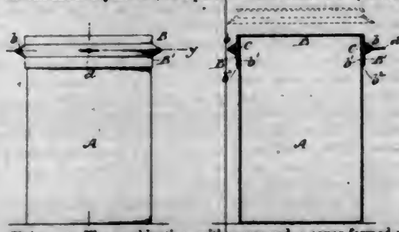
Claim.—A windmill or motor consisting of a cupola with guide boards set at an angle, a revolving wheel on a vertical shaft, said wheel being provided with hinged or pivoted wings or gates normally at right angles to the guides, and a governor secured to the shaft and connected to and automatically operating the said wings or gates, substantially as and for the purpose specified.

324,511. CHURN-DASHER. Thos. H. Abercrombie, Tumbling Shoals, S. C. Filed May 14, 1885. (No model.)



Claim.—The combination of the threaded dasher-rod, the dashers journaled thereon at a suitable distance apart, said dashers being made of wood, and having radial inclined blades provided with correspondingly-inclined open slots dividing the blades, the blades and slots of one dasher being inclined in the opposite direction from the blades and slots of the other dasher, to cause the dashers to rotate in opposite directions, the metallic plates H, secured to the opposite faces of the dashers, the sleeve I on the rod between the dashers, and the nuts K, for securing the dashers in place, substantially as described.

324,512. TIN CAN. Thomas C. Adams, Brooklyn, N. Y., assignor to himself and Henry Holsten, same place. Filed June 10, 1885. (No model.)

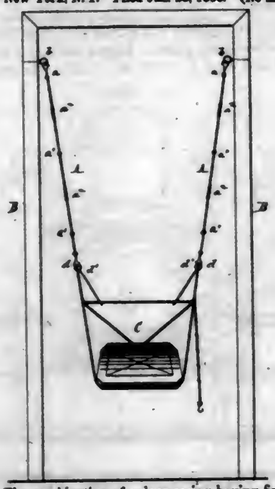


Claim.—1. The combination, with a can and a cover formed with an angular hollow rib in its flange, of an annular wire cutter beveled from its inner to its outer edge to form a cutting-edge, which cutting-edge engages the hollow rib at the apex of its angle, substantially as set forth.

2. The combination, with a can, of a cover having the hollow rib *b*, and the cutter C within said rib, and having a serrated cutting-edge, substantially as set forth.

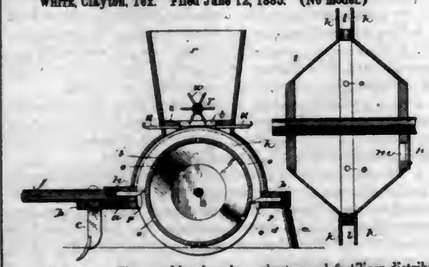
3. The cover B, formed with the flange B', ribbed, as shown at *b*, in combination with the cutter C, can A, and spring D, arranged to press upon the top of the cover B, substantially as and for the purposes set forth.

324,513. COMBINED SWING AND EXERCISING APPARATUS. H. Albrecht, New York, N. Y. Filed Jan. 23, 1885. (No model.)



Claim.—The combination of a door-casing having fixed screw eyes or rings, knotted suspension-ropes having safety-hooks at the upper and lower ends and re-enforcing sleeves between the knots, and a detachable swing or other exercising apparatus attached to the lower ends of the ropes, substantially as set forth.

324,514. COTTON, CORN, AND PEA PLANTER. David T. Applewhite, Clayton, Tex. Filed June 12, 1885. (No model.)



Claim.—1. The combination, in a planter and fertilizer-distributer, of a revolving drum having openings communicating with a groove in its periphery for sowing fertilizer, and a seeding mechanism arranged above the drum, whereby the seeds will fall into the groove of the drum and be thereby conveyed to the furrow, substantially as described.

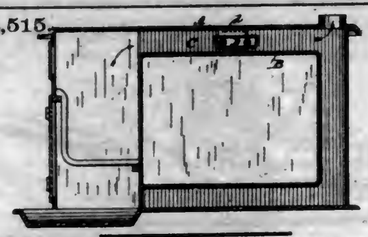
2. The combination, with a plow, harrow, or other device adapted for opening furrows, of the stud or tongue, the arms pivoted thereto, and the hopper secured to the arms, said hopper having the revolving grooved drum, and the dropping mechanism above the drum, and means for securing the tongue or stud to the plow or harrow, substantially as described.

3. The combination, with a plow, harrow, or other device adapted for opening furrows, of the stud or tongue secured thereto, the arms pivoted to the tongue, the hopper supported on the arms, the revolving drum journaled therein and forming the support therefor, the slides adapted to regulate the size of the openings in the bottom of the hopper, the seed-stirrer, and gearing or means for connecting the stirrer with the drum, substantially as described.

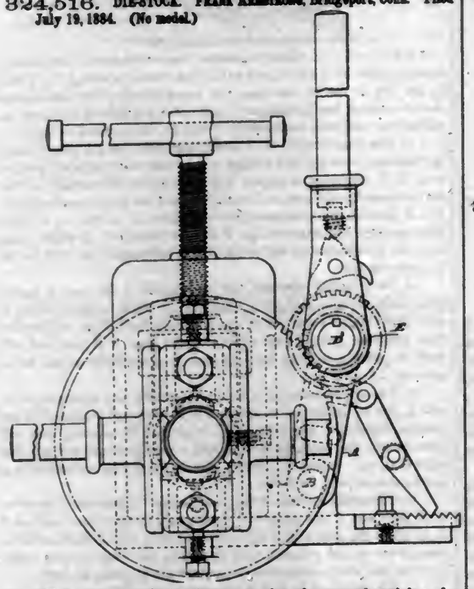
324,515. WATER-BACK. Frank Armstrong, Bridgeport, Conn. Filed Dec. 21, 1883. (No model.)

Claim.—In combination with the top of a stove, the drum or chest provided with the projections which extend upward and then at an angle, said projections being provided with openings for the reception of devices for securing them to the stove, as described.

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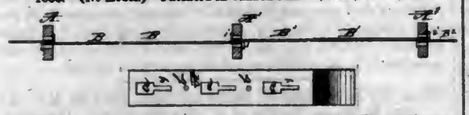
324,516. DIE-STOCK. Frank Armstrong, Bridgeport, Conn. Filed July 19, 1884. (No model.)



Claim.—1. A swinging frame carrying the operating-pinion of a die-cutter of the kind described, capable of adjustment to bring the gear into contact with cutter-heads of different diameters.

2. In combination with the die-cutter, the swinging frame composed of the upright bars and cross-pin, having the pawl secured thereto and adapted to engage with the serrated plate on the bed-plate, substantially as described.

324,517. FENCE. Lewis Barnes, Somerville, N. J. Filed Jan. 16, 1885. (No model.) Patented in Canada Jan. 31, 1885, No. 21,014.



Claim.—A fence consisting of posts A, provided with openings *u*, contracted at the lower ends to form slots *y*, and flat bars bent at right angles at the ends to form lips, and overlapping each other side by side within the slots *y*, substantially as described.

324,518. STORE CASING OR FINISHING. Richard W. Bates, Chicago, Ill. Filed Oct. 30, 1884. (No model.)

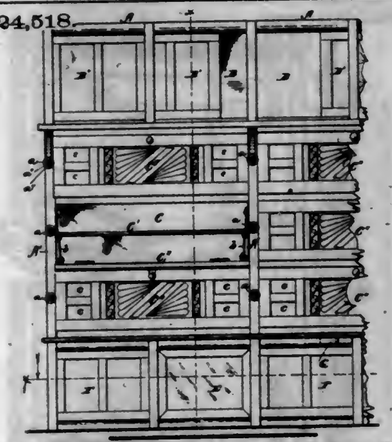
Claim.—1. The casing or finishing for the interior of stores, comprising compartments C, shelves C', leaves C'', folding braces *b*, and automatic fastenings *a*, all combined and arranged substantially as and for the purpose specified.

2. In a casing or finishing for the interior of stores, the leaves C'', hinged to the shelves C', in combination with the folding braces *b* and adjustable automatic fastenings *a*, as and for the purpose specified.

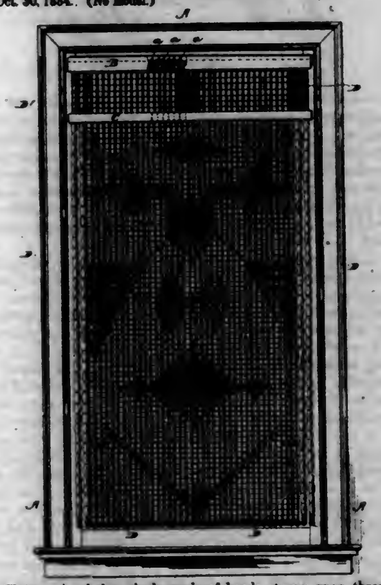
3. The casing or finishing for the interior of stores, comprising the upper and lower sections, with compartments A D, and a middle section, with smaller compartments C, provided with folding leaves C'', jointed braces *b*, and automatic fastenings *a*, all combined and arranged substantially as and for the purposes shown.

4. In a store casing or finishing, the lower section, D, provided with sliding mirror E and sliding doors F, as and for the purpose specified.

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324,519. WINDOW-SHADE. Richard W. Bates, Chicago, Ill. Filed Oct. 30, 1884. (No model.)



Claim.—A window-shade made of beads strung upon threads, as *a a*, arranged to be separately suspended from the top of the window, substantially as and for the purpose shown.

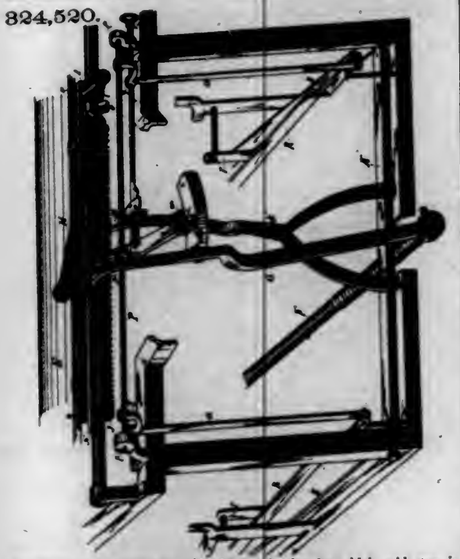
324,520. TYPE-WRITING MACHINE. Edwin S. Belden, San Francisco, Cal. Filed Oct. 2, 1884. (No model.)

Claim.—1. In a type-writing machine, the combination of a vibrating pawl operated by the key-levers, a fixed and a sliding rack, as described, and a swinging graduated stop, against the several graduations of which the sliding rack is adapted to come in contact, whereby the movement of the paper-carriage is limited at varying distances, substantially as herein described.

2. In a type-writing machine, the combination of a vibrating pawl operated by the key-levers, a fixed and a sliding rack, as described, a graduated stop, against which the sliding rack is adapted to bear, whereby the movement of the paper-carriage is limited, and a mechanism, substantially as described, consisting of levers and connecting-rods operated by the key-levers to swing the graduated stop into position to bring its several graduations or depressions into line with the sliding rack, according to the key-lever operated, whereby the movement of the paper-carriage is limited at varied distances, substantially as and for the purpose herein described.

3. In a type-writing machine, a vibrating pawl operated by the key-levers, a fixed and a sliding rack, as described, and the graduated stop O in line with the end of the sliding rack, and adapted to limit its

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movement, in combination with the mechanism by which said stop is vibrated to bring its several graduations or depressions into line with the sliding rack to limit the movement of the paper-carriage at varied distances, consisting of the pivoted flap-bar N, on which the stop is mounted, the rock-shaft P, having arm p', bearing under the flap-bar, the cranks q on the shaft, the connecting-rods Q, the pivoted side arms, R, and the cross-bar S, passing under and adapted to be depressed to different distances by the key-levers, substantially as and for the purpose herein described.

4. In a type-writing machine, the traveling paper-carriage E, the adjacent fixed and sliding racks I J thereon, the key-levers C, and the controlling-pawl M, vibrated by the operation of the key-levers acting through suitable mechanism, as described, in combination with the graduated stop O in line with the end of the sliding rack, the pivoted flap-bar N, on which it is mounted, the rock-shaft P, having arm p', for operating the flap-bar, the cross-bar S, passing under and adapted to be depressed to various distances by the key-levers, and connecting devices, substantially as described, whereby the motion of bar S is transmitted to the rock-shaft, substantially as and for the purpose herein described.

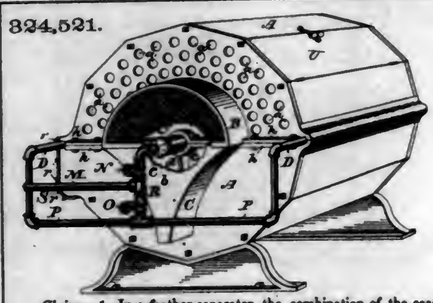
5. In a type-writing machine, the combination of a vibrating pawl operated by the key-levers, a fixed and a sliding rack, as described, the graduated stop O in line with the end of the sliding rack, the pivoted flap-bar N, on which the stop is mounted, the rock-shaft P, having arm p', the cross-bar S, passing under the key-levers, and connecting devices, substantially as described, between said cross-bar and rock-shaft, whereby when the former is depressed the latter is rocked to swing the graduated stop, in combination with the key-levers C of the machine, provided with lugs x of different widths, and adapted to depress the cross-bar S to different distances, substantially as and for the purpose herein described.

6. In a type-writing machine, the combination of a vibrating pawl operated by the key-levers, a fixed and a sliding rack, as described, the graduated stop O, having a rabbet or depression, o, in line with the sliding rack when said stop is at rest, and adapted to limit said rack after it has moved a distance of two teeth, and a shoulder brought in line with the sliding rack by the swinging of said stop to limit the rack after it has moved one tooth, the pivoted flap-bar N, the cross-bar S, and connecting devices, substantially as described, for transmitting motion to the graduated stop, in combination with the key-levers C of the machine, some of which vibrate free of the cross-bar S, whereby the stop remains at rest and others depress the bar to various distances to swing the stop through a longer or shorter arc, substantially as and for the purpose herein described.

7. In a type-writing machine, in combination with a vibrating pawl operated by the key-levers, and a fixed and a sliding rack, as described, the swinging graduated stop O, operated by the key-levers to limit at different distances the movement of the sliding rack, and the stop-screw i' in a lug, i, on the fixed rack, adapted to receive and limit the sliding rack at a certain distance when the stop is moved back, substantially as herein described.

324,521. FEATHER-RENOVATOR. Herman Berger, Milwaukee, Wis. Filed Mar. 10, 1885. (No model.)

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Claim.—1. In a feather-separator, the combination of the case A, agitating arms or fans H H, and small unobstructed openings a a, formed in the side or end of said case, and communicating with the interior thereof, so as to permit feathers of and under any desired size to be expelled from said case, substantially as and for the purposes set forth.

2. The combination, in a feather-separator, of the case A, small unobstructed openings a a through one or both ends, agitating wings or arms H H, and cages or screens B B, placed over the openings a nearest the center of said case, substantially as and for the purposes set forth.

3. In a feather-separator, the combination of the case A, provided with openings a a rotary wings H H, and branches I I, which rotate with and in advance of said wings H H, substantially as and for the purposes set forth.

4. In a feather-separator, the combination of the case A, having small unobstructed openings a a through its walls, agitating wings or arms H H, whereby feathers of and under any desired size are expelled from said case through said openings a, and pipes D D, provided with cocks or jets f f, opening into said case A, substantially as and for the purposes set forth.

5. The combination, in a feather renovator and separator, of the case A, having openings a a, a central shaft composed of pipes G G, and mounted axially in said case, wings or arms H H, radiating from said central shaft, pipe e, communicating with a heat-generator and with said pipes G G, and means for rotating said wings or arms, substantially as and for the purposes set forth.

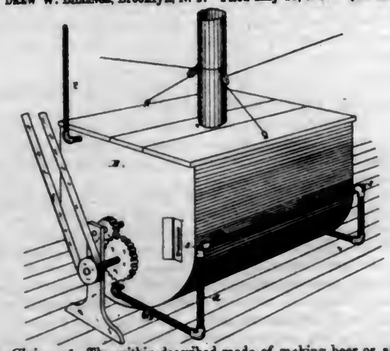
6. The combination, in a feather-renovator, of the case A, a central shaft composed of the pipes G G, gudgeons d d, chambered castings F F, in which the ends of said pipes G are secured, pipe e, communicating through one of said gudgeons with pipes G G, and wings or arms radiating from said shaft, substantially as and for the purposes set forth.

7. The combination, in a feather-renovator, of the case A, the central shaft composed of pipes G G and chambered castings F F, journaled in said case, wings H H, attached to said shaft, and side pipes, D D, provided with jets f f, substantially as and for the purposes set forth.

8. The combination, in a feather-renovator, of the case A, agitating wings or arms H H, and a flexible pocket, S, applied to and communicating with the interior of said case, and detachably connected therewith at its upper and outer edge, so as to be opened and discharge the dirt, &c., collected therein, substantially as and for the purposes set forth.

9. The combination, in a feather-renovator, of the case A and central rotary shaft composed of pipes G G, stationary side pipes, D D, provided with jets for openings f f, connecting-pipes, and valves N O, whereby steam is supplied to or shut off from either or both said central shaft and pipes D D, substantially as and for the purposes set forth.

324,522. PROCESS OF MANUFACTURING BEER OR ALE. Andrew W. Billings, Brooklyn, N. Y. Filed May 23, 1883. (No model.)



Claim.—1. The within-described mode of making beer or ale, the same consisting in making a malt-mash, making also a mash from raw grain by heating to a temperature below the boiling-point to secure the starch without extracting the oils, and adding malt, and then mixing the two mashes and treating as is usual in beer and ale making, substantially as described.

2. In a manufacture of beer or ale, making a mash of corn, rice, or other raw grain by combining the raw grain with warm water, raising the temperature by the direct injection of live steam to nearly the boiling-point, cooling suddenly by the injection of cold water, then adding a small proportion of malt, and after the mash has been allowed to stand again heating by the injection of live steam, substantially as specified.

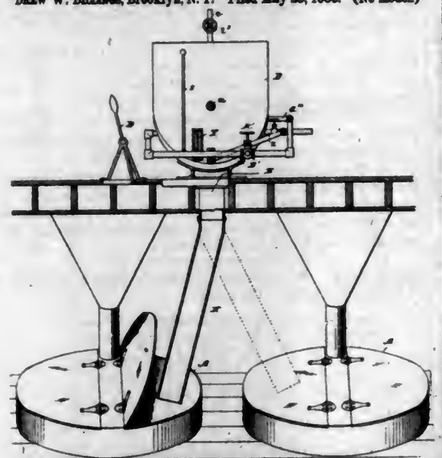
3. In the manufacture of beer or ale, making a corn-mash by combining the corn, a small proportion of malt, and warm water, raising the temperature to nearly the boiling-point, but without extracting the oils, cooling, and after the mash has been allowed to stand again heating, substantially as specified.

4. In the manufacture of beer or ale, making a corn-mash containing a proportion of malt, and alternately heating and cooling the mash, substantially as and to the degrees herein set forth, and combining with a malt-mash, as specified.

5. In the manufacture of ale or beer, heating and cooling the raw-grain mash by the direct injection of live steam and cold water to raise the temperature nearly to the boiling-point and suddenly lower it, to thoroughly convert the starch, but prevent the extraction of oils and other matters, substantially as and for the purpose set forth.

6. In the process of making ale or beer, treating and mashing raw grain to remove the starch without extracting the oils, adding diastase, and combining the mash thus made with mash made from malt, and treating the two together, as usual in the process of making beer and ale, substantially as described.

324,523. APPARATUS FOR THE MANUFACTURE OF BEER. Andrew W. Billings, Brooklyn, N. Y. Filed May 23, 1885. (No model.)



Claim.—1. The combination, with the usual open mash-tub, A, of a supplemental mash-tub adapted to hold supplemental mash, and provided with agitators and steam and cold-water pipes, both communicating with the interior of the supplemental tub, whereby to agitate and, by injecting the steam and cold water, to alternately heat and cool said supplemental mash, and with conduit to the tub A, substantially as set forth.

2. The combination of the tub, agitator, steam-inlet pipes, and perforated pipe t^2, and cold and hot water tubes t' t, connecting with the pipe t^3, and provided with cocks, substantially as described.

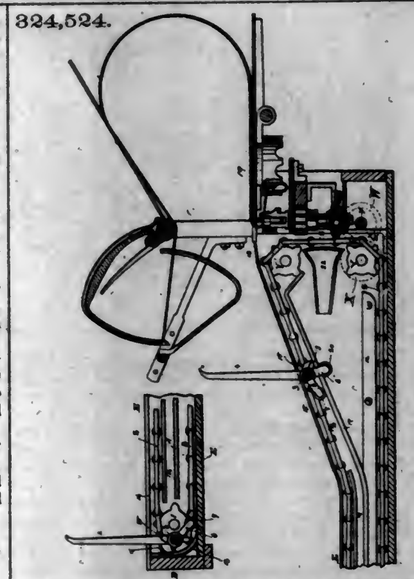
324,524. SELF-BINDING HARVESTER. George W. Blakesley, Perry, Iowa. Filed Mar. 4, 1884. (No model.)

Claim.—1. In a self-binding harvester, the combination, with the platform D E, having slots in its top, the chain-wheels Y Y' 1, and a driving mechanism, of the endless chains Z, having sockets 2, the rake-heads 3, having teeth 4, the cranks 6 6', and the guides 12 13 15 16 17 21 22, whereby the rake-teeth are projected, carry the grain from the grain-receiving platform, and force it on the binder-platform, and then pass down beneath the grain-receiving platform, as set forth.

2. In a self-binding harvester, the combination, with the rake-head 3, the endless chains Z, and the guides 16 17, of the crank-arm 6, stop 8, and the spiral spring 9, whereby the rake-teeth are held erect while carrying the grain from the grain-receiving platform and forcing the grain on the binding-platform, as set forth.

3. In a self-binding harvester, the combination, with the platform D E, the rake-head 3, the crank 6, and the spring 9, of the hook 10

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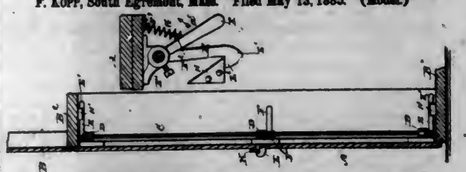


and the bracket 11, substantially as herein shown and described, whereby the said crank-arm is thrown inward and the teeth turned down outward to pass back beneath the grain-receiving platform, as set forth.

4. The rake-head 3, provided with teeth 4, in combination with the sleeve 5, loosely mounted on the rake-head, and provided with the crank 6, hook 10, and the spring 9, connecting the sleeve and head, substantially as set forth.

5. The rake-head 3, stop 8, and teeth 4, in combination with the slotted sleeve 5, spring 9, secured to the sleeve and head, as described, hook 10, and crank 6 on said sleeve, substantially as set forth.

324,525. BARN-DOOR FASTENING. William L. Bliss and George F. Kopp, South Egremont, Mass. Filed May 13, 1885. (Model.)



Claim.—1. In a barn-door fastening, the vertical shaft C, the hook-catches E E, and the spring-lever F, in combination with the latch-plates H and H', substantially as shown and described.

2. In a barn-door fastening, the vertical shaft C, the hook-catches E E, provided with heads E' E', having shoulders E^2, the lever F, the extension F', and the spring G, in combination with the latch-plates H and H', substantially as shown and described.

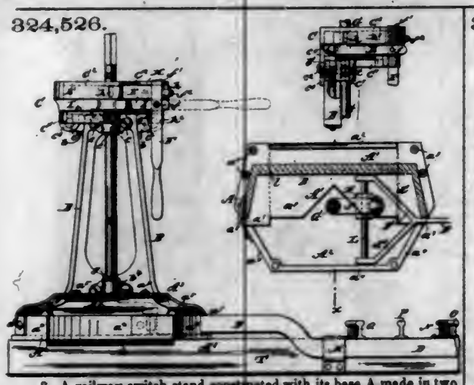
324,526. SWITCH-STAND. David Bowen, Topeka, Kans., assignor of one-fourth to Thomas B. Peacock, same place. Filed June 17, 1884. (No model.)

Brief.—The base is in two parts, one underlying the other, and having a rib which bears along the supporting-sleeper. The top is in two separated disks, having securing-flanges for the hand-lever which works between them, its upper end entering slots in the upper disk when in either of the proper positions. The switch-rod has a reciprocating movement by means of a sliding head on a horizontal shaft, said head being pivoted to a crank-arm upon the vertical operating-rod.

Claim.—1. A railway-switch stand having a base, A, formed with two parts, A' A^2, and the part A^2, which overhangs the tie, having a flange-plate, a', extending beneath and in a recess of the part A', on which the upper portion of the stand rests, substantially as shown and described.

2. A railway-switch stand constructed with its base A formed with two parts, A' A^2, said part A^2 having a flange-plate, a', fitted in a bottom recess of the part A', and an upturned flange, a^2, fitted in an edge recess of part A', and a rib, a, adapted to engage the edge of the supporting-tie, substantially as shown and described.

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3. A railway-switch stand constructed with its base A made in two parts, A' A^2, and a removable cover, A^2, substantially as shown and described.

4. The combination, with the post B and the spindle G, its arm E, and lever F, of the head C, made in separable parts C' C^2, fastened to each other and the post B, and so as to form upper bearings for the spindle G, substantially as shown and described.

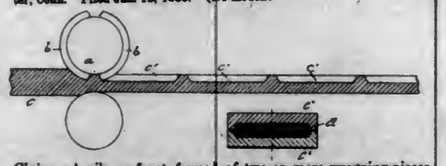
5. The combination, with the spindle G, its rigid arm E, and pivoted lever F, having an arm, f^2, of the head C of the switch-stand, made in two parts, C' C^2, the part C' having notches h^2 below the lever-pivot, and the part C^2 having face slots or notches H and edge slots h above the lever-pivot, substantially as shown and described.

6. The combination, in a switch-stand and with the spindle G, having an arm, E, lever F, and crank J, of the head C, made in separable parts C' C^2, fastened to each other and to the post B to form upper bearings for the spindle G and the lower removable half-bearing or box b^4, substantially as shown and described.

7. The combination, with the switch-rails N, the connecting-bar D, and the spindle G, having a lower crank-arm, J, of the sliding block K and rod L, substantially as shown and described.

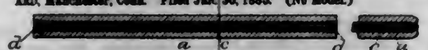
8. The combination, with the switch-stand and its spindle G, having an operating-lever, and crank J, and the sliding block K, and rod L, of the connecting-rod D, forked at its end within the stand and bearing by opposite faces of its arms d' d^2 on guide-faces or bearings l a^4, substantially as shown and described.

324,527. COMPOSITE METAL BAR. Edwin S. Brainard, Manchester, Conn. Filed Jan. 12, 1885. (No model.)



Claim.—A pile or fagot formed of two or more wrapping-pieces of metal that have socketed faces, and that completely inclose on the ends, as well as sides, a core of harder metal, as steel, all substantially as described.

324,528. COMBINED IRON AND STEEL PILE. Edwin S. Brainard, Manchester, Conn. Filed Jan. 30, 1885. (No model.)



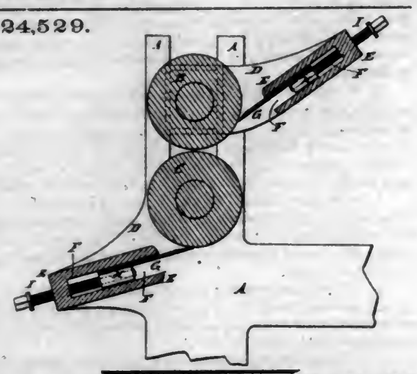
Claim.—1. As an improved article of manufacture, the within-described pile or fagot, composed of a tubular jacket of substantially regular outline in cross-section, a central portion of another kind of metal, and having both ends of the tube securely closed by plugs or the like, all substantially as described.

2. As an improved article of manufacture, a fagot or pile composed of a lap-welded tube of iron having a steel center and closed at the ends by plugs of metal, all substantially as described.

324,529. ADJUSTABLE SCRAPER FOR CRACKER-MACHINE FEED-ROLLERS. William H. Bromley and Philip J. Gately, Brooklyn, N. Y. Filed Mar. 19, 1885. (No model.)

Claim.—The combination, with the feed-rollers, of the arms provided with the intermediate bars having grooves opening at their inner edges, the plates fitted in said grooves and having eyes upon the lower rear edges, and the screws working in the intermediate bars and swiveled in the eyes of the said plates, substantially as and for the purpose set forth.

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324,530. HOLDER FOR INCANDESCENT ELECTRIC LAMPS. F. M. Brown, Boston, assignor to Nelson S. White, Canton, Mass. Filed June 7, 1884. (No model.)



Claim.—1. In an electric-lamp holder, the combination of the sleeve a^2, having the metal pins b connected with the lamp-wires b', and the brass pieces c^3 c^3, forming sections of the circuit, and having hooks c^{30}, all substantially as and for the purposes described.

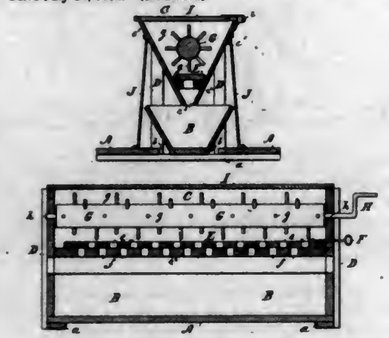
2. The combination of the lamp having the pins b, the brass pieces c^3 c^3, having the hooks forming sections of the electric circuit, and the spring D, whereby the pins are held in constant contact with the brass hooks, all substantially as and for the purposes described.

3. The combination of the brass pieces c^3 c^3, having the hooks c^{30}, forming sections of the electric circuit, the brass piece g, and the cut-off h, all substantially as and for the purposes described.

4. The combination of the brass pieces c^3 c^3, having hooks c^{30}, and the casing c^4, all substantially as and for the purposes described.

5. The combination of the sleeve a^2, its pins b, the lamp-wires b', and a safety-joint as union between the pins and lamp-wires, all substantially as and for the purposes described.

324,531. HOG-FEEDER. Hyland M. Carter, Cincinnati, Nebr. Filed July 16, 1884. (No model.)

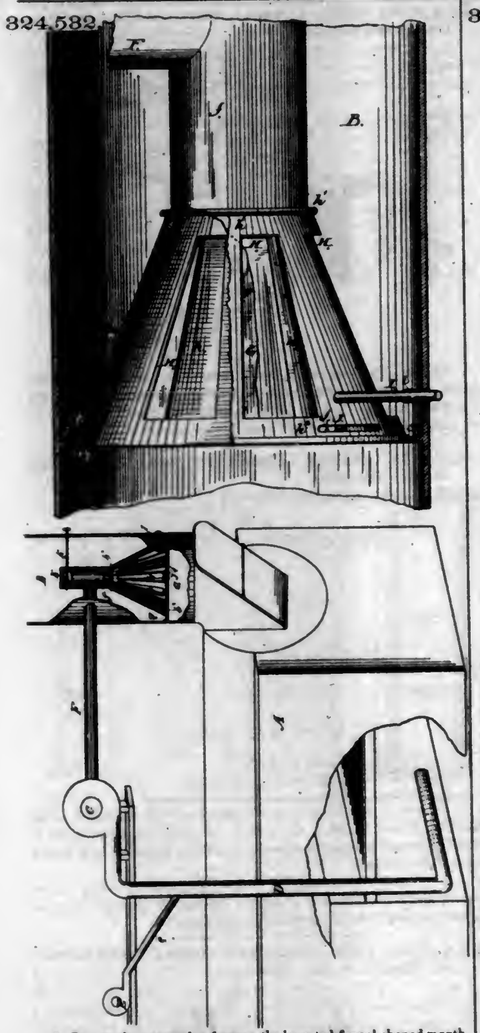


Claim.—An improved hog-feeder consisting of the platform A, the feeding-trough B, supported above the platform, with the spaces b along each side, the reservoir C, supported above the trough and provided with the sliding valve E in its bottom, the braces and fenders J, secured to the platform and reservoir, and the cylinder G, mounted in the said reservoir and provided with the teeth g and the crank-handle H, substantially as herein shown and described.

324,532. SMOKE-CONSUMING FURNACE. Charles C. Carter, San Francisco, Cal. Filed May 4, 1885. (No model.)

Claim.—1. In a smoke-consuming furnace in which a suction-blower or fan is employed to draw the products of combustion from the stack, an inverted-funnel-shaped mouth-piece provided with ports or apertures controlled by valves or gates, said mouth-piece being located in the stack of the furnace and connected with the blower, substantially as herein described.

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2. In a smoke-consuming furnace, the inverted-funnel-shaped mouth-piece G in the stack, provided with ports or apertures controlled by valves or gates, said mouth-piece being connected with a suction blower or fan, substantially as herein described.

3. In a smoke-consuming furnace, the inverted-funnel-shaped mouth-piece G in the stack, having ports or apertures controlled by valves or gates, in combination with the pipe F, connecting-elbow f, suction-blower C, and pipe D, substantially as herein described.

4. In a smoke-consuming furnace in which a suction blower or fan is employed to draw the products of combustion from the stack, the inverted-funnel-shaped mouth-piece G, located in the stack, and having a diameter at its base but little less than the diameter of the stack, said mouth-piece being connected with the blower and provided with ports or apertures controlled by valves or gates, substantially as and for the purpose herein described.

5. In a smoke-consuming furnace, the suction-blower C, pipes D and F, and elbow f, entering the stack, in combination with the inverted-funnel-shaped mouth-piece G in the stack and joined to the elbow, said mouth-piece having ports or apertures H and the swinging valves or gates h, and stem I, by which the ports are opened or closed, substantially as herein described.

324,533. APPARATUS FOR REMOVING SHEETS OF GLASS FROM ANNEALING-OVENS. John Casner, Covington, Pa. Filed May 13, 1885. (No model.)

Claim.—1. In a device for the purpose described, two sets of longitudinally-reciprocating bars loosely mounted upon oscillating arms, combined with the friction-rollers d and horizontal rollers d^2 d^2, as and for the purposes set forth.

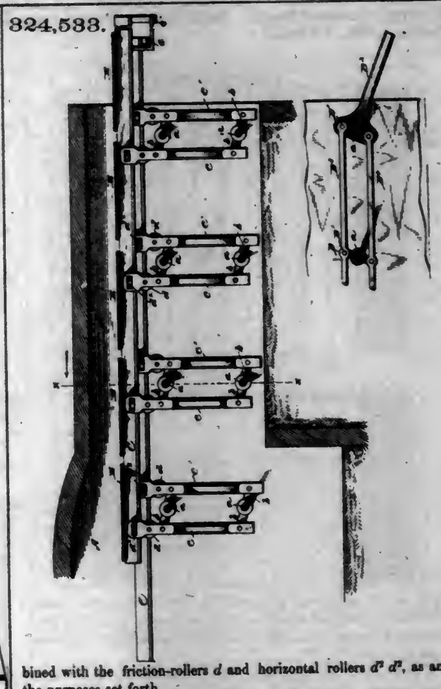
2. In a device for the purpose described, the combination of the shafts a, vertical bifurcated arms c c', the crank-arms b, sleeved on the shaft and its opposite end pivoted in the lower forks of said arms, and the bars C C', loosely secured in the upper bifurcated ends of said arms, as and for the purposes set forth.

3. In a device for the purpose described, the vertical arms c c', carrying friction-rollers d and horizontal rollers d^2 d^2, combined with the bars C C', the flanges of which extend beneath said rollers d^2 d^2, as and for the purposes set forth.

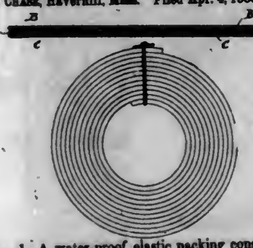
4. The vertical arms c c', bifurcated, as shown, the friction-rollers d, journaled between the forks thereof, and the rollers d^2 d^2, journaled in recesses in said bifurcated arms, combined with the T-shaped bars, the base of which rests upon the rollers d, and the flange passed beneath the rollers d^2 d^2, which bear against the vertical portions of said bars, as and for the purpose set forth.

5. The combination of the shafts a, vertical arms c c', the crank-arms b, connecting said arms upon opposite sides of said shafts, the levers D D D D^2 upon projecting ends of said shafts, and the connecting-bars D^3 D^4, joining said levers, as and for the purpose specified.

324,533.



324,534. CUSHION FOR THE TIRES, &c., OF VEHICLE-WHEELS. Milton Chase, Haverhill, Mass. Filed Apr. 4, 1885. (No model.)

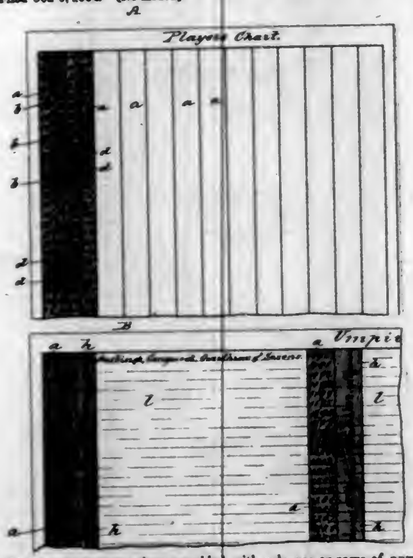


Claim.—1. A water-proof elastic packing consisting of a combination of cork and a water-proof elastic cement between two pieces of cloth or other suitable material, substantially as shown and described.

2. As a new article of manufacture, a strip of water-proof elastic packing suitable for a cushion between the tires and fellies of vehicle-wheels, consisting of a combination of cork and a water-proof elastic cement between two strips of cloth or other suitable material, and formed into a coil ready for application, substantially as shown and described.

3. A covering of asbestos or other fire-proof material, in combination with the portion of the packing which is subjected to the heated tire, as set forth.

324,535. GAME APPARATUS. Samuel L. Clemens, Hartford, Conn. Filed Oct. 9, 1884. (No model.)

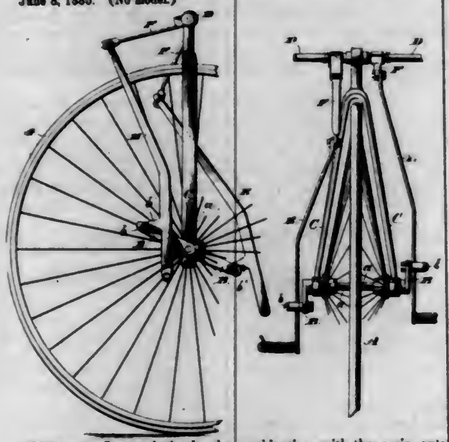


Claim.—1. A game-chart provided with columns or rows of numbers, a hole being produced at each number, and a series of rows of five holes each being formed at the end of each row, substantially as herein shown and described.

2. A game-chart provided with rows or columns of numbers and of columns or rows adjacent to the number columns or rows, on which additional rows or columns the names of the rulers corresponding with the number columns or rows are designated, substantially as herein shown and described.

3. A game-chart provided with rows or columns of numbers, rows or columns containing the names of rulers who reigned during the times comprised by the numbers, and rows or columns containing certain events of each year, substantially as herein shown and described.

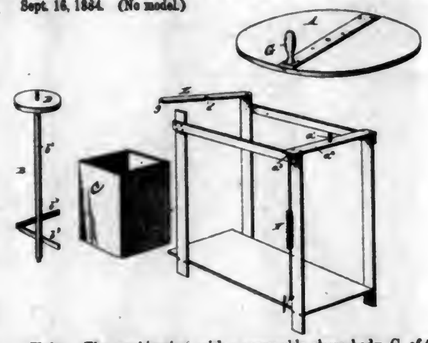
324,536. VELOCIPEDE. Wm. Clemson, Middletown, N. Y. Filed June 8, 1885. (No model.)



Claim.—1. In a velocipede, the combination, with the main axle and cranks secured to its ends, of depending pedals pivoted on the wrist-pins of said cranks and provided with forwardly and inwardly inclined shanks, substantially as described, and vibrating arms connecting the shanks to the main frame at points above the main axle, substantially as set forth.

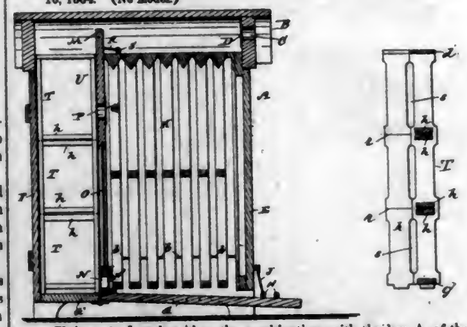
2. In a velocipede, the combination, with the main axle and the cranks secured on its ends, of depending pedals mounted on the wrist-pins of said cranks and provided with the forwardly and inwardly inclined shanks, and the vibrating arms connecting the upper ends of the pedal-shanks with the handle-bar, substantially as set forth.

324,537. CHURN. Laurence H. Conner, Grand View, Tex. Filed Sept. 16, 1884. (No model.)



Claim.—The combination, with a removable churn-body, C, of the frame, with a friction-wheel, A, mounted thereon, a dasher-spindle provided with friction-wheel D, movable notched bar E, and spring-rod F, all constructed substantially as shown, for the purpose set forth.

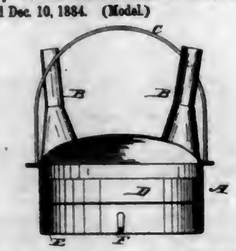
324,538. BEE-HIVE. Lorenzo S. Cook, Borden, N. Y. Filed Dec. 10, 1884. (No model.)



Claim.—1. In a bee-hive, the combination, with the box A, of the partition M, the hooks R, the eyes S, the pane O, and the frames K and T, arranged on opposite sides of the partition, substantially as herein shown and described.

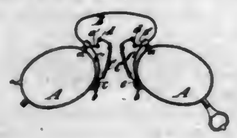
2. A honey-frame consisting of the side pieces, *k*, having cuts *r*, the top and bottom pieces, *d g*, and the intermediate pieces, *h*, arranged in pairs, substantially as herein shown and described.

324,539. COVER FOR MILK-CANS. Daniel F. Crippen, Riverside, Cal. Filed Dec. 10, 1884. (Model.)



Claim.—In a milk-can cover, the combination of the conical ventilating-tubes B, secured to and extending upwardly from the outside of the convex cover A, the removable screen D, ring E, and cross-bar F, constructed and arranged substantially as described.

324,540. NOSE-GUARD FOR EYEGLASSES. John Currin, Southbridge, Mass., assignor to the American Optical Company, same place. Filed May 27, 1885. (No model.)

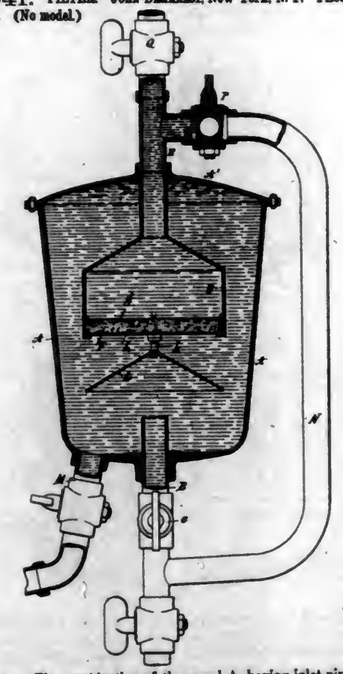


Claim.—1. The combination, with the eye-wire, bow-spring, and a stud attaching said spring to the eye-wire, of a guard connected at its lower end with the eye-wire, and a link connecting the upper end of the guard with the stud, and providing for the free movement of the guard toward and from the eye-wire in the same plane therewith, substantially as herein described.

2. The combination, with the eye-wire and compound or looped guard, of the hook *b*, attached to the eye-wire to receive within it the lower part of the guard, substantially as herein described.

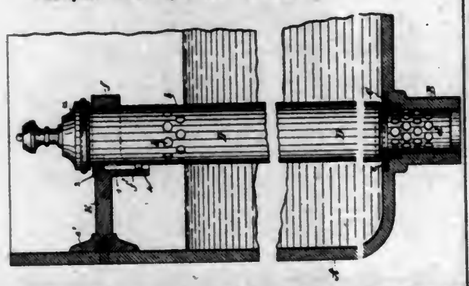
3. The combination, with the eye-wire, bow-spring, and a stud connecting the spring with the eye-wire, of the looped guard C C', having at its upper end a link-connection with the stud, and a hook, *b*, attached to the eye-wire for receiving the bent lower portion of the guard, substantially as herein described.

324,541. FILTER. John Demarest, New York, N. Y. Filed Feb. 9, 1885. (No model.)



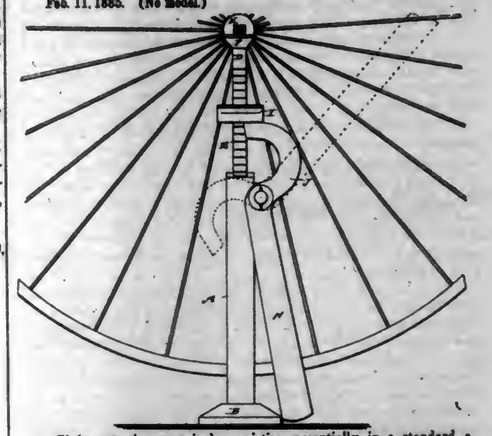
Claim.—The combination of the vessel A, having inlet-pipe B, rising above the bottom thereof, and the filtering-vessel D, suspended below the top of said vessel A and connecting to the outlet-pipe E, so as to leave space between the top of the vessels A and D and the deflector L above the inlet-pipe and below the filtering-vessel, as set forth, whereby light foreign substances will be retained in the top of such vessel A, as specified.

324,542. OVERFLOW AND DISCHARGE VALVE FOR BATHS. John Demarest, New York, N. Y., assignor to the J. L. Mott Iron Works, same place. Filed May 6, 1885. (No model.)



Claim.—The combination, with the overflow-pipe D, having perforations, and a lug, 4, at one side, of a sustaining-arm, E, and ring *f*, having grooves or slots at 1, 2, and 3, substantially as and for the purposes set forth.

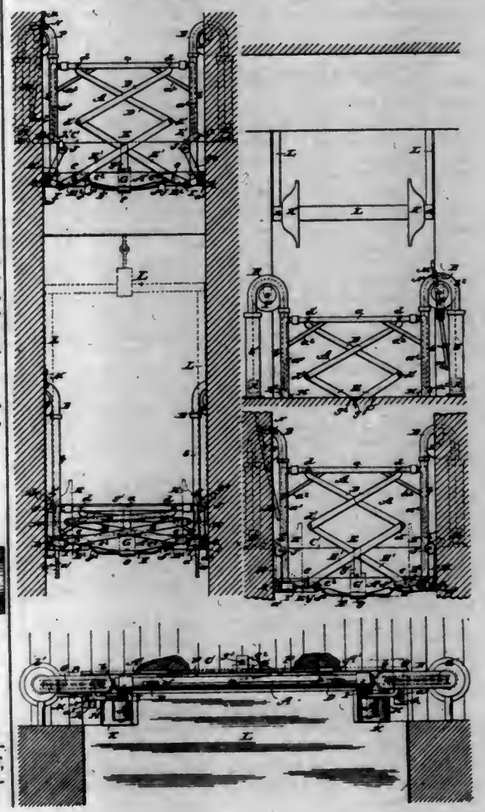
324,543. WAGON-JACK. John F. Eastman, Triumph, Ill. Filed Feb. 11, 1885. (No model.)



Claim.—1. A wagon-jack consisting, essentially, in a standard, a vertical sliding toothed bar thereon, a clutch-plate on the toothed bar, and a lever pivoted on the standard and constructed to bear against the under side of the clutch-plate and force it into engagement with the teeth on the toothed bar, substantially as set forth.

2. In a wagon-jack, the combination, with the hollow standard A, having its top beveled, of the toothed bar D in the standard, the clutch-plate I, having a beveled aperture, G, and of the lever H, pivoted on the standard and having a curved cam part, J, on its upper end, substantially as herein shown and described.

324,544. SAFETY-GATE FOR ELEVATORS. George T. Faller, St. Joseph, Mo. Filed June 5, 1885. (Model.)



Claim.—1. A safety-gate for elevators, comprising a gate, A, fitted for movement to close and open a side of the elevator-shaft, and connected to toggle-bars which are pivoted in said shaft, a spring or springs acting to close the gate, trip-levers H, provided with arms or pins adapted to engage the toggle-bars to fold them or allow them to fold to open the gate, and provided also with rollers or pins, as at J, lying in the path of trip-blocks fixed to the elevator-carriage, substantially as herein set forth.

2. A safety-gate for elevators, comprising a gate, A, fitted for movement to open and close a side of the elevator-shaft, and connected to toggle-bars which are pivoted in said shaft, a spring or springs acting to close the gate, trip-levers H, provided with arms or pins adapted to engage the toggle-bars E to fold them or allow them to fold to open the gate, and provided also with rollers or pins, as at J, lying in the path of trip-blocks fixed to the elevator-carriage, and said trip-levers having pawls or dogs h^3, normally engaging the gate to lock it closed, substantially as herein set forth.

3. A safety-gate for elevators, comprising a gate, A, fitted for movement to open and close a side of the elevator-shaft, and connected to toggle-bars which are pivoted in said shaft, a spring or springs acting to close the gate, trip-levers H, provided with arms or pins adapted to engage the toggle-bars E to fold them or allow them to fold to open the gate, and provided also with rollers or pins, as at J, lying in the path of the trip-blocks fixed to the elevator-carriage, and said toggle-bars E made in two parts or with shoes made movable independently of the main parts of the bars, substantially as described, whereby the operation of the trip-levers by the carriage trip-blocks will not necessarily cause the gate to open, substantially as herein set forth.

4. In safety-gates for elevators, the combination, with the gate A and guides therefor, of toggle-bars E, connected to the gate and consisting of two parts, E' E^3, pivoted in the elevator-shaft, and said part or shoe E^3 having flanges c^3 acting on the parts E', to unfold the toggle-bars to lift or close the gate, substantially as herein set forth.

5. In safety-gates for elevators, the combination, with the gate A, its operating toggle-bars, a spring or springs acting on the toggle-bars to close the gate, trip-levers H, provided with pins I, acting to fold the toggle-bars or allow them to fold to open the gate, and provided also with rollers or pins J, lying in the path of the trip-blocks K on the elevator-carriage, of a base-plate, A', fixed in the elevator-shaft, and provided with end flanges or parts, a^2 a^3, and to which base-plate the toggle-bars D E, spring F, and trip-levers H are adjusted in proper relative position, substantially as herein set forth.

6. In safety-gates for elevators, the combination, with the gate A and base-plate A', of opposite side standards, B, consisting of slotted tubular posts *b*, forming guides to the gate side bars, and extended beneath the floor next the gate and fastened to base-plate A', and the tubular posts *b'*, adapted to receive movable weights, the connecting head-bar b^2, and a pulley, P, adapted to receive a chain or cord, substantially as herein set forth.

7. In safety-gates for elevators, the combination, with the gate A and its toggle-bars D E, of the wall plate or strip *g'*, substantially as described, whereby the toggle-bars will be held from contact with the wall of the elevator-shaft, as herein set forth.

8. In safety-gates for elevators, the combination, with the gate A and the toggle-bars D E, pivoted in the elevator-shaft and connected to the gate, substantially as described, of a spring or springs having end parts, *f*, acting on the toggle-bars, and shoulders *f'*, adapted to a plate or stop in the shaft to limit the rise of the gate, substantially as herein set forth.

9. In safety-gates for elevators, the combination, with the gate A, its toggle-bars D E, the spring F, and the trip-levers H, of trip-blocks K, secured to the elevator-carriage, and provided with oppositely-beveled ends to operate the trip-levers, and with straight central portions, *k*, holding the gate A open until the elevator passes beyond ordinary stride, substantially as herein set forth.

10. In safety-gates for elevators, the combination, with the gate A, guides therefor, and toggle-bars E, connected to the gate and pivoted in the elevator-shaft, and consisting of two independently-movable parts, E' E^2, of the catch-lever M, substantially as herein set forth.

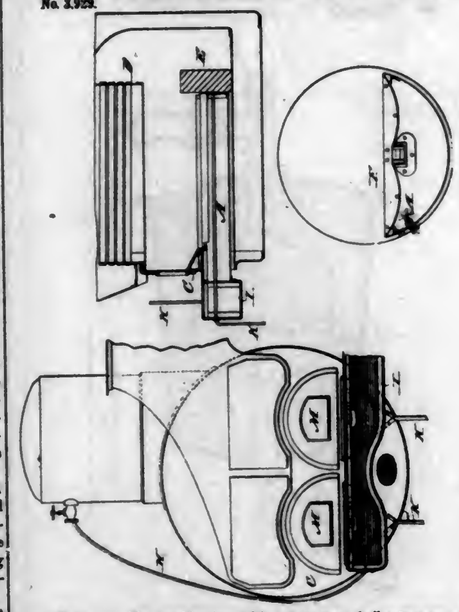
11. In safety-gates for elevators, the combination, with the gate A, guides therefor, and toggle-bars E, connected to the gate and pivoted in the elevator-shaft, of the chains or cords O and counterbalancing-weights R, substantially as herein shown and described.

12. In safety-gates for elevators, the combination, with the gate A, guides therefor, and toggle-bars E, connected to the gate and pivoted in the elevator-shaft, and a spring or springs bearing on the toggle-bars to close the gate, of chains or cords O and weights R, substantially as herein set forth.

13. In safety-gates for elevators, the combination, with the gate A, counterbalancing-weights R, and chains O, of side standards, B, consisting of slotted tubular uprights *b*, forming guides to the gate side bars and extending beneath the floor next the gate, the tubular uprights *b'*, receiving the weights, and a pulley, P, for the chain O, substantially as herein set forth.

14. In safety-gates for elevators, the trip-lever H, constructed with an arm carrying a roller or pin, J, adapted to be struck by a trip-block on the elevator-carriage, an arm carrying a pin or projection, I, adapted to act on the short arm of the gate operating toggle-bar, and a dog, h^3, adapted to retain the gate in closed position, and said trip-lever pivoted in a bearing fixed to the elevator-shaft, substantially as herein set forth.

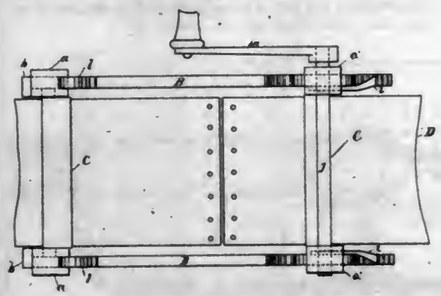
324,545. STEAM-BOILER. JOSEPH FERRANDO, Genoa, Italy. Filed May 6, 1885. (No model.) Patented in Italy Apr. 21, 1883, No. 15,355, July 5, 1883, No. 15,617, Feb. 7, 1884, No. 16,366, and Dec. 22, 1884, No. 17,599; in England Aug. 18, 1883, No. 4,013, and June 6, 1884, No. 8,681; in France Nov. 14, 1883, No. 156,877; in Belgium Nov. 15, 1883, No. 63,079, and Feb. 29, 1884, No. 64,184; in Germany Mar. 11, 1884, No. 26,259; in Austria-Hungary Apr. 18, 1884, No. 46,696 and No. 16,472, and Oct. 31, 1884, No. 21,621 and No. 50,684, and in Spain June 13, 1884, No. 3,929.



Claim.—1. The combination, with one or more boiler-furnaces, of the fire-boxes, upon which the grates are supported, and a fire-wall, the fire-boxes extending from the front of the furnace to the said fire-wall, substantially as herein shown and described.

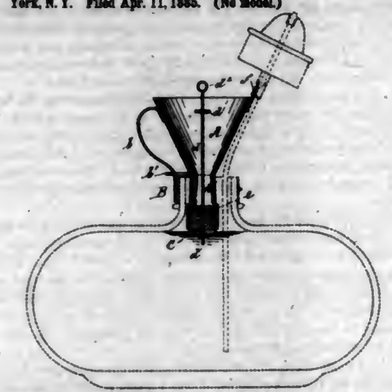
2. The combination, with a boiler-furnace, of the fire-boxes, upon which the grates are supported, a fire-wall, to which fire-wall the fire-boxes extend, and of an air-box connected with the front ends of the fire-boxes, which air-box is outside of the front end of the boiler, substantially as herein shown and described.

324,546. BELT CLAMP AND TIGHTENER. JOHN T. FERTIG, Denver, Colo. Filed Feb. 24, 1885. (No model.)



Claim.—The combination, in a belt-tightener, of the block A, with the pawls *l l*, the block A', with the plate a^2, the cog-wheels *h h*, the pawls *i i*, the shaft *j*, the crank *m*, the guide-rods B B, with notches, as shown, and the eccentric rollers C C, with a covering, substantially as described and shown, and for the purpose set forth.

324,547. DEVICE FOR FILLING LAMPS. ALBERT FREYGANG, New York, N. Y. Filed Apr. 11, 1885. (No model.)



Claim.—1. The combination of a funnel, a spring-clamp attached to one side of the funnel, and a guard device for guiding said clamp, substantially as set forth.

2. The combination of a funnel the discharge-tube of which is provided with escape-openings and a seat above said escape-openings, a vertically-guided float-valve, a spring-clamp attached to the upper part of the funnel, and a guard device for guiding the shank of the spring-clamp, substantially as set forth.

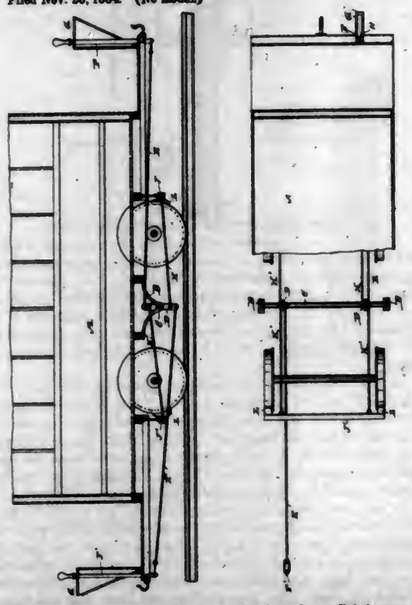
3. A funnel-shaped filling device for lamps, provided at its upper part with a pin or lug for supporting the burner, substantially as set forth.

4. The combination of a funnel having a pin or lug at its upper edge, a spring-clamp attached to one side of the funnel, and a guard device for guiding said clamp, substantially as set forth.

5. The combination of a funnel having a pin or lug at its upper edge, and a spring-clamp attached to the funnel at a point diametrically opposite to the pin or lug, substantially as set forth.

6. The combination of a funnel having a pin or lug at its upper edge, a spring-clamp at a point diametrically opposite to the same, a guard device for guiding said clamp, and a vertically-guided float-valve for closing the lower end of the funnel, substantially as set forth.

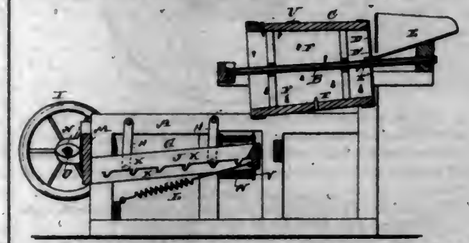
324,548. CAR-BRAKE. EDWARD GARDNER, Allegheny City, Pa. Filed Nov. 28, 1884. (No model.)



Claim.—In a car-brake, the centrally-pivoted parallel levers, in combination with the brake-bars, the hand-levers, and the guide-frames, each being provided with teeth upon the inner edge at one side, said centrally-pivoted levers being connected at their opposite ends by rods to the lower ends of the hand-levers at opposite ends of the car, and being connected intermediately of their upper ends and pivots by rods to one brake-bar, and intermediately of their lower ends and pivots by rods to the other brake-bar, said hand-levers engaging with the teeth of said guide-frames, substantially as and for the purpose set forth.

324,549. WITHDRAWN.

324,550. ORE-SEPARATING MACHINE. HENRY S. GIDEON and VALENTINE M. GIDEON, Crescent City, Iowa. Filed May 20, 1885. (No

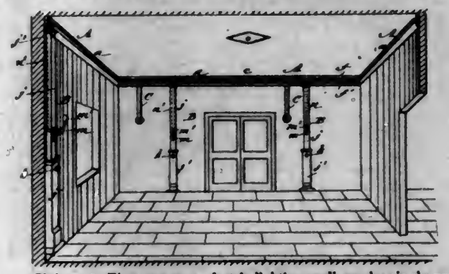


Claim.—1. An ore-separating machine made substantially as herein shown and described, consisting of the following elements: a rotary feeding-cylinder provided with interior spikes to agitate and pulverize the material, an endless chain moving under the mouth of the feeding-cylinder to carry off the coarse material, and a vibrating inclined pan provided with ore-collecting grooves or pockets, all as set forth.

2. In an ore-separating machine, the combination, with the ore-feeding cylinder and the vibrating pan, of the endless chains, substantially as and for the purposes herein described.

3. The combination, with the longitudinal driving-shaft R, pulleys T V V', and gear-wheels Q P, of the belt U, the feeding-cylinder C, the pan G, the endless chain W, and the cam-shaft O, with its cam N and its fly-wheel, all as set forth.

324,551. METHOD OF TEMPORARY ELECTRIC LIGHTING. LAZARUS GOLDENBERG, New York, N. Y. Filed Mar. 25, 1885. (No model.)



Claim.—1. The temporary electric-lighting appliance herein shown and described, consisting of a temporary or false molding or support, provided with electric conductors, in combination with temporary pillars or uprights for supporting the molding, substantially as described.

2. The temporary molding A, made in sections *a*, each section being provided with wires *f f'*, and means for locking the sections together end to end, substantially as described.

3. The sections *a*, provided with the wires *f f'* and hooks *c c'*, in combination with the screws c^2 c^3, with which the hooks are adapted to engage, so that the hooks will complete the metallic connection between the sections and at the same time lock the sections together, substantially as described.

4. The false or temporary pillars B, made in two parts, in combination with the false or temporary molding A, the pillars being made adjustable as to length, substantially as and for the purposes set forth.

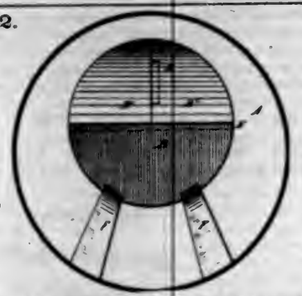
5. The false or temporary molding A, provided with the strips L of soft material, substantially as and for the purposes set forth.

6. The temporary or false pillars B, provided with electric lamps *m'* and wires *n n'*, in combination with the false or temporary molding A, provided with the wires *f f'* and supported by the pillars, the wires *n n'* serving to connect the lamp with the wires *f f'*, substantially as described.

7. The combination, with the molding A, of the pendent pieces C, provided with electric lamps and wires adapted to be connected to the molding and wires *f f'*, substantially as and for the purposes set forth.

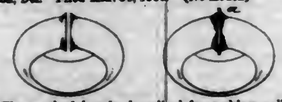
324,552. BAFFLE-PLATE FOR FLUES OF BOILERS. ROBERT GOSLING, Hatton Court, Ipswich, County of Suffolk, England. Filed Jan. 9, 1885. (No model.) Patented in England May 27, 1884, No. 8,265.

324,552.



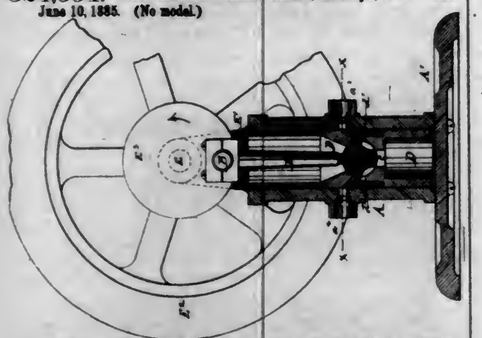
Claim.—A fire-proof disk or baffle-plate for use in the flues of steam-boilers, placed eccentrically with regard to the axis of the flue, the same having a boss or abutment to rest against the top of the flue, and being supported on refractory feet or brackets, substantially as described.

324,553. MANUFACTURE OF FINGER-RINGS. Edwin E. Hart, Wilmington, Del. Filed Mar. 31, 1885. (No model.)



Claim.—The method herein described for making solid rings from a straight blank of metal, which consists in upsetting the ends of the blank, bending the blank into a circular form, thereby bringing the upset ends together, uniting the said ends by fusion, rounding up the ring thus formed, condensing the metal of the ring by hammering, and incidentally thereto bringing the ring up to size, and then turning off the surface of the ring, substantially as set forth.

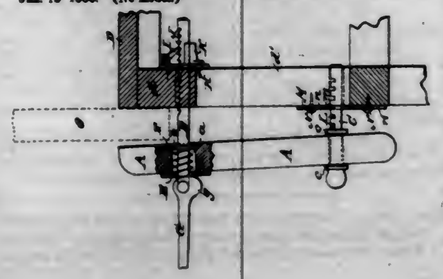
324,554. GAS-ENGINE. Henry Hartig, Brooklyn, N. Y. Filed June 10, 1885. (No model.)



Claim.—1. The combination of a cylinder having the usual inlet, exhaust, and ignition ports, a hollow reciprocating piston having similar ports registering with the ports of the cylinder, an oscillating slide-valve located at the interior of the piston, and a piston-rod secured to the slide-valve and connected to the driving-shaft, substantially as set forth.

2. The combination of a cylinder provided with gas and air inlet ports, an ignition-port and an exhaust-port, a hollow reciprocating piston having gas and air inlet ports, an exhaust-port, and a cup-shaped extension with an ignition-port, and an oscillating slide-valve located at the interior of the piston and connected by a piston-rod with the driving-shaft, substantially as set forth.

324,555. BENCH-CLAMP. Franklin P. Hess, Shelbyville, Ill. Filed Jan. 13 1885. (No model.)



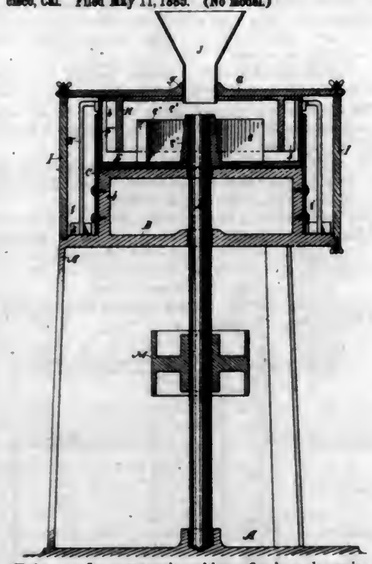
Claim.—1. The combination of the bench, the jaw, the bar B, connected at one end with the jaw and having its other end inserted through the bench and provided on part of its periphery with notches, and a pawl supported on the bench in position to engage said notches, the said bar B being axially rotatable, whereby its teeth may be adjusted out of engagement with the pawl, substantially as set forth.

2. In a bench-clamp, the device for holding and operating the head of the clamp-jaw, comprising a rotatable bar, B, passed through the jaw and bench, and provided with a series of notches, J, along one side, a pawl, I, hung to the bench and adapted to engage one of these notches, and a lever, G, pivoted to the outer end of the bar B, and having a cam-head, *g*, adapted to force the clamp-jaw inward, substantially as herein set forth.

3. In a bench-clamp, the device for holding and operating the head of the clamp-jaw, comprising a rotatable bar, B, passed through the jaw and bench and provided with notches J, a pawl, I, hung to the bench and adapted to these notches, a lever, G, pivoted to the outer end of bar B, and having a cam-head, *g*, and a spring interposed between a collar or shoulder on the bar B and a shoulder or plate of the clamp jaw, and tending to force the jaw outward when the pressure of the cam is relaxed, substantially as herein set forth.

4. In a bench-clamp, the combination, with the clamp-jaw A, axially rotatable bar B, having notches J, and a pawl, I, fixed to the bench, of an elongated bearing, K, held to the bench below the pawl, substantially as herein set forth.

324,556. OATMEAL-MACHINE. James C. Holloway, San Francisco, Cal. Filed May 11, 1885. (No model.)



Claim.—1. In an oatmeal-machine, a fixed annular series of knives and a rotating head having an upwardly-extending perforated annular flange lying within the circumference of the knives, in combination with a fixed annular flange having on its outer surface a series of parallel inclined or angling ribs, said flange being within the circumference of the perforated rim and having its lower edge raised above the surface of the head, whereby a passage is left for the oats, substantially as herein described.

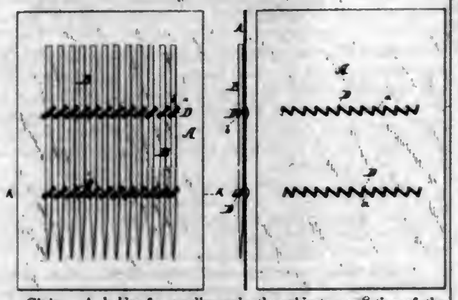
2. In an oatmeal-mill, a rotating head provided with an annular perforated rim and a fixed annular series of knives exterior to the rim, in combination with an annular flange provided with parallel-spaced ribs on its outer surface, said flange and ribs lying within the circumference of the perforated rim, and having its lower edge raised above the head, to provide a passage for the oats, and means for feeding the oats into the space inclosed by the flange, substantially as herein described.

3. In an oatmeal-mill, the combination of a fixed annular series of knives, a rotating head provided with an annular perforated rim within the circumference of the series of knives and radial wings on the head, and an annular flange having a series of inclined or angling ribs on its outer surface, said flange lying within the circumference of the perforated rim and beyond the ends of the wings and having its lower edge raised above the head, substantially as and for the purpose herein described.

4. In an oatmeal-mill, the combination of the top plate, B, having the series of knives C, the rotating head E, having a perforated rim, F, lying within the knives, the outer shell or curb, I, resting on the top plate and forming a discharge-chamber between itself and the knives, the centrally-perforated cap-plate G, resting on the outer shell, and the downwardly-extending flange H on the cap-plate, having a series of inclined or angling ribs, A, on its outer surface, said flange lying within the circumference of the perforated rim and having its lower edge raised above the head, substantially as herein described.

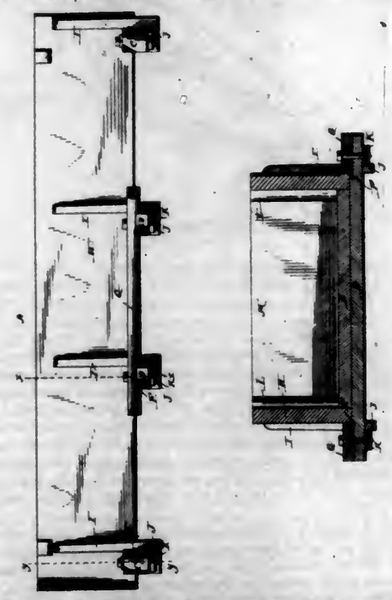
5. An oatmeal-mill comprising the top plate, B, having the fixed annular series of knives C, the outer shell or curb, I, encircling the knives and forming a discharge-chamber, *i*, a discharge-chute, L, the rotating head E, having an annular perforated rim, F, within the circumference of the series of knives, the centrally-perforated cap-plate G, resting on the outer shell and having an annular flange, H, provided with angling-ribs A on its outer surface, said flange lying within the circumference of the perforated rim and having its lower edge raised above the head, and the hopper J, fitted in the center of the cap-plate, all arranged and adapted to operate substantially as herein described.

324,557. HOLDER FOR NEEDLES AND OTHER OBJECTS. Joseph Holsbeen, Langerwehe, Prussia, assignor to Otto Von Auw, Ehrenfeld, Germany. Filed June 14, 1884. (No model.)



Claim.—A holder for needles and other objects, consisting of the spirally-wound wire D, in combination with the perforated card A, said wire being arranged to form a series of loops, *b b*, as specified.

324,558. WAGON-BODY. Wm. H. Jenkins, Tazewell Court-House, Va. Filed Apr. 27, 1885. (No model.)



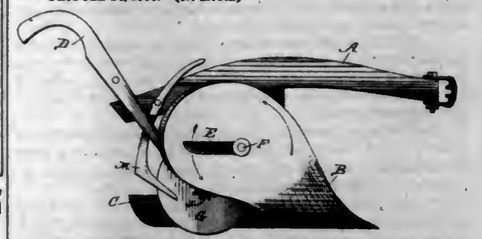
Claim.—1. In a wagon-box, the combination, with the bed or bottom having transverse braces or cross-pieces at or near the ends and center, said braces being provided at their outer ends with perpendicular retaining-shoulders, of the detachable sides set against said shoulders upon the cross-pieces and having vertical braces or standards, the lower ends of which are provided with forwardly-extending hooks, substantially as and for the purpose herein set forth.

2. As an improvement in wagon-boxes, the combination of the bed or bottom having transverse braces near the ends and center, said end braces being provided with the perpendicular retaining-shoulders at their outer ends, and the longitudinal retaining-flanges secured upon and connecting the middle braces and set against the sides of the body, of the detachable sides set against said shoulders and flange having vertical standards provided with forwardly-extending hooks, substantially as and for the purpose set forth.

3. As an improvement in wagon-boxes, the combination of the bed or bottom having transverse braces or cross-pieces secured to its under side at and near its ends and middle, said cross-pieces being provided with the retaining shoulders and flanges, as described, secured to said cross-pieces by means of vertical bolts having nuts at their lower ends, and the detachable side pieces having standards provided at their lower ends, with forwardly-extending hooks engaging the sides of said nuts to prevent them from turning, substantially as and for the purpose set forth.

4. As an improvement in wagon-beds, the combination of the bed or bottom having transverse flanged or shouldered braces, the detachable sides having standards provided at their lower ends with forwardly-extending hooks, and having vertical cleats on their inner sides at their front and rear ends, and the detachable end-gates having bolts adapted to extend through the wagon bed or bottom and provided with suitable fastening-nuts, substantially as and for the purpose herein shown and specified.

324,559. SELF-CLEANING PLOW. Allen Jones, San Marcos, Tex. Filed Jan. 24, 1885. (No model.)



Claim.—1. The combination of a mold-board having a plane face on the larger portion of its area, a blade having an axle journaled near the center of the said plane, a wheel journaled in the plow, with its rim parallel to and extending below the landside of the plow, a beveled gear-wheel upon the said wheel-axle, and another beveled wheel upon the blade-axle, engaging each other, substantially as shown and described.

2. The combination of a plow mold-board having a portion of its face plane, a blade on said plane face having an axle extending through the mold-board, and a wheel journaled in the plow between the mold-board and landside, with its rim extending below the landside, the said blade and wheel being connected together substantially as described, whereby the wheel rolling upon the ground revolves the blade in the opposite direction, for the purpose set forth.

324,560. POLARISCOPE. Walter G. King, Cleveland, Ohio. Filed May 26, 1885. (No model.)



Claim.—1. The combination of a single cylinder, A, formed with transverse opening B for the object to be examined, two prisms within said cylinder, and two eye-pieces, one of said prisms being fixed and the other movable, substantially as set forth.

2. The combination of a single cylinder, A, formed with transverse openings B and D, two eye-pieces, C C, a fixed prism between said opening B and one eye-piece, and an adjustable prism between said opening B and the other eye-piece, the adjustable prism having a handle extending through the opening D, substantially as set forth.

324,561. OPERA-CHAIR. Thomas I. Knight, New York, N. Y. Filed Mar. 15, 1884. (No model.)

Claim.—1. A row of chairs secured to a common support, each chair having a seat folding upward against the back and turning on a vertical axis near one of the rear corners of said seat, and having the axis of the chairs secured in pairs, with the axis of each pair closer together than the nearest axes of two adjoining pairs, and each chair provided with a catch to lock it in its forward position, and a motor to turn the chair around substantially at right angles to its said forward position when the catch is released, whereby a wide alley will be opened between the chairs when the seat is raised, as set forth.

2. The combination, with the double pedestal *a*, consisting of two sections united by a permanently-fixed brace, of a chair pivoted to each section of said double pedestal by a vertical pivot arranged under each

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seat, and the two constructed to fold to and from each other in horizontal planes, substantially as and for the purposes specified.

3. A folding chair having a back frame pivoted at one side by a vertical pivot to a stand beneath the seat, said back being provided with an extension on its opposite side to form a leg for the support of the same, substantially as described.

4. A folding chair having a back frame pivoted at one side by a vertical pivot to a stand beneath the seat, said back frame being provided with an extension on its side opposite the vertical pivot to form a back leg, and front legs pivoted to the seat thereof and folding with said seat, substantially as described.

5. A folding chair pivoted to a support at one corner, a catch to lock the same in one position, and a spring to swing the chair-frame and seat to another position at right angles to its former position, when said catch is unlocked, substantially as described.

6. A folding-chair frame vertically pivoted to a support, a catch to lock the same in one position, a seat pivoted to said frame constructed to unlock the catch when raised, and a spring to change the position of the main frame of the chair when the catch is operated by the seat, substantially as described.

7. The combination, with a pedestal, of a chair-frame pivoted thereto, and provided with the slotted main bracket *b*, and the auxiliary brace *d*, the spring-actuated axial pin *c*, the pivoted chair-seat having the fittings K K′, and the pawls *p* and *r*, substantially as specified.

8. The combination, with a double pedestal, of a chair pivoted to each section of said double pedestal, each chair being provided with a pivoted seat, and spring-actuated catch mechanisms, substantially as described, for holding the chairs in the folded and open positions, as set forth.

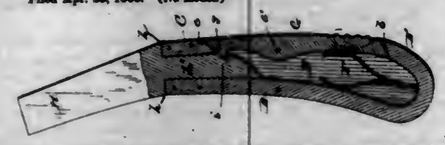
9. The combination, with the pedestal, the chair-supporting frame *b e d′*, pivoted thereon, and the seat *h*, pivoted to said frame, of the rock-shaft *l*, journaled at the front of the pivoted seat, the legs *j j*, fixed to the ends of the rock-shaft, and the arm *m*, pivoted at one end to the supporting-frame, and at the opposite end to the upward prolongation of one of the legs *j*, as set forth.

324,562. HORSESHOE. John Kneder, Auburn, Ind. Filed Apr. 27, 1885. (No model.)



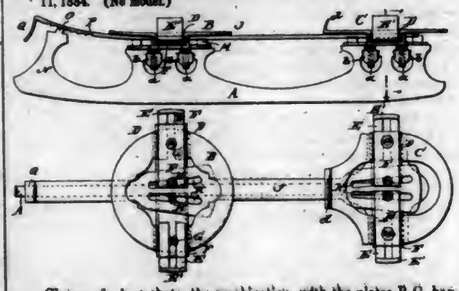
Claim.—The combination, with a horseshoe, of a casing consisting of plates having rims at their sides and rear ends, and at the front ends embracing the side edges of the shoe, and an elastic cushion inserted in the casing, substantially as and for the purpose described.

324,563. HANDLE FOR KNIVES. Paul Koska, Hartinton, Ill. Filed Apr. 23, 1885. (No model.)



Claim.—The improved knife for farriers' use herein described, consisting of a handle composed of the central sections, B C, to which are rigidly attached side pieces, D D, which project at their upper ends beyond said sections, and provided with recesses *d d*, in combination with a pivoted section, G, having a catch, *g*, formed thereon, a knife-blade with a recessed shank, and an independent spring, F, located in the body of the handle and having curved portions bearing, respectively, against the wall of said handle and the lower part of the pivot-section G, substantially as shown, and for the purpose set forth.

324,564. SKATE. Charles G. Lamont, Astoria, Oreg. Filed Sept. 11, 1884. (No model.)

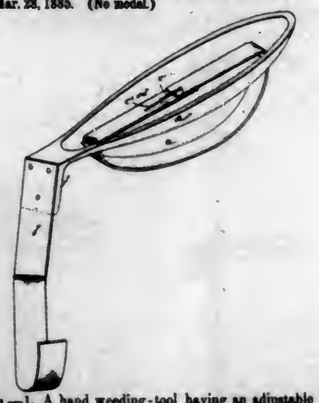


Claim.—1. In a skate, the combination, with the plates B C, having transverse grooves, of a runner held on the said plates and provided with upwardly-projecting guide-lugs M, the clamping bars or plates E on the plates B C, and the longitudinally-sliding strip J, for actuating the clamping-plates, which strip J is provided on its under side with longitudinal grooves in which the guide-lugs M pass, substantially as herein shown and described.

2. In a skate, the combination, with the runner A and the plates B C, of the clamping-plates E, the longitudinally-sliding strip J, for actuating the clamping-plates, and provided on its under side with teeth P, and the upwardly-projecting stud or pin O on the front part of the top of the runner, substantially as herein shown and described.

3. In a skate, the combination of the toe and heel plates, having pendent screws, and the nuts fitted upon said screws and securing the runner to said plates, substantially as and for the purpose set forth.

324,565. HAND WEEDING-TOOL. Fred N. Lane, Baraboo, Wis. Filed Mar. 23, 1885. (No model.)



Claim.—1. A hand weeding-tool having an adjustable loop upon one side to pass around the fingers when in use, and a blade projecting laterally, obliquely, and downward from one end, and having its point bent up in U form, substantially as and for the purpose set forth.

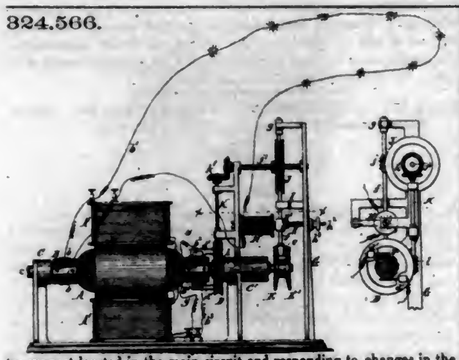
2. A weeding-tool consisting of a handle formed slightly hollowing on one side and provided with a flexible loop having its ends passed through slots in the handle and secured together, and a blade secured to and projecting laterally, obliquely, and downward from the handle, and having its point turned up in U form, substantially as and for the purpose set forth.

3. A handle for weeding-tools formed hollowing on one side and with slots, and having formed upon one end a lug for attachment to the blade, said lug extending obliquely from one side and its face obliquely across the end of the handle, substantially as described and shown.

324,566. CURRENT-REGULATOR FOR DYNAMO-ELECTRIC MACHINES. John A. Lannert, Cleveland, Ohio, assignor to the Buffalo Electric Works, Buffalo, N. Y. Filed Nov. 26, 1884. (No model.)

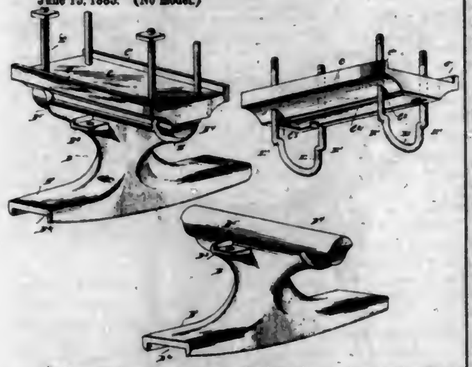
Claim.—1. In a dynamo-electric machine, the combination, with a revolving armature wound with two separate coils, one for the main current and one for the field-current, and the field-magnets, of a commutator connected with the main-current coil of the armature, a shifting commutator connected with the field-current coil of the same armature, an electro-magnet located in the main circuit and responding to changes in the strength of the main current, and a shifting train of shafts and gear-wheels which is set in motion by said electro-magnet, and whereby the shifting commutator is adjusted to increase or reduce the field-current, substantially as set forth.

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2. In a dynamo-electric machine, the combination, with a revolving armature wound with two separate coils, one for the main current and one for the field-current, and the field-magnets, of a commutator connected with the main-current coil of an armature, a shifting commutator connected with the field-current coil of the same armature, connected wheels E E′, secured to the shaft of the armature, a movable shaft, *f*, provided with a pinion, *e*, and armature *h*, a train of gear-wheels and shafts connecting the shaft *f* with the shifting armature, and an electro-magnet, H, arranged in the main circuit, and adjusting the position of the shaft *f* by the movable armature *h*, substantially as set forth.

324,567. SLEIGH-KNEE. Abney S. Larson, Geneva, Minn. Filed June 15, 1885. (No model.)



Claim.—1. As an improvement in sleigh-knees, the combination of the knee proper, composed of the base provided on its lower side with the longitudinal groove or recess, the rounded head cast at right angles to the base, and inclined slightly toward the inner side of the same, and having the longitudinal shoulders, arranged as described, the casting having the upwardly-projecting side flanges and the vertical apertures and provided on its lower side with the longitudinal concave recess, and the clips having the shoulders formed thereon, all constructed and arranged to operate in the manner and for the purpose shown and set forth.

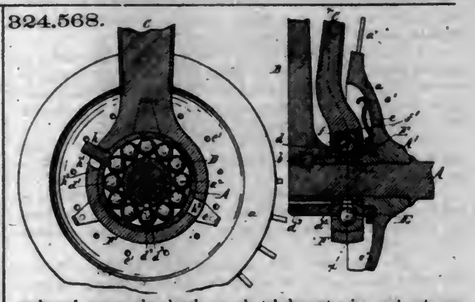
2. As an improvement in bob-sleighs, the combination, with the runners, of the knee having the longitudinal recess in the lower side of its base, the side projections, and the inclined rounded head having the longitudinal shoulders, the inclined braces extending from the runner to the side projections of the knee, the casting having the upwardly-projecting side flanges and the vertical apertures and provided on its lower side with the longitudinal concave recess, and the clips having the shoulders formed thereon, all constructed and arranged to operate in the manner and for the purpose shown and set forth.

324,568. VELOCIPEDE. Ernst G. Latta, Friendship, N. Y., assignor to the Pope Manufacturing Company, Hartford, Conn. Filed Apr. 29, 1884. (No model.)

Claim.—1. The combination, with the axle and bearing, of a hub provided on its outer side with a tubular extension inclosing the outer portion of the axle and passing through the bearing, substantially as set forth.

2. The combination, with the axle, of a hub provided on its outer side with a tubular extension inclosing the outer portion of the axle, a

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crank, and means whereby the crank, tubular extension, and axle are secured together, substantially as set forth.

3. The combination, with the axle or spindle and a surrounding bearing-box, of two similar cones capable only of axial movement on the axle, balls interposed between the cones and the bearing-box, and an adjusting device whereby one of said cones is adjusted, substantially as set forth.

4. The combination, with the axle or spindle having a longitudinal groove, d^3, of cones *d d*, provided with projections d^3, adjusting-ring E, bearing-box D, and balls d', substantially as set forth.

5. The combination, with the axle or spindle and a surrounding bearing-box, of two similar cones capable only of axial movement on the axle, balls interposed between the cones and the bearing-box, and an annular screw whereby one of the cones can be adjusted, substantially as set forth.

6. The combination, with the axle and the adjustable cones of the bearing, of an annular adjusting-screw made separate from the cones, and a spring-arm attached to said annular screw whereby the latter is locked in position, substantially as set forth.

7. The combination, with the axle, bearing, and annular adjusting-nut provided with a series of locking-arms, of a wheel having an annular series of stops or depressions so arranged with reference to the locking-arms that only one arm will engage with said stops or depressions at a time, substantially as set forth.

8. The combination, with a bearing, of a movable ring provided with a series of catches, and a series of stops so arranged with reference to the catches that only one catch will engage with a stop at a time, substantially as set forth.

9. The combination, with the axle or spindle, cones *d d*, bearing-box D, and balls d', of the adjusting-ring E, provided with a series of spring-catches, *e*, and the hub A′, provided with an annular row of stops or depressions, e', substantially as set forth.

10. The combination, with a supporting frame provided with an annular spherical recess or seat partly cut away, of a bearing-box provided with a convex outer spherical surface, and adapted to be introduced into the recess of the frame through the cut-away portion thereof and to be held in the frame upon being turned into its normal position, substantially as set forth.

11. The combination, with a bearing-box, of a supporting-frame made in one piece, and provided with an annular seat of larger diameter at its middle than at its edges, whereby the bearing-box is held in said seat, substantially as set forth.

12. The combination, with the supporting frame provided with an annular recess, *f*, having a concave inner face, and an opening, *h′*, of an annular bearing-box, D, having a spherical outer face, and a projection, *h*, entering the opening *h′*, whereby the bearing-box is prevented from revolving with the axle, substantially as set forth.

13. The combination, with the supporting-frame provided with an annular recess, *f*, having a concave inner face, and an opening, *h′*, of an annular bearing-box, D, having a spherical outer face, and a projection, *h*, entering the opening *h′*, whereby the bearing-box is prevented from revolving with the axle, and an auxiliary opening, h^2, which permits the bearing-box to be reversed, substantially as set forth.

14. The combination, with a supporting-frame provided with an opening, *h′*, of a bearing-box seated in said frame and capable of being moved therein, and provided with an oil-hole, h^2, which can be exposed through the opening *h′* or be covered up by the inclosing-frame, at desire, substantially as set forth.

15. The combination, with the steering-head, of the upper adjustable center bearing capable of moving vertically in the steering-head, and a differential screw whereby said bearing is adjusted, substantially as set forth.

16. The combination, with the steering-head P, center *o′*, and adjustable center bearing, *p′*, of the differential adjusting-screw Q, provided with a milled head, Q′, overlapping the upper end of the steering-head, substantially as set forth.

17. The combination, with the steering-head, center *o′*, and adjustable center bearing, *p′*, of the differential adjusting-screw Q, constructed

with a milled head, Q', and a locking-spring, q', attached to the steering-head, substantially as set forth.

18. The combination, with the steering-head provided with a recess and spring, q', seated therein, of the adjustable center bearing, p', provided with a recess for the reception of said spring, and whereby said center bearing is prevented from turning, but permitted to move vertically, substantially as set forth.

19. The combination, with the steering-head provided with a recess in its front side, of a brake arranged in said recess, substantially as set forth.

20. The combination, with the steering-head provided with a recess in its front side, of a spring seated with its rear end in said recess, and a brake seated in said recess on the rear end of said spring, substantially as set forth.

21. The combination, with the steering-head provided on its front side with a recess and on its upper end with a projection, of a brake seated in said recess and guided with its upper end in said projection, substantially as set forth.

22. The combination, with the steering-head P, provided with a recess, r^2, and handle-bar lug S, having a guide, r^3, of the brake R, provided with the knuckle r, seated in said recess r^2 and having its upper end arranged in the guide r^3, substantially as set forth.

23. The combination, with the handle-bar lug, of a right and left hand screw seated in said lug and held therein against turning, and handle-bars one of which is provided with a right and the other with a left screw-thread engaging with said right and left hand screw, substantially as set forth.

24. The combination, with the handle-bar lug S, of the tubular handle-bars T and screw S', extending into the handle-bars beyond the handle-bar lug S, substantially as set forth.

324,569. BANJO. Jerome Mathushek, Stratford, Conn. Filed May 26, 1884. (No model.)



Claim.—1. In combination with a sounding-box, the double rim, having thereon the head and supported upon blocks secured within said box and held thereto by screws passing through the lower rim, substantially as set forth.

2. The combination, with the sounding-box A, of the double rim F D, upon which is stretched the head by means of brackets J set upon blocks set within the sounding-box, substantially as set forth.

3. The combination of box A, having set therein supporting-blocks C, with rims D F, and brackets J, all arranged as described, and for the purpose described.

4. In combination with a banjo, a tail-piece of flat sheet metal slitted at one end, and with said slitted end curled around a wire or bar of metal, substantially as set forth.

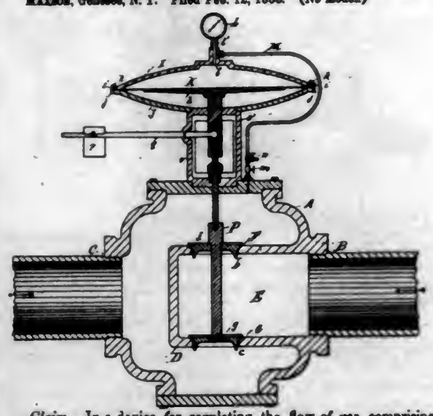
324,570. STEM-SETTING DEVICE. Edward A. Marsh, Newton, Mass. Filed May 6, 1885. (No model.)



Claim.—1. A watch-case having a longitudinally-movable winding-stem and a lever connected at one end to the case at one side of the winding-stem and extending across the inner end of said stem without engagement therewith, so that it will be moved only by an inward movement of said stem, as set forth.

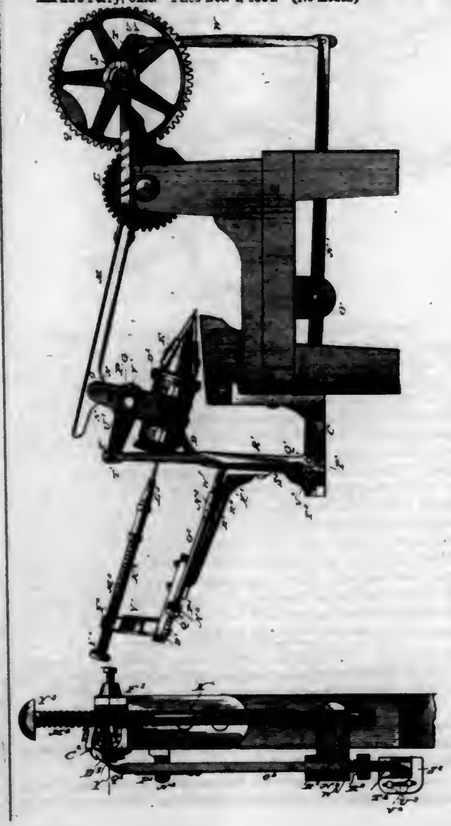
2. In a stem winding and setting watch, the combination of the yoke having the setting-wheel d, a spring whereby the yoke is normally held in position to make said wheel inoperative, the longitudinal winding-stem, a lever connected at one end to the case and extending across the inner end of the winding-stem without a positive connection therewith, and a connection, substantially as described, between the swinging end of said lever and the yoke, whereby an inward movement of the winding-stem is caused to move the yoke against the pressure of its spring into hand-setting position, as set forth.

324,571. REGULATING-VALVE FOR NATURAL GAS. John F. Mahon, Geneseo, N. Y. Filed Feb. 12, 1885. (No model.)



Claim.—In a device for regulating the flow of gas, comprising a high and low pressure chamber and an interposed regulating-valve actuated by a diaphragm in an independent chamber, a communicating conduit from the low-pressure chamber to the upper part of the diaphragm-chamber, said conduit having a stop-cock, m, interposed therein, whereby, when said cock m is closed, the diaphragm-chamber may be opened without interrupting the flow of gas through the valve-chamber.

324,572. NAIL-PLATE-FEEDING MACHINE. George W. McKim, Martin's Ferry, Ohio. Filed Dec. 4, 1884. (No model.)



324,572.



Claim.—1. The combination, in a nail-plate-cutting mechanism, of a drive-shaft having an eccentric, an oscillating arm carrying the plate-holding barrel, a connecting-rod articulated to the eccentric and to the oscillating arm, a pinion secured upon the drive-shaft, a cog-wheel meshing with the pinion being of twice the diameter of the pinion, and having a crank and pin, a rocking lever, a pitman connecting the crank and the lever, a rock-shaft imparting rotary reciprocating motion to the plate-holding barrel E, having spiral cogs or flanges F, engaging with pinion G, which is provided with spiral cogs H, and having a crank at its end, and a connecting-rod articulated to the crank and to the other end of the rocking lever, the pivotal point of the pitman and lever being concentric with the fulcrum of the oscillating barrel-carrying arm when the lever is in its horizontal position, as and for the purpose shown and set forth.

2. In a nail-plate-feeding mechanism, the combination, with an oscillating arm carrying the plate-holding barrel for rotary reciprocating the said barrel E, having spiral cogs or flanges F, engaging with pinion G, which is provided with spiral cogs H, of a rocking lever having means for turning the plate-holding barrel and rocking up and down once for every two oscillations of the arm, and having its end concentric with the fulcrum of the oscillating arm when the lever is in its horizontal position, as and for the purpose shown and set forth.

3. In a nail-plate-feeding machine, the combination of an oscillating arm carrying the rotary reciprocating plate-holding barrel, and provided with a rearwardly-extending bracket having a yielding cylindrical bearing, a cylindrical rack-bar provided with the plate-clamping nippers, and sliding and turning in the cylindrical bearing, a shaft journaled transversely in the side of the bearing, and having a pinion at its upper end meshing with the cylindrical rack-bar, and means for revolving the said shaft a portion of a revolution at each stroke of the oscillating arm, as and for the purpose shown and set forth.

4. In a nail-plate-feeding machine, the combination of an oscillating arm carrying the plate-holding barrel, a plate-feeding rack-bar sliding in bearings upon said arm, a shaft having a pinion meshing with the rack-bar and provided with a ratchet-wheel at its lower end, a bar sliding in bearings upon the arm and engaging the ratchet-wheel at one end, and an upright post secured upon the base of the machine, having its end projecting into the latter portion of the forward stroke of the sliding rod with the arm, as and for the purpose shown and set forth.

5. In a nail-plate-feeding machine, the combination of a revolving barrel, a plate-feeding cylindrical rack-bar, a bearing for the said rack-bar, a shaft having a pinion engaging the said rack-bar, and having a ratchet-wheel, a sliding rod engaging the ratchet-wheel with one end, and having a spring, throwing it back from the wheel, and means, substantially as described, for pushing the said sliding rod against the teeth of the ratchet-wheel, as and for the purpose shown and set forth.

6. The combination of the ratchet-wheel, the sliding rod having the spring forcing it forward, the bearing having a perforation wider than the rod and having a spring forcing the end of the rod against the ratchet-wheel, and means for forcing the rod rearward at each stroke of the plate-carrying arm, as and for the purpose shown and set forth.

7. The combination of the shaft having the feeding-pinion and the detachable ratchet-wheel, the sliding rod having pawl-shaped end, the bearing having the aperture wider than the rod, and having the spring forcing the end of the rod against the ratchet-wheel, the bearing having the recess in one end, the adjustable collar secured upon the rod at both ends of the bearings, the spiral spring fitting around the rod in the recess in the bearing, bearing against the rearmost of the collars, and the adjustable post, as and for the purpose shown and set forth.

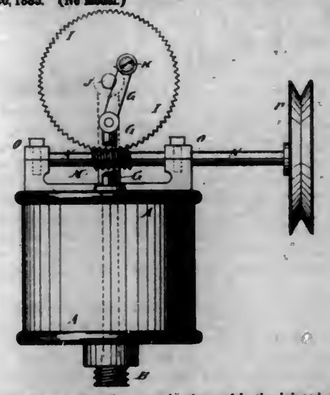
8. The combination, in a nail-plate-feeding machine, of a drive-shaft having an eccentric, an oscillating arm carrying the plate-holding barrel, a connecting-rod connecting the eccentric and the arm, a rocking lever, means for rocking said lever once for every two revolutions of the drive-shaft, a rock-shaft having a crank at one end for rotary reciprocating the plate-holding barrel E, having spiral cogs or flanges F, engaging with pinion G, which is provided with spiral cogs H, and a pitman pivoted to the crank and to the end of the rocking lever, as and for the purpose shown and set forth.

324,573. PICK ATTACHMENT FOR DREDGE-BUCKETS. John McSpirit, Jersey City, N. J. Filed June 8, 1885. (No model.)

Claim.—1. The combination, with the frame A of a dredge-bucket, of the pivoted picks O and their connecting-bar P, substantially as herein shown and described, whereby a dredge-bucket can be used as a pick to loosen hard ground at the bottom of water, as set forth.

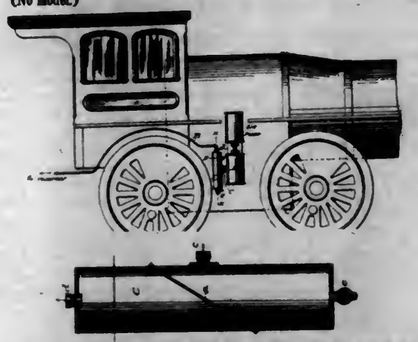
2. The combination, with the frame A of a dredge-bucket, and the picks O, pivoted to the said frame, of the hook Q, substantially as herein shown and described, whereby the said picks can be supported out of the way when not required for use, as set forth.

324,574. VALVE-OILER. Samuel D. Merrihon, Rahway, N. J. Filed Jan. 20, 1885. (No model.)



Claim.—In an oiler, the combination, with the jointed discharge-rod G, of the screw-wheel I, having crank-pin H, and the endless screw M, having a pulley, P, attached to its shaft to receive a driving-band, substantially as herein shown and described, whereby the oiler will be made to discharge oil with certainty at regular intervals of time, as set forth.

324,575. GREASE AND WATER TRAP FOR AIR-BRAKES. Frederick Mertsheimer and Spencer Otis, Denver, Colo. Filed Feb. 19, 1885. (No model.)



Claim.—1. In an air-brake system for railways, the combination of an air-compressing pump, a conductor through which air is delivered to the brake mechanism, and a trap, substantially such as shown, for collecting grease and moisture, located between the pump and the brake mechanism.

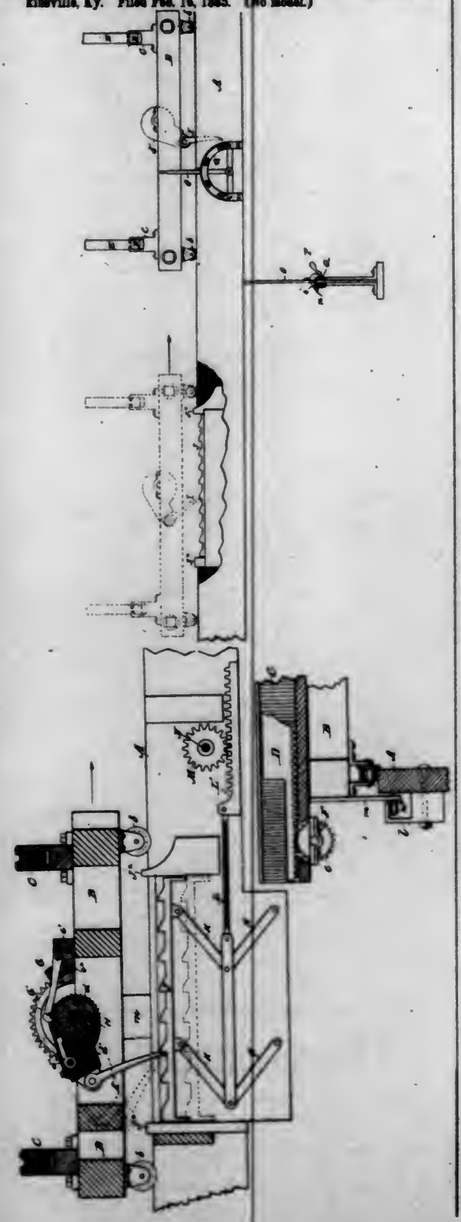
2. In a pneumatic brake system for railways, the air-pump, in combination with the body or vessel C, provided with the deflector-plate,

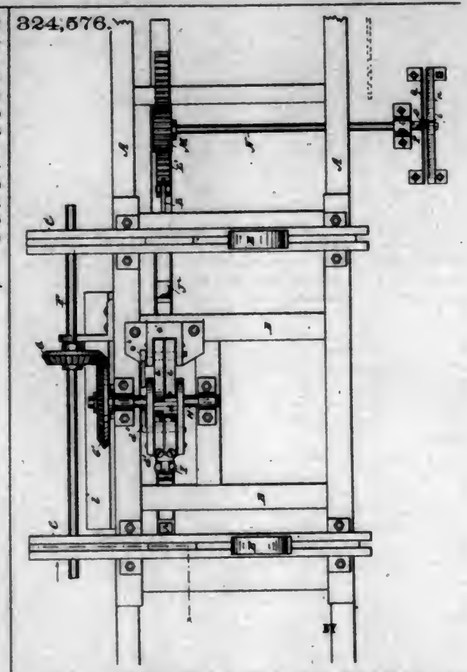
with the inlet-opening communicating below said plate, with the delivery portion of the pump, and outlet *d*, located above said plate, whereby the grease and moisture delivered from the pump are arrested and retained.

3. In a pneumatic brake-system for railways, and in combination with the air-forcing apparatus, the grease and air trap connected with the delivery-port, said trap consisting of the vessels C, provided with the internal deflector-plate, *a*, the air-inlet *c* below said plate, the air-outlet *d* above said plate, and the outlet-cock *e*, located at the bottom.

4. In a grease-trap, the chamber or body provided with the air-inlet midway of its height, with the air-outlet at its top, and with the intermediate plate, *a*, of a width less than the diameter of the vessel, whereby the inflowing air is directed against the under face of the plate and permitted to rise past the edges of the plate to the outlet-port, while the grease and moisture are precipitated.

324,576. SAW-MILL SET-WORKS. CHARLES W. METCALFE, Hopkinsville, Ky. Filed Feb. 16, 1885. (No model.)





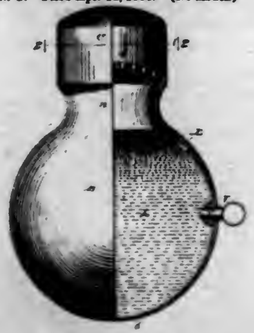
Claim.—1. The combination, with the head-block knees in a saw-carriage and automatic setting mechanism for the same, of an abutment-bar arranged relatively stationary to the carriage, and engaging with the setting mechanism, with a passive resistance for automatic setting when the carriage is in motion, and provided with mechanism for actively working it to set the head-blocks at will when the carriage is stationary, substantially as set forth.

2. The combination, in a saw-mill, with the traveling carriage, its head-block knees, and automatic ratchet mechanism for setting the same, of a pivoted thrust-bar and an elongated abutment-bar made relatively stationary to the carriage and thrust-bar, and arranged longitudinally in the path of the latter, and having a series of teeth or notches for engagement with and automatic operation of the thrust-bar and ratchet mechanism, whereby the travel of the carriage may be reversed at different points to suit the varying lengths of logs without interfering with the automatic setting mechanism, substantially as described.

3. The combination, with the saw-carriage and the ratchet mechanism located thereon, of a vertically-adjustable abutment-bar, J, having a series of teeth for engagement with the thrust-bar and arranged in the path of the ratchet mechanism, as and for the purpose described.

4. The combination, with the ratchet mechanism, the pendent thrust-bar, and the adjustable abutment-bar J, moving in guides, of the toggle-arms K, pivoted to the lower side of the abutment-bar and pivotally connected to and operated by the rod L, and the rack-bar L', connecting the said rod to the pinion M, shaft N, and lever O, substantially as described.

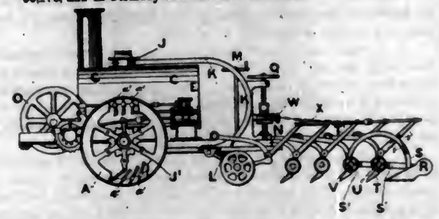
324,577. HAND-GRENADE FIRE-EXTINGUISHER. NOAH MITCHELL, New York, N. Y. Filed Apr. 11, 1885. (No model.)



Claim.—1. A portable fire-extinguisher having a hollow body of glass or the like, charged with a suitable chemical liquid, and having a sprinkler integral therewith, and a cap of thin glass hermetically attached by fusing or the like, which seals the sprinkler, exposes it to view, and is adapted to be instantaneously removed by breaking it, substantially as herein specified.

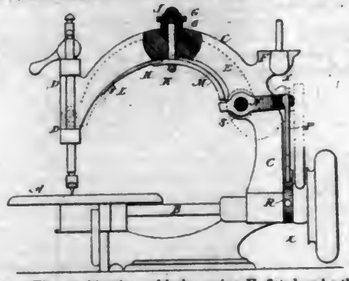
2. The within-described portable fire-extinguisher, having a hollow body of glass or the like, charged with a suitable chemical liquid, and having a sprinkler integral therewith, inclosed by a hermetically-attached cap of thin glass, a contracted neck by which to handle the extinguisher, a combined filling-mouth and vent in one side of the body, provided with an air-tight stopper, and a thin convex bottom opposite said neck and sprinkler, substantially as shown, whereby the extinguisher is adapted to be used either as a sprinkler or as a grenade at will, as herein set forth.

324,578. MACHINERY FOR PLOWING, &c. WILLIAM C. MORTON, Coleshill, County of Warwick, England. Filed June 3, 1885. (No model.) Patented in England Feb. 5, 1884, No. 2,732, and Feb. 6, 1884, No. 2,822; in France Nov. 10, 1884, No. 152,684; in Belgium Nov. 10, 1884, No. 69,176, and in Germany Dec. 10, 1884, No. 4,233.



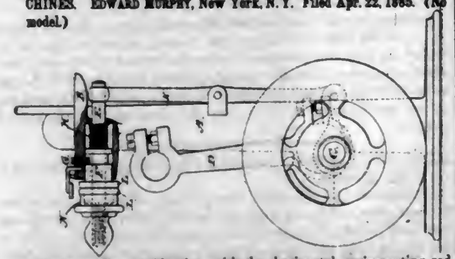
Claim.—The improvement in machinery for plowing, consisting of the engine pivoted and controlled from the centers J and J' by the straps K, in combination with said straps, the self-clearing wheels A and B, the elevating and steering mechanism for turning quick corners, and the plows adapted to single or grouped use at will, with independent and yet controllable action, as herein set forth.

324,579. TENSION DEVICE FOR SEWING-MACHINES. EDWARD MURPHY, New York, N. Y. Filed Sept. 24, 1884. (No model.)



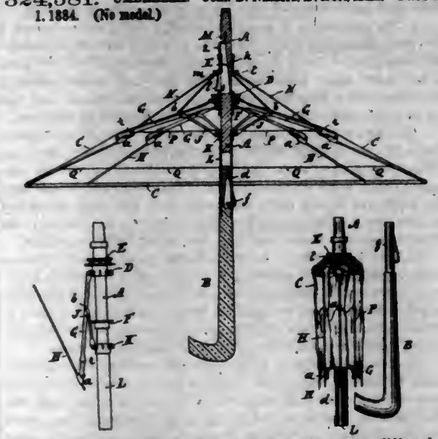
Claim.—The combination, with the spring H, fitted under the fixed arm C of a sewing-machine, and adapted to actuate a tension disk or disks, G, supported upon said arm, of a lever, N, pivoted upon the pivotal stud of the needle-arm E of the machine, and connected by a coupling-bar, P, with an adjustable eccentric, R, upon the main shaft, substantially in the manner and for the purpose herein set forth.

324,580. THREAD-CONTROLLING DEVICE FOR SEWING-MACHINES. EDWARD MURPHY, New York, N. Y. Filed Apr. 22, 1885. (No model.)



Claim.—The combination, with the horizontal reciprocating rod working transversely through the frame of a sewing-machine, of a collar formed with a circumferential groove and fitted loosely upon the rod to play thereon within a recess in the frame, through which the rod passes, a pin projecting from the frame into said groove, a spring within the recess forcing the collar outwardly, and two thread-clamping disks mounted loosely upon the rod outside of the collar and confined thereon by an outer nut, all substantially in the manner and for the purpose herein set forth.

324,581. UMBRELLA. JOHN D. NESBITT, Everett, Mass. Filed Dec. 1, 1884. (No model.)



Claim.—1. The combination of an umbrella-staff, a sliding sleeve thereon, a catch for fastening said sleeve, main ribs pivoted to said sleeve, a stationary sleeve on said staff, braces pivoted at one end to said main ribs and at the other end to said fixed sleeve, an auxiliary sliding sleeve above the sliding sleeve aforesaid, a catch for locking said sleeve, and braces connected at their upper ends to said auxiliary sleeve and at their lower ends to the main ribs, substantially as described.

2. The combination of an umbrella-staff, a sliding sleeve thereon, a catch for fastening said sleeve, main ribs pivoted to said sleeve, a stationary sleeve on said staff, braces pivoted at one end to said main ribs and at the other end to said fixed sleeve, an auxiliary sliding sleeve above the sliding sleeve aforesaid, a catch for locking said sleeve, and cords connecting said main ribs at points outside their joints with said braces, substantially as described.

3. The combination of an umbrella-staff, a sliding sleeve thereon, a catch for fastening said sleeve, main ribs pivoted to said sleeve, a stationary sleeve on said staff, braces pivoted at one end to said main ribs and at the other end to said fixed sleeve, an auxiliary sliding sleeve above the sliding sleeve aforesaid, a catch for locking said sleeve, braces connected at their upper ends to said auxiliary sleeve and at their lower ends to the main ribs, and cords connecting said main ribs at points outside their joints with said first-mentioned braces, substantially as described.

4. The combination of an umbrella-staff, a sliding sleeve thereon, studs for limiting the movement of said sliding sleeve in one direction, a catch for limiting its movement in the other direction, main ribs pivoted to said sleeve, an auxiliary sliding sleeve above the sliding sleeve aforesaid, a catch for locking said sleeve, and upper braces connected at their upper ends to said auxiliary sleeve and at their lower ends to the main ribs, substantially as described.

5. The combination of an umbrella-staff, a sliding sleeve thereon, studs for limiting the movement of said sliding sleeve in one direction, a catch for limiting its movement in the other direction, main ribs pivoted to said sleeve, an auxiliary sliding sleeve above the sliding sleeve aforesaid, a catch for locking said sleeve, upper braces connected at their upper ends to said auxiliary sleeve and at their lower ends to the main ribs, and cords connecting said main ribs at points remote from their inner ends, substantially as described.

6. The combination of an umbrella-staff, a sliding sleeve thereon, a catch for fastening said sleeve, main ribs pivoted to said sleeve, a stationary sleeve on said staff, main braces pivoted at one end to said main ribs and at the other end to said fixed sleeve, auxiliary ribs pivoted to the outer ends of said main ribs, an auxiliary sliding sleeve above the sliding sleeve aforesaid, a catch for locking said sleeve, and upper braces connected at their upper ends to said auxiliary sleeve and at their lower ends to the main ribs, substantially as described.

7. The combination of an umbrella-staff, a sliding sleeve thereon, a catch for fastening said sleeve, main ribs pivoted to said sleeve, a stationary sleeve on said staff, main braces pivoted at one end to said main ribs and at the other end to said fixed sleeve, cords connecting said main ribs at points outside their joints with said braces, and auxiliary ribs pivoted to the outer ends of said main ribs, substantially as described.

8. The combination of an umbrella-staff, a sliding sleeve thereon, a catch for fastening said sleeve, main ribs pivoted to said sleeve, a sta-

tionary sleeve on said staff, main braces pivoted at one end to said main ribs and at the other end to said fixed sleeve, auxiliary ribs pivoted to the outer ends of said main ribs, an auxiliary sliding sleeve above the sliding sleeve aforesaid, a catch for locking said sleeve, upper braces connected at their upper ends to said auxiliary sleeve and at their lower ends to the main ribs, and cords connecting said main ribs at points outside their joints with said main braces, substantially as described.

9. The combination of an umbrella-staff, a sliding sleeve thereon, a catch for fastening said sleeve, main ribs pivoted to said sleeve, an auxiliary sliding sleeve above the sliding sleeve aforesaid, a catch for locking said sleeve, upper braces connected at their upper ends to said auxiliary sleeve and at their lower ends to the main ribs, and auxiliary ribs pivoted to the outer ends of said main ribs, substantially as described.

10. The combination of an umbrella-staff, a sliding sleeve thereon, a catch for fastening said sleeve, main ribs pivoted to said sleeve, an auxiliary sliding sleeve above the sliding sleeve aforesaid, a catch for locking said sleeve, upper braces connected at their upper ends to said auxiliary sleeve and at their lower ends to the main ribs, cords connecting said main ribs at points remote from their inner ends, and auxiliary ribs pivoted to the outer ends of said main ribs, substantially as described.

11. The combination of an umbrella-staff, a sliding sleeve thereon, a catch for fastening said sleeve, main ribs pivoted to said sleeve, a stationary sleeve on said staff, main braces pivoted at one end to said main ribs and at the other end to said fixed sleeve, auxiliary ribs pivoted to the outer ends of said main ribs, and cords connecting said auxiliary ribs at points remote from their inner ends, substantially as described.

12. The combination of an umbrella-staff, a sliding sleeve thereon, a catch for fastening said sleeve, main ribs pivoted to said sleeve, a stationary sleeve on said staff, braces pivoted at one end to said main ribs and at the other end to said fixed sleeve, an auxiliary sliding sleeve above the sliding sleeve aforesaid, a catch for locking said sleeve, upper braces connected at their upper ends to said auxiliary sleeve and at their lower ends to the main ribs, auxiliary ribs pivoted to the outer ends of said main ribs, and cords connecting said auxiliary ribs at points outside their joints with the main ribs, substantially as described.

13. The combination of an umbrella-staff, a sliding sleeve thereon, a catch for fastening said sleeve, main ribs pivoted to said sleeve, a stationary sleeve on said staff, main braces pivoted at one end to said main ribs and at the other end to said fixed sleeve, an auxiliary sliding sleeve above the sliding sleeve aforesaid, a catch for locking said sleeve, upper braces connected at their upper ends to said auxiliary sleeve and at their lower ends to the main ribs, cords connecting said main ribs at points outside their joints with said main braces, auxiliary ribs pivoted to the outer ends of said main ribs, and cords connecting said auxiliary ribs at points outside their joints with the main ribs, substantially as described.

14. The combination of an umbrella-staff, a sliding sleeve thereon, a catch for fastening said sleeve, main ribs pivoted to said sleeve, a stationary sleeve on said staff, main braces pivoted at one end to said main ribs and at the other end to said fixed sleeve, cords connecting said main ribs at points outside their joints with said braces, auxiliary ribs pivoted to the outer ends of said main ribs, and cords connecting said auxiliary ribs at points outside their joints with the main ribs, substantially as described.

15. The combination of an umbrella-staff, a sliding sleeve thereon, a catch for fastening said sleeve, main ribs pivoted to said sleeve, an auxiliary sliding sleeve above the sliding sleeve aforesaid, a catch for locking said sleeve, upper braces connected at their upper ends to said auxiliary sleeve and at their lower ends to the main ribs, auxiliary ribs pivoted to the outer ends of said main ribs, and cords connecting said auxiliary ribs at points outside their joints with the main ribs, substantially as described.

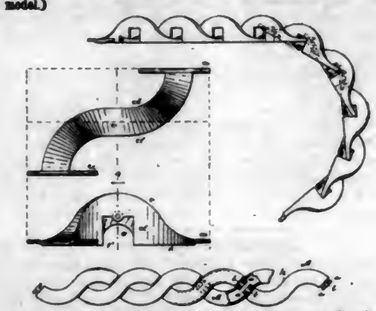
16. The combination of an umbrella-staff, a sliding sleeve thereon, a catch for fastening said sleeve, main ribs pivoted to said sleeve, an auxiliary sliding sleeve above the sliding sleeve aforesaid, a catch for locking said sleeve, upper braces connected at their upper ends to said auxiliary sleeve and at their lower ends to the main ribs, cords connecting said main ribs at points remote from their inner ends, auxiliary ribs pivoted to the outer ends of said main ribs, and cords connecting said auxiliary ribs at points outside their joints with the main ribs, substantially as described.

17. In an umbrella, the spring-catch M, provided with the shoulders *l m*, whereby it is adapted to fasten or lock the sleeve D in position when fully depressed, and the sleeve E when fully elevated, substantially as shown and described.

18. In an umbrella, the spring-catch M, provided with the shoulders *l m* and projection *z*, in combination with the sleeves E D, substantially as set forth.

19. The improved folding umbrella herein described, the same consisting of the staff A, provided with the spring-catch M and stop F, the handle B, provided with the spring-catch *f*, the ribs G, provided with the braces J P N, the ribs H, provided with the braces Q, and the sleeves D E and body or covering C, constructed, combined, and arranged to operate substantially as described.

324,582. ORNAMENTAL CHAIN. John Osbis, Newark, N. J., assignor to A. J. Hedges & Co., New York, N. Y. Filed Mar. 27, 1885. (No model.)



Claim.—1. A chain wherein each link is connected at its ends to the middles of the adjoining links, and the latter are connected at their ends to its middle, substantially as set forth.

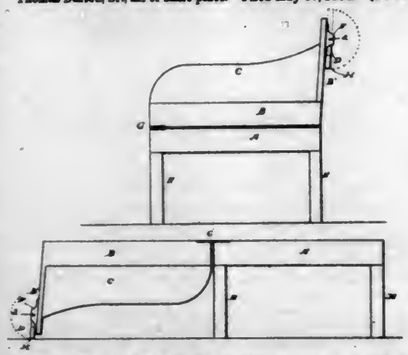
2. A chain consisting of hollow links, each formed with projections on its ends, and with slots in its middle portion adapted to receive corresponding projections on the ends of the adjoining links, and each link connected at its end to the middles of the two adjoining links, and connected at its middle to the ends of the adjoining links, substantially as set forth.

3. A chain consisting of hollow links, each formed with projections on its ends, and with slots in its opposite sides at its middle portion to receive corresponding projections on the ends of the adjoining links, and with a partition fixed in it between said slots, for the purposes specified.

4. A chain consisting of hollow links, each formed with lateral projections *a a* on its ends, and with a slot or opening, *e*, on each side at its middle, of sufficient width to admit the end, and each link connected at its ends to the middles of the two adjoining links, and connected a its middle to the ends of the adjoining links, substantially as specified.

5. A chain consisting of hollow links, each formed with lateral projections on its ends and with slots in its sides, and with supplementary slots *g g* to admit said end projections, and plates *h h*, closing the slots *g g*, and fastening device, substantially as described, for retaining said plates in place in said slots.

324,583. SOFA-BED. Joseph B. Okey, Indianapolis, Ind., assignor, by direct and mesne assignments, to Daniel F. Haley, James B. Lyon, and Thomas Dalton, Sr., all of same place. Filed May 17, 1884. (No model.)

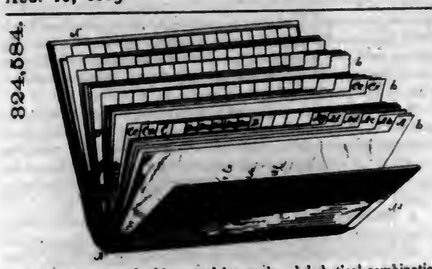


Claim.—In a folding sofa-bed, the combination of the seat hinged in front to the body of the lounge and opening forward to form half of the bed, the back fixed permanently to the seat, so as to revolve with it and form the front legs of the bed when open, and the revolving bar D, hinged to the back, so as to drop down when the bed is opened and protect the carving and finished work on the back, all substantially as described and specified.

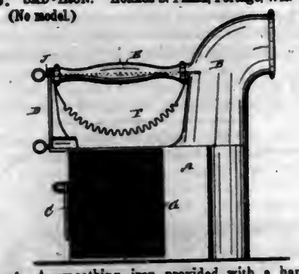
324,584. INDEX. Benjamin M. Payne, Chicago, Ill. Filed Apr. 5, 1883. (No model.)

Claim.—1. An index-book having a front cover of less height than the back cover, and having a filling of leaves in gradually-shortening sets from back to front to expose the index-tags, the book being adapted to rest upon its hinge and expose all the index-tags when closed, as set forth.

2. The index-book described, having back cover, A', hinge A^2, and front cover, A^3, of less height than the back cover, and having also a filling, B, of leaves arranged in sets of gradually less height from back to front to expose the tags *b*, the index-letters upon said filling being arranged transverse to the hinge and in regular alphabetical combinations, as specified.



324,585. RAD-IRON. Horace S. Peake, Portage, Wis. Filed Dec. 19, 1884. (No model.)



Claim.—1. A smoothing-iron provided with a handle and a curved fluter secured to the handle, substantially as herein shown and described.

2. The combination, with the smoothing-iron A, having the neck B and the standard D, of the handle E and the curved fluter F, secured on the under side of the handle, substantially as herein shown and described.

3. The combination, with the smoothing-iron A, having flutings G on one side, of the handle E and the curved fluter F on the handle, substantially as herein shown and described.

324,586. TRUSS. Daniel Pomeroy, Brooklyn, N. Y. Filed June 19, 1885. (No model.)



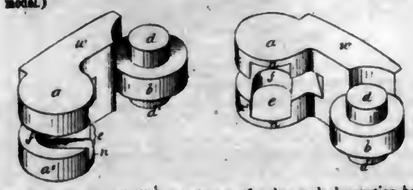
Claim.—1. In combination with the rod D and with projecting parts, as B c E, connecting the said rod to the truss-pad, the cap G, inclosing said projecting parts and having opposite side openings by which it is fitted and held stationary upon the said rod, substantially as and for the purpose set forth.

2. The combination of the socketed pad A, the ring-flange F, secured to the said pad, the socket-plate B, having flange *b*, confined by the said ring-flange, and the rod D, secured through the said socket-plate, with the cap G, surrounding the said socket-plate and provided with opposite side holes by which it is fitted and held stationary upon the said rod D, substantially as and for the purpose set forth.

3. The combination of the pad and band of a hernia-truss with a rod, D, having bends *h h'* in opposite directions, and secured with one end to the said pad and with the other end by a ball-and-socket joint to the said band, substantially as specified.

4. The truss-pad rod D, having end ball, *d'*, in combination with the truss-band H, having threaded socket I, provided with side opening, *i*, top screw, J, and side screw, K, substantially as set forth.

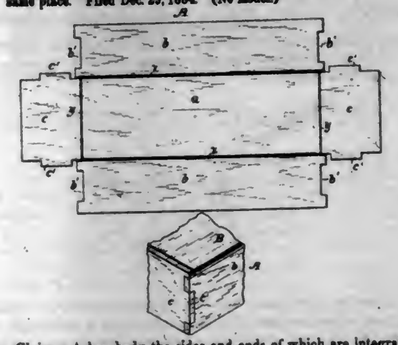
324,587. CHAIN. John G. Powell, Philadelphia, Pa., assignor to himself and Edward Powell, same place. Filed Sept. 15, 1883. (No model.)



Claim.—1. A chain-link consisting of a bar or body portion having at one end projections *a a'*, with recesses *e*, and at the other end a projection, *b*, with pins *d d'*, said projections, pins, and recesses having a hard-smooth skin, as set forth.

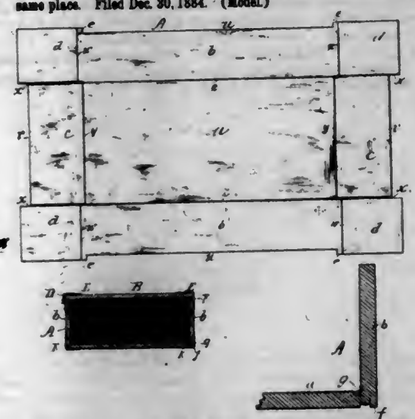
2. A chain composed of links, each consisting of a bar or body portion having at one end projections *a a'*, with recesses *e*, and at the other end a projection, *b*, with pins *d d'*, adapted to recesses *e* of an adjoining link, said projections, pins, and recesses having a hard smooth skin, as set forth.

324,588. PAPER BOX. Daniel E. Powers, New York, N. Y., assignor, by mesne assignments, to the Patent Paper Cigar Box Company, same place. Filed Dec. 29, 1884. (No model.)



Claim.—A box-body the sides and ends of which are integral with its bottom, being partially severed therefrom, the connecting-web of material being upset, whereby square corners are formed, said sides and ends being interlocked by recesses and tenons, substantially as described.

324,589. CIGAR-BOX. Daniel E. Powers, New York, N. Y., assignor, by mesne assignments, to the Patent Paper Cigar Box Company, same place. Filed Dec. 30, 1884. (Model.)



Claim.—1. A rectangular blank for cigar-boxes, recessed at its ends and provided with parallel longitudinal scores along the bottom section, with longitudinal cuts which are continuous with said longitudinal scores and extend from the ends of said scores to the end edges of the blank, with transverse scores which connect the meeting points of said longitudinal cuts and longitudinal scores, and with short transverse scores which extend from said longitudinal cuts to the side edges of the blank, and which are located endwise from the transverse scores a distance equal to the thickness of the blank, substantially as described.

2. A rectangular blank for cigar-boxes, recessed at its sides and provided with parallel longitudinal scores along the bottom section, with longitudinal cuts which are continuous with said longitudinal scores and extend from the ends of said scores to the end edges of the blank, with transverse scores which connect the meeting points of said longitudinal cuts and longitudinal scores, and with short transverse scores which extend from said longitudinal cuts to the side edges of the blank, and which are located endward from said transverse scores a distance equal to the thickness of the blank, the recesses in the sides of the blank extending between points opposite said transverse scores, substantially as described.

3. A box composed of paper-board, the bottom and sides of which are in one piece, the material being partially severed at the angles, the unsevered portions being upset, whereby a square corner is formed, substantially as described.

4. A box composed of paper-board and having double ends, the bottom, sides, and ends being in one piece, the material being partially severed at the angles, the unsevered portion being upset at that point, whereby square corners are formed, substantially as described.

5. A box composed of paper-board and provided with double ends extending above the sides and with a cover which shuts between said ends flush with the upper edges thereof, the bottom, sides, and ends being in one piece, the inner layers of the material being integral with the bottom of the box and the outer layers thereof being longer than the inner layers and in sections integral with the sides of the box, the material being partially severed at the angles, the unsevered portions being upset, whereby square corners are formed, substantially as described.

324,590. COMMUTATOR-BRUSH FOR DYNAMO OR MAGNETO ELECTRIC MACHINES. JOSEPH A. [illegible], Troy, N. Y. Filed Mar. 13, 1885. (No model.)

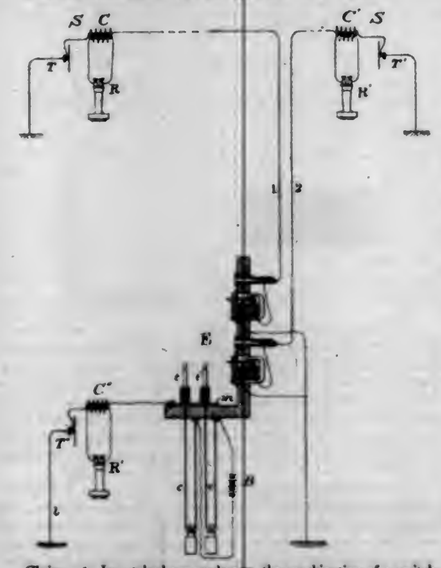


Claim.—1. The brush of wires or plates and a holder, C, a pivoted cap, D, and clamping-screw E, in combination with a spring-plate, F, between the cap D and brush and extending beyond the cap, substantially as set forth.

2. The stud or gudgeon G, having a shoulder at A, in combination with the brush A, holder C, lever K, spring M, and clamping-nut L, substantially as set forth.

3. The brush A, holder C, cap D, and screw E, in combination with the stud G, passing through holes in the flanges C' of the holder C, the lever K upon the stud G, the springs M N, extending out from such lever K and acting against the outer side of such holder C, and the clamping-nut L, substantially as set forth.

324,591. TELEPHONE SYSTEM. CHARLES W. PRICE and ALBERT BARRETT, Kansas City, Mo., assignors to the American Bell Telephone Company, Boston, Mass. Filed Mar. 27, 1885. (No model.)



Claim.—1. In a telephone-exchange, the combination of a switch-board upon which a series of sub-station lines are connected, a pair of connecting-cords with metallic tips united through a battery, a branch line having one terminal connected to earth and the opposite terminal to a metal plate or conductor, upon which the tips of the connecting-cords normally rest, and a battery-transmitter in the circuit of the branch line.

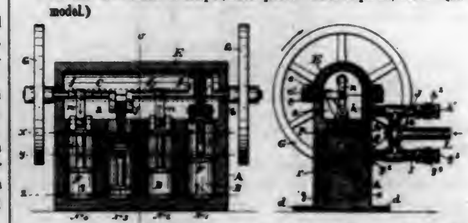
2. In a telephone-exchange, the combination of a switch-board to which the terminals of a series of sub-station lines are connected, a pair of connecting-cords with metallic tips united through a battery, a branch line having one terminal connected to earth and the opposite terminal to a metal plate or conductor, upon which the tips of the connecting-cords normally rest, a battery-transmitter, and the primary of an induction-coil located in the branch line, and a receiving-telephone in the secondary of the induction-coil.

3. The combination, in a telephone-exchange, of a switch-board upon which a series of subscribers' lines are grouped, one or more pairs of connecting-cords having metal tips, a metal plate or other conductor, upon which the cord-tips normally rest, connected to ground through the primary of an induction-coil, and a receiving-telephone in the secondary circuit of the coil.

4. The combination, in a telephone-exchange, of a metallic circuit, connecting with a sub-station, containing the secondary of an induction-coil, the primary of which is connected with a spring-jack or equivalent device and ground at the central station, a single ground-return subscriber's line containing a battery-transmitter at the sub-station, and means, substantially as described, for connecting the single line with the primary of the induction-coil and battery.

5. The combination, in a telephone-exchange, of a single-line wire containing a battery-transmitter, a metallic-circuit line containing the secondary of an induction-coil located at the central station, the primary thereof being connected to ground, and a pair of connecting-cords united through one or more cells of battery for connecting the single line with the primary of the induction-coil, substantially as described.

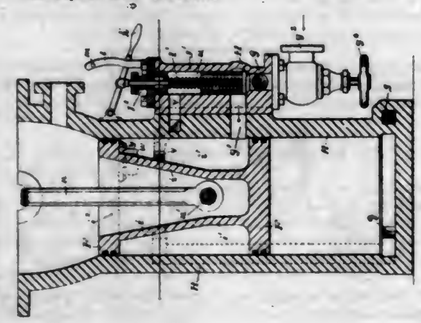
324,592. ENGINE. GEORGE W. PRICE, Baltimore, Md., assignor of one-half to William J. Hooper, same place. Filed Sept. 17, 1884. (No model.)



Claim.—1. An engine having in combination three or more cylinders, side by side and in a straight line with each other, each cylinder provided with a center port, g', and at one end with a port, q, both of which always remain uncovered, and at the other end with a port, p, which is alternately opened and closed by the reciprocation of the piston, and with a piston having in its side a space or recess, i', always in communication with the said center port, a passage, g, extending crosswise of all the cylinders and connecting with each of the said center ports, a passage, r, connecting the port at one end of one cylinder with the port in the opposite end of the next adjoining cylinder, a shaft extending across the ends of all the cylinders and provided with cranks, and a pitman connecting each crank with a piston, as set forth.

2. An engine having in combination three or more cylinders, each provided at or about the center with a port, g', at one end with a port, q, and at the other end with a port, p, and with a piston, a chest extending over the open ends of all the cylinders, a shaft having cranks f, which turn within the said chest, and each crank being connected with a piston, a pipe, I, in connection with the said center ports, g', and having an exhaust-outlet, g^3, guarded by a valve, a pipe, J, in connection with the steam-chest and having an exhaust-outlet, h', guarded by a valve, and a fluid-supply pipe, L, connected with the said two pipes I and J, and provided with a controlling-valve, t, adapted to direct the fluid into either pipe, as set forth.

324,593. CUT-OFF VALVE FOR ENGINES. GEORGE W. PRICE, Baltimore, Md., assignor of one-half to William J. Hooper, same place. Filed Sept. 22, 1884. (No model.)



Claim.—1. The combination of a cut-off valve having a fluid-tight valve-case, J', and an engine-cylinder having an induction-port which is guarded by the said cut-off valve and provided with a duct, v, which communicates with the valve-case above the valve, as set forth.

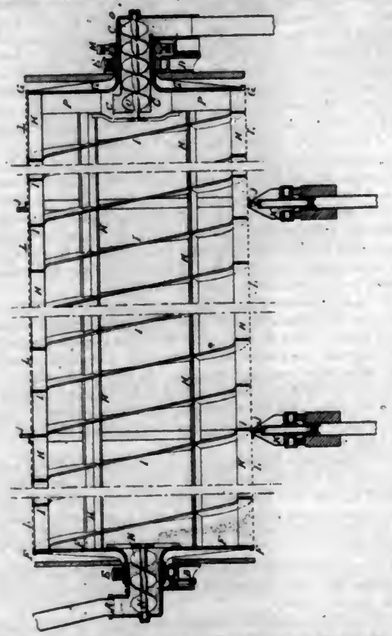
2. The combination of a cut-off valve having a fluid-tight valve-case, J', an engine-cylinder having an induction-port which is guarded by the said cut-off valve and provided with a duct, v, which communicates with the valve-case above the valve, and a piston in the cylinder having a lip, w, for closing the said duct, as set forth.

324,594. BOILER-TUBE. JAMES W. REEDER, Shelbyville, Ill. Filed Jan. 30, 1885. (No model.)



Claim.—A boiler having its heads provided with countersunk openings C, in combination with the tubes D, having beveled collars d at one end, which fit flush in the openings C of one of the boiler-heads, the other end of the tubes passing through the openings C of the other boiler-head, and extended a short distance beyond the same, and threaded, as shown at d', said threaded extensions fitting the openings C closely, and nuts working over the threaded ends or extensions of the tubes, and having beveled inner ends adapted to fit within the countersunk portion of the openings C, the head of the boiler around the nuts being flanged, so as to inclose the latter, for the purpose set forth.

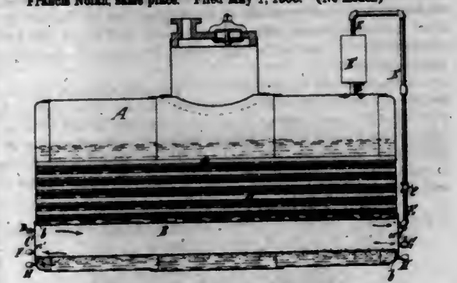
324,595. BOLTING-REEL. HENRY F. SAINT REQUIER, Asnières, assignor to La Société Anonyme Pour les Procédés Brevetés de Farinerie Saint Requier, Paris, France. Filed July 2, 1884. (No model.) Patented in France July 21, 1882, No. 150,233; in Belgium July 22, 1882, No. 58,543; in England July 28, 1882, No. 3,593; in Austria Oct. 13, 1882, No. 36,931; in Germany Mar. 2, 1884, No. 29,053; in Italy Mar. 4, 1884, No. 16,533, and in Spain June 9, 1884, No. 5,668.



Claim.—1. A rotary bolting-cylinder consisting of opposite end frames, longitudinal angle-bars connecting the two helical bars, a covering, and outer stiffening-rings, J, in combination with bearing-rollers on which the said rings are adapted to travel, substantially as set forth.

2. The combination of the rotary bolt having radial delivery-blades at the outlet end with the discharge-hopper C, projecting within the bolt, and having a feed-screw, O, to turn with the bolt, substantially as described.

324,596. MEANS FOR PREVENTING INCRUSTATION IN BOILERS. THOMAS J. REYNOLDS, Brooklyn, N. Y., assignor of one-half to Francis Nolan, same place. Filed May 1, 1885. (No model.)



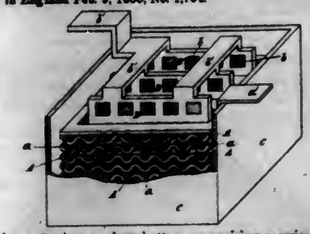
Claim.—1. The combination, with an evaporating-vessel, of a liquid-heater consisting of a shell or casing arranged within the vessel and preferably below the liquid-level, a feed-pipe connected with such heater shell or casing, and a pipe extending from such heater shell or casing into the vessel for delivering liquid therein from the heater shell or casing, substantially as and for the purpose herein described.

2. The combination, with an evaporating-vessel, of a tube or flue extending lengthwise therein and closed at the ends, a feed-pipe communicating with one end of the tube or flue, and a pipe extending from the other end of the tube or flue into the evaporating-vessel, substantially as and for the purpose herein described.

3. The combination, with an evaporating-vessel, of the tube or flue B, extending lengthwise within the said vessel and closed at the ends, the feed-pipe D, connected with one end of the tube or flue at the top thereof, and the pipe E, leading from the other end of the tube or flue at the top thereof into the evaporating-vessel, substantially as and for the purpose herein described.

4. The combination, with the evaporating-vessel A, of the tube or flue B, and feed and discharge pipes D E, communicating at opposite ends with the top of said tube or flue, and the blow-off pipes F G, leading from the opposite ends of the tube or flue at the bottom thereof, substantially as herein described.

324,597. SECONDARY BATTERY. JOHN S. SELLON, Hatton Garden, County of Middlesex, England. Filed Mar. 27, 1885. (No model.) Patented in England Feb. 9, 1885, No. 1,764.

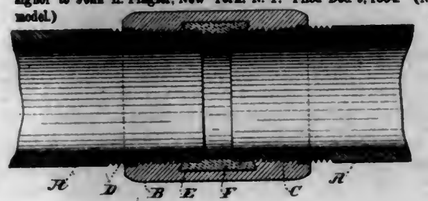


Claim.—1. A secondary battery comprising a series of plates or elements constituting the positive pole or denomination, and a series of plates or elements constituting the negative pole or denomination, the latter being arranged tranversely to the former, substantially as described.

2. A secondary battery comprising a series of horizontally-disposed plates or elements and a series of vertically-disposed plates or elements arranged in openings in the horizontal series, substantially as described.

3. In a secondary battery, the combination, with a vertically-disposed element, of a series of horizontally-disposed corrugated plates constituting the other element, said plates having their upper corrugations or grooves filled with active material, the lower grooves forming passages for the dispersion of the electrolyte, substantially as described.

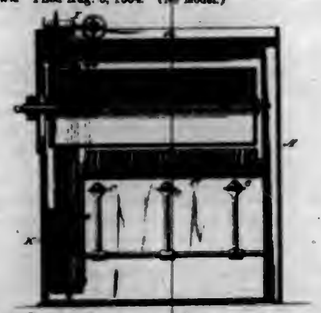
324,598. PIPE-COUPLING. THOMAS SHELTON, McKeesport, Pa., assignor to John H. Flagler, New York, N. Y. Filed Dec. 9, 1884. (No model.)



Claim.—1. In combination, the externally-threaded pipe-section A and the internally-threaded pipe-coupling B, provided with a packing-ring, F, extending inwardly so that its entire inner surface is beyond the bottom of the screw-threads of the coupling, but not beyond the top of such screw-threads, whereby the threaded ends of the pipe-sections will cut their way in the inner surface of such ring, as and for the purpose set forth.

2. In combination, the beveled and externally-threaded pipe-section A and the correspondingly internally-threaded pipe-coupling B, provided with a packing-ring, F, extending inwardly so that its entire inner surface is in the path of but not beyond the screw-threads of the pipe-section when it is being inserted in the coupling whereby the threads of the pipe-section will cut their way in the inner surface of such ring, as and for the purpose set forth.

324,599. COFFEE OR NUT ROASTER. Benjamin F. Shields, Oskaloosa, Iowa. Filed Aug. 8, 1884. (No model.)



Claim.—1. In a roasting apparatus, the combination of a revolving cylinder, a motor, a steam-coil generator for the motor located beneath the roasting-cylinder, means for heating said cylinder and steam-coil, and a pump operated from said motor, and located between the steam-coil and its supply, to force a continuous current of water through the coil, substantially as described, and for the purposes specified.

2. In a roasting apparatus, the combination of a revolving cylinder, a motor, a steam-generator, a supply-tank and separator connected with the generator, the separator communicating with said tank and motor, and a pump operated from the motor, and located between the tank and generator, the parts being constructed, arranged, and operating substantially as shown, and for the purposes described.

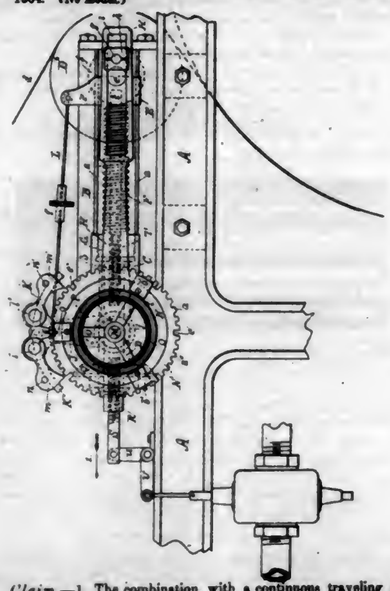
324,600. MANUFACTURE OF SAWS. Charles T. Shoemaker, Philadelphia, Pa., assignor to Hamilton Disston, Horace C. Disston, William Disston, and Jacob S. Disston, all of same place. Filed May 28, 1885. (No model.)



Claim.—1. The within-described improvement in the mode of manufacturing saw-blades, said improvement consisting in first rendering the blade true by grinding, then tempering the blade, and finally grinding and polishing the same, as described, whereby the blade at and near the cutting-edge retains the surface due to the tempering operation, as set forth.

2. A saw-blade having at and near the cutting-edge a tempered surface and on the other portions of the blade a ground surface, as set forth.

324,601. AUTOMATIC STEAM-REGULATOR FOR PAPER-MACHINES. Richard Smith, Sherbrooke, Quebec, Canada. Filed Nov. 12 1884. (No model.)



Claim.—1. The combination, with a continuous traveling paper web, of a device operated mechanically thereby to automatically increase or diminish the steam-supply according to the necessities of the paper web, substantially as stated.

2. In steam-regulators operated automatically by the condition of a continuous traveling paper web, the loose ratchet-wheel, operating as described, by which an interval of time is caused to elapse after every change in the position of the valve, substantially for purposes stated.

3. In automatic steam-regulators operated by the paper web, the combination, with the spring-actuated roll, of the right and left screw-threaded nut and its operative parts, whereby the length of the rods connecting with the valve are altered to effect changes in said valve and increase or diminish the supply of steam, substantially as herein described.

4. In an automatic steam-regulator, the combination, with the roll D^2, its movable journal-box E, and arm *p*, of the adjustable rod L, connecting with and operating the shield K to permit the pawls to become active or inactive, substantially as and for purposes herein set forth.

5. In an automatic steam-regulator for paper-making machines, the combination, with the spring-actuated roll D^2, shaft *e*, and pin-pallet *f*, secured thereto, of the slotted pivoted bell-crank lever H, whereby the latter is reciprocated, and by means of the arm J proper feed-motion is imparted to the pawls, substantially as stated.

6. In an automatic steam-regulator, the combination, with the bell-crank lever H, furnished with the pawls *m m'* and their pins *n n'*, of the pivoted rocking shield K, connecting-rod L, and operative journal-box E, to render the pawls either active or inactive, while at the same time proper feed-motion is obtained, as and for the purposes described.

7. The combination, with the rock-lever H and arm J, carrying the pawls *m m'*, of the active ratchet-wheel N and the loose ratchet N', whereby the former is intermittently employed, substantially as and for the purposes herein set forth.

8. In an automatic steam-regulator, the combination, with the spring-actuated roll D^2, operated by the paper web, bell-crank lever H, ratchet-wheels N N', and their operating mechanism, of the gears P Q, sleeve D, and screw-threaded nut R, with the rods S T, all operating, substantially as explained, to regulate the supply of steam, for the purposes herein described.

9. In automatic steam-regulators, the ratchet-wheel provided with the notches upon its periphery, mounted and operated substantially as and for purposes stated.

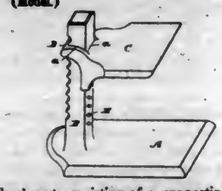
10. In steam-regulators operated automatically by the condition of a continuous traveling paper web, the combination, with the paper web and its roll, of the lever actuated by the rotation of said roll, whereby the lever and its operative parts regulate the valve according to the necessities of the paper web, substantially as described.

11. In automatic steam-regulators, the combination, with a steam-supply valve and an actuating-roll, of the connecting parts adjustably disposed and operated by said roll to regulate the valve, substantially as and for purposes stated.

12. In automatic steam-regulators, the combination, with the paper web and its roll, of mechanism automatically actuated by said roll upon breaking of the web to simultaneously close the valve, substantially as stated.

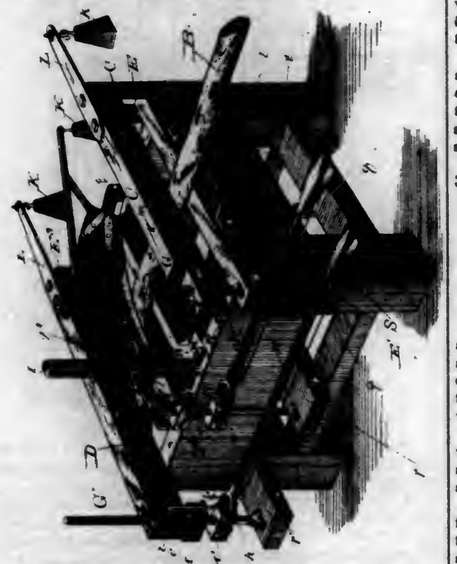
13. In steam-regulators, the combination, with the roll D^2, operated by the paper web, of the weighted lever *c*, and the cam c^2, whereby upon breaking of the paper web the roll is permitted to actuate said lever and its operative parts to close the valve, substantially as described.

324,602. BOOK-REST. Wilson B. Solliday, South Easton, Pa. Filed Feb. 6, 1884. (Model.)



Claim.—A book-rest consisting of a supporting-base, A, provided with a standard, B, having a rack on one side and openings on the opposite side thereof, and an adjustable shelf, C, having an opening, *a*, the walls of the said opening having teeth D and F, diagonally arranged on two of the opposite sides thereof, said parts being combined, arranged, and operated substantially as described.

324,603. WOOD-CUTTING MACHINE. Arthur L. Stanford, Fort Hill, Ill. Filed July 15, 1884. (No model.)

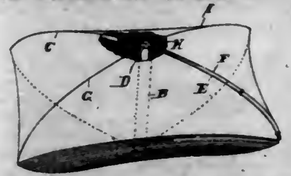


Claim.—1. In a machine for cutting wood, the combination, with a supporting-frame provided with a bearing over which the wood is to be bent at the point where it is to be cut, of a beam toward one end of the frame, under which the wood is passed, a vertically-movable beam toward the opposite end of the frame for bending the wood down over the bearing, a vertically-movable knife close to the bearing, and mechanism for operating both the bending-beam and knife, all substantially as described.

2. In a machine for cutting green wood, the combination of the following elements: a supporting-frame, a beam at one end of the frame, under which the wood is passed, a block intermediate between the ends of the frame, over which the wood is passed, a beam crossing the other end of the frame, under which beam also the wood passes, said beam being pivoted at one end to the frame, whereby by pressing down its opposite end the wood is bent over the block, a knife crossing the frame near the block, under which knife also the wood passes, said knife being pivoted at one end to the frame, whereby the forcing down of its opposite end causes it to cut the pole at the point of bending, and mechanism for forcing down the free ends of the bending-beam and knife, all substantially as described.

3. In a machine for cutting green wood, the combination of the frame A, adjustable beam C, block *m*, bending-beam D, pivotally connected at one end to a corner of the frame, and provided with a counterbalance, L K, bar G', pivoted at its lower end to a bearing attached to the frame and passing through a mortise in the bending-beam, friction-clutch M on the bar G', connected to the beam D, friction-clutch M' on the bar G' below the clutch M, lever N, connected at its end to the clutch M', rod *i*, connecting the lever N with the beam D, mechanism for releasing the clutches M and M', whereby they may be moved upward on the bar, knife H, pivotally connected to one side of the frame, and clutch mechanism for forcing down the opposite end of the knife, all substantially as described.

324,604. FOLDING DRESS-PILLOW. Herman S. Sternberger, Piqua, Ohio. Filed Mar. 23, 1885. (No model.)

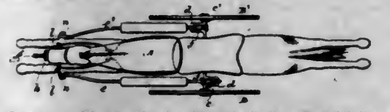


Claim.—1. In a folding pillow, a covering having each of the upper and lower parts formed of a single piece provided with a tuck from one corner diagonally to the center and centrally to the opposite corner, cut so as to furnish edges whereby the edges of the facings may be stitched, substantially as herein set forth.

2. The combination of a series of hinged ribs with the covering having each of the upper and lower parts formed of a single piece provided with a tuck from one corner diagonally to the center and centrally to the opposite corner, cut so as to furnish edges whereby the edges of the facings may be stitched, substantially as herein set forth.

3. The combination of the axial piece having thereon at the ends a single stationary rib and a series of hinged radiating ribs, and the covering having each of its upper and lower parts formed with a diagonal tuck and opening, so as to readily attach the facings thereto, the whole arranged as and for the purpose substantially as herein set forth and described.

324,605. VELOCIPEDE. Charles F. Stillman, New York, N. Y. Filed May 25, 1885. (No model.)

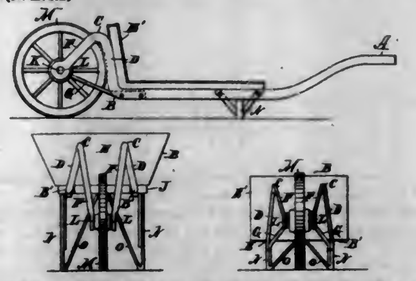


Claim.—1. The combination, in a velocipede, of two driving-wheels and their axle and cranks, an intermediate figure, such as a horse with a seat or saddle, the axle of the wheels passing across under the body of the horse and beneath such saddle, foot-treadles pivoted at one end to the horse, and links connecting said treadles to the cranks and a front wheel, substantially as set forth.

2. The combination, with a figure, such as a horse, of a steering-wheel and handle at the front, a wheel at each side, a divided crank-axle having at the inner ends a crank and arm, respectively, and treadles at the sides connected to the crank-axle, substantially as set forth.

3. The combination, in a velocipede, of a figure, such as a horse, a front steering-wheel, a rod and guiding-handle connecting the same to the horse, driving-wheels at each side of the horse, and the seat or saddle, a shaft and cranks, foot-treadles, and connections from such treadles to the cranks, substantially as set forth.

324,606. WHEELBARROW. Jacob Stoll, Milwaukee, Wis., assignor of one-half to Gottfred Raddatz, same place. Filed Apr. 17, 1885. (No model.)



Claim.—1. In a wheelbarrow, the combination of the handles A A, having at their front ends an upward bend, D, adapted to serve as a

support for the box or platform, and downwardly and inwardly converging ends F, terminating at the axle of the wheel, said ends being provided with holes K K, formed in and through them, for the reception of the wheel-axle, wheel M, and the box or platform, as set forth.

2. The combination of the handles A A, having upturned angular front bearings D, upon which the front end of the box or platform rests, downwardly-inclined ends F, terminating at the wheel-axle and provided with holes at such point, K, for the reception of the axle L, wheel M, and brace-rods G G, extending from the axle to the angle B, at which point it is affixed, substantially as and for the purpose specified.

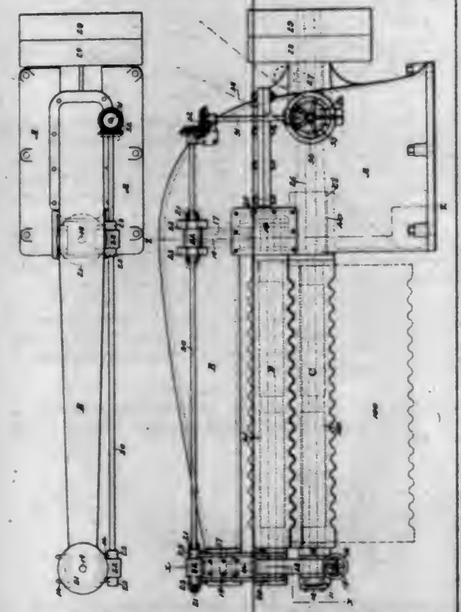
324,607. PLOW. Jacob Stoll, Milwaukee, Wis., assignor of one third to Gottfred Raddatz, same place. Filed Apr. 29, 1885. (No model.)



Claim.—1. In reversible plows, the share and mold-board rigid together, the sharp cutting-fins *f f* rigid to the share, and the share and mold-board together having an outer surface which on the line of their axis from front to rear laterally is concave near the point of the share, then at and near the line of junction of the share to the mold-board is convex, and at the rear is concave, substantially as described.

2. The plow-beam *a*, the thereto rigidly affixed block *i*, provided with lateral apertures for receiving the clevis-bolt, the clevis *s*, attached to the plow-beam through block *i*, and the hook *r*, attached to the axle *l* and adapted to engage the clevis *s*, in combination with the carriage-axle *l*, the tongue *u*, rigidly affixed to axle *l*, provided with notches on its curved segmental front end, the bifurcate coupling-bar *v*, pivoted at its rear end to the tongue *u*, and the key *y*, fitting into a vertical slot in coupling-bar *v* and into one of the notches in the front end of tongue *u*, substantially as and for the purpose described.

324,608. MACHINE FOR CORRUGATING PLATES OR TUBES. George S. Strong, Philadelphia, Pa. Filed June 25, 1884. (No model.)



Claim.—1. The combination, with the positively-driven corrugated roll C, provided at its outer end with a journal-box, as 11, which is supported from the arm B, of the similarly-corrugated roll D, located above the roll C, and supported at each end in movable journal-boxes, and means for adjusting said boxes so as to vary the position of said roll, substantially as described.

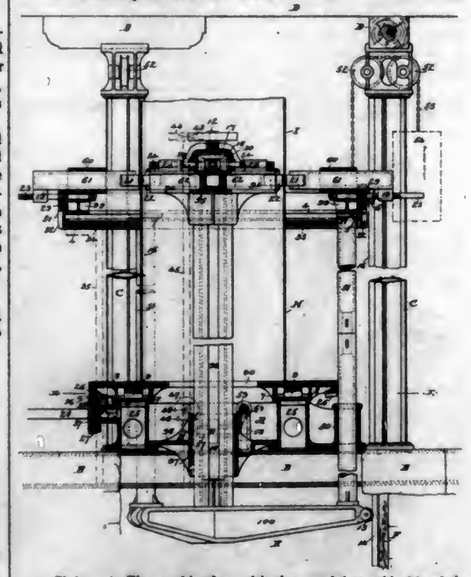
2. The combination, with the shaft 40, carrying the corrugated roll C, and having the journal-box 11 permanently secured to its outer end, of the similarly-corrugated roll D, located above the roll C and supported at each end in movable journal-boxes, means for adjusting said boxes so as to vary the position of said roll, and means for supporting the box 11 from the arm B, substantially as described.

3. The combination, with the positively-driven corrugated roll C, mounted in fixed bearings, of the similarly-corrugated roll D, supported at each end in movable journal-boxes, the arm B, extending outward from the base above the roll D, means for adjusting the position of the roll D, and means for supporting the outer end of the roll C from the arm B, substantially as described.

4. The combination, with the shaft 40, carrying the removable corrugated roll C, and provided at its outer end with the journal-box 11, of the shaft 41, carrying the removable corrugated roll D, and supported at each end in movable journal-boxes, means for adjusting the position of the roll D, and means for supporting the box 11 from the arm B, substantially as described.

5. The combination, with the rolls C D and arm B, of the journal-box 11, arms 13, and rod 15, journal-boxes 20, screw-rods 18, gears and worms 21 22, and shaft 30, substantially as described.

324,609. WELDING-MACHINE. George S. Strong, Philadelphia, Pa. Filed July 11, 1884. (No model.)



Claim.—1. The combination, with the revolving table 90, of the two sets of welding-rolls 21 22, arranged to act simultaneously upon the inside and the outside of the tube, substantially as described.

2. The combination, with the revolving table 90, of the two sets of welding-rolls 21 22, arranged to act simultaneously upon the inside and the outside of the tube, and means for moving said rolls to and from each other, substantially as described.

3. The combination, with the heads 61, carrying the rolls 21, arranged to act upon the outside of the tube, of the heads 62, carrying the rolls 22, arranged to act upon the inside of the tube, and means for simultaneously raising and lowering said heads, substantially as described.

4. The combination, with the heads 61 62, carrying the welding-rolls 21 22, arranged to act upon the inside and the outside of the tubes, of means for simultaneously raising and lowering said heads, and means for simultaneously moving said heads to and from each other, substantially as described.

5. The combination, with the revolving table 90, of the heads 61 62, carrying the welding-rolls 21 22, arranged to act upon the inside and the outside of the tube, means for simultaneously raising and lowering said heads, and means for simultaneously moving said heads to and from each other, substantially as described.

6. The combination, with the revolving table 90, of the heads 61 62, carrying the welding-rolls 21 22 and supported upon the vertically-movable columns 51 96, and the frame 100, connecting and supporting all of said columns, substantially as described.

7. The combination, with the revolving table 90, of the heads 61 62, carrying the welding-rolls 21 22 and supported upon the vertically-movable columns 51 96, the frame 100, connecting and supporting all of said columns, the annular frame 99, connecting the columns 51, and the rolls 6 and ribs 16 for holding the heads 61 in position during the welding operation, substantially as described.

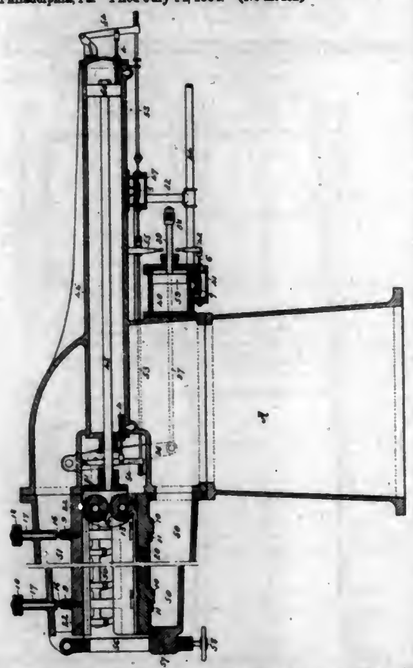
8. The combination, with the columns 51 96 and the frames 95 99 100, carrying the welding apparatus, of the chains 53 and balancing-weights 54, substantially as described.

9. The combination, with the columns 51 96 and frames 95 99 100, carrying the welding apparatus, of means for raising and lowering said parts, substantially as described.

10. The combination, with the columns 51 96 and frames 95 99 100, carrying the welding apparatus, of the racks 10, gears 11, and connections for operating said gears, substantially as described.

11. The combination, with the heads 61 62, carrying the welding-rolls 21 22, of connections, substantially as described, whereby said heads can be separately and simultaneously adjusted horizontally, for the purpose set forth.

324,610. MACHINE FOR WELDING TUBES. George S. Strong, Philadelphia, Pa. Filed July 14, 1884. (No model.)



Claim.—1. In a machine for welding tubes, the combination, with a support adapted to enter the tube, of clamps arranged to clamp the tube upon each side of the seam, a roll or rolls arranged to be passed back and forth along said seam, and means for operating said roll or rolls, substantially as described.

2. The combination, with a support adapted to enter the tube, of clamps arranged to clamp the tube upon each side of the seam, a roll or rolls arranged to be passed back and forth along said seam, means for operating said roll or rolls, and an adjustable track-bar arranged to press said roll or rolls against the seam, substantially as described.

3. The combination, with the horn or support 50, of clamps arranged to clamp the tube upon both sides of the seam, a roll or rolls arranged to be passed back and forth along said seam, and means, as the yoke 56, for supporting the outer end of said horn or support, substantially as described.

4. The combination, with the horn or support 50, of clamps arranged to clamp the tube upon both sides of the seam, a roll or rolls arranged to be passed back and forth along said seam, an adjustable track-bar arranged to press said roll or rolls against the seam, and means, as the yoke 56, for supporting the outer end of said horn or support, substantially as described.

5. The combination, with the horn or support 50, of the clamps arranged to clamp the tube upon both side of the seams, and the cylinder 40, piston 59, and connections for operating said clamp, substantially as described.

6. The combination, with the horn or support 50, of the clamping-bars 33, arranged to clamp the tube upon both sides of the seam, and the cylinder 40, piston 59, toggle-joints 29 31, and connections for operating said clamping-bars, substantially as described.

7. The combination, with the horn or support 50, of the rolls, adjustable track-bar 22, and the cylinder 46, piston 60, and connections for operating said rolls, substantially as described.

8. The combination, with the horn or support 50, of the clamps for clamping the tube upon both sides of the seam, the welding roll or rolls, and the cylinder 46, piston 60, and connections for operating said roll or rolls, substantially as described.

9. The combination, with the horn or support 50, of the clamps for clamping the tube upon both sides of the seam, the welding-rolls, the adjustable track-bar 22, and the cylinder 46, piston 60, and connections for operating said rolls, substantially as described.

10. The combination, with the horn or support 50, of the clamps 33, the welding-rolls, the adjustable track-bar 22, the yoke 56, and the cylinder 46, piston 60, and connections for operating said rolls, substantially as described.

11. The combination, with the welding-rolls, of the cylinder 46, piston 60, piston rod or rods 45, valve 5, and connections by which said valve is automatically reversed as the piston nears the end of each stroke, substantially as described.

12. The combination, with the welding-rolls, of the cylinder 46, piston 60, piston rod or rods 45, valve 5, valve-rod 53, tappet-rods 4, and connections, substantially as described.

13. The combination, with the horn or support 50 and clamps 33, of the two sets of welding-rolls, one set being arranged to operate upon the outside and the other upon the inside of the tube, substantially as described.

14. The combination, with the horn or support 50 and clamps 33, of the two sets of welding-rolls and the two adjustable track-bars 22 61 substantially as described.

324,611. MILK-CAN. Hiram Taylor, Salem, Ohio, assignor of one-half to John Heckart, same place. Filed Mar. 27, 1885. (No model.)



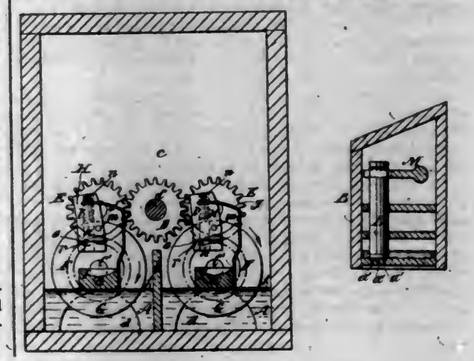
Claim.—1. The float D, provided with the weight E, and having an air-chamber, substantially as and for the purpose specified.

2. The guide C, held in proper position by the thimbles B and L, in combination with the float D and the can A, substantially as and for the purpose specified.

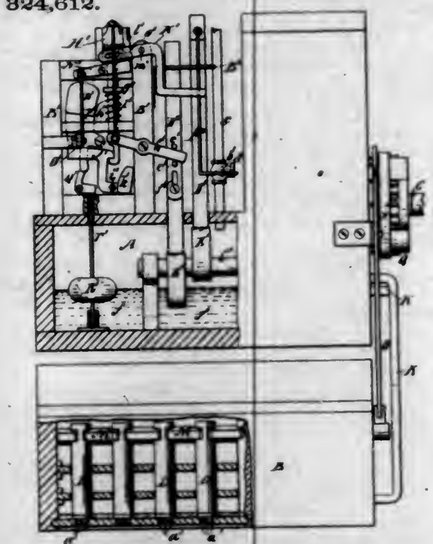
3. The combination of the can A, provided with the ears or arms G, of the staple H and the pins I, all arranged substantially as described, and for the purpose specified.

324,612. AUTOMATIC OILER FOR LUBRICATING WOOL. John C. Thurber, Hinsdale, Mass. Filed Oct. 3, 1884. (No model.)

Brief.—The object of the invention is to secure uniform lubrication of all the fibers. The lubricator is taken from tanks, in which it is kept at a constant depth, in measured quantities, and is conducted to the sprinkler directly over the weighing-box of a feeder. The supply of lubricator is automatically shut off whenever the card is stopped.



324,612.



Claim.—1. The combination, with a tank for holding a lubricating agent, of a sprinkler connected therewith, and a measuring device arranged in said tank for supplying the lubricating agent in measured quantities to the said sprinkler, substantially as herein shown and described.

2. The combination, with a tank for holding a lubricating agent, of a sprinkling-chamber having a series of apertures in its bottom and connected to said tank, a bucket in the tank, a measuring device for receiving the liquid from the bucket, and means for operating the bucket and intermittently opening and closing the apertures in the said sprinkling-chamber, substantially as herein shown and described.

3. The combination, with tank A, of the disk or bucket-carrier G, means for revolving the same, the tilting bucket H, eccentrically pivoted at *m* to said carrier and constructed with a transverse shoulder or ledge, *o*, the fixed stud or roller *r*, the pin or roller guide *n*, carried by the bucket, the fixed guide J, and the measurer or receiver I, substantially as specified.

4. The combination, with the disk G, the tilting bucket H, measurer I, and means for rotating said disk, of the outlet-pipe K, valve-box L, a delivery-valve therein, the shaft C, the wiper *w*, the valve opening or lifting lever *y*, and means for operating said shaft, substantially as described.

5. The combination, with the tank A for holding the lubricating agent, a tilting bucket or lifter of said agent, and means for operating said bucket, of the open-topped measurer I, arranged to occupy a position above the level of the agent in the tank, and provided with a lower opening, *z*, and adjusting-screw *v*, for regulating the capacity of the measurer to receive or hold fluid delivered by the bucket, substantially as specified.

6. The sprinkler B, having a series of discharge-apertures, *a'*, in its bottom, in combination with a series of plungers, L', therein, and means for intermittently operating said plungers for forcing out the lubricating agent through the apertures *a'*, and serving when at rest to close said apertures, essentially as described.

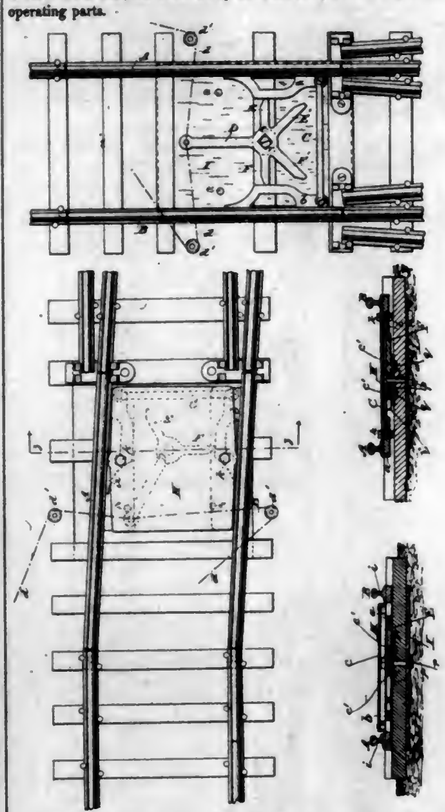
7. The combination of the rotating segment Q with the pinion P, the sprocket-wheel N, the lever O, the lifter M, the rising and falling plungers L', and the sprinkler B, having perforations *a'* in its bottom, substantially as and for the purpose herein set forth.

8. The combination, with the tank A, the supply-pipe *e*, valve *b'*, and valve-lever *d'*, of the float R', the reciprocating rods D' D^2, the pivoted rod F' on rod D', means for operating the said rods D' D^2, and intermediate mechanism for operating the rod F' by the rise and fall of the float, substantially as herein shown and described.

9. The combination, with the tank A and a supply-pipe, *e*, for supplying said tank with said fluid, of the rising and falling bars D' D^2, the rotating cams E' E^2, the crooked pivoted rod F', the valve-lever *d'*, and valve *b'*, the lever G', arranged to engage with the bar D^2, the rod *g'*, the lever H', the hook-rod I', with its lifting-spring *k'*, the crooked pivoted holder J', having a weight, *l'*, the arm *l'*, the lever K', constructed to engage with the rod F', the connected levers N' O', the projection *o'* on the lever H', the pivoted weight I', the pivoted catch Q', and the float R', with its attached rod *r'*, substantially as shown and described.

324,613. SAFETY RAILWAY-SWITCH. ELISHA H. TOBEY, Denver, Colo. Filed Apr. 5, 1884. (No model.)

Brief.—A lever with two or more arms adapted to operate and lock the switch in the desired position. The switch locking and moving parts are inclosed in a housing to prevent tampering with the switch and to protect the same from snow, ice, &c., and the housing is pivotally secured to inwardly-projecting base-plates bolted to the movable ends of the switch-rails, and is carried by the same independent of the switch-operating parts.



Claim.—1. The combination, with the pivoted switch-rails and a lever having two or more arms adapted to operate a switch and to lock it, of a housing, H, for said operating-lever, connected with and carried by the switch independent of said lever, substantially as herein set forth.

2. The combination, in a safety-locking railway switch for three divergent fixed track-rails, of an operating-lever having four arms, two of which have a length greater than the other two, substantially as described, for the purpose specified.

3. The combination, in a railway-switch, of the lever D, having two or more arms, E F, adapted to operate and lock the switch with a direct thrust, and the stretcher-bar C, with an inclosing-housing pivoted to and moving with the switch, substantially as set forth.

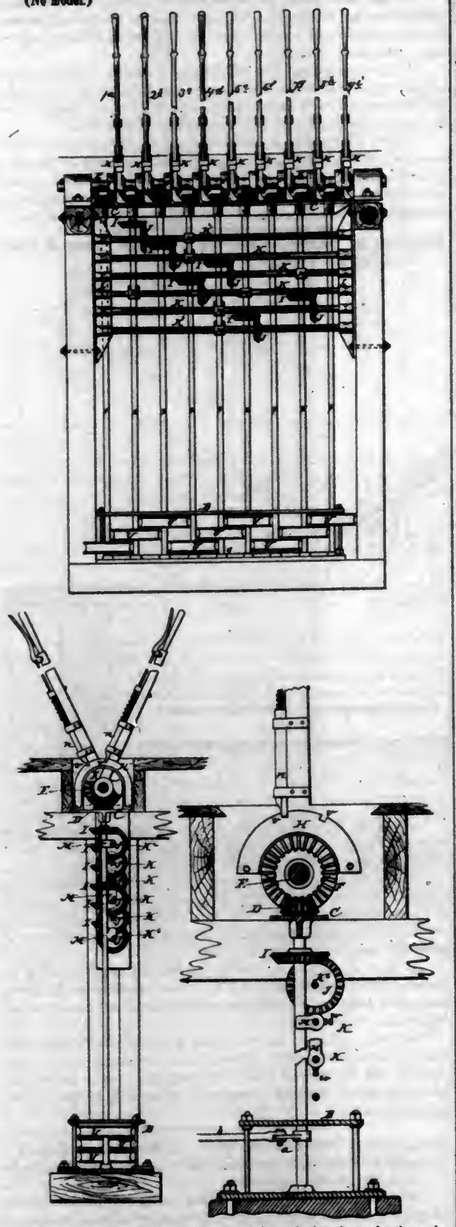
4. The combination, in a railway-switch, of the lever D, having two or more arms, E F, and the switch-rail plates *a b*, with a housing for said lever, consisting of the top plate, H, pivoted to and moving with the switch, the lever-pivot, and the fixed base-plate I, substantially as described, for the purpose specified.

5. The combination, in a railway-switch, of the lever D, provided with two or more adjustable arms, E F, and the switch-rail plates *a b*, with means for operating and controlling the movements of said lever-arms upon said rail-plates, substantially as described, for the purpose specified.

6. The combination, in a railway-switch, of the lever D, having two or more arms, E F, and a bottom ring projection, *c'*, and the switch-rail plates *a b*, with a bearing-plate, *p*, having a surface-groove, *q*, adapted to receive said ring projection, the housing H, the base-plate I, and the bolt *r*, substantially as herein set forth.

7. The combination, in a locking-switch, of the switch-rails A B, having the plates *a b*, and three fixed divergent tracks with the lever D, having four arms, two arranged at right angles to the lever, and two intermediate longer ones adapted to operate the switch, substantially as described.

324,614. INTERLOCKING MECHANISM FOR RAILWAY SWITCHES AND SIGNALS. ELISHA H. TOBEY, Denver, Colo. Filed Feb. 28, 1885. (No model.)



Claim.—1. In an interlocking switch and signal mechanism, the combination, with the switch and signal connecting shafts and their operating-levers, of the horizontal shafts geared with said signal and switch connecting shafts provided with locking-arms adapted to be locked with said vertical shafts, for the purpose specified.

2. In an interlocking switch and signal mechanism, the series of horizontal shafts provided each with one or more locking-arms arranged with vertical signal and switch connecting shafts to operate, as specified, to lock the switches and signals, and to release them by a movement of said locking arm or arms in the arc of a circle toward and from said vertical shafts.

3. The combination, in an interlocking switch and signal mechanism, of vertical signal and switch connecting shafts having an angular cross-section, with the horizontal shafts carrying forked locking-arms arranged to be locked with said vertical shafts, and suitable gearing connecting these shafts with each other and with operating hand-levers, substantially as described, for the purpose specified.

4. In an interlocking switch and signal mechanism, a series of adjustable locking-arms, and a series of carrying-shafts therefor, arranged parallel one above the other, in combination with a series of vertical shafts arranged parallel one beside the other along and near the horizontal shafts, suitable connecting-gearing therefor, a separate operating hand-lever for each vertical shaft, and suitable connections for the latter with the switches and the signals, as set forth.

5. In combination, in an interlocking switch and signal mechanism, the vertical shafts having an angular cross-section, the horizontal shafts carrying the forked locking-arms, the gearing I and J for said shafts, the hand-levers, the gear D E, connecting the latter with said vertical shafts, and suitable connections for the latter with the switches, and with the signals all arranged for operation and for interlocking co-operation, substantially as described, for the purpose specified.

6. The combination, in an interlocking switch and signal mechanism, of vertical switch and signal connecting shafts, a series of horizontal shafts carrying one or more locking-arms adjacent to and in juxtaposition to said vertical shafts, and suitable connecting-gearing for said shafts, with levers corresponding in number to said vertical shafts, suitable gearing connecting them with the latter, and suitable means for controlling the movements of the levers to correspondingly control and limit the movements of the signals, the switches, and the arc described by the arms which lock the crossing shafts together and release said lock, substantially as described, for the purpose specified.

7. In an interlocking-switch mechanism for railway-crossings, the combination, with switch-operating connections consisting of a vertical shaft connecting each switch, and an operating-lever suitably geared to said shaft, with a horizontal shaft for each vertical shaft, carrying a locking-arm for the latter, and suitable gear for connecting and operating the shafts in pairs, and their locking device, substantially as herein set forth.

8. In an interlocking switch and signal mechanism for railway-crossings, the combination of a series of shafts crossing each other connected with the switches, with the signals, and with their operating-levers, substantially as described, with one or more arms carried by one of said shafts and operated in harmony with their movement, and a provision on the other shaft whereby the said arm is adapted to lock the said shafts and to release said lock, as described.

9. The combination, in an interlocking switch and signal mechanism for railway-crossings, of a series of shafts crossing each other in separate parallel rows connected with the signals, with the switches, and with their operating-levers, as described, with one or more arms disposed upon the horizontal shafts in the order described to interlock with the vertical shafts in the order described, whereby the switches or the signals can be interlocked one with the other, as may be desired, for the purpose specified.

10. In an interlocking switch and signal mechanism, a series of shafts geared in pairs, each pair composed of a vertical and horizontal shaft, the two sets of shafts arranged in separate adjacent rows, the shafts of the horizontal row carrying each one or more forked arms in fixed relation thereto, and the shafts of the vertical row formed for angular cross-section at the point in juxtaposition to the forked arms, in combination with suitable switch and signal connecting mechanism and suitable operating-lever connections, substantially as described, for the purpose specified.

324,615. MANUFACTURE OF COLORING-MATTER FROM ALPHA-NAPHTHOL AND DINITRO-NAPHTHOL. LEO VERNON, Lyons, France. Filed July 25, 1884. Renewed June 18, 1885. (No specimens.)

Claim.—The process herein described of producing coloring-matter, the same consisting in treating alpha-naphthol with sulphuric acid at 66° Baumé until a liquid product is obtained, then adding pure ice to reduce the temperature and dilute the solution, then adding nitric acid at 40° Baumé, keeping the temperature under 30° centigrade, then heating the solution to near 40° centigrade, then cooling to 12° or 15° centigrade, and finally filtering, redissolving the precipitate, and treating with carbonate of potash in solution to produce a precipitate, which is pressed and dried, substantially as in the manner specified.

324,616. THREAD-CUTTER. BENJAMIN F. WALKER, Allentown, N.Y. Filed June 14, 1884. (No model.)



Claim.—The thimble provided with the cutting-blade A, arranged parallel to a plane transverse thereto, and having a rounded edge, and the guard C, which is similarly arranged, and has a lengthwise groove in its inner side to receive said blade, all as shown and described, to operate as specified.

324,617. FOLDING CARRIAGE. ALLAN H. WALSH and JULIUS ABRAMOWSKY, Chicago, Ill. Filed Dec. 18, 1884. (No model.)



Claim.—1. A folding carriage the body of which consists of two sections hinged to each other, each section being provided with a hinged bottom and with hinged wheel-supports, and means for temporarily securing said sections and bottom in position, substantially as and for the purposes set forth.

2. A folding carriage the box of which is provided with a hinged or removable bottom, and brackets or wheel-supports hinged to the sides and within said box, substantially as described.

3. A folding baby-carriage formed in two sections hinged to each other, each section being provided with a hinged bottom, and brackets or wheel-supports attached by hinges to the inside of the frame of said sections, respectively, and means for temporarily securing said sections and bottom boards in position, whereby said device may be alternately unfolded and maintained at will in the form of a carriage or compactly folded in the form of a case, substantially as described.

4. A child's carriage consisting of the combination of the sections A A', hinged to each other at the top, and having means for detachably securing the same at the bottom, with folding or hinged brackets or wheel-supports C, a jointed or telescoping handle having its lower end pivoted within the box, and a hinged or detachable bottom, whereby the body of said carriage may be folded together, thus forming a temporary case for the reception and inclosure of the wheels and other parts, substantially as and for the purposes specified.

5. In a baby-carriage, the combination of the sections A A', hinged to each other, hinged bottom boards, B B, wheels D, having their axles rigidly attached to the extremities of hinged brackets C, and means for locking said sections and bottom boards in position, respectively, substantially as described.

6. A folding baby-carriage in which the wheel-supports consist of a series of hinged brackets, said brackets being provided with sockets therein for the reception of loose pintles, to which the axles are attached, and a spiral spring within said socket, substantially as and for the purposes set forth.

7. In a folding baby-carriage, the hinged brackets C, having sockets c^3, spring c^4, and pintles E, with means for preventing the latter from turning within said sockets, substantially as and for the purposes specified.

324,618. ROLLER-SKATE. DANIEL WALTERS, Richmond, Ind. Filed Mar. 10, 1885. (No model.)



Claim.—1. A roller-hanger for skates, consisting of the upper hollow section having a shoulder, 12, and an aperture, 7, a lower section having two journals, one of which has its bearing in the aperture, and a detachable locking-arm having a lateral lug or flange, 14, to rest on the shoulder, substantially as described.

2. The combination of a roller-hanger for skates, an elastic block or cushion therein, a shaft journaled to rotate in the walls of the hanger, and a cam on the shaft for acting on the block or cushion, substantially as described.

3. The combination, in a roller-hanger for skates, of an upper section having walls provided with slots, a lower section jointed to the upper section, an elastic block or cushion resting on the lower section, a shaft arranged in the slotted walls, and a cam on the shaft for acting on the block or cushion, substantially as described.

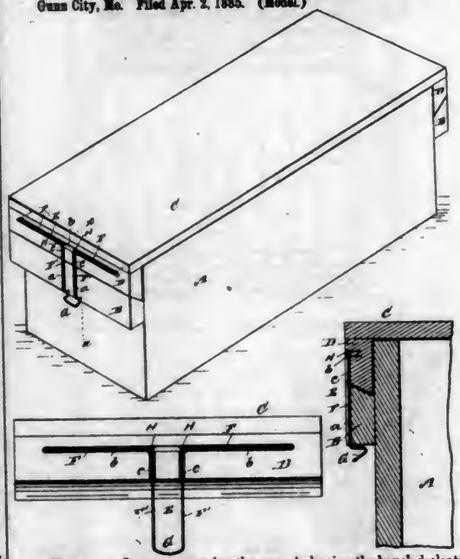
4. The combination, in a roller-skate, of an axle having an annular recess, a roller, a bush in the roller having a groove in its outer edge, and a spring-finger in the groove for engaging and disengaging the annular recess in the axle, substantially as described.

5. The combination, in a roller-skate, of an axle, a roller having a central bore, two bushes arranged, respectively, in the ends of the bore, and one provided with a spring-finger for engaging and disengaging the axle, substantially as described.

6. The combination, in a roller-skate, of an axle, a roller having a central bore, a bush secured in the bore, and a ring at the inner end of the bush provided with an outwardly-projecting finger or fingers for engaging and disengaging the axle, substantially as described.

7. The combination, in a roller-skate, of an axle having an annular recess, a roller having a bore, a bush secured in the bore and having a groove in its outer edge, and a ring at the inner end of the bush provided with a spring-finger extending outward in the groove for engaging and disengaging the annular recess in the axle, substantially as described.

324,619. FASTENING FOR EGG-CARRIERS. THOMAS W. WELLS, Gunn City, Mo. Filed Apr. 2, 1885. (Model.)



Claim.—1. In an egg-carrier, the case A, having the beveled cleats B, in combination with the cover or lid C, having the beveled cleats D, and the spring-catch E, substantially as shown and described.

2. The spring-catch E, formed of a wire bent at its middle to form a loop, G, and extending outward and upward to form the vertical sides F' F', the horizontal arms F F at right angles to the said sides, and each terminating in an attaching end bent inward at right angles to said horizontal arms, substantially as set forth.

3. In an egg-carrier, the case A, the beveled cleats B, having the groove *a*, in combination with the lid C, the beveled cleats D, having the grooves *b* and *c*, and the spring-catch E, substantially as shown and described.

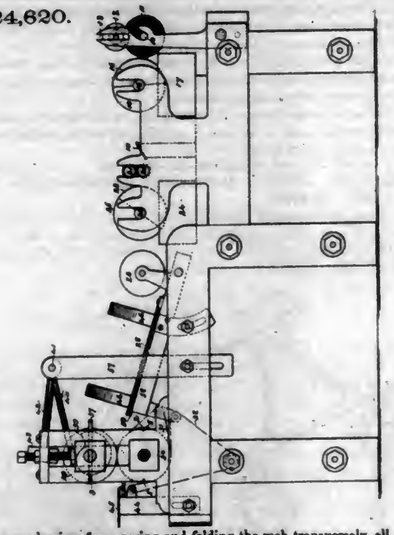
4. In an egg-carrier, the box or case A, provided with the beveled cleats B, having the grooves *a*, in combination with the cover or lid C, provided with the beveled cleats D, having the grooves *b* and *c*, and the spring-catch E, fastened by staples H, substantially as herein shown and described.

324,620. PAPER-BAG MACHINE. JAMES WEST, Ballston Spa, N.Y., assignor to the Union Paper Bag Machine Company, Philadelphia, Pa. Filed July 19, 1883. (No model.)

Claim.—1. The combination, with a mechanism, as the disks 16, for applying a series of short lines of paste to the edges of the web, of a mechanism for folding over said edges, a mechanism, as the disks 23, for applying lines of paste to said folded edges, and a mechanism, as the former and fingers 27 28, for folding over the edges of the web a second time, all substantially as described.

2. The combination, with a mechanism, as the disks 16, for applying a series of short lines of paste to the edges of the web, of a mechanism for folding over said edges, a mechanism, as the disks 23, for applying lines of paste to said folded edges, a mechanism, as the former and fingers 27 28, for folding over the edges of the web a second time,

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and a mechanism for severing and folding the web transversely, all substantially as described.

3. The combination, with the removable rolls and disks 16 18 and 23 25 and the removable plate 19, of adjustable guides 14 and the expansible former 27, substantially as described.

4. The combination, with the removable rolls and disks 16 18 and 23 25, the removable plate 19, and the removable rolls 29 30, of the adjustable guides 14 and the expansible former 27, substantially as described.

5. The combination, with the roll 29 and its severing-blade 3, of the hammers 43 and means for actuating the same, all substantially as described.

6. In a bag-machine, the combination, with means for advancing the web and for folding over its edges, of the creasing-blade 4 and the roll 30, provided with the pins 5, arranged to impale the paper just in the rear of the line creased by the blade 4, and the tapes or cords 31 32, arranged to complete the fold and deliver the bag from the roll, all substantially as described.

7. In a bag-machine, the combination, with means for advancing the web and for folding over its edges, of the roll 29, provided with the creasing and cutting blades 4 3, and the roll 30, provided with the pins 5, arranged to impale the paper just in the rear of the line creased by the blade 4, and the tapes or cords 31 32, arranged to complete the fold and deliver the bag from the roll, all substantially as described.

8. In a bag-machine, the combination, with means for advancing the web and for folding over its edges, of the creasing-blade 4 and the roll 30, provided with the pins 5, arranged to impale the paper just in the rear of the line creased by the blade 4, and means for completing the fold and delivering the bag from the roll, all substantially as described.

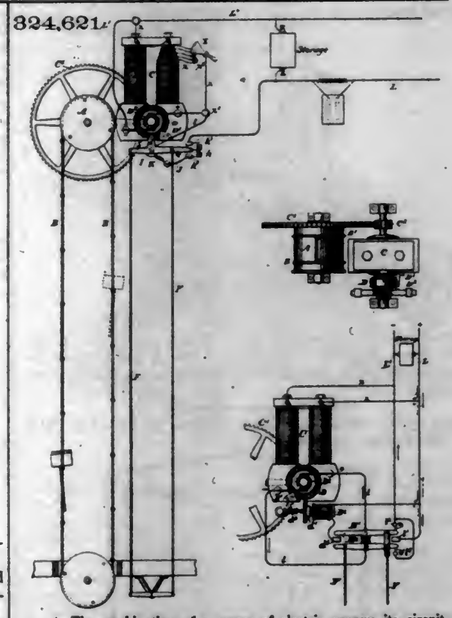
324,621. ELECTRIC ELEVATOR. SCHUYLER S. WHEELER, Newburg, N.Y. Filed Dec. 17, 1884. (No model.)

Claim.—1. The combination of a normally-constant source of electric energy, its circuit, an elevator or support for raising and lowering matter, an electric motor in said circuit for hoisting said elevator, which motor may be caused to act at the will of the operator to raise the elevator, connecting mechanism between the motor and elevator, whereby the armature of the motor is mechanically driven when the elevator descends, thereby working the motor as a dynamic generator of electricity, and the means or manner, substantially such as described, for utilizing the current thus generated.

2. The combination of a source of electric energy, its circuit, an electric motor therein, a car or support actuated by the motor for raising and lowering material, connecting mechanism between the motor and elevator, whereby the motor is driven as a dynamic electric generator when the elevator-car descends, and a storage system or secondary battery which is charged by the current thus generated.

3. The combination of a source of electric energy, its circuit, an electric motor therein, a car or support actuated by the motor for raising and lowering material, connecting mechanism between the car or support and motor, whereby the motor is mechanically driven as a dynamic electric generator when the car descends, a storage system or secondary battery which is charged by the current thus generated, and circuit-connections, whereby the current from the storage system is utilized to elevate the car.

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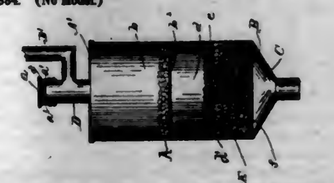


4. The combination of a source of electric energy, its circuit, an electric motor therein, a car or support actuated by the motor for raising and lowering material, circuit-controlling devices for throwing the motor into action to raise the elevator at the will of the operator, connecting mechanism between the car and motor, whereby the motor is mechanically driven as a dynamic electric generator when the car descends, and circuit connections and appliances, substantially such as described, for utilizing the current thus generated to reduce the sum of the electric energy that would otherwise be drawn from the primary source or generator to work said elevator.

5. The combination of a source of electric energy, its circuit, an electric motor therein, a car or support hoisted by the motor, connecting mechanism between the car and motor, whereby the motor is driven as a dynamic electric generator without changing its direction of rotation when the car is descending, and clutch devices for throwing the motor into action to elevate the car or permitting the motor to be driven by the descent of the car.

6. The combination of a source of electric energy, its circuit, an electric motor therein, a car or support hoisted by the motor, connecting mechanism between the car and motor for hoisting the car, and also mechanism whereby the motor is driven by the descending car as a dynamic electric generator without changing its direction of rotation, means, substantially as described, for normally clutching the two mechanisms, so as to hold the elevator-car at rest, and clutch devices for throwing either of said mechanisms out of connection, so that the car may be elevated or permitted to descend.

324,622. FILTER. EZEKIEL P. WHEELOCK, Corning, N. Y. Filed Oct. 14, 1884. (No model.)

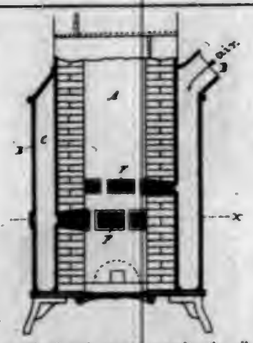


Claim.—The filter A, having integral therewith the perforated disk B, and studs *d'* and sponge E, in combination with the cover A', receiving-pipe D, and cap *a*, having standards *a'*, and gauze a^2, arranged to admit overflow, substantially as shown and described.

324,623. CUPOLA-FURNACE. J. HILL WHITING, Detroit, Mich. Filed June 4, 1885. (No model.)

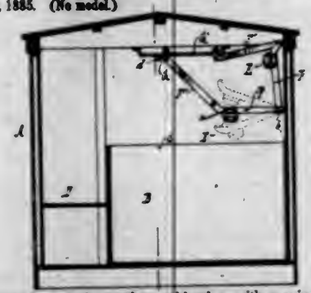
Claim.—In a cupola-furnace, the combination, with the furnace A and jacket B surrounding the same and forming an air-chamber, C, of the rectangular tuyeres F, each enlarging from its inlet to its outlet, and arranged, as shown, with a small rib, *a'*, between each two adjacent

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tuyeres, and the mouth of each tuyere opposite the rib between two other tuyeres, whereby the blast entering through said tuyeres is diffused over the whole sectional area of the cupola, substantially as described.

324,624. STOCK-CAR. JAMES H. WICKES, New York, N. Y. Filed June 25, 1885. (No model.)

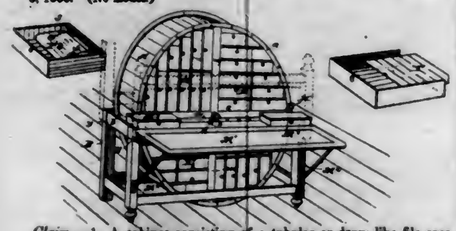


Claim.—1. In a stock-car, the combination, with a series of stalls, of a series of independent kicking-beams, and a lever mechanism for each kicking-beam for independently raising and lowering said beams, substantially as described.

2. The combination, with a stall, of a kicking-beam extending transversely across the same, the toggle-levers and guide-bar for raising and lowering, and means for securing the same in position, substantially as shown and described.

3. The combination of kicking-beams E, extending transversely across the stall and attached to the levers F F, fulcrumed at one end to the car-frame, the guide-bar G, extending longitudinally over the stall, the split clamp thereof, and the levers F' F' for connecting the split clamp G with the levers F F, substantially as shown and described.

324,625. FILE-CASE. EUGENE B. WIGHT, Chicago, Ill. Filed May 8, 1885. (No model.)



Claim.—1. A cabinet consisting of a tubular or drum-like file-case supported to revolve, and provided at one or both ends or heads with receptacles, substantially as described.

2. A revolving tubular or drum-like file-case axially supported, provided with receptacles open on the ends or heads of the case and with a detent for fixing it in position after adjustment, substantially as described.

3. A desk, table, or case provided with a frame having bearings, in combination with a tubular or drum-like file-case supported by said bearings to rotate freely and with receptacles at the end or head, substantially as described.

4. The combination of the revolving tubular or drum-like file-case having receptacles at the end and movable drawers or boxes adapted to said receptacles and provided with adjustable covers, substantially as described.

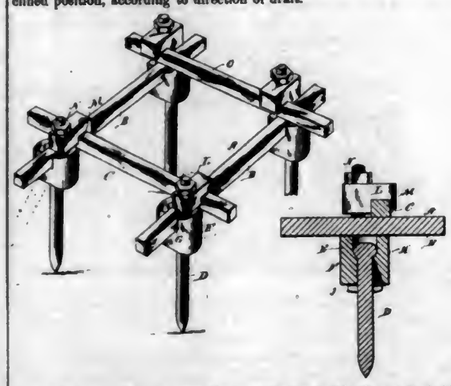
5. The revolving tubular or drum-like file-case having its head subdivided by partitions, in combination with a detent for securing it in position after adjustment, substantially as described.

6. The combination of a desk or table and bearings for a tubular or drum-like file-case supported to rotate, and provided with receptacles at the end or head, substantially as described.

7. In combination with a revolving case, a drawer or box having parallel grooves in each of the sides, in combination with a movable cover, F, substantially as set forth.

324,626. HARROW. ALBERT WILCOX, Clarence, Iowa. Filed June 5, 1884. (No model.)

Brief.—Tooth with ball-shaped head fitting and free to rotate in socket of lower clamp, said socket having both a vertical and an inclined wall, adapting the tooth to operate in either an upright or an inclined position, according to direction of draft.

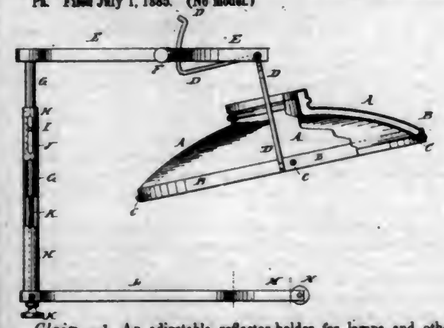


Claim.—1. In a harrow, the combination, with the tooth-holder having a recess or seat and a vertical and an inclined wall, of the swiveled tooth having an enlargement or head fitting in the said recess or seat, substantially as set forth.

2. The combination, with the frame-bars B C of a harrow, of the socket-clamp having a vertical and an inclined wall and recessed to receive the bar B, the harrow-tooth having an enlargement or head fitting in the socket-clamp, and the clamp L, substantially as described, catching over the bar C and holding it down upon and across the bar B, as set forth.

3. The frame-bars B C and the socket-clamp F, having the recess G to receive the bar B, in combination with the harrow-tooth fitting in the socket-clamp, the clamp L, catching over the bar C and holding it down upon the bar B, the bolt J, passing through the clamps F L, and the nut N, securing the bolt in place, the bolt and nut connection between the clamps being independent of the tooth, so as to allow the adjustment of the clamps on the frame-bars without disturbing the tooth, as set forth.

324,627. ADJUSTABLE REFLECTOR-HOLDER FOR STATIONARY LAMPS AND OTHER LIGHTS. WILLIAM J. WILKINSON, Philadelphia, Pa. Filed July 1, 1885. (No model.)



Claim.—1. An adjustable reflector-holder for lamps and other lights, constructed substantially as herein shown and described, and consisting of the band B to receive the reflector, the bent pivotal arms D, the forked bar E, carrying the pivotal arms D, and provided with a set-screw, F, for securing the said arms in place, the sliding tubular rod G, attached to the forked bar E, and having interior screw-threads, the supporting-socket H, to receive the tubular rod G, and provided with a swiveled hand-screw, K, for adjusting the said tubular rod, whereby the reflector can be readily adjusted at any desired height and at any desired angle, as set forth.

2. The combination, with the socket H, the swiveled screw K, the tubular rod G, the forked bar E, secured to the rod G, the swinging arms D, journaled in the prongs of the fork, and the reflector-supporting band secured to the ends of the arms D, of the bar L, secured at one end to the socket H and provided at its opposite end with a clamp, substantially as set forth.

324,628. BLOTTER. HOMER L. WILLIAMS, Lind Grove, La. Filed Aug. 21, 1884. (No model.)

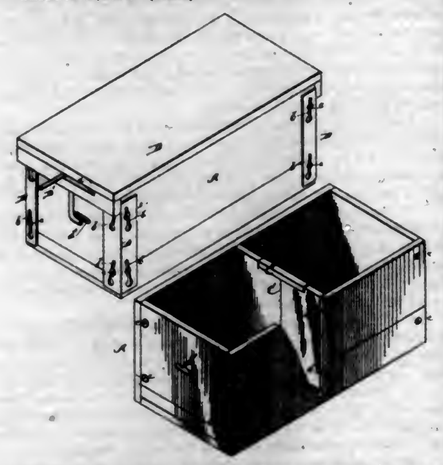


Claim.—1. A blotter consisting of the carrier A, having arms *a*, and a core, F, removably journaled thereon and provided with a fixed and a removable end plate constructed to hold a blotter-roll between them, the auxiliary absorbing or wiping roll journaled on the arms *a* and in contact with the blotter-roll, substantially as set forth.

2. In a blotter, the carrier A, having arms *a*, and the core F, removably journaled thereon and provided with a fixed and a removable end plate, in combination with the tubular blotter D on said core F, between the end plates, whereby when the core is removed from the arms an end plate may be removed to allow of the tubular blotter being placed on or removed from the core, substantially as set forth.

3. As an improved article of manufacture, a blotter consisting of the frame A, formed with a tang, *b*, and forked arms, *a*, the rest C, and the blotting-rollers D E, journaled on opposite sides of the forked arms and having their surfaces in contact with each other, substantially as set forth.

324,629. FOLDING CRATE. EDWARD B. YOUNG, Mansfield, Mo. Filed Dec. 20, 1884. (Model.)



Claim.—1. In a folding crate, the combination, with the sides and ends provided with headed pins at their corners, of angular corner-pieces formed with inclined slots for engaging the pins, substantially as and for the purpose set forth.

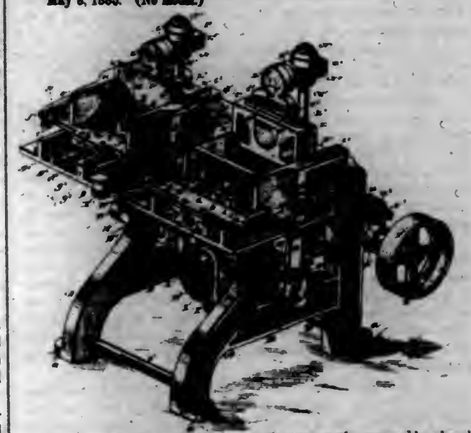
2. In a folding crate, the combination, with the main body of the box or crate, of a partition formed in two parts secured together by a metal clasp or slide upon their upper edge, and provided with dowel-pins engaging with the box, substantially as and for the purpose set forth.

3. The box A, having its sides and ends formed in two parts hinged to fold in upon the bottom, and provided with headed pins or screws *c*, near its corners, in combination with the angular corner-pieces B, having inclined slots *b*, with enlarged ends, substantially as and for the purpose set forth.

324,630. COLORING-MATTER FROM PHENYLHYDRAZINE. H. ZIEGLER, Basle, Switzerland, assignor to the Badische Anilin and Soda-fabrik, Mannheim, Germany. Filed July 1, 1885. (Specimens.)

Claim.—The yellow dye-stuff or coloring-matter hereinbefore described, and having the characteristics above set forth.

324,631. TOBACCO-PRESS. CHARLES B. ADAMS, Quincy, Ill. Filed May 8, 1885. (No model.)



Claim.—1. In a tobacco-press, the two stationary molds placed side by side which are each adapted to be opened and closed, in combination with mechanism whereby when one of said molds is opened the other is simultaneously closed, substantially as and for the purpose described.

2. In a tobacco-press, the two stationary molds placed side by side and having their open ends facing the same way, in combination with the two sets of alternately-acting compressing mechanism for the molds, substantially as and for the purpose described.

3. In combination with the two stationary molds placed side by side on a suitable table or support and having their fronts turned the same way, the two sets of alternately-acting compressing mechanisms for the molds and the lever for starting the mechanisms into action situated between the two molds within reach of the one tending the molds from the front of the machine, substantially as and for the purpose described.

4. In combination with the two stationary molds placed side by side and adapted to be filled from the front of the machine, the two sets of alternately-acting compressing mechanisms for the molds and the lever for starting such mechanisms into operation placed within reach of the operator from the front of the machine, substantially as and for the purpose described.

5. In a tobacco-press, a mold having a stationary back and bottom and movable front and ends, in combination with power-driven means, substantially as described, for automatically closing the mold front and ends inward, substantially as and for the purpose shown.

6. In a tobacco-press, a mold having a stationary bottom and back and movable ends and front, in combination with power-driven mechanism, whereby the ends are closed inward before the movable front is caused to close the front of the mold, substantially as and for the purpose described.

7. In combination with the mold having the movable front and ends and a plunger, means, substantially as described, for actuating the plunger and the mold front and ends from the same source of power, substantially as and for the purpose described.

8. In combination with the plunger, the movable front and ends of the mold, the power-driven shaft, mechanism actuated from said shaft to move the plunger, and mechanism, substantially as described, also actuated from the shaft to move the mold front and ends, substantially as and for the purpose described.

9. In combination with the plunger and the movable mold front and ends, automatic means, substantially as described, actuated from the same source of power adapted to actuate the plunger and the mold front and ends so that the mold ends are closed before the front and the front is closed before the plunger reaches the end of its downward stroke, substantially as and for the purpose described.

10. In combination with the plunger and the movable mold front and ends, automatic means actuated from the same source of power adapted to actuate the plunger, the mold front, and the mold ends, so that the front of the mold is retracted some distance before the ends are moved outward and the ends are retracted, substantially as and for the purpose described.

11. In combination with the two molds, two sets of automatically-acting compressing mechanisms, connecting means for positively opening and closing them operated from the same source of power, automatic means for stopping such compressing mechanisms as each one completes its compressing action and the other is open to receive a new charge, and means, substantially as described, for throwing them into action again, as desired, substantially as and for the purpose described.

12. In combination with the movable ends of the mold, the two slotted levers connected with such ends and the moving bar provided with pins engaging the slots in the levers, substantially as and for the purpose described.

13. In combination with the movable block or plate forming an end of the mold, the lever adjustably connected with such block or plate, substantially as and for the purpose described.

14. In combination with the movable end block or plate provided with lugs on its outer side, the plate provided with a slot near one end and having its other end turned up, the pin passing through the lugs and the slot in the plate, the actuating-lever provided with a guideway receiving the outer end of the plate, a longitudinally-slotted plate in such guideway turned up at its inner end, a set-screw extending through the slot in this plate into the lever, and a screw connecting the turned-up portions of the two plates, substantially as and for the purpose described.

15. In combination with the lever provided with a transverse guideway, a plate fastened to the lever and having one end turned up, a second plate fitting in the guideway and having its end nearest the other plate turned up and its other end slotted transversely, the screw connecting the upturned portions of the two plates, the mold end block provided with lugs on its outer face, and the screw or pin passing through such lugs and the slot in the plate, substantially as and for the purpose described.

16. In combination with the two movable mold ends, the two levers outside of such ends, each provided with a slot having a portion substantially longitudinal and a portion inclined inward, suitable connections between the movable mold ends and the levers, and a moving bar having pins playing in the slots in the levers, substantially as and for the purpose described.

17. In combination with the movable front plate of the mold, the sliding block, connections between the block and plate whereby the plate is moved with the block, a bar on the block, the pins on the bar, the movable ends of the mold, the levers connected by suitable connections with the outer sides of such ends and provided with slots at their inner ends, substantially longitudinal to the levers, and at their outer ends inclined, substantially as and for the purpose described.

18. In a tobacco-press, in combination with a reciprocating block driven in any desired manner, a sliding plate or block, a screw swiveled in a portion of one of the blocks and tapped into a portion of the other, and the plate for closing the front of the mold connected with and carried by the inner block, substantially as set forth and described.

19. In combination with the reciprocating block driven in any desired manner, the sliding plate or block connected with and driven from the other block, the lugs on the plate or block, the front plate of the mold having a slotted lug extending between the lugs on the block, and the pin or screw passing through the lugs on the block and the slot in the lug on the plate, substantially as and for the purpose described.

20. In combination with the plate for closing the front of the mold having on its outer side a slotted lug, the sliding plate or block provided with lugs embracing the lug on the plate, and a pin passing through the lugs on the block and the slot in the one on the front plate, substantially as and for the purpose described.

21. In a tobacco-press, in combination with the rest of the mold, the movable front plate having its lower side beveled, substantially as shown and described, the slotted lug on the outer side of the plate, the sliding plate or block for actuating the front plate, the upright lugs thereon embracing the slotted lug on the front plate, and a pin passing through the lugs on the sliding block or plate and the slot in the lug on the mold front plate, substantially as and for the purpose described.

22. In a press, in combination with the two plungers, the plunger-moving rods, the rotary shaft, the two diametrically-opposite cranks thereon, the rods connecting such cranks with the respective plunger-moving rods, mechanism for driving the shaft, and means for automatically stopping the shaft as the cranks reach their dead-centers with respect to the connecting-rod, substantially as and for the purpose described.

23. In combination with the rotating shaft, means whereby it is driven from any desired source of power, the diametrically-opposite cranks on the shaft, the plunger-actuating rods connected with and driven by the cranks, means for automatically throwing the connections between the shaft and the power out of action as each crank reaches the point of its greatest throw with reference to its respective plunger-rod, and means for throwing such connections into action again at will, substantially as and for the purpose described.

24. In combination with the reciprocating rod, the nut screwed thereon, the spool-shaped sleeve on the rod above the nut, the slotted bar or arm receiving the reduced main portion of such sleeve in its slot, the inverted cup-shaped nut screwed on the rod and bearing upon the upper face of the bar or arm, and the plunger connected with the bar or arm, substantially as and for the purpose described.

25. In combination with the reciprocating rod, the nut thereon, the sleeve on the rod above the nut provided at each end with projecting heads or flanges, the bar or arm slotted to receive the portion of the sleeve between the heads or flanges thereon, the inverted cup-shaped nut on the rod above the sleeve and arm, and the plunger attached to the slotted arm by suitable connections, substantially as and for the purpose described.

26. In combination with the longitudinally-slotted bar or arm connected with the plunger, the reciprocating rod, the nut on the rod, the sleeve on the rod extending up through the slot in the slotted bar or arm and provided with end flanges or heads engaging the upper and lower faces of the arm, the inverted cup-shaped nut on the rod adapted to engage with its lower edge the top of the bar beyond the head on the sleeve, substantially as and for the purpose described.

27. In combination with the slotted plunger-carrying arm, the flanged sleeve on the reciprocating rod, and a screw tapped through the end of such arm and swiveled to the sleeve, substantially as and for the purpose described.

28. In combination with the arm carried by the reciprocating rod having a stud extending at right angles to the face of the end of the arm, a yoke having its upper end pivoted on the stud and provided with a slot, and a set-screw extending through such slot into the end of the arm, substantially as and for the purpose described.

29. In combination with the horizontal bar or arm provided with a horizontal stud on its end, the yoke having its upper end pivoted on the stud and provided with a slot concentric with the center of motion of the yoke on the stud, and a set-screw extending through such slot into the bar end and having its head extending beyond the sides of the slot, substantially as and for the purpose described.

30. In combination with a plunger for a tobacco-press, the bar on the top thereof provided with pivot ears or lugs, the yoke having downwardly-extending lugs pivoted upon a horizontal pin or stud on a rising and falling arm or bar, and a pivot-rod passing through the ears on the bar on the plunger and the lugs on the yoke, substantially as and for the purpose described.

31. In combination with the front plate adapted to be moved bodily toward and away from the mold, means, substantially as described, adapted to draw the plate outward away from the front of the mold and cause it to fall into an upwardly and outwardly inclined position as it is drawn outward, substantially as and for the purpose described.

32. In combination with the table and the stationary upright plate thereon forming the mold-back and provided with horizontal flange at its back, the parallel side plates having their rear ends provided with portions extending over the top of the stationary plate and their other ends provided with lugs, screws passing through the projecting portions on the rear ends of the plates and slots in the flange on the back plate, screws passing through the lugs on the other ends of the side plates and slots in the table, and nuts on the lower ends of the screws, substantially as and for the purpose described.

33. In a tobacco-press, in combination with the two molds having movable ends and fronts, the means for alternately closing and opening the molds, a lever connected at or near opposite ends with such means, a revolving cam, and a yoke reciprocated thereby connected with one arm of the lever, substantially as and for the purpose described.

34. As a means for actuating the reciprocating blocks for closing the fronts of the two molds alternately, the pivoted lever provided with slots in its opposite arms, the screws extending through these slots up into the blocks or portions thereof, the revolving cam and the yoke reciprocated thereby connected with one arm of the lever, substantially as and for the purpose described.

35. In combination with the lever W, the reciprocating rod U', connected with the rear end of the lever, the clutch-fork on the rod, the plate on the front end of the lever having its end projecting beyond the lever side made wedge-shaped, the rock-shaft, the arm on the shaft having the fork engaging such end of the plate, the arm on the shaft provided with a lug or pin, the rotary wheel provided with a notched flange engaged by the pin or lug on the arm, and a spring adapted to press the rod U' endwise, substantially as and for the purpose described.

36. In combination with the clutch-shifting lever, the wedge-shaped plate on the lever, the forked arm engaging such plate, the rock-shaft upon which the arm is carried, the arm on the shaft having a lug or pin, the wheel with the notched flange, a spring adapted to swing the arm to hold it with its pins pressed against the wheel-flange, and the handle-lever on the upper end of the rock-shaft, substantially as and for the purpose described.

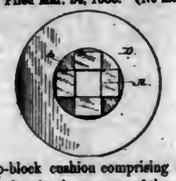
37. In combination with the lever W, means for swinging its forward end outward, consisting of the adjustable wedge-shaped plate on the lever, and the swinging arm X^2, forked to engage the sides of the wedge end of the plate, substantially as and for the purpose described.

38. In combination with the clutch on the driving-shaft, the fork for moving the reciprocating half thereof, the rod on which the fork is mounted, the spring pressing the rod so as to normally keep the sliding clutch-half from the other half, the lever W, connected at its rear end with such rod, the wedge-plate on the forward arm of the lever having its wedge end projecting beyond the inner side of the lever, and the swinging arm provided with a fork engaging such wedge end of the plate, substantially as and for the purpose described.

39. In combination with the lever W, provided with the transverse guideway, the slotted plate fitting in such way formed with a wedge-shaped end projecting beyond the lever side and a lug or downward projection on the other end, a set-screw extending through the slot in the plate and into the lever, a screw connecting the lug on the plate with a lug on the under side of the lever, and a swinging arm forked to engage the wedge end of the plate on the lever, substantially as and for the purpose described.

40. In combination with the sliding half of the clutch, the clutch-fork, the reciprocating rod upon which the fork is carried sliding in suitable fixed guides, a screw-nut on the rod, a spring on the rod between the nut and one of the guides, and a screw-nut on the end of the rod beyond such guide, substantially as and for the purpose described.

324,632. PROP-BLOCK CUSHION. JAMES H. ALEXANDER, Syracuse, N. Y., assignor of one-half to Clayton L. Baker and John W. Williams, both of same place. Filed Mar. 24, 1885. (No model.)

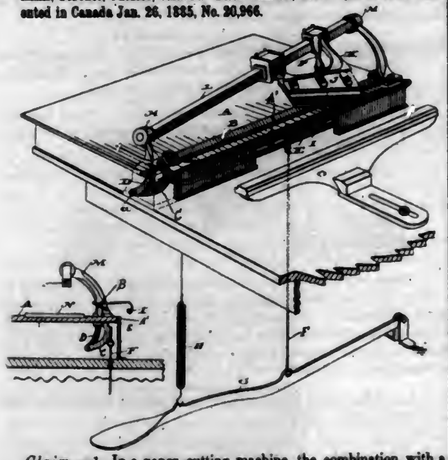


Claim.—1. A prop-block cushion comprising the sleeve or bushing having a central opening for the passage of the prop bolt or iron, and a washer or washers fitting around the sleeve or bushing, the end of the latter being slitted to form tongues which are turned back to hold the washer or washers in place, as set forth.

2. The combination, with a metal bushing having slitted ends, of a washer or washers located thereon, and washers D and F at the ends of the bushing, said washers being held in place by metal rims, substantially as set forth.

3. The combination, with a metal bushing having slitted ends, of a washer or washers located thereon, washers D F at the ends of the bushing, metal rims for clamping the same together, and a covering for the washers C, substantially as set forth.

324,633. MACHINE FOR SHEARING CARD-BOARD. WALTER AREL, Toronto, Ontario, Canada. Filed Jan. 23, 1885. (No model.) Patented in Canada Jan. 26, 1885, No. 20,966.



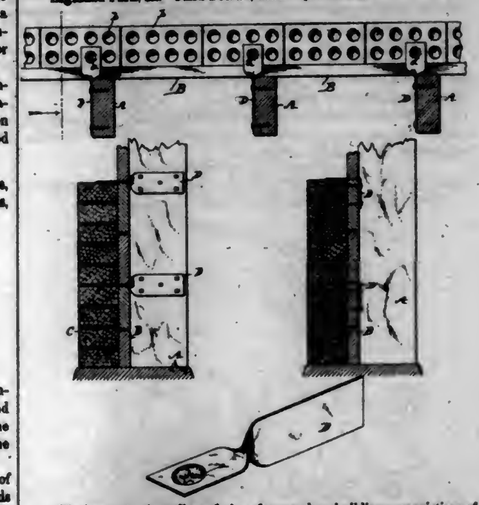
Claim.—1. In a paper-cutting machine, the combination, with a table having a knife-bearing edge, A', and with a rocking guide-bar arranged obliquely thereto, of a cutting-blade supported by and arranged to slide upon the guiding-bar and to be drawn from one end toward the other end of the bar and along the bearing-edge of the table, substantially as and for the purposes specified.

2. The combination, with the table having transverse knife-bearing edge A', and with the guide-bar L, mounted loosely in journals M and arranged obliquely to the edge A', of the bracket K and knife J, having beveled edge, as and for the purposes set forth.

3. The combination, with the table A, having edge A', and with the guide O, oblique rocking guide-bar L, and beveled knife J, as described, of the clamps B and I, connected together, as described, the bar E, treadle, and spring, all arranged and operating as and for the purposes set forth.

4. In a paper-cutting machine substantially as described, the combination, with the presser-bar B, arranged upon one side of the path of the knife, of the presser-bar I, secured to the bar B by spring-arms and arranged on the opposite side of said path, and a treadle-lever, as G, and connections, as set forth.

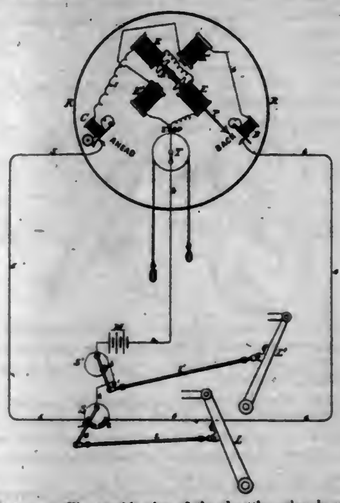
324,634. CONSTRUCTION OF BUILDINGS. JAMES C. ANDERSON, Highland Park, Ill. Filed Dec. 22, 1884. (No model.)



Claim.—1. A wall or facing for wooden buildings, consisting of bricks laid in the usual manner against the wall or siding of the wooden building, and secured thereto by anchors or binders of sheet metal, one end of which is laid flat and built in with the brick of the wall, while the other end is bent and secured to the siding or studding of the wooden structure, as set forth.

2. An anchor or binder for securing a brick wall to a frame or wooden building, consisting of a strip of sheet metal provided with a burr at one end for fitting into a cavity in the brick, the other end of the anchor being adapted to be secured to the studding or sheathing-boards, as set forth.

324,635. ELECTRICAL INDICATOR. MURRAY BACON, Philadelphia, Pa., assignor to the Novelty Electric Company, same place. Filed Sept. 15, 1884. (No model.)



Claim.—1. The combination of the throttle-valve lever of an engine and an electrical switch operated thereby with an electrical indicator controlled by said switch, substantially as set forth.

2. The combination of the reversing-lever of an engine and an electrical switch controlled thereby with an electrical indicator operated by said switch to show in which direction the engine is running, substantially as set forth.

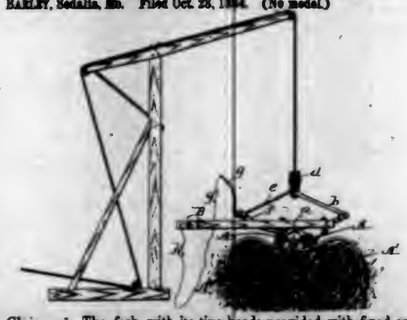
3. The combination of the valve-lever of an engine and an electrical switch controlled thereby with an indicator consisting of two electro-magnets and an armature, a pointer operated thereby, and a dial, substantially as specified.

4. The combination of a valve-lever of an engine and an electrical switch operated thereby with an indicator consisting of a dial, pointer, and two electro-magnets controlling the pointer, each electro-magnet having an audible signal in circuit differing in character from the other, substantially as described.

5. The combination of the slotted dial-plate and pointer with an axis carrying a reversible sign-plate, and a switch controlled by said axis, substantially as set forth.

6. The combination of the slotted dial-plate with an axis controlling a switch and carrying a reversible sign-plate, a pulley, and a manipulating-chain, substantially as described.

324,636. HAY-STACKER FORK. James H. Barley and Thomas K. Barley, Sedalia, Mo. Filed Oct. 23, 1884. (No model.)



Claim.—1. The fork with its tine-heads provided with fixed arms having a pivoted bail provided with a pulley, substantially as shown, and for the purpose set forth.

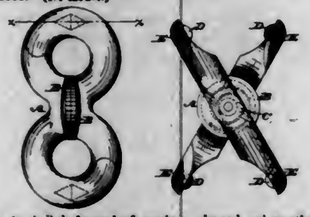
2. The fork with one of its tine-heads provided with fixed arms having a pivoted bail provided with a pivoted arm, and with its other tine-head provided with a fixed eye bar or arm having a trip-lever, all substantially as shown, and for the purpose set forth.

3. The fork having its tine-heads hinged together and provided with fixed arms having a pivoted bail provided with a pivoted arm, and having a trip-lever, substantially as and for the purpose set forth.

4. The fork having its heads hinged together and provided with tines and the handle of the fork connected to said heads, substantially as and for the purpose set forth.

5. The fork having its heads hinged together as shown, and provided with a series of fixed tines of an outwardly, downwardly, and inwardly curved shape, said heads provided with suitable means for opening and closing the tines of said fork, substantially as shown, and for the purpose specified.

324,637. OPEN LINK. Thomas Barnes, Philadelphia, Pa. Filed June 3, 1885. (No model.)



Claim.—1. A link formed of sections shaped substantially as described, having central pivoted bearings, the latter being recessed and containing a spring, the ends of which are connected with the two sections, substantially as described.

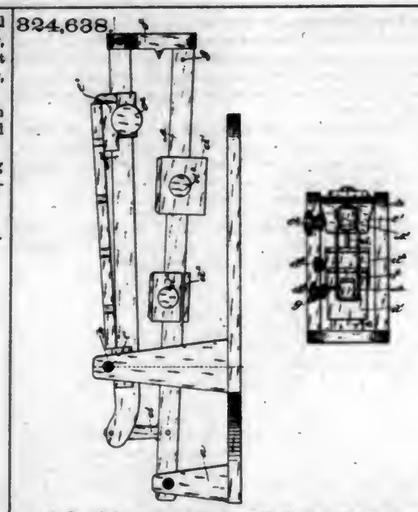
2. An open link consisting of sections shaped substantially as described, centrally pivoted together, having their bearings recessed, with a spring therein, and lugs and recesses on the inner faces of the sections abutting against each other when the link is closed, substantially as described.

3. An open link formed of two sections having a central bearing, B, each section having at each end thereof the projection D and recess E, adapted to interlock when the link is closed, substantially as described.

324,638. PROPORTIONAL BALANCE. George M. Beard, Auburn, Ind., assignor of one-half to Wm. H. Rakestraw, same place. Filed May 4, 1885. (No model.)

Claim.—1. In the balance, the combination of the levers connected together and supported as described, one of said levers having a fixed stop or rest with its center directly under its pivot or fulcrum, and having a movable or adjustable rest or stop, substantially as and for the purpose set forth.

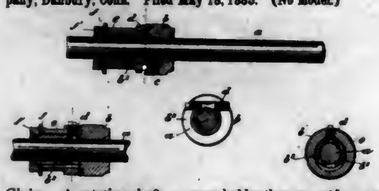
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2. In a balance, in combination with the lower lever pivoted at one end between parallel uprights or studs, and having an adjustable supplementary and principal weight and a point or projection, the upper lever connected to said lower lever by a link, and having a fixed and a movable or adjustable stop, and a pendent guide or loop having an index or pointed projection, substantially as shown, and for the purpose set forth.

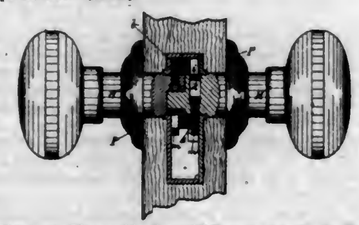
3. In a balance, the combination of the levers connected together and supported as set forth, the upper lever having a fixed and a movable or adjustable rest or stop, and the pendent loop or guide having an index, and the lower lever having an adjustable supplementary and principal weight, and a projection or point to coincide with the said index, substantially as shown and described.

324,639. ADJUSTABLE CAM OR ECCENTRIC. William F. Beardsley, Boston, Mass., assignor to the Manufacturers Special Machine Company, Danbury, Conn. Filed May 13, 1885. (No model.)



Claim.—A rotating shaft, a screw-holder thereon, and a cam or eccentric, combined with an adjusting-screw the threads of which engage screw-threads of the cam or eccentric, the said screw being free to rotate in the screw-holder, but being restrained from movement in the direction of its length, or at right angles to the center of rotation of the shaft, substantially as described.

324,640. KNOB ATTACHMENT. John Bellamy, Boston, Mass. Filed Apr. 18, 1885. (Model.)

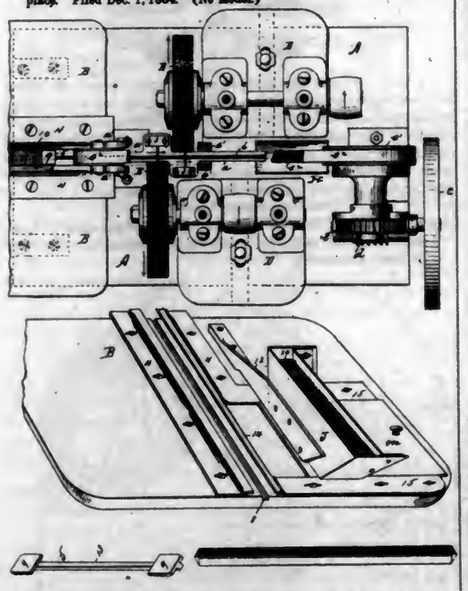


Claim.—1. The combination, with the case A and yoke D for actuating the bolt, of the recessed shank H', fitted with sliding pin *b*, and the shank H, fitted with a projection, *h*, whereby as the ends of said shanks are brought together the pin *b* is locked in a projected position, for the purposes and substantially as described.

2. The case A, yoke D, and shank H', provided with recess *g* and pin *b*, in combination with shank H, provided with projection *h*, hole *k*, and pin *d*, said pin *d* being free to slide in hole *k*, whereby as the shank is turned, bringing the hole *k* into a vertical position, the pin *d* drops downward and projects below the shank in line to operate the lower arm of the yoke, substantially as shown and described.

3. The combination, with a knob-shank fitted with a sliding pin which acts to connect the shank with the yoke or talons, of the case A and lever *m* and means for actuating it, whereby said pin may be slid back into the shank and out of line of contact with said yoke, for the purposes and substantially as described.

324,641. MACHINE FOR GRINDING THE ENDS OF WIRES. John Berry, Springfield, Mass., assignor to the National Needle Company, same place. Filed Dec. 1, 1884. (No model.)



Claim.—1. In a machine for grinding the ends of wire to a cone shape, a way for a wire-holder to slide on having an abutment-plate on opposite sides thereof, a wire-holder having two heads, between which to place the wires which are to be ground, a belt to move over and in contact with said wires, one or more grinding-wheels adapted to revolve near to and in a plane at right angles to said way, and means, substantially as described, for regulating the pressure of said belt against the wires, combined and operating substantially as set forth.

2. In a machine for grinding the ends of wire to a conical shape, a way for a wire-holder to slide on having on opposite sides thereof an abutment-plate adjustable to and from the center of the way, a wire-holder for holding pieces of wire, having two heads thereon, a belt to move over and in contact with said wires, one or more grinding-wheels adapted to revolve in a plane at right angles to said way and adjustable toward and from the latter, and means, substantially as described, for regulating the pressure of said belt against the wires, combined and operating substantially as set forth.

3. The way *a*, the belt a^3, the wire-holder 5, having an abutment-plate, 9, at each end, and having a sliding motion on said way, which is imparted to it through the contact of said belt with the pieces of wire carried thereon, the shoe *b*, and means, substantially as described, for forcing the shoe against said belt, combined and operating substantially as set forth.

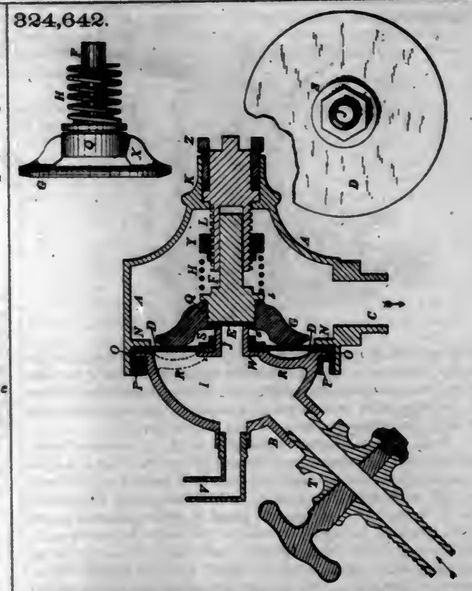
4. The grooved way, the table B, grooved to coincide with the way, and having the guide-strips 4 4 thereon, one of which is cut away at its side, and has arms 15 thereon, the holder 13, the box J, and the slide *m*, combined and operating substantially as set forth.

324,642. PRESSURE-REGULATOR FOR FERMENTING LIQUIDS. Albert S. Bishlow, Rochester, N. Y., assignor to the Eureka Spund Apparatus Company, same place. Filed June 26, 1885. (No model.)

Claim.—1. The combination, in a pressure-regulator, of a suitable casing provided with inlet and outlet passages, a flexible diaphragm secured to the casing at its center and periphery, a centrally-located valve-seat, and a spring-actuated valve provided with a ring bearing on the free portion of the diaphragm, substantially as described.

2. The combination, in a pressure-regulator, with a suitable casing provided with inlet and outlet passages, of the flexible diaphragm D, secured to the casing at its center and periphery, the valve-seat J, valve E, ring G, spring H, and adjusting-screw L, substantially as described.

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3. The combination, with the diaphragm D and valve-seat J, of the ring G and valve E, secured in the boss Q by the threaded valve-stem F, substantially as described.

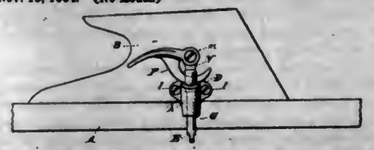
4. The combination, with the casing A, having outlet-passage C, of the inlet-chamber I, provided with valve-seat J, and the diaphragm D, secured to the inlet-chamber around the valve-seat by ring S and at its periphery between the flanges O and N, and the spring-actuated valve E, having ring G connected therewith, substantially as described.

5. In a pressure-regulator, a flexible valve-operating diaphragm forming a partition between the inlet and outlet chambers and secured thereto at its center and circumference, substantially as described.

6. The combination, in a pressure-regulator, with the casing A, having flange N and outlet-passage C, of the inlet-chamber I, provided with centrally-located valve-seat J, connected to the inlet-chamber by bars R, the flexible diaphragm D, fastened at its center to the inlet-chamber and at its periphery between the casing and inlet-chamber, and the spring-actuated valve E, having ring G connected therewith, substantially as described.

7. The combination, in a pressure-regulator, with the case A, having flange N, outlet-passage C, and boss K, of the inlet-chamber I, provided with centrally-located valve-seat J, connected to the inlet-chamber by bars R, the flexible diaphragm D, screw-rings P and S, valve E, ring G, spring H, and means for adjusting the tension of the spring, substantially as described.

324,643. SEAT-LOCK. Ebenezer H. Booth, Kirkwood, N. Y. Filed Nov. 15, 1884. (No model.)



Claim.—1. A seat-lock hook having a slotted enlargement or head at its upper end, and a shoulder on the shank below said enlargement, substantially as specified.

2. The combination, with the shoulder-hook, of the internally-shouldered socket through which the shoulder of the hook passes, substantially as specified.

3. The combination, with the slotted and shouldered hook, of the socket-plate having an internal shoulder, and the lever having a curved wedge-arm designed to engage the slotted hook and the socket, substantially as specified.

324,644. ENVELOPE-BLANK-FEEDING MECHANISM. Louis P. Bouvier, Toronto, Ontario, Canada, assignor of one-half to John Fitzallen Ellis, Philip Thomas Perrott, and Thomas James Clark, all of Toronto, Canada. Filed Sept. 22, 1884. (No model.)

Claim.—1. In an envelope-machine, the elevator-frame B, carried in suitable guides formed in the bracket C, and supporting the elevator

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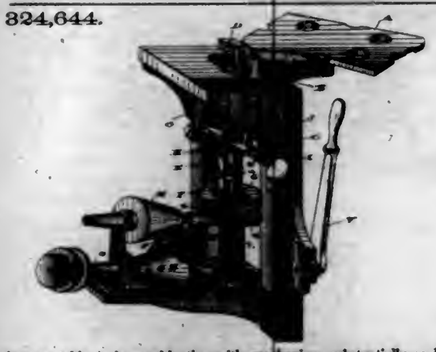


plate or table A, in combination with mechanism, substantially as described, arranged to impart a continuous upward movement to the table during the operation of the machine, and an adjustable friction-roller, as P, operating on the cones M and N, as described, and varying the speed of the feeding mechanism, as and for the purposes specified.

2. In an envelope-machine, the plate or table A, carrying the envelope-blanks, and attached to or forming part of the frame B, held in suitable guides within the bracket C, a screw, D, fastened to said frame, and split nut E, arranged to grasp the screw D, and pivoted to the worm-gear G, through which the screw D passes, in combination with a horizontal spindle, L, having a worm on it to mesh with the worm-gear G, and deriving motion from adjustable mechanism, substantially as described, by which the speed of the spindle L may be increased or decreased without stopping the machine, substantially as and for the purpose specified.

3. In an envelope-machine, the plate or table A, attached to or forming part of the frame B, held in suitable guides within the bracket C, a screw, D, fastened to said frame, and a pivoted split nut, E, made to grasp the screw D, in combination with a cone-shaped collar, H, arranged to open the split nut E, substantially as and for the purpose specified.

4. In an envelope-machine, the plate or table A, attached to or forming part of the frame B, held in suitable guides within the bracket C, a screw, D, fastened to said frame, and a pivoted split nut, E, made to grasp the screw D, in combination with a cone-shaped collar, H, the apex of which extends between the ends of the split nut E, and the pivoted lever I, supported by the spring J, substantially as and for the purpose specified.

5. In an envelope-machine, the plate or table A, attached to or forming part of the frame B, held in suitable guides within the bracket C, a screw, D, fastened to said frame, and a pivoted split nut, E, made to grasp the screw D, in combination with a cone-shaped collar, H, arranged to open the split nut E, which is held against the screw D by a rubber band or spring, *a*, substantially as and for the purpose specified.

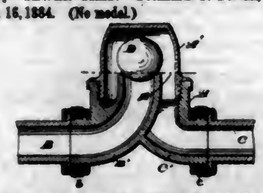
6. In an envelope-machine, the elevator-frame B, carried in suitable guides formed in the bracket C, and supporting the elevator plate or table A, and a screw, D, arranged to support the frame B when grasped by a nut secured to the worm-gear G, supported by bracket K, in combination with the spindle L, provided with a worm to mesh with the worm-gear G, and a cone, M, connected by the adjustable friction-roller P to the cone N, which is attached to the spindle O, deriving motion from some convenient moving part of the envelope-machine, substantially as and for the purpose specified.

7. In an envelope-machine, the elevator-frame B, carried in suitable guides formed in the bracket C and supporting the elevator plate or table A, a screw, D, fastened to the frame B, having a bastard thread cut upon it, with a nut, E, arranged to grasp the said thread, in combination with mechanism, arranged substantially as described, to impart a revolving motion to the nut, in order to convey a continuous upward movement to the elevator-frame B, and means, as the rack T, pawl U, and lever V, for raising said frame independently of the regular feed, as set forth.

8. In an envelope-machine, the vertically-adjustable elevator-table supporting the envelope-blanks, the spindle L, connected to the elevating mechanism, and having attached to it a cone, M, and a spindle, O, running parallel with the spindle L, and having attached to it a cone, N, the apex of the cone N being opposite to the base of the cone M, the two cones being similarly tapered, in combination with a friction-roller, P, arranged to form a connection between the two cones, and carried in a bracket capable of being adjusted toward either end of the cone, substantially as and for the purpose specified.

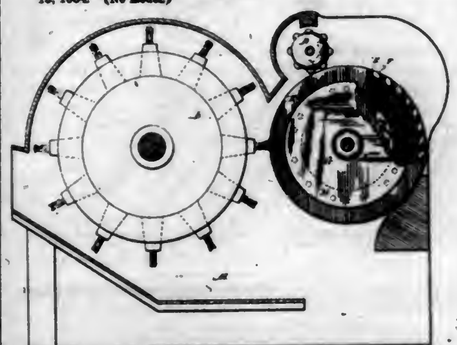
9. In an envelope-machine, a table carrying the envelope-blanks and attached to a frame carried in guides, so as to be vertically adjustable in them, and a ratchet-rack, T, formed upon or attached to the elevator-frame, in combination with the pawl U, pivoted on the end of the lever V, and having a rounded tail, *c*, arranged to extend beyond the adjustable bracket W, substantially as and for the purpose specified.

324,645. SEWER-TRAP. Bourland P. Bower, Cleveland, Ohio. Filed Apr. 16, 1884. (No model.)



Claim.—A sewer-trap provided with a funnel-shaped and curved body terminating on one side in a discharging-nozzle, and a tube curved in the opposite direction and terminating in an inlet-nozzle, the two parts integral and the nozzles in line with each other, and provided with screw-caps or other suitable mechanism for connecting pipes to the nozzles, by means of which the trap may be reversed without disconnecting the pipes or changing their place, substantially as set forth.

324,646. COTTON-GIN. William W. Bibb, Washington, D. C., assignor of one-third to Edward A. Blakely, New Orleans, La. Filed Sept. 13, 1884. (No model.)



Claim.—1. A cylinder for cotton-gins, provided with a series of independent spacing-blocks having recesses formed in the junction of their sides and peripheries for the teeth of the saws, substantially as described.

2. A roller for cotton-gins, provided with a series of saws and a series of spacing-blocks, the latter having recesses set staggering on opposite sides of each block, and the saws arranged one on either side of said blocks, with their teeth set opposite to the recesses in the blocks, substantially as described.

3. A spacing-block for cotton-gins, made of paper, having a series of recesses formed on its periphery, substantially as described.

324,647. METALLIC SEAL. Edward J. Brooks, East Orange, N. J., assignor to E. J. Brooks & Co., New York, N. Y. Filed June 9, 1884. (No model.)

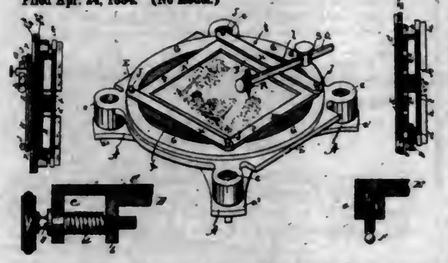


Claim.—1. An improved seal composed of a flexible sheet-metal shackle and a hollow sheet-metal seal-disk, the latter provided with a threading hole or holes to receive the threading end or ends of the shackle, and with permanent distinguishing-marks embossed in one or both faces of the seal-disk, said shackle end or ends being fastened against withdrawal by an indentation therein and in the seal-disk, substantially as herein specified, for the purposes set forth.

2. The combination, in an improved seal, of a flexible sheet-metal shackle provided with gage-notches in one or both edges, immediately above each threading end, and a hollow sheet-metal seal-disk having a threading-hole in its upper edge only to receive the threading end or ends, substantially as herein specified.

3. In combination with a sheet-metal shackle provided above each threading end with gage-notches, a hollow sheet-metal seal-disk having a threading-hole in its upper edge, and provided with indented guides to confine the threaded shackle ends to the middle of the seal-disk preparatory to pressing, substantially as herein specified.

324,648. TINTOGRAPH. Edward H. Brown, New York, N. Y. Filed Apr. 24, 1884. (No model.)



Claim.—1. In a tintograph, a tint-plate mounted on a turn-table so that it may be rotated at will under the work, which is placed in a fixed position over it, and also provided with a radial movement by means of a laterally-sliding plate interposed between it and the bed of the turn-table plate, substantially as shown and described.

2. In a tintograph, a turn-table plate provided with a fixed vertical axis, in combination with the stationary bed-plate, which secures it in place and allows it to rotate thereon, said turn-table provided on its upper face with a tint-plate, the upper surface of which is ribbed, with intervening grooves between the said ribs, the whole operating so that by turning the said turn-table and its attached tint-plate the ridges or lines on said tint-plate may be turned at any angle or parallel with any given radial line, substantially as shown and described.

3. In a tintograph, a tint-plate carrier formed of the turn-table plates B C, the latter being laterally adjustable on the former by means of an adjusting-screw, so as to slide the top plate, C, on the bottom plate, B, suitable guides between the two plates keeping them in position in the other direction, and thereby laterally adjust on the turn-table proper the tint-plate K, which is secured to and moves with the sliding plate C, substantially as shown and described.

4. The turn-table C, clamps *m*, and tint-plate K, combined substantially as described.

5. In a tintograph, the combination of the base or bed-plate A, provided with the central boss or sleeve, a^x, and the plate B, provided with the feet *b* and central pivot, b^x, substantially as and for the purpose herein described.

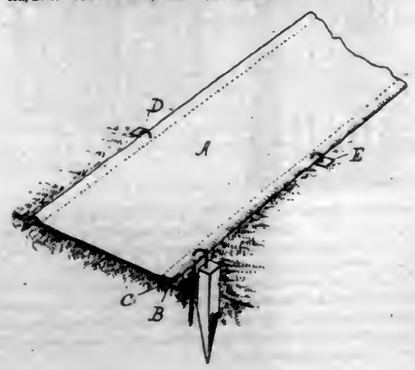
6. In a tintograph, the combination of the plate B, provided with the legs *b* and slots b^3, the plate C, provided with the lug *c* and ribs or fins c^3, and the screw D and spring *d*, arranged and operating substantially as and for the purposes herein described.

7. The stationary bed-plate A, having socket-holes a^3 on its top face and near its edges, in combination with the frame or plate E, provided with feet *f*, arranged to fit said socket-holes, said feet being made vertically adjustable by means of screw-threads on the shanks of the said feet, substantially as described.

8. The combination of the plate or frame E, ring G, clamping-bars H, and thumb-screws J, substantially as and for the purpose herein described.

9. The vertical post S, interchangeably fitted to holes *t* in the top annular frame, G, the said holes acting as centers in which the said vertical post may rotate, and in combination with said post a longitudinally-adjustable rod carrying at its inner end a pencil-head with pencil, the whole acting so as to mark or center the picture, which is secured to the stretcher P and rests on the frame G, the whole combined and arranged substantially as described.

324,649. TENNIS-COURT MARKER. Robert B. Brown, Washington, D. C. Filed June 27, 1885. (No model.)



Claim.—1. As a new article of manufacture, a tennis-court marker consisting of canvas made into strips, in combination with means for attaching each edge of the same to the ground, substantially as shown and described.

2. As a new article of manufacture, a tenuis-court marker consisting of canvas provided with a pocket on each edge inclosing a wire, for the purpose described.

3. As a new article of manufacture, a tennis-court marker consisting of a strip of canvas provided with a pocket at each edge containing a wire, and with pegs attached to the edge of the strips at intervals by means of staples passing over the wire, through the canvas, and into the pegs, substantially as shown and described.

324,650. GOLD AND OTHER METALLIC AMALGAM. Solomon P. Buatt, Bastrop, La. Filed Oct. 22, 1884. (No specimens.)

Claim.—1. The process herein described of producing the amalgam, which consists in first reducing into fine particles the gold, gold alloyed with metallic silver or pure silver, and amalgamating or incorporating the same with mercury or with a mercurial solution of gold, or otherwise applying the same to produce a like result, according to the nature of the base, then adding a saturated solution of sulphurous-acid gas in water and triturating the mass, also adding chalk thereto to absorb all excess of mercury, then washing with water, afterward adding alcohol to the mass and rubbing until the whole is plastic, and subsequently washing the mass, which is then ready for use, to be molded or set and burnished, as required, substantially as specified.

2. The within-described amalgam, in which gold or gold and silver are combined with mercury, sulphur, and chalk, and worked into a plastic mass, for use essentially as herein set forth.

324,651. CUTTING APPARATUS FOR GRAIN CUTTING OR MOWING MACHINES. John Burer, De Kalb, Ill., assignor of one-half to Hiram Ellwood, same place. Filed Aug. 1, 1884. (No model.)



Claim.—1. In a reaping or mowing machine, a sickle-bar, the blades of the sickle moving over or in connection with supporting-finger rests having a direct forward and back motion and severing the grass or the grain by a direct forward movement, both edges of the sickle teeth or blade cutting and acting upon the grain at the same time, substantially as shown and described.

2. In a reaping or mowing machine, the combination of the sickle-driving shaft and the sickle with hollow shoes or dividers supporting said shaft and sickle and driving mechanism connecting the shaft and sickle and inclosed within said hollow shoes, substantially as described, and for the purpose set forth.

3. The combination of the sickle-bar A, eccentrics C C, one at each end of the sickle-bar, drive-rods D D, and shaft E, substantially as shown and described.

4. The combination of the sickle-bar A, eccentrics C C, drive-rods D D, shaft E, and eccentric F, following and supporting the sickle-bar in its play, substantially as shown and described.

5. The combination of the sickle-bar A, eccentrics C C, drive-rods

D D, shaft E, and rests B, directly under the sickle-blades, substantially as shown and described.

6. The combination of the sickle-bar A, rests B, eccentrics C C, one at each end of the sickle-bar, drive-rods D D, shaft E, and bar G, substantially as shown and described.

7. The combination of the sickle A and cover H, secured to and reciprocating with said sickle, substantially as shown and described.

8. The combination of the hollow shoe or divider I, sickle A, eccentrics C C, drive-rods D D, and shaft E, substantially as shown and described.

324,652. WITHDRAWN.

324,653. WHEEL-AND-AXLE COUPLING. Alba B. Carter, Great Falls, N. H., assignor to the Eureka Axle Company, Portland, Me. Filed Oct. 23, 1884. (No model.)



Claim.—1. The combination of the hub and grooved axle with the engaging device adapted to revolve and rotate in the groove of the axle, a screw whereby the said engaging device is held in position in the hub, and a locking-screw co-operating therewith, substantially as described.

2. The combination of the hub and grooved axle with the engaging device *g*, its holding-screw *f* in the hub, and the locking-screw *h*, of opposite hand, substantially as described.

3. The combination of a hub and grooved axle with the engaging device *g*, its holding-screw *f*, the locking-screw *h* therefor, and the threaded passages for the said screws *f* and *h*, adapted to permit the said holding-screw to be screwed away from the axle a sufficient distance to enable the engaging device *g* to be removed from the groove of the axle, substantially as and for the purpose described.

324,654. WHEEL-AND-AXLE COUPLING. Alba B. Carter, Great Falls, N. H., assignor to the Eureka Axle Company, Portland, Me. Filed Oct. 23, 1884. (No model.)



Claim.—1. The combination of the axle having a circumferential groove with the hub provided with a screw and engaging device loosely connected therewith and capable of rotating, the engaging device being placed within or removed from the groove of the axle by turning the said screw, substantially as described.

2. The combination of the axle having a circumferential groove with the hub provided with a screw and engaging device loosely connected therewith, adapted to be placed within or removed from the groove of the axle by turning the said screw, and a locking-screw provided with a thread of opposite hand or inclination, substantially as described.

3. The grooved axle and hub combined with an engaging device to enter the said groove, a holding-screw for the engaging device, and locking device for the said screw, the engaging device being retained in connection with its holding-screw and having a free rotary movement in the groove, substantially as described.

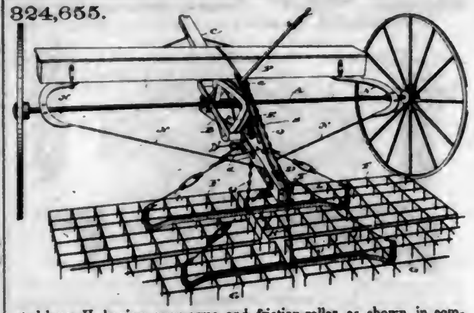
4. The combination of the axle having a circumferential groove with the hub provided with a screw, and engaging device loosely connected therewith, adapted to be placed within or removed from the groove of the axle by turning the said screw, and a locking device co-operating with the said screw, substantially as described.

5. The combination of the axle having a circumferential groove with the hub, provided with a socketed screw, and an axle-engaging device having a shank entering and free to rotate in the said screw, substantially as described.

324,655. WHEEL-HARROW. David W. Carter, Carrington, Dak., assignor to John Waldron Scott, Listowel, County of Perth, Ontario, Canada. Filed Feb. 24, 1885. (No model.) Patented in Canada Feb. 23, 1885, No. 21,193.

Claim.—1. The combination, with the tongue-extension D, two independent harrows supported by a lever pivoted on said extension and operating by their gravity, of said lever H, having friction-roller *a*, a cam rigid with the axle, and flexible connections between the lever and the harrows, as and for the purposes set forth.

2. The tongue-extension D, carrying roller T, the cam E, and pivoted lever H, having cross-arms and friction-roller, as shown, in combination with the independent harrows F F, connected by the yoke K, and harrows O O, connected by the yoke J, and the flexible connections I I, as and for the purpose set forth.



3. The independent harrows G F, made in sections and connected together by yokes having flexible connections with the tongue-extension D, combined with the cam E, lever H and connections, and with means for elevating the whole simultaneously, as set forth.

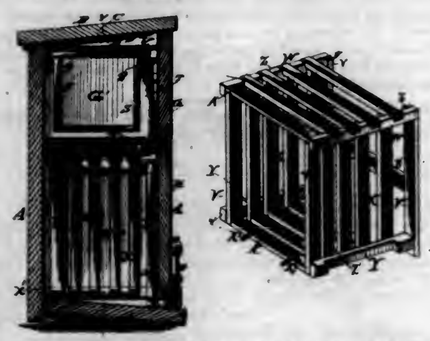
4. In a wheel-harrow, substantially as described, the combination, with the tongue-extension D, tongue C, the seed-box, and axle, of the braces N, furnishing journals for the axle, supports for the seed-box, and braces for the tongue, as set forth.

324,656. FENCE. John G. Chambers and Lafayette Byers, Thorntown, Ind. Filed Feb. 16, 1885. (No model.)



Claim.—The improved fence herein shown and described, the same consisting of the posts, the cap-rails arranged as described, the broad caps straddling the ends of the cap-rails and the upper ends of the posts, the panels consisting of rails connected by wires and supported from the cap-rails, and the wire bands encircling the lower ends of the panel-wires and the posts and secured to the opposite sides of the post in the manner shown and described, all constructed and arranged to operate in the manner and for the purpose shown and described.

324,657. BEE-HIVE. John A. Coalter, Wolf Creek, W. Va. Filed Dec. 10, 1884. (No model.)



Claim.—The combination, with a bee-hive having an inclined bottom, of a removable supporting-frame consisting of four upright posts, the front ones being longer than the rear ones, said four posts being joined together by top and bottom side pieces, top and bottom rear cross-pieces, and a front cross-piece, said top side pieces being provided with notches, and the said bottom side pieces being provided with gains, and the rear bottom piece being provided with rearwardly-projecting pins, and a number of brood-frames supported within said frame, substantially as and for the purpose described.

324,658. ELECTRIC PROCESS OF SMELTING ORE FOR THE PRODUCTION OF ALLOYS, BRONZES, AND METALLIC COMPOUNDS. Eugene H. Cowles and Alfred H. Cowles, Cleveland, Ohio. Filed Apr. 7, 1885. (No model.)



Claim.—1. The process of producing alloys, which consists in passing an electric current through a mixture of broken resistance material—ore to be reduced and pieces of the base metal of the alloy—so that said mixture is rendered incandescent and the alloy formed, substantially as hereinbefore described and set forth.

2. The process of producing alloys, which consists in passing an electric current through a mixture of broken resistance material and ore to be reduced, into which wires or rods of the base metal of the alloy have been inserted transversely to the path of the current, substantially as and for the purpose set forth.

3. The process of producing alloys hereinbefore described, which consists in mixing together ore of one of the metals of the alloy, broken or pulverized carbon, inserting wires or rods of the other metal of the alloy into the said mixture, and then passing an electric current through the mixture in a transverse direction to the wires or rods, so that the said mixture is rendered incandescent and an alloy formed, substantially as set forth.

324,659. PROCESS OF ELECTRIC SMELTING FOR OBTAINING ALUMINIUM. Eugene H. Cowles, Charles F. Mabery, and Alfred H. Cowles, Cleveland, Ohio. Filed Apr. 23, 1885. (No specimens.)

Claim.—1. The method of producing aluminium which consists in reducing an ore or compound of aluminium in company with an amalgamating metal by means of electricity and in the presence of carbon, substantially as described, and then separating the two metals of the alloy by amalgamation.

2. The method of producing aluminium which consists of mixing the aluminium ore with carbon and with a metal, reducing the said ore by means of electricity, so that the aluminium forms an alloy with the said metal, and finally separating the two metals of the alloy, substantially as set forth.

3. The method of producing aluminium which consists of mixing the aluminium ore with broken carbon and with a metal, reducing the said ore by means of electricity, so that the aluminium forms an alloy with the metal, and finally separating the aluminium from the alloy by amalgamating the said metal, substantially as set forth.

324,660. PLOW. Andrew J. Craig, Hickory, Miss. Filed Apr. 27, 1885. (No model.)



Claim.—1. A plow having a beam carrying a cutter, and a standard carrying the plow proper, adjustably and flexibly connected, and having handles pivoted to the beam and supported pivotally by pivoted uprights attached to the standards, substantially as and for the purpose specified.

2. A plow having a beam carrying a cutter, and provided with a series of holes or perforations, and a stop at the junction of the beam and cutter, a bifurcated plow-standard flexibly and adjustably secured to the beam, a removable bolt, and handles pivoted to near the front of the beam and flaring to the rear, where they are supported by uprights pivotally connected to both handles and standard, substantially as and for the purpose specified.

324,661. COMBINED CHAIR AND COUCH. Jesse A. Crandall, Brooklyn, N. Y. Filed Apr. 10, 1885. (No model.)

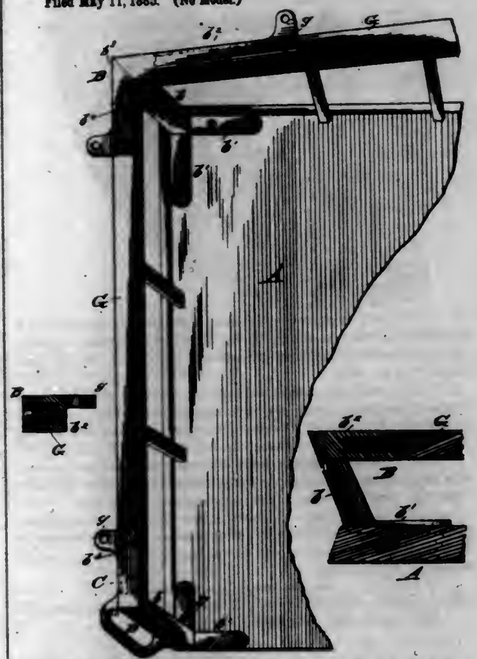
Claim.—1. The combination, with a chair, A, provided with a single arm, *a'*, of the sections B and C, the former of which is hinged to the chair-seat on the edge opposite its single arm, and the latter is hinged to the opposite edge of the former, and is provided with a chair-arm, *a²*, which, when the sections B and C are folded upon the chair-seat, will stand in position on the chair on the side of the same opposite the arm *a'*, substantially as specified.

324,661.



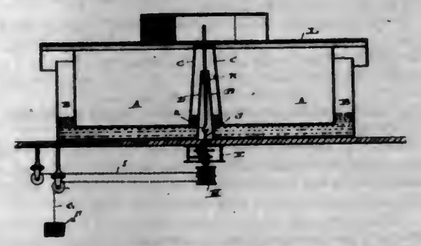
2. The combination, with the chair-body A, provided with the seat A', legs a^2, and single arm *a'*, of the hinged section B, provided with the folding legs D, and the hinged section C, provided with folding legs C', and chair-arm a^2, substantially as specified.

324,662. VEHICLE-SEAT. Robert T. Crawford, New Castle, Pa. Filed May 11, 1885. (No model.)



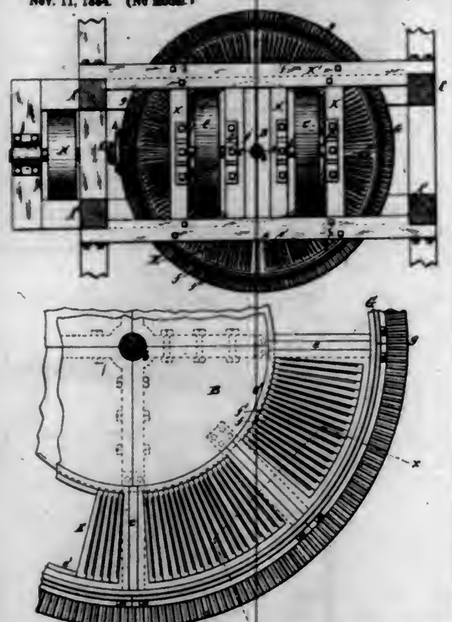
Claim.—A corner-iron for vehicle-seats, consisting of a post provided at its lower end with angle-arms and at its upper end with laterally-projecting sockets to receive the ends of the seat-rails, said sockets being integrally formed with perforated lugs to permit the attachment of a top to the seat, substantially as set forth.

324,663. REVOLVING SHOW-STAND. Samuel T. Culp, Toronto, Ontario, Canada, assignor of one-half to Arthur Godfrey Peschan, same place. Filed June 10, 1884. (No model.)



Claim.—In revolving show-stands substantially as described, the combination, with the shallow reservoir and float, of the clock mechanism having short spindle J and the square rod K, loosely jointed thereto near the bottom of the reservoir, and operating through a corresponding aperture in the float, as and for the purposes set forth.

324,664. ORE-CRUSHER. Ulias Cummings, Buffalo, N. Y. Filed Nov. 11, 1884. (No model.)



Claim.—1. In a crushing-machine, a circular pan provided with an annular screen surrounding the bed-plate and composed of detachable bars tapering lengthwise and arranged radially side by side, substantially as set forth.

2. In a crushing-machine, a circular pan provided with an annular screen surrounding the bed-plate, and composed of detachable radial bars tapering lengthwise and provided with lateral projections, whereby the bars are held at the proper distance apart, substantially as set forth.

3. In a crushing-machine, the combination, with a crushing-roller, of a pan composed of sections provided on their under sides with stiffening-ribs, which are bolted together, substantially as set forth.

4. The combination, with the bed-plate B, composed of sections provided on their under sides with ribs *d*, of arms *e*, extending outwardly from the bed-plate, frames *e'*, and screen-bars *f*, resting on said frames, substantially as set forth.

324,665. GAS-BURNER. Emanuel Detwiler, Milwaukee, Wis. Filed June 30, 1885. (No model.)



Claim.—1. A gas-burner having a mixing-chamber for gas and air surrounded by a water-jacket, combined with an inlet and an outlet pipe for maintaining a circulation of water around the burner mixing-chamber, to maintain a condition therein suitable for the proper proportions of gas and air, as shown and described.

2. The combination, with a gas-burner having a mixing-chamber for gas and air and a jacket for water circulation around said burner, of an air-jacket of refractory substance supplementing the water-jacket and the mixing-chamber, substantially as described, for the purpose specified.

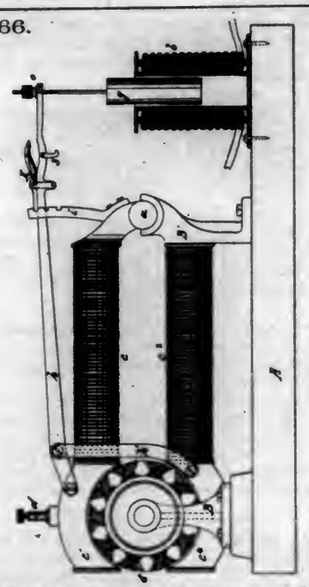
324,666. REGULATOR FOR DYNAMO-ELECTRIC MACHINES. P. Diehl, Elizabeth, N. J. Filed Sept. 8, 1884. (No model.)

Claim.—1. The combination, with a revolving armature, of a field-magnet having one or more movable poles adjacent to said armature, a solenoid, and a core movable relative to said solenoid, and connected with the said movable pole or poles, substantially as set forth.

2. The combination, with a revolving armature, of an electro-magnet having a movable pole adjacent to said armature, a solenoid, a core movable relative to said solenoid, and a lever connected with said pole and core, whereby as the strength of the current passing through said solenoid is increased the said pole will be moved away from said armature, and vice versa, substantially as set forth.

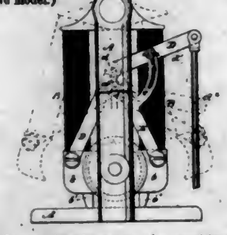
3. The combination, with the armature, of the magnet having fixed

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and pivoted portions and pole-pieces, the fulcrum-bar A', the lever A, bar *i*, detent K, solenoid *b*, and movable core *g*, adjustably connected with said lever A, substantially as set forth.

324,667. ELECTRIC MOTOR. P. Diehl, Elizabeth, N. J. Filed May 15, 1885. (No model.)



Claim.—1. In an electric motor, the combination, with a rotary armature and a field-magnet having movable poles, of an adjusting mechanism comprising one or more levers for varying the position of said poles relative to said armature, as set forth.

2. In an electric motor, the combination, with a rotary armature, of a field-magnet having swinging poles adapted to be removed from the armature to such a distance that their magnetism is insufficient to rotate said armature, whereby the motor may be stopped without breaking the circuit in which it is connected or without varying the wire resistance thereof, substantially as set forth.

3. In an electric motor, the combination, with a rotary armature, of a field-magnet having swinging poles, a lever attached to one of said poles and having a movable fulcrum-pin, and a link attached to the other of said poles and also to said pin, substantially as set forth.

4. The combination, with a rotary armature and a field-magnet having one or more movable poles, of a locking device, substantially as described, for securing the latter in any desired position, as set forth.

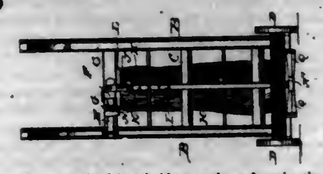
5. The combination, with a rotary armature and a field-magnet having one or more movable poles, of an adjusting mechanism comprising one or more levers for varying the position of said poles relative to said armature, and a locking mechanism for securing said pole in any desired position after adjustment, substantially as set forth.

6. The combination, with a rotary armature and a field-magnet having swinging poles, of a lever and link connected together and to said poles, a curved slotted arm, and a screw and set-nut whereby said poles may be secured in any desired position, substantially as set forth.

7. A rotary armature the body of which consists of a square shaft having T-shaped arms, said shaft having also a flange or seat for the commutator and a pulley integral therewith, substantially as set forth.

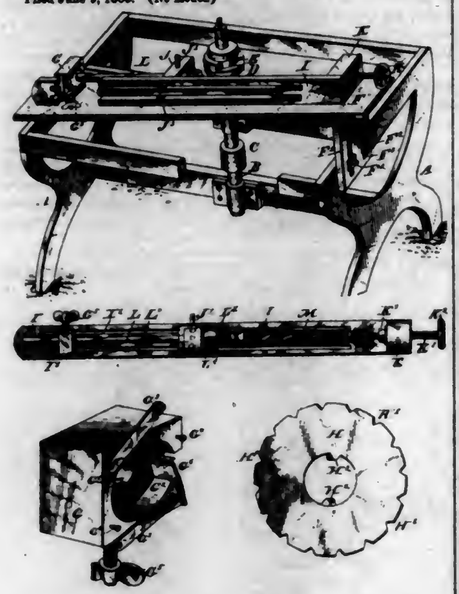
8. The combination, with the armature and commutator, of a shaft by which both are carried, said shaft having a flange forming one of the seats for the commutator-sections, and said flange being provided with recesses or notches at c^3, to facilitate the connection of the commutator-sections and the armature-arms, substantially as set forth.

324,668. COMBINED BAG-HOLDER, SCALE, AND TRUCK. Jasper Dollison and James Long, Salesville, Ohio. Filed Sept. 12 1884. (No model.)



Claim.—In a combined bag-holder, truck, and scale, the combination of the vertical rod connecting the platform-levers to the scale-beam, and having a number of perforations at its upper portion, the funnel and bracket having the sleeve J, and the pin K, fitting in a perforation in sleeve J and in the perforations in the vertical rod, as and for the purpose shown and set forth.

324,669. WOOD-FLUTING MECHANISM. Orin C. Downer, Allentown, Pa., assignor to Eli J. Schaeck and George H. Bear, same place. Filed June 9, 1885. (No model.)



Claim.—1. A fluting attachment of the character described, comprising a movable slotted base, a tail-stock adjustably mounted thereon, a fixed head-stock having a center, a pattern-spindle having a spurred head, and a relatively-fixed pattern-nut, in combination with the table and the cutter-head of a former, substantially as specified.

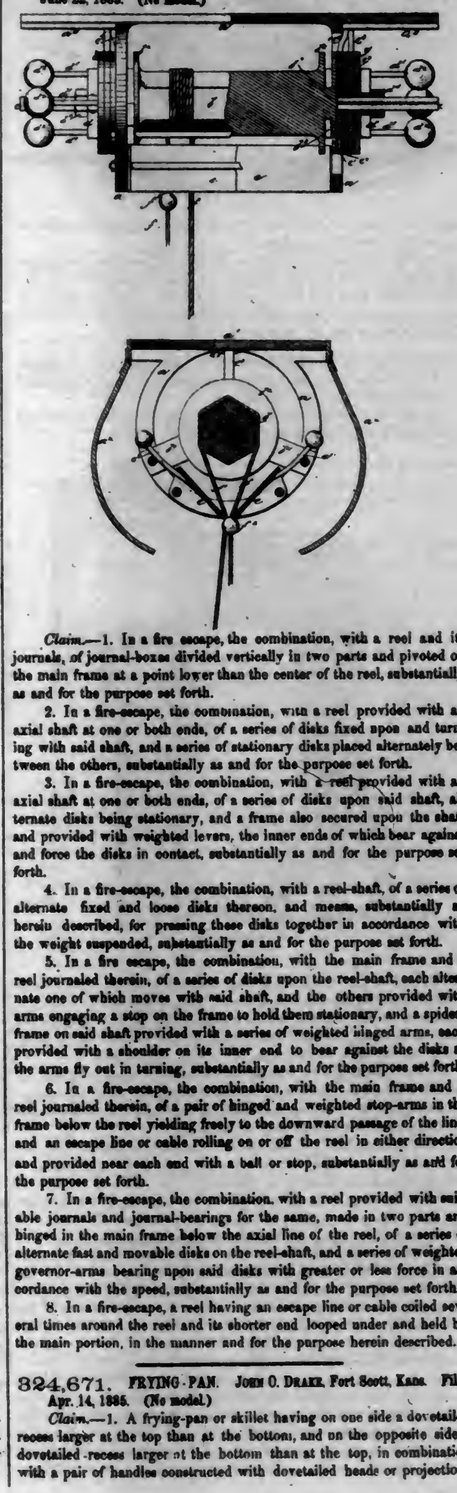
2. In combination with the board F, fixedly mounted upon a former and in suitable relation with its cutter-head, a fixed nut-stock pivotally attached to the board, and a movable fluting attachment the pattern-spindle of which is adapted to reciprocate through said nut, substantially as specified, whereby when said attachment is moved the pattern-spindle and work are rotated.

3. The combination, with a cutter-head of an ordinary former, of an adjustably-inclined table or board having pivotally secured thereto a pattern-nut stock provided with a nut-retaining spring, a reciprocating fluting attachment having a grooved pattern-spindle adapted to fit the nut, and a head-stock and center for holding work in connection with the spindle, substantially as specified.

4. The combination of the nut H, provided with the oppositely-inclined threads H^2 and peripherical pattern-notches H', with the nut-stock G, fixedly mounted on a former, having the recess G^2, aperture G', spring G^4, and retaining-bars G^3, with a movable fluting attachment having the pattern-shaft L, substantially as shown and described.

5. The combination of the board F, secured to a former, the stock G, having the thumb-screw G^2 for pivotal attachment to the board F, the nut H, mounted in the stock G, the spindle L, the adjustable tail-stock J, the head-stock K, forming a movable attachment, and the adjustable bracket F', for urging the inclination of board F, substantially as shown and described.

324,670. FIRE-ESCAPE. William R. Doolittle, Chicago, Ill. Filed June 22, 1885. (No model.)



Claim.—1. In a fire escape, the combination, with a reel and its journals, of journal-boxes divided vertically in two parts and pivoted on the main frame at a point lower than the center of the reel, substantially as and for the purpose set forth.

2. In a fire-escape, the combination, with a reel provided with an axial shaft at one or both ends, of a series of disks fixed upon and turning with said shaft, and a series of stationary disks placed alternately between the others, substantially as and for the purpose set forth.

3. In a fire-escape, the combination, with a reel provided with an axial shaft at one or both ends, of a series of disks upon said shaft, alternate disks being stationary, and a frame also secured upon the shaft and provided with weighted levers, the inner ends of which bear against and force the disks in contact, substantially as and for the purpose set forth.

4. In a fire-escape, the combination, with a reel-shaft, of a series of alternate fixed and loose disks thereon, and means, substantially as herein described, for pressing these disks together in accordance with the weight suspended, substantially as and for the purpose set forth.

5. In a fire escape, the combination, with the main frame and a reel journaled therein, of a series of disks upon the reel-shaft, each alternate one of which moves with said shaft, and the others provided with arms engaging a stop on the frame to hold them stationary, and a spider-frame on said shaft provided with a series of weighted hinged arms, each provided with a shoulder on its inner end to bear against the disks as the arms fly out in turning, substantially as and for the purpose set forth.

6. In a fire-escape, the combination, with the main frame and a reel journaled therein, of a pair of hinged and weighted stop-arms in the frame below the reel yielding freely to the downward passage of the line, and an escape line or cable rolling on or off the reel in either direction and provided near each end with a bait or stop, substantially as and for the purpose set forth.

7. In a fire-escape, the combination, with a reel provided with suitable journals and journal-bearings for the same, made in two parts and hinged in the main frame below the axial line of the reel, of a series of alternate fast and movable disks on the reel-shaft, and a series of weighted governor-arms bearing upon said disks with greater or less force in accordance with the speed, substantially as and for the purpose set forth.

8. In a fire-escape, a reel having an escape line or cable coiled several times around the reel and its shorter end looped under and held by the main portion, in the manner and for the purpose herein described.

324,671. FRYING-PAN. John O. Drake, Fort Scott, Kans. Filed Apr. 14, 1885. (No model.)

Claim.—1. A frying-pan or skillet having on one side a dovetailed recess larger at the top than at the bottom, and on the opposite side a dovetailed recess larger at the bottom than at the top, in combination with a pair of handles constructed with dovetailed heads or projections

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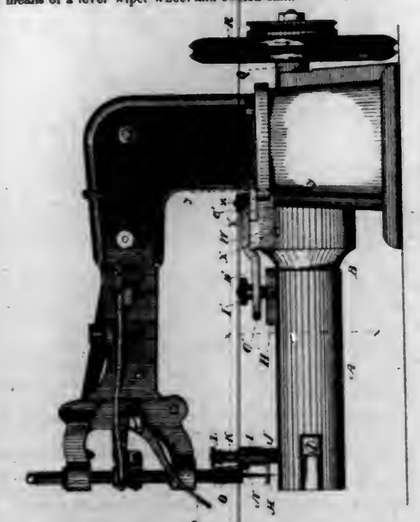


adapted to engage and interlock with the recesses on opposite sides of the pan, substantially as set forth.

2. The combination of the pan or skillet A, provided on opposite sides with dovetailed recesses C and sub-recesses *f*, and handles E, provided with the dovetailed heads or projections D, adapted to fit the recesses C, and spring-actuated bolts F, adapted to engage the sub-recesses *f*, substantially as and for the purpose set forth.

324,672. **OVERSEAMING-MACHINE.** Frederick Edge, Bridgeport, Conn., assignor to the Smith & Egge Manufacturing Company, same place. Filed Dec. 31, 1883. (No model.)

Brief.—A cylindrical sleeve for supporting the goods is oscillated by means of a lever wiper-wheel and switch-cam.



Claim.—1. In combination with a vertically-reciprocating needle of a cylinder sewing-machine, a sleeve placed over the cylinder and capable of being oscillated and of supporting the goods, whereby the needle is caused to penetrate first within one and then within the other of the meeting edges of the goods, substantially as set forth.

2. In a machine for overseaming the meeting edges of fabrics, an oscillating sleeve, in combination with the presser-foot acting as a clamping device, and the feed-dog constructed as described, and the vertically-reciprocating needle, substantially as set forth.

3. The combination of the cylinder, the sleeve placed over the cylinder, pivoted lever adjustably connected to said sleeve, and capable of being oscillated, substantially as described.

4. In a machine for overseaming the meeting edges of fabrics, the support for the goods capable of being oscillated around its axis underneath the vertically-reciprocating needle, substantially as set forth.

5. The pivoted lever adapted to be oscillated from its rear extremity, and with its forward end slotted longitudinally, in combination with the sleeve adapted to be oscillated and provided with guideways, and the pin passed between said guideways through the slotted portion of the lever, and adapted to be secured at various distances from the pivotal point of the latter, whereby the throw of the oscillation of the sleeve is increased or decreased, substantially as set forth and described.

6. In combination with the pivoted lever connected to the sleeve, as described, and having its rear end forked, the wiper-wheel arranged within said fork, wheel mounted on the same short shaft with the wiper and having depending from its lower face teeth, and the switch-track mounted on a revolving shaft and adapted to operate on said teeth and turn the wheel intermittently, substantially as shown and specified.

7. The feed-dog constructed in two pieces, the upper portion being connected to the sleeve, so as to have a movement longitudinal thereof, the lower portion fitting within a recess in the upper and adapted to be thrown upward and forward by a double-acting cam secured on the driving-shaft, whereby the upper portion is free to oscillate with the sleeve and at the same time is adapted to feed the goods forward, substantially as set forth and described.

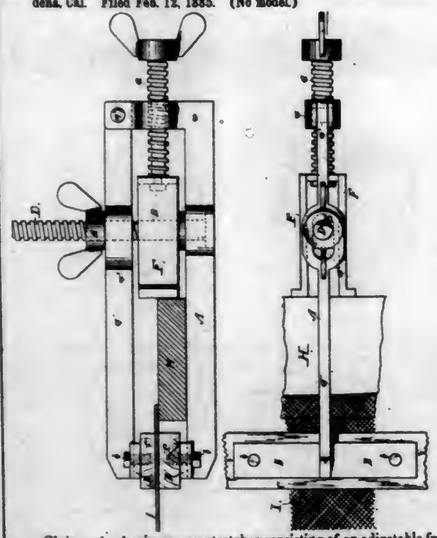
8. In an overseaming-machine, the presser-foot proper secured on the sleeve capable of being oscillated, in combination with the presser-bar having a hook projection adapted to extend underneath a lug or shoulder on said foot, and a lever connected to said bar and adapted to raise or lower the same, substantially as shown and described.

9. In an overseaming-machine, the presser-foot proper secured on the sleeve capable of being oscillated, in combination with the presser-bar having a hook projection adapted to extend underneath a lug or shoulder on said foot, a lever connected to said bar and adapted to raise and lower the same, feed-dog constructed in two pieces, the upper portion being connected to the sleeve, so as to have a movement longitudinal thereof, the lower portion fitting within a recess in the upper and adapted to be thrown upward and forward by a double-acting cam secured on the driving-shaft, the sleeve, pivoted lever adjustably connected to said sleeve and having its rear end forked, wiper-wheel arranged within said fork, toothed wheel mounted on the same short shaft with the wiper, and switch-track adapted to engage with said toothed wheel and mounted on the driving-shaft, substantially as shown and specified.

10. The wiper and toothed wheels secured on the extremities of the same short shaft, in combination with the switch-track mounted on the driving-shaft, pivoted lever, and sleeve capable of being oscillated, substantially as set forth.

11. In an overseaming machine, the combination, with a vertically-reciprocating needle, of the sleeve placed over the cylinder and capable of oscillation, pivoted lever one end of which is adjustably connected to said sleeve, the other end being recessed and containing an intermittently-revolving wiper-wheel, feeding devices, and means for clamping the goods on said sleeve, substantially as described.

324,673. **WIRE-SCREEN STRETCHER.** Charles Ehrenfeld, Pasadena, Cal. Filed Feb. 12, 1885. (No model.)



Claim.—1. A wire-screen stretcher consisting of an adjustable frame adapted to straddle the sash or door stile and provided with clamps for seizing and holding the screen, and an adjustable block moving in the frame and adapted to bear against the outer edge of the stile, whereby the frame is forced back and the screen stretched, substantially as herein described.

2. A wire-screen stretcher consisting of an adjustable frame adapted to straddle the sash or door stile and provided with clamps for seizing and holding the screen, an adjustable block moving in the frame and adapted to bear against the outer edge of the stile, and a screw seated in the end of the frame and engaging the block, whereby it is set up, substantially as and for the purpose herein described.

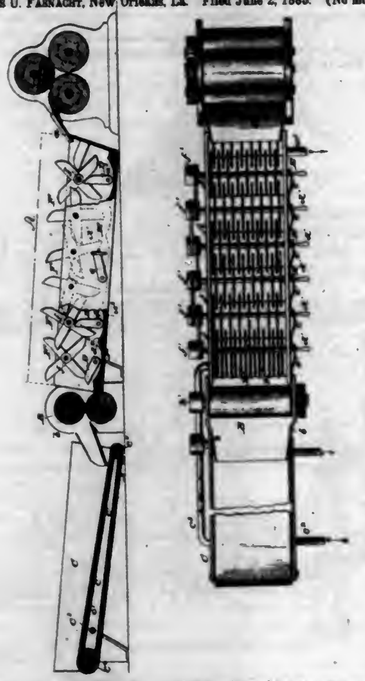
3. A wire-screen stretcher consisting of an adjustable frame adapted to straddle the sash or door stile and provided with clamps for seizing and holding the screen, a bolt passing transversely through the frame, and provided with a crank or thumb-nut threaded thereon by which the frame is contracted and its clamps caused to grip the screen, an adjustable block moving in the frame and adapted to bear against the outer edge of the stile, and a screw seated in the end of the frame and engaging the block, substantially as and for the purpose herein described.

4. In a wire-screen stretcher, the frame A, consisting of the angular bar *a* and straight bar *a'*, pivoted thereto, said bars passing on each side of the sash or door stile, the cross-clamps B in their ends, and a means for forcing the bars together to cause their clamps to seize and hold the screen, in combination with the block F, sliding between the arms and adapted to bear against the outer edge of the stile, and the screw G, seated in the angular bar *a* and engaging the block, substantially as herein described.

5. In a wire-screen stretcher, the frame A, consisting of the angular bar *a* and straight bar *a'*, pivoted thereto, the cross-clamps B in the ends, the transverse bolt D, passing through the bars, and the crank or thumb-nut E, threaded on the bolt, whereby the frame is contracted, in combination with the sliding block F, slotted on the bolt, and the screw G, seated in the bar *a* and engaging the block, substantially as and for the purpose herein described.

6. A wire-screen stretcher consisting of the combination of the adjustable frame A, adapted to straddle the sash or door stile, the cross-clamps B, secured to the end of the frame, the long cleats C, secured to the clamps B, the lower one of which has a thickness equal to that of the stile, for the purpose described, the loosely-playing transverse bolt D, seated in the frame, the crank or thumb-nut E, threaded on the bolt and bearing on the frame, the longitudinally-adjustable sliding block F, slotted on the bolt and adapted to bear against the outer edge of the stile, and the screw G, seated in the end of the frame and engaging the block, all arranged and adapted to operate substantially as and for the purpose herein described.

324,674. **MACHINE FOR TREATING RAMIE AND SUGAR-CANE.** Louis U. Farnacht, New Orleans, La. Filed June 2, 1885. (No model.)



Claim—1. A machine for treating ramie and sugar-cane, consisting of a decorticator or desiccator provided with revolving and stationary knife-blades, rollers for pressing out the water from the fiber, and a drier provided with a hollow steam-chamber underneath the bottom, over which the said fiber is passed, substantially as described and shown, and for the purpose set forth.

2. In a machine for treating sugar-cane and ramie, the combination of the decorticator A, provided with the vertical knife-blades D and the revolving knife-blades F, the rollers B, mounted in frames *b*, and the drier C, provided with the flat bottom *c* and the hollow steam-chamber *c'* beneath it, substantially as described and shown, and for the purpose set forth.

3. In a machine for treating sugar-cane and ramie, the combination of the decorticator-casing provided with the chute *a* and the pipe a^2, the knife-blades D, mounted on shaft *d*, having handles d^2, the stops E, the catches *e*, and the revolving knife-blades F, mounted on shafts *f*, provided with driving-pulleys f^2, substantially as described and shown, and for the purpose set forth.

324,675. **WATCH-CASE.** Ezra C. Fitch, Newton, Mass. Filed May 7, 1885. (No model.)



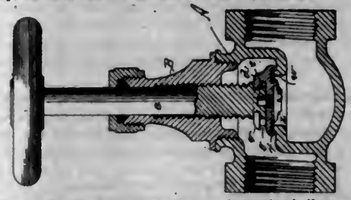
Claim.—1. A stiffening-piece for watch-case backs or covers, consisting of a central portion formed to fit the central portion of the back or cover and an interrupted or sectional flexible margin adapted to engage with a shoulder on the back or cover, as set forth.

2. A stiffening-piece for watch-case backs or covers, composed of a central portion formed to fit the central portion of the back or cover and flexible arms adapted to engage with a shoulder on the back or cover, as set forth.

3. A stiffening-piece for watch-case backs or covers, composed of a dome formed to fit the central portion of the back or cover, and recessed or cut away at its margin to form flexible arms and expose portions of the inner surface of the back or cover, as set forth.

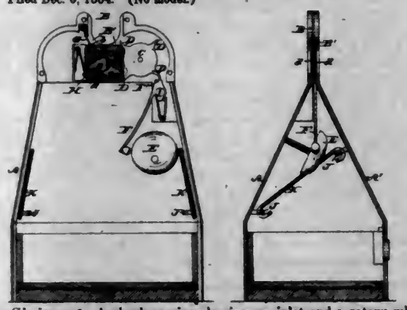
4. The combination of a watch-case back or cover and a stiffening-piece therefor fitting the central portion of the back or cover, and having two or more flexible or elastic arms engaged by their own resilience with a shoulder on the back or cover, as set forth.

324,676. **SWIVEL-CONNECTION FOR VALVES AND THEIR SPINDLES.** Henry R. Fresbie, Cromwell, assignor to the Pratt & Cody Company, Hartford, Conn. Filed Mar. 16, 1885. (No model.)



Claim.—A swivel-connection for a valve and spindle, consisting of a spindle-socket on the valve having an opening at one side substantially as described, said socket having an inwardly-projecting lip surmounting its sides, a spindle having a collar thereon, said collar entering said socket beneath said lip, and a screw engaging with the valve and having its plain end entering the lower end of the spindle, combined and operating substantially as described.

324,677. **CHECK-RECEIVER.** Asher B. Gill, Philadelphia, Pa. Filed Dec. 6, 1884. (No model.)

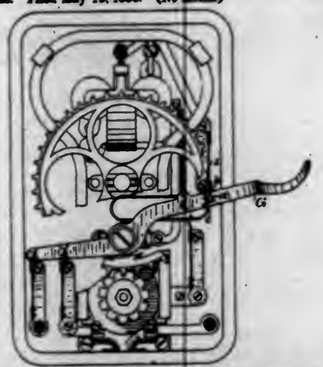


Claim.—1. A check-receiver having an inlet and a rotary wheel provided with fingers on its periphery, said wheel being on one side of the said inlet and having its fingers projecting therein so as to come in contact with the edge of the inserted check and be actuated by the same, and a bell having a hammer which is tripped or operated by the fingers of the said wheel, all the said parts being combined and arranged substantially as and for the purpose set forth.

2. A check-receiver having the inlet B, and provided with the arm G, having shoulder *b* and lip *a*, strip H, and a spring normally pressing the arm G against the said spring H to press the inserted check between the fingers of the rotary wheel C on the opposite side of the inlet, substantially as and for the purpose set forth.

3. A check-receiver having a mouth or inlet, a throat, a rotary wheel or disk with fingers on one side of the throat, and a guard and guide-plate with a spring-arm on the other side thereof, a bell and a bell-hammer, the latter being tripped by the fingers of the rotary wheel or disk and afterward locking the same, substantially as and for the purpose set forth.

324,678. ELECTRICAL CONTACT-POINT. Ezra T. Gilliland, Boston, Mass. Filed May 15, 1885. (No model.)



Claim.—1. The combination of a fixed contact-point and a contact-point having two or more edges or projections located upon a switch-arm in position to slide or scrape across or upon the surface of the first-named contact whenever said arm is actuated.

2. A fixed contact point or projection and a contact point or projection located upon a movable arm, combined with one or more additional points or projections, also placed on said movable arm in position to precede the contact-point in its movement across or upon the face of the fixed point or projection, so as to brush or scrape the surface of the latter.

3. A magneto-generator having a movable switch-arm provided with one or more pairs of contact-points, composed of a fixed point or surface, and a point or projection located upon the said arm, combined with one or more points or projections preceding the last-named contact in its movement upon or across the face of the fixed point.

324,679. STAIR-ROD. Thomas A. Goodwin, Camden, N. J., assignor of one-half to Enos Dismant, same place. Filed Nov. 7, 1884. (No model.)

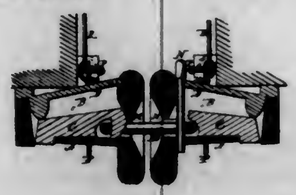


Claim.—1. In stair-rods, the combination, with a rod provided with open slots at its upper edge, of buttons movably secured to the stairs, the said buttons and the slots in the rod arranged relatively to each other, whereby the buttons can be moved into and out of the slots for locking or unlocking the rod, substantially as set forth.

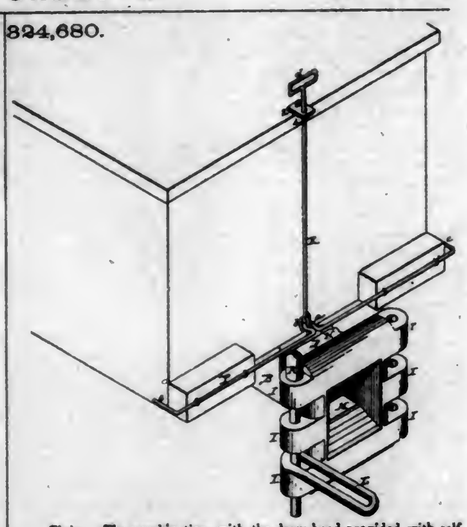
2. In stair-rods, the combination, with a rod having arc-shaped open slots formed therein, of cranks secured to the stair and buttons secured to the cranks, the said crank and buttons being arranged relatively to each other, whereby the buttons can be moved into slots for the purpose of locking the rods in position.

3. In stair-rods, the combination, with a rod provided with circular slots, of a crank provided with a screw and a handle, whereby the screw is turned into the stair and the handle into the slot, thereby locking the rod in position, substantially as set forth.

324,680. CAR-COUPLING. David U. Gravelee, Byron, Ill. Filed Jan. 26, 1885. (No model.)



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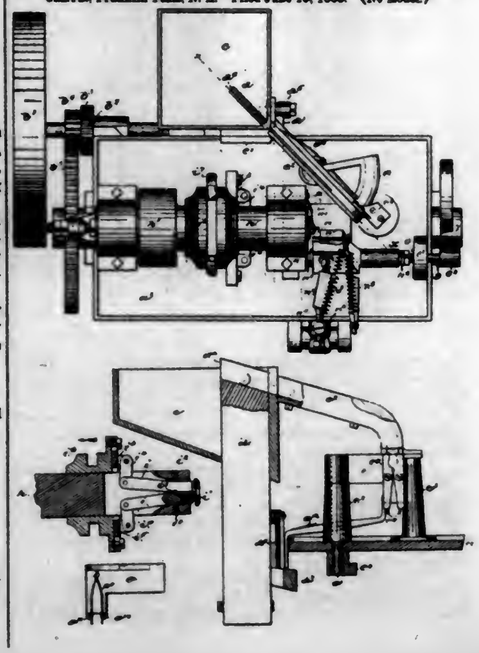
Claim.—The combination, with the draw-head provided with self-coupling devices, of a series of three or more lateral ears centrally bored for the reception of a coupling-pin, whereby a link can be coupled at different heights, as set forth.

324,681. JEWELRY. Leopold Greenman, Stapleton, N. Y. Filed Mar. 12, 1885. (No model.)



Claim.—A blank for a locket, button, or the like, part of the face of which is perfectly plain, while the other part is ornamented or pierced in any desired manner, the two parts being separated by two raised ledges forming settings.

324,682. MACHINE FOR FINISHING WASHERS. George W. Griffin, Franklin Falls, N. H. Filed June 15, 1883. (No model.)



Claim.—1. In a machine for finishing metal washers, the following elements in combination, namely: a hopper to contain the blanks to be finished, a roadway which receives the blanks edgewise, a transferring device provided with jaws which embrace the blank at its edges as it comes from said roadway, mechanism for moving the said transferring device and blank held thereby, and a rotating spindle and chuck which engages and holds the blank by its central opening, leaving its face and edges exposed, and a cutter which acts upon the blank when held and rotated by the said chuck, substantially as described.

2. The roadway which contains washer-blanks held edgewise therein, and a transferring device provided with jaws which engage each blank at its edges as it drops from the roadway, combined with a chuck which enters and engages the blanks in their central opening while held in the transferring device, substantially as described.

3. The roadway for washer-blanks, combined with the transferring device consisting of a pivoted segmental block provided with blank-holding jaws, and having an oscillating movement by which the said jaws are placed under and removed from the end of the roadway, the segmental block closing the end of the roadway, and forming a support for the column of blanks therein while the jaws are being moved toward and from the end of the roadway, substantially as described.

4. The roadway which holds the washer-blanks in a column edge to edge, combined with the transferring device having pivoted spring-pressed jaws which engage a blank around its edges as it falls from the roadway, and actuating mechanism which automatically opens the said jaws when beneath the end of the roadway, and subsequently moves the transferring device and blank held therein, substantially as and for the purpose described.

5. The transferring device provided with a holding device which embraces a washer-blank at its edges, combined with a chuck which engages the said blank at its central opening, and with mechanism which automatically operates the said transferring device and chuck, whereby the blank is applied to and engaged by the said chuck, substantially as described.

6. The spindle and chuck thereon which engages a washer-blank at its central opening, combined with the cutter and actuating mechanism therefor, whereby it is automatically caused to act upon the said blank, and is then withdrawn while a new blank is being applied to the chuck, substantially as described.

7. The receptacle for washer-blanks and roadway leading therefrom, combined with the transferring device having spring-pressed jaws which receive the blanks singly from the said roadway, and the plunger which conveys the blanks from the receptacle to the roadway, and actuating mechanism common to said plunger, and the jaws of the transferring device, substantially as described.

8. The chuck consisting of pivoted levers or jaws provided with fingers to enter the opening of the washer-blank, combined with mechanism to automatically operate the said levers, substantially as described.

9. The rotating spindle and chuck to engage and hold a washer-blank thereon with its face and edges exposed, combined with the cutter and cutter-clamp, and mechanism for feeding it against the washer held on the said spindle, substantially as described.

10. The rotating spindle and chuck which engages and holds a washer-blank thereon with its face and edge exposed, combined with the cutter-clamp and cutter, and actuating mechanism therefor, whereby the cutter is moved laterally and axially toward the blank to finish its edge and face, substantially as described.

11. The spindle and chuck consisting of jaws or levers having fulcrum-recesses in their adjacent sides and a fulcrum-pin common to both jaws in the spindle, and means to hold the said jaws engaged with the said fulcrum-pin, combined with the actuating-collar for the said jaws and its actuating-cam and shipper, substantially as described.

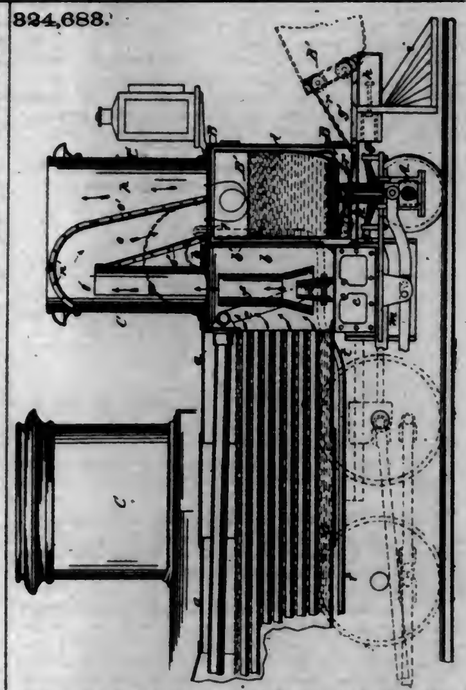
12. The cutter-clamp and its supporting centers and spindle, combined with cams and connecting mechanism, whereby the said clamp receives a rocking movement on its centers, and the said spindle receives an independent longitudinal movement, substantially as and for the purpose described.

324,688. SPARK-ARRESTER. David Grossbeck, Charles A. Ball, and Joseph A. Sterling, New York, N. Y. Filed Aug. 22, 1883. (No model.)

Claim.—1. In a locomotive-engine, the combination, with an extinguishing-chamber arranged in front of the smoke-box and extending from or near the base to or near the top thereof, with a charge of water in said chamber extending from or near the base of the smoke-box high above the same, and a free air-space in the top of said chamber above said water, of a flue discharging from the smoke-box downwardly into said air-space and above the level of said water, and a secondary flue rising from said extinguishing-box above the water-level and discharging outwardly therefrom, substantially as herein set forth.

2. The combination, in a locomotive-engine of the consolidated type, of an extinguishing-chamber supported on the frame of the engine above the track and in front of the smoke-box, with a charge of water in said chamber rising high above the base of the smoke-box to or near the top

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thereof, a free space in the top of said chamber above said charge of water, a primary flue discharging downwardly into said free space above said water, and a free discharging flue or outlet into the atmosphere from said space beyond said downward flue, substantially as herein shown and described.

3. In a locomotive or equivalent engine, an extinguishing-chamber arranged in front of the smoke-box, with a flue or stack discharging therein from the smoke-box, and a removable extinguishing-tank inclosed therein beneath said flue and capable of being moved into and out of said chamber, substantially as and for the purpose set forth.

4. In a locomotive-engine, a water-tank supported on the frame of the engine in front of the smoke-box and separated therefrom with a charge of water in said tank extending from or near the base of the smoke-box high above the same, with a free air-space in the top of said tank above the water level, in combination with the primary flue *n*, ascending from the smoke-box, the intermediate descending flue, *o*, discharging downwardly into the free space in the water-tank above the water-level, and the ascending flue *p*, rising from the said free space above the water into the air, substantially as herein shown and described.

5. In a locomotive-engine, the following combination and organization of elements: the smoke-arch *b* and extinguishing-chamber A in front of the same, a charge of water in said extinguishing-chamber above the base of the smoke-arch, a free air-space in the top of said chamber above the water-level, the primary flue *n*, ascending from the smoke-arch, exhaust-jet *d*, directed into said flue *n*, downward flue *o*, continuing from flue *n* and discharging into the air-space in the extinguishing-chamber above the water therein, and the final discharging-flue *p*, rising from said extinguishing-chamber above the water-level, substantially as herein shown and described.

6. In a locomotive-engine, the combination, with the smoke-arch and the extinguishing-chamber in front of the same, of the compound stack consisting of an oblong inclosing-casing superposed upon and connecting both the smoke-arch and the extinguishing-chamber, and provided with internal partitions forming a zigzag flue, *n o p*, the flue *n o* rising from the smoke-arch and discharging into the extinguishing-chamber, while the flue *p* rises from the extinguishing-chamber, substantially as set forth.

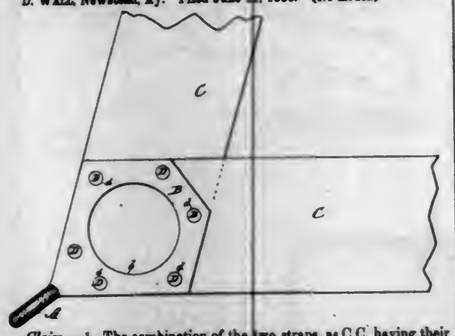
7. In a spark-arresting apparatus, substantially as described, the combination, with the extinguishing-chamber, of the movable water-tank, movable into and out of the same, movable doors on the walls of said chamber to inclose said tank or allow the removal thereof, and means to remove and dump the said tank, substantially as herein set forth.

8. In a spark-arresting apparatus substantially such as described, the combination, with the extinguishing-chamber B and supporting-rails

g' g', of the wheeled water-tank B', arranged and operating substantially as and for the purpose set forth.

9. In a spark-arresting apparatus such as set forth, the combination, with the extinguishing-chamber and the movable extinguishing-tank, of the water-feed pipe *t*, discharging at the top of the chamber over and into the mouth of the tank, substantially as herein shown and described.

324,684. HARNESS ATTACHMENT. THOMAS G. HANBERY and JOHN D. WALL, Newstead, Ky. Filed June 11, 1885. (No model.)

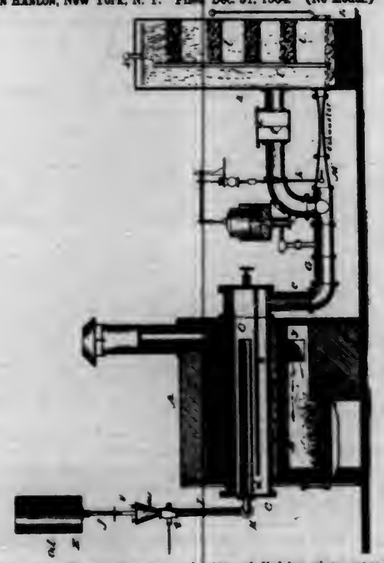


Claim.—1. The combination of the two straps, as C C, having their ends lapped one upon the other, the harness-loop having a ring and plates extended therefrom and lapped on the opposite sides of such straps, and rivets passed through the ring-plates and the lapped ends of the straps, substantially as set forth.

2. As an improved article of manufacture, a harness-loop consisting of the ring and the parallel clamping-plates extended therefrom and having rivet-openings, the inner side of the ring being flattened to a plane common with that of the inner clamping-plate, substantially as set forth.

3. The improved harness-loop herein described, consisting of the ring and the parallel clamping-plates extended therefrom and having their edges adjacent such ring formed in straight diverging lines, the inner side of the ring being flattened to a plane common with that of the inner clamping-plate, substantially as set forth.

324,685. APPARATUS FOR GENERATING HYDROCARBON GAS. JOHN HANLON, New York, N. Y. Filed Dec. 31, 1884. (No model.)



Claim.—1. The retort having a horizontal division-plate extending from the rear end to near the front end, and the vaporizing-tube extending from the front end to near the rear end above the division plate, in combination with the oil and air inlet pipe connecting with said tube, and the gas-take-off pipe connecting with the rear end of the retort below the division-plate, for the purpose described.

2. In combination with the generating-retort, the pipe H, oil-pipe N, having a trap and funnel, oil-pipe D, connecting with the supply-tank, and air-supply pipe I, for the purpose described.

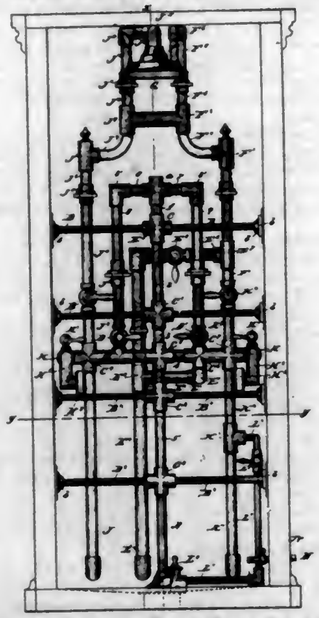
3. In combination with the generating-retort, the oil and air inlet pipes provided with valves, the gas-take-off pipe, and a connected exhauster, for the purpose described.

4. In combination with the generating-retort, the oil and air inlet pipes provided with valves pivotally connected to a single operating-lever, whereby the supply of oil and air may be simultaneously increased or diminished and the proper proportions thereof maintained.

5. In combination with the generating-retort, the oil and air supply pipes, the valves thereof pivotally connected to a single operating-lever, and means for varying the connection of the air-valve stem with such lever, whereby the air-valve may be connected to open more or less in proportion to the oil-valve and the relative proportion of oil and air supplied to the retort changed as desired.

6. The combination of the generating-retort, the oil and air supply pipes provided with valves pivotally connected to a single operating-lever, the gas-take-off pipe, and a connected exhauster, for the purpose described.

324,686. BATHING APPARATUS. VICTOR A. HARDER, New York, N. Y., assignor to the Mayer, Lane & Company Brass Works, same place. Filed Nov. 7, 1884. (No model.)



Claim.—1. The combined arrangement of the series of needle-spray pipes, suitably connected together by couplings and communicating with the hot and cold water supply pipes, the liver-spray devices H^3 H^3, suitably connected with the sources of water-supply, as described, the shower-giving device G, suitably connected with the hot and cold water supply pipes, and the ascending-douche nozzle L^2 and its water-supply connections, together with a series of faucets for controlling the supply of water in the respective devices above mentioned, all in substantially the manner and for the purposes hereinbefore set forth.

2. The combination, with the liver-spray devices H^3 H^3, suitably connected with the sources of water-supply, as described, of the shower-giving device G, suitably connected with the hot and cold water supply pipes, the ascending-douche nozzle and its water-supply connections, and the descending-douche nozzle and its connections, and a series of faucets for controlling, respectively, the different above-mentioned water-ejecting devices, and arranged within convenient proximity to the person using the bathing apparatus, all substantially as and for the purposes set forth.

3. The series of horizontally-disposed needle-spray pipes B B' B^2 B^3, suitably connected together by couplings C C' C^2 C^3, and intermediate pipe-sections, 2, 3, 4, and 5, in combination with the cold-water-supply pipe J and its connections, the hot-water-supply pipe E^4 and its connections, and cocks D D', for controlling the supplies.

4. In combination with the horizontally-disposed needle-spray pipes and connections, the cold-water-supply pipe K, the hot-water-supply pipe E^4, the shower-giving device G, the intermediate connections, and the cocks K^4 and E^3, for controlling the supplies, all as set forth.

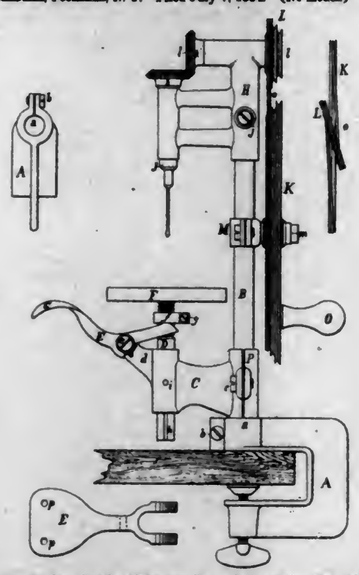
5. In combination with the horizontally-disposed needle-spray pipes B B' B^2 B^3 and their shown and described supply-pipes and connections, the pipes J and K, the liver-spray devices H^3 H^3, the intermediate connections, and the cocks H' H', for controlling the supplies, all substantially as set forth.

324,687. HAT. W. JOHN HARER, St. Louis, Mo. Filed May 31, 1884. (No model.)



Claim.—The combination of a hat-body having perforations near the bottom, a hat-sweat having perforations, and a corrugated strip, the corrugated strip having perforations and located between the sweat and body.

324,688. DRILLING-MACHINE. CARL G. HARSTRÖM and AXEL K. WESTERDAHL, Peekskill, N. Y. Filed July 7, 1884. (No model.)



Claim.—1. In a hand drilling-machine, the combination, with the feeding-table, of a guiding-spindle provided with a screw-thread and a clamping-nut, substantially as described.

2. In combination with a table having a threaded guiding-spindle and clamping-nut, as described, a feeding-lever, substantially as herein shown.

3. In a hand drilling-machine, the combination of the vertical shaft or post and adjustable balance-wheel support, for the purposes set forth.

4. The combination, in a hand drilling-machine, of the adjustable spindle-frame, vertical shaft or post, and adjustable balance-wheel support, substantially as shown and described.

5. In a drilling-machine, the adjustable spindle-frame, vertical shaft, adjustable balance-wheel support, adjustable table-bracket, feeding-lever and its supporting-arm, threaded clamping-nut, threaded table-spindle, and table, all combined as described, for the purposes set forth.

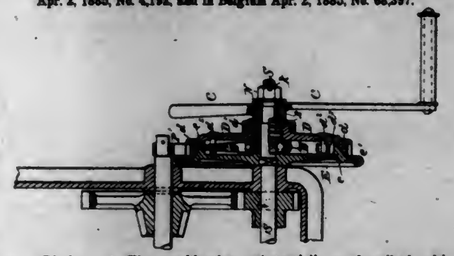
324,689. WATCH-MOVEMENT. GEORGE E. HART, Waterbury, Conn. Filed July 19, 1884. (Model.)



Claim.—1. A watch-train in which a seconds-arbor and pinion are placed between and journaled wholly within the sections of a pillar-plate that are united upon a plane which is parallel with the faces of said plate, substantially as and for the purpose specified.

2. A watch-train in which the seconds-arbor is journaled wholly within the pillar-plate, and is driven by means of the toothed wheel or pinion upon the contiguous end of an adjacent arbor, substantially as and for the purpose shown.

324,690. HOISTING-MACHINE. GUSTAV HENKEL, Cassel, Prussia, Germany. Filed Apr. 21, 1885. (No model.) Patented in England Apr. 2, 1885, No. 4,192, and in Belgium Apr. 2, 1885, No. 68,397.



Claim.—1. The combination, substantially as described, with a rotary shaft and a friction disk or wheel rigidly mounted thereon, of a second friction disk or wheel arranged to rotate with and move on spiral or inclined planes endwise on the shaft, and a locking-pawl to lock the latter disk against backward movement, whereby on the backward rotation of the shaft the latter disk is automatically moved into engagement with the former disk, for the purpose specified.

2. The combination, substantially as described, with a rotary shaft and a friction disk or wheel rigidly mounted thereon, of a friction disk or wheel movable endwise on the shaft, a locking-pawl to lock the latter disk against backward rotation, and an operating-crank acting upon the latter disk to move it into or out of frictional engagement with the former disk, according to the direction of rotation of the crank, for the purpose specified.

3. The combination, substantially as described, with a rotary shaft and a friction disk or wheel rigidly secured thereto, of a friction disk or wheel movable endwise on the shaft, a locking-pawl to lock the same against backward movement, and springs acting upon said disk to move it into frictional contact with the former disk when said shaft is rotated backward, for the purpose specified.

4. The combination, substantially as described, with a rotary shaft and a friction disk or wheel rigidly mounted thereon, of a second friction disk or wheel arranged to rotate with and move on spiral or inclined planes endwise on the shaft, and springs arranged to operate on the latter disk and move it into frictional engagement with the former disk, and adjusting-nut N and key *k*, to regulate the tension of the springs and the degree of the frictional contact between said disks, for the purpose specified.

5. The combination, substantially as described, with the disk D, of the locking-pawls P and P', of varying length, the hub of pawl P having an arm or extension operating on pawl P', for the purpose specified.

6. The combination, substantially as described, with a rotary shaft, a friction-disk rigidly connected therewith, a second friction-disk arranged to rotate with and move on spiral or inclined planes endwise on said shaft, a locking-pawl to lock the same against backward rotation, springs exerting their power on said disk to move the same toward the former disk on the backward rotation of the shaft, and an adjustable stop connected with the endwise-movable disk, of the operating-crank for rotating the shaft, for the purpose specified.

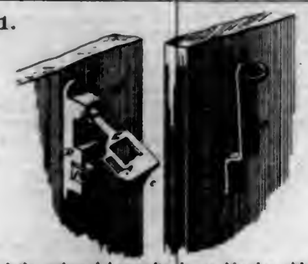
7. The combination, substantially as described, with a rotary shaft, a friction-disk rigidly connected therewith, a second friction-disk arranged to rotate with and move on spiral or inclined planes endwise on said shaft, a locking-pawl to lock the same against backward rotation, and springs exerting their power on said disk to move the same toward the former disk on the backward rotation of the shaft, of an automatic speed-brake operated by the centrifugal force exerted upon weights or weighted levers connected with one of the disks to check or arrest the rotation of the other disk and that of the shaft by carrying said disks into contact, as and for the purpose specified.

8. The combination, substantially as described, with a rotary shaft, a friction-disk rigidly connected therewith, a second friction-disk arranged to rotate with and move on spiral or inclined planes endwise on said shaft, a locking-pawl to lock the same against backward rotation, and springs exerting their power on said disk to move the same toward the former disk on the backward rotation of the shaft, of an automatic speed-brake consisting of a brake-band applied by the centrifugal force of one of the disks acting upon a weight or weighted lever to apply the brake-band to the other disk and arrest its rotation and with it that of the shaft, as and for the purpose specified.

324,691. SEAL-LOCK FOR RAILROAD-CARS. PHILIP HEIM, Rock Island, Ill. Filed Mar. 13, 1885. (No model.)

Claim.—1. The lock-case provided with the hinged latch, the gravi-

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tating bolt, and the seal-receiving cavity, in combination with the hasp provided with the lip or shoulder.

2. In a seal-lock for railroad-cars, the lock-case provided with the transverse recess in its face, in combination with the swinging hasp C, adapted to lie freely in said recess, and provided with the lip *a* to engage the exterior of the case, the latch E, hinged to the case to overlie the hasp, and the gravitating bolt F, adapted to engage the lip of the latch.

3. In a seal-lock for cars, the lock-case having the internal chamber with a seal-receiving seat at the front, and a seal-discharging hole, *d*, at the bottom, in combination with the gravitating bolt in said chamber, and the latch E, provided with the lip *c*, adapted to extend beneath said lock-case for the double purpose of engaging the bolt and closing the hole *d*, as described and shown.

4. In a seal-lock for cars, the lock-case provided with the vertical gravitating bolt, the hasp-receiving and the seal-receiving recesses, in combination with the hinged latch overlying the said recesses and adapted to interlock with the lower end of the bolt, as described and shown.

5. The lock-case provided with the seal-receiving cavity, the external recess to admit the hasp C, and the perforated ear *f*, in combination with the internal gravitating bolt and the hinged latch E, having the lip *c* to engage the bolt, and the slot *g* to receive the ear, whereby the device is adapted to be secured by a sealed bolt and a padlock, or either one, at will.

324,692. INSULATOR FOR SECURING TELEGRAPH AND OTHER WIRES. George W. Hill, Quincy, Mass. Filed May 21, 1885. (No model.)



Claim.—1. A device for securing and insulating wires, consisting of an insulating or securing plate made of an insulating material sufficiently soft and yielding to allow the wire to embed itself into it, a surmounting plate sufficiently rigid to serve as a clamping-plate, and a screw passing through both such plates and entering the support, as set forth.

2. An insulating or clamping device consisting of plates A B, of soft insulating material, rigid plate E, and screw S, passing all these plates and into the support, as set forth.

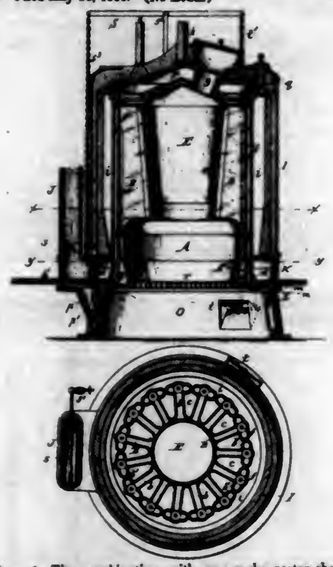
3. An insulating and securing device consisting of plates of soft yielding insulating material surmounted by a rigid clamping-plate, such plates having registering-perforations, and a fastening and clamping screw passing through such perforations and into the support, the parts being combined as and for the purpose set forth.

324,693. BLIND-SLAT HOLDER. David Hinman, Southington, Conn. Filed Apr. 23, 1885. (Model.)



Claim.—In combination with the pintles of a row of blind-slats, a spring-rod which extends from the bottom to the top of the row and bears alternately upon the front side and upon the rear side of the pintles of said row, substantially as and for the purpose shown.

324,694. STEAM-GENERATOR. Abel P. Holcomb, Silver Creek, N. Y. Filed May 16, 1885. (No model.)



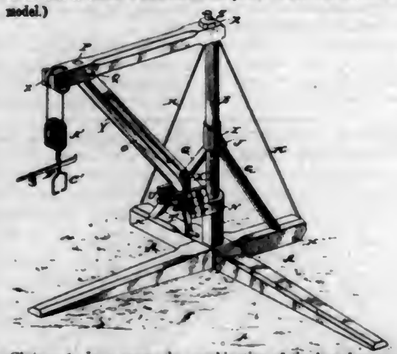
Claim.—1. The combination, with an annular water-chamber, A', of radial upright water-chambers B, resting upon the chamber A', and each composed of upright radial portions, *b*, separated by ascending flues *c* and outer lateral enlargements, *b'*, which form the outer wall of the generator, and are contracted at their upper ends to form passages *d*, a top chamber, F, resting on the chambers B, and an annular descending flue, *i*, surrounding the chambers B, substantially as set forth.

2. The combination, with the steam-generator and its inclosing-case, separated by an annular return-flue, and the smoke-pipe connecting with the lower end of said return-flue, of a passage of communication between the return-flue and the smoke-pipe, which passage is narrowest near the smoke-pipe and increases in width to the point farthest removed from the smoke-pipe, whereby the draft is more evenly distributed, substantially as set forth.

3. The combination, with a circular steam-generator, an inclosing circular case separated from the generator by an annular return-flue, and a smoke-pipe connected with the lower end of said return-flue, of an eccentric passage connecting the return-flue with the smoke-pipe, said passage having its narrowest point arranged nearest the smoke-pipe, substantially as set forth.

4. The combination, with a circular steam-generator and its inclosing-case, separated by an annular flue, of a base, L, inclosing the ash-pit and provided with openings *n* in line with said flue, and an annular plate or trough, M, provided with corresponding openings, *m*, substantially as set forth.

324,695. CRANE. Joseph Hollingsworth, Kilbourne, La., assignor of one-half to Simon Witkowski, same place. Filed Mar. 23, 1885. (No model.)



Claim.—1. In a crane, the combination of the base-beams, crossing each other and mortised together, the upright post mounted at the intersection of said base-beams and having a shoulder near its lower end and a spindle at its upper end, the detachable braces and brace-rods, the

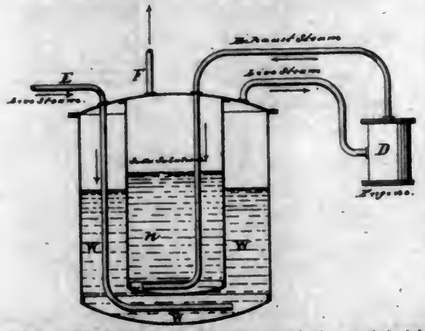
detachable cap-beam mounted upon the upper end of the upright post, a bracket mounted upon the shoulder of said post, and having an inclined brace connected detachably with the cap-beam, a winding-drum journaled in said bracket, and suitable pulleys and tackle, all arranged and combined substantially as and for the purpose set forth.

2. The combination of the base-beams, crossing each other and connected detachably, the detachable upright post, the inclined braces fitted in mortises in the said post and in the rear ends of the base-beams, and a flanged collar fitted upon the upright post over the upper ends of the said braces, substantially as and for the purpose set forth.

3. The combination of the base-beams, the upright post having a spindle at its upper end, a sleeve fitted upon said spindle and provided with lugs, brace-rods pivoted between said lugs and having their lower ends connected detachably to the rear ends of the base-beams, and the cap-beam journaled upon said sleeve, substantially as and for the purpose herein set forth.

4. The combination, with a crane constructed substantially as herein described, and equipped with the tackle, as set forth, of a steelyard attached to said tackle, for the purpose of ascertaining the weight of the load that is lifted, and to assist as a lever in manipulating the same, substantially as and for the purpose herein set forth.

324,696. STORING POWER BY STEAM UNDER PRESSURE. Moritz Honsmann, Grevenberg, near Aix-la-Chapelle, Germany. Filed May 18, 1885. (No model.)



Claim.—The within-described improvement in the art of obtaining power from exhaust-steam by producing its absorption into a solution which has a high boiling-point and utilizing the heat caused by such absorption for generating steam in a water-vessel apart from the vessel in which such absorption is produced, said improvement consisting in the injection of steam under pressure into said water-vessel for the purpose of heating the water therein, and thereby heating and producing the re-evaporation of the water of the steam which had been absorbed into said solution, and so producing the reconcentration of the solution, substantially as herein described.

324,697. HARVESTER. Daniel Houser, Stockton, Cal. Filed July 7, 1884. (No model.)

Claim.—1. In a combined header and thrasher, the thrashing-machine mounted upon bearing-wheels, the header-frame hinged to one side of the separator, in combination with a wheel having its shaft journaled in a frame-work which is pivoted to the outer end of the header-frame, so that it may swing about a vertical pivot, substantially as herein described.

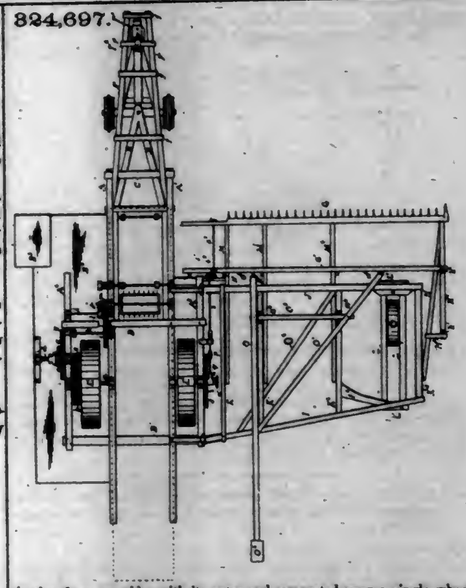
2. In a combined header and thrasher, the thrashing-machine mounted upon bearing-wheels having the header-frame hinged to and projecting from one side, in combination with a bearing-wheel for the outer end of the header-frame, having its shaft journaled in a supplemental frame swinging about a vertical pivot in front and at a point forward of the axis of the wheels of the thrashing-machine, substantially as herein described.

3. In a combined header and thrasher, the thrashing-machine mounted upon wheels upon which it may be drawn about the field, in combination with a header-frame hinged to and projecting from one side of the thrasher, and having an exterior pivot-wheel upon which its outer end is supported, said frame having diagonal braces O^4 extending between its front and rear timbers, substantially as herein described.

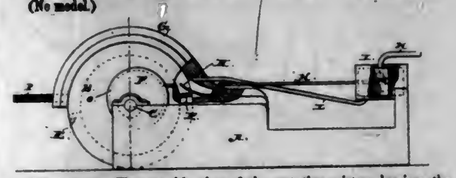
4. In a header and thrasher, the thrashing-machine mounted upon bearing-wheels having the header-frame hinged to and projecting from one side, with its outer end supported upon a single pivoted bearing-wheel, in combination with a supplemental frame, the rear end of which is journaled or pivoted to the main wheel-frame in line with the wheel-axis of the thrashing-machine, while the front end has the cutting and conveying mechanism attached to it, substantially as herein described.

5. In a combined header and thrasher, the thrashing-machine supported upon bearing-wheels having the header-frame hinged to and projecting from one side, with its outer end supported upon a single wheel journaled in a swinging frame, a supplemental frame pivoted to the main header-frame, so that its front may be elevated and depressed, in combination with a lever fulcrumed upon the thrashing-machine, having its front end connected with the hinged supplemental frame and its rear end extending backward to a rack upon the thrashing-machine, substantially as herein described.

6. In a combined header and thrasher, the thrashing-machine mounted upon bearing-wheels, having the header hinged to and projecting from one side, with a single outer supporting-wheel, an adjustable supplemental frame pivoted to the main frame, and a seat-support extending upward and forward from the front end of the separator, and having a seat attached to its upper forward end, substantially as herein described.



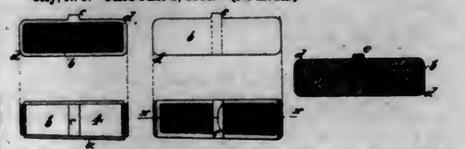
324,698. ROTARY ENGINE. Mark S. Huff, Sutton, W. Va., assignor of one-half to Pembroke B. Berry, same place. Filed June 8, 1885. (No model.)



Claim.—1. The combination of the rotating piston having the grooved periphery and the abutments or buckets, the case encircling the piston, and the valve H, pivoted in the case and bearing normally in the groove of the piston, substantially as described.

2. The combination of the bed-plate, the inclosing-case G, having the valve H, the steam-chest, having the inlet-opening and the outlet-opening communicating with the case G, near the valve H, with the rotary piston, having the buckets and a grooved periphery, the valve H, bearing in said groove, a valve in the steam-chest for closing the supply of steam as the buckets reach the valve H, and the eccentric and rod for operating the valve, substantially as described.

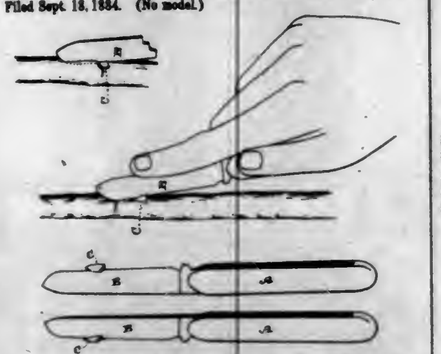
324,699. QUOIN AND SIDE-STICK. Marshall J. Holmes, Jersey City, N. J. Filed June 2, 1884. (No model.)



Claim.—1. A quoin composed of the oblong metal band *b* and inclosed wooden block *a*, filling the cavity of the same, substantially as shown and described.

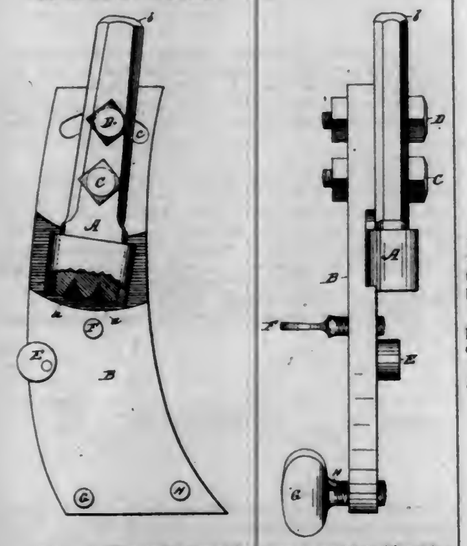
2. A quoin or side-stick having projections from the top plate thereof for use in driving in the operation of locking up.

324,700. BUDDING-KNIFE. Harry E. Hulbert, Santa Rosa, Cal. Filed Sept. 18, 1884. (No model.)



Claim.—In a budding knife, tool, or implement, a blade having a cutting-edge, and provided on said edge, back of its point, with a piece or lug adapted to enter under and raise the bark as the blade cuts it in advance, substantially as herein described.

324,701. SAW-SWAGE. William C. B. Hummel, Winfield, W. Va., assignor of two-thirds to Rufus Switzer and L. A. Christy, same place. Filed Oct. 14, 1884. (No model.)



Claim.—1. The combination of the swage A, provided with notches *a* in one end and a band around the said end, the side plate, B, provided with gage-points F G H, the pivot-screw C, passing through the swage into the said plate, and the binding-screw D, the plate B having a segmental groove across its face concentric with the bolt C and in the path of the said band, substantially as shown and described.

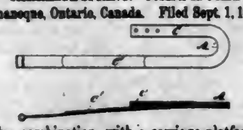
2. The combination, with the plate B, provided with bearings to rest against the side of a saw, as described, and with a curved slot, *c*, and the stud E, secured to the plate B, of the swage A, provided with notches *a*, and the bolts C and D, as shown and described.

324,702. SHOE-FASTENER. Frederick Jacob, Newark, N. J. Filed Jan. 30, 1885. (No model.)



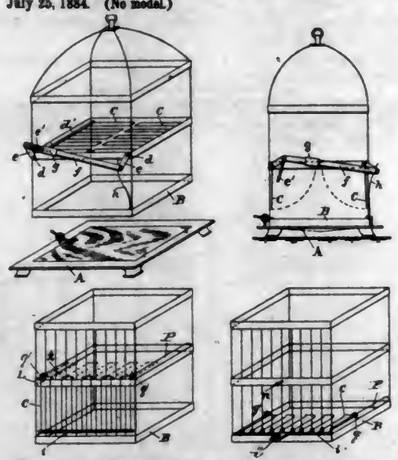
Claim.—The shoe-fastener herein described, consisting, essentially, of a wire bent spirally at *a*, and having oppositely-extending arms, and a plate, *e*, having suitable prongs, *f f*, to clamp one of said arms against the leather or other shoe material, substantially as herein set forth.

324,703. CARRIAGE-SPRING. Joseph R. Johnson and Charles K. Wright, Gananeque, Ontario, Canada. Filed Sept. 1, 1884. (No model.)



Claim.—The combination, with a carriage-platform and running-gear, of torsion-springs composed of several connected leaves bent so as to form a long and a short leg, the short leg being connected to the platform near one side thereof and the long leg to the running gear or frame, and the two legs being substantially parallel to one another, substantially as described and shown.

324,704. BIRD-CAGE. William Kaiser, Wilkes-Barre, Pa. Filed July 25, 1884. (No model.)



Claim.—1. A bird-cage having an ordinary bottom and provided with a supplemental bottom hinged to the cage-walls, whereby the said supplemental bottom may be moved to occupy a vertical position when the ordinary bottom is on, and a horizontal position when the ordinary bottom is removed, as set forth.

2. A bird-cage having an ordinary bottom and provided with a supplemental bottom composed of two or more wings, each hinged to the cage-walls, substantially as and for the purpose set forth.

324,705. CAR-WHEEL. Ross Kells, Cleveland, Ohio. Filed July 3, 1885. (No model.)

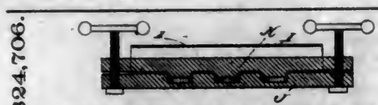


Claim.—1. In a car-wheel, the combination, with a tire having an internal flange, the latter being rectangular in cross-section and located opposite that portion of the tread that covers the rail-head, a hub having an external flange and a skeleton flange integral with the solid flange, the flanges of the hub and tire corresponding in thickness and lying in the same plane, of side plates or disks bolted to and embracing the said flanges, and joining the tire on lines parallel with the axis of the wheel, substantially as set forth.

2. A car-wheel consisting, essentially, of a steel tire provided with an internal flange rectangular in cross-section and located opposite that portion of the tread that covers the rail-head, a hub having an external solid flange and a skeleton flange, the two flanges being integral and corresponding in thickness, and lying in the same plane with the flanges of the tire, bolts passing respectively through the disks and through the flanges of the hub and tire, a series of bolts passing through the disks next inside the tire-flanges, substantially as set forth.

324,706. METHOD OF MAKING HEADERS FOR WATER-TUBE BOILERS. William Kent, Jersey City, N. J. Filed Oct. 24, 1884. (No model.)

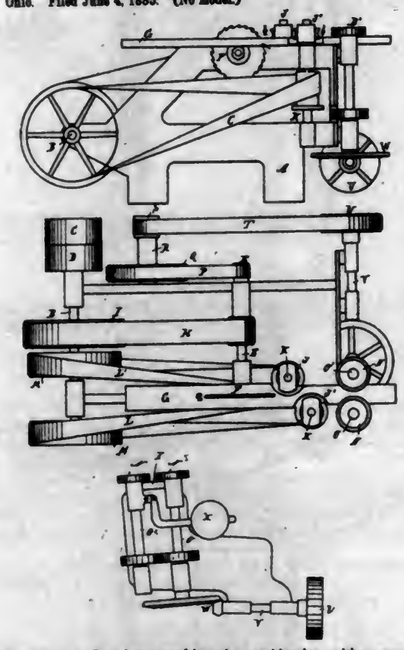
Claim.—1. The method or process of making a header for a water-tube boiler, the same consisting in first cutting the holes in two opposite sides of a tube and then pressing the metal surrounding the hand-holes into the desired form to constitute raised seats for hand-hole plates, substantially as set forth.



2. The method or process of forming the raised hand-hole seats for a header of a water-tube boiler, consisting in placing the header with the hand-hole side on a suitably-formed mandrel or die having depressions corresponding to the seats, and, by means of formers or male dies attached to a block which is placed inside of the header, pressing the metal surrounding the hand-holes into the desired form to constitute raised seats for hand-hole plates, substantially as set forth.

3. The method of making a tube approximately rectangular in cross-section, by inserting two mandrels rectangular in cross-section inside of the tube, and forcing them apart by the action of screws passed through the extremities thereof, substantially as set forth.

324,707. BARREL-HOOP MACHINE. Peter Kettenring, Defiance, Ohio. Filed June 4, 1885. (No model.)



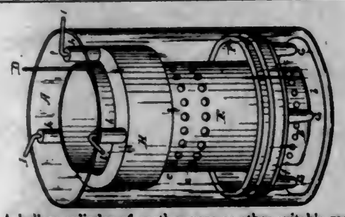
Claim.—1. In a hoop-machine, the combination, with a supporting-frame, a main drive-shaft journaled therein, a saw secured to a shaft running parallel with the main drive-shaft, and the belt H, connecting the two shafts, of the feed-rolls N N', carried by shafts set at an inclination to the saw-shaft to cant the stick from which the hoops are formed, substantially as and for the purpose specified.

2. In a hoop-machine, the combination of a supporting-frame, the main drive-shaft supported thereby, the saw-arbor parallel with the said drive-shaft and driven by the belt from the main shaft, the feed-rolls carried by inclined shafts, weight X, attached to one of the feed-rolls, the beveled gear W, carried by the shaft of the other feed-roll, and intermediate connections between said gear and the main shaft, substantially as described.

3. In a hoop-machine, the combination of the main shaft supported upon a suitable frame, the saw-arbor parallel with said main shaft and driven by the belt H from the pulley I on the main shaft, the vertical shafts K, and cutters J' J', carried thereby, quarter-twist belts L L', running over pulleys on the main shaft, the feed-rolls N N', carried by inclined shafts, bevel-gear W, shaft R, pulley Q thereon, shaft V, carrying pulley U, the pinion S, carried by the shaft R, and the belt P, all arranged and operating substantially as and for the purposes specified.

324,708. GALVANIC BATTERY. Edwin F. Leighton, Boston, Mass., assignor of one-half to James Serson, same place. Filed Mar. 23, 1885. (No model.)

Claim.—1. A hollow perforated cylinder of earthenware or other suitable material for use in galvanic batteries between the two electrodes, provided with a flange forming a trough surrounding it at or near the bottom and adapted to fit the sides of the outer jar closely, all substantially as and for the purpose set forth.



2. A hollow cylinder of earthenware or other suitable material for use in a galvanic battery between the two electrodes, provided with one or more series of perforations, and also with a trough-shaped flange adapted to fit the sides of the outer jar closely at or near its bottom, substantially as shown and set forth.

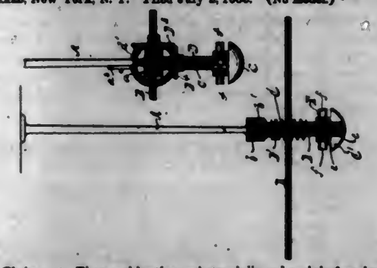
3. A perforated hollow cylinder of earthenware or other suitable material for use in a galvanic battery between the two electrodes thereof, provided with a trough-shaped flange surrounding it, the outside of the flange being encircled by a band or packing of rubber or other suitable material, all substantially as shown, and for the purpose set forth.

4. A galvanic battery consisting of an outer jar, a perforated cylinder of copper provided with a flange at the bottom, a perforated hollow cylinder of earthenware or other suitable material having a trough-shaped flange surrounding it and legs to support it above the bottom of the jar, a zinc cylinder surrounding the earthenware cylinder at the top and supported by the outer jar, and of sulphate of copper or other liquid used to charge the cell, all arranged and used for the purpose herein specified, substantially as described.

5. A galvanic battery consisting of an outer jar, a perforated cylinder of copper provided with a flange at the bottom, a perforated hollow cylinder of earthenware or other suitable material having a trough-shaped flange surrounding it and feet to support it above the bottom of the jar, a band of rubber around the outside of the said flange to make close contact between it and the outside of the glass, a perforated cylinder surrounding the earthenware cylinder at the top, and the sulphate of copper or other liquid used to charge the cell, all arranged and used for the purpose herein specified, and substantially as described.

6. A galvanic battery consisting of the jar A, a perforated cylindrical copper plate, B, bent as at *b*, a perforated flanged hollow cylinder of earthenware or other suitable material, E, a rubber band, *f*, the zinc H, provided with supports A I, the necessary connections, and the charging-liquid, all arranged substantially as shown and described, and for the purpose set forth.

324,709. MECHANISM FOR TRANSMITTING MOTION. George Lieb, New York, N. Y. Filed July 2, 1885. (No model.)



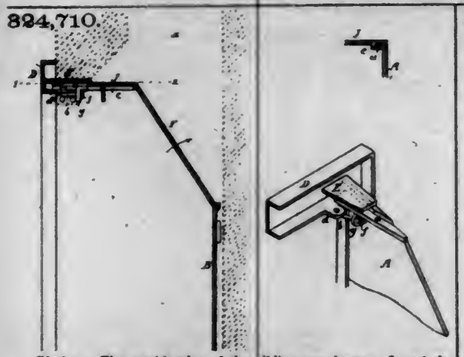
Claim.—1. The combination, substantially as hereinbefore described, with the hanger and the arm thereof, having a bearing for a line-shaft, of a stationary spindle on the end of the hanger, a hollow shaft fitting the spindle and geared to the line-shaft, the sockets on the hollow shaft, which rotate with the same, and a drip-cup secured to one end of the spindle below the collar.

2. The combination, substantially as hereinbefore described, with the hanger and the arm thereof having a bearing for a line-shaft, of the stationary spindle on the end of the hanger, the hollow shaft fitting the spindle, the worm thereof, the worm-gear on the line-shaft, which engages the worm, the socketed collar on the hollow shaft, rotating with the same, and a drip-cup secured to the end of the spindle below the collar.

3. The combination, substantially as hereinbefore described, with the hanger having a bearing for a line-shaft, of an overhanging arm provided with a bearing for a branch line-shaft, the stationary spindle on the end of the hanger, the hollow shaft fitting the spindle and geared to the line-shaft, the sockets on the hollow shaft, which rotate with the same, and the gear on the branch shaft engaging the gear on the line-shaft.

324,710. FIRE-PLACE NICHE. James N. Lowe, Philadelphia, Pa., assignor of one-half to David Coulter, same place. Filed May 24, 1884. (No model.)

824,710.



Claim.—The combination of the sliding top damper, J, and the pivoted rear plate, F, serving with the damper to close the flue, with the niche-frame having supports on which the top damper is free to slide, and a rest on which the rear plate can tilt, all substantially as specified.

824,711. TELEGRAPH CUT-OUT. CHARLES H. LOTHROP, Lyons, Iowa. Filed May 1, 1885. (No model.)



Claim.—1. In a switch for telegraphic and other instruments, the combination of a pivoted bar having an electrode upon either end, one of which is shorter than the other, whereby the short circuit remains broken while the long one is complete, substantially as described.

2. In a switch for telegraphic and other instruments, the combination of a pivoted bar having an electrode upon either end, one of which is shorter than the other, terminals B D and G I, the former being placed nearer together than the latter for the reception of said short and long electrodes, substantially as described and shown.

3. In a switch for telegraphic and other instruments, the combination of a tablet having upon the under side, attached to a pivot, *f*, a movable bar, P, provided upon either end with connecting-electrodes C and H, electrically insulated from each other, the former being shorter than the latter, electrodes B I of the main circuit and D G of the short circuit, which make contact with said short and long electrodes, a lever, M, and hand N upon the face of said tablet, the former for operating said movable bar and the latter for indicating the position of the switch, substantially as described.

824,712. PROCESS OF CASTING COMPOUND METAL INGOTS. A. J. LOUDS, St. Louis, Mo. Filed Nov. 21, 1884. (No model.)



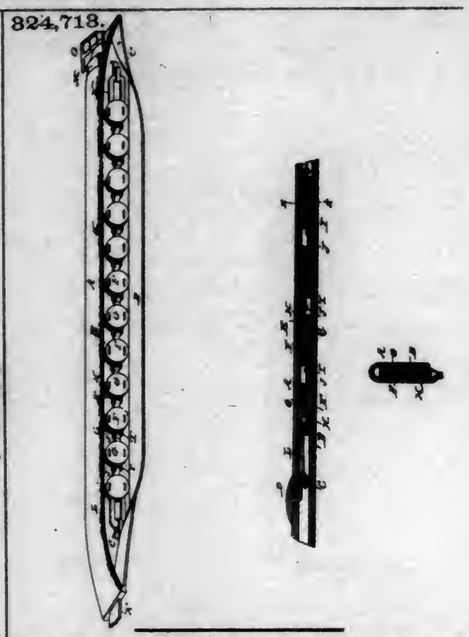
Claim.—1. In the manufacture of compound ingots, the process described, which consists in first roughening the face of a plate or ingot of wrought-iron and applying an anti-oxidizing flux thereon, and then casting upon such face a stratum of steel, as set forth.

2. The process described, which consists in roughening a face of a wrought-metal plate and applying thereon a flux, then casting upon such face a stratum of steel and gradually cooling the whole while in the mold, as set forth.

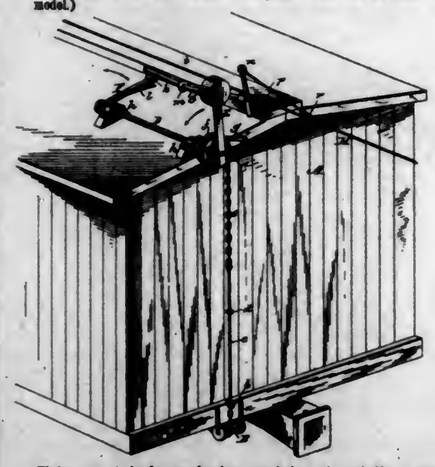
824,713. ELECTRIC BELT. OSCAR F. MAIN, Marion, Iowa, assignor of two-thirds to Alden R. Sargent and Oliver S. Hall, both of same place. Filed Mar. 30, 1885. (No model.)

Claim.—In an electrical belt, the combination, with a water-proof covering consisting of a single piece of water-proof material folded upon itself and forming a flap at the lower edge, electrodes at the ends of the belt, consisting of metallic buttons on one side of the belt and hooks on the other, a voltaic chain adapted to be inclosed in said covering and terminating at the ends in links, and means for securing said ends of the belt together around the body, substantially as described, and for the purpose set forth.

824,718.



824,714. CAR-BRAKE. ROBERT R. MARSH, Owosso, Mich., assignor of one-fourth to Chester J. Stuart, same place. Filed Apr. 28, 1885. (No model.)



Claim.—1. A brake mechanism consisting of a windlass, ratchet and pawl connecting with the brakes, a weighted lever for operating the windlass, and a tripping device for setting and tripping the mechanism, substantially as and for the purpose set forth.

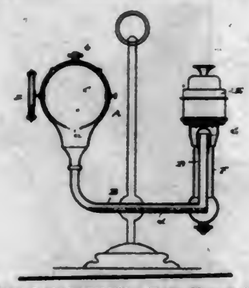
2. In a mechanism for operating the brakes of cars, consisting of a weighted lever, a windlass, ratchet and pawl attached to the brakes by suitable chains, a rod to which the windlass is secured, provided with an arm, in combination with a sliding trip-lever, substantially as and for the purpose specified.

3. In a brake mechanism, a rod provided at one end with a windlass and weighted lever, and at the opposite end with an arm having a button and spring, in combination with a trip-lever, substantially as and for the purpose described.

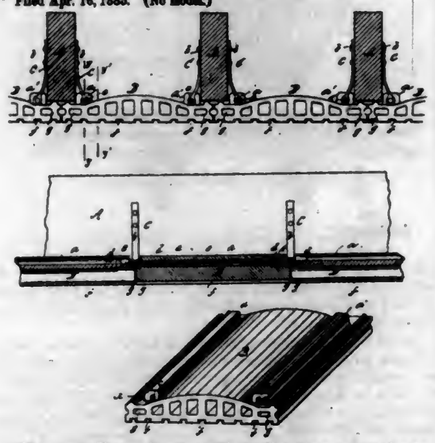
824,715. OIL-LAMP. MARMADUKE MATTHEWS, Toronto, Ontario, Canada. Filed Feb. 24, 1885. (No model.) Patented in Canada Feb. 26, 1885, No. 21,197.

Claim.—The combination, with the pipe B, having horizontal section charged with mercury, of the cap G, fitting over the upper end of the pipe, and adapted to serve with the pipe F and reservoir, as set forth.

824,715.



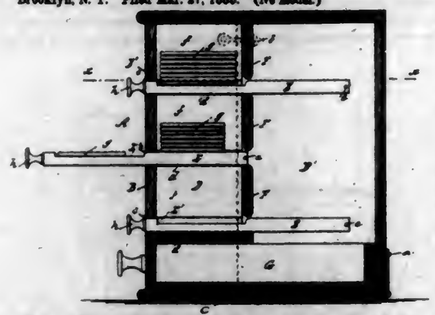
824,716. FIRE-PROOF CEILING. HENRY MAURER, New York, N. Y. Filed Apr. 16, 1885. (No model.)



Claim.—1. The combination, with the floor-beams, of the hangers C, provided with suitable arms, the tiles B, and the sockets *d* in said tiles, constructed to receive the arms of the hangers, substantially as and for the purpose specified.

2. The combination, with the floor-beams, of the hangers C, provided with suitable arms, the tiles B, the protuberances *a a'*, formed thereon, and the sockets *d* in said protuberances, constructed to receive the arms of the hangers, substantially as and for the purpose specified.

824,717. CABINET FOR PAPERS OF NEEDLES. FREDRICK MEYERS, Brooklyn, N. Y. Filed Mar. 27, 1885. (No model.)

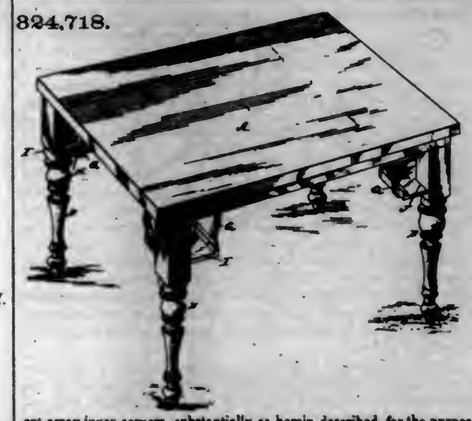


Claim.—The combination, with the separable sections B B' and the vertical partition-walls secured to the front section, B, of the grooves *d*, formed in the partition-walls, the openings *c*, formed in the front section, the slides E, which extend through the openings and fit the grooves, recesses E', formed in the slides, and longitudinal bars extending across the section B' and constructed to close the compartments, substantially as shown and described.

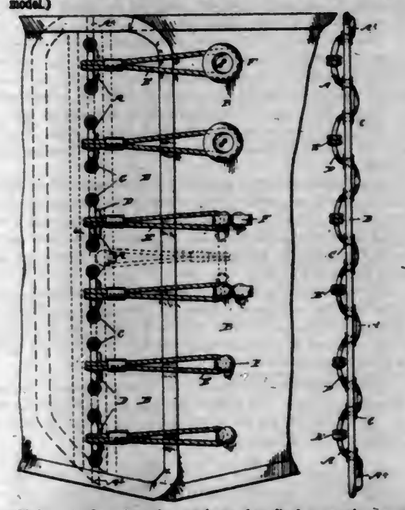
824,718. TABLE. JACOB MOELLER, Manitowoc, assignor of one-half to Ernst Sondermann, Manitowoc County, Wis. Filed Mar. 27, 1885. (No model.)

Claim.—The combination of the table, straps or brackets connecting the upper ends of the legs of the same with the table-frame, said straps having flat horizontal lower portions, and the removable shelves arranged detachably upon the said brackets, said shelves having the cut-away inner corners, substantially as herein described, for the purpose set forth.

824,718.



824,719. FASTENING FOR BELTS, BANDAGES, &c. ELIZABETH M. MOORE, West Kensington, London, England. Filed May 21, 1885. (No model.)



Claim.—1. In a fastening such as described, a continuous elastic cord, A, loosely secured to the material to be fastened in loops or sections D, whereby the extension of one loop D may be increased by the yielding of one or more of the others, substantially as specified.

2. In a fastening such as described, the combination, with a continuous elastic cord, A, arranged in loops or sections D, of fastening-loops E, secured loosely upon said sections D, whereby the extension of one loop D may be increased by the yielding of the others, substantially as specified.

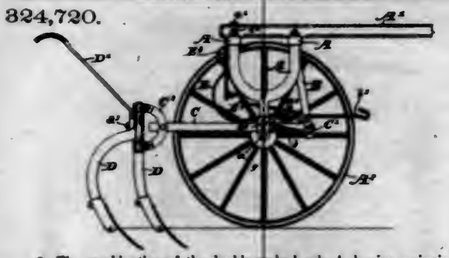
3. In a fastening such as described, an elastic cord, A, threaded through holes C in the material to which it is applied, and forming loops or sections D, to which the fastening-loops E are secured, substantially as specified.

4. In a fastening such as described, the combination of two elastic cords, A, one for each part of the article to be joined, each cord divided into loops or sections D, carrying the fastening-loops E, which cross the joint in opposite directions, and are secured by the buttons or equivalent F upon the opposite part of the article, the whole constructed and operating substantially in the manner and for the purpose specified.

824,720. CULTIVATOR. OSCAR L. NEBELER, Indianapolis, Ind. Filed May 26, 1885. (No model.)

Claim.—1. The combination, in a cultivator, of the arched axle, the vertical parts of which are composed of two branches, and having two upper portions, swinging supports pivoted to the ends of the bar A^3, secured to the under side of the front top part of the axle, plow-beams and draft-rods pivoted to the lower end of said swinging supports, and stay-chains connecting the lower ends of said swinging supports to the lower part of the axle, substantially as set forth.

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2. The combination of the double-arched axle A, having swinging supports B secured to its forward portion, plow-beams secured to the lower ends of said swinging supports, the plows thereon, arms secured to the rock-shafts of said plow-beams, and springs secured to the rear portion of said double-arched axle and engaging with said arms, substantially as set forth.

3. The combination of plow-beams pivoted at their forward ends to swing in both directions, semicircular bearing-plates secured to the rear ends thereof, and plows mounted in said bearing-plates and provided with connecting-arms which extend from one to the other, substantially as described, and for the purposes specified.

4. The combination, with the plows and plow-beams, of bearings connected to said beams for said plows, the two halves of which are provided with notches and projections which interlock, and bolts by which the fit of said bearings on the shanks of the plows may be adjusted, substantially as shown and specified.

5. The combination of the double plow-beams C, semicircular bearing-plates C^3, pivoted to the rear ends thereof, plows D, the standards of which are pivotally mounted in bearings in said plates, and are provided with inwardly-projecting arms d and d', which lap by each other, and a bolt, d^3, which passes through said arms and secures them together, said projecting arms being provided with a series of holes, whereby the distance between the plows may be adjusted, substantially as set forth.

6. The combination, with the pivoted plow-beams, of the arched axle, the springs E, secured by pivots to the hangers E' upon the crossbar of the axle, and the adjusting device E^2, adjustably secured to said axle at its upper end, and its lower end extending out and down against said spring, whereby the tension of said spring may be adjusted, substantially as set forth.

7. The adjustment for holding down springs of cultivators, which consists of a slotted and curved device, E^2, secured to the axle above said springs by a bolt, on which it may be adjusted, and its lower end extending down and coming in contact with the rear side of the spring, substantially as shown and specified.

324,721. BAKE-OVEN. Johan L. W. Olsen, Copenhagen, Denmark. Filed Dec. 13, 1884. (No model.) Patented in Austria-Hungary Dec. 20, 1884, No. 38,733, and No. 59,172, and in France Feb. 20, 1885, No. 164,895.



Claim.—A baker's oven comprising the baking-chamber C, the chamber below the baking-chamber having partial partitions dividing the chamber into compartments *h h i*, a chamber, E, above the baking-chamber having partial partitions dividing this chamber into compartments *e e f*, a furnace, G, at one side of this chamber, flue F, connecting the furnace with compartment *f* of chamber E, flues H, connecting compartments *e e* of chamber E with compartments *h h* of chamber I, and a flue connecting compartment *i* of chamber I with the chimney.

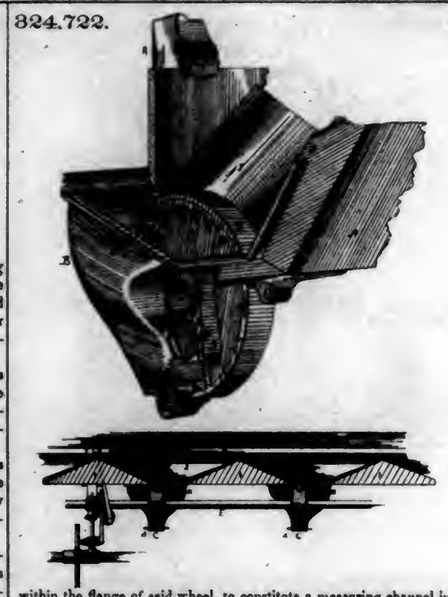
324,722. FORCE-FEED SEEDING-MACHINE. Charles E. Patrie, Springfield, Ohio. Filed Feb. 9, 1885. (Model.)

Claim.—1. Combined with a series of double seed-cups, B, and double-flanged feed-wheels C, projecting upward into the hopper, a series of beveled blocks, I, having the ends rounded to conform to the curve of the bridge D, adapted to deliver grain into the feed-wheel at the lowest possible point.

2. Combined with a series of double seed-cups, B, and double-flanged feed-wheels C, projecting upward into the hopper, a bridge, D, and sliding gate-bottom composed of blocks I, having sloping tops and rounded ends, secured to side strips, J, and strips *p*, secured to the hopper-sides to hold the sliding bottom down.

3. Combined with the feed-wheel C, having a laterally-projecting carrying-flange, a cup or casing, B, having a projection, *g*, extending

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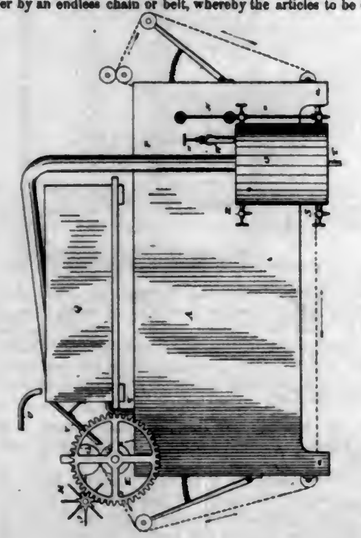
within the flange of said wheel, to constitute a measuring-channel invariable in size, and the side walls gradually converging, and finally merged into the walls of said measuring-channel without abrupt angles, for the purpose set forth.

4. In a force-feed seeding-machine, the following instrumentalities combined: a revolving wheel with a lateral carrying-flange, said wheel set to project upward into the hopper, a discharge-throat invariable in size within the flange of the wheel, and constituted by said wheel and a portion of the stationary seed-cup, and mechanism to vary at will the speed of said feed-wheel.

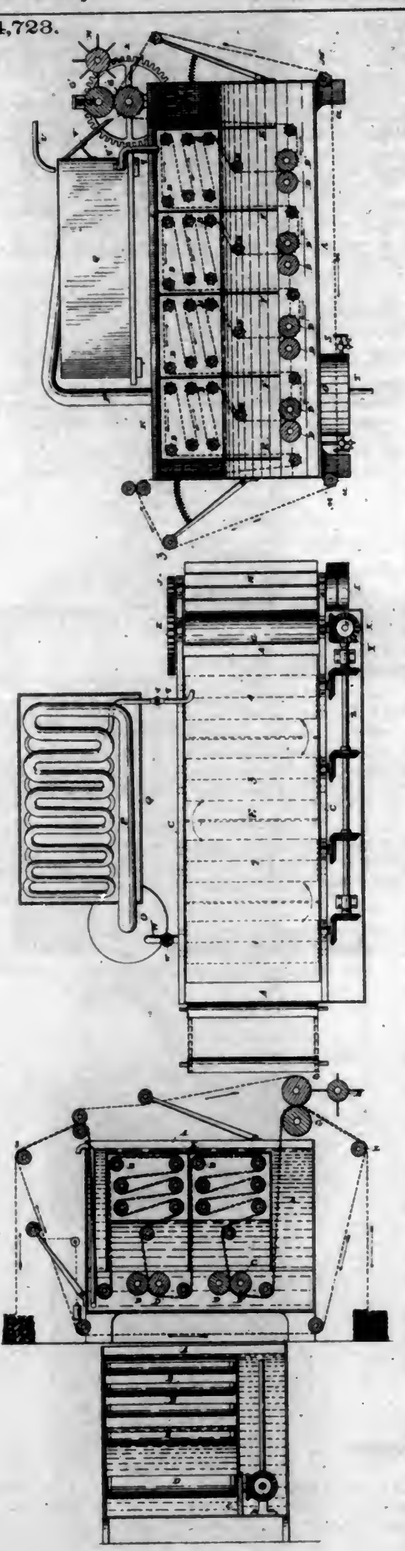
5. Combined with a series of double seed-cups, B, and double-flanged feed-wheels C, projecting upward into the hopper, a bridge, D, and a sliding gate-bottom composed of blocks I, having sloping tops secured to sliding strips J, forming a series of small hoppers adapted to close over one or the other side of said seed-cups, as set forth.

324,723. APPARATUS FOR WASHING PIECE-GOODS. Robert Patrick, Jr., and George Godfrey, Galt, Ontario, Canada. Filed Mar. 30, 1885. (No model.)

Claim.—1. In an apparatus for cleaning textile fabrics, the combination, with an outer tank, of an inner tank or vessel having partitions dividing it into compartments and provided with carrying-rollers connected together by an endless chain or belt, whereby the articles to be cleansed



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are carried through the cleaning agents in said vessels, substantially as described.

2. In an apparatus for cleaning textile fabrics, the combination, with an outer tank and an inner inverted tank or vessel divided into compartments by partitions and provided with carrying-rollers, of squeezing-rollers located in said outer tank and connected with said carrying-rollers by an endless chain or belt connection, substantially as described.

3. In an apparatus for cleaning textile fabrics, the combination, with an outer tank provided with squeezing-rollers and an inner inverted tank or vessel divided into compartments by partitions, and provided with carrying-rollers and endless chain or belt connection between said carrying and squeezing rollers, of gears located on the journals of the squeezing-rollers meshing with gears upon a power-shaft, whereby motion is imparted to the endless chain or belt, substantially as described.

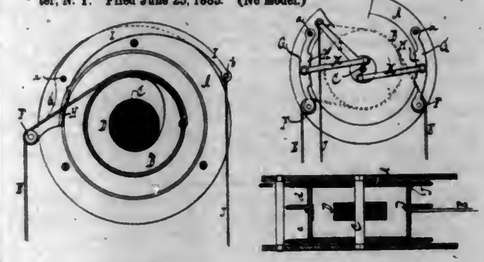
4. In an apparatus for cleaning textile fabrics, the combination, with an outer tank having squeezing-rollers D D', and an inner partitioned inverted tank or vessel having carrying-rollers B, of the squeezing-rollers G G', located above the outer tank, and an endless chain or belt connection between the squeezing-rollers D D G G', and carrying-rollers B, substantially as described.

5. In an apparatus for cleaning textile fabrics, the combination, with an outer tank and an inner inverted tank or vessel, and the squeezing and carrying rollers therein, of the squeezing-rollers G G', and wiper H, substantially as described.

6. In an apparatus for cleaning textile fabrics, the combination, with an outer tank having sprocketed rollers D', and an inner inverted tank divided into compartments by partitions F, and having sprocketed carrying-rollers B, of the sprocketed squeezing-roller G, and sprocketed rollers L, M, M', and *z*, and an endless chain engaging with the sprockets on said rollers, and means for actuating the rollers D', substantially as described.

7. In an apparatus for cleaning textile fabrics, the combination, with an outer tank and an inner inverted tank or vessel, and means for carrying the fabric to be cleansed therethrough, of a jacketed evaporator and a condenser connected with the inner tank and with each other, whereby a continuous circulation of the solvent in the inner tank is secured, substantially as described.

324,724. SUSPENSION DEVICE. Charles J. Petersen, Port Chester, N. Y. Filed June 25, 1885. (No model.)



Claim.—1. In a suspension device, the combination of a support or frame, a rotating spring-drum mounted thereon, a brake on the frame movable to and from the drum, a suspension cord or chain wound on the drum and passing outward therefrom over a guide on the brake and thence at an angle to the article to be supported, a brake-releasing lever having the parts on one side of its fulcrum connected with said brake, and a clearing-cord engaging said brake-releasing lever, substantially as described.

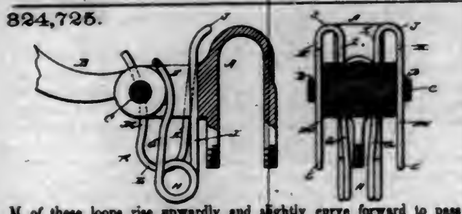
2. In a suspension device, the combination of a support or frame, a rotating spring-drum mounted thereon, a brake on the frame movable to and from the drum, a suspension cord or chain wound on the drum and passing outward therefrom over a guide on the brake and thence at an angle to the article to be supported, a brake-releasing lever having the parts on one side of its fulcrum connected with said brake, and a clearing-cord wound upon the drum and passing outward therefrom over a guide on the brake-releasing lever, substantially as described.

3. In a suspension device, the combination of a support or frame, a rotating spring-drum mounted thereon, two brakes on the frame on opposite sides of the drum and movable toward and from said drum, two suspension-cords wound upon the drum and passing outward therefrom over guides on the brakes and thence at an angle to the article to be supported, brake-releasing levers connected to said brakes, and a clearing-cord engaging said brake-releasing levers, substantially as described.

324,725. THILL-COUPLING. Aaron B. Perdue, Topeka, Kans. Filed Feb. 19, 1885. (No model.)

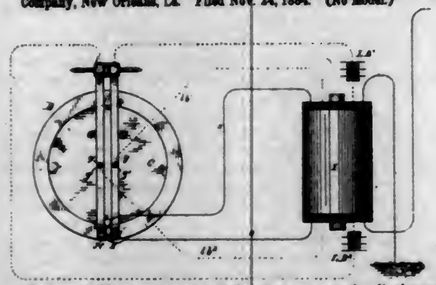
Claim.—The improved spring anti-rattler herein described, consisting of a single piece of wire bent upwardly to form a central loop, F, the lower ends of the branches of which are provided with coils H H, from which rise vertically lateral loops K K, and the free arms

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M of these loops rise upwardly and slightly curve forward to pass through perforations in the opposite ends of the securing-bolt C, the whole constructed and adapted to serve in a thill-coupling, substantially as set forth.

324,726. TELEPHONE TRANSMITTER AND RELAY. Thomas J. Perrin, Brooklyn, N. Y., assignor to the National Improved Telephone Company, New Orleans, La. Filed Nov. 24, 1884. (No model.)

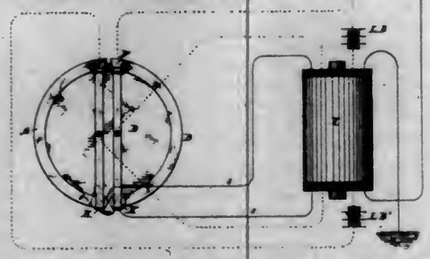


Claim.—1. The combination of the ring magnet, the diaphragm, an electrode carried by the diaphragm, a swinging arm, G, the other electrode carried thereby, and an adjustable pole-piece on the ring magnet for acting on said arm.

2. The combination of the ring magnet, the diaphragm, the insulated electrodes carried thereby, the swinging arms G, the opposite electrodes carried by said arms, the adjustable pole-pieces on the ring magnet, an independent primary circuit in which each pair of electrodes is included, and a continuous secondary line on which said primary circuits act.

3. The combination of the ring magnet, the diaphragm, an electrode carried thereby, an opposite electrode, its swinging support, an adjustable pole-piece on the ring magnet for acting on said support, a primary circuit in which said electrodes are included, and a secondary circuit wound around the ring magnet.

324,727. TELEPHONE TRANSMITTER AND RELAY. Thomas J. Perrin, Brooklyn, N. Y., assignor to the National Improved Telephone Company, New Orleans, La. Filed Nov. 24, 1884. (No model.)



Claim.—1. The combination of the diaphragm, the two bent magnets A B, the swinging arms supported magnetically from the upper poles of the bent magnets, electrodes carried by the diaphragm, and the electrodes carried by the swinging arms.

2. The combination of the diaphragm, the two bent magnets A B, the swinging arms supported magnetically from the upper poles of the bent magnets, the electrodes carried by the diaphragm, the electrodes carried by the swinging arms, and the adjustable pole-pieces in the lower ends of the bent magnets.

3. The combination of the diaphragm, the bent magnets, the swinging arms, the electrodes carried by the swinging arms and by the diaphragm, the adjustable pole-pieces of the bent magnets which act on said swinging arms, the wire coil on said pole-pieces, the secondary line in which said coils are included, and the primary transmitting-circuits.

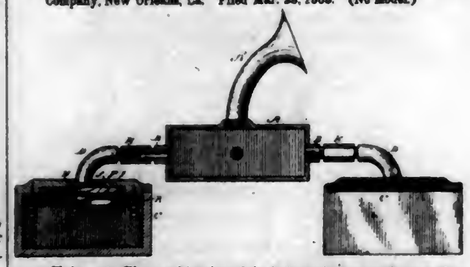
4. The combination of a diaphragm, magnet-poles arranged in proximity to each other, near the lower edge of the diaphragm, swinging arms supported above the center of the diaphragm and hanging opposite said magnet-poles, electrodes carried on the diaphragm and on the swinging arms, an adjustable pole-piece in each of said magnet-poles, the coils on the adjustable pole-pieces, the secondary circuit in which said coils are included, and the primary transmitting-circuits.

5. The combination of a diaphragm, a magnet arranged with one pole above the center of the diaphragm and the other pole below it, a swinging arm suspended magnetically from the upper pole of said magnet, an electrode carried on said arm, the opposite electrode on the diaphragm, and an adjustable pole-piece in the lower pole of the magnet.

6. The combination of a diaphragm, a magnet arranged with one pole above the center of the diaphragm and the other pole below it, a swinging arm suspended magnetically from the upper pole of said magnet, an electrode carried on said arm, and the opposite electrode on the diaphragm.

7. The combination of the diaphragm, the magnet arranged with its pole above the center of the diaphragm, the curved socket in the magnet-pole, the swinging arm having a rounded end which fits in said socket, and is thus suspended magnetically, a contact-button carried by said arm, and the corresponding contact-button on the diaphragm.

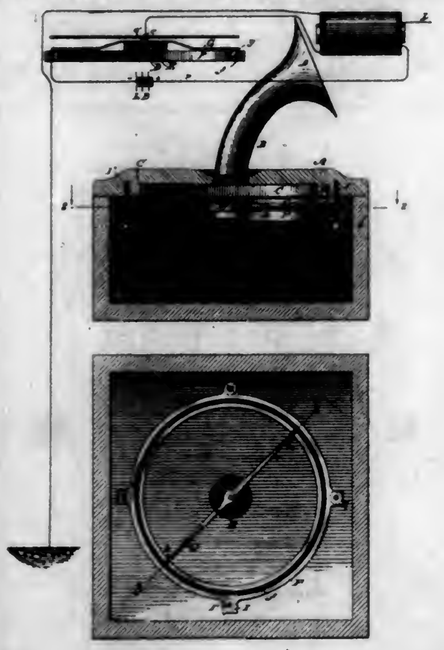
324,728. TELEPHONE TRANSMITTING APPARATUS. Thomas J. Perrin, New York, N. Y., assignor to the National Improved Telephone Company, New Orleans, La. Filed Mar. 23, 1885. (No model.)



Claim.—1. The combination of the independent central resonating-chamber, the jointed separable sound-conveying tubes radiating therefrom, and the transmitting diaphragms and electrodes.

2. The combination of the independent central resonating-chamber, a mouth-piece and sound-conveying tube connected therewith, the curved jointed or separable sound-conveying tubes leading to the several transmitters, and horizontal transmitting diaphragms and electrodes.

324,729. TELEPHONE-TRANSMITTER. Thomas J. Perrin, New York, N. Y., assignor to the National Improved Telephone Company, New Orleans, La. Filed Mar. 27, 1885. (No model.)



Claim.—1. The combination, substantially as set forth, of the diaphragm, the electrode-supporting pin connected therewith, the bottom electrode, the upper electrode through which the supporting-pin passes, the metallic arm carried by the upper electrode, and the mercury-well.

2. The combination of the diaphragm, the electrodes, the ring or frame with the mercury-well, the washer H, and mechanism for clamping the ring up against the washer to seal the well.

3. The combination of the diaphragm, the pairs of electrodes, the upper electrodes of which rest by gravity on the lower ones, the metal strips or conductors carried by the upper electrodes, and the mercury-wells, one for each pair of electrodes, arranged concentrically relatively to the electrodes.

4. The combination of the diaphragm, the transmitting-electrodes, the upper one of which rests loosely by gravity on the lower one, a central pin or guide which passes centrally loosely through and prevents the displacement of the upper electrode, a metal conductor carried by said upper electrode, and a mercury-well, into which said conductor dips, arranged on an arc concentric with said central pin.

5. The combination of a diaphragm, a pin or electrode support secured thereto and projecting therefrom, an electrode fixed on said pin, and the second electrode which rests loosely upon the fixed electrode and through which said pin loosely passes.

6. The combination of a horizontal diaphragm, a depending pin or electrode support carried thereby, an electrode carried by the pin, and a second electrode through which said pin loosely passes resting on the first electrode.

324,730. THREAD-GUARD FOR SPINNING-FRAMES. William H. Rivers, Adams, Mass., assignor of one-third to Edgar Wright, same place. Filed Oct. 30, 1884. (No model.)

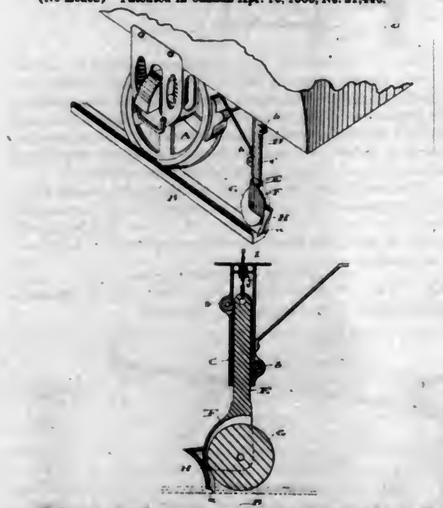
Brief.—A plate thread-guard is provided on its under edge with a notch the vertical side of which is beveled, and may be provided with a steel wiper, against which the traveler strikes lightly as it rises with the ring-rail, and is thereby cleaned.



Claim.—1. A plate thread-guard having on its edge a notch provided with a vertical beveled edge adapted to strike lightly against the traveler as the latter rises with the ring-rail and clear the same, substantially as specified.

2. The thread-guard F, provided on its lower edge with the triangular notch *g*, against the vertical edge of which is secured a steel wiper, *h*, having a vertical beveled edge, which is adapted to impinge lightly on and clear the traveler J as the latter rises with the ring-rail, substantially as described.

324,731. RAIL-SCRAPER FOR STREET AND OTHER RAILWAYS. William H. Robertson, Toronto, Ontario, Canada. Filed Apr. 2, 1885. (No model.) Patented in Canada Apr. 16, 1885, No. 21,446.



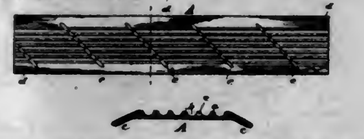
Claim.—1. A rail-scraper composed of a plow-shaped nose, H, attached to the toe of the shoe F, which has journaled within it a wheel or roller, G, in combination with the sleeve C, securely fastened to the bottom of the car, substantially as and for the purpose specified.

2. A rail-scraper composed of a plow-shaped nose, H, having a lip, *a*, and attached to the toe of the shoe F, which has journaled within it a wheel or roller, G, in combination with the sleeve C, securely fastened to the bottom of the car, substantially as and for the purpose specified.

3. The wheel or roller G, arranged to support the shoe F, to which the plow-shaped nose H is attached, a shank, E, extending upwardly from the shoe F and fitting into the hollow sleeve C, in combination with the friction-rollers *b*, arranged substantially as and for the purpose specified.

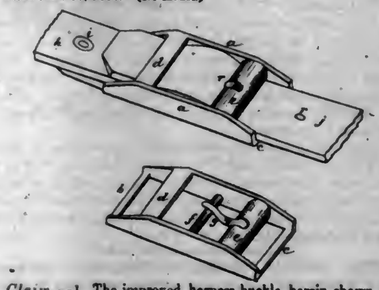
4. The wheel or roller G, arranged to support the shoe F, to which the plow-shaped nose H is attached, a shank, E, extending upwardly from the shoe F and fitting into the hollow sleeve C, in combination with the friction-rollers *b* and cord or chain I, substantially as and for the purpose specified.

324,732. METALLIC DOOR-SILL. Charles C. Schreiber, Cincinnati, Ohio, assignor to the L. Schreiber & Sons Company, same place. Filed June 18, 1885. (No model.)



Claim.—A rolled-iron door-sill having its level portion grooved, and formed with the flexible wings *e e*, capable of being bent as described, to increase or decrease the height of the sill, substantially as and for the purpose set forth.

324,733. HARNESS-BUCKLE. John Schroder, Tama City, Iowa. Filed June 18, 1885. (No model.)



Claim.—1. The improved harness-buckle herein shown and described, consisting of the side bars united by the cross-bars *b c d e f*, and the tongue *g*, hinged to one of the intermediate cross-bars, *e*, and extending over the other intermediate cross-bar, *f*, whereby the end of the tongue is concealed between the buckled straps, as set forth.

2. The combination of the frame having the cross-bars *b c d e f*, arranged as described, and the tongue *g*, hinged to the cross-bar *e*, with the straps *h j*, the former riveted around the cross-bar *f*, and the tongue supported thereon between it and the outer strap, *j*, as shown and described.

324,734. DRIVE-CHAIN. Joseph J. Seldner, Baltimore, Md. Filed Dec. 4, 1884. (No model.)



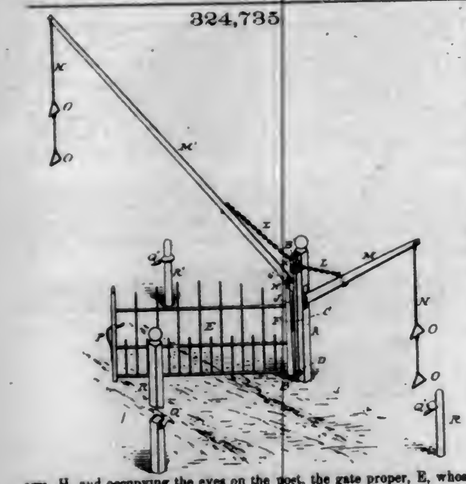
Claim.—The combination of the links A, having bars of uniform size and the reduced portions B, and the coupling C, having the central partition, D, extending to the top of the coupler, and the two slots G, the partition being provided with the flanges *a* upon opposite edges for the purpose of contracting the slots, substantially as shown.

324,735. GATE. Oliver E. Seymour, Cincinnati, Ohio, assignor of one-half to Hugh McKenzie, same place. Filed Sept. 22, 1884. (Model.)

Claim.—1. The combination of a ground-post, a vertical shaft supported thereon and having near its upper end an arm projecting therefrom and a pulley secured thereto, the gate proper having a hinge-stile provided with an eye embracing the lower part of said shaft, a pivot-pin surmounting said hinge-stile and turning in said arm, and operating cords or chains wrapped around said pulley, to cause the release of said gate and force the latter to another position by dragging said hinge-stile of said gate proper into close contact with said shaft and holding it to the latter, as explained.

2. The improved swinging gate, comprising a ground-post, A, eyes B and B', secured thereto, vertical shaft C, having near its upper end an

324,735

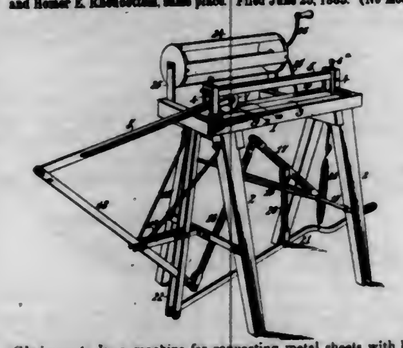


arm, H, and occupying the eyes on the post, the gate proper, E, whose hinge-stile F is provided with an eye, D, embracing the lower part of shaft C, and is surmounted by a pivot, G, which turns in the arm H, a pulley, K, near the top of said shaft C, and operating cords or chains L L', attached to said pulley, the whole being combined and operating substantially as set forth.

3. The combination, in a swinging or automatic gate, of the post A, the eyes B B', projecting therefrom, the vertical shaft C, having the arm H *h*, and occupying the said eyes B B', the gate proper, E, whose hinge-stile has an eye, D, which embraces said shaft, and a pivot, G, turning in said arm H *h*, a pulley, K, secured to the shaft C above the arm H *h*, levers M and M', hinged to the post, and connections L and L', wrapped partly around and secured to the pulley and connecting it with said levers, substantially as set forth.

4. In a swinging gate, the combination of ground-post A, having the eyes B B', the vertical shaft C, having perforated arm H *h* for the upper gate-pintle, G, occupying the eyes B B', and an eye, D, on the gate proper, and having a pulley, K, for the operating cords or chains L L', there being attached to said gate proper a T-formed spring, J, substantially as and for the purposes set forth.

324,736. MACHINE FOR SEAMING SHEET METAL. Van Schaick Sharp, Woodsport, N. Y., assignor of two-thirds to Wallace W. Holcomb and Homer E. Rhoubottom, same place. Filed June 25, 1885. (No model.)



Claim.—1. In a machine for connecting metal sheets with lock-joints, the combination of a bed-plate, vertically-slotted heads, a longitudinally-slotted bar arranged above and parallel with the bed-plate, and vertically adjustable at each end within said slotted heads, and a roller arranged to travel along the bed-plate within the slot and under the pressure of said bar and over the seam or joint to be locked, substantially as described.

2. The combination of a bed-plate having gages for aligning the work, vertically-slotted heads arranged at the opposite ends of said bed-plate, a longitudinally-slotted horizontal bar vertically adjustable in said slotted heads, and a pressure-roller arranged to be moved forward and back along the bed-plate and beneath and within the horizontal slotted bar, whereby a lock joint or seam in two connected sheets of metal is formed by the pressure of said roller, substantially as described.

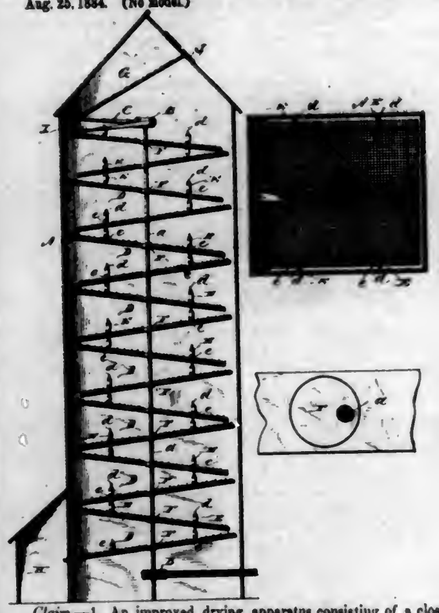
3. The combination of a bed-plate having a yielding guide, a roller arranged to move forward and back over said guide and bed-plate and over the work lying thereon, and a vertically-adjustable bar to vary the pressure of the roller and enable it to accommodate itself to varying thicknesses of material acted upon, substantially as described.

4. The combination of a bed-plate, a pressure-roller arranged to move forward and back over said bed-plate and over the work supported thereon, said pressure-roller being provided with side rollers, 9, of smaller diameter, and a vertically-adjustable slotted bar arranged parallel with and above the bed-plate, and arranged to bear on the small rollers on each side of the pressure-roller to regulate the pressure of the latter, substantially as described.

5. The combination of the bed-plate 3, having gages 10 and yielding guide 11, the slotted heads 4, adjustable pressure-bar 5, reciprocating lever 8, pressure-roller 7, journaled in one end of said reciprocating lever, and provided with side rollers, 9, and means for actuating said lever, substantially as described.

6. The combination of the table 1, bed-plate 3, vertically-adjustable slotted bar 5, roller 7, moving within the slot of the pressure-bar, and having side rollers, 9, the reciprocating lever 8, rods or levers 13 16 17, treadle 21, link 20, and spring 23, substantially as described.

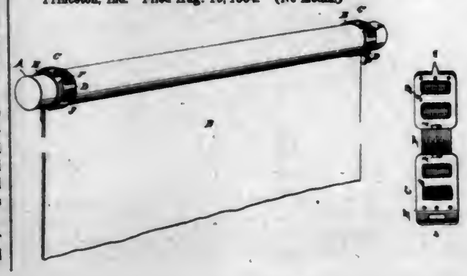
324,737. GRAIN-DRIER. Jesse R. Sitler, Axtell, Kans. Filed Aug. 25, 1884. (No model.)



Claim.—1. An improved drying apparatus consisting of a closed case having arranged centrally therein a vertical shaft provided with horizontal eccentrics, inclined shelves having central annular apertures for the engagement of the said eccentrics, the said shelves being suspended from the inner walls of the case, and extending beyond each other alternately at opposite ends, and the said vertical shaft having pulleys to receive and impart motion by belts, substantially as specified.

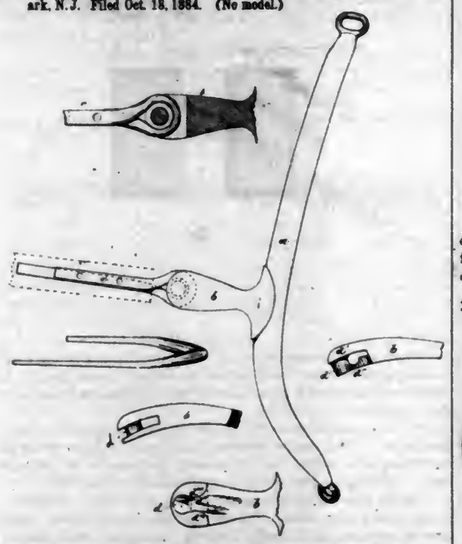
2. The combination, with the case and shelves constructed as described, and provided with the hopper at its upper end, of the feed-roller arranged in the throat of the said hopper, the vertical shaft having the pulleys B, the belt C, and means for rotating the vertical shaft, substantially as specified.

324,738. WINDOW-SHADE FASTENER. Nathan Tomlinson Princeton, Ind. Filed Aug. 16, 1884. (No model.)



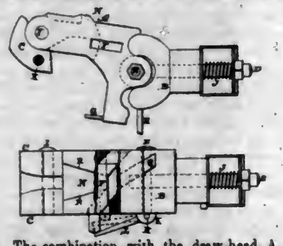
Claim.—The combination, with a curtain and its roller-stick, of the fastening therefor, consisting of the concave plates D and E, having the toothed slots *g*, and the bearing *r* and catch *m* at their outer ends, and the elastic T, connecting the said plates, substantially as specified.

324,739. HAME AND CLIP. Thomas E. Van Ness, Vailsburg, assignor to the Rubber and Celluloid Harness Trimming Company, Newark, N. J. Filed Oct. 18, 1884. (No model.)



Claim.—The hame having a draft-eye perforated in a line or direction parallel or approximately parallel with the broad surface thereof, forming a cross-bar, *d*, and jaws *d' d''*, the latter jaw being recessed, as at *d'''*, substantially as set forth and shown.

324,740. CAR-COUPLING. Frank A. Westbrook and Winfield S Cook, Port Jervis, N. Y. Filed June 23, 1885. (No model.)



Claim.—1. The combination, with the draw-head A, bolt D, pin E, and casing B, of the pivoted head C, which is pivoted upon the draw-head, and which has an opening through it for connection with the ordinary coupling-link, substantially as shown.

2. The combination of the draw-head A, bolt D, pin E, and casing B with the pivoted head C, which has the hook N formed upon its inner end, with a locking-pin and operating-lever, substantially as described.

3. The combination of the head A, provided with an opening through it, with a pivoted head, C, having the hook formed upon its inner end, the pin F, which is shaped as shown, and the operating-lever, substantially as set forth.

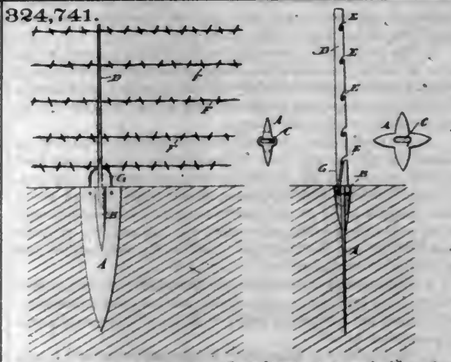
4. The combination of the draw-head A with the slides G, which are placed in the inclined grooves, and which operate to lock the heads together, substantially as specified.

324,741. FENCE. Aaron Zimmerman and John Q. Shipley, Disko, Ind. Filed Aug. 7, 1884. (No model.)

Claim.—1. In a fence, the combination, with the blade A, formed with a socket, B, in its upper edge and with an aperture on opposite sides thereof, of the removable post provided at its lower end with a clevis-hook, the hooked ends of which are constructed to engage the said apertures, whereby the post and blade may be readily disengaged, or the post and blade raised together by a lever inserted through the clevis-hook, substantially as set forth.

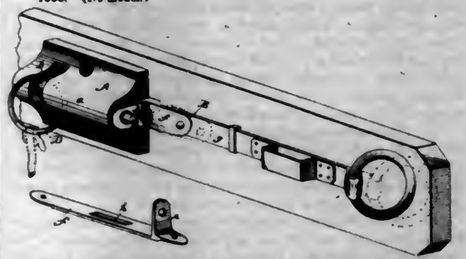
2. In a fence, the posts D, the wooden panels H, secured thereto, to form sections of a fence, and the hook-clevis G, pivoted to the lower

324,741.



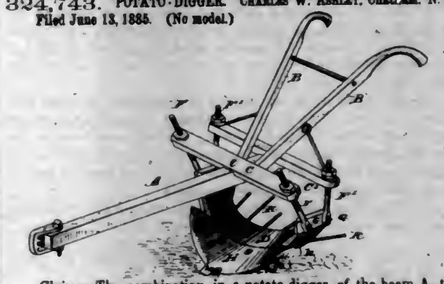
ends of the posts, in combination with the blades A, formed with pockets for the lower ends of the posts and with apertures for the hooked ends of the clevis to engage, substantially as set forth.

324,742. STOCK-RELEASING DEVICE. Theophilus Arndt, Florin, assignor to himself and William Scholing, Mount Joy, Pa. Filed Feb. 6, 1885. (No model.)



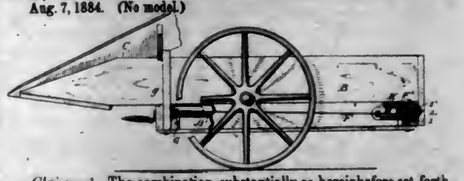
Claim.—The combination of the plate *f*, having lengthwise slot *h* and the right-angular apertured stop-lug *i*, with the socket A, recessed on the under side, and bored and slotted, as specified, and the bolt *b*, having lug *e* and spring *c*, encircling it, and projecting through the end of said socket, so as to act against the lug *i*, all as shown and described.

324,743. POTATO-DIGGER. Charles W. Ashley, Chatham, N. Y. Filed June 13, 1885. (No model.)



Claim.—The combination, in a potato-digger, of the beam A, the transverse beam C' at the rear end thereof, and the transverse beam C in front of beam C' and secured to beam A in an inclined position, with the curved scoop having the detachable point, sole, and fingers, and suspending-bars F F', pivoted to the sides of the scoop and passing through the ends of beams C C', and nuts on the threaded ends of the bars for clamping them to the beams, substantially as described.

324,744. HARVESTER. William R. Baker, Chicago, Ill. Filed Aug. 7, 1884. (No model.)



Claim.—1. The combination, substantially as hereinbefore set forth, of the apron, its laterally-movable drum, the sliding boxes in which said drum is journaled, the winch formed in two sections peripherally ad-

justable with reference to each other, and the intermediate connections between the sliding boxes and the winch.

2. The combination, substantially as hereinbefore set forth, of the apron, its laterally-movable drum, sliding boxes in which said drum is journaled, the two sheaves mounted upon the same axis and adjustable thereabout to change their peripheral relation, and the cords leading from the sliding boxes to said sheaves.

3. The combination, substantially as hereinbefore set forth, of the apron, its laterally-movable drum, the slotted sliding bars mounted upon the front and rear sills and carrying the boxes or bearings for said drum, the hooks projecting from said boxes, the wire ropes attached to said hooks, the guide-pulley for the rope from the front box, and the winch formed of two sheaves clamped together and independently adjustable about their axis, one of which sheaves receives the cord from the front and the other from the rear box.

4. The combination, substantially as hereinbefore set forth, to form a winch, of the two sheaves constructed to interlock upon their contiguous faces, and the bolt passing axially through said sheaves and clamping one against the other.

5. The combination, substantially as hereinbefore set forth, to form a winch, of the two sheaves milled or radially serrated upon their contiguous faces, and the screw-threaded journal-bolt passing axially through a smooth bore in one sheave and screwing into a threaded central bore in the other.

6. The combination, substantially as hereinbefore set forth, of the bracket for the winch, the dog pivoted therein, the sheave mounted in said bracket, having a series of ratchet-teeth upon an enlargement or disk, and milled or radially ribbed on the face of said disk, a second sheave milled or radially ribbed or serrated on the face opposing said disk and formed with a hub which extends into a bearing in the bracket, and a journal-bolt passing through the opposite bearing and axially through both sheaves and screwed into said hub to clamp the sheaves together in any relative peripheral adjustment.

7. The combination, substantially as hereinbefore set forth, with the winch made in two sections independently adjustable about the same axis, and one of which has a journal-hub, of the clamping-bolt enlarged and shouldered at the end away from said hub to form the opposite journal and to sit against the face of the sheave at that end.

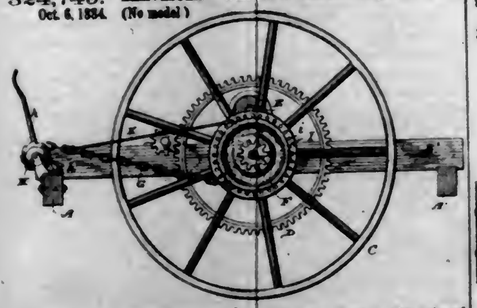
8. The combination, substantially as hereinbefore set forth, with the front and rear sills, and with the laterally-adjustable apron-drum, of the longitudinally-slotted sliding bars having bearings cast therewith, and the guide-clips having tongues passing through the slots in said bars to rest upon the underlying sill, and their upper surfaces flush with the main surface of the sill to support the edge of the belt.

9. The combination, substantially as hereinbefore set forth, with the front and rear sills, and with the laterally-adjustable apron-drum, of the longitudinally-slotted sliding bars having bearings cast therewith, and having their sides turned up to come flush with the main surface of the sill, and the guide-clips for said bars having tongues which pass through the longitudinal slots and rest upon the underlying body of the sill, and their upper surfaces flush with the main surface of the sill and with the sides of the sliding bars.

10. The combination, substantially as hereinbefore set forth, with the front and rear sills, and with the laterally-adjustable drum, of the longitudinally-slotted sliding bars having grooves on each side of the slots, and having bearings for the drum, and the guide-clips having tongues to pass through the longitudinal slots and rest upon the body of the sill, and ribs to enter the parallel grooves.

11. The sliding bearing-bars constructed, as described, with longitudinal slots, depressed bearings, and hooks outside of said bearings.

324,745. HARVESTER. William R. Baker, Chicago, Ill. Filed Oct. 6, 1884. (No model.)



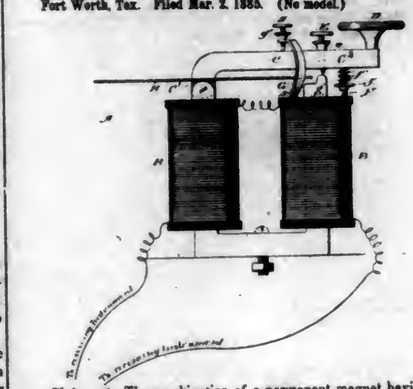
Claim.—1. The combination, with the main wheel and its axle, of the sheave, adjusting-chain, and hooked rod or link.

2. The combination, with the main wheel and its axle, of the sheave, the adjusting-chain, the circumferentially-perforated disk, and the hooked rod or link.

3. The sheave and perforated disk formed as a single casting.

4. The sheave, perforated disk, and pinion cast integral with each other.

324,746. MAGNETO-ELECTRIC TELEGRAPHY. Fred. H. Brown, Fort Worth, Tex. Filed Mar. 2, 1885. (No model.)



Claim.—1. The combination of a permanent magnet having a coil or coils, an armature or disk connected to one pole thereof and free to vibrate over the opposite pole, and a key for vibrating the armature or disk, substantially as described.

2. The combination of a permanent magnet having a coil or coils, an armature or disk connected to one pole thereof and free to vibrate over the opposite pole, a key for vibrating the armature or disk, and stops for limiting the play of the key, substantially as described.

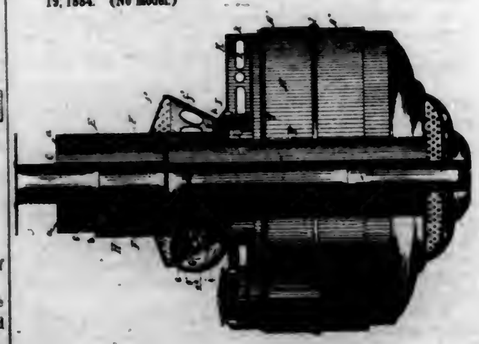
3. The combination of a permanent magnet having a coil or coils, an armature or disk connected to one pole thereof and free to vibrate over the opposite pole, a key for vibrating the armature or disk, and a spring for keeping the key normally out of contact with the disconnected pole, substantially as described.

4. The combination of a permanent magnet having a coil or coils, an armature or disk connected to one pole thereof and free to vibrate over the opposite pole, a key for vibrating the armature or disk, a spring for keeping the key normally out of contact with the disconnected pole, and stops for limiting the play of the key, substantially as described.

5. The combination of the permanent magnets having the coils connected in circuit, an armature or disk connected to one pole of each magnet and free to vibrate over the opposite pole thereof, whereby the vibrations of one of the armatures or disks are transmitted by induced current to the other armature or disks in circuit and reproduced by said other armatures or disks, and an inclosing-case forming an air-chamber around the disk or armature of one or each of the connected magnets, said inclosing-case having a mouth-piece, substantially as described.

6. The combination of the permanent magnets having the coils connected in circuit, an armature or disk connected to one pole of each magnet and free to vibrate over the opposite pole thereof, whereby the vibrations of one of the armatures or disks are transmitted by induced currents to the other armatures or disks in circuit and reproduced by said other armatures or disks, an inclosing-case forming an air-chamber around the disk or armature of one or each of the connected magnets, said case or cases having a mouth-piece, and a key or keys for vibrating the armature or disk of one or each of the magnets in circuit, substantially as described.

324,747. LAMP. Jacob Burnet, Jr., Cincinnati, Ohio. Filed Aug. 19, 1884. (No model.)

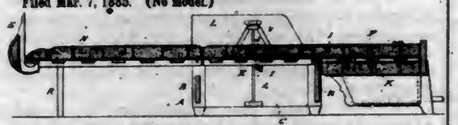


Claim.—1. The combination, with the lamp-font and the burner and wick-raising device thereof, of the perforated ring *f'*, closed at one side, and having the housing *f*, covering said wick-raising device, and the tube H, communicating with the housing to form a vent for the vapor, substantially as described.

2. The combination, in a lamp, of the burner thereof and a font having its top provided with two concentric rings, with the non-conducting collar A secured between said rings and adapted to receive the burner, substantially as described.

3. The combination, in a lamp, of the burner thereof, a non-conducting collar, and a font having a top proper and a ventilating false top, both tops being insulated from the burner, substantially as described.

324,748. FOLDING BED. Alfred S. Burnham, Parkersburg, Iowa. Filed Mar. 7, 1885. (No model.)



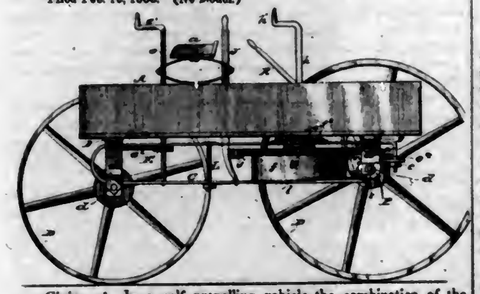
Claim.—1. In a folding bed, the combination, with a supporting-frame having hinged front and back sections, of a reciprocating middle section engaging vertical guides, whereby it is kept in level position, substantially as specified.

2. In a folding bed, the combination, with hinged foot- and head sections, of a vertically-reciprocating middle portion rising and falling in a main frame to which said foot and head sections are hinged, and the connecting-cords whereby the movements of the middle portion are governed, substantially as specified.

3. A sofa-bed consisting of an open supporting-frame having the hinged front and back sections and the reciprocating middle section, and engaging vertical guides of the main frame, and operated by flexible connections extending to the front section, substantially as specified.

4. The combination, with the main supporting-frame and the portion F hinged thereto, of the vertically-reciprocating portion E in the opening of the main frame, and engaging vertical guides thereof, and the connecting-cords I, substantially as specified.

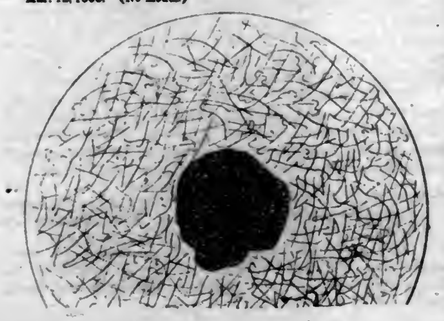
324,749. VELOCIPEDE. John W Burroughs, Salt Lake City, Utah. Filed Feb. 16, 1885. (No model.)



Claim.—1. In a self-propelling vehicle, the combination of the brake-lever J, provided with the brake-block *j* and catch *j'*, with the driving-wheel G for stopping the motion of the machinery, substantially as shown and described.

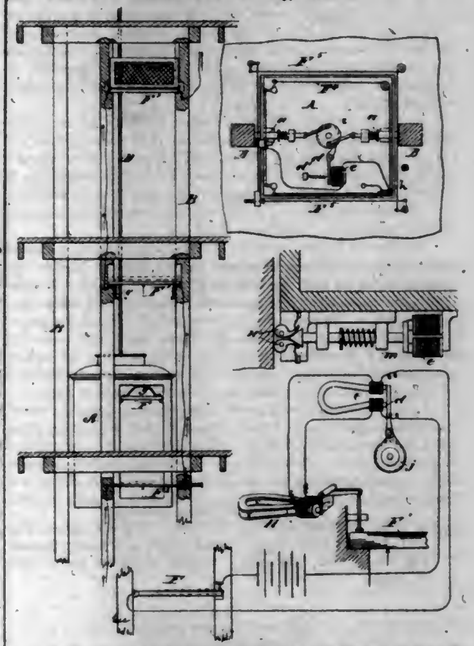
2. In a self-propelling vehicle, the combination of the spring F, ratchet-wheel H, provided with the pawl *f'* and spring *f'*, the driving-wheel G, pinion N, bevel-wheel O, bevel-pinions P, and rear axle, *d*, for driving the vehicle, substantially as shown and described.

324,750. FILTERING-PAPER. E. W. Carter, Cohoes, N. Y. Filed Mar. 12, 1885. (No model.)



Claim.—A paper for filtering purposes made from sponge and fibrous pulp, and having loose cut thread or similar fiber mixed therewith, for strengthening the same, substantially as described.

324,751. SAFETY DEVICE FOR ELEVATORS. Robert M. Curtiss, Brooklyn, N. Y. Filed Jan. 22, 1884. (No model.)



Claim.—1. In an elevator apparatus, the combination, with mechanism for stopping the car, of a movable or yielding transom or transoms on the door or doors of approach to the car, and electrical connections between said transoms and stopping mechanism, whereby a collision with or movement of said transoms acts to automatically stop the car, substantially as herein set forth.

2. The combination, in an elevating apparatus, with mechanism for stopping the car, of a movable or yielding guard near one of the lateral edges of the top of the car, and electrical connections, substantially as described, between said guard and stopping mechanism, whereby the collision of any obstruction with the top of the car on its ascent moves said guard and thereby releases the stopping mechanism and stops the car.

3. The combination, in an elevating apparatus, with mechanism for stopping the car, of a movable or yielding guard near one of the lateral edges of the bottom of the car, and electrical connections between said guard and said stopping mechanism, substantially as herein set forth, whereby the collision of the bottom of the car with any obstruction in its path will move said guard and thereby release the stopping mechanism and stop the car.

4. The combination, with an elevating apparatus with mechanism for stopping the movement of the car, of an electric motor device or magnet controlling the action or release of said mechanism, and of a movable or yielding guard or bar guarding the approach to the car and serving as a contact-maker controlling the electric circuit of said motor device, whereby a collision with and movement of said bar will open or close the circuit, and thereby actuate the motor device, release the stopping device, and stop the car, substantially as herein set forth.

5. The combination, with a hoisting-engine, of a valve for stopping the movement thereof, and an electro-magnet constructed and arranged to operate said valve, with an electric circuit energizing said magnet, and means, substantially as described, for breaking and closing said circuit at the will of the operator, substantially as and for the purpose set forth.

6. The combination, with a hoisting-engine and a valve controlling the flow of motive fluid to or from the same and an electro-magnet controlling the action of said valve, of an electric circuit energizing said magnet, and means, substantially as described, for breaking or closing said circuit in case of coming in contact with a solid obstruction, whereby the action of the magnet shuts the said valve and stops the engine, substantially as set forth.

7. The combination, with an elevating apparatus and mechanism

for stopping the movement of the car, of electric motor devices controlling said mechanism, and an electric circuit energizing said mechanism and extended to the car, with a circuit-breaking switch in said circuit on the car, whereby the car may be stopped by moving said switch, substantially as set forth.

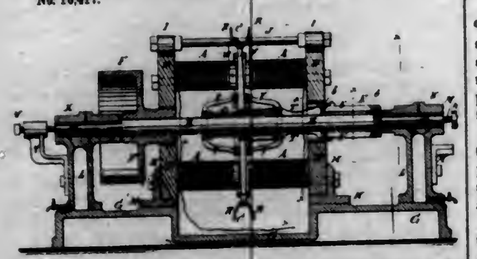
8. The combination, in an elevating apparatus, with a safety electric circuit traversing the same, and with mechanism for stopping the movement of the car, of an electric magnet or electric motor device in said circuit arranged to control said stopping mechanism, a storage-battery for energizing said circuit, and a dynamo-electric generator for charging said battery driven by the movement of the car, substantially as herein set forth.

9. The combination, with an elevating apparatus, of an electric circuit, energizing-motor devices arranged to effect the stopping of the car upon the breaking of said circuit, with a dynamo-electric generator driven by the movement of the car, and two storage-batteries, one of which is in circuit with the generator and the other with the safety-circuit, with means for changing the respective circuits with the respective batteries, substantially as herein set forth.

10. The combination, with an elevating apparatus, of an electric safety-circuit, energizing electric-motor devices arranged to effect the stoppage of the car upon the breaking of said circuit, with a dynamo-electric generator and two storage-batteries, one of which is connected to the generator or charging-circuit, and with switch mechanism arranged to reverse the said circuits in relation with the said batteries, and with the magnets S S', arranged, respectively, in the charging and working circuits, and the armature T, playing between said magnets and connected with the said switch, substantially as and for the purpose set forth.

11. In combination with an elevating apparatus, the safety electrical circuit-energizing motor devices arranged to effect the stopping of the car on the breaking of said circuit, with an electric alarm normally out of circuit, and means, substantially such as described, whereby the breaking of the safety-circuit closes the alarm-circuit and causes the same to sound when the safety-circuit is broken, substantially as herein set forth.

324,752. DYNAMO-ELECTRIC MACHINE. Holbrook Cushman, New York, N. Y., and Joseph P. Hall, Oldham, County of Lancaster, England. Filed Feb. 19, 1885. (No model.) Patented in England Dec. 13, 1884, No. 16,417.



Claim.—1. The skeleton frame of the armature, consisting of the hub O and the radial insulated spokes, provided with forks R at their outer ends, as shown and described.

2. The combination, with the field-of-force magnets, of the armature-wheel wound with a single insulated conductor, S, which passes along a portion of the periphery, then inward to the hub, thence to the commutator, then back to the periphery, along another portion of the same, and again inward to the hub, and so on, all as shown and described, for the purpose specified.

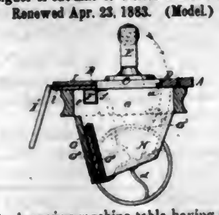
3. The combination, with the skeleton armature-wheel and conductor S wound thereon and extending from periphery to hub, of the rings W and cages V, which are arranged on opposite sides and serve to compress the radial wires adjacent to the hub, and to hold and protect the wires when the armature is in use or being transported, as specified.

4. In a dynamo-electric machine, the combination, with the armature-wheel having long hub and having forked arms upon its rim, of a single continuous insulated conductor, S, insulated side cages, V, and insulated fastening-rings W, substantially as herein shown and described, whereby the said conductor will be clamped and retained in position, as set forth.

5. The armature-wheel wound with a single previously-insulated conductor, the latter extending radially from the hub to the rim, then along the rim and radially back to the hub, and extending thence in the form of a twisted loop to the commutator, also around a portion of the hub, then again to the rim, and so on until the spaces between the spokes of the wheel are filled with a web composed of a single layer of radial strands, as set forth.

6. In a dynamo-electric machine, the combination, with the armature-wheel wound with a single previously-insulated conductor and the commutator E, of brushes *c d*, grouped in double series, substantially as herein shown.

324,753. SEWING-MACHINE TABLE. William M. Cuthbert, Pittsburg, Pa., assignor of one-half to Wilton C. Dean, Brooklyn, N. Y. Filed May 1, 1873. Renewed Apr. 23, 1883. (Model.)



Claim.—1. A sewing-machine table having a recess in its top, in combination with a guide-bar mounted in bearings at one side of said recess, a platform of less length than the recess hinged to said guide-bar, and a support for sustaining the said platform in a horizontal position, and from which the platform may be detached, substantially as and for the purpose set forth.

2. The combination, with a sewing-machine table provided with a recess in the top, and a driving-wheel attached to one of the end supports of the table, leaving a space between the driving-wheel and the most remote end of the recess sufficient to permit the lowering of a sewing-machine within the same, of a platform of less length than the recess and located within the same, a sewing-machine mounted on the platform, and supports for said platform, part of said supports being movable and part detachable from the platform, substantially as and for the purpose set forth.

3. The combination, with a sewing-machine table provided with a recess in its top, and a driving-wheel attached to one of the end supports of the table, leaving a space between the driving-wheel and the most remote end of the recess sufficient to permit the lowering of a sewing-machine within the same, of a sewing-machine platform of less length than the recess, located within the said recess, and supports for the said platform on which the said platform can be moved lengthwise of the said recess for the purpose of carrying the band-wheel of the sewing-machine in and out of line with the driving-wheel, substantially as specified.

4. A sewing-machine table, the top of which is provided with a recess, in combination with a sewing-machine and a platform therefor, the said platform being of less length than the said recess in the table-top and in which it is placed, a driving-wheel connected with the sewing-machine table at one end thereof and below or under the top, and supports for the platform and sewing-machine, substantially as specified, and for the purpose set forth.

5. The combination of the table-top A, provided with the recess B, the drop-platform C, on which the sewing-machine is mounted, said platform being of less length than the said recess and located therein, and supports for the said platform on which it is movable, substantially as specified.

6. The combination of the table-top A, provided with the recess B, the drop-platform C, on which the sewing-machine is mounted and which is of less length than the recess B, in which it is placed, and the supports *f a*, on which the said platform is movable lengthwise of the recess, and from one of which it is detachable, and on the other it swings as on a pivot, substantially as specified.

7. In combination with the sewing-machine table and the drop-platform carrying the sewing-machine, a receptacle under the table-top, composed of the fixed end pieces, G G, and back G', and adjustable front and bottom pieces, substantially as specified.

8. In combination with the recessed table-top and the drop-platform located in the said recess, the lid or covers I I', block or piece L, and part D of the table-top, provided with the rabbet *a*, substantially as specified.

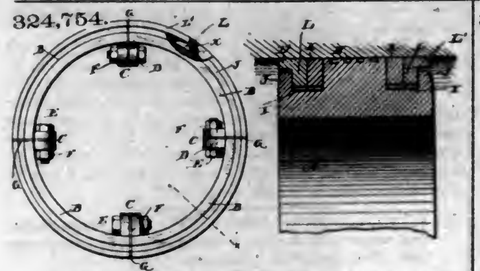
9. The sewing-machine table provided with a recess in its top, the platform carrying the sewing-machine, of less length than the recess and located within the same, in combination with supports for the platform on which the said platform is movable lengthwise of the said recess, and a block or piece for filling the space between the end of the platform and the end of the recess when the machine is in its operative position, and which is removable from the recess, substantially as specified.

10. The combination of the sewing-machine table provided with a recess in the top, a sewing-machine platform of less length than the recess and located within the same, supports for the said platform, on which it is movable lengthwise of the recess, and the block or piece L, substantially as specified, and for the purpose set forth.

324,754. PISTON-PACKING. George Dix, Baltimore, Md., assignor of one-half to John Emory Bell, same place. Filed June 3, 1885. (No model.)

Claim.—1. A bull-ring for piston-packings composed of a series of segmental sections provided at their ends with inwardly-extending lugs having transverse perforations and suitable connecting-bolts, substantially as and for the purpose herein set forth.

324,754.



2. A bull-ring for piston-packings composed of a series of segmental sections suitably connected together, in combination with thin pieces or washers interposed between the abutting ends of the several sections, substantially as and for the purpose herein set forth.

3. A bull-ring for piston-packings composed of a series of segmental sections suitably connected together, said bull-ring being provided at each end with the annular angular recess and the short annular flange, in combination with the slotted annular plain or flat packing-ring and the slotted annular angular outer packing-ring, arranged as described, for the purpose set forth.

4. The combination, with the bull-ring provided at each end with an annular recess and a short annular flange, of two packing-rings, the inner plain or flat and the outer L-shaped in cross-section, and arranged as described, for the purpose set forth.

5. As an improvement in piston-packings, the combination of a bull-ring composed of a series of segmental sections provided at their ends with inwardly-extending perforated lugs, suitable bolts connecting the said sections, annular angular recesses at each end of the said bull-ring, flanges formed at the outer ends of the said recesses, and the plain and L-shaped packing-rings having slits, as herein described, said rings being sprung into the recesses at the ends of the bull-ring, substantially as and for the purpose herein set forth.

324,755. SEWING-MACHINE TENSION. Geo. H. Dimond, Bridgeport, Conn. Filed Apr. 27, 1885. (Model.)



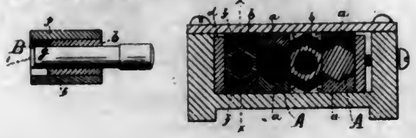
Claim.—1. A bobbin-case for rotating-hook sewing-machines having a slot through which the thread passes to the outside, and a hole or aperture, H, with an overhanging flange, in combination with a spring secured to said case, and bifurcated at its end to form prongs, between which the thread passes, the front prong being made longest and curved downward under the flange to hold the spring in place, and a tension-screw to regulate the pressure upon the thread.

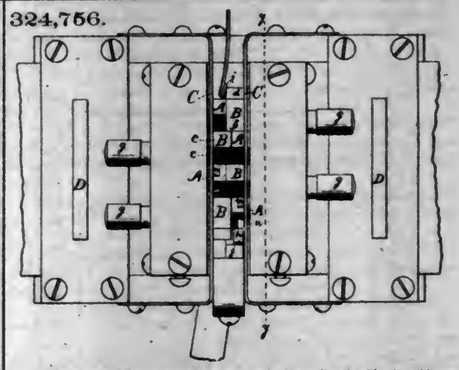
2. A bobbin-case for rotating-hook sewing-machines, having a diagonal thread-slot, F, and a hole or aperture, H, with an overhanging flange, in combination with a spring, one end of which is attached to the case, is then curved outward slightly therefrom, then inward again against the case, and at its free end is provided with prongs, the front prong being curved under the flange.

3. The combination, in a rotating-hook sewing-machine, with a bobbin-case having a diagonal thread-slot and a hole or aperture, H, with an overhanging flange, of a curved tension-spring which does not wholly cover the thread-slot, and has at its free end prongs, between which the thread is delivered, one of which is curved downward under the flange, as and for the purpose set forth.

4. In a rotating-hook sewing-machine, the combination, with a bobbin-case having a thread-slot and a hole or recess, H, with an overhanging flange, of a tension-spring attached thereto, having at its free end prongs, between which the thread passes, the front prong being curved downward under the flange to hold the spring in place, the back prong following the curve of the spring, so that the thread cannot escape, but in threading up may be readily drawn under it.

324,756. DIE FOR CUTTING HEXAGONAL NUTS. George Dunham, Unionville, Conn., assignor to Carl B. Anderson, same place. Filed June 20, 1881. (Model.)





Claim.—1. The pairs of hexagonal dies placed side by side and face to face, so as to carry the metal cut by them in opposite directions, and adapted to form the six sides of each of two or more hexagonal nuts from a straight bar by a single blow without waste in the length of the bar from which said nuts are cut, said dies also having confronting cutting-edges for severing the scrap on lines which form a continuation of the cuts between two adjoining nuts thus formed, substantially as herein described, and for the purpose specified.

2. The pairs of hexagonal dies placed face to face and side by side, with one-sixth of the cutting-edge of one male die forming also one-sixth of the cutting-edge of the adjoining female die, substantially as described, and for the purpose specified.

3. The female dies B, constructed of a central hexagonal prism and several surrounding blocks governed in their position and supported by said prism, substantially as described, and for the purpose specified.

4. The female die B, having one or two of its sides formed by the adjoining male die or dies, and four of its sides formed by blocks, substantially as described, and for the purpose specified.

5. The hexagonal dies set in pairs for cutting nuts from a straight bar of metal, and also having edges for cutting the scrap in two, whereby the waste cut from one nut is carried in the opposite direction from that of the waste cut from the adjoining nut, substantially as described, and for the purpose specified.

6. The pairs of hexagonal dies placed face to face and side by side, in combination with the stripper-plates C C, having alternate small and large perforations for the male and female dies, respectively, and adapted to receive the bar to be cut between them, substantially as described, and for the purpose specified.

7. The gage for the edge of the bar to be cut, formed by the upper surface of the wings *h h*, set alternately to the right and left, substantially as described, and for the purpose specified.

8. The gage for the edge of the bar, consisting of the wings *h* and body *j*, the alternating wings being connected by said body, substantially as described, and for the purpose specified.

9. In hexagonal dies, the scrap-lifters *n n*, placed on the sides of the male die back of its edge, substantially as described, and for the purpose specified.

10. In hexagonal dies placed in pairs, the combination of the adjoining male and female dies with the scrap-lifters *n*, placed in the adjoining corners, substantially as described, and for the purpose specified.

11. The combination of the stripper-plates C C, pairs of hexagonal dies, and the gage *h j*, substantially as described, and for the purpose specified.

12. The pairs of hexagonal dies, in combination with the gage *h j* and yielding end gage, *i*, substantially as described, and for the purpose specified.

13. The combination of the pairs of hexagonal dies, the stripper-plates C C, the gage *h j*, and end gage, *i*, substantially as described, and for the purpose specified.

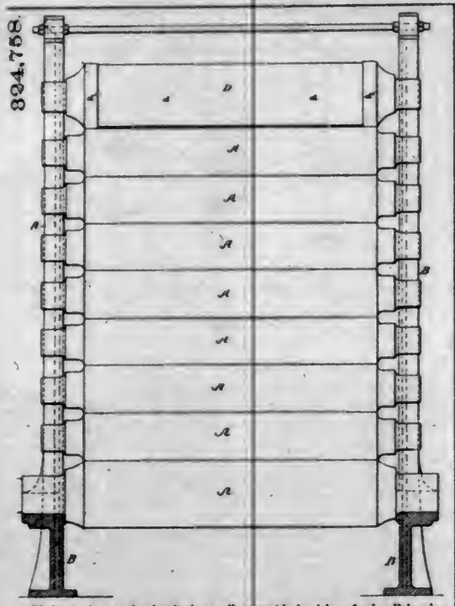
324,757. EAR-RING. Ira R. Dunham, Newark, N. J. Filed Mar. 9, 1885. (No model.)



Claim.—The combination, in an ear-ring, of a hollow ball, and shank hinged thereto on the outside, and a spring contained in said hollow ball and projecting through the wall thereof in contact with the shank or a stud thereon, substantially as specified.

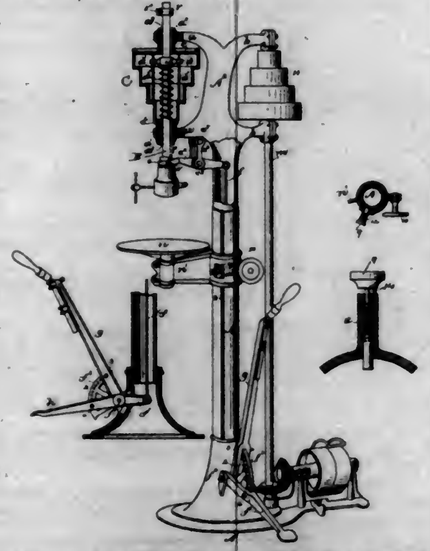
324,758. CALENDERING-ROLL. George Dunn, Middletown, Ohio, assignor of one-half to Lobdell Car Wheel Company, Wilmington, Del. Filed Mar. 30, 1885. (No model.)

324,758.



Claim.—A set of calendering-rolls provided with a feed-roll having its ends slightly larger in diameter than its intermediate portion over which the web of paper passes, substantially as and for the purpose set forth.

324,759. DRILLING-MACHINE. Sterling Elliott, Watertown, Mass. Filed July 7, 1884. (No model.)



Claim.—1. In a drill-press, the hollow cone having at its ends hollow sleeve-like bearings, combined with a spindle taking its bearings in the said sleeve-like bearings, and means to connect the cone and spindle to revolve in unison, substantially as described.

2. The hollow cone having at its opposite ends hollow sleeve-like bearings and the guide-rods, and the spindle taking its bearings in the sleeves of the cone, combined with the driver arranged to slide on the said guide-rods, substantially as described.

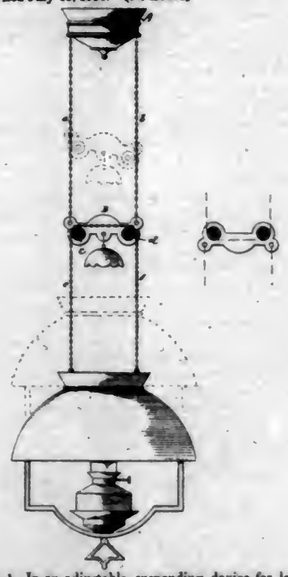
3. The cone and the spindle therein, and means to connect them to rotate in unison, combined with a stop attached to the spindle to limit the descent of the spindle, substantially as described.

4. In a drill-press, the cone, and the spindle having its bearings in the cone, and means to connect the said spindle and cone to revolve in unison, combined with a spring to elevate the spindle, and with a lever to depress the same, substantially as described.

5. The lever *f'*, having a segmental end, and the rod *f*, lever e^2, and spindle and chuck, combined with a lever adjustably connected with the segmental head or end of the lever *f'*, to operate substantially as described.

6. In a drill-press, the column provided with a longitudinal groove, the table *n*, and arm *n'* to support it, combined with a pin adapted to be placed in or to be withdrawn from the said groove, the pin in the groove causing the alignment of the center of the table with the center of the spindle, and when out of the groove permitting the said arm to be rotated on the column, substantially as described.

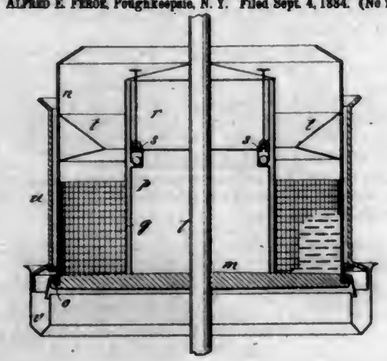
324,760. EXTENSION LAMP-FIXTURE. John A. Evarts, Meriden, Conn., assignor to the Bradley & Hubbard Manufacturing Company, same place. Filed July 13, 1885. (No model.)



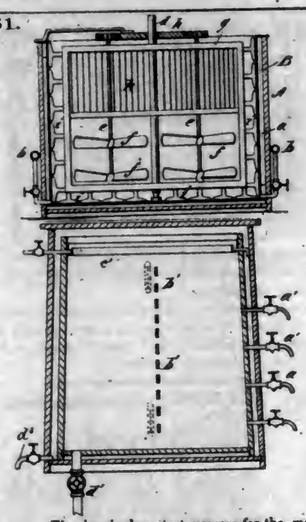
Claim.—1. In an adjustable suspending device for lamps and like purposes, and which consists of two suspending cords or chains extending downward from the drum or drums in the hanger above, the combination therewith of an auxiliary hanger intermediate between the principal hanger and the thing to be suspended, two chains extending upward from the thing to be suspended, the said intermediate hanger fixed to either two of said chains, the other two of the said chains arranged in loop form around bearings in said intermediate hanger and free to run upon said bearings, substantially as described.

2. The combination of the principal hanger A, carrying a drum, two chains, *a b*, extending from said drum downward from opposite sides, two chains, *e f*, extending upward from the thing suspended, the auxiliary hanger B, to which two of said chains are attached, pulleys *c d*, arranged in said auxiliary hanger, the other two of the said chains connected in the form of a loop over said pulleys, substantially as described.

324,761. PROCESS OF MAKING SIRUP AND BEER FROM MAIZE. Alfred E. Perot, Poughkeepsie, N. Y. Filed Sept. 4, 1884. (No model.)



324,761.



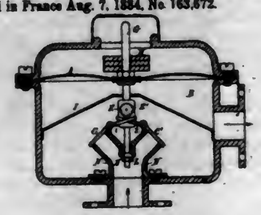
Claim.—1. The herein-described process for the manufacture of beer-wort and sirup from corn and malt, which consists in soaking the meal in water at a temperature a little below the point at which the albuminoids begin to coagulate; then adding a small percentage of malt; then raising the temperature slowly to the point at which starch dissolves, and keeping the meal at this temperature for a sufficient time to render the constituents of the meal as soluble as possible by such treatment; then in a suitable separator separating the soluble portions, fine albuminous matter, &c., from the insoluble portions; then mashing with malt in the usual manner; then running it into a settling and conversion tub suitable for the purpose, keeping the mash at a substantially even temperature, thereby facilitating conversion and settling the fine insoluble matter by keeping the top portions of the mash as warm as or a little warmer than the lower portions; then drawing off the clear wort, boiling the same until coagulation is complete; then running the wort into the settling-tub, settling it as before, and drawing off the clear wort for further treatment, substantially as set forth.

2. In the manufacture of beer-wort and sirup, the herein-described method of treating the residue which remains in the settling-tub after conversion and settling and after the clear wort, &c., has been drawn off, which consists in separating from the said residue in a suitable separating-machine the liquid portion thereof, cooling the same to a temperature of from 50° to 70° Fahrenheit and adding thereto Irish moss, gelatine, or other similar substance, as usually prepared for fining beer, thoroughly mixing the same, and in a suitable vessel passing a gas or atmospheric air through it, and after the mass is cleared drawing off, and then treating the clear portion in the same manner as the wort first drawn from the mash, as set forth.

3. The herein-described method of facilitating the settling of the fine insoluble matter of corn and malt mashes during and after conversion, which consists in surrounding the vessel containing the mash or wort on its entire sides and over the upper surface of the mash or wort by a circulating-conductor of heat of the same or a little higher temperature than the contents of the said vessel, substantially as shown and described, whereby the escape of heat from the sides and upper part of the mash or wort and the consequent circulation caused by unequal cooling is prevented, as set forth.

4. The hereinbefore-described process of separating the fine insoluble matters in corn and malt mashes from the extract or wort, which consists in treating it with a solution of Irish moss or gelatine, and then subjecting the liquid to the action of gas or air, as specified.

324,762. GAS-REGULATOR. Johannes Fleischer, Hieronymus W. Müller, and Johann G. Arnold, Frankfort-on-the-Main, Germany. Filed Apr. 16, 1885. (No model.) Patented in Germany June 19, 1884, No. 30,176, and in France Aug. 7, 1884, No. 163,672.



Claim.—1. In a gas-regulator, the combination, with the breeches-pipe N, of the rod G, carrying at its lower end the valve D and operating the valves C C', which close the main exits of the pipe N, substantially as and for the purpose specified.

2. In a gas-regulator, a breeches-pipe, N, fitted with valves C C', adapted to be operated by the weighted rod G, substantially in the manner and for the purpose specified.

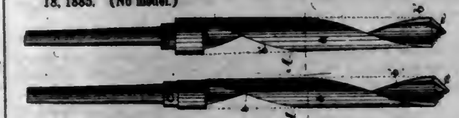
3. In a gas-regulator, the combination, with the breeches-pipe N, of the valve D, secured upon the rod G in such manner that said valve D opens before the valves C or C', substantially as and for the purpose specified.

4. In a gas-regulator, the combination, with the breeches-pipe N, of valves C C', adapted to be successively operated by rod G, substantially in the manner and for the purpose specified.

5. In a gas-regulator, the combination, with the weighted rod G, of rollers E-E', of different diameters, for the purpose of operating successively the valves C C', substantially as specified.

6. A compound gas-pressure regulator having two superposed regulating-chambers, each provided with vertically-operating valves and valve-rods, weighted or spring-impelled levers connected to each rod, and an adjustable rod connecting the outer or free ends of such levers, as set forth.

324,763. BORING-BIT OR AUGER. Lucian M. Foster, Troy, N. Y., assignor to Samuel Foster and John H. Reynolds, same place. Filed May 18, 1885. (No model.)



Claim.—A boring-tool composed of a cutting-pod, *a*, and a spirally-wound ribbon, *b*, without a central core, the said ribbon being provided with a sharp cutting-edge on the entire length of its foremost spiral line, as and for the purpose herein specified.

324,764. PENCIL OR CRAYON HOLDER. Frederick Froescher, Nuremberg, Germany. Filed May 7, 1885. (No model.) Patented in Germany Aug. 12, 1883, No. 27,318; in France Oct. 14, 1883, No. 158,520, and in Austria-Hungary Dec. 12, 1883, No. 41,607 and No. 55,733.

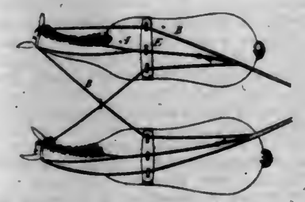


Claim.—1. In a crayon-holder, the combination, with a tube for receiving the crayon, of jaws mounted to swing slightly on the ends of the tube, which jaws have gripping-surfaces for gripping the lead or crayon, a sliding tube surrounding the crayon-holding tube and resting on said jaws, and a tube or casing surrounding the sliding tube, which outer tube or casing is provided with an end piece, substantially as herein shown and described.

2. In a crayon-holder, the combination, with the tube B, having the bead C, of the jaws D, mounted to swing slightly on the said bead, which jaws are adapted to grip and hold a crayon passed into the tube B, springs I, acting on the jaws, the sliding tube M, surrounding the tube B, and the tube or casing R, surrounding the tube M, substantially as herein shown and described.

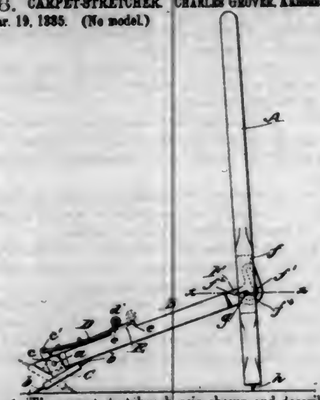
3. In a crayon-holder, the combination, with the tube B, having a bead, C, on one end, of the jaws D, mounted to swing slightly on said tube and having bends D', the springs I, projecting from the inner sides of the jaws, the tubes M and R, and the end pieces, S, having a bead, T, or offset, substantially as herein shown and described.

324,765. HARNESS-CHECK. William B. Frost, San Francisco, Cal., assignor of one-half to George S. Ingersoll, same place. Filed June 8, 1885. (No model.)



Claim.—A harness-check leading upward and backward from the bit through guides or runners, in combination with the independent terret or guide E, and the driving-reins, to which it is united at the rear of the terret or guide, all substantially as herein described.

324,766. CARPET-STRETCHER. CHARLES GROVER, Kansas City, Mo. Filed Mar. 19, 1885. (No model.)



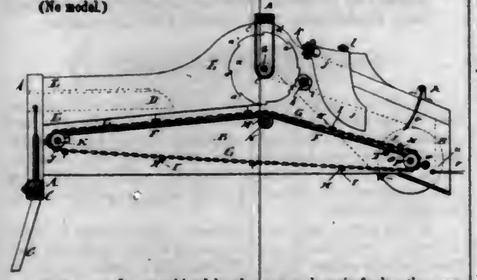
Claim.—1. The carpet-stretcher herein shown and described, consisting of the main lever A, bar B, and head C, pivoted to the bar B by central upright plates or lugs, and provided with points *b* at both edges, substantially as and for the purpose set forth.

2. The head C, provided with points *b* at both edges, and pivoted to the bar B by central lugs or plates, *c c'*, in combination with the rod D and notched plate E, the rod D being attached to plate C' for reversing the head C, substantially as and for the purposes set forth.

3. The bar B, formed or provided with plate F, having curved slot *f'*, in combination with the main lever A and pin *g*, substantially as and for the purposes set forth.

4. The bar B, having plate F, having the curved slot *f'* formed in it, the slot being enlarged at *f²* to form the lip *f³*, substantially as and for the purposes set forth.

324,767. COMBINED BAND-CUTTER AND GRAIN-FEEDER FOR THRASHERS. CHARLES GROVER, Kansas City, Mo. Filed Sept. 15, 1884. (No model.)



Claim.—1. In a combined band-cutter and grain-feeder, the combination, with the frame A and the carrier, of the shaft Z, a series of rotary cutters mounted thereon, the cross-bar *k*, having a series of apertures therein, the spreaders *j*, forked at their upper rear corners, bolts passing through the arms of the forks and the cross-bar *k*, the bar *l*, pivoted to the upper end of the spreaders, the vertical cranked rock-shaft *m*, connected to the bar *l*, and operating mechanism, substantially as set forth.

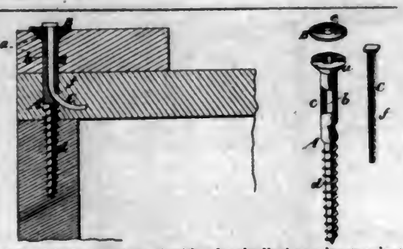
2. In a combined band-cutter and grain-feeder, the frame A, the carrier, and the rotary cutters, in combination with the cross-bar *k* provided with a series of pivot-holes widened at their lower ends, as described, the spreaders *j*, forked at their upper ends, the bolts passing through the arms of the forks and said pivot-holes, the connecting-bar *l*, pivotally connected to the top of the spreaders, and a vibrating mechanism, substantially as set forth.

3. In a combined band-cutter and grain-feeder, the endless carrier and the rotary cutters, in combination with the cranked shaft *p q*, journaled above the delivery end of the carrier, downwardly-projecting prongs *v* thereon, the cranked shaft *u t*, journaled in rear of the delivery end of the carrier, the prongs *v* thereon, the roller *w* in rear of the shaft *u*, the shaft P, crank-pulley Q, and the rods *r* and *s*, connecting the said pulley and the cranks *q t*, respectively, as set forth.

324,768. TUBULAR SCREW. FREDERIC R. HUNT, Leavenworth, Kans. Filed June 5, 1885. (No model.)

Claim.—1. A screw formed with a nick in its head, and also having an opening extending through it at an angle to said nick, the lower end of said opening being deflected or turned at an angle to the length of the screw, whereby a pin may be inserted in said opening to intersect the nick in the head and have its point turned to prevent its extraction, substantially as described.

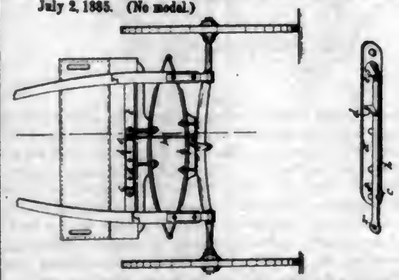
324,768.



2. A nicked screw formed with a longitudinal opening terminating in its side, in combination with a nail or pin to extend through said opening, substantially as described.

3. The combination, with a screw or spike having a longitudinal hole terminating in its side, of a nail or pin to extend through the opening, said nail or pin being formed with a notch to engage with an edge of the screw or spike, substantially as described.

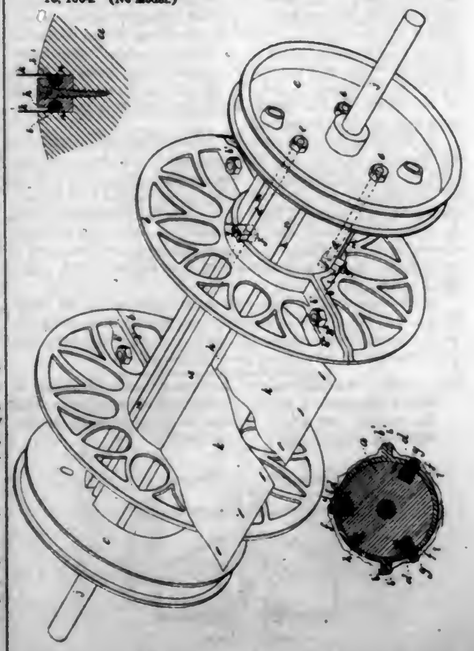
324,769. THILL-SUPPORT. JOSEPH HURRLE, Oneida, N. Y. Filed July 2, 1885. (No model.)



Claim.—1. In combination with the thills and forward part of the vehicle, the plate *a*, the brace *b*, pivoted on said plate, and the catch *c* for holding the brace in its folded position, as set forth.

2. In combination with the thills and forward part of the vehicle, the plate *a*, the brace *b*, pivoted on one end of said plate by a universal joint, the catch *c*, affixed to the opposite end of the plate *a*, and the lug *d*, attached to the central portion of said plate, substantially as described and shown.

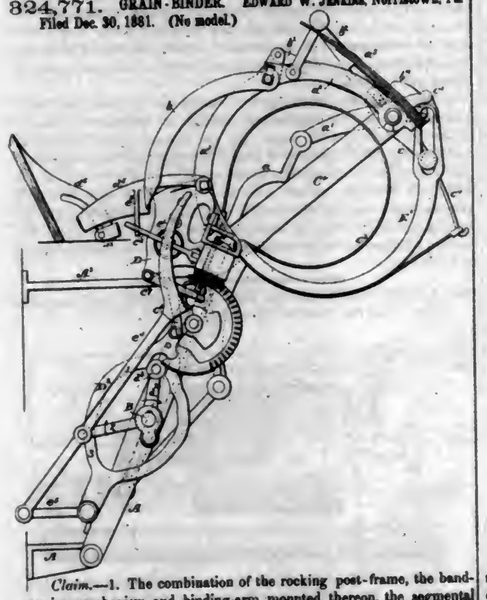
324,770. WARP-BEAM FOR LOOMS. GEORGE F. HUTCHINS, Worcester, Mass., assignor to L. J. Knowles & Brother, same place. Filed Oct. 15, 1884. (No model.)



Claim.—1. The combination of the warp-beam body, grooved as described, and having pulleys *c*, with the heads recessed in their hubs, as described, a series of rods arranged longitudinally in the grooves and fixed at their ends to the beam or its pulleys, and with sliders adapted to slide on such rods and to enter the recesses of the heads, and having set-screws to clamp them to the said rods, all being substantially as set forth.

2. The beam-body grooved lengthwise on its periphery and having within the groove a T-shaped tongue, combined with the two aprons and the sustaining-rods of the said aprons, applied as described, such tongue being between the said two aprons, and they being extended outwardly from it and the beam-body and adapted to slide in the groove, substantially as represented.

324,771. GRAIN-BINDER. EDWARD W. JENKINS, Norristown, Pa. Filed Dec. 30, 1881. (No model.)



Claim.—1. The combination of the rocking post-frame, the band-securing mechanism and binding-arm mounted thereon, the segmental cam-gear, and the vibrating cam-lever and its connecting-link.

2. The pivoted post-frame carrying the binding-arm, combined with the crank on the gear-wheel, and the two links, one for rocking the post-frame on its pivots and the other for actuating the binding-arm.

3. The combination of the slotted compressor, the bracket or offset on the post-frame having a pin taking into said slot, and the crank on the rock-shaft pivoted to the heel of said compressor.

4. The combination of the binding-arm, its actuating-crank, the slotted compressor and its actuating-crank, and the bracket and pin from the post-frame.

5. The combination of the cut-off pivoted upon the binder-arm, the link from its heel-extension, the slotted crank-arm on the rock-shaft, and the cam upon the post-frame traveled by a pin or roller from said link.

6. The combination of the rocking post-frame, and the bars or rods connecting said post-frame with the slotted abutments on each side of the slot in the grain-receptacle, whereby the bars are caused to rise and fall, for the purpose described.

7. The combination of the rocking post-frame, the bars connecting it with the slotted abutments on each side of the slot in the grain-table, the binder-arm, and the cut-off.

8. The combination, with the tension-disks, of the pivoted lever attached to the movable disk and a tappet or hanger on one of the bridge-bars to actuate said lever.

9. The tappet or hanger on one of the bridge or cradle bars arranged to actuate the tension-lever as the rocking frame nears the end of its outward oscillation to release the tension.

10. The combination of the binder-arm formed in two sections and connected to each other, as described, the crank upon the rock-shaft, the spring interposed between said crank and the first or main section of the binder-arm, and the link connecting said crank with the heel-extension of the second section.

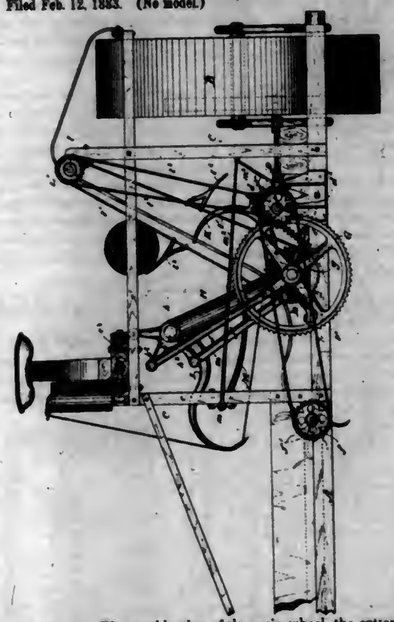
11. The crank, whereby the binder-arm is actuated, slotted to receive a pin from the link connecting it with the cut-off arm, and allow said pin to play as its roller travels over the cam on the post-frame.

12. The vibrating slotted cam-lever to actuate the gear-segment having a cam-aperture shaped substantially as shown, and controlled by the crank and two anti-friction rolls.

13. The combination of the main shaft, the main gear-wheel, the rocking post-frame actuated by a link from said wheel, the vibrating cam-lever actuated by a crank from the main shaft, and the oscillating segmental gear actuated by a link from said cam-lever.

14. The binder-arm made in sections, combined with the crank-arm, the link, and the eccentric to move one of said sections relating to the other.

324,772. HARVESTER-BINDER. EDWARD W. JENKINS, Chicago, Ill., assignor to the McCormick Harvesting Machine Company, same place. Filed Feb. 12, 1883. (No model.)



Claim.—1. The combination of the main wheel, the outter crank-shaft, the loose pinion and loose chain-wheel thereon, the chain-wheel driving the platform-carrier, and the chain connecting it with the loose chain-wheel on the crank-shaft, the main gear-wheel of the binder intermeshing with the loose pinion, and the double clutch-half between said loose pinion and loose chain-wheel adapted to engage with the one and with the other alternately to clutch them to the shaft.

2. The combination of the main gear-wheel of the binder, the bracket with its overhung arm, the rock-shaft passing through said arm, the binder-arm at the inner or front end of said rock-shaft, the double-crank casting at the outer end of said overhung arm keyed to the rock-shaft, the pitman connecting one arm of said casting with the wrist-pin upon the main gear, and the second pitman connecting the second arm of said casting with the arm upon the rock-shaft subtending the grain-receptacle and bearing the compressor.

3. The combination of the main gear-wheel of the binder running loose upon the rock-shaft, the bracket-casting with its overhung arm, the binder-arm shaft journaled in said overhung arm, the double-crank casting keyed to the outer end of said shaft, the pitman connecting one arm of said casting with the wrist-pin upon the main gear, the second pitman connecting the other arm of said casting with a crank-arm from the same rock-shaft upon which the main gear turns, and the compressor keyed to said latter rock-shaft and opposing the binding-arm.

4. The combination of the main gear of the binder turning loosely upon the rock-shaft which subtends the grain-receptacle, the bracket-casting supporting the binder-arm shaft, the double-crank casting keyed to the outer end of said shaft, the pitman connecting one arm of said casting to the wrist-pin upon the main gear, the second pitman connecting the other arm with a crank from said rock-shaft, the compressor fixed to the rock-shaft and operated by the second pitman, the sprocket-wheels turning loosely upon the rock-shaft, and the chain belts and their fingers connecting said sprocket-wheels with other sprocket-wheels upon the elevated driven shaft, whereby the bound sheaves may be discharged over the main wheel by said chains and fingers.

5. The combination of the automatic binding mechanism, its main gear-wheel, a loose pinion upon the driven shaft intermeshing with said gear-wheel, a loose chain-wheel upon said driven shaft connecting by chain belt with another wheel upon the shaft or drum which drives the platform-carrier, the elevating-chains and their fingers, and the upper shaft by which they are driven, the sprocket-hub upon the loose pinion

connected by chain with the sprocket-wheel upon said upper shaft, and the shifting-clutch between the loose pinion and the loose sprocket-wheel, whereby the platform-carrier may be thrown out of action and the binder and elevating-chains simultaneously started.

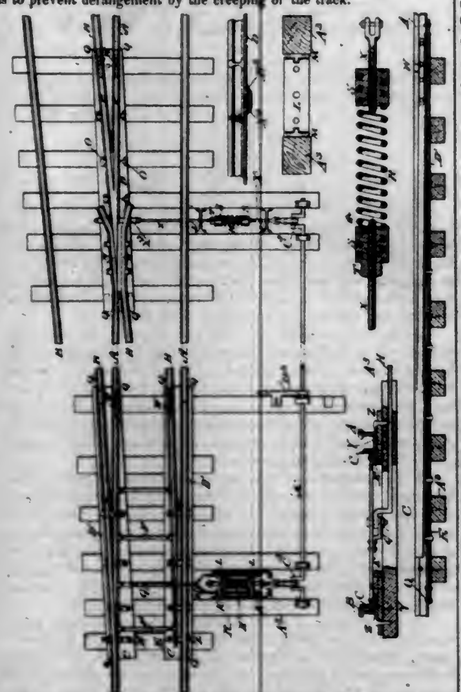
6. The combination of the main gear wheel of the binder, the rock-shaft upon which it turns loosely, the compressor fixed to said rock-shaft, the sprocket-wheels, also turning loosely upon the rock-shaft, the chain belts connecting said sprocket-wheels with other sprocket-wheels upon the upper driven shaft, the loose pinion and its sprocket-hub, and the chain belt connecting said sprocket-hub with a sprocket-wheel upon the upper shaft to drive the binder and sheaf-elevator simultaneously.

7. The combination, with a low-down grain-receptacle and automatic binding mechanism working in connection therewith, of the two elevating-chains, having fingers abreast of each other to carry up and eject the bound sheaf.

8. The combination of the platform-carrier, the grain-receptacle at the inner end thereof, the packers intermediate between the carrier and the grain-receptacle, the binding mechanism working in connection with said receptacle, the tripping-arm actuated by the accumulation of the gavel in the receptacle, the binder main gear-wheel, the loose pinion on the cutter crank-shaft, the loose chain-wheel, also on said shaft, connected by chain belt with the chain-wheel on the shaft which drives the platform-carrier, the sliding clutch-half between the loose pinion and the loose sprocket-wheel, actuated by the tripping-arm, the sheaf-elevator, and the chain belt connecting the chain-wheel on the driving-shaft of the latter with the chain-hub on the loose pinion.

324,773. AUTOMATIC RAILWAY-SWITCH. Samuel H. Jenkins, New York, N. Y. Filed Jan. 27, 1883. (No model.)

Brief.—A movable V-shaped frog-point and the switch-points are connected by spring-connections to a rocking shaft, so that the frog-point shall obey the movement of the switch-points. The latter and their adjacent fixed rails and their connections are so mounted upon sub-plates as to prevent derangement by the creeping of the track.



Claim.—1. In automatic safety railway-switches, the combination of longitudinal plates whereon are formed or secured bearings for movable needle-point rails, movable needle-point rails supported on said bearings substantially upon a level with fixed main-line and side-track rails secured to said plates firmly at each end thereof beyond the heels and points of said movable needle-point rails, the fixed main-line and side-track rails outside of said movable needle-point rails being spiked to the ties through the plate on the outside, and held in place by said bearings projecting over the feet of these fixed rails on the inside, substantially as shown and described.

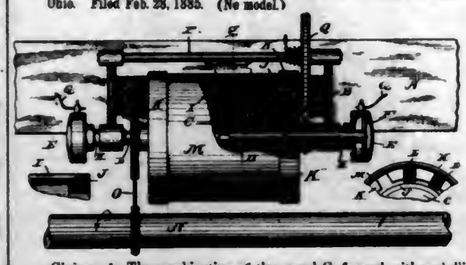
2. The herein-described combined safety switch and frog, consisting of the needle-pointed switch-rails mounted upon supports secured to or formed upon the longitudinal plates D', to which the rails A and B are secured, as set forth, the frog consisting of the V-shaped rail P, mounted upon the plate D, the said needle-pointed switch and the frog being provided with an operating-rod wherein is located the spring, as shown, said rods connecting with cranks upon the operating-shaft, the whole arranged to be operated automatically by the flanges of passing wheels or by means of the said shaft, as set forth.

3. In a device of the character herein specified, the bifurcated rod H, the forks thereof being screw-threaded for their entire length, as set forth, guides L, plates M, spring R, rod H', and the regulating or locking nuts K, the whole combined and arranged to operate substantially as shown and described.

4. In automatic safety railway-switches, the combination of longitudinal plates having bearings for movable needle-point rails supported thereon, fixed main-line and side-track rails secured to said plates beyond the heels of said movable rails, said fixed rails outside of said movable rails being secured to the ties on the outside, and held from turning by said bearings projecting over their feet on the inside, substantially as shown and described.

5. In automatic safety railway-switches, the combination of movable needle-point rails supported on bearings on longitudinal plates, to which fixed main and side track rails are secured beyond the heels of said movable rails, a movable V-shaped rail supported on a longitudinal plate secured to the fixed inside main and side track rails beyond the heel of the V-shaped rail and to the wings of the fixed inside main and side track rails near the other end of said plate, and connecting and operating rods and springs, all arranged, substantially as set forth, for automatic operation by flanges of passing car-wheels, substantially as shown and described.

324,774. ELECTRIC CAR-BRAKE. Charles E. Jones, Cincinnati, Ohio. Filed Feb. 28, 1885. (No model.)



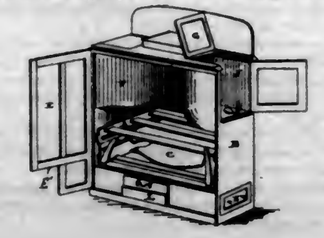
Claim.—1. The combination of the spool C, formed with metallic end flanges, pole-rings J, encircling the same, and the spool-jacket I, formed of non-magnetic metal, substantially as and for the purpose set forth.

2. The combination of the metallic spool C, provided with metallic end flanges and a central metallic flange, the pole-rings J, encircling the end flanges of the spool, and the spool-jackets I, of brass, secured to the pole-rings by being cast thereto and engaging separately the central flange of the spool, substantially as and for the purpose set forth.

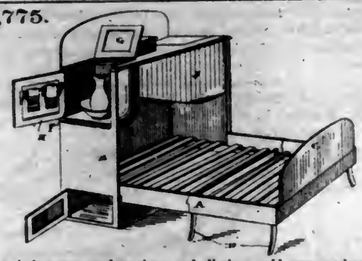
3. In an electric train-brake, the combination, substantially as set forth, of wires U and V, from the engine throughout the train, electric car-brakes connected thereto in multiple arc, a dynamo-machine or other generator of electricity at the front of the train, wire W, connecting one terminal of the dynamo or generator with wire V at the rear of the train, and a controlling-switch at the front of the train arranged, substantially as set forth, to connect at will with the other terminal of the generator with wire V or with wire U, and at the same time connect wire V with the first terminal of the generator.

324,775. COMBINED BEDSTEAD AND DRESSING-TABLE. John W. Jones, Toronto, Ontario, Canada. Filed May 2, 1884. (No model.) Patented in Canada Mar. 19, 1884. No. 18,909.

Claim.—1. The toilet table or case B, having formed therein below its top a chamber, as J, said chamber being open at the top and one end, as described, in combination with a door hinged to the side of said chamber and forming a splasher, and a door hinged to the top thereof,



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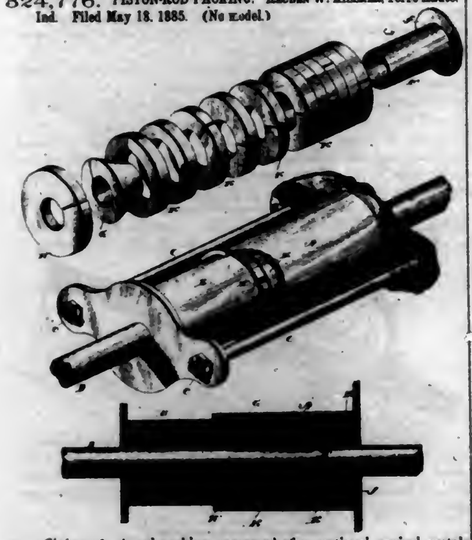


said doors being arranged to close and disclose said open end and top, substantially as and for the purpose specified.

2. The toilet-case B, having at each end a chamber formed entirely below the top, with a space between said chambers and below the bottom thereof, in combination with a hinged bedstead adapted to be folded within said case below the bottom of said chamber, and the top of said case forming a canopy over the bedstead, substantially as herein shown and described.

3. The combination, in a wardrobe-bedstead, with a hinged bed, A, and drawer L at the front below said bed, of the doors E, hinged to the front of the case B, and cut away at E', whereby when said doors are closed said cut-away portions are coincident with the drawer L, thus permitting the drawer to be opened when said doors are closed, or the doors to be opened when the drawers are closed, substantially as described.

324,776. PISTON-ROD PACKING. Reuben W. Killmer, Terre Haute, Ind. Filed May 18, 1885. (No model.)



Claim.—1. A rod-packing composed of a sectional conical metal ring that is adapted to fit within a stuffing-box and to embrace the rod to be packed, and compressible material which is placed above, below, and around the exterior of said ring, in combination with the stuffing-box, and with a gland for compressing said packing longitudinally within the same, substantially as and for the purpose specified.

2. In combination with the lower or inner portion of the compressible packing, an interior metal thimble, which operates to prevent contact at such point between said packing and the rod to be packed, substantially as and for the purpose shown.

3. The hereinbefore-described rod-packing, consisting of the elastic disks E and H, the metal thimble F, and the longitudinally-divided metal ring G, in combination with each other, with the stuffing-box A, the gland B, the rod D, and with means, substantially as shown, whereby said gland may be pressed into said stuffing-box, substantially as and for the purpose specified.

324,777. TREE-PROP. Isaac H. Kiser, Riverside, Cal., assignor of one-half to Russell Porter Waite, same place. Filed May 18, 1885. (No model.)

Claim.—1. A fastening or clamp for tree-props, consisting of a vertical portion, V-shaped at its lower end, bent so as to be driven into a support, and rectangular perforated wings bent to embrace the support, substantially as described.

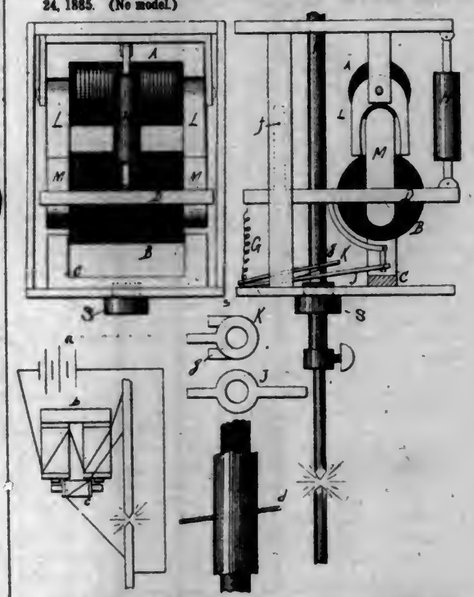
2. The combination of the main support C, provided with the bent

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fastening or clamp A, having perforated wings *a*, with the arm B, substantially as described, for the purpose set forth.

324,778. ARC LAMP. Osborn P. Loomis, Lynn, Mass. Filed Jan. 24, 1885. (No model.)



Claim.—1. In an electric-arc lamp, a double ring-clutch, which consists of the two annular disks J and K, through which passes the carbon-holder N, and which are adapted to be set at different angles by the movements of the armature B, the two disks being separated by a spring, one end of which is fastened to one disk, and the other end of which presses upon the other disk, substantially as specified.

2. In an electric-arc lamp, the combination of the following elements: the armature B, located above the fixed permanent magnet C, and supported on a lever, D, which is fulcrumed at *f*, counterbalanced by a spring, G, and connected up with the dash-pot H, and with the clutch by means of levers, the said armature B being in the shunt-circuit and located just below the main magnet A, substantially as described and illustrated.

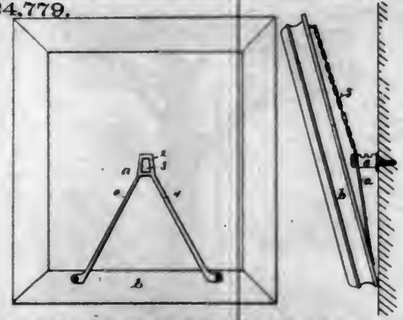
324,779. PICTURE-HANGER. Albert J. Lyons, Lynn, Mass. Filed Feb. 24, 1885. (No model.)

Claim.—1. A picture-hanger composed of an arm or bracket adapted to be rigidly attached at one end to the back of a picture-frame, near the edge thereof, and formed to extend partly across the back of the frame and provided with a socket having straight sides, and a stud adapted to be attached to a wall and formed to fit said socket, and thereby prevent the picture from tipping, as set forth.

2. A picture-hanger composed of an arm or bracket adapted to be rigidly attached to the back of a picture-frame, and provided with a socket, and a stud formed to fit said socket, and provided with a series of enlargements, whereby the socketed end of the arm may be held at different distances from the wall, as set forth.

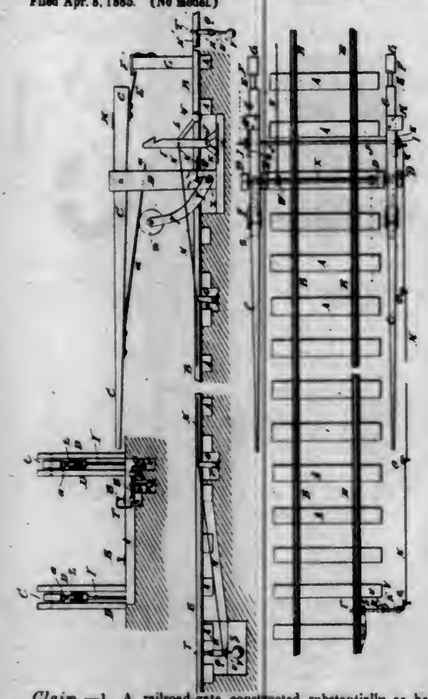
3. The bracket formed as described and having holes at one end to receive attaching-screws, and provided at its other end with a socket.

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3. the bracket being of such length that when attached at one end to one of the pieces of the frame its socketed end will extend partly across the back of the frame, as set forth.

324,780. RAILROAD-GATE. John J. Murray, Jr., Brooklyn, N. Y. Filed Apr. 8, 1885. (No model.)



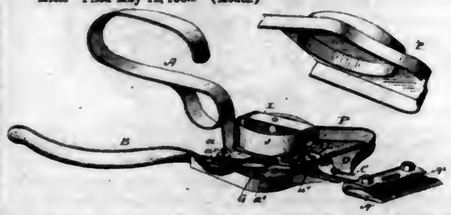
Claim.—1. A railroad-gate constructed substantially as herein shown and described, and consisting of the combination of the pivoted bar C, provided with a stop-spring, E, a catch-bar, H, and an inclined lifting-spring, *a*, a stop-bar and post, F G, for holding the gate in place when closed, a pivoted hook, I, provided with a weighted arm, L M, for holding the gate in place when open, a shaft, X, having arms W Y and friction-rollers Z, for opening the gate, and the wires N N', connecting the catch-hook and the armed opening-shaft with armed shafts operated by the wheels of a locomotive or car, whereby the gate will be worked by the said wheels, as set forth.

2. In a railroad-gate, the combination, with the pivoted gate-bar C, of the stop-spring E and the stop-plate and post F G, substantially as herein shown and described, whereby the said gate-bar will be stopped and held in a horizontal position, as set forth.

3. In a railroad-gate, the combination, with the pivoted gate-bar C, of the catch-bar H, the catch-hook I, having weighted arm L M, the wire N, and the rock-shaft R, having arms Q T and weighted arm U V, substantially as herein shown and described, whereby the gate-bar will be held in an erect position, and will be released by the wheels of an approaching locomotive or car, as set forth.

4. In a railroad-gate, the combination, with the pivoted gate-bar C, of the inclined spring *a*, the rock-shaft X, having arm W and arm Y, provided with a friction-roller, Z, the wire N', and the rock-shaft R', having arms Q' T' and weighted arm U' V', substantially as herein shown and described, whereby the said gate-bar will be raised into an upright position by the wheels of a retiring locomotive or car, as set forth.

324,781. HAIR-CLIPPING MACHINE. William W. Myers, Portland, Mich. Filed May 12, 1885. (Model.)



Claim.—1. In a clipping apparatus, the combination of the stationary handle having the fixed cutter at its forward end, the crank-shaft having the balance-wheel, the pivoted arm carrying the movable cutter at its forward end, the pitman, the pivoted operating-handle, and intervening mechanism arranged to rotate the crank-shaft through the movement of the operating-handle, substantially as set forth.

2. In a clipping apparatus, the combination of the stationary handle having the fixed cutter at its forward end, the pivoted arm carrying the movable cutter at its forward end, the crank-shaft provided with the balance-wheel having the toothed wheel secured concentrically upon its lower hub, the pinion loosely journaled on the crank-shaft and provided with the spring-detent, the gear-wheel having the pinion secured concentrically upon it, and the pivoted operating-handle having the pivoted rack bar, all constructed and arranged to operate substantially in the manner and for the purpose shown and set forth.

3. In a clipping apparatus, the combination of the stationary handle having the fixed cutter at its forward end, the pivoted arm carrying the movable cutter at its forward end, the crank-shaft provided with the balance-wheel having the toothed wheel secured concentrically upon its lower hub, the pinion loosely journaled on the crank-shaft and provided with the spring-detent, the gear-wheel having the pinion secured concentrically upon it, the pivoted operating-handle having the pivoted rack-bar, and the spring, substantially as described.

324,782. BRACKET FOR LADDERS. Joseph D. Norton and Leonard M. Norton, Loudville, Mass. Filed June 26, 1885. (No model.)



Claim.—A bracket for a ladder, composed of the body A, having a series of notches in its lower end, and which is strengthened by the rods or bars C D E, the said rods or bars being so shaped as to form the hooks at their upper inner end of the bracket and the stop at the outer corner, substantially as described.

324,783. ORE-CONCENTRATING TABLE. Leonard S. Osgood, Stockton, Utah. Filed June 12, 1885. (No model.)



Claim.—1. The combination, with the concentrating-table and the means, substantially as described, of imparting to it a reciprocating motion, of the hinged supporting-frame B, provided with a nut and screw for adjusting vertically its free end, the grooved bearing-rollers *d*, and the tracks *g*, substantially as set forth.

2. The combination, with the concentrating-table, the mechanism for reciprocating it, the tracks *g*, the rollers *d*, mounted on the frame B, the said frame B hinged at one end, as shown, the screw C, hinged at *b* under the free end of frame B, with its end engaging a socket, c, and the nut D, all arranged to operate substantially as set forth.

3. The combination of the table E, provided with tracks *g* on its under side, the shaft F, eccentric *i*, eccentric-rod *j*, coupled to table E, the grooved rollers *d*, mounted on the frame B, the tracks *g*, resting on said rollers, the frame B, hinged to the main frame at the end where the reciprocating mechanism of the bed is mounted, and the nut and screw for regulating the height of the free end of frame B, all substantially as herein set forth.

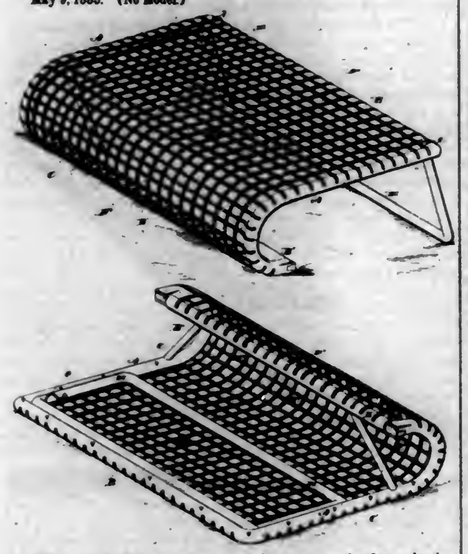
324,784. VALVE-GEAR. Delmar D. Pinkham, Longview, Tex. Filed June 15, 1885. (No model.)



Claim.—1. The combination, with a shaft, of cams of different projection, one being adjustable, and a yoke having at each end and on each side thereof adjustable lugs or bearings, substantially as and for the purpose specified.

2. The combination, with a shaft, of cams of different projection thereon, one being adjustable, a loose friction-collar of cylindrical shape on the shaft between the cams, a yoke surrounding said collar, and adjustable lugs or bearings on each side of each end of the said yoke, substantially as and for the purpose specified.

324,785. PILLOW. Albert L. Pinney, Washington, D. C. Filed May 9, 1885. (No model.)



Claim.—1. The pillow composed of a rectangular frame having one end curved under and its opposite end supported by or upon pivoted legs, and a covering-fabric of wire, rattan, bamboo, or other like material stretched over and secured to said frame, substantially as and for the purpose shown.

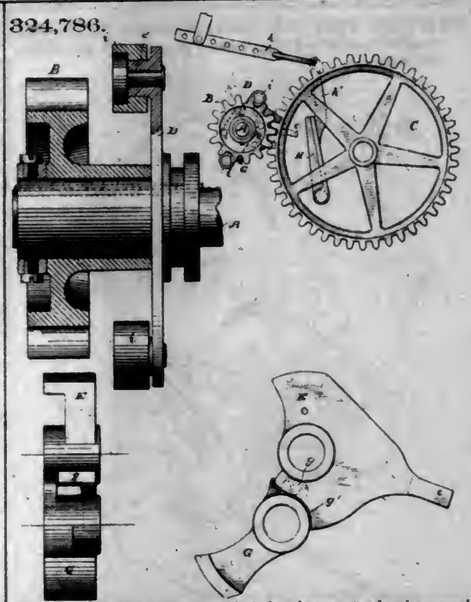
2. The hereinbefore-described pillow, composed of the parallel side bars having similar ends curved under, the cross-bars secured to and extending between the ends of the same, the leg-frame pivoted to said side bars, the braces extending between the front cross-bar and said side bars, and the covering-fabric stretched over said frame, all combined substantially as and for the purpose set forth.

324,786. CLUTCH. Henry E. Prudmore, Chicago, Ill., assignor to the McCormick Harvesting Machine Company, same place. Filed Apr. 11, 1885. (No model.)

Claim.—1. The combination, substantially as hereinbefore set forth, in a clutch, of a cross-head fixed to the driving-shaft, lugs at each end of said cross-head, a pinion mounted loosely upon said shaft, a dog-spring pressed into engagement with one of said lugs, and a reverse dog simultaneously engaging with the opposite on the same side with the other.

2. The combination, substantially as hereinbefore set forth, in a clutch, of a driven shaft, a cross-head fixed thereto, lugs at each end of said cross-head, a pinion mounted loosely upon said shaft, a driving-dog

324,786.



pivoted to said pinion upon the side facing the cross-head and arranged to be brought into engagement with one of the lugs to drive the pinion, a reverse or locking dog pivoted to said pinion on the same side with the other, gear-teeth from the hubs of both dogs intermeshing with each other, whereby the movement of the driving-dog actuates the locking-dog.

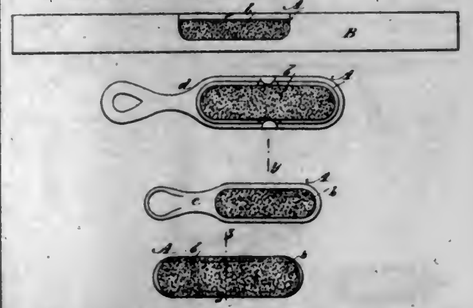
3. The combination, substantially as hereinbefore set forth, in a clutch, of a driving-shaft, a cross-head fixed thereto, lugs at each end of said cross-head, a driving-dog spring pressed into engagement with one or the other of said lugs, a lever-arm from said driving-dog, a trip-latch to engage with said arm and force the dog out of engagement, a locking-dog reversely placed and pivoted to the pinion to engage with the lug opposite to that engaged by the other, and intermeshing gear-teeth from the hubs of both dogs.

4. The combination, substantially as hereinbefore set forth, with the driving-dog and locking-dog, of the lever from the driving-dog formed with a heel-extension having a curved seat fitting closely over or against the hub of the locking-dog.

5. The combination, substantially as hereinbefore set forth, with a pinion and driving-dog, of a spring which forces the driving-dog into position to engage with the driving-lug, and also acts as a stop to restrain said dog from passing too far.

6. The combination, substantially as described, with a driving-dog and simultaneously-actuated locking-dog, of the anti-friction sleeves or rollers upon the driving-lugs.

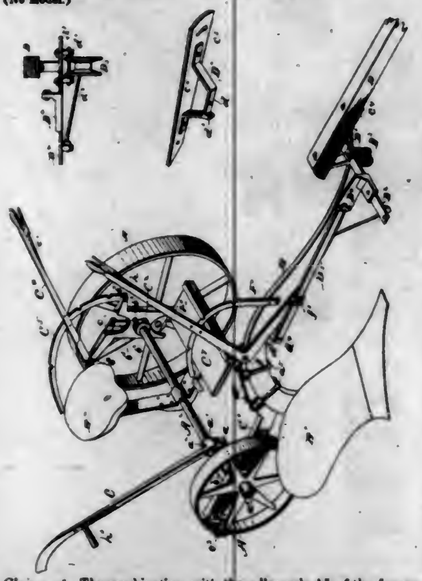
324,787. SLATE-PENCIL SHARPENER. John Putnam, Philadelphia, Pa. Filed Feb. 5, 1885. (No model.)



Claim.—1. As a new article of manufacture, a pressed-glass slate-pencil sharpener having one or more pressed abrading-surfaces, substantially as specified.

2. A pressed-glass slate-pencil sharpener having one or more pressed abrading-surfaces and provided with a handle, essentially as described.

324,788. SULKY-PLOW. Samuel Rockafellow, Muscatine, Iowa, assignor of one-half to William G. Rawn, Peru, Ill. Filed Mar. 17, 1885. (No model.)



Claim.—1. The combination, with the sulky-axle A^2, of the furrow-wheel arm C', secured rigidly to the plow-beam, and the axle-bearing *b*, formed on or attached to the arm, substantially as and for the purposes described.

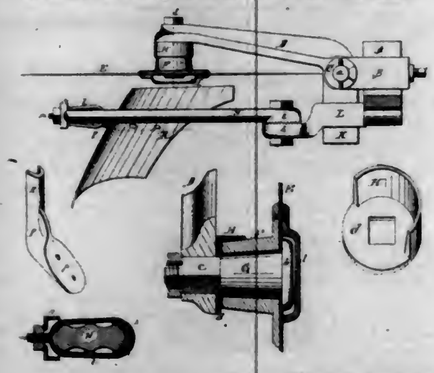
2. The combination, with the sulky-plow axle, of the adjustable collar *a'*, having the set-screw a^2, the flange-plate *a*, and the handle C, substantially as and for the purposes described.

3. The combination, with the plow-beam B, of the equalizing-bar D^2, hinged to the beam, the slotted plate c^4, and the tongue-iron D', bolted to the bar and to the tongue, substantially as and for the purposes described.

4. The combination, with a plow-beam, B, and the equalizing-bar D^2, hinged to the beam, of the plate D^4, having a series of holes, the bar D^3, the slide *f'*, and the crank-lever E d^3, substantially as and for the purposes described.

5. In a sulky-plow, the furrow-wheel arm C', rigidly attached to the plow-beam, and with the wheel-spindle a^3, and having the portion (^{a} extended backward beyond the spindle, in combination with the scraper c^3, attached to the extended arm, substantially as and for the purposes described.

324,789. PLOW. Henry M. Skinner, Rockford, assignor of one-half to Ira M. Alvord, Chicago, Ill. Filed Nov. 19, 1884. (No model.)



Claim.—1. In a combined rolling colter and jointer-plow, the jointer made adjustable relatively with the colter laterally, substantially as and for the purpose set forth.

2. In a combined rolling colter and jointer-plow, the jointer-plow beam having a pivot-connection with the yoke of the colter, whereby the angle or inclination of the jointer-plow may be varied, and means, substantially as shown, for securing said plow in adjusted position, as set forth.

3. In a combined rolling colter and jointer-plow, the jointer made adjustable laterally with relation to the colter, and also made vertically adjustable by means, substantially as shown, to vary the angle or inclination of the said jointer-plow, as set forth.

4. In a combined rolling colter and jointer-plow, the jointer-plow made adjustable in its connection with its beam-support to vary its angle relatively with the line of travel of the colter, substantially as and for the purpose set forth.

5. The combination, with a rolling colter capable of a lateral oscillatory movement, of a jointer-plow, said jointer-plow supported to conform to the oscillating and vertical movements of the colter, substantially as and for the purpose set forth.

6. In a combined rolling colter and jointer-plow, a two-part beam, said two-part beam having a rosette-ratchet connection, substantially as and for the purpose set forth.

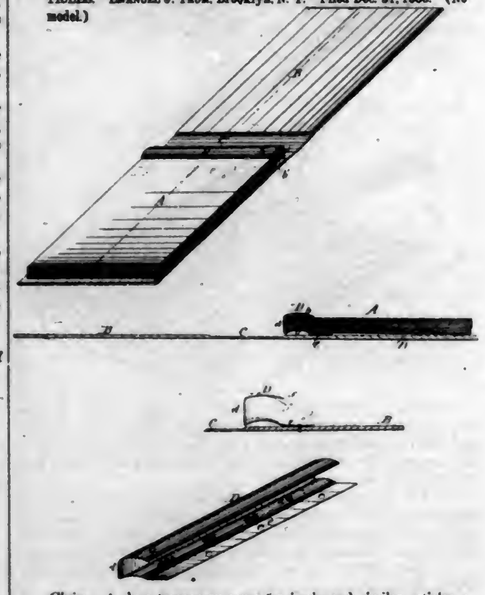
7. The combination, with the colter-yoke, of a plow-beam having a socket and set-screw connection with an arm on the colter-yoke, substantially as set forth.

324,790. PROCESS OF MANUFACTURING IRON OR STEEL. José Lletget y Sardá, Barcelona, Spain. Filed May 11, 1885. (No specimens.) Patented in England Jan. 13, 1885, No. 479

Claim.—1. The improved method or process of treating iron or steel by immersing it when heated in a bath of nitric acid and soda combined with water in about the proportions hereinbefore defined, and substantially in the manner hereinbefore set forth.

2. The improvement in the manufacture of iron and steel consisting in heating the same in masses to a red or white heat, immersing in a bath of nitric acid and soda mixed with water in about the proportions defined, and then subjecting said masses to the operations of reheating or remelting and rolling or the like, substantially as described.

324,791. TEMPORARY COVER FOR BOOKS AND SIMILAR ARTICLES. Emanuel J. Trum, Brooklyn, N. Y. Filed Dec. 31, 1883. (No model.)



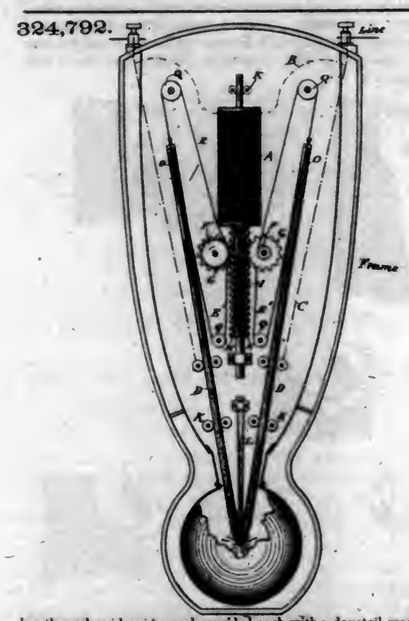
Claim.—1. In a temporary cover for books and similar articles, a clasp having its top and bottom parts formed into parallel curves extending the whole length of the clasp, substantially as specified.

2. A clasp for temporary covers having its top and bottom, between which the back of the book is held, formed into parallel curves extending the whole length of the clasp, and provided with a fastening-plate, *e*, projecting from the bottom *b'*, and so arranged that the curved bottom part, *b'*, is free of the cover to which the plate *e* is attached, substantially as specified.

324,792. ELECTRIC-ARC LAMP. Albert R. Worth, Brooklyn, N. Y. Filed May 18, 1885. (No model.)

Claim.—1. An arc lamp comprising the combination of guides consisting of rollers arranged, as shown, upon the three sides of a triangle formed by bending a wire into the shape of a triangle, electrodes passing through said guides and provided each with a dovetail groove at one end, with a metal rod soldered into said groove, with a tube through which passes said metal rod, and with a nut fitting upon said metal rod outside of said tube, and means for operating said electrodes in said guides in the manner substantially as described in the annexed specification and as shown in the drawings, and for the purposes indicated.

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2. In an electric-arc lamp, the combination of a solenoid in a shunt about the arc, a core to said solenoid provided with a rack upon each side of said core, pinions gearing into said racks, a drum upon each side of and integral with each of said pinions, cords wound upon said drums and passed over pulleys, electrodes supported by said cords, each provided with a dovetail groove at one end, with a metal rod soldered into said groove and with a nut fitting upon said metal rod outside of said tube, guides for said electrodes, consisting of rollers mounted upon a wire bent into the shape of a triangle, and a rod of refractory material between the electrodes at the locus of the arc, substantially as set forth.

3. In an electric-arc lamp, guides for the electrodes, consisting of rollers or pulleys arranged upon the three sides of a triangle formed by bending a wire into the shape of a triangle, the ends of the wire being adjustably connected to each other, as shown in the accompanying drawings and heretofore described.

4. In an electric-arc lamp, the combination of the carbon electrode provided with a dovetail groove at one end, a metal rod soldered into said groove, a tube through which passes the said metal rod, and a nut fitting upon said metal rod outside of said tube, substantially as and for the purpose set forth.

324,793. EXTENSION-LAMP. Herman F. Jaeger, Chicago, Ill. Filed Aug. 18, 1883. (No model.)

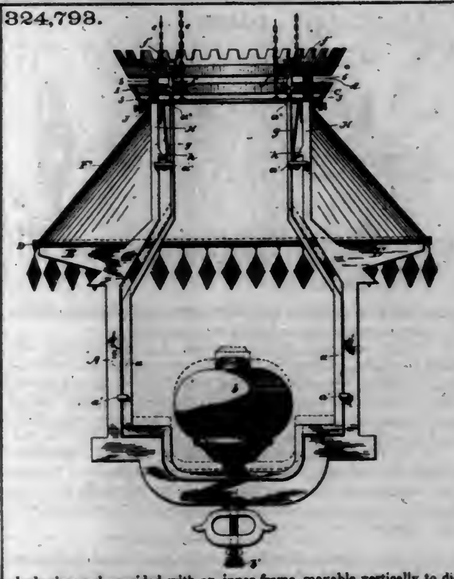
Claim.—1. In an extension hanging lamp, the combination, with a supporting-chain, of a counterbalancing-weight made in two parts detachably connected by spring-catches, a support for the lower part of said weight, and the harp composed of an outer and an inner frame, the latter movable vertically to disconnect the two parts of the weight to permit the lowering of the harp, substantially as set forth.

2. In an extension hanging lamp, the combination, with the supporting-chain, of a weight made in two parts detachably connected by spring-catches, a shade-ring to support one part of said weight, and the harp made in two parts, one within the other, the one part being movable vertically, as and for the purpose set forth.

3. In an extension hanging lamp, the combination, with the supporting-chain, of the two-part counterbalancing-weight, spring-catches to connect said two parts, a shade-ring to support one of said parts, the harp composed of an inner and outer frame, the former movable vertically within the latter and having beveled ends to engage the spring-catches, and the push-piece to operate said inner frame, substantially as described.

4. In an extension hanging lamp, the combination, with the supporting-chain, of the divided counterbalancing-weight, the spring-catches for detachably connecting the parts of said weight, a shade-ring to support the lower part of the weight, the harp detachably connected to said shade-ring and provided with an inner frame movable vertically to disconnect the parts of the weight, substantially as described.

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5. In an extension hanging lamp, the combination of the supporting-chain and counterbalancing-weight, and shade-ring having socketed downward projections, the harp having ends to enter said projections and provided with lugs, and spring-catches to co-operate with said lugs to connect and disconnect the shade-ring and harp, substantially as set forth.

6. In an extension hanging lamp, the combination, with a harp having lateral brackets, of a ring supported on said brackets to receive the lower end of the shade, and a shade-ring having sockets to receive the harp, and having a downwardly-projecting rim provided with set-screws, between which rim and the harp-sockets the upper end of the shade is secured by said screws, substantially as set forth.

7. In an extension hanging lamp, the combination, with the supporting-chain, the divided weight, and the shade-ring, of packing-rings interposed between the shade-ring and the divided weight, substantially as and for the purpose described.

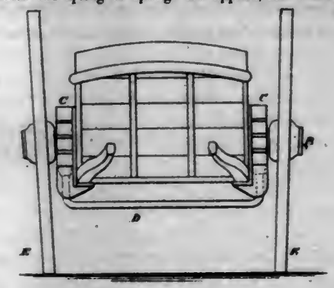
8. An extension lamp-fixture provided with supporting devices for the neck of the shade, and a ring which surrounds and protects the lower edge of the shade, but is not supported thereby.

REISSUES.

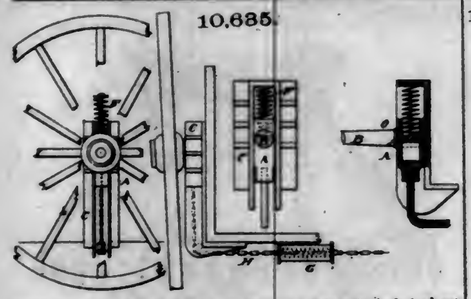
10,635. ROAD-VEHICLE. William J. Brewer, London, England. Filed July 7, 1885. Original No. 312,960, dated Feb. 24, 1885. Patented in England Apr. 12, 1883, No. 1,962.

Claim.—1. The combination, with the body of a road-vehicle, of flanged angle-braces closely embracing the lower angles of the body and forming vertical guides for slides from which the axle-spindles project and to which the spring or springs are applied, substantially as herein specified.

2. The combination, in a road-vehicle, of a body provided with flanged angle-braces closely embracing the lower angles of the body and forming vertical guides for slides from which the axle-spindles project and to which the spring or springs are applied, and a connection be-



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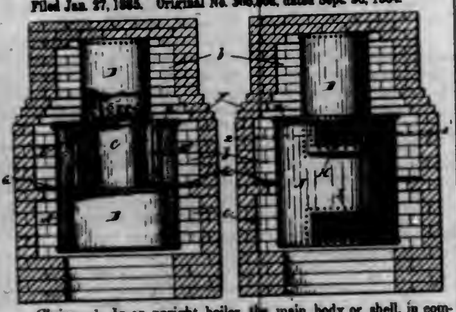


tween said slides extending horizontally across below the body and out of contact therewith, substantially as herein specified.

3. The combination, in a road-vehicle, of a body provided with flanged angle-braces closely embracing the lower angles of the body and forming vertical guides for slides from which the axle-spindles project, and a connection between said slides in the form of a chain working over rollers in said angle-braces and extending horizontally across below the body and out of contact therewith, substantially as herein specified.

4. In a road-vehicle, a vertical slide, A, having a stud-spindle, B, projecting therefrom, and constructed with a recess, O, in its upper part, connected by a duct with the surface of the said spindle for retaining a spiral spring above said slide and supplying the spindle with lubricant, substantially as herein specified.

10,636. TUBULAR BOILER. ALBERT D. DAVIS, Colorado Springs, Colo. Filed Jan. 27, 1885. Original No. 306,902, dated Sept. 30, 1884.

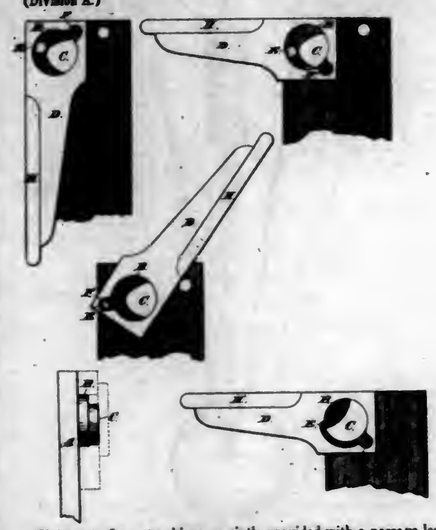


Claim.—1. In an upright boiler, the main body or shell, in combination with a fire-box of smaller diameter and inclosed within said shell, a steam-dome above the boiler, of smaller diameter than the fire-box, a submerged fuel-magazine of smaller diameter than the steam-dome and arranged directly above the fire-box, and flues extending upward from the fire-box through the boiler, and opening into a chamber around the steam-dome, outside the circumference of the latter, substantially as and for the purposes set forth.

2. In an upright boiler, the main body or shell, in combination with a submerged fire-box of smaller diameter than the shell, a steam-dome surmounting the boiler, of smaller diameter than the fire-box, an outer wall or casing surrounding the whole, with a space or chamber between the two, and submerged flues extending from the fire-box up through the boiler, and opening into the chamber at the base of the dome and outside of its circumference, substantially as and for the purposes set forth.

3. In an upright boiler, the boiler and steam-dome, in combination with the submerged fire-box, the submerged magazine located centrally above the fire-box and beneath the steam-dome, the submerged flues leading from the top of the fire-box through the top of the boiler at the base of the steam-dome, and the chambers *b b* and *c c*, surrounding the boiler and steam-dome, substantially as and for the purposes set forth.

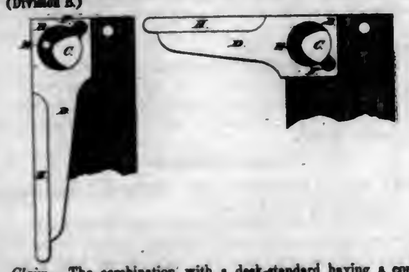
10,637. STOP-HINGE. JAMES M. DODGE, Chicago, Ill., assignor, by mesne assignments, to Alfred H. Andrews and Herbert L. Andrews, same place. Filed Jan. 2, 1880. Original No. 221,290, dated Nov. 4, 1879. (Division A.)



Claim.—1. In a stop-hinge, a pintle provided with a passage leading from the upper to the lower side thereof and a knuckle or socket piece, the two parts constructed to provide a constricted or cam opening between them, and the knuckle having an enlarged side pocket or recess, in combination with a loose stop-ball larger than the cam-opening, whereby the two parts of the hinge are stopped at the point desired by the ball caught in the cam-opening and released by raising the knuckle-piece to permit the ball to drop into the side pocket, in which it is carried round and dropped into the upper end of the pintle-passage by lowering the knuckle-piece, substantially as described.

2. The pintle B, having a transverse groove or passage, in combination with the movable knuckle or socket D, provided with a pocket, F, at the side of the socket, and the loose ball E, constructed and operating substantially as described.

10,638. STOP-HINGE. JAMES M. DODGE, Chicago, Ill., assignor, by mesne assignments, to Alfred H. Andrews and Herbert L. Andrews, same place. Filed Mar. 31, 1881. Original No. 221,290, dated Nov. 4, 1879. (Division B.)



Claim.—The combination, with a desk-standard having a corner and a lid-arm pivoted to the said standard and having a shoulder, of an unattached movable locking stop-piece automatically thrown into and out of action by the movements of the lid-arm.

PHOTO LITH. NORRIS PETERS WASH. D.C.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

DECISIONS OF THE U. S. COURTS.

U. S. Circuit Court—Southern District of New York.

MCFARLAND *et al. v.* SPENCER *et al.*

Decided February 24, 1885.

1. Letters Patent No. 76,491, for a metal tenon for repairing wooden blind-slats, are not anticipated by a patent granted to George R. Clark, March 5, 1867, for an improved metallic blind slat, clasp, and pivot. Proof that two hundred metal tenons were made in 1837 or 1838, which could only be used for purposes of repair by taking the frames apart, and that a similar tenon was used to repair an iron shutter in New York in 1849, and that similar tenons were used in constructing iron shutters in Germany in 1844 and 1846, and that for three hundred years shutters so made have been used in a church-tower in Germany, is wholly inadequate to defeat the patent.
2. Such testimony might be admitted to show the state of the art, or to narrow a broad claim, if the question were one of infringement; but it cannot avail the defendants, who deal in the identical contrivance covered by the patent.

Mr. Peter Van Antwerp for the complainants.

Mr. Edward S. Clinch and *Mr. E. T. Rice* for the defendants.

COXE, *J.:*

The complainants are the owners of Letters Patent No. 76,491, issued to William McFarland and John H. Campbell, April 7, 1868, for a "metal tenon for blind-slats."

The object of the invention is to provide tenons for blind-slats when the original tenons are broken off or injured so as to become inoperative. The following diagrams will serve to illustrate the invention:

Fig. 1.



Fig. 2.



Fig. 3.



Figure 1 represents the tenon applied and fitted to a blind-slat and working in the mortise of the frame in place of the one broken or removed; Fig. 2, the face view of the tenon with escutcheon-plate on its inner end; Fig. 3, the same reversed, showing the connection of the escutcheon-plate to the tenon by means of a beveled shoulder.

The inventor declares in the specification that—

> heretofore the breaking off or the decay of a tenon has caused the entire loss of the slat, there being no means or device known previous to my invention whereby the tenon could be restored or repaired without incurring too much expense. And, furthermore, the repair or restoration of a broken tenon is difficult without the removal of one of the side-bars of the frame.

The advantages of the invention are economy, simplicity, symmetry, and durability. It is much cheaper to use the metal tenon than to remove the slat. A person possessed of a pocket-knife and a very limited amount of mechanical skill can make the repair. Prior to the invention it was necessary to take down the blind, separate the frame, remove the broken slat, substitute the new slat, attach it to the hand-rod which operates the series of slats, and readjust the frame. All this required time and skill, was expensive and inconvenient, and when the work was done it was found almost impossible to make the new slat correspond in color with the old ones. The device is an exceedingly simple and unpretending one, so simple that to one who sees it now the wonder is that it did not occur to some one long before the date of the patent; but it never did. Criticism that an invention is so plain that it must be perceived by all comes with poor grace from those who did not themselves perceive it. The answer is confined to specific denials of the allegations of the complaint. No affirmative defence is pleaded. The defendants introduced in evidence a patent granted to George R. Clark, March 5, 1867, for an "improved metallic blind slat, clasp, and pivot." It consists of a metal cap, carrying a tenon, which fits on the end of the slat. The merits claimed for it are that it prevents longitudinal splitting, and furnishes a pivot of great durability for the slat to turn on. Should a tenon become broken, the frame must necessarily be dismembered, precisely as in the case of the wooden tenon, in order to repair it.

The Clark device is wholly dissimilar from that of the complainants. The defendants also, under objection, introduced testimony showing that in 1837 or 1838 two hundred tenons were made, to fill a special order, out of 16-gage strap-iron, the strap being bent so as to grasp the slat on both sides, and a pivot to swivel the slat being riveted to the bent end. These tenons could not be used for purposes of repair, except by taking the frame apart; it required mechanical skill to apply them, and they could be made only on special order, as it was necessary that they should exactly fit the slat.

The defendants also proved that between 1849 and 1851 the iron shutter of a building on Reade street, New York, was repaired with a tenon like the complainants'; also, that in 1844 and 1846, in Germany, similar tenons were used in the original construction of iron shutters, and that for three hundred years shutters so made have been used in the tower of the church

at Wittenberg, to the front door of which Martin Luther nailed his theses.

It will be seen that even had the defendants pleaded prior use, as required by Section 4,920 of the Revised Statutes, there is nothing in this testimony which anticipates the complainants' invention. There is no allegation that the inventor or other persons here had knowledge of the prior use in Germany; but in any view the evidence is wholly inadequate to defeat the patent.

As showing the state of the art, the testimony, though involved in obscurity and doubt, may be admissible, and, were the question one of infringement, such proof might require the narrow construction of a broad claim; but it is obvious that it cannot avail the defendants where they deal in the identical contrivance covered by the patent. No one, so far as the record shows, ever used, prior to the patent, a tenon like the complainants' on wooden blind-slats for the purposes of repair. This is what the invention covers.

There should be a decree for the complainants for injunction and an account, with costs.

U. S. Circuit Court—District of Connecticut.

BRUSH *et al.* v. THE NAUGATUCK RAILROAD COMPANY *et al.*

Decided July 10, 1885.

1. The plea of the Naugatuck Railroad Company, licensees under the Weston patent, which sets up privity of estate with their licensor, the United States Electric Lighting Company, the real defendants in the suit of Brush *v.* Condit, involving the Brush and Weston patents, and which sets up the judgment in said suit (that the Brush patent was anticipated by the Hager patent) as a bar to the present suit, is overruled, for the reason that the Brush and Weston patents are for different inventions, although the Weston lamp cannot be made without using the Brush clamp, and the judgment in the former suit (which threw the claimed combination open to the public) was not an adjudication of the validity or scope of the Weston patent, so as to make a case of privity of estate in behalf of licensees under it.
2. The plea of William D. Bishop, which sets up non-infringement, is overruled under *Sharpe* v. *Reissner*, (9 Fed. Rep., 445.)

Mr. W. Caustin Browne and *Mr. E. N. Dickerson* for the plaintiffs.

Mr. Edmund Wetmore for the defendants.

SHIPMAN *J.:*

In the suit of the present plaintiffs against Condit *et al.* before the Circuit Court for the Southern District of New York for the infringement of the Brush patent by the manufacture of electric lamps made under subsequent patents, known as the "Weston patent," it was decided that the combination which was the subject of the elder patent had been anticipated in the Hager lamp, and the bill was dismissed.

The Brush patent and the Weston patents are for different inventions.

The plea of the Naugatuck Railroad Company in this case avers that the electric lamps used by said defendants were manufactured by the United States Electric Lighting Company, and are identical in construction with the electric lamps made and sold by Condit, and which were the subject of the suit in the Southern District of New York, and that the defense of that suit was solely conducted and controlled by said Electric Company; that when that said suit was commenced Edward Weston had applications pending for letters patent on electric lamps, which applications were for the benefit of said Lighting Company, and on which application letters patent were granted and became the property of that company pending the Condit suit; that pending that suit the Naugatuck Railroad Company took a license from said company with knowledge of the complainants' claim; that the use of the lamps so licensed under the Weston patents was an infringement of the Brush patent; that said defendant's lamps are made under the Weston patents, and that the invention patented by one of them cannot be made without using the invention described and claimed in the Brush patent. Upon these facts the defendant says that the Electric Lighting Company was the real defendant in the case of *Brush* v. *Condit;* that the Naugatuck Railroad Company is privy in estate with its licensor, and pleads the judgment for the defendant in the former suit as a bar to the present suit. The plea has been set down for hearing.

It is admitted that the Electric Lighting Company, the owner of the Weston patents, was the real defendant in the Condit case, and that the Naugatuck Railroad Company, becoming the licensee of said Lighting Company pending said suit and with knowledge of the complainant's claim, is privy in estate with the Lighting Company, and that a judgment in the former suit which determined the title to the estate of the said company or some right or liability attaching to said title would be conclusive as an estoppel.

The plaintiff says that the Brush invention and the Weston invention as claimed in the respective patents, not being alike, an adjudication that the invention of the elder patent has been anticipated by a third person is a judgment which did not determine either the title of the Lighting Company to the junior patents or any liability attaching to such title.

The defendant says that so far as the application of the doctrine of *res adjudicata* is concerned there is no difference between an adjudication affecting a right to use the property to which it relates and the title to that property, and that the grant of a patent confers the exclusive right of property subject to prior grants, and the question whether such prior grants limit the enjoyment of the property is a question which directly affects it so that an adjudication in regard to it affects any one who is privy in ownership, and that Brush's contention in the Condit case was that he had "a prior valid patent, the existence of which would prevent Weston from using his subsequent grant except under Brush's license," and thus the litigation vitally affected the extent and manner in which Weston's property was to be enjoyed, and therefore related to the property as much as a question which related to the ownership. In this case neither the extent of the grant to Weston nor any liability attaching to his title was in issue. The title to the inventions which were the subject of his patents or their scope was not in dispute. The contest was not between the patents of the two inventions, except in popular phrase, but was whether anybody had a right to make and use the Brush combination of clamp, core, and coil—a right which the plaintiff insisted was theirs exclusively, and the defendant contended was open to the public.

A contest between two patentees as to priority of invention, and a judgment that the junior patentee was or was not the first inventor of the thing patented to each, would be an adjudication affecting the title of the junior patentee; but an adjudication that the senior patentee was not the first inventor of the thing claimed in his patent, which was not the thing claimed by the junior patentee, does not enlarge nor affect the estate of the latter.

But it is urged, and it is the strength of the defendants' argument, that Weston cannot make his lamp without using the Brush clamp; and then that the adjudication in the Condit case, which threw the claimed combination open to the public, affected the extent of Weston's enjoyment of his property, and therefore related to the property as much as if it affected his title.

It is true that the adjudication will, if hereafter sustained, affect his enjoyment of his franchise in the sense that it will relieve him from the alleged liability or obligation to pay royalty to the plaintiffs; but the defect in the defendant's argument seems to me to consist in insisting that the relations to each other of grants of exclusive rights in different inventions by different letters patent are analogous in all respects to the relations to each other of grants of rights in a piece of land by different deeds.

The inventor's estate in letters patent is his exclusive right to practice his own invention for the time limited by the statute. The subsequent inventor who has taken a patent for a different invention is no more subject to the grant to the senior patentee than he would have been if he had not taken a patent. There cannot properly be said to be a burden or easement upon the junior patentee's estate, although there is a prohibition against the use by the public of the senior patentee's exclusive right. There is no implied condition that Weston's grant shall be subject to prior valid grants, for the grant does not touch upon the territory which had been granted to anybody else. In other words, the fact that after the Condit suit was commenced the Electric Lighting Company obtained patents for the devices which characterized the Weston lamps does not give to the adjudication that the Brush patent was invalid by reason of prior anticipation by a third person any different position or force from that which he would have had if the Weston patent had never been issued, because these patents do not relate to the invention which was included in the Brush patent. Weston's freedom from the claim of Brush for royalty "was," to use the language of the plaintiff's counsel, "not obtained in his capacity as patentee, not by way of enlargement of the rights as patentee, not as an adjudication in favor of his estate as patentee, so as to make a case of 'privity of estate' in behalf of his licensees."

The cases of *Ingersoll* v. *Joewell* (16 Blatchf. C. C. R., 378) and *Hunt* v. *Pennington* (20 Fed. Rep., 195) do not sustain the plea. In the first case Ingersoll, as owner of the Heath patent, had sued Turner, a licensee under Topham's patent for the same invention, for infringement of the Heath patent. Topham assumed the defense of the suit. The question of privity of invention as between Heath and Topham was the one at issue, and was decided in Topham's favor. This title to his invention, as between Ingersoll and himself, was the subject which was adjudicated. Ingersoll then sued Jewett, another licensee of Topham, for making the same invention, and then it was held that if Jewett had become a licensee after judgment in the Turner suit he would have been privy in estate with Topham, and the former judgment would have been conclusive as an estoppel.

In the case of *Hunt* v. *Pennington*, Hunt sued Pennington upon the Clark patent, having bought it from King, the unsuccessful defendant in the previous suit of *Pennington* v. *King* upon the Pennington patent, in which case King's defense was that the Pennington invention had been previously patented to Clark. The court sustained the validity of the Pennington patent as against the Clark patent, and thus the validity or the scope of the letters patent was directly in issue. Hunt, having bought the Clark patent from King after the adjudication, with knowledge of the controversy, was held to be privy in estate with his assignor and to be bound by the judgment.

The difference between these two cases and the one at issue is that in each of the cited cases the validity or the scope of the patent which belonged to the defendant in the original suit was directly in issue and was adjudicated upon.

The plea of William D. Bishop, which sets up non-infringement, is within the adverse criticism of the court upon a similar plea in *Sharpe* v. *Reissner*, (9 Fed. Rep., 445.)

Both pleas are overruled.

U. S. Circuit Court—Southern District of New York.

PEARD *v.* JOHNSON.

Decided April 3, 1885.

1. Assuming that claim 2 of Letters Patent No. 86,440, for an improvement in school-desks, is not functional and void, it must, in view of the state of the art, be limited to the apparatus described or its equivalent, and so construed the defendant does not infringe.
2. The claims of Letters Patent No. 115,232, for an improvement in school-desks, are for aggregations, merely, and the patent is therefore invalid.

Mr. Frederic H. Betts for the complainant.

Mr. Francis Forbes for the defendant.

COXE, *J.:*

This action is founded upon two patents, Nos. 86,440 and 115,232, granted to the complainant, for improvements in school-desks, February 2, 1869, and May 23, 1871, respectively. One of the objects of the inventor in the first of these patents—No. 86,440—was to furnish a school-desk so constructed that the desk-board can be folded up out of the way or turned up to serve as an easel. When used for the latter purpose, it is held in position by adjustable supports having hooks formed upon their upper and lower ends, to hook over the edge of the desk-board and the stationary part of the desk-top, respectively. The second claim of this patent is alone in controversy, and is as follows:

2. Supporting the desk-board E in an elevated position by means of the supports H, or equivalent supports, substantially as herein shown and described, and for the purposes set forth.

The defenses interposed are, first, that the claim is functional and void; second, that mechanical skill alone is involved, and not invention; third, that as to one of the alleged infringing desks the claim, now fourteen years old, is stale; fourth, non-infringement.

Assuming that the claim is not functional, and for that reason void, it must, in view of the state of the

art, be limited to the apparatus described or its equivalent. It cannot be held to cover, broadly, every device for holding up a desk-top. So construed, the conclusion is reached that the defendant does not infringe.

The desk-board in this patent is attached to arms pivoted to the upper part of the standards, and so constructed that it may be used in three positions—horizontally as a desk, perpendicularly, or nearly so, as an easel, and it may be turned over to form the back for a seat. It swings, in all, about two hundred and seventy degrees. When used as an easel, it is entirely above the standards and overhangs the seat in front, making it necessary for that seat to be vacated. The easel is too far distant from the scholar sitting in the seat behind to be used as a reading or book board, and can be used by him for drawing purposes only when standing. The supports H are movable and can be taken off at pleasure. They may be made of two parts sliding upon each other, so that their length may be increased or diminished to hold the desk-board at any desired angle. When in use, the desk-board is held rigidly in position. To move it, the hooks must be taken off; to change its angle as an easel they must be adjusted by hand.

The defendant in the two exhibits said to infringe has a desk-board pivoted at a point nearly midway between its front and rear edges. The rear edge turns upward, presenting the lower side to the scholar in the seat behind. The board swings between the standards, and is brought so near that it can be used as a reading-board by a scholar while in a sitting position. A stop-hinge is used having lugs on the hinge, which are turned against corresponding shoulders in the frame by pressing the rear edge of the desk-board upward and forward, so that when the board assumes the proper position it is held there and prevented from going farther in that direction. The hinge permits the board to assume two stationary positions only—a horizontal one as a desk, and an upright one as a reading-board. From one of these positions to the other—a distance of about one hundred and forty-five degrees—the board can be turned at pleasure. It is thought that the stop-hinge is not an equivalent for the hooked rod in complainant's patent. To be an equivalent it must perform the same function in substantially the same manner. The two are different in construction, operation, and principle. (*Rowell* v. *Lindsay*, to be reported, 113 U. S.; *Eames* v. *Godfrey*, 1 Wall, 78; *Werner* v. *King*, 96 U. S., 218, 230; Walker on Patents, sections 353, 361.)

In the second patent, No. 115,232, the object of the patentee was to improve the construction of school desks and seats, making them more simple, convenient, and comfortable. The desk and seat boards, supplied with a hinge having a concealed stop, fold up, filling the space between the supports. Ample unobstructed room is allowed for the scholars to pass between the desks, and the concealed stop renders it entirely safe for them to manipulate the desk-board. When the desk-board is turned up, the under side alone is visible to the scholar. A reading-board, flanged and shouldered for the purpose of holding books, is attached to the under side of the desk-board, and is held in position at the proper angle by means of wedge-shaped blocks. The scholar is thus enabled to read while sitting erect in his seat. The claims are as follows:

1. The flanged reading or book board F G, attached to the under part of the pivoted desk-board B, substantially as herein shown and described, and for the purposes set forth.

2. A desk, B, pivoted brackets C C, having checks c^2, and the circular end a' of the frame having recess with shoulders a^2 a^3 thereon, all combined with reading-board F G, and constructed and arranged as and for the purpose specified.

The defenses are lack of novelty and invention and non-infringement. The conclusion that these claims are for an aggregation, merely, cannot be avoided. Both are for combinations. The second claim contains an additional element, and is for a larger combination than the first. The Supreme Court in *Pickering* v. *McCullough* (104 U. S., 310) describe, at page 318, with remarkable perspicuity, the essential requisites to a valid combination. The court say:

> In a patentable combination of old elements, all the constituents must so enter into it as that each qualifies every other. To draw an illustration from another branch of the law, they must be joint tenants of the domain of the invention, seized each of every part, *per my et per tout*, and not mere tenants in common, with separate interests and estates. It must form either a new machine of a distinct character and function, or produce a result due to the joint and co-operating action of all the elements, and which is not the mere adding together of separate contributions. Otherwise it is only a mechanical juxtaposition and not a vital union.

Tested by this rule I am unable to understand how these claims can be upheld. If to the under side of the desk-board shown in defendant's patent, No. 109,518, the well-known church book-rest is attached, the product will be the precise invention described in the first claim. What is the one practical result produced by the action of all the elementary parts? In what manner do the desk-board and the reading-board co-operate to produce a common result? This question was fairly and frankly answered by the complainant's expert. He says: "They do co-operate in so far as they form a desk-board in one position and a reading-board in another position." A writing-desk is turned up for reading and a reading-desk is turned down for writing. Is not this the precise fault found to be so fatal in *Reckendorfer* v. *Faber*? (92 U S., 347.) The desk-board performs its functions independently of the reading-board. So do the hinges. There is no joint action. Take away the reading-board and the desk-board operates in precisely the same way. Each does when placed in juxtaposition precisely what it did alone. The reading-board does not influence or modify the action of the desk-board or of the hinges. Its action combined with them is in no respect different from its action when disconnected from them. It was a reading-board before; it is a reading-board still. No new feature is added to it by placing it in the position indicated. It is thought that the patent is invalid within the doctrines of the cases cited. (See, also, *Hailes* v. *Van Wormer*, 20 Wall., 352; *Packing Company Cases*, 105 U. S., 566; Walker on Patents, section 32; Simonds on Patents, 47.)

The bill is dismissed.

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OF THE

United States Patent Office.

[*BY AUTHORITY OF CONGRESS.*]

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The Official Gazette.

The OFFICIAL GAZETTE is published every Tuesday, simultaneously with the weekly issue of patents. From January 1, 1872, (the commencement of its publication,) to June 30, 1883, it was published and bound in semi-annual volumes; since July 1, 1883, in quarterly volumes. All subscriptions must commence with the beginning of a volume; none taken for less than three months. Terms: To all subscribers within the United States and Canada, $5 per annum; to foreign subscribers, $7; single copies, 10 cents; bound semi-annual volumes, (prior to June 30, 1883,) full sheep, $4 per volume; bound quarterly volumes, (subsequent to July 1, 1883,) full sheep, $2.75 per volume. No club rates. *Payment in advance.* All orders should be addressed to "The Commissioner of Patents, Washington, D. C."

Indexes to Patents on Electricity.

Appendix No. 2 to the index to patents relating to electricity, covering the period of time from July 1, 1882, to June 30, 1883, has been issued, and is now for sale. These indexes, arranged alphabetically, numerically, and by classes, are completed to June 30, 1883, and comprise the following volumes:

Vol. 1. Index to patents relating to electricity granted by the United States prior to June 30, 1881, with an appendix, July 1, 1881, to June 30, 1882. One volume, 250 pages. In paper covers, $3; bound, $5.

Vol. 2. Appendix No. 2, July 1, 1882, to June 30, 1883. One volume, 50 pages. In paper covers, $1.50.

Vol. 3. Appendix No. 3, July 1, 1883, to June 30, 1884. One volume, 60 pages. In paper covers, $1.50.

Order No. 275.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., August 14, 1885.

In compliance with the recommendation of the Examiner of Division V, a new sub-class is hereby directed to be formed in Class 84, "Music," to be entitled *Piano-Cases*.

M. V. MONTGOMERY,
Commissioner.

Issue of August 25, 1885.

Patents	435	No. 324,794 to No. 325,228, inclusive.
Designs	6	No. 16,210 to No. 16,215, inclusive.
Trade-Marks	10	No. 12,528 to No. 12,537, inclusive.
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TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks and Labels.	States.	Patents and Designs.	Trade-Marks and Labels.
Alabama	2	....	Nebraska	1	....
Arizona Territory	....	....	Nevada	....	....
Arkansas	3	....	New Hampshire	6	....
California	10	....	New Jersey	24	....
Colorado	5	....	New Mexico Territ'y	1	....
Connecticut	14	....	New York	66	1
Dakota Territory	2	....	North Carolina	1	....
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Idaho Territory	....	....	South Carolina	....	....
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Indiana	19	....	Texas	4	....
Iowa	15	....	Utah Territory	....	....
Kansas	4	1	Vermont	1	....
Kentucky	3	....	Virginia	4	....
Louisiana	1	1	Washington Territ'y	....	....
Maine	1	....	West Virginia	1	....
Maryland	10	1	Wisconsin	3	....
Massachusetts	33	3	Wyoming Territory	....	....
Michigan	18	....	United States Army	....	....
Minnesota	7	....	United States Navy	....	....
Mississippi	2	....			
Missouri	17	1	Total to citizens of the United States	414	10
Montana Territory	1	....			

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Labels.	Countries.	Patents and Designs.	Trade-Marks and Labels.
Australia	....	....	France	3	....
Austria-Hungary	1	....	Germany	4	....
Barbadoes	....	....	Holland	....	....
Belgium	1	....	Italy	....	....
Bermuda	....	....	Mexico	....	....
Brazil	1	....	Netherlands	....	....
Canada	4	1	Russia	....	....
Cape of Good Hope	....	....	Scotland	....	....
Columbia, U. S. of	....	....	Sweden	1	....
Cuba	....	....	Switzerland	1	....
Denmark	....	....			
Egypt	....	....	Total to citizens of foreign countries	27	2
England	11	1			

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DESIGNS.

16,210.—ORNAMENTATION OF SINKS.—*Isaac Jay Baxter*, Peekskill, N. Y. Application filed July 8, 1885. Term of patent 7 years.

16,211.—EXHIBITION-CASE.—*Frank M. Garland*, Providence, R. I. Application filed April 23, 1885. Term of patent 14 years.

16,212.—CHENILLE.—*Emil Held*, New York, N. Y., assignor to himself and *Rudolph Ippich*, same place. Application filed June 19, 1885. Term of patent 7 years.

16,213.—CANDY-TRAY.—*William Loft*, Jersey City, N. J. Application filed April 27, 1885. Term of patent 7 years.

16,214.—RUG.—*Adolph Petzold*, Philadelphia, Pa. Application filed July 13, 1885. Term of patent 3½ years.

16,215.—WINDOW-GUARD.—*John Pirkl*, Brooklyn, N. Y. Application filed June 26, 1885. Term of patent 7 years.

TRADE-MARKS.

[Certificates of registration of Trade-Marks numbered 8,191 and upward are registered under the act of March 3, 1881.]

12,528.—INDIA PALE ALE, ALE, PORTER, AND BROWN-STOUT.—*The Bergner & Engel Brewing Company*, Philadelphia, Pa. Application filed June 10, 1885.

"A representation of the lotus flower and one leaf, and the word 'ΛΩΤΟΣ' (Lotus) in Greek letters underneath."

12,529.—SPIRAL BUSTLES.—*The Bradley, Voorhees & Day Manufacturing Company, (Limited,)* New York, N. Y. Application filed July 30, 1885.

"The representation of a woman wearing a spiral bustle and holding in her hands another spiral bustle."

12,530.—BUTTER AND CHEESE.—*Cross, Widgery & Co.*, Bristol, England. Application filed June 10, 1885.

"An ellipse within which is placed the word 'UNRIVALLED,' and within this again an eight-pointed star. Above the ellipse is the word 'OUR' and below it the words 'GILT EDGE,' the lettering being in every case arranged to follow the curve of the ellipse."

12,531.—MEDICINE FOR HORSES.—*The Dalmo Company*, Cleveland, Ohio. Application filed July 23, 1885.

"The word 'DALMO.'"

12,532.—LAUNDRY AND TOILET SOAPS.—*John Henry Keller*, New Orleans, La. Application filed July 21, 1885.

"The picture of a circular well-curb, with the bucket just coming into view."

12,533.—CANDY.—*Lindsey & Lefevre*, Baltimore, Md. Application filed July 24, 1885.

"The representation of a monument mounted on a pedestal, and surrounded by a railing, with a pedestrian and equestrian in the foreground, and the words 'MONUMENTAL' and 'BRAND' on either side of said representation."

12,534.—FOOD PRESERVATIVE.—*John Patten Ober*, Boston, Mass. Application filed July 6, 1885.

"The alphabetical symbols 'L P & P.'"

12,535.—BAKING-POWDER.—*A. Richards & Co.*, Fort Scott, Kans. Application filed April 13, 1885.

"The representation of a silver United States coin."

12,536.—LEATHER DRESSING.—*Swan & Howland*, Boston, Mass., and New York, N. Y. Application filed July 27, 1885.

"The arbitrary word 'PRINCESS.'"

12,537.—NEEDLES, SHARPS AND BETWEENS.—*Alfred Albert Wright*, St. Louis, Mo. Application filed June 10, 1885.

"The letters and words 'J. A. COATES & SONS' and the picture of a locomotive."

LABELS.

4,563.—Title: "LIEBIG'S CONDENSED MINERAL WATERS."—*John Clarke*, Peterborough, Ontario, Canada. Application filed July 3, 1885.

4,564.—Title: "LIQUID PURIFIER & PRESERVER."—*John P. Ober*, Boston, Mass. Application filed July 6, 1885.

PATENTS

GRANTED AUG. 25, 1885.

324,794. TWO-WHEELED VEHICLE. ARTHUR A. ABBOTT, Chicago, Ill. Filed Aug. 14, 1884. (No model.)



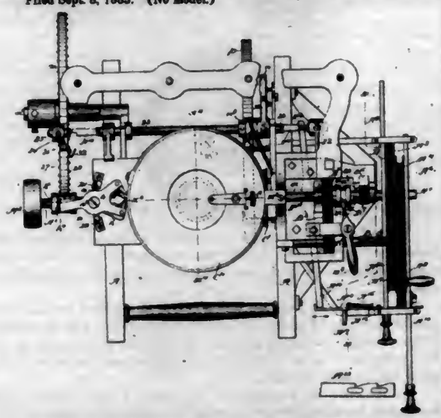
Claim.—1. In a two-wheeled vehicle, the combination, with the shafts united by a cross-bar and pivoted to the body of the vehicle, of a single spring-connection with the body of the vehicle, one end of said spring being secured to the cross-bar at or near its center, and the other end to the body, substantially as shown and described.

2. In a two-wheeled vehicle, the combination of the body A, pivoted shafts B, cross-bar C, and spring D, connecting said cross-bar with the body A of the vehicle, substantially as shown and described.

3. In a two-wheeled vehicle, the combination of the body A, shafts B, cross-bar C, spring D, connecting said cross-bar with the said body, and stops E, substantially as shown and described.

4. In a two-wheeled vehicle, the combination of the body A, pivoted shafts B, cross-bar C, spring D, stops E, and small springs F, substantially as shown and described.

324,795. KNITTING-MACHINE. WALTER AIKEN, Franklin, N. H. Filed Sept. 8, 1883. (No model.)



Claim.—1. The horizontal needle-bed, two series of needles placed therein, the cam-plate provided with two independent grooves, one to receive the butts of the needles which are to remain motionless when the cam-plate is being reciprocated, while the other groove receives the butts of the series of needles which are to be moved to knit when the cam-plate is being reciprocated, and two knitting-cams, one for each groove, and means to rotate and to reciprocate the said cam-plate at intervals, according to the work to be done, combined with means to withdraw one of the said cams when the cam-plate is to be reciprocated to operate substantially as described.

2. The cam-plate and the radially-grooved shouldered needle-bed and shouldered needles placed in the grooves in the bed, combined with the independent needle-shifters, one for each needle, fitted into grooves in the needle-bed at right angles to the needle-groove, and grooved to receive and to support the rear ends only of the said needles, and with means to raise and lower the said shifters and needles singly, substantially as described.

3. The radially-grooved needle-bed, a series of needles placed in the said grooves, the needle-shifters fitted to slide vertically and independently in vertical grooves at the outer ends of the needle-grooves and at right angles thereto, and needles embraced by the said shifters only at or near their outer ends, combined with a cam-plate provided with grooves for the reception of the butts of the needles, and means to both rotate and reciprocate the said cam-plate, and with means to reciprocate the said needle-shifters to withdraw the butts of the needles which are embraced by the said shifters from their actuating cam-groove, and to replace them therein at the proper times, substantially as described.

4. The needle-bed grooved radially for the reception of the needles and provided with a shoulder, 14, and the cam-plate having a groove for the reception of the butts of the needles, combined with a series of needles provided with shoulders 62, and with a series of independent vertically-movable needle-shifters, one for each needle, the butt of which is to be withdrawn from and raised into the said groove, and with means for automatically operating the said shifters to automatically withdraw the butts of the needles from the cam-groove in the cam-plate and place the needles in position with relation to the shoulder 14 to lock the same in place, substantially as described.

5. The grooved needle-bed, the needles placed directly in the said grooves, and the independent needle-shifters, one for each needle to be shifted, the said shifters being located in grooves in the needle-bed at the rear ends of the needle-receiving grooves, combined with the segmental slides to engage and operate the shifters, substantially as described.

6. The grooved cam-plate, the needle-shifters grooved for the reception of the needles and provided each with a heel or projection, the needle-bed and needles, and the toothed segmental slides provided each with a cam-groove to receive the heels or projections of the needle-shifters, combined with means to engage and operate the said segmental slides in opposite directions to lower and raise the needles for narrowing or widening the fabric, substantially as described.

7. The grooved cam-plate, the needle-shifters grooved for the reception of the needles and provided each with a heel or projection, the needle-bed and needles, the toothed segmental slides provided each with a cam-groove to receive the heels or projections of the needle-shifters, combined with means to engage and operate the said segmental slides in opposite directions to lower and raise the needles for narrowing or widening the fabric, and with a pattern-surface and means actuated thereby to move the said segmental slides, substantially as described.

8. The needle-bed, the series of needles c^2, the cam-plate C', the sinker-actuating cam-ring D', and suitable means to reciprocate the said plate and cam-ring, combined with a sinker-carrying bed, and a series of sinkers provided with hooks or projections 62, and with the needle-shifters, and means to actuate them at the proper times, substantially as described.

9. The grooved cam-plate C', its knitting-cams, means to both rotate and reciprocate the said cam-plate, the needle-bed provided with grooves in which the needles rest and slide, and with other grooves intersecting the needle-grooves for the reception of the needle-shifters, and series of needles and needle-shifters provided with grooves to receive and guide the rear ends of the said needles to raise and lower their butts into and from their actuating-groove in the cam-plate, and provided with heels or projections to be engaged by the segmental cam-slides, combined with the segmental cam-slides, and with a pattern-surface and means actuated thereby to move the said segmental slides in

the proper direction to automatically operate the needle-shifters and needles for narrowing and widening the fabric, substantially as described.

10. The pattern-surface *m*, provided with two rows of pins at one side and two rows of pins at its other side, and the two levers h^4 h^5, provided with wedge-blocks h^7, combined with the pawl-carriers A A', their attached pawls, the toothed cam segments or slides, and the guide *g* for the said slides, the cam being and operating substantially as described.

11. The auxiliary pattern-plate *n*, means to rotate it, the pattern-surface *p*, provided with pins to indicate the times at which the machine should stop the production of circular web, and means intermediate between the said auxiliary pattern and pattern-surface *p* to actuate the latter, combined with the needle-bed, needles, cam-plate, and shaft *a*, and gearing to actuate the cam-plate, and with the shipper-slide and means, intermediate between it and the belt, which moves the shaft *a*, substantially as described.

12. In combination, the cam-ring D', the sinker-carrying bed, the sinkers, the needle-bed, the needles, the cam-plate, the shaft *a*, means to reciprocate it, the gear C, fast on the said shaft to move the cam-plate, the gear D, loose on the said shaft to drive the cam-ring, and a projection carried by the shaft *a* and adapted to enter a notch or slot in the hub of the gear D to permit lost motion between the said gear and shaft as the direction of reciprocation of the cam-plate is changed, substantially as described.

13. The needle-bed, its needles, the cam-plate, the shaft *a*, the attached bevel-gear C, toothed hub *a'*, splined thereon, and the pinions B^4 B^7, provided with clutching-teeth and loose on the said shaft, combined with the toothed wheel B^3, its crank, the link, and rack-bar, and with means to rotate the gear B^3, the shaft *a* having a rotary or reciprocating motion, according to which of the pinions B^4 or B^7 is engaged by the clutch *a'*, substantially as described.

14. The latched needles provided with shoulders and tail-pieces extended backward from their butts, and the needle-bed provided with the shoulder 14, and cam-plate to reciprocate the said needles, combined with the independent needle-shifters to receive and guide the tails of the needles and permit them to slide therein when the butts of the needles are in the groove of the cam-plate, and which hold the tails of the said needles when the shoulders of the butts engage the shoulder of the needle-bed, and with means for actuating the needle-shifters, substantially as described.

15. The needle-bed having independent needle and needle-shifter grooves, the former made deeper from their inner edges outward to form a shoulder, 14, the cam-plate provided with a groove, *c*, a series of hooked needles, c^2, each having a shank, butt, and tail, and provided with a shoulder, 62, at the junction of the butt and tail, and a series of shifters adapted to hold the tails of the needles and provided with projections, combined with means to move the said shifters to raise and lower the outer ends of the said needles in their grooves in the needle-bed, substantially as described.

324,796. KNITTING-MACHINE. Walter Aiken, Franklin Falls, N. H. Filed Dec. 26, 1883. (No model.)

Claim.—1. The plate C', means to move it, the needle-bed and needles therein, and the knitting-cam composed of three parts and carried by the said plate, combined with the cam-adjusting block 21, the segmental rack, and the lever 30 and its pawl, and with means to operate the said lever, substantially as described.

2. The cam-plate, means to rotate it, the needle-bed, needles therein, the knitting-cam, the cam-adjusting block provided with teeth, the lever 25, toothed at one end to engage the toothed cam-adjusting block and provided with a segmental rack at its other end, the stitch-regulating lever, and its pawl to engage the segmental rack to move the lever step by step in the same direction, combined with the finger 36, the lever and its projection to operate the finger in one direction, and with the pattern-wheel to actuate the said lever intermittingly, substantially as described.

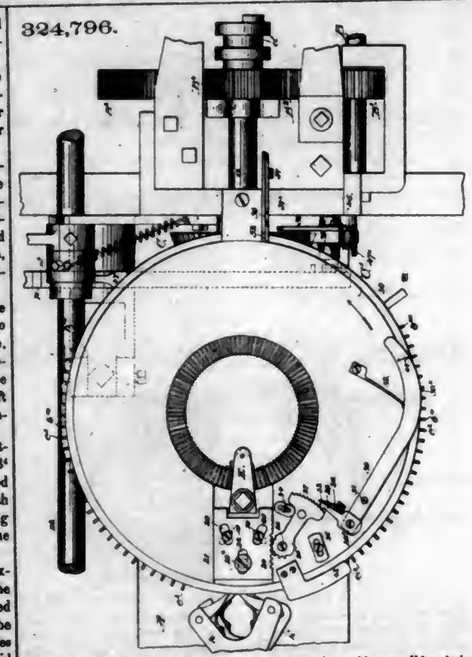
3. The plate C', the knitting-cam composed of the throwing-out cam 12 and two slides, 13 14, their attached headed screws 19, the toothed cam-adjusting block 21, provided with diagonal slots to receive the said screws, the toothed lever having a segmental toothed end, and the stitch-regulating lever and pawl carried by it, combined with a finger to strike or move the said stitch-regulating lever, and with means to rotate the said plate, substantially as described.

4. The cam-plate, the stitch-regulating lever thereon, and means to rotate the said cam-plate, the finger, the lever provided with the projection 38 to lift the said finger, and the presser 43 to depress said finger, combined with the pattern-wheel, to operate substantially as described.

5. The cam-plate, means to move it, the needle-bed, the series of needles used in narrowing and widening, and the series of needles b^{10} each side of the said needles, combined with means, substantially as described, to automatically lower the needles b^{10} and withdraw their butts from the groove in the said cam-plate preparatory to narrowing the web for the production of heels and toes, substantially as set forth.

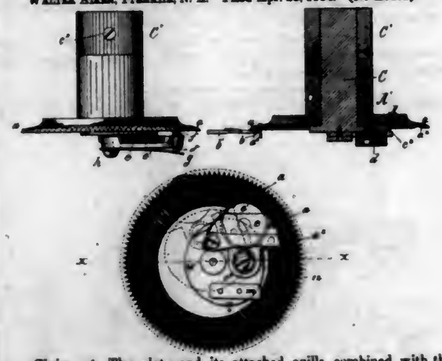
6. The cam-plate, means to move it, the needle-bed, the series of needles c^2, c^3, and b^{10}, the needle-shifters *e*, segmental cam-slides to move the said shifters, and the auxiliary cam-slides, combined with the needle-

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shifter e^{10} to hold the tails of the needles b^{10}, the said cam-slides being adapted to simultaneously operate all the shifters e^{10} and the needles held by them preparatory to narrowing, substantially as set forth.

324,797. TRANSFERRING DEVICE FOR KNITTING-MACHINES. Walter Aiken, Franklin, N. H. Filed Apr. 22, 1884. (No model.)



Claim.—1. The plate and its attached quills, combined with the knocking-off device and with the head and shaft to rotate the same to remove or transfer the loops from the ends of the quill, substantially as described.

2. The plate A, provided with the series of quills *a* and the shaft, and the knocking-off device pivoted thereon provided with the friction device or detent and with a projection to hold the knocking-off device in its extended position with its acting surface beyond the points of the quills, substantially as described.

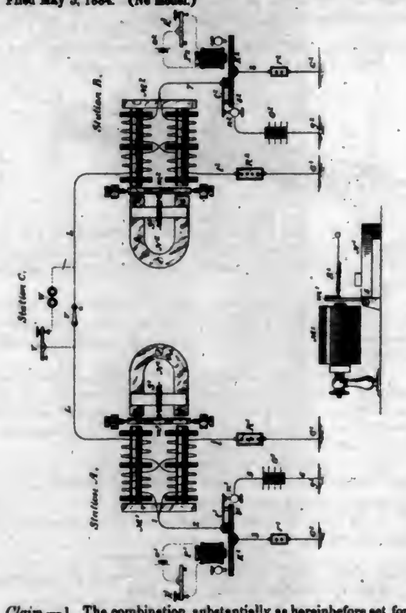
3. The plate A, provided with the series of quills, and the shaft having the knocking-off device pivoted thereon and provided with the wheel and detent and with a projection to hold the knocking-off device in its extended position, substantially as described, to transfer the loops from the quills upon the needles, as set forth.

324,798. PENCIL-SHARPENER. John W. Alexander, New York, N. Y. Filed May 7, 1885. (No model.)



Claim.—In a pencil-sharpening tool, the removable knife C, having the definite set cutter-edge shown, and furnished with finger-ring or handle *c*, in combination with the body A, having projecting lips *e e*, provided with slots E E, the screw *b*, and thumb-ring B, made with collar and nut, all substantially as herein set forth and described.

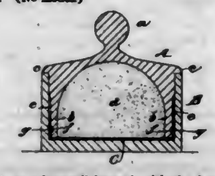
324,799. TELEGRAPHY. William E. Atherm, New York, N. Y. Filed May 5, 1884. (No model.)



Claim.—1. The combination, substantially as hereinbefore set forth, with a telegraphic main line, of two receiving-instruments, two transmitting-instruments, and two assisting-batteries, one of each of which instruments and batteries is located at each end of said main line, means, substantially such as described, for causing each of said receiving-instruments to respond only to currents from the battery at the remote terminal of the line, and a receiving-instrument located at an intermediate point in said line and responding only to currents due to the combined action of said batteries.

2. The combination, substantially as hereinbefore set forth, with a main line, of two assisting-batteries, two transmitting-keys for respectively connecting said batteries with the respective terminals of said main line, two telegraphic receiving-instruments respectively located at the opposite terminals of said main line and responding only to the movements of the key at the remote terminal of the line, a receiving-instrument and transmitting-key included in said main line at a point between said batteries, which receiving-instrument responds when both of the first-named keys are closed.

324,800. POWDER-PUFF. James C. Austin, Brooklyn, N. Y. Filed May 24, 1884. (No model.)



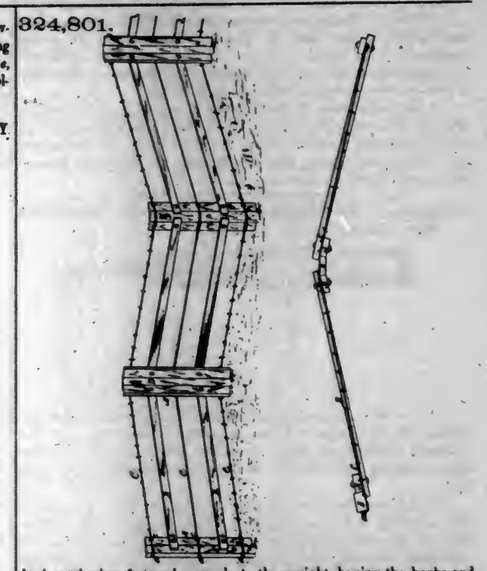
Claim.—1. A powder-puff formed with the handle and powder-receptacle in one piece, the receptacle being closed by a soft covering through which the powder is adapted to pass, substantially as described.

2. The powder-puff herein shown and described, consisting of the puff proper, A, and the box, bottom, or receptacle B for receiving the puff A, the latter being formed with the handle *a*, powder-receptacle *b* in one piece, closed by the covering C, substantially as set forth.

324,801. PORTABLE FENCE. George T. Bale, Tama City, Iowa. Filed Jan. 20, 1885. (No model.)

Claim.—1. In a portable fence, a section or panel consisting of two terminal uprights, one of them provided with lateral hooks, one or more horizontal bars pivotally connected with said uprights, and one or more

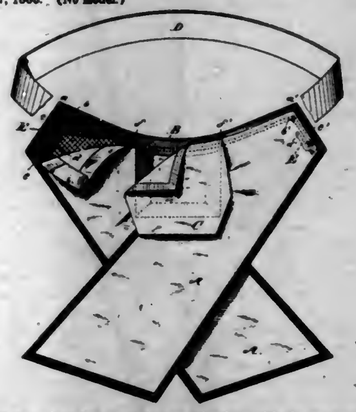
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horizontal wires fastened securely to the upright having the hooks and loosely to the other, and having loops at the loose end adapted to engage with the hooks on the adjoining panel, substantially as set forth.

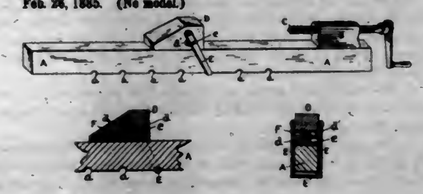
2. In a fence, the combination of stakes D and sections or panels consisting of uprights A A, one of them provided with hooks *a a*, horizontal bars B B, horizontal wires C C, one end extending beyond the uprights and having a loop adapted to engage with the hook on the upright of the adjoining panel, substantially as and for the purpose set forth.

324,802. SCARF. Frank Baldwin, New York, N. Y. Filed Jan. 27, 1885. (No model.)



Claim.—In a flat scarf, the combination, with the cross-aprons, the center-piece, and the shield, of the metal wire-support and former E, secured to the scarf near its upper edge between the fabric forming the front and that forming the back faces of the scarf, and extending along the line of said upper edge beyond the side edges of the shield on each side thereof, as and for the purpose specified.

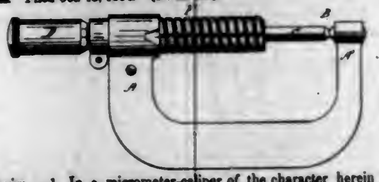
324,803. CLAMP. Frederic J. Bancroft, Pawtucket, R. I. Filed Feb. 26, 1885. (No model.)



Claim.—1. The improved clamp herein described, consisting of the grooved bar A, head-block B, clamp-screw C, tail-block D, pivoted clamp-iron E, and spring F, located within and protected by the tail-block, and bearing upon the same and upon the clamp-iron, to hold them in position upon the bar, substantially as set forth.

2. The combination of the tail-block D, having a spring-cavity, *d*, and transverse slot or hole *d'*, the pivoted clamp-iron E, provided with a pin or cross-bar, *e*, and the spring F, located within and protected by the tail-block, and bearing upon the same and the clamp-iron, substantially as and for the purposes specified.

324,804. MICROMETER-CALIPERS. Merrick M. Barnes, Boston, Mass. Filed Oct. 13, 1884. (No model.)

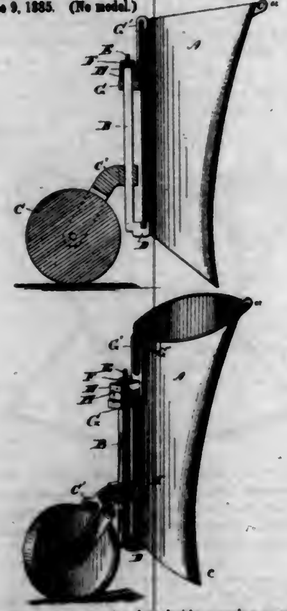


Claim.—1. In a micrometer-caliper of the character herein described, the combination, with the calipering device and its anvil, of a graduated shifting-screw adapted to alter at pleasure the field of action of the calipering-screw relatively to the opposed calipering-anvil, as set forth.

2. A micrometer-caliper having fixed arms, one carrying a micrometer calipering device, and the other a calipering-anvil, (the distance between the arms being greater than the calipering movement of the micrometer calipering device,) and provided with a graduated shifting-screw, whereby the position of the calipering device may be shifted relatively to that of its opposed calipering-anvil, all substantially as herein set forth.

3. In a micrometer-caliper, the combination of a frame or yoke having arms A A', a calipering-screw, C, a graduated shifting-screw, F, and an anvil, B, all substantially as herein set forth.

324,805. SEED-DRILL GAGE. Spencer F. Barber, Rutherford, Pa. Filed June 9, 1885. (No model.)



Claim.—1. As a means for detachably securing a gage-wheel to a drill-tooth, a frame carrying the gage-wheel and provided with a clamp for engaging the drill-tooth, said clamp being applicable to ordinary drill-teeth having no special provision for the attachment of a gage-wheel, substantially as described.

2. The combination of the rod, the adjustable gage-wheel mounted thereon, and the clamp for attaching said rod to an ordinary drill-tooth, substantially as described.

3. The combination, with the rod having the hooks for attaching it to the drill-tooth, of the gage wheel or shoe mounted on said rod and adapted to be adjusted thereon, substantially as described.

4. The combination, with the rod having the hook, of the adjustable hook mounted thereon and the gage wheel or shoe, substantially as described.

5. The combination of the square rod having the hook at one end, the adjustable hook mounted thereon, and the adjustable gage wheel or shoe, also mounted on the rod, substantially as described.

6. The combination of the rod having the hook at one end, the adjustable bracket having the broad hook or hooks, and the adjustable gage wheel or shoe, substantially as described.

324,806. ROLL-GUARD FOR ROUGHING-MACHINES. Edward A. Blake, Chicago, Ill. Filed Mar. 7, 1885. (No model.)



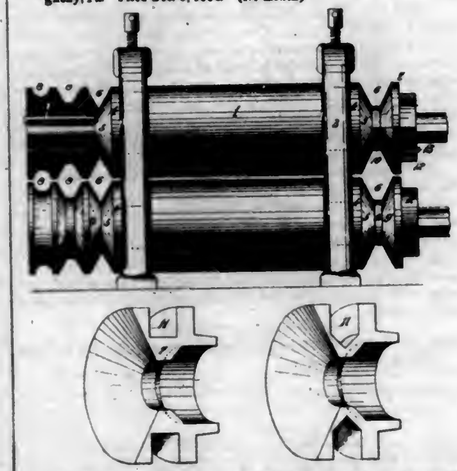
Claim.—1. In a roughing-machine, the combination, with the bed having a longitudinal motion and the feed-rollers placed transversely over said bed, of the guard C, protecting said rollers from dirt and particles of metal.

2. In a roughing-machine, a guard, C, adapted to partly surround the feed-rollers, and having its inner side contiguous to the path of the chisel vertical and extending downward to the same horizontal plane as under surface of said rollers.

3. In a roughing-machine, a guard, C, adapted to protect the feed-rollers, as set forth, having arms *b b* extending from one end thereof, and having an extension, *c*, extending from the opposite end, which is provided with the eye *d*, in combination with the said feed-rollers, their bearings, and the screws D and E.

4. The combination, in a roughing-machine, with the feed-rollers, their bearings, and screws D and E, projecting laterally therefrom, of the guard C, having arms *b b* and extension *c*, having an eye, *d*, and the dog G, fulcrumed to said extension and having a recess in its under edge, substantially as set forth.

324,807. ROLL FOR ROLLING-MILLS. Daniel W. Bradford, Allegheny, Pa. Filed Dec. 6, 1884. (No model.)



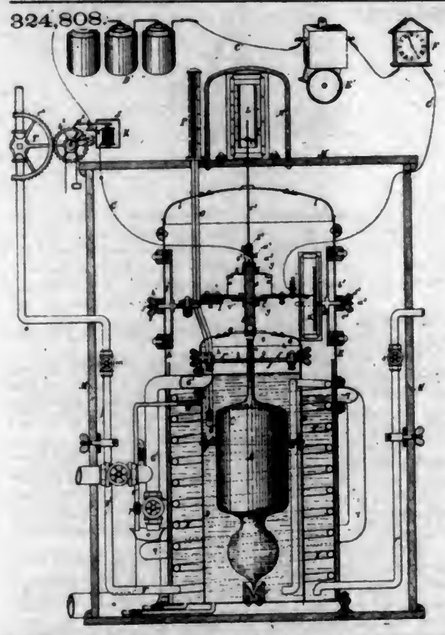
Claim.—1. A roll having one or both journals projecting beyond the housings, in combination with one or more collars secured to said journals adjacent to the housings, the outer faces of which are constructed to form one wall of an edging-groove, and one or more removable rings or collars having their inner ends constructed to form the opposite wall and bottom of said groove, substantially as set forth.

2. A roll having one or both journals projecting beyond the housings, in combination with one or more sectional and removable rings having edging-grooves therein and adapted to fit on the projecting journals, substantially as set forth.

324,808. AUTOMATIC SPECIFIC-GRAVITY APPARATUS. Gabriel A. Boehek, Boston, assignor, by mesne assignments, to himself and Frederick N. Wales, Newton, Mass. Filed Oct. 17, 1884. (No model.)

Claim.—1. The combination of the adjustable arm I, in two sections or parts electrically insulated from each other, and its fixed scale K, with the hydrometer and either or both the disks B C, adapted to the latter, so as to be adjustable relatively to or longitudinally of its stem, substantially as set forth.

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2. The combination of the adjustable arm in two sections electrically insulated from each other, with the electric wires extending upward from such arm, the fixed scale of such arm, and with the hydrometer and the two disks adapted to the latter, so as to be adjustable relatively to or longitudinally of its stem, substantially as set forth.

3. The combination of the screw-threaded tube and its tubular insulator encompassing the stem of the hydrometer with either or both the disks screwed upon such screw-threaded tube, and with the fixed scale and its adjustable arm made in two sections electrically insulated from each other and arranged with such disks, substantially as set forth.

4. The combination of the screw-threaded tube and its tubular insulator applied to the stem of the hydrometer with such hydrometer and with the fixed scale and its adjustable arm, the electric wires projecting upward from the said arm, and with the two disks adapted to screw upon such threaded tube, all being substantially as set forth.

5. The combination of the scale fixed to the top of the case with the hydrometer having to its stem a rod electrically insulated from its circuit-wire coupling and extending from the hydrometer upward to such scale and adjustable relatively to the stem lengthwise thereof.

6. The combination of the scale fixed to the top of the case with a rod electrically insulated from its circuit-wire coupling and extending upward from the hydrometer, and provided with an indicator adjustable on such rod lengthwise thereof and arranged against the scale, all being substantially as represented.

7. The combination of an electric circuit with the hydrometer, the screw-threaded tube, its electrical insulator and adjustable disks, and with the fixed scale and the adjustable arm and its electric wires, such arm being in two sections electrically insulated from each other and adapted to the outer cistern, so as to be adjustable vertically relatively thereto, all being substantially as set forth.

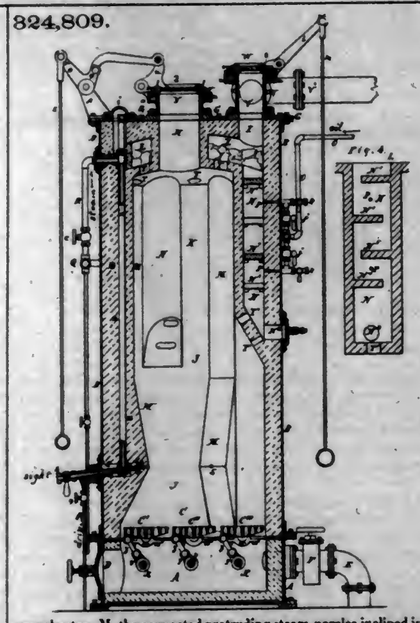
8. The combination of the thermometer extending into the inner cistern and upward through the outer one and above the surrounding case, as described, with the two cisterns, the hydrometer arranged in the inner one, the circulating-coil disposed in the outer one, the adjustable arm and its fixed scale, and an electric circuit and electrodes applied to operate with such hydrometer, substantially as represented.

9. The hydrometer-guide *f*, consisting of the two arms *f'* and *f''*, pivoted to brackets *h*, fixed to the cistern D, and provided with semicircular notches *i*, arranged so that when the arms are together or lapped on one another such notches shall form a circular passage to guide the stem.

324,809. APPARATUS FOR GENERATING ILLUMINATING-GAS. Reinhold Boecklin and John D. Averell, Brooklyn, N. Y. Filed Oct. 29, 1884. (No model.)

Claim.—1. In a gas-generator, the coal-chamber J, having grate G, and the chamber L, in combination with the vertical projecting steam-superheaters M, the connected protruding steam-nozzles inclined inwardly and upwardly, and the drip-pipes *f*, connected with their outer ends, substantially as and for the purpose described.

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2. In combination with the water-gas generator having steam-nozzles S, the vertical projecting oil-gas-generating chambers N, secured to the side walls of the furnace and having oil-supply nozzles P P, substantially as and for the purpose described.

3. In combination with the generating-cupola having coal-inlet H and gas-outlet I, the top mixing and fixing chamber, L, having perforations T, leading into the water-gas chamber, and the connecting oil-gas generators N, substantially as and for the purpose herein set forth.

4. The generating-cupola having the vertical projecting tile M, provided with passages extending from the top of the cupola to the tuyere-passages, in combination with the inclosed steam-pipes *a*, having a plug extending through the top plate of the cupola and the protecting-caps *i*, for the purpose described.

5. The combination, with the water-gas generator, the steam-nozzles S, the top mixing-chamber, L, having passages T, of the vertical inward-protruding oil-gas-generating chamber or chambers N, located above the grate and having oil-nipples P, substantially as and for the purpose herein stated.

6. The cupola gas-generator having coal-chamber J, fixing-chamber K, coal-inlet H, and gas-outlet I, in combination with the steam-superheaters M and their nozzles S, having drip-pipes *f*, the mixing-chamber L, and the oil-gas-generating chambers N, having the oil-nozzles P, for the purpose described.

7. The combination of the protruding steam-superheater M, the branch pipe R, having valve *c*, the vertical steam-pipe *a*, with the inwardly and upwardly inclined and protruding nozzle S, having drip-pipe *f*, and the sight-cock *h*, substantially as and for the purpose herein described and shown.

8. The cupola gas-generator having coal-chamber J, mixing-chamber L, having passages T, and gas-outlet I, in combination with the oil-gas-generating chamber N, provided with shelves N', forming a zigzag passage, and oil-supply nozzles P, substantially as and for the purpose described.

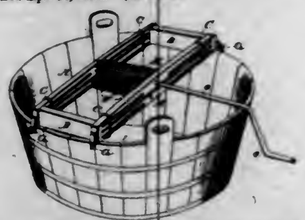
324,810. SHOE. Söhne C. K. Böhe, South Natick, Mass. Filed June 8, 1885. (No model.)



Claim.—1. A high-cut shoe composed of a bottom or sole and an upper attached thereto, said upper comprising in one piece a vamp and quarter seamed at the heel and V-shaped pieces 8 set into slitted openings at the ankle portions, in the manner substantially as described.

2. A high-cut shoe composed of a bottom or sole and a crimped upper attached thereto, said upper comprising in one piece a vamp and quarter seamed at the heel, and V-shaped pieces 8 set into the slitted openings at the ankle portion, and the strap 10, all substantially as described.

324,811. WASHING-MACHINE. Michael Carroll, Fredericksburg, Iowa. Filed Apr. 18, 1884. (No model.)

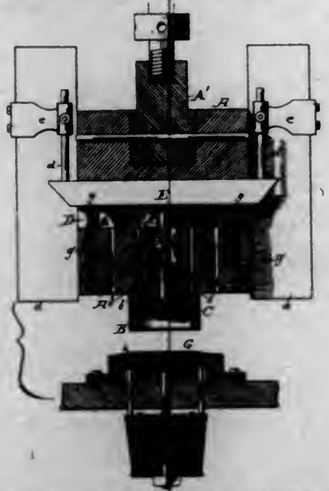


Claim.—1. In a washing-machine, the combination of side bars slotted longitudinally, forming upper and lower elastic sections, end bars connecting said side bars, bed-rollers journaled in the lower section, and a presser-roller journaled in the upper sections, substantially as set forth.

2. The combination of the side bars formed with upper and lower sections separated by an intervening slot, transverse bars connecting the opposite ends of said side bars, and rollers journaled in the sections of such side bars, substantially as set forth.

3. The herein-described washing-machine, composed of the side bars slotted longitudinally, forming the upper and lower section, each of which is provided with supplemental slots, the connecting end bars, the links placed and movable on the side bars, the bed-rollers journaled in the lower section, the bands looped around said rollers, and the presser-roller journaled in the upper sections, substantially as set forth.

324,812. STAMPING-PRESS. James H. Clapp, Chicago, Ill., assignor to James Louis Board. Filed Mar. 5, 1884. (No model.)



Claim.—1. The combination, with the head of a stamping-press, having a transverse slot therein, the adjustable stops *d d*, the transverse bar E, and die-head B, of the die C, having a stem or shank, *c*.

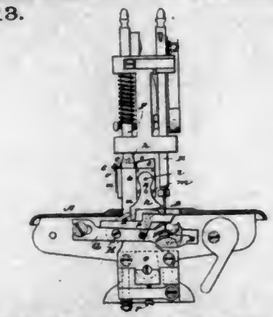
2. The combination, with the head A, having a transverse slot therein, die-head B, secured in said head, and die C within die-head B, having a shank or stem, *c*, of the bar E, stops *d*, and springs *g g*.

3. The combination of the head A, having a transverse slot, D, and having perforations *k* therein, as shown, in which operate suitable pins, *m*, with the die-head B, die C, and the bar E and stops *d d*, as shown.

324,813. TRIMMING ATTACHMENT FOR SEWING-MACHINES. William S. Clark and John F. Murphy, Little Falls, N. Y. Filed Apr. 10, 1885. (No model.)

Claim.—1. In a trimming attachment for sewing-machines, the combination of the bracket-plate, the cross-plate adjustable vertically on the bracket-plate, the lower toggle-jaw fulcrumed to the bracket-plate and vertically adjustable, and the upper toggle-jaw fulcrumed to the cross-plate, whereby the meeting edges of the jaws may be maintained

324,813.



in line with the cloth-plate of the sewing-machine as the jaws wear away, substantially as described.

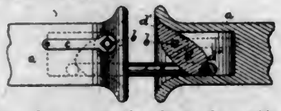
2. The combination of the bracket-plate, the cross-plate vertically adjustable thereon, the lower toggle-jaw fulcrumed to the bracket-plate and vertically adjustable, the upper toggle-jaw fulcrumed to the cross-plate, and means for securing the bracket-plate to the vertical arm of a sewing-machine, substantially as described.

3. The combination of the bracket-plate having the vertical extension, the cross-plate dovetailed thereon, said cross-plate having a vertical slot, the arm *g*, having screw *h*, and the set-screw *i*, that passes through the lower end of the arm, through the slot in the cross-plate, and enters the bracket-plate, the lower toggle-jaw, and the upper toggle-jaw fulcrumed to the cross-plate, substantially as described.

4. The combination of the bracket-plate having the vertical extension, the cross-plate adjustable vertically thereon, the wedge bearing on the cross-plate, the lower toggle-jaw, and the upper toggle-jaw fulcrumed to the cross-plate, substantially as described.

5. The combination of the bracket-plate having the vertical extension, and the lug *n*, the cross-plate adjustable vertically on the bracket-plate, the wedge bearing on the cross-plate having the threaded arm that passes through the lug *n* and the nut on the end of the arm, the lower toggle-jaw, and the upper toggle-jaw fulcrumed to the adjustable cross-plate, substantially as described.

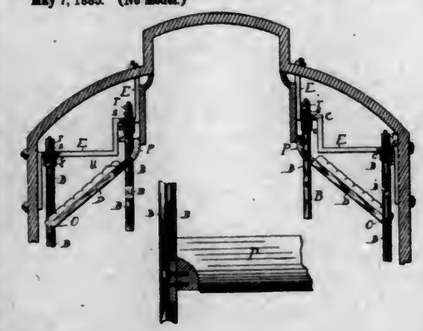
324,814. CAR-COUPLING. William Crane, Boston, Mass. Filed Dec. 19, 1884. (No model.)



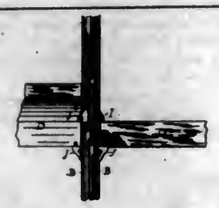
Claim.—1. In a car-coupling device, the combination of the hollow draw-bar *a*, a locking-lever, *d*, pivoted therein and resting at one end upon the bottom of the interior of the draw-bar and at its other end against the flaring mouth of the draw-bar and adapted to receive the strain of the link against its lower end, the hinge-pin *b*, and lever or handle *c*, substantially as described.

2. In a car-coupling device, the combination of a hollow draw-bar, *a*, a locking-lever, *d*, pivoted therein and formed with a downwardly-projecting tongue, *d'*, and side flanges, d^2 d^2, the tongue being adapted to drop into the cavity of the link and receive the strain thereof against its end, while the side flanges rest upon the link and prevent its dropping while uncoupled but in position for coupling, the hinge-pin *b*, and lever or handle *c*, substantially as described.

324,815. SLEEPING-CAR. Arthur Cherrin, Chicago, Ill. Filed May 7, 1885. (No model.)



324,815.



Claim.—1. A sleeping-car provided with seats and berths whose weight is sustained by rods or uprights suspended or hung from the upper portions of the car, and held above and free from its permanent bottom frame-work by yielding or vibratory supports, whereby such rods, seats, and berths may vibrate up and down independently of such permanent bottom frame-work, substantially as described.

2. A sleeping-car provided with seats whose weight is sustained by rods or uprights suspended or hung from the upper portions of the car, and held above and free from its permanent bottom frame-work by yielding or vibratory supports, whereby such rods and seats may vibrate up and down independently of such permanent bottom frame-work, substantially as described.

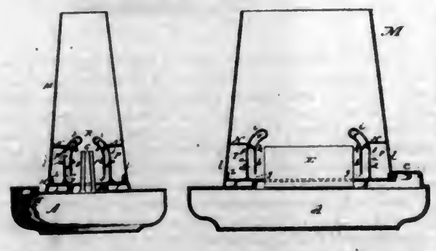
3. A sleeping-car provided with berths whose weight is sustained by rods or uprights having flanges or projections to receive and support the weight of the front edges of the berths when open, and a spring or springs to hold the berths open, such rods or uprights being suspended or hung from the upper portions of the car, and held above and free from its permanent bottom frame-work by yielding or vibratory supports, whereby such rods and berths may vibrate up and down independently of such permanent bottom frame-work, substantially as described.

4. A sleeping-car provided with seats and berths whose weight is sustained by rods or uprights suspended or hung from the upper portions of the car, and held above and free from its permanent bottom frame-work by yielding or vibratory supports arranged in separate and independent sets or sections capable of yielding or vibrating independently of other sets or sections, whereby the rods, seats, and berths in each section may vibrate up and down independently of the other rods, seats, and berths, substantially as described.

5. A sleeping-car provided with seats whose weight is sustained by rods or uprights suspended or hung from the upper portions of the car, and held above and free from its permanent bottom frame-work by yielding or vibratory supports arranged in separate and independent sets or sections capable of yielding or vibrating independently of other sets or sections, whereby the rods and seats in each section may vibrate up and down independently of the other rods and seats, substantially as described.

6. A sleeping-car provided with berths whose weight is sustained by rods or uprights having flanges or projections to receive and support the weight of the front edges of the berths when open, and a spring or springs to hold the berths open, such rods or uprights being suspended or hung from the upper portions of the car, and held above and free from its permanent bottom frame-work by yielding or vibratory supports arranged in separate and independent sets or sections capable of yielding or vibrating independently of other sets or sections, whereby the rods and berths in each section may vibrate up and down independently of such permanent bottom frame-work and independently of the other rods and berths, substantially as described.

324,816. HYDROCARBON-BURNER. Ledyard Colburn, Boston, Mass., assignor of one-half to Richard R. Colburn, Ansonia, Conn. Filed Aug. 18, 1884. (No model.)



Claim.—1. The combination of the fount A, constructed with an air-chamber, B, said chamber provided with an opening for the admission of air from outside the burner, a pair of wick-tubes leading from the fount through the air-chamber and provided with the usual wick-adjusting devices, and an air-flue, G, from the air-chamber B, between the wick-tubes, with a surrounding cone, substantially as described.

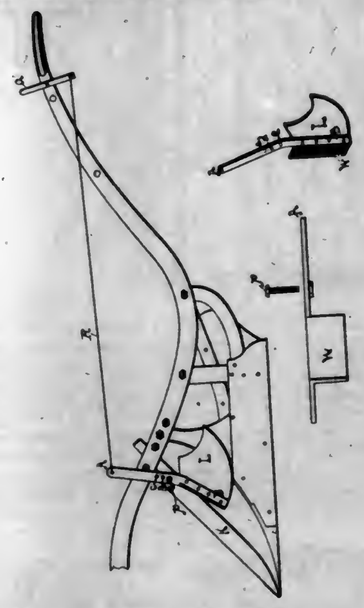
2. In a lamp-burner, the cone and the chimney upon it, the cone constructed to form the air-chamber P inside the chimney and outside the combustion-chamber, and with the air-chamber *d*, between said chamber P and the combustion-chamber, with openings *f* from the chamber P into the top of the chamber *d*, and with openings *g* from the bottom of the chamber *d* into the combustion-chamber, substantially as described.

3. The combination of the fount constructed to form an air-chamber, B, and with an inlet to said air-chamber outside the burner, a pair of wick-tubes leading from the fount through said air-chamber, a flue, G, leading from said air-chamber upward between the wick-tubes, the cone surrounding said wick-tubes, constructed with the flame-opening R, and with the chamber P outside the combustion-chamber, and also with an air-chamber, *d*, between said air-chamber P and the combustion-chamber, openings *f*, leading from said chamber P to the top of the chamber *d*, and openings *g* from the bottom of said chamber *d* into the combustion-chamber, substantially as described.

4. In a lamp-burner, the base H, constructed to receive and support the chimney, the cone upon said base, constructed to form the chamber P, between said chimney and the combustion-chamber, the chimney constructed with openings leading into said chamber P, an air-chamber, *d*, between said chamber P and the combustion-chamber, openings *f*, leading from said chamber P into said chamber *d*, and openings *g*, leading from said chamber *d* into the combustion-chamber, the dome constructed to form chambers *e* with openings *h* from the combustion-chamber leading into said chambers *e*, and openings *i*, leading from said chambers *e* into the chimney and around the flame-opening R, substantially as described.

5. The combination of a lamp-fount constructed with an air-chamber, B, and an opening thereto outside the burner, wick-tubes E F, leading from the fount through said air-chamber, a flue, G, leading from the air-chamber upward between the wicks, a cone surrounding said wick-tubes and forming the combustion-chamber, said cone constructed to form air-chambers P, a chimney upon said cone with openings through it into said air-chamber P, the cone also constructed with an air-chamber, *d*, between said air-chamber P and the combustion-chamber, openings *f*, leading from the air-chamber P into the air-chamber *d*, openings *g*, leading from the air-chamber *d* into the combustion-chamber, the dome of the cone constructed with the flame-opening R, and also with air-chambers *e*, and with openings *h*, leading from the combustion-chamber into said air-chambers *e*, and with openings *i* from said air-chambers into the chimney and around the flame-opening, substantially as described.

324,817. COLTER AND PLOW-CLEANER. Thomas W. Corey, Grosse Point, Mich. Filed Nov. 25, 1884. (No model.)



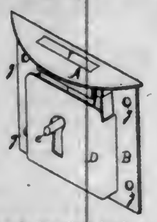
Claim.—1. In combination with the colter of a plow, an arm pivoted directly to said colter and adapted to swing upon its pivot, and having upon its lower end a plate with its lower edge curved, so that its

lowermost point is nearly coincident with the surface of the ground, while the forward edge swings through a considerable angle.

2. In combination with the colter and a swinging arm pivoted thereto, a plate having an extension rearward beyond the forward edge of the plow, and having its forward edge extended in a wing to the landside.

3. In combination with the colter, a swinging arm pivoted thereto, a plate attached to said swinging arm, having its lower edge curved with the convexity downward, its rear edge curved with the concavity forward, and its forward edge turned around the swinging arm and extending to the landside in a wing, substantially as described.

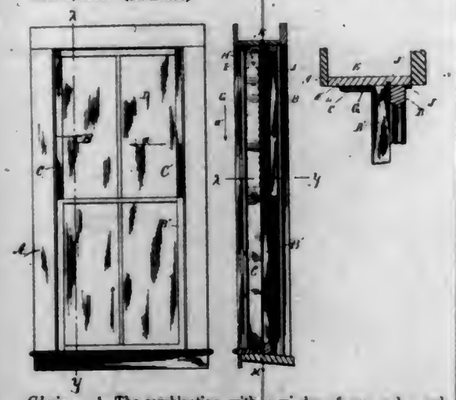
324,818. LOCK. GEORGE B. COWLES, New Britain, Conn., assignor to the Corbin Cabinet Lock Company, same place. Filed Mar. 10, 1883. (No model.)



Claim.—1. The lock herein described, having a top plate or selvage whose front edge is in the arc of a circle while the rear edge is straight, said selvage projecting from the top edge of the front plate, B, substantially as described, and for the purpose specified.

2. The combination, with a support having a routed cavity formed therein, the rear wall of the cavity being of concave form, in combination with a lock provided with a projecting key-post, and a top plate or selvage having its front or projecting edge made in the arc of a circle, projecting over and beyond the cap-plate, and adapted to cover and conceal the upper end of the routed cavity, and provided with a flat front or lock-plate that covers and conceals the open side of the cavity, substantially as set forth.

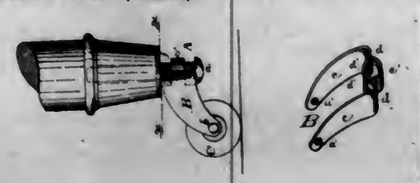
324,819. SASH-BALANCE. LEVI M. DEVORE, Freeport, Ill. Filed Mar. 5, 1885. (No model.)



Claim.—1. The combination, with a window-frame and a sash hung therein, of a hollow stop attached to said frame, a suitable pulley attached to the frame, a weight-cord attached to the sash and passing over said pulley, and a weight within said stop and attached to said cord.

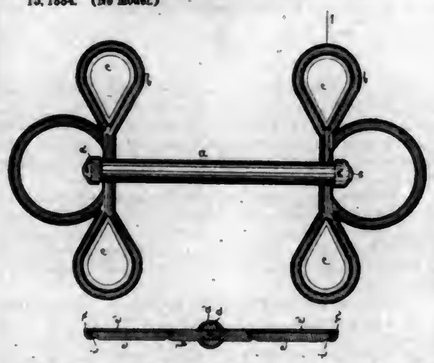
2. The combination of the frame A, the sash B B', the hollow stops C C', formed substantially as shown and described, the weights G G', lying within said stops, respectively, the pulleys H H' H'', and the cords I I', substantially as shown and described, and for the purpose set forth.

324,820. FURNITURE-CASTER. ALBERT B. DEE, Brooklyn, N. Y. Filed Dec. 27, 1884. (No model.)



Claim.—In a furniture-caster, the frame composed of the wrought-metal part B, having integral portions c' d', bent in opposite directions, to form a socket for the reception of a pintle, A, substantially as and for the purpose herein set forth.

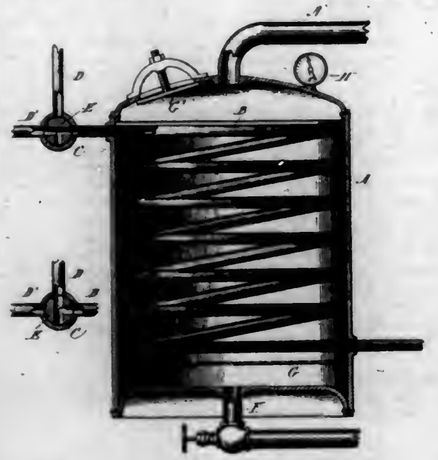
324,821. BRIDLE-BIT. JOHN G. EBERHARD, Akron, Ohio. Filed Dec. 15, 1884. (No model.)



Claim.—1. As an article of manufacture, a bridle-bit formed in part of glass or china, the bit having cheeks *b*, formed with flanges *i*, and provided with retaining-pieces *c'* and glass or china *c*, substantially as herein described.

2. In a bridle-bit, the combination of mouth-piece *a*, glass or china piece *s*, and cap *a'*, attached to the end of the mouth-piece and partly inclosing piece *s*, to retain the same in place, substantially as described.

324,822. PROCESS OF MAKING BEER. LEO ERNST, Chicago, Ill. Filed Jan. 31, 1885. (No model.)



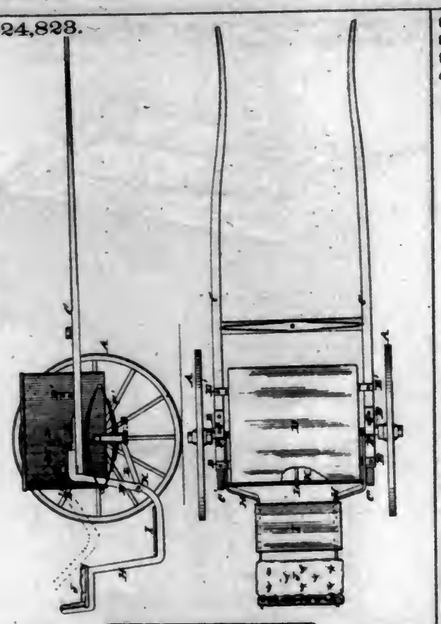
Claim.—The within-described process of brewing beer, which consists, first, in treating a given amount of wort in an ordinary open boiler; second, in drawing a small quantity thereof into a hermetic boiler; third, in mixing the wort remaining in the open boiler with low-grade hops and boiling the mixture; fourth, in mixing the wort in the hermetic boiler with a high grade of hops and subjecting the same to a heat above that of boiling water, and then cooling the same, and, fifth, in commingling the two mixtures in a suitable cooling device.

324,823. TWO-WHEELED VEHICLE. HERMANN ESCHE, St. Louis, Mo. Filed July 6, 1885. (No model.)

Claim.—1. In a two-wheeled vehicle having the bent shaft B and box D, the pivotal seat-frame H, hinged to the block G by the pivot F, substantially as and for the purpose specified.

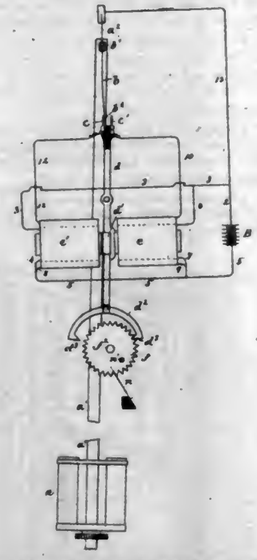
2. A two-wheeled vehicle consisting, substantially, of the box D, pivotal seat-frame H, brace L, and brace-rod K, in combination with the wheels A, axle B, shafts C, block G, and pivot F, all substantially as and for or with the purposes set forth.

324,828.



324,824. ELECTRIC CLOCK. FRANK R. FIELD, Greenfield, Mass. Filed June 1, 1885. (No model.)

Brief.—Oscillation of pendulum maintained and movement driven by electro-magnets, the circuits to which are in turn controlled by the pendulum.



Claim.—1. The combination of a pendulum with an impelling-spring fixed at one end upon the pendulum-rod; and an electro-magnet, armature, and armature-lever which engages and strains the said spring, the spring forming a part of the circuit of the magnet and controlling its operation, substantially as described.

2. The pendulum and impelling device co-operating therewith, combined with an electro-magnet having two coils, one of which is in a permanently-closed circuit, and the other of which is in a circuit controlled by the pendulum, and an armature for the said magnet, co-operating with the pendulum-impelling device, substantially as and for the purpose set forth.

3. The pendulum and impelling-spring connected therewith, combined with two electro-magnets, and an armature and armature-lever therefor provided with two insulated projections, which co-operate with the impelling-spring, straining the said spring to impart an impulse to the pendulum, and controlling, in connection with the spring, the circuit of the magnets, substantially as described.

324,825. CAR-SEAT. MATTHIAS N. FORNEY, New York, N. Y. Filed Mar. 2, 1883. (No model.)



Claim.—1. The combination, substantially as set forth, of a reversible seat-back provided with projections at or near its upper and lower sides, a seat-supporting frame, and pairs of intersecting or crossed links pivoted to the ends of said seat-back and to the seat-supporting frame.

2. The combination of a seat-supporting frame, a movable seat, a reversible seat-back, and pairs of intersecting or crossed links pivoted to said seat-back and to the supporting-frame, substantially as set forth.

3. The combination, substantially as set forth, of a seat-supporting frame, a reversible seat-back, intersecting or crossed links pivoted to said seat-back and to the supporting-frame, and a movable seat pivoted at each end to one or both of the adjacent links.

4. The combination, substantially as set forth, of a supporting-frame, a reversible seat-back, intersecting or crossed links which are pivoted at their upper ends to the seat-back and are supported upon fixed pivots between their ends, and a seat connected to the lower extensions of said links below their fixed pivotal points.

5. The combination, substantially as set forth, of a supporting-frame, a reversible seat-back, and a pair of intersecting or crossed links, each link provided with a spring, as and for the purpose described.

6. The combination, substantially as set forth, of a seat-supporting frame, a reversible seat-back, two pairs of intersecting or crossed links pivoted to said back and to the supporting-frame, and an extensible frame, one portion of which is pivoted to one pair of said links and the other portion pivoted to the opposite pair of links, said frame being constructed substantially as described, whereby its two portions may slide one upon the other, as and for the purpose specified.

324,826. VELOCIPEDE. AUGUST FRITZ, Chicago, Ill. Filed Jan. 20, 1885. (No model.)



Claim.—1. The combination of the body *a*, pivoted portions *b c*, pivotal rod *d*, having standards *h* depending therefrom, a driving-wheel that is journaled between the standards, cranks *k*, pedal-levers *l*, and links *m*, for actuating the wheel and rear wheels, substantially as described.

2. The combination of the body *a*, pivoted portions *b c*, pivotal rod *d*, having standards *h* depending therefrom, springs *g*, and sleeve *e*, a driving-wheel which is journaled between the standards, cranks *k*, pedal-levers *l*, and links *m*, for actuating the wheel, springs *o*, rear axle, *n*, and wheels *p*, pivoted saddle *r*, spring *u*, and a bridle attached to the head of the bobby-horse, substantially as described.

324,827. FIFTH-WHEEL. LEVI C. FULLER, Fayette, Mo. Filed Aug. 6, 1884. (No model.)

Claim.—1. The combination of the coupling-pole, the fifth-wheel consisting of part *b'* and part *b*, the latter having lug *b'*, the brace G, having arms g^2, extended up through lug *b'* and the pole, and the strap H, secured at its rear end by the rear end of the brace and at its forward end by the arm g^2, substantially as set forth.

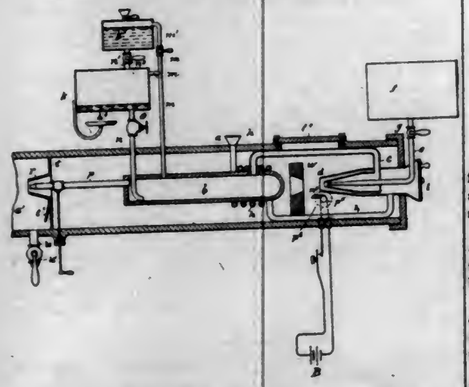
324,827.



2. The combination of the fifth-wheel having its section *b* provided with a lug, b^3, the strap H, having a vertical wing held close to the rear side of the fifth-wheel and a horizontal wing extended forward under said wheel and close to the under side of the lug b^3, and the brace G, having an arm, g^2, projected upward through the strap H, lug b^3, and the pole, and secured substantially as set forth.

3. The combination, with the reach and the fifth-wheel having its upper section provided with a depending lug, b^3, of the strap H, connected at one end with the pole, and having its other end extended under and secured to the lug b^3, substantially as set forth.

324,828. MOTOR-PRESSURE GENERATOR. Oscar Gaskett, Boston, Mass. Filed Oct. 13, 1884. (No model.)



Claim.—1. In an apparatus for generating gases under pressure, the combination of the following elements, namely: the main casing or chamber for containing the gaseous products, a steam-generating chamber, a reservoir for combustible fluid, and a nozzle communicating with the steam-generating chamber, the jet of steam from which nozzle acts on the fluid supplied from the reservoir, whereby in the operation of the apparatus a jet of combustible gas or vapor is produced, the flame of which acts upon the steam-generating chamber, substantially as described.

2. In an apparatus for generating gases under pressure, the combination of an outer casing for containing the gaseous products, a steam-generating chamber, and water-reservoir communicating with the latter, with a reservoir for combustible fluid and a nozzle communicating with the steam-generating chamber and with the reservoir for combustible material, whereby when steam is generated in the generating-chamber it produces a combustible jet, the flame of which, when ignited, acts upon the said generating-chamber, substantially as described.

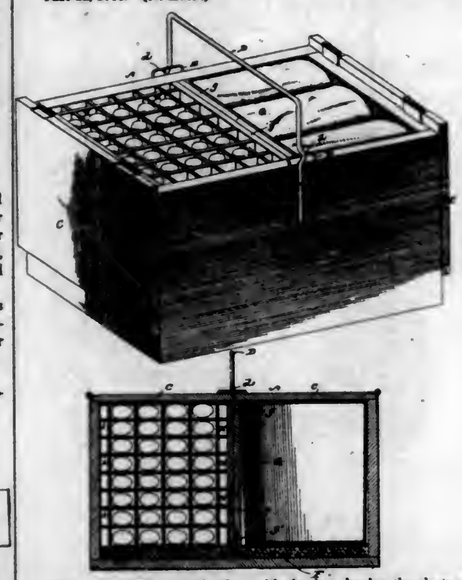
3. The combination of the outer chamber provided with an air-inlet, an internal steam-chamber, and the water-reservoir communicating with the latter, with a reservoir for combustible fluid, a nozzle communicating with the internal chamber, and a duct conveying the combustible fluid into the outer chamber, substantially as described.

4. The main and internal chambers for combustible fluid, combined with a nozzle communicating with the said internal chamber and reservoir and an igniting device capable of operation from the exterior of the main chamber, substantially as described.

5. The main chamber and steam-generating chamber heated by a flame in the main chamber, combined with an outlet-pipe from the said steam-generating chamber and a co-operating nozzle, whereby a jet of steam is caused to act upon the gaseous products, substantially as described.

6. The main chamber and steam-generating chamber, combined with a reservoir for combustible fluid, a nozzle communicating with the said steam-generating chamber, and an air-supplying duct exposed to the action of a jet or flame issuing from the said nozzle, substantially as described.

324,829. EGG-BOX. William C. Gaskill, Apalachin, N. Y. Filed June 22, 1885. (No model.)



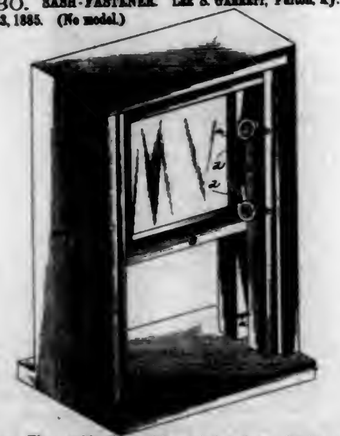
Claim.—1. The combination, with the box having the cleats or flanges B, of the partition adapted to be placed on the cleats and to form a false bottom to the box, and the collapsible trays, substantially as described.

2. The combination, with the box having the cleats or flanges B, of the collapsible trays and the hinged partition G, adapted to divide the series of trays or to be folded down on the cleats to form a false bottom for the box, for the purpose set forth, substantially as described.

3. The combination, with the box having the cleats or flanges B, of the folding partition G, adapted to divide the box vertically into two compartments and to be folded down on the cleats to form a false bottom for the box, substantially as described.

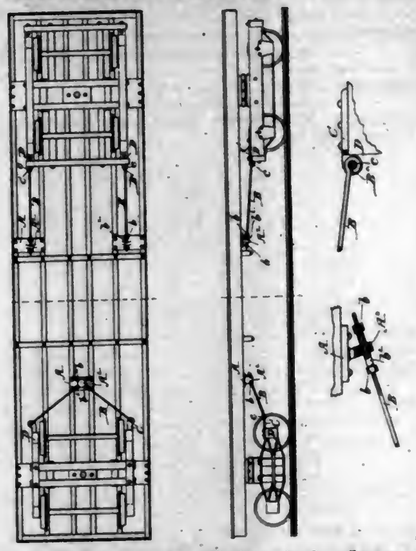
4. The combination, with the box having the lids C, of the bail having the curves *d*, and the spring-catches E, adapted to catch over the edges of the lids when the latter are closed and to be drawn back into curves *d* to release the lids, substantially as described

324,830. SASH-FASTENER. Lee S. Garrett, Fulton, Ky. Filed June 23, 1885. (No model.)



Claim.—The combination, with a window-frame having pins projecting inwardly from the inner side thereof, of the herein-described holder secured to the front face of the lower sash, the holder consisting of a spring-plate secured midway its ends to the sash, and having said ends bent outwardly from the point of attachment of the holder, notches *d* on the inner side of the holder at the upper and lower ends thereof, said holder being also provided with eyes or loops at its upper and lower ends, for the purpose set forth.

324,831. CAR-TRUCK. John Gerhardt, Montreal, Quebec, Canada, assignor to Samuel Davis, same place. Filed Feb. 3, 1885. (No model.) Patented in Canada Feb. 12, 1885. No. 21,093.



Claim.—1. The combination, with the trucks of a railway-car, of sliding rods connecting them to the car-frame, substantially as and for the purposes set forth.

2. The combination, with the truck-frames of a car, of plates C, to which the sliding rods B are connected, and plates A, secured to longitudinals to which such rods are adjustably attached, as and for the purposes set forth.

3. The combination, with a car truck and body, of sliding rods B, stops *b* on such rods, and a sleeve, b', substantially as described.

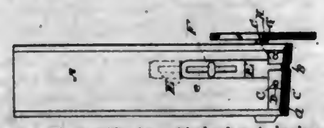
4. In combination with a car frame and truck, rods extending from the truck to the frame and sliding in such frame, and stops on said rods to limit their motion, substantially as described.

324,832. BUTTON. William H. Gifford, Cincinnati, Ohio. Filed June 29, 1885. (No model.)



Claim.—The combination, with a button-back having two rigid posts secured thereto, one post being notched near its outer end, of a hollow lock-bar hinged to one post, and a spring-actuated latch or bolt located wholly within said hollow lock-bar, and provided with a projection that extends through an elongated slot in the lock-bar, substantially as set forth.

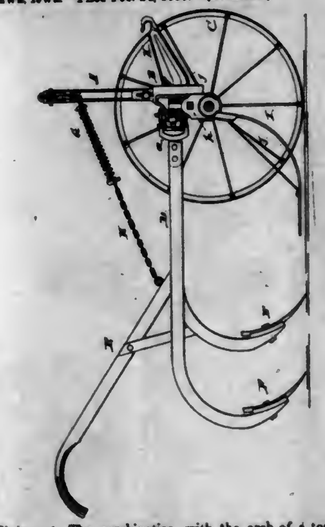
324,833. GUANO-DISTRIBUTER. Benjamin R. Grant and Andrew C. Grant, Hamilton, Ga. Filed Aug. 6, 1884. (No model.)



Claim.—1. The combination, with the box A, having its bottom provided with slot B, of the guide-plates C C, held to the bottom on opposite sides of an adjustable overslot, B, and the regulating-plate E, placed and adjustable longitudinally over slot B, the edges of said plate E being inserted between the adjacent edges of plates C and the bottom of the box, substantially as set forth.

2. The improved fertilizer-distributer herein described, comprising the box A, having its bottom *a* provided with slot B, the plates C, provided with lateral slots C', and held to the bottom *a* by screws passed through said slots, whereby the plates C may be adjusted laterally over the slot B, the plate E, having its lower end held and adjustable longitudinally over the slot B and its upper end provided with slot *e*, the screw F, passed through slot *e* and turned into the box, and the shaft provided with feed-wheel *g*, agitators *g'*, and drive-wheel H, substantially as set forth.

324,834. TONGUELESS CULTIVATOR. Mockersie G. Graham, Ottumwa, Iowa. Filed Feb. 24, 1885. (No model.)



Claim.—1. The combination, with the arch of a tongueless cultivator, supported on wheels, of the springs G, chains or rods H, beams D, and runners I, substantially as specified.

2. The combination of the arch A and extensions L with the springs G, chains H, and beams D, with adjustable runners I, substantially as and for the purpose described.

3. The draw-bars K, having the pivots *k* and rear projecting ears, *l*, with the collar *m*, having a set-screw, and the runners I, whereby the swaying movement of the draw-bar is not communicated to the runner, substantially as described.

4. The end plates, *j*, pivoted near their front edges, in combination with the wheel spindle or plate *h*, located in rear of the pivot *k*, whereby the wheels are permitted to have an independent movement and a caster action, all substantially as specified.

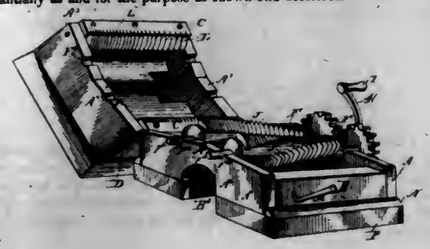
5. The combination of the draw-bar K, pivoted runner I, and pivoted wheel C, operating from a common pivot, *k*, substantially as described.

6. The combination of the arch ends or plates B, having the ears or projections *o*, with the plates *j*, having the ears *n*, wheel-spindle plates *h*, and pivot-pins *k*, substantially as set forth.

7. The combination of the arch A B, springs G, chains or rods H, beams D, draw-bars K, runners I, and pivoted wheel C, all constructed and arranged substantially as specified.

324,835. SAUSAGE-MEAT CUTTER. John R. Grath, Lorah, and Thomas K. Watson, Leinbach, Pa. Filed Mar. 23, 1885. (No model.)

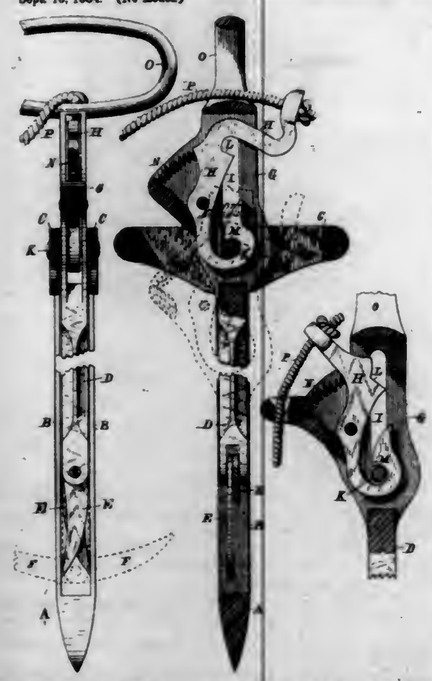
Claim.—A twin-roller meat-cutter consisting, essentially, of the following elements: top and bottom concaves, D B, having feeding-aperture D^a and discharge-aperture B^a, intermediate pieces, C C, ends A, A', and A^a, hopper E, cutters or knives L L, rolls F F, and cutters or knives J and central knives or cutters, K, all of said cutters being removably fixed in saw-kerfs, gear G, and crank H, the parts being combined substantially as and for the purpose as shown and described.



324,835.



324,836. HAY-FORK. CHAS. A. GUTCHEINST, Milwaukee, Wis. Filed Sept. 10, 1884. (No model.)

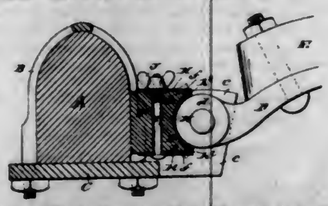


Claim.—1. In a hay-fork, the latch H, pivoted to the stem of the fork and provided with recesses L and M, in combination with the stem of the fork and the sheath B B, having pin K, substantially as set forth.

2. In a hay-fork, the latch H, pivoted to the stem of the fork and provided with recesses L and M, in combination with the stem of the fork, the spring N, and sheath B B, provided with pin K, substantially as set forth.

3. In a hay-fork, the tripping-latch H, provided with recesses L and M, said latch being so pivoted within a recess in the stem of the fork that the recesses L and M, by the gravity of the latch, will automatically engage upon a pin sliding in a slot in the stem of the fork, in combination with the stem of the fork, provided with tines E E, rope P, pin K, rigid in sheath B B, and sheath B B, provided with guard C and point A, substantially as and for the purpose set forth.

324,837. THILL-COUPLING. MAHON HALL and JOHN C. RYAN, St. Paul, Minn. Filed Dec. 10, 1884. (No model.)

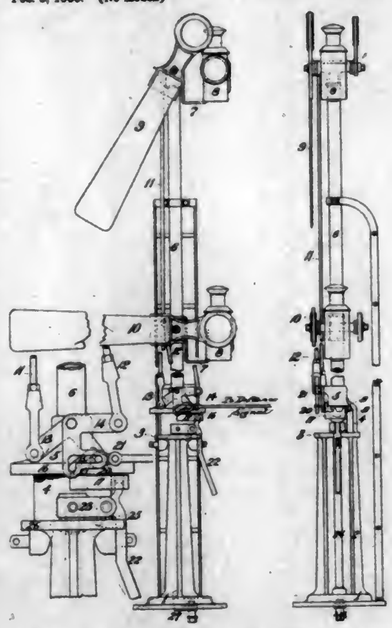


Claim.—1. The combination, with a thill-connection, of the elastic packing F and a casing, H, having the curved face A', shoulders or points A^2 A^2, inclosing the lips *f f* of the packing, and an open back, together with means for attaching the casing to the packing, whereby the packing may be compressed vertically and elongated horizontally, as herein set forth.

2. The combination, with a thill-connection, of the elastic packing F, the casing H, having a curved face, A', shoulders or points A^2 A^2, inclosing the lips *f f* of the packing, and an open back, together with the bolt I, passed through slots A' A' of the casing and through the packing, and provided with a nut, J, substantially as herein set forth.

3. As an improved article of manufacture, the open back casing, H, made with curved face A', shoulders or points A^2 A^2, and opposite slotted wings, all made in one piece, as set forth.

324,838. SWITCH-STAND. JAMES T. HANBAY, Pittsburg, Pa. Filed Feb. 5, 1885. (No model.)



Claim.—1. In a signal mechanism, the combination of two semaphores or other signals, a reciprocating block or slide, and independent signal-operating mechanisms, each engaging said block and adapted in a single movement of the block to shift one of said signals from "danger" to "safety" and the other from "safety" to "danger," and to lock the signals in such changed positions, substantially as set forth.

2. In a signal mechanism, the combination of two semaphores or other signals, one of which is normally locked at "danger" and the other at "safety," a reciprocating block or slide, and independent signal-operating mechanisms, each engaging said block and adapted on a single movement of the slide to reverse the positions of the signals and lock them in such reversed positions, substantially as set forth.

3. In a switch and signal mechanism, a rotating switch stem or shaft, in combination with a lever pivoted to said shaft and adapted to lock the shaft as against rotary motion, and two semaphores or other signals, one of which is normally at "danger" and the other at "safety," adapted to be reversed and locked in reversed positions by the locking and unlocking movements of the lever, substantially as set forth.

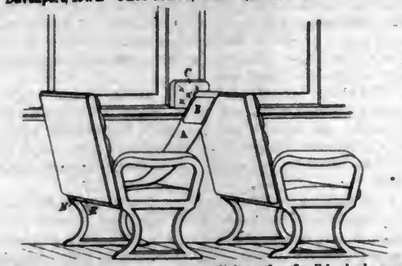
4. In a switch and signal mechanism, a rotating switch stem or shaft, in combination with a lever pivoted to said shaft and adapted to lock said shaft as against rotary motion, two semaphores or other signals, and suitable connecting mechanism, whereby the unlocking movement of the lever will set both signals at "danger," and the locking movement will set one signal at "safety" and lock the other at "danger," substantially as set forth.

5. In a switch and signal mechanism, a rotating switch stem or shaft, in combination with a lever pivoted to said shaft and adapted to lock the shaft as against rotary motion, two semaphores or other signals, and suitable connections between the lever and signals, whereby said signals are set and held at "danger" by the unlocking of the lever and during the shifting of the switch-rails, and are set and locked in such positions as indicate the position of the switch-rails by the locking movement of the operating-lever, substantially as set forth.

6. In a signal mechanism, the combination of two main-line signals and a switch-signal, and reciprocating block and suitable connections between the block and signals, whereby said signals may be operated by a single movement of the block, so as to indicate the condition of the main line and switch, substantially as set forth.

7. In a signal mechanism, the combination of two semaphores connected to two bell-crank levers, each having one of their ends slotted, as described, and a reciprocating block provided with a pin adapted to engage the slots in both bell-cranks, substantially as set forth.

324,839. CAR-SEAT REST AND FIRE-ESCAPE. EDWARD H. HAHN, Davenport, Iowa. Filed Oct. 30, 1884. (No model.)



Claim.—1. A car-seat rest consisting of a flexible body portion provided at one end with a bar having a handle and binding-straps, and attaching-hooks mounted in said bar, and at the other end with straps and adjustably mounted attaching devices, substantially as specified.

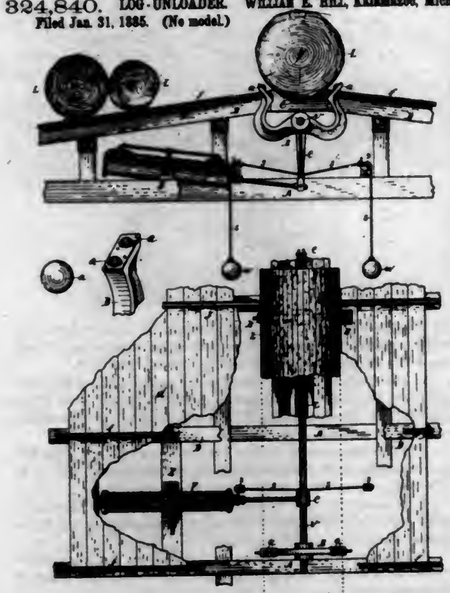
2. In a car-seat rest, the combination of a flexible body portion and a rigid cross-bar having binding-straps and a handle with pivoted hinged attaching-hooks, whereby the entire rest is capable of being rolled and secured in a convenient package, substantially as specified.

3. A car-seat rest made of one continuous narrow strip returned back and forth and sewed or fastened together, to be easily ripped apart and converted into a fire-escape, substantially as described.

4. The device for fastening the lower end of the rest to the seat, said device consisting of the hook E, hinged at the top, combined with the thumb-button F, substantially as set forth.

5. The folding catch, with the hinge *a*, shoulder *b*, and choke-tongue C, substantially as described.

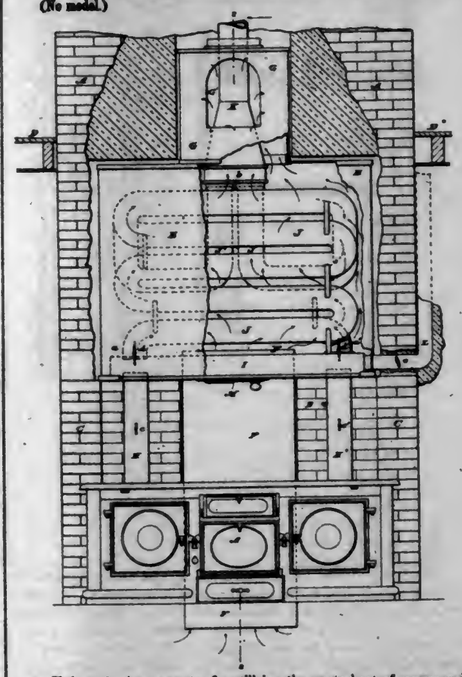
324,840. LOG-UNLOADER. WILLIAM E. HILL, Kalamazoo, Mich. Filed Jan. 31, 1885. (No model.)



Claim.—1. An improved log-unloader consisting of a rock-shaft beneath the log-trough, the double rocking levers, and a downwardly-extending operating-lever secured to the rock-shaft, and a horizontal pivoted engine, the free end of its piston pivotally connecting with the free end of the operating-lever, substantially as set forth.

2. The combination of the rock-lever and shaft, the operating-lever projecting from said shaft, means for oscillating the operating-lever, the fixed pulley-blocks having the stop projections, pulleys in said blocks, and the weighted chains or ropes connecting the operating-lever passing over the pulleys, and provided with the stops for conflicting with the stop projections of the pulley-blocks to limit the fall of the weighted end of the chains, substantially as set forth.

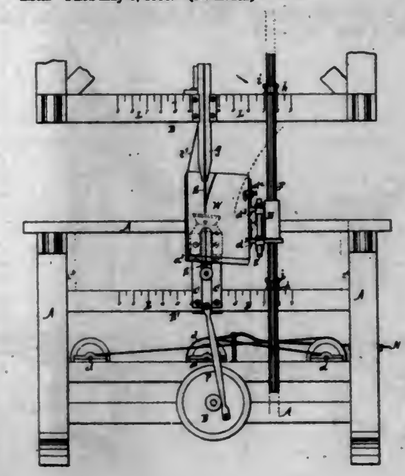
324,841. APPARATUS FOR UTILIZING THE WASTE HEAT FROM RANGES. WILLIAM T. HOLLAND, Brooklyn, N. Y. Filed Jan. 12, 1885. (No model.)



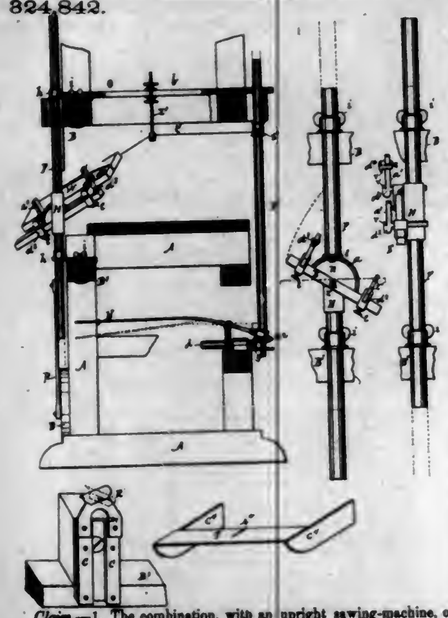
Claim.—1. An apparatus for utilizing the waste heat of ranges and stoves, comprising an exterior casing or air-chamber provided with air induction and eduction openings, a flue, I, arranged at the bottom of said chamber and provided with an aperture or apertures to receive the pipe or pipes of the range or stove, the contorted heater-flues J J', connected with flue I, pipe K, for carrying the products of combustion to the chimney-flue, the branch flue L, and the dampers *d*, *d'*, and *e*, all arranged substantially as set forth.

2. The combination, to form a heating apparatus for the purposes specified, of the chamber E, its air-induction pipe F, its air-eduction pipe G, the flues J J', arranged within chamber E and connected at the bottom with a flue, I, the said flue connected with the smoke-pipes of a range or stove, substantially as described, and the pipe K, arranged within the air-eduction pipe G and constructed to receive the products of combustion from the flues J J', substantially as set forth.

324,842. SCROLL-SAWING MACHINE. HENRY L. HOPKINS, Caro, Mich. Filed May 6, 1885. (No model.)



324,842.



Claim.—1. The combination, with an upright sawing-machine, of the reciprocating shaft F, said shaft journaled in supports *h h*, said supports adapted to be adjusted toward or from the saw, of the tilting arm E, pivoted to said shaft, of a pair of dogs mounted upon said arm, said dogs adapted to clamp the material to be cut, of a pivoted support located in advance of the saw and below the material to be sawed, substantially as specified.

2. The combination, with an upright sawing-machine, of the shaft F, journaled within the plates *h h*, said plates attached to the frame of the machine, of the tilting arm E, having the plate *n*, formed integral therewith, said arm pivoted to the shaft F, the means for adjusting said arm on said shaft, of a pair of dogs mounted upon said arm, said dogs adapted to clamp the material to be cut, and the pivoted rest R, located in advance of the saw and below the material to be sawed, as and for the purposes set forth.

3. The combination, with an upright sawing-machine, of the shaft F, journaled in the plates *h h*, said shaft having the tilting arm E attached thereto, said arm having the extension-plate *n*, and the means for attaching said plate to the shaft F, of a pair of dogs adjustably mounted upon said arm, said dogs adapted to clamp the material to be cut, of the yoke *m*, supporting the rest R, the feeding-shaft D′, its spool S′, the feed-cord *f*′, its hook a^3, the lever N, and pinions for operating said feed-shaft, as and for the purposes specified.

324,843. FOLDING COT. Nuson N. Horton, Kansas City, Mo. Filed Mar. 19, 1884. (No model.)



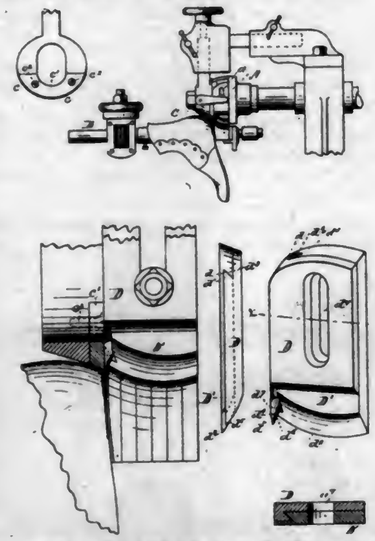
Claim.—1. In combination with the section 1, having two sets of legs, 2 3, the section 5, hinged thereto and having hinged legs 7 opening in a plane parallel with the length of the cot, the braces 9, for staying said legs, prolongations 8, hinged to the legs 7 and opening in a plane transverse to the length of the cot, and the braces 11, for staying said prolongations, substantially as set forth.

2. The combination of a two-part hinged frame, legs 2 3 7, hinged thereto, prolongations 8, hinged to the legs 7, braces 11, for staying said prolongations, and braces 9, each having a series of notches, 10, for engaging with said legs 7, whereby they are stayed while supporting the head at any elevation, as set forth.

3. In combination with the section 1, having two sets of legs, 2 3, the section 5, hinged thereto and having hinged legs 7, and the braces 9, for staying said legs, the prolongations 8, hinged to the legs 7 and opening in opposite directions in a plane transverse to the length of the cot, and the braces 11, for staying said prolongations, substantially as set forth.

4. In combination with the section 1, having legs 2 3, and the section 5, hinged thereto and having hinged legs 7 and braces 9, the prolongations 8, hinged to the insides of said legs 7 and opening outward in opposite directions, and the braces 11, for staying said prolongations, substantially as set forth.

324,844. HEEL-TRIMMING MACHINE. Herman J. Humkamp, Fort Madison, Iowa. Filed Nov. 10, 1884. (No model.)



Claim.—1. In a heel-trimming machine, the combination of the blade or cutter D′ with the plate D, supporting the edge skiving or feathering knife, all substantially as and for the purposes described.

2. The combination, in a heel-trimming machine, of a rotary shaving knife or blade, D′, and the plate D, adjustable upon the knife D′ and supporting the sole-edge skiving or feathering knife d^4, all substantially as and for the purposes described.

3. The combination of the shaving-knife D′ and the sole-edge skiving or feathering knife plate interlocked by the half-dovetail *d d*′, as described, all substantially as and for the purposes set forth.

4. In a heel-trimming machine, the feathering-knife d^4, having the cutting-edge d^6 and the bevel surface d^7, all substantially as and for the purposes described.

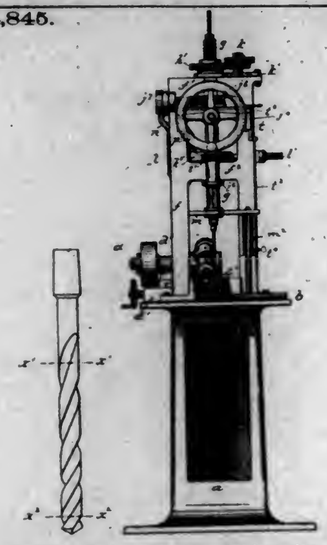
5. In a heel-trimming machine, the combination of the gage-block C with the removable guard or gage plate *c*′, all substantially as and for the purposes described.

324,845. DRILL-MILLING MACHINE. Hosea C. Johnson, Hartford, Conn., assignor of one-half to Amos Whitney, same place. Filed May 3, 1884. (No model.)

Claim.—1. In combination, a standard, *a*, bed *b*, frame *f*, driving-shaft *j*, spindle *g*, feed mechanism *k*, shaft *l*′, bearing worm l^3, in mesh with gear *i*′, fast to rotary sleeve *i*, splined to the reciprocating spindle *g*, all substantially as described.

2. In combination, a frame, *f*, rotary reciprocating spindle *g*, feed mechanism *k*, swinging frame *j*′, bearing driving-shaft *j*, with worm j^3, rotary nut *h*, bearing worm-gear h^3, and stop mechanism *t*, all substantially as described.

324,845.



3. In combination, frame *f*, rotary and reciprocating spindle *g*, increase-feed mechanism *l*, and feed mechanism *k*, all substantially as described.

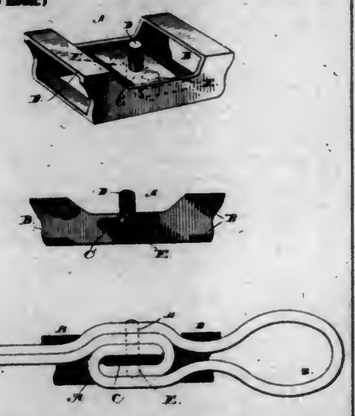
4. In combination with a worm-gear, a rotary and longitudinally-moving shaft bearing a worm, and an eccentric guide or cam, all substantially as described.

5. In combination, a frame, *f*, rotary shaft *l*′, sliding in bearings on the frame, slide l^2, eccentric guide *n*, pivoted to a slide and having a cam-slot, *n*′, into which projects and works a pin, k^7, on a sliding bar, k^6, all substantially as described.

6. In combination, a frame, *f*, sliding rotary spindle *g*, bearing yoke *m*, slides *m*′ m^2, eccentric guide *n*, and shaft *l*′, connected and operated by the guide *n*, all substantially as described.

7. In combination, a bed, *b*, frame *f*, sliding rotary spindle *g*, bearing yoke *m*, slides *m*′ m^2, with inclined guides m^3, and cutter-carriage *d*′, with lugs m^4, embracing the guide, all substantially as described.

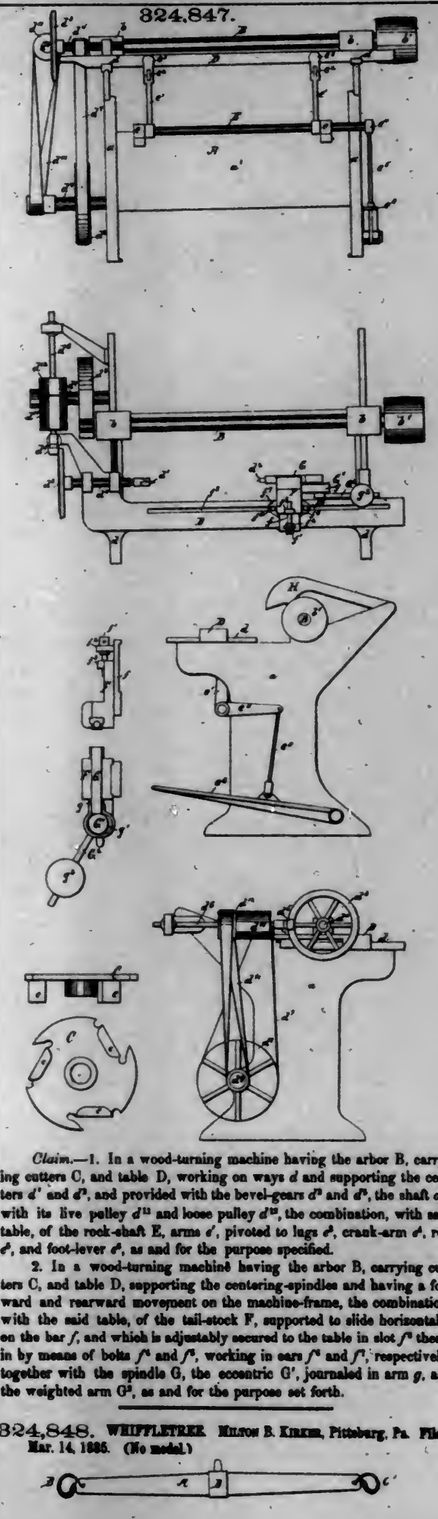
324,846. BUCKLE. William T. Jones, Prescott, Ark. Filed June 5, 1885. (No model.)



Claim.—The combination of the buckle having the central transverse bar provided with the studs D and E on opposite sides, and the loops B at its ends, with the straps attached to the studs on opposite sides of the bar, said straps being passed or bent around said bar and over each other, and passed out through the loops B in opposite directions, one of said straps having its free end returned back through the loops of the buckle and secured on the stud D, for the purpose set forth, substantially as described.

324,847. WOOD-TURNING LATHE. William A. Kettenring, Defiance, Ohio. Filed June 16, 1885. (No model.)

324,847.



Claim.—1. In a wood-turning machine having the arbor B, carrying cutters C, and table D, working on ways *d* and supporting the centers *d*′ and d^2, and provided with the bevel-gears d^9 and d^8, the shaft d^9, with its live pulley d^{12} and loose pulley d^{13}, the combination, with said table, of the rock-shaft E, arms *e*′, pivoted to lugs e^3, crank-arm e^4, rod e^5, and foot-lever e^6, as and for the purpose specified.

2. In a wood-turning machine having the arbor B, carrying cutters C, and table D, supporting the centering-spindles and having a forward and rearward movement on the machine-frame, the combination, with the said table, of the tail-stock F, supported to slide horizontally on the bar *f*, and which is adjustably secured to the table in slot f^9 therein by means of bolts f^6 and f^8, working in ears f^5 and f^7, respectively, together with the spindle G, the eccentric G′, journaled in arm *g*, and the weighted arm G^2, as and for the purpose set forth.

324,848. WHIFFLETREE. Milton B. Kirker, Pittsburg, Pa. Filed Mar. 14, 1885. (No model.)

Claim.—A single or double tree consisting of the hollow cylinder described, having the hooks G′ at each end formed in one piece with the cylinder by drawing the cylinder down to a solid bar or rod and tapering and bending it, as shown, whereby the strength of the entire cylinder is given to the hook, as shown and described.

324,849. SULKY PLOW AND CULTIVATOR. SIMEON LANGFORD, Cynthiana, Ind. Filed Jan. 20, 1885. (No model.)



Claim.—1. The combination, with the frame of a plow or cultivator, of a rear supporting-wheel, E, and lateral wheels M and J, carried by caster-frames, and means for locking the frame of the wheel M in a position parallel to the line of draft, and for releasing the same when the instrument is to be turned, substantially as set forth.

2. The combination of the frame, rear supporting-wheel, E, caster-wheel J at one side, caster-wheel at the opposite side, and locking-bar N, connected to the caster-frame of the wheel M, and means for locking and releasing the said bar, substantially as set forth.

3. The combination, with the frame of a cultivator or plow, of a caster-wheel, M, a caster-frame, L, carried by a shaft provided with a crank, *m*, and a notched bar, N, connected to the crank and extending through a slot in a standard on the frame, substantially as set forth.

4. The combination, with the caster-wheel, frame, and notched bar N, of a foot-lever, R, substantially as set forth.

5. The combination, with the frame of a plow or cultivator, of a rear wheel, E, forward caster-wheel at one side, and means for locking and unlocking the frame thereof, and a caster-wheel, J, at the opposite side, carried by an adjustable arm, G, substantially as specified.

324,850. CULTIVATOR-SHOVEL. SIMEON LANGFORD, Cynthiana, Ind. Filed June 25, 1885. (No model.)



Claim.—1. A double-ended reversible blade for cultivators, with arrow-shaped points widened and curved toward the center, one portion of the said blade being cut away at one side and provided with a cutter-plate, *d*, substantially as and for the purpose set forth.

2. A double-ended reversible cultivator-blade provided with arrow-shaped points widened above said points, straight at one side, and provided with a cutter-blade, substantially as set forth.

3. A doubled-ended reversible cultivator-blade having a notch, *x*, near one end, in combination with a detachable blade, *d*, adapted at one end to the notch, having a slot, *y*, at the other, and bolted to the cultivator-blade, substantially as described.

324,851. BRAKE-SHOE. JOHN J. LAPPIN, Toronto, Ontario, Canada. Filed Feb. 2, 1885. (No model.) Patented in Canada Nov. 29, 1884, No. 30,658.



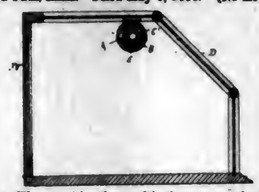
Claim.—A brake-shoe, A, with chilled portions C in the face thereof, and running across the shoe at an oblique angle of about one hundred and twenty-five degrees, and having soft unchilled projecting portions between the chilled portions, which soft portions will wear down to an exact fit on the wheel before the chilled portions come in contact with the same, substantially as shown and described, as a new manufacture.

324,852. SEPARABLE BUTTON. HENRY G. LATHROP, St. Johnsville, N. Y. Filed June 22, 1885. (No model.)



Claim.—In a separable button, the combination of the two button-sections thereof, one of which has a hollow shank, a spring contained therein, and a lock-slot, and the other having a post with a key or feather formed thereon, and a sleeve surrounding the base of the post the required distance therefrom to form a space between it and the post for the end of the hollow shank to enter when the two button-sections are connected together, substantially as and for the purpose set forth.

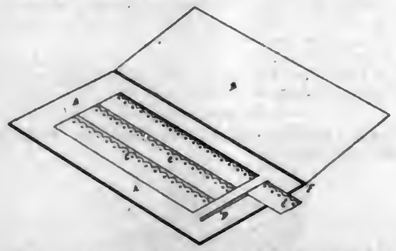
324,853. TOBACCO-MOISTENING APPARATUS. LEOPOLD J. A. LAURIER, St. Paul, Minn. Filed May 9, 1885. (No model.)



Claim.—1. The combination, with the receptacle for cigars, &c., of a device for impregnating the air in said show-case with moisture, consisting of a casing, B, covers C′ C², trough E, and a moisture producing and retaining substance, A, substantially as described, and for the purpose set forth.

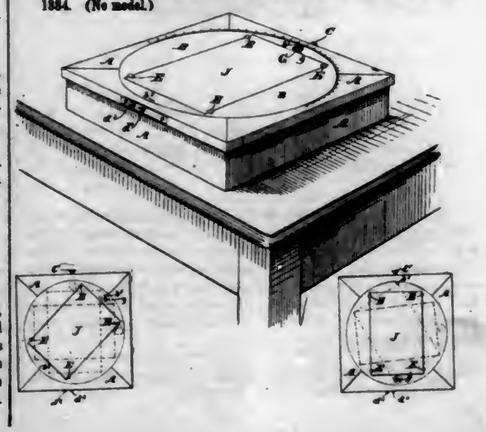
2. The moistening device for cigar receptacles, consisting of the wire-cloth cylinder provided at each end with a metallic cap, the metallic trough connecting said caps and the coil of bibulous material carried by said cylinder, substantially as set forth.

324,854. EMBROIDERY-ENVELOPE. JOHN E. LEE, Chicago, Ill. Filed Apr. 12, 1884. (No model.)



Claim.—An envelope for packing embroidery, made of one piece and consisting of a pocket and a flap, the pocket having an opening for the display of the goods, and a slot for withdrawing the goods without disturbing the folds, substantially as shown and described.

324,855. DRAWING-BOARD. CHARLES N. LEONARD, Indianapolis, Ind., assignor of one-half to Chester Bradford, same place. Filed Apr. 5, 1884. (No model.)



Claim.—1. The combination of the frame A, one side of which is adapted to serve as a guide for a draftsman's square, the circular revoluble board B, mounted in an opening in said frame and provided with notches in its periphery, and a catch secured to said frame and adapted to engage with said notches, whereby said board can be secured in any of several certain positions relative to said frame and the drawing-paper on said board thereby given the desired secure but adjustable relation to the guide side of said frame.

2. The combination of the frame A, having one side adapted to serve as a guide for a draftsman's square, the circular revoluble board B, mounted in an opening in said frame and provided with notches in its periphery, a catch, D, secured in the edge of the opening in said frame, and a lever, D′, one end of which is attached to said catch, and the other end of which extends out to the outside edge of said frame, whereby said catch can be operated, substantially as set forth.

3. In a drawing-board, the combination of the revoluble board having notches in its edge, the frame in which it is mounted having one side adapted to serve as a guide for a draftsman's square, the spring-catch D, secured to the edge of the opening in said frame and extending against the edge of said board, and the lever D′, connected to the free end of said catch and extending at its other end out through said frame and having a thumb-piece, d^2, formed on said end, whereby said catch can be readily disengaged from the edge of the board from the outside edge of the frame, substantially as set forth.

4. In a drawing-board, the combination of the frame A, circular board B, pivoted in a circular opening therein, catch D, secured to the inside edge of the frame, the lever D′, pivoted on the plate D^2 and connected to the catch by a link, *d*, and said plate D^2, substantially as set forth.

5. In a drawing-board, the combination, with the board B and frame A, of the catch D, secured to the edge of said frame and adapted to engage with notches in the edge of the board, the lever D′, pivoted in bearings on the plate D^2 and connected to the catch by the link *d*, and the plate D^2, said plate having an aperture through which a thumb-piece, d^2, on one end of said lever D′ projects, and also having a slide, D^3, which is adapted to be slid under a lug on said thumb-piece when said thumb-piece is pushed in, thereby preventing the catch from re-engaging with the notches in the edge of the board, substantially as described, and for the purposes specified.

6. In a drawing-board wherein the board is revoluble, the combination, with the said board, of a catch secured in the frame thereof adapted to engage with notches in the edge of said board, and a slide, D^3, adapted to engage with a stop or lug connected with said catch, whereby said catch may be held out of engagement with said notches when desired, substantially as set forth.

7. The combination of a drawing-board, clamp-bolts E therein, and levers for operating said clamp-bolts.

8. The combination, with a drawing-board, of the clamp-bolts E, extending down through the board, the bell-crank levers F, mounted on the under side of said board, an arm of each being attached to one of said bolts E, and means for drawing back said levers and tightening the bolts, substantially as set forth.

9. The combination, in a drawing-board, of the clamp-bolts E, extending down through the board, bell-crank levers F, one arm of which is attached thereto, the bolt G, connected to the horizontal arms of the bell-crank levers H, the shank of which extends up through the board and is provided with a thumb-nut, said bell-crank levers H, and connecting-rods I, which connect the levers H to the levers F, whereby the clamp-bolts E are adapted to be operated from the bolt G, substantially as set forth.

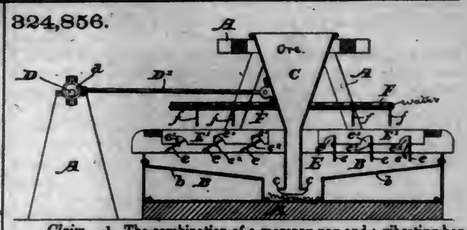
10. The combination, in a drawing-board, of the clamp-bolts E, the bolt part extending down through the board and connecting with the bell-crank levers F, said bell-crank levers F, the springs E′, operating to bear upward on said bolt, the connecting-rods I, bell-crank levers H, connected to said bell-crank levers F by said connecting-rods I, and the bolt G, having one arm of each of the bell-crank levers H connected thereto, and a thumb-nut, *g*, on its upper end, by which it is operated, substantially as described, and for the purposes specified.

11. The combination, in a drawing-board, of the frame A, revoluble board B, friction-plate *c*′, and set-screw C, whereby said board may be secured rigidly in said frame, substantially as set forth.

12. In a drawing-board, the board of which is revolubly mounted in its frame, the combination of said frame, said board, a friction-plate, and a set-screw, substantially as described, and for the purposes specified.

13. The combination of a frame, A, having an opening therein and having one side adapted to serve as a guide for a T-square, a circular board mounted and adapted to revolve in said opening, and a stop-screw, C, set in one side of said frame and adapted to come against the edge of said board and thus hold it in any desired position relative to said frame.

324,856. APPARATUS FOR EXTRACTING GOLD FROM PLACER MINES. GILBERT M. LEVERTT, Indianapolis, Ind. Filed June 16, 1885. (No model.)



Claim.—1. The combination of a mercury-pan and a vibrating hopper extending from above said pan down into the same to near its bottom, whereby the sand is conducted beneath the mercury, and then by the vibrations of the hopper permitted to escape from beneath said hopper and rise to the top of said mercury.

2. The combination, in mining apparatus, of a frame-work, a vibrating hopper suspended upon said frame-work and extending down into and near the bottom of a mercury-pan, said mercury-pan having a deep central portion somewhat wider than the distance traveled by the vibrating hopper and shallow ends, and means for moving the treated sand in each direction from the center, and discharging it over the ends of the pan, substantially as set forth.

3. The combination of a mercury-pan, a vibrating hopper extending to beneath the surface of the mercury in the pan, and a reciprocating scraper moving over the pan, and adapted to scrape off the sand which rises to the top of the mercury.

4. The combination of a mercury-pan, a hopper leading beneath the surface of the mercury, and a scraper for removing the sand from off the mercury, said scraper consisting of a reciprocating frame-work having pivoted blades on each side of the center, the blades on each side being arranged to work toward their respective ends of the pan.

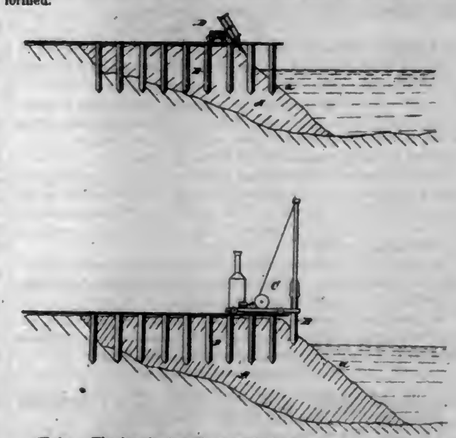
5. The combination of a mercury-pan, a hopper leading to near the bottom of said pan, scrapers arranged to reciprocate over the top of said pan, and a series of water-pipes arranged above said pan, and provided with orifices or nozzles to discharge the water onto the sand on the mercury in the pan.

6. The combination of a mercury-pan, a vibrating hopper leading to beneath the surface of the mercury, a scraper, and a series of water-pipes or jets.

7. The combination of a mercury-pan, a hopper leading to beneath the surface of the mercury therein, a scraper, and means for imparting a vibratory or reciprocal motion to said hopper and said scraper.

324,857. METHOD OF BUILDING JETTIES. ROGER S. LITTLEFIELD, Empire City, Oreg. Filed Dec. 26, 1884. (No model.)

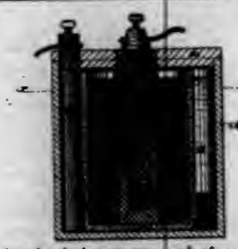
Brief.—A new method of building jetties which avoids the expense of using piles long enough to penetrate through the embankment and find their support in the ground beneath by first commencing a track and fill, and then driving the piles into the slope of the dump thus formed.



Claim.—The herein-described method of constructing breakwaters and jetties, which consists in beginning a fill at the point where the jetty is to be constructed, driving piles into the slope of said fill, extending a track on the piles, then filling about said piles, and so continuing in order until the jetty is completed.

324,858. GALVANIC BATTERY. JESSE B. LOW, Watertown, N. Y. Filed Mar. 23, 1885. (No model.)

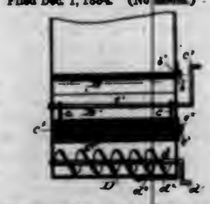
324,858.



Claim.—1. A galvanic battery composed of an outer jar, an unglazed earthenware porous cup and a carbon porous cup, the space between the outer jar and the earthen porous cup containing a solution of chloride of sodium, and a negative electrode, the space between the earthenware porous cup and the carbon porous cup being packed with chloride of sodium, and the carbon porous cup containing chromic acid, all being arranged relatively in the manner herein specified.

2. A carbon porous cup adapted to contain an acid and provided with a removable stopper for hermetically sealing said cup, the said stopper forming a binding-post for receiving one of the circuit-wires, as herein specified.

324,859. COMBINED FLOUR BOX AND SIFTER. William C. Mars, Onawa, Iowa. Filed Dec. 1, 1884. (No model.)



Claim.—1. A combined flour box and sieve, comprising the casing A, provided with the slot b', the adjustable cover b^4, arranged to close the slot, the removable partition B, adapted to be inserted through the slot and to fit closely against the walls of the box, the sieve-drawer C, constructed to fit closely against the walls of the box, and the agitator B', arranged above the sieve, all substantially as and for the purposes described.

2. A combined flour box and sieve, comprising the casing A, having the slot b', the adjustable cover b^4, arranged to close the slot, the removable partition B, adapted to be inserted through the slot and fit closely against the walls of the box, the sieve-drawer C, constructed to fit closely against the walls of the box, the agitator B', arranged above the sieve, and the worm-conveyer D, arranged in a chamber below the sieve, substantially as and for the purposes described.

324,860. PROCESS OF DECORATING PAPER AND OTHER MATERIALS WITH OIL-COLORS. Mary B. Martin, New York, N. Y. Filed Nov. 26, 1884. (Specimens.)

Claim.—1. The process, substantially as before set forth, of coloring paper and other materials with oil-color by diffusing the oil-color, in connection with a solvent, upon water, and applying the paper or other material to the same, substantially as before set forth.

2. The process, substantially as before set forth, of coloring and bronzing oil-paper and other materials with oil-color and bronze by diffusing the oil-color, in connection with a solvent and bronze-powder, upon water, and applying the paper or other material to the same, substantially as before set forth.

3. As a new manufacture, the article hereinbefore described, consisting of an article whose surface is colored with oil-color by the diffusion process, substantially as above described.

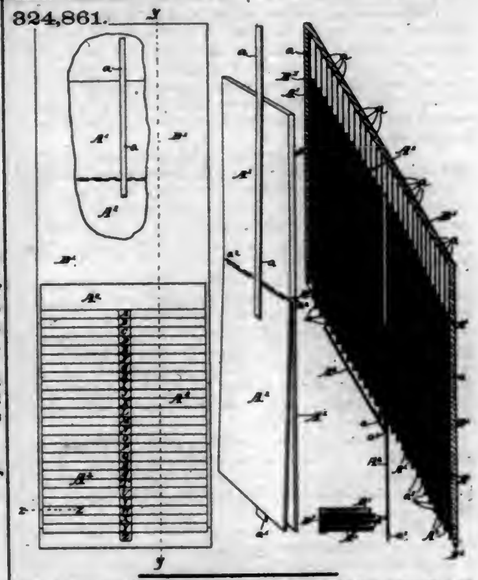
4. As a new manufacture, the article hereinbefore described, consisting of an article whose surface is colored with oil-color by the diffusion process, and bronzed, substantially as above described.

324,861. INDEX OR DIRECTORY CASE. Elijah B. Martindale, Indianapolis, Ind. Filed May 30, 1884. (No model.)

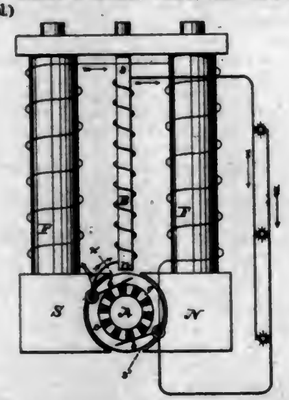
Claim.—1. The combination, with a case, of a series of sheets independently mounted on elastic cords or springs, inscribed with index or directory matter, and provided with indicator characters or letters on the lower ends, each sheet being arranged to drop slightly below the one in front, substantially as set forth.

2. The combination of a case, sheets A', suspended therein, supplemental sheets hinged thereto, and an elastic cord, *a*, extending from a point below said hinge on said sheet A^2 to a point above said sheets in said case, substantially as set forth.

324,861.



324,862. REGULATOR FOR DYNAMO-ELECTRIC MACHINES AND MOTORS. Richard H. Mather, Windsor, Conn. Filed Oct. 23, 1884. (No model.)



Claim.—1. In a dynamo-electric machine of that class in which the field-magnet proper is not in the main circuit, a regulating field-magnet located in said circuit and having one of its poles adjacent to that part of the armature which lies between a like pole of said armature and a like pole of the field-magnet proper of such machine operating as a generator, and between a like pole of said armature and an unlike pole of said field-magnet proper of such machine operating as a motor, substantially in the manner and for the purpose specified.

2. In a dynamo-electric machine, whether motor or generator, whose field-magnet proper is separately or permanently excited or, is shunt-wound, a regulating field-magnet wound and connected in series with the armature of such machine and placed with one of its poles adjacent to said armature at a point immediately in advance of the like pole of said armature, substantially in the manner and for the purpose specified.

3. A dynamo-electric machine in which the brushes are in a fixed position, and in which an electro-magnet in the working-circuit of such machine co-operates with the field-magnet thereof and locates the diameter of commutation, substantially as shown, and operating as described, for the purpose specified.

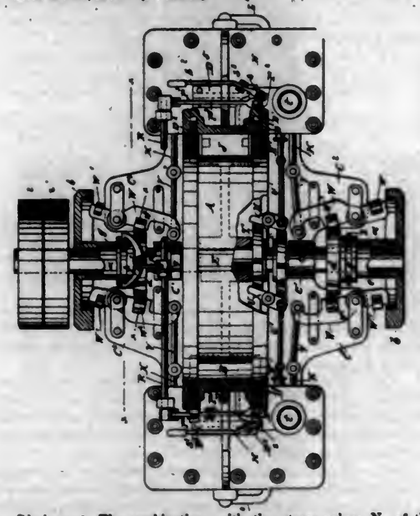
4. In a dynamo-electric machine, whether motor or generator, an auxiliary field-magnet consisting of an electro-magnet which is located in the main circuit of the machine and has one of its poles just in advance of a like pole of the armature, substantially in the manner and for the purpose specified.

5. A dynamo-electric machine, whether motor or generator, provided with an auxiliary field-magnet which is attached to the principal field-magnet of such machine, is located in the main circuit, and has a

pole slightly in advance of a like pole of the armature, substantially in the manner and for the purpose specified.

6. A dynamo-electric or electro-dynamic machine provided with a principal and an auxiliary field-magnet, the latter being an electro-magnet which is wound to a greater electro-magnetic efficiency than the armature of said machine, is placed in the main circuit, and has a magnetic pole adjacent to a like magnetic pole of said armature, substantially in the manner and for the purpose specified.

324,863. ROTARY ENGINE. Dennis McColgan, Butte City, Mont. Filed Oct. 29, 1884. (No model.)



Claim.—1. The combination, with the steam-valves N, of the levers U and the cams T T', mounted on the shaft C, the cam T' being mounted in such a manner as to have play of one-sixth of a revolution on the shaft, substantially as herein shown and described.

2. In a rotary engine, the combination, with a grooved wheel, of a casing surrounding it, which casing is provided with abutment-boxes at diametrically-opposite points, sliding abutments in the boxes, sleeves on the main shaft, cams formed at each end of each sleeve, cam-levers adapted to be acted upon by either cam of each sleeve, and of rods connected with the cam-levers and with the abutments, substantially as herein shown and described.

3. In a rotary engine, the combination, with a grooved wheel, of a casing surrounding it and provided with abutment-boxes at diametrically-opposite points, sliding abutments in the boxes, the sleeves *a* on the shaft C of the wheel, the cams *b d* on the sleeves, the cam-levers W, provided with the rollers W' W^2, and rods connected with the said levers and with abutments, and of levers for shifting both sleeves at the same time, substantially as herein shown and described.

4. In a rotary engine, the combination, with a wheel, of a casing surrounding it, abutments in the casing, hollow pistons projecting into cylinder-apertures in the abutments, and pipes for conducting steam through the hollow pistons into the cylinder-apertures, substantially as herein shown and described.

5. In a rotary engine, the combination, with a wheel, of a casing surrounding it, abutments in the casing, hollow pistons projecting into cylinder-apertures in the abutments, pipes for conducting steam through the hollow pistons into the cylinder-apertures, thus pressing the abutments against the rim of the wheel, and of cams on the shaft of the wheel, and rods connected with the abutments and acted upon by the said cams for the purpose of pressing the abutments from the shaft of the wheel, substantially as herein shown and described.

6. In a rotary engine, the combination, with a wheel, of a casing surrounding it, abutment-boxes provided in the casing, sliding abutments in the boxes, steam-channels formed on the bottom and top of the abutment-boxes, and valves for admitting the steam from the steam-chest into the upper or lower channel, substantially as herein shown and described.

7. In a rotary engine, the combination, with a wheel and a casing surrounding it, of abutment-boxes formed on the casing, sliding abutments in the boxes, the said boxes being provided with steam-channels at the top and bottom of the abutments, a valve for admitting the steam from the chest into either channel, a rock-shaft connected with the said valve, a lever for throwing the rock-shaft, shifting-cams on the shaft of the wheel, rods acted upon by the cams and connected with the abutments, and levers for acting on the shifting-cams and connected with the lever for throwing the rock-shaft, substantially as herein shown and described.

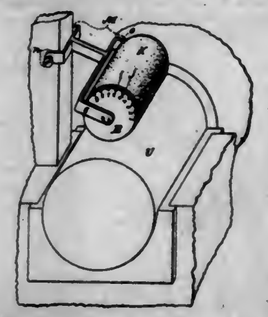
8. In a rotary engine, the combination, with a wheel and a casing surrounding it, of abutment-boxes formed in the casing, sliding abutments in the boxes, the sliding valve N, working in the steam-chest M, the valve P', working in the chamber P, connected with the steam-channels Q Q, and the valve S', working in a channel, S, establishing communication between the steam-chest M and the chamber P, for the purpose of starting the machine, substantially as herein shown and described.

9. In a rotary engine, the combination, with the grooved wheel, of a cylindrical casing surrounding it, and the pistons E, formed in the groove by two transverse partitions, covered by a top plate on which a packing-plate is held, substantially as herein shown and described.

10. In a rotary engine, the combination, with the wheel A, having a groove in its rim, of the two piston-walls E', the cross-piece E^2, the packing-plate F, the pins F', projecting from the packing-plate F through the cross-piece E^2, and the springs F^2, for pressing the packing-plate against the bottom of the groove, substantially as herein shown and described.

11. In a rotary engine, the combination, with the wheel A, having a groove in its rim, of the piston-walls E' E', having apertures *d'*, the cross-piece E^2, having a groove, *e*, and an opening, e^2, the valve *f*, held in the groove *e*, the packing-plate F on the cross-piece E^2, and the springs for pressing the packing-plate against the cross-piece E^2, substantially as herein shown and described.

324,864. ROTARY LUBRICATOR. Duncan L. McCorkindale, Troy, N. Y., assignor of one-half to S. Alexander Orr, same place. Filed July 2, 1885. (No model.)



Claim.—1. A lubricator adapted to contain lubricating material, and to be rotated by peripheral contact with a revolving journal, and having through its circumferential casing an aperture or apertures furnished with an adjustable cut-off for regulating the escape of the lubricating material, substantially as set forth.

2. A lubricator adapted to contain lubricating material, and to be rotated by peripheral contact with a revolving journal, and having through its circumferential casing an aperture or apertures furnished with an adjustable cut-off, and surrounded by a porous or absorbent covering, substantially as described.

3. A lubricator adapted to contain lubricating material, and to be rotated by peripheral contact with a revolving journal, and having a circular casing and a sleeve fitting thereto with correspondingly-spaced perforations in the sleeve and casing, and the sleeve adjustable to regulate the escape of the lubricating material through said perforations, substantially as described.

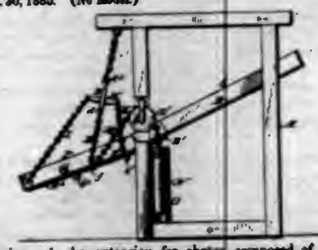
4. A rotary lubricator adapted to contain lubricating material, and having a cylindrical casing and a sleeve fitting thereto, with correspondingly-spaced perforations in the casing and sleeve, and the sleeve adjustable and surrounded by a porous covering, substantially as set forth.

5. A rotary lubricator having a hollow cylinder, A, with heads B B' and the perforations *c*, a sleeve fitting around and adapted to be turned upon said cylinder, and having a series of perforations, *d*, spaced and graduated in numbers relatively to the perforations in the cylinders, substantially as described, the correspondingly-spaced stops *i* on the head of the cylinder, the catch *j* on the sleeve, and the porous covering K, substantially as described.

6. A rotary lubricator having an internal chamber for the lubricating material, a pointed or conical journal *l*, and a wick, *q*, extending outward from within said chamber closely through a perforation to the surface of said journal, substantially as shown and described.

7. The combination, with a rotary journal-lubricator having pointed or conical journals *l*, of the detachable holder M, having the spring-arms *o*, formed with sockets or recesses into which fit the pointed or conical journals of the lubricator, and having pivots *n* for securing the holder to a support, as set forth.

324,865. COAL-CHUTE. James McEachern, Wenona, Ill. Filed Apr. 30, 1885. (No model.)



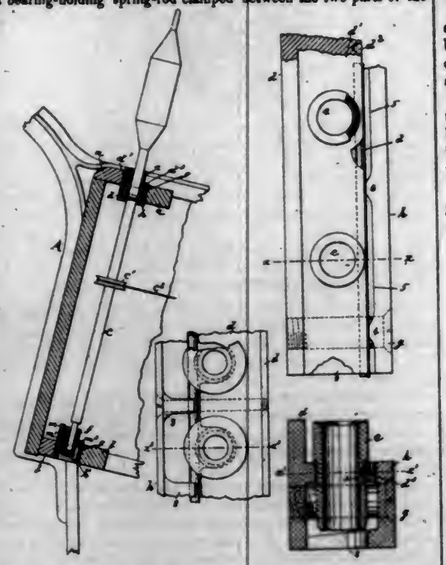
Claim.—1. An extension for chutes, composed of two sections hinged together, the inner section constructed to fold upward and the outer section to fold downward, combined with a weight attached to said inner section, substantially as and for the purpose specified.

2. The combination, with the folding sections of an extension-platform, of supporting-chains, an equalizing-lever, and brace-chains connecting said lever with said sections, as and for the purposes specified.

3. A coal-chute consisting of a frame provided with a chute and an extension thereto, composed of two hinged sections having detachable guide-bars, a weight, supporting-chains, and equalizing-lever and brace-chains, substantially as and for the purpose set forth.

324,866. SPINDLE-BEARING FOR MULES AND JACKS. John T. Heath, Taunton, Mass. Filed Jan. 12, 1885. (No model.)

Brief.—The bearings are mounted in the flange of a metal rail, are permitted to rock on the rail as a fulcrum, and are held in their places by a bearing-holding spring-rod clamped between the two parts of the rail.



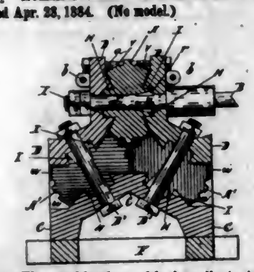
Claim.—1. A jack or mule carriage having a -I-shaped rail, and the bearings grooved externally and supported between their ends by and to tip or rock on a flange, d', of the said rail, combined with the rod d^3, acting against the peripheries of the said bearings from end to end of the rail and retaining them in the openings in the said rail, substantially as described.

2. The bolsters or bearings grooved at their peripheries and the rail and its flange provided with openings to receive the said bolsters, combined with the spring-rod, and with the part h of the rail, having projections to bear against the rod at suitable intervals to keep the rod in contact with the said bolsters or bearings, substantially as described.

3. The rail portion d, having the laterally-extended flange provided with openings for the reception of the bearings, and the bearings, shaped externally, as described, to enter said openings loosely, combined with the rod intersecting the said openings and acting against the bearings, and with means to hold the said rod in place at suitable intervals, substantially as described.

4. The carriage A, provided with the metal rails d m, having, respectively, laterally-extended flanges d' m', provided with openings, for the reception, respectively, of the bolster and the footstep bearings loosely, the separate bolsters and footsteps placed loosely in the openings of the said flanges, and the spindle placed in the said bearings and sustained thereby above and below its whirl, combined with means for holding the said bolsters and footsteps in the openings of the said flanges, permitting them to tip to accommodate the spindle, but restraining their rotation with the spindle, substantially as described.

324,867. ROLLING-MILL. Edward B. Heatyard, Lake Geneva, Wis. Filed Apr. 28, 1884. (No model.)



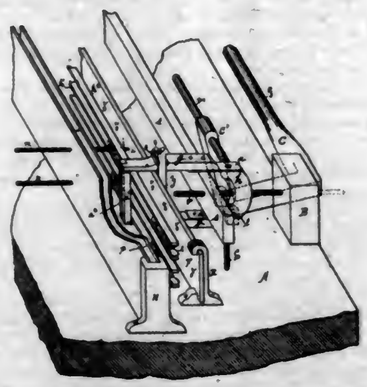
Claim.—1. The combination, with the rolls A A', having the hollow journals H, and the housings D, and the arched base C, and the frame F, of the bolts B B', to secure correct adjustment of all the parts while under severe strains, substantially in the manner and for the purpose set forth.

2. The combination, with the driven roll A, of the bolt B, so arranged and with the proper devices to act not only as a bolt to hold the housings in place, but also as a power-shaft, substantially in the manner and for the purposes set forth.

3. The combination, in a three-part roll, of the three rolls, arranged as described, and provided with hollow journals through which extend bolts connecting that portion of the housing or framing at one end of each roll to the corresponding portion at the other end, substantially as and for the purposes specified.

4. The combination, with the three rolls, arranged as described, of the base C and housings D, in which the said rolls are mounted, and bolts passing through the hollow journals of the said rolls and connecting the said housings to each other and to the base, substantially as and for the purposes specified.

324,868. CAPSULE-MACHINE. Theodore C. Merz, Detroit, Mich. Filed May 2, 1885. (Model.)



Claim.—1. In a device for removing gelatine capsules from their pins, a series of bars or supports provided with the springs e, said bars adapted to be drawn apart to allow the capsules to be projected between and beyond said springs, said bars also adapted to be simultaneously moved toward each other, causing the springs to press upon the body of the capsule pin or pins, thence moved along the body of said pin or pins, removing the capsule or capsules, substantially as set forth.

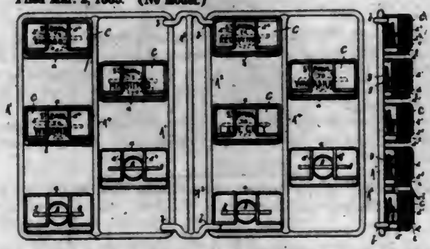
2. In a device for removing gelatine capsules from their pins, the combination of the base attached thereto in duplicate, the uprights B B H, the lever attached to the rod m and base, as specified, said rod attached to the heads k, mounted upon the rods r, sliding through the posts S B, the jaws g, attached by spring-metal plates to said heads, the free ends of said jaws attached to the vertical bars, said bars attached to the horizontal bars h' h^2, as specified, said horizontal bars supporting the series of springs e which engage with the series of capsule-pins, as and for the purposes specified.

3. In a device for removing gelatine capsules from their pins, the combination of the base, the uprights attached thereto, the capsule plate and pins, the series of horizontal bars h' h^2, said bars attached to the vertical bars, as specified, said vertical bars attached to the yoke y, the capsule-receiving plate located in advance of the capsules upon the pins n, the holes e, registering with said capsules, and mechanism for reciprocating the parts, as and for the purposes specified.

4. In combination with the pins and capsules of a capsule-plate, the capsule-receiving plate located in advance of said capsules and pins, said receiving-plate provided with a series of holes adapted to register with the mounted capsules of the capsule-plate and to receive said capsules as they are removed from the pins, substantially as specified.

5. The combination, with the horizontally-reciprocating jaws, of the vertical bars attached to the free ends of said jaws, as specified, said vertical bars supporting the horizontal bars, as set forth, and a yoke for holding said jaws, in the manner and for the purposes set forth.

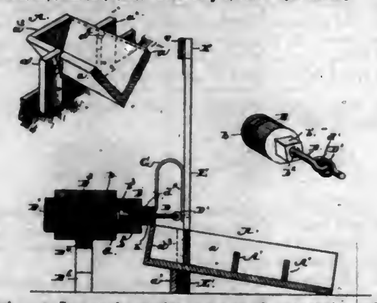
324,869. TICKET-HOLDER. Tracy M. Metcalf, St. Paul, Minn. Filed Mar. 2, 1885. (No model.)



Claim.—1. In a ticket-holder, a frame, A', having ticket-holding racks attached thereto, a similar frame, A^2, having similar ticket-holding racks attached thereto, the racks of one frame alternating with the racks of the other frame, and an intermediate frame, A^3, hinged to said frames A' A^2, whereby the latter may be folded together and the racks of one frame fit into the spaces between the racks of the adjoining frame, substantially as and for the purpose set forth.

2. The combination of the frames a, bands d' d^2, corner sections, d^3 d^4, open spaces e, springs B, and cross-bars g, substantially as and for the purpose set forth.

324,870. STOCK-WATERING DEVICE. Emanuel A. Mix and Marion C. Mix, Halstead, Kans. Filed July 9, 1885. (No model.)



Claim.—1. In a stock-watering apparatus, the trough, in combination with a water-supply pipe communicating with the trough, a regulating-valve fitted in the supply-pipe, and a pivoted supply-gate fitted within the trough so as to be actuated by the nose of the animal, and connected to the valve, whereby the pressing of the gate backward causes the opening of the valve, and means, substantially as described, for returning the gate to its closed position, as set forth.

2. In a stock-watering apparatus, the trough, in combination with a water-supply pipe arranged on the same plane, and communicating with the trough, a horizontal regulating-valve fitted in the supply-pipe, and a vertical pivoted supply-gate connected with the stem of the valve and fitting within the trough, the pressing of the gate backward causing the valve to work on a horizontal line, as set forth.

3. In a stock-watering apparatus, the combination of a trough, a supply-pipe, a pivoted supply-gate, a regulating-valve fitted in the supply-pipe and connected to the gate, and a spring for returning the gate to its closed position when pressure thereon is removed, substantially as described.

4. In a stock-watering apparatus, the combination of an inclined trough, a supply-pipe, a pivoted supply-gate supported by uprights, a plug having openings or passages therein fitted in the supply-pipe, a valve-rod connected to the gate and carrying a valve fitting in the plug, and a spring for automatically returning the gate to its closed position, substantially as described.

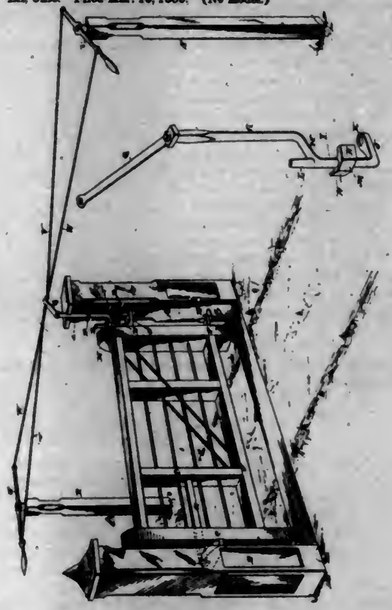
5. In a stock-watering apparatus, the combination of a trough having upright partitions, a supply-pipe, a pivoted spring-actuated supply-gate, a plug fitted in the supply-pipe and having a valve-seat therein, and a rod carrying a valve controlled by the supply-gate, substantially as described.

6. In a stock-watering apparatus, the combination, with a trough and a supply-pipe, of a spring-actuated pivoted gate, a plug having an exterior screw-threaded portion fitting in the supply-pipe and having a valve-seat, and a valve-rod having a valve adapted to fit said seat and pivotally connected to said gate, substantially as described.

7. In a stock-watering apparatus, the combination of an inclined trough having partitions therein terminating a short distance from the upper edges thereof, and adapted to form drinking-chambers, a supply-pipe, a pivoted spring-actuated gate, a plug fitted in the supply-pipe, and a regulating valve and rod controlled by the supply-gate, substantially as described.

8. In a stock-watering apparatus, the combination of the following elements: a trough, A, supported in an inclined position, and having partitions A' therein to provide drinking-compartments, a supply-pipe, B', a sleeve, B^2, secured thereon, a plug, B, fitted in said pipe and having a valve-seat and opening formed therein, a screw-threaded valve-rod, D, carrying a valve, d, and pivotally connected to a supply-gate, a supply-gate, E, pivoted to a horizontal cross-bar, e, standards E', to which said cross-bar is secured, and a spring, G, connected to the supply-gate and adapted to bear against the plug B, all arranged and adapted to operate substantially as set forth.

324,871. ATTACHMENT FOR SWINGING GATES. John F. Mock, Eli, Ohio. Filed Mar. 10, 1885. (No model.)



Claim.—1. The combination, with a gate-post, of a cranked rod pivoted to the post and provided with laterally-extending wings, and a gate pivoted to the cranked portion of said rod.

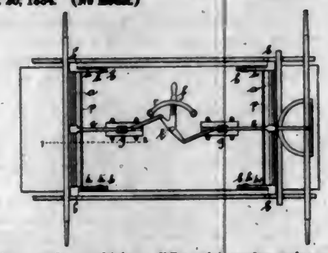
2. The combination, with a gate-post, of a cranked rod pivoted to said post and provided with laterally-extending inclined wings, a gate pivoted to the cranked portion of said rod, and devices for turning the rod.

3. The combination, with a post and a gate hinged thereto near its lower edge, of the cranked rod pivotally connected to the post and to the gate, laterally-extending wings formed integral with the cranked portion of said rod, and the devices, substantially as described, for operating said gate.

4. The combination, with a swinging gate, of a swinging pintle for elevating the latch end of the gate, the pintle being provided with wings for giving additional impetus to the gate, substantially as set forth.

5. The combination, with a swinging gate, of a swinging pintle forming a section of a hinge, rearwardly-inclined wings secured to the pintle, and a crank for operating said pintle, whereby the latch end of the gate is elevated and the gate opened, substantially as set forth.

324,872. VEHICLE-SPRING. E. Platt Morse, Ithaca, N. Y. Filed Nov. 20, 1884. (No model.)



Claim.—1. In a vehicle, a differential torsion-spring consisting of one or more elastic rods and attached arms, said arms having a different angular motion when the body is depressed, in virtue of which said rod or rods act as torsion-springs supporting the body, substantially as described.

2. In a vehicle, a differential spring consisting of an elastic rod provided with two short arms supporting the vehicle-body and a long arm supported by the vehicle-body, substantially as and for the purpose set forth.

3. An arm, *c*, of a vehicle-spring, in combination with a movable link, *c'*, adapted to change the effective length of arm *c* and thus adjust the spring to the desired stiffness, substantially as set forth.

4. In a vehicle, a spring consisting of one or more elastic rods provided with one or more short arms supporting the body and a long arm supported by the body, in combination with suitable mechanism for adjusting the length of one of said arms, substantially as and for the purpose set forth.

5. In a vehicle torsion-spring, the combination of two or more rods grouped and acting together with two or more attached arms having a different angular motion when the body is depressed, whereby said rods act as torsion-springs supporting the body, substantially as described.

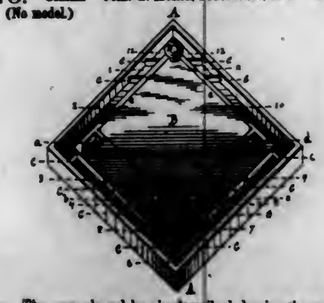
6. The slide *m* and prismatic guide *g*, in combination with lever *l* and connecting-straps for adjusting the spring, substantially as described.

7. The elastic rod *p*, connecting the supporting-arms of a vehicle-spring and tending to make them turn together and equalize the depression of the body, substantially as described.

8. The spring *s*, securely attached to arm *d* at one end and to pin *t* at the other, in combination with stops to limit the bending of said spring, substantially as and for the purpose set forth.

9. A vehicle torsion-spring consisting of one or more elastic rods and three attached arms, two of said arms having a different angular motion from the third when the body is depressed, in virtue of which said rod or rods act as torsion-springs supporting the body, substantially as described.

324,873. GAME. John B. Morse, Providence, R. I. Filed Mar. 9, 1885. (No model.)



Claim.—The game-board herein described, having the external rim or flange, A, the raised platform B, the channel extending from the platform on all sides to the flange and divided by the partitions C, the post D, and pockets *a b c d*, all arranged substantially as and for the purpose specified.

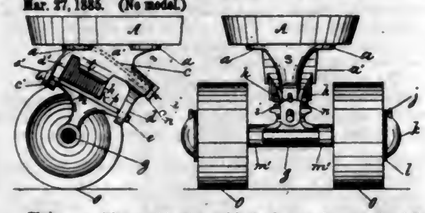
324,874. SWING-JOINT FOR STEAM. Horace J. Morton, Chicago, Ill. Filed Apr. 16, 1885. (No model.)



Claim.—1. In a swing-joint, the combination of the coupling-piece A, a loose ring mounted upon and encircling the same, and a coupling-nut, B, substantially as described.

2. A swing-joint consisting of a coupling-piece, A, provided with a groove, *a*, in combination with a loose ring and a coupling-nut, B, substantially as and for the purposes specified.

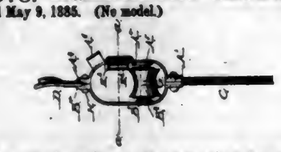
324,875. ROLLER-SKATE. William R. Mount, Milton, Ind. Filed Mar. 27, 1885. (No model.)



Claim.—1. The combination, with the hanger-frame and saddle, of the journal-arm bent at its end, and the tension-bar having a loop at its end for the journal-arm, and passing over the cushion and secured by a screw-thread and nut in the hanger-frame, substantially as and for the purpose specified.

2. The convex-cap washer composed of a hollow convex cap, *k*, and base-plate *l*, provided with a hole for the linchpin *j*, in combination with the axle *g*.

324,876. METALLIC SHAFT-TUG. Joseph H. Moyer, Reading, Pa. Filed May 9, 1885. (No model.)



Claim.—1. As an improved construction of metallic shaft-tugs for harness, the front portion provided with a pin or shaft adapted to enter within and support thereon a roller, G, having an internal recess, journal-seats, and locking-ears for a side roller, E², the rear portion also provided with an integral pin or shaft for the roller G, the two portions jointly providing interlocking ears for the reception of a buckle, D, and a receptacle for the strap C, the whole combined and adapted to form a harness shaft-tug, substantially as and for the purpose set forth.

2. The combination, with a shaft-tug, of a side roller, E², within a concealed recess, E, provided within the interior face of the tug, said recess having bearings K' and ears E², whereby the same are locked in place, as and for the purpose shown and described.

324,877. HAIR-CRIMPER. Sereno E. Norton, Chicago, Ill. Filed Sept. 11, 1884. (No model.)



Claim.—1. The combination of the thin flat non-elastic sheet-metal strip A with a cloth or fibrous covering, B, provided with a projecting flap, *b*, adapted to fold lengthwise of the crimper to secure the end of the hair, substantially as specified.

2. The combination of the thin flat non-elastic sheet-metal strip A, made of taggers tin, with the cloth covering B, folded over the metal strip, and having one edge secured by a seam, *b'*, and the other projecting to form a flap, *b*, adapted to fold lengthwise of the crimper, substantially as specified.

3. The combination of the thin flat non-elastic sheet-metal strip A with a fibrous covering, B, surrounding the same, and provided with projecting flaps *b*, adapted to fold lengthwise of the crimper on both sides, substantially as specified.

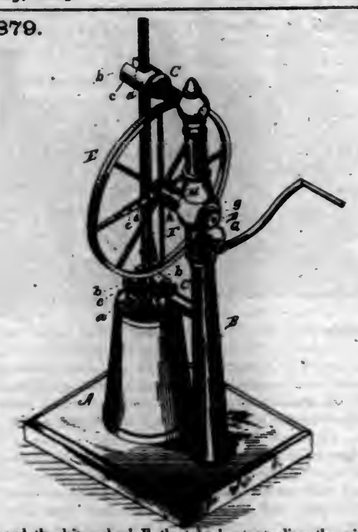
324,878. ROSIN-OIL. David J. Oshyy, Cincinnati, Ohio. Filed Sept 29, 1884. (No specimens.)

Claim.—As a new article of manufacture, rosin-oil of commerce treated with and containing an alkaline salt of sodium or potassium in quantity sufficient to wholly or partially neutralize the resinous acids, substantially as and for the purpose set forth.

324,879. CHURN. Charles W. Patton, Chicago, Ill. Filed June 27, 1884. (No model.)

Claim.—The device herein described, consisting of the flat base A, the tapering upright B, inclined as described, and provided with the guide-arm apertures, the detachable guide-arms *c*, having the vertical open slots *a*, and the transverse pins for locking the dasher in the said slots, the horizontal shaft carrying at one end the pinion *g* and at the

324,879.

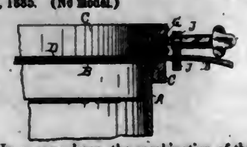


opposite end the drive-wheel E, the tube A, surrounding the said shaft and provided with the lubricant-receptacle H, and the pitman and gear-wheel carrying the crank-arm, substantially as specified.

324,880. FRAME FOR STRETCHING AND DRYING STOCKINGS. William C. Perkins, Worcester, Mass., assignor of one-half to Henry F. Arms, same place. Filed June 16, 1884. (No model.)

Claim.—In a frame for stretching and drying stockings, the wire part or form A, in combination with the means for expanding, contracting, and suspending the same, consisting of the part *d*, central part, *b*, and side link-pieces, *c c*, provided with upwardly-projecting holding-arms c^3 c^3 constructed, arranged, and hinged to operate substantially as shown and described.

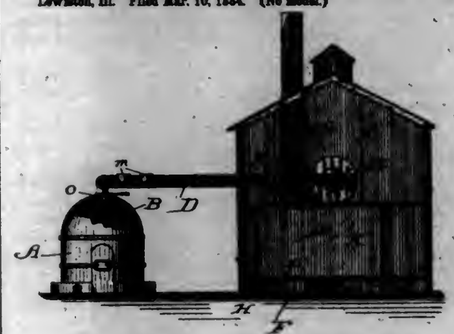
324,881. SNARE-DRUM. Rowland R. Perry, Peace Dale, R. I. Filed Apr. 25, 1885. (No model.)

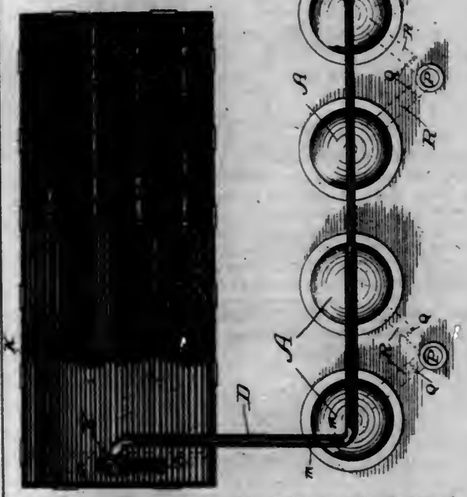


Claim.—1. In a snare-drum, the combination of the snares, rigidly secured to the hoop at one side of the drum, with a clamping and stretching device at the opposite side of the drum, the faces of the clamp-jaws and the stretching-screw lying parallel with the snares, as set forth.

2. In a snare-drum, the combination of the hoop C, perforated plate E, clamp J, adjusting-screw F, and snare D, the adjusting-screw and clamp-faces lying in a line parallel to the snares, as and for the purpose set forth.

324,882. APPARATUS FOR THE UTILIZATION OR DISPOSITION OF SURPLUS OR WASTE HEAT IN POTTERY-KILNS. Ruth Porter, Lewiston, Ill. Filed Mar. 10, 1884. (No model.)





Claim.—1. The combination of the drying-room of a tile or earthenware manufactory, a kiln for burning said tile, an air-passage connecting the drying-room with the kiln, and an exhaust-fan for forcing the heated air of the kiln into the drying-room, thereby simultaneously cooling the kiln and ventilating and heating said drying-room, and drying the tile or earthenware therein contained, substantially as and for the purpose described.

2. The combination of the drying-room of a tile or earthenware manufactory, a kiln for burning said tile, an air-passage connecting the drying-room with the kiln, an exhaust-fan for forcing the heated air of the kiln into the drying-room, a distributing-chamber in said drying-room for receiving the heated air from the air-passage, and means for distributing the heated air therefrom throughout the drying-room, substantially as and for the purpose described.

3. The combination of the drying-room of a tile or earthenware manufactory, a kiln for burning said tile, an air-passage connecting the drying-room with the kiln, and adjustable valves in said passage connecting the outer air, whereby the temperature of the heated air passing into the drying-room may be regulated, substantially as and for the purpose described.

4. The combination of the drying-room of an earthenware manufactory, said drying-room being provided with ventilators, a kiln or kilns where such earthenware is baked or burned, and an air-passage connecting said drying-room with said kiln or kilns, substantially as and for the purpose set forth.

5. As a means for distributing heated air throughout a drying-room, a line or lines of joints of tile or pipe laid with short spaces between the joints, substantially as shown and described.

6. As a means for distributing air throughout a drying-room, a chamber for receiving such heated air, and lines of short sections of pipe or tile, laid with spaces between the sections, ramifying from the chamber throughout the drying-rooms, substantially as shown and described.

7. In the manufacture of drain-tile, sewer-pipe, fire-brick, and other similar earthenware, the process of cooling the kilns wherein the earthenware is burned or baked, and accelerating the drying of the green ware, which consists in suitably regulating the temperature of the heated air from the cooling-kilns and causing it to pass through the drying-rooms wherein said green earthenware is stacked, substantially as and for the purpose set forth.

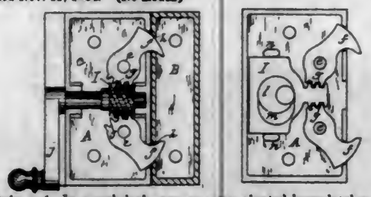
8. The combination of the hot-air or burning chamber B, pipe D, exhaust-fan E, distributing-chamber F, and drying-room K, substantially as and for the purposes described.

9. The combination of the hot-air or burning chamber B, connecting-pipe D, exhaust-fan E, and drying-room K, substantially as and for the purposes described.

10. The combination of the burning or hot-air chamber B, connecting-pipe D, exhaust-fan E, distributing-chamber F, distributing-pipes H H, and drying-room K, substantially as and for the purposes described.

11. The combination of the hot-air or burning chamber B, connecting-pipe D, slides *m m*, exhaust-fan E, and drying-room K, substantially as and for the purposes described.

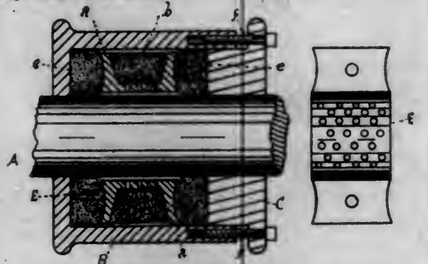
324,883. SASH-FASTENER. EDWARD T. PRINDLE, Aurora, Ill. Filed Nov. 13, 1884. (No model.)



Claim.—1. In a sash-lock, one or more pivoted lever-latches having an arc of cog-teeth actuated by a movable piece gearing directly with such toothed arc or arcs, such actuating-piece being provided with a handle outside the case, and serving to operate the latch or latches positively in latching or unlatching, substantially as set forth.

2. In a sash-lock, the combination, with the latch-box and with its inclosed geared and pivoted latches, of a sliding rack located between and engaging with the teeth of both latches, and an actuating-handle serving positively to latch and unlatch them, as set forth.

324,884. PISTON-ROD PACKING. SILAS H. REYNOLDS and GEORGE E. DANFORTH, Lynn, Mass., assignors to said Reynolds, as trustee. Filed Apr. 22, 1885. (No model.)



Claim.—1. In combination, a piston-rod, a stuffing-box, a central bushing adapted to fit loosely within the stuffing-box, and having a chamber filled with oil-retaining substance, and perforations leading therefrom to the piston-rod, and having a bore slightly larger throughout than the said rod, the concave sides of the bushing, the packing material arranged upon either side of the bushing, whereby, when pressure is applied by means of the follower C, the bushing will be held by a yielding support and assume a position out of frictional contact with the piston-rod, thus forming an oil-space around the rod, and the packing material will be pressed closely against the rod and prevent the escape of oil from the box, all substantially as described.

2. In combination with the piston-rod, a stuffing-box, and packing material, the bushing E, formed in two parts, adapted to be clamped around the piston-rod, as described, and having a chamber filled with oil-retaining substance, and perforations leading therefrom to the piston-rod, substantially as described.

324,885. SASH-HOLDER. FRANK L. ROSENTHER, Cleveland, Ohio, assignor to the Champion Safety Lock and Novelty Company, same place. Filed Jan. 27, 1885. (No model.)

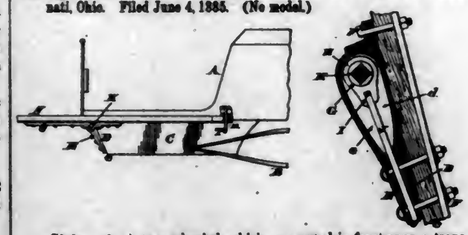


Claim.—1. In a sash-holder, the combination, with a latch composed of a vertical binding-bar and two parallel guide-arms moving on a horizontal guide-piece secured to the sash, of a pivoted actuating-piece provided with an eccentric edge arranged to bear against the binding-bar and move the latch in one direction, and an eccentric recess or slot engaging a pin on the latch, and thereby moving the latter in the reverse direction, substantially as specified.

2. In a sash-holder, the combination, with the guide-piece A and latch B, provided with the binding-bar B', having the beveled inner surface, E, of the actuating-piece C, pivoted at *a*, and provided with the eccentric beveled edge D', adapted to bear against the bevel edge E when the handle of the actuating piece is turned downward, substantially as specified.

3. In a sash-holder, the combination of the guide-piece A and latch B, provided with the lug or pin *b*, with the actuating-piece C, composed of the handle C^2 and plate C', provided with the straight edge D, eccentric edge D', and eccentric slot E', substantially as specified.

324,886. TWO-WHEELED VEHICLE. DANIEL M. SECHLER, Cincinnati, Ohio. Filed June 4, 1885. (No model.)



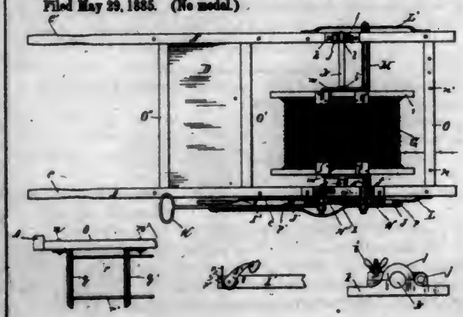
Claim.—1. A two-wheeled vehicle supported in front upon a transverse pivot-shaft, K *k'*, and bearings I, I', the opposite extremities of said shaft being rigidly attached to the thills N N', and a forked hub, G G' H I, being applied at or near the mid-length of said shaft, which fork I receives the free end of a spring, J, whose fixed end is secured in a housing, D *d* E *e*, fastened to the vehicle-body, and serving as a bearing for the hub G G' H I, substantially as herein described.

2. A pivot-shaft bearing consisting of the recessed strap O *o*, recessed cap P *p*, and flange S, arranged to serve as a stop that prevents end shifting of the shaft, substantially as herein described.

3. The bolts *n n'*, tapped into the rear ends of thills N N', and traversing the vertical slots *t* of keepers T T', which latter are rigidly attached to the opposite sides of the body, for the purpose specified.

4. The pivot-shaft K, inserted in the hub H G G', whose collars G G' are journaled in the housing D E, as herein described.

324,887. MACHINE FOR WINDING FENCE-WIRE. EDWARD W. SHOEMAKER, Lena, Ill., assignor of one-half to George Bruce, same place. Filed May 29, 1885. (No model.)



Claim.—1. In a machine of the class described, the combination, with a cart-body, of a suitably-mounted spool-shaft, a reciprocating lever pivoted to the cart-body, and pawl-and-ratchet mechanism connecting the lever and the spool-shaft, whereby the reciprocal motion of the lever rotates the spool-shaft.

2. The combination of the cart-body A A', the pinion H'', and its socketed shaft H''', the spool-shaft N, having one of its ends cylindrical and the other non-cylindrical, and the separable box *k l*, the cylindrical end of the shaft being journaled in said box and the non-cylindrical end stepped in the socket of the shaft H''', substantially as shown and described, and for the purpose set forth.

3. The combination of the shaft N and the dogs *m m'*, mounted on said shaft, one of said dogs being removable at will and both of said dogs being adapted to engage a wire-spool and hold the same in position on the shaft N, the separable box *k l*, in which one end of said shaft N is journaled, and the socketed shaft H''', in which the other end of said shaft N is stepped, and means, substantially as shown and described, for rotating said socketed shaft H''', substantially as and for the purpose set forth.

4. The combination, with the cart-frame A A', of the pinion H'' and its shaft H''', the spool-shaft N, having one of its ends stepped in the shaft H''' and the other journaled in a box on the frame, the pinions H H', levers I I', and pawls J J', substantially as shown and described, and for the purpose set forth.

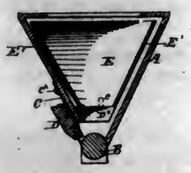
5. The combination, with the cart-frame A A' O and a spool-shaft mounted and rotating thereon, of the wire-guide attached to the front of the machine, and consisting of the vertical bars *q q'* and the horizontal rods *r r'*, substantially as shown and described, and for the purpose set forth.

6. The combination of the pinion H'' and its short shaft H''', the cart-frame on which they are mounted, the shaft N, rotating with the shaft H''', and the brake c and stop *g*, adapted to retard the rotation of the pinion H'', substantially as shown and described, and for the purpose set forth.

7. The combination, with the pinions H H' H'', levers I I', and pawls J J', of the springs *p* and pins *s*, constructed and combined substantially as shown and described, whereby the pawls may be held in or out of engagement, as desired, and the reverse rotation of the pinions be permitted or prevented at will.

8. The combination of the cross-bar O, the bars *q q'*, one of which is stationary and the other laterally adjustable, and the horizontal rods *r r'*, each attached securely at one end to one of the bars *q q'* and passing through the other of said bars, substantially as shown and described, and for the purpose set forth.

324,888. FEED-REGULATOR. LEOPOLD C. SCHROEDER, Jamestown, N. Y. Filed June 11, 1885. (No model.)



Claim.—1. The combination of the hopper A, the roller B, the gate D, and its spring-straps C with the arms D^2, projecting within the hopper, and the funnel E, secured thereon, substantially as described.

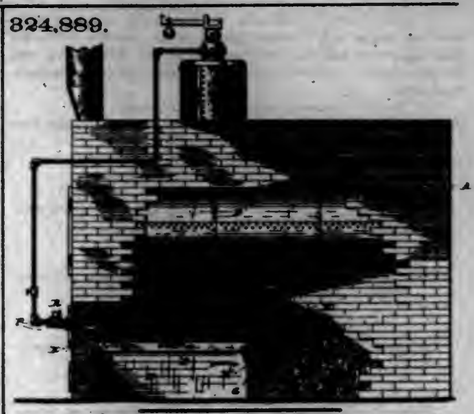
2. The combination of the hopper A, the roller B in the bottom thereof, the internal funnel, E, and arms D^2, projecting laterally therefrom through the walls of the hopper, with the gate secured to said arms and adjustably attached to the hopper A, substantially as and for the purpose described.

324,889. STEAM-BOILER FURNACE. BYRON SLOPER, New York, N. Y. Filed Dec. 22, 1884. (No model.)

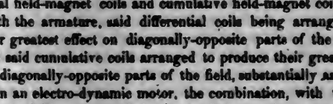
Claim.—1. The process herein described of effecting combustion in furnaces, consisting in first highly heating the air to the degree of incandescence of the walls of the furnace, then mixing it with steam, then injecting the mixture in such manner as to form a broad thin layer, substantially horizontal, over and upon the fuel, whereby the steam and air are instantaneously decomposed, the neutralizing effect of the nitrogen greatly reduced, and a complete and rapid combustion of the gases produced by which the highest attainable heat is secured.

2. The process herein described of combining air heated to the degree of the incandescent walls of the furnace with dry steam, by which the steam is highly superheated, also introducing carbonaceous material at or near the point of mixture of the steam and air, and injecting the mixture by the force of the steam into the furnace in a broad thin layer, substantially horizontal, over and in contact with the surface of the fuel, in such manner that immediate combustion of the gases takes place.

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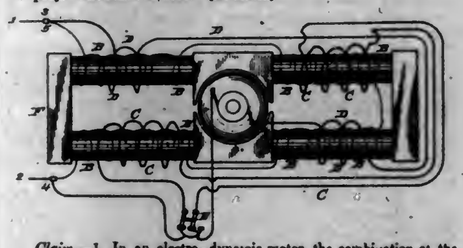


324,890. BUTTON AND FASTENER. FRANKLIN A. SMITH, Jr., Providence, R. I. Filed Aug. 25, 1884. (No model.)



Claim.—The button-head *a*, provided with the stem *b*, having the knob *c* at its end, combined with the concavo-convex spring-washer provided with the central seat or socket, b^2, and the slot *b'*, leading from said socket to the periphery of the washer, all substantially as shown and described.

324,891. ELECTRO-DYNAMIC MOTOR. FRANK J. SPRAGUE, New York, N. Y., assignor to the Sprague Electric Railway and Motor Company. Filed Mar. 12, 1885. (No model.)



Claim.—1. In an electro-dynamic motor, the combination of the armature, main field-magnet coils in shunt relation to the armature, and differential field-magnet coils and cumulative field-magnet coils in series with the armature, substantially as set forth.

2. In an electro-dynamic motor, the combination of the armature, a set of differential field-magnet coils and a set of cumulative field-magnet coils, both in series with the armature, and main field-magnet coils shunted around one of said series sets, substantially as set forth.

3. In an electro-dynamic motor, the combination of the armature, a set of differential field-maguet coils and a set of cumulative field-magnet coils, both in series with the armature, and main field-magnet coils shunted around the armature and said differential series set only, substantially as set forth.

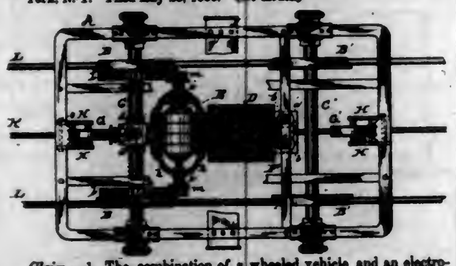
4. In an electro-dynamic motor, the combination of the armature, differential field-magnet coils and cumulative field-magnet coils, both in series with the armature, main field-magnet coils in shunt relation to the armature, and means for varying the magnetizing effect of said differential coils, substantially as set forth.

5. In an electro-dynamic motor, the combination, with the armature and main field-magnet coils in shunt relation to the armature, of differential field-magnet coils and cumulative field-magnet coils, both in series with the armature, said differential coils being arranged to produce their greatest effect on diagonally-opposite parts of the magnetic field, and said cumulative coils arranged to produce their greatest effect on other diagonally-opposite parts of the field, substantially as set forth.

6. In an electro-dynamic motor, the combination, with the armature, of main field-magnet coils in shunt relation to the armature, wound equally on all parts of the field-magnet, and differential field-magnet coils and cumulative field-magnet coils, both in series with the armature, said differential coils being arranged to produce their greatest effect on diagonally-opposite parts of the magnetic field, and said cumulative coils arranged to produce their greatest effect on other diagonally-opposite parts of the field, substantially as set forth.

7. In an electro-dynamic motor, the combination of the armature, main field-magnet coils in shunt relation to the armature, differential field-magnet coils and cumulative field-magnet coils, both in series with the armature, and means for varying the armature-current, substantially as set forth.

324,892. ELECTRIC RAILWAY-MOTOR. Frank J. Sprague, New York, N. Y. Filed May 25, 1885. (No model.)



Claim.—1. The combination of a wheeled vehicle and an electro-dynamic motor mounted thereon and propelling the same, having its field-magnet sleeved on an axle of the vehicle, substantially as set forth.

2. The combination of a wheeled vehicle and an electro-dynamic motor mounted upon and propelling the same, the field-magnet of said motor being sleeved upon an axle of the vehicle at one end, and supported by flexible connections from the body of the vehicle at the other end, substantially as set forth.

3. The combination of a wheeled vehicle, an electro-dynamic motor mounted upon and propelling the same, and flexible connections between the field-magnet of the motor and the body of the vehicle, the armature of the motor being supported directly upon said field-magnet, substantially as set forth.

4. The combination of a wheeled vehicle, an electro-dynamic motor mounted upon and propelling the same, the field-magnet of said motor being sleeved upon an axle of the vehicle, and the armature of said motor being supported upon the field-magnet, and gearing between the armature-shaft and the driving-wheels of the vehicle, substantially as set forth.

5. The combination of a wheeled vehicle, an electro-dynamic motor mounted upon and propelling said vehicle, extensions from the pole-pieces of said motor, and journal-boxes connected with said extensions and inclosing an axle of said vehicle, substantially as set forth.

6. The combination, with a wheeled vehicle supported upon its axles by springs, of an electro-dynamic motor flexibly supported from such vehicle and centered upon the driving-axle thereof, substantially as set forth.

7. The combination, with a wheeled vehicle, of an electro-dynamic motor centered upon the driving-axle thereof, and having its armature-shaft imparting motion to such axle, and a spring-support for the motor, relieving said axle wholly or partly of the dead-weight of motor, substantially as set forth.

8. The combination, with a wheeled vehicle, of an electro-dynamic motor centered upon the driving-axle thereof, and having its armature-shaft imparting motion to such axle, and an adjustable spring-support for the motor, relieving said axle wholly or partly of the dead-weight of motor, substantially as set forth.

9. The combination, with a wheeled vehicle, of an electro-dynamic motor centered upon the driving-axle thereof at one end, a spring-support for that end of the motor from the truck or body of vehicle, and relieving axle wholly or partly of dead-weight, and a spring-support for the other end of motor from the truck or body of vehicle, substantially as set forth.

324,893. WIRE-STRETCHER. Hans H. Stadgaard, Sycamore, Ill., assignor to Abram Ellwood, same place. Filed Apr. 27, 1885. (No model.)

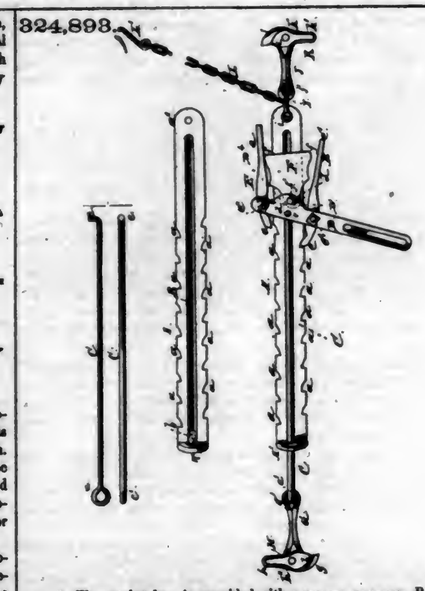
Claim.—1. A bar, A, having ratchet-teeth on opposite edges and a central longitudinal depression, B, and a draw-rod fitting in said depression, substantially as and for the purpose set forth.

2. The bar A, having ratchet-teeth on opposite edges, and a central depression, B, and formed with a turned end, A', in combination with a draw-rod, C, fitting in said depression and passing through end A', substantially as and for the purpose set forth.

3. The ratchet-bar A, provided with a central groove or recess, B, and draw-rod C, located in the recess, in combination with an actuating-lever, to which the draw-rod is centrally pivoted, substantially as described.

4. The actuating-lever having its sides or cheeks formed with interior recesses, in combination with a pawl having bosses on its sides fitting in said recesses, and a pivot-bolt passed through the lever and pawl, substantially as described.

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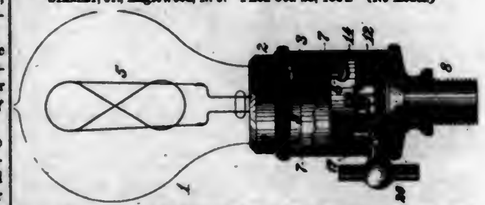
5. The ratchet-bar A, provided with a groove or recess, B, and rod C, in combination with a lever having sides or cheeks, and dogs E, acting on opposite sides of the ratchet-bar, for insuring a central line of draft for the draw-rod, substantially as specified.

6. The combination, in a wire-stretcher, of a ratchet-bar, a hollow oscillating head receiving and sliding on said bar, an actuating-lever carrying pawls and oscillating the head for causing it to alternately bear against the tail ends of the pawls, and a draw-rod moving longitudinally, on the rack-bar, substantially as described.

7. The combination, with the bar having ratchets on opposite edges, of the operating-lever D, formed with cheek D', and having cheek D'' secured thereto, and the two dogs pivoted to said lever to engage with the ratchets of said bar, substantially as described.

8. The combination, with the ratchet-bar A, of the operating-lever D, formed with cheeks D' D'', each having an ear, D', formed with a slot, d', the head F, provided with pins fitting in said slots, and dogs E, pivoted to said lever, substantially as described.

324,894. SOCKET FOR INCANDESCENT ELECTRIC LAMPS. Wm. Stanley, Jr., Englewood, N. J. Filed Oct. 23, 1884. (No model.)

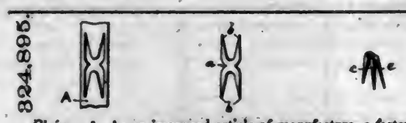


Claim.—1. The combination of an incandescent lamp, a base-piece fixed thereto and carrying the terminals of conducting-wires connected to the filament of the lamp, a socket adapted to receive said base-piece, a pair of contact-plates secured to said socket and adapted to make continuous contact with the terminals of the filament, a key or switch fitted to turn in the socket in contact with one of said plates, an independent contact-plate with which said key is adapted to be brought into or out of contact, and a pair of conducting-wires, one of which is connected to said plate and the other to the continuous contact-plate which does not communicate with the key, substantially as set forth.

2. The combination of a socket, a pair of spring contact-plates secured to an insulating-block therein, a conducting-wire connected to one of said plates, a key adapted to be partially rotated in said block while continuously in contact with the other plate, an independent contact-plate fixed to the insulating-block and adapted to receive or be out of the contact of the key, according to the position thereof, and a conducting-wire connected to said independent contact-plate, substantially as set forth.

324,895. FASTENER. James F. Thayer, Providence, R. I. Filed June 26, 1885. (No model.)

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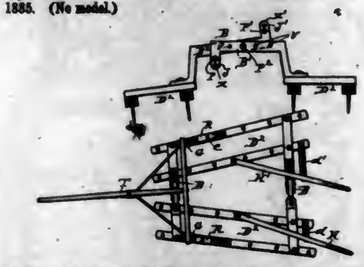


Claim.—1. As an improved article of manufacture, a fastener consisting, essentially, of two sides or halves, each provided with a penetrating prong or prongs, the prongs of one side being farthest removed from those of the other side at their extremities, as described.

2. A fastener consisting, essentially, of two sides or halves joined at one end, and having penetrating-prongs at their other ends, the prongs of one half diverging from heel to point from those of the other half, substantially as set forth.

3. A fastener composed of a single strip of sheet metal, having penetrating-prongs at each end, and a bend at its center to provide two diverging integral sides, the prongs of one side being apart from each other, as specified, and opposite corresponding prongs of the other side, substantially as described.

324,896. HARROW. Leonard Thies, Cabery, Ill. Filed Apr. 9, 1885. (No model.)



Claim.—The harrow D^2, having the upwardly bent or curved arms B' B^2, provided with the perforations v and J J', and pins P P', curved perforated draft-standards R, tongue T, removable beams a, and handles H H', all combined and arranged as and for the purpose set forth.

324,897. SUSPENDER-BUCKLE. Joseph F. Townsend, Cambridgeport, Mass. Filed June 15, 1885. (No model.)



Claim.—The buckle-frame provided with the duplex or concavo-convex tongue *e*, arranged with and adapted to such frame as described, and with the elastic curved tongue *g*, projecting from the said frame and extending down nearly to the lower bar thereof, all being substantially as set forth.

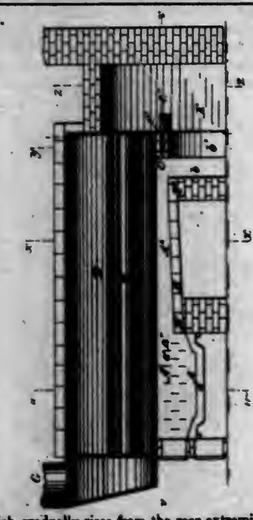
324,898. STEAM-BOILER FURNACE. Daniel Urquhart, Cleveland, Ohio. Filed Mar. 24, 1885. (No model.)

Claim.—1. The combination, in a steam-boiler furnace, the side and rear walls of the ash-pit of which are imperforate, and the side walls of the longitudinal flue of which are imperforate, of a fuel and combustion chamber which is provided in its side walls, from end to end thereof, with several series of narrow vertically-arranged orifices, an air-chamber at either side of such fuel and combustion chamber, discharging into the vertical orifices, and passages which extend directly outward from the air-chambers through the walls of the furnace, whereby fresh unheated air is discharged into the fuel and combustion chamber in numerous vertical ribbon-like currents.

2. In a steam-boiler furnace, the side walls of the longitudinal flue of which are imperforate, a fuel and combustion chamber which is lined with imperforate fire-bricks, which longitudinally are placed a short distance apart, so as to leave between them a narrow vertical passage, and air-chambers outside of the fuel and combustion chamber, which communicate with the exterior air by passages which extend directly outward through the side walls of the furnace, and which communicate also through the narrow vertical passages with the fuel and combustion chamber, in combination as described.

3. In a steam-boiler furnace, the combination of a boiler, a fuel and combustion chamber, an unobstructed imperforate longitudinal flue, the

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bottom of which gradually rises from the rear extremity of the fire-box to the rear end of such bottom, a vertical diving-flue behind the rear bridge-wall, a vertical boiler-supporting transverse arched wall, which terminates downwardly in a fixed deflector, which at its center is in the same or nearly the same horizontal plane as the rear upper extremity of the rear bridge-wall, and which constitutes the rear boundary of the longitudinal flue, a short horizontal flue beneath the fixed deflector, and embracing the entire space within the furnace below the fixed deflector, and a secondary combustion or expansion chamber behind the transverse wall, the secondary combustion or expansion chamber discharging into the flues of the boiler.

4. The combination, in a steam-boiler furnace, of a boiler, a fuel and combustion chamber, an unobstructed imperforate longitudinal flue which extends rearwardly from the fuel and combustion chamber, a flue which extends downwardly from the rear extremity of the longitudinal flue to the bottom of the furnace, a short horizontal flue which extends rearwardly from the flue which extends downwardly, and which embraces the entire space between the bottom of the boiler-supporting wall and the bottom or foundation of the furnace, a secondary combustion or expansion chamber which receives the volatile products of combustion from the short horizontal flue, and which communicates with the flues which lead through the boiler to the smoke-stack, and a fixed deflector directly behind the rear extremity of the longitudinal flue, which terminates downwardly at its center at a point horizontally opposite the upper extremity of the rear bridge-wall.

5. The combination, in a steam-boiler furnace, of a tubular boiler, a fire-box or fuel-chamber, a longitudinal flue which leads rearwardly from the fuel-chamber, a flue which extends downwardly from the longitudinal flue, a short horizontal flue which leads rearwardly from the downwardly-extending flue, a secondary combustion or expansion chamber which receives the volatile products of combustion from the short horizontal flue, and which discharges into the boiler-flues, a fixed deflector directly behind the rear extremity of the longitudinal flue and above the short horizontal flue, and a horizontal longitudinally-slidable deflector which is applied upon the fixed deflector.

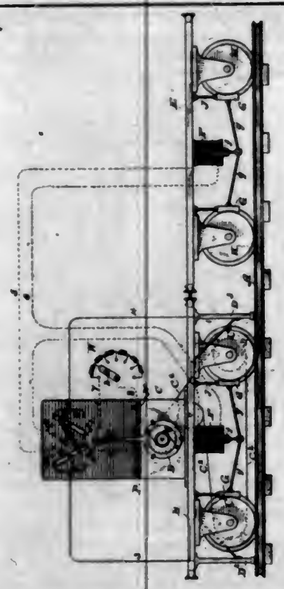
6. The combination, in a steam-boiler furnace, of a fuel and combustion chamber, which is provided from end to end with lateral vertical air-induction openings, an unobstructed longitudinal flue which diminishes in area from the front rearwardly, flues and a chamber which connect the longitudinal flue with the flues of the boiler, and a fixed deflector at the rear extremity of the longitudinal flue, and directly beneath the rear end of the boiler.

324,899. ELECTRIC RAILWAY. Charles J. Van Depoele, Chicago, Ill. Filed Jan. 10, 1885. (No model.)

Claim.—1. In a system of electric railways, the combination of a motor receiving current from a source of electricity as long as it is necessary to propel the train, with proper means for cutting out the motor from said source of electricity when it shall be necessary to stop said train, and means for reversing the brushes of and thereby converting the motor into a generator while under headway, and for closing the motor-circuit upon one or more electric brakes, when the current produced by said motor, acting as a generator, will actuate said brakes and stop the train, substantially as set forth.

2. In electric railways, the combination, with a motor, a car, and means for supplying a current to the motor for propelling said car, of an

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electro-magnet brake and connections between the coils of said brake and the binding-posts of the motor, and means, substantially as described, for cutting off the propelling current and for carrying current generated by forcible rotation of the armature of the motor to the brake-circuit, as described.

3. In electric railways, the combination of a generator, a car, means for forcibly rotating the armature of the generator by the momentum of the car, an electro-magnetic brake or series of brakes, and connections between the coils of said brake or brakes and the brake-circuit, means for shifting the commutator-brushes, and suitable switches for carrying the current produced by the forcible rotation of the armature of the generator to the brake-circuit, as set forth.

4. In electric railways, the combination, with a motor, a car, means for supplying current to the motor for propelling the car, an electro-magnetic brake or series of brakes, and connections between the coils of said brake or brakes and the binding-posts of the generator, and an adjustable resistance included in the brake-circuit, of means for reversing the commutator-brushes and suitable switches for cutting out the propelling current and for carrying the current generated by forcible rotation of the armature of the motor, acting as a generator, to the brake-circuit, as set forth.

324,900. SPINDLE AND BEARING. LEVI D. VAN VALKENBURGH, Holyoke, Mass. Filed Sept. 30, 1884. (No model.)

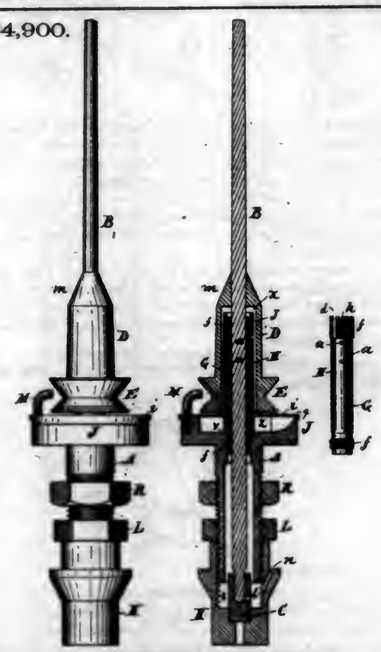
Brief.—The bushing, provided with threaded bosses, is screwed into the supporting-case with wicking interposed between bushing and case. The spindle-step is carried in an adjustable holder provided with a reservoir. The case above the rail is enlarged to form an oil-reservoir communicating with the wicking, and through the perforated bushing with the spindle-bearing.

Claim.—1. The combination of the holder K, provided with the chamber *r* and hole or duct *n*, the step C, having the duct *l*, the body A, provided with the nut L, and the spindle B, substantially as described.

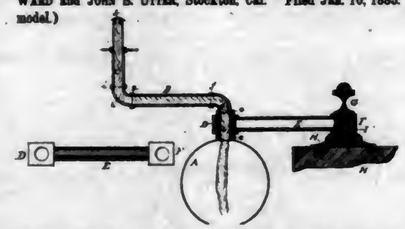
2. The combination of the body A, provided with reservoir *z* and with duct *v*, nuts L R, spindle B, provided with whirl E, the bushing G, provided with bosses *f*, with the duct *a*, and with the groove *d*, the wicking H, the step C, provided with the duct *l*, and the holder K, provided with the reservoir *r* and hole *n*, substantially as described.

3. The combination of the following instrumentalities, to wit: a spindle, a body in which the spindle is supported, an adjustable holder carrying a step for the spindle and disposed at the lower end of said body, a reservoir for oil disposed near the center of said body, a bushing for the spindle disposed in the upper portion of said body, a wick or absorbent for conveying oil from said reservoir to the upper portion of said bushing, a duct for the oil leading from said reservoir to the wicking, a duct for the oil leading from the wicking through the bushing to the spindle, a whirl or pulley for the spindle, and a nut or means for securing the body to the rail of a spinning-frame, substantially as described.

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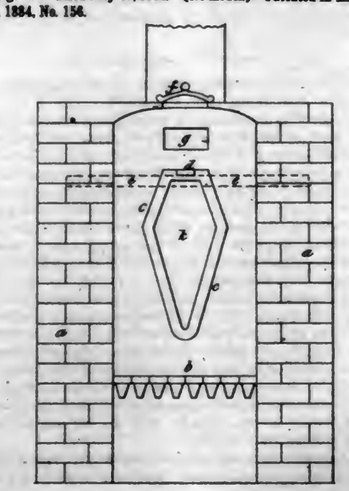


324,901. PIANO-FORTE MUSIC-RACK ILLUMINATOR. HENRY WARD and JOHN S. UTTER, Stockton, Cal. Filed Jan. 10, 1885. (No model.)



Claim.—The illuminator consisting of the plate H, having the neck I and screw G, the stem E, having the collars F D, the reservoir A, the tube B, and the burner consisting of the perforated cap *j*, substantially as shown.

324,902. BOILER. JOHN WATSON, St. Albans, County of Hertford, England. Filed July 28, 1884. (No model.) Patented in England Jan. 1, 1884, No. 156.

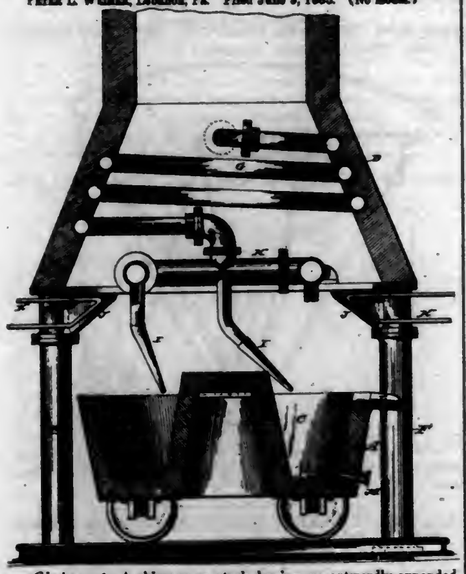


Claim.—1. A steam-generator for heating conservatories and similar structures, composed of a furnace and a boiler with sloping sides, suspended within the furnace, as shown, said sides surrounding a flue-space, substantially as described.

2. The combination, in a steam-generator, of a furnace composed of walls *a* and grate-bars *b*, with a horizontal boiler, *c*, with sloping sides, suspended within the furnace, and a horizontal flue, *k*.

3. The combination, in a steam-generator, of a heating-furnace, *a b*, with a boiler, *c*, having sloping sides, an internal flue, *k*, and a central water-way, *h*, projecting into the central flue, *k*, and being suspended substantially as described.

324,908. APPARATUS FOR CONVERTING IRON INTO STEEL. PETER L. WEBER, Lebanon, Pa. Filed June 9, 1885. (No model.)



Claim.—1. A chimney or stack having an outwardly-expanded base, as shown, in combination with an air-supply and a distributing pipe arranged within and supported by the masonry forming said chimney or stack, substantially as described.

2. A chimney or stack having an outwardly-expanded base, in combination with an air-supply pipe and an annular distributing-pipe provided with contracted nozzles inclined downward and forward, substantially as shown and described.

3. A chimney or stack, in combination with an air-supply pipe and a distributing-pipe provided with depending nozzles inclined downward, and also in a direction tangential to a curve located in a horizontal plane, substantially as shown and described.

4. A chimney or stack having an outward-expanded base, supported by a mantel-ring resting upon columns, in combination with an air-supply and a distributing pipe contained within and supported by the masonry forming said chimney, substantially as described.

5. The combination of an open portable converter having an annular chamber and an air-distributing pipe arranged axially above the converter and provided with nozzles inclined downward, and also in a direction tangential to a curve located in a horizontal plane, substantially as described.

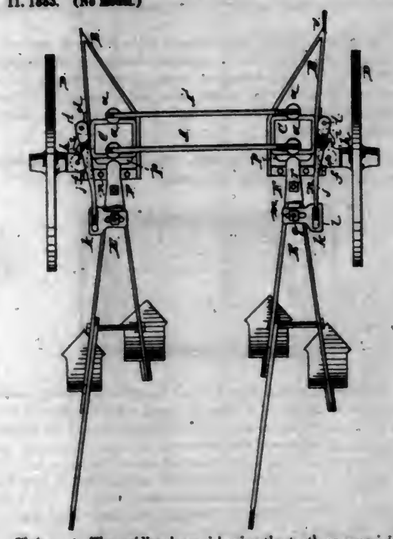
6. The combination of an open portable converter provided with an annular chamber, and an air-distributing pipe having nozzles inclined downward, and also at a tangent to the angular chamber, whereby a circular current motion is imparted to the molten metal contained in the converter by the air directed upon the surface and into the body of the metal, substantially as described.

7. The combination of an open converter, a chimney having an outward expanded base supported upon columns, an elliptic air-supply pipe supported by the masonry forming the chimney, and a distributing-pipe arranged horizontally above the converter, provided with a series of nozzles, and adapted to be heated by the metal in the converter and the gases arising therefrom, substantially as described.

8. The combination of an open converter having an annular chamber, an air-supply pipe, and an annular distributing-pipe provided with depending nozzles inclined downward, and also in a direction tangential to a curve located in a horizontal plane, and a forced blast of air adapted to project lime thrown upon the surface of the metal into the body thereof, substantially as described.

9. The combination of a converter, a chimney having an outwardly-expanded base, and an air-supply and a distributing pipe arranged above the converter and heated therefrom, the nozzles projecting downward and at a tangent to the annular chamber of the converter and extending near to the surface of the metal, whereby hot air under pressure is supplied to the metal, substantially as described.

324,904. CULTIVATOR. WM. S. WEIR, Monmouth, Ill. Filed Aug 11, 1883. (No model.)



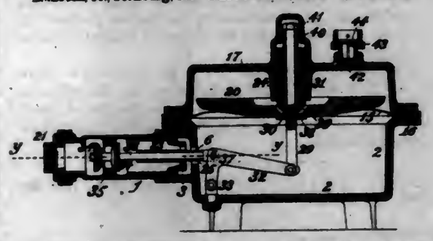
Claim.—1. The guiding-lever *j*, having the teeth or gear *i*, in combination with the wheel-spindles *g*, having the gear or teeth *h*, substantially as specified.

2. The combination of the guiding bar or lever *j*, having the teeth *i*, with the pivoted wheel-spindle having the teeth *h*, the plate *k*, and beam E, substantially as described.

3. The combination of a draft-frame, B, having sockets *a*, slotted at their upper ends, the arch or bar A′, flattened adjacent to the sockets, guide-bars *j*, pivoted to the draft-frame, spindle-plates *f*, and beam-plates *k*, substantially as described.

4. The combination of the pivoted arches A A′, draft-frame B, guide-bars *j*, having teeth *i*, with the pivoted wheel-spindles *g*, having the teeth *h*, and the adjusting-plate *k*, substantially as and for the purpose specified.

324,905. PRESSURE-REGULATOR AND CUT-OFF. GEORGE WESTINGHOUSE, Jr., Pittsburg, Pa. Filed June 17, 1885. (No model.)



Claim.—1. The combination of a valve-casing having supply and delivery passages, a regulating and cut-off valve composed of two disks fixed upon a common stem in such relation that either disk is fitted to govern independently of the other, an opening in a partition in the valve-casing between its supply and delivery passages, a by-pass valve governing a passage establishing fluid communication from the space between the disks of the regulating and cut-off valve to the supply-passage of the valve-casing, a pressure-chamber communicating with the valve-casing on the delivery side of the partition, and a movable abutment working in said chamber and coupled to the stem of the regulating and cut-off valve, substantially as set forth.

2. The combination of a pressure-chamber, a flexible diaphragm secured peripherally thereto, a pressure-plate resting on said diaphragm and having a central sleeve or boss fitting a guide-socket in the cap of the pressure-chamber, a stem passing freely through said sleeve or boss and carrying a plate which closes an opening or openings in the dia-

phragm and pressure-plate, a spring bearing against a shoulder on the stem and against said sleeve or boss, and a valve governing communication between supply and delivery passages in a casing communicating with the pressure-chamber, and coupled to the stem of the diaphragm and pressure-plate, substantially as set forth.

3. The combination of a pressure-chamber, a movable abutment working therein, a cap or cover closing said chamber, a discharge-passage leading out of said cap, and a check-valve governing said passage, and provided with a small opening for the passage of air, substantially as set forth.

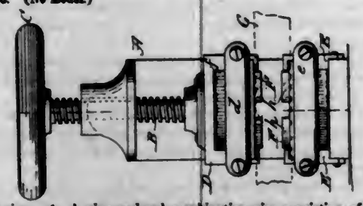
4. The combination of a valve-casing, a valve governing communication between supply and delivery passages therein, a movable abutment working in a pressure-chamber communicating with the valve-casing and coupled to the stem of said valve, and a perforated delivery check-plug inserted in the delivery-passage of the valve-casing, substantially as set forth.

324,906. PAPER KEG OR CASK. CHARLES H. WEKKERMAN, Pottstown, Pa. Filed Dec. 5, 1884. (No model.)



Claim.—The paper keg or cask herein described, the same consisting of the shell A, formed of a sheet of board, notched at its four corners, and bent into cylindrical form, the longitudinal sides of the notches resting against each other, and the portions of the edges of the board between the said notches being overlapped and secured together, and end caps, B, fitting over the ends of the cylinder, substantially as set forth.

324,907. VISE. JEROME B. WILDER, Lynn, Mass. Filed Apr. 16, 1885. (No model.)

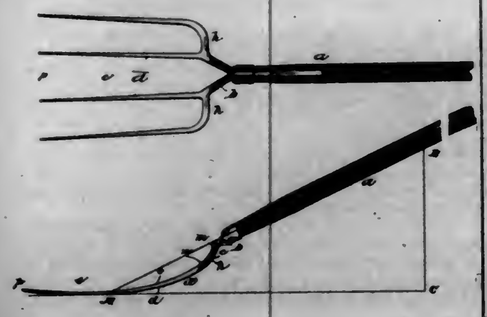


Claim.—1. A pipe-and-rod combination-vise consisting of a supporting-frame, A, recessed jaws D E, and detachable and reversible dies F F, inserted within these jaws, and whose upper and lower faces are adapted to serve, respectively, as a flat-faced vise and as a pipe-vise, substantially as shown and described.

2. In a vise, the combination of a fixed jaw, E, and movable jaw D, both of which are formed for receiving dies, and are provided with retaining-pieces *d e*, for locking said dies in position, substantially as described and shown.

3. In a pipe-vise, the combination, with the jaws D E, of the reversible dies F F, each of which is formed on one side with a flat roughened face, *f*, and on the opposite side with projections A A, that lie closer together in one direction than in the other, substantially as and for the purposes described.

324,908. FORK. WM. H. WITHINGTON, Jackson, Mich. Filed May 2, 1885. (No model.)

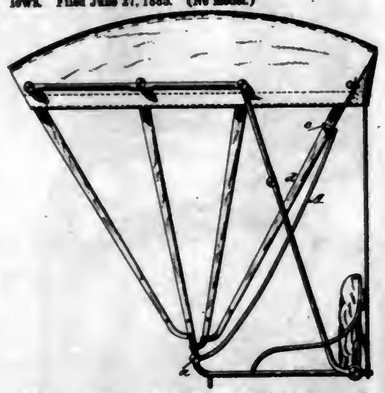


Claim.—1. A hay or other fork having a shank projecting beyond the end of the handle, which shank is curved to throw the head eccentric to the axis of the handle, and curved teeth or tines lying partly upon either side of said axis, as and for the purpose set forth.

2. A hay or other fork having a bifurcated shank bent to throw the heads eccentric to the axis of the handle, and having curved teeth or tines, which project across the line of said axis, as and for the purpose set forth.

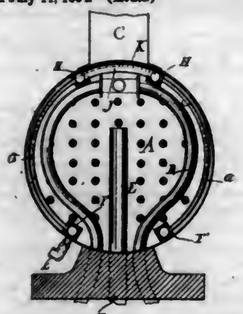
3. The fork described, consisting of the handle *a*, the shank *b*, curved at *c* to throw the head *A* eccentric to the handle, and the tines *d*, curved to form a dishing part upon one side of the axis of the handle to give the proper hang, and projecting delivery and holding portions upon opposite sides of said axis, all arranged and serving as and for the purpose set forth.

324,909. SPRING FOR BUGGY-TOPS. WM. R. WOOD, Mapleton, Iowa. Filed June 27, 1885. (No model.)



Claim.—An equalizing spring-arm for the back bow of buggy-tops, formed at one end with an eye and at the opposite end with a spring-yoke.

324,910. FEED-WATER HEATER. FRANCIS S. ZWICKL, Greenville, N. J. Filed July 11, 1884. (Model.)



Claim.—1. The combination, with a locomotive-boiler, of a feed-water heater formed of circularly-curved pipes having their ends held in boxes in the smoke-box, the said pipes being arranged along the sides of the smoke-box, substantially as herein shown and described.

2. The combination, with a locomotive-boiler, of the boxes F F', the circularly-curved pipes G, uniting them, and the bridge-pieces H and the tube J, forming an opening in the heater to permit the smoke, &c., to pass into the smoke-stack, substantially as herein shown and described.

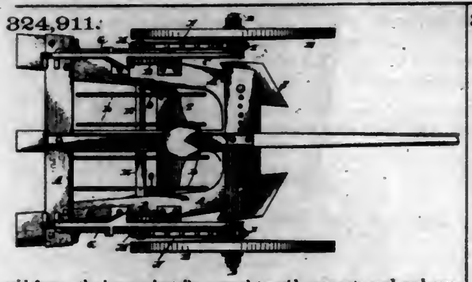
3. The combination, with a locomotive-boiler, of the boxes F F', of which the former is divided into two compartments, *g g'*, by a transverse partition, G', of the curved pipes G, uniting the boxes F F', and of the elbows L and M, substantially as herein shown and described.

4. The combination, with a locomotive-boiler, of a feed-water heater formed of circularly-curved pipes arranged transversely in the smoke-box along the inner surface of the same, substantially as herein shown and described.

324,911. POTATO-DIGGER. ALANSON ASHLEY, Geneva, N. Y. Filed Nov. 13, 1884. (No model.)

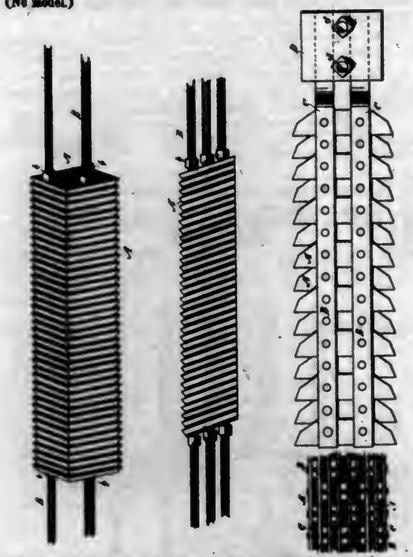
Claim.—In a potato-digger, the combination, with a frame having a depending shovel or digger, the toothed segments rigidly secured to

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said frame, the levers pivotally secured to said segments, and each provided at its lower end with a short axle, the spring-actuated dogs for locking the levers in position, and the ground-wheels journaled on the short axle and provided with sprocket-wheels, of the shafts K, journaled in the frame and provided with prongs, sprocket-wheels secured to said shafts, and drive-chains connecting the sprocket-wheels on the shaft with the sprocket-wheels on the ground-wheels, all of the above parts constructed and combined substantially as set forth.

324,912. RASP. JESSE ANTHONY, Covelo, Cal. Filed Mar. 6, 1885. (No model.)



Claim.—A file or rasp consisting of the series of separate parallel plates A, the transverse pivot-bolts B in the plates, the connecting-strips C on the bolts, and the clamping-plates D on the strips, all arranged and adapted to operate substantially as herein described.

324,913. BAG-FASTENER. S. JAY AUSTIN and EDWARD J. STONE, Waverly, Pa. Filed Feb. 2, 1885. (No model.)



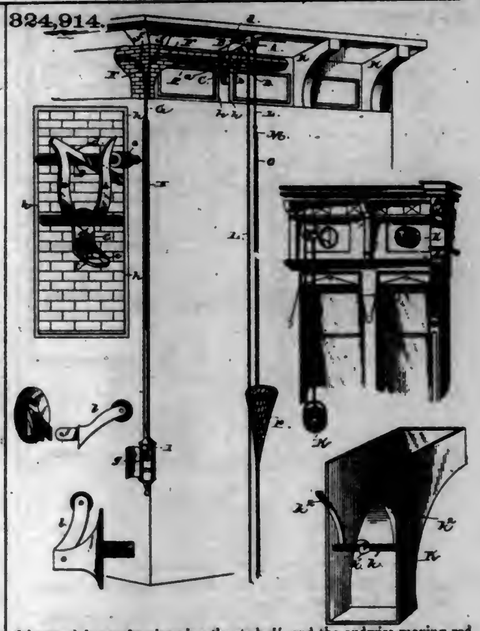
Claim.—The herein-described bag-fastener, comprising the arms A A, constructed to interlock at their outer or free ends, and having the balls E E, for holding them in closed position, and the integrally-formed rivet and hook B, substantially as described.

324,914. FIRE-ESCAPE. EDWARD H. BURNHAM, Cimarron, N. Mex. Filed June 2, 1885. (No model.)

Claim.—1. The combination of the brackets having the sheaves, the removable boxes or cases for covering the brackets and sheaves, the grapples having the fulcrumed levers for securing the boxes or cases to the building, the ropes L on the sheaves and coiled in the boxes or cases, and the endwise-moving rod having the studs engaging with the levers of the grapples for releasing the boxes or cases, and the device for moving the rod, substantially as described.

2. The combination of the brackets having the sheaves, the boxes or cases K, having the springs and the studs *k'*, the grapples having the

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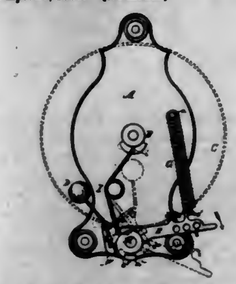


fulcrumed levers for clamping the studs *k'*, and the endwise-moving rod having the studs or bosses *e*, and means for moving the rod to trip the levers of the grapples and the ropes L on the sheaves and coiled in the boxes or cases, substantially as described.

3. The combination of the brackets having the sheaves, the boxes or cases K, the grapples having the levers *a b*, for securing the boxes or cases, the rod D, having the bosses or studs, and formed in sections joined by the chain F, passing over sheaves *f*, the vertical rod G, secured to the chain, and a pin for supporting the rod G, substantially as described.

4. The combination of the brackets having the sheaves, the boxes or cases, the grapples having the levers *a b*, for securing the boxes or cases, the tube E, the endwise-moving rod D in the tube and having studs or bosses for tripping the levers, means for moving said rod, and the ropes L on the sheaves, adapted to be coiled in the boxes or cases, substantially as described.

324,915. GONG DOOR-BELL. RUDOLPH R. BUEHLER, Philadelphia, Pa. Filed Apr. 27, 1885. (No model.)



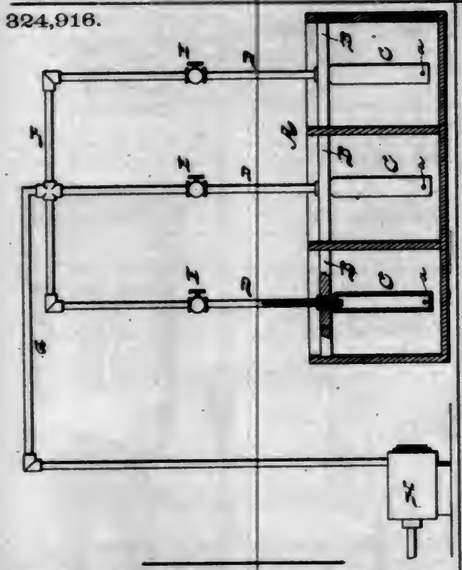
Claim.—1. In a bell-stroke movement, the combination, with lever E, having shoulders e^2 e^3, of plate F, having projection f^2, and spring I, substantially as shown and described.

2. The combination, with base-plate or bracket A, of hammer D, lever E, having shoulders e^2 e^3, plate F, having projection f^2, pintle H, check-spring G, and stroke-spring I, said several parts being combined and constructed for operation substantially as shown and described.

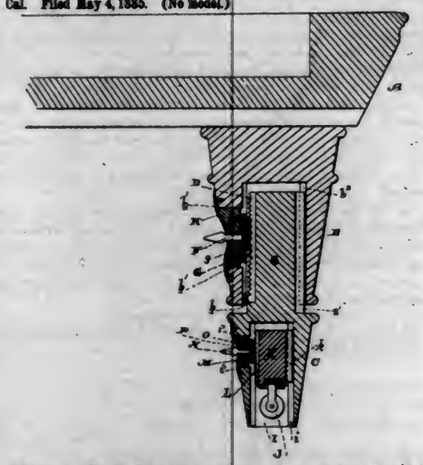
324,916. AGITATOR FOR TAN-VATS. ARTHUR T. BULL and WILLIAM BELL, Jr., Limestone, N. Y. Filed June 13, 1885. (No model.)

Claim.—A tanning apparatus consisting of a subdivided vat, each covered compartment of which is provided with a pipe or injector, C, suspended therein and perforated near its bottom, in combination with vertical pipes D, provided with regulating-valves, the horizontal pipe F, an air-supply pipe, G, and an air-forcing engine, as described.

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324,917. BILLIARD-TABLE LEG. Michael Cashin, San Francisco, Cal. Filed May 4, 1885. (No model.)



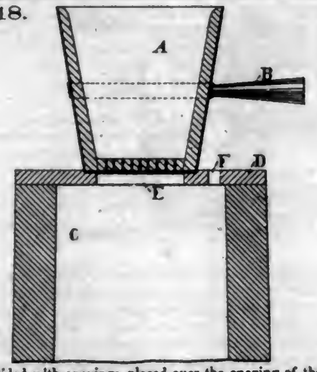
Claim.—1. The leg B, having a socket, *b*, and an aperture, *b'*, at right angles with the socket, and communicating therewith, and the foot C, having a stem, *c*, fitted and guided within the socket *b* of the leg, in combination with the rack D on the stem, the removable plug E in the aperture, the key-shaft F, passing through the plug, and the snail *g* on the key-shaft engaging with the rack, substantially as herein described.

2. In a billiard-table leg, the foot or lower portion of the leg having a socket, I, made therein, in combination with the caster J, the stem or shank K, on which it is mounted, said stem fitting within the socket in the foot and adapted to move up or down therein, and the means by which its adjustment is effected, consisting of the rack L on the stem, the key-shaft N, passing through the lower portion or foot of the leg, the removable plug E in an aperture at right angles with the socket I, and the snail M on the key-shaft engaging with the rack, whereby the caster may be entirely withdrawn into its socket, or may be projected against the floor, substantially as herein described.

324,918. APPARATUS FOR POURING AND CASTING METALS. Carl A. Caspersson, Forsbacka, Sweden. Filed Mar. 26, 1884. (No model.) Patented in England Mar. 10, 1884, No. 4,632; in Belgium Mar. 31, 1884, No. 64,436; in Sweden Apr. 5, 1884, No. 102; in France June 6, 1884, No. 160,233; in Germany Nov. 21, 1884, No. 29,585, and in Austria-Hungary Nov. 22, 1884, No. 49,305 and No. 53,923.

Claim.—A colander-funnel with perforated bottom for casting or pouring metals in fine streams in molds, in combination with a covering-plate provided with openings, placed over the opening of the mold and around the funnel, substantially as and for the purpose set forth.

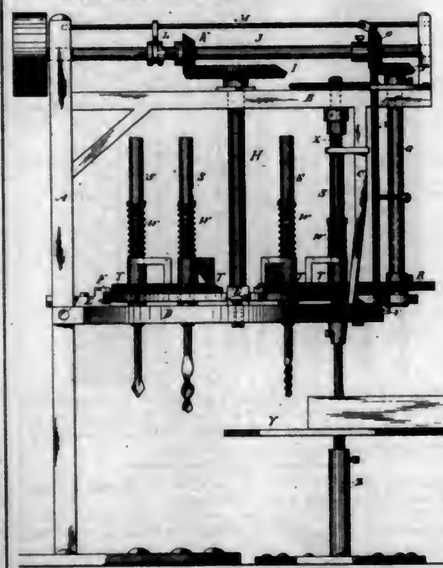
324,918.



324,919. LINIMENT. George W. Chenoweth, Paris, assignor of one-half to James M. Grant, Depart, Tex. Filed Mar. 27, 1885. (No specimens.)

Claim.—The compound consisting of alcohol, spirits of turpentine, spirits of camphor, aqua-ammonia, tincture of opium, chloroform, tincture of ginger, oil of sassafras, balsam of fir, essence of peppermint, oil of black pepper, oil of origanum, tincture of capsicum, tincture of guaiacum, and sulphuric ether, in about the proportions specified.

324,920. BORING-MACHINE. John P. Cobb, College City, Cal. Filed May 4, 1885. (No model.)



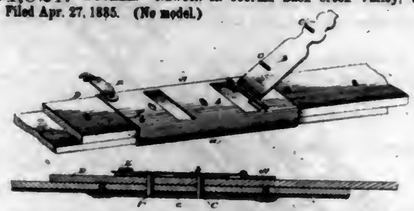
Claim.—1. In a drilling apparatus, a horizontal disk having drill-shanks journaled vertically around its periphery, a central shaft and gearing to which the disk is fixed, and by which it is caused to rotate, and a stationary exterior ring supported by the frame and located beneath the disk, and guides within which the periphery of the disk turns, substantially as herein described.

2. In a drilling apparatus, a horizontal rotating disk, and a stationary exterior ring located beneath the disk and provided with guides for the edges of said disk, and a central driving-shaft having a gear, I, in combination with a clutch mechanism consisting of the shaft J, the pinion K, an arm, L, a shaft, M, and an operating-lever, whereby the gear may be thrown into or out of engagement with the driving-pinion to rotate the table, and a stop adapted to engage notches upon the edges of the disk and hold it, substantially as described.

3. In a drilling apparatus, the combination of the following elements: a horizontal disk, a stationary ring located beneath the disk and supported by the main frame, the guides K upon the ring, vertical drill-shank journaled and moved through the periphery of the disk, gears

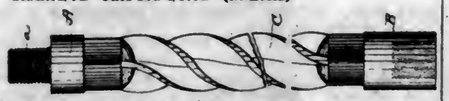
fitted to said shank so as to allow the shanks to be moved vertically through them, springs by which the shanks and drills are raised, a stationary feeding screw and wheel, whereby each drill may be forced downward when brought in engagement with the driving-gear, substantially as herein described.

324,921. BUCKLE. Newton A. Cooper, Back Creek Valley, Va. Filed Apr. 27, 1885. (No model.)



Claim.—As an improvement in buckles, the rectangular inclosing-frame A, the plate B, hinged at one end to the upper face of the frame, tongues C, carried by the plate and passing through the frame and straps, a swinging catch, E, pivoted to the frame on one side of the plate and extending transversely over the end thereof, and a stod, F, on the other side of the frame, adapted to be engaged by the catch, as and for the purpose set forth.

324,922. SUCKER-ROD FOR DEEP WELLS. John M. Davidson, Bradford, Pa. Filed Dec. 4, 1884. (No model.)

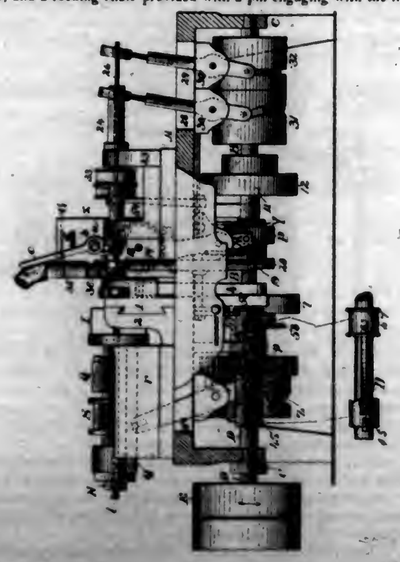


Claim.—1. A section or length for deep-well sucker-rods, consisting of a spirally-twisted metal rod having at one end a threaded pin and at the opposite a threaded box, said pin and box integral with the rod, substantially as and for the purposes specified.

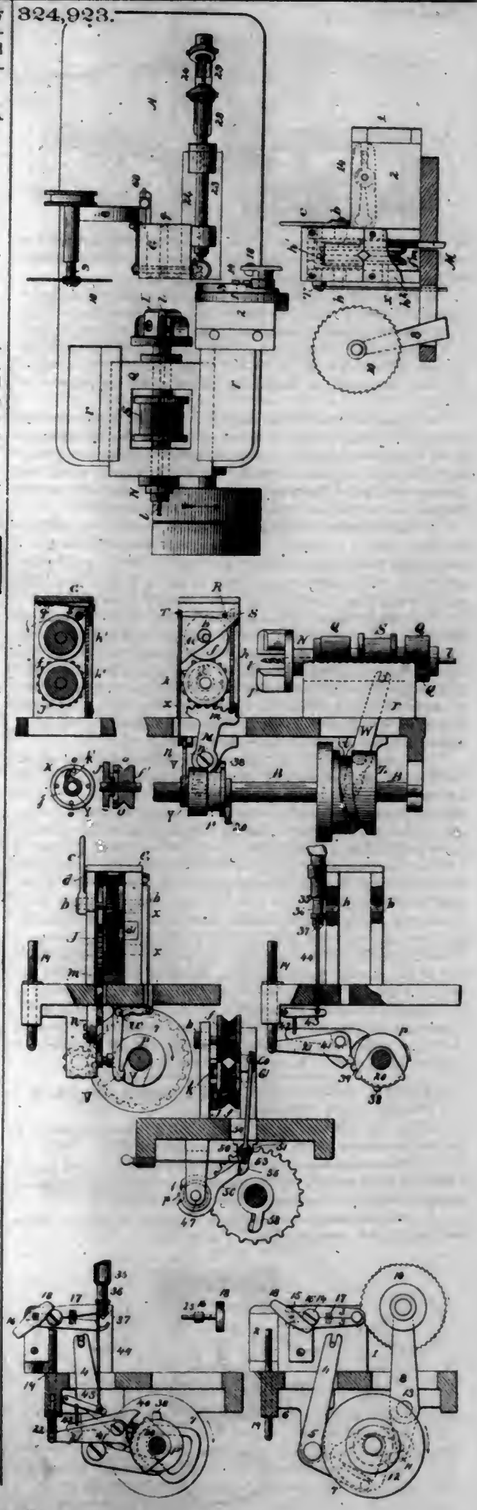
2. A section or length for deep-well sucker-rods, consisting of a spirally-twisted metal rod provided with threaded connections, the twist of the rod being in reverse direction from the thread of its connections, substantially as and for the purposes specified.

324,923. MACHINE FOR MAKING CIGARETTE MOUTH-PIECES. Catherine A. Davis, San Francisco, Cal., administratrix of Job C. Davis, deceased. Filed Apr. 10, 1885. (No model.)

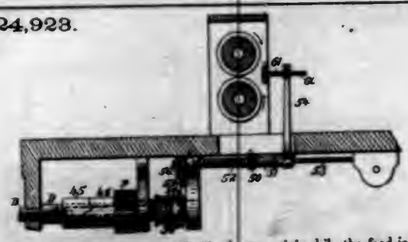
Claim.—1. In a machine for making wooden cigarette mouth-pieces and similar articles from a continuous strip of wood, the combination, with the intermittent feeding mechanism that advances a length of material at each movement, of the intermittently-acting clamping device composed of a fixed and a movable plate, the latter being held normally in position to clamp the piece by means of a spring, and operated to release it by means of a cam on the main shaft, connecting-levers, and a rocking shaft provided with a pin engaging with the mova-



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ble clamp, and which grasps and holds the material while the feed is at rest and releases it when the feed acts to advance the material, substantially as hereinbefore described and specified.

2. In a machine for making cigarette mouth-pieces and similar articles from a strip of wood, the combination, with the nipper-jaws 3 3, that grasp and inclose the piece of work and carry it from the clamp k' k^2 into line with the finishing-tool, of the reciprocating boring and finishing tools 25 27, to act against the end of the work while it is held in the jaws, substantially as hereinbefore described, for the purposes set forth.

3. In combination with the traveling nipper-jaws having alternate opening and closing movements before and at the end of their forward travel, a reciprocating pipe for delivering an intermittingly-acting jet or blast of air applied against the article held within the jaws during their opening movement to discharge and eject the finished piece of work from the jaws, substantially as hereinbefore described and specified.

4. The feed-roller f', having the concentric recess j in one side, and the pins or studs o o arranged therein, in combination with the gear J, carrying the pawl k upon the hub y and turning loosely upon the feed-roller shaft, the vibrating segment-gear m, having a lever, M, pivoted at n, and with a cam operating said lever, substantially as set forth.

5. In combination with the shaft D, carrying the clutch-sleeve 46, the sliding clutch-sleeve 45, connected with the sliding collar 47, the spring-barrel 51, having the arm 54, with its adjustable stop at one end, engaging with the sliding collar, and the forked arm 56 at the other end, with its depending dog 55, operating in conjunction and combination with the stationary incline 61 and the rotary finger 55 on the principal shaft B, and the feeding and forming mechanism, substantially as herein described, to operate as and for the purpose set forth.

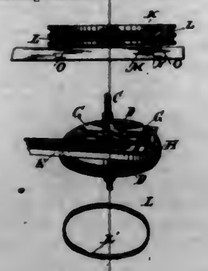
6. A machine for working cigarette mouth-pieces and other similar hollow articles from a continuous strip of wood, consisting of the following instrumentalities, operating in connection and combination: a main shaft, B, provided with suitable cams for operating the devices hereinafter enumerated, and levers connecting thereto, a pair of intermittently-rotating feed-rollers, f f', a clamping-plate, h, a rotary spindle, N, having a forward and back movement toward and away from the material presented in front of the plate h, and adapted to carry and operate a cutter-head, I, and a boring-tool, l, a traveling carriage, 1, carrying a set of nipper-jaws, 3 3, which is operated to open at the forward movement, and then close upon and seize the strip of material as the carriage 2 comes in front of the holding-plate h, and remain closed during the return of the carriage, a vibrating saw, 10, which moves forward and severs the material from the continuous strip as soon as it is seized by the nippers 3 3, and the double spindle 24 26, carrying the tools 25 27, which have a continuous rotary motion and an intermittent reciprocating movement toward and away from the nipper-jaws, all combined and operated substantially as herein described and specified.

324,924. BALING-PRESS. Peter K. Dederick, Londonville, N. Y. Filed Apr. 4, 1884. (No model.)

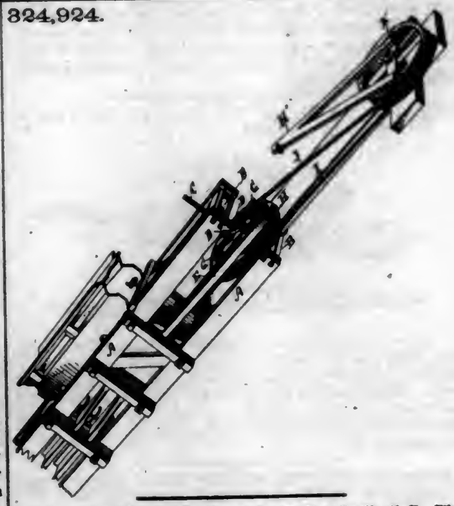
Claim.—1. The combination of the wheel K, connecting-lines I J, and double cam-head G, for the purpose set forth.

2. The combination of connecting-lines I J with the wheel K, provided with duplicate latch and trip attachments, whereby the lines are alternately attached and released, substantially as described.

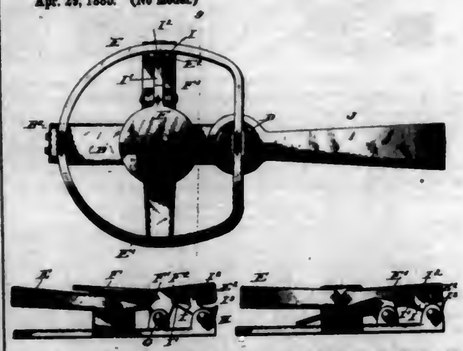
3. The combination of the traverser F, pitman E, arms D, double cam-head G, and connecting-lines I J, as set forth.



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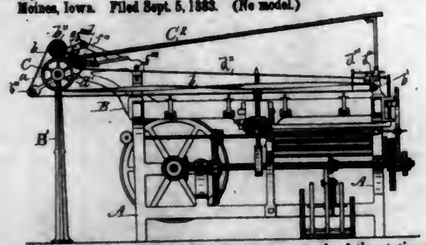


324,925. RAT-TRAP. Samuel Dedds, Hornellsville, N. Y. Filed Apr. 29, 1885. (No model.)



Claim.—In a trap of the class described, the jaws E E', lug E^2, trigger I, having the setting-shoulder I^2, hook portion I^3, and projection I', and the bait-pan F, its supporting-arm F', having the notch or shoulder F^2, and spring J, in combination with the base A, having the integrally-cast arms B B' C C', the lugs G and H, forming bearings for said trigger and bait-pan support, the swivel D, and upwardly-projecting-lug B^2, substantially as specified.

324,926. PAPER-FOLDING MACHINE. Talbot C. Dexter, Des Moines, Iowa. Filed Sept. 5, 1883. (No model.)



Claim.—1. The sheet-feeding device composed of the stationary table or board, a rotating shaft, C, having tape-pulleys a, a roller, d, a series of endless tapes, b, a rock-shaft, f, having stops f' and cranks f'', and vibrating arms carrying a sheet-gripping roller, f'''', and connected with the cranks f'' by means of links g, in combination with a series of endless sheet-carrying tapes, for the purposes specified.

2. In a paper-folding machine, a series of endless twisted sheet-carrying tapes, in combination with a pair of folding-rollers and a side gage extending parallel with the folding-rollers, for the purpose of adjusting a moving sheet laterally relative to the folding-rollers, for the purposes specified.

3. The combination of a series of twisted sheet-carrying tapes, an endless moving belt, and a pair of folding-rollers, substantially as shown and described, for the purposes specified.

4. The rotating shaft C, having tape-pulleys a, the series of endless tapes b, the rollers b', b'', and d, the endless tapes d' and d'', the rock-shaft f, having stops f' and cranks f'', the vibrating arms f'''', carrying a roller, f'''', the connecting links g, the endless belt g'', and a pair of folding-rollers, arranged and combined substantially as shown and described, to advance, feed, and adjust a sheet in the manner set forth, for the purposes specified.

5. The combination of elastic supports s' with a packing-box having slots s'' and a follower pivoted to a reciprocating arm, and carrying a shaft, s''', that slides upon the elastic supports, in the manner set forth, for the purposes stated.

324,927. HUB FOR VEHICLE-WHEELS. Charles W. Fillmore, Marengo, Ill. Filed June 11, 1885. (No model.)



Claim.—1. The combination, with a wooden hub having a series of spoke-mortises adapted to receive the full-sized ends of a series of spokes and having a series of tenon-mortises extending inward from said spoke-mortises, of a series of metal retaining-plates flush with the surface of the hub, lying between said spoke-mortises and forming the side walls thereof, and a single-piece band encircling said hub and retaining-plates and formed with openings for the admission of the spokes to said spoke-mortises.

2. The combination, with a wooden hub having a series of spoke-mortises adapted to receive the full-sized ends of a series of spokes and having a series of tenon-mortises extending inward from said spoke-mortises, of a series of metal retaining-plates flush with the surface of the hub, lying between said spoke-mortises and forming the side walls thereof, and having their ends embedded in the wood of the hub on opposite sides of the line of said spoke-mortises, and a single-piece band encircling said hub and said retaining-plates, and formed with openings corresponding in size and position to said spoke-mortises.

3. The combination, with a wooden hub having a series of spoke-mortises and a series of tenon-mortises extending inward from said spoke-mortises, of a series of spokes whose tenons lie in said tenon-mortises and whose tenon-shoulders rest on the bottom of said spoke-mortises, a series of metal retaining-plates lying between the spokes and having their ends embedded in the wood of the hub on opposite sides of the plane of the spokes, and a single-piece metal band encircling the hub and the retaining-plates and formed with openings for the admission of the spokes.

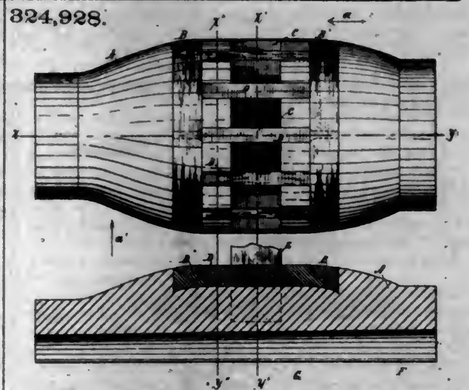
4. The combination, with a wooden hub having a series of spoke-mortises and a series of tenon-mortises extending inward from said spoke-mortises, of the metal retaining-plates E, shown and described, lying between said spoke-mortises, and the single-piece band B encircling said hub and retaining-plates and formed with openings for the admission of the spokes to the spoke-mortises, each of said retaining-plates being flush with the surface of the wooden hub and consisting of a body adapted to fill the space between two contiguous spokes, and two projecting ends of greater thickness than the body and embedded in the wood of the hub on opposite sides of the line of mortises.

5. The combination, with the hub A, having a series of spoke-mortises and a series of tenon-mortises extending inward from said spoke-mortises, of the retaining-plates E, lying between said spoke-mortises and having their ends embedded in the wood of the hub on opposite sides of the line of mortises of the single-piece band B encircling said hub and retaining-plates, and having openings corresponding to the spoke-mortises, each of said retaining-plates having in its opposite faces the gains or grooves I, to permit the admission of spokes to the spoke-mortises, substantially as shown and described, and for the purpose set forth.

324,928. HUB FOR VEHICLE-WHEELS. Charles W. Fillmore, Marengo, Ill. Filed July 16, 1885. (No model.)

Claim.—1. The combination, with a mortised wooden hub, of a series of metal retaining-plates lying between the spoke-mortises, but extending beyond the ends of said mortises toward both ends of the hub, and having their projecting ends embedded in the wood of the hub, and two rings or bands encircling the hub and the ends of said retaining-plates, each of said rings being separated from the spoke-mortises by a portion of the wood of the hub.

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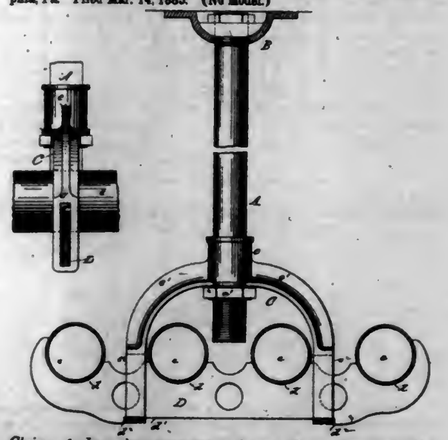
2. The combination, with a mortised wooden hub, of a series of retaining-plates lying between the spoke-mortises and forming the side faces thereof, but extending beyond the ends of said mortises toward both ends of the hub, and having their projecting ends embedded in the hub, and two bands or rings encircling the hub and the ends of said retaining-plates, and resting in annular channels cut in said hub and said plates, each of said rings having its outer surface flush with the surface of the hub, and being separated from the spoke-mortises by a portion of the wood of the hub.

3. The combination, with a mortised wooden hub and a series of spokes inserted in the mortises thereof, of a series of retaining-plates lying between the spokes and within the surface of the hub, and extending toward the ends of the hub beyond the spokes, and two rings or bands encircling the hub and the ends of said retaining-plates on opposite sides of the spokes, but not in contact therewith, each of said retaining-plates being provided with an integrally-formed cap extending from the spokes to each of the encircling rings, and each of said caps being flush or approximately flush with the surface of the hub.

4. The combination, with the mortised hub A, of the retaining-plates D, lying between the spokes-mortises and having the flanges m, and the rings B, encircling the hub and the ends of the retaining-plates, and separated from the ends of the spoke-mortises by parts of the wood of the hub.

5. The combination, with the mortised hub A, of the retaining-plates shown and described, each consisting of a central body, D, lying between two contiguous mortises, and two projecting ends embedded in the wood of the hub and formed with caps m and depressions H, and the rings or bands B, encircling the hub and lying in said depressions and in annular channels in the hub continuous with said depressions, substantially as shown and described, and for the purpose set forth.

324,929. SUPPORT FOR STEAM-PIPES. John Finnegan, Philadelphia, Pa. Filed Mar. 14, 1885. (No model.)

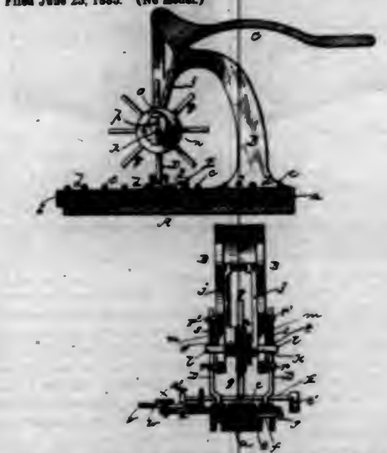


Claim.—1. In a pipe supporter or hanger, the combination, with the yoke C, having arms c' c', slotted at or near their lower ends, of the continuous supporting-bar D, arranged within the slots c^2, and having the pipe-seats d on its upper edge and the shoulders d^2 on its lower edge.

2. In a pipe supporter or hanger, the combination, with the threaded pipe or hanger A and the adjusting-nut a', of the yoke C, having slotted

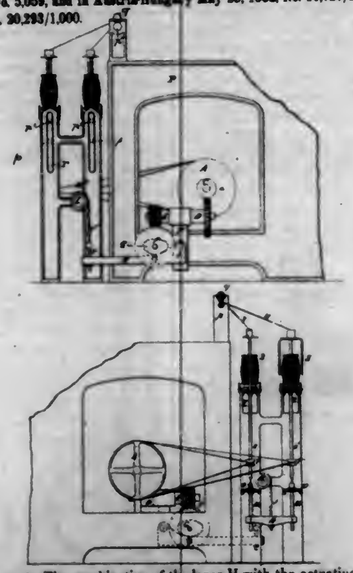
or mortised arms c', and the supporting-bar D, projecting through the slots c^2, and formed with the pipe-seats d on its upper edge and the shoulders d^2 on its lower edge, substantially as described.

324,930. PUNCHING-MACHINE. JOSHUA L. FLETCHER, Corinth, Miss. Filed June 25, 1885. (No model.)



Claim.—The herein-described machine for punching holes in leather, consisting of the longitudinally-channeled base A, having the spacing-bed *b*, provided with the notches *c*, to engage the tooth *f* on the thumb-lever *g*, the curved standards B, slotted at *m*, to receive the ends of the transverse shaft, the punch-wheel *n*, carrying the punches *q* and spring-pawl *o*, to engage the tooth wheel or collar *p*, the pitman or rod *j*, secured to the hand-lever C and shaft *k*, the adjustable stop-plate *u*, and gage-rod *a'*, the whole constructed and arranged as described, and for the purpose set forth.

324,931. SPINNING-MACHINE. PAUL FLEURY, Gonneville, France. Filed Sept. 12, 1882. (No model.) Patented in France July 25, 1881, No. 144,223; in Belgium Nov. 17, 1881, No. 56,257; in England Nov. 18, 1881, No. 5,059, and in Austria-Hungary May 25, 1882, No. 10,727/1,001 and No. 20,293/1,000.



Claim.—1. The combination of the lever H with the actuating-cam G, the worm-wheel F and its shaft, the worm E, worm-wheel D, worm C, and the drum-shaft *a*, the adjustable chain J'', pulley K'', and the shaft L, pulleys K K', chains J J', cross-heads N N', vertical rods M M', and the traverse-rails Z Z', as set forth.

2. The combination of the lever H with the actuating-cam G, the worm-wheel F and its shaft, the worm E, worm-wheel D, worm C, and the drum-shaft *a*, the adjustable chain J'', pulley K'', and the shaft L, pulleys K K', chains J J', cross-heads N N', vertical rods M M', the traverse-rails Z Z', having side pins, *p p'*, and the frame having the guide-slots *r r*, as set forth.

324,932. COG-WHEEL. HARVEY O. GADBERRY, Washington, Ind. Filed Sept. 28, 1883. Renewed Feb. 16, 1885. (No model.)



Claim.—1. In a cog-wheel, the combination, with a core having a rim or tire provided with flanges and radially-projecting spurs formed on the face of said tire and integral therewith, of insertible cog-teeth arranged on the face of the said tire between the flanges thereof, and having recesses on their under sides to receive the spurs of the said tire, substantially as set forth.

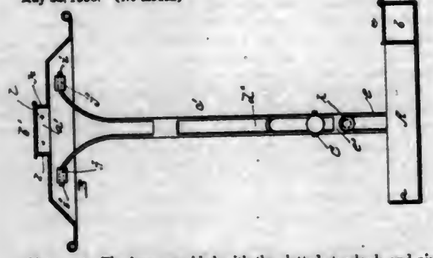
2. In a cog-wheel, the combination, with a suitable core, of insertible cog-teeth arranged upon the tire thereof, said teeth being adapted to be firmly secured together by bolts passing transversely through the wings and the block of the adjoining section, substantially as set forth.

3. The combination, with a core, of cog-sections secured thereto, and consisting of the teeth, blocks, and laterally-extending wings, substantially as set forth.

4. The combination, with a core, of insertible cog-sections consisting each of a beveled tooth and a block extending therefrom and formed with angular shoulders, and wings extending from the sides of the cog-section in the opposite direction of the block and adapted to receive a block of the next adjoining section, substantially as set forth.

5. An insertible cog-section consisting of the cog-tooth beveled on its end, a block having angular shoulders, and laterally-extending wings, substantially as set forth.

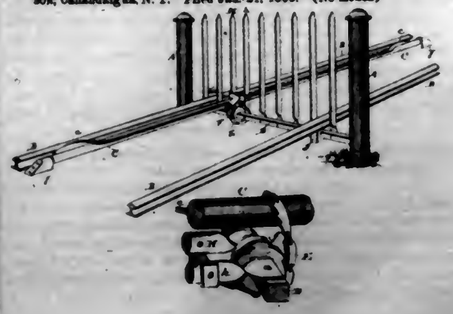
324,933. ATTACHMENT FOR LAMPS. FERDINAND GOLDSMITH, Saginaw, Mich., assignor of one-half to James W. Perrin, same place. Filed May 22, 1885. (No model.)



Claim.—1. The base provided with the slotted standards and pins, and the shade having depending arms provided with slotted and forked ends to engage said pins, and provided with the thumb-screws passing through said slots, as and for the purposes set forth.

2. The attachment described for lamps, consisting of the shade B, having the central opening, *a'*, and cover *b'*, and provided with the bearings *j*, the standards having the spring-arms to engage said bearings, and provided with the slot *d'* and forked end *e'*, the base A, provided with slotted arm *e* and lug *g*, and the thumb-screws C, substantially as and for the purpose set forth.

324,934. RAILWAY-GATE. HARRISON GRIDLEY and THOMAS JOHNSON, Canandaigua, N. Y. Filed Jan. 21, 1885. (No model.)



Claim.—1. In a railway-gate, the combination, with a vertically-rocking gate, of an operating-rod having a shoulder or shoulders constructed to engage the gate and lock the same in a vertical position.

2. In a railway-gate, the combination, with a gate consisting, essentially, of a series of pales secured to a rock-bar located transversely beneath the rails, of a spirally-flanged operating-rod journaled along the side of one of the rails, a flexible device secured to the flanged rod, and a yielding device connecting the flexible device to the gate, substantially as set forth.

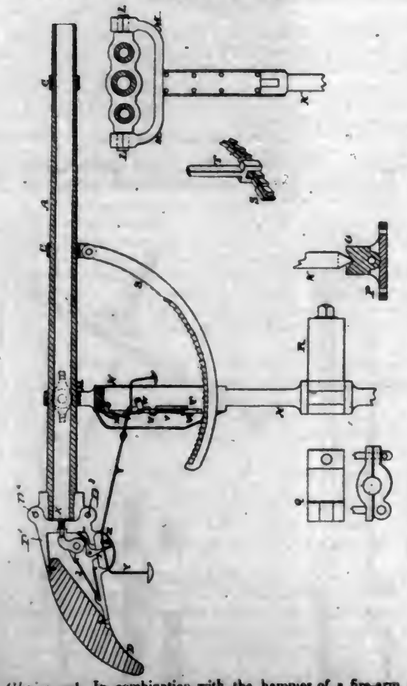
3. In a railway-gate, the combination, with a rock-bar provided with pales and located transversely beneath the rails, and a rotary rod located along the side of one of the rails, of a ratchet-toothed pulley secured on the rock-bar, a ratchet-toothed chain, and a yielding device connecting the chain and rock-bar.

4. The combination, with a rock-bar provided with pales and located transversely across the track, and a rotary operating-rod located along the inside of one of the rails, of a flexible chain secured at one end to the operating-rod and at the other end to a spring-actuated support on the gate, a portion of the chain being provided with teeth adapted to engage the rock-bar, whereby the chain at first rotates the rock-bar and then disengages itself therefrom and accommodates itself to the rotation of the operating-rod, substantially as set forth.

5. The combination, with a vertically-rocking gate secured to a rock-bar, and a spirally-flanged operating-rod located alongside of one of the rails and connected to the rock-bar for turning the latter to a horizontal position, of a hollow post located in close proximity to one end of the rock-bar, and devices connected to the rock-bar and located within the post for turning the gate to a vertical position.

6. In a railway-gate, the combination, with a rock-bar located transversely beneath the rails and a series of pales secured thereto, of a spirally flanged operating-rod located alongside of one of the rails, and an extensible or yielding device connecting the rock-bar and flanged operating-rod, whereby the latter is permitted to continue its movement after the pales on the rock-bar have been turned to a horizontal position, substantially as set forth.

324,935. SUPPORT FOR WHALING-GUNS. JOHN J. HAVERIDE, San Francisco, Cal. Filed Jan. 16, 1885. (No model.)



Claim.—1. In combination with the hammer of a fire-arm, the tumbler-pin carrying the same and having the lugs H secured to it, the hollow tumbler turning loosely upon the pin and having the lug G fixed within it, so that it may engage the lug upon the pin and the hammers be drawn back when the pin and tumbler are turned, substantially as herein described.

2. A whaling-gun consisting of the barrels A and B, mounted upon trunnions upon the upper end of a vertical standard, a stop in the bottom of the boat, within which the lower end of the standard rests and turns, and a hinged clamp, Q, by which the standard may be secured to a thwart, whereby the gun may be adjusted horizontally and vertically, substantially as herein described.

3. In a whaling-gun, the barrels having trunnions by which they may be adjusted vertically, a vertical standard supported within the boat, as shown, and having trunnions journaled to its upper end, a curved rack having one end fixed to the gun in front of the standard, while the other passes through a slot in it, and a pawl by which the rack may be engaged and held at any desired point, substantially as herein described.

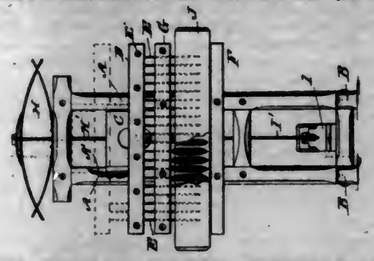
4. In a whaling-gun, the barrels mounted upon trunnions upon the upper ends of a vertical horizontally-rotating standard, a curved rack passing through a slot in said standard and having one end attached to the barrels of the gun, and a pawl with an actuating-spring, by which it may be made to engage the rack and prevent its moving in either direction, substantially as herein described.

5. In combination with the gun and standard, the curved rack S, secured to the gun and supported in the standard, the pawl T, moving in vertical guides with an actuating-spring, as shown, the bell-crank lever W, arm and spring X, by which the pawl is kept out of contact with the rack, and a means for relieving the pawl from the action of the spring X, so that it may be caused to engage the rack, substantially as herein described.

6. In combination with the gun and standard, a rack, S, secured to the gun and supported in the standard, a pawl, T, moving in vertical guides and having a spring by which it is caused to engage with the rack S, a second spring, X, having greater tension and acting to hold the pawl out of contact with the rack, in combination with a cord, Y, attached to the spring X or its lever, extending backward through the trigger, and having a knot by which the trigger may be pulled after the pawl has been released, so as to engage the rack, substantially as herein described.

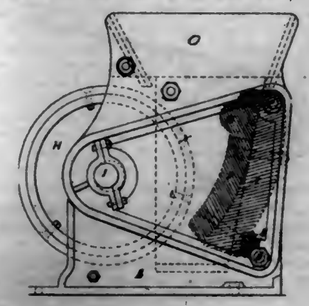
7. A whaling-gun having two or more barrels and a corresponding number of hammers mounted upon and operated by a common shaft, whereby the several barrels may be discharged simultaneously, and the swinging breech-block and locking-pin, substantially as set forth.

324,936. CIGAR-PERFORATING MACHINE. ALBERT HEED and GEORGE D. HALL, Barnesville, Ohio. Filed Feb. 5, 1885. (No model.)



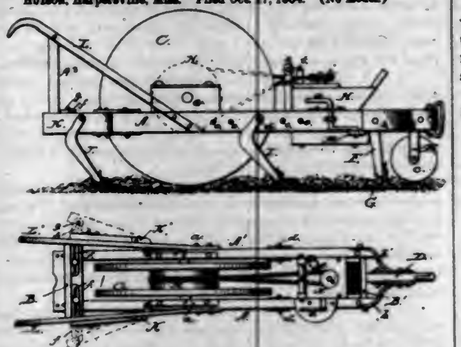
Claim.—A cigar-perforating machine comprising the following elements in combination: a guide-frame, a stop or support for the cigar-holder, a cross-head movable along said guide-frame, a needle-clamp bar attached thereto and extended laterally beyond the guide-frame and cross-head and provided with needles for longitudinally piercing the cigar, a perforated needle-bar arranged between the needle-clamping bar and the cigar-holder support, a retracting-spring adjustably connected with the cross-head on the one side, and an operating-lever adjustably connected with said cross-head on the opposite side, substantially as shown, and for the purposes set forth.

324,937. ROCK CRUSHER OR BREAKER. FRANK A. HUNTINGTON, San Francisco, Cal. Filed July 14, 1884. (No model.)



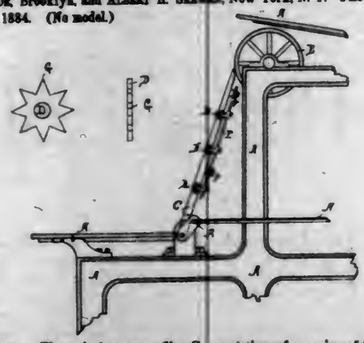
Claim.—A crushing apparatus comprising a frame provided with a hopper, an eccentric shaft, a loose cylinder upon said shaft, a fixed jaw formed with a projection, G, the bolt C, bar D, and plates E, substantially as and for the purpose specified.

324,938. UNIVERSAL PLANTER AND CULTIVATOR. JAMES M. HUDSON, Harperville, Miss. Filed Oct. 17, 1884. (No model.)



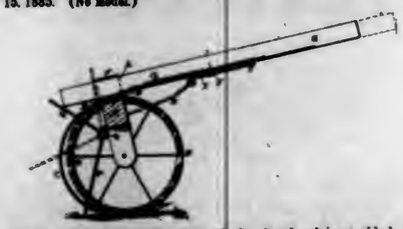
Claim.—In combined planters and cultivators, the frames A A', connected by cross-beams B B', the beam B' maintaining both the horizontal draft-pole D and the vertical plow-support F in position, the beam B performing a similar staying function for the handle-support A^2 and for the adjustable wings K K', from which plows J J' depend, the said frames A A' supporting centrally-adjustable plows I I', and the wheel c, in combination with the removable wheel C, mounted in bearings *a a*, and having a pulley, N, on the same shaft, the standard having contiguous friction-rollers *s t* thereon, and the detachable seed-box H, having shaft *h*, provided with pulley *i*, brush *n*, and disk *j*, having also flange *m* and perforations *k l*, adjustable slide M, and crank *o*, the whole co-operating in the manner and for the purpose set forth.

324,939. SHEET-FLIER FOR PRINTING-MACHINES. LEWIS W. HYDE, Brooklyn, and ALBERT H. SEAMAN, New York, N. Y. Filed Sept. 15, 1884. (No model.)



Claim.—The printing-press flier C, consisting of a series of fingers framed together and provided with series of rollers D, having points or projections G around their face, and arranged with their axes transverse to the fingers, substantially as shown and described.

324,940. HAND-RAKE. WILLIAM H. JONES, Liberty, Ind. Filed July 15, 1885. (No model.)



Claim.—1. The combination of the hand-rake provided with wheels, the sliding handle, and a device for cleaning the teeth, substantially as described.

2. The combination of a hand-rake with a sliding handle, which is connected thereto, and a cleaning device the arms of which are moved in one direction by the substance being raked and in the other direction by means of the handle, substantially as set forth.

3. The combination of a hand-rake with a cleaning device, which consists of a shaft which is secured to the under side of the rake head or axle, arms for cleaning the teeth, and a lever for forcing the arms downward, substantially as specified.

4. The combination of a hand-rake, a sliding handle, a sliding plate which is secured to the handle, a guiding-loop upon the rake-head of the axle, and a cleaning device which is operated by the sliding movement of the handle for the purpose of cleaning the teeth, substantially as shown and described.

324,941. FABRIC FOR WALL-DECORATION. JOHN KLEE, New York, N. Y. Filed Nov. 21, 1884. (Specimens.)



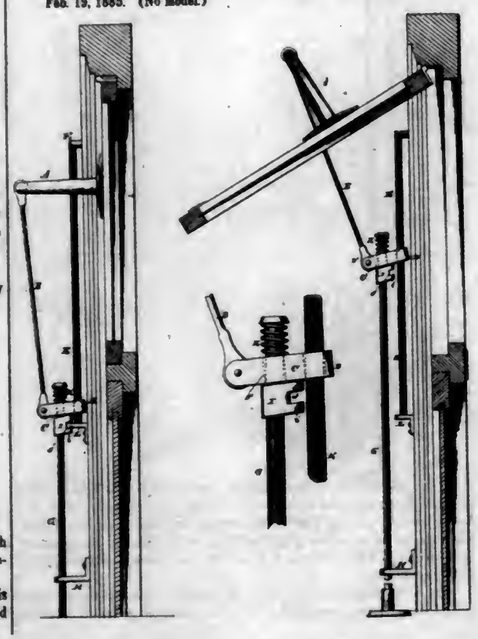
Claim.—A wall-covering composed of a backing of paper or other suitable fabric, an intermediate textile fabric, and a layer of plaster-of-paris or other suitable plastic material, substantially as set forth.

324,942. MATTING AND CARPET BINDING. CHARLES E. KNAPP, Brooklyn, N. Y. Filed Nov. 17, 1884. (No model.)



Claim.—The rubber binding, substantially as described, for the purpose specified, it consisting of a thin oblong piece of rubber, solid on one side and open on the other to admit the ends of the material to which it is to be attached, the open space being formed by flaps that extend from the solid side and cover the ends of the material, all combined and arranged essentially as set forth.

324,943. TRANSOM-LIFTER. ALBERT LANGSTROM, Council Bluffs, Iowa, assignor of one-half to Conrad Wasnberg, Omaha, Nebr. Filed Feb. 19, 1885. (No model.)

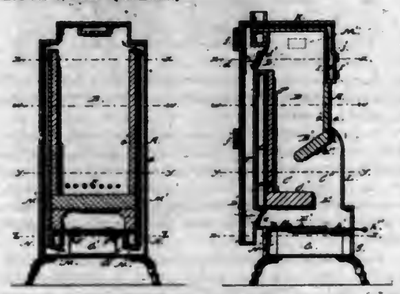


Claim.—1. The combination, with a transom, and a slide the outer end of which is connected with the transom and the inner end connected to a guide or track, of an operating-rod connected with the slide, and a cam for changing the angular adjustment of the slide relatively to the track, thereby locking the transom, substantially as set forth.

2. The combination, with a transom and slide secured to a guide or track and connected with a transom, of an operating-rod connected with the slide, and a cam secured to said rod for the purpose of changing the angular position of the slide, substantially as set forth.

3. The combination, with a transom, of an operating-rod connected with the slide, and a cam secured to said rod, and a spring for holding the cam in engagement with the slide, substantially as set forth.

324,944. STOVE AND HEATER. SILAS H. LA RUE, Reading, Pa. Filed Oct. 1, 1883. (No model.)



Claim.—1. The fresh-air draft-passages leading from the ash-pit to the coking-chamber, in combination with the brick fire-bed or fuel-support, and the exit-flue below said fire-bed and between the fire-bed and the ash-pit.

2. The fire-bed, imperforate and wholly unobstructed at its front, as shown, and the exit-flue beneath said fire-bed, in combination with the front downward-discharge passage and the illuminating combustion-chamber, as described.

3. The ash-pit, the fresh-air flues leading from the ash-pit to the coking-chamber, the coking-chamber, the combustion-chamber, the fire-bed, and the exit-flue beneath the imperforate open-front fire-bed, all in combination, substantially as described.

4. The direct-exit opening in the upper portion of the independent coking-chamber, the coking-chamber, the fuel or fire chamber open and unobstructed at its front and wholly closed at its bottom by the imperforate fire-bed which projects from the rear toward the front of the stove and which has a lower flue beneath the same, the combustion and illuminating chamber opposite the fire-chamber, and the mica doors opposite the illuminating-chamber, in combination.

5. The ash-pit, the orifice in the top of the ash-pit, the slide or valve which controls the orifice, the fire-bed, and the flue which leads from and extends beneath the fire-bed, in combination.

6. The lower imperforate fire-bed projecting from the rear wall forward and having an indirect-draft flue beneath the same, and the upper imperforate bed projecting from the front wall backward and overhanging the lower fire-bed at some distance above the same, in combination, substantially as described.

7. The updraft-exit opening, and the downdraft-exit passage extending under the fire-bed, in combination with the coking-chamber, the fuel-support which extends rearwardly from the front wall of the stove, and with the combustion-chamber, the fire-bed of which projects from the rear wall of the stove toward the front thereof, substantially as set forth.

8. The brick-lined coking-chamber the diaphragm at the bottom of which projects from the front wall of the stove, the bricked fire-chamber the brick fire-bed of which projects from the rear wall of the stove, and the exit-flue which passes downwardly at the front of and extends rearwardly beneath the fire-bed, in combination, substantially as described.

9. The fresh-air flues leading from the ash-pit chamber, as described, the coking-chamber receiving air from the fresh-air flues, the fire-bed and its combustion-chamber, the ash-pit chamber separated from the flue-space above it by a partition or diaphragm, an orifice or opening, *h*, in such diaphragm, and a slide which is adapted to control such orifice, in combination.

10. The independent gas-flue, and the gas-chamber between the feed-doors communicating with the independent gas-flue and with the coking-chamber, which in turn communicates interiorly with the indirect-exit flue, in combination with the fresh-air flues which exteriorly connect the ash-pit with the coking-chamber and which operate to affect the pressure within the coking-chamber by discharging air into the same.

11. The independent gas-flue connecting the gas-chamber and the exit-pipe, the safety-valve arranged between the coking-chamber and the exit-pipe and adapted to be opened by gaseous pressure, and the coking-chamber communicating with the combustion-chamber and with the downdraft-exit flue beneath the fire-bed, all combined and operating substantially as described.

12. The vertical brick-lined rear fire-wall, the brick fire-bed projecting from the rear fire-wall, the over-projecting brick shelf, the front discharge-passage, the illuminating door or doors opposite the discharge-passage, and the flue for downdraft beneath the fire-bed, combined substantially as described.

13. The direct-exit flue, the indirect-exit flue, the fire-bed or fuel-chamber and its combustion and illuminating chamber, which communicates, as described, with the direct-exit flue and with the indirect-exit flue, and the flues which are arranged along the vertical walls of the ash-pit and through which air is conveyed from the ash-pit and is discharged into the flue which leads downwardly and rearwardly from the fire-chamber, in combination.

14. The coking-chamber, the gas-chamber between the two feed-doors and opening out of the coking-chamber, the uptake-flue, the gas-flue which connects the gas-chamber with the uptake-flue, the direct-exit damper which controls the opening between the coking-chamber and the uptake-flue, the lower or indirect-exit flue which discharges into the uptake-flue, and the damper for controlling the opening between the indirect-exit flue and the uptake-flue, in combination.

15. The combination of the coking-chamber, the direct-exit opening near the top of the coking-chamber, the imperforate fire-bed, and the indirect-exit passage leading first downwardly along the front vertical face of the fire-bed and then rearwardly along the bottom of the same to the opening in the uptake-flue, substantially as described.

16. The fresh-air flues, the coking-chamber, the combustion-chamber, the fire-bed, and the small air-conduits leading from the top of the coking-chamber down the rear wall of the stove to a point above the level of the fire-bed, where they enter the fire-chamber through orifices in the rear wall for the purpose of aiding combustion, all in combination, substantially as described.

17. The combination of an upper fuel and coking chamber which at its front is provided with an imperforate fuel-supporting diaphragm, with a lower fuel or fire chamber directly under the coking-chamber, and which at its rear above a horizontal indirect-exit flue has an imperforate fixed non-adjustable fire-bed, substantially as described.

18. The combination of an upper fuel and coking chamber which has a supporting-diaphragm at its front, with a lower fuel or fire chamber which has an imperforate fire-bed which projects from the rear of the stove toward the front thereof, the fire-bed being non-adjustably secured in position, and the fire-chamber being adapted to burn with an upward draft or with a downward draft through a flue beneath the fire-bed, substantially as described.

19. The combination of an upper fuel and coking chamber which at its front has an imperforate fuel-supporting diaphragm, with a lower fuel or fire chamber which is directly under the coking-chamber, such lower chamber having beneath it an indirect-exit passage and being open at its top for communication with the coking-chamber, and wholly open at its front so that the rays of light may have unobstructed passage through the lower combustion and illuminating chamber beneath the supporting-diaphragm to the mica lights in front of the same, substantially as specified.

20. The combination of an upper fuel and coking chamber and a lower fuel or fire chamber, such lower chamber being directly under the coking-chamber and being provided with an imperforate fire-bed, and adapted by the provision of a lower indirect-exit flue which leads downwardly and rearwardly under the fire-bed to burn with a downward draft.

21. A stove the fire-chamber of which has a series of minute perforations in one of its walls for the introduction of air and gases to support combustion, which is entirely open at one side and at the top for the escape of air and the products of combustion, and which is entirely closed at all other points.

22. The combination of an upper fuel, coking, and combustion chamber which is provided with an opening for the direct exit of the products of combustion, with a lower fuel or fire chamber which is partially separated from the coking-chamber by an imperforate diaphragm, and which has an imperforate fire-bed, between the front edge of which and the front wall of the stove is an opening or passage for the indirect escape of the products of combustion.

23. The combination of an independent upper fuel and coking chamber which is provided with a direct-exit opening and a front diaphragm, and a lower combustion-chamber which has an imperforate fire-bed, and which discharges its products of combustion at the front through a short vertical flue downwardly directly into a horizontal flue-chamber or exit-passage which extends rearwardly along the under surface of the imperforate fire-bed, substantially as set forth.

24. The combination of an upper fuel-supply and coking chamber, a fuel-receptacle below the fuel-supply and coking chamber, a flue-chamber below the fuel-receptacle for the passage of the volatile products of combustion and for the temporary reception of the solid incombustible portions of the fuel, and a chamber below such flue-chamber

adapted to receive and to discharge air for combustion, and also to receive the unconsumed portions of the fuel.

25. The combination of a coking and fuel-supply chamber with a fixed imperforate fire-bed which is directly under the fuel-supply chamber, and which has beneath it an indirect-exit flue, the fuel-supply chamber having a fire-brick or tile at its bottom, which extends from side to side of the coking-chamber and from the front thereof toward the rear of the same, the rear extremity of the fire-brick or tile being directly or nearly directly over the center of the fire-bed.

26. A coking and fuel-supply chamber which has at its lower extremity a tile of refractory material, a gas-chamber which has an orifice in its top, a gas-passage which leads from the gas-chamber to a smoke-exit pipe, and a damper which is provided with an orifice which is adapted to be closed by an automatically-acting valve, combined for operation in a stove, substantially as described.

27. The combination, with the ash-pit, of laterally-extending air-flues adapted to conduct air into the upper part of the stove, and other air-flues directly over the laterally-extending flues and leading at right angles thereto from a point near the front to a point near the rear of such ash-pit and adapted to conduct air into the lower part of the stove, substantially as and for the purposes set forth.

28. The combination, with the ash-pit, of flues which are adapted to receive air therefrom at a point near the front thereof and to discharge it into the lower smoke-exit passage, and other flues adapted to receive air from the ash-pit and to convey it to the coking and fuel-supply chamber.

29. The combination, in a stove, of a smoke-passage which connects at its lower extremity with a flue chamber or passage for indirect escape of the products of combustion which is directly under the fire-chamber, and of one or more vertical passages which connect with an air-chamber which is directly below such flue-chamber, and with the interior of the stove at a point or points in the upper portion thereof, substantially as described.

30. In a heating apparatus substantially of the character herein described, the combination, with the upper fuel-supplying and coking chamber thereof, of an exit-opening for such chamber, a damper in such exit-opening, an orifice in such damper, a gas-valve which is attached to the damper and which is adapted to close the orifice therein, and a loosely-swinging door or valve which is hinged to an opening in the wall of the coking-chamber and which is adapted to move outwardly under slight pressure of gas and permit the escape of the same from such coking-chamber.

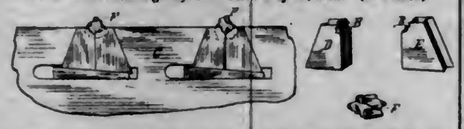
31. In a stove, a fuel or coking chamber which is provided on one of its sides with a perforated and valved damper, and on another side with a gas-escape chamber the inner wall of which is composed of a loosely-pivoted, freely-swinging door which moves outwardly under pressure of gas and permits its escape into such gas-chamber.

32. The combination of a fire-bed or fuel-support which at one side is wholly unobstructed, a fire back or wall which has air-inlet openings a short distance above the fire-bed, and an overhanging fire-brick or tile which serves to direct fuel to the fire-bed below it and to support fuel for combustion or for coking above it, and which forms the principal portion of the upper wall or ceiling of a combustion and illuminating chamber.

33. The combination, with the lower or indirect-exit flue which is provided with a damper at its rear extremity, of the side and rear flues which conduct air from the front part of the ash-pit to the rear part of the exit-flue, and the dampered orifice in the top of the ash-pit through which air is admitted directly from the ash-pit into the exit-flue

324,945. METHOD OF SECURING DIAMONDS IN SAW-TEETH.

AUSTIN H. LUGAR, Allegheny, Pa. Filed May 26, 1884. (No model.)

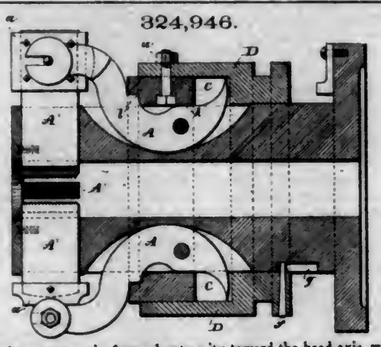


Claim.—The method herein described of setting diamonds in saw-teeth, the same consisting in placing the diamond in a suitable frame, pouring plaster around it, and when set dividing the plaster on a line with axis of the carbon, then removing the diamond and casting molten copper in the cavity, then removing the copper from and casting a metal tooth partly around said form, then dividing the tooth longitudinally and placing the tooth in the cavity, the parts being held together when in place, thus securing the diamond, substantially as specified.

324,946. BOLT-CUTTER HEAD.

MICHEL D. LUEDERS, Cleveland, Ohio. Filed Apr. 2, 1884. (No model.)

Claim.—1. In a bolt-cutter head, the combination, with a rocking lever having its forward extremity directly and positively secured to a die or die-holder, of a ring located outside and rearward of the plane of the die, said ring having engagement with said lever forward of its pivotal plane to move its forward extremity toward the head-axis, whereby the die is actuated in a corresponding movement directly by the lever, substantially as set forth.



2. In a bolt-cutter head, the combination, with a rocking lever having its forward extremity directly and positively secured to a die or die-holder, of a ring located outside and rearward of the plane of the die, said ring engaging with the lever forward of its pivotal plane to move the die toward the head-axis, and engaging with said lever rearward of its pivotal line to move the die from the head-axis, substantially as set forth.

3. In a bolt-cutter head, the combination, with rocking lever A, of ring C, provided with inner peripheral cam, *h*, on its forward portion, engaging with said lever forward of its pivotal point, substantially as set forth.

4. In a bolt-cutter head, the combination, with ring C, having the two series of inner peripheral cams, *h* and *h'*, respectively formed in its forward and rear portions, of rocking levers A, respectively adapted to engage at points forward of their fulcrums with said cam series *h*, and at points rearward of their fulcrums with said cam series *h'*, substantially as set forth.

5. In a bolt-cutter head, the combination, with rocking levers A, respectively provided with flat bearings *l*, located forward of their pivotal points, of ring C, having the series of inner peripheral cams, *h* formed on its forward portion, said cams having engagement with said flat bearings to lock the levers against accidental movement tending to move their forward extremities from the head-axis, substantially as set forth.

6. In a bolt-cutter head, the combination, with ring C, having the series of inner peripheral cams, *h'*, formed on its rear portion, of curved rocking levers A, respectively provided with flat bearings *k* rearward of their pivotal points, said ring being located outside and in rear of the plane of the dies, and adapted by the engagement of said parts *h'* and *k* to lock the curved levers against accidental movement tending to move their forward extremities toward the axis of the head, substantially as set forth.

7. In a bolt-cutter head made without a ring in the plane of the dies, the combination, with ring C, having the two series of inner peripheral cams, *h* and *h'*, respectively formed in its forward and rear portions, of rocking levers A, having forward and rear flat bearings, *l* and *k*, substantially as set forth.

8. In a bolt-cutter head, the combination, with rocking levers A, of ring D and ring C, adapted to have circular adjustment relative to the latter, both said rings being located outside and in rear of the plane of the dies, said ring C having the two series of inner peripheral cams, *h* and *h'*, respectively formed in its forward and rear portions, and respectively engaging with said levers at points forward and rearward of their fulcrums, substantially as set forth.

9. In a bolt-cutter head, the combination, with a die and a rocking lever, of a ring having two peripheral cams, respectively adapted to engage with said lever at points on opposite sides of an intermediate line passing through the center of movement of the lever, substantially as set forth.

10. In a bolt-cutter head, the combination, with a ring having circular and endwise movements, of a rocking lever having engagement with two cams formed on the inner periphery of the ring, substantially as set forth.

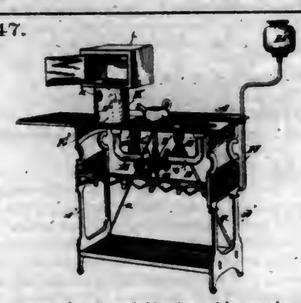
324,947. VAPOR-STOVE.

FORDYCE A. LYMAN, Cleveland, Ohio. Filed Aug. 2, 1884. (No model.)

Claim.—1. In a vapor-stove, the combination, with a combustion-chamber and a commingling-tube located alongside of the same, of a shield interposed between the combustion-chamber and the commingling-tube.

2. In a vapor-stove, the combination, with a combustion-chamber, a vaporizing-chamber located in close proximity to the combustion-chamber and provided with a jet-orifice, and a commingling-tube located in a line with said jet-orifice, of a shield, G', located between the commingling-tube and combustion-chamber.

324,947.



3. In a vapor-stove, the combination, with a combustion-chamber, a vaporizing-chamber provided with a jet-orifice, and a commingling-tube having its open end in a line with said jet-orifice, of a shield interposed between the combustion-chamber and the commingling-tube, and the funnel-shaped mouth-piece inserted in the open end of the commingling-tube, substantially as and for the purpose set forth.

4. In a vapor-burner, the combination, with a vaporizing-chamber and a commingling-tube, of the burner F, secured on the commingling-tube, and a perforated plate between the burner and commingling-tube, substantially as set forth.

5. In a vapor-stove, the combination, with a base or frame, a commingling-tube, an extension-tube fitting the commingling-tube and extending up above the top plate of the frame, and a burner secured to said extension-tube, of the drum surrounding the extension-tube, substantially as set forth.

324,948. FASTENING FOR TRUNKS AND BOXES.

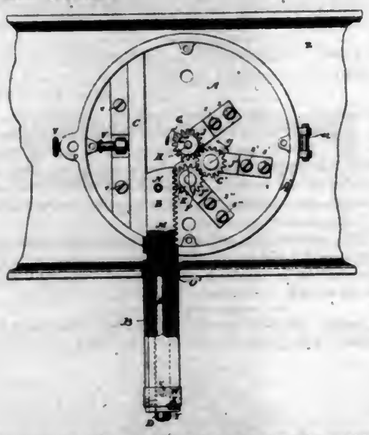
CLAYTON MARK, Chicago, Ill. Filed Mar. 21, 1884. (No model.)



Claim.—In a trunk-fixture in which there is an upper and lower plate, one for attachment to the lid of the trunk, and the other for attachment to the body thereof, the combination of a fixed catch or bolt, B, on one of the said plates, a yielding latch or loop, E, pivoted to the other of the said plates, and a slide arranged to move behind the said loop, as the latter is drawn from its engagement with the said bolt, substantially as and for the purposes specified.

324,949. APPARATUS FOR INDICATING THE FLEXURE OF CAR-SPRINGS.

FRIEDRICH W. MINCK, Vienna, Austria-Hungary. Filed Oct. 10, 1884. (No model.)



Claim.—1. In a flexure-indicator for car-springs, the combination, substantially as hereinbefore described, with the car-frame and the car-spring, of a hollow rack sliding vertically in fixed guides upon the car-frame, and provided with an adjustable extension-piece sliding in its hollow exterior, whereby the same may be extended to touch upon the car-spring, and means, substantially as described, for indicating the flexure of the springs during loading by the movement of the car-frame in reference to the rack.

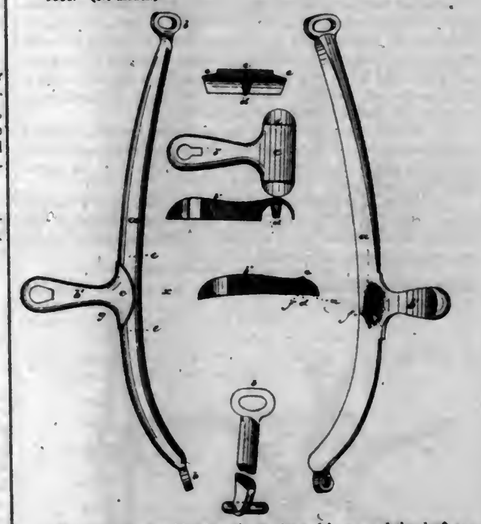
2. In a flexure-indicator for car-springs, the combination, substantially as hereinbefore described, with the car-frame Z and the car-spring R, of the cylindrical box A, having the dial-plate Q, provided with the slot P', and the graduated scale P, attached to the car-frame, the hollow rack B, sliding vertically in fixed guides in said box over the center of the spring R, provided with the adjustable extension-piece D in its hollow interior, the adjusting and holding screw *v*, whereby the same may be extended to rest upon the car-spring, and the arrow O upon the rack B, for indicating the flexure of the spring upon the scale P

3. In an apparatus for regulating the loading of railway-cars, the hereinbefore-described combination, with the car-frame Z and the car-spring R, of the cylindrical box A, provided with the dial-plate Q and the semicircular slot S, secured to said car-frame, the hollow toothed rack B, sliding vertically in fixed guides in said box over the center of the car-spring, the train of gear-wheels G, G', and G'', rotating in said box, engaging with the rack B and with each other, the index-finger K, rotating with the gear-wheel G'' over the dial-plate Q, the adjustable extension-piece D in the hollow rack B, provided with the adjusting and holding screw *v* and the hinged protecting-cap *w*, whereby the rack may be extended to rest upon the car-spring, and the adjustable button T in the slot S, for indicating the maximum point of loading.

4. In an apparatus for regulating the loading of railway-cars and indicating the flexure of the springs, the hereinbefore-described combination, with the car-frame Z and the car-spring R, of the cylindrical box A, provided with the dial-plate Q, the slots P' and S, and the graduated scale P, attached to the car-frame, the hollow toothed rack B, sliding vertically in fixed guides in said box over the center of the car-spring, the train of gear-wheels G, G', and G'', rotating in said box, engaging with the rack B and with each other, the index-finger K, rotating with the gear-wheel G'' over the dial-plate Q, the adjustable extension-piece D in the hollow rack B, provided with the adjusting and holding screw *v*, and the hinged protecting-cap W, whereby the rack may be extended to rest upon the car-spring, the adjustable button T in the slot S, for indicating the maximum point of loading, and the arrow O upon the rack B, for indicating the flexure of the spring upon the scale P.

324,950. HAME.

JOHN S. MITCHELL, Milford, Conn. Filed Apr. 6, 1885. (No model.)



Claim.—1. In combination, the perforated hame and the draft-eye having the apron to inclose the face of the hame, said apron being provided with a lug to enter the perforation, the parts being welded together, substantially as set forth.

2. In combination with the hame, the draft-eye provided with an apron with scarfs projecting from the opposite ends thereof, which are beveled on the flat sides, as shown, the parts being welded together, substantially as set forth.

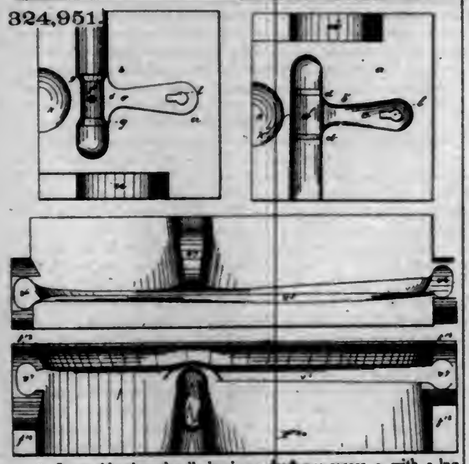
324,951. DIE FOR MANUFACTURING HAMES.

JOHN S. MITCHELL, Milford, Conn. Filed Apr. 27, 1885. (No model.)

Claim.—1. In combination, the dies for breaking down a bar to secure the shape of a draft-eye at the ends thereof, having the broader recesses *a'* at the edge thereof, the rounded projections *a'''*, the receding edges *a⁴*, and the curved returned edges *a⁵*, substantially as and for the purposes set forth.

2. The combination of the dies herein shown and described, for forming a draft-eye and apron, comprising the die having the recess *c* and projection *l* near the end thereof, the transverse recess *c'*, with the inclines *d d*, and the die having the ridge *f* and inclines *g g*, substantially as shown and described.

324,951.



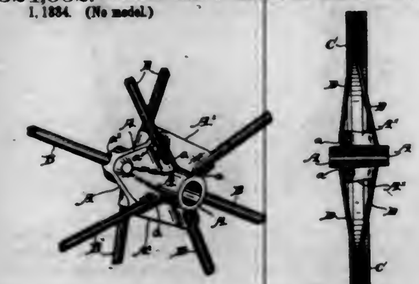
3. In combination, the die having a draft-eye recess, *c*, with a lug or projection for forcing out the clip-eye at one end thereof, an apron-recess, *c'*, lying transversely across the end of said recess *c*, having inclines *d d*, for forming scarfs *d'* at the opposite ends thereof, and a die having the raised platform conforming in shape to the bottom of the draft-eye and adapted to partly fill the recess *c*, and having at the base of said platform, running at right angles thereto, a ridge, *f*, to form the concaved under side of the apron, substantially as set forth.

4. In combination, the die having a draft-eye recess, *c*, with a lug or projection for forcing out the clip-eye at one end thereof, an apron-recess, *c'*, lying transversely across the end of said recess *c*, having inclines *d d*, for forming scarfs *d'* at the opposite end thereof, and a die having a raised ridge for forming the concaved under side of the apron, said ridge being bored, as at *i*, to form the pin *j*, and expanded, as at *g*, to co-operate with inclines *d d* in forming the scarfs, said parts being arranged and operating substantially as set forth.

5. Hame-bending dies having the longitudinal groove c^6, bearing for the draft-eye c^5, and the co-operating die having forks at each end to receive the ends of the other die and bend the hame over the curved face of the coacting die.

6. The die having the longitudinal groove c^6, bearings c^7 at the ends of said groove for the end eyes, and a raised finger or bearing for the draft-eye, in combination with a co-operating die having forks to receive the ends of the hame, substantially as set forth.

324,952. WHEEL. James E. Mustard, Glen Hall, Ind. Filed Dec. 1, 1884. (No model.)



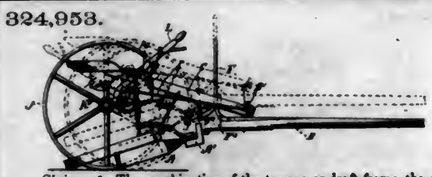
Claim.—1. A hub for staggered wheels, provided with a zigzag flange around its outside extending back and forth lengthwise of said hub, said flange being provided with transverse holes at its points in which the spokes of the wheel may be easily secured by a nut or by being riveted therein, substantially as set forth.

2. The combination of the hub A, having a zigzag flange, A', with holes *a* and grooves *a'*, spokes B, the inner ends of which are bent and riveted in the holes *a* in the flange, and the outer ends of which are secured in the rim C, and said rim C, substantially as set forth.

3. A hub for staggered wheels, having a zigzag flange around its outside, said flange being cast integrally therewith and provided with transverse holes at its points in which the spokes of the wheels may be easily secured, substantially as set forth.

324,958. WHEEL-HARROW. Albert E. Myers, Garland, Pa. Filed Dec. 31, 1884. (No model.)

324,953.



Claim.—1. The combination of the tongue or draft-frame, the axle-beam, the wheel-supporting cranks, the bar supported at one end on the axle-beam and having its other end pivotally connected with the draft-frame, and the tooth-frames, also connected with the draft-frame, and adjusting-connections between the axle-beam and the wheel-supporting cranks and between bar C and the tooth-frames, substantially as set forth.

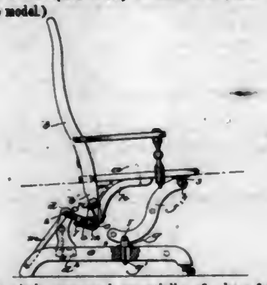
2. The combination, with the tongue or draft-frame, of the carriage comprising the axle-beam, adjustable wheel-supports, and the seat-bar supported at its rear end on the axle-beam and pivotally connected at its forward end to the tongue, adjusting-connections between the wheel-support and the axle-beam and between the seat-bar and the tongue, and the tooth-frame supported at its forward end by the tongue and at the rear end by the carriage, substantially as set forth.

3. The combination of the tongue, the toothed frames, the seat-bar, a link, G, depending from seat-bar, and the lever F, having arm F', pivotally suspended on link G, and arm F^2, pivoted to the tongue, substantially as set forth.

4. The combination of the tongue, the seat-bar provided with slot C', a pin, B', projected from the tongue into slot C' and provided with an opening, *b*, and a rod, E, projected transversely through the seat-bar and opening *b* of pin B', substantially as set forth.

5. The combination of the tongue, the toothed frames, the bar C, having a slot, C', a pin, B', projected from the tongue into or through slot C' and provided with an opening, *b*, a rod, E, projected through bar C and opening *b*, the hanger G, depending from the bar C, and the lever F, provided with arm F', pivoted to hanger G, and with arm F^2, pivoted to the tongue, substantially as set forth.

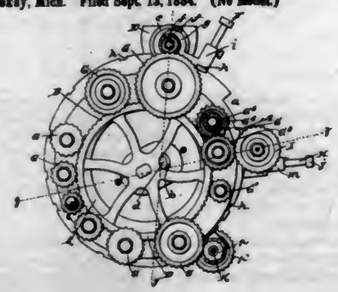
324,954. TILTING-CHAIR. Charles A. Perley, Baldwinsville, Mass., assignor to Thompson, Perley & Waite, same place. Filed June 18, 1885. (No model.)



Claim.—1. A chair composed, essentially, of a base-frame, standards or uprights thereon, a seat-frame and short leg-like portions below it, and links *f*, pivotally connected at or near their ends with relation to the seat and the base-frame, and links and springs to constitute a spring-joint, substantially as described, between the leg-like portions of the seat-frame and the said standards or uprights, to operate substantially as and for the purposes described.

2. The base-frame, its spring-stops, the adjustable stands, and the links *f f*, pivoted to the said stands, as shown, and to the seat, combined with the said seat, the standards or uprights, the links, and springs, to operate substantially as described.

324,955. SPEED-CHANGING MECHANISM. Benjamin B. Powell, Petoskey, Mich. Filed Sept. 13, 1884. (No model.)



Claim.—1. In a speed-changing mechanism, the blind wheel or disk, together with actuating mechanism, substantially as and for the purpose set forth.

2. In a speed-changing mechanism, the disk or blind wheel supporting arm or bracket provided with a support having a sprig-retaining bolt to engage and hold the said disk, the latter being notched to receive the lower end of said bolt, substantially as and for the purpose set forth.

3. In a speed-changing mechanism, the blind wheel or disk having a segment of its surface removed along its periphery, substantially as shown, and for the purpose described.

4. In a speed-changing mechanism, the disk or blind wheel having a recess or notch along or in its periphery, in combination with the shifting or adjusting lever, with its pinions engaging or gearing pinions of said disk, substantially as shown and described.

5. In a speed-changing mechanism, the shifting or adjusting lever having a lateral extension or arm provided upon its inner surface, with a groove or recess to receive the edge or periphery of the disk or blind wheel, substantially as and for the purpose set forth.

6. In a speed-changing mechanism, the combination, with the blind wheel or disk, of the shifting or adjusting lever having a lateral extension or arm provided with a spring catch or bolt with its inner end bearing in notches in the periphery of said disk or wheel, substantially as shown and described.

7. In a speed-changing mechanism, the bracket or arm E, having the central pin or axis, *d*, in combination with the blind wheel or disk A, having a sleeve or hub through which said pin passes, and the spur-wheel B, mounted loosely upon said disk, sleeve, or hub, substantially as shown and described.

8. In a speed-changing mechanism, the disk or blind wheel having fixed projecting studs or spindles carrying gearing, substantially as shown and described.

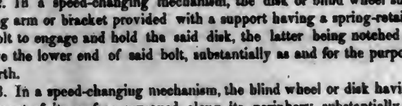
9. In a speed-changing mechanism, the disk or blind wheel having a hub projecting therefrom and itself serving as a support or axis, substantially as shown and described.

10. In a speed-changing mechanism, the disk or blind wheel having at or near its edge an arm or projection supporting a spindle-bearing, pinions disposed upon each end of said spindle, one of said pinions gearing with a pinion of said disk and the other pinion adapted to engage with a pinion or wheel upon the opposite side of the disk, substantially as shown and described.

11. In a speed-changing mechanism, disk or blind wheel supporting arm or bracket having a tubular bearing or boxing to receive and provide an extended bearing for the driving-shaft, substantially as shown and described.

12. In a speed-changing mechanism, the combination, with the disk or blind wheel and its concentrically-supporting pin or axis, together with its differential gearing, of the eccentric wheel disposed alongside of said disk or wheel to expose a large area of the latter to provide for the disposition thereon of additional gearing, substantially as shown and described.

324,956. FASTENING FOR STEREOTYPE-BOXES. Edwin E. Pratt, Chicago, Ill., assignor to A. N. Kellogg Newspaper Company, same place. Filed Nov. 28, 1884. (No model.)



Claim.—The shipping-box having strap-irons permanently and immovably attached at both ends, in combination with a removable cover adapted to be inserted within the vertical walls of the box and under said strap-irons, means, substantially such as specified, for supporting the cover, and a spring, *c*, acting to hold the cover in position under the irons, substantially as specified.

324,957. TELEGRAPH-INSULATOR. Jacob D. Putnam, South Lyndeborough, N. H. Filed Nov. 13, 1884. (No model.)



Claim.—1. The insulator-knob made as shown and described, having the broad-bottomed part *b*, provided with a sunken thread or spiral groove, and with the short unthreaded part *c* above such threaded portion, and having the broad flange or water-shed *d* projecting abruptly beyond such part *c*, and to an extent nearly equal to double the diameter of the part *b*, and having above such flange the annular groove surmounted by a head of materially less diameter than that of the water-shed.

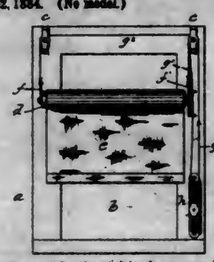
2. The reversible insulator made with the two solid broad-bottomed tapering parts *b*, each having an external sunken thread, as shown and described.

324,958. WAGON-STANDARD. John M. Roberts and Bradley W. Case, Brownsville, Dak. Filed June 10, 1885. (No model.)



Claim.—The combination of the bolster having the two tenons B C formed upon its ends with the casting having a double socket formed therein and the two tenons upon its outer ends with the bolts, standard, and a catch for holding the standard in a vertical position, substantially as shown and described.

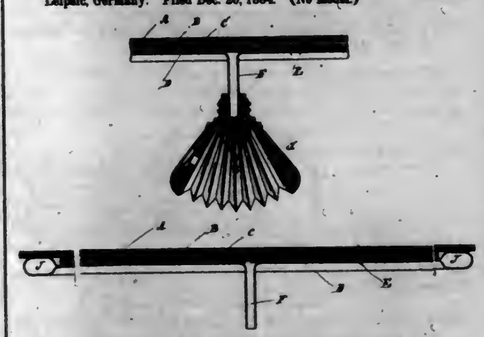
324,959. CURTAIN-FIXTURE. Franklin Root, Hartford, Conn. Filed Sept. 22, 1884. (No model.)



Claim.—1. In combination with the suspended curtain-roller with cords, bearers, and fixed supports, substantially as described, the cord-strainer *h*, consisting of the frame having a guide-slot, a fixed screw-rod, a check-nut, and a slide bearing a cam-roller, all substantially as described.

2. In combination with the endless cord *g* of a curtain-fixture, the cord-strainer *h*, having the slide h^3 open on the lower side for the ready introduction of the cord and bearing the cam-roller *h'*, the screw-rod, and the check-nut, all substantially as described.

324,960. LIGHT COPYING APPARATUS. Hugo Sack, Flagwitz Leipsic, Germany. Filed Dec. 20, 1884. (No model.)



Claim.—1. In combination with the glass plate A, paper B, containing the drawing to be copied, and the sensitive or copying paper C, the perforated material D, and the air-tight material E, provided with a pipe, F, and suitable suction apparatus, substantially as and for the purpose set forth.

2. The combination, with the air-tight material E and the glass plate A, of a light copying apparatus, and the air-cushion J, around the outer surface of the air-tight material, in the manner and for the purpose described.

324,961. BOLT-CUTTER. OLE A. BATH, Jackson, Miss. Filed May 7, 1885. (No model.)

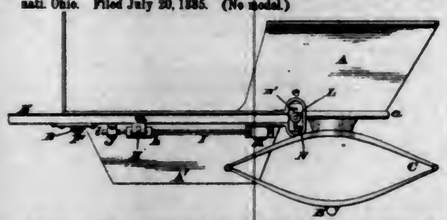


Claim.—1. The combination of the base, the jaws pivoted to the outer end of the base and provided with shanks extended back over the base and having cam-wings, and the lever provided with a cam-head pivoted to the base between the cam-wings of the blades, substantially as set forth.

2. The combination of the blades provided with extensions or shanks having curved cam-wings on the ends thereof, the lever having a cam-head pivoted between the cam-wings of the blades, and the opening-lever *d*, pivoted midway its ends on the bolt of the cam-head, and having flanges on its ends adapted to engage the said wings and open the jaws, substantially as set forth.

3. The improved bolt-cutter hereinbefore described, consisting of the base-plate having an extension or handle, the jaws pivoted to the outer end of the base-plate and provided with rear extensions having cam-rings thereon, the cam or operating lever having a cam-head pivoted to the base between the cam-wings of the jaws, the opening-lever *d*, and the top plate, *e*, all arranged and operating substantially as set forth.

324,962. TWO-WHEELED VEHICLE. DANIEL M. SECHLER, Cincinnati, Ohio. Filed July 20, 1885. (No model.)



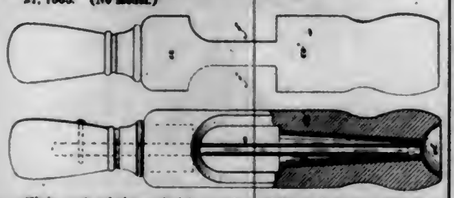
Claim.—1. The combination, in a vehicle, of a pair of shafts fulcrumed to the body, a pair of longitudinally-disposed bars, and devices that connect said shafts to said bars, for the purpose of effecting a torsional or twisting motion of the latter, substantially as herein described.

2. The combination, in a vehicle, of fulcrum D, shafts E E', boxes F F', hangers G G', arms H A H' A', torsion-springs I i I' i', boxes J J', and keepers K K', for the purpose described.

3. In combination with the vehicle-shaft E and yoke *e*, the vertically-adjustable stud-shaft M, carrying the cushion or bumper L, for the purpose specified.

4. The combination, in a vehicle, of vertically-slotted socket-plate N *n n'*, stud-shaft M *m m'*, and cushion or bumper L, for the purpose specified.

324,963. CORK-DRIVER. JOHN SOMMER, Newark, N. J. Filed Jan. 21, 1885. (No model.)



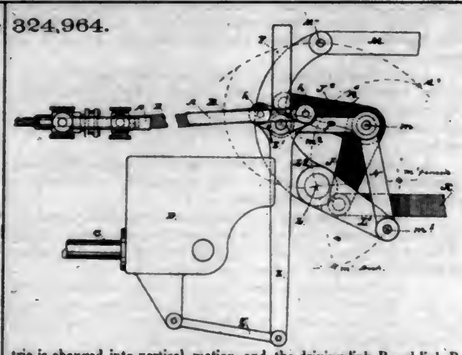
Claim.—A tubular cork-driver, substantially such as described, having the opposite openings *f f* to the bore, substantially as and for the purposes set forth.

324,964. VALVE-GEAR FOR STEAM-ENGINES. ANDREW J. STEVENS, Sacramento, Cal. Filed July 29, 1884. (No model.)

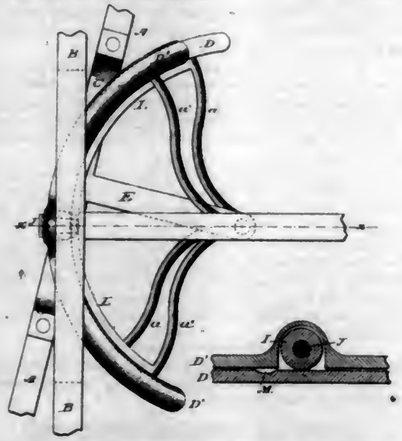
Claim.—1. The combination, with the bell-crank J J', adapted to receive motion from an eccentric or other driving mechanism, of the links R P, one connected either directly or indirectly to the valve-rods and the other to the bell-crank, and at their inner ends connected to a common pivot or center, *m*, which is confined to a movement in the arc of a circle and is also adjustable up and down, substantially in the manner set forth.

2. In a valve-gear, the combination, with the eccentric-rod K, of the bell-crank connection, by which horizontal movement of the eccentric is changed into vertical motion, and the driving-link P and link R, connecting the bell-crank and driving-link together, said links at their common pivot *m* being connected to the arm L' of a tumble-shaft, L, by link N, substantially as and for operation as set forth.

3. The combination, with the oscillating disk or head of the lever E, having oscillating movement from as well as rotation on the end of the suspension-link F, and a connection of the valve-rods A B thereto as well as a connection of the end of the lever to the piston, of the rocker-shaft I, arms J J', links P R, tumble-shaft L, and lifting-link N, substantially as described.



324,965. FIFTH-WHEEL. SANFORD P. STILLMAN, Westerly, R. I. Filed Apr. 14, 1883. (No model.)



Claim.—The combination of the plates D D', the pivot H, the friction-roller I, and the groove M.

324,966. FURNACE-GRATE. J. STORER, Marlborough, N. Y. Filed Nov. 6, 1884. (No model.)

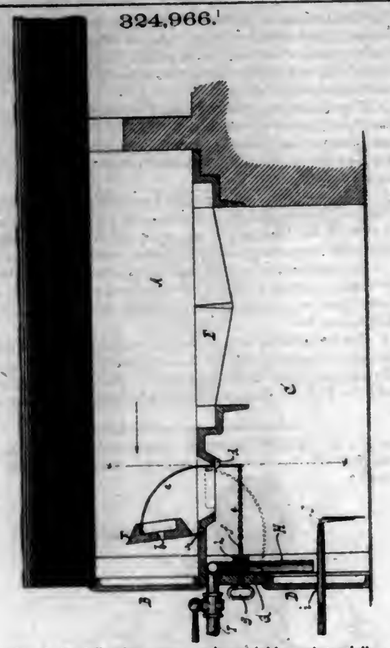
Claim.—1. The combination, with a furnace-grate and an ash-pit below the same, of a trap-door arranged in front of the grate-bars and hinged to swing upward and outward to an upright position and constitute a support for the rake to draw the ashes through the opening of the trap-door, substantially as described.

2. The combination, with a furnace-grate and an ash-pit beneath the same, of a trap-door hinged to swing upward and outward to an upright position and constitute a support for the rake to draw the ashes through the trap-door opening, and a spring-catch for sustaining the trap-door in its upright position, substantially as described.

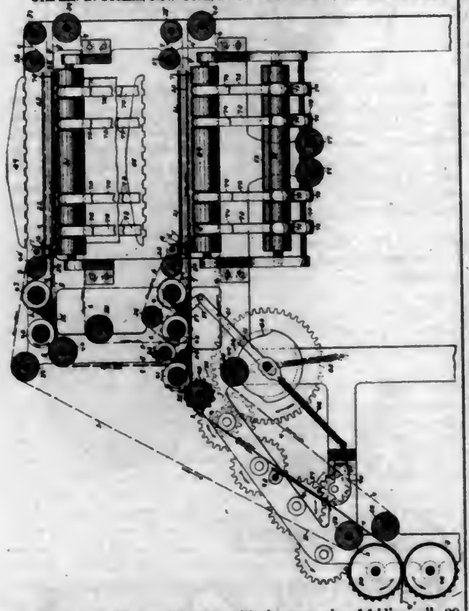
3. The combination, with a furnace-grate and an ash-pit below the same, of a trap-door hinged to swing upward and outward to an upright position in front of the grate and constitute a support for a rake to draw the ashes through the trap-door opening, a spring-catch carried by the trap-door for holding the latter in its upright position, and a handle outside the furnace and connected with the spring-catch for releasing the same to close the trap-door, substantially as described.

4. The combination, with a furnace-grate and an ash-pit below the same, of the trap-door hinged to swing upward and outward to an upright position in front of the grate and constitute a support for a rake to draw the ashes through the trap-door opening, a sprinkler, H, arranged adjacent to the front plate of the furnace beneath the trap-door opening, and a pipe, I, for delivering water to the sprinkler, substantially as described.

324,966.



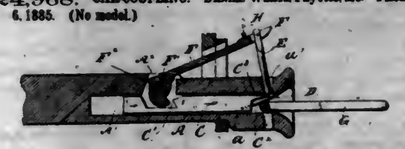
324,967. DELIVERY APPARATUS FOR PRINTING-MACHINES. STEPHEN D. TUCKER, New York, N. Y. Filed Mar. 7, 1885. (No model.)



Claim.—1. The combination, with the two pairs of folding-rolls 29 30 and 31 32 and their co-operating folding-blades, of the main sheet-conducting pathway in which all of the sheets are advanced, the two principal branch pathways leading therefrom to the two pairs of folding-rolls, the two auxiliary branch pathways leading from the principal branch pathways and to the same folding-rolls, switches, as 54 57 58, for directing the sheets into the several pathways in the proper order, and the stops 70 71, all substantially as described.

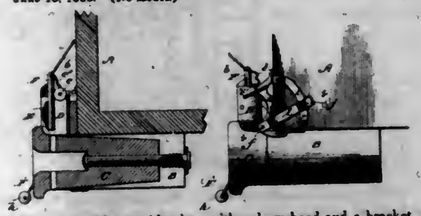
2. The combination, with a folding-blade, as 68 or 69, having an interrupted edge, of a pasting-disk having a similarly-formed edge, substantially as and for the purposes set forth.

324,968. CAR-COUPLING. DANIEL WERTZ, Fayetta, Mo. Filed Jan. 6, 1885. (No model.)



Claim.—The combination, in a car-coupling, of the draw-head, the bumper-block C', having extension C^2, the pin, the arm F, the cords H H' H', and guides I I' I', substantially as set forth.

324,969. CAR-COUPLING. JAMES H. WESSON, Attalla, Ala. Filed June 18, 1885. (No model.)



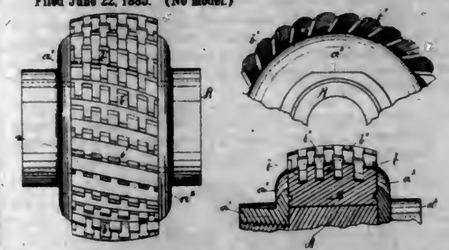
Claim.—1. The combination, with a draw-head and a bracket secured to the front of the car above the same, of a pin-guide eccentrically pivoted in said bracket, substantially as set forth.

2. The combination, with a draw-head having a bracket secured above the same, and a pin-guide eccentrically pivoted in said bracket, of a shaft carrying a pulley, and a chain connecting the coupling-pin and pulley, as set forth.

3. The combination, with the draw-head, of a journaled shaft bent to form a stirrup, and rollers journaled on the stirrup to lift and adjust the link, as set forth.

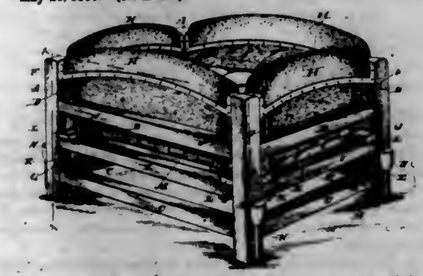
4. The combination, with a draw-head, of a journaled shaft bent to form a stirrup, arms or levers secured to the ends of said shaft, said arms having divided ends, circular plates secured to the sides of the car and fitting in said divided ends, and set-screws working in openings in the divided ends of the levers and bearing against the circular plates, as set forth.

324,970. ROTARY CUTTER. ANDREW J. WILBUR, Boston, Mass. Filed June 22, 1885. (No model.)



Claim.—The series of blades B B', each blade consisting of a back, *b*, and teeth *b'*, arranged about a hub so that the teeth of one blade cover the openings between the teeth of the next adjacent one, as set forth.

324,971. FIRE-ESCAPE. RICHARD WOOLLISCROFT, Streator, Ill. Filed May 20, 1885. (No model.)

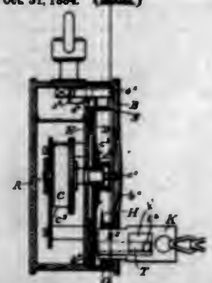


Claim.—1. The combination, with upright standards provided with oblong recesses and springs located in said recesses, of a frame supported on said springs and slats removably supported on said frame, substantially as set forth.

2. The combination, with upright standards provided with recesses and springs secured therein, of upper and lower frames supported on the springs, substantially as set forth.

3. The combination, with upright standards provided with recesses and springs located in said recesses, of upper and lower frames supported on said springs and rods loosely connecting the upper and lower frames and slats resting on said lower frame, substantially as set forth.

324,972. WATCHMAN'S TIME-DETECTOR. Louis Zehnder, Basle, Switzerland. Filed Oct. 31, 1884. (Model.)



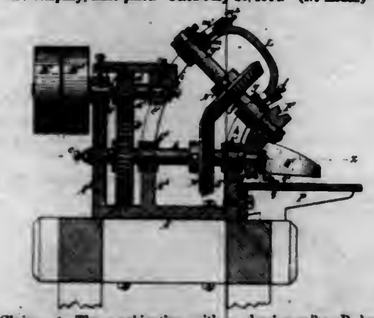
Claim.—1. In combination with the station-keys of watchman's time-detectors, exchangeable (ordinary printer's) types fitted into channels provided in said keys, said types having notches at their one end reaching therewith into a hollow of said keys and sealed fast to said keys, substantially as shown, and for the purpose set forth and described.

2. In combination with watchman's time-detectors, the keys K, with the suitably-shaped part k^2, a square hole cut lengthwise, the type T, fitted into said square channel or hole, with the face end t' and the notch t^2 at its other end, reaching with the latter into the hole k' of the key, said hole filled up with the seal W, all substantially as shown, and for the purpose set forth and described.

3. In combination with watchman's time-detectors, a set of station-keys, as K, punched out of sheet metal and provided with arrow-shaped portions fitting into the same slot of the watch-casing, said keys further provided with differently-located type-containing sockets cut into the same, so as to print the marks or words on the dial on several lines, all substantially as shown and described, and for the purpose set forth.

4. In a watchman's time-detector, the combination, with the lid B, the face-plate E, and the casing A, of means for marking the paper dials whenever the said lid is opened, said means attached to said face-plate and consisting, substantially as shown and described, of the block S, secured to said face-plate, the movable pin, as s', fitted into said block and seated on a flat spring, as s^2, which is secured to said face-plate, and a knife, as s^3, double-edged and secured crosswise within said pin, all for the purpose as set forth.

324,973. MACHINE FOR ROLLING HOOPS. George G. Annable and Henry W. Leonard, Syracuse, N. Y., assignors to the Syracuse Paper Ware Company, same place. Filed July 21, 1884. (No model.)



Claim.—1. The combination, with a shaping-roller, B, having a concave face, n, and an annular tongue, n', of a shaping-roller, F, having a convex face, o, and an annular groove, o', whereby a flanged tapering hoop is produced, substantially as set forth.

2. The combination, with the shaping-roller B, having a concave face, n, annular tongue n', and conical face n^2, of a shaping-roller, F, having a convex face, o, annular groove o', and conical face o^2, substantially as set forth.

3. The combination, with the roller B, constructed with an annular tongue, n', and secured to a shaft, b, of the roller F, constructed with an annular groove, o', and secured to a shaft, f, arranged at an angle to the shaft b, and means whereby said shafts are geared together, substantially as set forth.

4. The combination, with the roller B, constructed with an annular tongue, n', and secured to a shaft, b, of the roller F, constructed with an annular groove, o', and secured to a shaft, f, arranged at an angle to the shaft b, and a guide, Q, whereby the blanks are conducted between the rollers, substantially as set forth.

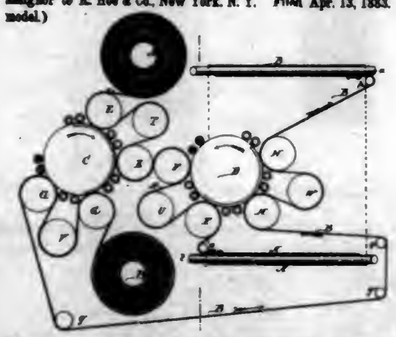
5. The combination, with the roller B, constructed with an annular tongue, n', and secured to a shaft, b, of the roller F, constructed with an annular groove, o', and secured to a shaft, f, arranged at an angle to the shaft b, and a curved guide, Q', which receives the rolled hoops from the rollers, substantially as set forth.

6. The combination, with the shaft b and roller B, secured thereto, of a supporting-frame provided with concentric guides, a shaft, f, carrying a roller, F, and bearings g g', supporting the shaft f and made adjustable in the concentric guides of the frame, substantially as set forth.

7. The combination, with the shaft b and roller B, secured thereto, of the shaft f, carrying a roller, F, means whereby the shaft f is made radially adjustable, and gear-wheels connecting the shafts b and f, substantially as set forth.

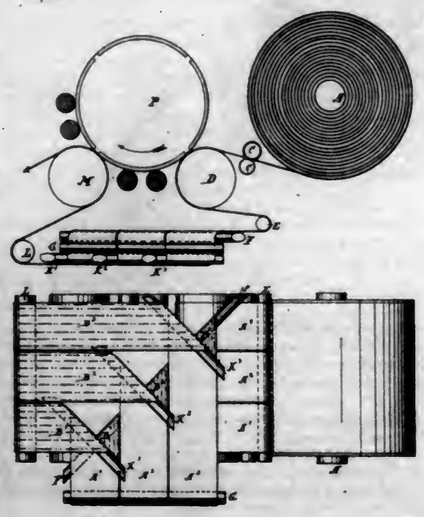
8. The combination, with the shaft b and roller B, secured thereto, of the shaft f, carrying a roller, F, means whereby the shaft f is made radially adjustable, gear-wheels connecting the shafts b and f, and means whereby the shaft b is made lengthwise adjustable, substantially as set forth.

324,974. PRINTING-MACHINE. Edwin Anthony, Jersey City, N. J., assignor to R. Hoe & Co., New York, N. Y. Filed Apr. 13, 1883. (No model.)



Claim.—In a printing-machine, the combination, with mechanism for printing both sides of two webs, (each web being printed on alike, but with different matter, on opposite sides of a web,) of mechanism for deflecting the paths of both webs, and mechanism for longitudinally slitting or dividing them, whereby the similarly-printed sides of the two webs are brought together and they are caused to form two side-by-side streams, the same in every respect except that the two streams are reversewise up, all substantially as described.

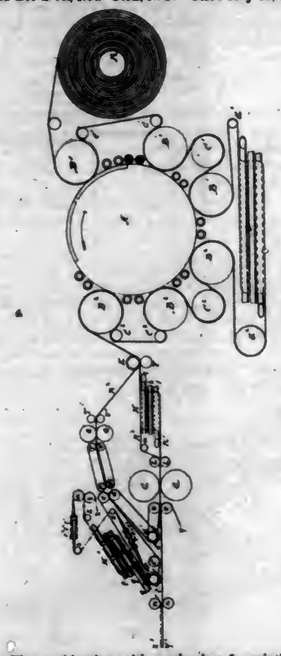
324,975. PRINTING-MACHINE. Edwin Anthony, Jersey City, N. J., assignor to R. Hoe & Co., New York, N. Y. Filed May 18, 1883. (No model.)



Claim.—1. In a web-printing machine, the combination, with printing mechanism, of mechanism for longitudinally slitting or dividing a web into narrow webs before it has received its second impression, and mechanism for reversing the separate webs so that their paths of travel are not the same while being reversed, all substantially as described.

2. The combination, with a single turning-bar or cylinder, of a plurality of turning-bars or cylinders at appropriate angles thereto and parallel to one another, and rollers to guide the webs between said bars or cylinders, whereby a plurality of webs running side by side are reversed, all substantially as described.

324,976. PRINTING-MACHINE. Edwin Anthony, Jersey City, N. J., assignor to R. Hoe & Co., New York, N. Y. Filed May 18, 1883. (No model.)



Claim.—1. The combination, with mechanism for printing opposite sides of a web with like matter, of slitting mechanism for dividing one web into three webs, and of mechanism for directing successive sections of one web alternately into association with the other two webs, all substantially as described.

2. The combination, with a slitting mechanism for dividing one web into three webs, of deflecting devices for bringing the outside webs side by side, and a switching mechanism for directing alternate sections of the central web into separate pathways, one of which is provided with a transferring mechanism, the whole operating to associate successive sections of one web alternately with the other two webs, all substantially as described.

3. The combination, in a web-printing press, of a form-cylinder (adapted to receive six forms, three abreast, the column-rules lying parallel to its axis) and impression-cylinders, with mechanism for longitudinally dividing or splitting the web into three strips, mechanism for transversely severing two of the strips into sheets on each side of which two pages are printed, mechanism for severing the remaining strip into sheets on each side of which one page is printed, and mechanism for associating these last-mentioned sheets alternately with the one and the other stream of two-paged sheets, whereby a six-page paper is printed from one set of forms (whose columns lie at right angles to their motion) and is caused to issue so that the after-folding mechanism is the same as is required for folding two streams of four-page papers, all substantially as described.

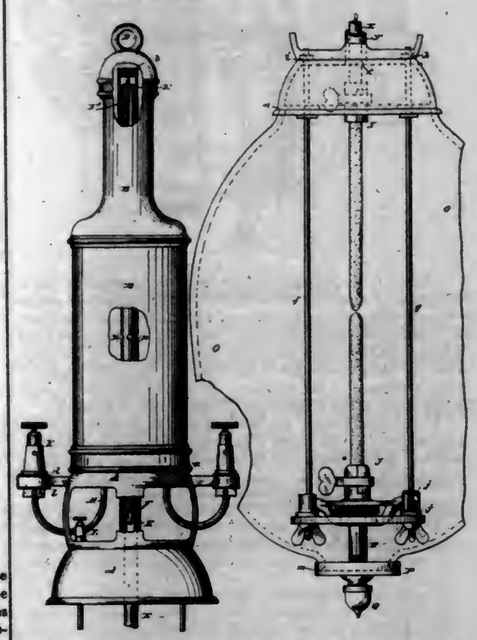
324,977. AUTOMATIC FIRE-EXTINGUISHER. Charles Barnes, Dayton, Ky. Filed June 13, 1885. (No model.)



Claim.—1. In an automatic fire-extinguisher, the combination of the frame A, having ring a, perforated boss a', hook a^2, and arm a^3, the screw-threaded tube B, secured in the ring a of the said frame, the valve, and distributer C, adapted to slide within said frame and close the end of tube B, and the releasing device D, having its short arm loosely coupled to said frame and its longer arm coupled to the end of the arm a^3 by fusible material to hold said valve to its seat until released by heat, substantially as shown and described.

2. In an automatic fire-extinguisher, the combination, substantially as set forth, of tube B, having seat b, the frame A a a' a^3 a^2, and releasing device D d d' d^2 with the valve and distributer C c c' c^2, and fusible pin e.

324,978. ARC-LAMP. Alexander H. Bowman, Packerton, Pa. Filed Mar. 19, 1885. (No model.)



Claim.—1. In combination with the frame of an arc-lamp, a tube, F, fixed to said frame and provided with holes p, a closed tube, F', continuous with the tube F, a doubly-twisted wire attached to the upper end of the tube F', and provided with the two ends e, not twisted, and the tubular carbon-holder E, fitting loosely in the continuous tube formed of the two tubes F and F', and fitting tightly upon the ends e of the said doubly-twisted wire, substantially as described.

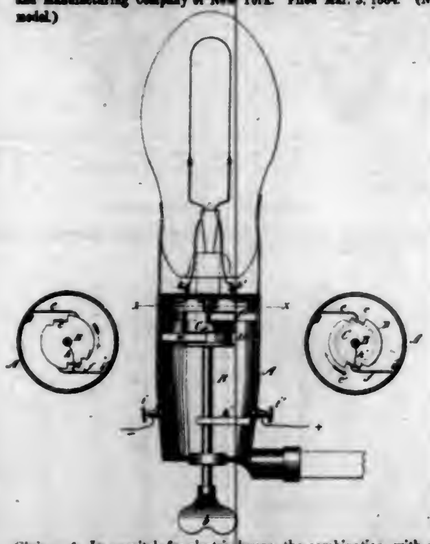
2. As a part of an arc-lamp, a clutch consisting of a conical collar, S, provided with plugs q, adapted to press endwise against the carbon-holder and to be released from pressing against said carbon-holder, and of the said conical collar S', fitting loosely upon the first-mentioned conical collar, and adapted by its movements to press the said plugs q against the said carbon-holder, substantially as described.

3. In an arc-lamp, a clutch consisting of two conical collars, the one fitting loosely upon the other, and the inner one fitting loosely upon a tube which incloses the carbon-holder, and being provided with plugs which press more or less through holes in the tube surrounding the carbon-holder, according to the position of the said outer conical collar.

4. In an arc-lamp, the combination of the pivoted main magnet-armature U, the lever X', having a projection, q', resting against an arm attached to the said armature, and having a link-connection with the armature Y of the shunt-magnet T', and the lever X, connected rigidly to the armature of said shunt-magnet and at or near its center to the clutch of the carbon-holder by means of suitable levers, substantially as and for the purpose set forth.

5. In an arc-lamp, the two levers w and w', pivoted together by a hinge, provided each with grooved projections v, and connected to the clamping device by levers v', the lever w' having a double lever-arm, X, carrying upon its lower end the armature of the shunt-magnet, and being connected at its upper end to the frame-work through the medium of a spring, substantially as and for the purpose specified.

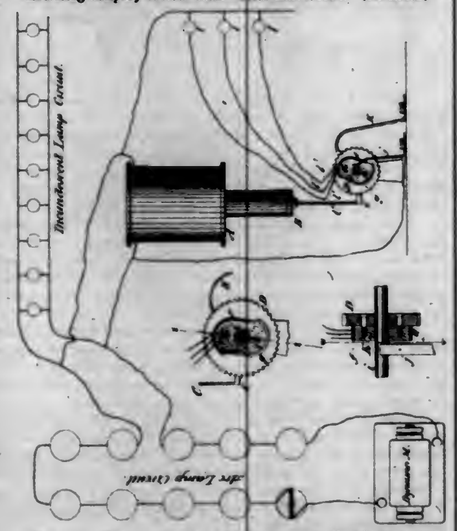
324,979. ALTERNATING SWITCH FOR INCANDESCENT LAMPS. JOHN A. CABOT, New York, N. Y., assignor to the Cabot Electric Light and Manufacturing Company of New York. Filed Mar. 3, 1884. (No model.)



Claim.—1. In a switch for electric lamps, the combination, with a lamp-holder, of a rotating switch-block bearing upon its outer surface two contact-plates electrically connected with the terminals of the line-wire, and two contact-springs made to bear upon the switch-block and electrically connected with the contact springs or plates of the lamp-holder, the whole so arranged that a rotation of the switch-block will cause an alteration of the direction of the current from the line-wire through a lamp placed in the holder, all substantially as described.

2. The combination of the insulating-block C, mounted upon the shaft and provided with plates c' and c² and continuous brass band D, connected through contact-springs with the line-wires and with the terminals of the lamp-holder, substantially as shown and described.

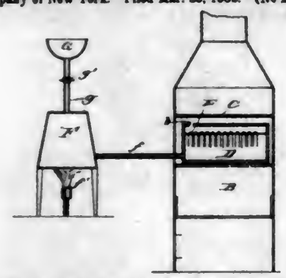
324,980. SAFETY DEVICE FOR INCANDESCENT LAMPS. JOHN A. CABOT, New York, N. Y., assignor to the Cabot Electric Light and Manufacturing Company of New York. Filed Mar. 3, 1884. (No model.)



Claim.—1. The combination, with two or more electric lamps connected in multiple circuit, of a rotating switch-block provided with contact plate or plates to successively switch into the circuit fresh lamps as those already in the circuit are destroyed, operated through a pawl and ratchet by the sliding core of a solenoid-magnet connected in circuit with the lamps, substantially as and for the purpose set forth.

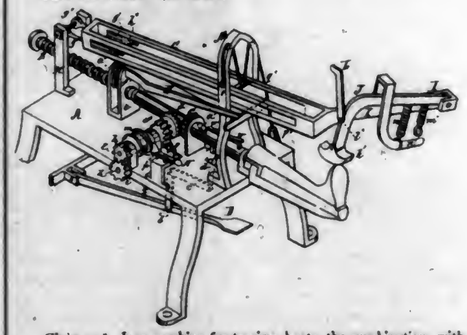
2. The combination, with two or more electric lamps in multiple circuit, and with a solenoid in circuit therewith and provided with a sliding core, of a pivoted switch-block provided with a contact-plate electrically connected with one branch of the multiple circuit, and adapted to be brought by the rotation of the block into contact successively with a series of contact-springs, each connected through an independent lamp with the remaining branch of the multiple circuit, substantially as and for the purpose set forth.

324,981. PROCESS OF MAKING INCANDESCENTS. JOHN A. CABOT, New York, N. Y., assignor to the Cabot Electric Light and Manufacturing Company of New York. Filed Mar. 23, 1885. (No model.)



Claim.—The herein-described process of making carbon filaments, consisting in saturating twisted fibrous filaments with concentrated collodion or similar material, molding the said filaments into shape, carbonizing the same in boiling fixed oil, and afterward subjecting them to intense heat in the presence of vapors from the decomposition of glycerine.

324,982. BOOT-TREEING MACHINE. JAMES CALL, Boston, Mass. Filed Oct. 9, 1884. (No model.)



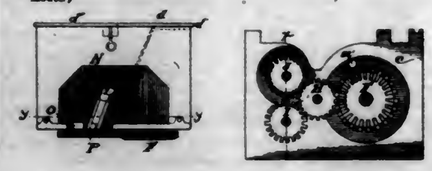
Claim.—1. In a machine for treeing boots, the combination, with a pivoted rubber, of a boot-tree mounted upon the end of a revolving screw-shaft, and means, substantially as described, for feeding forward the said shaft, as herein set forth.

2. In a machine for treeing-boots, the combination, with a pivoted rubber, of a boot-tree mounted upon the end of a screw-shaft, mechanism connected therewith for rotating the same, and means, substantially as described, for feeding forward the said shaft, all constructed to operate as described.

3. In a machine for treeing boots, the rubber F', pivoted to the lever J, in combination with the arm or lever G, made adjustable longitudinally, substantially as and for the purpose described.

4. The combination, with the rotating shaft B, provided with ratchet notches or teeth and having secured to its outer end a boot-tree, of the ratchet-lever w, secured to the end of a block, r, upon the central rod, q, of the boot-tree, and mechanism, substantially as described, for actuating the said lever, all constructed and arranged to operate substantially as set forth.

324,988. COMBINED CORN-PLANTER AND FERTILIZER-DISTRIBUTER. JAMES CAMPBELL, Harrison, Ohio. Filed Sept. 27, 1884. (No model.)



324,983.



Claim.—1. The combination, in a pilot-wheel corn-planter, of the bevel gear-wheel F, driven from the pilot-wheel, the transmitting-gear H, engaging said bevel gear-wheel, the gear-wheels J and I, engaging the said transmitting-gear, the seed-dropping plate K, the fertilizer-dropping plate L, mounted on a spindle secured to the gear J, and an agitator or stirrer, M, connected with and operated by the gear I, substantially as described.

2. In a combined corn-planter and fertilizer-distributer, the combination of the corn-dropping disk K and the fertilizer-dropper disk L, geared together to drop the fertilizer at or near the same point as the corn, with the hopper C, having the rear portion, N, inwardly curved in circular form and extending over the two disks, and the bottom plate, c, having upwardly-turned flange n, substantially as described.

3. In combination with the bottom plate, c, of the hopper C, and fertilizing-dropper L, the bent partition N, the circular opening n', and cut-off O, for dropping the fertilizing material, substantially as specified.

4. In combination with the pilot-wheel of a corn-planter, the driving and transmitting gears, the dropping and fertilizing disks, simultaneously operated thereby, and the stirrer M, mounted upon the shaft of gear I, and revolving within the hopper over the dropper-plate L, substantially as specified.

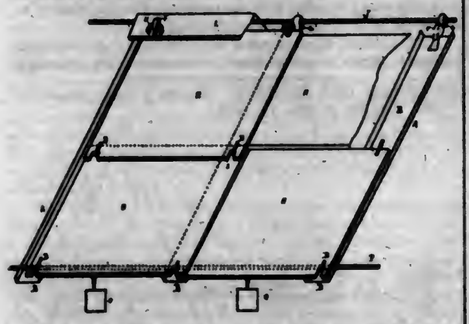
5. In a combined corn-planter and fertilizer-distributer, the combination of the two dropper-plates K and L, geared together for simultaneously dropping the corn and fertilizer, with the hopper having the rear partition inwardly curved in circular form and extending across both dropping-disks, substantially as described.

324,984. ROPE-LOCK. GEORGE W. COOK, Chicago, Ill., assignor to Madison B. Kennedy, same place. Filed Apr. 13, 1885. (No model.)



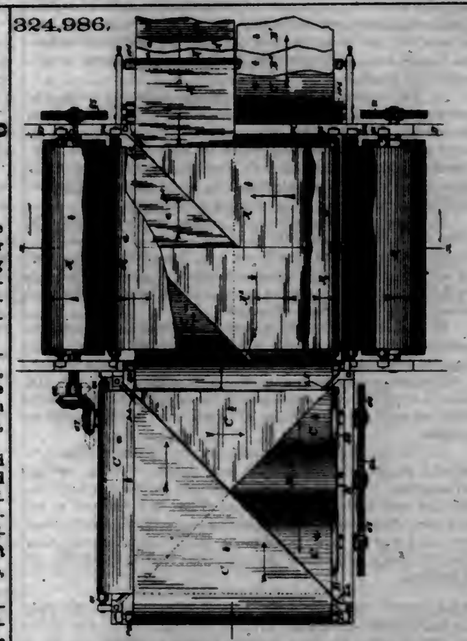
Claim.—A rope-lock for holding two ropes by the use of but one eccentric clutch, consisting of the frame A, the eccentric clutch B, provided with the thumb-piece B' and the narrowing groove, and the double wire spring C, all in combination substantially as set forth.

324,985. COVER FOR HAY OR CORN RICKS. LOUIS A. COUTHAR, Léauville, France. Filed June 5, 1884. (No model.) Patented in France June 15, 1883, No. 154,043.



Claim.—In a portable roof for affording temporary protection, the combination of the channel-rafters A, provided with hooks and loops, as described, notched panels H, solid and tubular irons J J', ridge-cover L, crescent-shaped bolts N, and looped weights O, substantially as shown and described.

324,986. PRINTING-MACHINE. LOUISE C. CROWELL, Brooklyn, assignor to R. Hoe & Co., New York, N. Y. Filed Jan. 14, 1884. (No model.)



Claim.—1. The combination, with printing mechanisms arranged to perfect a plurality of webs, of web-turning devices arranged to direct said webs laterally out of the machine after the printing of both their sides, all substantially as described.

2. The combination, with printing mechanisms arranged to perfect a plurality of webs, of web-turning devices arranged to direct said webs laterally out of the machine after the printing of both their sides, and slitting mechanisms arranged to split said webs longitudinally, all substantially as described.

3. The combination, with printing mechanisms arranged to perfect a plurality of webs, of slitting mechanisms arranged to split said webs longitudinally and web turning and associating devices arranged to associate the sections of said webs and direct the same laterally out of the machine after the printing of both their sides, all substantially as described.

4. The combination, with printing mechanisms arranged to perfect a plurality of webs, of web-turning devices arranged to direct said webs laterally out at the same side of the machine after the printing of both their sides, all substantially as described.

5. The combination, with printing mechanisms arranged to perfect a plurality of webs, of web-turning devices arranged to direct said webs laterally out at the same side of the machine after the printing of both their sides, and slitting mechanisms arranged to split said webs longitudinally, all substantially as described.

6. The combination, with printing mechanisms arranged to perfect a plurality of webs, of slitting mechanisms arranged to split said webs longitudinally, and web turning and associating devices arranged to associate and direct the sections of said webs laterally out at the same side of the machine after the printing of both their sides, all substantially as described.

7. The combination, with printing mechanisms arranged to perfect a plurality of webs, of web-turning devices located between said printing mechanisms and arranged to direct said webs laterally out at the same side of the machine after the printing of both their sides, all substantially as described.

8. The combination, with printing mechanisms arranged to perfect a plurality of webs, of web-turning devices located between said printing mechanisms and arranged to direct said webs laterally out at the same side of the machine after the printing of both their sides, and slitting mechanisms arranged to split said webs longitudinally, all substantially as described.

9. The combination, with printing mechanisms arranged to perfect a plurality of webs, of slitting mechanisms arranged to split said webs longitudinally, and web turning and associating devices located between said printing mechanisms and arranged to associate and direct the sections of said webs laterally out at the same side of the machine after the printing of both their sides, all substantially as described.

10. The combination, with a main printing mechanism arranged to perfect a main web, of a supplement-printing mechanism arranged to

perfect a supplement-web and deliver the same at the same point with the main web, and means by which said main and supplement mechanisms may be driven at the same and at different surface-speeds, all substantially as described.

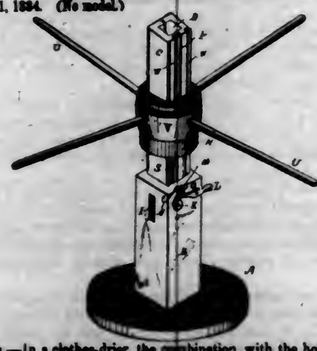
11. The combination, with a main printing mechanism arranged to perfect a plurality of webs with the same matter and deliver them at the same side of the machine, of a supplement-printing mechanism arranged to perfect a third web and deliver the same in position to be associated with the webs from the main mechanism, and means by which said main and supplement mechanisms may be driven at the same and at different surface-speeds, all substantially as described.

12. The combination, with a main printing mechanism adapted to perfect a plurality of webs with the same matter, of web-turners arranged to direct said webs laterally out at the same side of the machine, and a supplement-printing mechanism adapted to perfect a third web and deliver it in position to be associated with the webs from the main mechanism, all substantially as described.

13. The combination, with a main printing mechanism adapted to perfect a plurality of webs with the same matter, of web-turners arranged to direct said webs laterally out at the same side of the machine, a supplement-printing mechanism adapted to perfect a third web and deliver it in position to be associated with the webs from the main mechanism, and mechanism for splitting all of said webs, all substantially as described.

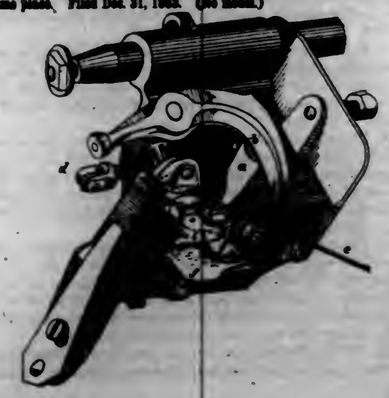
14. The combination, with a main printing mechanism adapted to perfect a plurality of webs with the same matter, of slitting, turning, and associating devices by which said main webs may be split longitudinally and have their sections turned, associated, and delivered at the same point, a supplement-printing mechanism adapted to perfect a third web and deliver the same in position to be associated with said main webs, and means for splitting said supplement-web longitudinally, all as described.

324,987. CLOTHES-DRIER. DAVID A. DERRON, Chicago, Ill. Filed Jan. 31, 1884. (No model.)



Claim.—In a clothes-drier, the combination, with the hollow standard mounted on a suitable base, of a rack-bar moving in the same, a gear-wheel engaging with the rack-bar, an operating-shaft for the gear-wheel, a cross-bar attached to the upper end of the rack-bar and sliding in grooves of the standard, the head carrying the clothes-arms and secured to the cross-bar, vertical guide-wires attached to the standard, and plates S, fitted to the head, for the purpose set forth.

324,988. KNOTTER MECHANISM FOR SELF-BINDERS. ROBERT W. DEERE, Springfield, Ohio, assignor of two-thirds to Chase Stewart, same place. Filed Dec. 31, 1883. (No model.)



Claim.—1. In combination with a tying-bill, a cord supporting or holding finger and means whereby it is moved in harmony with the knotting mechanism into a position between the supply-cord and tying-bill and adapted to support the supply-cord until the previous knot is tied and discharged.

2. The combination, with a knotter, of an oscillating cord supporting or holding finger actuated by and in harmony with the knotter mechanism, substantially as and for the purpose specified.

3. The combination, with the tying-bill and the cord-gripping device, of an oscillating cord-supporting finger adapted to be moved under the supply-cord by the same means which causes the gripping device to grasp the ends of the cord and to be held in said position until the previous knot is tied and discharged from the tying-bill, substantially as set forth.

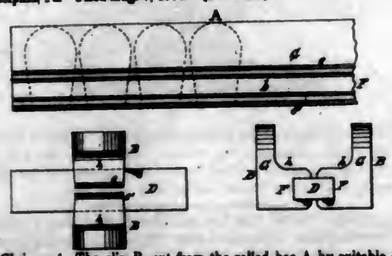
4. The combination, with the tying-bill and gripping device, of the plunger *d*, the lever *c*, attached thereto and adapted to move the gripper *f*, the pintle *b*, secured to said lever and provided with the cord-supporting finger *a*, substantially for the purpose set forth.

324,989. SHUTTER-WORKER. JESSE C. DEREE, Newark, N. J. Filed June 24, 1885. (No model.)

Claim.—1. In combination, the slotted and notched sill-plate, the connecting-rod and shutter-bracket, and a finger-pin having a tapering shank, all said parts being arranged and combined substantially as herein set forth.

2. In combination, the slotted plate *c*, having notches c^{iv} and an enlarged opening, c^4, a connecting-rod, and a pin or finger-piece having the shoe *h*, adapted to pass through the opening c^4, but not through the notches c^{iv}, said connecting-rod being pivoted to the bracket, substantially as set forth.

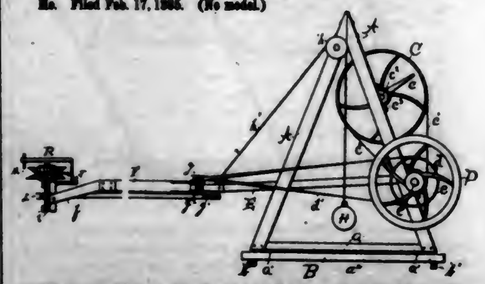
324,990. CLIP FOR VEHICLE-SPRINGS. WILLIAM EVANS, Philadelphia, Pa. Filed Aug. 7, 1884. (No model.)



Claim.—1. The clip B, cut from the rolled bar A by suitable dies, having the portion F, rolled of thicker metal than the cheek-piece G, for forming the set-off A, substantially as described.

2. The shackle E, constituted of two of the clips B, and the bar D, arranged in relation to each other and welded, substantially as described.

324,991. CALK-SHARPENER. EPHRAIM H. FENTON, Kansas City, Mo. Filed Feb. 17, 1885. (No model.)



Claim.—1. The combination, in a calk-sharpening machine, with the rotating platform, of a supporting-frame, suitable driving mechanism on said frame, flexible jointed arms extending from and pivoted to said supporting-frame, and a tool-holder journaled upon said arms, and grinding-disks in said tool-holder, connected with the driving mechanism, as shown and described.

2. The combination, with the rotating platform, of a supporting-frame thereon, suitable driving mechanism mounted on said supporting-frame, and flexible jointed arms pivotally attached at one end to said supporting-frame, and means for supporting said arms at various elevations adjustably, as described.

3. The combination, with the supporting-frame of the machine, of the driving-pulley, flexible jointed arms attached at one end to said supporting-frame, a vibrating tool-holding box pivotally attached to said arms and provided with a suitable pulley, and grinding-disks, beveled, as described, and belts attached to said pulley on the supporting-frame and extending to the pulley in the tool-holding box, for the purpose described.

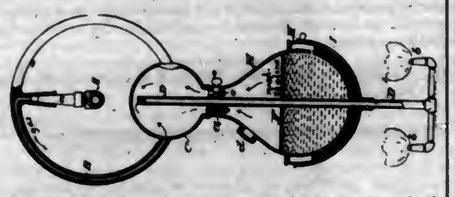
4. In a tool-holder for sharpening calks, the combination, with the mandrel, of the oppositely-arranged grinding-disks fixed rigidly in said mandrel, and having the periphery of said disks beveled, as shown, and arranged at opposite inclinations in respect to each other and at a suitable distance apart, and means for rotating said mandrel, as described.

5. In a tool-holder for sharpening calks, the combination, with the oppositely-arranged sharpening-disks, beveled, as described, of an adjustable guard arranged in proximity to the edge of one of said disks, and adapted to prevent the contact of the edge of the said disk with the calk and guide the point of the calk, as shown and described.

6. In a tool-holder for sharpening calks, the combination, with the mandrel, of sharpening-disks, beveled, as described, and oppositely arranged on said mandrel in said tool-holder, and a washer or its equivalent arranged between said beveled disks, and retaining devices on said mandrel outside of and against said disks, and means for rotating said mandrel, substantially as described.

7. The combination, with the supporting-frame of the machine, of the flexible jointed arms attached at one end to said supporting-frame and held at various elevations by an adjusting device, a driving-pulley on said supporting-frame, and a tool-holding box provided with a mandrel and pulley, and journaled on said arms and adapted to vibrate, bands attached to said driving-pulley on the machine, and also to the pulley in the tool-holding box, sharpening-disks, beveled, as described, on said mandrel, and means for adjusting the distance between the said disks on said mandrel, and an adjustable guard attached to said tool-holding box and arranged in proximity to the periphery of one of said disks, for the purpose specified.

324,992. DEVICE FOR ENRICHING GAS SUPPLIED TO BURNERS. NICHOLAS FINCK, Elizabeth, N. J. Filed June 3, 1884. (No model.)



Claim.—1. A device for enriching gas, wherein a safety-valve is arranged in the partition which separates the hydrocarbon-chamber from the mixing-chamber and opening into the latter, substantially as and for the purposes set forth.

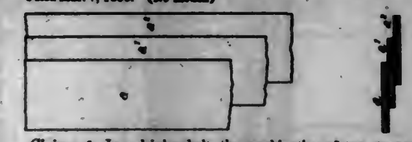
2. In a device for enriching gas, the combination of the hydrocarbon-chamber, the mixing-chamber connected with the hydrocarbon-chamber only by a narrow passage controlled by a cock, the said cock, the gas pipes and jets, and a safety-valve arranged in the partition between the two chambers, substantially as and for the purposes set forth.

3. The combination of the chambers C and E, separated by a partition and connected only by a narrow passage for the vapors, the safety-valve G, arranged as shown, the axial gas-pipe D, arranged in the axis of the chambers, as shown, and provided with a jet or jets, *b*, and the ring-like gas-pipe B, provided with a socket to take over the nipple *a*, substantially as set forth.

4. In a device for enriching gas, wherein the illuminating-jets are employed to effect the volatilization of the hydrocarbon, the combination of the chamber E, the mixing-chamber C, arranged on chamber E and connected therewith by a contracted or narrow passage, the pipe D, arranged axially in said chambers C and E and depending below chamber E, the burner or burners *b*, arranged to serve the double purpose of illumination and heating, and the pipe B, arranged to supply gas to the mixing-chamber, all substantially as and for the purposes set forth.

5. The combination, in a device for enriching gas, of the ring-like pipe B, provided with a socket to take over the nipple *a* of a gas bracket or pipe, the mixing-chamber C, connected to pipe B, the chamber E, arranged below chamber C and connected therewith only by a narrow or contracted passage for the vapors, the axially-arranged pipe D, extending from chamber C through the bottom of chamber E, and the illuminating jet or jets *b* on the lower pendent end of pipe D, all substantially as set forth.

324,993. DRIVING-BELT. CARL O. GERICKENS, Hamburg, Germany. Filed Mar. 7, 1885. (No model.)



Claim.—1. In a driving-belt, the combination of two or more longitudinal strips of an equal or nearly equal breadth, connected together to form a belt stair-shaped in cross-section, substantially as described and shown.

2. A driving-belt formed of two or more strips of equal or nearly equal breadth, overlapping each other longitudinally, and forming a belt thicker along the center line than along the edges, substantially as described and shown.

324,994. METALLIC ROOFING. FRANK A. GUTHRIE, Gallipolis, Ohio. Filed Oct. 11, 1884. (No model.)

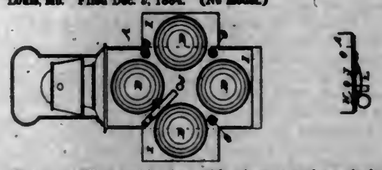


Claim.—1. The plate or sheet A, having a cap, B, along its edges, and the plate or sheet A′, provided with a similar cap, B′, in combination with an anchor or strap having its arms connecting with the rafters or beams, and coming together at their upper ends, where they are formed with a clamping rim or flange, *h*, the latter fitting over the cap B, the cap B′ being sufficiently large to enable it to spring over the clamping-rim, so as to inclose the cap B, as set forth.

2. The combination, with the metallic roofing consisting of plates or sheets provided with caps at their meeting edges, of the herein-described anchor or strap, arranged to be passed around and underneath the rafters and fitted to the caps, as set forth.

3. The combination, with the roofing plates or sheets, formed with caps at their meeting edges, of the herein-described anchor or strap, passing around and underneath the rafter, and having its arms extending upward and coming together at their upper ends, where they are formed with a rim or flange to fit over the under cap, as set forth.

324,995. SIGNAL-LANTERN. ALEXANDER H. HASELAN, Jr., St. Louis, Mo. Filed Dec. 9, 1884. (No model.)



Claim.—1. The combination, with a lantern or lamp body having a suitable opening in the side thereof, of a single plate having signal-glasses and a central pivot located between said signal-glasses, and by which said plate is secured to said body, substantially as set forth.

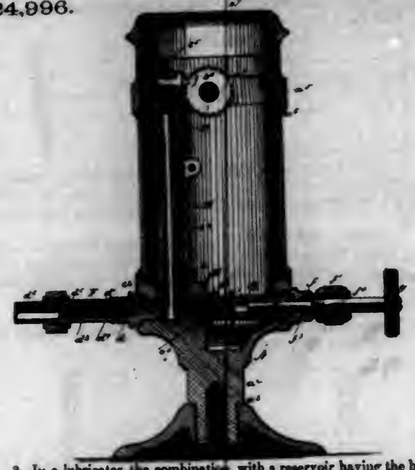
2. The combination of a lantern or lamp body having a suitable opening and pin-holes O, a single plate, I, having signal-glasses D, and spring L, formed with a pin engaging said pin-holes, and a central pivot, J, by which said plate is secured to said body, and on which said plate is rotated to bring said signal-glasses in front of said opening as required, substantially as set forth.

324,996. LUBRICATOR. CORNING C. HARLOW, Brockton, Mass., assignor to the Harlow Lubricator Company, same place. Filed Dec. 15, 1884. (No model.)

Claim.—1. In a lubricator, the combination, with a reservoir, of the inlet-tube contained within the reservoir and extending across the same, and provided with the transverse openings for the admission of the lubricant, an outlet-tube projecting from the reservoir, the inlet and outlet valves, respectively located and acting on a corresponding transverse plane within the inlet and outlet tubes, and a forcing-rod working between the ends of the said tubes at right angles to the movement of the valves, substantially as and for the purpose set forth.

2. In a lubricator, the combination, with a reservoir and the forcing-rod therein, an inlet-tube located within the reservoir and carrying the inlet-valve, an outlet-tube projecting from the reservoir and provided with the outlet-valve, and a valve-rod working through the inlet-tube to regulate the supply of lubricant thereto, substantially as set forth.

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3. In a lubricator, the combination, with a reservoir having the box or chamber C, of the inlet and outlet tubes provided with valves and entering said box, the inlet-tube being contained within the reservoir and extending across the same, and provided with inlet-openings, the valve-rod f^2, working in the tube with respect to said openings to regulate the supply of the lubricant thereto, and the forcing-rod working between the adjoining ends of the said tubes, substantially as set forth.

4. In a lubricator, the combination of the reservoir having the box or chamber C at one end, the inlet-tube located across the reservoir at right angles to said chamber and entering the same, said tube being provided with inlet-openings covered by a strainer, and with a valve between these openings and its inner end, the outlet-tube extending from said chamber and provided with a valve, the forcing-rod working between the adjoining ends of the inlet and outlet tubes, and the adjustable valve-rod f^3, extending from the outside of the reservoir into the inlet-tube, the entire regulation of the flow of the lubricant being effected by the adjustment of said valve-rod with respect to the openings of the inlet-tube, substantially as set forth.

5. In a lubricator, the combination, with the inlet-tube located within the reservoir and provided with the openings and valve, and the forcing-rod for actuating said valve, of the adjustable valve-rod f^3, working through said tube with relation to the openings, substantially as and for the purpose set forth.

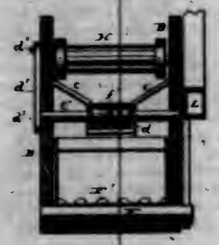
6. In a lubricator, the combination, with a reservoir, of the box or casing C within the same, the inlet and outlet tubes located on a corresponding horizontal plane and entering said box on diametrically-opposite sides, the valves in said tubes, and openings in the inlet-tube, and the forcing-rod operating at right angles to the valves, and a regulating-rod working in the inlet-tube, substantially as and for the purpose set forth.

7. In a lubricator, the combination, with a reservoir having a box or casing within the same and provided with the forcing-rod, of the inlet-tube having the openings in its shell, and a strainer fitted around the tube and over said openings, substantially as set forth.

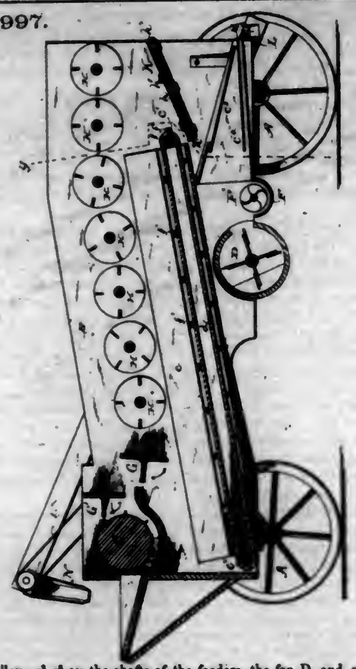
8. In a lubricator, the combination, with an inlet-tube located within the reservoir and having inlet-openings, of the regulating-valve consisting of the screw-threaded stem working longitudinally in said tube and provided with an end disk having a graduated face, substantially as and for the purpose set forth.

324,997. THRASHING-MACHINE. Jonathan Hershberger, Walnut Creek, Ohio. Filed May 13, 1885. (No model.)

Claim.—A thrashing-machine comprising the toothed cylinder C, the winged feeders G G', the series of beaters H, extended from the feeders to the tail of the machine, the disks *a*, and pulleys b^2 d^2 k' on the shafts of the beaters, the pulleys *b b'* on the shaft of the cylinder,

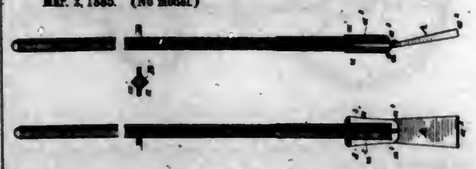


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the pulleys a^2 n^2 on the shafts of the feeders, the fan D, and grain-conveyer F', the pulleys b^2 m' m^2 on the shafts of the fan and conveyer, the pitman-bars a' n^2, eccentrically attached to the disks *a* and to the pulleys n^2 d^2 k', the inclosed bottom consisting of the inclined sides *c* and central trough, *d*, extending from the front of the machine to and over the grain-board, the belt-rollers c' c^2, and the endless belt *f*, arranged to run on the rollers in the central trough, substantially as and for the purposes described.

324,998. TAMPING-TOOL. Herbert M. Hoxie, St. Louis, Mo. Filed Mar. 2, 1885. (No model.)



Claim.—1. In a tamping-tool, the combination, with the tamping-head having a portion of the handle-socket formed therewith, and a flange or web projecting from each side of said socket, of a plate formed with the other portion of the socket and similar flanges, bolts or rivets for securing said flanges together, and the handle, substantially as set forth.

2. A tamping-tool having a head of increased width and thickness at the working-face, substantially as set forth.

3. The head of a tamping-tool, bent in proximity to the handle, and increasing in width and thickness from the bend to the working-face.

4. The combination, in a tamping-tool, of a head with a handle-socket set at an inclination to the working part and flaring from the socket to the working-face, and a wooden handle fixed in the socket, substantially as set forth.

324,999. PARTITION FOR CELL-CASES. Gustav L. Jaeger, New York, N. Y. Filed June 25, 1885. (No model.)



Claim.—1. The herein-described partition for cell-cases, having formed therein a series of hooks, each having a slot leading from the hook to the edge of the partition, and provided with a corresponding

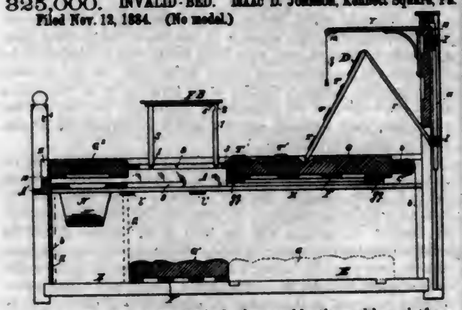
series of eyes formed in the body of the partition and completely closed upon all sides, substantially as described.

2. The partitions for cell-cases herein described, each having hooks formed in the body of the partition and provided with slots leading from the edge of the hooks, said slots having bell-shaped or flaring mouths, and each provided, also, with a corresponding series of eyes formed in the body of the partition and completely closed upon all sides, the hooks of one partition engaging with the eyes of another, substantially as described.

3. The herein-described partitions for cell-cases, one set of said partitions having a series of hooks and a corresponding series of eyes aligned perpendicularly above the hooks, and the other set having a series of similar hooks and a corresponding series of eyes aligned perpendicularly beneath the hooks, the eyes of each set being formed in the body of the partition and completely closed on all sides, the eyes in each set being adapted to engage with the hooks of the other set, substantially as described.

4. The herein-described partitions for cell-cases, each having a series of hooks and provided with oblique slots leading from the edge to said hooks, and each provided, also, with a corresponding series of eyes completely closed on all sides, the eyes in one partition being adapted to engage with the hooks of the intersecting partition, and vice versa, substantially as described.

325,000. INVALID-BED. Isaac D. Johnson, Kennett Square, Pa. Filed Nov. 12, 1884. (No model.)



Claim.—1. In an invalid-bed, the combination, with a platform, such as E, and means for raising and lowering the same, the mattress and supporting-cribs in independent sections adapted to be raised and lowered simultaneously, together with means for sustaining the forward section, when desired, so that the next section may descend with the said platform, while the forward section is sustained free from the latter, and thus prevented from descending with the platform, substantially as and for the purpose set forth.

2. The combination, with the invalid-bed, of the vertically-movable platform and the mattress-crib, provided with sliding frames adapted to engage with the shelf-rails for sustaining the ends of said sliding rails, substantially as specified.

3. The combination, with the commode located at the foot of the bed, of a removable foot-board, substantially as and for the purpose described.

4. In combination with the commode located at the foot of the bed, the pivoted sliding foot-board, substantially as and for the purpose specified.

5. The combination, with the mattresses and the vertically-movable supporting-platform, of the foot-board and its cleats, adapted to slide in grooves, whereby the foot-board may be moved longitudinally and brought to a horizontal position, substantially as and for the purposes specified.

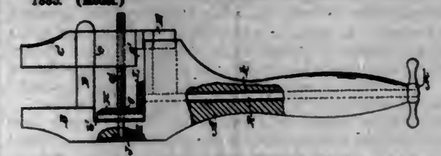
6. The combination, with the convertible foot-board and table, of the straps S, pivoted to the sliding bars 2, and the stays 7, also pivoted to said bars and having hooks adapted to engage with eyes attached to the said foot-board or table, substantially as and for the purpose specified.

7. In combination with the commode located at the foot of the bed, the foot-rail cut away in front of the commode, and the hinged lid having a section secured thereto corresponding to the cut-away portion of the foot-rail, substantially as and for the purpose specified.

8. The combination of the pivoted head-section connected by the pivoted bars *r* to the sliding weighted frame in the rear of the head-board, the cord *q*, the fixed vertical bar 15, and the pivoted eccentric pawl *d*, having the cord *q* attached to its free end, together with the spring 16, all constructed and adapted to operate substantially as and for the purpose described.

9. In combination with the hinged head-section pivoted to the vertically-sliding frame I, and the operating-cord *q*, connected with said frame, substantially as described, of the weights W, with means for arresting the descent of the same at different heights or points, together with the weight-cords *q'*, attached to said sliding frame, and provided, respectively, with sinkers, as *s'*, the whole constructed and adapted to operate substantially as and for the purpose set forth.

325,001. WRENCH. John McLean, Camden, Ala. Filed June 6, 1885. (Model.)

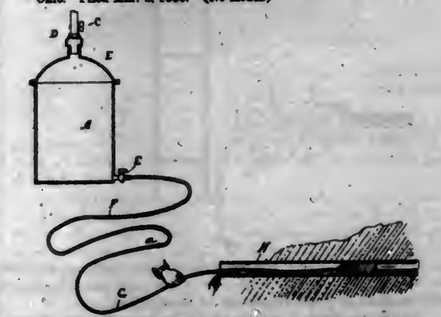


Claim.—1. A wrench comprising a stock, a fixed jaw, B, a movable jaw, C, a screw, G, operating to shift jaw C, and carrying a bevel-pinion, H, a bevel-pinion, L, meshing with pinion H, and fixed to a shaft, K, fitted in the stock and adapted to be operated at the end or heel of the stock for shifting the movable jaw, substantially as herein shown and described.

2. The combination, in a wrench, of the stock A, provided with a fixed jaw, B, a movable jaw, C, a screw, G, for shifting the movable jaw, and carrying a bevel-pinion, H, a bevel-pinion, L, meshing with pinion H and fixed to a shaft, K, fitted to the stock, and a handle, M, fixed to shaft K at the heel of the stock, substantially as herein set forth.

3. The combination, in a wrench, of the stock A, provided with a fixed jaw, B, a pin or stud, D, and a guide-slot, F, a movable jaw, C, fitted to pin D, and by a T-head in slot F, and a screw, G, pinions H L, shaft K, and handle M, substantially as herein set forth.

325,002. THAWING-MACHINE. Ferdinand L. Mentel, Cincinnati, Ohio. Filed Mar. 2, 1885. (No model.)



Claim.—1. In a thawing-machine, the metallic reservoir having a segmental head at the top provided with a stop-cock connecting with an air-pump, the lower part of the reservoir having outwardly a stop-cock having thereon a flexible tubing, the outer end of said tubing provided with a flexible metallic tube, substantially as herein set forth.

2. The combination of the metallic reservoir having a detachable flanged segmental head and coupling device, the lower part of said reservoir having outwardly a stop-cock, with the flexible tubing, the outer metallic end to be inserted within the pipe to be thawed, substantially as herein set forth.

325,003. CAR-VENTILATOR. Adam Miller, London, England. Filed June 18, 1885. (No model.) Patented in England Apr. 17, 1885, No. 4,762.



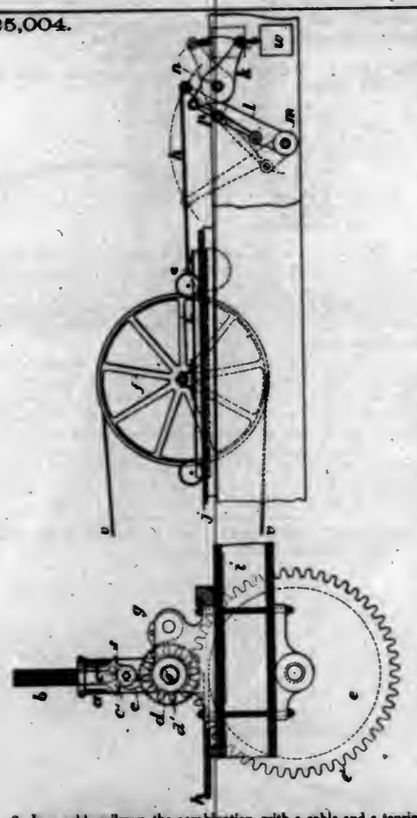
Claim.—A ventilator for a railway-car, consisting of a casing having a closed top and sides and open ends, a vertical tube within said casing, open at top and bottom, and terminating below the top of the casing, and pendent partitions within said casing extending from the walls thereof, and terminating below the upper end or mouth of the vertical tube, to form a passage between the sides of the tube and the said partition, all substantially as and for the purpose set forth.

325,004. TRACTION-ROPE RAILWAY. Daniel J. Miller, Chicago, Ill. Filed Nov. 3, 1882. (No model.)

Brief.—The weight is connected to the tension-car through an adjustable supplemental cable and a system of differential levers, whereby the strain will be gradually reduced as the slack is taken up and increased as it is paid out.

Claim.—1. In a cable railway, the combination, with the cable and the tension-car, of a weight and a system of differential levers incorporated in the line of connection between said car and weight, as explained.

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2. In a cable railway, the combination, with a cable and a tension-car, of a weight, a supplemental cable, and a system of differential levers for connecting said weight and car, as explained.

3. The combination, with a tension-car, a weight, and a supplemental cable connecting said weight and car, of a winding-drum to which said supplemental cable is secured, as explained.

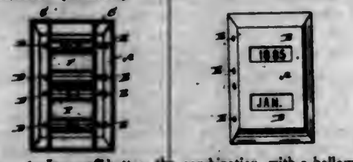
4. A tension-car and weight, in combination with a system of differential levers and a supplemental cable connecting said car and weight, and a winding-drum to which said supplemental cable is attached, journaled to and carried by said car, as and for the purpose set forth.

5. A tension-car and a weight, in combination with a system of differential levers and supplemental cable for connecting them, and a take-up or winding mechanism for regulating the length of said supplemental cable and consequently the strain exerted by the weight.

6. In combination, a tension-car, a weight, a pair of cables supporting said weight, and a pair of winding-drums to which said cables are secured, journaled to and carried by said car, as and for the purposes set forth.

7. In a cable railway, in combination, the tension-car, the winding-drum *e*, journaled thereon, the supplemental cable *h*, secured to said drum, lever *l*, link *p*, beam *k*, and weight *w*, all constructed and arranged to operate substantially as set forth.

325,005. CALENDAR CUFF-BUTTON. Garcia Monteiro, New Bedford, Mass., assignor to himself and Edward A. Chase, same place. Filed Feb. 14, 1885. (No model.)



Claim.—1. In a cuff-button, the combination, with a hollow shell having its upper face slotted, of spindles journaled in said shell, and bands attached to said spindles and provided with the names and numbers of the months, days, &c., substantially as herein shown and described.

2. In a cuff-button, the combination, with the frame or shell A, having slots B in the front and openings E in one side, of the spindles D, having squared ends and bands secured on the spindles, and on which bands the names and numbers of the months, days, &c., are produced, substantially as herein shown and described.

325,006. HEAD-REST. Charles E. Neeley, Gurdon, Ark. Filed June 2, 1885. (No model.)



Claim.—1. The combination, with an adjustable head-piece provided on one face with a cushioned surface and on the other with a mirror, of a clamping device adapted to secure the same to the back of a car-seat or chair, substantially as shown and described.

2. The combination, with an adjustable head-piece having a cushioned head-rest on one side and a mirror on the other and provided with a circular toothed support at right angles to its rear face, and pivots centrally formed on or attached to the said support, of a clamping device adapted to secure the same to the back of a car-seat or chair, substantially as shown and described.

3. The combination, with an adjustable head-piece having a circular toothed support at right angles to its rear face, of two clamping-pieces attachable to the same, each piece being formed with a longitudinal slot at its upper end, a semicircular groove on its inner side, and the front clamping-piece having a shoulder at the lower end of its longitudinal slot, a screw-threaded rod projecting at right angles from the rear face of the front piece, a washer, and of a knob or nut on said rod, substantially as shown and described.

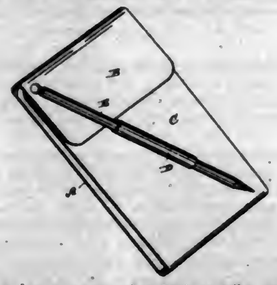
4. The combination, with the adjustable head-piece B, having the cushioned rest C, and the toothed circular support E, provided with the pivots F, of the clamping device A, consisting of the front piece, G, having a semicircular groove on its inner side, the longitudinal slot G′, the shoulder G^2, engaging with the teeth of the support E, and the backwardly-projecting screw-threaded rod I, operating in conjunction with the back piece, H, having a semicircular groove on its inner side, and the longitudinal slot H′, of the knob J, formed with central screw-threaded bore, and of the washer K, substantially as shown and described.

5. The combination, with the head-piece B, having the rest C, the mirror D, the circular toothed support E, and the pivots F, of the clamping device A, consisting of the pieces G and H, having the longitudinal slots G′ and H′, the semicircular grooves surrounding the pivots F, and the piece G, having the shoulder G^2, the screw-threaded rod I, the internally-screw-threaded knob J, and the washer K, substantially as shown and described, whereby the head-rest or mirror can be adjusted at any desired angle and the head-piece B can be secured to the back of a car-seat or other chair, as specified.

325,007. MEDICAL COMPOUND. John O'Flaherty, Lachine, Quebec, Canada. Filed Dec. 13, 1884. (No specimens.)

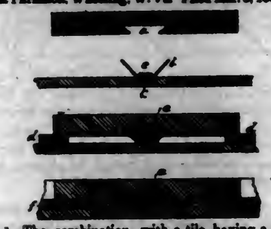
Claim.—The herein-described medical compound, consisting of powdered sulphur and hierapicra, in substantially the proportions specified.

325,008. NOTE AND MEMORANDUM BOOK, &c. Adolph Pfister, Brooklyn, N. Y. Filed Mar. 10, 1885. (No model.)



Claim.—A note or memorandum book, or toilet, sewing, or other case having a flap that can be folded over the front of the book or case, and a pocket or loop for receiving a pencil, which pocket is on the front of the book or case adjacent to that part of the front overlapped by the flap, thus permitting of passing a pencil through the pocket or loop and resting part of the pencil upon the flap to hold the flap on the face of the book or case, substantially as herein shown and described.

325,009. METHOD OF AND APPARATUS FOR SETTING TILES. R. Walker Pettebone, Wheeling, W. Va. Filed Mar. 3, 1885. (No model.)



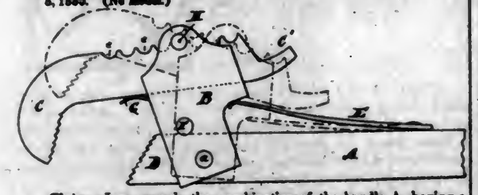
Claim.—1. The combination, with a tile having a cleat recess or projection on its back, of an elastic or spring cleat of a corresponding form to the recess groove or projection in the back of the tile for holding the tile, substantially as and for the purposes specified.

2. The combination, with a tile having a cleat recess, groove, or projection, of a guttered cleat of a corresponding form to the recess groove or projection in the back of the tile for holding the tile, a filling of plaster-of-paris or a quick-setting hydraulic cement making the tongue-and-groove union between the tile and the cleat solid, rigid, and fixed, substantially as and for the purposes specified.

3. The combination, with a tile having a cleat recess, groove, or projection, of a guttered cleat of a corresponding form to the recess, groove, or projection in the back of the tile for holding the tile, a quick-setting hydraulic-cement groove-filling making the tongue-and-groove union between the tile and the cleat solid, rigid, and fixed, and a cement backing between the back of the tile and the foundation, substantially as and for the purpose specified.

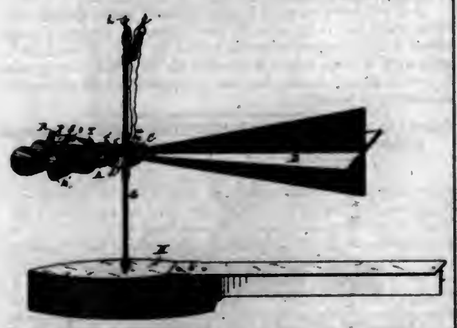
4. The combination of two or more tiles, each having cleat groove or projection, and two or more spring-cleats of corresponding form, two or more quick-setting cement groove-fillings making the tongue-and-groove union between the tiles and the cleats solid, rigid, and fixed relatively to each other and the surface to be tiled, and a cement backing between the tiles and the surface to be tiled, substantially as specified.

325,010. WRENCH. Daniel R. Foster, Revere, Mass. Filed Apr. 3, 1885. (No model.)



Claim.—In a wrench, the combination of the handle A, having a jaw, D, at its front end, the pivoted shoe B, the jaw C, provided with the grooves *e e*, and the springs E G, substantially as shown and specified.

325,011. CURRENT-METER. William G. Penn, New Orleans, La. Filed June 8, 1885. (No model.)



Claim.—1. In a current-meter, the combination of a cup-wheel having a shaft provided at one end with an axial pin and at the opposite end with a tube or socket with a meter-frame having a pivot-bearing and a journal-bearing adapted to support the opposite ends of the wheel-shaft, substantially as and for the purpose set forth.

2. In a current-meter, the combination of a meter-frame having a journal-bearing communicating with an air-tight box adapted to receive the extremity of a meter-wheel shaft or axial pin one part of which is insulated from the other, and the box provided with an insulated post having a spring connected therewith through which electrical communication is had with the meter-shaft, substantially as and for the purpose set forth.

3. In a current-meter, a meter-frame having an axial bearing communicating with an air-tight box, the latter provided with an insulated post and a contact-spring adapted to operate against the extension of the journal or axial pin of a wheel-shaft, as described, the interior of the box provided with pieces of ivory and a wax filling for reducing the air-space within same, substantially as and for the purpose set forth.

4. In a current-meter, a frame having an axial bearing communicating with an air-tight box, the cover of box provided with an oil-hole adapted to receive a screw against which the end of the wheel-shaft operates, substantially as and for the purpose set forth.

5. In a current-meter, a wheel-frame provided with a vane and an intermediate journal or trunnion box, with a supporting-trunnion having perforations or guides at each side of the center thereof for the passage of the insulated wires, substantially as described, and for the purpose set forth.

6. In a current-meter, the combination of a wheel-frame provided with a journal or trunnion box having a hinged side, as described, with a supporting-trunnion adapted to connect with or be disconnected from the aforesaid parts, substantially as described.

325,012. MALT-STIRRING MACHINE. Andrew J. Reynolds, Chicago, Ill. Filed Apr. 20, 1885. (No model.)



Claim.—1. A malt-stirring machine consisting of a mold-board, B, and share D, and a distributing-wheel, L, arranged to operate substantially as and for the purpose set forth.

2. In combination with the mold-board and share for raising the grain, and a wheel, L, for disintegrating the mass and distributing the same, a traction-wheel, E, connected with wheel L for imparting motion to it, substantially as described.

3. The combination, in a machine substantially such as described, of a rotating distributing or stirring wheel, L, a traction-wheel, E, for imparting motion to the same, and intermediate mechanism such as described, whereby said distributing or stirring wheel may be made to rotate continuously in one direction while the driving-wheel moves in either direction, as set forth.

4. In combination with the mold-board B, a hinged or flexible adjustable share, D, substantially as and for the purpose set forth.

5. In a malt-stirring machine, the combination, with the share and mold-board, of the revolving brush at the lower portion of the machine to agitate the malt and move it from the machine, substantially as described.

6. In a malt-stirring machine, the combination, with a brush to agitate and move the malt, of a drive-wheel, E, having connection with said brush and provided with a rubber tire, *f*, to give it adhesion, substantially as described.

7. In a malt-stirring machine mounted on a wheel, the combination of a curved share and mold-board mounted on the machine in front of its wheel and obliquely thereto, substantially as and for the purpose described.

8. In a malt-stirring machine, an adjustable share provided with a flexible edge, substantially as and for the purposes described.

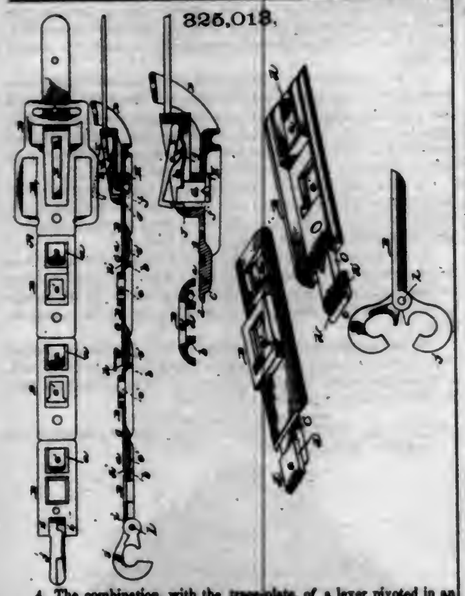
325,013. HAME-TUG. Thomas L. Rivers, Montclair, assignor of one-third to Josephine Thomas, Newark, N. J. Filed May 21, 1885. (No model.)

Claim.—1. In a hame-tag, the combination of the series of sections having countersunk openings at one end, forming ledges or shoulders, and projecting lips located at the other ends of the sections and having flanges, whereby, when the sections are engaged, the flanges will rest on the ledges of the next adjacent section, substantially as set forth.

2. In a hame-tag, the combination of the series of sections having countersunk openings at one end, forming ledges or shoulders, and projecting lips located at the other ends of the sections and having flanges at their outer ends, whereby, when the sections are engaged, the flanges will rest on the ledges of the next adjacent section, and channels on the under sides of the sections at the ends at which the openings are located, substantially as set forth.

3. In a hame-tag, the combination of the series of sections having projecting lips formed with flanges located at one end thereof, countersunk openings at the other ends of the sections, T-shaped openings in the sections, and a trace-plate having a T-shaped lug, as set forth.

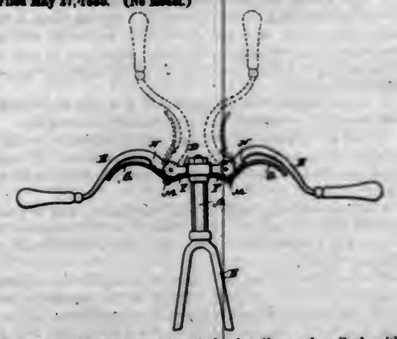
325,013.



4. The combination, with the trace-plate, of a lever pivoted in an opening thereof and a nib located at the outer end of the lever and projecting at right angles to the latter, as set forth.

5. The combination, with the trace-plate having the lug of a form to fit an opening in any one of the series of hame-sections, of a pivoted lever having a nib, a cam projection on the lever, and a flat spring bearing against the same, as set forth.

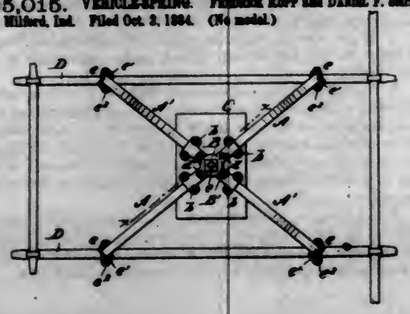
325,014. BICYCLE-HANDLE. Robert Roden, Jr., Nashville, Tenn. Filed May 27, 1885. (No model.)



Claim.—1. The construction of the handle, as described, with a projection to engage the spring-catch and the extremity of the releasing-lever, and projection to receive the releasing-lever, as set forth.

2. The combination, with the arm D, of the handles E, pivoted to said arm and provided with the projections M, the spring-catches F, provided with sockets P, and the levers G, having forked ends, substantially as herein shown and described.

325,015. VEHICLE-SPRING. Frederick Rupp and Daniel P. Smith, Milford, Ind. Filed Oct. 3, 1884. (No model.)

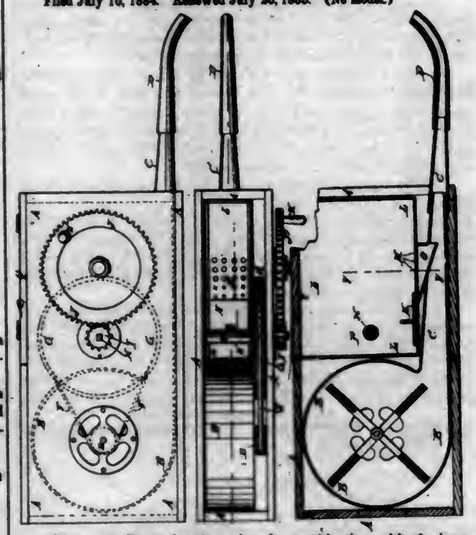


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Claim.—The combination, with the platform C, of the two separate and independent crossed plates B B', provided with the keepers *a a* at their opposite ends and with central apertures and apertures on either side of the central aperture, the central bolt, *c*, passing through the platform and plates B, the springs A A', having their inner ends within the keepers, and the bolts *d*, passing through the platform, springs A A', and the plates, substantially as set forth.

325,016. PAINTER'S SANDER. Joseph P. Ryan, New York, N. Y. Filed July 10, 1884. Renewed July 20, 1885. (No model.)

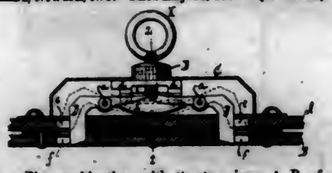


Claim.—1. In a painter's sander, the combination, with the inner box, L, having perforations M in its bottom, and the air-chute C, of the sand-chute O, having a downwardly-inclined sand-passage, substantially as herein shown and described, whereby the outflowing sand will be carried forward by the air-blast and the air will be kept from blowing up through the sand-box, as set forth.

2. In a painter's sander, the combination, with the inner box, L, having a sand-chute, O, provided with a narrow downward and forward inclined sand-passage, of the air-chute C, having an opening through which sand-chute projects, the delivery end of the said air-chute being extended beyond the inclined passage of the sand-chute, whereby air from the air-chute will be prevented from being blown up into the box L, substantially as set forth.

3. As an improved article of manufacture, a painter's sander, consisting, essentially, in the casing A, rotary blower B, air-chute C in the bottom of the casing and projecting beyond the same, the sand-box L, perforations M in the bottom of the same, the horizontally-moving slide N, and the chute O, leading from the perforations into the air-chute C, substantially as set forth.

325,017. LOCK FOR THE FRAMES OF SATCHELS, &c. Ferdinand C. Schmidt, Newark, N. J. Filed May 14, 1885. (No model.)

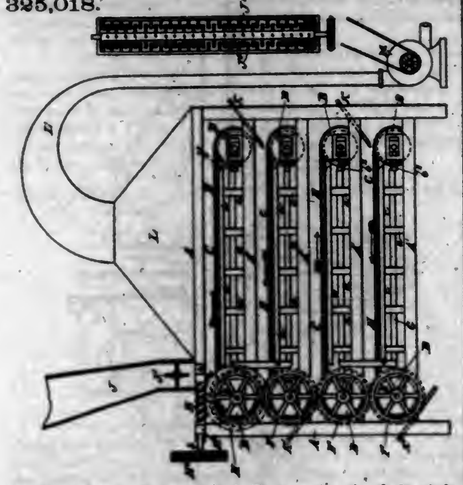


Claim.—The combination, with the two jaws A B, of a case secured to the outer jaw, A, two hook-bolts mounted in case, a finger-piece acting on the tails of the hook-bolts, slots in the inner and in the outer jaw, and supports for the inner jaw when the same is closed, substantially as described.

325,018. MALT-DRIER. Adam Schuler, Cincinnati, Ohio. Filed Mar. 27, 1885. (No model.)

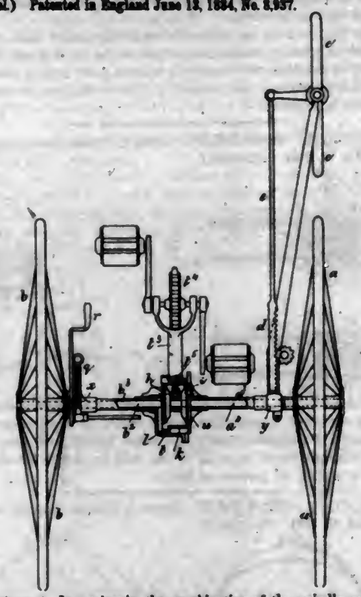
Claim.—1. In a malt-drying machine, the combination of a series of drums, B, the series of foraminous aprons alternately traveling in

325,018.



opposite directions, the spur-wheels F, connecting the shafts of the drums at one end of the machine, the hopper J, the agitator J', and the link-chain J^2, connecting the shaft of the agitator with the upper drum-shaft, substantially as described.

325,019. TRICYCLE. Thomas Shakespear, Birmingham, County of Warwick, England. Filed Aug. 18, 1884. Renewed July 13, 1885. (No model.) Patented in England June 13, 1884, No. 8,937.



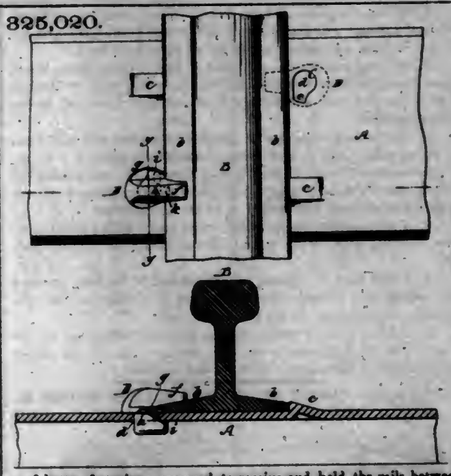
Claim.—1. In a tricycle, the combination of the spindle carrying the drive-wheels, the chain-wheel *k*, and brake-wheel *l*, formed together and carrying within them the pinion *m*, and the bevel-wheels *h* and *i*, meshing with pinion *m*, and connected with the two drive-wheels, as set forth, to operate the same, substantially as described.

2. In a tricycle, the combination of the divided spindle carrying the two drive-wheels, the bevel-gears *h i*, secured to said spindle, the chain-wheel *k*, and brake-wheel *l*, formed together, the pinion *m*, secured within said wheels *k* and *l*, and meshing with said gears, a sleeve inclosing each section of the spindle, a box, *t*, secured to one part of said sleeve, a plate, *u*, secured to the other part, and bolts for clamping the box and plate together, substantially as and for the purpose described.

325,020. METALLIC RAILWAY-TIE AND FASTENER. Robert R. Shepard, New York, N. Y. Filed June 15, 1885. (No model.)

Claim.—1. The combination, with the metal tie having raised lips

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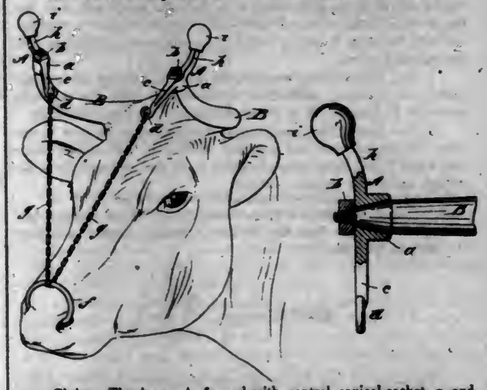
c, of button-fastenings arranged to receive and hold the rails between them and the lips on opposite sides of the rail, essentially as described.

2. In a button-fastening for railway-rails, the button D, constructed with a lateral head, *f*, flange *g*, shank *h*, lower bit, *i*, and a locking projection or facing, *k*, on the under side of the flange and out of line with the bit of the button, substantially as specified.

3. The combination, with the metal tie having key-hole-shaped apertures C, of the buttons D, having lower bits, *i*, and upper locking projections, *k*, arranged out of line with the bits and constructed to engage with the bit-receiving portions of the apertures C in the tie, essentially as described.

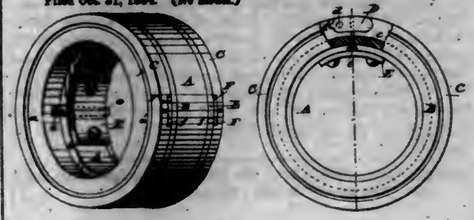
4. The combination of the rail B, the metal tie A, having key-hole-shaped apertures C on one side of the rail, and lips *c* on the opposite side thereof, and the locking-buttons D, constructed to engage with and disengage from said apertures in the tie, substantially as specified.

325,021. SAFETY ATTACHMENT FOR HORNED CATTLE. William P. Simonds, Competine, Iowa. Filed Nov. 6, 1884. (No model.)



Claim.—The levers A, formed with central conical socket, *a*, and arms *c* and *h*, the latter reaching forward of the socket, in combination with chains *g g* for connecting the lower ends of the levers to the nose-ring *f*, the arms *c h* being formed with the rings *d* and ball *i*, substantially as and for the purposes set forth.

325,022. PISTON-PACKING. William W. St. John, New York, N. Y. Filed Oct. 21, 1884. (No model.)



Claim.—1. In piston-packing, the split head made expansible by means of a wedge arranged as shown, and provided with a filling-piece D, over its joint, substantially as and for the purpose set forth.

2. In piston-packing, the split head A, having filling-pieces D and means for expanding it, with the solid rings B, forming seats for the split rings C, provided with filling-pieces F, all substantially as and for the purpose specified.

3. The piston-packing herein described, consisting of a split head, A, having filling-piece D, and made expansible by means of a wedge, in combination with solid rings B, having flanges *a a'*, and recesses *c c*, forming seats for the split rings C, provided with filling-pieces F, all constructed and arranged substantially as shown and specified.

4. A split packing-ring provided with a recess having a tenon to receive the filling-piece, in the manner shown, and for the purpose specified.

5. A split head for pistons, having recesses in its sides, provided with suitable tenons to receive the filling-pieces for closing the joint, substantially as shown, and for the purpose set forth.

6. A filling-piece for piston-packing, provided with a lug, *d'*, and a hole, *d*, to fit into a recess in the ring, having a tenon, *d''*, to receive said filling-piece, substantially as shown and specified.

325,028. PASTING ATTACHMENT FOR PAPER-FOLDING MACHINES. J. H. Stoneker, Erie, Pa. Filed Apr. 14, 1884. (No model.)



Claim.—1. In a paper-folding machine, the combination, with the lever-arm D, carrying the paste-reservoir, of the paste-wheel E, rotated by a shaft, K, carried by said lever, said shaft being driven from one of the rollers by gears *k b*, and means, substantially as set forth, for securing both said paste wheel and reservoir in an inoperative position, substantially as set forth.

2. In a paper-folding machine, the lever-arm D, the shaft K, carried by said lever, the paste-wheel E on the outer end of said shaft, and the pinion *k* on the inner end thereof close to the fulcrum, in combination with the roller B, having gear *b*, substantially as described, and for the purpose set forth.

3. In a paper-folding machine, the lever D, carrying the pasting-wheel and operating mechanism, in combination with the adjusting screw-pin L, substantially as described, and for the purpose set forth.

4. In a paper-folding machine, the combination of the lever D, carrying the pasting-wheel and operating mechanism, with the adjustable cam-wheel F, the latter being adjustable on its stud, substantially as described, and for the purpose set forth.

325,024. VEHICLE-WHEEL. James Taylor, Wigan, County of Lancaster, England. Filed Mar. 20, 1883. (Model.) Patented in England Mar. 21, 1882, No. 1,364.



Claim.—1. A tire, K, having transverse grooves *k*, in combination with a felly, J, and a series of pieces set into said fellies, and provided with ribs I', which fit said transverse grooves, substantially as set forth.

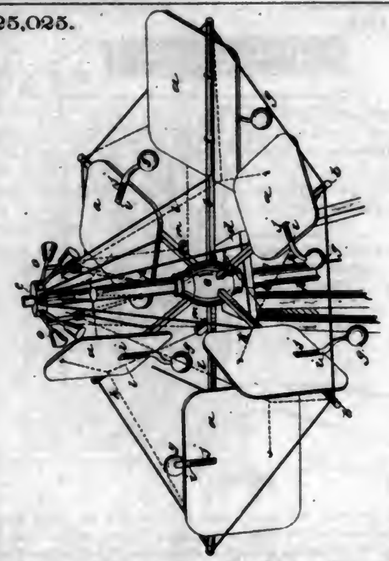
2. A series of spokes each provided on its outer end with a cap, H, having a screw-threaded outer extension, *h*, in combination with caps I, which are set into the felly, and internally screw-threaded to receive said extensions *h*, substantially as set forth.

3. A series of caps, I, which are internally screw-threaded, and provided on their outer ends with projecting transverse ribs I', in combination with the recessed felly J, into which said caps are set, the tire K, having in its inner face the transverse grooves *k*, and the spokes E, which have on their outer ends the caps H, provided with screw-threaded extensions *h*, that take into said caps I, substantially as set forth.

4. The combination of the spokes and spoke-sockets with the hub-sections A A', the two nuts *a* A^5, which screw on the extension A^5 of section A, and the axle-spindle B, having collar A^2, all substantially as set forth.

325,025. WINDMILL. Pea Tuttle, Saguache, Colo. Filed Mar. 5, 1884. Renewed Dec. 22, 1884. (No model.)

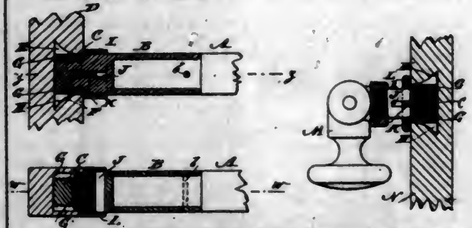
325,025.



Claim.—1. The combination, with radial arms of a vertical shaft, of sails *a*, eccentrically pivoted to said arms balanced thereon, connected by chains to the arms ahead to be held up to the wind, and also connected to weighted centrifugal governor-arms *o*, to be regulated thereby, substantially as described.

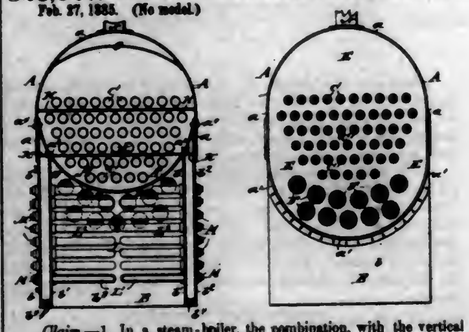
2. The combination, with radial arms of a vertical shaft, of sails *a*, pivoted eccentrically thereon, connected to the arms ahead for being held up to the wind, and connected to rods *p*, for holding them out of the wind, by chains *l*, also connecting them to the governor-arms, substantially as described.

325,026. CHAIR-SOCKET. James F. Thomas, Denver, Colo. Filed Mar. 18, 1884. (No model.)



Claim.—The combination of an internally-screw-threaded socket having a notch on its outer end, with a ferrule having a threaded portion, and a slot extending into a part of the threads, and a ring having a key mounted loosely upon the ferrule, with the key in the slot of the same, as and for the purpose set forth.

325,027. STEAM-BOILER. George G. Tindall, Oakland, Cal. Filed Feb. 27, 1885. (No model.)

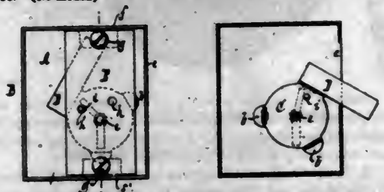


Claim.—1. In a steam-boiler, the combination, with the vertical spaced walls of the fire-box, of the downward-curved crown-sheet secured at or near its edges to the upper edges of said walls, the fire-tubes

C F, and the outer upper U-shaped section *a*, riveted at a^4 to the outer wall and to the crown-sheet, said crown-sheet forming the bottom of the forward end of the boiler, substantially as set forth.

2. A fire-box steam-boiler shell constructed with upper plate or plates, *a*, lapping down its sides, lower plate or plates, *a'*, riveted to the rear outer plate, *b*, of the fire-box, and to plates *a* and rear head, E, a front head, D, extended at the front of the fire-box B, which consists of inner plates, *b' b' b^3 b^3*, and a concave-convex plate, A', riveted to the fire-box plates and to the plates *a*, and constituting the crown-sheet of the fire-box, substantially as herein set forth.

325,028. LOCK. Charles F. Vert, London, England. Filed Jan. 22, 1885. (No model.)



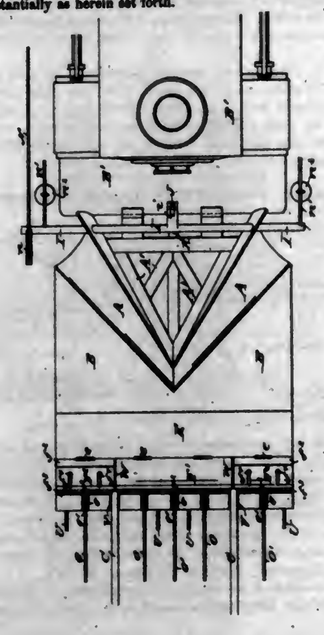
Claim.—1. The combination of the disk C, the flange or feet *b*, projecting from said disk, the bolt D, firmly connected to the disk, the lock-plate A, the frictional spring-plate E, acting on the back of the disk and pressing the feet or flange thereof against the inner surface of the lock-plate, the center pin, *c*, secured in the spring-plate and extending through the center of the disk, and the abutment *d*, projecting from the inner surface of the disk, substantially as and for the purpose specified.

2. The combination of the disk C, the flange or feet *b*, projecting from said disk, the bolt D, firmly connected to the disk, the lock-plate A, the frictional spring-plate E, acting on the back of the disk and pressing the feet or flange thereof against the inner surface of the lock-plate, the center pin, *c*, secured in the spring-plate and extending through the center of the disk, the abutment *d*, projecting from the inner surface of the disk, two holes, *k k'*, in the spring-plate, and the projection *i*, formed on the back of the disk, in position to engage with the holes and to retain the disk in its locked and unlocked positions, substantially as described.

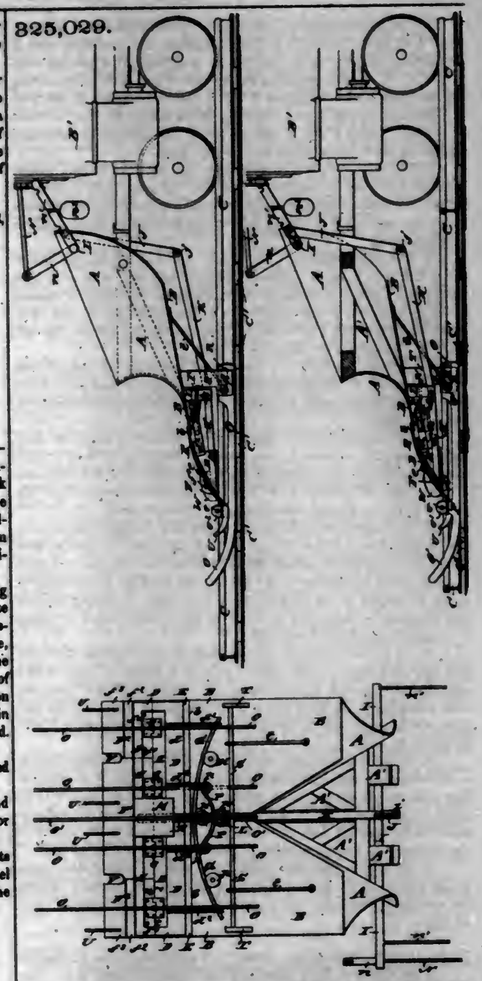
325,029. SNOW-PLOW. Joseph Wackerman, Wayne, Pa. Filed Feb. 5, 1885. (No model.)

Claim.—1. A snow-plow constructed with a laterally-movable and vertically-adjustable shovel-plate at its forward end, and with means for raising and lowering the plate, substantially as herein set forth.

2. A snow-plow constructed with a laterally-movable shovel at its forward end, which overlaps the bed-plate of the plow, and said shovel being made in two plate-sections hinged to each other crosswise of the plow, substantially as herein set forth.



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3. A snow-plow constructed with a laterally-movable shovel at its forward end, and said shovel overlapping the bed-plate of the plow, and made in two plate-sections hinged to each other crosswise of the plow, and the front shovel-plate having runners pivoted to it, and said runners having a longitudinal slot-connection with a rear cross-bar fixed to the plow bed-plate, substantially as herein set forth.

4. A snow-plow constructed with a laterally-movable shovel at its forward end, which shovel overlaps the plow bed-plate, and is made in two plate-sections hinged to each other crosswise of the plow, and the front shovel-plate being made in central and opposite end parts independently-movable vertically on their hinged joints, and with runners pivoted near their forward ends to the front shovel-plate sections, and having a longitudinal slot-connection at their rear ends with a cross-bar fixed to the plow bed-plate, substantially as herein set forth.

5. The combination, in a snow-plow, of the mold-board and bed-plate A B, the shovel-plates E F, hinged together at *e*, the plate E overlapping bed-plate B, and being fixed to a frame, D, which has backwardly-projecting arms d^3, the curved bar G, fixed to bed-plate B, and against which the bar G presses, the links *p* and yoke P, connecting bar G with a post fixed to the bed-plate, and means for raising or lowering shovel-plates E F and frame D, substantially as herein set forth.

6. The combination, in a snow-plow, of the mold-board and bed-plate A B, the shovel-plates E F, hinged together at *e*, said plate E overlapping the plate B, and being fixed to a frame, D, which has arms d^3, the bar G, sheaves or guides H, the yoke P, links *p*, connecting the bar G and the shovel-plates to a post on bed-plate B, and the lever K, fulcrumed on a post, L, fixed to plate B, and said lever extending forward beneath the shovel-plate frame D, to raise and lower the shovel-plates, and means for operating the lever, substantially as herein set forth.

7. The combination, in a snow-plow, of the mold-board and bed-plate A B, shovel-plates E F, hinged together at *e*, and said plate E overlapping bed-plate B, and being fixed to a frame, D, which has arms d^3, the bar G, sheaves or guides H, the yoke P and links *p*, connecting the bar G and the shovel-plates E F to a post on bed-plate B, the lever K, fulcrumed on post L and extending into a casing, M, fixed to frame D, the bar J, shaft I, arm *n*, and the rod N, extending to the attendant behind the plow, substantially as herein set forth.

8. The combination, in a snow-plow, and with the hinged shovel-plate E and frame D, supported from the bed-plate B, so as to have lateral and vertical movements, substantially as described, of the plate F, having openings V V for the railway-tracks to enter, substantially as herein set forth.

9. The combination, in a snow-plow, and with the hinged shovel-plates E F and frame D, supported from the bed-plate B, so as to have lateral and vertical movements, substantially as described, of runners O O', pivoted at *o* to the shovel-plate F, and connected by slots R at their back ends with a cross-bar, S, held in posts T, fixed to the bed-plate B, substantially as herein set forth.

10. The combination, in a snow-plow, and with the hinged front shovel-plate, F, of the central runner or runners, pivoted at *o* to the plate F, and having open slots R at their back ends, substantially as herein set forth.

11. In a snow-plow, the shovel-plates E F, hinged together at *e*, and supported on a frame, D, and from the bed-plate B, so as to have lateral and vertical movements, substantially as described, and said plate F being made in sections $F' F^2 F^3$, to which the forward ends of the runners O O' are pivoted, substantially as herein set forth.

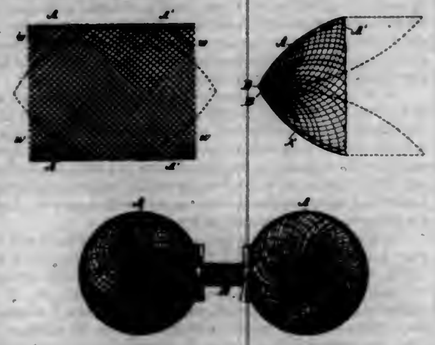
12. In a snow-plow, the shovel-plates E F, hinged together at *e*, and supported on a frame, D, and from the bed-plate B, so as to have lateral and vertical movements, substantially as described, and said plate F being made in sections $F' F^2 F^3$, and the sections F^2 consisting of plates f^2, hinged at *e* to shovel-plate E, and plates f^3, having the runners O pivoted to them, and held so as to be adjustable over the plates f^2, substantially as herein set forth.

13. In a snow-plow, the shovel-plates E F, hinged together at *e*, and supported from the bed-plate B and on a frame, D, made with a rear bar, *d*, and with a front bar, *d'*, on which the plate F rests, and over which bar *d'* the snow passes when the plate F is lifted by the runners, which are pivoted to the plate at their forward ends, substantially as herein set forth.

14. In a snow-plow, the shovel-plates E F, hinged to each other at *e*, and supported from the bed-plate B and on a frame, D, in combination with runners pivoted at *o* to the plate F, and said plate F being made in sections $F' F^2 F^3$, and having openings V V for the railway-tracks at the meeting ends of its sections, and cutters W W, secured to the section F' at the openings V V, substantially as herein set forth.

15. In a snow-plow, the combination, with the hinged shovel-plate F and runners O O', pivoted thereto, of the upturned guards U, fixed to the shovel-plate between and next the runners, substantially as herein set forth.

325,030. BOSOM-PAD. Joseph L. Wells, Philadelphia, Pa., assignor to the Weston & Wells Manufacturing Company, Camden, N. J. Filed Mar. 13, 1885. (No model.)



Claim.—1. A bosom-pad of substantially hemispherical form, constructed of an elastic duplex frame formed by drawing down the ends of a tubular wire frame and introverting one end within the other, the free ends of the wire being secured, substantially as and for the purpose specified.

2. In combination with the introverted or duplex wire frame-work, the hollow button D, into which the extremities of the wires A A'' are inserted, and the covering C and tuft, united as described, whereby the parts are held together, substantially as specified.

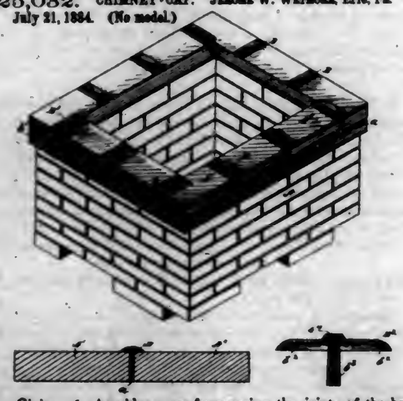
325,031. BUSTLE. Joseph L. Wells, Philadelphia, Pa., assignor to the Weston & Wells Manufacturing Company, Camden, N. J. Filed Apr. 14, 1885. (No model.)



Claim.—1. A bustle consisting of a braided-wire tube having its ends contracted and confined and attached to a suitable strap, the intermediate portion adjacent to the strap being bunched and secured to the same, substantially as and for the purposes specified.

2. In combination with the wire braided bustle, the hollow metallic end clips having said wires inserted and bent over therein, substantially as and for the purpose specified.

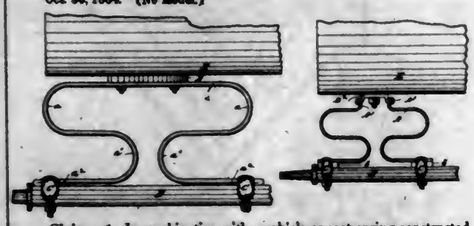
325,032. CHIMNEY-CAP. Jerome W. Weymore, Erie, Pa. Filed July 21, 1884. (No model.)



Claim.—1. An oblong cap for covering the joints of the brick of the upper course of a chimney-top, of a size to cover but a fraction of each of the ends of adjacent bricks, and having a broad tongue projecting down between the adjacent ends of the bricks, substantially as described.

2. An oblong cap for covering the joints of the brick in the upper course of a chimney-top, of a size to cover only small portions of the ends of adjacent bricks, constructed with an end flange which projects down on the joint, and with a broad tongue projecting down from the under side into the mortar between the ends of two adjacent bricks, substantially as described, for the purpose specified.

325,033. VEHICLE-SPRING. Jerome W. Weymore, Erie, Pa. Filed Oct. 30, 1884. (No model.)



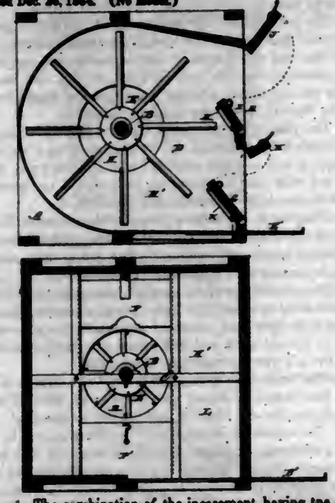
Claim.—1. In combination with a vehicle or seat spring constructed with double reverse curves, the blocks *b b* and block D, placed back from the curves, substantially as and for the purpose set forth.

2. The combination, with a wagon-axle, of the double reverse-curve springs and the separating-blocks set back from the curves, substantially as shown, at the attachment of the springs to the axle, together with the like means for connecting the wagon-body to the upper side of the springs, substantially as and for the purpose set forth.

3. A vehicle or seat spring constructed with two S-shaped curves, the upper part being bent, substantially as shown, to form a support

(limited to the middle part of the section) for a seat or a vehicle-body, and the bottom arms thereof, *c c*, bent, substantially as shown, to form the limited bearing or supporting sections of the spring, substantially as set forth.

325,034. MINE-VENTILATOR. Thomas Wilson, Jr., Washington, Ind. Filed Dec. 26, 1884. (No model.)

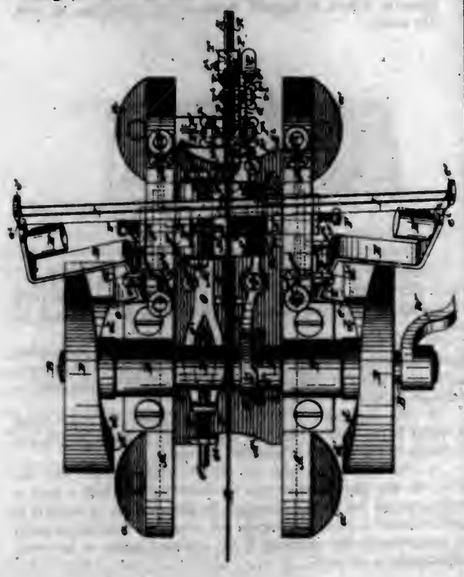


Claim.—1. The combination of the incasement having the middle and side compartments, doors for the side compartments, openings communicating with the side and middle compartments, sliding doors for said openings, and openings in the lower sides of the compartments, and slides for said bottom openings, and the blower located in the middle compartment, substantially as described.

2. The combination, with the middle compartment having the horizontally-hinged end doors, and bottom and side openings, and slides for said openings, of the side compartments having bottom slides and side doors, and the blower located in the middle compartment, substantially as described.

3. The combination, with the middle compartment having the hinged end doors and bottom and side openings with slides, of the side compartments having bottom slides and side doors, substantially as specified.

325,035. SAW-SETTING MACHINE. John H. C. Webster, Lynchburg, Va. Filed June 2, 1884. (No model.)



Claim.—1. In a machine for setting saws, the following elements in combination: a driving-shaft, B, provided with cam-disks D D and tappets J K, a vise having a fixed jaw, M, and a movable jaw, N, a saw-holding frame, S, held in line with the meeting faces of the vise-jaws, a cam-lever, L, actuated by the tappets J to close the vise-jaw N upon the saw-blade, a pair of opposite punches, F F, acting to set two adjacent saw-teeth reverse ways against anvils or set-blocks on the vise-jaws, opposite hammers E' E', actuated by the cams D, and a connecting elastic band or spring to strike the setting-punches, and a feed-pawl, Q, connected to a rock-lever, P, pivoted to a slide-bar, O, which is actuated by a spring and the tappets K on the driving-shaft, all constructed and arranged to operate substantially as shown and described.

2. The combination, with the opposite side frames, A A', opposite setting-punches F F, set to slide transversely in the frames, and opposite hammers E E' E E', pivoted to the frames, of the opposite cams D D, set on the main shaft and acting to lift and release both hammers simultaneously, and an elastic band, I, or equivalent means for driving the hammers against the punches, substantially as shown and described.

3. The combination, with the side frames, A A', of the setting-punches F, fitted to slide transversely in blocks F', which are adjusted longitudinally in slots F^4 of the frames, and the hammers E E', pivoted in fulcrum-blocks G, which are pivoted at one end to the frame and connect therewith at their other end by a slot and bolt, allowing the hammers to be shifted relatively as the punches are shifted, substantially as shown and described.

4. The combination, with the frames A A', slotted at F^4, and the punch-carrying blocks F', fitted in the slots, of the set-screws F^5, substantially as shown and described.

5. The combination, with the side frames slotted at F^4, of the punch-blocks F', provided with a shoulder, f^3, at one face of the frame, and a key, F^2, at the other face, said key passing into a recess, *f*, in the punch to hold it to the block and prevent its turning, and said key serving also to lock the block F' to the frame, substantially as shown and described.

6. The combination, with the side frames, A A', of the vise-jaw M, fixed to the frame A, and the movable vise-jaw N, pivoted at *n* to the frame A' and opened by a spring, n^2, and said jaws M N being provided with anvils or set-blocks F^3, substantially as shown and described.

7. The saw-holding frame S, made with a top groove, *s'*, and guard-plates T, having head-flanges T' and attached to the frame by a slot-and-bolt connection, substantially as shown and described.

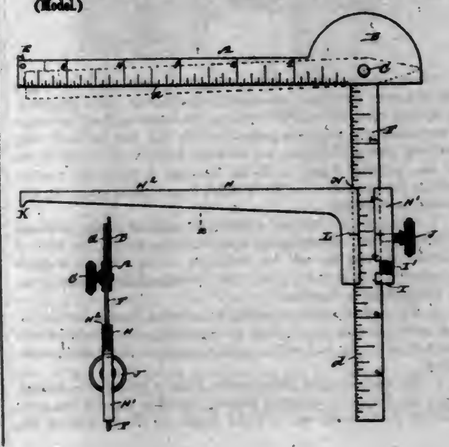
8. The saw-holding frame S, made with a top groove, *s'*, and end guards, T, and with slotted wing-plates S^2, whereby the frame may be fastened to the fixed jaw M of the vise, substantially as shown and described.

9. The saw-holding frame S, made with a top groove, *s'*, end guards, T, and a yoke, S', to pass beneath the vise-jaws, substantially as shown and described.

10. The combination, in a saw-setting machine, of the shaft B, having tappets K, the slide O, driven backward by the tappets and forward by a spring, the rock-lever P, pivoted to the slide O and fulcrumed on a post of the frame, and the feed-pawl Q, connecting with the slotted head of lever P and engaging the saw-teeth, substantially as shown and described.

11. The combination, with the movable vise-jaw N, of the shaft B having tappets J, and the cam-lever L, pivoted to rock horizontally, and provided with the cam-shoulder l^2 and cam-faces l^3 l^4, substantially as shown and described.

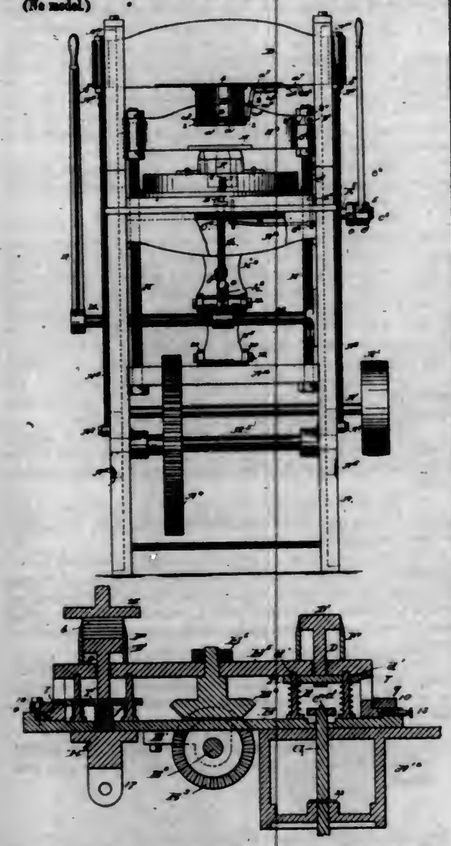
325,036. COMBINED CALIPER, PROTRACTOR, AND BEVEL. Frederick W. Woodhull, Lincoln University, Pa. Filed May 22, 1885. (Model.)



Claim.—1. The combination, with the arm A, provided with the right-angular point E on its outer end, and the graduated arm F, pivoted thereto, of the caliper-arm H, having the straight upper edge, H^2, and provided with the right-angular point K at its outer end, and with the socketed angular arm H', having the mark L, the said caliper-arm being adjustably secured to the graduated arm, substantially as herein shown and described.

2. In a combination-tool for measuring, the combination of the graduated arm A, the protractor B, the thumb-screw C, the graduated arm D, the point E, the graduated arm F, the pointer G, the caliper-arm H, the right-angular arm H', having the groove I' and the slot I, the thumb-screw J, the point K, and the mark L, all arranged and operating substantially as shown and described.

325,087. LEATHER CUTTING AND FILING MECHANISM. J. Varnum Abbott and Charles E. Lock, Dedham, Mass. Filed May 13, 1885. (No model.)



Claim.—1. In a machine for cutting leather or other material, a plate or carrier, and two or more cutting-dies thereon, and a reciprocating block to cause the material resting on the cutters to be cut into shape corresponding with and to be pushed into the said dies, combined with a molding plate or abutment, and followers located one in each of the said dies, and with means to lift the followers at the proper times to compress the material in the die in which it was placed when cut, substantially as described.

2. The movable plate, and a cutting-die attached thereto, combined with a follower and supporting-bar, upon which the shank of the follower is permitted to rest, the said bar having or moving a pointer or finger to co-operate with an index to show the thickness of the material in the die, substantially as described.

3. The movable plate, a cutting-die attached thereto, and the follower provided with a stem, and the supporting-bar, combined with springs to sustain the said bar in a yielding manner, substantially as described.

4. The movable block, the movable plate, a cutting-die attached thereto, and the spring-supported follower located in the said die, combined with the bed-plate and with the ejector to lift the follower and eject from the die the material forced into it by the block, substantially as described.

5. The cutting-block, the plate or carrier, and two or more cutting-dies mounted thereon, and the vertically-movable followers located in the said dies, and the plunger, its carrying-beam, and toggle-lever, combined with means, substantially as described, to operate the said toggle-lever, as set forth.

6. The cutting-block, the plate or carrier, and two or more cutting-dies mounted thereon, and the vertically-movable followers located in the said dies, and the plunger, its carrying-beam, and toggle-lever, and ejector, combined with the rock-shaft and its arm, link, and cam, and with the pivoted finger, whereby the ejector and toggle-lever may be moved by the rock-shaft, substantially as described.

7. The plate or carrier and its attached cutting-die, and the vertically-movable follower therein, and the ejector having a spring-held pivoted finger at its lower end, combined with the link *h* and its cam portion h^2, and with means, substantially as described, to operate the said link and ejector, as and for the purposes set forth.

8. The plate or carrier, its attached cutting-die, and follower therein, and the cross-head, and the hollow block to receive paste or cement and open at its lower end, combined with a gate to open and close the opening in the said block, substantially as described.

9. The plate or carrier, its attached cutting-die, and follower therein, and the cross-head, and the hollow block to receive paste or cement and open at its lower end, combined with a gate to open and close the opening in the said block, and with means, substantially as described, to operate the said gate automatically, as set forth.

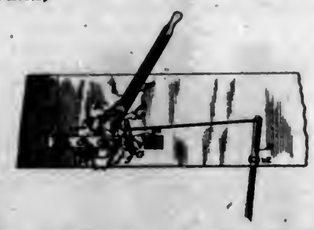
10. The cross-head, its attached hollow block open at its lower end, and the gate therein, combined with the lever a^3, the slide-bar, and the cam to operate the said slide-bar, substantially as described.

11. The cross-head, its attached hollow block open at its lower end, and the gate therein, combined with the lever a^3, the slide-bar, and the cam to operate the said slide-bar, and with the slide-rod and means, substantially as described, to move it to place the said cam out of operative position and prevent the opening of the gate, substantially as described.

12. A cross-head, a hollow cutting-block connected therewith, and a gate or valve to control the flow of paste or cement from the said block, and a lever and slide-bar to open the said gate, and the plate or carrier, and two or more cutting-dies connected therewith, and their contained followers, having shanks, and a cam to operate the slide which is connected with the said slide-bar, combined with means, substantially as described, to move the said cam out of operative position with relation to the said slide-bar to prevent the opening of the said gate, as set forth.

13. The cross-head, and its attached hollow block to contain paste or cement and open at its lower end, and a gate, and a lever, and slide-bar to move the said lever, combined with an adjusting plate or device, a^4, whereby the quantity of paste or cement leaving the block may be regulated according to the requirements of the work, substantially as described.

325,088. WAGON-BRAKE. Albert K. Barbour, Milano, Tex., assignor to William H. Brevoort, Vincennes, Ind. Filed Apr. 30, 1885. (No model.)



Claim.—1. In a wagon-brake, the combination of the lever F, provided with a pawl having the heel f^2, a ratchet-wheel, and the catch G, having the projecting portion f', substantially as shown and described.

2. The combination of a brake-lever provided with a brake-block, the ratchet-wheel A, barrel B, connected by a cord to the brake-lever, the lever F, provided with a pawl having the heel f^2, and the catch G, substantially as described and shown.

3. The combination of a brake lever and block, the ratchet-wheel A, barrel B, the lever F, provided with a pawl, *f*, the striker H, and the catch G, substantially as described and shown.

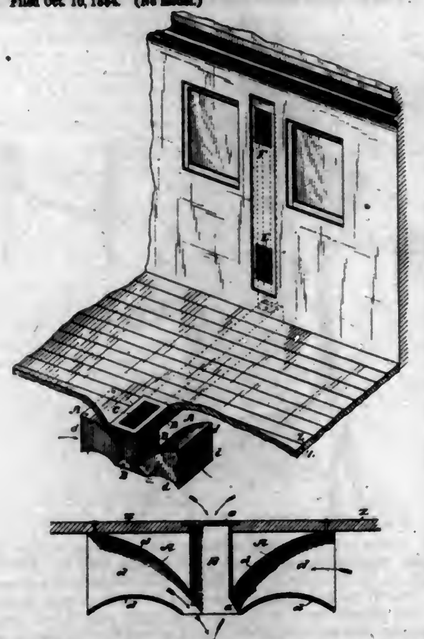
4. The combination, with the ratchet-wheel provided with the drum, the stop pawl or catch, and the lever provided with a pawl or pallet arranged and adapted to engage the ratchet-wheel, of a striker or guide arranged in position to engage and release the point of the pallet at approximately the extremity of the rearward stroke of the lever, substantially as set forth.

325,039. COMMODE-PAIL. Elbert H. Bemis, Bethel, assignor to Dwight E. Rogers, Danbury, Conn. Filed July 13, 1885. (No model.)



Claim.—The herein-described pail, consisting of the metal body A, having a ring, B, hinged to its upper edge, the body of the said ring semicircular in transverse section, the convex side up, and constructed with an annular flange, *b*, around its outer edge, adapted to rest upon and overlap the upper edge of the pail, and with an inwardly-projecting flange, *c*, around its inner edge, combined with a cover, C, constructed with flanges *i k*, adapted to rest upon and within the flange *c* of the ring, substantially as described.

325,040. CAR-VENTILATION. Alonzo Bell, Washington, D. C. Filed Oct. 10, 1884. (No model.)



Claim.—1. The car-ventilator herein described, consisting of the double cowl A A, open at the bottom and having central passage, B, arranged beneath the car and communicating with the interior thereof, and a register placed over the passage B, whereby air and dirt may be discharged from the bottom of the car, as and for the purpose set forth and described.

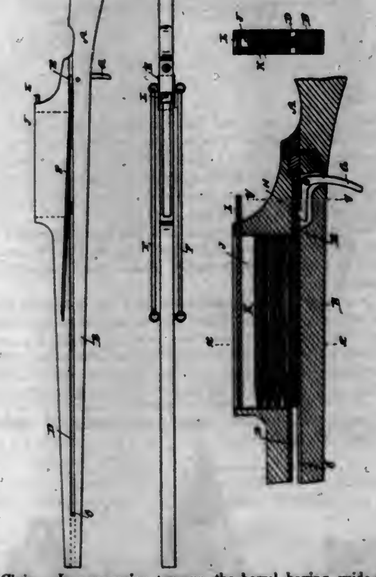
2. The car-ventilator herein described, consisting of a double cowl, A A, having an open bottom and arranged horizontally beneath a car-floor, exhaust-casing B, forming at its lower end a vertical central passage through said double cowl and communicating with the interior of the car, a floor-register, and a side register or registers opening into said casing, as shown and described, whereby air and dirt may be discharged from the lower portion, and the hot air removed from the upper portion of the car, substantially as set forth.

325,041. STENCIL. Max Bendix, New York, N. Y. Filed June 18, 1885. (Model.)

Claim.—A stencil for stamping a design for embroidery, having arbitrary symbols perforated therein within the outlines of its design, to be invariably repeated with said design upon the fabric, and thereby indicate the coloring and shading to be followed in the embroidery, substantially in the manner and for the purpose herein set forth.

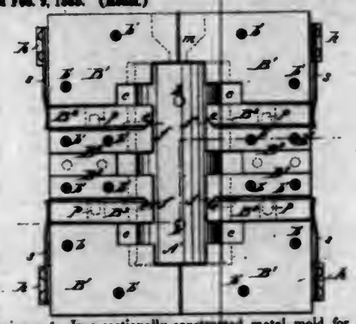


325,042. MAGAZINE SPRING-GUN. Ambrose J. Benjamin, Valley Falls, R. I. Filed Dec. 3, 1884. (No model.)



Claim.—In a magazine toy gun, the barrel having guide-slots in the sides of its chambers and the sides of its magazine, the chamber of said magazine communicating with said barrel-chamber, in combination with the cross-head or piece fitted to slide in said barrel and magazine chambers and said slots, said cross-head having a shouldered notch in its lower side and connected by springs to the side of said barrel, and the trigger with its forward end engaging the shoulder of said notch and held under the action of a spring, substantially as and for the purpose set forth.

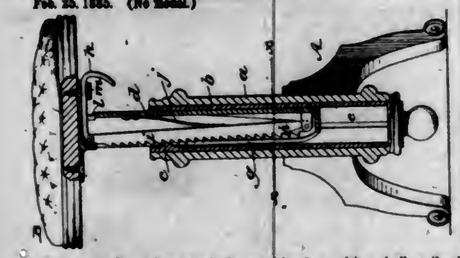
325,043. METAL MOLD. Thomas D. Emmett, Atlantic Mine, Mich. Filed Feb. 9, 1885. (Model.)



Claim.—1. In a sectionally-constructed metal mold for making castings, the combination, with fixed sectional portions of the mold having beveled lips on their inner ends, of yielding sections or pieces arranged to form a portion of the sides of the mold and free to slide laterally and lengthwise, with their inner ends beveled to fit the beveled lips of the fixed sectional portions, and springs for forcing inward said yielding sections, essentially as described.

2. In sectionally-constructed metal molds for making hollow or recessed castings, the section A, with its attached core A', in combination with the section B, the fixed end and central body portions, B' B², the latter having beveled lips *f* on their inner ends, and the sliding and connected yielding sections or pieces B², having bevels *s*, made to fit the beveled lips *f*, and provided with springs for forcing them inward, substantially as specified.

325,044. PIANO-STOOL. Claude W. Blackburn, Chicago, Ill. Filed Feb. 25, 1885. (No model.)

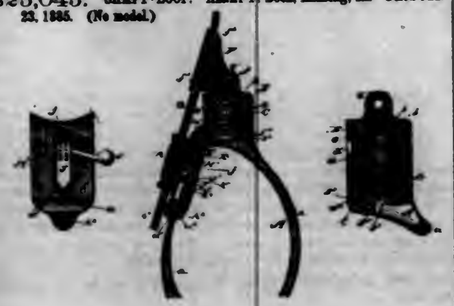


Claim.—1. In a piano-stool, the combination, with a shell, *a*, lined throughout with a cylindrical tube, as *b*, that is provided with a lip, as *c*, and vertical grooves, as *e*, of a slotted inner tube having external ribs, *f*, fitting in the grooves *e*, a spring-operated tooth-plate, *i*, pivoted at its lower end within the tube *d*, and provided at its upper end with a finger-piece, as *k*, substantially as described.

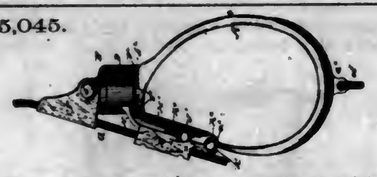
2. In a piano-stool, the combination, with tube *b*, provided with lips *c* and grooves *e*, of a tube, as *d*, formed with ribs *f* and brace *o*, and provided with a spring-actuated toothed plate, *i*, and a finger-piece, as *k*, substantially as set forth.

3. In a piano-stool, the combination, with the shell *a* and tube *b*, provided with a lip, as *c*, and vertical grooves, as *e*, of an inner tube, as *d*, formed with a slot, as *g*, external ribs *f*, and a seat-plate, as *p*, formed in turn with a keeper, *m*, and a spring-operated tooth-plate, *i*, pivoted at its lower end within the tube *d*, and provided at its upper end with a finger-piece, as *k*, that rides in the keeper *m*, substantially as described.

325,045. SHAFT-LOOP. Henry F. Book, Lansing, Ill. Filed Jan. 23, 1885. (No model.)



325,045.



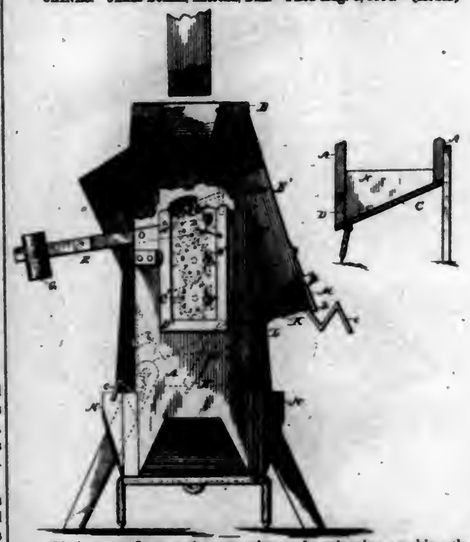
Claim.—1. A shaft-loop for harness, consisting of a rigid hook suspended by a swivel-joint from the saddle-strap buckle, and provided with a laterally-swinging guard, and means, substantially as described, for locking the same.

2. A harness shaft-loop consisting of a rigid hook suspended by a swivel-joint from the saddle-strap buckle, and provided with a laterally-swinging guard having a retractile spring-catch, whereby the same may be locked in position for securing the vehicle-shaft therein, substantially as and for the purposes set forth.

3. The combination of the rigid hook A, connected by means of a swivel-joint with the saddle-strap buckle, and a guard, H, constructed to swing laterally upon the neck of said swiveled hook, and means, substantially as described, for locking said guard to the end of said hook, substantially in the manner and for the purposes specified.

4. The combination of the rigid hook A, provided with a laterally-swinging guard, H, with the triangular-shaped buckle F, substantially as and for the purposes specified.

325,046. AUTOMATIC GRAIN-MEASURE FOR THRASHING-MACHINES. James Boran, Altoona, Dak. Filed Aug. 5, 1884. (Model.)



Claim.—1. In a grain measuring and registering machine, the double hopper pivoted on the rear end of the scale-beam and provided with the friction-roller P, in combination with the guides R and spout T, whereby the loaded hopper is permitted to descend a short distance to clear the spout before emptying its load, and be returned again under the spout when freed or partially freed of the weight of the grain, as set forth.

2. In a grain weighing and measuring machine, the combination of the double tilting or rocking hopper F, pivoted as described, having the doors or valves connected together by the bar L, as described, with the gravity-catches M and projection N, said projections being formed by the upper edge of the receiving-hopper and adapted to release the gravity-catches, as set forth.

325,047. JIB-HANK. John L. Bradley and Riley T. Smith, New Haven, Conn. Filed July 1, 1885. (No model.)

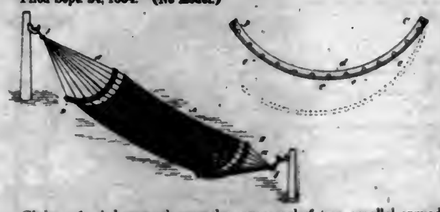


Claim.—1. The herein-described jib-hank, consisting of the neck portion *a*, forwardly-projecting ears B B, with a roller, C, hung between them, eyes *d d*, and the concaved face projections *c c* between said eyes, substantially as shown.

2. In a jib-hank having the neck portion *a*, ears B B, with roller C, the rearwardly-projecting eyes *d d*, with a concaved portion between them, as set forth.

3. In a jib-hank, the combination, with the neck portion *a*, and means for securing the device to the jib, of the forwardly-projecting ears B B, separated at their ends and adapted to receive a roller, substantially as shown.

325,048. HAMMOCK-SPREADER. William E. Brock, Dunellen, N. J. Filed Sept. 24, 1884. (No model.)



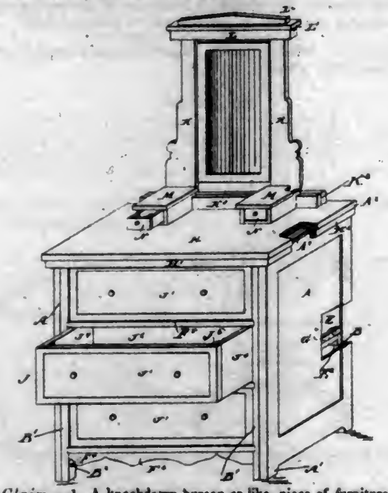
Claim.—1. A hammock-spreader composed of two parallel curved bars placed vertically the one over the other, the upper bar having slots on its under side to receive the suspension-cords, and said bars being hinged together at one end to admit of their being spread apart, and provided with a suitable clasp at their other end for connecting them together after the hammock has been placed thereon, as set forth.

2. In combination with the lower solid bar, *c*, and upper slotted bar, *d*, provided with the bevel *h*, the hinge or pivot, C, constructed as described, for the purpose set forth.

3. In combination with the lower bar, *c*, and upper bar, *d*, provided with the groove *k* and shoulder *i*, the clasp D, constructed as described, for the purpose set forth.

4. In a hammock-spreader, the combination of an upper slotted bar, *d*, a lower solid bar, *c*, and a pivot-hinge, C, and clasp D, both constructed as described, for the purpose set forth.

325,049. KNOCKDOWN FURNITURE. Jos. B. Brolaski, St. Louis, Mo. Filed Oct. 10, 1884. (No model.)



Claim.—1. A knockdown bureau or like piece of furniture provided with a knockdown mirror-frame adapted to be held on the said piece of furniture, substantially as herein shown and described.

2. A knockdown bureau or like piece of furniture provided with a knockdown mirror-frame and with knockdown boxes containing knockdown drawers, substantially as herein shown and described.

3. In a knockdown bureau or like piece of furniture, the combination, with the grooved bottom and top rails, D D', of the intermediate standard, E', having a longitudinal groove in each side edge, and having tongues at the top and bottom, which tongues pass into suitable notches in the top and bottom rails, and of the panel-plates E, held between the upright E' and the end posts of the frame, and between the top and bottom rails, D D', substantially as herein shown and described.

4. In a knockdown bureau or like piece of furniture, the base rail or bar K³, held on the top of the bureau by dovetailed cleats K⁴, secured to the bar K², and passing into notches in the back of the top plate of the bureau, and of a mirror-holding frame held on the said bar, substantially as herein shown and described.

5. The combination, with a knockdown bureau or like piece of furniture, of the bar K², having dovetailed notches K², the standards K, having dovetailed top and bottom ends, and cross-pieces uniting the upper ends of the standards, substantially as herein shown and described.

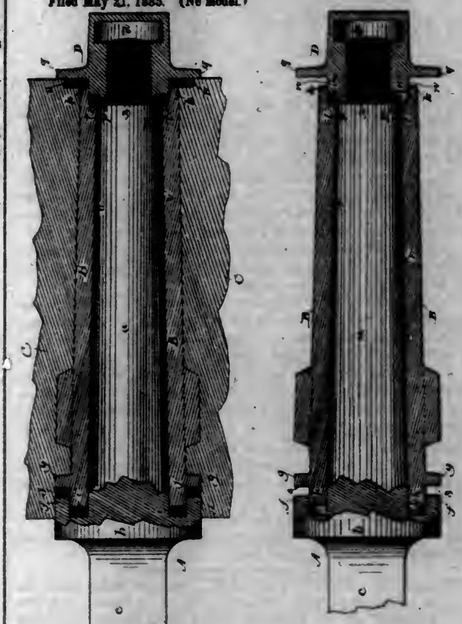
6. The combination, with a knockdown bureau or like piece of furniture, of the bar K², having dovetailed notches K², the standards K, having dovetailed top and bottom ends, the cross-pieces L L', having the dovetailed notches *l l'*, and the ornamental top piece, L², substantially as herein shown and described.

7. The combination, with a knockdown bureau or like piece of furniture, of the bar K², the standards K, the pins *l*², projecting from the back of the standards K at their upper ends, the cross-pieces L L' L², and the hooks *l*² on the top piece, L², substantially as herein shown and described.

8. The combination, with a knockdown bureau or other like piece of furniture, of the bar K², the standards K, the pins *k'*, projecting from the same, and the hooks *k* on the bar K², substantially as herein shown and described.

9. The combination, with a knockdown bureau or other like piece of furniture, of a knockdown mirror-frame held on the same, and the knockdown boxes M, each constructed with a top, M', and two sides, O, held on the top by dovetails and united at their front ends by a dovetailed cross-piece, P, which is held on the top plate of the bureau, substantially as herein shown and described.

325,050. CARRIAGE-AXLE. D. Arthur Brown, Concord, N. H. Filed May 21, 1885. (No model.)



Claim.—1. As an improvement in axles, the box B, formed with an interior shoulder, *l*, and lip *k*, and nut D, formed with flange *q* and differential sleeves *n p*, substantially as specified.

2. The combination, with axle A, box B, formed at its outer end with internal shoulder, *l*, and projecting lip *k*, and nut D, formed with flange *q* and sleeves *n p*, of packing-rings *t w*, arranged relatively to the axle, box, and nut as specified.

325,051. HANGER FOR SHAFTING, PIPES, &c. Frank Cadwallader, Philadelphia, Pa. Filed May 21, 1885. (No model.)



Claim.—1. The sectional yoke C, having sectional collar D, the latter composed of the parts D' D², respectively connected with the sections of the said yoke, in combination with the hanger A, having a head, B, and the loose sleeve E, substantially as and for the purpose set forth.

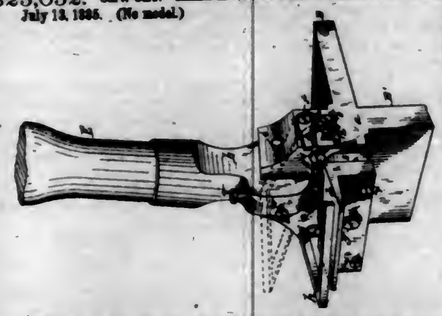
2. The hanger A, having the head a, with a convex side, in combination with the yoke C, having a collar, D, and sleeve E, mounted on said bar, the said yoke C having a shoulder, D^3, and the collar D having a flaring opening, substantially as and for the purpose set forth.

3. A sectional yoke provided with a sectional collar and a coupling-sleeve, in combination with a hanger rod or bar having a head, to which the yoke is clamped and by which it is sustained, substantially as described.

4. A yoke supported on a hanger by means of a ball-and-socket joint, formed by a convex head, B, on the hanger, a shoulder, D^3, of the yoke, and a collar, D, having a flaring opening, substantially as and for the purpose set forth.

325,052. SAW-SET.

HIRAM M. CHAMBERLIN, Waltham, Mass. Filed July 13, 1885. (No model.)



Claim.—1. In a saw-set, the combination, with the base *a*, having a suitable anvil therein, of the vibrating lever *b*, pivoted to said base, and the jaw *c*, adjustable in the direction of its length in a socket in said lever, substantially as set forth.

2. In a saw-set, the combination, with the base *a*, of the saw-rest *d*, adjustable at right angles to the face of the anvil *c*, and vibratorily on the end of the base *a* to change the degree of the incline of its face relative to the face of the anvil, substantially as set forth.

3. In a saw-set, the combination, with the base *a*, of the saw-rest *d*, having its face inclined and adjustable at right angles to the face of the anvil *c*, substantially as set forth.

4. In a saw-set, the combination, with the base *a*, of the saw-rest *d*, adjustable at right angles to the face of the anvil *c*, and the steadying-yoke *h*, pivoted to said base and adjustable relative to the inclined face of said saw-rest, substantially as set forth.

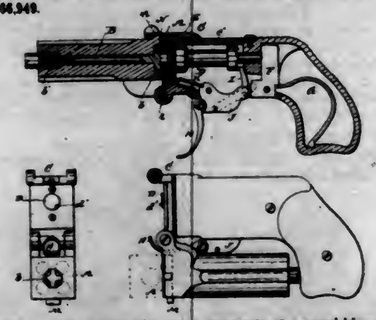
5. In combination, the base *a*, having a suitable anvil therein, the lever *b*, pivoted to the base, the jaw *c*, adjustably secured in said lever opposite the anvil, the saw-rest *d*, adjustably attached to the base *a*, and the steadying-yoke *h*, pivoted to the latter and adjustable relative to the face of said rest, substantially as set forth.

6. In a saw-set, the combination, with the tooth-setting jaw thereof, of the gage *o*, adjustable toward and from the anvil, substantially as set forth.

7. The combination, with the base *a*, provided with the anvil *c*, of the vibratory lever *b*, having the jaw *c* attached thereto, the gage *o*, and the screw *n*, substantially as set forth.

325,053. REPEATING FIRE-ARM.

ATHANASE CHUCHU, Bahia, Brazil. Filed Jan. 15, 1885. (No model.) Patented in France July 6, 1883, No. 156,457, and Apr. 2, 1884, No. 161,814, and in Belgium July 6, 1883 No. 66,949.

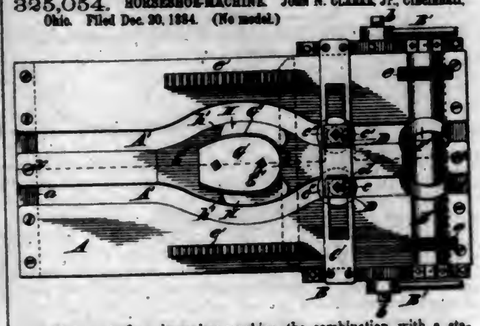


Claim.—1. The combination, with the stock, of a barrel hinged to the same, and a plate hinged on the breech end of the barrel and adapted to cover the said breech end and prevent the cartridges from falling out, which plate has a single aperture through which the firing-pin can strike the barrel, substantially as herein shown and described.

2. The combination, with the stock, of united barrels hinged to the same and adapted to be folded against the front of the stock, and of a firing-pin arranged to revolve on its longitudinal axis within the stock and operated from the trigger, substantially as herein shown and described.

325,054. HORSESHOE-MACHINE.

JOHN N. CLARKE, Jr., Cincinnati, Ohio. Filed Dec. 20, 1884. (No model.)



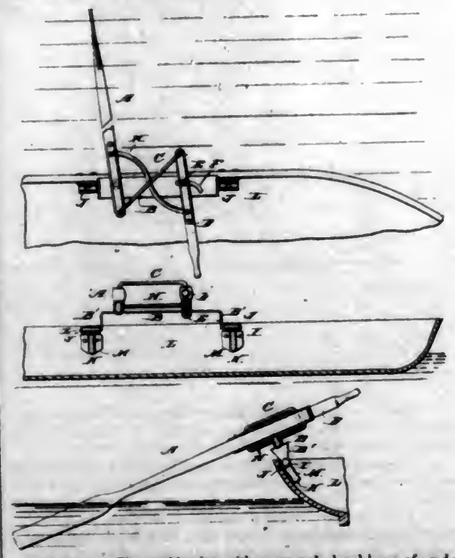
Claim.—1. In a horseshoe-machine, the combination, with a stationary base-plate, A, having the irregular slots or ways A' A', the die G, mounted thereon intermediate the slots A', and the rack-teeth *e' e'*, of a reciprocating carriage, B, provided with slotted transverse bars C C', bending-rollers *c c' c''*, suspended from and operating laterally in the slots of said bars C C' by means of said ways A', and the roller E, having pinions *e e*, and squeezing-die F, all constructed and adapted to operate substantially as herein set forth.

2. The combination, with the shaping-die G, having recess or channel M and calk-cavities *m m'*, of the dotters or punchers 1 2 3 4, arranged and adapted to operate in connection with a squeezing-die, F, substantially as and for the purpose specified.

3. In a horseshoe-machine, the dotters or punchers 1 2 3 4, having their respective points constructed at varying angles to form simultaneously and uniformly the nail-holes in the shoe to suit the varying angles in the shape of the horse's hoof, substantially as herein set forth.

325,055. BOW-FACING OAR.

MARCUS M. CLARK, Vermont, Ill. Filed June 9, 1885. (No model.)



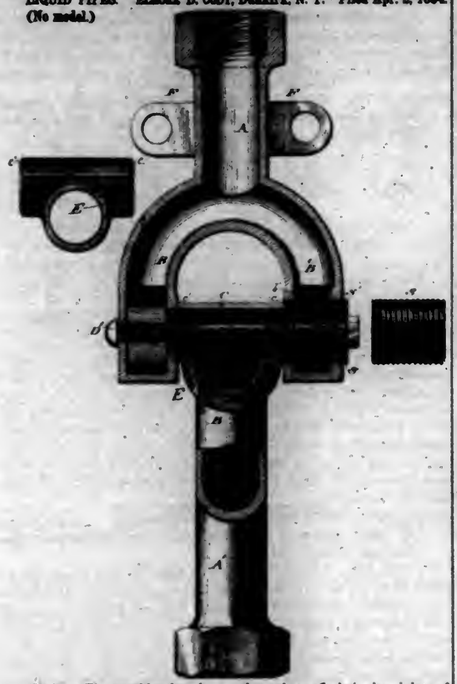
Claim.—1. The combination, with an oar and a hand-lever, of a rod or bar on which they are pivoted at the side of the boat, and of cross-rods connecting the oar and lever at different sides of the fulcrums of said oar and lever, one end of each rod being secured to the oar, and the other end of each rod being secured to the lever, substantially as herein shown and described.

2. The combination, with an oar and a lever, of a bar or plate forming a curved guide for the fulcrum of the lever, and of crossed rods connecting the oar and lever at opposite sides of the fulcrums, substantially as herein shown and described.

3. The combination, with an oar and a lever, of a plate or rod on which they are mounted, crossed rods connecting the oar and lever at opposite sides of their fulcrums, and of sockets on the boat open at their tops, for holding the plate or rod detachably to the boat, substantially as herein shown and described.

325,056. UNIVERSAL JOINT FOR STEAM, WATER, AND OTHER LIQUID PIPES.

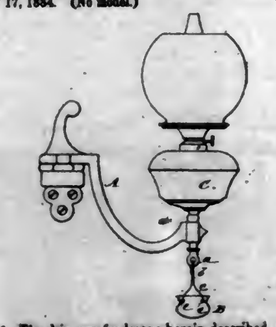
ELMORE D. CODY, Dunkirk, N. Y. Filed Apr. 2, 1884. (No model.)



Claim.—The combination, in a universal or gimbal pipe-joint, of the U-shaped sections, B B' and B B', with the offset crossed pipes C E, the adjustable screw-plugs S S, and the two pivoted bolts D D', substantially as and for the purpose set forth.

325,057. DRIP-CUP FOR LAMPS.

EDWARD A. CONDIT, Hoboken, N. J. Filed May 17, 1884. (No model.)



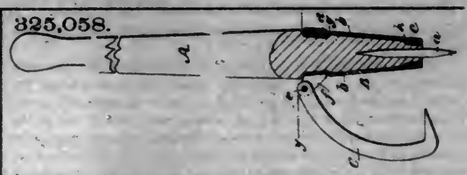
Claim.—1. The drip-cup for lamps herein described, consisting, essentially, of the cup B, internal staples, *c c*, and bail *c*, substantially as set forth.

2. The combination, with the lamp-bracket provided with loop *a* below the lamp, of the drip-cup B, internal staples, *c c*, bail *c*, and chain *b*, connecting the bail and loop, substantially as set forth.

325,058. CANT-HOOK.

HARRY C. CRAWFORD and EDWIN V. MUNDY, Duluth, Minn. Filed June 6, 1885. (No model.)





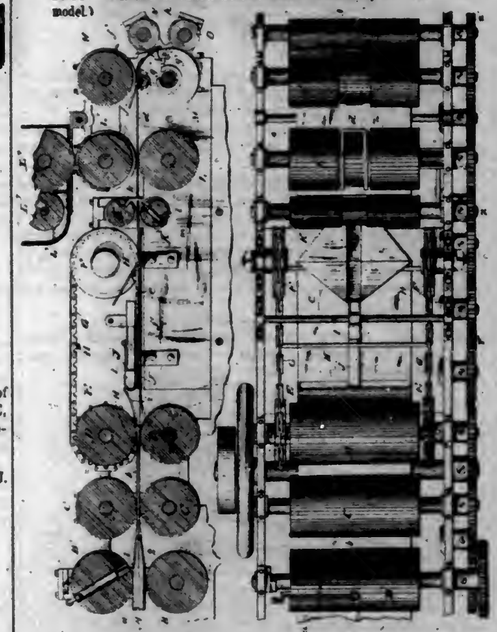
Claim.—1. In a cant-hook, the combination of the socket formed of two independent longitudinal sections, a ferrule for securing the sections together, and the pivoted hook, substantially as set forth.

2. The combination, with the socket B, formed of longitudinally-divided sections *b*, the ferrule or ring *c*, securing the lower ends of said sections, the clasp-ring *d* at the upper ends of said sections, the bolt *e*, and the hook C, substantially as set forth.

3. A cant-hook consisting of the handle A, the longitudinally-divided socket B, having upper and lower depressions forming shoulders *g h*, the clasp-ring *d*, fitting in the upper depression, the bolt *e*, connecting the ends of said ring, the hook C, pivoted on said bolt, and the ring or ferrule *c* in the lower depression, substantially as set forth.

325,059. MACHINERY FOR MAKING SATCHEL-BOTTOM PAPER BAGS.

WILLIAM C. CROSS, Boston, Mass. Filed May 21, 1885. (No model.)



Claim.—1. The combination, with the guide-finger and the means for opening the mouth of the blank and directing the upper ply above or upon the guide-finger, of a plate-knife folder rotating or moving continuously in one direction and arranged to meet the upper ply at a point where its plane of motion is substantially parallel with the ply, substantially as and for the purposes hereinbefore set forth.

2. The combination, with the guide-finger, the opener for the mouth of the blank, and the rolls in advance of which the mouth of the blank is opened, of a plate-knife folder continuously moving or rotating in one direction, and arranged, substantially as described, to travel back of said rolls, and thence to pass forward between them along with the blank, substantially as and for the purposes hereinbefore set forth.

3. The combination of the guide-finger, the spring-opener, the rolls D F, the plate-knife folders, and the chains or bands carrying the same, these members being arranged together for joint operation, substantially as hereinbefore set forth.

4. The guide-finger formed or provided on its under face with a spring or yielding pressure-pad arranged and operating to exert a yielding pressure upon the diamond fold as the latter is being formed, substantially as and for the purpose hereinbefore set forth.

5. The combination, with the diamond-fold-forming mechanism, of the knife-roll K' and its fellow roll, the reciprocating knife carried by said knife-roll, the cam for operating said knife, and means, substantially as described, for moving said cam into and out of operative position

relatively to said knife at the times and in the manner substantially as set forth.

6. The combination of the diamond-fold mechanism, the paste-rolls, the knife-roll and its fellow roll located between the paste-rolls and the diamond-fold mechanism, and made half the size of the paste-rolls, mechanism, substantially as described, for rotating both pairs of rolls at the same peripheral speed, the cam for operating said knife, and means, substantially as described, for moving the cam into and out of operative position relatively to the knife, at the times and in the manner substantially as hereinbefore set forth.

7. The combination, with the blade and nipper carrying rolls for making the second and third folds, of the power-driven wiper-roll O, for laying the final fold, supported in spring or yielding bearings and rotated at the same peripheral speed with the blade and nipper carrying rolls, and provided with cam ledges or flanges which act to intermittently move it outwardly from the said rolls, at the time and in the manner substantially as hereinbefore set forth.

325,060. HOLDER FOR PENS AND PENCILS. Frank G. Davison, Jamaica, assignor to Asa L. Shipman & Sons, New York, N. Y. Filed Mar. 31, 1885. (No model.)



Claim.—1. A holder for pencils, pens, &c., consisting of a plate having side pieces projecting therefrom at its edges and a rubber band extending across the open space between said side pieces.

2. A holder for pencils, pens, &c., consisting of a plate having lateral wings converging toward the bottom and a rubber band encircling the same, substantially as described.

3. The combination, substantially as hereinbefore set forth, of the plate A, having wings or side pieces, a' and a^2, the band B, and the pins c' and c^2, for securing the same, substantially as described.

4. A holder for pencils, pens, &c., consisting of the combination, substantially as hereinbefore set forth, of a supporting-plate consisting of a central portion having two lateral projections of greater width at one edge than the other and converging toward the narrower portions and an elastic band encircling the same.

325,061. PLANING AND SLOTTING MACHINE. Charles K. Dawes, Trenton, N. J., assignor of one-half to Theodore H. Dibble, same place. Filed Sept. 27, 1883. (No model.)



Claim.—1. In a planing-machine, in combination with a reciprocating bed, a cutter-bar reciprocated by said bed for cutting the work secured to a chuck, substantially as described and set forth.

2. In a planing-machine, in combination with a reciprocating bed, a cutter-bar adjustably set in radial guides journaled in standards secured to the bed and reciprocated by said bed, for cutting the work secured to a chuck, substantially as described and set forth.

3. In a planing-machine, in combination with reciprocating cutting mechanism, a sliding feed-block provided with a face plate or chuck for securing the work thereto and operated by said feed-block, substantially as and for the purposes set forth.

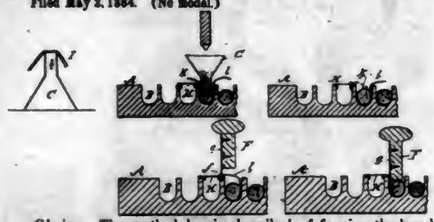
4. In a planing-machine, in combination with a cutter-head or sliding feed-block and operated thereby, a face plate or chuck for securing the work thereto, a bearing bar or rest, as P, for said chuck, and reciprocating cutting mechanism, substantially as and for the purposes set forth.

5. In a planing-machine, a face-plate or chuck for securing the work thereto, journaled on a cutter-head or sliding feed-block, and gearing for imparting rotary motion to said chuck, in combination with reciprocating cutting mechanism, substantially as and for the purposes set forth.

6. In a planing-machine, a rotary face plate or chuck secured to a cutter-head or sliding feed-block and provided with a slot or opening therethrough, in combination with a reciprocating bed and a cutter-bar passing through said slot and reciprocated by said bed, whereby rotary feed motion may be imparted to said chuck without interfering with the operation of the cutter-bar upon the work secured to said chuck, substantially as set forth.

7. In a planing-machine, in combination with a reciprocating bed and reciprocated thereby, a cutter-bar provided with a cutting-tool for cutting the work to be operated upon, and with a steadying-rest, as P, between its end supports, substantially as and for the purposes set forth.

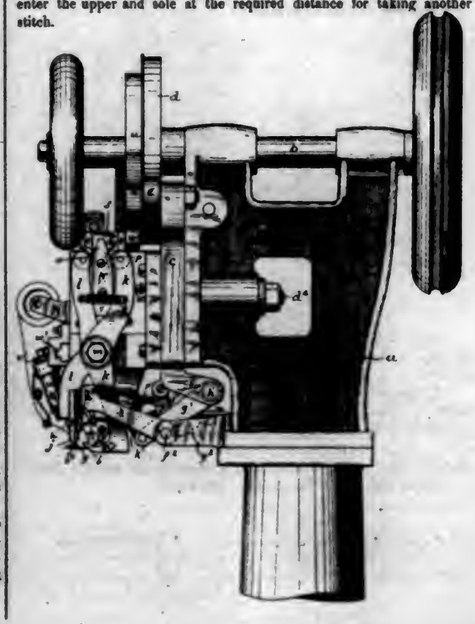
325,062. METHOD OF MANUFACTURING CIGARS. Nicolaus Doetsch, Detroit, Mich., assignor of one-half to John B. Klee, same place. Filed May 2, 1884. (No model.)



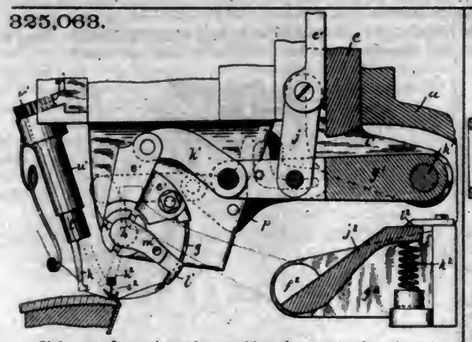
Claim.—The method herein described of forming the bunch in manufacturing cigars, consisting of the following steps: first, charging a cigar-mold with a binder and a measured amount of filler, the ends of the binder projecting unequally; secondly, lapping the projecting ends of the binder over the filler, with the longer end on the outside; and, thirdly, completing the lap while the bunch is still in said mold by forcing the outer end of the binder between the cigar and the side of the mold, whereby the bunch is completely wrapped in a single mold, substantially as described.

325,063. BOOT AND SHOE SEWING MACHINE. Andrew Eppler, Jr., Boston, assignor of one-half to Edwin Adams, Newburyport, Mass. Filed Mar. 2, 1885. (No model.)

Brief.—The boot or shoe is placed upon the last wrong side out, and held by the hands of the operator, who commences by inserting the channel-gage in the channel of the sole. The back gage is then brought into position to support the edge of the sole. The needle penetrates the edge of the upper and the base of the channel-flap, the looper rotates and places the thread against the barbed side and within the recess of the needle, and thereupon the head swings upon its pivot, carrying the needle, back gage, channel-gage, and looper with it, thus giving the shoe its proper feed movement, the sticker being at this time raised so that it does not touch the sole. After the needle has withdrawn in the forming a loop, the gages separate, releasing the sole, and the sticker is depressed to hold the soles; whereupon the head swings backwardly to enter the upper and sole at the required distance for taking another stitch.



325,068.



Claim.—1. In a sole-sewing machine, the combination of a swinging head, mechanism, substantially as described, to operate it, stitch-forming mechanism, substantially as described, including a curved needle, a back gage and a channel-gage, all supported by and moving with said head, and operating devices, substantially as described, for the stitch-forming mechanism, and operating devices, substantially as described, whereby said gages are caused to grasp the work when the needle is projected and during the feeding movement of the head, and to release the work during the backward movement of the head, as set forth.

2. In a sole-sewing machine, the combination of a swinging head, mechanism to operate it, stitch-forming mechanism, substantially as described, a back gage and a channel-gage, all supported by and moving with the head, operating mechanism, substantially as described, for the stitch-forming mechanism, operating mechanism, substantially as described, whereby said gages are caused to grasp the work during the feeding movement of the head and to release the work during the backward movement of the head, and a pointed arresting device or sticker, and mechanism, substantially as described, to operate it, whereby the sole is held during the backward movement of the head, as set forth.

3. In a sole-sewing machine, the combination of a swinging head, mechanism to operate it, stitch-forming mechanism, substantially as described, including a curved needle supported by and moving with the head, mechanism, substantially as described, to move said head forward while the needle is projected and backward while the needle is withdrawn, and a pointed sticker or arresting device and mechanism to operate it, whereby the sticker is removed from the sole during the forward movement of the head and engaged with the sole during the backward movement of the head, as set forth.

4. The combination of the swinging head, its operating mechanism, the stitch-forming mechanism supported by the head, the channel and back gages, also supported by the head, operating mechanism, substantially as described, for said gages, the rock-shaft journaled in the fixed frame of the machine, the sticker-carrying arm attached to the rock-shaft, and the devices whereby said rock-shaft is oscillated to raise the sticker while the head is moving forward and to lower the sticker while the head is moving backward, as set forth.

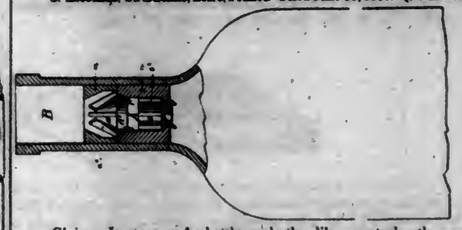
5. The combination of the swinging head, mechanism to operate it, the stitch-forming mechanism supported by and moving with the head, the levers k l, pivoted to said head and having the gages i j at their lower ends, and means, substantially as described, whereby said levers are oscillated and their gages caused to alternately grasp and release the work, as set forth.

6. The combination of the swinging head, mechanism to operate it, the stitch-forming mechanism supported by and moving with the head, the gages i j, the levers k l, supporting said gages and pivoted to the head, and the reciprocating wedge-block between the upper ends of said levers, and the spring which presses said ends against the wedge-block, whereby the levers are caused to approach and recede from each other, as set forth.

7. The combination of the supporting-frame, the driving-shaft having the cams d u journaled in said frame, the swinging head pivoted to the frame, the curved needle, the looper, the cast-off, and the channel and back gages, all supported by and moving with the head, and devices, substantially as described, whereby motion is communicated to said needle, looper, cast-off, and gages from the cams d u, as set forth.

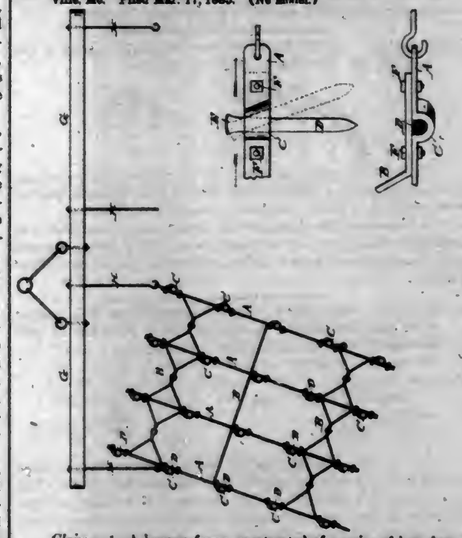
8. The combination of the supporting-frame, the driving-shaft having the cams d u, the head c, pivoted to the frame and having a roll, e, and a spring, f, which presses said roll against the cam d, the slide e' in the head, engaged with a cam-groove in the cam d, the curved needle, and the cast-off supported by and moving with the head, the devices whereby the movements of the slide e' are caused to oscillate said needle and cast-off, the channel-gage, the back gage, and their pivoted operating-levers supported by the head, the looper also supported by the head, the cam u on the driving-shaft having a cam-groove, d^2, and intermediate devices, substantially as described, whereby motion is communicated from the cam u to said gages and looper, as set forth.

325,064. BOTTLE-STOPPER. Jean M. Escorsa and Marguerite L. S. Escorsa, St. Etienne, Loire, France. Filed June 18, 1885. (No model.)



Claim.—In stoppers for bottles and other like receptacles, the combination of the pieces m and n with the valves a and e, arranged one above the other, and provided with suitable guiding projections, a^2 and e^2, and resting in seats i and o, respectively, substantially as set forth.

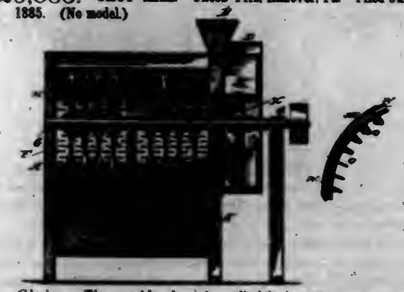
325,065. HARROW. Conrad Fischer and Louis Grother, Brownsville, Md. Filed Mar. 17, 1885. (No model.)



Claim.—1. A harrow-frame constructed of a series of bars formed with open-sided sockets to receive the teeth, in combination with the braces, with their ends bent at right angles and closing the open sides of said sockets, said sockets increasing in width from the top to the bottom, substantially as shown and described, and for the purpose set forth.

2. In a harrow, the combination, with the bars A, pressed or bent to form sockets C, of the brace-bars B, having their ends bent and bolted to the sides of the bars A by bolts F, to close the sockets C, and the teeth D, held in the sockets C, substantially as herein shown and described.

325,066. SMUT-MILL. Jacob Fitz, Hanover, Pa. Filed June 24, 1885. (No model.)



Claim.—The combination of a cylindrical perforated case in sections, a flanged radially-bladed ring fixed between adjacent sections, and a series of segmental wheels secured within the case on a shaft journaled concentrically therewith, the sections of the case being secured upon the ring at each side of the flange thereof, and the body and blades of the ring extending inward from the circumference of the case, substantially as shown and described.

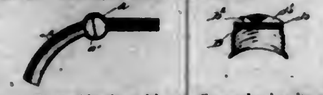
325,067. BANJO. Hamlet K. Fobbert, New Haven, Conn., assignor of two-thirds to William H. Beecher and Edwd. G. Mansfield, same place. Filed Oct. 23, 1882. Renewed Feb. 3, 1885. (No model.)



Claim.—1. A banjo-rim constructed from a strip of bent wood, having its outer surface transversely channeled and the channels filled with wood blocks, the grain of which runs transversely to the grain of the bent part of the rim, substantially as described.

2. In a banjo, the combination of the plate C, upon the inside of the rim, constructed with a tail-piece, D, extending through the rim and into the arm, and the screw E, having a conical body, *e*, the screw set-screwed into a hole in the arm and into the tail-piece D, the conical part of the screw taking a bearing in the arm toward the rim and thereby drawing the rim and arm together, substantially as described.

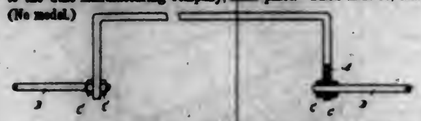
325,068. ATTACHMENT FOR COAL-OIL CANS. Abiel E. Fox, Leadville, Colo. Filed Apr. 12, 1885. (No model.)



Claim.—1. In combination with an oil-can having its screw-cap provided with a screen and a movable cover, a spout having a spherical enlargement and a screen, substantially as shown and described.

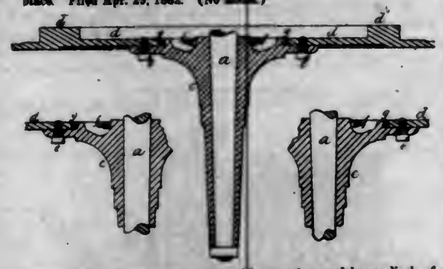
2. In combination with an oil-can having its spout provided with a spherical enlargement and a screen, the screw-cap having a screen and a movable cover pivoted thereon, substantially as shown and described.

325,069. SULKY-PLOW. Augustus J. Gale, Albion, Mich., assignor to the Gale Manufacturing Company, same place. Filed Mar. 18, 1885. (No model.)



Claim.—The combination, with the frame A, having perforated vertical arms, and with the spindles B, having threaded portions which pass through said perforations, of the two nuts C C, arranged one upon either side of each arm and acting to clamp the same between them, while the outer nut serves as a hub-bearing, as set forth.

325,070. SECURING THE PARTS OF TRANSITS AND OTHER INSTRUMENTS OF PRECISION. Frederick W. Gardam, Brooklyn, N. Y., assignor of two-thirds to William Gardam and Joseph Gardam, same place. Filed Apr. 29, 1882. (No model.)

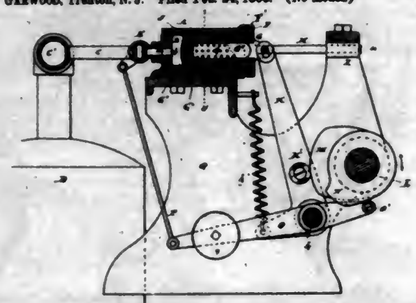


Claim.—1. The combination, with a socket and lower limb of a transit, of a plastic material arranged in an annular recess formed between adjacent parts of the same, substantially as and for the purpose hereinbefore set forth.

2. The combination, with the upper limb, *b*, and verniers *k k*, formed and arranged, as described, with annular recesses between them, of the plastic material holding and retention device *l*, substantially as and for the purpose set forth.

3. As an improved means for holding the socket c and lower limb, *d*, of a transit instrument in adjustment, the combination therewith of the plastic material *g*, placed in the annular recess having undercut sides formed by the inner edge of the lower limb and the flange of the socket through which the adjusting-screws *f f* pass, substantially as and for the purpose set forth.

325,071. MACHINE FOR MAKING HEEL-STIFFENERS. Henry H. Garwood, Trenton, N. J. Filed Feb. 24, 1885. (No model.)



Claim.—1. In a machine for forming leather into various shapes, the combination of a receiver, into which compressed air, gas, or vapor is forced, and a former upon which the leather is pressed, the former fitting into the receiver, whereby the leather may be caused to conform to the shape of the former by means of the action of the compressed air, and suitable guides by which they may be made to work together, substantially as and for the purpose specified.

2. In a machine for forming leather into various shapes, the combination of a receiver, into which compressed air, gas, or vapor is forced, and a former upon which the leather is pressed, the former fitting into the receiver and forming an air-tight joint at the open end of said receiver, and means for operating the same, substantially as and for the purpose specified.

3. In a machine for forming leather into various shapes, the combination of a receiver, into which compressed air, gas, or vapor is forced, a former upon which the leather is pressed, and a flexible diaphragm to prevent the direct contact of the compressed air and leather to be formed, substantially as and for the purpose specified.

4. In a machine for forming leather into various shapes, the combination of a receiver, into which compressed air, gas, or vapor is forced, and a former upon which the leather is pressed, the former fitting into the receiver and forming an air-tight joint at the open end of said receiver, and provided with apertures through its walls, and means for operating the same, substantially as and for the purpose specified.

5. In a machine for forming leather into various shapes, the combination of a receiver and means for operating the same, into which compressed air, gas, or vapor is forced, a former upon which the leather is pressed, and mechanism, substantially as set forth, to reciprocate said former, substantially as and for the purpose specified.

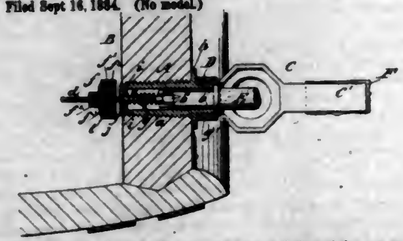
6. In a machine for forming leather into various shapes, the combination of a receiver, into which compressed air, gas, or vapor is forced, a former upon which the leather is pressed, mechanism, substantially as set forth, to reciprocate said former, and automatic-valve devices to control the flow of compressed air, gas, or vapor into said receiver, substantially as and for the purpose specified.

7. In a machine for forming leather into various shapes, the combination of a receiver, into which compressed air, gas, or vapor is forced, a former upon which the leather is pressed, and a valve to control the flow of air, gas, or vapor into said receiver, substantially as and for the purpose specified.

8. The combination of receiver A, having chamber B, with former G, having groove G^2, air-pipe C, and valve E, and suitable means for operating the same, substantially as and for the purpose specified.

9. The combination of receiver A, having chamber B, pipe C, reservoir D, valve E, former G, lever K, cams M and N, lever O, and rod P, substantially as and for the purpose specified.

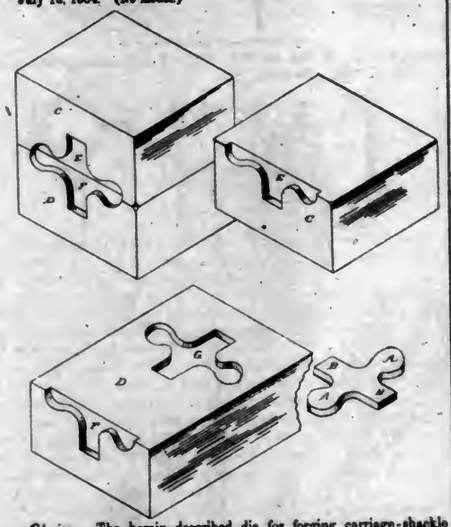
325,072. AUTOMATIC TAP. Adam J. Geyer, Jr., Rahway, N. J. Filed Sept 16, 1884. (No model.)



Claim.—1. An improved automatic tap consisting of the externally-screw-threaded outer shell, *a*, provided with the flange *h* at its outer end, and having a series of apertures, *i*, at its inner end, the sliding inner shell, *b*, having the slotted end *b'*, the spindle *d*, secured to the slotted end of the inner shell and projecting through the outer shell, the spring *e* on the stem *d*, with its ends resting against the inner and outer surfaces of the inner and outer shells, respectively, and the stopper *f*, adjustably secured on the said stem outside of the outer shell, substantially as herein shown and described.

2. The combination, with the outer shell, *a*, having apertures *i* in its inner end, and the spring-pressed spindle *d*, projecting through the outer shell, of the stopper *f*, consisting of the block *f'*, having the recess *f*, the nuts f^3 f^3, and the washer *l*, substantially as herein shown and described.

325,073. DIE FOR FORGING CARRIAGE-SHACKLE BLANKS. P. Gillen, Southington, Conn., assignor to Oscar C. Ebert, same place. Filed July 18, 1884. (No model.)



Claim.—The herein-described die for forging carriage-shackle blanks, consisting of the two parts, each constructed with like cavities, E F, in a vertical plane, the cavity open at one end, and one part with a cavity, G, on its horizontal face, the corresponding face of the other part flat, substantially as described.

325,074. BLOWING-ENGINE VALVE. Fred. W. Gordon, Pittsburg, assignor to Gordon, Strobel & Laureau, Philadelphia, Pa. Filed May 15, 1884. (No model.)

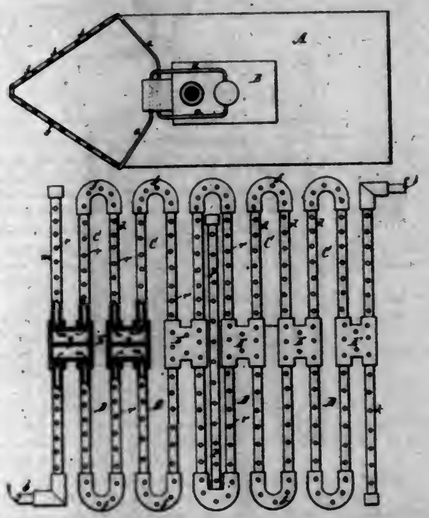


Claim.—1. In a blowing-engine valve, a valve-holding plate provided with an opening for a valve-seat, a disk-like seat disposed within such opening and removable from the outside of the plate, a disk-like valve engaging the face of the seat, a spider-like cage with its legs resting upon the side of the plate opposite to the side from which the seat is inserted, and a bolt passing through the cage and seat and serving to hold the seat in the opening of the plate and the cage against the face of the plate, combined substantially as and for the purpose set forth.

2. In a blowing-engine valve, a plate provided with a grated valve-seat, a spider-like cage with its legs resting upon said plate around said seat, a bolt passing through the cage and seat, and a disk-like valve engaging the face of the said seat, and engaging with its periphery the interior surface of the legs of the cage, and adapted to play between the roof of the cage and the seat, combined substantially as and for the purpose set forth.

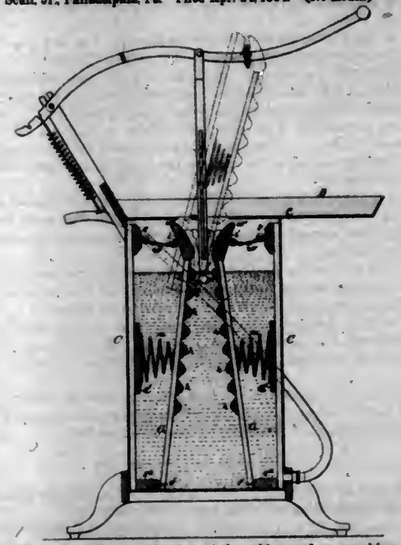
3. In a blowing-engine valve, a plate having a circular opening, a disk-like seat engaging such opening from one side of the plate, a cage with its legs resting upon the other side of the plate around said opening, a bolt engaging the cage and seat and serving to clamp the plate between them, and a disk-like valve playing upon the seat within the cage, combined substantially as and for the purpose set forth.

325,075. SNOW-PLOW. Ezekiel Hand, Rochester, assignor of two-thirds to Hugh Hammond, Jr., Phelps, and Lyman P. Johnson, Seneca Castle, N. Y. Filed Apr. 13, 1885. (No model.)



Claim.—In a snow-plow, the combination of two separate and distinct sets of steam-pipes attached to the front of the plow and provided with nozzles for the ejection of superheated steam, and the stand-pipes *k m p*, two at the sides and one in the center, as shown and described, and for the purpose specified.

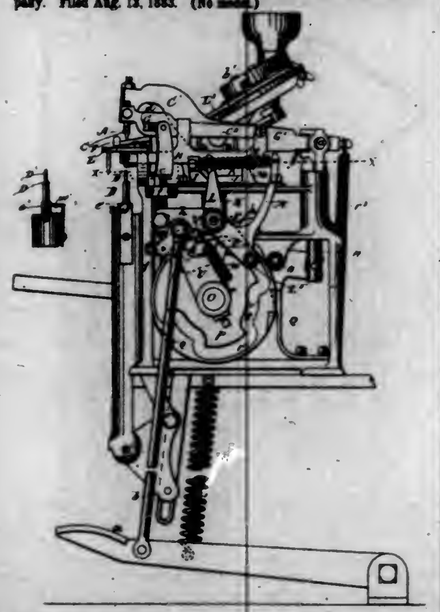
325,076. WASHING-MACHINE. Joseph O. Hardwick, Colorado City, Colo., assignor to Edwin S. Bumstead and John J. Carson, Colorado Springs, Biddle Reeves and Samuel Alsop, Jr., Denver, Colo., and David Scull, Jr., Philadelphia, Pa. Filed Apr. 24, 1884. (No model.)



Claim.—1. The combination of the rubber and removable rubber-frames with a wash-tub having a top, *c*, forming a permanent part of the tub, and provided with a contracted opening, *n*, of a size to permit the withdrawal of the rubber and rubber-frames, substantially as set forth.

2. The combination of a wash-tub having a top, *c*, forming a permanent part of the tub, and provided with a contracted opening, *n*, with a rubber and rubber-frames, having their upper ends free to be contracted to withdraw said frames from the tub through the opening *n*, substantially as described.

325,077. EYELETING-MACHINE. Lorenzo D. Hawkins, Stoneham, Mass., assignor to the Combination Power Punch Eyeleting Machine Company. Filed Aug. 12, 1883. (No model.)



Claim.—1. In an eyeleting-machine, the combination, with the ponching, feeding, eyelet inserting and upsetting, and work-holding devices, of a treadle adapted to be operated by foot-power, a rock-shaft, intermediate devices, substantially as described, whereby the rock-shaft is oscillated by the movements of the treadle, and mechanism whereby said punching, feeding, eyelet inserting and upsetting, and work-holding devices are successively operated by the oscillations of the rock-shaft, as set forth.

2. In an eyeleting-machine, the combination, with the punching, feeding, eyelet inserting and upsetting and work-holding devices, of the rock-shaft provided with the cam T, the disk P, having cam-grooves journaled on said shaft, mechanism, substantially as described, whereby said shaft is oscillated and the cam-grooved disk is intermittently rotated, and intermediate mechanism, substantially as described, through which said rock-shaft, its cam, and the cam-grooved disk act to operate said punching, feeding, eyelet inserting and upsetting, and work-holding devices, as set forth.

3. In an eyeleting-machine, the combination, with the work punching and feeding mechanism and eyelet-supply trough, of an eyelet-transfer finger and a transfer-finger stop, all arranged to co-operate substantially as described.

4. In an eyeleting-machine, the combination, with an eyelet-lifter, of a treadle mechanism and connections therefrom to the lifter, substantiall as described, whereby said lifter may be arrested, as set forth.

5. In an eyeleting-machine, the combination, with the eyelet-lifter provided with a lateral arm, i^3, of the sliding plate n' and means, substantially as described, for engaging said plate with the arm, as set forth.

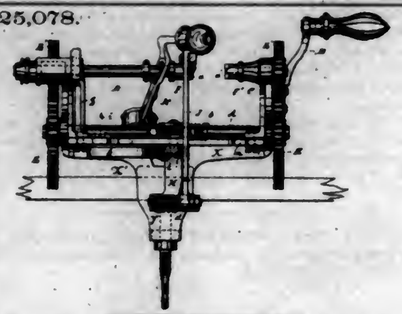
6. In combination with the eyelet-box, the slide or standard a', made in two sections, 2 3, the sections being tongued and grooved together and detachably secured by a set-screw, as set forth.

325,078. POTATO-PEELING MACHINE. Carl P. Herboe, Reudnitz, near Leipsic, Germany. Filed Aug. 23, 1884. (Model.)

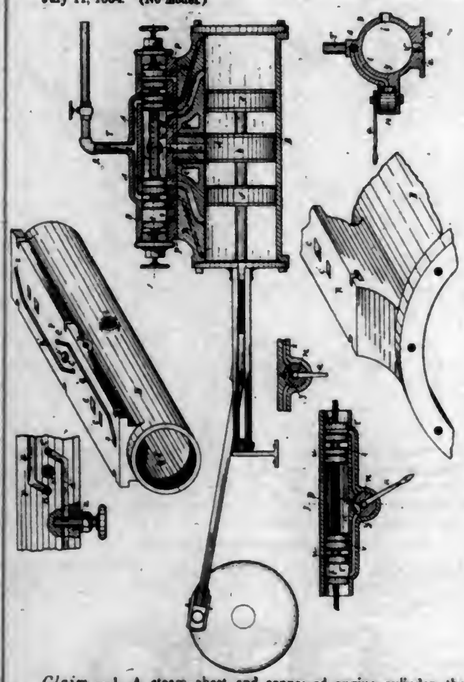
Claim.—1. In a potato-peeling machine, the combination of the driving-shaft A, provided with teeth *b*, forming a screw-thread, wheels E E and E' E', shafts B and C, provided with heads F F', to which the potato is attached, lever H, with segment G, knife-lever J, with peeling-knife *f* and spring *d*, and spring-lever K, the whole being arranged to operate in the manner and for the purpose substantially as described.

2. In combination with the frame X, the plate X', having pins *i*, spring *k*, lever *g*, lever H, turning on center *n*, attached to the plate X', spring *l*, projection *m*, and knife-lever J, substantially as and for the purpose described.

325,078.



325,079. STEAM-ENGINE. Wm. E. Hill, Kalamazoo, Mich. Filed July 11, 1884. (No model.)



Claim.—1. A steam-chest and connected engine-cylinder, the former having an induction-port each side of the longitudinal center, and a central main exhaust-port, the latter having a main exhaust-port leading centrally into the steam-chest, and both having communicating ports, as follows: an exhaust-port for each end of the steam-chest, one leading from the right-hand end to the central portion of the cylinder at the left of the cylinder main exhaust-port, the other leading from the other end of the chest to the right of said main exhaust, a cylinder exhaust-port leading from each end of the cylinder into the central portion of the steam-chest, and a cylinder induction-port leading from the steam-chest into each end of the cylinder, in combination with valve-pistons in the chest and the cylinder arranged to open and close said communicating ports, and the valve-pistons in the chest being also arranged to register the steam-chest and cylinder induction-ports, all substantially as set forth.

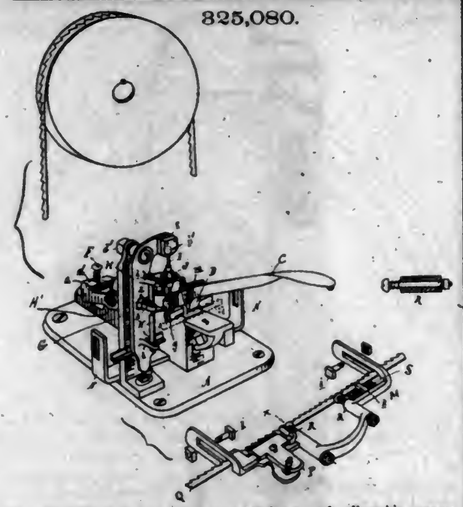
2. A steam-chest having a steam-actuated valve therein and provided at the ends with adjustable head-blocks to govern the longitudinal size of the interior of the chest, for the object stated, substantially as set forth.

3. A steam-chest having a steam-actuated valve therein, a passage leading from the main induction-port and branching into each end of the chest, and a one-way plug at the juncture of said passage and branches, for the object stated, all substantially as set forth.

325,080. FEED MECHANISM FOR SAW-SETS. Hiram H. Hitchcock, Detroit, Mich. Filed Oct. 22, 1884. (No model.)

Claim.—1. In a saw-setting mechanism, an oscillating gate carrying a tooth-engaging pawl, an operating-lever, and adjustable connections between said lever and gate, whereby the throw of the pawl is regulated at will to feed the saw, as set forth.

325,080.



2. The combination, with a bifurcated lever, C, carrying the setting device between its arms, and pivoted as shown, of the gate H, screw F, nut *c*, and adjustable connecting-rod I, whereby the length of stroke may be adjusted in either direction, as set forth.

3. The combination, with the gate H, having ball-socket *b'*, and the lever C, having socket *g*, of the connecting-rod I, made in two parts, and the adjusting turn-buckle J, as and for the purposes set forth.

4. In a saw-setting mechanism, as described, the oscillating gate H, having horizontal lugs A, with vertical slots, in combination with the pawl K, recessed as shown, and the spring L, operating within said recess and against the pawl, to hold it in the outer portions of the slots with freedom to move, as set forth.

5. In combination with a saw-set having an adjustable lever, an oscillating gate connected with said lever by means of an adjustable connecting-rod, as I, and a pawl, K, carried by said gate, substantially as and for the purposes described.

6. In combination with a saw-set having a feeding mechanism attached thereto, an adjustable yoke, as M, having a spring-clamp, P, and spring-guides R S, for holding the saw and keeping it in position, the parts being constructed and operating substantially as and for the purposes specified.

7. In a saw-set, the combination of the lever C, connecting-rod I, vibrating gate H, pawl K, and yoke-guide M, the parts being constructed and operating substantially as and for the purposes set forth.

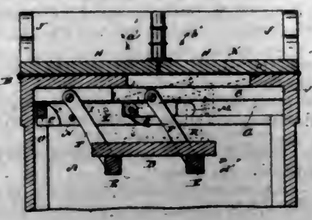
8. In a saw-set having a feeding mechanism attached thereto, the slotted standards N, in combination with the yoke M, having open slotted ends, and the bolts *i*, whereby such standards and yoke are removably and adjustably secured together, substantially as and for the purposes described.

9. In a saw-set having feeding mechanism attached thereto, the gate H, having projecting and slotted guides *h*, in combination with the pawl K and spring L, substantially as and for the purposes specified.

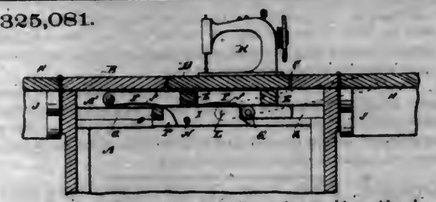
10. In combination with a saw-set having feed mechanism attached thereto, the yoke M, having a spring-clamp, P, substantially as described.

11. In combination with a saw-set having feed mechanism attached thereto, the yoke M, having one or more spring-guides, R and S, substantially as specified.

325,081. SEWING-MACHINE CABINET. William H. Hitchcock, Peru, Ind. Filed Feb. 12, 1885. (No model.)



325,081.



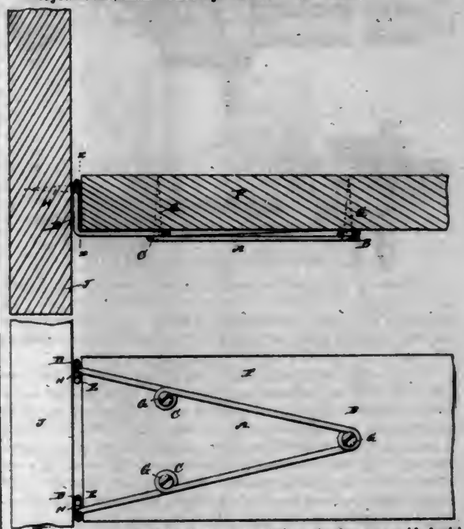
Claim.—1. The combination, with a sewing-machine cabinet having an opening in its top, of a sewing-machine secured on a vertically-movable plate, links pivoted to the plate and to the inner surfaces of the sides of the cabinet, a sliding frame in the cabinet engaging the links, a hinged leaf on the top of the cabinet, and a connecting-bar connecting the leaf with the sliding frame, whereby when the leaf is raised or lowered the sliding frame will be operated to act on the links, and thereby raise or lower the vertically-movable plate, substantially as herein shown and described.

2. The combination, with the cabinet A, having an opening in its top, of the hinged leaf H, the slides I, connected by the rod N, the plate D, carrying a sewing-machine, the links F, and the bar K, connecting one slide I with the hinged leaf H, substantially as herein shown and described.

3. The combination, with the cabinet A, having an opening in its top, of the slides I, the rod N, the rollers Q, the links F, the plate D, carrying a sewing-machine, the bar K, and the pivot L, passed through a horizontal slot, M, in the back of the casing, substantially as herein shown and described.

4. The combination, with the cabinet A, having an opening in its top, of the slides I, having cam-pieces P, the links F, the plate D, carrying a sewing-machine, the hinged leaf H, and the bar K, substantially as herein shown and described.

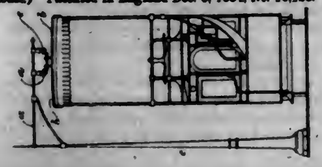
325,082. WIRE BED-SLAT FASTENER. Solomon D. Hollister, Crystal Falls, Mich. Filed Apr. 16, 1884. (No model.)



Claim.—1. A bed-slat fastener consisting of a frame provided with eyes and having its ends bent up rectangularly, which ends are provided with hooks, substantially as herein shown and described.

2. A bed-slat fastener consisting of a triangular frame provided with an eye at the apex and with an eye in each shank, the ends of the shanks being bent at right angles and provided at the ends with hooks, substantially as herein shown and described.

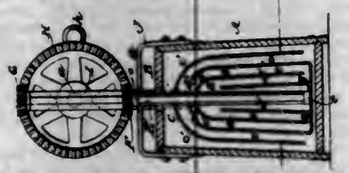
325,083. CONDUCTOR FOR ELECTRIC RAILWAYS. John Hopkinson, Westminster, County of Middlesex, England. Filed Mar. 9, 1885. (No model.) Patented in England Dec. 6, 1884, No. 16,128.



Claim.—1. The combination of the suspended conductor or conductors *a a* with the car carrying the contact bars or rollers *b b*, fixed to the car at such a level as to pass clear beneath the insulating-supports *c c*, and extending transverrely across the car.

2. In electric tramways or railways, the combination of the suspended conductor or conductors with the car having a contact piece or surface or contact pieces or surfaces extended across the car, so that in all positions of the car proper contact with the wires of the line is maintained, substantially as hereinbefore described.

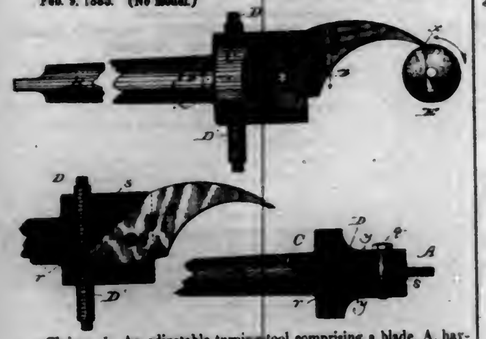
325,084. CHURN. Frank A. Hoxie and Thomas C. Carter, Holden, Mo. Filed Apr. 20, 1885. (No model.)



Claim.—1. In a churn, the combination, with the upper dasher having depending blades *c*, curved downward at their upper ends, of the lower dasher having a cross-piece, *d*, and inner and outer vertical blades, d' d^2, projecting therefrom between the blades *c*, the outer blades, d^2, being curved inward at their upper ends to correspond with the curves c' of the upper blades, substantially as set forth.

2. The dasher C, consisting of the upright plate E, provided at its opposite ends with apertured lugs *e*, and the outward and downward curved blades c' c', secured at their upper ends to the opposite edges of plate E at right angles to its lugs, substantially as set forth.

325,085. TURNING-TOOL. Ernest W. Hubbard, Aurora, Ill. Filed Feb. 9, 1885. (No model.)



Claim.—1. An adjustable turning-tool comprising a blade, A, having an edge, *x*, in combination with a rotary holder upon which the turning-tool is pivotally mounted, and adjusting means, substantially as described, upon the holder to adjust the turning-tool to various positions with relation to the holder and work, as set forth.

2. An adjustable turning-tool, A, comprising a blade having the sides of the body eccentrically concave-convex to afford an edge, *x*, toward its forward extremity, and provided with an opening, *t*, toward its rear extremity, in combination with a holder, B, provided with a head, C, having a slot, *s*, to receive the rear extremity of the tool, and openings coinciding with the opening *t* in the adjusted tool, containing a set-screw, *q*, and a longitudinal opening, *r*, along the base of the slot *s*, containing adjusting-screws D and D', the whole being constructed and arranged substantially as described.

325,086. ELECTRIC BELT. Lee Hughes, Marshall, Mo. Filed Apr. 13, 1885. (No model.)

Claim.—1. The combination, in a battery for electric belts or other like purposes, of the positive and negative plates or elements, and the connecting-conductors having brushes at their extremities bearing upon the connected plates, substantially as and for the purposes specified.

2. The combination, with the belt, of the battery connected in sections by the connecting-conductors, having brushes at their extremities and the metallic disks or pads connected to the terminal conductors, substantially as and for the purposes specified.

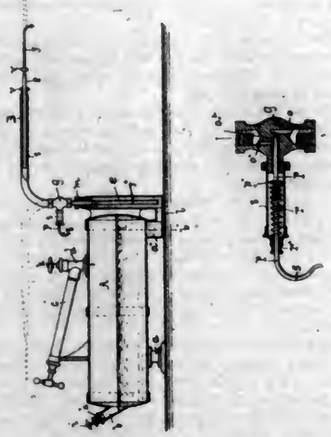
3. The combination, with the belt proper, the battery, and the metallic disks or pads, of the flaps adapted to cover said disks or pads, substantially as specified.

4. A conductor for connecting the zinc and copper plates of a battery for electric belts, consisting of strands of wire, twisted together between their ends, and having said ends spread apart in the form of brushes, substantially as and for the purposes set forth.

325,086.



325,087. LUBRICATING OIL-CAN. John S. Hull, Baltimore, Md. Filed Feb. 26, 1885. (No model.)



Claim.—1. In an oil-can, the combination of the receptacle A, the air-pump *c*, the nozzle B, and a cut-off valve, *g*, placed in the nozzle, whereby the oil is ejected.

2. In an oil-can, the combination of the air-pump *c*, the receptacle A, the spring cut-off valve *g*, and the telescopic nozzle B, as herein shown.

3. In an oil-can, the combination of the air-pump *c*, the receptacle A, the cut-off valve *g*, and the nozzle B, attached to the receptacle A by a swivel-joint, whereby it may be placed over the same, as herein specified.

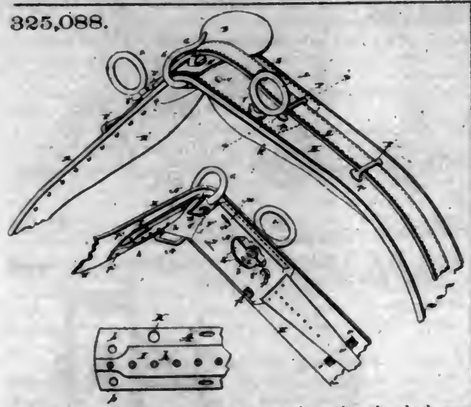
4. In an oil-can, the combination of the receptacle A, the pump *c*, the telescopic nozzle B, and the cut-off valve *g*.

5. In a lubricating oil-can, the combination of the pump *c*, the receptacle A, the spring-valve *g*, and the nozzle B, as herein set forth.

325,088. HARNESS-SADDLE. Albert Jacquot, Wilmington, Del. Filed Mar. 25, 1885. (No model.)

Claim.—1. In a harness-saddle, in combination with the seat provided near its front with an opening, the tree provided with a lug entering this opening, and with a hole below such opening, the check-snap having a shank passing down through and filling the portion of the opening in the seat not filled by the lug on the tree, and a screw passing up through the tree into the seat.

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2. In combination with the seat provided with the rectangular opening near its front, the tree having an opening below and a flat lug extending up into the opening in the seat, a screw passing up through the tree into the seat, and the check-snap having a rectangular shank adapted to fit the portion of the seat-opening not filled with the tree-stud, substantially as and for the purpose described.

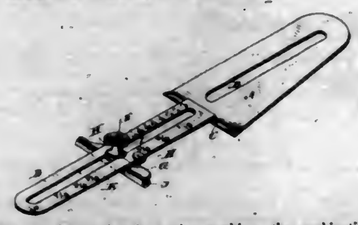
3. In a harness-saddle, the combination of the seat provided near its front end with a rectangular opening, the tree provided with an opening below and a flat lug extending up into the seat-opening, the screw passing through the tree and into the seat, the check-rein hook having its lower end extending under the tree, the check-snap having its shank extending down through the openings in the seat and tree and through the hook end, and a nut screwed on the lower end of such shank, adapted to be screwed up against the hook end, substantially as and for the purpose described.

4. In combination with the terret having its shank extending down through the skirt and the plate of the tree, the screw-nut on the lower end of the shank and the rib on the tree-plate, adapted to engage the nut and prevent it from turning, substantially as and for the purpose described.

5. In a harness-saddle, the guide-loops on each side of the saddle, in combination with the shaft or thill supporting strap passing loosely through such loops and over the seat, and the two stops attached or fixed to the strap on each side of the seat, attached to the strap between the seat and the guide-loops, substantially as and for the purpose described.

6. In combination with the guides P P on the saddle, the thill or shaft strap passing through such guides and over the seat, and the two stops each consisting of a screw-shank screwed into the strap and a head adapted to come in contact with one of the guides, substantially as and for the purpose described.

325,089. TUCKER FOR SEWING-MACHINES. Walter T. Johnson, Columbus, Ga. Filed June 12, 1885. (No model.)



Claim.—1. In a tucker for sewing-machines, the combination of a base-plate having a transverse slot formed therein, and provided at its outer edge with a vertical flange, with a slotted arm extending laterally from the upper edge of the said flange, and a gaging-slide adjustable upon the said arm, substantially as and for the purpose herein set forth.

2. In a tucker for sewing-machines, the combination of a slotted base-plate having a vertical flange at its outer edge, a slotted arm extending laterally from the said flange, and a slide moving upon the said arm, and having lugs or catches taking over the outer edges of the latter, and provided with an upwardly-extending screw-threaded stem extending through the slot in the said arm, and provided with a thumb-nut, by means of which the said slide may be secured in any position to which it may be adjusted, substantially as and for the purpose herein set forth.

3. In a tucker for sewing-machines, the combination of the slotted base-plate having an upwardly-extending flange at its outer edge and a slotted arm extending laterally from the upper edge of the said flange, with the adjustable slide having upturned lugs catching over the upper edges of the said arm, and provided with an upwardly-extending stem extending through the slot in the said arm, an interned flange at the outer edge of the said slide, and a thumb-nut adjustable upon the upper end of the screw-threaded stem of the latter, whereby it may be retained in any position to which it may be adjusted, substantially as and for the purpose herein set forth.

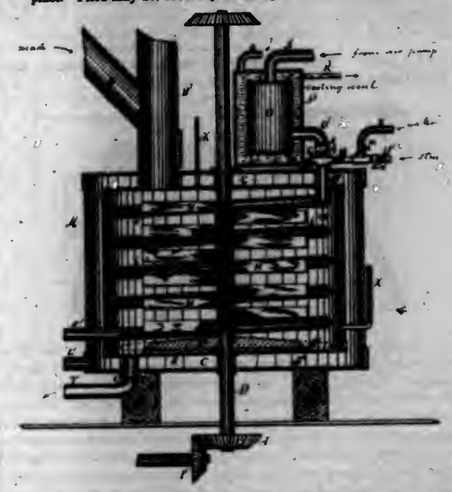
325,090. WALL-COVERING. George Jordan, New York, N. Y. Filed June 1, 1885. (No model.)



Claim.—1. A wall-covering consisting of embossed sheets of plastic material having an adhesive coating at the back and a film of fibers spread over said coating, substantially as set forth.

2. The composition for a wall-covering herein described, consisting of a mixture of molasses, Venetian turpentine, chalk, and fibers, substantially as set forth.

325,091. APPARATUS FOR BOILING AND COOLING MASH. Elias Kauffeld, Pittsburg, Pa., assignor of one-half to Thomas Miller, same place. Filed May 27, 1885. (No model.)



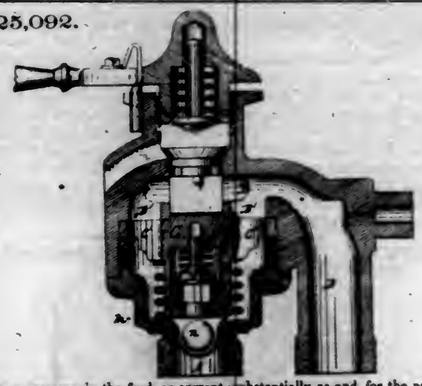
Claim.—1. In a mash-preparing apparatus, the combination, with a mash-tub having an inner and outer casing with an intervening space, of a vertical rotary shaft armed with paddles or beaters, a coil of pipe surrounding said beaters, and a pipe communicating with said coil and said intervening space, and the air-chamber, water-supply, and steam-supply for the admission of steam and water or air, substantially as described.

2. In a mash-preparing apparatus, the combination, with mash-tub and a vertical rotary shaft armed with paddles, of a cooling and heating coil, an air-cooling tank, a water-box inclosing said tank, a steam-supply, and means, substantially as described, for controlling the admission of steam and cooled air to the coil, as set forth.

325,092. ENGINEER'S VALVE FOR FLUID-PRESSURE BRAKES. James Kearney, North Springfield, Mo. Filed Nov. 11, 1884. (No model.)

Claim.—1. In a cock for charging and discharging fluid-pressure, the combination, with a counterbalanced feed-valve, of an auxiliary rush-valve adapted to be automatically closed by any sudden accelera-

325,092.



tion or pressure in the feed or current, substantially as and for the purposes specified.

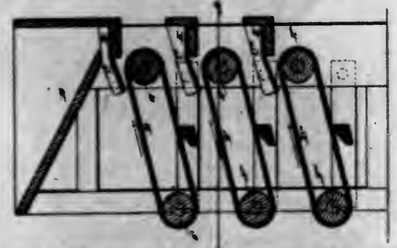
2. In combination with a cock or valve for charging and discharging the fluid-pressure of air-brakes, a feed-passage leading from the main reservoir to the brake-pipe connection or branch, a counterbalanced valve arranged to control said feed-passage, and an auxiliary rush-valve arranged between the counterbalanced valve and the main reservoir, to control the egress-port of the latter, substantially as and for the purposes specified.

3. In an engineer's valve for controlling fluid-pressure brakes, the combination, with a main valve having a hollow stem, a feed-passage, and a counterbalanced feed-valve, of a rush ball-valve, substantially as and for the purposes specified.

4. In an engineer's valve for controlling fluid-pressure brakes, the combination, with a main valve having a hollow stem, a feed-passage, and a counterbalanced feed-valve, of a ball-valve and basket, substantially as and for the purposes specified.

5. In an engineer's valve for controlling fluid-pressure brakes, the combination, with a main valve having a hollow stem, and a feed-passage, of a rush-valve, substantially as and for the purposes specified.

325,093. WILD PEA AND OAT SEPARATOR. James M. King, Rochester, Minn. Filed Jan. 5, 1885. (No model.)



Claim.—The improved pea and oat separator herein described, comprising the frame A, having at its upper end the hopper B, the upper guide beneath the same, the rollers arranged in two vertical rows at the opposite sides of the frame and formed with grooves near their ends, inclined endless aprons passing over the said rollers and having projections working in said grooves, the guides arranged over the upper ends of the inclined aprons and having their inclined portions extending between the said aprons and their ledges K approximately level, and suitable driving mechanism for said rollers and aprons, substantially as specified.

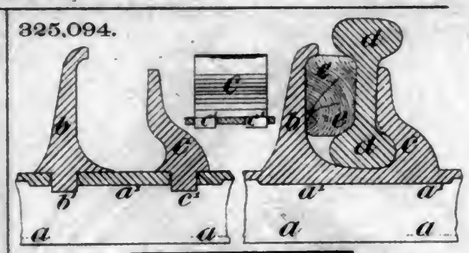
325,094. MANUFACTURE OF COMBINED CHAIR AND SLEEPER. Peter Kirk, Workington, County of Cumberland, England. Filed Feb. 19, 1885. (No model.) Patented in England Nov. 22, 1884, No. 15,396; in France Jan. 31, 1885, No. 154,190; in Belgium Feb. 2, 1885, No. 67,772, and in Spain Feb. 21, 1885, No. 1,137.

Claim.—1. A rolled steel sleeper to which are secured chairs or jaws by welding tongues or tenons on the chairs or jaws into slots or holes formed in the sleeper, substantially as and for the purpose set forth and indicated.

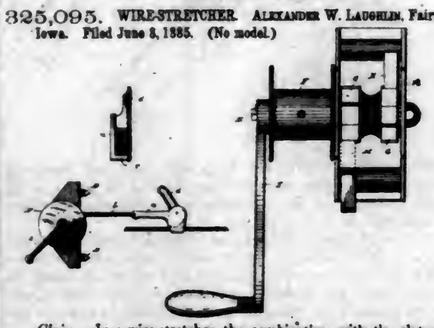
2. A combined metal sleeper and chairs formed by riveting, clinching, or welding tongues or tenons rolled or formed on the metal chairs or rail-holding jaws into slots or holes punched or formed in the sleeper, substantially as and for the purpose set forth and indicated.

3. In a metal railway and tramway sleeper, the steel or iron sleeper, to which are secured jaws *b c* by welding tenons *b' c'*, formed on the jaws into slots punched or formed in the sleeper, substantially as set forth.

325,094.

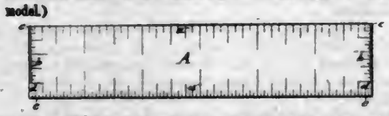


325,095. WIRE-STRETCHER. Alexander W. Laughlin, Fairfield, Iowa. Filed June 8, 1885. (No model.)



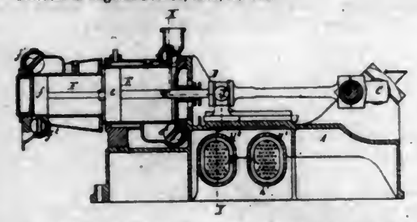
Claim.—In a wire-stretcher, the combination, with the plate having the projecting spurs, the cheek-pieces, and the binding-chain having hooks, of the drum located at one side of the said plate, and having its shaft journaled in said pieces and provided with oppositely-disposed ratchets, and the pawls pivotally mounted in the said cheek-pieces and constructed to engage and disengage, respectively, with the said ratchets.

325,096. GRADUATED SCALE. Herbert J. Leighton, Syracuse, N. Y., and John Coffin, Johnstown, Pa. Filed Apr. 13, 1885. (No model.)



Claim.—The within-described multiple linear measure and square, consisting of a rectangular plate having a straight and parallel longitudinal side edges and straight end edges perfectly true and at right angles to the side edges, and graduated in linear measure on its four longitudinal or side edges and the entire length thereof, and also graduated on two or more of its end edges, the graduations of the latter extending from one corner part way across the end of the scale, substantially in the manner specified and shown, for the purposes set forth.

325,097. REFRIGERATING APPARATUS. Thomas B. Lightfoot, Fenchurch Street, London, England. Filed July 19, 1884. (No model.) Patented in England Feb. 11, 1882, No. 673.



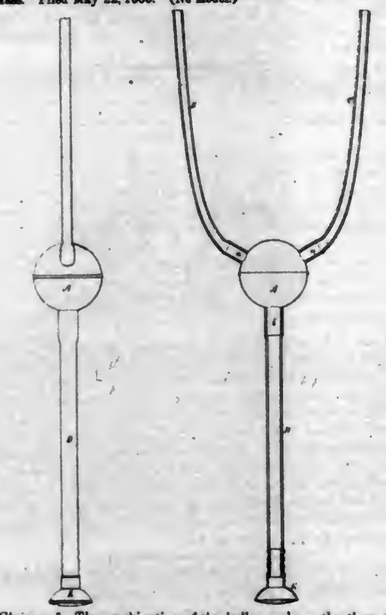
Claim.—1. The combination of a bed-plate, a crank-shaft supported thereon transversely thereto, an engine connected to said crank-shaft, and an air-compressing and an air-expanding cylinder arranged longitudinally of said bed-plate axially in line with each other, each of said cylinders being provided with an inlet and an outlet valve, the piston-rods of said cylinders being axially in line and rigidly connected, a connecting-rod connecting one of said piston-rods with said crank-shaft, cooling-chambers arranged transversely of said bed-plate, and valved pipes connecting said cylinders and chambers, substantially as described.

2. The combination of a bed-plate, a crank-shaft supported thereon transversely thereto, an engine connected to said crank-shaft, and an air-compressing and an air-expanding cylinder arranged longitudinally of said bed-plate axially in line with each other, each of said cylinders being provided with an inlet and an outlet valve, the piston-rods of said cylinders being axially in line and rigidly connected, a connecting-rod connecting one of said piston-rods with said crank-shaft, cooling-chambers arranged transversely of said bed-plate, valved pipes connecting said cylinders and chambers, a series of eccentrics on said crank-shaft, and connecting-rods connecting said valves with said eccentrics, substantially as described.

3. The combination of a bed-plate, a crank-shaft supported thereon transversely thereto, an engine connected to said crank-shaft, and an air-compressing and an air-expanding cylinder arranged longitudinally of said bed-plate axially in line with each other, each of said cylinders being provided with an inlet and an outlet valve, the piston-rods of said cylinders being axially in line and rigidly connected, a connecting-rod connecting one of said piston-rods with said crank-shaft, cooling-chambers arranged transversely of said bed-plate, systems of cooling-pipes within said cooling-chambers, valved pipes connecting said cylinders and chambers, a series of eccentrics on said crank-shaft, connecting-rods connecting said valves with said eccentrics, and a pump also connected to said crank-shaft for circulating water within said cooling-pipes, substantially as described.

4. A cooling-chamber for ice-machines, provided with a series of cooling-pipes within said chamber, and with flanges on its interior for directing the air onto said pipes, said flanges being perforated at the bottom of the chamber, to permit the passage of water of condensation, substantially as described.

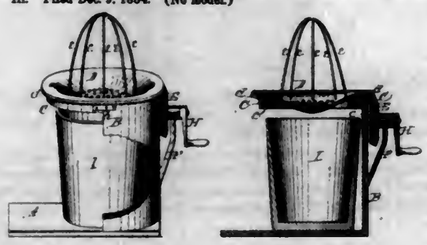
325,098. APPARATUS FOR SHAMPOOING. Henry Main, Boston Mass. Filed May 22, 1885. (No model.)



Claim.—1. The combination of the hollow sphere, the three flexile tubes, and the sprinkler, arranged substantially as set forth.

2. The combination of the hollow sphere, provided with the short tubes extending from it, with the three flexile or longer tubes encompassing and fitting to the said short tubes, and with the sprinkler inserted in and fitted to one of such flexile tubes, all being substantially and for use as set forth.

325,099. LEMON-JUICE EXTRACTOR. John P. Manny, Rockford, Ill. Filed Dec. 9, 1884. (No model.)



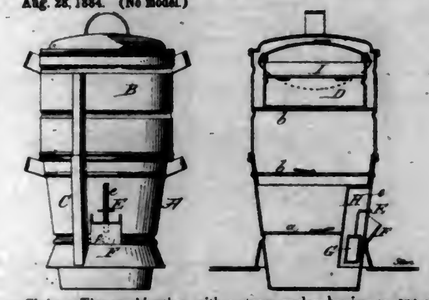
Claim.—1. A lemon-juice extractor consisting of a base portion and a skeleton frame rising therefrom, and adapted to be turned or oscillated, substantially as set forth.

2. A lemon-juice extractor consisting of a perforated base and a skeleton frame rising therefrom, said frame being adapted to be oscillated in contact with the pulp of a lemon to extract the juice from the pulp without forcing out the oil of the lemon-peel, substantially as set forth.

3. As an article of manufacture, a lemon-juice extractor consisting of a supporting-base and a frame formed by a series of ribs secured to said base, the device as thus constructed being adapted to be rotated to extract the juice by the contact of said ribs with the pulp of the lemon, substantially as set forth.

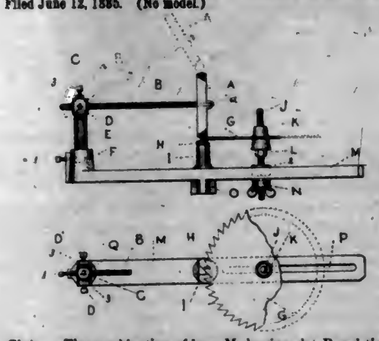
4. The combination, substantially as hereinbefore set forth, of a supporting-frame, a skeleton extractor, a gear-train, and a winch, as and for the purpose set forth.

325,100. STEAM-COOKER. John A. Marden, Hinsdale, N. H. Filed Aug. 28, 1884. (No model.)



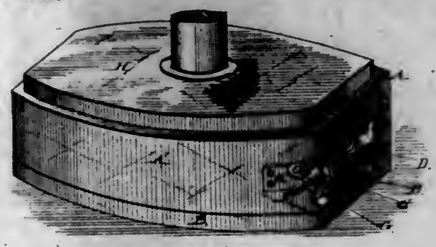
Claim.—The combination, with a steam-cooker having on one side an external funnel, F, vertical slot *e*, and perforation *f*, of an interior vertical casing, H, open only at the bottom, and a float, G, inclosed in said casing, and provided with a bent indicator-arm, E, that is capable of a vertical movement in the slot *e*, whereby the movement of the indicator can be observed and the vessel filled when required through the funnel F, and communicating perforation *f*, without permitting the escape of steam, substantially as described.

325,101. SAW-SET. Larnard F. Markham, Grand Rapids, Mich. Filed June 12, 1885. (No model.)



Claim.—The combination of base M, having slot P and the socket F, movable post E, arms S S, sleeve Q, hammer A B, anvil I, carrying die H, with the movable and adjustable screw-post J, adapted to bear the conical saw-support K, or slotted saw-support R, all substantially as shown and described.

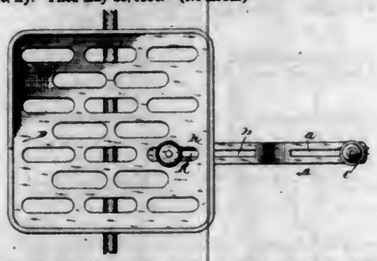
325,102. APPARATUS FOR PACKING FISH. Daniel O. Marshall and Charles F. York, Gloucester, Mass. Filed June 30, 1885. (No model.)



Claim.—1. In an apparatus for packing fish, the combination of a sectional block having a movable section with open bottom, and a stationary section having a bottom piece which extends under both sections when closed, and upon which the boxes rest, a follower having plungers corresponding nearly in size to the diameter of the boxes, and a locking-bolt for securing the sections of the block together, substantially as herein described.

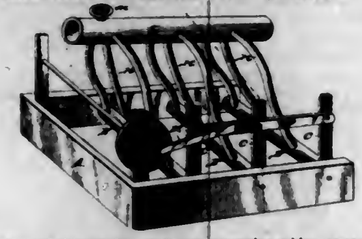
2. An apparatus for compressing fish, comprising a sectional block provided with a movable and a stationary section, the latter having a bottom piece, B, extending under both sections when closed, openings formed in the sections, and shoulders formed in the openings, against which the seams of the boxes bear, a follower having plungers adapted to enter the boxes and compress the fish, and a threaded bolt and thumb-nut, whereby the sections may be locked or unlocked, substantially as and for the purpose herein described.

325,103. TREADLE ATTACHMENT. ALFRED B. MCATEE, Mayville, Ky. Filed May 25, 1885. (No model.)



Claim.—A treadle attachment for sewing-machines, consisting of plate A, having slots *a* and *b*, weight C, and screw-bolt *d*, adjustably secured to the treadle by said screw-bolt, substantially as shown and described.

325,104. ATTACHMENT FOR ORE-CONCENTRATORS. ALBERT MCCORMICK, Golden, Colo. Filed Mar. 9, 1885. (No model.)



Claim.—1. An attachment for concentrating-tables, comprising a series of transverse vibrating nozzles through which steam or air may be forced against the surface of the material passing over the table, substantially as and for the purpose herein set forth.

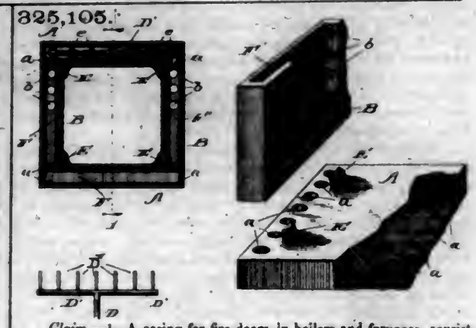
2. The combination of a frame, a series of cylindrical nozzles mounted transversely in the same and having longitudinal slits or openings in their under sides, mechanism for rocking or vibrating the said nozzles, and means adapted for receiving steam or air under pressure and for supplying the same to the said nozzles while they are being vibrated, substantially as and for the purpose set forth.

3. The combination of a frame, a series of cylindrical nozzles mounted transversely in the same, flexible tubes, a steam or air supply pipe, and mechanism for rocking or vibrating the said nozzles, substantially as and for the purpose herein set forth.

325,105. FIRE-DOOR CASING FOR FURNACES. JAMES R. MCELLIGOTT, Chicago, Ill. Filed June 6, 1885. (No model.)



325,105. [duplicate]

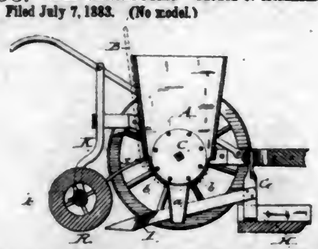


Claim.—1. A casing for fire-doors in boilers and furnaces, consisting of a hollow plate, forming the bottom of said casing, in combination with hollow side plates and a hollow top plate, all said plates having holes permitting the admission and circulation of air in said casing, said side and top plate also having holes into said fire-box, all substantially as described, and for the purpose set forth.

2. A casing for fire-doors in boilers and furnaces, consisting of hollow plate A, having holes *a a* therein, side plates, B, having holes *b b* therein, and top plate, A', having holes *a a* and *e e* therein, all combined substantially as described, and for the purpose specified.

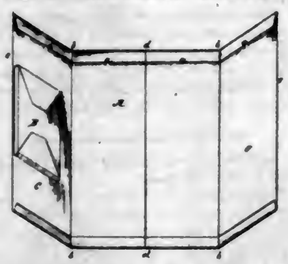
3. A casing for fire-doors in boilers and furnaces, consisting of hollow plates A A' and B B, having holes *a a*, *b b*, and *e e* therein, in combination with pipe D, having branches D' D', all substantially as described, and for the purpose specified.

325,106. SEED-DISTRIBUTER. GEORGE J. MCMILLAN, Teachey's, N. C. Filed July 7, 1883. (No model.)



Claim.—In an implement for distributing seed and other materials, the frame F, supporting a seed-receptacle, carrying a curved bottom and a shaft journaled in said receptacle, provided with a stirrer consisting of side disks and transverse bars, the latter being adapted to be rotated by the shaft concentric with and in close proximity to said curved bottom said seed-receptacle being provided with a central spout, and with a discharge-opening therefor, a pivoted cut-off operated by a lever centrally pivoted to the rear of the hopper, and a furrow-opener, coverers, and a roller attached at the rear of the implement within slotted standards, and provided with springs attached to the frame, which bear upon the ends of the roller-shaft, the parts being organized and combined substantially as shown, and for the purpose set forth.

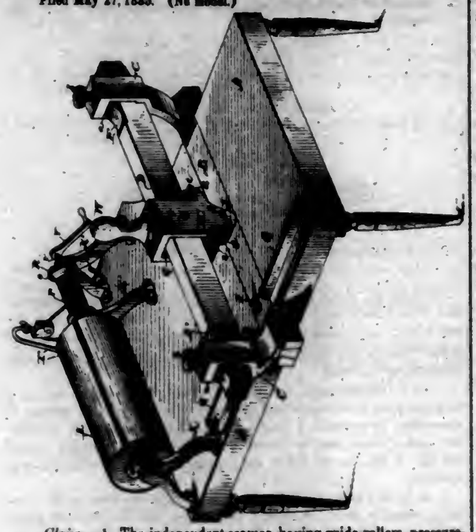
325,107. PERFUMED ADVERTISING-PACKET. FREDERICK A. MERRELL, Chicago, Ill. Filed Nov. 4, 1881. (No model.)



Claim.—1. As an advertising medium, the printed paper packet or pocket-book described, having a perfumed sachet secured in a pocket thereof, substantially as described.

2. The printed advertising sachet-packet described, consisting of the sheet A, having its edges *a a* folded and joined to form opposite pockets, as shown, and having a sachet secured in one of the pockets, substantially as and for the purposes set forth.

325,108. ROOFING-SEAMER. HORACE M. MILLER, Wabash, Ind. Filed May 27, 1885. (No model.)



Claim.—1. The independent seamer, having guide-rollers, pressure-roller and handle, and a cross-head guide for the seamer, having smooth straight sides, said seamer being arranged to encircle the said guide, in combination with the automatic spring-stop and the guides for the sheet metal, substantially as set forth.

2. Mechanism for seaming sheet metal, in combination with automatic mechanism for rolling the same, composed of the take-up roll, spring-pawl thereon, ratchet-wheel on the shaft of spool adjacent to the roll, the spool, ratchet-wheel also on shaft of spool engaging spring-pawl attached to standard K", and the weight for operating said automatic devices, as set forth.

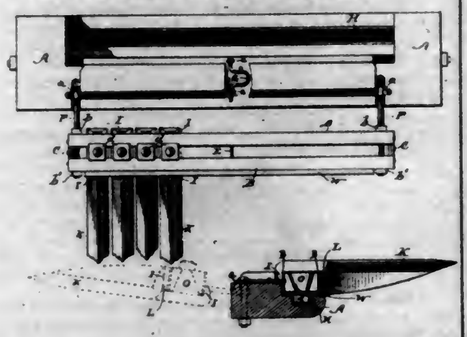
3. Mechanism for automatically rolling sheet metal, consisting of the take-up roll, spring-pawl on the end thereof, ratchet-wheel on shaft of spool adjacent to said roll, the spool, ratchet-wheel engaging spring-pawl attached to standard K", and the weight for operating said mechanism, as set forth.

4. The cross-head provided with tension devices, and the seamer having anti-friction and pressure rolls, in combination with the automatic stop, as set forth.

5. In a machine for seaming tin or other material, the combination, with the platform having slide-guides, of the uprights having set-screws and adjusting-springs, the seamer having anti-friction rolls and seaming-roller, and the automatic spring-stop, substantially as set forth.

6. The combination of the seamer having pressure and anti-friction rolls, the cross-head guide provided with tension devices, the standards which support the cross-head guide, and the removable base-plate, substantially as described.

325,109. COMB FOR GRASS-SEED HARVESTERS. JACOB L. C. NAFF, Winchester, Ky. Filed Oct. 17, 1884. (No model.)



Claim.—1. The combination, with the comb-frame in a grass-harvester, of the cutting or stripping teeth and separators with legs for spacing the teeth and holding the separators in place, substantially as described.

2. The combination, with the trough-like frame having slot in its bottom, of the tooth K, having the bolt O, adapted to pass through said slot, the shoulders I I, adapted to bear against the sides of the trough, and a nut for securing the bolt beneath the trough, substantially as shown and described.

3. The combination, with the comb-frame having a wooden bar, W, on its side, of the tooth K, having shoulders, one of which is adapted to bear against this wooden bar to facilitate the fitting of the teeth, as and for the purpose described.

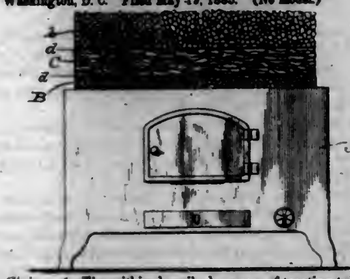
4. The combination, with the trough-frame B B, of the bolt-hinges having threaded ends with a removable nut for permitting the ready detachability of the comb, as described.

5. The combination, with the comb-frame and the cross-bar A, of a sliding locking-bolt, G, as and for the purpose described.

6. A grass-header comb having its teeth secured by nuts on the under side, in combination with a subjacent frame adapted to bear against all the nuts, in the manner described, when the comb is in operative position to lock the nuts against turning, as described.

7. The combination, with the comb having its teeth secured by nuts on its under side, of the grooved or rabbeted cross-bar A, having its grooves or rabbets adapted to bear against the said nuts and lock them, as described.

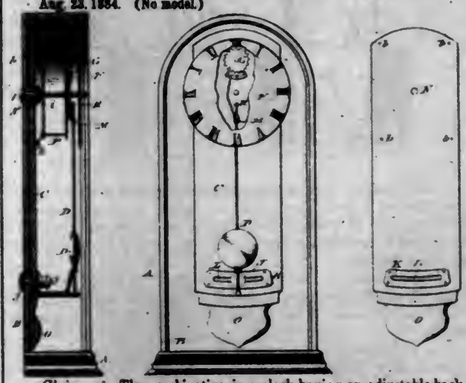
325,110. PROCESS OF TREATING TOBACCO. ETIENNE NEUMAN, Washington, D. C. Filed May 19, 1885. (No model.)



Claim.—1. The within-described process of treating tobacco, which consists of the following steps: first, spreading upon the upper surface of an oven wood-charcoal reduced to about the size of peas, from the pores of which all dust has been removed by washing; then covering over said charcoal with textile fabric; then spreading upon said fabric a layer of tobacco; then covering the tobacco with textile fabric, then spreading upon said fabric a layer of divided cleansed wood-charcoal, and then subjecting the material, arranged as described, to heat from the oven, as and for the purpose intended, substantially as described.

2. The within-described process of treating tobacco, which consists in subjecting to heat a layer of tobacco inclosed between sheets of textile fabric and layers of divided cleansed charcoal, as and for the purpose set forth, substantially as described.

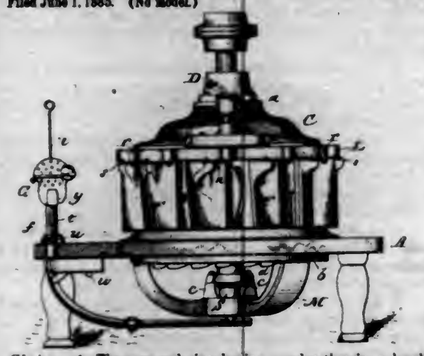
325,111. ADJUSTING BEAT OF CLOCKS. HIRAM P. PRUDEN, Grand Haven, Mich., assignor of one-half to Thomas Cairns, same place. Filed Aug. 22, 1884. (No model.)



Claim.—1. The combination, in a clock having an adjustable back, C, supported by a pivoting-screw, I, with the slot L, the set-screw J, the guard K, and a center arm or index, E, substantially as and for the purpose set forth.

2. A clock having a pendulum, D, and movements P, in combination with the adjustable back G, the pivoting-screw I, the set-screw J, the slot L, the center arm or index, E, and the weight O, substantially as and for the purpose set forth.

325,112. TURBINE WATER-WHEEL. Joseph Raab, Dayton, Ohio. Filed June 1, 1885. (No model.)



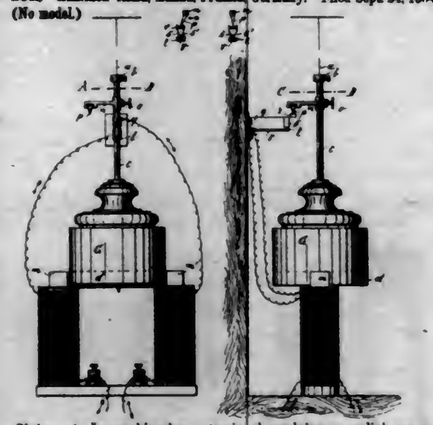
Claim.—1. The cage and pipe having a valve therein, a handle and connecting-rod pivotally secured to a bell-crank, and a valve, in combination with the step and shaft of a wheel as hereinbefore described.

2. In a turbine water-wheel, the combination of the cage G and pipe *f*, which convey cooling-liquid to the wheel, valve *e*, stop and guide J, support *u*, which holds said pipe in a normal position, and step S, having a conduit which registers with pipe H and the shaft of the wheel, substantially as described.

3. In a turbine water-wheel, the combination of the lever *b*, bell-crank *w*, and connecting-rod T with stop-cock *h*, pivotally secured within pipe *f* to allow the passage of water when desired, in the manner hereinbefore set forth.

4. The combination, with a vertical shaft, of a water-wheel, the end or bearing of which being hollowed out, and a step correspondingly rounded to fit said hollow, said step having a conduit passing entirely through it, whereby cooling-liquid is conveyed between the bearing-joint for the purpose described.

325,113. ELECTRIC IMPULSION DEVICE FOR A TORSION-PENDULUM. Heinrich Rabe, Hanau, Prussia, Germany. Filed Sept. 24, 1884. (No model.)



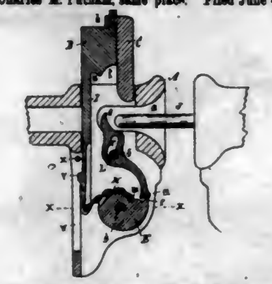
Claim.—1. In combination, a torsional pendulum, a radial arm secured thereto, a pendant loosely pivoted thereto, and a spring circuit-closer set in the path thereof and at such a relation thereto that it will be operated to close the circuit only when the pendant is in its vertical position, as set forth.

2. In combination, the torsional pendulum, the stem *c*, the radial arm *a* thereon, the pendant *p*, pivoted to said arm, the spring *q*, having trough *r* and springs *s s'*, and the wedge *t*, as and for the purpose set forth.

3. A torsional pendulum provided with an armature, an electro-magnet having its poles in the same plane with said armature, and a circuit-closing mechanism attached to the pendulum, operative to close the circuit only in the position which the pendulum assumes at the end of a retarded stroke, whereby electrical impulse is given at that time, as set forth.

4. A torsional pendulum having a radial arm attached adjustably thereto, and a circuit-closing device pendent from said arm, whereby the time of giving the electrical impulse may be accurately adjusted, as set forth.

325,114. CAR-COUPLING. Ezra Ramsdn, Flint, Mich., assignor of one-half to Charles M. Putnam, same place. Filed June 4, 1885. (No model.)



Claim.—1. In an automatic car-coupling device, a pin-carrier actuated from without the line of the car to which the coupler is attached and having a coupling-pin removably secured thereto by a horizontal pivot, whereby said pin cannot be raised without raising the carrier, substantially as described.

2. In an automatic car-coupling device, a pin-carrier having a coupling-pin removably secured thereto and actuated for the purpose of uncoupling by means of a chain connecting the lower end of said carrier with a wheel and its connections, as described, extending beyond the line of the car to which the coupler is attached, substantially as specified.

3. In an automatic car-coupling device, the combination of a rotating wheel, a chain connecting said wheel with the shank of a pin-carrier, a coupling-pin removably secured to the head of said carrier, and a coupling-link, the parts being constructed and arranged with relation to a draw-head, substantially as and for the purposes set forth.

4. As a means of uncoupling an automatic car-coupling device, the combination of the rotating wheel, a chain connecting said wheel to the shank of a pin-carrier, a coupling-pin removably secured to the head of such carrier, a shaft upon which the wheel is secured, such shaft being journaled in the sides of a pendent support from the draw-head, and the crank-rods secured to the ends of such shaft, the parts being constructed, arranged, and operating substantially as described.

5. In a car-coupling device constructed and operating substantially as described, the dog supported upon a pivot-pin passing through an L-shaped slot in such dog, whereby a movable fulcrum is obtained as a means of locking the parts in position when not engaged in coupling cars together, and forming a trip actuated by the impact of the entering link, which compels the coupling by the gravity of the coupling-pin and its attachments, substantially as described.

6. In a car-coupling device, a pin-carrier having a lug upon its rear face, in combination with a removable stop-pin, substantially as and for the purposes specified.

7. A car-coupling device wherein the draw-bar A, the carrier B, pin C, pendent box D, wheel E, shaft *i*, chain H, crank-rods G, universal joints F, and dog L are constructed, combined, and operate substantially as for the purposes set forth.

325,115. SHOE-FASTENING. Silas H. Raymond, Grand Rapids, Mich. Filed Apr. 3, 1885. (No model.)



Claim.—A shoe or other fastener consisting, essentially, of a flat disk or plate having a central integral eyelet or loop struck up therefrom, the said disk or plate adapted to be employed beneath on the inner side of the material forming the shoe-upper or other article with the eyelet or loop passing through an opening formed in said upper or article, substantially as shown and described.

325,116. FOOT-WARMER. Hermann Sack, Philadelphia, Pa. Filed Oct. 18, 1884. (No model.)



Claim.—1. A combined foot stool and warmer consisting of a box with a warming-pan therein, a detachable base, and a detachable foot-stool, substantially as and for the purpose set forth.

2. A foot-warmer provided with pockets adapted to receive the main portion of the feet, and separate pieces connected with the sides of the pockets by springs for closing around the heels thereof, substantially as and for the purpose set forth.

3. A foot-warmer, in combination with a foot-rest sustained thereon, provided with a heel-supporting cross-bar, substantially as and for the purpose set forth.

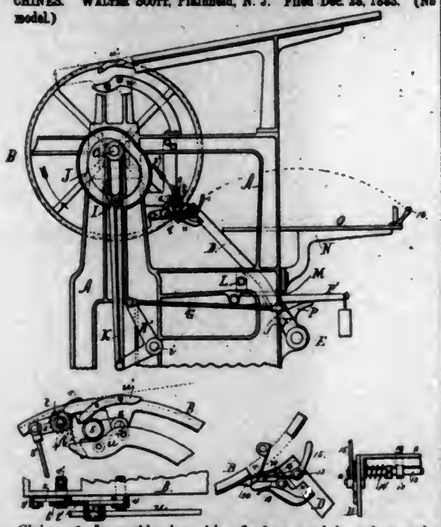
4. A combined foot stool and warmer consisting of a box having within the same a warming-pan and pockets, the latter being above the former, a base, and a foot-stool provided with a heel-rest, substantially as and for the purpose set forth.

325,117. BREASTPIN. Friedrich Schroder, New York, N. Y. Filed Jan. 23, 1885. (No model.)



Claim.—The combination of a tubular body having a fixed and forked pin at one end and a slotted guide-socket at the other end, a sliding and spring-cushioned bolt guided in said socket, a face-plate attached to said bolt, and a bent pin attached to said face-plate, substantially as set forth.

325,118. SHEET-DELIVERY MECHANISM FOR PRINTING-MACHINES. Walter Scott, Plainfield, N. J. Filed Dec. 23, 1882. (No model.)



Claim.—1. In combination with a fly-frame and its grippers, the cam-toes upon the rock-shaft of the fly-frame, and the weighted lever pressing upon such cam-toes, substantially as set forth.

2. The frames L', the cross-frame M, the bracket N, extending out from the frame M, and the delivery-table O, supported by such brackets, in combination with the bearers L, connecting the frames A and L', the rock-shaft E below the table O, and the fly-frame having the arms D, that pass in between the frame A and the edges of the table O, substantially as set forth.

3. The combination, with the impression-cylinder and its grippers, of the pinion *t*, segment-gear *t'*, the crank-arm *s*, spring and rod *s'* to the gripper-shaft, the roller 5, the cams *u u'*, for closing the grippers, and the cam 6, for opening the grippers, substantially as specified.

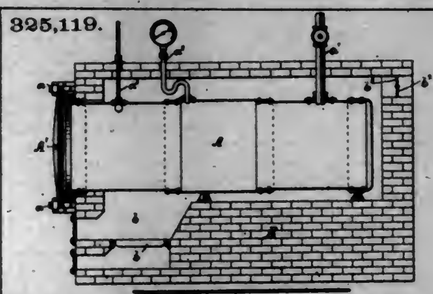
4. The feed-table and impression-cylinder and its grippers, in combination with a delivery-table below the feed-table, a fly-frame, and a rock-shaft for the same below the delivery-table, the gripper-fingers 10, fixed upon the fly-frame and passing in between the sheet and the impression-cylinder, the gripper-fingers 12, the shaft 13, carrying the same and supported in the fly-frame near the outer end of the same, and the cam 20 upon the impression-cylinder to cause the grippers 12 to close and grasp the advancing end of the sheet, substantially as set forth.

5. The combination, with the impression-cylinder and its grippers, the fly-frame D and cross-piece 11, the gripper-fingers 10, the shaft 13, and its gripper-fingers 12, of a latch, 18, upon the fly-frame, a stop, 20, upon and moving with the impression-cylinder to unlatch the latch 18, and a spring, 14, to close said grippers and grasp the sheet, substantially as set forth.

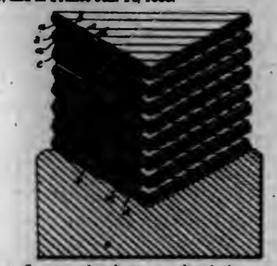
325,119. METHOD OF VULCANIZING RUBBER. Frederick W. Seabury, Providence, R. I. Filed June 3, 1884. (No model.)

Claim.—The improved method herein described of vulcanizing rubber, the same consisting in subjecting the rubber to the action of steam under pressure and dry heat in a vulcanizing-chamber, as described.

325,119.



325,120. SECONDARY BATTERY OR ELECTRICAL ACCUMULATOR. John S. Sellon, Hatton Garden, County of Middlesex, England. Filed Feb. 5, 1885. (No model.) Patented in England Apr. 10, 1884, No. 6,238, and in France Jan. 14, 1885.

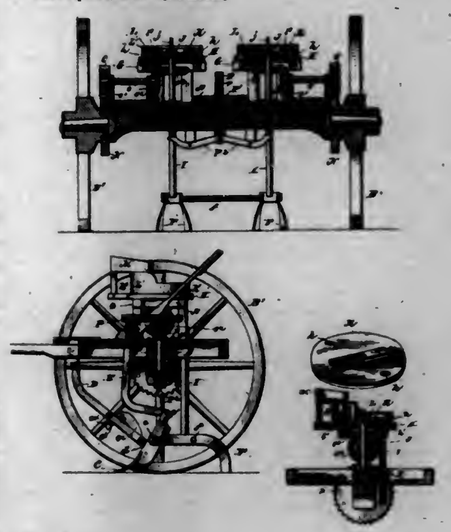


Claim.—1. In a secondary battery or electrical accumulator, a series of conical or equivalent shaped plates forming compound elements, the component parts of each element having between them insulating material or spaces, the said compound elements being separated from each other, as described, and forming containers of the electrolyte, substantially as set forth.

2. In a secondary battery, the series of conical or equivalent shaped plates placed in or upon each other in a suitable battery, tank, or vessel, as specified, and provided with openings or passages through the plates for the escape of gases, substantially as described.

3. A secondary battery or electrical accumulator comprising series of conical or equivalent shaped electrodes placed in or upon one another in a suitable battery, tank, or vessel, so as to be self-clamping, the said plates being separated from each other by insulating strips or pieces, and being provided with passages or openings through the plates for the escape of the gases and the diffusion of the electrolyte, substantially as described.

325,121. CORN-PLANTER. George Shadday, Jr., Rexville, Ind. Filed Apr. 22, 1885. (No model.)



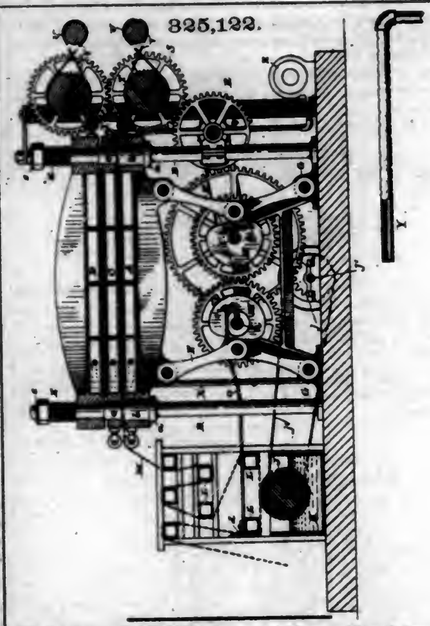
Claim.—1. In a corn-planter, the combination, with a suitable frame, of two hoppers secured thereon, each of said hoppers consisting of a rigid bottom piece having an annular flange upon its upper side, and an aperture within said flange through which the seed is discharged, a plate provided with seed-receptacles revolving within said flange, an annular cover or top provided with a channel or groove upon its under side secured to said flange, and having an opening through which the seed passes to the seed-receptacles in the revolving plate, a seed-hopper provided with an opening registering with said opening in the top plate, and mechanism for operating said seed-plate, substantially as and for the purpose set forth.

2. In a corn-planter, the combination, with a suitable frame, of two hoppers secured thereon, each of said hoppers consisting of a rigid bottom piece having an annular flange upon its upper side, and a projection extending from a portion of its periphery, and an aperture within said flange through which the seed is discharged, a plate provided with seed-receptacles revolving within said flange, an annular cover or top provided with a channel or groove upon its under side secured to said flange, and having a segmental opening through which the seed passes to the seed-receptacles in the revolving plate, a hoop or rim around said top piece, a cut-off pivoted within said segmental opening, a spring under one end of said cut-off, a seed hopper or receptacle hinged to said projection upon said bottom piece, and having an opening registering with said segmental opening in the top piece, and suitable means for operating said revolving plate, substantially as and for the purpose set forth.

3. In a corn-planter, the combination, with the above-described frame and hoppers, of two upright shafts, the lower end of each of which is journaled in and rests upon the axle of the machine, and the upper ends pass through the said bottom pieces and engage with the said revolving plates, and means for rotating said shafts, and suitable means for moving them vertically, substantially as and for the purpose set forth.

4. In a corn-planter, the combination, with the above-described frame and hoppers, of two upright shafts, the lower ends of which are journaled in and rest upon the axle of the machine, and the upper ends of which are squared and pass through openings in the said bottom pieces and engage with the revolving seed-plates, bevel-pinions secured upon said shafts engaging with bevel-wheels secured upon said frame, and operated by the driving-wheels, two pivoted arms secured upon the under side of said axle, the outer ends of which engage with the lower ends of said shafts, an upright post secured to the inner ends of said pivoted pieces, a spring-actuated lever for operating said upright post and pivoted levers, and a pair of suitable opening and covering plows, substantially as and for the purpose set forth.

325,122. MACHINE FOR PRESSING CLOTH. John Shearer, Preston, Ontario, Canada. Filed Dec. 6, 1883. (No model.) Patented in Canada Jan. 16, 1884, No. 13,463.



Brief.—The presser-plates are operated by toggle-jointed levers alternately pressing the cloth between them, and releasing said cloth to be drawn forward by means of a roller in the rear of the machine, provided at its ends with spurs to take into the selvages of the cloth, said roll receiving the proper intermittent motion from a mutilated gear-wheel gearing with a pinion upon its shaft. While the cloth is being pressed, the bars holding the cloth down and in contact with the dampening-brush are raised by means of an arm projecting from said bars, which rests on a cam on the front cam-shaft of the machine, thus preventing the cloth from being unevenly dampened.

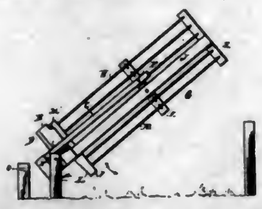
Claim.—1. The combination, with the pressing-plates A C D and means for intermittently operating the same, of the spiked rollers T, gear-wheels S, mutilated gear R, meshing with one of said gear-wheels, and means, substantially as described, for rotating said mutilated gear R to draw the cloth intermittently through the space between said pressing-plates, substantially as and for the purpose specified.

2. The posts B, hollow plates A C D, supported, as described, on said posts B, jointed arms F, cams H, for actuating the same, and means for operating said cams, in combination with the steam-pipe W, drain-pipe X, and pipes *w*, each extending parallel with and connected to one of the plates and to the pipes W and X on a level with its plate, so that the plates may be moved vertically, as set forth.

3. In combination with the rotary damping-brush, the pressing-plates A C and means, substantially as set forth, for intermittently operating said plates, a frame arranged to hold the cloth over said damping-brush, and mechanism, substantially as shown, for intermittently lifting the said frame and carrying the cloth clear of the damping-brush during the period that pressure is being exerted on the cloth between the plates, substantially as and for the purpose specified.

4. The combination of the pressing-plates A C, means, substantially as described, for intermittently operating the same, the gear-wheels S, rollers T and U, and mutilated gear R, constructed and arranged to impart an intermittent motion to said rollers T and U, with mechanism substantially as described, for giving a rotary motion to said mutilated gear and to the rollers U from the rollers T, as set forth.

325,128. FARM-GATE. Jeremiah G. Sherman, West McHenry, Ill. Filed Apr. 14, 1885. (No model.)



Claim.—1. In a gate, the combination, with a pair of posts, of a bar or shaft mounted pivotally in the upper ends of the same, arms secured to said shaft and extending inwardly therefrom, a suitably-constructed gate pivoted midway its ends between the outer ends of said arms, and a weight, N, attached to the shaft B, substantially as set forth.

2. In a gate, the combination of a pair of posts or uprights, a bar or rock-shaft journaled transversely in the upper ends of said posts and provided with laterally-extending converging arms and with a flanged upright, and a suitably-constructed gate mounted pivotally between the outer ends of the said arms, and having a beveled post or brace at its inner end, substantially as and for the purpose set forth.

3. The combination of a rock-shaft having a pair of converging arms and a flanged upright with a gate pivoted between the outer ends of said converging arms and provided at its inner end, which overbalances the outer end, with laterally-projecting pins or studs forming stops adapted to engage the flanges of the upright upon the rock-shaft, substantially as and for the purpose set forth.

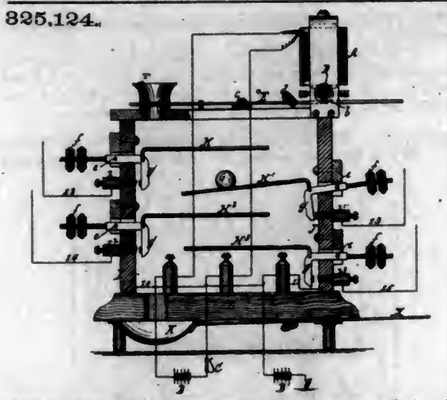
4. The combination of posts or supports, a rock-shaft having a pair of laterally-extending converging arms, and a flanged upright, a gate pivoted between the outer ends of the said converging arms, the rear or inner end of said gate overbalancing its outer end, and a counter-weight upon the outer side of the rock-shaft, all arranged and operating substantially as and for the purpose herein shown and specified.

325,124. CIRCUIT-CLOSER. Adolph T. Smith, New York, N. Y. Filed Aug. 23, 1884. (No model.)

Claim.—1. The combination, with an electro-magnet and with its armature, of a hopper, a gate adapted to close the discharge-opening of the hopper and controlled by the armature of the electro-magnet, and a balanced tray, which, when depressed, closes a circuit from a secondary battery, substantially as and for the purpose shown and described.

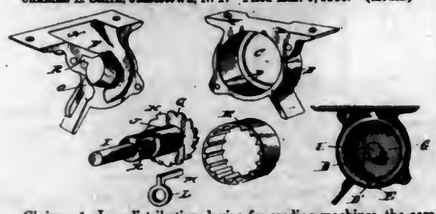
2. The combination, with an electro-magnet and with its armature, of a hopper, a gate adapted to close the discharge-opening of the hopper and controlled by the armature of the electro-magnet, and a series of balanced trays extending in opposite directions, each of which, when

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depressed, closes a circuit from a secondary battery, substantially as and for the purpose set forth.

325,125. DISTRIBUTING MECHANISM FOR SEEDING-MACHINES. Charles L. Smith, Jamestown, N. Y. Filed Mar. 9, 1885. (Model.)



Claim.—1. In a distributing device for seeding-machines, the combination of a casing having an open-ended cylindrical recess, said casing having an inwardly-projecting flange at the open end of said recess, an inwardly-ribbed rim arranged to revolve in said recess, a toothed disk laterally adjustable within said rim, and entrance and exit openings for the seed, substantially as and for the purpose set forth.

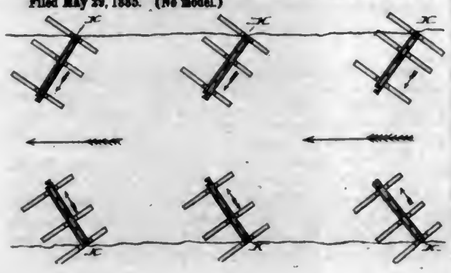
2. In a distributing device for seeding-machines, the combination of a casing having an open-ended cylindrical recess, said casing having an inwardly-projecting flange at the open end of said recess, and being also provided with a hole at its lowest portion, D′, suitable distributing device operating within said recess, and entrance and exit openings for the seed, substantially as and for the purpose set forth.

325,126. METHOD OF STAYING SLITS IN GARMENTS. Walter D. Smith and William H. Paul, Baltimore, Md. Filed July 12, 1884. (No model.)

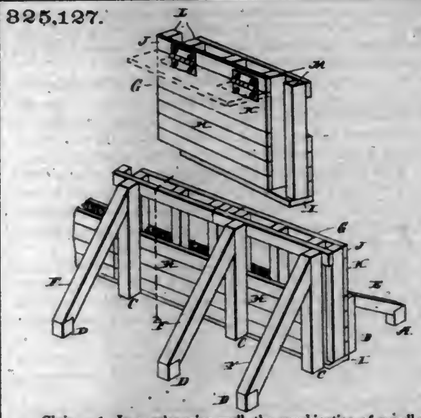


Claim.—The method herein described of staying a slit in a fabric or garment, consisting in stretching out the material so that the edges of the slit lie in a continuous line, then binding the same with a strip of its full length, next bringing the edges of the same together, the binding standing out folded, the folds lying substantially parallel to each other and at right angles to the slitted fabric, then folding the inner fold of the binding down upon the material, and, finally, stitching said inner fold to the fabric, as set forth.

325,127. SUBMARINE WALL. Daniel Spangler, Hanford, Cal. Filed May 29, 1885. (No model.)



325,127.

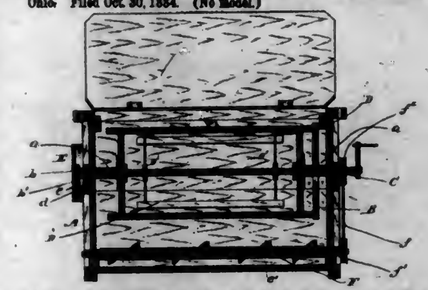


Claim.—1. In a submarine wall, the combination of parallel rows of perpendicular piles provided with connecting-braces and vertically-removable interlocking panels or sections, said panels or sections being provided at their tops with outwardly-swinging hinged gates and having their bulk or body composed of upright timbers, with facing-planks and a bottom plank which form an incasement or box for the reception of suitable ballast, substantially as and for the purpose shown and set forth.

2. The combination of the parallel rows of vertical piles, the movable interlocking panels disposed between and braced by the inner rows of piles, and the gates forming part of the panels and adapted to swing or open in one direction only, substantially as and for the purpose shown and set forth.

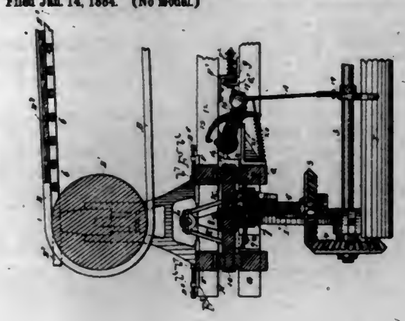
3. A panel for submarine walls, consisting of a rectangular frame adapted to be placed vertically between supporting piles or timbers forming a closed box or receptacle at its lower end, adapted to be loaded with a suitable ballast, and having a swinging gate or gates at its upper part, the lower edge of which impinges upon the upper edge of the box part, substantially as and for the purpose shown and set forth.

325,128. CENTRIFUGAL BOLTING-REEL. Edgar A. Squier, Tiffin, Ohio. Filed Oct. 30, 1884. (No model.)



Claim.—The combination of the reel, the beaters, beater-shaft, a pinion, and a revolving tubular crank-shaft, and a pinion journaled on the crank, in combination with the reel-journal connected to said revolving crank-shaft, and the internally-toothed fixed wheel or circular rack geared to the pinion borne by said crank, substantially as shown, and for the purpose described.

325,129. ORE-CONCENTRATOR. Edward W. Stephens, Erie, Pa. Filed Jan. 14, 1884. (No model.)



Claim.—1. In a wet-ore concentrator, the combination of an ore-bed having a series of curved riffles forming a series of pan-like spaces, a frame supporting said ore-bed, and mechanism for actuating said ore-bed in a horizontal orbit, substantially as described.

2. In a wet-ore concentrator, the combination of an endless-belt ore-bed having a series of curved riffles forming a series of pan-like spaces, drums on which said ore-bed is mounted, a frame supporting said ore-bed and drums, and actuating mechanism, substantially as described.

3. In a wet-ore concentrator, the combination, substantially as described, of the following elements: an ore-bed having a series of riffles forming a series of pan-like spaces, a frame supporting said ore-bed, gearing, substantially as described, for moving said frame in a horizontal orbit, a base-frame, and universal-jointed toggles for giving said frame a tipping movement as it is rotated, substantially as shown.

4. In a wet-ore concentrator, the combination, substantially as described, of the following elements: an ore-bed, frame-work for supporting said ore-bed, consisting of two frames, one of which supports the ore-bed and rests upon the other, and is movable thereon longitudinally, gearing, substantially as described, for moving both said frames in an orbit, and other gearing, substantially as described, for reciprocating the upper frame upon the lower while both are being rotated, as set forth.

5. In a wet-ore concentrator, the combination, with the ore-bed B, mounted and moved as a conveyer, substantially as described, of the frames G and F, the upright shafts 6 6, crank-pins 8, toggles J J, trunnions 10 10, and crank-heads 7 7 for supporting and moving said frames, in the manner and for the purposes set forth.

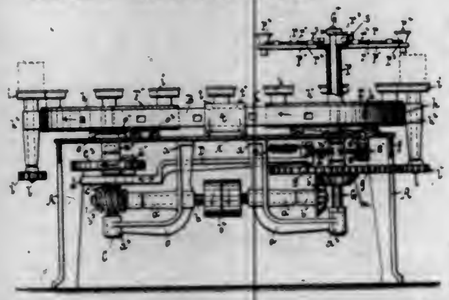
6. In a wet-ore concentrator substantially as described, the combination, with the ore-bed B and the frames F and G, of the upright shafts 6 and 6, adjustable cranks 7 8 and 7 8, the trunnions 10 and 10, and the toggles J J J J, substantially as and for the purposes mentioned.

7. The combination, substantially as herein described, with the ore-bed B, of the frames F and G, cranks 7 8, trunnions 10, toggles J, and the arc-shaped foot-plates J', for the purposes mentioned.

8. The combination, with the ore-bed B and the frames F and G, of the buffers F' G', spring F^2, the shaft 11, disks 12 12 and 13, catches *f f. f' f'*, and 14, pawl 15, arm 16, connecting-rod 18, and eccentric 19, as described, and for the purposes mentioned.

9. The combination, with the bed B and drum B', of the clutch device 27 28, rod 26, crank 25, shaft 22, arm 24, and eccentric 23, as described, and for the purposes mentioned.

325,130. CAN-SOLDERING MACHINE. William H. H. Stevenson, Baltimore, Md. Filed Jan. 10, 1885. (No model.)



Claim.—1. In a can-soldering machine, the combination of a flexible band, B, provided with can-holders, and the wheels F and F', as herein set forth.

2. In a can-soldering machine, the wheel F, having rigidly attached thereto solder-applying devices, in combination with the can-holders *i* and means for rotating the wheel and moving the can-holder, whereby a solder-applying device and a can-holder are successively brought together, as herein specified.

3. In a can-soldering machine, the wheels F and F', and the endless band B, provided with can-holders *i*, in combination with the wheels *f* and the master gear-wheel *g*, whereby two or more cans may be revolved at one time.

4. In a can-soldering machine, an endless flexible band provided with can-holders and means for moving the band, as herein specified.

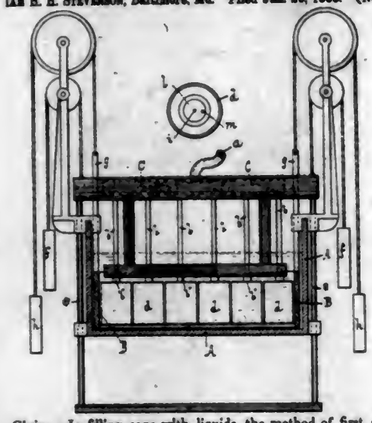
5. The combination of the wheels F and F', the flexible band B, provided with can-holders, and the support *t*, for the purpose as herein specified.

6. The combination of the ratchet *f*, the rock-arm E, provided with a spring-pawl, the connecting-rod D, the cam c^2, the shaft C, provided with a pin and roller, the spring *e*, and the upper wheel carrying the can-soldering devices.

7. The combination of the ratchet *f*, the rock-arm E, provided with a spring-pawl, the connecting-rod D, the cam c^2, the shaft C, provided with a pin and roller, the spring *e*, and the endless band carrying the can-holders.

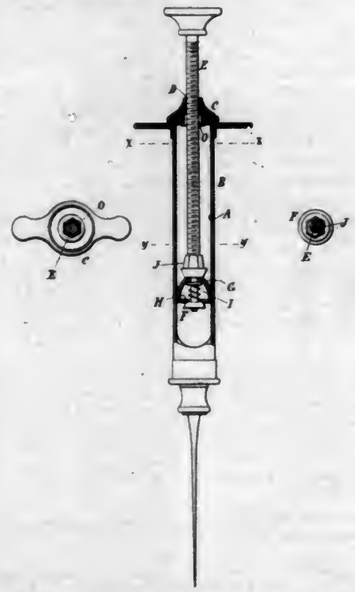
8. The combination of the ratchet *f*, the rock-arm E, provided with a spring-pawl, the connecting-rod D, the cam c^2, the shaft C, provided with a pin and roller, the spring *e*, the endless band carrying the can-holder, and the wheel carrying the solder-applying devices.

325,131. METHOD OF FILLING FRUIT-CANS WITH LIQUID. William H. H. Stevenson, Baltimore, Md. Filed Jan. 26, 1885. (No model.)



Claim.—In filling cans with liquids, the method of first submerging the cans in the liquid with which they are to be filled, and while submerged exhausting the air or forming a vacuum in the can or cans, whereby the liquid is caused to pass therein.

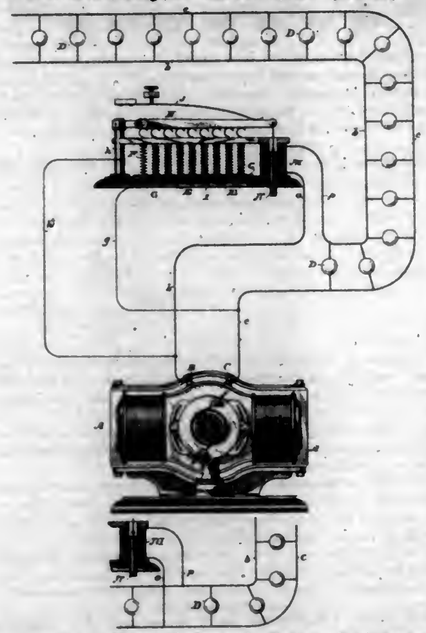
325,132. SYRINGE. Charles J. Tagliabue, Brooklyn, N. Y. Filed Feb. 3, 1885. (No model.)



Claim.—1. In combination with the screw-threaded piston-rod, the expansible piston, and the jam-nut fitted on the piston-rod to act on the piston, the cylinder-head having the axial passage for the piston-rod provided with a socket to receive the jam-nut and hold it stationary in the rotation of the piston-rod, substantially as shown and described.

2. The screw-threaded piston-rod, the expansible piston, and the jam-nut arranged on the piston-rod to act on the piston, and constructed in form of a tapering polygon, in combination with the cylinder-head having the axial passage for the piston-rod, provided with a socket of corresponding form to the jam-nut to receive the latter and hold it stationary in the rotation of the piston-rod, substantially as described.

325,133. REGULATOR FOR DYNAMO-ELECTRIC MACHINES. C. J. Van Depoele, Chicago, Ill. Filed Nov. 15, 1884. (No model.)



Claim.—1. The combination, with a dynamo-electric generator having its armature and field-magnet coils connected in series, of means for regulating the production of current of constant electro-motive force, said means consisting, essentially, of a group of resistances spanning the main conductors at starting, a movable contact adapted to connect more or fewer of said resistances in multiple arc between said main conductors, and a solenoid actuated by the main current, the armature or core of which is connected to and adapted to move said contacts, so as to increase or diminish the extent of said multiple-arc group of resistances, as more or less working-resistance is put into the circuit, substantially as described.

2. The combination, with a dynamo-electric generator having its armature and field-magnet coils connected in series, of a variable resistance spanning the main conductors at starting, the entire conductivity of all the coils of the rheostat being such as will allow sufficient current to pass around and magnetize the field-magnets of the machine to produce a current of predetermined tension for operating multiple-arc working resistances in the main circuit, a solenoid in series with the main conductors, and means operated by said solenoid for cutting out the variable resistance when a portion of the multiple-arc working resistances are brought into circuit, substantially as described.

3. In a system for regulating the production of current of constant electro-motive force, the combination, with a dynamo-electric generator, of a group of resistances spanning the main conductors at starting, a movable contact adapted to connect more or fewer of said resistances in multiple arc between said main conductors, a number of working resistances arranged in multiple arc, and a solenoid in the main circuit, the armature of said solenoid being connected to and adapted to move said contacts, so as to increase or diminish the extent of the said multiple-arc group of resistances as more or fewer of the working resistances are placed in circuit, substantially as set forth.

325,134. HEIGHT-MEASURE FOR HORSES. Ira Wadwright, New York, N. Y. Filed Nov. 15, 1884. (No model.)



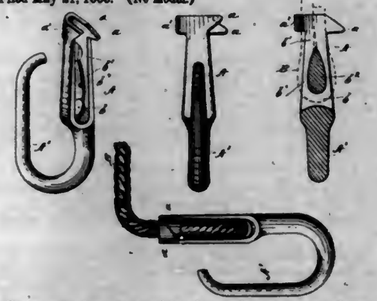
Claim.—The combination, in a height-measure, with an upright standard secured upon a suitable base, of a longitudinally-slotted scale-bar hinged to the upper end of the standard to form a continuation thereof end to end and to fold down against the same, and fitted with an adjustable slide moving longitudinally upon the bar, carrying an arm pivoted thereto to fold within the slot and to open out therefrom and be secured at a right angle with the bar, substantially in the manner and for the purpose herein set forth.

325,135. LAMP-BOX FOR CARS. Joseph J. Walton, Newark, N. J. Filed Mar. 19, 1885. (No model.)



Claim.—The combination, with the rectangular lamp-box A, adapted to be secured within a car and provided with the openings A' and A^2, and the door B, having the metal guard *b* on its lower edge and hinged at its upper edge within the opening A', of the dish-shaped bottom C, removably secured below the opening A^2 and provided with the recess D and guard-plate *d*, and the plate E, provided with the catch F and surface *f* to engage the guard *b* on the lower edge of the door as the latter falls and hold the door closed, substantially as specified.

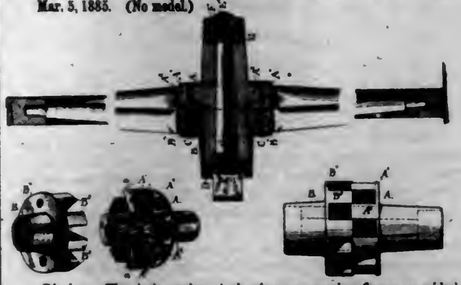
325,136. ROPE-CLAMP. Joel Weigel and James Barclay, Erie, Pa. Filed May 21, 1885. (No model.)



Claim.—1. As a new article of manufacture, a rope-clamp consisting of a body, A, having side grooves *b'*, which meet and form the opening *b* and the web b^2, and an open-sided band, *a a a'*, which can be closed upon a rope lying in the grooves *b'* and looped around the web b^2, as set forth, said parts being formed of one piece of metal.

2. The combination, substantially as set forth, of a rope-clamp consisting of a body, A, having side grooves *b'*, which meet and form the opening *b* and web b^2, and an open-sided band, *a a a'*, which can be closed upon a rope lying in the grooves *b'* and looped around the web b^2, as set forth, and a hook or other object to be attached to said rope formed integral with said rope-clamp.

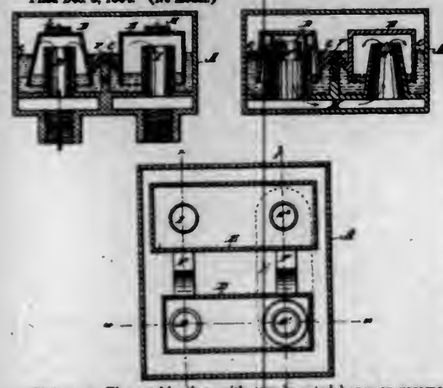
325,137. WAGON-WHEEL. John W. Weber, Chicago, Ill. Filed Mar. 5, 1885. (No model.)



Claim.—The hub-section A, having an annular flange provided with a series of lateral projections, A^2, combined with the part B, fitted to slide longitudinally upon the part A, and having a series of lateral projections, B^2, said projections and the spaces between them being of equal width circumferentially, and the projections in one part being ar-

ranged opposite the spaces between the projections in the other part, so as to form a double series of spoke-sockets and bolts secured in the flange of the part A, and in the part B operating to clamp the ends of the spokes in the sockets, substantially as described.

325,138. GAS-REGULATOR. James D. Weir, East Orange, N. J. Filed Dec. 3, 1884. (No model.)



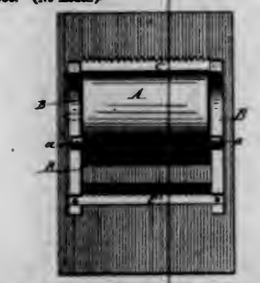
Claim.—1. The combination, with two inverted boxes or gasometers connected together and balanced to tilt on a fulcrum, of a tank containing liquid, in which the lower edges of the said boxes are immersed, an inlet-pipe and an outlet-pipe communicating freely with one of the said boxes, a free inlet-pipe for the other or second box, and an outlet-pipe therefor, serving as the inlet-pipe to the first-named box, and a trap or valve for the outlet of the second box connected therewith to be opened and closed by the tilting of the boxes, substantially as shown and described.

2. The gas-regulator consisting of two connected and balanced boxes or gasometers, one of larger area than the other, and a sealing trap or valve fitted for being opened and closed by the tilting movement of the boxes, whereby gas admitted to the smaller box is allowed to flow to or is cut off from the larger box, according to the pressure in the latter, substantially as described.

3. The combination, with the tank A and the passages B, H', H³, and I, projecting up into the tank, and the passage H, connecting the passages H' and H³, of the inverted boxes or gasometers D and E, the web F, connecting them, and the fulcrum G, substantially as shown and described.

4. The combination, with the tank A, the passages B, H', H, H³, and I, and the gasometers D and E, balanced in the tank to tilt over the mouths of the said passages, of the ring J, projecting down within the gasometer D, and the annular cup K around the passage H', substantially as shown and described.

325,139. PAPER-HOLDER. Ross Wells, Brattleborough, Vt. Filed June 24, 1885. (No model.)

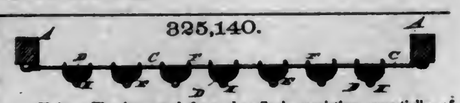


Claim.—1. The combination of a supporting-frame, a roll of paper supported in bearings of said frame and having a core provided with weighted laterally-projecting stops, and two serrated cutting-knives attached, respectively, above and below the roll, substantially as set forth.

2. The combination of a supporting-frame, a roll of paper turning in bearings of said frame and having a core provided with weighted laterally-projecting stops, and two serrated cutting-knives attached, respectively, to the frame in front of the vertical axis above the roll and back of said axis below the roll, substantially as set forth.

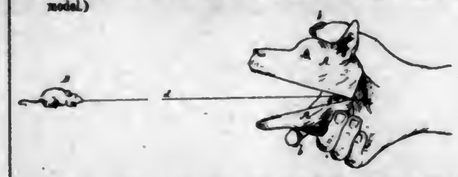
325,140. FENCE. Reuben F. Wilson, Augusta, Kans. Filed May 7, 1885. (No model.)

325,140.



Claim.—The improved fence described, consisting, essentially, of the posts A, the upper and lower fence-wires, B C, the pickets D, and the loops E, for securing the pickets to the said wires, having eyes at opposite ends and an integral intermediate tightening-loop, H, all combined and adapted for joint operation, substantially as specified.

325,141. TOY. Alvin Wilkie, Camden, N. J. Filed Mar. 9, 1885. (No model.)



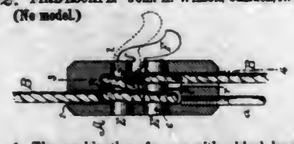
Claim.—1. The combination of the shell with the figure B and an elastic connection between the same and the interior of the shell, said connection being of such length as to permit the projecting of the figure from the shell, as set forth.

2. The combination of the shell composed of hinged sections each having a loop, *b*, the figure B, and an elastic connection between the same and the interior of the shell, as set forth.

3. The combination of the shell composed of hinged sections, the figure B, and an elastic cord, *d*, connecting said figure to the interior of the shell, said cord being of such length as to permit the projecting of the figure from the shell, as set forth.

4. The combination of the shell composed of hinged sections, a spring for drawing said sections together, a figure, B, and an elastic connection between said figure and the interior of the shell, as set forth.

325,142. FIRE-ESCAPE. John H. Wilson, Camden, N. J. Filed July 7, 1885. (No model.)



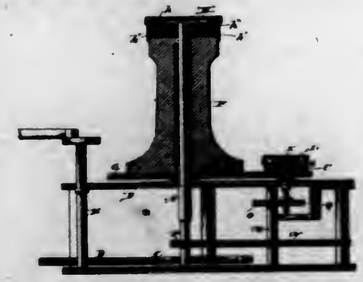
Claim.—1. The combination of a rope with a block having two bars, E and E', one fixed and the other movable toward and from the fixed bar, the said rope being passed around and between the bars, substantially as set forth.

2. The combination of a rope, a block having a fixed bar, and an adjacent movable bar around and between which the rope passes, with a cam-lever to separate the two bars against the strain of the rope, substantially as described.

3. The combination of a rope, a block having a fixed bar, and an adjacent bar pivoted at one end to the block, with a cam-lever to separate the two bars against the strain of the rope, which passes around and between the bars, substantially as specified.

4. A block for a fire-escape, having bars for the passage of the rope, said bars being of wood, with sheet-metal sheathing, as set forth.

325,143. CAPSTAN. Augustus R. Young, Stillwater, Minn. Filed Mar. 25, 1885. (No model.)



Claim.—1. A capstan in which are combined with the winding-drum two shafts that are adapted to be simultaneously rotated in either direction, and by means of clutch mechanism and gearing, substantially as described, to alternately engage with and rotate said drum with different velocities, but always in the same direction, as the direction of revolution of said shafts is reversed, substantially as and for the purpose specified.

2. A capstan in which are combined with the winding-drum an axially-journaled shaft that when rotated in a forward direction is adapted to engage with and revolve said drum forward, a second shaft which journals a loose pinion that meshes with peripheral teeth upon said drum, and is engaged by and moved with said shaft when the same is rotated in a backward direction, and means, substantially as shown, whereby said shafts may be simultaneously rotated forward or backward, substantially as and for the purpose set forth.

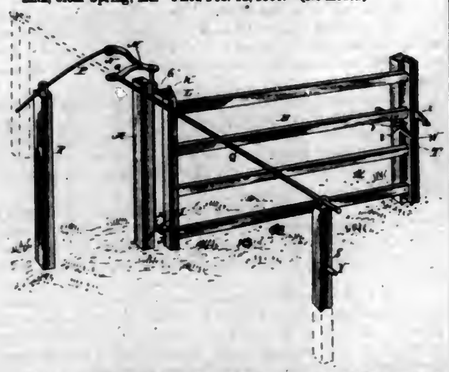
3. A capstan in which are combined the following elements, to wit: a winding-drum that is provided with peripheral gear-teeth, a shaft which is journaled axially within said drum, and by means of clutch mechanism is adapted to engage with and rotate the same when revolved in a forward direction, a second shaft that carries a loosely-journaled pinion which meshes with the peripheral teeth of said drum, and by means of clutch mechanism is engaged by and revolves with said shaft when the same is rotated in a backward direction, and means, substantially as shown, whereby said shafts may be simultaneously rotated in a forward or backward direction, substantially as and for the purpose specified.

4. As a means for connecting the shaft I with the winding-drum F, the pinion K, loosely journaled upon said shaft and provided with the ratchet-teeth *k*, the head L, secured upon said shaft and having the pivoted pawls *l*, and the toothed wheel G, secured to said drum and meshing with said pinion, said parts being combined to operate substantially as and for the purpose set forth.

5. As a means for releasing the pawls *h'* from and locking the same out of engagement with the ratchet-teeth *f*, the casing h^3, surrounding the head H and adapted to be partially rotated around the same, and the pins or studs h^3, which project from said casing radially inward beneath said pawls, said parts being combined substantially as and for the purpose shown and described.

6. The hereinbefore-described capstan, in which are combined the shafts A, E, I, and M, the gear-wheels C, D, G, and N, the pinions O and P, the drum F, having the ratchet-teeth *f*, the loose pinion K, provided with the ratchet-teeth *k*, and the heads H and L, having, respectively, the pivoted pawls *h'* and *l*, substantially as and for the purpose specified.

325,144. OPERATING DEVICE FOR SWINGING GATES. George Eder, Clear Spring, Md. Filed Feb. 12, 1885. (No model.)



Claim.—1. In a swinging gate, the combination of the gate-post, a plate near the lower end of the same, having a pair of stop-studs at right angles to each other, a bracket near the upper end of said post, extending directly between said stop-studs, a hinge-rod journaled vertically in said plate and bracket, and having at its lower end a crank provided with a pintle, and at its upper end an angular lever, to which are connected pivoted operating-rods, and the gate hinged at its lower end to the hinge-rod crank, and at its upper end to the bracket near the upper end of the gate-post, substantially as and for the purpose set forth.

2. The combination of the vertical hinge-rod having a crank at its lower end, and journaled at its lower end in a plate having stop-studs at right angles to each other, and at its upper end in a bracket extending directly between said studs, with the gate hinged at its lower end to the crank of the hinge-rod, and at its upper end in a slot of the said bracket, and provided with suitable latches or fastening devices at its outer end, substantially as and for the purpose herein set forth.

3. The combination, with a swinging gate constructed and arranged to operate as herein described, of a beveled catch secured to the post, and provided with a notch at the post, a horizontal lever pivoted to the side of said catch parallel thereto, and extending beyond both sides of the post, said catch and lever adapted to engage with a pin upon the gate, and said pin being placed below and parallel with one of the slats of the gate, substantially as and for the purpose set forth.

325,145. TOE-CALK FOR HORSESHOES. John Adams, Piqua, Ohio. Filed July 11, 1884. (Model.)

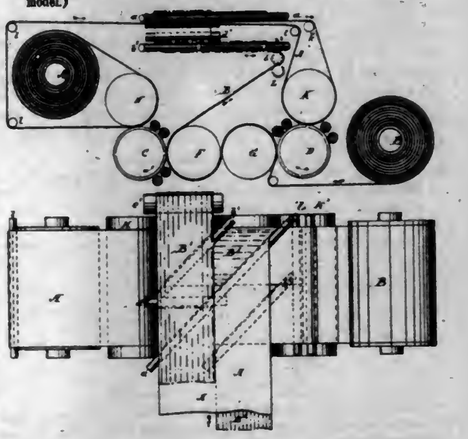


Claim.—1. The combination, with a horseshoe, of the combined toe-calk and clip herein described, having a rearwardly-extending slotted plate a hooked bar adapted to rest within said slotted plate and grasp the shoe, and a key or bar adapted to grip said hooked bar and slotted plate, and clamp the same upon the shoe, substantially as set forth.

2. As an article of manufacture, a combined toe-calk and clip consisting of a front piece or head, C, having a toe-calk, E, a clip, *b*, having an inwardly-extending lip or flange, *c*, and a rearwardly-extending slotted plate, D, formed integrally therewith and with the slot extending through said head, a bar or plate adapted to fit within the slotted plate D and slotted head C, and having on its under face a lug, *i*, and at its rear end a hook, *g*, and a wedge-shaped key or bar for the purpose of removably securing the attachment to shoes of different widths, substantially as set forth.

3. The combination of a shoe, A, having lugs *a* on its front edge, and the combined toe-calk and clip having a slotted front or head piece, C, adapted to rest between said lugs, a rearwardly-extending slotted plate, D, adapted to rest against and fit the under side of the shoe, a clamping-hook adapted to engage with the slotted head-piece C and slotted plate D, and also with the inner front edge of the shoe, and having a lug or projection, *h*, and a beveled key adapted to grip said plate D and lug *h*, and clamp the attachment to the shoe, substantially as and for the purpose set forth.

325,146. PRINTING-MACHINE. Edwyn Anthony, Jersey City, N. J., assignor to R. Hoe & Co., New York, N. Y. Filed Apr. 20, 1883. (No model.)



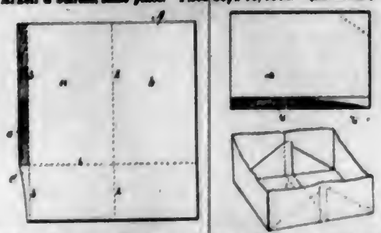
Claim.—1. The combination, with printing mechanism arranged to perfect two webs, and a slitting mechanism, of turning-bars arranged to turn and associate strips of one with the other, and thus form two side-by-side streams of like products running laterally out of the machine, all substantially as described.

2. The combination, with printing mechanism arranged to perfect two webs, and a slitting mechanism, of turning-bars arranged to turn the webs and associate strips of one web with the upper and under sides of opposite halves of the other web, all substantially as described.

3. The combination, with printing mechanisms arranged to perfect two webs, and slitting mechanism operating to split each web into two strips, of turning-bars arranged and operating to transfer and associate

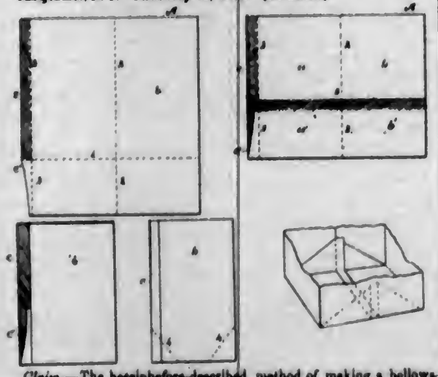
the strips of one web with the opposite strips of the other web, whereby the two opposite strips of both webs are brought together and form two streams of like products running side by side, all substantially as described.

325,147. PAPER BAG. James Arkell, Canajoharie, N. Y., assignor to Arkell & Smiths, same place. Filed Sept. 13, 1884. (No model.)



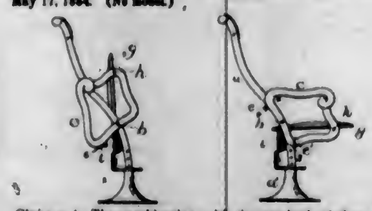
Claim.—A bellows-bottom bag having a seam at the middle of its bottom, and a side seam composed of the part *b* and flap *c*, and having also a supplemental flap *c'*, which is of less width than the flap *c*, and which is located between the latter and the part *b*, all substantially in the manner and for the purpose set forth.

325,148. METHOD OF MAKING PAPER BAGS. James Arkell, Canajoharie, N. Y. Filed May 12, 1885. (No model.)



Claim.—The hereinbefore-described method of making a bellows-bottom bag with one side seam and one seam at the middle of the bottom, which consists in folding the blank shown on the line 1, thereby doubling it at its lower portion, in applying adhesive matter at the localities *a* and *b*, in folding next on the line 2 and bringing the parts *a b a' b'* face to face, with the pasted portions on *a'* and *b'* coinciding, and then folding on the line 3 the pasted flap *c* and securing it to the part *b*, all as shown and described.

325,149. OPERA-CHAIR. Henry S. Bacon, Milford, Mass. Filed May 17, 1884. (No model.)

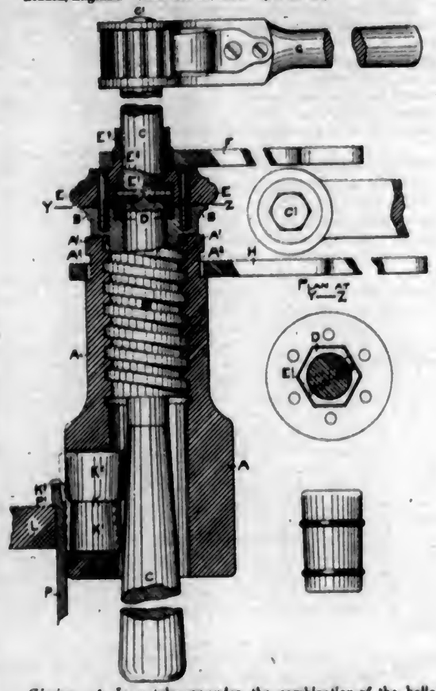


Claim.—1. The combination, with the standard, of the main frame or back attached thereto, the arm-frames pivoted to the back, the seat pivoted to the arm-frames near its front, and supporting-springs on the standard under the rear of the seat.

2. The combination, with the standard, of the main frame attached thereto, the arm-frames pivoted to the main frame, and having projecting lugs in position to engage therewith, the seat pivoted near its front to the arm-frames, and a support for the rear of the seat extending from the base.

3. The combination of the standard, the main frame or back pivoted thereto by a vertical pivot, the arm-frames pivoted to the main frame, and having legs projecting therefrom in position to engage the main frame, the seat pivoted near its front to the arm-frames, and springs under the rear of the seat resting on the base, substantially as described.

325,150. TUBE-EXPANDER. Robert Barnard and Edwin Mills, London, England. Filed Oct. 23, 1884. (No model.)



Claim.—1. In a tube-expander, the combination of the hollow screw, the hollow cap E, secured on the top thereof, the screw and cap having formed therein the recess E', the removable collar in said recess, the mandrel, and means by which the said collar is secured to the mandrel, as set forth.

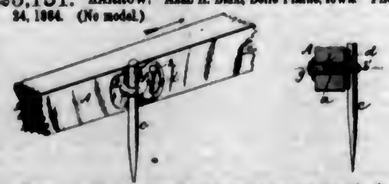
2. In a tube-expander, the combination of the hollow screw, the hollow cap E, secured on the top thereof, the screw and cap being provided with recess E', the mandrel C, located in and passing through the hollow of said screw and cap, and the collar D, located in said recess E' and encompassing and secured to the mandrel by means substantially as described.

3. In a tube-expander, the combination of the mandrel, the hollow screw having cap E secured on the top thereof, the wrench G, which revolves the mandrel, and is secured on the top thereof, and the wrench F, attached to the cap E and serving to rotate it and the screw, as set forth.

4. In a tube-expander, the combination of the mandrel, the hollow screw surrounding it, the box or nut A in which the screw rotates, the wrench F, attached to the cap E and serving to rotate the screw, the wrench G, attached to and serving to rotate the mandrel, and the wrench H, attached to and serving to rotate the box, as set forth.

5. In a tube-expander, the combination of the hollow screw, the mandrel within said screw, the box surrounding the screw, and the roller having faces K' K³ and shoulder K², as set forth.

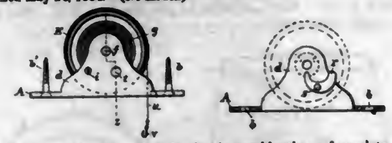
325,151. HARROW. Asel R. Bell, Belle Plaine, Iowa. Filed July 24, 1884. (No model.)



Claim.—1. In a harrow having straight pointed teeth, the tooth-fastening device herein described, consisting of the following parts in combination: the bearing-plate *d*, having the face-groove *e*, the perforation *f*, and the slot *i*, the eyed grip-bolt *b* the bearing-sleeve *l*, the nut *g*, and the stop *k*, the tooth being clamped to the grooved plate, and the said bolt clamped to the bearing-sleeve by the nut, whereby all the parts are clamped together without bringing the clamping-nut directly upon the harrow-bar, as shown and described.

2. The combination, in a harrow, of the tooth *c*, with a bearing-plate therefor having the face-groove *e*, the slot *i*, the perforation *f*, and the integral bearing-sleeve *l*, the latter opening in the bearing-plate on the side of the face-groove opposite the perforation *f*, the eyed grip-bolt *b*, the nut *g*, and the stop *k*, all constructed as shown and described, whereby the bolt and the tooth are prevented from turning independent of the bearing-plate, and the fastening device and its several parts are clamped upon the bearing-sleeve and move with it in changing the position of the teeth.

325,152. SASH-BALANCE. Gilbert C. Bolgiano, Baltimore, Md. Filed May 24, 1884. (No model.)



Claim.—A lifter for sashes, having in combination a face-plate, A, provided with two bearing-plates, *d*, a drum, E, having a chamber open at one side, a hub, *h*, in the chamber, a notched hub, *k*, on the outside, and having projecting on the same side a flange, *n*, which extends only part way around, leaving a space, *q*, where there is no flange, and mounted on a shaft between the said two bearing-plates, a coiled spring, *g*, having one end secured to the said inner hub, *h*, and the other end to the bearing-plate adjoining the open side of the chamber, a dog, *r*, pivoted to the other bearing-plate in position to engage with the notched hub, and a band, *u*, wound on the drum, as set forth.

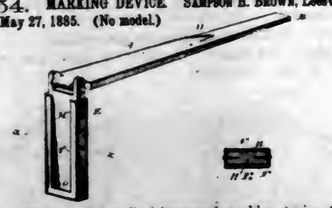
325,153. OVERFLOW-FIXTURE TRAP. Frederick L. Brown, Scranton, Pa. Filed June 5, 1885. (No model.)



Claim.—1. A trap for bath-tubs and other overflow-fixtures, composed of a vertical cylinder having a waste-pipe opening from a point near its upper end and a discharge-pipe from the tub opening into its lower end, an overflow-pipe from the tub opening into said discharge-pipe near the cylinder, a spherical valve adapted to close by gravity the entrance of the discharge-pipe into the cylinder, and a concave strainer secured to a rod depending from the screw-cap of the cylinder and fitting closely within the same, so as to strain the water both from the overflow and the discharge-pipe from the tub, substantially as specified.

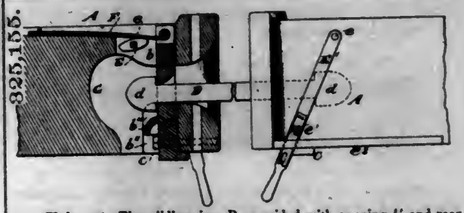
2. The herein-described trap, composed of the cylinder B, provided with the eduction-pipe I and induction-pipe F, the overflow-pipe H, opening into the induction-pipe near the cylinder, the hollow rubber ball-valve C, having on its interior the spherical weight C', and adapted to close by gravity the entrance of the induction-pipe into the cylinder, the screw-cap A, having a proper wrench-hold on its outer side, and the concave strainer D, secured to the rod E, depending from the center of the screw-cap and fitting closely within the cylinder, substantially as set forth.

325,154. MARKING DEVICE. Sampson H. Brown, Leesville, Tex. Filed May 27, 1885. (No model.)



Claim.—The herein-described improved marking device, the same consisting of an arm adapted to be inserted between the folds of a fabric and provided with means for holding it fixed in its position after it has been inserted, and having hinged to its outer end the tag having a strip of suitable material secured around its edges, as shown, so as to form on both sides of the tag the flanges adapted to receive the removable, reversible, and interchangeable cards, substantially as set forth.

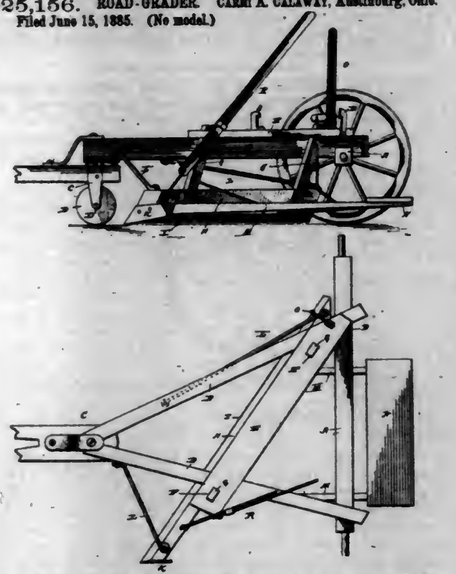
325,155. CAR-COUPLING. William J. Brown, Webster City, Iowa. Filed Mar. 21, 1885. (No model.)



Claim.—1. The sliding jaw B, provided with opening *b'* and rear projection, *b''''*, in combination with a fixed jaw, C, having tenon c^2 and shoulders c^3 c^3, whereby said jaw in rising not only unlocks itself from the link but also the fixed jaw by carrying the link-head up above said fixed jaw.

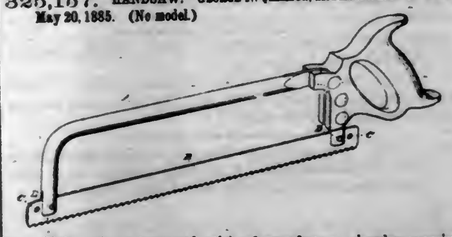
2. The combination of a draw-head having keeper e^3, the lever E', carrying spring *e'* near its handle end, and the shaft *e*, carrying cam E, with the sliding jaw B, as and for the purpose specified.

325,156. ROAD-GRADER. Carmi A. Calaway, Austinburg, Ohio. Filed June 15, 1885. (No model.)



Claim.—A road-grader consisting of a rear axle, converging timbers secured thereto, a swiveled caster-wheel at the front, a diagonal timber supported by the frame and slotted, a leveler or grader proper having upright posts which pass through the slots in the diagonal timber, stays passing from the leveler toward the front of the frame, a straight lever pivoted to the frame and operating to raise the front of the leveler, an angle or L-shaped lever operating to raise the rear of the leveler, and a platform supported by timbers projecting from said leveler, substantially as and for the purpose specified.

325,157. HANDSAW. George N. Clemson, Middletown, N. Y. Filed May 20, 1885. (No model.)



Claim.—As an improved article of manufacture, a handsaw consisting of a bowed metallic frame, A, having its opposite ends kerfed and provided with a single transverse perforation, as shown, a blade, B, having the two outer perforations, C C, and two inner perforations, D D, on the same longitudinal plane, the said blade being secured to the frame by means of a pin, so as to leave an idle perforation at each end, whereby the blade is adapted for frames of various sizes, substantially as specified.

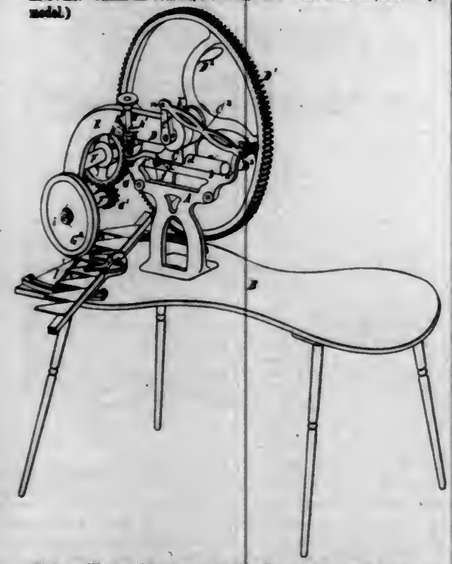
325,158. SOLDERING-IRON. Robert W. Coffer, Liberty, Va. Filed Dec. 30, 1884. (No model.)



Claim.—1. As an improvement in soldering-irons, the combination, with the hollow barrel, of the soldering-head fitted to one end of the same and communicating therewith to receive a supply of balls or lumps of solder therefrom, an opening provided in the soldering-head, and means, substantially as described, for closing and for admitting air to the barrel to provide sufficient pressure for the expulsion of the molten solder through the opening in said head, as set forth.

2. In a soldering-iron, the combination, with the hollow barrel, of the soldering-head fitted to one end of the same and made hollow, so as to communicate with the barrel to receive a supply of balls or lumps of solder therefrom, an opening at the point or front end of the head, and a cap for closing the rear end or opening to the barrel, for the purpose of supplying the same with the soldering material, and also to admit air within the same, as set forth.

325,159. MACHINE FOR SHARPENING MOWER AND REAPER KNIVES. James M. Connel, Newark, Ohio. Filed June 20, 1884. (No model.)



Claim.—The combination, with the slip-coupling contrivance consisting of the pitman or connecting-arm C², pins D³ and n, and spring s', of the standard A, reciprocating carriage C, shaft D, crank-arm C', grinding-wheel G², and gearing D' G G', for operating the shaft, crank-arm, carriage, and grinding-wheel, substantially as and for the purpose described.

325,160. PAINT COMPOSITION. Platt C. Connell, Chicago, Ill. Filed Mar. 23, 1885. (Specimens.)

Claim.—The coloring composition for imitating the color of antique walnut, consisting of substitute or oil shellac, Vandyke brown, and rose-pink, substantially as herein described.

325,161. ROLLER-SKATE. Wilbur F. Cornelius, Muncie, Ind., assignor, by mesne assignments, to the Victor Adjustable Truck Roller Skate Company, same place. Filed June 23, 1884. (Model.)

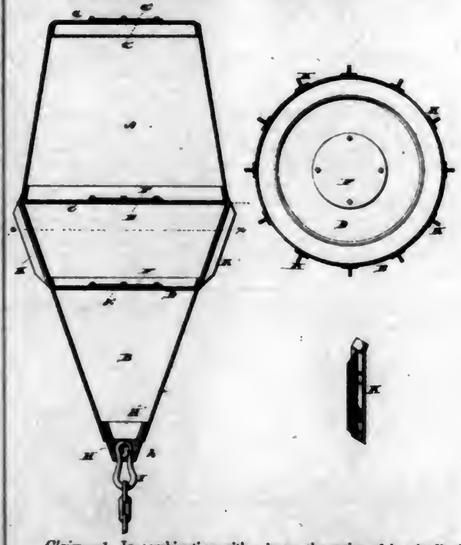


325,161.



Claim.—In a roller-skate, the heel-plate casting F, having slots s', and secured to the skate-bottom A, said plate binding on the side of the said bottom at s'', substantially as and for the purpose set forth.

325,162. BUOY. Patrick Delany, Newburg, N. Y. Filed May 9, 1885. (No model.)



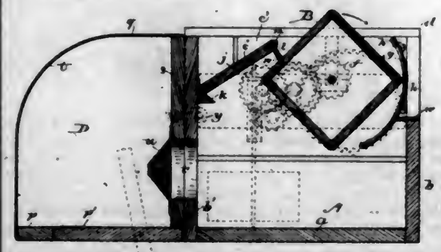
Claim.—1. In combination with a buoy, the series of longitudinal guard-bars or fenders attached to the buoy, having their lower ends cut or beveled inward and downward, substantially as and for the purpose described.

2. In combination with a buoy, the T-shaped bars attached by their cross-plates to the sides of the buoy, so that each bar extends longitudinally with reference to the buoy, and having their lower ends cut or beveled inward and downward, substantially as and for the purpose described.

3. In combination with the buoy, the angle-bars attached thereto, extending longitudinally of the same from points at or near the water-line to points below the same, and having their upper and lower ends cut or beveled inward toward the side of the buoy, substantially as and for the purpose described.

4. In combination with the shell of the buoy, an internal stiffening diaphragm extending across the same at or about the water-line, the second similar diaphragm below this, and the series of longitudinal bars on the outside of the shell extending over and a little beyond the portion of the shell between the diaphragm, and having ribs or flanges extending out radially with reference to the shell, substantially as and for the purpose described.

325,163. FLY-TRAP. George W. W. Edson, Stow, Mass. Filed Dec. 20, 1884. (No model.)

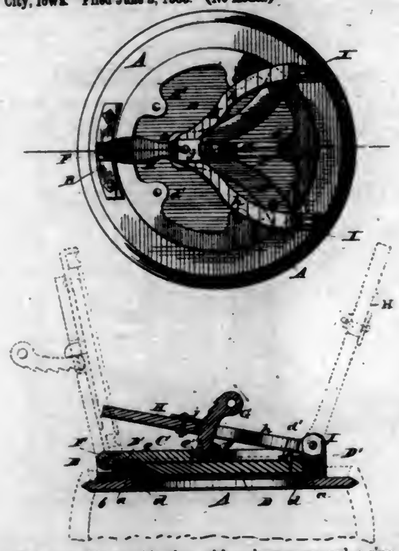


Claim.—1. The combination, with the rotary prism of a fly-trap, of a curtain of transparent glass curved in cross-section, as an arc of a circle, corresponding with the greater circle described by said prism, and a detacher duly pivoted and arranged to co-operate with said prism and shield, substantially as specified.

2. In combination with the rotary prism of a fly-trap, the rear curtain provided with a suitable detacher and pivoted at or near the center of its width and slightly in rear of its center of gravity, substantially as specified.

3. The combination, with the rotary prism and rear curtain of a fly-trap, of a detacher pivoted upon said curtain at or near the lineal center of said detacher, substantially as specified.

325,164. FASTENER FOR CHURN-TOPS. John H. Elliott, Mason City, Iowa. Filed June 3, 1885. (No model.)

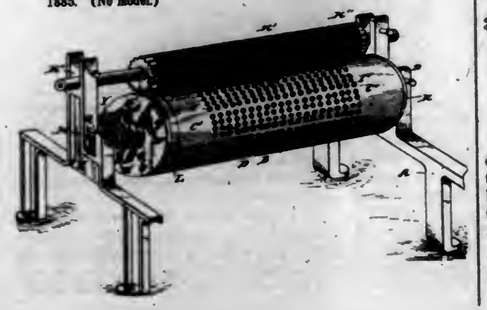


Claim.—1. The combination, with a churn-cover and a ring, of a rocking serrated latch pivotally attached to the cover, and a bifurcated lever pivotally attached to the ring and arranged to bear upon the top of the cover and provided with a plate to engage the teeth of the latch, all substantially as described.

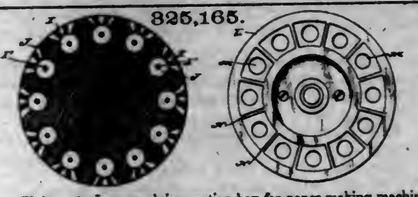
2. The combination, with a hinged top or cover composed of a metallic rim and a wooden disk having a Y-shaped brace secured to the rim and disk and provided with a latch, G, of a metallic ring provided with posts, to which are hinged the prongs of a lever arranged to bear upon the cover when said lever is depressed, and a plate on the lever adapted to engage the latch of the cover, whereby the lever is held to its bearing upon the cover, substantially as specified.

3. The combination, in a churn-top, of a metallic ring, A, having posts I I, a bifurcated lever hinged to the posts, and a removable hinge-plate, B, beneath which are one or more washers, with a hinged cover composed of a metallic rim, D', and a wooden disk, D, the space between said disk and inner circumference of the rim being filled with an elastic or yielding substance, and means for securely locking the lever, substantially as set forth.

325,165. SUCTION-BOX FOR PAPER-MACHINES. William A. Fletcher and Walter E. Keightley, Clarksville, Mo. Filed Mar. 17, 1885. (No model.)



325,165.



Claim.—1. In a revolving suction-box for paper-making machines, the combination of a revolving roller or box having a number of longitudinal compartments extending under the perforated face of the roller, the said compartments opening with their ends in the end of the roller, with a valve or head fitting against the end of the roller, and having a perforation for the suction-tube registering with the open ends of the compartments, as and for the purpose shown and set forth.

2. In a paper-making machine, the combination, with a revolving perforated suction-box, of a roller having a perforated covering and journaled above the suction-box, as and for the purpose shown and set forth.

3. In a revolving suction-box for paper-making machines, the combination of a revolving roller or box having a number of longitudinal compartments under its periphery opening into the said periphery through perforations and opening at the end of the roller, a valve seat or disk secured upon the end of the roller and having a number of perforations corresponding to the open ends of the compartments and surrounded by raised ribs, and a stationary disk or valve having an aperture for the insertion of a suction-pipe registering with the apertures in the valve-seat, as and for the purpose shown and set forth.

4. In a revolving suction-box for paper-making machines, the combination of a revolving roller having a number of longitudinal compartments extending under the perforated face of the roller and opening at the end of the roller with a valve or head fitting against the end of the roller, and having a suction-aperture registering with the open ends of the compartments, and having means, substantially as shown, for adjusting the disk in a vertical plane to bring the suction-aperture to register with the line of contact for the paper upon the revolving box or roller, as and for the purpose shown and set forth.

5. In a revolving suction-box for paper-making machines, the combination of the sides of the machine-frame having a bearing in one side and a polygonal slot in the other side, a disk having a segmental slot near its edge and having a polygonal sleeve or bearing fitting in the polygonal slot of the frame, a roller or box having an axial shaft and having a number of longitudinal compartments extending under the perforated face of the roller and opening in the end of the roller, the said shaft turning in the bearing in the frame and in the polygonal sleeve, a valve or disk bearing tightly against the end of the roller, having a suction-aperture registering with the open ends of the compartments, and having a central outwardly-projecting sleeve formed with two diametrically-opposite recesses, an annular yoke having two diametrically-opposite pointed screws bearing in the recesses in the aforesaid sleeve, and having two diametrically-opposite lugs provided, respectively, with an outwardly-pointing set-screw and with a spring-cushioned pin, and a plate having two inwardly-projecting lips clamping the spring-cushioned pin and its lug and provided with a set-screw sliding adjustably in the slot of the disk having the polygonal sleeve, as and for the purpose shown and set forth.

6. In a revolving suction-box having longitudinal cylindrical compartments extending under its perforated face, the combination of the roller having the said compartments, tubes fitting in the ends of the said compartments and having perforations registering with the perforations in the face of the roller and in the sides of the compartments, imperforate tubes sliding in the perforated tubes and having cross-bars at their ends provided with threaded perforations, and rods having means for turning them and having a right-hand and a left-hand screw-thread, one at each end, fitting in the perforations of the cross-bars of the imperforate tubes, as and for the purpose shown and set forth.

325,166. SHELL. Joseph Garrick, Michigan City, Ind. Filed May 26, 1885. (Model.)



Claim.—1. The combination of the outer shell having cone-shaped cutter on the inner central surface of its base, the inner shell carrying the explosive and having percussion-primer opposite the center, and the head or point A, which serves the purpose of holding the shells centrally together, and also of discharging the inner shell by forcing it against the cutter, as hereinbefore described.

2. The combination of the outer shell, the cutter on the inner central surface of the base of the outer shell, the head or point which serves to hold the inner shell within the outer one, the inner shell inclosed

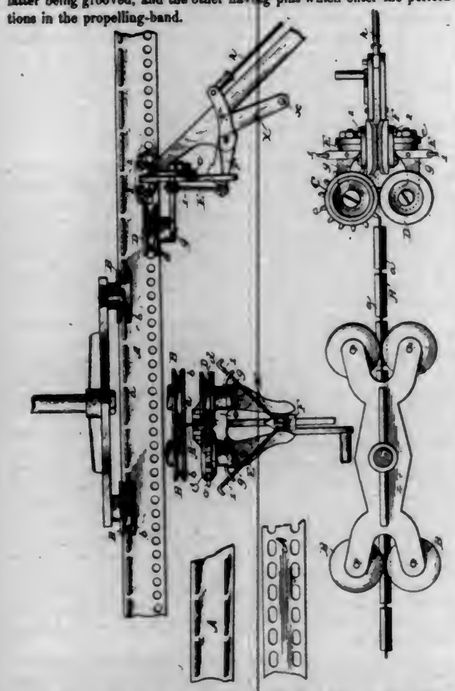
within the shell B, and the percussion-primer inserted within a central opening in the base of the inner shell and opposite the cutter, as set forth.

3. The outer shell provided with cone cutter upon the central surface of its base and an annular chair or seat near its top, in combination with the inner shell having a percussion-primer in its base and the head or point, as set forth.

4. The combination of the outer shell, the cutter, and an annular chair or seat for the larger ridge of the point, with the inner shell containing the explosive and provided with a percussion-primer, with the head or point, said point having a chamber in its body and carrying a charge which is designed to explode and operate after that of the inner shell, as set forth and explained.

325,167. TRACTION-WAY. Richard Gornall, Baltimore, Md., assignor of ninety one-hundredths to George A. Dubreuil and Jacob Hecht, both of same place. Filed July 5, 1883. Renewed July 28, 1885. (No model.)

Brief.—A flat vertical driving-band, perforated or plain, supported laterally and vertically between pairs of pulleys, and having a free edge for the gripper. A gripper having jaw-levers and pulleys, one of the latter being grooved, and the other having pins which enter the perforations in the propelling-band.



Claim.—1. A traction device for cars and other vehicles, consisting of a flat band or cable, one edge of which is adapted to pass between and engage with the pairs of a series of pulleys, whereby the band or cable is supported laterally and vertically and a free edge presented for the gripping device, substantially as described.

2. A series of pairs of pulleys supported on suitable frame-work above a way, in combination with a suspended flat band or cable, the upper edge of which is adapted to engage with the pulleys and be supported thereby, and the lower edge is exposed to the gripping device, substantially as described.

3. The band having a rib on one edge, in combination with the supporting grooved pulleys, whereby the band is supported and one edge adapted to be seized by the gripping device of a vehicle, all substantially as described.

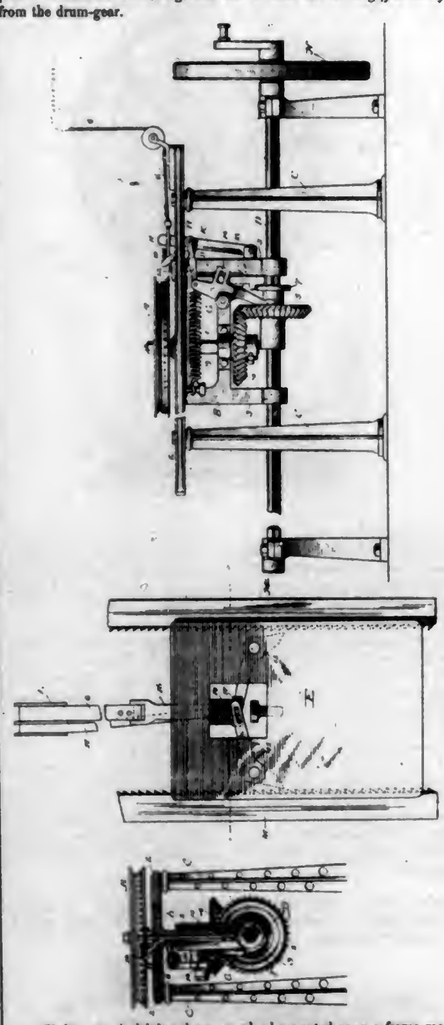
4. A traction device for cars and other vehicles, consisting of a band or flat cable having a rib on one edge, in combination with grooved supporting-pulleys and a series of holes on the other edge adapted to act in connection with a gripping device having a pin-roller and a grooved roller, all substantially as described.

5. The gripping device mounted on the end of the pole of a car or other vehicle, said device consisting of jaw-levers and jaws adapted to be operated by the attendant, arms on said jaws, a pair of pulleys, one grooved and one pivoted with pins, the whole being adapted to a perforated band, all substantially as described.

6. A flat band or cable having means, substantially as described, for holding the gripping devices to the band, and means, substantially as described, for holding the band to the supporting-pulleys.

325,168. APPARATUS TO BE USED WITH TRACTION-CABLES. Richard Gornall, Baltimore, Md., assignor of ninety one-hundredths to George A. Dubreuil and Jacob Hecht, both of same place. Filed Sept. 10, 1883. Renewed July 28, 1885. (No model.)

Brief.—The frame carrying the driving-drum, and the driving-gear, are splined upon the main driving-shaft. The drum is automatically ungeared from the driving-power through a shifting lever, dog, and bolt, which are held out of action against a spring through connection with the spring-actuated pawls of the compensating-weight while the cable is running, but in the event of its breaking, the action of the spring-pawls actuates the lever, dog, and bolt to shift the driving-gear away from the drum-gear.



Claim.—1. A driving drum or wheel mounted upon a frame moving on suitable ways in line with the strain of the cable, a main driving-shaft in parallel line with the ways, a gear-wheel splined upon the main driving-shaft and held in connection with gearing upon the shaft of the main driving wheel or drum, and a weight connected to the frame, whereby the cable is kept under tension and expansion and contraction allowed, substantially as described.

2. A driving drum or wheel mounted upon a frame on suitable ways in line with the strain of the cable, a gear-wheel splined upon the main driving-shaft, held in connection with the gearing upon the shaft of the wheel or drum by means of a trigger and intermediate mechanism, said trigger being connected to the safety-dogs of the weight, whereby the driving-shaft is disconnected from the drum by the breakage of the cable, substantially as described.

3. The combination of the carriage B, the driving wheel or drum A, with its shaft and bevel-gear, and the bevel-gear splined on the main driving-shaft engaging with the gear of the drum-shaft, substantially as described.

4. The combination of the driving drum or wheel, having a bevel-gear on its shaft engaging with a sliding bevel-gear splined upon the main driving-shaft, and the frame sliding in ways and upon the main driving-shaft, substantially as described.

5. In combination with the carriage, mounted as described, and carrying the driving-drum connected by gearing to the main shaft, the lever G, connected to a trigger, 10, mounted upon the lever K, and connected to the weight in the manner described.

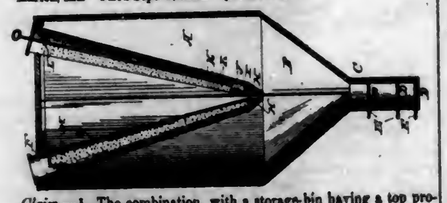
6. In connection with the described frame, its drum and gears, all adapted to move upon the main shaft, the lever G and its trigger, in combination with the bolt 13, acting in connection with the lever and the end of the sleeve, substantially as described.

7. In combination with the driving-drum of an endless cable, a carriage for said drum moving on suitable ways, and connected to a sliding gear on the main driving-shaft, with a weight connected to said frame, and with safety-dogs adapted to engage in rack-bars in the guides of said weight, whereby the cable is kept under constant and uniform strain, substantially as described.

325,169. INSECTICIDE-WASH. Frank H. Harman, Holton, Kans. Filed June 25, 1885. (No specimens.)

Claim.—The herein-described wash for trees, the same consisting of a mixture of slaked lime, water, gas-tar, whale-oil soap, and clay or loam, mixed in about the proportions set forth.

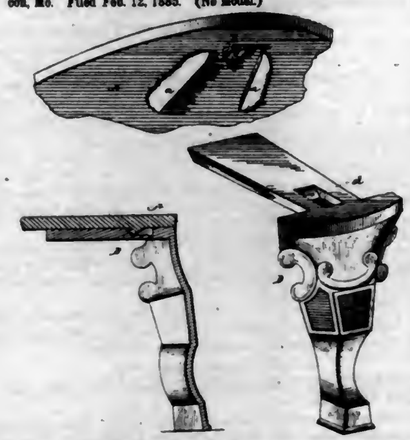
325,170. VENTILATOR FOR GRAIN-BINS. Ben F. Harrell, New Marion, Ind. Filed Sept. 2, 1884. (No model.)



Claim.—1. The combination, with a storage-bin having a top provided with a suitable opening or openings, of a removable and adjustable perforated ventilating-tube terminating in a conical point, and having an opening near its lower end capable of being closed by a suitable slide having a handle extending to the upper end of the said tube, substantially as and for the purpose set forth.

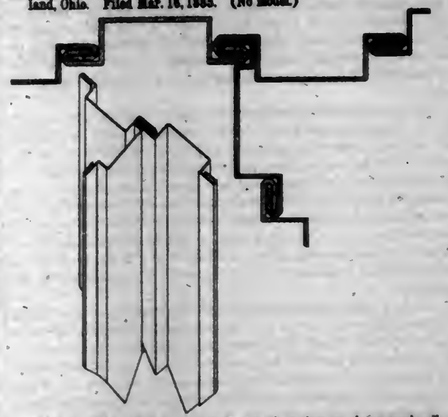
2. A perforated ventilating-tube for storage-bins, terminating in a conical point at its lower end, and provided near its upper end with a gravity trap-door opening downward or inward, substantially as and for the purpose set forth.

325,171. STOVE-LEG. Curtis R. Haverly and George E. Gary, Macon, Mo. Filed Feb. 12, 1885. (No model.)



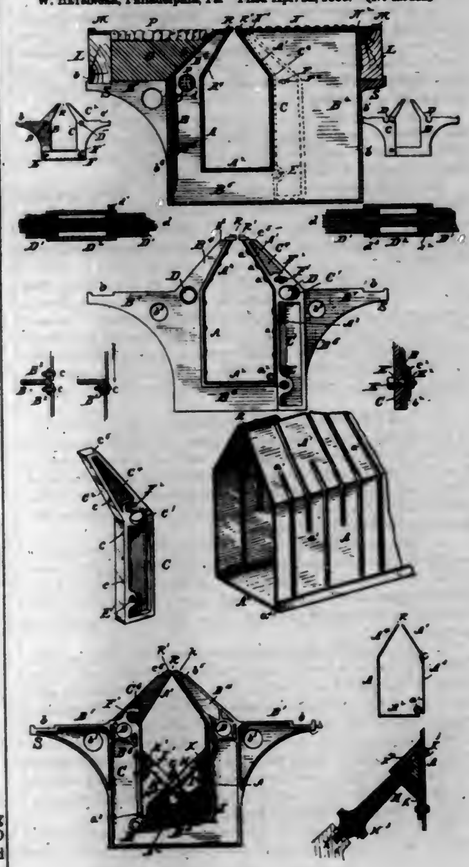
Claim.—The combination, with the base-plate of a stove having depending and beveled pieces *a a* and block B, of the leg with tongue D and recess *d*, the said block B being adapted to enter said recess, and when the leg is in its proper position to contact with the end wall of said recess and limit the further movement of said leg, substantially as shown, and for the purpose set forth.

325,172. SHEET-IRON LOCK-JOINT SPILE. Hiram C. Herron, Cleveland, Ohio. Filed Mar. 16, 1885. (No model.)



Claim.—The lock-joints as applied to sheet-iron or sheet-steel spiles, as shown by the metal partings in the drawings referred to, for the purpose of constructing breakwaters, cribs, coffers, dams, and all other structures for controlling water or earth, sand, gravel, and rock, or both, or all of them.

325,173. CONDUIT FOR CABLE AND ELECTRIC RAILWAYS. I. W. Heysinger, Philadelphia, Pa. Filed Apr. 22, 1885. (No model.)



Claim.—1. In a cable-railway conduit, the combination of the fixed yoke B and adjustably-pivoted frame C, substantially as and for the purposes described.

2. The combination of the fixed yoke B, having attached thereto the bottom A^2, side A, and inwardly-sloping top A^4, of a sheet-metal conduit-tube, the frame C, pivoted to the said yoke at E, and having attached thereto the side A^3 and sloping top A of the said conduit, together with the adjustable attachment F F' F^2, by means of which the said frame and the said yoke may be clamped together or adjusted upon the said pivot E to open or close the grip-slot R, substantially as described.

3. In a cable-railway conduit, the series of yokes B B B, supporting the bottom and one side of a sheet-metal conduit-tube, in combination with the series of opposite frames C C C, hinged upon the said yokes at E E E, near the lower angle of the said conduit-tube, and having the flat sides of the said frames and the said yokes brought into apposition with and firmly held against each other by the bolts F F F, so as to adjust the sides of the different sections of which the conduit is composed upon each other by opening or closing the grip-slot R to a proper gage and screwing up the said bolts F F F to firmly clamp the said yokes B B B against the said frames C C C, substantially as described.

4. In a cable-conduit, the rigid yoke B, consisting of the bottom B^2, the upright provided with slope B^4, and opposite upright B^3, and having the bolt-holes E^2 and F', in combination with the frame C, consisting of the upright provided with slope C^4, and having the bolt-hole E' and bolt-slot F^2, or their equivalents, together with the pivot-bolt E and clamping-bolt F, the whole constructed to operate substantially as and for the purposes set forth.

5. A cable-railway conduit consisting of a series of rigid yokes and frames, B B B C C C, supporting internally thereto a continuously-corrugated sheet-metal conduit-tube, substantially as described.

6. A sheet-metal conduit-tube for cable railways, consisting of the sides A, A', A^3, A^3, and A^4, and having the flexible longitudinal corner corrugation a^2, or its equivalent, substantially as and for the purposes described.

7. In combination with a rigid yoke, B, supporting internally thereto the fixed sides of the sheet-metal conduit-tube A A^2 A^4, an adjustable frame, C, pivoted upon the said yoke and supporting internally thereto the movable sides A^3 A^4 of the said tube, the side A^3 being adjusted upon the bottom A^2 of the said tube by a flexible closed joint, a^2, substantially as described.

8. In combination with a cable-railway conduit provided with suitable brackets or supports, one or more electric-wire conduits supported upon said brackets, said conduits communicating with each other and forming a compound conduit, substantially as described.

9. In combination with a cable-railway conduit having man-holes B^3 at suitable intervals, an electric-wire conduit external thereto and connected with the said man-holes, so that both cable and electric conductors communicate freely and are both accessible therefrom, substantially as described.

10. A conduit for electric wires, consisting of a containing-tube, D' D', and one or more insulated electric conductors contained therein, the ends of the said tube D' D' being permanently separated from each other, so as to expose the said wire or wires and covered by a freely-sliding sleeve, D^2, adapted to be held in place, so as to complete the tube, or to be slipped back upon and externally to the tube D', to expose the said wire or wires and make or brake connection therewith, substantially as described.

11. In a cable railway, in combination with a cable-conduit having an open grip-slot, R, and a traveling cable, G, adapted to propel the car above by connection made from the said cable with the said car through the said grip-slot, the elongated opposite and diagonally-placed rollers, upon which the traveling cable is supported and guided in the angle formed by the intersection of the upper and opposite rotating surfaces thereof, substantially as described.

12. The opposite diagonal sheaves or rollers H H' H^2, arranged alternately in pairs or groups of three or more at suitable intervals to sustain the traction-cable G at the angle of intersection of the said opposite and diagonal sheaves, or upon a single sheave of the said pair when the cable rises upon one or the other side of the same, substantially as described.

13. The tapering diagonal sheaves or rollers H H', enlarging in diameter from above downward, supported at their upper ends by the spindles or bearings *h h* in the sockets K K' at opposite sides of the conduit or path of the cable A, and provided at their lower parts with the enlarged heads H^2 H^2, so constructed as to present by their intersection in longitudinal view a curved channel for the cable G, and sustain and steady the same against lateral whipping thereof and smoothly seat the said cable by gravity in the said angle formed by the surfaces of the said opposite sheaves after the passage of the grip-bar of a car and the lifting of the cable thereby, substantially as described.

14. In combination with the diagonal sheaves or rollers H H', the stepped seats *i i*, adapted to contain lubricating material, in which the spindles *h' h'* are seated, and the opposite and upper journal blocks or bearings, K K', in which the spindles *h h* are seated, substantially as described.

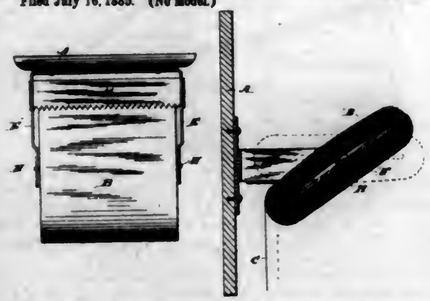
15. In combination with the conduit-tube A of a cable railway and the cables G, the opposite diagonal sheaves or rollers H H' and the beveled brackets K K', fixed to the opposite sides of the said conduit-tube, and in which said brackets are journaled the upper spindles of the said sheaves H H', the whole being so constructed that the cable G, if displaced to the side of the conduit-tube A, will slide down upon the beveled brackets K K' and the rotating sheaves H H', and be smoothly centered at the axis of intersection of the said diagonal rolls or sheaves, substantially as described.

16. In combination with the conduit of a cable railway having a grip-slot provided with adjustable sides so constructed as to enable the width of the said grip-slot to be altered or regulated by the lateral adjustment of one or both of the said sides, the yokes B B B, supporting internally thereto the sheet-metal conduit-tube A, and having the projecting arms B' B' springing from the sides of B between the bottom and top of the said yoke, and provided with the socketed seats *b b*, in which are supported the stringers L L of the rails M M, substantially as described.

17. In a sheet-metal conduit-tube for a cable railway, in combination with the yokes B B, grip-slot R, and traveling cable G, the vertical crimps or corrugations *a' a' a'* in said conduit-tube, by means of which the tube is stiffened, and at the same time compensates for expansion or contraction of the continuous line of conduit when the said vertical crimps are placed at intervals, and by varying the relative depth or number of crimps on opposite sides of the said conduit-tube the same may be curved along its course, substantially as described.

18. In combination with the sheaves H H', the double-leaved brackets K^2 K^2, the interposed adjustable journal-block K^4, and the cross-bolt K^3, substantially as shown and described.

325,174. **TOILET-PAPER FIXTURE.** OLIVER H. HYDE, Chicago, Ill. Filed July 16, 1885. (No model.)



Claim.—1. The combination, with a weighted oscillating roll of toilet-paper actuated in one direction by a pull upon its free end, of a knife or cutter co-operating with said roll to sever the unwound portion when the roll has reached the limit of its motion in one direction, and a stop for limiting the motion of said roll, substantially as described.

2. The combination, with an oscillating roll of toilet-paper having its bearings out of line with its center of gravity and actuated in one direction by a pull upon its free end, of a stop constituting a knife or cutter for co-operating with said roll to sever the unwound portion when the roll has reached the limit of its motion in one direction, the eccentric hanging of the roll returning it automatically to its normal position, substantially as described.

3. The combination, with an elongated or oval oscillating roll of toilet-paper actuated in one direction by a pull upon its free end, of a stop constituting a knife or cutter co-operating with the roll to sever the unwound portion therefrom when the roll has reached the limit of its motion when so actuated, substantially as described.

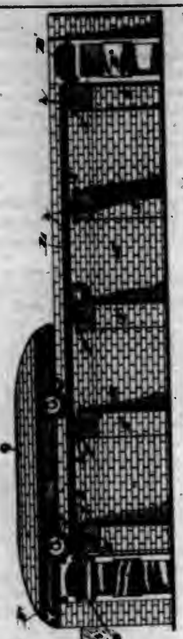
4. The combination, with the supporting-arms, of a stop-plate or cutter extending between said arms, and an oscillating core-plate having its bearings in said arms and adapted to hold a roll of paper, substantially as described.

5. The combination of the back plate, the supporting-arms, the plate forming the stop and cutter, and the oscillating core-plate, the whole arranged and operating substantially as described.

325,175. **FURNACE.** JAMES HILL, Cleveland, Ohio. Filed Feb. 3, 1885. (No model.)

Claim.—1. In a furnace or oven, the combination, with a traveling roof mounted on wheels, of a track and devices for elevating or depressing said track, whereby the roof may be moved bodily away from the furnace and returned and made to rest on the walls of the furnace, substantially as set forth.

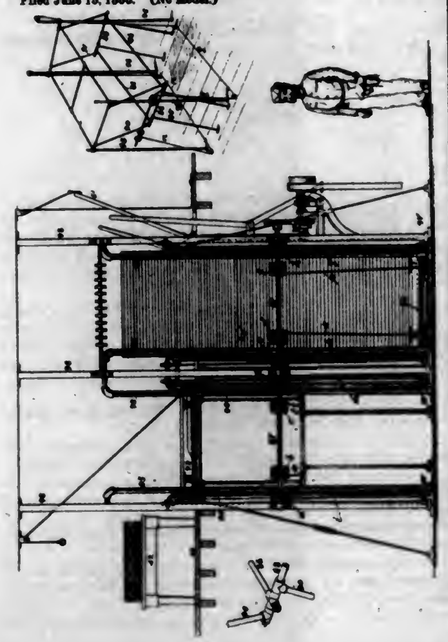
325,175.



2. The combination, with a double furnace, a track located alongside of said double furnace, and devices for vertically adjusting said track, of a roof mounted on wheels and adapted to be moved from one section of the furnace to the other.

3. The combination, with a double furnace the floors of which are provided with openings, and a hot-air chamber located below said floors, of a track located alongside of said double furnace, devices for vertically adjusting the track, and a roof mounted on wheels and adapted to be moved from one section of the double furnace to the other, substantially as set forth.

325,176. **VARNISHING-MACHINE.** JOS. E. HINDS, Brooklyn, N. Y. Filed June 15, 1885. (No model.)



Claim.—1. In an apparatus for handling varnished sheets, the combination, with the varnishing-machine, of elevators arranged substantially as described, and for the purpose specified.

2. In an apparatus for handling varnished sheets, the combination, with the varnishing-machine, of two elevators arranged to be actuated in opposite directions, substantially as described, and for the purpose specified.

3. In an apparatus for handling varnished sheets, the combination, with the varnishing-machine, of two elevators and their toggle-levers, all arranged and combined substantially as described, and for the purpose specified.

4. In an apparatus for handling varnished sheets, the combination, with the varnishing-machine, of two elevator-platforms, toggle-levers, ropes, and a drum-shaft, all arranged and combined substantially as described, and for the purpose specified.

5. In an apparatus for handling varnished sheets, the combination, with the elevator-platforms, of toggle-levers, ropes, and a drum shaft arranged to be operated in either direction, substantially as described, and for the purpose specified.

6. In an apparatus for handling varnished sheets, the combination, with the varnishing-machine, of two elevator-platforms, two series of toggle-levers, ropes, and a drum-shaft carrying drums, over which the ropes from either series of levers pass in opposite directions, substantially as described, and for the purpose specified.

7. In an apparatus for handling varnished sheets, the combination, with an elevator-platform, of toggles operated by two series of ropes, as *n q* and *o p*, said ropes, and a drum-shaft, as 87, together with a mechanism for operating said shaft, substantially as described.

8. In an apparatus for handling varnished sheets, the combination, with two elevators and their operating mechanism, of a floor or staging, 50, substantially as described, and for the purpose specified.

9. In an apparatus for handling varnished sheets, the combination, with two elevators and their operating mechanism, of a floor or staging, 50, provided with trap-doors, as 53 and 54, all substantially as described, and for the purpose specified.

10. In an apparatus for handling varnished sheets, the combination, with an elevator-platform, of toggle-levers, as 90 and 91, an operating mechanism for said toggle-levers, and a flooring, as 56, adapted to act as an inclined way, substantially as described.

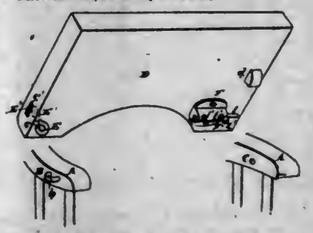
325,177. **CAR-WHEEL.** ROSS KELLS, Cleveland, Ohio, assignor to the Paige Car Wheel Company, same place. Filed July 3, 1885. (No model.)



Claim.—1. In a car-wheel or wheel for an engine-truck, the combination, with a tire provided with an internal flange, the latter being rectangular in cross-section, and located opposite that portion of the tread that covers the rail-head, of a cast-metal center having cored spokes, and having a rim, A^3, flange A^2, shoulders *a* and *a'*, and a retaining-ring, the parts being arranged substantially as set forth.

2. The combination, with a cast-metal center having a tire-flange and retaining-ring, and a tire having an internal flange, the parts being arranged substantially as indicated, of bolts for securing the retaining-ring to the cast center, and arranged to engage the inner edge of the tire-flange, to serve as keys to prevent the tire from turning on the cast center, substantially as set forth.

325,178. **CHILD'S CHAIR.** AUGUSTUS KNOWLTON, West Gardner, Mass. Filed Jan. 30, 1885. (No model.)



Claim.—1. A child's chair having one of its arms provided with an eye or loop, in combination with a tray having a loose or movable eye adapted to be coupled to the loop on the chair, by which said tray may be placed in position before the child or allowed to hang down on one side of the chair, substantially as and for the purpose specified.

2. A child's chair having one of its arms provided with an eye or loop having one part thereof of less thickness than the rest, in combination with a tray having a loose eye adapted to be coupled to the loop on the chair, by which said tray may be placed in position before the child or allowed to hang down on one side of the chair, the said eye having

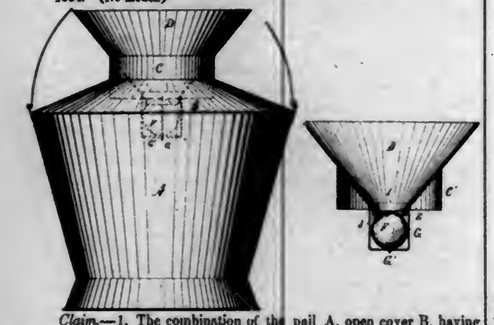
a narrow opening by which it may be coupled or uncoupled, with the loop at its place of least thickness, substantially as and for the purpose specified.

3. The chair-arm A, having loop B, made rigid, in combination with the tray D, having eye E, loosely pivoted thereto, substantially as and for the purpose specified.

4. The chair-arm A, having loop B, in combination with the tray D, having eye E, and bolt F, substantially as and for the purpose specified.

5. The arm A, having loop B, having flattened part *b*, in combination with tray D, having eye E, with opening *e*, substantially as and for the purpose specified.

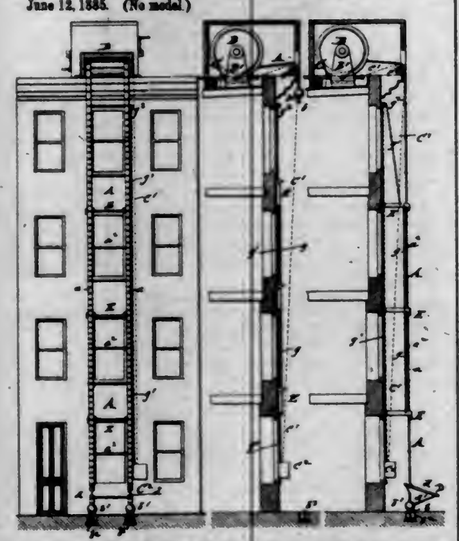
325,179. MILK-PAIL. WILLIAM KOEGEL and FREDERICK STROHACKER, Freeport, Ill.; said Strohacker assignor to said Koegel. Filed May 29, 1884. (No model.)



Claim.—1. The combination of the pail A, open cover B, having neck C, surrounding the opening therein, the funnel D, collar C', tip E, cage G G', and ball F, all combined and operating substantially as shown and described, and for the purpose set forth.

2. The combination of the pail A, cover B, and neck C, with the funnel D, collar C', strainer I, cage G G', and ball F, all constructed and combined substantially as shown and described, and for the purpose set forth.

325,180. FIRE-ESCAPE. FRANZ KOSOSCHEK, Hoboken, N. J. Filed June 12, 1885. (No model.)



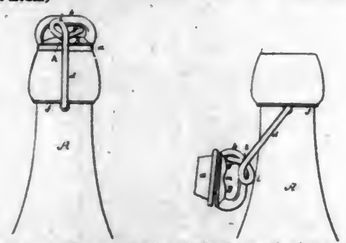
Claim.—1. The combination of a fire-escape ladder composed of flexible side chains and transverse rounds, a reel located at the roof of the building, a friction-brake applied to the reel, a chain for releasing the brake, hooks for fastening the lower end of the ladder to the ground, stretching-levers fulcrumed to the lower links of the ladder, and retaining-chains for hitching said stretching-chains, substantially as set forth.

2. The combination of a fire-escape ladder composed of flexible side chains and transverse rounds, a reel located at the roof of the building for winding up the ladder, a friction-brake applied to the reel, a chain for releasing the brake, a device, substantially as described, for fastening the lower end of the ladder to the ground, and brackets that are hinged to the wall, and adapted to engage the ladder and hold it at a distance from the wall, substantially as set forth.

3. The combination of a fire-escape ladder formed of flexible chains and transverse rounds, a reel supported at the roof of the building for winding up the same, a friction-brake applied to the reel, a chain for releasing the friction-brake, devices attaching the lower end of the ladder to the ground, brackets hinged to the wall and provided with forked front ends, chains connecting the brackets, and a chain attached to the uppermost bracket and passing over a pulley for raising or lowering the brackets, substantially as set forth.

4. In fire-escapes, a U-shaped bracket hinged to the wall, and provided with forked front ends, having a downwardly-bent hook for locking to the rounds and chains of the fire-escape ladder, substantially as set forth.

325,181. BOTTLE-STOPPER. EDWIN L. LLOYD, Philadelphia, Pa., assignor of one-half to Charles Joly, same place. Filed June 11, 1885. (No model.)



Claim.—1. The combination of the stopper having a yoke with the bail having side bars, and a top loop bearing on the stopper and projecting in advance of the side bars of the bail, as set forth.

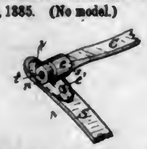
2. The combination of the stopper having a yoke with the bail having side bars, and a top bearing-loop projecting in advance of said side bars, and having that portion in advance of the bearing bent upward, as specified.

3. The combination of the stopper having a yoke and a recess, *m*, with the bail having side bars, and a top bearing-loop projecting in advance of said side bars, and having projections *h*, adapted to the recess *m*, as set forth.

4. The combination of the stopper having a yoke with the bail having side bars, a top bearing-loop projecting in advance of the bars, and opposite return-bends, as specified.

5. The combination of the stopper having a yoke with the bail having side bars, a top bearing portion projecting in advance of said bars, and opposite projections *i*, extending above the bearing portion, so as to engage with the yoke and retain the stopper centrally on the bail, as specified.

325,182. SIDE-SPRING VEHICLE. HARVEY A. MOYER, Syracuse, N. Y. Filed Jan. 3, 1885. (No model.)



Claim.—1. In combination with the cross-spring C, arranged in a vertical plane and having integral with it the trunnions *t t*, the side springs, S, having the ends of their main leaves below the cross-springs and projecting beyond the same, and the eyes *e e*, rigidly attached to the top of the end portions of said main leaves and projecting upward from the same, substantially as specified and shown.

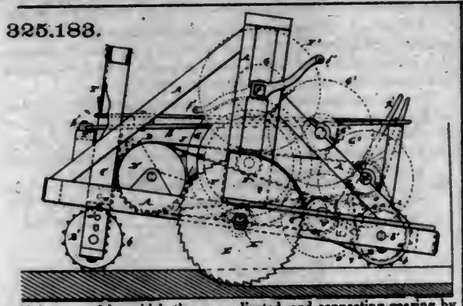
2. In combination with the cross-spring provided with the trunnion *t*, the side spring, S, having the end of its main leaf below the cross-spring and projecting beyond the same, and the eye *e*, provided with a flat base, *e'*, seated upon the end portion of the side spring, and rivets *r r*, fastening said eye in position, substantially as described and shown.

325,183. ICE-CUTTING MACHINERY. WILLIAM S. MOYER, Philadelphia, Pa. Filed Oct. 6, 1884. (No model.)

Claim.—1. In a machine for cutting ice, a frame carrying a rotary cutter, in combination with geared hand-power, substantially as set forth, for propelling said frame, a support for one end of the cutter-frame, provided with a rack, and a gear to mesh with said rack carried by the cutter-frame, and by which it may be adjusted vertically, the said gear being automatically operated by the motive power of the machine, substantially as and for the purpose specified.

2. In an ice-cutting machine, a frame supported upon the ice, in combination with a rotary cutter, a support for one end of the cutter-frame, and upon which it is adjustable vertically for raising or lowering the cutter relative to the ice, a rack and gear respectively carried by

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said frame, and by which they are adjusted, and connecting-gearing by which the same motive power being used for rotating and raising the cutter actuates the rack and gear, substantially as and for the purpose specified.

3. An ice-cutting machine consisting of a main frame supported upon wheels and arranged to be moved over the ice, in combination with a rotary cutter carried thereby and a frame upon which the main frame is vertically adjustable, gear-and-rack mechanism for adjusting said frames relatively to each other, by which the entire cutting machinery may be raised or lowered, substantially as and for the purpose specified.

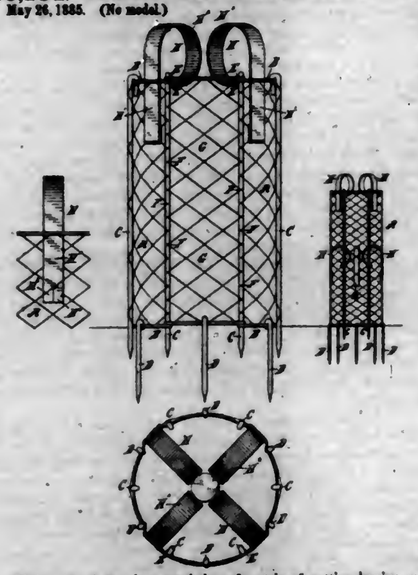
4. In an ice-cutting machine, the frames A and C, in combination with rack C', gear D, sprocket-wheels D' D^2, chains J J', and suitable devices, substantially as set forth, to put either of said chains into action to rotate said gear in either direction, as desired, to raise or lower the frame A, substantially as and for the purpose specified.

5. The combination of frame A, carrying cutter E, frame C, having rack C', gear D, sprocket-wheels D', D^2, I, I', O^2, P', K, and M, shafts H O^2, clutches K' R, wheels B, and suitable gearing to rotate said shafts H and O^2, substantially as and for the purpose specified.

6. The combination of frame A, carrying cutter E, frame C, having rack C', gear D, sprocket-wheels D, D'. I, I', O^2, P', K, and M, shafts H O^2, clutches K' R, wheels B, and suitable gearing to rotate said shafts H and O^2, catch T T', pawl S', levers R', *k*, N, and S, and cam O^2, substantially as and for the purpose specified.

7. The combination of frame A and frame C, adapted for adjustment, supporting-wheels B B', and pins W, to support the frames A e given distance from the ground, substantially as and for the purpose specified.

325,184. TREE-BOX. KEPLER H. NICHOLS, Fairfield, Conn. Filed May 26, 1885. (No model.)

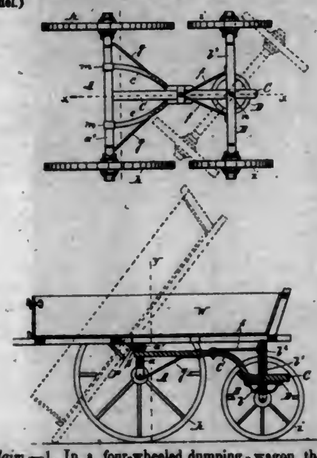


Claim.—1. A tree-box consisting of a strip of netting having eyes at both edges, a band at the top passing through the meshes of the netting, and having eyes at its ends and rods clasped over said band, which extend down through the meshes of the netting and into the ground, one of said rods being passed through the eyes at the edges of the netting and the ends of the bands.

2. In a tree-box, a strip of netting having eyes at both edges and bands at top and bottom passing through the meshes of the netting, and having eyes at both ends, in combination with rods clasped over the top band and extending down through the meshes of the netting and into the ground, one of said rods passing through said eyes, and other rods adapted to be clasped over the bottom band and driven into the ground.

3. In a tree-box, the combination, with a strip of netting and rods for securing the edges together and for securing the box to the ground, of detachable springs which bear against the tree and are bent at their lower ends to clamp the wires of the netting.

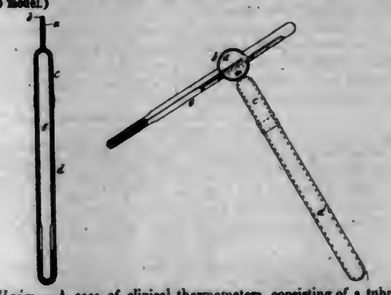
325,185. DUMPING-WAGON. HENRY NOLEN, Indianapolis, Ind., assignor to John Gundelhoefer, same place. Filed July 13, 1885. (No model.)



Claim.—1. In a four-wheeled dumping-wagon, the combination, with the wagon-bed W, the hind gear *h h a a'*, the hounds *c c*, and the fore gear *i i b b' b^2 r r*, all constructed and arranged as described, of the coupling-pole C, extending from the hind gear forward horizontally and bending down into the fore gear, as described, the hind braces *g g* and the fore braces *f f* strengthening and bracing the coupling-pole C onto the hind axle and the fore bolster, substantially constructed as described, and for the purpose specified.

2. In a four-wheeled dumping-wagon, the combination, with the wagon-bed W, the running-gear A and B, as described, and the hind bolster *a'*, of the clevises S S, bolted to the bolster *a'* under the longitudinal sills of the wagon-bed W, the eyebolts P P, hinged with their eyes to the clevises S S, and a series of vertical holes, *h' h'*, cut through the longitudinal sills of the wagon-bed W to receive the bolts P P and to form with them a detachable hinge-connection between the wagon-bed and the hind bolster, all constructed as described, and for the purpose specified.

325,186. COMBINED THERMOMETER-CASE AND MAGNIFYING-LENS. FERDINAND A. REICHARDT, Elizabeth, N. J. Filed Feb. 10, 1885. (No model.)

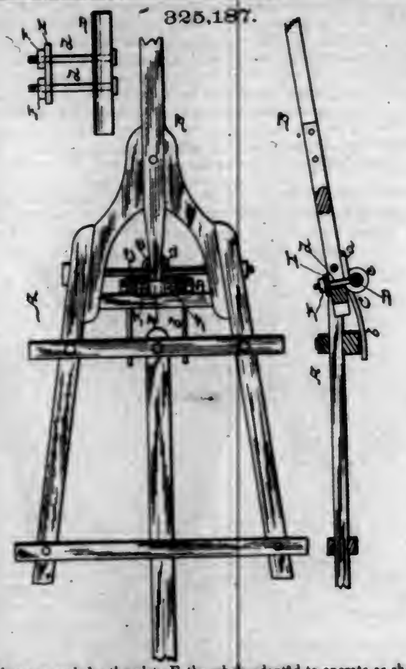


Claim.—A case of clinical thermometers, consisting of a tubular body and a cap adapted to cover the same, the latter having at its extremity a rim holding a magnifying-lens, substantially as described, and for the purposes set forth.

325,187. TONGUE-SUPPORT. PARDON B. STONE, Waverly, Pa. Filed July 8, 1885. (No model.)

Claim.—The combination, with the tongue and hounds, provided with the spring constructed as described, of the transverse bar D, provided with the vertical bolts *d*, having the adjusting-nuts and connected at

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their upper ends by the plate E, the whole adapted to operate as shown and described, as and for the purpose specified.

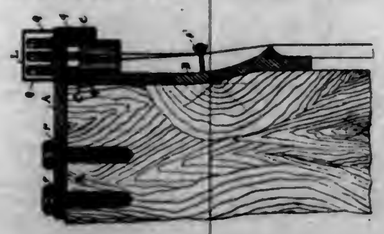
325,188. COOKING UTENSIL. Edwin B. Tate, Johnstown, Ill. Filed Mar. 16, 1885. (No model.)



Claim.—1. In a cooking utensil, the combination, with the outer pot or receptacle, of the inner vessel perforated as described, and receiving the articles to be cooked, slots provided in the sides of the vessel at the top, and a support introduced into the slots and extending out from the same to rest upon the top edge of the outer pot or receptacle, as and for the purpose set forth.

2. In a cooking utensil, the outer pot or receptacle, in combination with the inner vessel, B, perforated as described, a bail or handle for the same, and a support passed through slots or openings of the inner vessel, one of the extended ends of the support being shaped to provide a handle, for the purpose set forth.

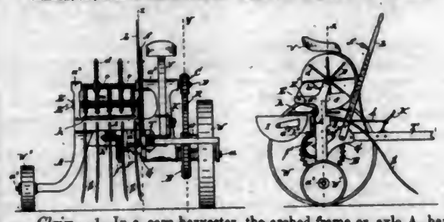
325,189. STRINGING PIANOS. Joseph Vivier, Brussels, Belgium. Filed Nov. 6, 1884. (No model.) Patented in Belgium May 5, 1884, No. 65,045, and Oct. 30, 1884, No. 66,745; in England Oct. 28, 1884, No. 14,232; in Germany Nov. 3, 1884, No. 32,067; in France Nov. 4, 1884, No. 165,159; in Austria-Hungary Nov. 8, 1884, No. 42,047 and No. 9,870, and in Italy Dec. 10, 1884, No. 17,663.



Claim.—1. The combination of the frame of a piano and perforated supporting-plate A with a corresponding guide-plate, B, intermediate distance-pieces, and tension screws and nuts adapted to said plate A and the guide-plate, substantially as set forth.

2. The combination of the frame of a piano, supporting-plate, and corresponding guide-plate, with tension-screws, to which the wires of the piano are connected, the said screws having square shanks and enlarged shanks alternately, substantially as and for the purpose set forth.

325,190. CORN-HARVESTER. Charles Williamson, Crawfordsville, Ind., assignor to George W. Williamson, Sr., and George W. Williamson, Jr., both of Ottawa, Kans. Filed Oct. 24, 1884. (No model.)



Claim.—1. In a corn-harvester, the arched frame or axle A, having the axle-spindles *a* and *a'*, the wheels W and W', operating on said spindles *a* and *a'*, the supports or brackets a^2 a^3 a^4 a^4, forming part of or being rigidly secured to the arched frame A, and the fingers S S S, extending downward from the arch A, in combination with the sprocket-wheel B, revolving on the spindle *a*, the removable slip or lock bolt *w*, connecting the wheels W and B, the shaft D, supported by the standards a^3 and a^3, the husking rasp-disks *d d*, revolving with the shaft D, the springs *o o o*, arranged, as specified, on said shaft D, the sprocket-wheel C, firmly secured to the shaft D, the chain R, transmitting power from the wheel B to the wheel C and the shaft D, and the stationary rasp-plates *e e e*, mounted on the rods E E', and separated by the springs *m m m*, all arranged as described, and for the purpose specified.

2. In a corn-harvester, the arched frame or axle A, having the axle-spindles *a* and *a'*, the wheels W and W', operating on said spindles *a* and *a'*, the sleeve or bracket a^2, forming part of or being rigidly secured to the arched frame A, and the fingers S S S, extending downward from the arch A, in combination with the wheel B, revolving on the spindle *a*, and being provided with an internal gear, the bolt *w*, connecting the wheels W and B, the shaft F, revolving in the sleeve a^2, the pinion *f*, keyed to the shaft F and operated by the cog-wheel B, the bevel-gears *f' h'*, transmitting motion from the shaft F to the shaft H, and the circular saw or cutter *h*, secured to and revolving with the shaft H, all constructed as described, and for the purpose specified.

3. In a corn-harvester, the arched frame or axle A, constructed as described, and provided with the fingers S S S, the wheels W and W', and the supports and brackets a^2 a^2 a^3 a^4 a^4, forming part of or being rigidly secured to the arched frame A, in combination with the combined sprocket and gear wheel B, the shaft D, the sprocket-wheel C, the chain R, transmitting motion from the wheel B to the shaft D, the revolving rasp-disks *d d*, movable laterally on the shaft D, the rods E and E', the stationary rasp-plates *e e e*, mounted and movable laterally on said rods E and E', the springs *o o m m*, arranged as described, the pinion *f*, shaft F, and gear-wheel *f''*, and the saw or cutter *h*, shaft H, and gear-wheel *h'*, all arranged and constructed as described, and for the purpose specified.

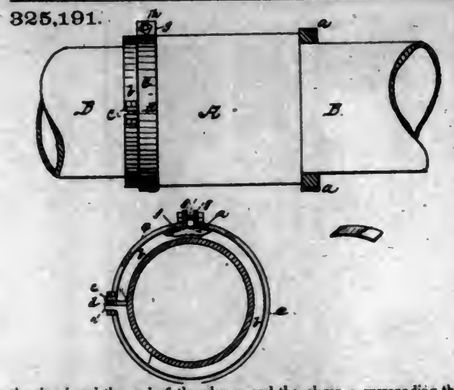
4. In a corn-harvester, the arched frame or axle A, constructed and provided with brackets and supports, as described, the fingers S S S, and the wheels W and W', in combination with the revolving rasp-disks *d d*, the stationary rasp-plates *e e e*, the revolving cutter *h*, the driving mechanism for the rasp-disks *d d*, and the cutter *h*, constructed as described, the arm G, pivoted to the arched frame A, and provided with the notches *g*, and the lever L, rod P, and pawl N, forming a device for raising and lowering the fingers S S S, all arranged as described, and for the purpose specified.

5. In a corn-harvester, the arched frame or axle A, the fingers S S S, the supports or brackets a^2 a^2 a^3 a^3 a^4 a^4, and the wheels W and W', all constructed as described, in combination with the stationary rasp-plates *e e e*, the revolving rasp-disks *d d*, the springs *m m o o*, arranged as described, the driving mechanism B R C D, the cutter *h*, its operating mechanism B *f* F *f'* *h'* H, the lifting device L P N *g* G, the tongue T, the box I, pivoted to the brackets a^3 a^3, as described, and the dumping mechanism *k* K, all constructed as described, and for the purpose specified.

325,191. PIPE-COUPLING. Thomas W. Alexander, Chartiers Township, Allegheny County, Pa. Filed May 14, 1885. (No model.)

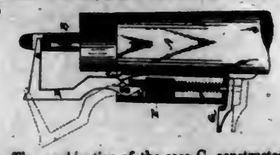
Claim.—The combination, with the adjacent ends of pipe B B and the sleeve A, which unites the same, of the supplemental clamp or removable ring *b*, placed over and held securely upon the pipe at a suitable distance from the end of the sleeve, the rubber band *a*, inserted between

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the ring *b* and the end of the sleeve, and the clamp *c*, surrounding the band *a* and compressing it so that it seals the joint between the pipe B and sleeve A, as set forth.

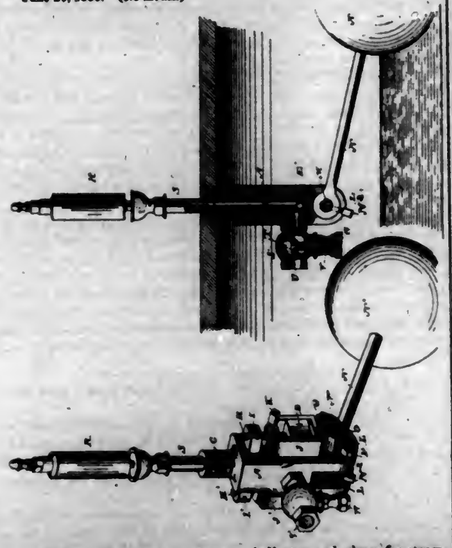
325,192. WHIFFLETREE-HOOK. Selden Austin, North Haven, assignor to Edward T. Beach, East Windsor, Conn. Filed June 15, 1885. (No model.)



Claim.—1. The combination of the case C, constructed for attachment to the surface of the whiffletree, the finger D, hung in said case and adapted to swing toward and from the stud in the end of the whiffletree, the said finger constructed with a tail, *e*, extending longitudinally upon the opposite side of the pivot on which the finger is hung, with the spring-bolt E, arranged longitudinally in the case in rear of the pivot, the end of the said bolt constructed to pass beneath the tail *e* when the finger is in its closed position, and so as to lock the finger in that position, substantially as described.

2. The combination of the case C, finger D, spring-bolt E, and spring H, substantially as and for the purpose specified.

325,193. ALARM FOR STEAM-BOILERS. Charles E. Brown, Rome, N. Y., assignor of one-half to Samuel Southall, same place. Filed June 29, 1885. (No model.)

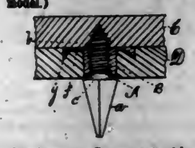


Claim.—1. In a water and steam indicator and alarm for steam-boilers, the combination of a body having a vertical recess terminating in an interiorly and exteriorly threaded nipple at the upper end, lugs extending laterally from the said body and having passages connected at their inner ends with the said recess and terminating in valve-seats at their outer ends, the vertically-sliding valves fitted to the said seats, the vertically-sliding yokes connected adjustably with the stems of the said valves, oppositely-faced cams mounted adjustably upon a transverse rock-shaft and adapted to act alternately against the lower ends of the said yokes, a lever mounted adjustably upon the said rock-shaft and having a yoke at its free end, and a steam-whistle connected to the nipple at the upper end of the body, all arranged and operating substantially as and for the purpose herein set forth.

2. In a high and low water indicator of the class described, the combination of the vertically-recessed body having laterally-extending lugs provided with passages connected at their inner ends with the recess in said body and having valve-seats at their outer ends, the valves having upwardly-extending stems, the laterally-extending lugs having bearings for the said valve-stems, the vertically-sliding yokes inclosing the lower lugs and connected adjustably with the valve-stems, and mechanism, substantially as described, for operating the said yokes, all arranged and operating substantially as and for the purpose herein set forth.

3. The herein-described improved combined high and low water and high-steam indicator and alarm for steam-boilers, the same consisting of a vertically-recessed body having a pair of laterally-extending lugs provided with channels or passages connected at their inner ends with the vertical recess in the body and having valve-seats at their outer ends, the vertically-sliding valves having upwardly-extending stems, the vertically-extending bearing-lugs for the said valve-stems, the yokes connected with the said valve-stems, the transverse rock-shaft at the lower end of the casing, having a float-lever and a pair of oppositely-facing cams adapted to bear against the lower ends of the said yokes, a pipe extending forwardly from the body, connecting the recess in the latter with the steam-space in the boiler and having a valve-seat, a valve opening from the steam-space into the recess in the body, a spring arranged to keep the said valve closed against the pressure of the steam, mechanism for regulating the tension of the said spring, and a steam-whistle connected to the upper end of the recess in the body, all arranged and operating substantially as and for the purpose herein shown and specified.

325,194. DRIVING-CALK. Edward A. Buck, Bangor, Me., assignor to himself and Edward W. Vezaie, same place. Filed Dec. 30, 1884. (No model.)

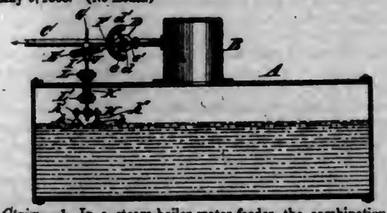


Claim.—1. In a removable calk designed for use in the soles of rubber or leather boots and shoes, the combination of the point *a*, suitably-tapering shoulder *c*, and gimlet-pointed screw-shank *b*, constructed and combined in a calk adapted to fit and screw into and through the nut B and screw more or less into the sole of a boot or shoe, as shown and described.

2. In a removable calk provided with a screw-threaded nut, and designed for use in the soles of leather or rubber boots and shoes, the flanged holding-nut B, provided with arms *f f* and studs *g g*, and the aperture *e*, reamed out or countersunk at *d* to fit the beveled shoulder *c* and shank *b* of the calk A, and adapted to fit into the sole of a leather or rubber boot or shoe and hold the calk A and prevent it from tipping, as shown and described.

3. In a removable calk provided with a flanged holding-nut, and designed for use in the soles and taps of leather or rubber boots or shoes, the flanged holding-nut B, provided with the spurs *g* and calk A, in combination with the sole or tap-sole of a leather or rubber boot or shoe, as shown and described.

325,195. STEAM-BOILER WATER-FEEDER. John P. Buckley, Cincinnati, Ohio, assignor of one-half to Peter Eckert, same place. Filed May 9, 1885. (No model.)



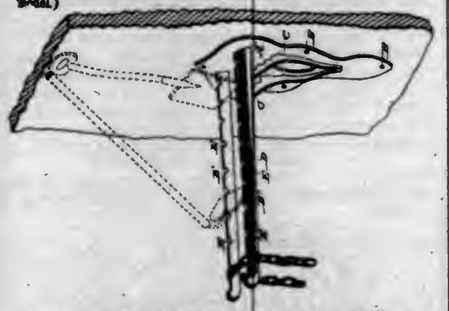
Claim.—1. In a steam-boiler water-feeder, the combination, with the boiler provided with a steam-dome, of a steam-pipe provided with a globe-valve leading from the steam-dome to the feeding device, a tube leading into the interior of the boiler, said tube being provided with a

stuffing-box at one end and a guide-cap at the other, a vertical rod passing through said stuffing-box and guide-cap and provided with a float at its lower end within the boiler, and means at the upper end for connecting said rod adjustably with said globe-valve within said steam-pipe, substantially as and for the purpose set forth.

2. In a steam-boiler water-feeder, the combination, with a boiler and a steam-pipe, of a globe-valve within said pipe provided with an arm secured thereto, a vertical rod passing through suitable bearings into said boiler, the lower end of said rod being provided with a suitable float, and at the upper end with a plate, one side of which is provided with perforated lugs or eyes, and means for securing said rod within said eyes, and the other side of said plate being provided with suitable means for securing said plate to said arm of said globe-valve, substantially as and for the purpose set forth.

3. In a steam-boiler water-feeder, the combination, with the boiler and steam-pipe, of a globe-valve within said pipe, and provided with a handle adjustably secured thereto, and an arm fitting loosely on the stem of said globe-valve at one end, and provided with a slot at the other, and means for securing said arm to said handle at any desired point, a vertical rod passing through suitable bearings into the interior of said boiler, said rod being provided with a float at its lower end and with a plate at its upper end, and a trundle secured to said plate and engaging with the slot in the end of the arm of said globe-valve, substantially as and for the purpose set forth.

325,196. BRACKET. BENJAMIN F. CALDWELL, Montrose, Mo., assignor of one-half to Andrew Wally, same place. Filed Sept. 2, 1884. (No model.)



Claim.—1. A bracket for displaying merchandise, consisting, essentially, of a base-plate having two parallel arms extending outwardly, and inclined slightly in an upward direction, rigidly secured thereto, substantially as and for the purpose set forth.

2. A bracket for the display of merchandise, consisting of a base-plate having a pair of arms rigidly secured thereto, the upper sides of which are provided with ribs or flanges having notches, substantially as and for the purpose set forth.

3. A bracket for displaying merchandise, consisting of a base-plate having outwardly-extending arms inclined slightly in an upward direction, and provided on their upper sides with notched ribs or flanges, and braces connecting the said arms with the lower end of the base-plate, substantially as and for the purpose set forth.

4. A bracket for displaying merchandise, composed of a pair of arms secured to a base-plate, and a pair of braces notched upon their inner sides connecting said arms with the lower part of the base-plate, substantially as and for the purpose set forth.

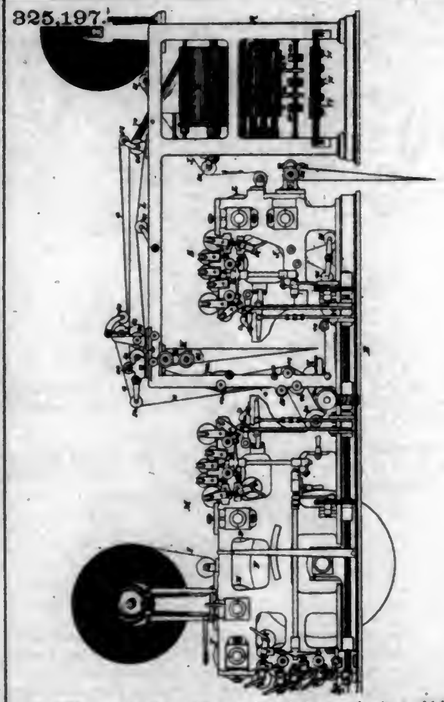
325,197. PRINTING-MACHINE. LUTHER C. CROWELL, Brooklyn, N. Y. Filed Apr. 18, 1884. (No model.)

Claim.—1. The combination, with a main printing mechanism which is adapted to perfect a main web, of a turner for superimposing the longitudinal sections of said web, and an auxiliary printing mechanism which is adapted to perfect a web of lesser width than the main web and deliver the same associated with the sections of the main web, all substantially as described.

2. The combination, with a main printing mechanism which is adapted to perfect a main web, of a turner for superimposing the longitudinal sections of said web, an auxiliary printing mechanism which is adapted to perfect a web of lesser width than the main web and deliver the same associated with the sections of the main web, and a longitudinal folder for folding said associated web and sections, all substantially as described.

3. The combination, with a main printing mechanism which is adapted to perfect a main web, of a slitter for dividing said web longitudinally into two narrow webs or sections, a turner for superimposing said sections, and an auxiliary printing mechanism which is adapted to perfect a web of lesser width than the main web and deliver the same associated with the sections of the main web, all substantially as described.

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4. The combination, with a main printing mechanism which is adapted to perfect a main web, of a slitter for dividing said web longitudinally into two narrow webs or sections, a turner for superimposing said sections, an auxiliary printing mechanism which is adapted to perfect a web of lesser width than the main web and deliver the same associated with the sections of the main web, and a longitudinal folder for folding said associated web and sections, all substantially as described.

5. The combination, with a main printing mechanism which is adapted to perfect a main web, of a slitter for dividing said web longitudinally into two narrow webs or sections, a turner for superimposing said sections, an auxiliary printing mechanism which is adapted to perfect a web of lesser width than the main web and deliver the same associated with the sections of the main web, and the pasters W Y, all substantially as described.

6. The combination, with a main printing mechanism which is adapted to perfect a main web, of a slitter for dividing said web longitudinally into two narrow webs or sections, a turner for superimposing said sections, an auxiliary printing mechanism which is adapted to perfect a web of lesser width than the main web and deliver the same associated with the sections of the main web, and a transverse cutting mechanism for severing said associated web and sections into sheets, substantially as described.

7. The combination, with a main printing mechanism which is adapted to perfect a main web, of a slitter for dividing said web longitudinally into two narrow webs or sections, a turner for superimposing said sections, an auxiliary printing mechanism which is adapted to perfect a web of lesser width than the main web and deliver the same associated with the sections of the main web, a transverse cutting mechanism for severing said associated web and sections into sheets, and a transverse folding mechanism for folding said sheets, all substantially as described.

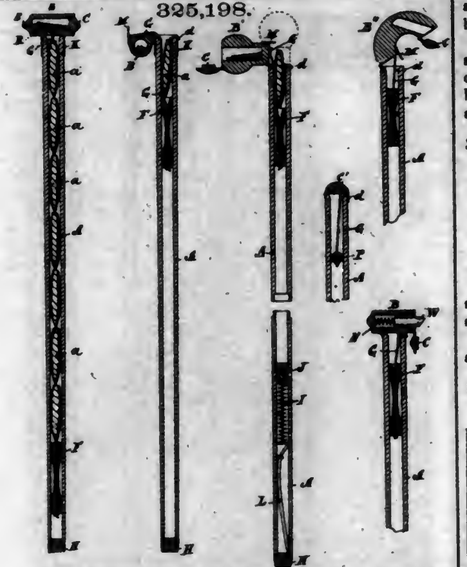
325,198. CANE. DANIEL CROWLEY, Boston, Mass. Filed Feb. 19, 1884. (No model.)

Claim.—1. The combination, with a hollow cane, of an elastic cord, G, attached at one end to the head or handle B of the cane, and a hollow spool, F, the said cord passing through the said spool and attached to the lower end of the same, substantially as and for the purpose set forth.

2. In combination with a hollow cane, the movable and adjustable partition J and the spiral spring I, attached thereto, as and for the purpose set forth.

3. In a hollow cane, the pin *d*, projecting into the interior of the cane and outwardly from the same, and serving the purpose of preventing the cigar from being forced out when the handle B is opened, and also acting as a holder for the fastening M, as shown and described.

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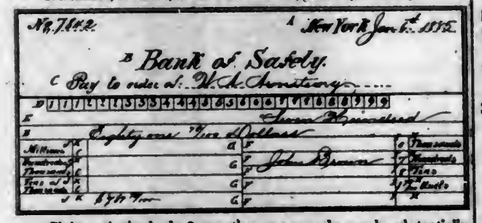


4. The combination of the hollow cane A, the hollow hinged handle B and its cap C, the whistle W, and spring N, as shown and described.

5. In combination with a hollow cane, the partition J, with the spiral spring I attached, the elastic cord G, hollow cylinder F, pin *d*, hollow handle B, whistle W, and spring N, as shown and specified.

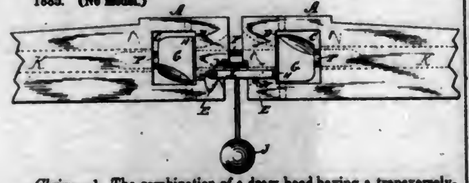
6. The combination of a hollow cylinder, F, and an elastic cord, G, the said cord being fastened at one end to the lower end of the cylinder and passing through the same, the said cord being properly secured or held at its other end.

325,199. CHECK, DRAFT, OR OTHER MONEY-ORDER. WILLIAM T. DORRIUS, Flatbush, N. Y. Filed Mar. 11, 1885. (No model.)



Claim.—A check, draft, or other money-order made substantially as herein shown and described, with spaces A B C to receive the name of the place and the date, the name of the drawer and the order and the name of the payee, with a space, D, containing groups of three of each of the digits, with spaces E to receive a statement of the sum in words, with spaces F G to receive the signature of the drawer, and with spaces H I J K corresponding with the spaces F G, the spaces H J containing the names of the various denominations, and the spaces I K to receive numerals representing the amounts of the said various denominations and ciphers, as set forth.

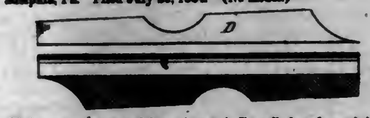
325,200. CAR-COUPLING. JOSHUA H. DYMOND, Carbondale, Kans., assignor to himself and William W. Dymond, same place. Filed June 6, 1885. (No model.)



Claim.—1. The combination of a draw-head having a transversely-elongated mouth, lips spirally slanted forward and shouldered at their rear, an enlarged throat open at its sides behind the lips, and having a round rearward extension, and a link having a cylindrical body and lateral wings, spiral at their outer ends and shouldered at their inner ends and weighted at one side, the body of the link projecting at each end beyond the said wings, substantially as shown and described.

2. The combination of a link adapted to turn on its longitudinal axis, and provided with a weighted arm, a bar pivoted at one end to one draw-head, and a stud projecting from the side of the other draw-head, substantially as shown and described, whereby the said weighted arm may be temporarily supported and finally set free, as set forth.

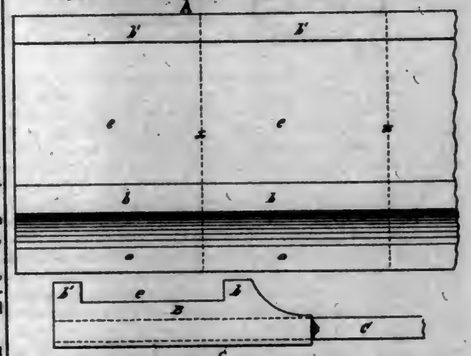
325,201. CLIP FOR LOCOMOTIVE-SPRINGS. WILLIAM EVANS, Philadelphia, Pa. Filed July 29, 1884. (No model.)



Claim.—1. A tapered bar of metal, D, rolled and scarfed into the shape shown and described, for forming clips for the backs of locomotive-springs.

2. The clip E, provided with the welding-flanges *a a*, substantially as shown and described.

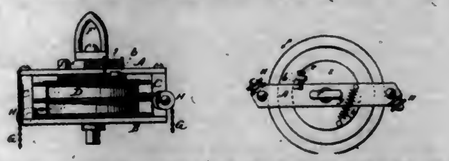
325,202. CLIP FOR LOCOMOTIVE-SPRINGS. WILLIAM EVANS, Philadelphia, Pa. Filed Aug. 9, 1884. (No model.)



Claim.—1. The bar A, of which to cut clips for forming ends of locomotive hook-back springs, having the recess *c* and flanges *b b'* rolled thereon, substantially as described.

2. The clip B, having the recessed space *c*, flanges *b b'*, and the welding-flanges *c c*, substantially as shown.

325,203. SUSPENSION DEVICE FOR LAMPS. JOHN A. EVARTS, Meriden, Conn., assignor to the Bradley & Hubbard Manufacturing Company, same place. Filed July 13, 1885. (No model.)



Claim.—1. The combination of the supporting-frame, axle, and spring-drum with an oscillating bar or plate concentric with the axle between one side of the frame and the end of the drum, said plate carrying a wedge-like cam adjacent to the said side of the frame, substantially as and for the purpose described.

2. The combination of the supporting-frame, axle, and spring-drum with an oscillating bar or plate concentric with the axle between one side of the frame and the end of the drum, said plate carrying a wedge-like cam adjacent to the said side of the frame, and an adjusting-screw, substantially as described, and whereby the extent of movement of said plate may be adjusted.

3. The combination of the supporting-frame, axle, and spring-drum with an oscillating bar or plate concentric with the axle between one side of the frame and the end of the drum, said plate carrying a wedge-like cam adjacent to the said side of the frame, and a spring between the frame and the said bar or plate, substantially as described, the action of the said spring being to force said cam between the frame and drum.

4. The combination of the supporting-frame, axle, and spring-drum, the disk I between one side of the said frame and the end of the drum, loose upon the axle and so as to oscillate thereon, and cams *b b* on said disk, diametrically opposite each other and adjacent to the said side of the frame, substantially as and for the purpose described.

5. The combination of the supporting-frame, axle, and spring-drum, the disk I between one side of the said frame and the end of the drum, loose upon the axle and so as to oscillate thereon, cams *b b* on said disk, diametrically opposite each other and adjacent to the said side of the frame, and a stop between said frame and disk, substantially as and for the purpose described.

6. The combination of the supporting-frame, axle, and spring-drum, the disk I between one side of the said frame and the end of the drum, loose upon the axle and so as to oscillate thereon, cams *b b* on said disk, diametrically opposite each other and adjacent to the said side of the frame, and an adjusting-screw, *c*, on said disk, substantially as described.

7. The combination of the supporting-frame, axle, and spring-drum, the disk I between one side of the said frame and the end of the drum, loose upon the axle and so as to oscillate thereon, cams *b b* on said disk, diametrically opposite each other and adjacent to the said side of the frame, and a spring, *g*, between said disk and frame, substantially as described.

325,204. WATCH-MOVEMENT BOX. Albert F. Freeland, Malden, and Charles H. Whitten, Waltham, Mass. Filed Nov. 28, 1884. (No model.)



Claim.—1. The combination, with a watch-movement box or casing, A, having an interior peripheral groove or bead at or near its bottom, of the removable movement-holder B, provided with spring feet or legs *k*, adapted to support the same in a horizontal position when out of the box and spring into or engage with said groove or bead when the holder is placed within the box, substantially as and for the purpose set forth.

2. The removable holder B, adapted to contain the watch-movement and provided with a flange, *f*, around its lower edge, over which are turned the case-screws *g* of the movement, to confine the latter within the holder, and having outwardly and downwardly projecting spring feet or legs *k*, in combination with the box A, provided with a peripheral groove, *d*, at or near its bottom, for the reception of the lower ends of the feet *k*, all constructed to operate substantially in the manner and for the purpose described.

325,205. CABLE RAILWAY. Richard Gornall, Baltimore, Md. Filed Mar. 3, 1884. Renewed July 28, 1885. (No model.)

Brief.—To the car-platform is swiveled a draw-bar which carries spring gripping-jaws, which engage a vertical traveling band through means of a sliding clamp operated from the platform. The lever which controls the grip is also capable of elevating the draw-bar, and consequently the grip, when desired, and grip and brake can be simultaneously operated through the grip-operating lever and a laterally-movable lever, to lie parallel to the first-named lever, the two to be grasped at once. Through pins upon the grip device the grip is released automatically at crossing cables by inclined ways, which contact said pins, and thereby release and elevate it.

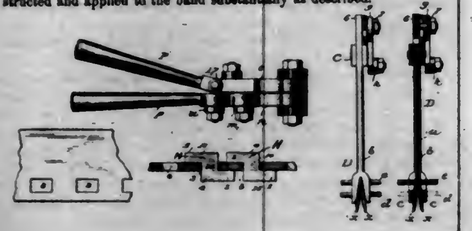
Claim.—1. The combination of the gripper D, bar C, swiveled to the front of the car-rod *k*, bell-crank levers *g l*, and a rod connecting the bell-crank lever *l* to the end lever, substantially as described

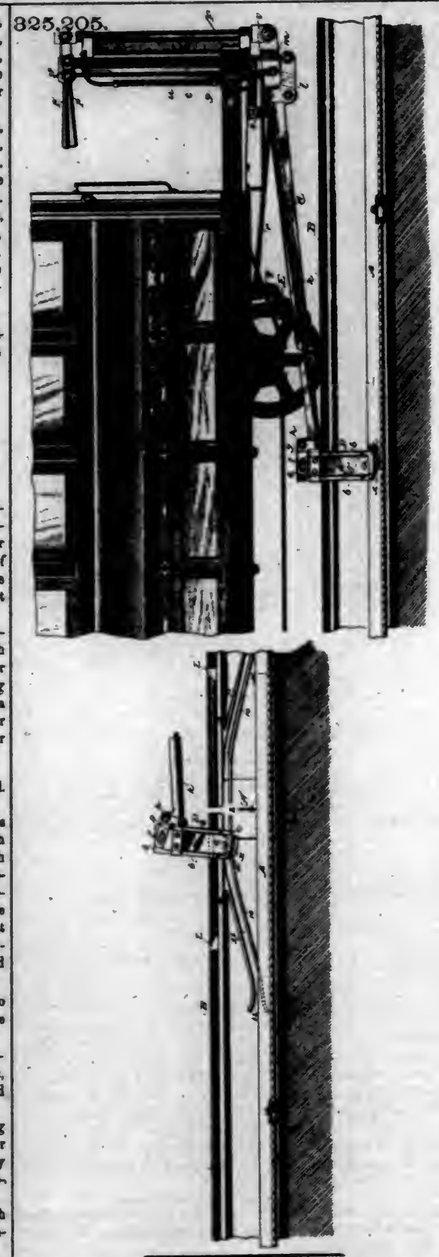
2. The combination of the gripper D, the draft-bar C, the mechanism for operating the gripper connected to the lever *n*, and a rod, *u*, connecting the levers to the bar C, whereby the bar may be lifted and the gripper is released, substantially as described.

3. The combination, with the levers *n o*, with the rod *t*, connecting lever *o* with the brake mechanism, and with a rod connecting the lever *n*, of the gripping mechanism, the levers *n* and *o* being placed side by side, whereby the gripper may be released and the brake applied, substantially as described.

4. The combination, with the gripping mechanism provided with pins or rollers *c d*, of the incline bars 10 and 11, adapted to the intersecting cable A', substantially as described.

5. The combination, with the band-cable A', of the block H, constructed and applied to the band substantially as described.





325,206. PAPER-STOCK DRAINER. Watson Gray, Three Rivers, Mich., assignor of one-half to Richard H. Webb, same place. Filed Sept. 13, 1883. Renewed Sept. 12, 1884. (No model.)



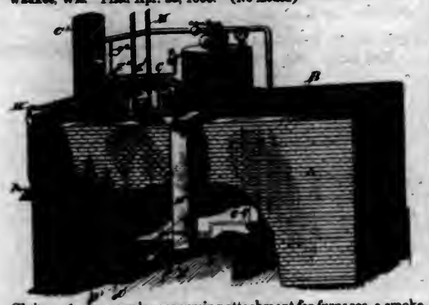
Claim.—1. The use of gravel as a paper and pulp stock drainer, substantially as herein set forth.

2. A paper-stock drainer composed of a suitably-slatted bottom box containing gravel, broken stone, &c., through which the pulp or paper stock is adapted to pass in the process of manufacture, substantially as herein set forth.

3. The box or drainer having a bottom composed of slats placed side by side, said slats having their upper edges chamfered or not, as shown, and a second tier of slats above the bottom slats, placed transversely across the box or bottom, and having their lower edges chamfered or not, substantially as herein set forth.

4. In a paper-stock drainer, the combination of the box A, having the bottom composed of slats placed side by side, and having their upper edges chamfered or otherwise, with the transverse slats above chamfered on their lower edges, and with the gravel between said upper and lower tier of slats, substantially as herein set forth.

325,207. SMOKE-CONSUMING FURNACE. Henry B. Greve, Milwaukee, Wis. Filed Apr. 22, 1885. (No model.)



Claim.—1. In a smoke-consuming attachment for furnaces, a smoke-chamber situated near the fire-bed, in combination with a blower and a flue connecting it with the combustion-chamber and another flue connecting it with the smoke-chamber, substantially as set forth.

2. The combination, with a flue leading into the smoke-stack, of another flue leading into a smoke-chamber, an intermediate blower, a wall separating the smoke-chamber from the ash-pit, and passages connecting the smoke-chamber and ash-pit, as set forth.

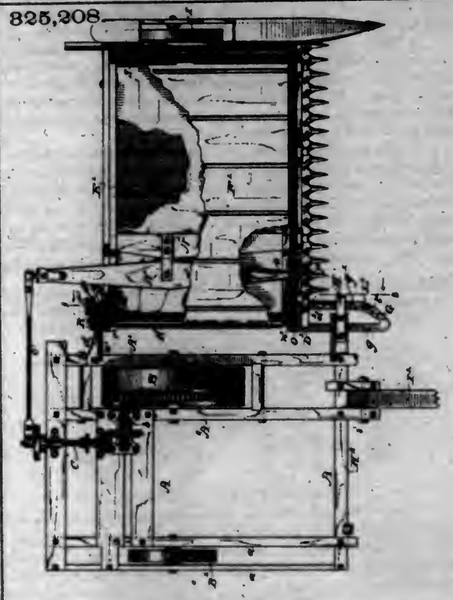
3. The combination, with the smoke-chamber, blower, and its flues, of a steam-pipe leading from the top of the boiler into the smoke-stack and through the nest of flues and down into the smoke-chamber, as set forth.

4. The combination, with the smoke-chamber and smoke-stack, of a pipe, *g*, leading from the bottom of the smoke-chamber up into the smoke-stack above its damper, as set forth.

5. The combination, with chamber D, of pipe *g* and a steam-jet leading from the boiler into the upper end of pipe *g*.

6. The combination, in a furnace, of a pipe, H, the blower and its flues, and the smoke-chamber, as set forth.

325,208. HARVESTER. William P. Hale, Brockport, N. Y. Filed Sept. 12, 1884. (No model.)



Claim.—1. The combination, substantially as hereinbefore set forth, of the main frame supported upon two wheels, the frame-bracket at or near the inner rear corner of the main frame, the grain-platform, the platform-bracket having pivotal connection with the frame-bracket, the finger-beam, and means by which the heel end of the finger-beam and the grain-platform at front have adjustable jointed connection with the main frame, for the purpose described.

2. The combination of the main frame, its supporting-wheels, the grain-platforms, the frame-bracket with which the inner rear end of the grain-platform has jointed connection, the finger-beam, and the shoe and guideway bracket by which the heel end of the finger-beam and the grain-platform at front have adjustable connection with the main frame, substantially as and for the purpose hereinbefore set forth.

3. The combination of the main frame, the grain-platform having adjustable jointed connection therewith at front, the frame-bracket secured to the main frame at or near the rear inner corner thereof, the platform-bracket provided with the tubular boss by which the grain-platform has pivotal supporting connection with the frame-bracket, the bolt by which said boss is secured in its bearing in the frame-bracket, and the pinion pivotally supported on this bolt, substantially as and for the purpose hereinbefore set forth.

4. The combination, substantially as hereinbefore set forth, of the main frame, the grain-platform having jointed connection at its rear inner end with the main frame, the finger-beam, the guideway-bracket secured to the inner front corner of the main frame, and the shoe formed with branches and secured to the finger-beam, and passing by one of its branches through the guideway-bracket, whereby the platform and cutting apparatus are adapted to be folded up and to be rocked, as described.

5. The combination of the main frame, the rigidly-united grain-platform and finger-beam, the guideway-bracket, secured to the main frame, the shoe adjustably engaging with the guideway-bracket, the jointed connection between the grain-platform and main frame in rear of the shoe, the platform-rocking lever, its detent devices, and the link-rod having jointed connection with the shoe and platform-rocking lever, substantially as and for the purpose hereinbefore set forth.

6. The combination of the main frame, its supporting-wheels, the rigidly-united grain-platform and finger-beam having jointed connection with the main frame, the grain-wheel having its axle in line with the axles of the supporting-wheels of the main frame, the tongue having jointed connection at its heel with the main frame, the main-frame-rocking lever, its detent devices, and the link-rod connected with this lever and the tongue, substantially as and for the purpose hereinbefore set forth.

7. The combination of the main frame, the grain-platform having jointed connection therewith, the endless carrier, the driving-roller thereof, its attached pinion, and the carrier-actuating pinion mounted to rotate about an axis coincident with that about which the grain-platform plays as it vibrates about its jointed connection with the main frame, substantially as and for the purpose hereinbefore set forth.

8. The combination of the main frame, its supporting-wheels, the grain-platform having adjustable jointed connection at front and jointed connection at the rear with the main frame, the endless carrier, the driving-roller thereof, its attached pinion, the carrier-actuating pinion mounted to rotate about the pivot of the rear jointed connection of the grain-platform with the main frame, the sprocket-pulley attached to the carrier-actuating pinion, and the driving-chain, substantially as and for the purpose hereinbefore set forth.

9. The combination of the main frame, the driven shaft C, the pulley thereon, the driving-chain, the idle-pulley, the grain-platform having jointed connection with the main frame, the carrier-actuating pinion, its attached pulley, the reel-operating shaft, and the pulley thereon, substantially as and for the purpose hereinbefore set forth.

10. The combination of the reel-operating shaft Q', its attached bevel-pinion, the bevel-gear meshing with said pinion, the upright shaft mounted in fixed bearings and to which said gear is attached, the pinion rotating with and sliding on said shaft, the reel-shaft, its attached bevel-gear meshing with the sliding pinion on the upright shaft, and the vertically-adjustable bearing-bracket for the reel-shaft having engagement with said sliding pinion, substantially as and for the purpose hereinbefore set forth.

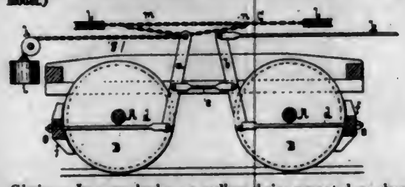
11. The combination of the reel, the reel-shaft, the bearing-bracket for the reel-shaft, the fixed guide-rods up and down which the bearing-bracket slides, the gear on the reel-shaft, the pinion meshing therewith and with which the bearing-bracket has engagement, the rotating upright shaft with which said pinion turns and up and down which it slides with the movements of the bearing-bracket, the reel-adjusting lever, its

detent devices, and the chain connected with this lever and the bearing-bracket, substantially as and for the purpose hereinbefore set forth.

12. The combination of the main frame, the grain-platform and finger-beam having jointed connection with the main frame, the vertically-adjustable reel, means for supporting and adjusting it, the shoe, the platform-rocking lever, and the link-rod connecting the shoe and lever, and by means of which the reel is prevented from descending too low, substantially as and for the purpose hereinbefore set forth.

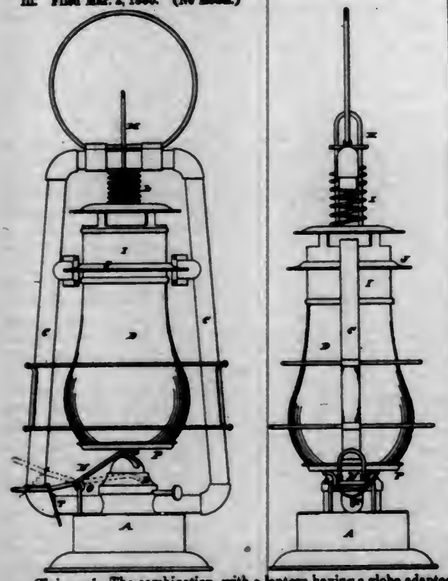
13. The combination of the main frame, its supporting-wheels, the grain-platform and finger-beam having jointed connection with the main frame, the grain-wheel, means for rocking the main frame and the grain-platform and finger-beam about the axles of the supporting and grain wheels, the shoe, and the lever having connection with the shoe, and by which the platform and finger-beam may be rocked independently of the main frame, substantially as and for the purpose hereinbefore set forth.

325,209. CAR-BRAKE. John J. Henry, Baltimore, Md., assignor of one-half to George A. Schaal, same place. Filed Jan. 23, 1885. (No model.)



Claim.—In a car-brake, an endless chain supported on sheaves and connected to a lever forming a part of the brake mechanism, combined with a pendent weight attached to the said endless chain, and means to operate the said endless chain, substantially as and for the purpose specified.

325,210. LANTERN. Joseph Kirsh and Joseph Ruff, East St. Louis Ill. Filed Mar. 2, 1885. (No model.)



Claim.—1. The combination, with a lantern having a globe adapted to be raised and lowered, of a lever hinged to a stationary part of the lantern, and extending inwardly beneath the globe and outwardly to provide means by which the inner end of the lever can be elevated and depressed to raise and lower the globe, substantially as set forth.

2. The combination, with a lantern, of the lever N, hinged to the front, extending inwardly beneath the globe and outwardly beyond an air-tube, substantially as set forth.

3. The combination, with a lantern, of the lever N, hinged to the front, extending inwardly beneath the globe, outwardly beyond an air-tube, and provided with a bail between its fulcrum and said tube, substantially as set forth.

325,211. FOUNTAIN-PEN. James B. Hoyt, Newtown, Conn., and Ferdinand S. Bartram, New York, N. Y. Filed Apr. 14, 1885. (No model.)



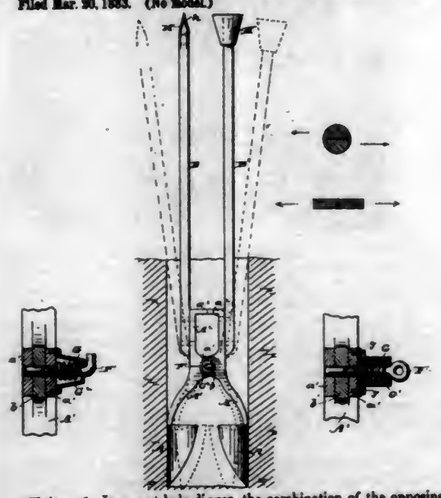
Claim.—1. In a fountain-pen, the plug B, having a point, B', supporting the pen, and a spring for exerting an elastic action to maintain a gentle pressure of the point B' against the inner or under face of the pen E under all conditions, as herein specified.

2. In a fountain-pen, the spring-plug B, having hook B*, adapted to serve as a stop, in combination with the body A, having a recess to receive said hook, and pen E, as herein specified.

3. In a fountain-pen, a solid plug, B, having a groove, *b*, extending a portion, but not the whole, of its length, and having its bottom of V-section and deepened to nearly the entire thickness of the plug at the end receiving the ink from the body, as shown, so as to conduct the last drops of ink to the pen, substantially as herein specified.

4. In a fountain-pen, as described, the plug B, in combination with a band, D, encircling it, as shown, and with the case A and pen E, as and for the purpose set forth.

325,212. POST-HOLE DIGGER. Frederick E. Koehler, Canton, Ohio. Filed Mar. 20, 1883. (No model.)



Claim.—1. In a post-hole digger, the combination of the opposing shovels, the metallic connecting-arms A A', curved inwardly and provided with the stops a^3 at the upper ends, the pivot which directly joins said metallic arms below said stops, and the straight wooden handles secured to the outside of the metallic connecting-pieces above the pivot, said parts being arranged, substantially as set forth, to have the handles swing toward and from each other in the same plane and to be held apart by the metallic connecting-pieces and the stops above the pivots, they being, when the shovels are in parallelism, situated on straight lines throughout their entire length between the vertical planes of the shovels and the central vertical line, substantially as set forth.

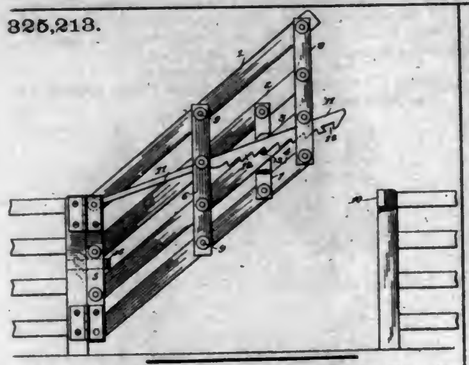
2. In a post-hole digger, the combination, with the shovels and the wooden handles, of the herein-described connecting devices, each having the inward-projecting pivoting-ear, the upward-projecting plate or arm A^3 above the pivot-ear, the inward-projecting stop a^3 at the upper end of said plate, and the outward-curved part A' for direct attachment to the shovel, all the parts of said connecting device being formed integrally in one piece, substantially as set forth.

3. In a post-hole digger, the combination, with the shovels and the wooden handles swinging in the same transverse plane, and having their lower ends situated on vertical lines between the vertical center of the device and the vertical lines of the shovels, of the connecting-arms A', one having two inward-projecting pivot-ears, and each connecting-arm having a plate, A^3, rising above its pivot-ear and formed with an inward-projecting stop and an outward and downward curved bar, *a*, adapted to be riveted directly to a shovel, substantially as set forth.

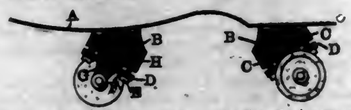
325,213. GATE. William G. Kyte and Jacob A. Martin, Middlebury, Ind. Filed Apr. 30, 1885. (No model.)

Claim.—In combination, a hinged gate composed of bars and uprights pivotally connected together so as to allow the gate to be lifted, a brace-ratchet for holding the gate in an elevated position, and a spring-catch attached to the post and adapted to catch over the edge of the upright and hold the gate from swinging while in an elevated position, substantially as described.

325,213.



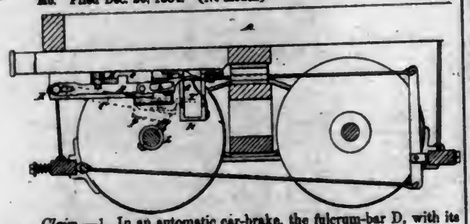
325,214. ROLLER-SKATE. John M. W. Long, Hamilton, Ohio. Filed Mar. 11, 1885. (No model.)



Claim.—1. In a roller-skate, the combination of a hanger provided with a pair of downwardly-projecting bosses having threaded holes in their lower ends, a housing provided with a wheel-axle and with a bearing for a transverse rocker-bar, a spring disposed between the housing and the hanger, a rocker-bar having an eye at each end, and screws serving to unite the rocker-bar to the hanger, and serving to adjust the rocker-bar bodily in its relation to the hanger, substantially as and for purpose set forth.

2. The combination, with a hanger, housing, and spring, of the rocker-bar B, having eyes at each end, provided with lips F, and screws E, with flat-sided heads engaged and prevented from being turned by the lips F, substantially as and for the purpose set forth.

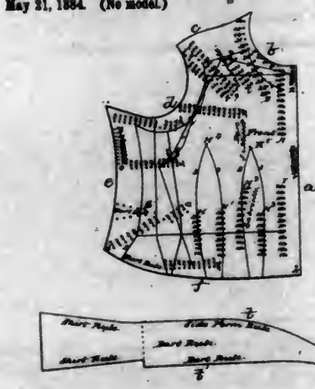
325,215. AUTOMATIC CAR-BRAKE. John L. Munday, St. Louis, Mo. Filed Dec. 26, 1884. (No model.)



Claim.—1. In an automatic car-brake, the fulcrum-bar D, with its shoulder *c* and its tongue *d*, in combination with the trip-spring T, as above described, and for the purposes set forth.

2. In an automatic car-brake, the combination of the brake-lever B, the fulcrum-bar D, trip-spring T, and cam or lug L.

325,216. DRESS-CHART. Mary E. Northen, Lanier, Tex. Filed May 21, 1884. (No model.)



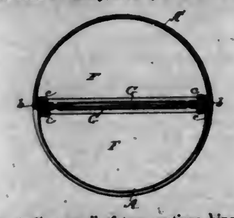
Claim.—1. The front-waist chart having the curved perforated scales H, H', H^3, and H^3, which form darts having points H^4 and H^5, in combination with a dart-rule having curved sides, substantially as described.

2. The front-waist chart having the curved perforated scales H, H', H^3, and H^3, which form darts having points H^4 and H^5, and the dart S, in combination with a dart-rule having curved sides, substantially as described.

3. The front-waist chart having the curved perforated scales H, H', H^3, and H^3, which form darts having points H^4 and H^5, the skirt-dart S on the back, and the perforated and numbered scales A, B, C, D, K, E, F, O, G, I, and P, arranged as shown, substantially as described.

4. The combination, with the dress-charts, of the dart-rule shown in Fig. 4, having the curved side *t*, the point *s*, and the partly-curved and partly-straight side *t'*, substantially as described.

325,217. DINNER-PAIL. Edwin P. Ryder, Port Jefferson, assignor of one-half to John W. Bailey, Brooklyn, N.Y. Filed May 26, 1885. (No model.)



Claim.—1. A dinner-pail of two sections hinged at opposite sides of a circular base, whereby said sections may be closed vertically upon said base and opened outwardly in horizontal positions, in combination with a top fastening for the sections when closed, substantially as described, for the purpose specified.

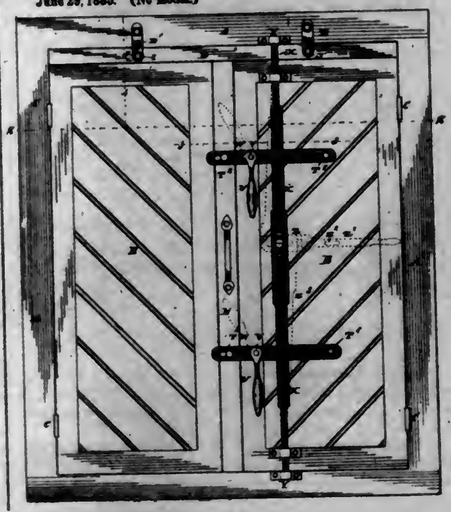
2. The combination, with the pail-sections and a separate cylindrical base, to the opposite sides of which the said sections are hinged, of a bail-handle of two sections provided with a coupling device, substantially as described, for the purpose specified.

3. The combination, in a dinner-pail, of an inclosing-case of two sections and a base, to the circumference of which they are hinged, with one or more food-receptacles seated upon said base, independent of the said hinged sections, and food-compartments formed in said sections above the independent base-receptacle, substantially as herein set forth.

4. In a dinner-pail, the half-cylinder sections, each provided with a fixed food-compartment, F, at one end, closed by slides, and having joint-closing edge-laps *b*, in combination with a separate base, C, and one or more removable food-receptacles inclosed upon said base, substantially as described, for the purpose specified.

5. In a dinner-pail, the combination, with the sections having food-compartments and a circular base, to which they are hinged to open to a horizontal position upon opposite sides of said base, of a bail part for each section and a coupling therefor, whereby the sections are closed vertically and fastened to inclose the food-receptacles.

325,218. CAR-DOOR. David Sutherland, St. Louis, Mo. Filed June 29, 1885. (No model.)



325,218.



Claim.—1. In combination with the doors, the wedge-shape adjustable strip located above the doors, substantially as and for the purpose set forth.

2. In combination with the doors, the wedge-shape adjustable strip provided with packing-strips and located above the doors, substantially as and for the purpose set forth.

3. In combination with the doors, the wedge-shape strip provided with the packing, and the brackets and screw-threaded rods for adjusting the strip to compensate for wear, substantially as and for the purpose set forth.

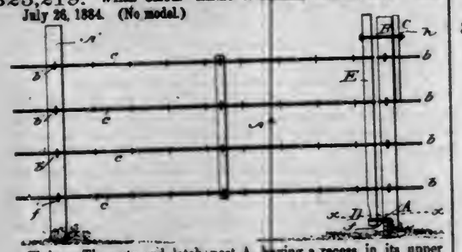
4. In combination with the doors, the vertical strip located between the doors and made adjustable, substantially as and for the purpose set forth.

5. In combination with the doors, the vertical wedge-shape adjustable strip located between the doors, and the packings between the strip and the doors, substantially as and for the purpose set forth.

6. In combination with the doors, the wedge-shape strip located between the doors, the spring-arm connecting the strip to one of the doors, and the nuts for tightening the strip to compensate for wear, substantially as and for the purpose set forth.

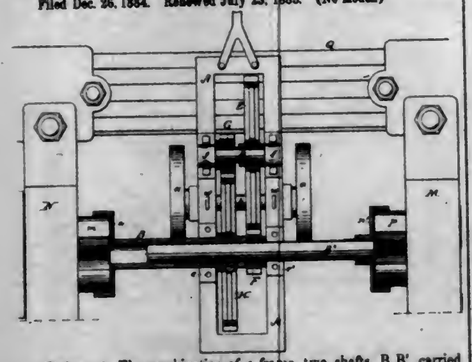
7. In combination with the doors, the wedge-shape strip, the slotted spring-arms connecting the strip to one of the doors, and threaded bolts or rods provided with handles for tightening the strip, substantially as and for the purpose set forth.

325,219. WIRE GATE. Henry O. Thomas, Fremont, Nebr. Filed July 26, 1884. (No model.)



Claim.—The gate and latch-post A, having a recess in its upper end, in combination with the link D, hinged to the post A at its lower end, the bar E, having a notch at its lower end to receive the link D, a link, B, hinged to the upper end of bar E, and the lever C, working in the recess at the upper end of the post A, as set forth.

325,220. PORTABLE SPEED-REDUCING GEAR. John S. Worth, Coatesville, Pa., assignor of one-half to William P. Worth, same place. Filed Dec. 26, 1884. Renewed July 23, 1885. (No model.)

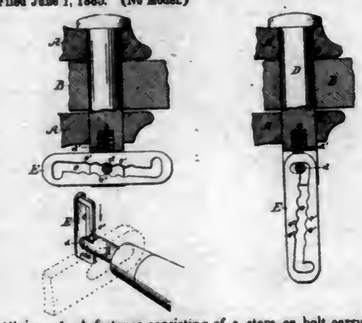


Claim.—1. The combination of a frame, two shafts, B B', carried thereby, and gearing, substantially as described, by which the shaft B may be driven from the shaft B' at a less speed than the latter, as set forth.

2. The combination of two shafts, B B', and gearing whereby the shaft B is driven from the shaft B' at a less speed than the latter, with a wheeled truck carrying said shafts and gearing, as set forth.

3. The combination of the frame A, the tubular shaft B, the shaft B', sliding in said tubular shaft, and gearing whereby the shaft B is driven from the shaft B', but at a less speed, as set forth.

325,221. FASTENING DEVICE. Edwin Wright, Leesburg, Va. Filed June 1, 1885. (No model.)

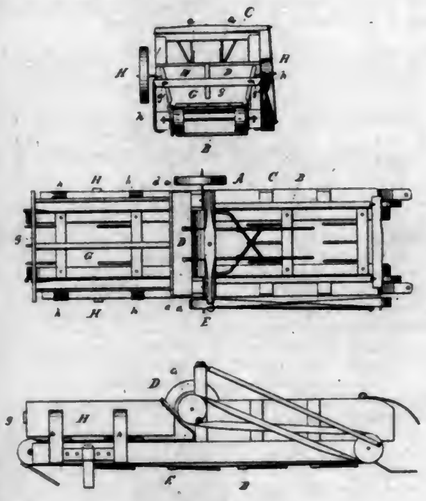


Claim.—1. A fastener consisting of a stem or bolt carrying at its end a slotted retaining-plate, and a friction-spring bearing against the edge of the retaining-plate, substantially as set forth.

2. A fastening consisting of a friction-spring, a bolt or stem having a transverse pin, *d*, and a slotted retainer-plate through which said pin passes, the slot having a notch or notches in its edge, substantially as set forth.

3. A fastening consisting of a stem or bolt having a transverse pin, *d*, with a retaining-plate having an inclined slot through which the said pin passes, and a friction-spring bearing against the edge of the plate, substantially as set forth.

325,222. BAND CUTTER AND FEEDER. Henry K. Andrews, Eureka Springs, Ark. Filed Apr. 9, 1884. (No model.)

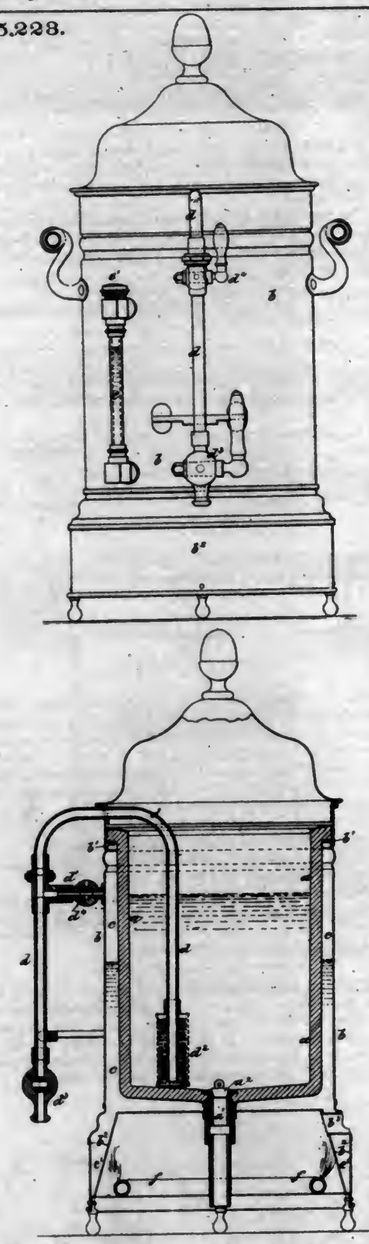


Claim.—1. The combination of the cutter-shaft, the guard-board arranged in front thereof, its supporting-springs, the partition-board secured at one end to the said guard-plate, a cross-bar secured to the opposite end of the partition-board and slotted near its ends, the inclined side boards, their supporting-springs, and screws or pins connecting the cross-bar and side bars, all substantially as and for the purposes specified.

2. The combination, with the cutters, of the guard-board and the springs having one end secured to the framing and their opposite ends secured to the guard-board, the latter being supported entirely by the springs, substantially as described.

325,223. COFFEE OR TEA POT. Ebenezer Boyes, Peckham, County of Surrey, England. Filed Feb. 14, 1885. (No model.) Patented in England July 6, 1883, No. 3,363, and Jan. 1, 1884, No. 215.

325,223.



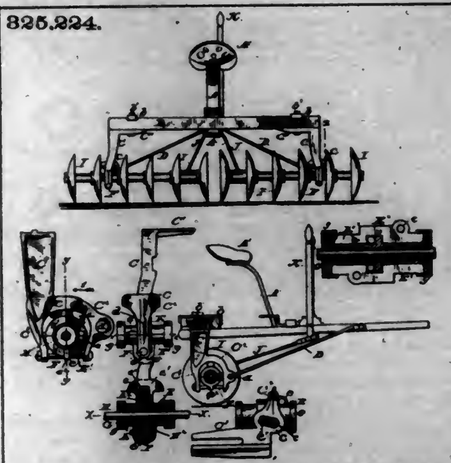
Claim.—1. The combination of inner vessel, *a*, and outer vessel, *b*, hermetically connected together at the upper end, forming the close chamber *c*, pipe *d*, tubular junction *d'*, and valve d^4, substantially as herein shown and described, and for the purpose stated.

2. The combination of inner vessel, *a*, outer vessel, *b*, forming the close chamber *c*, pipe *d*, tubular connection *d'*, and valves d^3 d^4, substantially as herein shown and described, and for the purpose stated.

3. The combination of inner vessel, *a*, outer vessel, *b*, forming the close chamber *c*, pipe *d*, and valve d^3, substantially as herein shown and described, and for the purpose stated.

325,224. DISK-HARROW. Jay S. Corbin, Gouverneur, N.Y. Filed July 24, 1884. (No model.)

325,224.



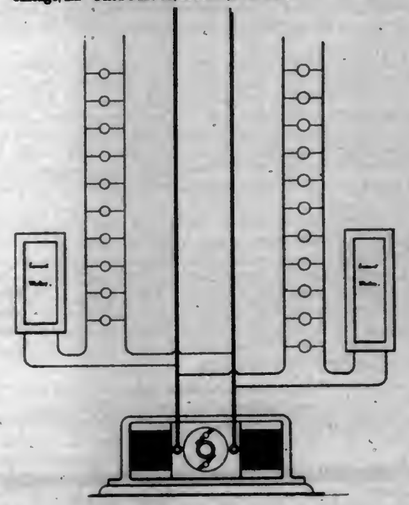
Claim.—1. In a disk-harrow, the combination of a tongue, the transverse bar rigidly attached to the tongue, two disk-gangs and the bearings in which they rotate, non-rotating hangers, each slotted at its upper end and forked at its lower end, which is arranged between two adjacent disks of a gang, the bolts F F in the lower ends of the forked hangers, and the bolts *b b*, passing through the slotted upper ends of the hangers, the shaft-bearing being mounted loosely in the lower ends of the forked hangers, whereby the gangs are adapted to vibrate in both horizontal and vertical planes, and to be adjusted toward and from each other on a line at a right angle to the line of draft, substantially as set forth.

2. In a disk-harrow, the combination, with the tongue and the transverse bar, of the forked hangers, each open at its lower end, the bolts mounted in the lower ends of the forked hangers, the axles and the bearings provided with the lugs arranged upon opposite sides of the bolt, and mounted loosely in the hangers, and adapted to engage with one leg of each hanger when the harrow is drawn forward, substantially as set forth.

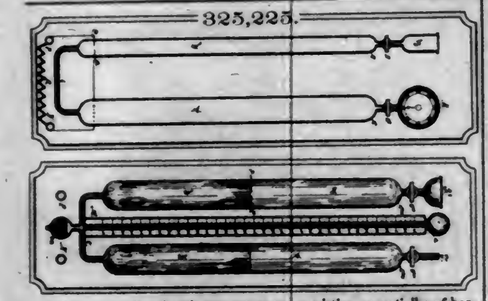
3. In a disk-harrow, the herein-described forked hanger having the leg C^2, provided with the transversely-slotted part *c*, the bolt at the lower end of the fork, and the bearing loosely supported between the bolt and the fork of the hanger, and provided with a lug projecting into the transverse slot, and with the lugs c^3 c^3, substantially as set forth.

4. In a disk-harrow, the herein-described forked hanger having the leg C^2, provided with the transversely-slotted part *c*, the bolt at the lower end of the fork, and the bearing provided with the enlargement F', the lugs c^3 c^3, and the hollow leg *c'*, arranged in the slot *c'*, substantially as set forth.

325,225. ELECTRIC-CURRENT METER. Charles J. Van Depoele, Chicago, Ill. Filed June 11, 1885. (No model.)



325,225.



Claim.—1. An electric-current meter consisting, essentially, of hermetically-closed chambers containing an electrolyte and electrodes for decomposing said electrolyte, in combination with an indicator acted upon by the gases produced by decomposition of the electrolyte and circuit connections, substantially as described, whereby the amount of current passing in a given circuit can be ascertained.

2. An electric-current meter consisting of two hermetically-closed cylinders or holders, one holding an electrolyte in proper electrical communication with two platinum electrodes passing from the outside to the inside of said holder, and connected to the source of electricity to be measured in the manner described, and the other holder containing air which will be compressed by the production of gas in the first holder during the decomposition of the electrolyte, said cylinders or holders being directly connected to a proper manometer, either mercurial or other, from which the pressure in the cylinders can be read, for the purpose set forth.

3. In an electric-current meter, two holders, the first containing an electrolyte, from which the gas is evolved under the action of the current to be measured, the second holder containing common air or any other elastic gas which can be compressed by the electrolyte, which is expelled from the first holder under the pressure of the gas formed in said holder, and a pressure-indicator properly connected to both holders, from which the pressure, and consequently the current used, can be read, substantially as described, and for the purpose set forth.

4. An electric-current meter consisting of a holder for an electrolyte, a holder containing air to be compressed by the expulsion into it of the electrolyte under the pressure of the gases resulting from the decomposition of the electrolyte, in combination with a mercurial or other manometer adapted to indicate the pressure of the air and gas in the above-named holders, the electrolyte, the air, gas, and mercury, all hermetically sealed against communication with the atmospheric pressure, all as described, and for the purpose set forth.

5. An electric-current meter consisting of a holder containing an electrolyte receiving current from a source of electricity to be measured, the electrolyte placed in a shunt-circuit from the source, allowing only a small portion of the current to traverse the electrolyte, in combination with a second holder containing air, connected to the first by means of proper tubing, enabling the electrolyte to be gradually expelled from the first holder as the production of gas goes on, thus compressing the air in the second holder, and a properly-attached pressure-indicator showing the pressure in the hermetically-closed holders, substantially as described.

6. An electric-current meter consisting of an electrolyte contained in a hermetically-closed holder or holders, the electrolyte being placed in a shunt-circuit from the source of electricity to be measured, and proper means for giving room to the gas evolved from the electrolyte, in combination with a pressure-indicator showing the pressure produced by the evolution of gas from the electrolyte under the action of the current, for the purpose of determining the current consumed during a period of time in the circuit in which the meter is placed, substantially as described and set forth.

7. An electric-current meter consisting of an electrolyte contained in a hermetically-closed holder or holders, the electrolyte being placed in a shunt-circuit from the source of electricity to be measured, the resistance of said shunt-circuit bearing a definite relation to that of the circuit from which it is derived, in combination with a pressure-indicator showing the pressure produced by the evolution of gas from the electrolyte under the action of the current, for the purpose of ascertaining the amount of current consumed in the circuit in which the meter is placed, substantially as described and set forth.

325,226. ATTACHMENT FOR COMBS. CHESTER H. WELLS, Meshoppen, Pa. Filed Apr. 30, 1885. (No model.)



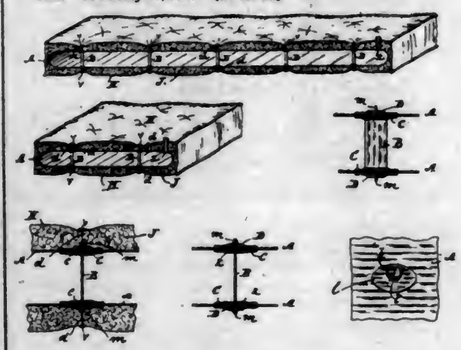
325,226.



Claim.—1. A combined comb and brush consisting of a comb, in combination with a spring-actuated frame which is applied thereto, the frame being made to surround the lower end of the teeth, and the springs for moving the frame being applied directly to the teeth, substantially as shown and described.

2. The combination of a comb with a metallic frame which is applied around the ends of the teeth and springs which are attached to the frame for the purpose of holding it in position upon the comb, substantially as set forth.

325,227. LIFE-SAVING MATTRESS. ALBERT A. YOUNG, Boston, Mass. Filed May 29, 1885. (No model.)



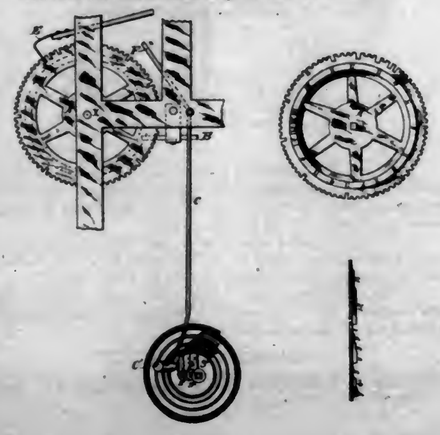
Claim.—1. In an upholstered air-sack, the combination of the following instrumentalities, to wit: an air-sack provided with a suitable inflating-tube, stays disposed on the interior of the sack and connecting its walls or top and bottom, a body of hair or other suitable stuffing material, twine or tafting-cords, and eyes, loops, or other suitable devices attached to the air-sack for receiving and holding the inner ends of the tafting-cords, substantially as described.

2. The sack A, provided with the inflating-tube *x*, stays B, and eyes or loops *m*, substantially as and for the purpose specified.

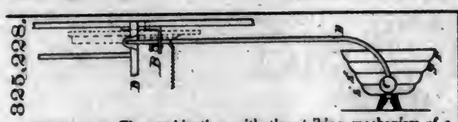
3. The sack A, provided with the stays B, tube *x*, and buttons D, having eyes *m*, substantially as described.

4. As an improved article of manufacture, a mattress or cushion having the air-sack A, provided with the tube *x*, stays B, and eyes *m*, in combination with the covering H, stuffing J, and cords *d*, constructed, combined, and arranged substantially as described.

325,228. STRIKING MECHANISM FOR CLOCKS. HENRY L. NARAMORE, Sharon, Mass., assignor of one-half to August Fischer, Winchester, and James F. Potts, Whitehall, Ill. Filed Apr. 13, 1885. (No model.) Patented in England Feb. 20, 1884, No. 3,665; in France Feb. 23, 1884, No. 160,529; in Belgium Feb. 25, 1884, No. 64,283; in Germany Feb. 26, 1884, No. 29,358, and in Canada May 27, 1884, No. 19,421.



325,228.



Claim.—1. The combination, with the striking mechanism of a clock, of a plurality of bells of different tones, and mechanism, substantially as described, by which the hammer may be thrown into contact with any one of the bells.

2. In a striking-clock, a partially-rotating arbor provided with a striking-wire and a hammer pivoted upon said arbor, in combination with mechanism for shifting the hammer laterally, so as to allow it to strike different bells, substantially as set forth.

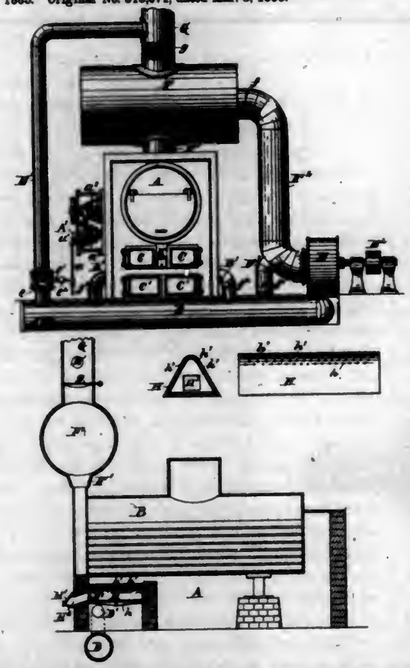
3. In a striking-clock, the combination, with a plurality of bells of varying size and tone, of a single hammer operated by said clock for all the bells, as set forth.

4. In a clock substantially such as described, the counting-wheel B, provided with a cam or lift adapted to operate on a lever or other device connecting said wheel with the hammer, and thereby move the hammer from one bell to another as the wheel revolves, as set forth.

5. In a clock substantially such as described, the lever D, in combination with the wheel B, for moving or swinging the wire E longitudinally of the rocker-shaft, and holding it in position while the hammer strikes the hour on the bell, substantially as set forth.

REISSUES.

10,639. SMOKE-CONSUMING FURNACE. FRANKLIN B. GIESLER, Milwaukee, Wis., assignor of one-half to Adolph Legemann. Filed July 16, 1885. Original No. 313,071, dated Mar. 3, 1885.

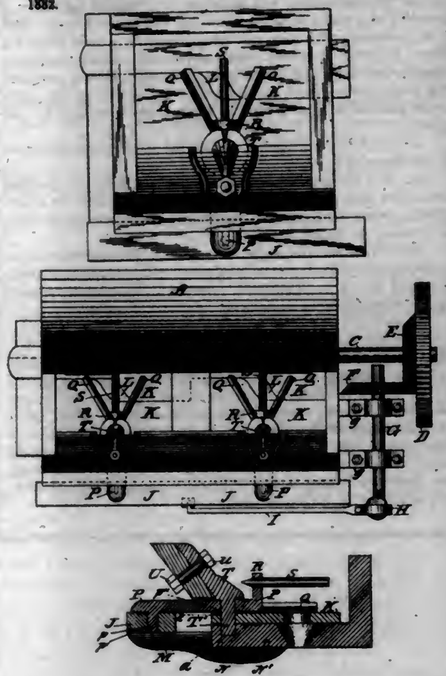


Claim.—1. The combination, in a smoke-consuming furnace having an exhaust-fan or artificial draft, of an exhaust-pipe communicating from the furnace with the exhaust side of said fan or artificial draft, and both a return and escape pipe communicating from the return side of said fan or artificial draft, respectively, one with the furnace and the other with the exterior air, substantially as and for the purpose specified.

2. The combination, with a furnace, of pipes D, D', F', F², and F³, the reservoir and blower-pipe E', and its valve, and mechanism for lifting the latter at intervals, substantially as described.

3. In a smoke-consumer, the combination, with the furnace A, the horizontal flue D, and its branches D' D', of a chamber or flue formed above the grate-bars in the center and the whole length of the furnace, and having its closed bottom resting on the grate-bars, suitable perforations on each side, near its top, and an adjustable door opening in the furnace-front, substantially as and for the purpose set forth.

10,640. FERTILIZER-DISTRIBUTER. JOHN F. KELLER, Shepherdstown, W. Va. Filed Oct. 6, 1884. Original No. 265,674, dated Oct. 10, 1882.



Claim.—1. The combination, with the hopper of a fertilizer-distributer, of the securing-plates T, each having horizontal and inclined face, as described, and a lateral projection, V, whereby accumulations are removed from the stirrer-bars, as set forth.

2. The combination, with the hopper of a fertilizer-distributer, of the securing-plates T, each having a horizontal and an inclined surface, one or more lateral projections, V, for the removal of accumulations from the stirrer-bars, and a holding-spindle, T', which serves as a fixed bearing for the stirrer-bars.

3. The combination, with the hopper of a fertilizer-distributer, of the securing-plates T, each having a horizontal and an inclined face, and a fixed holding-spindle, and a stirrer-bar which has oscillation upon such fixed spindle.

4. The combination of the holding-spindle T' upon the securing-plate T, the stirrer-bar P, having agitating-fingers, the rear slide, K, and the hopper A, having cavity *a*, whereby the stirrer-bar and the rear slide are maintained in adjustment with the hopper, and a fixed pivotal bearing is provided for the stirrer-bars, as set forth.

5. The combination, with the hopper A, of a securing-plate, T, a fixed vertical holding spindle or bearing which projects from the bottom of such securing-plate, and a fingered stirrer-bar which has oscillation upon such fixed bearing.

6. The combination, with the hopper of a fertilizer-distributer, of the stirrer-bar P, provided with pivot-pin *p*, perforation *p*''', and perforated and fingered arm R.

7. The combination, with the hopper of a fertilizer-distributer, of supporting brackets or keepers, a coupling-bar which rests loosely upon such brackets, a fingered stirrer-bar which is pivotally connected with such coupling-bar, and securing and adjusting screws which engage with the brackets and with the hopper, whereby the fingers of the stirrer-bar are made adjustable vertically in relation to the upper surface of the feed-slides, as described.

8. The combination, with the hopper of a fertilizer-distributer, of a securing-plate which has an inclined face to fit the inclined wall of the hopper, a horizontal face to fit the horizontal top surface of the stirrer-bar, and which has also a holding-spindle which projects downwardly from the bottom of such plate and serves as a fixed bearing for the stirrer-bar.

9. The combination, with the hopper of a fertilizer-distributer, of a securing-plate which has a flat portion to fit one of the inner walls of such hopper, a flat portion to fit the top of the stirrer-bars, and a downwardly-projecting spindle which engages with the stirrer-bars, which

engages also with the rear feed-slide, and which engages also with the bottom of the hopper.

10. The combination, with the hopper of a fertilizer-distributer, of a securing-plate which is bolted to the rear wall of the hopper, which by its horizontal portion rests upon the stirrer-bars at a point within the hopper, and which is provided with a downwardly-extending spindle, a fingered stirrer-bar which has oscillation upon such spindle, a perforated slide which receives and is secured and guided by such spindle, and a bottom plate which, by a cavity in its upper surface, is engaged by such spindle.

11. In a fertilizer-distributer, a stirrer-bar provided with pin *p*, arm R, and fingers Q Q and S.

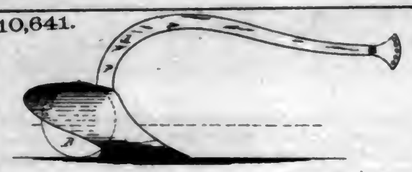
12. In a fertilizer-distributer, the slides K, forming the S-shaped opening and having the sharp edges *l*, in combination with the fingers Q, having sharp edges, and with mechanism, substantially as described, for operating the fingers.

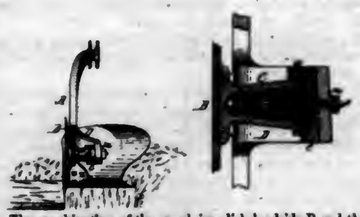
13. The combination of the stirrer-bars P, provided with fingers Q, the securing-plates T, attached to the hopper, the supporting brackets or keepers M, and the coupling-bar J, arranged and adapted to operate together substantially as set forth.

10,641. LANDSIDE FOR PLOWS. GARLAND B. ST. JOHN, Kalamazoo, Mich. Filed Aug. 11, 1884. Original No. 278,823, dated May 29, 1883.

Claim.—1. A revolving blade-disk landside made thin and sharp to permit it to cut through inequalities in the bottom of the furrow and to penetrate the soil for the purpose of returning the plow to place when thrown out by obstructions, in combination with the plow, whereby the plane of the outer face of the disk intersects that of the furrow-bank near the bottom, leaving a narrow clearance above that line, substantially as and for the purpose set forth.

10,641.





2. The combination of the revolving disk-landside B and the plow-beam A, having the axle-supporting lug D, adapted to bring the outer face of the disk practically in line with the furrow longitudinally, substantially as and for the purpose set forth.

3. In combination with a revolving landside, substantially as described, the hub C, axle *i*, bolt *e*, sand-band *a*, wedge-shaped washer *c* and plow-beam A D, substantially as and for the purpose set forth.

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DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

DECISIONS OF THE U. S. COURTS.

U. S. Circuit Court—Western District of Pennsylvania.

CARY *et al. v.* THE LOWELL MANUFACTURING COMPANY, (LIMITED.)

Decided June 13, 1885.

1. Upon motion for a preliminary injunction to restrain infringement of Letters Patent No. 116,266, which has been twice sustained in suits before other courts, as there appears to be no sufficient reason for rejecting said decisions, the injunction is ordered to issue.
2. Upon such a motion the court will accept and follow an adjudication sustaining the patent, made in another circuit on a final hearing and after full consideration.

Mr. Geo. H. Christy, Mr. W. C. Witter. and *Mr. W. H. Kenyon* for the complainants.

Mr. John K. Hallock and *Mr. Wm. Bakewell* for the defendants.

ACHESON, *J.:*

This case is now before the court on a motion for a preliminary injunction. The suit is upon Letters Patent No. 116,266, granted on June 27, 1871, to Alanson Cary, whose invention relates to spiral springs, usually made in a conical form, of hard-drawn steel wire coiled and forced to proper shape. In the ordinary operation of bending or coiling the wire into springs the metal (the specification states) is unavoidly weakened—the outer portion of the wire coil being drawn or stretched, while the inner portion is crushed or shortened. The invention consists in a process for restoring to the wire of the spring the strength and elasticity which it lost by this distortion, and this is effected by subjecting the spring, after it has been completed in the usual manner, for about the space of eight minutes, to "a degree of heat known as 'spring-temper heat,' which is about 600°, more or less," whereby a complete homogeneity of the metal is produced, and increased strength, elasticity, and durability are imparted to the spring. The claim of the patent is for "the method of tempering furniture or other coiled springs," substantially as described. For the last ten years this patentee has been involved in constant litigation in defending or enforcing his rights under his patent. In June, 1875, the Eagleton Manufacturing Company brought suit against parties manufacturing springs under the Cary patent for an infringement of letters patent granted December 19, 1871, to one Eagleton, substantially covering the invention described and claimed in the previous patent to Alanson Cary. This suit, which involved the question of priority of invention as between Cary and Eagleton, resulted favorably to the former, as will appear by the opinion of the Supreme Court, delivered May 5, 1884, in *Eagleton Manufacturing Co.* v. *West, &c., Manufacturing Co.*, (111 U. S., 490.) In the meantime these complainants, in October, 1879, brought suit in the United States Circuit Court for the Southern District of New York against Raphael H. Wolff and others for the infringement of the Cary patent. In that suit the defendants (among other defenses) by their answer denied the validity of the patent, denied that Alanson Cary was the first inventor of the patented process, alleged prior uses and prior publications in great numbers, denied that the invention was a new and useful one, and also denied the fact of infringement. The litigation in that case was most protracted and expensive. A very large amount of testimony by experts and other witnesses was taken therein. The case was hotly contested throughout, and on the part of the defense most strenuous efforts made to defeat the patent. The able counsel for the defendants were assisted by experienced experts. The case was elaborately argued on final hearing in the fall of 1884. In February, 1885, Judge Wheeler filed an opinion sustaining the patent, finding infringement, and directing a decree in favor of the complainants. I have been thus particular in recounting the facts connected with this litigation because I am now asked upon this interlocutory hearing to consider the question of the validity of the patent as open, and to disregard the decision made in the second circuit. The defendants' counsel earnestly contend that the theory upon which the court there sustained the patent is false. The rationale of the Cary invention, according to Judge Wheeler is this:

> The process of the patent [he says] does not merely add temper as a quality of steel which did not have it before; it restores the lost strength and elasticity of the wire consequent to the displacement of the particles of which it is composed by the process of making it into springs. The discovery was that the application of heat would effect that restoration, which is a different thing from tempering.

Now, it will be observed that this is the expressly-declared theory of the patent itself, and it was accepted as sound by the Patent Office, and this (as Mr. Cary states in his affidavit) after tests were made by the Examiner personally. And if it be true that the theory of the restoration of strength and elasticity lost by the distortion of the wire in the coiling of it was not questioned in the Wolff case by either counsel or expert, this very fact tends strongly to create confidence in the soundness of that theory.

The defendants' theory, as set forth in Mr. Lovell's affidavit, is that the loss of strength and elasticity is due not to the coiling of the wire into springs, but to the previous cold-drawing of it, and that the restorative effect of the Cary process is no other or different from that which was, prior to his invention, well known in the art to result from a partial reheating and gradual cooling of steel which had been hammered, rolled,

or otherwise manipulated, the elasticity of which had been thereby impaired or partially destroyed; but I am not yet satisfied that this is the true theory of the Cary process, and for the present I think it is my duty to follow here the conclusion of the court in the second circuit. Upon this question it seems to me the case comes fairly within the general rule that upon a motion for a preliminary injunction where infringement is clear, the court will accept and follow an adjudication sustaining a patent made in another circuit on a final hearing and after full consideration. (*Green* v. *French*, 4 Ban. & Ard., 169; *Mallory Manufacturing Company* v. *Hickok*, 20 Fed. R., 116; *Coburn* v. *Clark*, 24 Off. Gaz., 899.) Adhering, then, for the time being, to Judge Wheeler's view touching the rationale of the Cary invention, I see nothing in the *ex parte* affidavits now presented which should lead me to reject his decision at this preliminary stage of the case. Moreover, there are cogent reasons which induce me to adopt the course I have just indicated. The defendants were not ignorant of the pendency of the Wolff case. It is shown that for at least three years before that litigation closed their Mr. Lovell was fully informed in respect to it. He watched the case with interest as it progressed, and several times conversed with Wolff about the suit and the chances of a successful defense therein, expressing the hope that Wolff might win. It was his interest to defeat the Cary patent in that contest, and he had every opportunity of assisting in the defense by giving information or otherwise; but he did not do so, nor did he ever suggest to the defendants therein the theory of the Cary process upon which he now insists. In this regard the case here is not unlike that of *Robinson* v. *Randolph*, (4 Ban. & Ard., 163,) in which, on a motion like the present one, the court declined to listen to an affidavit alleging a new defense. Again, during the pendency of the Wolff case, and with full knowledge of the risk taken, the defendants embarked in the manufacture of coiled springs by the infringing process. Still further, the two adjudications above mentioned, establishing the complainants' rights, have been obtained after a most tedious litigation, attended with great expense, and the patent has now only three years to run. And, finally, I am convinced that an injunction is the only efficacious remedy for the complainants under all the circumstances.

Upon the question of infringement the case is free from difficulty or doubt. It is quite clear to me that the defendants have been using the Cary process. It may, indeed, be true that they have been using a higher degree of heat than that specially mentioned in the patent, but so did the defendants in the case of *Cary et al.* v. *Wolff et al.* So long as the springs are kept below a red heat, the substance of the invention (as Judge Wheeler says) is taken. (*Tilghman* v. *Proctor*, 102 U. S., 707.) Nor, in my judgment, is it at all material that the defendants cool their springs by plunging them into cold water. This, also, was the practice of the defendants in the Wolff case. The beneficial results are secured by subjecting the springs to the prescribed heat, and the patent is altogether silent as to the manner of cooling; and if the springs are not raised to a red heat, it is immaterial whether air-cooling or water-cooling is practiced.

Let a preliminary injunction issue.

U. S. Circuit Court—Northern District of New York.

THE TOLEDO MOWER AND REAPER COMPANY v. THE JOHNSTON HARVESTER COMPANY *et al.*

Decided August 17, 1885.

The demurrer is overruled, with costs, where the bill for injunction and account was filed twenty-six days before the patent expired, and where it sets forth special ground of equitable relief, and prays for an injunction restraining the sale of the unlawfully-made machines after as well as before the patent expires.

Messrs. Parkinson & Parkinson for the plaintiff.

Messrs. Cogswell, Bentley & Cogswell for the defendants.

BLATCHFORD, *J.*:

This bill is brought for the infringement of letters patent granted to John S. Davis, March 10, 1868, for an improvement in reapers and mowers for seventeen years from that day. The bill was sworn to February 9, 1885, and filed February 12, 1885. The plaintiff is alleged to be a corporation of Ohio, the defendant corporation a corporation of New York, and the other defendants its officers and citizens of New York. The bill avers that the plaintiff, from December 23, 1881, has been continuously engaged in making and selling machines under and in accordance with the patent at Toledo, Ohio, and elsewhere in the United States, and has been and is prepared to fully supply the market therefor, and is the owner of the patent, and has invested and expended large sums of money, and been to great trouble in and about the invention, and for the purpose of carrying on the business of making, selling, and introducing to the public in Toledo and elsewhere in the United States, and, among other places, in the northern district of New York, machines embodying the invention, and making the same profitable to itself and useful to the public; that the invention has been and is of great benefit and advantage, and has, by the efforts of the plaintiff and its predecessors in title, been made extensively and favorably known to the public, and many machines were made according to the invention and sold by the plaintiff and its predecessors in title; that it has reserved to itself the entire right to make, use, and sell under the patent, and has granted no licenses to make thereunder; that the defendants, in infringement, have made and sold machines containing the invention, and still continue to do so, and are threatening to make the said machines in large quantities, and to supply the market therewith, and to sell the same; that said acts of infringement are being carried on by the defendants jointly in the northern district of New York and in Toledo, where the plaintiff has built up a trade in the machines, and is prepared to supply the market therewith; that the defendants are now, in the northern district of New York, making large quantities of the machines containing the invention, and preparing and intending to put upon the market and sell for use during the season of 1885 in said district, and in and about Toledo, and elsewhere in the United States, such machines so manufactured prior to the expiration of the patent; that they have large quantities of the machines on hand which they are offering for sale; and that the use of the invention by the defendants, and their avowed determination to continue the same, encourage and induce others to infringe the patent. The bill prays for an account of profits, and for an injunction restraining the defendants from further constructing or selling or using any of the machines, and from selling or putting into use as well after as before the expiration of the patent "any infringing machines unlawfully made or acquired in whole or part during the term thereof, and that all infringing machines now in possession or use of the said defendants may be destroyed or delivered up to your orator for that purpose." It also prays for a decree for damages in addition to profits, and for an increase of damages, and a provisional injunction.

The defendants demur (1) for want of ground for equitable relief; (2) for want of equitable jurisdiction; (3) because the bill shows that the remedy, if any, is at law.

This case does not fall within the ruling in *Mershon* v. *The J. F. Pease Furnace Co.*, herewith decided. In the present case the bill was filed twenty-six days before the patent expired. There was time to give notice of a motion for a provisional injunction and to obtain it. Moreover, the bill sets forth special circumstances for equitable relief, in that the plaintiff has retained the exclusive right to make and sell, and is exercising it, and is able to supply the market, and the defendants are making machines containing the invention, and threaten to make them in large quantities, and intend to put on the market in the season of 1885 infringing machines made before the patent expires, and have large quantities on hand which they are offering for sale; and the bill prays for an injunction restraining the sale after as well as before the patent expires of machines unlawfully made before it expires. Such a case is like that of *Crossley* v. *Beverly*, (Webst. P. C., 119,) commented on in *Smith* v. *London & S. W. Railway Co.*, (Kay, 408,) and like the cases in this circuit of *American Diamond Rock Boring Co.* v. *Sheldon*, (18 Blatchf. C. C. R., 50,) and *American Diamond Rock Boring Co.* v. *Rutland Marble Co.*, (Id., 146.)

The demurrer is overruled, with costs, and the defendants are assigned to answer the bill by the rule day in October next.

U. S. Circuit Court—Northern District of New York.

MERSHON v. THE J. F. PEASE FURNACE COMPANY.

Decided August 17, 1885.

Demurrer is allowed, with costs, where the bill for injunction and account was filed six days before expiration of the patent, the rules of court requiring a notice of eight days of a motion for an injunction.

Messrs. Forbes, Brown & Tracy for the plaintiff.

Messrs. Duell & Hoy for the defendant.

BLATCHFORD, *J.*:

This is a bill in equity brought for the infringement of Reissued Letters Patent No. 4,695, granted to the plaintiff January 2, 1872, for an improvement in dampers for hot-air furnaces, for the unexpired term of seventeen years from May 5, 1868, on which date the original Letters Patent No. 77,512 were granted to the plaintiff. The bill prays for an account of profits and damages and for injunctions provisional and perpetual, but it sets forth no special ground for equitable relief. The bill was sworn to April 29, 1885, six days before the patent would expire. It was filed May 1, 1885 and the subpœna to appear and answer was served May 2, 1885. The defendant interposes a demurrer for want of equity, which also alleges want of jurisdiction in the court because the plaintiff has an adequate remedy at law.

It is provided by section 723 of the Revised Statutes that—

suits in equity shall not be sustained in either of the Courts of the United States in any case where a plain, adequate, and complete remedy may be had at law.

If there is such a remedy at law when the defendant is brought into the court of equity; if there is not, in good faith, at that time a case in which the court of equity could, by the exercise of its jurisdiction in the ordinary course of procedure, give to the plaintiff the most moderate measure of equitable relief which he prays or would be entitled to on his allegations; if the coming into the court of equity appears to be a pretence to avoid a court of law, the court of equity should not entertain the case.

The jurisdiction conferred by section 4921 of the Revised Statutes is—

to grant injunctions according to the course and principles of courts of equity, to prevent the violation of any right secured by patent, on such terms as the court may deem reasonable; and, upon a decree being rendered in any such case for an infringement, the complainant shall be entitled to recover, in addition to the profits to be accounted for by the defendant, the damages the complainant has sustained thereby; and the court shall assess the same, or cause the same to be assessed under its direction.

Not only, as is suggested in *Root* v. *Railway Co.*, (105 U. S., 189, 206,) does the language of section 4921 seem to make the power to award profits dependent upon the power to grant an injunction, but the general "course and principles of courts of equity" make the right to an account dependent on the right to an injunction. (*Higginbotham* v. *Hawkins*, L. R., 7 Ch. App. 676; *Baily* v. *Taylor*, 1 Russ. & M., 73; *Smith* v. *London & S. W. Railway Co.*, Kay, 408.) In speaking here of "power" and "right," I refer to entertaining the suit at all, and not to the power to give proper relief, in an equity suit properly brought, where the patent expires during the pendency of the suit. This power was exercised in *Lake Shore Co.* v. *Car Brake Shoe Co.*, (110 U. S., 229) and in *Consolidated Valve Co.* v. *Crosby Valve Co.*, (113 Id., 157.)

In the present case the sole object of the bill plainly appears to be, to obtain pecuniary compensation in the shape of profits or damages, in a case where no injunction of any kind could be obtained, for, by the rules of the court, a notice of eight days, of a motion for an injunction is required. The coming into a court of equity, under such circumstances, will not be permitted. (*Betts* v. *Gallars L. R.* 10 Eq., 392.)

As the bill does not show that an action at law for damages would be an inadequate remedy for the wrongs complained of, and no *bona fide* ground for equitable relief is presented, the demurrer is allowed, with costs.

U. S. Circuit Court—Eastern District of Pennsylvania.

RICHARDS v. HAYS.

Decided April 28, 1885.

DAGGOW—SQUIBS FOR BLASTING—NOVELTY—PRIOR USE.

The prior use of fuses embodying the essential features of the Patents Nos. 8,361 and 134, 128 being shown, *held* that such patents are void for want of novelty.

Mr. Chas. Howson and *Mr. E. G. Buller* for the plaintiff.

Mr. Guy E. Farquhar, Mr. F. T. Chambers, and *Mr. George Harding* for the defendant.

PER CURIAM:

This bill is founded upon two patents issued to Samuel H. Daddow, and to Esther H. Daddow, executrix of Samuel H. Daddow, Nos. 8,361 and 134,128, respectively. They are both for improvements in squibs for blasting, and it is alleged that the first claim of 8,361 and the second claim of 134,128 have been infringed by the defendant. Numerous witnesses have been examined touching their prior knowledge and use of fuses embodying the essential features of those described in both patents. If this testimony is believed, it is decisive against the complainant. While it would serve no useful purpose to consider it in detail, it is sufficient to say that we are unable to discredit it, and hence the bill is dismissed, with costs.

U. S. Circuit Court—Eastern District of Pennsylvania.

DEPLANQUE *v.* RIPKA *et al.*

Decided April 23, 1885.

INFRINGEMENT.

The evidence failing to satisfy the court that the Deplanque Plaque is infringed by the plaque of Ripka, the bill is dismissed.

Jerome Carty for the plaintiff.

J. Cooke Longstreth for the defendants.

BUTLER, *J.*:

The parties may stand upon the presumptions arising out of the respective patents involved. The evidence touching the validity of the plaintiff's letters (aside from this presumption) is not conclusive. It seems probable that he got his ideas, and instruction how to carry them out, from Mr. Ripka. This question cannot be settled by the witnesses' recollections of dates, on which the plaintiff relies. If Ripka tells the truth, there can be little doubt tha the communicated the information on which the plaintiff proceeded. If the plaintiff had made the discovery at the time Ripka refers to, the conversation could not, it would seem, have occurred. The plaintiff would not have listened to the suggestions without revealing his discovery; especially would not have replied as Mr. Ripka swears he did. This testimony must therefore be accepted or discarded for want of integrity in the witness. He is, however, corroborated in part by Miss Brightenbangh. But granting that the plaintiff did not thus get his information, it is extremely doubtful whether any invention or discovery is involved in what he did. The materials used and the combination employed are old. Panels for decoration were made of the same materials, combined in the same way, long before. The molding of similar substances was common, and in most instances this seems to have been done as the plaintiff does it—that is, by the use of some liquid or the application of heat to moisten the substance and render it pliable. The only thing which clearly seems to be new is the application of the material to the formation of a plaque, and this was simply molding it in a particular form, which certainly is not patentable of itself. Still, in the view we entertain of the case, the validity of the plaintiff's patent need not be passed upon. The evidence does not satisfy us that the respondent's plaque is an infringement. We are not convinced that the materials used are the same as those employed by the plaintiff. The testimony relied upon by the plaintiff is inconclusive, and should not therefore be held to overcome the presumption arising from the contrary judgment pronounced by the Patent Office.

The bill must be dismissed.

THE OFFICIAL GAZETTE OF THE United States Patent Office.

[BY AUTHORITY OF CONGRESS.]

VOL. 32—No. 9. TUESDAY, SEPTEMBER 1, 1885. PRICE—$5 per year.

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The Official Gazette.

The OFFICIAL GAZETTE is published every Tuesday, simultaneously with the weekly issue of patents. From January 1, 1872, (the commencement of its publication,) to June 30, 1883, it was published and bound in semi-annual volumes; since July 1, 1883, in quarterly volumes. All subscriptions must commence with the beginning of a volume; none taken for less than three months. Terms: To all subscribers within the United States and Canada, $5 per annum; to foreign subscribers, $7; single copies, 10 cents; bound semi-annual volumes, (prior to June 30, 1883,) full sheep, $4 per volume; bound quarterly volumes, (subsequent to July 1, 1883,) full sheep, $2.75 per volume. No club rates. *Payment in advance.* All orders should be addressed to "The Commissioner of Patents, Washington, D. C."

Indexes to Patents on Electricity.

Appendix No. 2 to the index to patents relating to electricity, covering the period of time from July 1, 1882, to June 30, 1883, has been issued, and is now for sale. These indexes, arranged alphabetically, numerically, and by classes, are completed to June 30, 1883, and comprise the following volumes:

Vol. 1. Index to patents relating to electricity granted by the United States prior to June 30, 1881, with an appendix, July 1, 1881, to June 30, 1882. One volume, 250 pages. In paper covers, $3; bound, $5.

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Indexes to Foreign Patents.

The following indexes to foreign patents have been translated, compiled, and published under the authority of the Commissioner of Patents, and may be obtained as a Patent Office publication at the prices given below.

INDEX TO FRENCH PATENTS, 1791 to 1876, inclusive, (subject-matter,) one volume, 935 pp., bound in cloth.....$10 00

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Bound half-turkey	2 50
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Issue of September 1, 1885.

Patents	414	No. 325,229 to No. 325,642, inclusive.
Designs	6	No. 16,216 to No. 16,221, inclusive.
Trade-Marks	14	No. 12,538 to No. 12,551, inclusive.
Labels	1	No. 4,565.
Reissues of patents	2	No. 10,642 to No. 10,643, inclusive.
Total issue	437	

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks and Labels.	States.	Patents and Designs.	Trade-Marks and Labels.
Alabama	2	.....	Nebraska	1	.....
Arizona Territory	.....	.....	Nevada	.....	.....
Arkansas	4	.....	New Hampshire	2	.....
California	16	.....	New Jersey	19	1
Colorado	3	.....	New Mexico Territory	.....	.....
Connecticut	19	.....	New York	77	4
Dakota Territory	2	.....	North Carolina	.....	.....
Delaware	1	.....	Ohio	35	.....
District of Columbia	1	.....	Oregon	.....	.....
Florida	1	.....	Pennsylvania	39	1
Georgia	5	.....	Rhode Island	4	.....
Idaho Territory	.....	.....	South Carolina	.....	.....
Illinois	38	.....	Tennessee	1	.....
Indiana	18	1	Texas	11	.....
Iowa	5	.....	Utah Territory	.....	.....
Kansas	3	.....	Vermont	.....	.....
Kentucky	2	.....	Virginia	5	2
Louisiana	.....	.....	Washington Territory	2	.....
Maine	1	.....	West Virginia	1	.....
Maryland	3	1	Wisconsin	8	.....
Massachusetts	42	3	Wyoming Territory	.....	.....
Michigan	15	1	United States Army	.....	.....
Minnesota	4	.....	United States Navy	.....	.....
Mississippi	3	1			
Missouri	9	.....	Total to citizens of the United States	404	15
Montana Territory	2	.....			

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Labels.	Countries.	Patents and Designs.	Trade-Marks and Labels.
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Barbadoes	.....	.....	Holland	.....	.....
Belgium	.....	.....	Italy	.....	.....
Bermuda	.....	.....	Mexico	.....	.....
Brazil	.....	.....	Norway	1	.....
Canada	4	.....	Russia	.....	.....
Cape of Good Hope	.....	.....	South Australia	1	.....
Colombia, U. S. of	.....	.....	Spain	1	.....
Cuba	.....	.....	Sweden	.....	.....
Denmark	.....	.....	Switzerland	1	.....
Egypt	.....	.....			
England	4	.....	Total to citizens of foreign countries	16	.....
France	2	.....			

DESIGNS.

16,216.—SPOON-HANDLE.—*Charles T. Grosjean*, New York, N. Y., assignor to *Tiffany & Co.*, same place. Application filed June 25, 1885. Term of patent 14 years.

16,217 and 16,218.—BACK OF A PLAYING-CARD.—*Isaac Levy*, New York, N. Y., assignor to *The New York Consolidated Card Company*, same place. Applications filed June 30, 1885. Term of patents 7 years.

16,219.—MEDAL.—*Johann Heinrich Ludwig Nauwerck*, St. Louis, Mo. Application filed April 12, 1884. Term of patent 14 years.

16,220.—LADY'S MUFF.—*Adolph Platky*, New York, N. Y. Application filed June 30, 1885. Term of patent 14 years.

16,221.—SHAWL OR BREAST PIN.—*David Stone*, New York, N. Y. Application filed June 24, 1885. Term of patent 7 years.

TRADE-MARKS.

[Certificates of registration of Trade-Marks numbered 8,191 and upward are registered under the act of March 3, 1881.]

12,538.—INCANDESCENT LAMPS.—*Clinton M. Ball*, Boston, Mass. Application filed August 3, 1885.
"The arbitrary word 'LUMENOID.'"

12,539.—SUBSTITUTE FOR CARBON FILAMENT IN INCANDESCENT LAMPS.—*Clinton M. Ball*, Boston, Mass. Application filed August 3, 1885.
"The arbitrary word 'EDITE.'"

12,540.—WHEAT-GERM FLAKES.—*Hezekiah Bridenthal*, Vincennes, Ind. Application filed June 24, 1885.
"The word 'ROYAL.'"

12,541.—SMOKING AND CHEWING TOBACCO, CIGARS, CIGARETTES, AND SNUFF.—*S. Busnitz & Co.*, Richmond, Va. Application filed August 3, 1885.
"The symbol-words 'SCOTCH CAP' and the figure of a man's head with a Scotch cap on."

12,542.—SMOKING AND CHEWING TOBACCO, CIGARS, CIGARETTES, AND SNUFF.—*S. Busnitz & Co.*, Richmond, Va. Application filed August 3, 1885.
"The arbitrary word 'BIJOU.'"

12,543.—WHITEWASH-BRUSHES.—*J. Bond Carroll & Brother*, Baltimore, Md. Application filed June 24, 1885.
"A lozenge-shaped figure or the word 'DIAMOND.'"

12,544.—DISINFECTANT.—*James E. Davis*, Detroit, Mich. Application filed July 21, 1885.
"The word 'DISINFECTINE.'"

12,545.—DESICCATED COCOANUT.—*Edward Dudley*, Camden, N. J. Application filed April 22, 1885.
"The representation of a cocoanut carried by monkeys and the words 'NOIX DE COCO' on the cocoanut."

12,546.—OINTMENT FOR THE CURE OF PILES, AND A REMEDY FOR LUNG DISEASES.—*William S. Norris*, Dixon, Miss. Application filed June 20, 1885.
"The letter 'N,' placed in a circle surrounded by a five-pointed star, within the points of which are arranged the letters 'ORRIS,' one letter in each point."

12,547.—SOAP FOR LAUNDRY AND TOILET USE.—*L. & J. Oakley*, Newburg, N. Y. Application filed March 11, 1885.
"The word 'QUEEN.'"

12,548.—MEDICATED PLASTERS.—*Potter Drug and Chemical Co.*, Boston, Mass. Application filed August 3, 1885.
"The word 'CUTICURA.'"

12,549.—SUSPENDERS AND SHOULDER-BRACES.—*Thomas Otis Potter*, Boston, Mass. Application filed August 3, 1885.
"The word 'TOHPACA.'"

12,550.—HARD SOAP.—*Isaac Stine*, Chambersburg, Pa. Application filed August 7, 1885.
"The arbitrary words 'BLUE MOUNTAIN' and the design S. & Co."

12,551.—OINTMENT.—*John D. Topp*, Brooklyn, N. Y. Application filed July 29, 1885.
"The arbitrary word 'SALVELINE.'"

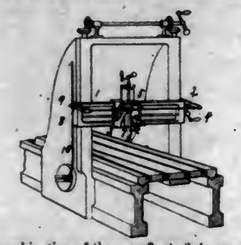
LABELS.

4,565.—Title: "HAKKA CREAM."—*Edward A. Talbot*, Boston, Mass. Application filed August 4, 1884.

PATENTS

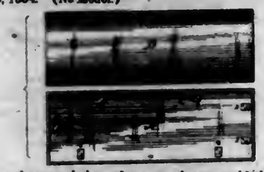
GRANTED SEPT. 1, 1885.

325,229. MACHINIST'S PLANER. JOHN S. ALCORN, Hartford, Conn., assignor of one-half to Joel B. Sexton, same place. Filed June 29, 1885. (No model.)



Claim.—The combination of the arm 3, shaft 4, arm 6, hook 7, arm 8, and rod 10 with the feed-motion, horizontally-reciprocating head, and cutting-tool of a machinist's planer, substantially as described.

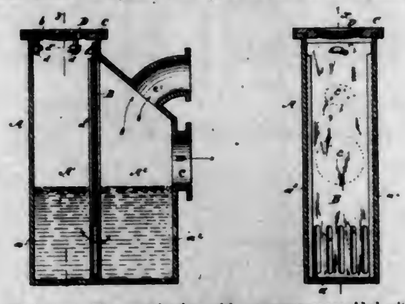
325,230. BURIAL-VAULT. OLIVER H. ANDERSON, Springfield, Ohio. Filed Oct. 10, 1884. (No model.)



Claim.—A casket consisting of two sections provided with catches on one end or side arranged or spaced differently from those on the opposite end or side, so that the sections are locked when in one position, but free when the position of either section is reversed, substantially as described.

325,231. SEWER-TRAP AND CESSPOOL. HOWARD G. BADGLEY, New York, N. Y. Filed Sept. 15, 1884. (No model.)

Brief.—Constructed with two compartments divided by a removable partition with openings at its lower end. One chamber has an inlet above the level of the partition-opening, and the other has an outlet above said opening and below the inlet-opening, and a second outlet above the first. The trap has a cover with an opening for a removable strainer, the cover being secured to lugs on the inside of the trap near its top.



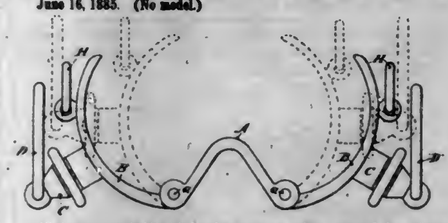
Claim.—1. The combination, with a sewer-trap provided with a lug or lugs on the inside near its top, of a cover having an opening adapted to receive a removable strainer and provided with means for securing said cover to the lugs inside of the trap, the same being so located as to be accessible through the opening in the cover, as and for the purpose specified.

2. A sewer-trap divided into two chambers, with open communication between them at or near one end, one of said chambers being provided with an inlet above the level of said opening, and the other chamber being provided with an outlet above the level of said opening and below the level of the inlet in the first chamber and a second outlet above the level of the first outlet, as and for the purpose specified.

3. A sewer-trap divided into two chambers by a removable partition, with open communication between them at or near one end, one of said chambers being provided with an inlet above the level of said opening, and the other chamber being provided with an outlet above the level of said opening and below the level of the opening in the first chamber, as and for the purpose specified.

4. A sewer-trap divided into two chambers by a removable partition, with open communication between them at or near one end, one of said chambers being provided with an inlet above the level of said opening, and the other chamber being provided with an outlet above the level of said opening and below the level of the inlet in the first chamber and a second outlet above the level of the first outlet, all as and for the purpose described.

325,232. BRIDLE-BIT. CHARLES BAKER, Minneapolis, Minn. Filed June 16, 1885. (No model.)

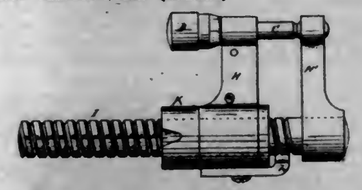


Claim.—1. A bridle-bit having a center piece, curved jaw-clamps B, jointed thereto, standards C, and rings D, all substantially as described, and for the purpose set forth.

2. A bridle-bit having the tongue-piece A, curved clamps B, joints *a*, standards C, and rings D, all substantially as described, and for the purpose set forth.

3. The combination, in a bridle-bit, of the tongue-piece A, curved clamps B, joints *a*, standards C, rings D, and cheek-pieces E, having rings I and hooks F, all substantially as described.

325,233. MICROMETER-CALIPERS. HERBERT M. BARNES, Boston, Mass. Filed Feb. 4, 1885. (No model.)

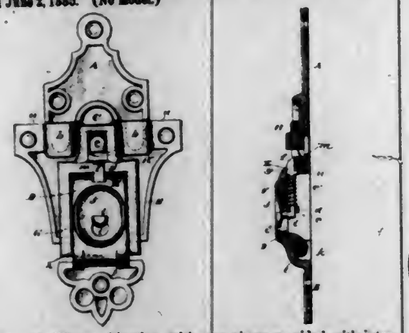


Claim.—1. In a micrometer-caliper of the character herein described, the combination, with the calipering device and its anvil mounted upon standards, either of which is movable relatively to the other, of a graduated shifting-screw adapted to alter at pleasure the field of action of the calipering-screw relatively to its anvil by shifting one of the said standards, all substantially as herein set forth.

2. A micrometer-caliper having its calipering-screw carried upon a shifting-arm and its calipering-anvil mounted upon a fixed arm and provided with a graduated shifting-screw, whereby the shifting-arm may be moved or shifted a regulated distance toward or away from the fixed arm, all substantially as herein set forth.

3. In a micrometer-caliper, the combination of the fixed arm H', carrying an anvil, the movable arm H, carrying a calipering-screw, C, the screw I, nut K, and tail *h*, all substantially as herein set forth.

325,234. TRUNK CATCH OR FASTENER. GILBERT H. BLAKESLEY, Bristol, assignor to the Corbin Cabinet Lock Company, New Britain, Conn. Filed June 2, 1885. (No model.)



Claim.—1. The combination, with two plates provided with interlocking dowel and sockets, of a hasp or loop hinged to one plate, and a spring-pressed catch or bolt provided with a projection adapting it to be retracted by hand, said catch or bolt being constructed and arranged to detachably secure the free end of the hasp or loop to the hasp-plate, substantially as set forth.

2. The combination, with two plates provided with interlocking dowel and sockets, one plate being provided with a hollow box or projection, of a spring-actuated hand-catch located within said hollow box, and a loop or hasp hinged to the plate provided with the catch or bolt, and adapted to be locked thereto, and also interlock at its free end with the other plate, substantially as set forth.

325,235. NUT-LOCK. GEORGE D. BULMER and CHARLES BULMER, White House, assignors of one-third to William R. Jones, Braddocks, Pa. Filed June 11, 1885. (No model.)



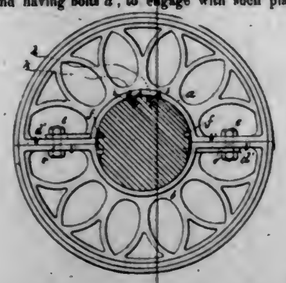
Claim.—1. A nut-lock consisting of two helical rings united together at one edge and curved in opposite directions, substantially as and for the purposes described.

2. A nut-lock consisting of two helical rings united at one edge, and folded together so that the adjacent ends overlap and extend in opposite directions, so that the outer separate ends terminate on opposite sides of the center, substantially as and for the purposes described.

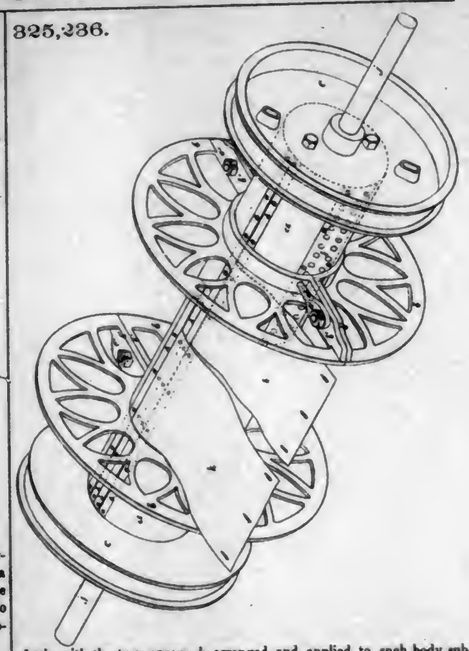
325,236. WARP-BEAM FOR LOOMS. ELISHA S. BURLINGAME, Central Falls, R. I., assignor to L. J. Knowles & Brother, Worcester, Mass. Filed Oct. 15, 1884. (No model.)

Claim.—1. The warp-beam body *a*, having the perforated plates *f*, in combination with the heads *b*, having the bolts *d'*, as set forth.

2. The combination of the warp-beam body *a*, provided with the perforated plates *f*, fixed on it, and with the heads *b*, adjustable on it longitudinally, and having bolts *d'*, to engage with such plates, as set



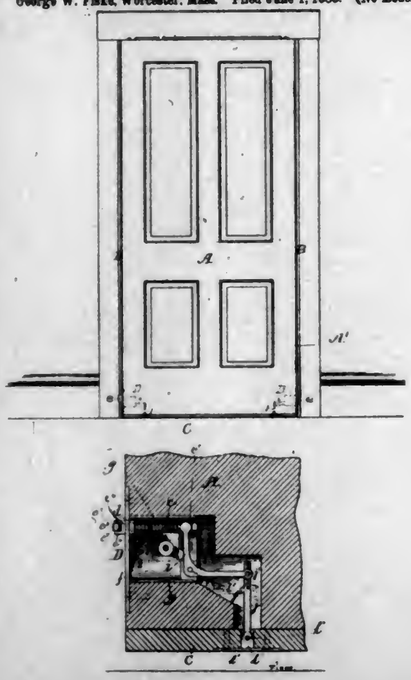
325,236.



forth, with the two aprons *k*, arranged and applied to such body substantially as described, so as to be capable of being moved lengthwise of it, more or less, across each other, as specified.

3. The warp-beam body *a*, having the parallel grooves *c' c'* and the strips *d*, arranged a short distance apart and partly covering said grooves, in combination with the aprons *k k*, having at one end the rods *i i*, one resting in each groove *c' c'*, as set forth.

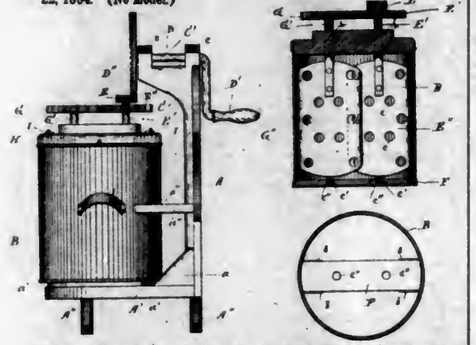
325,237. DEVICE TO BE SUBSTITUTED FOR THRESHOLDS. ALFRED A. CHASE and DANIEL H. HESSELTON, Holden, assignors of one-third to George W. Fiske, Worcester, Mass. Filed June 1, 1235. (No model.)



Claim.—1. The combination of the strip C, fitted to work up and down in a longitudinal slot or groove formed in the bottom edge of a door, with the means for raising and lowering said strip by the operation of opening and closing said door, consisting of the bolts *c*, spiral springs *d*, casing *g'*, hinged arms *i*, link-pieces *j*, and bearing parts *k*, substantially as shown and described.

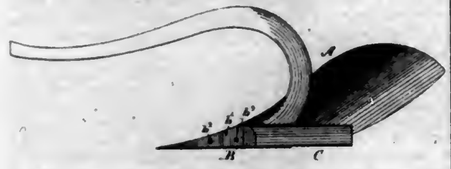
2. The combination of the bolts *c*, spiral springs *d*, and casings *g* with the hinged arms *i*, link-pieces *j*, bearing parts *k*, and flat strip C, substantially as shown and described.

325,238. CHURN. DAVID CONOVER, Mount Vernon, Ind. Filed Oct. 22, 1884. (No model.)



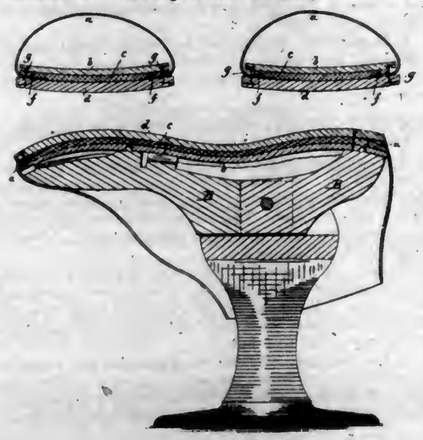
Claim.—In a churn, the body B, provided with lugs *b*, and removable strip F, having openings *c''*, in combination with pins *c'*, vertical dashers G'', having circular perforations *e*, shafts E' G', provided with spur-wheels E''' G, and pinion E, the said removable strip F being held down by the weight of said pins, dashers, shafts, spur-wheels, and pinions, as described, and for the purposes set forth.

325,239. PLOW. JOHN R. CUMMINS, McKinney, Tex., assignor of two-thirds to Francis Emerson and Joseph J. Faires, same place. Filed June 2, 1885. (No model.)



Claim.—The combination, with a plow, of the landside share attachment B, provided with the horizontal blade *b*, sloping outward from the point of the plow, made sharp on the said sloping edge, and having the flange *b'* projecting upward from the horizontal blade, and the bolts *b²* for securing the said flange and plow together, and the removable landside attachment C, substantially as described and shown, and for the purpose set forth.

325,240. MANUFACTURE OF BOOTS OR SHOES. GEORGE W. DAY Haverhill, Mass. Filed Aug. 13, 1883. (No model.)



Claim.—An improved method of manufacturing boots and shoes having inner, middle, and outer soles, the same consisting in first lasting the middle sole and upper upon a last having an extra thickness on its bottom equal to the thickness of the inner sole to be afterward inserted then removing the shoe from the last, and temporarily securing the inner and outer soles to the so-lasted middle sole and upper, and permanently securing the whole together by stitches in the usual way, substantially as described, for the purpose specified.

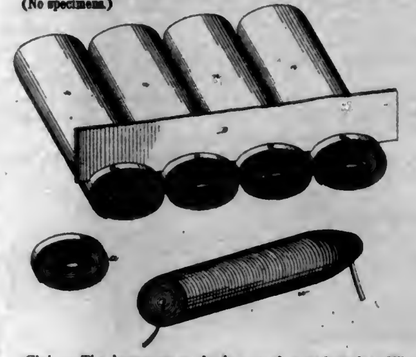
325,241. ART OF PREPARING YARN OR THREAD FOR FILLING. EDWARD H. EISENHART, New York, N. Y. Filed Sept. 28, 1883. (No model.)

Brief.—The process of preparing the yarn or jute employed as a filling, whereby from a single bobbin or cop any required number of picks of like color may be laid and followed by an equal number of picks of a different color.



Claim.—The method of preparing the hank of filling material, consisting, essentially, in forming the hank in two or more parts, a definite length of material being wound alternately in forming said parts, securing the material where the latter crosses for the purpose of keeping the parts separated, dyeing the several parts in different colors, and then rewinding to form a cop, substantially as set forth.

325,242. ART OF MANUFACTURING FILLING FOR RAG CARPETS. EDWARD H. EISENHART, New York, N. Y. Filed Oct. 18, 1883 (No specimens.)



Claim.—The improvement in the art of manufacturing filling for rag carpets, which consists in, first, sewing pieces or remnants of goods together at their ends to form a continuous piece; second, forming said piece into a roll; third, cutting the roll into transverse pieces or slices, and, fourth, winding these transverse pieces into a cop, substantially in the manner and for the purpose described.

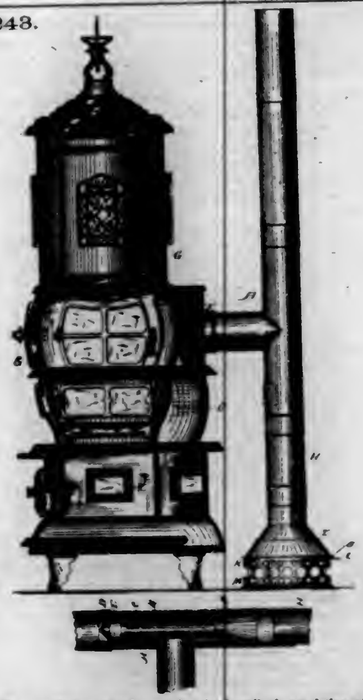
325,243. VENTILATING ATTACHMENT. BENJAMIN J. GOLDSMITH, Saratoga Springs, N. Y. Filed Dec. 26, 1884. (No model.)

Claim.—1. A ventilating attachment provided with three branches, one of which is connected to the stove, a second extends upward to connect with the stove-pipe, chimney, or flues, and the third extends downward to receive the cold air, and containing a central ventilating-tube open at its bottom, substantially as described.

2. The combination, with stove or other heating apparatus, of a T, one of whose branches connects with the stove or other apparatus, a second fits the stove-pipe, and the third extends downward, and is provided with a vertical ventilating-tube open at its bottom, and connected to said third branch near its bottom, substantially as described.

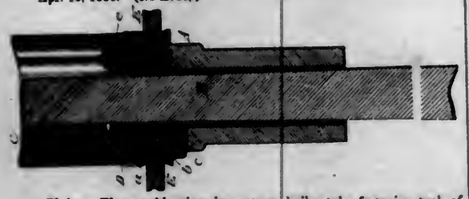
3. The combination, with a stove or other heating apparatus, of a T, one of whose branches connects with said stove or heating apparatus, a second one fits the stove-pipe, and a third extends downward, and is provided with a ventilating-tube connected to a hollow frustum of a cone, whose lower end is fastened to said third branch near the bottom of the same, substantially as described.

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4. The ventilating attachment herein described, consisting of a T having one branch adapted to be connected to a stove or other heating apparatus, a second branch adapted to be connected to the off-bearing stove-pipe, a central ventilating-pipe having a cap at its upper end, and an enlarged lower end connected to the lower part of the third branch of the T, the enlarged portion I, connected with the third branch and having at its lower end the register K L, the perforated base M, and a bottom, N, all constructed and arranged substantially as shown and described.

325,244. TUBE-EXPANDER. HARRISON HAYES, Portland, Me. Filed Apr. 10, 1885. (No model.)



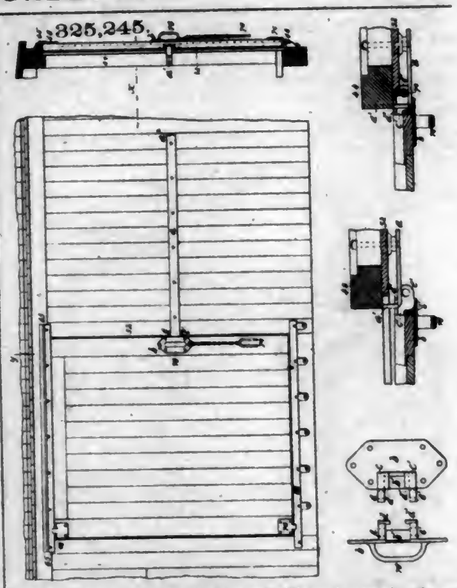
Claim.—The combination, in a steam-boiler-tube-fastening tool, of three or more sets of rolls, *a b c*, in a stock, A, with a tapering mandrel, B, having a hole or holes in its largest end for the purpose of inserting a rod to revolve the tool, all as shown, described, and specified.

325,245. SLIDING DOOR. HERBERT H. HEWITT, New York, N. Y. Filed June 13, 1885. (No model.)

Claim.—1. In combination with a sliding door, three short bearers or supports attached thereto, one at the upper and one at the lower part of the front edge, and the other at or near the central part of the rear edge, and three independent fixed tracks or guides, one secured above the door-opening, one below the door-opening, and the other one extending from the central part of one side of the door-opening, thus providing the door with three bearing-points triangularly arranged for all positions occupied by the door, substantially as set forth.

2. A car-door provided with three bearers or supports attached thereto, one at the upper part and one at the lower part of the front edge, and the other one at or near the central part of the rear edge, in combination with three independent tracks or guides secured to the car-body, one above and one below the door-opening, arranged at an angle to the side of the car, and the other one extending from one side of said opening and secured in a central position to one side of the car-body, parallel thereto, substantially as and for the purpose set forth.

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3. The combination, with a central guide-track secured to the car-body, of a bearer or shoe adapted to slide thereon, secured to the rear edge of the door, and an operating-handle forming a part of or integral with said bearer or shoe, and means, substantially as described, for supporting and guiding the front end of the door, substantially as set forth.

4. The combination, with a central rail attached to the side of the car-body, and with its end narrowed and bent at right angles and secured to the door-post, of a sliding shoe or support attached to the door, and having a bearing-surface which embraces the longitudinal part of the rail, and projecting flanges which bear against the inside of the same and arranged to pass over the bent end of the rail, substantially as and for the purpose set forth.

5. A guide rail or track secured to the central part of the wall of a car-body, with its end bent at right angles and secured to the door-post, and a bearer or support secured to the car-door, constructed to bear on the rail or track, and provided with a locking device adapted to engage with the rail or track when the bearer or support passes over the bent end of the rail or track, in combination, substantially as set forth.

6. In a sliding car-door, in combination, the top door-track, 65, the shoe or hanger 68, the bottom door-track, 66, the shoe 70, the central rail or track, *a*, the supporting-shoe *b*, and the car-door and car-body, substantially as and for the purpose set forth.

7. In combination, the central rail or track, *a*, the supporting-shoe *b*, with the handle 78, forming a part thereof, or integral therewith, and the car-door and car-body, substantially as and for the purpose set forth.

8. The shoe *b*, provided with recessed block *b'*, bearing-flanges *c c'*, and stop-flanges *d d'*, in combination with the rail or track *a*, with narrowed bent end *a'*, and the car-door and car-body, substantially as and for the purpose set forth.

9. In combination, the shoe *b*, bearing-flanges *c c'*, stop-flanges *d d'*, the perforated projecting lugs *e e*, the door pin or staple 74, the central rail, *a*, and the car-door and car-body, substantially as and for the purpose set forth.

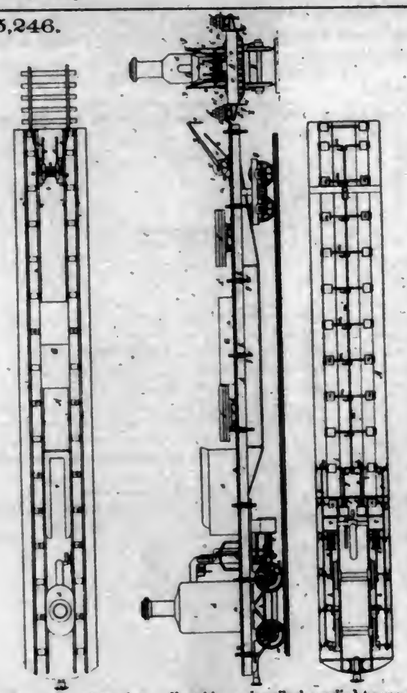
325,246. RAILWAY CONSTRUCTION TRAIN OR CARRIAGE. B. B. HILL, Lowell, Mass. Filed Oct. 1, 1884. (No model.)

Brief.—Adjustable brackets on the sides of the car carry a track for the rail-truck. The bodies of the cars are provided with sets of broad wheels extending throughout their length, revolved simultaneously by power from the engine. Near one end of the car arms mounted upon a spring-shaft, having also friction wheels and brakes, are provided for lowering the rails onto the track.

Claim.—1. The locomotive platform-car provided with a steam engine and boiler, or mechanism for moving such car on a railway-track, and also having to one or each side of its platform a series of brackets, and a railway-track thereon provided with one or more wheeled trucks, all being substantially as set forth.

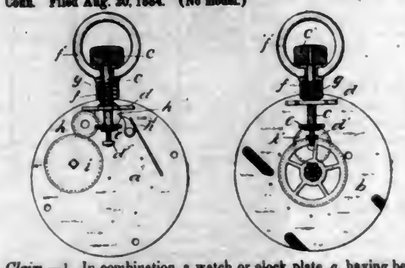
2. The locomotive platform-car provided not only with a steam engine and boiler, or mechanism for moving the car on a railway-track, and with one or more sets of broad wheels extending throughout lengthwise of it, and having mechanism for simultaneously revolving them, but with a series of brackets, adjustable as described, applied to one or each of the sides of the car, and having laid upon it, the said series, a railway-track furnished with one or more trucks or carriages, all being substantially and for use as represented.

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3. The locomotive platform-car provided not only with a steam engine and boiler, or mechanism for moving such car upon a railway, and also with a series of broad wheels arranged in it, and having mechanism for simultaneously revolving them, as described, but with a shaft and arms projecting therefrom, and with friction wheels and brakes, and a spring to the shaft, such shaft being near one end of the car, and all being substantially and for the use as set forth.

325,247. STEM-WINDING WATCH. ARTHUR E. HOTCHKISS, Cheshire, Conn. Filed Aug. 30, 1884. (No model.)

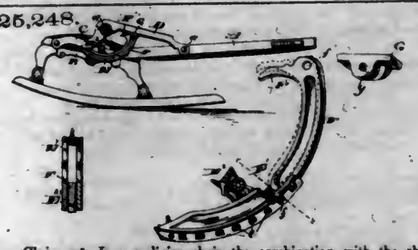


Claim.—1. In combination, a watch or clock plate, *a*, having bearings *d d'*, that support a rotary and sliding stem, *c*, and a winding-train, *h'*, wheels arranged parallel to the plate, a plate, *b*, bearing the cog-wheel *k'* in mesh with the cog-wheel on the hand-bearing arbor, and the cog-wheel *e*, fast on the stem *c* and meshing at the opposite limit of its play with the cog-wheels *h'* and *k'*, respectively, all substantially as described.

2. In a watch or clock, in combination, the plate-supported bearings *d d'*, a sliding and rotary stem, *c*, pressed outward by a spring, a cog-wheel, *e*, fast to the stem and meshing edgewise of its teeth at the opposite limits of the sliding play of the stem directly with the cog-wheels *h'* and *k'* of the winding and hand-setting trains, respectively, all substantially as described.

325,248. RECLINING-CHAIR. FREDERICK HUNGER, Cleveland, Ohio, assignor of one-half to Solomon Schmuck, same place. Filed July 3, 1885. (No model.)

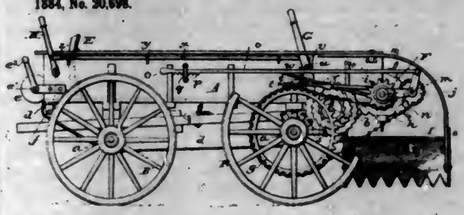
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Claim.—1. In a reclining-chair, the combination, with the chair-back and arm-posts, respectively hinged to the seat and to the arms, substantially as indicated, of extension-braces in the form of a sector, the parts of the brace made male and female, the one portion of the brace being secured to the arm-post, and the other portion pivoted to the arm, the two parts of the brace having holes, projections, or depressions for mutually engaging the pivoted parts of the brace, with a hand-lever arranged under the respective arms for operating the extension-bar, substantially as set forth.

2. In a reclining-chair, the combination, with a seat, back, arms, and arm-posts, the parts hinged to each other, substantially as indicated, of an extension-brace in the form of a sector, having its center at the axis of the hinge *d*, the parts made male and female, forming a slip-joint, and provided, respectively, with suitable holes, depressions, or projections for engaging each other, the one part of the brace being secured to the arm-post and the other portion of the brace being pivoted to the arm, a hand-lever for elevating the pivoted part to disengage it for tilting the chair-back, and so arranged that the parts of the brace, when left free, will engage each other by means of the gravity of the pivoted portions, substantially as set forth.

325,249. FERTILIZER-DISTRIBUTER. PETER JOHNSON, Dassel, Minn. Filed June 19, 1885. (No model.) Patented in Canada Dec. 6, 1884, No. 30,698.





Claim.—1. The herein-described fertilizer-distributer, consisting of wagon A, wheels B, sprocket-wheels *g i j*, cylinder F, and chain *h*, passing about the wheels *g j* and in contact with wheel *i*.

2. In combination with wagon A and wheels B, sprocket-wheel *g*, chain *h*, shaft *k*, provided with wheel *i* and cylinder F, and arm *n*, provided with wheel *j* and journaled on shaft *k*, as and for the purpose set forth.

3. In combination with wagon A and wheels B, sprocket-wheel *g*, chain *h*, shaft *k*, provided with wheel *i* and cylinder F, arm *n*, provided with wheel *j* and journaled on shaft *k*, and rod or bar *o*, connected with the arm *n* and provided with teeth or notches *p*, as and for the purpose set forth.

4. In a fertilizer-distributer, in combination with body A, shaft *k*, mechanism for imparting rotary motion thereto, eccentric *l*, pawls *r*, ratchet-wheel C, and hand-lever G, provided with studs *t*, as and for the purpose set forth.

5. In a fertilizer-distributer, in combination with body A, shaft *k*, mechanism for imparting rotary motion thereto, eccentrics *l*, pawls *r*, ratchet-wheel C, hand-lever G, provided with studs *t*, hand-lever H, and rod *x*, as and for the purpose set forth.

6. In a fertilizer-distributer substantially such as shown and described, the distributer I, consisting of inclined bottom 11, front and rear flanges, 8, and arms 9 10.

7. In a fertilizer-distributer, the combination of a wagon-body, a shaft, *b*, journaled therein and provided with sprocket-wheels *c*, seats or

sockets 6, and ratchet-wheel C, and chains D, said ratchet-wheel being adapted, substantially as described, to slide upon the shaft *b*

8. In a fertilizer-distributer, the combination of a wagon-body, a shaft, *b*, journaled therein and provided with a ratchet-wheel C, and socket 6, pivoted lever 4, and spring 7, all arranged as shown.

325,250. TOOTH-BRUSH. RINALDO S. LAKIN, Boston, Mass., assignor of one-half to Solomon S. Higgins, same place. Filed Nov. 20, 1882. (No model.)



Claim.—1. A folding tooth-brush having in its handle a receptacle for tooth-powder and provided with a removable end cap, in combination with a feeding device, substantially as described, permitting delivery of the dentifrice to the brush, substantially as set forth.

2. A folding tooth-brush having in its handle a receptacle for tooth-powder and provided with a removable end cap, in combination with a tapering sliding plug serving to close the aperture from the receptacle to the brush-recess, for the purpose set forth.

3. In a folding tooth-brush, the handle A, having receptacle *a* and recess *b*, separated by the partition E, and provided with the spring H, formed in one with the handle, in combination with the brush-head B, hinged at D to the handle, substantially as set forth.

325,251. PULLEY OR WHEEL. JOSEPH LATHROP and AHIRA TYRRELL, Chicago, Ill. Filed Mar. 3, 1885. (No model.)



Claim.—1. A pulley comprising a metallic hub, a rim, and a body consisting, essentially, of separate disks formed of multiple wood veneers glued together with their grains crossed, said disks extending each from the hub to the rim, and being connected at a point between the rim and the hub, and from each point being flared outwardly, substantially as described.

2. A pulley comprising a metallic hub, a rim, and a body consisting, essentially, of two separate disks formed of multiple wood veneers glued together with their grains crossed, said disks being connected at a point between the rim and the hub, and from each point being flared outwardly to both the hub and the rim, substantially as described.

3. A disk for forming the body of a pulley or wheel, having a central opening to receive the wheel-hub, and having an annular depression, substantially as shown, between its center and periphery, substantially as described.

4. A pulley comprising a metallic hub, a rim, a body consisting of disks of multiple wood veneers glued together, and brace-strips E between said disks, intermediate the hub and rim, substantially as described.

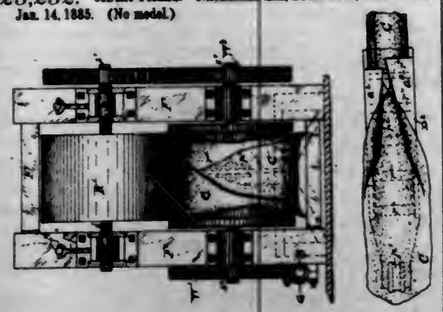
5. A pulley comprising a hub, a rim, and a body consisting of two disks of multiple veneers glued together and having bracing-strips F at the rim, substantially as described.

6. The combination, with a split pulley comprising a metallic flanged hub, a rim, and a body formed of separate divided disks, of the half-rings C, having projecting ends for locking the sections of the pulley, substantially as described.

7. In a split pulley, the combination, with the two main sections, of the bolts H and the tie-plates H', extending across the joint of the pulley-sections, substantially as described.

8. In a pulley, the combination, with the wood-veneer disks, of the metallic hub having flanges A', with projections a^2 on the inner faces thereof, substantially as described.

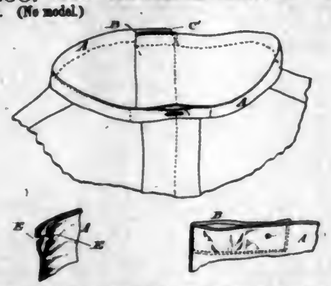
325,252. CIDER-PRESS. NATHANIEL LEE, Brunswick, N. Y. Filed Jan. 14, 1885. (No model.)



Claim.—1. The combination of the press-wheels R' and R^2 with the flanges, adjustable boxes *b*, with levers *f'*, and weight *w*, substantially as described.

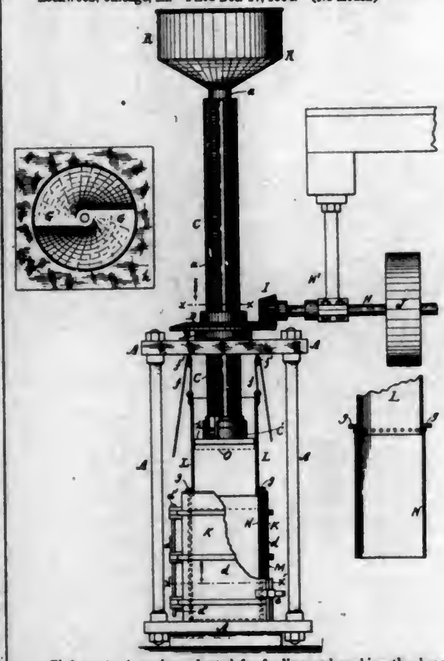
2. The endless cloth C, provided with rope *r'*, substantially as described.

325,253. SHIRT. LEON LEMOS, San Francisco, Cal. Filed Sept. 18, 1884. (No model.)



Claim.—A shirt having in the front of its band a stud-pocket closed at the bottom and at each of its ends, and provided with a button-hole in each face in line with and directly opposite each other, substantially as and for the purpose described.

325,254. PACKER FOR BRAN AND OTHER ARTICLES. SAMUEL T. LOCKWOOD, Chicago, Ill. Filed Dec. 17, 1884. (No model.)



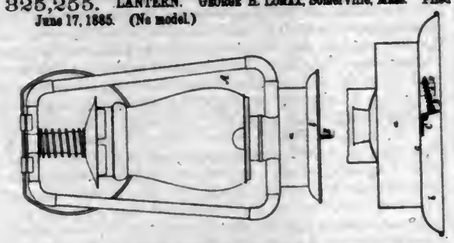
Claim.—1. A packer adapted for feeding and packing the bran or other material by means of a rotative tubular screw or feed-tube turning in a screw-threaded bearing and carrying an auger-like device for ejecting and compressing the bran or other material.

2. The combination, in a packer, of a rotative tubular screw or feed-tube, an auger-like device in connection with and carried by the said tube, a fixed screw-threaded bearing for the said tube, and a driving or rotating wheel splined to the said tube.

3. The combination, in a packer, of a rotative tubular screw or feed-tube, a fixed screw-threaded bearing for the said tube, a tubular extension clasped to the lower end of part of the said tube and capable of turning thereon, the wings F F, carried by the said extension, and the auger-like device G, carried by the said feed-tube, substantially as and for the purposes specified.

4. The combination, substantially as specified, in a packer, of the rotative tubular screw or feed-tube C, carrying an auger-like device, G, and having therein one or more grooves or channels, *a a*, the fixed block or screw-threaded bearing B, the wheel D, having therein one or more ribs, *a' a'*, entering the said groove or grooves, and a rotary driver or pinion, I, engaging the wheel D, for the purposes set forth.

325,255. LANTERN. GEORGE H. LOMAX, Somerville, Mass. Filed June 17, 1885. (No model.)

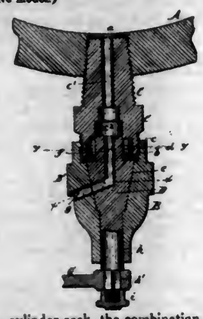


Claim.—1. A lantern provided or combined with a screw arranged within the annular supporting-base and projecting from and hinged to the bottom of such lantern, so as to be capable of being moved from a position at right angles to such bottom upward into another position parallel, or about so, with the bottom, such screw when in its lowest position projecting beyond the lower edge of the base, as set forth.

2. A lantern provided with a screw hinged to the bottom of such lantern, so as to be capable of being turned from a position at right angles with the said bottom into one parallel, or about so, therewith.

3. A lantern provided with an annular base extending from the bottom of the oil-reservoir, and provided with a screw pivoted or hinged to the said bottom, and also with a catch to hold the screw in its raised position, as set forth, the screw when turned down projecting beyond the said base, as and for the purpose substantially as represented.

325,256. CYLINDER-COCK. GEO. W. LOOMIS, Syracuse, N. Y. Filed Aug. 22, 1884. (No model.)



Claim.—1. In a cylinder-cock, the combination, with the stem C and the casing B, provided with a conical seat, *e*, and a side opening, *g*, of a perforated conical plug, D, arranged in the seat *e*, and having its inner end exposed to the steam-pressure, and provided with a cylindrical guide-extension, *d*, substantially as set forth.

2. In a cylinder-cock, the combination, with the casing B and the shank C, provided with a central passage, *c'*, of a conical plug, D, arranged in a conical seat in the casing in line with the central passage, *c'*, and provided with an extension, *d*, projecting into an enlargement, c^3, of the passage *c'*, and a stem, *h*, extending through the casing and provided with an actuating-lever, G, substantially as set forth.

325,257. MANUFACTURE OF INCANDESCENTS. PATRICK N. MACKAY, San Francisco, Cal. Filed Aug. 13, 1884. (Specimens.)

Claim.—The herein-described material for the manufacture of electrodes for electric lights, consisting of the mixture of the oxide of titanium in powder and a hydrocarbon oil, substantially as herein set forth.

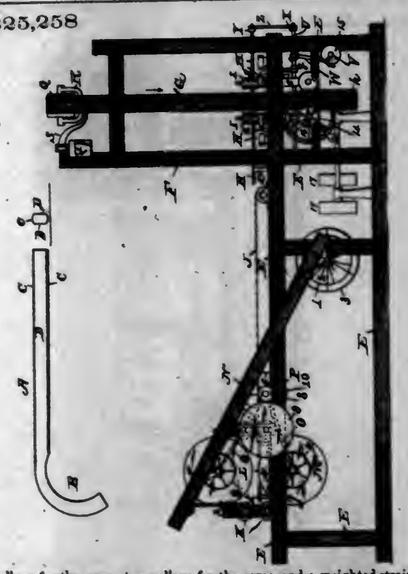
325,258. MACHINE FOR FINISHING PLOW-HANDLES. WILLIAM C. MARSHDANT, Hamilton, Ohio, assignor to the Economist Plow Company, South Bend, Ind. Filed June 11, 1884. (No model.)

Claim.—1. In a plow-handle-finishing machine, a pair of vertically-arranged sand-belts, a supporting-table between the acting faces of the belts, vertical feed-rolls at the sides of said table, a pair of horizontal sand-drums, horizontal feed-rolls at the sand-drums, and a carrier disposed between said sand-belts and said sand-drums, combined substantially as and for the purpose set forth.

2. In a plow-handle-finishing machine, a horizontal sand-drum, a second horizontal sand-drum disposed above the first, a vibrating frame supporting said second sand-drum, horizontal feed rolls at said sand-drums, and a cam and lever or equivalent means for reciprocating said sand-drums, combined substantially as and for the purpose set forth.

3. In a plow-handle-finishing machine, a pair of sand-belts, base

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pulleys for the same, top pulleys for the same, and a weighted straining-lever supporting said top pulleys, combined substantially as and for the purpose set forth.

4. In a plow-handle-finishing machine, a pair of sand-belts, base pulleys and top pulleys for the same, pivoted yokes supporting said top pulleys, and straining-levers supporting said pivoted yokes, combined substantially as and for the purpose set forth.

5. In a plow-handle-finishing machine, a pair of sand-belts, a supporting rocking table located between said sand-belts, a crank and lever mechanism, substantially as described, for imparting a rocking motion to said table, and feeding-rolls for carrying work between said sand-belts and upon said rocking table without interfering with the rocking of the work as it moves along upon the table, combined substantially as and for the purpose set forth.

6. In a plow-handle-finishing machine, a pair of sand-belts, a supporting rocking table disposed between said sand-belts, and reciprocating feed-rolls at the sides of said table, combined substantially as and for the purpose specified.

7. In a plow-handle-finishing machine, a pair of sand-belts, a supporting-table located between said sand-belts, and feed-rolls at the sides of said table, arranged and combined, substantially as set forth, in such manner that the space above the table, between the feed-rolls, is open for the insertion edgewise of a plow-handle to be fed by said feed-rolls impinging upon the edges of the handle after the handle shall have been turned flatwise upon the table.

325,259. REVOLVING FURNACE. HENRY MATHEY, New York, N. Y., assignor to H. G. Bond, same place. Filed Mar. 17, 1885. (No model.)

Claim.—1. In a revolving furnace, a cylinder consisting of two or more sections suitably joined together, each section of said cylinder having a conical lining, substantially as described, and for the purpose set forth.

2. In a revolving furnace, a cylinder consisting of two or more sections, each section having one end flanged, projecting outwardly from the cylinder, the opposite end of the section having a flange projecting into and outwardly from the cylinder, substantially as and for the purpose set forth.

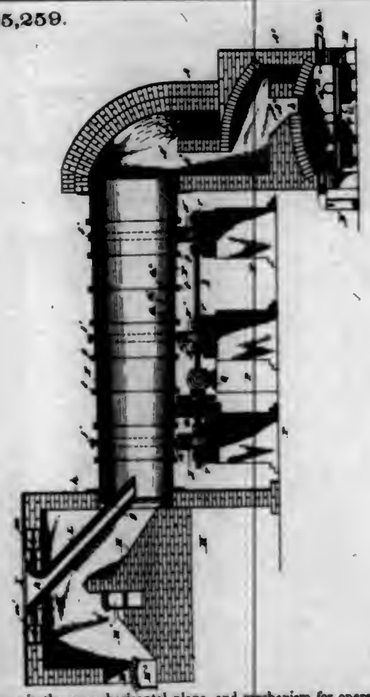
3. In a revolving furnace, a cylinder consisting of two or more sections, each section having an inwardly-projecting flange to form an abutment for the lining of the cylinder, substantially as and for the purpose set forth.

4. In a revolving furnace, a cylinder consisting of two or more sections, the lining of said cylinder consisting of a series of bricks of gradually-diminishing height, as described, whereby said lining is made cone-shaped, substantially as and for the purpose set forth.

5. In a furnace, a cylinder consisting of one or more sections, as described, and provided with a lining of fire-brick, the difference in height of the end brick of each section being the difference in height of the sections when bolted together, whereby the lining is rendered conical, while the sections remain horizontal, substantially as set forth.

6. In a furnace, a cylinder consisting of two or more sections, each section having a conical lining, in combination with wheels whose bear-

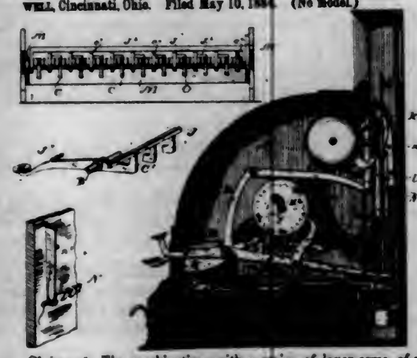
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ings are in the same horizontal plane, and mechanism for operating the same, whereby torsion and side friction on said wheels and cylinder are reduced to a minimum, substantially as described.

7. In a revolving furnace, the combination, with a cylinder, of two fire-places, one placed above and in advance of the other, and a flue-shaft which permits the material heated by the first fire-place to come into direct contact with the heat from the lower fire-place as it falls from the cylinder, whereby the calcining, roasting, and burning are completed, substantially as described.

325,260. CASH REGISTER AND INDICATOR. WALTER H. MAXWELL, Cincinnati, Ohio. Filed May 10, 1884. (No model.)



Claim.—1. The combination, with a series of lever-arms, of a series of pairs of serrated register-wheels, one wheel in each pair having one notch deeper than the rest, and a series of pallets, one in each lever-arm, arranged to operate positively the register wheel or wheels, a series of supporting-rods, one upon each lever-arm, and a series of indicating-tablets, one on each supporting-rod, substantially as described.

2. The combination, with a series of lever-arms carrying at their farther extremities supporting-rods on which are indicating-tablets, and with a wing, of a series of collars, one on each supporting-rod, and a series of individual springs, one for each supporting-rod, to engage with the collar on said supporting-rod, substantially as described.

3. The combination, with the lever-arms, the wing, and suitable actuating mechanism, of a series of supporting-rods, each having upon it a shoulder or collar one face of which is beveled, and a series of individual springs on said wing so arranged as to allow the collars to pass the wing without moving the wing and to support them until the wing is moved by mechanism independent of the supporting-rods.

4. The combination, with a series of lever-arms carrying a series of rods which support indicating-tablets, each rod fitted with a collar or shoulder, of a wing having upon it a series of independent springs, one for each rod, said wing being operated by mechanism wholly distinct from the supporting-rods, so that by operating any of the lever-arms the collar on the supporting-rod passes its individual spring on the wing without moving the wing, and on releasing the lever-arm the collar on the supporting-rod falls back on the wing, substantially as described.

5. The combination of a series of lever-arms, upon which are pivoted pallets for the operation of a registering device, with a series of pairs of registering-wheels, a series of rods supporting indicating-tablets, each rod fitted with a collar or shoulder, and a wing provided with a series of independent springs, one for each rod, said wing being operated by mechanism distinct from the supporting-rods, so that when any of the series of lever-arms is operated the collar on the supporting-rod passes its individual spring without moving the wing, and on releasing the lever-arm the collar on the supporting-rod falls back on the wing.

6. The combination, with the lever-arms and a cross-bar beneath said lever-arms adapted to be depressed thereby, of a bell-crank fast to said cross-bar, and link connected to a lever having a trip thereupon, a bell-hammer, and a wing provided with an arm extending upward therefrom adapted to be pushed backward by the bell-hammer when the bell-hammer is drawn back to nearly its limit of motion.

7. The combination of a series of lever-arms upon which are pivoted pallets for the actuation of a registering device, a series of rods supporting indicating-tablets, each rod fitted with a collar or shoulder, with a cross-bar beneath said lever-arms adapted to be depressed thereby, a bell-crank fast to said cross-bar, a link connected to the lever and having a trip thereupon, a bell-hammer, and a wing provided with an arm extending upward therefrom adapted to be pushed backward by the bell-hammer when drawn back to nearly its limit of motion, thereby releasing the previously-raised indicating-tablets.

8. The combination, with a series of lever-arms, a cross-bar below said lever-arms, and an automatically-locking cash-drawer, of a locking device arranged to prevent operation of the machine while the cash-drawer is open, substantially as described.

9. The combination, with a series of lever-arms, a cross-bar below said lever-arms, and a cash-drawer, of a block, spring pressed under said cross-bar when the drawer is open and automatically withdrawn by the closing of the drawer to lock and release the operative mechanism, substantially as described.

10. As an improvement in actuating devices for cash registers and indicators, a series of lever-arms carrying buttons indicating five and its multiples, of which those which carry buttons indicating odd multiples of five beyond the first power are adapted to actuate the lever-arm which carries a button indicating the next lower even multiple of five and the five-cent lever-arm.

11. In combination with a series of registering-wheels indicating five and its multiples, a series of lever-arms, of which those which carry buttons indicating odd multiplies of five beyond the first power are adapted to actuate the wheel registering the next lower even multiple of five and the five-cent registering-wheel.

12. In combination with a series of registering-wheels indicating five and its multiples, a series of lever-arms carrying buttons indicating five and its multiples, of which those which carry buttons indicating odd multiples of five beyond the first power are adapted to actuate the lever-arm which carries a button indicating the next lower even multiple of five, the five-cent lever-arm, the wheel which registers the next lower even multiple of five, and the five-cent registering-wheel.

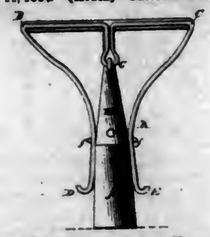
13. In combination with a series of lever-arms carrying buttons indicating the multiples of five, a bar extending across said lever-arms and attached to the lever-arm carrying the button indicating the first multiple of five, adapted to be operated by the depression of any of the buttons which indicate odd multiples of five, thereby actuating the lever-arm carrying a button indicating the first multiple of five.

14. As an improvement in actuating devices in cash registers and indicators, the combination, with the lever-arms and the registering-wheels, of a disengaging-bar extending from side to side of the frame above the lever-arms, and actuating-pallets having a cam-like shoulder, said shoulder being so placed as to cause its pallet to rise and disengage from the register wheel or wheels at the proper moment when said shoulder comes in contact with the disengaging-bar.

15. As an improvement in actuating devices in cash registers and indicators, in combination of the lever-arms and register-wheels, a disengaging-bar supported by arms pivoted on the sides of the frame, and actuating-pallets, each having a shoulder so placed that when said shoulder meets the disengaging-bar the disengaging-bar moves through the arc of a circle having the supporting-arms as radii and disengages the pallet from the register wheel or wheels, substantially as described.

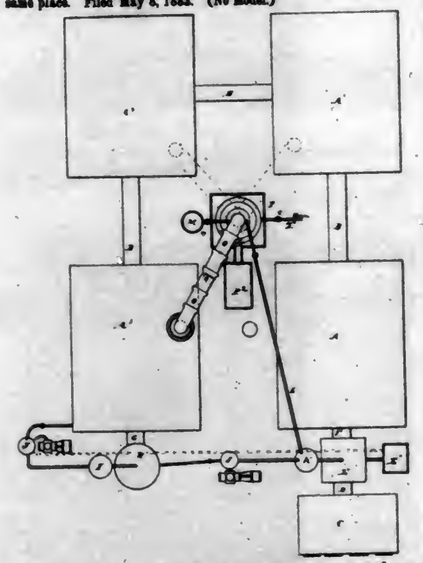
16. In a cash registering and indicating machine, the combination of the long and short lever-arms, the five-cent bar, the registering-wheels, the pallets arranged to actuate said registering-wheels positively and primarily, the disengaging-bar operated by the pallets, the rods on the inner ends of the lever-arms supporting indicating-tablets and provided with collars or shoulders, the wing carrying a series of individual springs, one for each supporting-rod, which permit the rods to go up freely, but prevent their repassing the wing until it is actuated by mechanism entirely apart from the supporting-rods, the cash-drawer, and an automatic locking device by which operation of the machine is prevented by the opening of said cash-drawer, substantially as described

325,261. MOP-HEAD. DONALD MCLELLAN, Woodstock, Ontario, Canada. Filed Oct. 11, 1884. (Model.) Patented in Canada Feb. 11, 1885 No. 21,071.



Claim.—In a mop-head, the tapering cap H, provided with a hook, G, and grooved cross-head B' C', in combination with the wire B C D E, curved as shown and described, pins *f f*, radially projecting from said cap near its base, and handle A, for the purpose set forth.

325,262. PROCESS OF MANUFACTURING SULPHURIC ACID. J. MCNAB, Camden, N. J., assignor to the United States Chemical Company, same place. Filed May 8, 1883. (No model.)



Claim.—1. The herein-described process for restoring sick or pale acid-chambers, which consists in injecting nitrous vapors directly into said sick or pale chamber, the said nitrous vapors being separate and distinct from the gases or vapors incident to the manufacture of acid.

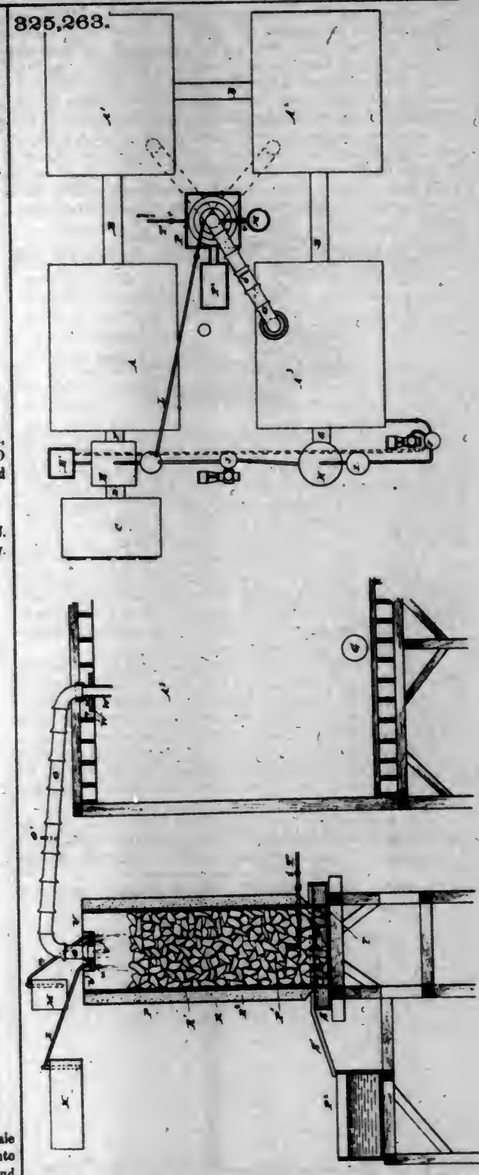
2. The process for restoring sick or pale acid-chambers in apparatus in which there are two or more acid-chambers, which consists in injecting nitrous vapors directly into the last of said chambers, or the one farthest from the sulphur-furnace, the admission of said nitrous vapors being separate and distinct from the gases or vapors incident to the manufacture of sulphuric acid.

3. The process for restoring sick or pale acid-chambers, which consists in first freeing the nitrous vapors from sulphuric acid, holding them in solution by passing steam through said acid, and then injecting the nitrous vapors so produced into the pale or sick chamber.

325,263. APPARATUS FOR THE MANUFACTURE OF SULPHURIC ACID. J. MCNAB, Camden, N. J., assignor to the United States Chemical Company, same place. Filed June 15, 1885. (No model.)

Claim.—1. The combination of acid-chamber A^2, pipe O, inclined toward the acid-chamber, a damper, O', and a nitrous-vapor-generating tower, substantially as set forth.

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2. The combination of acid-chamber A^2, pipe O, inclined toward the acid-chamber, a damper, O', pipe W, lead flanges *w w'*, and a nitrous-vapor-generating tower, substantially as set forth.

3. The combination of cylinder R', containing filling P' of flint or its equivalent, lid V, outlet V^2, trough V', apertures *u*, basin S, and steam-pipe T, substantially as set forth.

4. The combination of cylinder R', containing filling P' of flint or its equivalent, lid V, outlet V^2, trough V', having apertures *u*, water-tank M, pipe *m*, sulphuric-acid tank K, pipe L, basin S, and steam-pipe T, substantially as set forth.

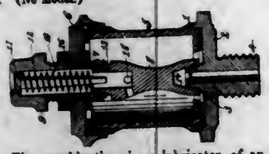
5. The combination of cylinder R', filling of flint, P', outer cylinder, R, sulphur filling R^2, a liquid seal at the bottom, a steam-pipe, T, pipes to admit water and sulphuric acid charged with nitrous vapors, and an outlet at the top, substantially as set forth.

6. The combination, in a sulphuric-acid works, of the acid-chambers with an auxiliary nitrous-vapor-generating tower separate and distinct from the usual Gay-Lussac tower, and arranged to discharge nitrous fumes into the last acid-chamber, substantially as set forth

7. The combination, in a sulphuric-acid works, of the acid-chambers with an auxiliary nitrous-vapor-generating tower separate and distinct from the usual Gay-Lussac tower, and means to connect and disconnect said tower with the last of the acid-chambers, substantially as set forth.

8. The combination, in a sulphuric-acid works, of the acid-chambers with an auxiliary nitrous-vapor-generating tower separate and distinct from the usual Gay-Lussac tower, said tower consisting of a cylinder containing refractory material, provided with means at the top to admit the sulphuric acid containing the nitrous vapors in solution, a liquid seal to allow the acid to pass off at the bottom, a steam-pipe to admit steam into the cylinder containing the refractory material, and a flue connecting said cylinder with the acid-chamber, substantially as set forth.

325,264. LUBRICATOR. CHAUNCEY W. MILLS, Rochester, N. Y. Filed Jan. 22, 1885. (No model.)



Claim.—1. The combination, in a lubricator, of an oil-reservoir provided at its bottom with a conical nipple having an aperture extending vertically from its apex with a vertically-adjustable stem having a conical cavity in its lower end to fit over the conical nipple, and thereby force the oil to rise between the exterior surface of the nipple and the interior surface of the cavity in its passage to the upper end of the discharge-aperture in the nipple, substantially as described.

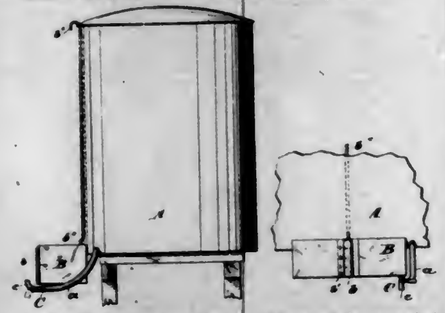
2. In a lubricator, the combination of the vertically-adjustable valve stem or spindle made in two parts, the filling-valve fitted in an oilway of said valve-stem, and the openings leading from said oilway, with the cone-shaped valve in the top of the valve-stem, and the oil-cup having a cone-shaped bottom projection or nipple, and the cap-plate adapted to receive the valve-stem, substantially as described.

3. In a lubricator, the combination of the lifting-sleeve and the spring-encircled valve-stem, and its valve carried by said sleeve, and the cap-plate having an opening for the reception of the lifting-sleeve, with the oil-cup, and the bottom plate having a cone-shaped projection provided with a discharge-opening, substantially as described.

4. In a lubricator, the combination of the screw-threaded valve-stem having a bottom cone-valve and an upper jam-nut, with the oil-cup having a screw-threaded aperture for the valve-stem, and a bottom cone surrounded by the cone-valve, substantially as described.

5. In a lubricator, the combination of a ridged dowel-pin in the top of the oil-cup, and a lifting-sleeve having cavities of varying depths for the purpose of regulating the flow of oil, substantially as described.

325,265. LIQUID-MEASURE. WILLIAM MITTENDORF and JOHN H. MITTENDORF, Dayton, Ohio. Filed Apr. 6, 1885. (No model.)

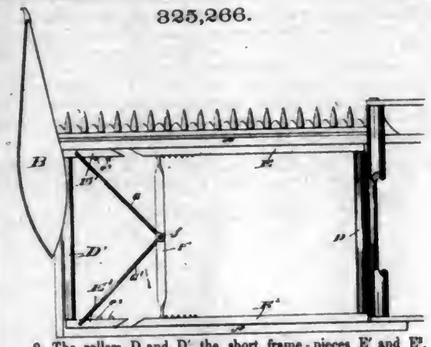


Claim.—In a liquid-measure, the combination of the reservoir A, the measuring-can B, provided with window *b* and gage *b'*, the vent b^2, and pipe *a*, with the reversible cock C, consisting of spout *c*, having port c^2 and passage c^4, oscillating in the sleeve c^3, having ports c^5 and c^6, substantially as and for the purpose specified.

325,266. HARVESTER. ANDREW B. MOUCK, Fargo, Dak., assignor of one-half to William Deering, Chicago, Ill. Filed Dec. 5, 1884. (No model.)

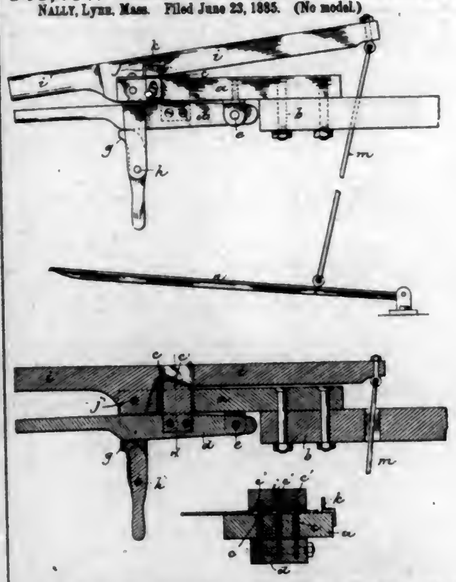
Claim.—1. The rollers D and D', the latter supported in bearings adapted to be moved so as to increase the distance between the said rollers, the elastically-supported bar F, and the braces G and G', pivoted to the said bar and secured to said bearings, all arranged and combined substantially as described.

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2. The rollers D and D', the short frame-pieces E' and E^2, the roller D' journaled therein, the braces G and G', the bar F, the guide-rods *e* and *e'*, and the springs e^2 and e^3, all combined substantially as and for the purpose set forth.

325,267. MACHINE FOR CRIMPING SHOE-QUARTERS. THOMAS NALLY, Lynn, Mass. Filed June 23, 1885. (No model.)



Claim.—1. The combination, with a fixed bed, *a*, made with an opening or openings therethrough, of the jaw or jaws *c*, supported in the lever *d* on the under side of the bed, said jaws being movable through said opening or openings to project above the bed, means, substantially as described, for supporting said lever in the elevated position of the jaws, and a lever or bar, *i*, having recesses *c'*, corresponding and operating in connection with the jaw or jaws *c*, as set forth.

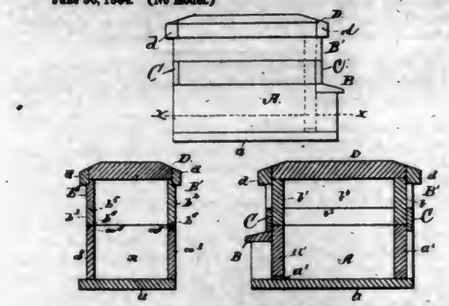
2. The combination, with a fixed bed, *a*, made with an opening or openings therethrough, of the jaw or jaws *c*, supported in the lever *d* on the under side of the bed, said jaws being movable through said opening or openings to project above the bed, means, substantially as described, for supporting said lever in the elevated position of the jaws, a lever or bar, *i*, having recesses *c'*, corresponding and operating in connection with the jaw or jaws *c*, and means for operating said recessed lever, as set forth.

3. The combination, with a fixed bed, *a*, made with an opening or openings therethrough, of the jaw or jaws *c*, supported in the lever *d* on the under side of the bed, means for supporting said lever with the jaws projecting above the bed, a lever or bar, *i*, having recesses *c'*, corresponding and operating in connection with the jaw or jaws *c*, and a gage, *k*, upon said bed, as shown, and for the purpose set forth.

4. The combination of the bed having the adjustable gages *j j* with the crimping-jaws *c* and *c'*, as set forth.

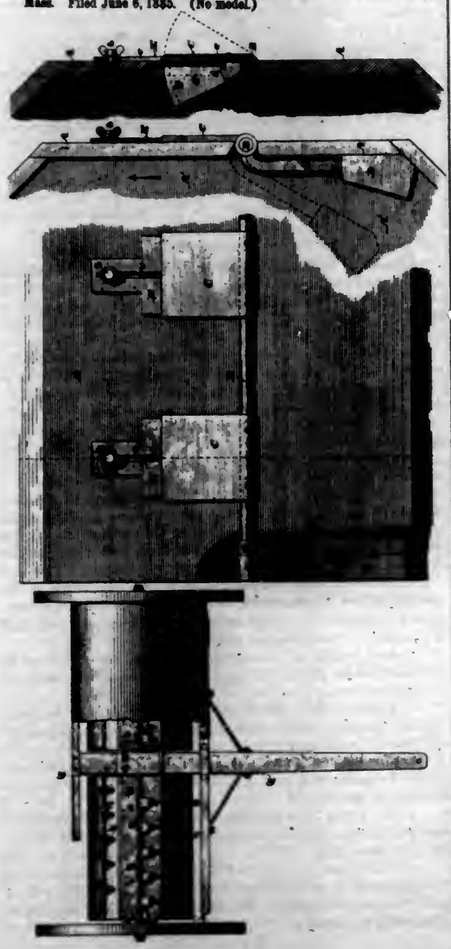
5. In a leather-crimping machine constructed and operating substantially as herein described, the combination, with the bed thereof, of the adjustable gages *j j* and *k*, for the purpose set forth.

325,268. BEE-HIVE. GRANVILLE R. OLNEY, Atlantic, Iowa. Filed June 30, 1884. (No model.)

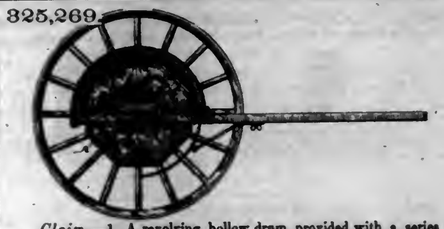


Claim.—A bee-hive comprising the lower compartment having base *a*, end board, *a'*, having opending a^1, end board, a^2, side board, a^3, rabbeted at its upper edge, and removable side board, a^4, rabbeted at its upper edge and provided with grooves a^5 to receive end boards, *a'* a^3, and the upper bottomless compartment composed of the end boards, *b b'*, side board, b^2, rabbeted on its upper and lower edges, cleat b^3, rabbeted on its lower edge and having beveled upper edge, b^4, removable piece b^5, rabbeted on its upper edge and having its lower edge beveled and grooved on its inner face to receive the end boards, *b b'*, and the cap or cover, substantially as set forth.

325,269. FERTILIZER-DISTRIBUTER. HENRY O. PEABODY, Boston, Mass. Filed June 6, 1885. (No model.)



325,269.



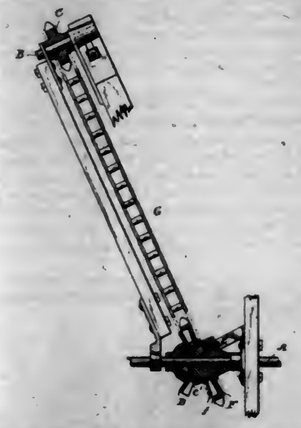
Claim.—1. A revolving hollow drum provided with a series of buckets mounted in apertures cut through the peripheral shell of said drum and arranged to be automatically vibrated from positions with their mouths within said drum to positions with their mouths outside of said drum, in combination with a series of non-vibrating plates or gates secured to the shell of the drum, one end of each of which enters the mouth of a bucket for the purpose of regulating the amount of fertilizer to be distributed.

2. The combination of a revolving hollow drum, a shaft mounted in suitable bearings on the outer surface of said drum, a series of buckets firmly secured to said shaft and adapted to be vibrated therewith within apertures cut through the shell of the drum, and a counterpoise-weight secured to said shaft outside the head of said drum and adapted by its own gravity to operate all of the buckets on said shaft.

3. The combination of a revolving hollow drum, a shaft mounted in suitable bearings on said drum, a series of buckets firmly secured to said shaft and adapted to be vibrated therewith within apertures cut through the shell of the drum, a counterpoise-weight secured to said shaft and adapted to operate by its own gravity all the buckets on said shaft, and a series of plates or gates one end of each of which enters the mouth of one of the buckets, while its opposite end is adjustably secured to said drum, so that its inner end may be moved to a position at a greater or less distance from the pivot of said bucket, for the purpose of gaging the amount of fertilizer to be distributed.

4. A revolving hollow drum provided with a series of buckets mounted in apertures cut through the peripheral shell of said drum and arranged to be automatically vibrated from positions with their mouths within said drum to positions with their mouths outside of said drum, in combination with a series of non-vibrating plates or gates secured to the shell of the drum, one end of each of which is provided with a laterally-projecting knife-edged rib and enters the mouth of a bucket for the purpose of regulating the amount of fertilizer to be distributed.

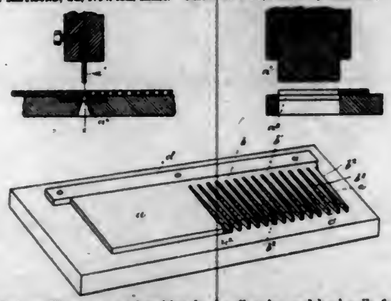
325,270. MECHANICAL MOVEMENT. HENRY E. PRIDMORE, Chicago, Ill. Filed July 19, 1885. (No model.)



Claim.—1. The combination of the rotating shaft, the bevel-pinion keyed thereto, the brass encircling said shaft and formed with an oblique peripheral bearing, and the sprocket-wheel turning loosely on said brass and formed with a bevel-gear in its face opposite to the teeth of the bevel-pinion, which gear meshes with said pinion.

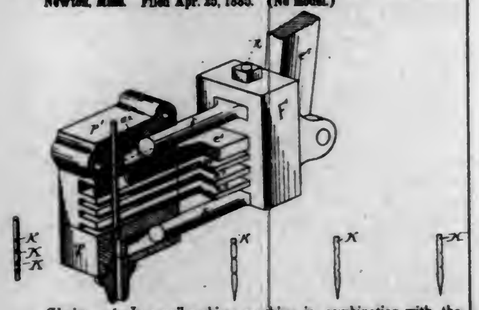
2. The combination of a rotating shaft, the pinion keyed thereto, the brass encircling the shaft opposite the toothed face of said pinion and formed with an oblique peripheral bearing, the sprocket-wheel turning loosely on said bearing, and having a bevel-gear cut in its face to engage with the bevel-pinion, the oblique counter-shaft, the sprocket-wheel thereon, and the chain connecting the two sprocket-wheels.

325,271. METHOD OF MAKING HEEL-NAIL PLATES. FREEBORN F. RAYMOND, 2d, Newton, Mass. Filed Mar. 19, 1885. (No model.)



Claim.—The process of making heel-nail strips and heel-nails from heel-nail plates, consisting in punching from heel-nail plates complete heel-nails of a length less than the width of the strip, alternating with the shanks of the nails on the blank-strip, and thereby forming a heel-nail strip or comb comprising the portions or shanks b^3 and the narrow uncut section of margin b, all substantially as and for the purposes described.

325,272. NAIL-MAKING MACHINE. FREEBORN F. RAYMOND, 2d, Newton, Mass. Filed Apr. 25, 1885. (No model.)



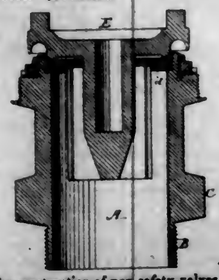
Claim.—1. In a nail-making machine, in combination with the feed-way, one or more movable cutters for forming notches, serrations, or grooves in the body of the nail, all substantially as and for the purposes described.

2. In a nail-making machine, in combination with the movable pointing-cutters, one or more notching or serrating or grooving cutters adapted to be moved across the feedway to form notches or serrations or indentations in the shank of the nail, all substantially as and for the purposes described.

3. The combination of the feedway of the machine, the cutter passage or passages extending across the same, and the movable cutter or cutters for forming notches, grooves, serrations or indentations in the shank of the nail, all substantially as and for the purposes described.

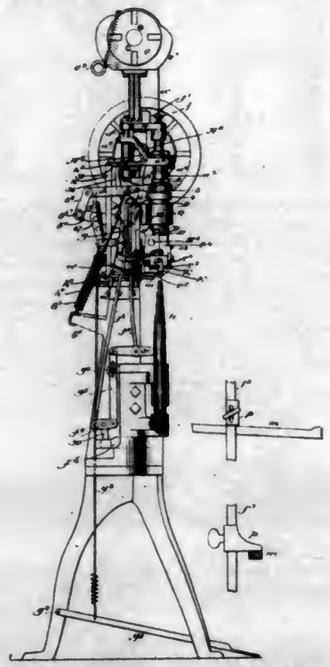
4. The combination of the throat of the machine, the movable cutters for severing the nail, and a movable notching or grooving cutter arranged below the severing-cutter, for the purpose of forming a notch or recess in the shank of the nail at a given distance from the head thereof, regardless of its length, all substantially as and for the purposes described.

325,273. SAFETY-VALVE. GEORGE W. RICHARDSON, Medford, Mass. Filed Mar. 14, 1885. (No model.)



Claim.—In the construction of pop safety-valves, the valve-bush A, faced at its upper extremity with a seating-bush, d, inserted therein, which seating-bush is composed of a hard non-corrodible metal, in combination with a valve proper, E, of a comparatively homogeneous and softer quality, and less resistant to corrosion than the metal of the seating-bush d, substantially as and for the purposes described.

325,274. MACHINE FOR UNITING THE SOLES AND UPPERS OF BOOTS OR SHOES. STILLMAN W. ROBINSON, Columbus, Ohio. Filed Oct. 13, 1884. (No model.)



Claim.—1. The shaft, its crank-pin, the knuckle-piece, the pitman, and connected working-head D, combined with the yoke and spindle B, with which it is connected, the said yoke receiving a vibrating motion to oscillate the spindle and rising and falling with the knuckle-pin, substantially as described.

2. The reciprocating working-head, the presser-plate-carrying sleeve, and the reciprocating and oscillating spindle, combined with an independent stop adapted to arrest the descent of the spindle when desired, substantially as described.

3. The uniformly-reciprocating working-head made as a sleeve, and the spindle B, combined with the interposed sleeve c, having at its lower end the bearing-plate c' and supporting the presser-plate, substantially as described.

4. The sleeve c, the bearing-frame c' at its lower end provided with the pins or studs c^2 c^3, and the cutter-carrying levers geared together, as described, and the cutters, combined with means to actuate the said levers to operate the cutters and sever the fastening material, substantially as described.

5. In a machine for uniting soles to uppers, the spindle B, the center piece, and the attached spindle-head, slotted as described, combined with grippers to engage the wire, and with means, substantially as described, to operate the grippers, as set forth.

6. In a machine for uniting soles to uppers, the spindle-head B^7, combined with the detaining-jaws placed therein and with the spring d^4, to operate substantially as described.

7. The spindle-head provided with the slot or opening 72, combined with the detaining-jaws provided at their rear sides with projections 65, substantially as described.

8. The spindle-head provided with the slot or opening 72, combined with the detaining-jaws, one of which is provided with pins, substantially as described.

9. The spindle B, its collar B^2, slotted at 71, and the spindle-head provided with the projection 70, combined with the center piece, B^4, substantially as described.

10. The spindle, the spindle-head, the reciprocating working-head D, and attached ring G, having a race, 47, combined with the gripper-carriers suspended by the said ring and adapted to operate the grippers, substantially as described.

11. The spindle, the slotted spindle-head, the reciprocating working-head, and attached ring G, provided with a projection or race, 47, and with tappets, combined with the gripper-carriers and the grippers d^3, and with the cam-ring which is arrested by the said tappets, substantially as described.

12. The working-head and its attached ring, combined with the slotted spindle-head, and with the gripper-carriers made as segments to embrace the spindle-head, and having projections 48 and 49, to operate substantially as described.

13. In a machine for uniting soles to uppers, the slotted rotating and reciprocating spindle-head, grippers d^3 therein, and gripper-carriers, combined with the working-head, its attached ring provided with the race 47, and with the flush-blocks to complete the said race after the hooks of the gripper-carriers are passed above the said race, substantially as described.

14. In a nailing-machine to unite soles to uppers, a uniformly-reciprocating working-head, a spindle, and spindle-head therein, grippers, gripper-carriers, and detaining-jaws, and the horn, combined with mechanism, substantially as described, to automatically lift the horn and lock it in place before the wire is driven into the stock on the horn and to automatically release the horn to depress the same, as set forth.

15. In a machine to unite soles and uppers, the feed-dog m, its pivoted guide, and the shaft A and its eccentric pin, combined with the cam-rod A^4, and means, substantially as described, to operate it.

16. The feed-dog m, the pivoted guide, the cam-rod, an adjustable pin or support therefor, and the inclined dog m^2, combined with a lever to move the said dog to effect the lateral movement of the feed-dog.

17. In a machine for inserting metal fastenings into the soles of boots and shoes, a horn, a feed-dog, m, and means, substantially as described, to move the same to effect the feeding of the boot or shoe intermittingly on the horn, combined with a lever, change of position of which enables the spacing of the fastening at any desired distance from each other while the machine is in operation, substantially as described.

18. The horn, the presser-plate, the feed-dog, the shaft A, crank-pin A^3, and means to turn it to place the said crank-pin more or less distant from the center of the presser and axis of the horn, combined with a cam-rod to move the feed-dog and place its acting front end more or less distant from the axis of the horn, the front end of the feed-dog acting as a gage to insure the insertion of the fastenings more or less distant from the edge of the sole, substantially as described.

19. In a machine for uniting soles to uppers, the levers E E', the cutter-holding clamping-block E^3 E^4, and the cutters 7 8, combined with the presser-plate provided with holes for the guidance of the said cutters, substantially as described.

20. In a machine for uniting soles to uppers, the levers E E', the cutter-holding clamping-blocks E^3 E^4, and cutters, combined with the adjusting-screws 12 and the slotted plugs e', to operate substantially as described.

21. The ring G, provided with a race, and gripper-carriers supported by the said race, combined with the grippers, to operate substantially as described.

22. In a machine to unite soles to uppers, the tappet-ring provided with a race having removable flush-blocks 46, substantially as described.

23. The working-head, the tappet-ring G, connected therewith, the slotted spindle-head, and the grippers provided with shoulders 54 and means to suspend the said grippers loosely with relation to the said ring, combined with the cam-collar interposed between the said tappet-ring and the projections 54 of the grippers, substantially as described.

24. In a machine to unite soles to uppers, the slotted spindle-head, the grippers 23, inserted in the slots of the said spindle-head, and provided near their lower ends with shoulders 54 and at their upper ends with hooks, and means to support loosely and reciprocate the said grippers in the slots of the spindle-head, combined with the loosely-supported cam-ring 55, to retain the grippers in the slots of the spindle and to actuate the grippers to grasp the wire, substantially as described.

25. The slotted spindle-head, the working-head, its attached ring G, provided with the tappets 45, and the loosely-suspended toothed grippers provided at or near their upper ends with hooks and near their lower ends with shoulders 23, combined with the ring 55, having cams 57 and recesses 58, the said ring being supported frictionally by the said grippers, substantially as described.

26. The slotted spindle-head, means, substantially as described, to partially rotate it, and the toothed grippers to feed the wire and the tappet-ring, combined with the loosely-supported cam-ring surrounding the said spindle-head and to actuate the grippers, substantially as described.

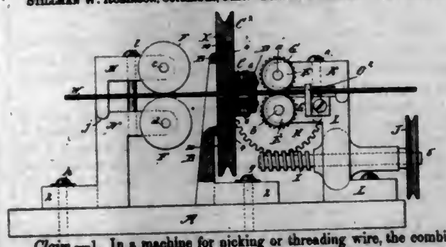
27. The cutter-carrying levers E E', geared together as described, combined with the sliding rack-bar having teeth to engage the teeth 13 of the lever E', substantially as described.

28. The feed-bar m, the lever 33, and means to move it, combined with the lever 36 and the cam-rod A^4 to control the movements of the feed-bar, substantially as described.

29. The spindle-head B^7, slotted longitudinally for the reception of the grippers, and provided with the slot 72 at right angles to the gripper-receiving slots for the reception of the detaining jaws or blocks, and the toothed grippers and the detaining jaws or blocks, combined with the reciprocating working-head and the cam-ring, and with means, substantially as described, to effect the movement of the said head and ring to actuate the grippers, for the purposes set forth.

30. In a machine for uniting the uppers and soles of boots and shoes, the tappet-ring having tappets 45, the slotted spindle-head provided with toothed grippers for feeding the wire, and the gripper-operating loose ring provided with tappet projections and surrounding the said spindle-head, said loose ring being provided with tappet projections to engage with the tappets 45, carried on the working-head, combined with means, as described, for partially rotating the slotted spindle-head.

325,275. MACHINE FOR MAKING SCREW-WIRE FOR PEGS. STILLMAN W. ROBINSON, Columbus, Ohio. Filed Oct. 13, 1884. (No model.)



Claim.—1. In a machine for nicking or threading wire, the combination, with a rotating die-carrier provided with nicking-die, of a pair of feed-rolls arranged in front of the die-carrier and a pair of press-rolls located in rear of the said die-carrier, to operate substantially as described.

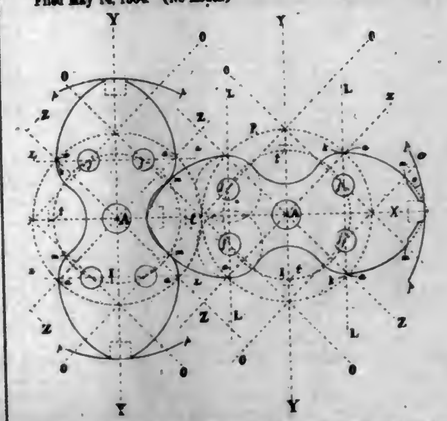
2. The combination, substantially as described, with a pair of feed-rolls and a pair of press-rolls, of a pulley, C^2, provided with a rotating die-carrier arranged intermediate of the feed and press rolls and having a die, D, the said pulley and die-carrier being made thin or constructed to occupy but little space in the direction of the path of the wire to thereby permit the feed and press rolls to be placed in close proximity therewith, for the purpose specified.

3. The combination, with the standard provided with the flanged annulus, as described, of the pulley C^2, having an annular groove in one of its sides and provided with a ring, X, substantially as and for the purpose set forth.

4. The combination, with a fixed standard provided with a pair of feed-rolls, and a standard made longitudinally movable and having a rotating die-carrier and a die, of a second movable standard adapted to have a longitudinal movement in rear of the said die-carrier, and provided with a pair of press-rolls, substantially as and for the purpose specified.

5. In a machine for screw-threading wire, a standard having a rigid arm provided with a roll-shaft, combined with a movable arm having a rigid portion projecting at right angles thereto and fulcrumed to the said standard and provided with a roll-shaft, the said movable arm having an adjusting-screw passing down through it and entering the rigid arm of the standard, for the purpose set forth.

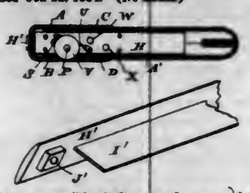
325,276. ROTARY PUMP. FRANCIS M. ROOTS, Connersville, Ind. Filed May 14, 1884. (No model.)



Claim.—Pistons for rotary pumps, constructed substantially as hereinbefore set forth—that is, having the convex abutting surfaces composed of arcs of circles at different radii, the centers from which said several arcs

are described being the points *j*, which are common centers to the major and minor curves on opposite sides of the major axis X Y.

325,277. TAILOR'S PRESS-PAD. SAMUEL C. RUGLAND, San Francisco, Cal. Filed Oct. 22, 1884. (No model.)



Claim.—1. In an extensible cloth-covered press-pad for tailors' use, the combination, with the adjustable sections A, B, C, and D, of the metal fastening-tongues E F, division-plate H', and screws G, substantially as described.

2. In a tailor's press-pad, the combination of the sections A, B, C, and D, the end plates, H I, bars N N, having racks O O, the shafts P S, carrying pinions Q R, the shafts W X, carrying winding-drums Y Y and provided with pinions W' X' that are driven directly by the racks O O on the upper and lower plates of the pad, the cloth covering A', and the dividing-plate H', substantially as described.

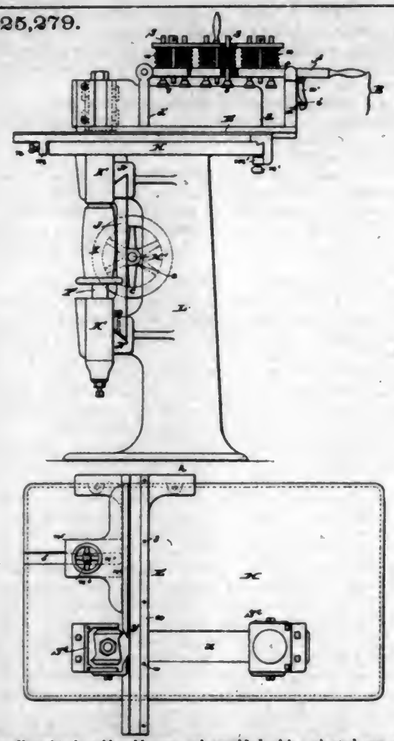
325,278. VEHICLE-WHEEL. BENJAMIN RUSHMER and GEORGE A. JOYCE, Columbus, Ohio. Filed Oct. 7, 1884. (No model.)



Claim.—1. In the wheel A herein described, the combination of the axle-sleeve *b*, having the vertically-intermedial web-disk *c*, and the clamping-disk flanges *d*, provided each with the coradial half-sockets *e*, and the nut-bolts *n*, with the rim *g*, having smooth spoke-sockets, and the spokes *f*, provided with the jam-nuts *s*, all made and adjusted substantially as and for the purposes herein specified.

2. In the wheel herein described, the combination of the spokes having jam-nuts with the smooth spoke-sockets of the wheel-rim and the clamp-sockets of the wheel-hub, substantially as and for the purposes herein specified.

325,279.



WOOD-WORKING MACHINE. HENRY H. SHEP, Philadelphia, Pa. Filed June 2, 1885. (No model.)

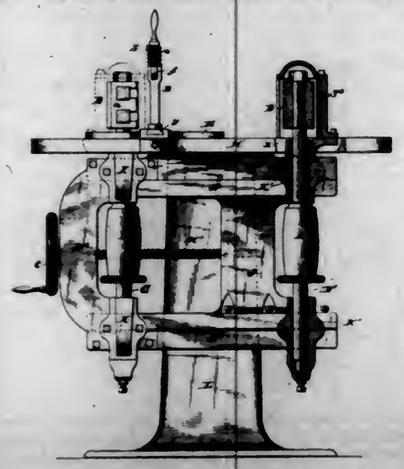
Claim.—1. The combination, with the standard or support of a wood-working machine, of fixed bearings supported thereby, a vertical shaft turning in said bearings and carrying a cutter-head, guides supported by the standard, a frame sliding in said guides, bearings supported by the frame, a second shaft supporting a cutter-head turning in the latter bearings, and a table or platform slotted for the passage of the movable shaft supported by the frame, substantially as and for the purpose described.

2. The combination, in a wood-working machine, of a table provided with a guideway, a cutter-head supported above the table, a carrier adjustable in said guideway and provided with a pivoted arm carrying a series of yielding clamps, and means, substantially as described, for locking the arm in place when brought upon the material, as and for the purpose set forth.

3. The combination of the cutter-heads and movable and fixed shafts, table, guide adjustable upon the said table between the cutter-heads, carrier movable upon said guide, and a clamp for securing the material in said carrier, substantially as and for the purpose described.

4. The combination, in a wood-working machine, of a vertical shaft revolving in fixed bearings and carrying a cutter, a slotted table, an adjustable frame, a second vertical shaft revolving in bearings upon the frame and carrying the cutter, a guide secured adjustably upon the table, and a carrier sliding in said guide and constructed to receive and retain the material to be cut, substantially as described.

5. The combination, with the frame of the carrier, of a pivoted arm, device, substantially as described, for securing said arm in place when brought upon the material, and sliding rods supported by said arm and provided with heads at their lower ends and with shoulders *t*, and springs bearing upon said shoulders, substantially as and for the purpose described.



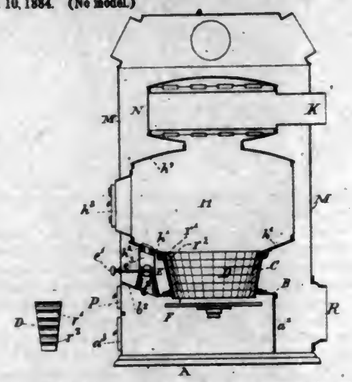
325,280. ANKLE-SUPPORTING SHOE. LOUIS SHADOWIX and BENJAMIN NATHAN, New York, N. Y. Filed June 19, 1885. (No model.)



Claim.—1. A shoe provided with a series of flexible supporting-ribs, E, arranged in both sides of the upper A and over the ankle portions thereof, and having a facing, G, covering the upper ends of said ribs, substantially as specified.

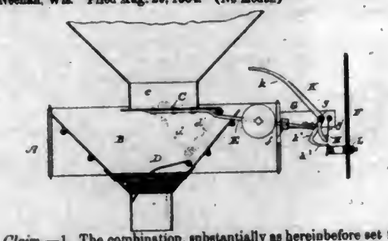
2. The combination of the upper A, linings B B', having pockets D' therein for the reception of the flexible supports E, with the interior lining, F, and flap G, substantially as shown and described.

325,281. HOUSE-FURNACE. JAMES SPEAR, Philadelphia, Pa. Filed Nov. 10, 1884. (No model.)



Claim.—The combination of the following elements: the ash-pit *a'*, the plate B, having inclined front *b²*, the collar *c²*, dust-flue E, dust-damper *e'*, inclined lower drum-head, *h'*, having the collar *h²*, drum or combustion-chamber H, fire-pot D, and door P, all arranged and operating substantially as and for the purpose set forth.

325,282. AUTOMATIC WEIGHING-MACHINE. JOHN STEVENS, Neenah, Wis. Filed Aug. 29, 1884. (No model.)



Claim.—1. The combination, substantially as hereinbefore set forth, in an automatic weighing-machine, of the discharge-gate, its catch-arm, the trip-latch, and a trip-hammer adapted to disengage said latch by a blow with its dead weight, and provided with a trackway along which a roller on the catch-arm runs to reset said latch as the discharge-gate opens.

2. The combination, substantially as hereinbefore set forth, in an automatic weighing-machine, of the discharge-gate, its catch-arm, the trip-latch, a trip-hammer adapted to disengage said latch by a blow with its dead weight, and a stop on the scale-rod, whereby said trip-hammer is held out of action until the scale-rod sinks with the weight accumulated in the receptacle.

3. The combination, substantially as hereinbefore set forth, in an automatic weighing-machine, of the discharge-gate, its catch-arm, the trip-latch, a trip-hammer adapted to disengage said latch by a blow with its dead weight, a stop on the scale-rod, whereby the hammer is held out of action until said rod sinks, and a projection on the catch-arm, whereby the hammer is thrown back as the gate opens into position to be reset for action when the scale-rod has risen.

4. The combination, substantially as hereinbefore set forth, in an automatic weighing-machine, of the discharge-gate, its catch-arm, the trip-latch, a pivoted trip-hammer adapted to disengage the trip-latch by a blow with its dead weight, a stop on the scale-rod against which the heel of said hammer rests, and whereby it is held out of action until the rod sinks, and a lateral projection or roller on the catch-arm, whereby, as the gate opens, the hammer is returned to position to be reset on the rise of the scale-rod.

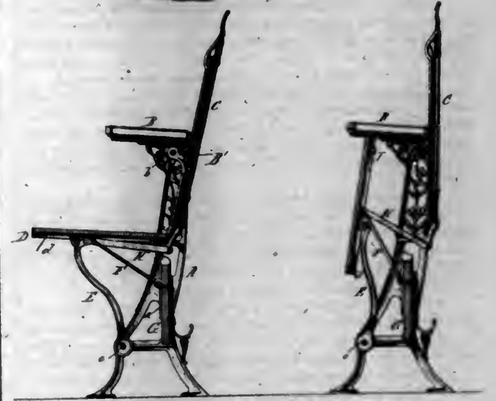
5. The combination, substantially as hereinbefore set forth, in an automatic weighing-machine, of the discharge-gate, its catch-arm and roller, the pivoted pendent trip-latch with its lateral lug, the pivoted trip-hammer having a trackway above the pivot, and a shank and heel extension beneath, and the scale-rod and its trip-stop, against which the heel of the hammer rests when said hammer is out of action.

6. The combination, substantially as hereinbefore set forth, to form a tripping device, of the catch-arm, the pivoted pendent trip-latch, the pivoted trip-hammer arranged to deal a blow with its dead weight against said latch, and the movable trip-stop against which the heel of said hammer rests until the mechanism is tripped by the recession of said stop.

7. The combination, substantially as hereinbefore set forth, of the discharge-gate, its catch-arm and lateral roller, the pendent trip-latch with lateral projection, the spring which presses said latch toward the catch-arm, the trip-hammer having curved trackway, shank and heel extension, and the trip-stop on the scale-rod.

325,283. OPERA-CHAIR. IRVING L. STONE, Battle Creek, Mich. Filed May 31, 1884. (No model.)





Claim.—1. The combination of the standards, the front supporting-braces pivoted to the standards, a seat pivoted to the front supporting-braces, and a second supporting-brace having a pivotal connection at its forward end with the seat, and a fixed central pivotal connection with a bar or frame connecting the standards, substantially as described.

2. The combination of the standards having the back pivoted thereto, the seat, arms or links connecting the lower portion of the back to the seat, said links at some portion of their length being nearer together than the width of the seat to support the rear portion thereof, and braces connecting the seat with the standards, substantially as described.

3. The combination of the standards having the back pivoted thereto, the seat, and arms or links connected to the lower portion of the back and to the forward portion of the seat for tilting the back when the seat is folded, said links being pivoted at one end nearer together than the width of the seat, with arms or links connecting the seat with the standards, substantially as and for the purpose set forth.

4. The combination of the standards, the seat, the forward side braces connecting the seat and standards, the second supporting-brace having a central pivotal connection with a bar or frame supported between the standards, the back pivoted to the standards, and the links connecting the seat with the back, substantially as described.

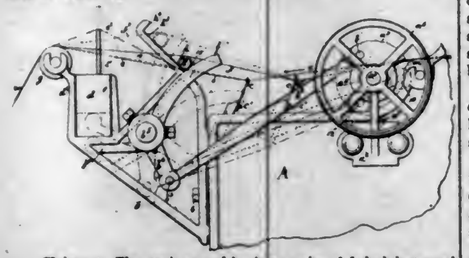
5. The combination of the standards, the back pivoted in said standards and provided at its lower swinging end with projecting arms, the buffers mounted on the standards in the line of movement of the

projections on the back, the links connecting the back and seat, and the braces connecting the seat and standards, substantially as described.

6. The combination of the standards having the back pivoted thereto, the seat, arms or links connecting the seat and back, said links at some portion of their length being nearer together than the width of the seat, buffers connected to the seat to engage the links when the seat is extended, and braces connecting the seat with the standards, substantially as described.

325,284. WARPING AND BEAMING MACHINE. HERMAN F. STRAW and JAMES D. BUTLER, Manchester, N. H. Filed July 30, 1883. (No model.)

Brief.—A shaft supported in suitable brackets has adjustably attached to it two lifters, which control the up-and-down movement of the warp-separating rod placed between the alternate threads of the sheet of warps, and having its journals supported upon an inclined rod-rest. Likewise attached to the same shaft are two other arms, which act against the under side of the box of the comb or reed and serve to lift the latter, the notches of said dents receiving the alternate warp-threads, and serving to support them while taking a lease. The comb or reed box, instead of being stationary, is fitted between guides of the frame, and is supported upon this frame except when the lifting-arms are swung to raise the comb-box.



Claim.—1. The comb or reed having a series of forked dents, and the warp-supports fore and aft of said dents, combined with the warp-supporting rod adapted to be placed between the warp-threads to divide them into two sheets or layers, a rest or guide for said rod, and lifters for said rod, and means to operate them, substantially as described.

2. The comb or reed having a series of forked dents, means to lift said dents, and the warp-supports fore and aft of said dents, combined with the warp-supporting rod adapted to be placed between the warp-threads to divide them into two sheets or layers, a rest or guide for said rod, and lifters for said rod, and means to operate them, substantially as described.

3. The comb or reed having a series of forked dents, an expanding spring or holder for the dents, means to lift said dents, and the warp-supports fore and aft of said dents, combined with the warp-supporting rod adapted to be placed between the warp-threads to divide them into two sheets or layers, a rest or guide for said rod, and lifters for said rod, and means to operate them, substantially as described.

4. The comb or reed having a series of forked dents, means to expand the same, and means to lift them, combined with the warp-separating rod, a guide or rest for said rod, and lifters, and means to operate them and thereby the rod, the dents operating the warp-threads *e*, and the rod acting upon the warp-threads *f*, to separate the warp-threads vertically for the formation of a shed to receive the lease-thread, substantially as described.

5. The warp-supporting rod adapted to be placed between the warp-threads to divide them into two sheets or layers, and a rest or guide for the said rod, combined with lifters and with means to operate the said lifters, substantially as described.

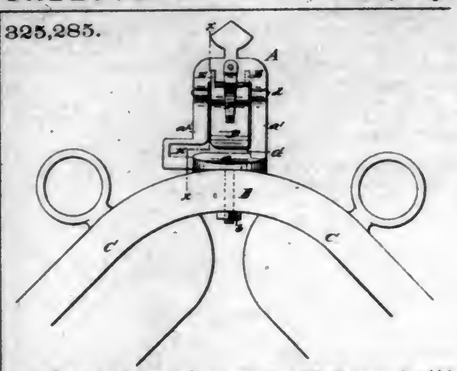
6. The comb or reed box, the rod *h*, the bracket on which it is moved, and the rock-shaft and its arms b^3 b^5 b^4, combined with the stop a^3 and the shouldered disk, and the connecting-rod b^2, joining the said disk with the arm b^4 of the rock-shaft, to operate substantially as described.

325,285. CHECK-REIN HOLDER. WILLIAM D. TABER, Rockville, R. I., assignor to himself and Clark A. Tabor, same place, and John A. Covey, Hope Valley, R. I. Filed Jan. 13, 1885. (No model.)

Claim.—1. A check-rein holder comprising a frame, a clamping device arranged to clamp the check strap or rein in a space between said clamping device and the frame, and said frame having a side space or slot for receiving a check rein or strap communicating with the space in which the strap or rein is clamped, substantially as herein set forth.

2. A check-rein holder comprising a frame, a pivoted plate clamping the check strap or rein in a space between said plate and the base-plate of the frame, and said frame having a side space or slot for receiving a check rein or strap communicating with the space in which the check-strap is clamped, substantially as herein set forth.

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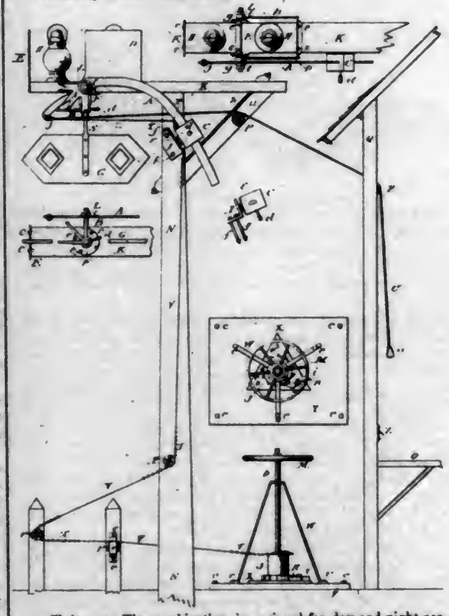


3. The combination, in a check-rein holder, of a frame, a clamping device arranged to clamp the check-strap between itself and the frame, and said frame having a side space or slot for receiving a check rein or strap communicating with the space in which the strap is clamped, and said strap being adapted for connection to the check-rein and extended backward to the vehicle, substantially as herein set forth.

4. The combination, in a check-rein holder, of a frame, A, pivoted clamp-plate D, provided with stops E E and spring F, said frame A being formed to provide a strap-space, G, and a communicating space or slot, H, substantially as herein set forth.

5. The combination, in a check-rein holder, of a frame, A, provided with a strap-space, G, and a communicating space or slot, H, pivoted clamp-plate D, spring F, stops E E, and the checking-strap I, adapted for connection to the check-rein and extended to the vehicle, substantially as herein set forth.

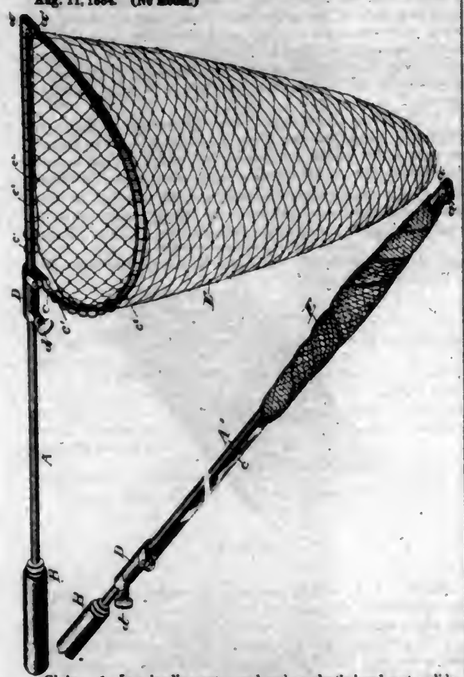
325,286. RAILROAD-SIGNAL. JAMES N. TOOLE, Jackson, Mich. Filed July 7, 1884. (No model.)



Claim.—1. The combination, in a signal for day and night use, of a center rocking shaft, L, to which are attached the two screens D D, the counterbalance-weight C, the forked gearing A and B, with the weight-stop I and rubber stop *r*, all combined, arranged, and operated for the purpose specified.

2. In a railroad-signal, the combination, with a light or lights, of opaque screens mounted upon a single shaft, adapted to hide said light, a swinging day-signal, intermeshing fingers engaging said screens and day-signal to each other, and mechanism for operating the same from either within or without the cabin.

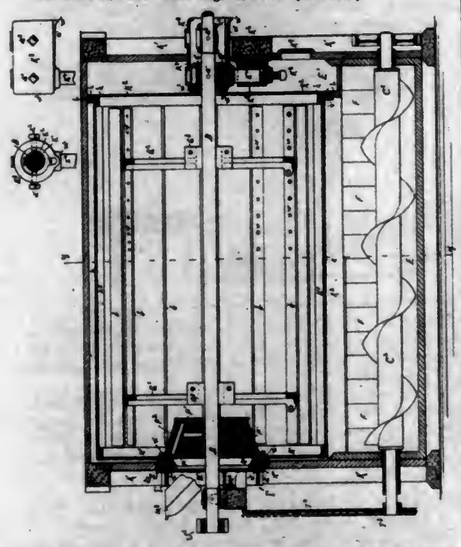
325,287. LANDING-NET. CHAS. P. UTLEY, Milwaukee, Wis. Filed Aug. 11, 1884. (No model.)



Claim.—1. In a landing-net, a rod and an elastic band and a slide, the band being pivoted at one end to the outer end of the rod and at the other to the slide, substantially as described.

2. The combination, with the rod and the band pivoted to its outer end, of a slide to which the inner end of the band is pivoted, and a set-bolt for securing the slide in adjustment, as set forth.

325,288. CENTRIFUGAL SEPARATOR. ARTHUR H. VAN DUZEE, Leavenworth, Kans. Filed Aug. 11, 1884. (No model.)



Claim.—1. In a centrifugal separator, the combination of the casing A', shaft B, adjustably mounted in the said casing, the beater-cylinder, reel head-disk H', formed with a projecting central bearing-ring, H^4, gear-rim I', and flange n^2, reel tail-disk H^2, having discharge-slots *h h*, ribs H^3 H^3, connecting the said head and tail disks, fixed disk M', and packing-ring N', substantially as and for the purpose herein set forth.

2. The combination of the casing, the bolting-cloth, the reel consisting of the tail-disk H^2, head-disk H', and ribs H^3 H^3, the fixed central plate or disk, M', the packing-ring N', wire-cloth cage P', attached thereto, shaft B, and brush P^2, substantially as shown and described.

3. The combination of the casing A', the shaft B, the beater-cylinder, boxes K^2 K^1, sleeve or shell K^3, adjusting-screw K^5 set-screws d' d^2 d^3 d^4, tail-disk H^2, having discharge-ports *h h*, head-disk H', having gear I' and packing-ring N', ribs H^3 H^3, connecting said head and tail disks and having wooden strips in the angles thereof, and means, substantially as described, whereby said reel-disks and ribs may be rotated in the same direction but at a less speed than said shaft and beater-cylinder are rotated.

4. In a centrifugal separator, a beater-cylinder comprising the shaft B, spiders G' G^2, formed in two parts and clamped to the shaft B, and inclined beater-ribs *b b*, connecting the heads at their peripheries, substantially as described.

5. The combination of a bolting-cloth-covered reel constructed with tail and head disks and longitudinal ribs connecting the disks, a fixed central plate, M', provided with a packing-ring, N', and shaft B, carrying the beating-cylinder, substantially as herein set forth.

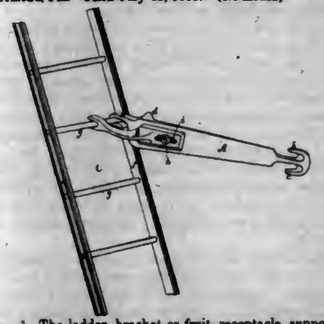
325,289. CHECK-VALVE. PETER G. VAN WIE, Cleveland, Ohio. Filed Feb. 14, 1884. Renewed June 22, 1885. (No model.)



Claim.—1. An elliptical valve-chamber terminating at either end in a circular form, and provided with a diagonal valve-seat having round opening or passage for the valve to rest in or upon, substantially as specified.

2. The combination, with an elliptical valve-chamber terminating at either end in a circular form and having diagonal valve-seat, of a valve arranged to close upon said seat and requiring but little play for uncovering the opening, substantially as described, and for the purpose set forth.

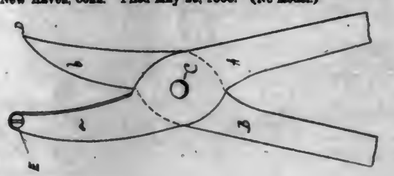
325,290. BASKET-SUPPORT FOR LADDERS. JEREMY B. WARDWELL, Ormond, Fla. Filed July 13, 1885. (No model.)



Claim.—1. The ladder-bracket or fruit-receptacle supporter, substantially as described, composed of the arm A, provided with hooks at its ends and with a shoulder or shoulders to extend from one side of it, and of the furcated brace B, projecting from the other side of it, and arranged essentially as set forth.

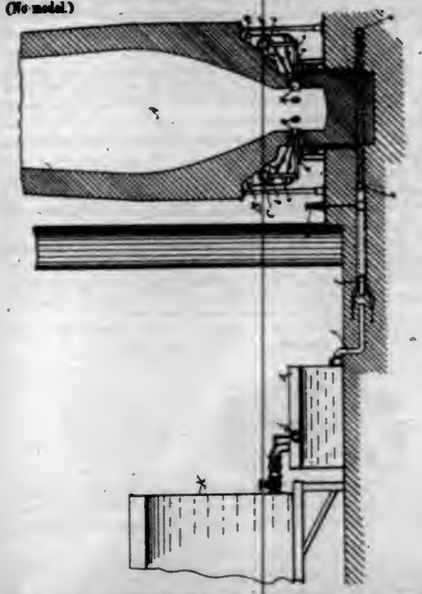
2. The ladder-bracket composed of an arm, A, provided with hooks at its ends and with a shoulder or shoulders, *d e*, extending from one side of it, and of a furcated brace, B, applied to the outer side of such arm and provided with means, as described, by which such brace may be adjusted and fastened on the arm into different positions relatively to the hooks thereof, all being essentially as represented.

325,291. SHEARS FOR METAL-WORKERS. WILLIAM L. WARNER, New Haven, Conn. Filed May 25, 1885. (No model.)



Claim.—In combination with the jaws *a a*, a set-screw and collar, for the purpose set forth.

325,292. APPARATUS FOR APPLYING LIQUID FUEL TO BLAST-FURNACES. FREDERICK C. WEBER, Chicago, Ill. Filed Jan. 19, 1885. (No model.)



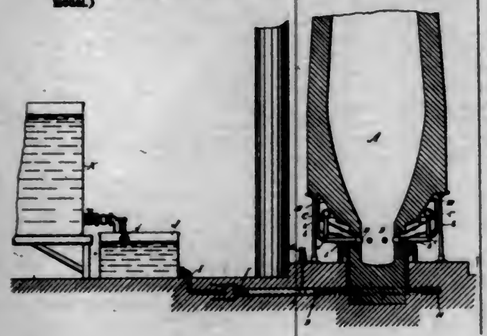
Claim.—1. The combination, with the tuyere of a blast or other furnace, of petroleum tanks or reservoirs having floats to maintain a level or head of oil, service-pipes having devices whereby the flow of the petroleum may be regulated, supply-pipes having valves or other regulating devices for feeding the petroleum with the blast, and protecting water-jackets, substantially as described.

2. The combination, with the tuyere of a blast or other furnace, of petroleum tanks or reservoirs having floats to maintain a level or head of oil, service-pipes having devices whereby the flow of petroleum may be regulated, supply-pipes having valves or other regulating devices for feeding the petroleum with the blast, protecting water-jackets, and safety-valves for preventing explosions, substantially as described.

3. The combination, with the tuyere of a blast or other furnace, of petroleum tanks or reservoirs having floats to maintain a level or head of oil, service-pipes having devices whereby the flow of the petroleum may be regulated, supply-pipes having valves or other regulating devices for feeding the petroleum with the blast, protecting water-jackets, and means for regulating and determining the petroleum-flow, substantially as described.

4. The combination, with the tuyere of a blast or other furnace, of petroleum tanks or reservoirs having floats to maintain a level or head of oil, service-pipes I, having stop-cock Q, supply-pipe E, having valve L, lever M, and arc-dial O, a burner, protecting water-jacket F, and ball-valve P, substantially as described.

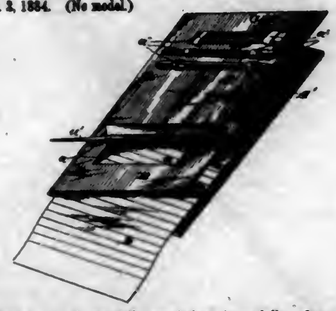
325,293. PROCESS OF SMELTING ORE BY MEANS OF PETROLEUM. FREDERICK C. WEBER, Chicago, Ill. Filed May 2, 1885. (No model.)



Claim.—1. The process of smelting ore, which consists in charging the furnace with one hundred parts of ore, proper fluxes, and from sixteen to forty parts of free carbon, and injecting from sixty-five to forty parts of crude petroleum with air, and regulating the amount of air to produce a non-oxidizing flame, the proportions of free carbon and petroleum varying relatively within said limits as required by the varying compositions of the petroleum or other circumstances, substantially as described.

2. The process of smelting iron ore, which consists in charging the furnace with one hundred parts of ore, proper fluxes, and from fifteen to sixty parts of free carbon, and reducing the mass by a flame produced by the burning of crude petroleum or liquid hydrocarbons injected with sufficient air to produce a non-oxidizing flame, the amount of the liquid fuel being determined and regulated by the varying composition of the ore, solid and liquid fuel, or other circumstances, substantially as described.

325,294. PORTFOLIO. WILLIAM H. WEIR, Springfield, Ohio. Filed Oct. 3, 1884. (No model.)

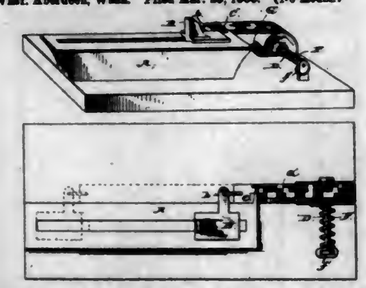


Claim.—1. A portfolio consisting, essentially, of two covers or leaves connected at one edge, one of said covers or leaves being provided with a transverse opening therein, substantially as set forth.

2. A portfolio consisting, essentially, of two covers or leaves connected at one edge, one of said covers or leaves being provided with a transverse opening, and with a flap adapted to be turned down so as to cover more or less of said opening, according to the size of the flap, substantially as set forth.

3. As a new article of manufacture, a portfolio consisting, essentially, of two leaves or covers connected at one edge, one of said leaves or covers having an opening through the same, a flap for closing the opening in said cover, and one or more loops for holding pens or pencils, substantially as set forth.

325,295. INDICATOR FOR SAW-MILL SET-WORKS. ARNOLD J. WEST, Aberdeen, Wash. Filed Mar. 23, 1885. (No model.)



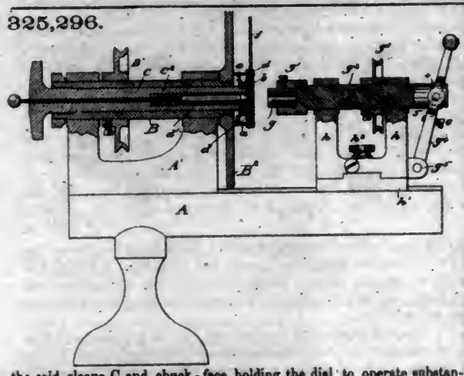
Claim.—1. The combination of the head-block, the stationary indicator-hand secured to the way in which the head-block travels, and the graduated band that moves back and forth with the head-block, substantially as described.

2. The combination of the head-block, the stationary indicator-hand, the graduated band connected to the movable head-block, the drum to which the rear end of the band is secured, and the spring for turning the drum and winding the band when the head-block is retracted, substantially as described.

325,296. APPARATUS FOR RECESSING WATCH-DIALS. EDWIN D. WETHERBEE, Waltham, Mass. Filed Mar. 31, 1885. (No model.)

Claim.—1. In a machine for recessing the face of watch-dials for the reception of the second-hand, the rotating spindle and its attached chuck-face, and the longitudinally-adjustable sleeve C, and the head *d*, loosely pivoted thereon and located at the rear side of the chuck-face, combined with the rotating spindle g^3, provided with the tool having its center of rotation out of line with relation to the center of rotation of

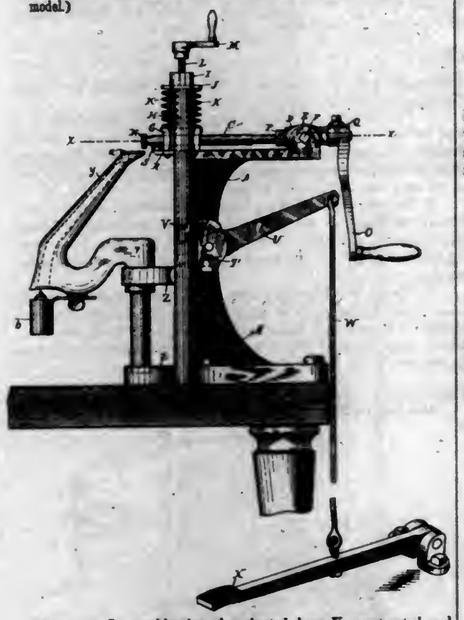
325,296.



the said sleeve C and chuck-face holding the dial, to operate substantially as and for the purposes described.

2. The spindle B, the open plate *b*, carried by it, and the sleeve C and its loosely-connected head, and the pump-center, combined with the rotating spindle g^3, provided with the tool having its center of rotation out of line with the center of rotation of the spindle B, to operate substantially as described.

325,297. IMITATION-STITCH MACHINE. EDGAR L. WHEELER, Marlborough, Mass. Filed Dec. 19, 1884. Renewed July 23, 1885. (No model.)



Claim.—1. In combination, the pivoted horn Y, constructed and arranged to receive, support, and turn with the shoe while under the operation of the impression-wheel, the impression-wheel mounted upon the horizontal shaft C, and provided with means for rotating the same, mechanism, substantially as described, adapted to produce the requisite degree of pressure of the wheel upon the shoe-sole while supported upon the horn, and to relieve the same at will, substantially as and for the purposes specified.

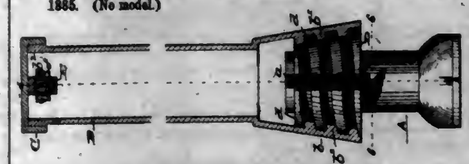
2. In combination, the pivoted horn Y, the impression-wheel N, journaled in the rocking box D, and the sliding box G, with provision for lineal adjustment, and for rotating the same, and a pressure mechanism consisting of springs K, plate J, cap I, and screw L, all substantially as and for the purposes specified.

3. In combination, the pivoted horn Y, provided with wheel *a*, impression-wheel N, mounted on a lineally-adjustable shaft, C, and an adjustable gage, R, provided with roll S, all substantially as and for the purposes specified.

4. In combination, the pivoted supporting-horn Y, the impression-wheel N, mounted on shaft C journaled as described, a yielding pressure mechanism, substantially as described, for forcing the impression-wheel down upon the work, a gaging device, and a treadle mechanism, substantially as described, for counteracting the pressure and relieving the work therefrom at will, all substantially as specified.

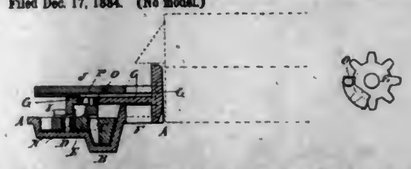
5. In combination with an impression-wheel and pressure devices, constructed and arranged to operate together substantially as described, a hollow horn, Y, pivoted to operate as described, and arranged to support the work under the impression-wheel, a wheel, *a*, mounted in the upper end of said horn, and a heating device arranged to heat the horn, all substantially as and for the purposes specified.

325,298. STOP-BOX. PETER WHITE, St. Louis, Mo. Filed Apr. 27, 1885. (No model.)



Claim.—The combination of the part A, having the ribs *a a*, the part B, having the tapered threaded end *b*, and the tapered threaded sections *d d*, substantially as described.

325,299. DOOR-OPENER. CHARLES E. WHITNEY, Brooklyn, N. Y. Filed Dec. 17, 1884. (No model.)



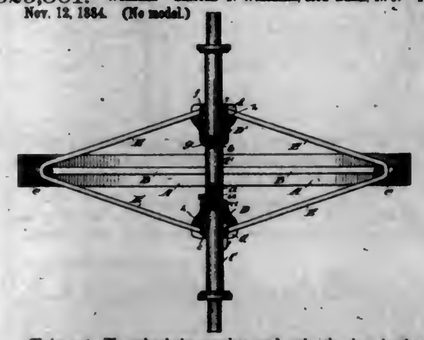
Claim.—In a door-opener, the combination, with the striker G, having slot P, of the gear-wheel E, having pin O, the rack-bar C, and the spring K, substantially as herein shown and described, whereby the said striker will be locked in place by the said pin, and can only be moved by the movement of the said pin, as set forth.

325,300. CHAIN-SHELL. FRANCIS H. WILLIAMS, Syracuse, N. Y. Filed June 15, 1885. (No model.)



Claim.—The combination of the explosive shells B B, the chain C, uniting them, and the tubular elastic buffer surrounding the chains, substantially as described.

325,301. WHEEL. SAMUEL T. WILLIAMS, Red Bank, N. J. Filed Nov. 12, 1884. (No model.)

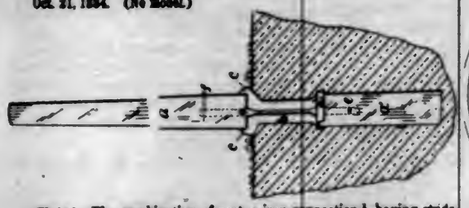


Claim.—1. The wheel-rim, spokes, and axle, the last having the single slot *b* and series of slots *a a*, combined with the hubs D D′ and keys *g*, for securing the hubs to the slotted axle and permitting the adjustment of the hub D toward and from the hub D′, substantially as described.

2. In a wheel of substantially the construction described, the hubs D D′, consisting of sleeve-like portions and enlarged ends hollowed out and provided with an inwardly-overlapping rim, and a series of slots, *d*, and recesses *h*, as herein shown and described.

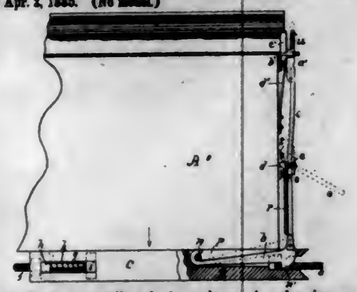
3. The wheel-rim provided with holes *e*, combined with spokes first headed complete, and then passed through such holes and connected with slotted and adjustable hubs, and a shaft or axle to receive said hubs, substantially as described.

325,302. FENCE-POST. THOMAS E. WILSON, Farmland, Ind. Filed Oct. 21, 1884. (No model.)



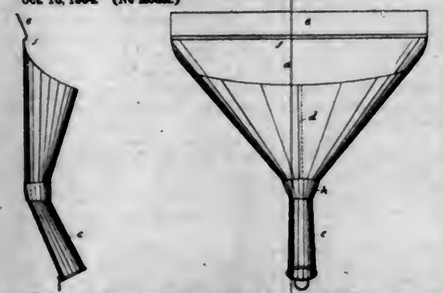
Claim.—The combination of post *a*, iron connection *b*, having studs *c c*, pins *f' i*, grooved at *f''* and *i'*, respectively, bottom end, *d*, formed as described, and lower section, *a'*, inserted in said end *d*, the parts being secured together substantially as set forth.

325,303. CAR-COUPLING. JOHN B. WHITING, Bergen, N. Y., assignor of five-eighths to Michael F. Bergin and Alexander B. Enoch, same place. Filed Apr. 2, 1885. (No model.)



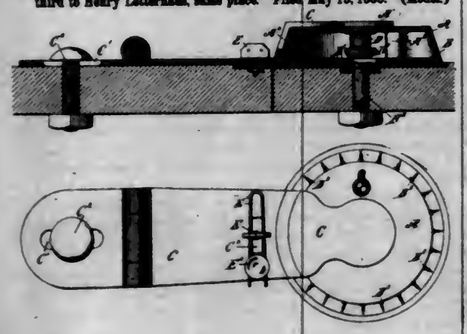
Claim.—In a car-coupling device, a lever, *c'*, and a ring or crook *u*, provided with an additional ring or catch, *d*, in combination with a notched sectional lever, *c*, the bracket *b*, the spring *d'*, which operates to press said rod forward against the edge *c'* of said bracket, the longitudinal bar *d*, and the coupling-hook *k*, all substantially as and for the purpose set forth.

325,304. DUST-PAN. JESSEL F. WYNKOOP, Philadelphia, Pa. Filed Oct. 10, 1884. (No model.)

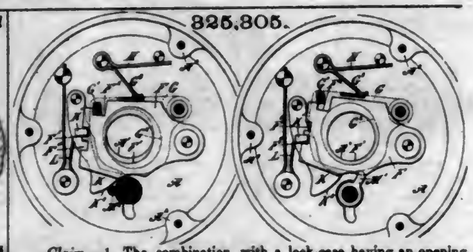


Claim.—A dust-pan having a triangular covered dirt-receptacle, and an open tubular handle connected therewith at the apex of the triangle, and adapted to serve as a discharge-passage, substantially as described.

325,305. LOCK. JOHN E. YOUNG, Bridgeport, Conn., assignor of one-third to Henry Letterhaus, same place. Filed May 15, 1885. (Model.)



325,305.



Claim.—1. The combination, with a lock-case having an opening and a locking-stud adapted to engage said opening, of a locking-bolt having an opening through which said stud passes, and notches upon two edges, and independently pivoted tumblers having stumps which engage said notches.

2. The lock-case having a central opening, and a locking-stud having an enlarged head, in combination with a pivoted locking-bolt having an opening adapted to register with the one in the case and two notches in its outer edge, and a pivoted tumbler having a stump adapted to engage one of said notches when the openings register, and the other notch when said openings are eccentric and the solid metal of the bolt has passed under the head of the locking-stud.

3. The combination, with the locking-stud having an enlarged head, and the locking-bolt having an opening through which said stud passes, and a notch, F^2, of a tumbler, G, having a stump, G', opening G^2, and lip G^3, and a spring acting on said lip.

4. The locking-stud and locking-bolt having a central opening and notches F^2, F^3, and F^4, in combination with tumbler G, having opening G^2 and stump G', and tumbler K, having stump K'.

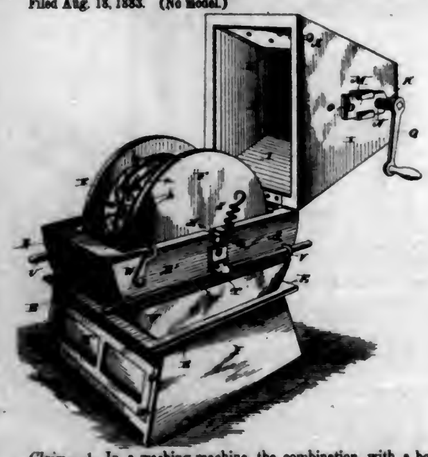
5. The locking-stud and locking-bolt having central opening and notches F^2, F^3, and F^4, in combination with tumbler G, having a central opening, stump G', and lip G^3, and tumbler K, having stump K' and convex end K^2, as and for the purpose set forth.

6. The combination, with a locking-stud and a locking-bolt, of a case having a central opening to receive the locking-stud and upon its opposite side a depression and opening therethrough, a bolt, B^2, passing through said opening and adapted to hold the lock in position, but which at the same time leaves it free to turn.

7. The combination, with the locking-stud and case having a central opening and bosses A^2, and carrying the locking mechanism, of a base-plate secured to said bosses and having a central depression, B, an opening therethrough, and a retaining-bolt, B^2, whose head rests in said depression.

8. The combination, with a hasp having a locking-stud at its end, of a lock-case having a central opening to receive the locking-stud and a key-hole in its outer side, and a central retaining-bolt whereby the case is held in place, but is left free to be turned when it is desired to protect the key-hole by the hasp.

325,306. WASHING-MACHINE. JOHN O. AUSTIN, Bonham, Tex. Filed Aug. 18, 1883. (No model.)



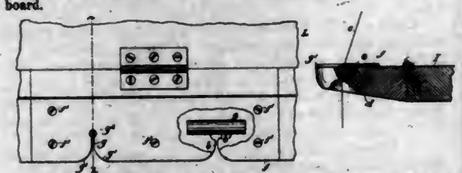
Claim.—1. In a washing-machine, the combination, with a boiler having laterally-projecting flanges, a body secured to said boiler, a heater on which the boiler rests, and a cover hinged to the body, of a drum situated within the body and over the boiler, a rubber journaled in the cover, and devices, substantially as described, for yieldingly holding the rubber in contact with the drum.

2. In a washing-machine, the combination, with the boiler, body, and top hinged to the body and provided with oblong slots, of a drum journaled in the body, a rubber the spindle of which rests and moves in the oblong slots of the top, the plates connected to said spindle, and springs for yieldingly holding the rubber in contact with the drum, substantially as set forth.

3. In a washing-machine, the combination, with the heater, the boiler resting on the heater, the body secured to the boiler, and the cover hinged to the body, of the flanged drum journaled in the body, the rubber journaled to the cover immediately over the drum, the movable plates forming bearings for the rubber-shaft, clips secured to the cross-bars, and springs connecting the plates and clips, substantially as set forth.

325,307. GUIDE-BOARD FOR SPINNING-FRAMES. JOHN BARKER, Lawrence, Mass. Filed Jan. 2, 1885. (No model.)

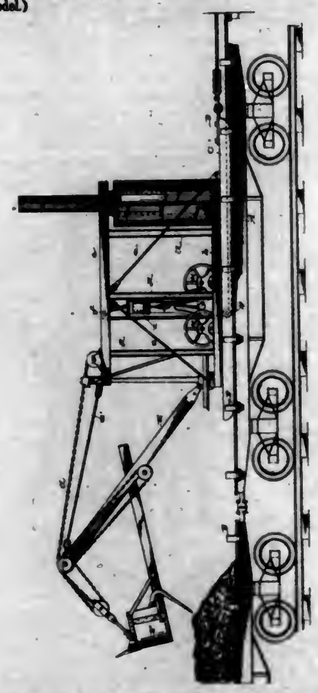
Brief.—The guide-board is slotted at its edge inward, and is provided with longitudinal recesses on its upper side to receive cylinders of vitreous material. The recesses are covered and the cylinders held in place by metal plates slotted to correspond with the slots in the guide-board.



Claim.—1. The guide-board slotted at *b b'* and recessed longitudinally at *d*, combined with the cylindrical supports or guides *a*, of vitreous material, placed in the said recesses, substantially as described.

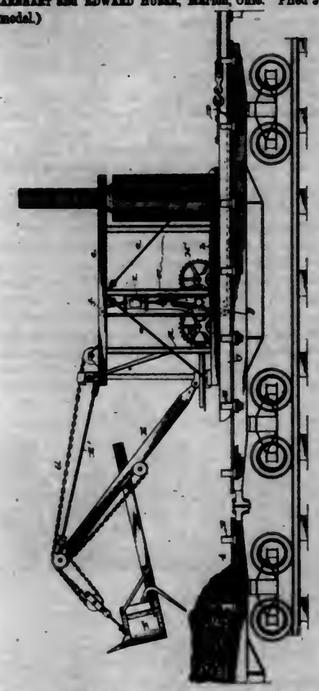
2. The guide-board slotted at *b b'* and recessed at *d*, and the vitreous supports or rests *e*, laid in the said recesses and crossing the rear edge of the opening *b'*, combined with the metal top plate, *f*, slotted as shown and described, and shaped to cover the guide-board and retain the supports or rests in place, all substantially as set forth.

325,308. METHOD OF LOADING AND UNLOADING CARS. HENRY M. BARNHART and EDWARD HUBER, Marion, Ohio. Filed July 22, 1885. (No model.)



Claim.—The method of loading and unloading platform-cars, consisting, essentially, in moving a traveling crane mounted on the platform-cars toward the material to be removed from the cars, and away from the material as it is loaded on the cars, substantially as set forth.

325,309. DEVICE FOR LOADING AND UNLOADING CARS. HENRY M. BARNHART and EDWARD HUBER, Marion, Ohio. Filed July 22, 1885. (No model.)



Claim.—1. In a device for loading and unloading cars, the combination, with a train of platform-cars, of a sled or carriage, a crane or derrick mounted on said sled or carriage, and devices, substantially as described, for moving the sled or carriage.

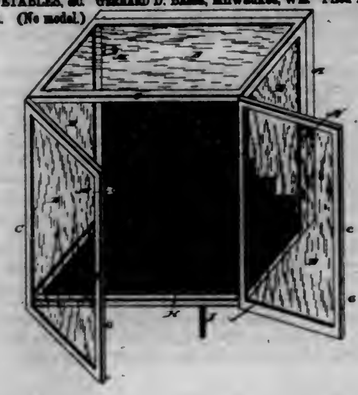
2. In a device for loading and unloading cars, the combination, with a train of platform-cars and a sled adapted to move on said cars, of a derrick-frame pivoted to the sled, a motor mounted on the sled, and devices connecting the motor and car, whereby the sled can be moved from one end of the train to the other, substantially as set forth.

3. The combination, with a train of platform-cars, each of which latter is provided with side guides, of a sled adapted to travel over said cars and carrying a crane or derrick, and devices carried by the sled and connected to one of the cars for moving the sled, substantially as set forth.

4. The combination, with a sled or carriage mounted on platform-cars, a derrick-frame pivoted to said sled, and a derrick or crane secured to said frame, of the devices, substantially as described, for moving the sled, substantially as set forth.

5. The combination, with a train of cars having side guides, of a sled or carriage having beveled ends, a derrick secured to said sled, a carriage, and devices, substantially as described, for moving the sled.

325,310. APPARATUS FOR PRESERVING AND DISPLAYING VEGETABLES, &c. GERHARD D. BAAKE, Milwaukee, Wis. Filed May 5, 1884. (No model.)

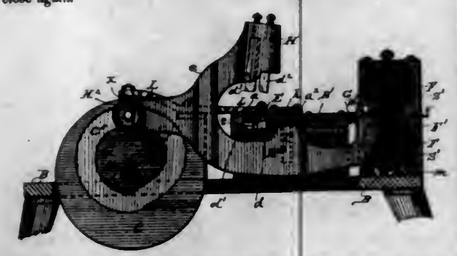


Claim.—1. In an apparatus for preserving and displaying vegetables, fruits, &c., the combination of the inclosure A, base D, having basin E, show-stand H, water-pipe I, distributing-tube J, and one or more holes or nozzles, K, provided with an impact or atomizing plates, L, said pipes, nozzles, and atomizing-plates being adapted to convert the water into vapor within said inclosure and retain it in contact with the contents of the receptacle, as set forth.

2. In an apparatus for preserving and displaying garden products, the combination of the inclosure consisting of frames C, plate-glass sides B, base D, having basin E, rigidly-fixed back P, connected to said case A by hinges M M, water-pipe I, distributing-tube J, nozzles K, and atomizing-plate L, all substantially as and for the purpose specified.

325,311. WIRE-BARBING MACHINE. ALBERT J. BATES, Joliet, Ill., assignor to the Joliet Barb Wire Company, same place. Filed July 6, 1885. (No model.)

Brief.—The movable cutters are all mounted on a vertically-oscillating lever. On the upstroke of the lever one of the cutters, acting with a stationary cutter, cuts and bends up one point of the barb. On the downstroke the other cutters, with their stationary cutters, cut and bend the remaining points of the barb and sever it from the barb-strip. A reciprocating guide, through which one of the strand-wires passes, spreads the wires apart as the strip is fed in, and then allows them to close again.



Claim.—1. In the wire-barbing machine shown and described, the cutters d, d', d^3, d^3, h, and h', arranged in combination with each other and with bed B' and lever H^3, and means for operating the lever, whereby at each descent of cutters d^3 d^3 three prods of a barb are cut and formed and a barb severed from the barbing-strip and seated between a pair of cabling strand-wires, and at each ascent of said lever-cutter h' it, in conjunction with stationary cutter h, cuts and forms the rear upper prod of the next succeeding barb, substantially as set forth.

2. In the wire-barbing machine shown and described, the combination of bed B, secondary bed B', having the several cutters, formers, and guides described, lever H^3, having the several cutters and formers described, cam c, having the cam-channel c', shaft S, gear-wheel D on said shaft, gear-wheel A of a twister-yoke, and the barb-strip feed mechanism shown and described, as and for the purpose set forth.

3. In the wire-barbing machine shown and described, the cam c, having the cam-channel c'' and the waved cam-channel c', in combination with the levers H^3 and L, said cam-channel c'' being so formed as to receive roller-wrist J of lever H^3 and operate said lever, so that its several barb-cutters will shear with the several cutters of bed B', and said annular cam-channel c' being so formed as to receive the roller z of lever L, to operate said lever to reciprocate guide E, in the manner substantially as and for the purpose set forth.

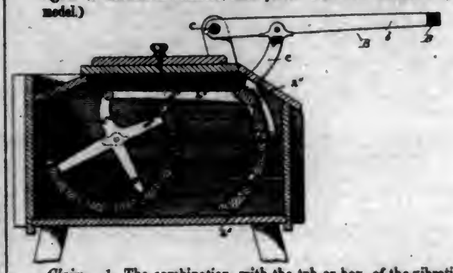
4. In the wire-barbing machine shown and described, in combination with beds B and B', the lever H^3, having adjustably secured therein the barb-cutters d^3, d^3, and h', stationary barb-cutters d, d', and h, guide t, reciprocating guide E, having the channel E' and stud a^4, barb-strip guides n and k, cam c, having the cam-channels c' and c'', and the barb-strip feed mechanism, all adapted to operate as and for the purpose set forth.

5. In the wire-barbing machine shown and described, the combination of bed B, secondary bed B', arranged to support its several cutters, formers, and guides, as set forth, lever H^3, arranged to support its several cutters and formers, as described, cam c, lever L, shaft S, gear-wheel D of said shaft, gear-wheel A of the twister-yoke, and the barb-strip feeding mechanism shown and described, whereby the power applied to gear-wheel A by means of a twister-yoke will operate the several parts of the machine to automatically cut, form, and seat between a pair of cabling strand-wires a four-pointed flat metal barb, in the manner substantially as set forth.

6. In the wire-barbing machine shown and described, the secondary bed B', having the cutters d, d', and h, barb-strip-adjusting guides n and k, stationary strand-wire guide t, and reciprocating strand-wire guide E, arranged substantially as set forth, in combination with lever H^3, having the cutters d^3, d^3, and h', arranged as set forth, and the means, substantially as shown and described, for operating said lever and for feeding forward the barb-strip, for the purpose specified.

7. In the wire-barbing machine described, the guide T, arranged to reciprocate in the manner substantially as described, and for the purpose set forth.

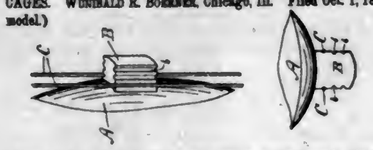
325,312. WASHING-MACHINE. LEANDER BECKER, York, Pa., Nelson C. Bengtman (administrator of said Leander Becker, deceased) assignor to Edward E. Johnston, same place. Filed Mar. 19, 1884. (No model.)



Claim.—1. The combination, with the tub or box, of the vibrating handle, the arms extending down into the box, the rubber hung by a pivotal connection upon said arms, and the other rubber pivoted to the sides of the box and connected to the first-named rubber by the arms, whereby when the handle is operated a back-and-forth and slightly oscillatory motion is given the first-mentioned rubber, and a reciprocating circular motion is given the other rubber, substantially as described.

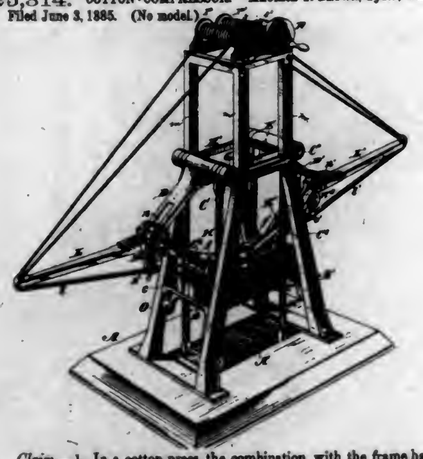
2. The combination, with the tub, of the vibrating handle, the arms connected to the handle and extended down into the tub, the rubber C, having the rear sockets on its heads for receiving the pivots of the levers, and having the forwardly-extended arms, and the rubber D, having its heads pivoted to the sides of the box, and having the socketed arms, with which the forwardly-extended arms of the rubber C are connected by a jointed connection, substantially as described.

325,313. MEANS FOR ATTACHING CUTTLE-BONE TO BIRD-CAGES. WUNIBALD R. BOERNER, Chicago, Ill. Filed Oct. 1, 1884. (No model.)



Claim.—As an article of manufacture, a cuttle-bone having attached directly to its back a block shaped on its sides to receive or fit between the wires of a bird-cage, substantially as described.

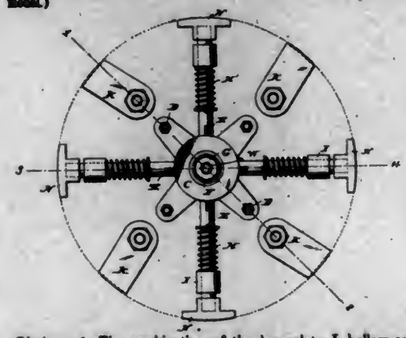
325,314. COTTON-COMPRESSOR. MAURICE T. BROWN, Tyler, Tex. Filed June 3, 1885. (No model.)



Claim.—1. In a cotton-press, the combination, with the frame having the upper stationary platen provided with end and central bearings, having levers and arms pivoted thereto, the shafts C C', having bifurcated arms D D', rods F F', and rollers G, the brackets E^2 E^2, having the levers and arms of the upper platen hinged thereto, the operating-arms L L', secured to the brackets of the arms H H', connected to the shafts C C' and to the lower platen, and means, as described, for operating said lower platen, as set forth.

2. The combination, with the upper and lower platens, A B, brackets E^2 E^2, and shafts C C', the levers C^2 C^2, arms D D' and K K', pivoted to said brackets, shafts, and upper platen, said shafts provided with rollers G and arms H H', said arms also connected to the lower platen, of the operating-arms L L', secured to said brackets, and mechanism, as described, for operating said arms L L', whereby the lower platen is raised upward, as shown and described.

325,315. CENTERING AND HOLDING DEVICE FOR TIRES. SIMON H. BROWN and LEWIS SIBLEY, Ramapo, N.Y. Filed June 30, 1885. (No model.)



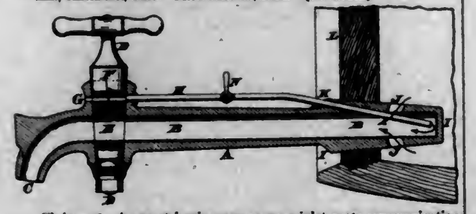
Claim.—1. The combination of the base-plate J, hollow center piece, C, having radial openings and containing a vertically-adjustable cone, F, rods E, extending through said openings and bearing against the cone at their inner ends, and adjustable dogs K, all arranged to operate substantially as set forth.

2. The combination, with the plate J, of a hollow center piece, C, a shaft, W, within the latter threaded to receive a nut and supporting the vertically-adjustable cone F, centering-rods E, extending radially through openings in the center piece and through girders and bearing against the cone, and dogs K, pivoted to the face-plate J, substantially as set forth.

3. The combination, with the plate J, hollow center piece, adjustable cone, and radiating centering-rods extending through openings in the center piece, of springs H H', tending to force the cone outwardly and the rods inward against the cone, substantially as set forth.

4. The combination, with the radially-adjustable rods, of detachable shoes N, adapted to fit the end of the rods, substantially as and for the purpose set forth.

325,316. BEER-FAUCET. EDWARD A. BYRNE and JAMES P. LENAHAN, Cincinnati, Ohio. Filed June 18, 1884. (No model.)



Claim.—1. A faucet having one or more inlet-ports communicating with its main or discharge channel, and a device for admitting air into said channel in the rear of said ports when the plug is opened, substantially as herein described.

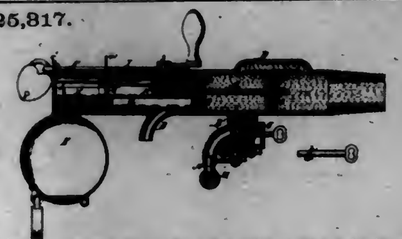
2. A faucet having one or more inlet-ports communicating with its main or discharge channel, a device for admitting air into said channel in the rear of said ports when the plug is opened, and an independent appliance for controlling the flow of air through said device, substantially as described.

3. A faucet having an inlet-port on its lower side communicating with the main or discharge channel and a device for admitting air into said channel in the rear of said port when the plug is opened, substantially as herein described.

4. The combination of faucet A B C I, channeled plug D E F, opening G, and air-duct H, whose discharging end is located in the rear of inlet port or ports J, as and for the purpose specified.

5. The combination of faucet A B C I, channeled plug D E F, opening G, and duct H, the latter being provided with an independent appliance for regulating the entrance of air and having its discharging end located in the rear of inlet port or ports J, as and for the purpose specified.

325,317. MEASURING-FAUCET. JOHN R. CAREY, Gladbrook, Iowa. Filed Mar. 7, 1885. (No model.)



Claim.—1. In a faucet, the combination of tube A, having spout B, and slot c, the piston-head F, cylinder G, plunger H, stud b, and lever J, substantially as shown and described.

2. The combination of tube A, having slot c and discharge-spout B, piston-head F, cylinder G, having perforated diaphragm e, plunger H, with means for moving it back and forth, slotted plug K, and cash-receptacle E, substantially as shown and specified.

3. In a faucet, the cash and liquid regulating piston, consisting of the adjustable heads F F', the cylinder G, in two parts, connected by lugs n n, and provided with a perforated diaphragm, e, and a movable plunger, H, all constructed, arranged, and adapted to operate substantially as set forth.

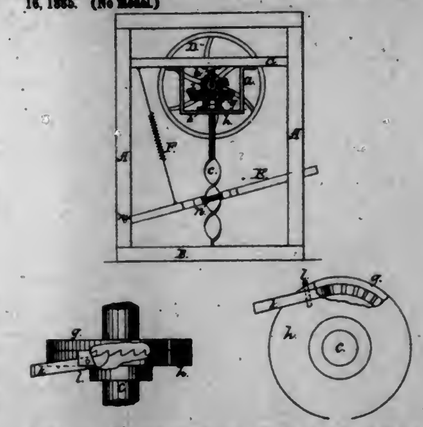
4. In combination with a cash receiving and discharging and a liquid-measuring piston, substantially as described, the faucet-tube A, having cash receiving and discharging slots c f, discharge-spout B, and lateral conduit D, substantially as set forth.

5. In combination with an automatic cash-receiving and liquid-measuring faucet, substantially as specified, the supplemental cock B', adapted to be locked, as set forth.

6. In combination with a cash-receiving and liquid-measuring faucet, as described, the supplemental cock B', having lock g, substantially as set forth.

7. In combination with a cash-receiving and liquid-dispensing faucet, as described, the supplemental cock B', having handle M, provided with bolt N, substantially as set forth.

325,318. MOTOR. TOLIVER L. CRISMAN, Sherman, Tex. Filed July 16, 1885. (No model.)



Claim.—1. The combination, in a motor, of the vertical spiral e with a treadle having rollers n n, and a disk, h, carrying pawl k, substantially as set forth.

2. In a motor, the combination of the disk h, ratchet g, and gear-wheel d, with pinion e, crank-shaft f, and band-wheel D, substantially as described.

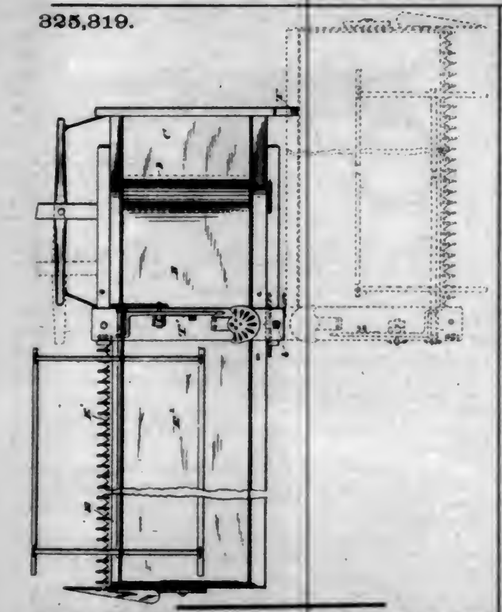
325,319. HARVESTER. WM. P. COCHRANE, Harper's Ferry, W. Va. Filed Sept. 19, 1884. (No model.)

Claim.—1. In a harvester, and in combination with the main frame thereof, a reel, the support whereof is pivotally secured to the main frame to permit the reel to be swung to the rear of the machine, substantially as described.

2. In a harvester, and in combination with the main frame thereof, a platform and reel standard pivoted to the main frame and adapted to be swung in rear thereof, substantially as described.

3. In a harvester such as indicated, the combination of the main frame, the platform and reel support pivotally attached to the main frame upon the same axis, and the bolt for detachably securing the front end of platform and reel support to the main frame, substantially as described.

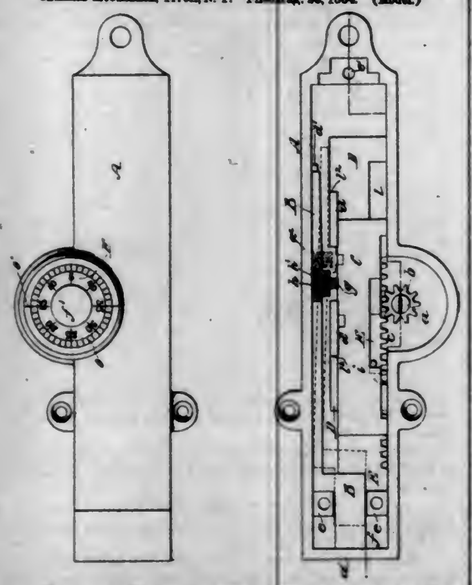
325,319.



325,320. BOOT AND SHOE BLACKING. GEORGE S. COLBURN, Gardner, Mass. Filed Mar. 16, 1885. (No specimens.)

Claim.—A blacking composition for boots, shoes, and other articles of leather, comprising one part neat's-foot oil, four parts alcohol, lamp-black to color the same, and fifteen parts of gum-shellac, mixed together substantially as specified, all substantially as and for the purposes described.

325,321. COMBINATION-LOCK. THOMAS H. COLE, East Albany, and CHARLES MCCARREN, Tivoli, N. Y. Filed Aug. 28, 1884. (Model.)

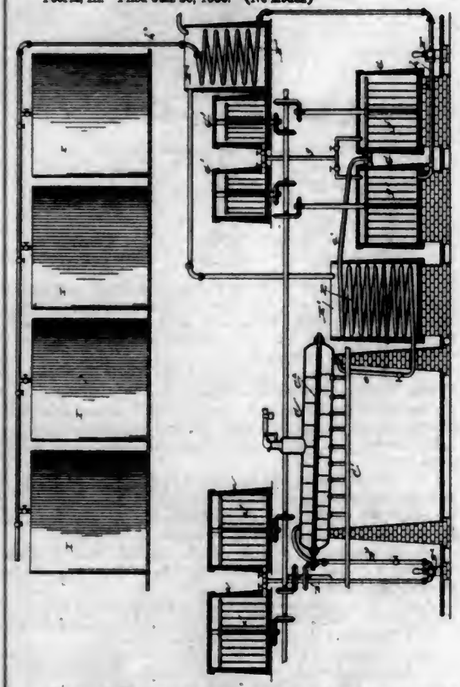


Claim.—1. The box A, formed or provided with the lug *d'*, the bolt B, formed or provided with the lug *g*, and the spring A, adapted to press the bolt inward in the box, in combination with the tumblers C C', plate E, provided with a pin for operating the tumblers, and notched at its edge to receive the lug *g* of bolt B for moving the bolt longitudinally, division-plates between the tumblers and plate E, and means for operating the plate E, substantially as set forth.

2. The box A, formed or provided with the stop-lug *d'*, and the bolt B, formed or provided with the lug *g*, placed in the box A and pressed inward by the spring A, in combination with the notched tumblers C C', division-plates D, and operating-plate E, provided with pin *i*, for operating the tumblers, and notched at its edge with the beveled notch *j k* for receiving the lug *g* and moving the bolt B both longitudinally and laterally, the plate E being formed with the rack *e* to receive the pinion *b* on bolt *a*, substantially as and for the purposes described.

3. In a combination-lock, the lock-box A, the sliding tumblers C C', separate division-plates D, and operating-plate E, held in place in the box A of the lock by the removable back plate, means for operating said plate E, spring *p*, and lugs *d d*, formed in the box A, substantially as described.

325,322. PROCESS OF MAKING WHISKY. CHARLES S. CORNING, Peoria, Ill. Filed Jan. 20, 1885. (No model.)



Claim.—1. The process of making spirituous liquors, which consists, first, in mixing the grain with water, slop, or other liquid in a heated state or subject to heat in an open vessel, then forcing it into and through, continuously, a closed vessel, where it is subjected to a high degree of heat and pressure, and through a cooling device to the converters, where the small grain is added, and, finally, passing from the converters through a second cooling device to the fermenting-tube, substantially as shown and described.

2. The process of making spirituous liquors, consisting of preparing the mash and converting in one tub of each pair while the others are in use, and passing the material in a continuous flow through the apparatus, substantially as shown and described.

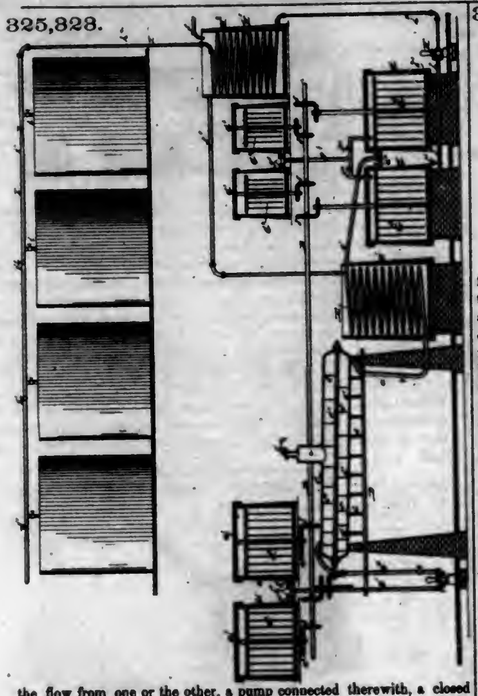
3. The process of making spirituous liquors, which consists in mixing the grain with water, slop, or other liquid in a pair of mixing-tube having a single outlet-pipe connected to a scalder, forcing said mixture continuously into and through the scalder, subject to heat and pressure, and through a cooling device into a pair of converters provided with valves to control the flow, and then passing the small grain from one or more grain-tubs into the converters, and then forcing the material from the converters through a cooling device into the fermenting-tubs, substantially as shown and described.

325,323. APPARATUS FOR MASHING GRAIN IN DISTILLERIES. CHARLES S. CORNING, Peoria, Ill. Filed Jan. 20, 1885. (No model.)

Claim.—1. In an apparatus for mashing grain, &c., the combination of an open vessel for mixing the grain, water, and slop, a closed scalding-vessel connected to said open vessel, with means to force material from said mixer into the scalder, a converter connected to the scalder by cooling-pipes, and the said converter being connected to fermenting-tubs, substantially as shown and described.

2. In an apparatus for mashing grain for distilleries, a pair of mixing-tube having a single outlet-pipe provided with valves for controlling the flow from one or the other, a pump connected therewith, a closed scalding-vessel, with one end of which the pump is connected, and a cooling device connected to the other end of the scalder, in combination with a pair of converting-tubs connected to the cooler by a pipe having valves to control the flow to either tub, a small-grain tub similarly connected to these tubs, a pump connected to the converting-tubs, and also to a cooling device interposed between the pump and the fermenting-tubs, whereby the mash is prepared and converted in one tub of each pair while the other is in use, and a continuous flow of material through the apparatus is obtained, substantially as and for the purpose set forth.

325,328.



325,324. STEREOTYPE-PLATE AND MEANS FOR SECURING IT IN PRINTERS' FORMS. J. RAYMOND CUMMINGS, Chicago, Ill., assignor of one-third to Joseph P. Ellacott, same place. Filed Mar. 6, 1884. (No model.)



Claim.—1. A stereotype-plate provided with a side flange set so that its outer surface is at a slightly acute angle to the surface of the plate, so that when the form is locked the rule will press against the upper part of the outer surface of the flange, and thereby press the other edge of the plate down upon the base.

2. The combination of a stereotype-plate having at one side edge a fastening-flange, a base retreating at the upper part of one edge, the retreating surface being roughened, and column-rules which when the form is locked bear against the flange and force its inner surface against the roughened surface of the base.

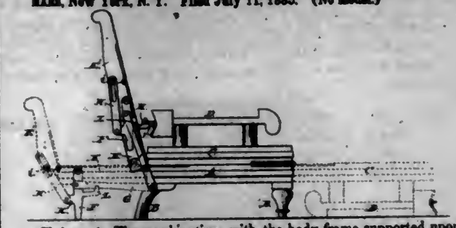
325,325. PENCIL-CASE. JOHN DEKER, Newark, N. J. Filed Nov. 26, 1884. (No model.)



Claim.—1. The herein-described case for pencils and similar implements, consisting of the tube *l*, having a layer of fibrous material, *n*, cemented thereto, and an outer layer composed of triangular slabs of shell or similar material having their narrow ends arranged alternately in opposite directions with the overlapping caps *c d* applied thereto, substantially as shown.

2. The combination of the tube *l*, the layer of paper or cloth *n*, and the triangular slabs of shell, arranged substantially as and for the purpose set forth.

325,326. COMBINED EASY-CHAIR AND COUCH. JOHN V. H. DITMARS, New York, N. Y. Filed July 11, 1885. (No model.)

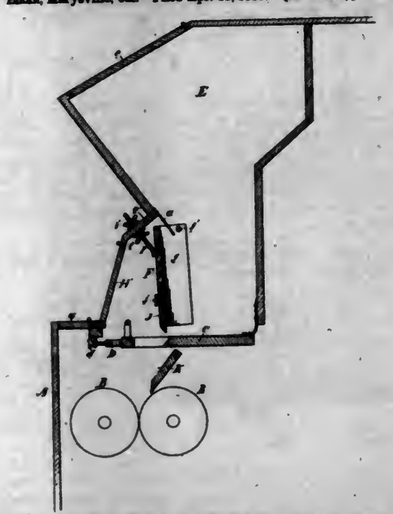


Claim.—1. The combination, with the body-frame supported upon four legs, of a seat-frame pivoted to the front edge of the body-frame to fold over thereon and open out therefrom, and which is provided with arms fixed to serve as its supports when opened out, and of a back-frame constructed in two sections and hinged to the rear edge of the body-frame, to fold up at an angle thereto and to open out therefrom, said back-frame having its inner section supported upon a pivoted leg, and its outer section adjusted and stayed at an angle with the first by a slotted link connecting it with said leg, all substantially in the manner and for the purpose herein set forth.

2. The combination, with the body-frame, and with the back-frame hinged thereto, constructed in two sections hinged together, of legs pivoted laterally to the outer end of the inner section, links coupling said legs each to the body-frame below its hinged joint with the back, and slotted links pivoted to offsets projecting from said legs and engaging each by means of its slot a pin upon the side of the outer hinged section, substantially in the manner and for the purpose herein set forth.

3. The combination, in a combined chair and couch, with the body-frame, the legs pivoted laterally to the back-frame, which is hinged to the rear edge of the body-frame, the seat-frame hinged to the front edge of the body-frame, and the inner ends of the arms fixed upon said seat-frame, of links hinged to the inner end of said arms, to drop open by their weight when the arms are in position upon the chair, and hooks projecting from the pivoted legs to engage said links when the back-frame is elevated in its normal position to complete the chair, substantially in the manner and for the purpose herein set forth.

325,327. MILL-STOCK FEEDER. GEORGE DOWNIE and ALBERT F. EMAN, Marysville, Cal. Filed Apr. 13, 1885. (No model.)

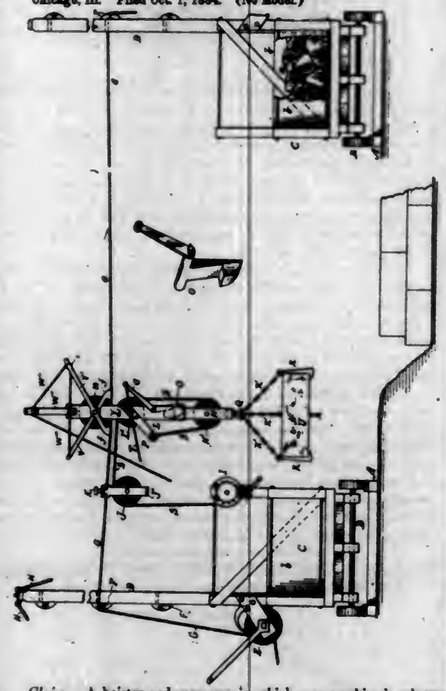


Claim.—1. In a mill-stock feeder, the combination of the hopper E and shaker C under its throat with the gate F, forming the front wall of the throat of the hopper, the flanges *f* on the ends or sides of the gate, extending inwardly into the throat of the hopper, and the pivots *f'* in the upper inner corners of said flanges, substantially as herein described.

2. In a mill-stock feeder, the shaker C and the hopper E, having an outwardly-inclined flange, *e'*, on its forward wall, and a door, H, hinged to the flange, in combination with the vertically-arranged gate F, forming the front wall of the throat of the hopper, its lower end being in close relation with the front edge of the shaker, the pivots *f'*, by which the gate F is suspended, and the guard-plate G, substantially as herein described.

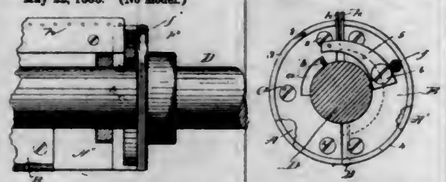
3. A mill-stock feeder comprising the shaker C, the hopper E, the swinging gate F, forming the front wall of the throat of the hopper, and having its lower edge in close relation with the discharge edge of the shaker, and the swinging or pivoted directing-board K under the discharge end of the shaker and adapted to receive the stuff therefrom and deliver it to rolls or other machine below, substantially as herein described.

325,328. HOISTING AND CONVEYING APPARATUS. LEVI EARTH, Chicago, Ill. Filed Oct. 1, 1884. (No model.)



Claim.—A hoister and conveyer in which are combined, substantially as specified, temporary or portable tracks, trucks or cars, an elevated cable supported by and suspended between the said trucks or cars, a traveler or conveyer on said cable, brake mechanism carried by the traveler or conveyer, hoisting-tackle supported by or depending from the traveler or conveyer, and tackle for working the traveler or conveyer and the brake mechanism, and for raising and lowering the load, for the purposes set forth.

325,329. BUFFING-ROLL. FRANK H. EMERSON, Lynn, Mass. Filed May 22, 1885. (No model.)



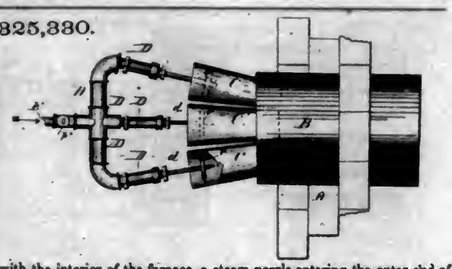
Claim.—1. The herein-described buffing-roll, comprising two semi-cylindrical sections hinged together to open away from one another to receive the buffing material, and cam-surfaces, substantially as described, applied to one of said sections at its opposite ends, combined with a shaft and disks arranged thereon at the ends of the roll, and having pins co-operating with the cam-surfaces, substantially as set forth.

2. The shaft provided with a pin, 5, and having the fixed disks F, provided with pins f', combined with the two semi-cylindrical halves or shells A A', hinged together, and having at their opposite ends plates C and E, the plate E having cam-surfaces 5, all to operate substantially for the purpose set forth.

325,330. AIR-BLAST MECHANISM FOR FURNACES. THOMAS J. PENNELL, Elmira, N. Y. Filed Apr. 28, 1885. (No model.)

Claim.—1. In combination with the wall of a furnace, an injector-blower consisting of a frustum having its smaller end communicating

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with the interior of the furnace, a steam-nozzle entering the outer end of the frustum, and a plate of less diameter than the frustum surrounding said nozzle, as set forth.

2. An injector-blower consisting of a frustum, its front end communicating with the furnace, and similar frustums at each side thereof, all inclined to a common center, each frustum being provided with a steam-jet nozzle and surrounding disk, as set forth.

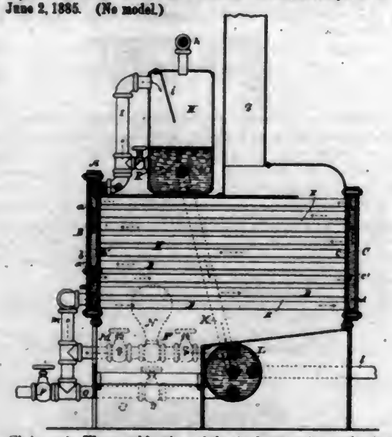
3. The combination, with the wall of a furnace, of a thimble embedded therein, a series of hollow frustums leading into said thimble, a steam-jet nozzle leading into each cone, and a disk of smaller diameter than the frustums surrounding the nozzle within each frustum, as set forth.

325,331. THILL-COUPLING. ADELBERT FILKINS, Maltaville, N. Y. Filed June 11, 1885. (No model.)



Claim.—In a thill-coupling, the tie-bar C, perforated for the passage therethrough of clip-bolts B', and having cast thereon at its front end a three-sided housing, C', the bottom of which is perforated for the reception of a set-screw, and the side walls of which are perforated to form bearings for the bolt D' of the shank-iron, in combination with the cushion F, concaved as at F^2, and provided with the textile covering F^3, the rear end of said cushion being vertically grooved, as at F', adapted to straddle the clip B, and the follower-plate E', grooved as at E^2, substantially as shown and described.

325,332. STEAM-BOILER. WILLIAM FLAGG, Brooklyn, N. Y. Filed June 2, 1885. (No model.)



Claim.—1. The combination of the feed-water drum, the front and rear water-spaces of the boiler, the boiler-tubes, means by which the boiler has communicating connection with the feed-water drum, the steam-dome, the water-circulating pipe having inlet communication with it and communicating with the boiler, and the return-water-circulating pipe communicating with the steam-dome and feed-water drum, substantially as and for the purpose set forth.

2. The combination of the boiler-tubes, the inner and outer plates constituting the front water-space extending from side to side of the boiler, the partition a', and the inner and outer plates constituting the

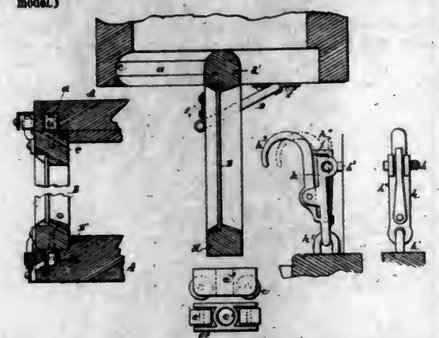
rear water-space, likewise extending from side to side of the boiler, substantially as and for the purpose set forth.

3. The combination of the boiler, the steam-dome, the water-circulating pipe by which the water ascends from the boiler to the steam-dome, the return-water-circulating pipe, the feed-water drum communicating with the steam-dome by way of the return-water-circulating pipe, means by which the water is conducted from the feed-water drum to the boiler, and the pump by which a forced circulation of the water through the boiler and water-circulating pipes is kept up, substantially as and for the purpose set forth.

4. The combination of the boiler, the steam-dome, its deflector projecting downwardly and terminating above the water-level, and the pipe I, connecting the steam dome and boiler and from which the water issues against the deflector, substantially as and for the purpose set forth.

5. The combination of the feed-water drum, the boiler, the pipe M m, having communication with the boiler and feed-water drum, the pump, the pipe O, the valves of the pipes M and O, the steam-dome, the water-circulating pipe I, and the return-water-circulating pipe, substantially as and for the purpose set forth.

325,333. WINDOW CONSTRUCTION AND FASTENING AND HINGE. OLE FLAGSTAD, Hamar, Norway. Filed May 6, 1885. (No model.)



Claim.—1. The combination, with a window-frame, and a sash provided near one end with bearings, which latter engage grooves or tracks formed in a' secured to the frame, of rods pivoted to the sash and frame, substantially as and for the purpose set forth.

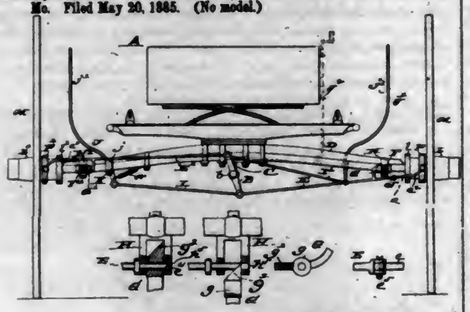
2. The combination, with a window-frame and a window-sash, of rollers journaled to the sash near one end thereof, and engaging corresponding tracks or ways in the frame, and rods pivoted to the frame and sash, substantially as shown.

3. The combination, with a grooved frame and a window-sash, of the rollers secured to the sash and engaging the grooves, and the bent rods connecting the frame and sash.

4. The combination, with a window-frame and a swinging sash, of a metal strip located between the sash and frame, substantially as and for the purpose set forth.

5. The combination, with a window-frame having upper and lower grooves, and the water-outlets g, and a window-sash having bearings, which latter rest within said grooves, of the rods pivoted to the sash and frame.

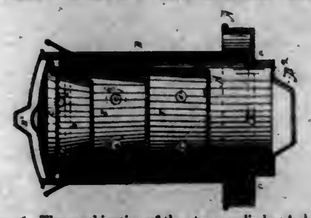
325,334. HORSE-DETACHER. ALEXANDER F. GODEFROY, St. Louis, Mo. Filed May 20, 1885. (No model.)



Claim.—1. The combination of the axle D, the lever B, the rods E E' I, the collars P P', and the hubs L L', having the flanges l l', substantially as described.

2. The combination of the axle D, the pivoted lever B, the rods E E' I, the bolts F F', the thill-irons G G', the axle-clips H H', the collars P P', and the hubs L L', having the flanges l l', substantially as and for the purpose set forth.

325,335. STEAM COOKING APPARATUS. JOHN J. HADEN and WILLIAM S. GOEBLE, Texarkana, Ark. Filed Feb. 20, 1885. (No model.)

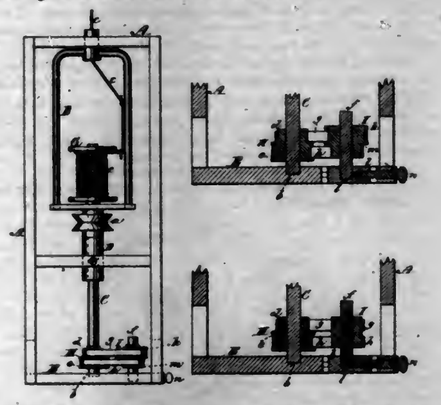


Claim.—1. The combination of the steam-cylinder A, having a water-pan, A', surrounding it, and having perforations a, with the vessels D, E, and F, resting on the rim of said cylinder, and cylindrical cover B, having perforations b and steam-drum B', all substantially as shown and described.

2. The combination of the steam-cylinder A, having the water-pan A', with vessel D, having perforations d, vessel E, having perforations e immediately below the bottom of vessel D, and corresponding in position with the upper perforations, f, in the larger vessel, F, vessel F, having two rows of perforations, f and f', the upper row, f, being larger and corresponding to the perforations e in the vessel E, the lower row, f', being immediately below the bottom of the vessel E, and cylindrical cover B, having steam-drum B' and perforations b, all substantially as shown and described.

325,336. FRICTION DEVICE FOR SPOOLS IN CORDAGE AND TWINE MAKING MACHINES. BERNICE S. HALE and JAMES B. HALE, Malden, Mass. Filed Aug. 28, 1884. (No model.)

Brief.—One of a pair of pulleys is connected with the spindle of the spool, and the other is mounted and capable of revolving on an independent stud, one or both of said pulleys having portions of different diameters and being connected by two parallel belts passing from the different sized portions of one pulley to the opposite pulley, whereby as the pulleys are rapidly revolved a gradual slip of one or both of the belts is produced and the required friction created. The independent stud carrying one pulley is adjustable to and from the spool-spindle by a screw working a slide on which the stud is mounted.



Claim.—1. A spindle, a pulley rigidly secured thereto and having portions of different diameters, in combination with a second pulley, a support therefor, and a pair of belts connecting both pulleys, substantially as described, whereby the belt from the larger portion of the first pulley tends to revolve the second pulley faster than the belt from the smaller portion of the first pulley, and a gradual slip and friction occurs during rotation of the pulleys, substantially as shown and described.

2. A spindle, a pulley having portions of different diameters, in combination with a second pulley, a support for the same, and a pair of parallel belts moving in the same direction and connecting the pulleys, substantially as described, whereby the belt from the larger portion of the first pulley tends to revolve the second pulley faster than the belt from the smaller portion of the first pulley, and a gradual slip and friction occurs during the rotation of the pulleys, substantially as herein shown and described.

3. A spindle, a pulley having portions of different diameters, a vertical stud and second pulley, and pair of belts connecting the two pulleys, in combination with a slide carrying the second pulley and a screw

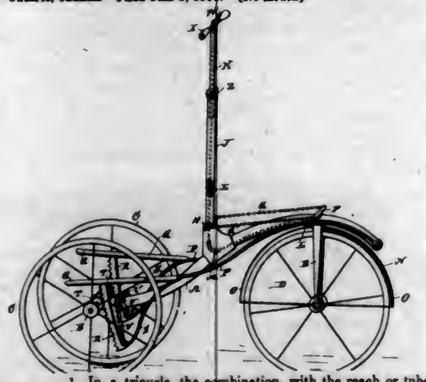
or other equivalent device for adjusting the position of the slide, substantially as shown and described.

325,337. MAP-RACK. ARTHUR H. HALL, Chicago, Ill. Filed Nov. 10, 1884. (No model.)



Claim.—In a map-rack adapted to contain a series of spring-actuated map-rollers in different positions, a series of stops located in different longitudinal planes at or near the front edges of the ends of the case and forming concavities or irregular faces for the lower ends of the maps to engage in, substantially as and for the purpose described.

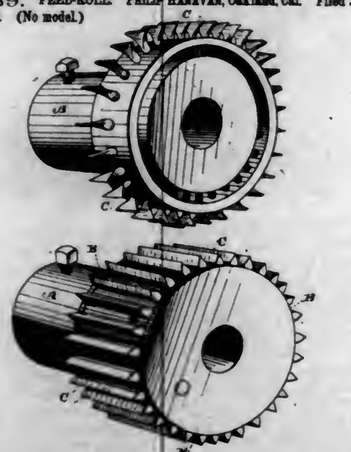
325,338. TRICYCLE. THOMAS P. HALL and JAMES B. HALL, Toronto, Ontario, Canada. Filed Jan. 5, 1885. (No model.)



1. In a tricycle, the combination, with the reach or tube A, of driving-wheels and foot-levers for operating them, the steering-wheel D, the guard-frame O on the same, and the brake-band N, held to the said frame in front of the wheel and to a chain or wire connected with the brake-lever, substantially as herein shown and described.

2. In a tricycle, the combination, with the reach or tube A, of driving-wheels and foot-levers for operating them, vertical tubes on the reach and adapted to turn on their longitudinal axes, a brake-lever, W, on the said tube, and the brake chain or wire L, connected with the lever W and with the brake, and passed through the above-mentioned tubes, substantially as herein shown and described.

325,339. FEED-ROLL. PHILIP HANAVAN, Oakland, Cal. Filed June 1, 1885. (No model.)



Claim.—1. In a feed-roll for wood-working machinery, the roll having the independent adjustable flat-edged teeth projecting around its periphery, and having their inner ends secured by a filling of fusible metal poured into the channel between and around the independent teeth, substantially as herein described.

2. In a feed-roll for wood-working machinery, the hub having a rim or flanges with their intervening channel, in combination with independent adjustable teeth or plates set into the rim, and a filling of fusible metal poured in and around said teeth, whereby they are held, substantially as herein described.

3. In a feed-roll for wood-working machinery, a hub having a rim or flanges projecting therefrom, and having holes or indentations in its sides, in combination with independent radially-placed teeth or plates having openings, perforations, or indentations within the channel, and a filling of fusible metal surrounding said teeth, substantially as herein described.

325,340. MACHINE FOR CLEARING THE SIDES OF RAILROAD-TRACKS. DANIEL M. HARRIS, Aberdeen, Miss. Filed Dec. 15, 1884. (No model.)

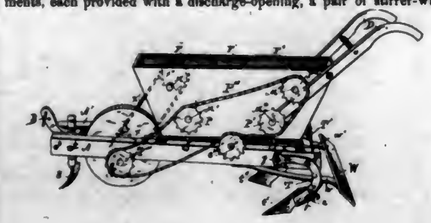


Claim.—1. The combination, with the car provided with a cutter-bar upon each side, of gear-wheels C C, mounted upon the axles of the car-wheels, the shaft *b*, provided with the pinions D D, meshing with said gear-wheels, the crank-shaft *c'*, connected with the cutters and having loosely-mounted pinions *f f*, the sliding clutches *g g*, and levers for operating said clutches, substantially as and for the purposes set forth.

2. The combination, with a car provided with a cutter-bar upon each side, of gear-wheels C C, mounted upon the axles of the car-wheels, the shaft *b*, provided with the pinions D D, meshing with said gear-wheels, the crank-shaft *c'*, connected with the cutters and having loosely-mounted pinions *f f*, the sliding clutches *g g*, and levers for operating said clutches to throw either of the cutters into operation, and a pawl-and-ratchet capstan, and connection between said capstan and the cutter-bars, substantially as and for the purpose described.

325,341. COMBINED PLANTER AND FERTILIZER-DISTRIBUTER. SIDNEY W. HATCHER, Knoxville, Ga. Filed May 25, 1885. (No model.)

Claim.—1. In a combined planter, fertilizer-distributer, and cultivator, the combination of a pair of beams adapted to be adjustably connected, as described, with a detachable hopper having three compartments, each provided with a discharge-opening, a pair of stirrer-wheel



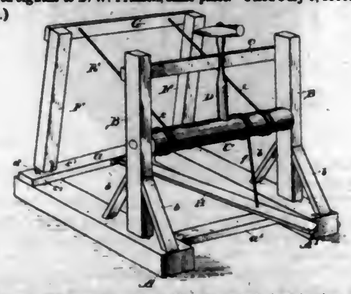
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shafts journaled in the sides of each end compartment, and a pocket-wheel shaft connected with the bottom of the central part of the hopper, as set forth, the said shafts provided with chain-wheels, whereby they are adapted to be driven from the chain-wheels of a ground-wheel axle, substantially as and for the purpose specified.

2. In combination with the beams A A', a perforated brace for adjustably connecting the rear ends thereof, a ground-wheel having an axle provided at each end with a chain-wheel, a hopper having three compartments with discharge-openings in the bottom of each, a pocket-wheel adapted to operate under the central compartment, and the end compartments provided with upper and lower shafts carrying stirrers and chain-wheels, as described, the pocket-wheel, lower stirrers, and the upper stirrer of the rear compartment adapted to be driven by a single chain, and the upper stirrer of the front compartment operated by a separate chain, substantially as described.

325,342. OLIVER. MINNIE HEADEN, Christiansburg, Va., assignor of seven-eighths to D. W. Frizzell, same place. Filed July 9, 1885. (No model.)



Claim.—1. The combination, with a journaled shaft having an arm or handle secured thereto, and a hammer secured to said arm or handle, of means for partially rotating the shaft to lower the hammer, a spring-actuated frame, and ropes or chains secured to the frame and wrapped around and secured to the journaled shaft, substantially as set forth.

2. The combination, with a journaled shaft carrying an arm or handle, and a hammer secured to the outer end of the arm or handle, of a spring-actuated frame, ropes or chains connecting the frame and shaft, said ropes or chains being wrapped upon the shaft, and another rope or chain wrapped one or more times around the shaft, whereby, upon pulling said rope or chain, the shaft is partially rotated, as set forth.

3. The combination, with a journaled shaft carrying an arm or handle, and a hammer secured to said arm or handle, of a spring-actuated frame, ropes or chains secured to the frame and wrapped around and secured to the shaft, a swiveled foot-lever, and a rope or chain connecting the foot-lever with the shaft and wrapped around the said shaft, as set forth.

4. The combination, with a journaled shaft carrying an arm or handle, and a hammer secured to said arm or handle, of a spring-actuated frame, ropes or chains secured to the frame and wrapped around and secured to the shaft, a rope or chain wrapped around and secured to the shaft, and a stop, substantially as set forth.

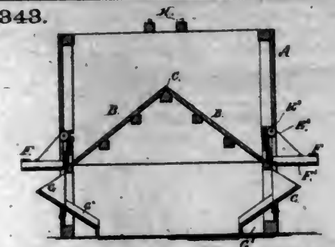
5. The combination, with a journal-shaft carrying an arm or handle, and a hammer secured to said arm or handle, of a spring-actuated frame, ropes or chains secured to the frame and wrapped around and secured to the shaft, a swiveled foot-lever, a rope or chain secured to the same and wrapped around and secured to the shaft, and a stop, as set forth.

6. The combination, with a journaled shaft carrying an arm having a hammer secured at its outer end, of a frame, spring-rods secured to the lower ends of the uprights composing the frame and to the supporting-base, ropes or chains secured to the frame and wrapped around and secured to the shaft, and means for partially rotating the shaft to cause the hammer to be raised and lowered, as set forth.

325,343. AUTOMATIC SCREEN CHUTE, GATE, COAL-BIN, &c. B. KEPNER, Philadelphia, Pa. Filed June 30, 1885. (No model.)

Claim.—1. The combination of a coal-hopper having an inclined bottom and a discharge-opening, a vertically-sliding gate to close the discharge-opening, a hinged spring-chute arranged on the outer side of the coal-receptacle at the lower side of the discharge-opening, a flat spring bearing on the upper edge of the gate, and a cord attached to the chute passing over a pulley and connected to the gate, as and for the purposes set forth.

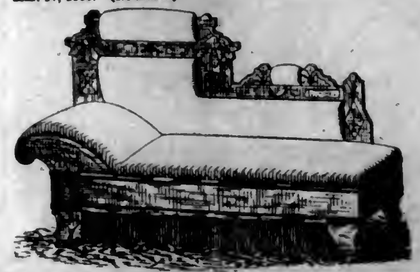
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2. The combination, with the coal-hopper A, having discharge-opening D, of the screen F, hinged to said receptacle below the discharge-opening, and the return-chute G, extending beyond the hopper, its inner end, G^2, projected beneath the hopper and forming the dust-box G', substantially as shown and described.

3. The combination of the hopper A, having double-inclined bottom B B and discharge-openings D, track H, located immediately over the apex of the bottom, vertically-sliding doors E, flat spring E', hinged spring-chutes F, cord E^2, connecting the latter with the doors, return-chute G, and screen-extension G^2, forming the dust-receptacles G', the parts constructed, arranged, and operating substantially as shown and described.

325,344. BED-LOUNGE. GEO. E. KRAUER, Indianapolis, Ind. Filed Mar. 17, 1885. (No model.)



Claim.—1. The combination, in a bed-lounge, of the main section A, hinged section B, receptacle C, constructed to fit within the frame A at its top and being secured therein, the bottom of said receptacle being formed of cross-slats and canvas secured thereon, the end slats being a short distance from the end of the receptacle and the end of the canvas being secured thereto, thereby providing an opening, c^3, at each end for the discharge of dirt, &c., and a hinged bed, D, hinged at one side to the frame A and resting upon the top edge of said receptacle C when in a closed-down position, substantially as set forth.

2. The combination, in a bed-lounge, of the main section A, hinged section B, receptacle C, secured to said frame A, hinged bed D, and legs E, secured to the strip E', said strip E' hinged to the frame B by the hinges E^2, a sufficient space being left between the top edge of said strip and the joint of the hinge to allow said strip to be turned entirely over into the bed, substantially as described, and for the purposes specified.

3. The combination, in a bed-lounge, of the main section A, hinged section B, legs E, secured to the strip E', said strip E' hinged to the frame B by the hinges E^2, said hinge E^2, one strap of which is bent and thus adapted to fit onto two sides of the side piece, and thereby permit screws to be inserted through it in two directions, and the other of which is secured to the strip E' at a distance from the joint of said hinge sufficient to permit said strip to be turned entirely over the edge of the side piece into the bed, and means for securing said strip and legs in position to support the frame B, substantially as set forth.

4. The combination, with the hinged section of a bed-lounge, of hinged legs hinged to the outer side thereof, a space being left between the top of the leg or piece to which it is secured and the joint of the hinge sufficient to permit said legs to be turned up over the edge of the side piece to which it is hinged from a position supporting said section to a position on or in the bed, substantially as set forth.

325,345. CARPET-STRETCHER. LEVI KEIM, Frankfort, Ind. Filed May 16, 1885. (No model.)

Claim.—In a carpet-stretcher, a grooved ratchet-wheel, a bifurcated lever having its side arms formed with elongated slots, and a dog formed in the bifurcation to engage with the ratchet-wheel, the axle thereof extending through the slots and supported by standards, in combination with an adjustable spring-pawl, a cord and hook, and a bar and cross-head provided with spurs, substantially as and for the purpose set forth.

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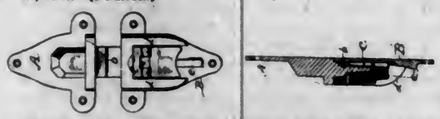


325,346. BOSOM-BOARD. SYLVESTER J. LACKEY, Indianapolis, Ind. Filed Dec. 9, 1884. (No model.)



Claim.—The bosom-board *b*, having projections *p* on its sides and lower end and solid neck-piece *n*, hook *h*, frame *f*, with rabbets *r* on its sides and lower end, arranged so that board *b* projects above the plane of the sides of frame *f*, and spring-catch *c*, all combined substantially as described.

325,347. TRUNK-CATCH. JAS. H. LADD, Bristol, Conn. Filed Mar. 30, 1885. (No model.)



Claim.—1. In a trunk-catch, a base-plate provided with a mortise, in combination with a companion plate having a jointed tenon adapted to be passed through said mortise and folded backward upon itself, substantially as herein described, and for the purpose specified.

2. In combination with a base-plate provided with both the stop-rib *c* and a mortise having extended side walls, a companion plate having a jointed tenon adapted to be passed through said mortise and folded back upon itself to prevent the withdrawal of said tenon, as described, and for the purpose specified.

3. In combination with a base-plate provided with a mortise and a companion plate having a jointed tenon adapted to be passed through said mortise and then folded backward upon itself to prevent the withdrawal of said tenon, a spring which, bearing on the flattened hinged end of the folding section, acts to hold said section in either an opened or closed position, as desired, substantially as described.

4. In a trunk-catch, a base-plate provided with a mortise, in combination with a companion plate having a rigid tenon adapted to enter said mortise, the two forming a dowel, and a locking device hinged or jointed thereto, said locking device and its joint being located on that part of the tenon which enters said mortise, substantially as described, and for the purpose specified.

325,348. FARE-BOX. FRANK O. LANDGRAFF and MILTON E. WILLIS, San Francisco, Cal. Filed Jan. 16, 1885. (No model.)

Claim.—In a fare-box, a four-sided table journaled so as to rotate within a casing, and having a cam with concave sides on the journal J, corresponding with the faces of the table, in combination with rollers journaled in lever-arms on two sides of journal J, so as to fit said cavities in the cam, and springs connecting the levers, substantially as herein described.

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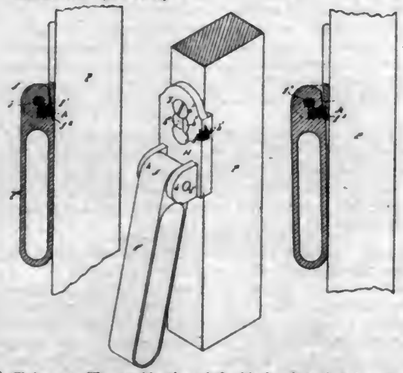


325,349. PROCESS OF EXTRACTING SUGAR FROM JUICES, SIRUPS, &c. LOUIS LEFRANC, Tracy-le-Val, France. Filed June 12, 1885. (No specimens.)

Claim.—1. The improvement in the art of extracting sugar from saccharine liquid, consisting in adding to the liquid more than sufficient milk of lime and quicklime in powder to produce a soluble sucrate of lime, filtering the solution to remove the excess of lime, heating the filtered solution to about 100° centigrade, returning to the solution the lime previously removed by filtration, refiltering to separate the tribasic sucrate of lime from the mother-waters, then adding quicklime to the resulting mother-waters, filtering the mixture to extract the excess of lime, adding to the filtered liquid, first, a salt of lime in sufficient quantity to form tribasic sucrate of lime, and afterward an alkaline or alkaline earthy base to transform the remaining sugar into tribasic sucrate of lime, and, finally, filtering the liquor from the sucrate, all substantially as herein described.

2. In the process of converting the sugar of saccharine solutions into sucrate of lime by first adding lime to produce a bibasic sucrate solution and afterward heating that solution to obtain the tribasic sucrate, the filtering of the excess of lime from the bibasic solution before heating, and the re-addition of the so extracted lime after the cooling and before the subsequent filtration of the tribasic solution, substantially as and for the purpose herein set forth.

325,350. DEVICE FOR CONNECTING PICKING-STRAPS TO THE PICKING-STICKS OF LOOMS. THOMAS H. LOGAN, Lowell, Mass. Filed Jan. 26, 1885. (No model.)



Claim.—1. The combination of the block adapted to be attached to a picking-stick and provided with ears, a loop having a shank pivoted to said ears between the same, and a spring placed between said block and said shank, as and for the purpose specified.

2. The combination of the block adapted to be attached to a picking-stick and provided with ears, a loop having a shank pivoted to said ears between the same and provided with a recess and a spiral spring placed within said recess and compressed between the bottom of said recess and said block, as and for the purpose specified.

3. The combination of the block adapted to be attached to a picking-stick and provided with ears, a loop having a shank pivoted to said ears between the same, and a spring placed between said loop and its pivot and compressed between said shank and said block, said shank extending beyond said pivot on the opposite side of said pivot from said spring to limit the motion of said loop around said pivot, as and for the purpose specified.

4. The combination of the block adapted to be attached to a picking-stick provided with ears having holes, a loop provided with a shank having a pivot-hole oblong horizontally, a cylindrical pivot passing through the holes in said ears and the pivot-hole in said shank, and a spring placed between said block and said shank, as and for the purpose specified.

325,351. PROCESS OF MANUFACTURING PANEL AND WOOD TRIMMINGS. FREDERICK MANKEY, Williamsport, Pa. Filed July 22, 1885. (No model.)



Claim.—The herein-described improved process of ornamenting the surface of wood or analogous material, which consists in first producing in the surface of said material a series of elongated recesses or depressions transversely, or at an angle to the grain; and, secondly, dividing said material into strips, blocks, or pieces by cutting it at an angle to said indentations or recesses; and, thirdly, uniting or securing said strips together, so as to form a surface having a new configuration.

325,352. THILL-COUPLING. ANDREW B. MCKAY, Woodstock, Ontario, Canada. Filed Apr. 16, 1885. (No model.)



Claim.—The herein-described improved thill-coupling, comprising the main section secured to the under side of the axle, and having the integral extension C, the section comprising the plate D, pivoted to the under side of the plate B, lugs at the forward ends of the sections, a bolt passing through said lugs, said sections having the semicircular recesses on their inner sides, the recesses *f*, forming the shoulders *g*, in combination with the thrill-iron having the spherical head, substantially as set forth.

325,353. COPYING PROCESS. WALDO G. MORSE, Rochester, N. Y. Filed May 9, 1884. (No model.)



Claim.—The herein-described copying process, consisting in covering a sheet of india-rubber with a thin film of diluted glycerine, making a transferred impression under pressure of an original writing or drawing on said sheet, and subsequently producing copies from the said transferred impression by subjecting the india-rubber sheet in contact with blank paper to a suitable pressure, substantially as and for the purposes described.

325,354. ROAD-LEVELER. STILLMAN A. MOULTON, San José, Cal. Filed Feb. 18, 1885. (No model.)



Claim.—1. In a road-leveler, a wheeled frame, in combination with the adjustable and jointed scraper-head E, suspended from the frame and provided with a series of spring scrapers or teeth, e, terminating above the horizontal plane of the lowest points of the wheels, substantially as and for the purpose herein described.

2. In a road-leveler, a wheeled frame, in combination with the scraper-head E, suspended from the frame and adapted to be adjusted to various distances above the ground and from the wheels, and the spring scrapers or teeth *e* on the scraper-head, substantially as and for the purpose herein described.

3. In a road-leveler, the wheeled frame B, in combination with the scraper-head E, having teeth *e*, as described, and the means by which said scraper-head is suspended and adjusted, consisting of the vertically-adjustable chains F, and the extensible or adjustable diagonal rods H, secured to the frame, substantially as and for the purpose herein described.

4. In a road-leveler, the suspended transverse sectional and hinged scraper-head E, having scrapers or teeth *e*, said scraper-head being adapted to be bent at the meeting lines of its hinged sections to an angle in horizontal or in a vertical plane, and the series of spring scrapers or teeth *e* carried by said head, substantially as and for the purpose herein described.

5. In a road-leveler, the suspended sectional scraper-head E, having the scrapers or teeth *e*, in combination with the slotted hinge-links I, joining the sections of the scraper-head, and the bolts J and nuts *j*, by which they are fixed, substantially as and for the purpose herein described.

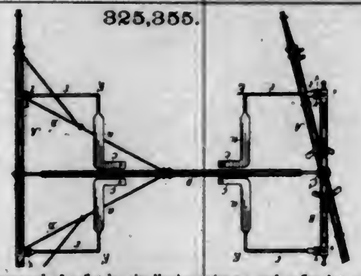
6. The watering-cart A, having wheeled frame B and sprinkler D, in combination with the sectional hinged scraper-head E, having spring scrapers or teeth *e*, the adjustable chains F and rods H, by which the scraper-head is suspended from the frame and adjusted, and the bail K, pivoted elbow-lever L, and rod *l*, by which it is raised out of the way, substantially as and for the purpose herein described.

7. The wheeled frame B and the transverse scraper-head E, suspended from the frame, and having the spring scrapers or teeth *e*, adapted to operate as described, in combination with the side runners or guides, P, connected with the frame in front and extending to the rear of and secured to the scraper-head, substantially as and for the purpose herein described.

325,355. WAGON-SPRING. NELSON A. NEWTON, Kalamazoo, Mich. Filed May 12, 1884. Renewed Mar. 13, 1885. (No model.)

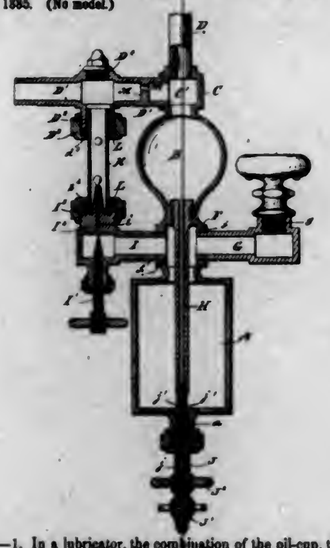
Claim.—A series of wagon-springs, in combination with the wagon body and gear, each consisting of an outer rod, *r*, and an angular inner bar which is attached to said wagon-body, this angular inner bar

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being composed of a flat longitudinal portion, *c*, and a flat lateral portion, *a*, at right angles thereto, all parts of the spring being in one piece, substantially as described.

325,356. LUBRICATOR. ALONZO NOTEMAN, Toledo, Ohio. Filed Jan. 15, 1885. (No model.)



Claim.—1. In a lubricator, the combination of the oil-cup, the condensing-chamber, the pipe H, depending from the condensing-chamber into the oil-cup, and the valve J, having openings *j j'*, and cock J', and turned upward through the oil-cup below the pipe H, substantially as set forth.

2. The combination, with the oil-cup and the pipe H, of a valve, J, whereby the discharge of pipe H may be closed, the said valve J being provided with a second valve, J', and adapted to draw the water from the oil-cup when the valve J' is open, substantially as set forth.

3. The combination of the pipe D, the condenser, the oil-cup, the out feed-pipe through which the oil is conveyed to the cylinder, proper connections between said pipe and the oil-cup, an approximately horizontal pressure-equalizing pipe connecting the out feed-pipe and the pipe D, and a partition located in the pressure-equalizing pipe and having an opening, *m*, substantially as set forth.

4. In a lubricator, the combination of the oil-cup, the condenser, pipes D D', the pipe I, the sight-tube K, the valve I', and the valve J, having cock J', and openings *j* and *j'*, substantially as set forth.

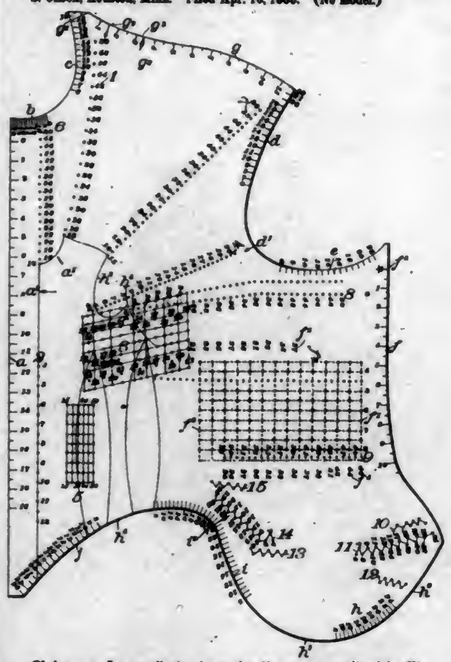
325,357. FENCE-POST. JAMES J. OELVER, Roscoe, Ohio. Filed Mar. 27, 1885. (No model.)



Claim.—1. A fence-post formed of a wooden strip, A, and a second wooden strip, B, of equal dimensions, said strips or sections being placed at right angles to each other to prevent bending or yielding, and the section B having a series of mortises, E, cut therein to receive the rails, and connected by metallic pins C, and bound by encircling wires wound around the sections A and B and the projecting ends of the pins C, substantially as set forth.

2. A fence-post formed of two thin sections of wood placed at right angles to each other, and bolted together by two metal pins whose ends project to form catches for encircling wires, said wires being wrapped around the wooden sections which form the post, and also around the projecting ends of the pins, all substantially as shown and described.

325,358. TAILOR'S CHART FOR CUTTING GARMENTS. JENNIE S. OLSON, Houston, Minn. Filed Apr. 16, 1885. (No model.)



Claim.—1. In a tailor's chart, the diagram as outlined in Fig. 1, and provided with the scales 1 2 3 4 5 6 7 8 9, constructed and arranged substantially as specified.

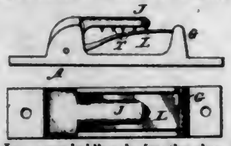
2. In a tailor's chart, the diagram as outlined in Fig. 1, and provided with the scales 1 2 3 4 5 6 7 8 9, in combination with a diagram as shown in Fig. 2, provided with the parts *c' k k' l² l³ f⁵ f⁷*, substantially as specified.

3. In a tailor's chart, the diagram as shown in Fig. 1, provided with scales 1 2 3 4 5 6 7 8 9, in combination with the diagram outlined as shown in Fig. 6, provided with the scales *h i*, substantially as specified.

4. In a tailor's chart, the diagram as outlined in Fig. 1, and provided with the scales 1 2 3 4 5 6 7 8 9, in combination with a rule constructed as shown in Fig. 3, substantially as specified.

325,359. HOLDER FOR HITCHING-STRAPS. CALEB D. PAGE, Morgan, Colo. Filed Dec. 19, 1884. (No model.)

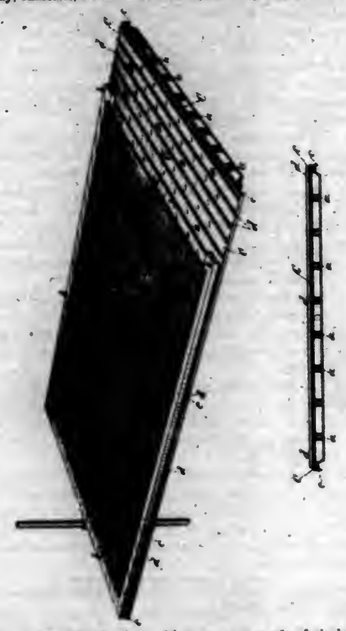
Brief.—Improvement on Patent No. 265,299, dated October 10, 1882.



Claim.—1. In a strap-holding device, the plate A and rigid jaw J, in combination with the spring-actuated pivoted jaw L, limited by the guard G, all substantially as set forth.

2. In a strap-holding device, the combination of the base A, provided with the guard G and the rigid toothed jaw J, with the pivoted jaw L, actuated by the coiled spring S, all arranged substantially as set forth, and for the purposes described.

325,360. FRUIT-DRIER. CYRUS P. ROGERS, Frederica, Del., and Leicester Allen, New York, N. Y., assignors to the Steam Heat Evaporator Company, Charlotta, Mich. Filed Oct. 31, 1884. (No model.)

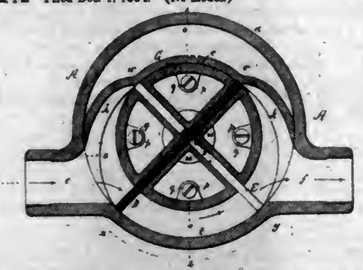


Claim.—1. The combination, with a steam-pan of a fruit-drier, of an attachable and detachable shield for protecting the pan from the accumulation of concreted fruit-juice, substantially as herein described, and for the purpose set forth.

2. The combination, with a steam-pan of a fruit-drier, of an attachable and detachable shield provided with means for holding such shield in proper relation with the steam-pan, and with rigidly-attached supports for the gauze of fruit-trays, substantially as and for the purposes set forth.

3. The combination, with a steam-pan of a fruit-drier, of an attachable or detachable shield for the protection of the pan from juice extracted from fruit, which shield has its front and back edges turned down over the front and back edges of the pan for holding the shield in proper relation with the pan, and for preventing air-currents from passing between the shield and pan, substantially as and for the purposes described.

325,361. ROTARY WATER-METER. JOHN ROWBOTHAM, Philadelphia, Pa. Filed Dec. 1, 1884. (No model.)

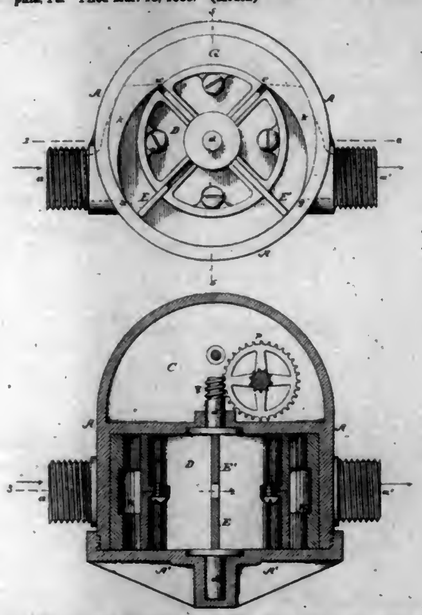


Claim.—1. The herein-described drum for a water-meter, said drum being slotted and made in two parts detachably secured to each other, and having vanes adapted to slide in said slots, substantially as set forth.

2. The herein-described drum for a water-meter, said drum being made in two parts detachably secured to each other, and each part having four sections united by a central hub, and vanes adapted to the slots between the sections, substantially as described.

3. The combination of the meter-casing having a removable cover with a rotary drum provided with journals and bearings for the journals of the drum and indicator-gearing, one of the said journals having a threaded end no larger than its bearing to engage with said gearing, as set forth.

325,362. ROTARY WATER-METER. JOHN ROWBOTHAM, Philadelphia, Pa. Filed Mar. 13, 1885. (Model.)



Claim.—1. The combination of the casing and rotary drum of a water-meter with transverse rigid vanes carried by the drum, and shorter in length than the diameter of the chamber in which they move, substantially as set forth.

2. The combination of the casing and rotary drum of a water-meter with transverse rigid vanes carried by said drum, the said vanes being shorter in length than the diameter of the chamber in which they move, and crossing each other, and having notches considerably greater in width than the extent of motion of the vanes, as set forth.

3. A water-meter consisting of a casing having a working-chamber with eccentric surfaces *w x* and *y v* and concentric surfaces *w v* and *x y*, with the measuring-surface *x y* at the bottom, and a rotary drum carrying rigid vanes shorter than the diameter of the working-chamber, as and for the purpose set forth.

4. A casing for the vane-provided drum of a water-meter, the working-chamber of which is provided with an upper segmental surface, being a bearing for the peripheral face of the drum, with a lower segmental measuring-surface concentric with said upper surface, but of greater radius, and with two intermediate eccentric surfaces or camways, each provided with a recess at least coextensive with its length, and likewise provided with horizontally-disposed opposite ports opening into said recesses, substantially as and for the purposes set forth.

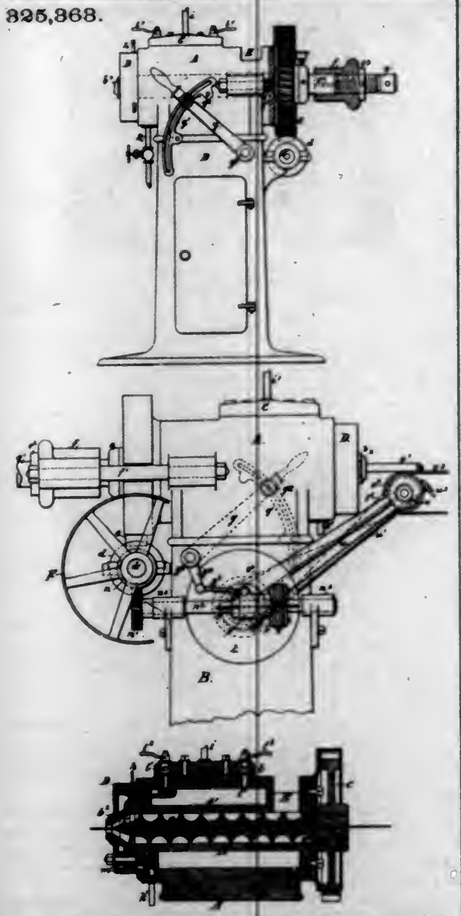
5. In a meter, the combination of a drum having sliding vanes and capable of rotation in either direction, with a casing the working-chamber of which is provided with an upper segmental surface, being a bearing for the peripheral face of said drum, with a lower segmental measuring-surface concentric with said upper surface, but of greater radius, and with two intermediate eccentric surfaces or camways, each provided with a recess at least coextensive with its length, and likewise provided with horizontally-disposed opposite ports opening into said recesses, the arrangement being such that while the water enters and leaves the meter upon opposite sides and passes through it in a short segmental course, so as not to be retarded, the vanes during their passage over the camways are under an equilibrated pressure of water in the recesses, substantially as and for the purposes set forth.

325,363. MACHINE FOR MAKING TUBING AND CORD AND FOR COVERING TELEGRAPH AND OTHER WIRES. VERNON ROYLE and JOHN ROYLE, Jr., Paterson, N. J. Filed Dec. 26, 1884. (No model.)

Claim.—1. The combination, with the pressure-cylinder, presser, and die of a machine for making tubing or covering wire, of a core made separate from the presser, and a core-bridge supporting the core at its inner end and adjustable transversely to the axis of the core and die for the purpose of adjusting the core concentric with the die, substantially as herein described.

2. The combination, with the pressure-cylinder and head and pressure-screw of a machine for making tubing or covering wire, and the die and core within said head, of an adjustable core-bridge arranged within

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said head and supporting the core at its inner end, and set-screws arranged in said head transversely to the axis of the die and core, and serving to adjust said core-bridge from the exterior of said head, substantially as herein described.

3. The combination, with the body of the pressure-cylinder and its removable head containing a die, of the core arranged within the die, a core-bridge supporting the core at its inner end, arranged and held in place in a concavity between the inner face of said cylinder and head and adjustable in a direction transverse to the axis of the cylinder, substantially as herein described.

4. The combination, in a machine for making tubing or cord or covering wire, of a pressure-cylinder and a hollow head attached to the end of said cylinder and containing the forming-die, separate jackets to the said cylinder and head, and cocks for introducing steam or cooling-water to each of the two jackets independently of the other, substantially as herein described.

5. The combination, with the jacketed pressure-cylinder, of a chest, C, divided by a partition into two compartments, one for steam and the other for cooling-water, a valve-seat having passages communicating with the jacket and with both compartments of the chest, and a cock or valve for bringing the passage from either compartment into communication with the said jacket, whereby provision is afforded for supplying steam or water to the jacket, substantially as herein described.

6. The combination, with the pressure-cylinder and its head having separate jackets, of a chest divided by a partition into two compartments, one for steam and the other for cooling-water, and each common to both jackets, and two valves or cocks in the said chest, each having a communication with the two compartments, and one having a communication with the jacket of the head for controlling the supply of either steam or water to either jacket from one chest, substantially as herein described.

7. The combination, with the jacketed pressure-cylinder, having on it a steam and water chest from which a passage, m^6, runs to the end of the cylinder, of the separately-jacketed head D, having an opening, m, to the jacket arranged to communicate with the passage m^6, whereby provision is afforded for the removal of the said head without disturbing any other connection with the chest D, substantially as herein described.

8. The combination, with the pressure-cylinder and its jacketed head D, of the escape-pipe k', communicating with a passage, m^3, through the end of the cylinder corresponding with an opening m', in the jacket of the head, to provide for the removal of the head without disturbing its escape-pipe, substantially as herein described.

9. The combination, with a pressure apparatus and die for forming pipe or cord of plastic material, of a delivery-apron the speed of which is variable at will relatively to the speed of the pressure apparatus during the operation of the machine, substantially as herein described.

10. The combination, with the main shaft d' of the machine, and the apron-driving pulley t^6 and its shaft t', of the shaft n^2, geared with said driving-shaft, the friction-wheel $r\ s$, movable lengthwise on said shaft, and the friction-disk t on the shaft t', all substantially as and for the purpose herein described.

11. The combination, with one of the drums and drum-shafts of the delivery-apron, and a shaft for transmitting motion to the said drum-shaft, of a bracket for carrying the bearing of the said drum-shaft adjustable around said driving-shaft, substantially as and for the purpose herein described.

12. The combination, with the delivery-apron drum v^3, its shaft v', and pulley v, the apron-driving pulley t^6, its shaft t, and the box t^4 for said shaft, of the removable bracket u, adjustably clamped around said box and containing the bearing for the said shaft v', substantially as herein described.

13. The combination, with a movable stand for supporting the outer drum-shaft of the delivery-apron, and a pan or receptacle for the pipe or cord as it is delivered from the said apron, of an adjustable support on said stand for supporting the said drum-shaft and permitting its adjustment relatively to said receptacle, substantially as and for the purpose herein described.

325,364. CHAIN-SAW. WALTER S. SHIPE, Minerva, Ohio. Filed Sept. 16, 1884. (Model.)

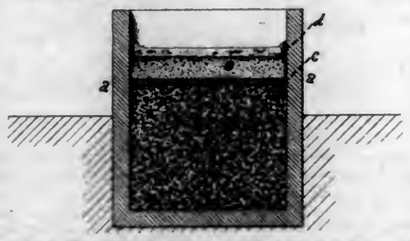


Claim.—1. In a sawing-machine, the combination, with the links, of the teeth or cutters, each slightly curved longitudinally and having side flanges flared laterally, or converging toward the body of the tooth and fitting into corresponding sockets of the links, substantially as and for the purpose set forth.

2. In a sawing-machine, the combination, with the links, of the cutting and clearing teeth disposed in divergent planes at the same angle of inclination, with their lower acting edges disposed toward each other, substantially as and for the purpose set forth.

3. In a sawing-machine, the alternately-connected single and parallel plates, in combination with the teeth disposed in pairs between said parallel plates and upon the sides of the single plates in divergent planes at the same angle of inclination, with their lower acting edges disposed toward each other, substantially as and for the purpose set forth.

325,365. SILO. WILLIAM E. SIMONDS, Hartford, Conn. Filed Feb. 2, 1885. (No model.)

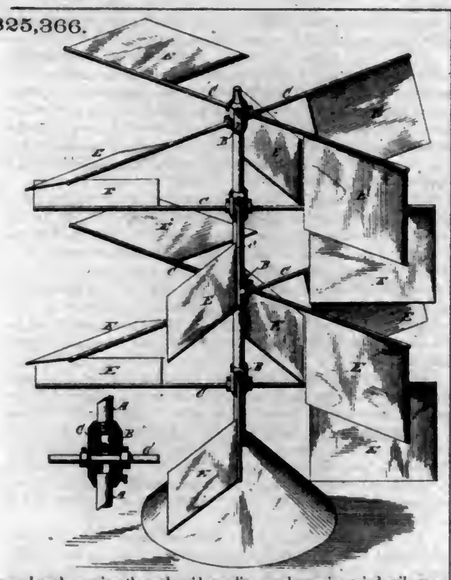


Claim.—The cover for ensilage contained within a silo, consisting of sheeting and superimposed earth, substantially as described.

325,366. HORIZONTAL WIND-WHEEL. THOMAS J. SIMPSON, Worthington, Minn. Filed July 3, 1885. (No model.)

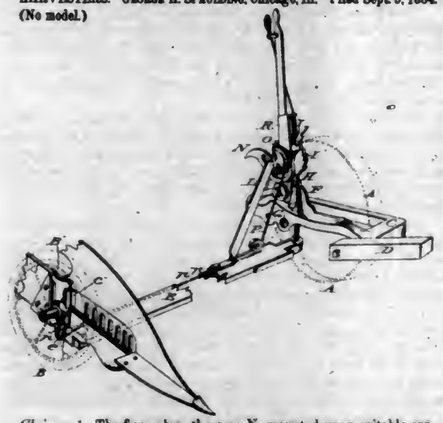
Claim.—A wind-wheel consisting of an upright rotary shaft formed of detachable sections connected together by couplings, and horizontal

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arms loosely passing through said couplings and carrying wind-sails connected thereto, the sails of each arm being arranged at an angle to each other, substantially as and for the purpose set forth.

325,367. MECHANISM FOR ADJUSTING THE PLATFORMS OF HARVESTERS. GEORGE H. SPAULDING, Chicago, Ill. Filed Sept. 5, 1884. (No model.)



Claim.—1. The finger-bar, the cam N, mounted upon suitable supports, connected to the said finger-bar and adapted to rise and fall therewith, and the main frame provided with the roller Q, all combined substantially as described.

2. The main frame suitably supported on the master-wheel, and having the roller Q, the grain-wheel suitably supported on the support B', and the finger-bar adapted to rise and fall in relation to the said supporting-wheels, in combination with the cam N, quadrant-sheave O, and chains P, p, and p', substantially as and for the purpose set forth.

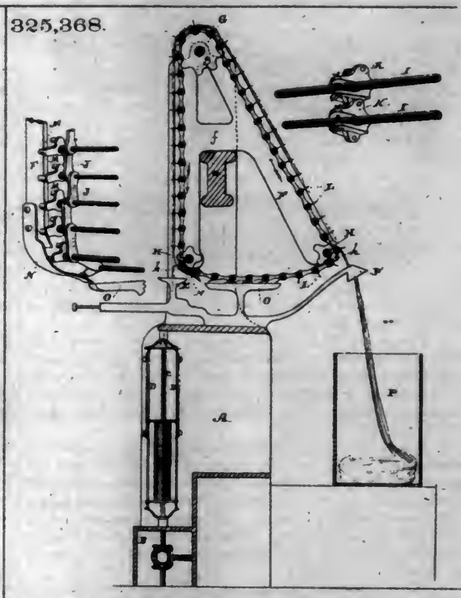
325,368. MACHINE FOR SPINNING HEMP, &c. ALFRED L. TUBBS, San Francisco, Cal. Filed Apr. 21, 1884. (No model.)

Brief.—The sliver-chain is mounted upon a triangular frame consisting of ribs having cross-bars which rest on a beam of the main frame, said ribs bearing the driving and carrying shafts of the sliver-chain.

Claim.—1. The main frame A and cross-beam a, in combination with the chain-supporting frame, consisting of the ribs F, supported on beam a and the cross-bars f, substantially as described.

2. The main frame A, having the beam a, in combination with the chain-frame, consisting of the ribs F, having cross-bar f, resting on beam a, and the shafts G H in said ribs, having chain-pulleys g h, suitable pulleys and gearing for operating the shafts G and H, and the endless sliver-chain mounted on said frame and driven by the shaft G and pulleys g, substantially as herein described.

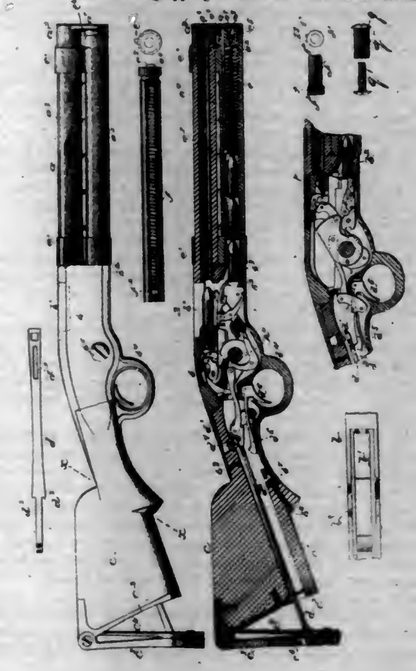
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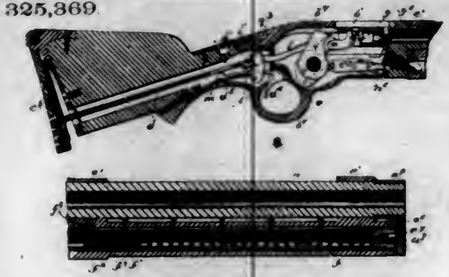
325,369. MAGAZINE-GUN. HORACE UPDEGRAFF, Hampton, Kans. Filed Feb. 9, 1884. (Model.)

Claim.—1. In a breech-loading fire-arm, a recoil bar or mechanism attached to the stock and adapted to rest or bear against the shoulder, and intermediate means whereby the recoil mechanism will be automatically coupled to the firing mechanism when the gun is discharged, substantially as and for the purposes described.

2. The combination, with the breech-operating mechanism and a recoil mechanism attached to the stock, of a coupler or connection-rod having one end attached to the breech-operating mechanism and its rear end detached and provided with a catch, and a draw-bar having its rear end attached to the recoil mechanism and its forward end detached and provided with a latch or grappling hook which when thrust forward



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will engage the catch on the rear end of the coupler, substantially as and for the purposes set forth.

3. The combination of a pivoted locking-shoulder, a breech-block connected to and operated by the locking-shoulder, a cartridge-carrier arranged below the breech-block and connected with and operated by the locking-shoulder, a coupling-rod, and a recoil mechanism attached to the stock and automatically engaged with the coupling-rod, substantially as and for the purposes set forth.

4. The combination, with the stock, the breech-block, and the firing mechanism, of a yielding recoil-bar attached to the butt of the stock and supported by a spring, and a draw-bar arranged between the recoil-bar and the firing mechanism, and having one end hinged or pivotally connected, and its other end detached, so as to be automatically engaged and coupled with both the butt-bar and firing mechanism when the gun is fired and to draw the breech-block back from the breech of the barrel, substantially as set forth.

5. The combination, with the stock, and a recoil-bar attached to the stock, of a draw-bar having its rear end pivotally connected to the recoil-bar, and provided with anti-retracting shoulders d^3, which engage stops suitably arranged on the stock, a retracting-spring, and a depressing-spring arranged to bear upon and depress the draw-bar, substantially as set forth.

6. In a breech-loading fire-arm, the combination of a recoil-bar attached to the butt, an automatic reloading mechanism arranged within the casing, a detachable connecting-bar automatically coupled with the recoil-bar and the reloading mechanism when the gun is fired, and a trigger arranged to disengage the reloading mechanism from the recoil-bar when the gun is to be discharged, substantially as set forth.

7. The combination, in a breech-loading fire-arm, of the stock, the firing mechanism, the recoil-bar, a retracting-spring, a draw-bar having one end attached to the recoil-bar and its other or forward end adapted to be automatically engaged with the firing mechanism, and a spring suitably arranged and adapted to depress the forward end of the draw-bar, substantially as set forth.

8. In a breech-loading fire-arm, the combination, with the recoil-bar, and the draw-bar having its forward end adapted to automatically engage the firing mechanism, of an anti-firing shoulder arranged above the forward end of the draw-bar and adapted to operate in connection therewith, substantially as set forth.

9. In a breech-loading fire-arm, the combination, with the recoil-bar, the draw-bar having its forward end adapted to automatically engage the firing mechanism, and the firing mechanism, of the trigger, and a trip-arm connected with the trigger and adapted to disengage the draw-bar and firing mechanism, substantially as set forth.

10. The combination, with the recoil-bar, the draw-bar, the firing mechanism, the trigger, and the trip-arm connected with the trigger, and adapted to disengage said draw-bar and firing mechanism, of the anti-firing shoulder, arranged, substantially as described, and adapted to operate substantially as specified.

11. The combination of the breech-block, the firing-pin located therein, the return-lever pivoted midway its ends, and having its forward wing engaged with and adapted to withdraw the firing-pin, the hammer pivoted in the breech-block, and alternately engaging the rear wing of the return-lever and the firing-pin, and the necessary operating mechanism, substantially as set forth.

12. The combination of the breech-block, the firing-pin, the return-lever pivoted in the breech-block and having its forward wing engaged with the firing-pin, the hammer pivoted in the breech-block and having its portions above and below the pivot arranged to alternately engage the rear wing of the return-lever and the firing-pin, the locking-shoulder connected with said hammer, the tumbler, the connecting-rod having its forward end pivoted to the firing-shoulder, and its opposite end connected with the tumbler and provided with the hooked extension adapted to engage the draw-bar, the draw-bar, and the recoil-bar or support, substantially as set forth.

13. The combination of a breech-block sliding longitudinally on suitable guides, and having the firing-pin arranged therein, a hammer having its forward end pivoted to the breech-block behind the firing-pin, the locking-shoulder having the rear end of the hammer pivoted thereto, and the trigger mechanism, substantially as set forth.

14. In a breech-loading fire-arm, a sliding breech-block having two forward extensions provided with vertical guide-channels formed in their inner faces, spring cartridge-holding jaws arranged on opposite sides of and secured to the breech-block just above the forward extensions thereon, and a cartridge-carrier arranged below the breech-block, whereby when the latter is drawn back the cartridge will be forced upward through the guide-channels into the spring-jaws on said breech-block, substantially as set forth.

15. The combination of the magazine, the carrier adapted to receive the cartridge from the magazine, the breech-block, and the pivoted locking-shoulder having its upper end connected with the breech-block and its lower end connected with the carrier, whereby said parts are reciprocally operated, substantially as and for the purposes set forth.

16. The combination, with the carrier, and the locking-shoulder having its lower end provided with a pin or stud, of the carrier-lever having its arms bent at approximately a right angle and adapted to be alternately engaged by the pin or stud on the locking-shoulder, substantially as set forth.

17. The herein-described cartridge carrier and stop, comprising the lever n', pivoted to the frame, and having its rear end adapted to be engaged by the firing mechanism, and its opposite end adapted to support the forward end of a cartridge, the lever n^2, pivoted midway its ends to the lever n', and the lever n^3, having its rear end pivoted to the lever n^2, and its forward end turned down in front of the cartridge-opening in the casing, and provided with an elongated bearing supported by and sliding upon a lateral shoulder or pin projected from the upper end of the lever n', substantially as set forth.

18. The combination, with the firing mechanism and the trigger-frame, of the lever n', pivoted to the frame and having its rear end adapted to be engaged by the firing mechanism, and its forward end adapted to engage under and lift the front end of the cartridge, the lever n^2, pivoted midway its ends and having its rear end adapted to lift the rear end of the cartridge, and a pin or bearing, n^3, arranged on the frame above the lower or forward end of the lever n^2, substantially as shown and for the purposes specified.

19. The combination, with the carrier n, having its lever n' provided in its rear end with a slot, n^4, and the locking-shoulder k, provided with a pin, k^4, of a lever, o, pivoted to the frame and arranged so that its rear end will engage the pin k^4 on the locking-shoulder, and its forward end engage in the notch n^4 in the lower n', substantially as and for the purposes set forth.

20. The combination, with the barrel, of a depending retaining-plate arranged at the muzzle and provided with a detent in its rear face, and a magazine provided with hangers or sleeves placed upon and turning on the barrel, and a spring-catch placed in the forward end of the magazine and engaging in the detent in the depending retaining-plate, substantially as shown and described.

21. The combination of the gun-barrel, the retaining-plate depending therefrom and provided with a depression or indentation on its inner face, the magazine suspended from the barrel, and a yielding catch or button arranged in the forward end of the magazine in position to engage the indentation in the retaining-plate, substantially as set forth.

22. The combination of the barrel, the magazine provided with a longitudinal slot and suspended from the barrel and turning out from under the same, the plunger provided with a pawl projected into and made of less width than said slot, a series of pins or stops suitably supported and projected into and made of a width less than the slot in the magazine, and means whereby said magazine is rotated slightly when turned from under the barrel, substantially as set forth.

23. The combination of the barrel provided on its under side with a notch or depression, and the magazine constructed, substantially as described, and suspended from said barrel, said magazine being provided with a lug projected approximately radially therefrom in position to engage the notch in the barrel, whereby the magazine is given a slight axial rotary motion, substantially as set forth.

24. The combination of the gun-barrel, the depending retaining-plate having its sleeve slipped on the muzzle end of the barrel and provided in its under side with a recess or notch, and the magazine suspended from the barrel and provided at its forward end with a lug adapted to engage said recess or notch, substantially as set forth.

25. In a magazine-gun, the combination, with the barrel, of a magazine provided with hangers or sleeves placed upon and turning on the barrel, a depending retaining-plate provided with a sleeve fitting over and detachably secured to the muzzle, and means for interlocking the plate and magazine, substantially as set forth.

26. In a magazine-gun, the combination, with the barrel, of a swinging carrier, a magazine supported loosely in the carrier, means for partially rotating the magazine in the carrier, and means for locking the carrier and magazine in place immediately below the barrel, substantially as set forth.

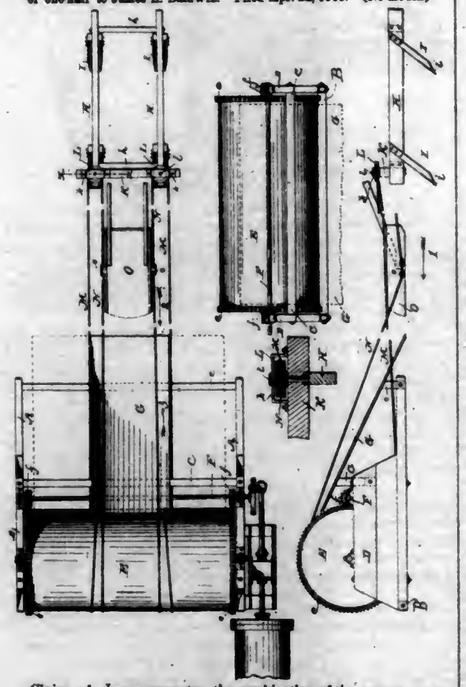
27. The combination of the sliding breech-block, a firing-pin located therein, a hammer pivoted at one end to the block in rear of and arranged to engage the end of the firing-pin, and having its other end pivotally connected to the trigger mechanism, and the trigger mechanism, substantially as set forth.

28. The combination of the breech-block, the firing-pin, the hammer having one end pivoted in the breech-block and arranged to engage the rear end of the firing-pin, and having its other end pivotally connected with the breech-block, the locking-shoulder arranged to turn against the rear end of and lock the breech-block against the barrel, and the necessary trigger mechanism, substantially as described.

29. In a breech-loading fire-arm, the combination, with the locking-shoulder and the draw-bar, of the tumbler, the mainspring, and the connecting-rod having one end pivoted to the locking-shoulders, and its other end pivoted to the tumbler and provided with a rear hooked extension, substantially as and for the purposes set forth.

30. The combination, with the magazine having a longitudinal slot, a carrier adapted to support the magazine, and a series of pins projected from the carrier into the slot in the magazine, of a propelling-spring arranged within the magazine, a plunger supported by the free end of the propelling-spring, a spring catch or pawl attached to plunger and arranged to pass under and engage on the forward side of the pins on the carrier as the plunger is forced back by the cartridges, and means for releasing the catch from its hold upon the pins, substantially as set forth.

325,370. EXCAVATOR. CHAS. H. WATSON, Omaha, Nebr., assignor of one-half to James H. Baldwin. Filed Apr. 22, 1885. (No model.)



Claim.—1. In an excavator, the combination of the scraper, a carrier secured to the scraper, a second carrier, also secured to the scraper separately from the first aforesaid carrier, a drum or drums which engage with the carriers at one end and propel them, and a guide or support for each carrier at the other end, substantially as set forth.

2. In an excavator, the combination of the scraper, a rope or belt, N, secured to the scraper, a second rope or belt, N', also secured to the scraper separately from the first aforesaid belt, a rotating support for each carrier at the front end thereof, and a rotating support, as at L, for each carrier at the rear end thereof, substantially as set forth.

3. In an excavator, the combination of the scraper, the two independent endless carriers separately secured to the scraper, and a drum or drums, with which the said carriers engage and by which they are propelled, substantially as set forth.

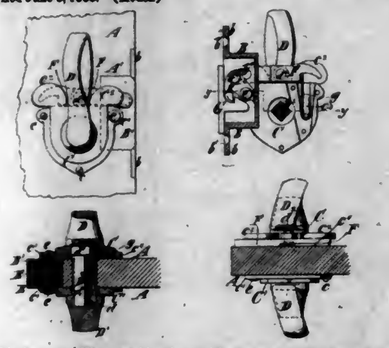
4. In an excavator, the combination of the scraper, the drum, the carrying-ropes connected to the scraper at both sides thereof and having two strands, N N, moving together in one direction, and two strands, M M, moving together in the opposite direction, substantially as set forth.

5. In an excavator, the combination of the scraper, the two independent endless carriers separately secured to the scraper, a drum with which both of the said endless carriers engage at one end in common, and separate guiding and supporting devices for the other ends of the carriers, as at L L, substantially as described.

6. The combination of the scraper, the two independent endless carriers separately secured to the scraper, the drum with which both of said carriers engage in common, and power devices which impart rotation to both ends of the drum simultaneously, whereby both carriers are simultaneously propelled in the same direction, substantially as set forth.

7. In an excavator, the combination of the scraper, the carriers which propel the scraper, the pulleys or guides at the rear ends of the carriers, and the anchor-frame having cross-bars A A and elongated longitudinal bars H H, the forward-inclined anchors I I at the front end of the said bars H, and the forward-inclined anchors I I at the rear end of the said bars, whereby an elongated base of resistance is provided, substantially as set forth.

325,371. CAR-DOOR LATCH. CHARLES H. WHITE, New York, N. Y. Filed June 8, 1885. (Model.)



Claim.—1. The combination, with a tongue-case adapted to be notched into the edge of a car-door, of stay-plates to be applied to the inner and outer sides of the door, and having formed in them the bearings for the handles, and a pin-and-eye connection, e e', between said tongue-case and the stay-plates, whereby they are enabled to mutually support each other, substantially as herein described.

2. The combination, with a tongue-case to be notched into the edge of a door, and stay-plates comprising bearings for the handles and to be secured to opposite sides of the door, of a tongue arranged in the case, and journals or pivots whereby the tongue is supported in the case, and which project through the sides of the case and are received in bearers or eyes upon the stay-plates, substantially as herein described.

3. The combination, with a tongue-case having a removable plate, B', of the tongue E, having integral pivots or journals which are supported in the sides of the case, and stay-plates C C', having bearers or eyes e', which receive the integral journals or pivots e of the tongue, substantially as herein described.

4. The combination, with a tongue-case and its pivoted tongue, of the handles and their connecting-spindle, and a draw-bar upon the inner side of the door, and forming a connection between one of said handles and the pivoted tongue, substantially as herein described.

5. The combination, with a tongue-case and its pivoted tongue, of the handles and their connecting-spindle, a draw-bar arranged upon the inner side of the door and forming a connection between one of the handles and the pivoted tongue, and a stay-plate, also secured to the inner side of the door, and forming a slideway or guides for the draw-bar, substantially as herein described.

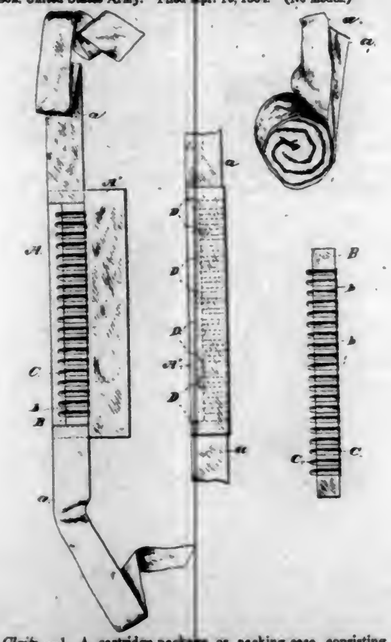
6. The combination, with a tongue-case having one of its side plates slotted, and a pivoted tongue arranged therein, of handles and their connecting-spindle, the inner handle being provided with an inwardly-projecting pin or stud, and a draw-bar upon the inner side of the door having a socket to receive the pin or stud on the handle, and having a pin or stud which projects inward through the slot in the tongue-case and engages with the tongue, substantially as herein described.

7. The combination, with a tongue-case and its pivoted tongue, of the handles and their connecting-spindle, a stay-plate secured to the inner side of the door and comprising upwardly-projecting flanges, and having a recess upon its inner side, a draw-bar upon the inner side of the door, forming a connection between the handle and the pivoted tongue, a spring acting upon the draw-bar and arranged within a recess on the inner side of the stay-plate, and a covering-plate for said recess projecting upward upon the inner side of the draw-bar to prevent chafing the door, substantially as herein described.

8. The combination, with a tongue-case and its removable slotted plate B', and a pivoted tongue, E, having integral journals e, of the stay-plates C C', provided with eyes or bearers e', which receive the integral journals of the pivoted tongue, the handles and their connecting-spindle, the inner handle, D, being provided with an inwardly-pro-

jecting stud or pin d^3, and a draw-bar, F, having a socket or hub, f', receiving the pin or stud d^3, and having an inwardly-projecting pin or stud, f, working through the slot f^2 in the tongue-case and engaging with the tongue, substantially as herein described.

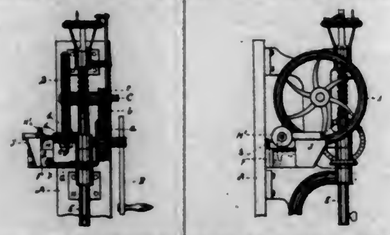
325,372. CARTRIDGE PACKER AND CARRIER. GEORGE S. WILSON, United States Army. Filed Apr. 16, 1884. (No model.)



Claim.—1. A cartridge-package or packing-case consisting of a strip provided with pockets for holding the individual cartridges, a covering-flap, and end straps, said strip, flaps, and straps being made of thin pliable material, which will permit the cartridges to be rolled up or folded together into a compact bundle, as set forth.

2. The hereinbefore-described cartridge-packing case made of thin pliable material provided with pockets, which will permit the cartridges to be rolled up or folded on, but separate from, one another, in the shape of a compact bundle, and having a covering-flap attached at intervals along its free edge to the body-strip by stitching or other fragile connections, as and for the purposes set forth.

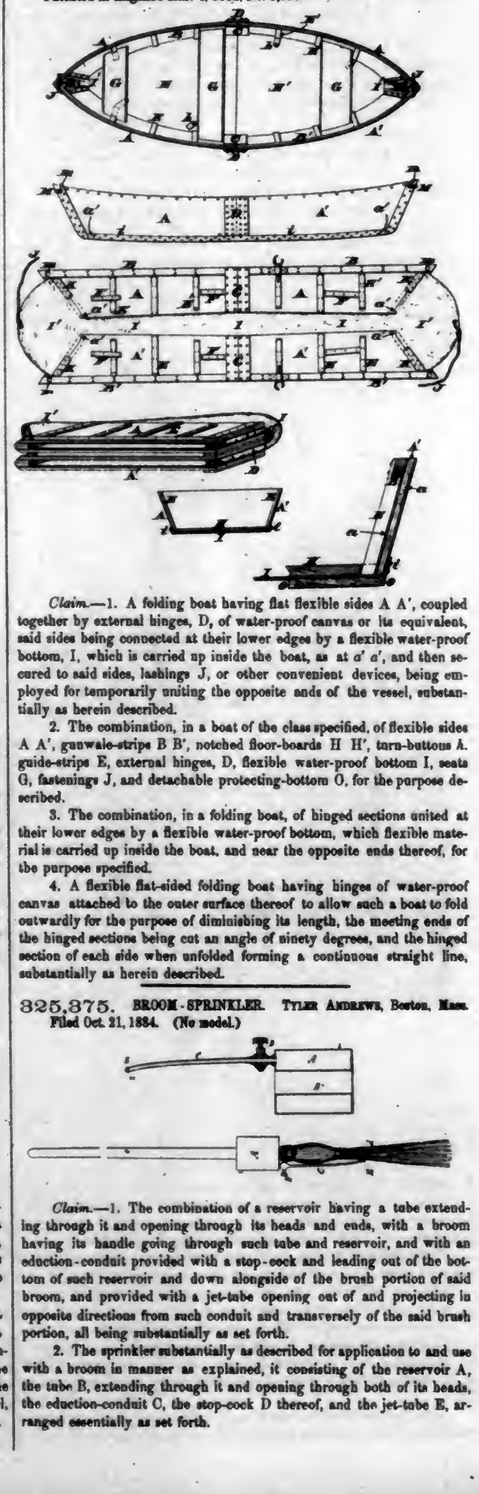
325,373. DRILL-GRINDING ATTACHMENT FOR DRILLING-MACHINES. EDWARD J. WORCESTER, Worcester, Mass., assignor to George Burnham and Asa Goddard, same place. Filed Jan. 30, 1884. (No model.)



Claim.—1. The combination, with the balance-wheel of a drilling-machine, of a grinding apparatus consisting of the arbor H, carrying a grinding-wheel and the friction-wheel K, swinging frame or plate G, holding the arbor H, screw *e*, and spring suitably attached to the plate G, so as to act against the screw *e*, all arranged as described, and for the purpose set forth.

2. The combination, with the balance-wheel of a drilling-machine, of a drill-grinding apparatus consisting of swinging frame G, arbor H, carrying a grinding-wheel and a friction-wheel, having means, substantially as described, for bringing said friction-wheel into contact with the balance-wheel, and a stationary drill-rest attached to the frame of the machine, formed of an angle-iron set obliquely to the grinding-wheel, all combined and operating as described, and for the purpose set forth.

325,374. COLLAPSIBLE OR FOLDING BOAT. JOHN P. WRIGHT, Redhill, County of Surrey, England. Filed Oct. 4, 1884. (No model.) Patented in England Mar. 4, 1882, No. 1,056.



Claim.—1. A folding boat having flat flexible sides A A', coupled together by external hinges, D, of water-proof canvas or its equivalent, said sides being connected at their lower edges by a flexible water-proof bottom, I, which is carried up inside the boat, as at *a' a'*, and then secured to said sides, lashings J, or other convenient devices, being employed for temporarily uniting the opposite ends of the vessel, substantially as herein described.

2. The combination, in a boat of the class specified, of flexible sides A A', gunwale-strips B B', notched floor-boards H H', turn-buttons A, guide-strips E, external hinges, D, flexible water-proof bottom I, seats G, fastenings J, and detachable protecting-bottom O, for the purpose described.

3. The combination, in a folding boat, of hinged sections united at their lower edges by a flexible water-proof bottom, which flexible material is carried up inside the boat, and near the opposite ends thereof, for the purpose specified.

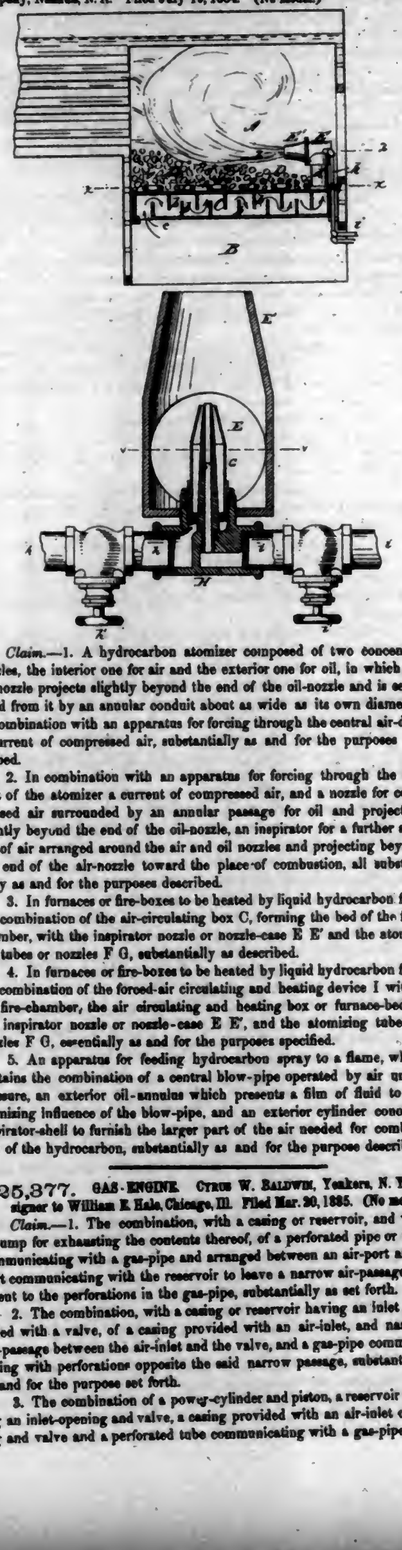
4. A flexible flat-sided folding boat having hinges of water-proof canvas attached to the outer surface thereof to allow such a boat to fold outwardly for the purpose of diminishing its length, the meeting ends of the hinged sections being cut an angle of ninety degrees, and the hinged section of each side when unfolded forming a continuous straight line, substantially as herein described.

325,375. BROOM-SPRINKLER. TYLER ANDREWS, Boston, Mass. Filed Oct. 21, 1884. (No model.)

Claim.—1. The combination of a reservoir having a tube extending through it and opening through its heads and ends, with a broom having its handle going through such tube and reservoir, and with an eduction-conduit provided with a stop-cock and leading out of the bottom of such reservoir and down alongside of the brush portion of said broom, and provided with a jet-tube opening out of and projecting in opposite directions from such conduit and transversely of the said brush portion, all being substantially as set forth.

2. The sprinkler substantially as described for application to and use with a broom in manner as explained, it consisting of the reservoir A, the tube B, extending through it and opening through both of its heads, the eduction-conduit C, the stop-cock D thereof, and the jet-tube E, arranged essentially as set forth.

325,376. APPARATUS FOR BURNING HYDROCARBONS. ELBRIDGE EAKER, Boston, Mass., assignor to the National Thorn Meter Company, Nashua, N. H. Filed July 19, 1884. (No model.)



Claim.—1. A hydrocarbon atomizer composed of two concentric nozzles, the interior one for air and the exterior one for oil, in which the air-nozzle projects slightly beyond the end of the oil-nozzle and is separated from it by an annular conduit about as wide as its own diameter, in combination with an apparatus for forcing through the central air-duct a current of compressed air, substantially as and for the purposes described.

2. In combination with an apparatus for forcing through the air-duct of the atomizer a current of compressed air, and a nozzle for compressed air surrounded by an annular passage for oil and projecting slightly beyond the end of the oil-nozzle, an inspirator for a further supply of air arranged around the air and oil nozzles and projecting beyond the end of the air-nozzle toward the place of combustion, all substantially as and for the purposes described.

3. In furnaces or fire-boxes to be heated by liquid hydrocarbon fuel, the combination of the air-circulating box C, forming the bed of the fire-chamber, with the inspirator nozzle or nozzle-case E E' and the atomizing tubes or nozzles F G, substantially as described.

4. In furnaces or fire-boxes to be heated by liquid hydrocarbon fuel, the combination of the forced-air circulating and heating device I within the fire-chamber, the air circulating and heating box or furnace-bed C, the inspirator nozzle or nozzle-case E E', and the atomizing tubes or nozzles F G, essentially as and for the purposes specified.

5. An apparatus for feeding hydrocarbon spray to a flame, which contains the combination of a central blow-pipe operated by air under pressure, an exterior oil-annulus which presents a film of fluid to the atomizing influence of the blow-pipe, and an exterior cylinder conoidal inspirator-shell to furnish the larger part of the air needed for combustion of the hydrocarbon, substantially as and for the purpose described.

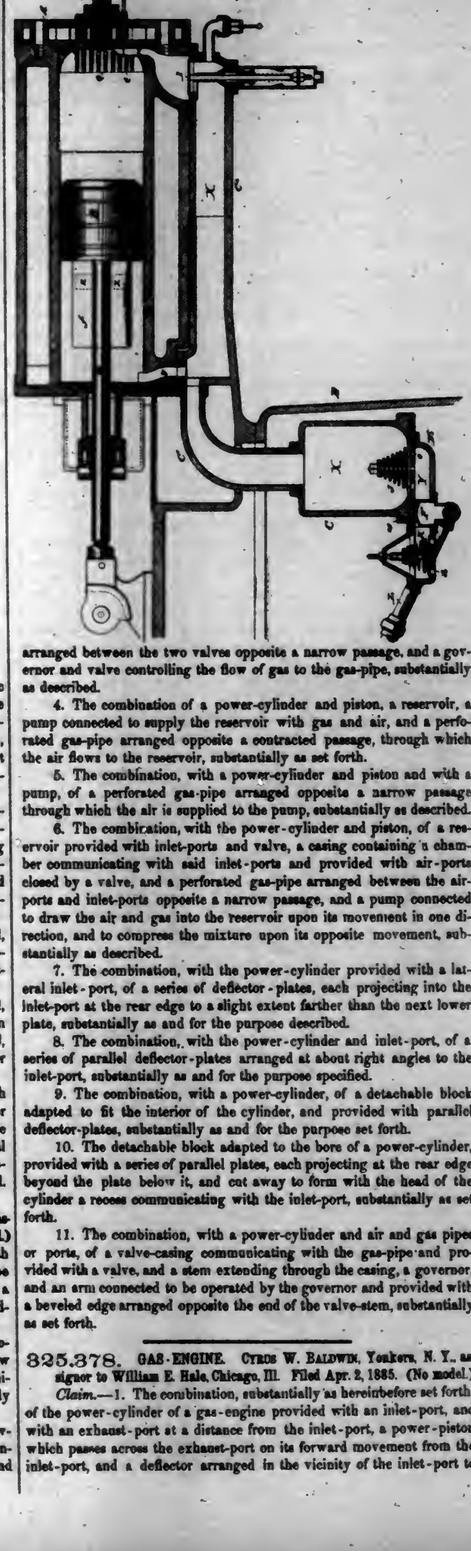
325,377. GAS-ENGINE. CYRUS W. BALDWIN, Yonkers, N. Y., assignor to William E. Hale, Chicago, Ill. Filed Mar. 20, 1885. (No model.)

Claim.—1. The combination, with a casing or reservoir, and with a pump for exhausting the contents thereof, of a perforated pipe or tube communicating with a gas-pipe and arranged between an air-port and a port communicating with the reservoir to leave a narrow air-passage adjacent to the perforations in the gas-pipe, substantially as set forth.

2. The combination, with a casing or reservoir having an inlet provided with a valve, of a casing provided with an air-inlet, and narrow air-passage between the air-inlet and the valve, and a gas-pipe communicating with perforations opposite the said narrow passage, substantially as and for the purpose set forth.

3. The combination of a power-cylinder and piston, a reservoir having an inlet-opening and valve, a casing provided with an air-inlet opening and valve and a perforated tube communicating with a gas-pipe and

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arranged between the two valves opposite a narrow passage, and a governor and valve controlling the flow of gas to the gas-pipe, substantially as described.

4. The combination of a power-cylinder and piston, a reservoir, a pump connected to supply the reservoir with gas and air, and a perforated gas-pipe arranged opposite a contracted passage, through which the air flows to the reservoir, substantially as set forth.

5. The combination, with a power-cylinder and piston and with a pump, of a perforated gas-pipe arranged opposite a narrow passage through which the air is supplied to the pump, substantially as described.

6. The combination, with the power-cylinder and piston, of a reservoir provided with inlet-ports and valve, a casing containing a chamber communicating with said inlet-ports and provided with air-ports closed by a valve, and a perforated gas-pipe arranged between the air-ports and inlet-ports opposite a narrow passage, and a pump connected to draw the air and gas into the reservoir upon its movement in one direction, and to compress the mixture upon its opposite movement, substantially as described.

7. The combination, with the power-cylinder provided with a lateral inlet-port, of a series of deflector-plates, each projecting into the inlet-port at the rear edge to a slight extent farther than the next lower plate, substantially as and for the purpose described.

8. The combination, with the power-cylinder and inlet-port, of a series of parallel deflector-plates arranged at about right angles to the inlet-port, substantially as and for the purpose specified.

9. The combination, with a power-cylinder, of a detachable block adapted to fit the interior of the cylinder, and provided with parallel deflector-plates, substantially as and for the purpose set forth.

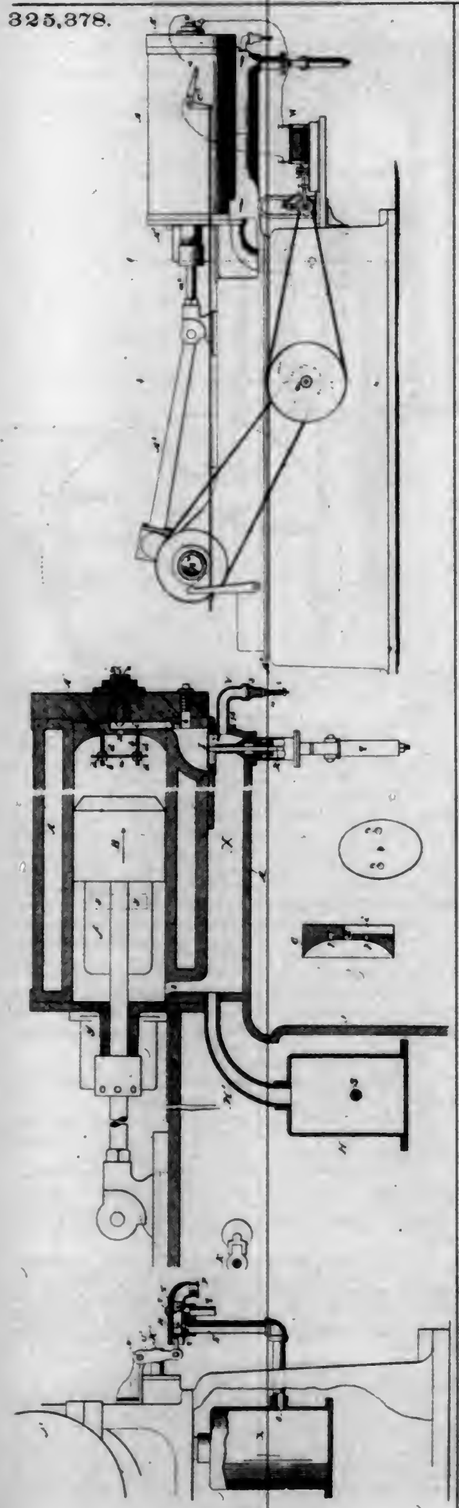
10. The detachable block adapted to the bore of a power-cylinder, provided with a series of parallel plates, each projecting at the rear edge beyond the plate below it, and cut away to form with the head of the cylinder a recess communicating with the inlet-port, substantially as set forth.

11. The combination, with a power-cylinder and air and gas pipes or ports, of a valve-casing communicating with the gas-pipe and provided with a valve, and a stem extending through the casing, a governor, and an arm connected to be operated by the governor and provided with a beveled edge arranged opposite the end of the valve-stem, substantially as set forth.

325,378. GAS-ENGINE. CYRUS W. BALDWIN, Yonkers, N. Y., assignor to William E. Hale, Chicago, Ill. Filed Apr. 2, 1885. (No model.)

Claim.—1. The combination, substantially as hereinbefore set forth, of the power-cylinder of a gas-engine provided with an inlet-port, and with an exhaust-port at a distance from the inlet-port, a power-piston which passes across the exhaust-port on its forward movement from the inlet-port, and a deflector arranged in the vicinity of the inlet-port to

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prevent the direct passage of the charge from the inlet to the exhaust port, substantially as set forth.

2. The combination of a cylinder provided with inlet and outlet ports near its opposite ends, with an intermediate deflector arranged to be struck by the inflowing gases to prevent the direct passage thereof to the outlet-port, substantially as described.

3. The combination, with the power-cylinder having the exhaust-port near one end, of a deflector arranged near the opposite end to prevent the forward flow of the new charge directly to the exhaust, substantially as described.

4. The combination of a cylinder having an outlet-port at one end and an inlet-port at the opposite end, and a deflector arranged in front of the inlet-port, substantially as set forth.

5. The combination, with the power-cylinder having an inlet-port, of a deflector corresponding in outline with the outline of said port, substantially as set forth.

6. The combination of a cylinder having inlet and outlet ports, a reservoir or chamber, and means for supplying the same with mixed gases under pressure, and a deflector arranged within the cylinder in position to be struck by the inflowing gases on their passage to the exhaust, substantially as set forth.

7. The combination, with the cylinder having a power-piston and an exhaust-port near the forward end and an inlet-port near the opposite end, of a plate arranged adjacent to said inlet-port and supported adjustably in its position, substantially as described.

8. The combination, with the power cylinder and piston, and with the exhaust and inlet ports near opposite ends of the cylinder, of a deflector, and an igniting device arranged at the rear of the deflector, substantially as described.

9. The combination, with the cylinder and head of a gas-engine, of a detachable block fitting within the cylinder and provided with a port and passage, substantially as described.

10. The combination, with the cylinder provided with inlet and exhaust ports adjacent to opposite ends, and with a power-piston, of a block inserted detachably in the end of the cylinder and provided with a port and channel, and a deflector carried by said block, substantially as described.

11. The combination of a power cylinder and piston, an inlet-port, a chamber or reservoir for the explosive mixture, a valve controlling the inlet-port and the flow of the mixture into the said cylinder, and a governor and connections whereby the movements of the said valve and the quantity of mixture admitted to the cylinder are varied by the governor, substantially as set forth.

12. The combination, with the power cylinder and piston, of a charge reservoir or chamber, a channel, and automatic valve operated by the fluid between the reservoir and cylinder, and a governor connected to vary the action of said valve, substantially as set forth.

13. The combination of a power piston and cylinder, a charge reservoir or chamber, and an automatic valve controlling the inlet-port and the flow of the mixture to the cylinder, and automatic controlling devices, substantially as described, whereby the movements of the valve are regulated to proportion the charge admitted to the power-cylinder to the work to be done, substantially as described.

14. The combination, with a valve operated by the fluid in a passage through which the mixture flows under pressure to the power-cylinder, of controlling devices automatically regulating the extent of opening the valve, or period of time it remains open, according to the work to be done, substantially as described.

15. The combination, with the power-cylinder, its piston, and means of igniting the charge in said cylinder, of a valve controlling the inflow of the charge to the power-cylinder, and governor to automatically vary the lift of the valve, substantially as set forth.

16. The combination of the power-cylinder, means of igniting the charge therein, reservoir containing a mixture of gas and air, connecting-passage, valve operated by the fluid, provided with a stem and spring, governor, and wedge controlled by the governor, substantially as specified.

17. The combination, with the reservoir, of a valve-casing provided with air and gas inlet ports of areas proportioned to the desired relative proportions of air and gas, and a valve constructed to open and close both ports simultaneously to regulate the volume of the gases without altering the proportions, substantially as specified.

18. The combination, with the reservoir and the power-cylinder, of a valve-casing and a valve controlled by a governor and controlling the flow of the mixture to the engine, the valve and casing having air and gas inlet ports proportioned to admit the gas and air in proper relative quantities, whatever may be the degree to which the ports are opened, substantially as set forth.

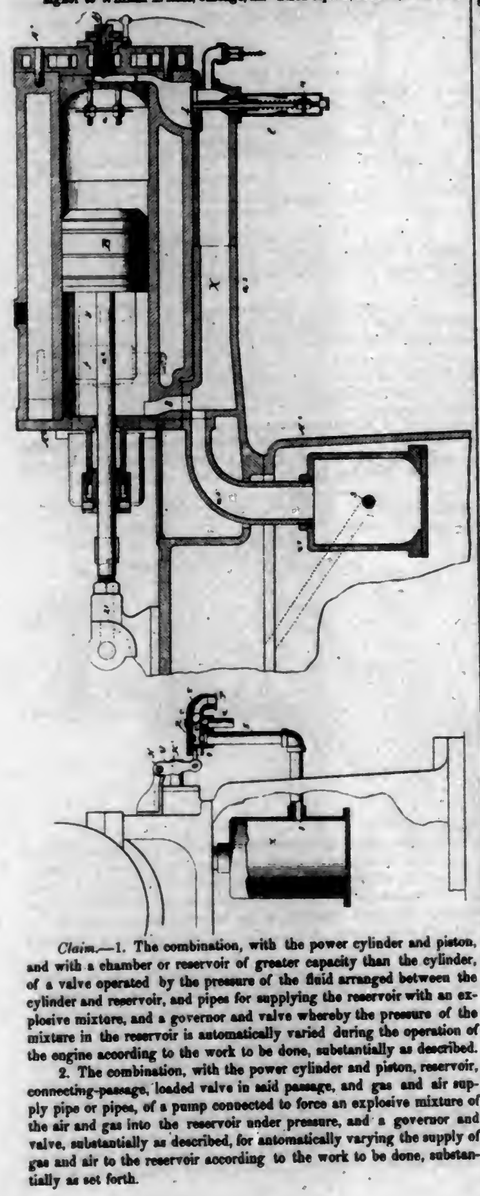
19. The combination, with the power-cylinder and reservoir, of a valve-casing, and valve constructed to regulate the volume without altering the relative proportions of the gases, a valve in the passage between the reservoir and cylinder, and a governor, and connections between the governor and both valves, whereby the volume of mixed gases admitted to the reservoir and that of the mixture discharged into the cylinder is regulated by the governor, substantially as set forth.

20. The combination, with the reservoir and the power-cylinder, of a valve-casing provided with ports *p r t*, and a valve having ports *v u* of different areas constructed and arranged to maintain the relative areas of the gas and air ports, whatever may be the extent to which the valve is opened, substantially as described.

21. The combination, with the pump, power-cylinder, inlet-port, and valve closing said port, of an air-inlet and valve arranged to permit the air to pass inward beneath said valve when the pressure in the reservoir is reduced, substantially as described.

22. The combination of the power-cylinder, reservoir, communicating passage, valve in said communicating passage, and air-port and air-valve communicating with said passage adjacent to the valve in the same, substantially as set forth.

325,379. GAS-ENGINE. CYRUS W. BALDWIN, Yonkers, N. Y., assignor to William E. Hale, Chicago, Ill. Filed Apr. 2, 1885. (No model.)



Claim.—1. The combination, with the power cylinder and piston, and with a chamber or reservoir of greater capacity than the cylinder, of a valve operated by the pressure of the fluid arranged between the cylinder and reservoir, and pipes for supplying the reservoir with an explosive mixture, and a governor and valve whereby the pressure of the mixture in the reservoir is automatically varied during the operation of the engine according to the work to be done, substantially as described.

2. The combination, with the power cylinder and piston, reservoir, connecting-passage, loaded valve in said passage, and gas and air supply pipe or pipes, of a pump connected to force an explosive mixture of the air and gas into the reservoir under pressure, and a governor and valve, substantially as described, for automatically varying the supply of gas and air to the reservoir according to the work to be done, substantially as set forth.

3. The combination, with the power cylinder and piston, reservoir, connecting-passage, and loaded valve therein, pump, and governor, and air and gas inlets, of a valve controlling the flow of air and gas to the reservoir and connected to be operated by the governor, substantially as set forth.

4. The combination, with the power cylinder and piston, reservoir communicating therewith, loaded valve, pump, gas and air inlets, and governor, of a valve connected to be controlled by said governor and constructed to regulate the flow of the gas and air to the reservoir without varying the relative proportions thereof, substantially as described.

5. The combination, with the power cylinder and piston, reservoir communicating with the cylinder, pump, gas and air inlet, and governor and valve, substantially as described, for regulating the admission of gas and air to the reservoir according to the work to be done, of a valve in the passage between the cylinder and reservoir, and means for varying the load upon said valve, substantially as described.

6. The combination, with the power cylinder and piston, of a pump, gas and air inlets, and reservoir communicating freely with the pump to insure a churning or mixing action of the pump upon the gases, substantially as set forth.

7. The combination of the power cylinder and piston, inlet provided with a valve, reservoir having an inlet for the gas and air, and pumps communicating freely with the reservoir between the inlet and discharge ports, substantially as described.

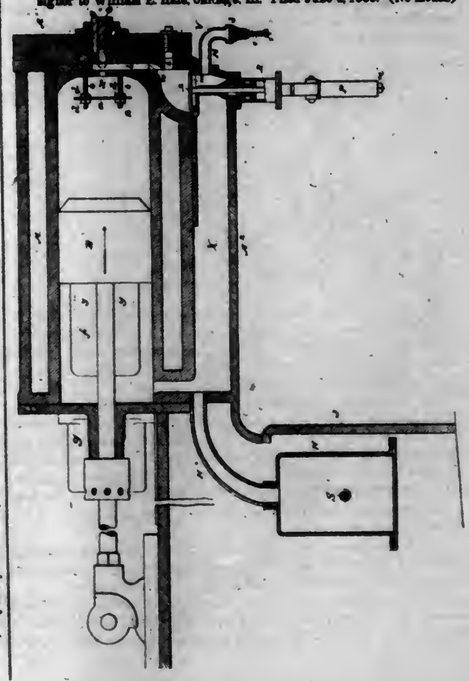
8. The combination of the power cylinder and piston, reservoir communicating with the cylinder through a channel provided with a loaded valve, and pump whereby the gas and air are introduced into the reservoir, the inlet for the gas and air being at the end of the reservoir opposite to that at which the loaded valve is situated, substantially as described.

9. The combination of the power cylinder and piston, reservoir, loaded valve in a channel between the reservoir and cylinder, inlet-port communicating with the reservoir, and pump communicating with the reservoir through an unobstructed passage arranged between the inlet-port and the loaded valve, substantially as described.

10. The combination, with the power-cylinder provided with a surrounding water-jacket, of water inlet and outlet pipes communicating with said jacket and leading to an elevated tank, water-distributing appliances within said tank, and a circulating-pump whereby the water is forced to circulate through the water-jacket, pipes, and tank, substantially as described.

11. The combination, with the power-cylinder, piston, water-jacket, tank, and circulating-pump, of a pipe connecting the lower portion of the tank and the water-jacket, and a separate outflow-pipe connected with the upper portion of the water-jacket, substantially as described.

325,380. GAS-ENGINE. CYRUS W. BALDWIN, Yonkers, N. Y., assignor to William E. Hale, Chicago, Ill. Filed June 3, 1885. (No model.)



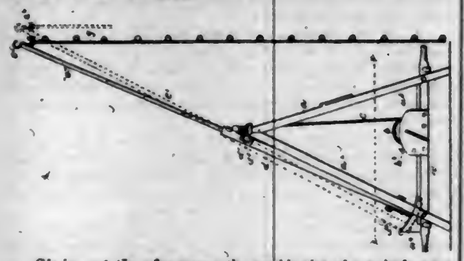
Claim.—1. The mode described of preventing the ignition of an explosive mixture within a chamber or reservoir communicating with the power-cylinder of a gas-engine, the same consisting in admitting a limited volume of air between the spent gases retained in the power-cylinder and each new charge drawn from the reservoir, substantially as described.

2. The method of operating a gas-engine, which consists in interposing a stratum or layer of air between the spent gases retained in the power-cylinder and each successive charge, substantially as described.

3. The method of operating a gas-engine, which consists in admitting a limited supply of air to the induction-passage of the power-cylinder in advance of each successive charge of explosive mixture, whereby a non-combustible fluid-body is interposed between the gases retained in the cylinder and the gaseous mixture in the reservoir, substantially as described.

4. The method of operating a gas-engine, which consists in drawing a limited supply of air into a reservoir containing a gaseous mixture and admitting said air to the power-cylinder between the spent gases retained therein and the working charge drawn from the reservoir, substantially as described.

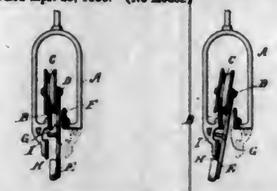
325,381. **FIRE-ESCAPE.** WILLIAM C. BARKLEY, Litchfield, Ill. Filed Apr. 30, 1885. (No model.)



Claim.—1. In a fire-escape, the combination of a main frame, a guide-frame pivoted thereto, means for holding the guide-frame in an adjusted position, a ladder made in detachable sections, one end of the sections being tenoned, the other provided with a socket to receive the tenoned end of the next succeeding section, and means, substantially as described, for raising and lowering said sections, substantially as specified.

2. The combination, with the main frame and the windlass journaled thereon, of the ladder made in detachable sections, the pivoted guide-frame, pulleys fastened to the upper end of the guide-frame, a hooked hoisting-bar, and the hoisting-rope, having one of their ends made fast to the hooked hoisting-bar, and their other ends passed over the said pulleys and made fast to the windlass, substantially as set forth.

325,382. **STORE-SERVICE APPARATUS.** ISIDORE BIRGE, Philadelphia, Pa., assignor to the Transit Apparatus Company, (Limited,) same place. Filed Apr. 23, 1885. (No model.)



Claim.—1. In combination with a single carrying rail or track for the wheeled carrier of a store-service apparatus, a guard-rail suspended or supported in propinquity to the track, and in such manner as to leave a longitudinally-extending continuous and vertically free open space between said guard-rail and said track or carrying rail.

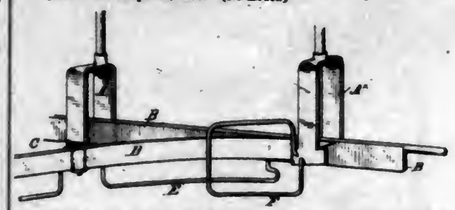
2. In a store-service apparatus, the combination of a suitably-supported carrying rail or track, a suitably-supported guard-rail in propinquity thereto, but so disposed as to leave a continuous open space between it and the carrying-rail, a traveling wheeled carrier adapted to run upon the carrying-rail and provided with a depending or pendulous arm or hanger, which passes down through and travels within the open space between the guard-rail and carrying-rail, substantially as and for the purpose set forth.

3. In combination with a single carrying rail or track for the wheeled carrier of a store-service apparatus, a hanger-rail suspended or supported below said carrying-rail at the outside of curved portions thereof.

4. In a store-service apparatus, the combination of a carrying rail or track for a wheeled carrier, a hanger-rail suspended or supported below said carrying-rail at the outside of curved portions thereof, and a traveling wheeled carrier adapted to run upon the carrying-rail, and provided with a depending or pendulous arm or hanger, the arrangement being such that the centrifugal throw of the hanger is limited by the hanger-rail.

5. In a store-service apparatus, the combination of a curved track composed of a single suitably suspended or supported carrying-rail, a guard-rail adjacent to a given side of said track at curved portions thereof, but at such distance from said track as to leave a continuous open space between them, a hanger-rail suitably suspended or supported below the level of the track or guard rail and to the outside of all curves, and a traveling wheeled carrier the wheel or wheels of which run upon the track, and which is provided with a depending arm adapted at curved portions of the track to travel between the track and the guard-rail and to the inside of the hanger-rail, substantially as shown and described, and for the purposes set forth.

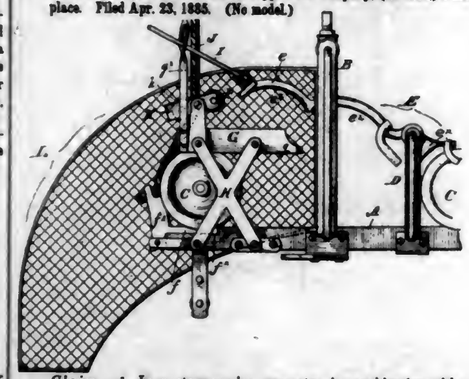
325,383. **STORE-SERVICE APPARATUS.** ISIDORE BIRGE, Philadelphia, Pa., assignor to the Transit Apparatus Company, (Limited,) same place. Filed Apr. 23, 1885. (No model.)



Claim.—1. In a store-service apparatus, in combination with a pivoted or movable switch-rail, a depending guard formed as a part of or connected with said rail, substantially as and for the purposes set forth.

2. In a store-service apparatus, the combination of a main track, a branch track, a movable switch-rail adapted to place the branch track in communication with the main track, a depending guard applied to said switch-rail, and a flaring guard adjacent to the movable extremity of the switch-rail and adapted to co-operate with the switch-guard in steadying the travel of the carrier from the switch-rail to the main track, substantially as set forth.

325,384. **STORE-SERVICE APPARATUS.** ISIDORE BIRGE, Philadelphia, Pa., assignor to the Transit Apparatus Company, (Limited,) same place. Filed Apr. 23, 1885. (No model.)



Claim.—1. In a store-service apparatus, in combination with a track which is suitably suspended or supported, an arresting device adjacent to the terminal extremity of the track, a receiving device applied to the extremity of the track and adapted to have movement with respect thereto, and a connecting device between said receiving and said arresting device which occasions their conjoint operation, as and for the purposes set forth.

2. In a store-service apparatus, the following elements in combination: a track, an arresting device adjacent to the extremity of said track, a receiving device applied to the extremity of said track, a connecting-device for connecting the arresting device with the receiving device and a cord for operating said receiving device, substantially as set forth.

3. In a store-service apparatus, in combination with a track suitably supported or suspended, a carrier-receiver applied to the terminal extremity of said track, a pivoted detent or kindred arresting device applied to said carrier-receiver, and a cord connected with said detent for operating said receiver, substantially as set forth.

4. In a store-service apparatus, in combination with a track suitably supported or suspended, a carrier-receiver applied to the terminal extremity of said track, a cord connected with said receiver, and pulleys applied to said receiver for easing the play of the cord, substantially as set forth.

5. In a store-service apparatus, the combination of a track, a pivoted carrier-receiver applied to the terminal extremity of the track, a cord for operating said pivoted receiver, and a hood for preventing entanglement of the cord, substantially as set forth.

6. In a store-service apparatus, in combination with a track suitably suspended or supported, a pivoted carrier-arrester having an arresting-arm upon each side of its pivot, a pivoted cage-like carrier-receiver composed, essentially, of a track-bar and a cover suitably connected, bars, a link or rod connecting the pivoted arrester with the pivoted receiver, and a cord for elevating the receiver, substantially as set forth.

7. In a store-service apparatus, in combination with a track suitably suspended or supported, a pivoted carrier-arrester, a pivoted carrier-receiver, a link or rod connecting the pivoted arrester with the pivoted receiver, a pivoted detent applied to said receiver, and a cord connected with said detent and adapted to control the throat or carrier-escape opening of said receiver, as and for the purposes set forth.

8. In a store-service apparatus, the combination of a track, a carrier-receiver applied to said track, being essentially a closed guard or cage for a carrier, and provided with a track-bar which, when the receiver is elevated, is a continuous connection of the track, a pivoted detent applied to the track-bar of the receiver which, when the receiver is elevated, forms a continuous connection of the track-bar, and a cord for conjointly operating both the detent and the carrier-receiver, substantially as described.

9. As an article of manufacture, a carrier-receiver for a store-service apparatus of the class herein recited, provided with a track-bar, being a continuation of the main track, and a pivoted detent being a continuation of the track-bar, substantially as described.

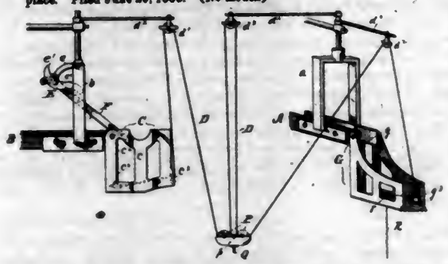
10. In combination with the pivoted carrier-receiver provided with the lifting-cord, pulleys for fixing one point of bearing or connection and for easing the movement of the cord with respect to the receiver, substantially as set forth.

11. In combination with the pivoted arrester, the pivoted receiver, the pivoted detent, and the cord for operating both the detent and the receiver, substantially as described.

12. As an article of manufacture, a carrier-receiver provided with a bell-muzzle or flaring throat, as and for the purposes set forth.

13. As an article of manufacture, a carrier-receiver for a store-service apparatus of the class herein recited, consisting of an inclosed cage adapted to be pivoted to the terminal extremity of the track, and provided as to its lower opening or floor region with a track-bar or a continuation of the track, substantially as set forth.

325,385. **STORE-SERVICE APPARATUS.** ISIDORE BIRGE, Philadelphia, Pa., assignor to the Transit Apparatus Company, (Limited,) same place. Filed June 29, 1885. (No model.)



Claim.—1. In a store-service apparatus, the combination of a receiver, a send-off, and a carrier-cord operating in connection with and common to both receiver and send-off.

2. In a store-service apparatus, the combination of a receiver, a send-off, a carrier-cord operating in connection with and common to both receiver and send-off, and a single pulling-rope for operating said carrier-cord, substantially as set forth.

3. In a store-service apparatus, the combination of a receiver, a send-off, a carrier-cord operating in connection with and common to both receiver and send-off, and pulleys above said receiver and send-off over which the cord passes.

4. In a store-service apparatus, the combination of a receiver, a send-off, a carrier-cord operating in connection with and common to both receiver and send-off, a pulley above the receiver, a pulley above the send-off, a pulley intermediate between said pulleys, and a double pulley, substantially as set forth.

5. In a store-service apparatus, the combination of a receiver, a send-off, a carrier-cord operating in connection with and common to both receiver and send-off, a pulley above the receiver, a pulley above the send-off, a double pulley beneath which the carrier-cord passes after it has passed over the pulleys above the receiver and send-off, and a pulley above the double pulley over which the cord also passes, substantially as set forth.

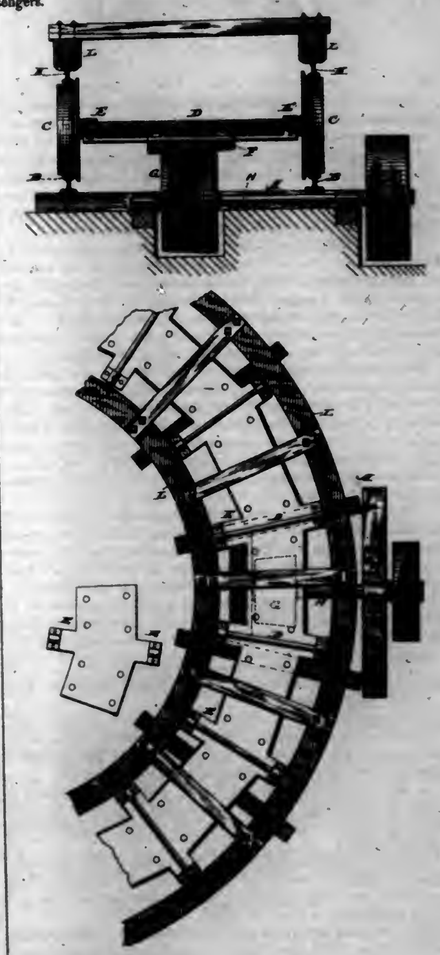
6. In a store-service apparatus, the combination of a receiver, a send-off, a carrier-cord operating in connection with and common to both receiver and send-off, a pulley above the receiver, a pulley above the send-off, a double pulley beneath which the carrier-cord passes after it has passed over the pulleys above the receiver and send-off, a pulley above the double pulley over which the cord also passes, and a single pulling-rope connected with the double pulley, substantially as set forth.

7. In a store-service apparatus, the combination of a receiver, a send-off, a carrier-cord operating in connection with and common to both receiver and send-off, a pulley above the receiver, a pulley above the send-off, a double pulley beneath which the carrier-cord passes after it has passed over the pulleys above the receiver and send-off, a pulley above the double pulley over which the cord also passes, a single pulling-rope connected with the double pulley, and a send-off cord connected with that portion of the carrier-cord which operates in connection with the send-off, substantially as set forth.

8. In a store-service apparatus, the combination of a receiver, an arrester, means for occasioning the operation of the arrester by the receiver, a send-off, and a carrier-cord common to and operating in connection with both receiver and send-off, substantially as set forth.

325,386. **CIRCULAR-TRAVELING DEVICE.** CHARLES BLIVEN, Norfolk, Va. Filed Dec. 4, 1884. (No model.)

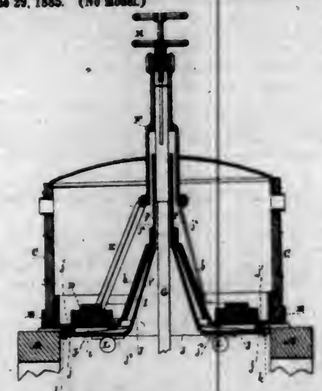
Brief.—A pleasure railway consisting of a circular track, and a circular truck moving thereon and having an intermediate bearing in connection with the driving-power, and carrying a circular whirling frame engaging the tops of the truck-wheels and carrying the seats for the passengers.



Claim.—1. The combination, with the lower circular rails or bearings, B B, concentrically arranged, of the radial axles D, the flanged wheels C C, of the different dimensions, the circular intermediate bearing, F, the bevel-wheel which engages said intermediate bearing, and the upper whirling circle frame having inverted rails or bearings engaging the tops of the wheels C C, substantially as specified.

2. The combination, with a circular track and a circular truck thereon carrying a circular depending bearing, of a driving bevel-wheel and a circular whirling frame engaging the tops of the truck-wheels and adapted to move with double the rapidity of the truck, substantially as specified.

325,387. AMALGAMATING-PAN. MARTIN P. BOSS, Oakland, Cal. Filed June 29, 1885. (No model.)



Claim.—1. In an amalgamating-pan, a continuous steam chamber or space under the bottom of the pan and behind or within its cone center, substantially as herein described.

2. In an amalgamating-pan, the combination of the pan B, having a cone center, *b*, with the piece, plate, or casting I, having a cone center, *i'*, said piece, plate, or casting being so fitted and secured to the pan as to leave a chamber or space, J, under the bottom of the pan and behind or within the cone center *b*, substantially as herein described.

3. In an amalgamating-pan, the pan B, having a cone center, *b*, and an annular rib or flange, *j''*, on its bottom, in combination with the piece, plate, or casting I, having a cone center, *i'*, and fitted under the pan against the rib or flange *j''* with suitable packing, its cone center fitting up within cone *b* of the pan and united with the top of said cone by a steam-tight joint, whereby a steam-chamber, J, is formed under the pan and behind or within its cone, substantially as herein described.

4. In an amalgamating-pan, the combination of the pan B, having cone center *b*, with the piece, plate, or casting I, having an annular portion or rim, *i*, a cone center, *i'*, and tubular extension *i²*, said piece, plate, or casting being so fitted and secured to the pan as to leave a steam chamber or space, J, under the pan and behind or within its cone center, the tubular extension passing upwardly through and united with said cone center, and forming the bearing for the driving-shaft, substantially as herein described.

5. In an amalgamating-pan, the pan B, having cone center *b*, in combination with the piece, plate, or casting I, as described, and so fitted and secured to the pan as to form a steam chamber or space, J, under the pan and behind or within its cone center, and the steam-ports L L, communicating with said chamber, substantially as herein described.

6. In an amalgamating-pan, the pan B, having the annular ribs *j'' j²* on its bottom in the vertical plane approximately of the outer and inner edge of the dies and shoes, substantially and for the purpose as herein described.

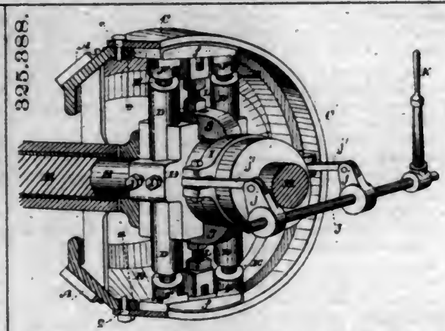
325,388. FRICTION-CLUTCH. MARTIN P. BOSS, Oakland, Cal. Filed July 1, 1885. (No model.)

Claim.—1. In a friction-clutch, the ring C, of a springy nature, secured to the part or mechanism driven and operated by friction mechanism on the part driving, the said friction mechanism bearing directly against the flange of the ring, substantially as herein described.

2. In a friction-clutch, the ring C, of a springy nature, secured to the part or mechanism driven, in combination with radially-moving shoes on the part driving adapted to bind against the ring, substantially as herein described.

3. In a friction-clutch, the ring C, of a springy nature, secured to the part or mechanism driven, and adapted to have a slight movement thereon, said ring being operated by friction mechanism on the part driving, substantially as herein described.

4. In a friction-clutch, the gear A, or other part or mechanism to which power is to be transmitted, having a flange, *a*, in combination



with the ring C, of a springy nature, and operated by friction mechanism on the driving-shaft, and the pins *c*, through the ring and loosely seated in the flange, whereby the ring may have a slight movement thereon, substantially as herein described.

5. In a friction-clutch, the gear A, or other part or mechanism to which power is to be transmitted, having a flange, *a*, and the ring C, of a springy nature, secured to the flange *a* by pins *c*, loosely seated thereon, as described, in combination with radially-moving shoes on the driving-shaft adapted to bend against the ring, substantially as herein described.

6. In a friction-clutch, the ring C, of a springy nature, secured to the part or mechanism to which power is to be transmitted, in combination with a head on the driving-shaft, guides in the head, shoes on the guides adapted to move radially to bind on the ring, and mechanism for operating the shoes, substantially as herein described.

7. In a friction-clutch, and in combination with a friction-ring on the part or mechanism to which power is to be transmitted, the head D, fixed on the driving-shaft, the radial guides E, fixed in the head, the shoes F, fitted and sliding on the guides, and mechanism for moving said shoes to force them against or withdraw them from the friction-ring, substantially as herein described.

8. In a friction-clutch, and in combination with a friction-ring on the part or mechanism to which power is to be transmitted, the head D, fixed on the driving-shaft, the radial guides E, fixed in the head, the shoes F, fitted and sliding on the guides, the yoke G, mounted loosely on the driving-shaft and having arms *g* resting in recesses in the head, the toggles or links L, pivoted to the shoes and to the arms of the yoke, and mechanism for longitudinally moving the yoke to move the shoes radially to or from the friction-ring, substantially as herein described.

9. In a friction-clutch, and in combination with a friction-ring on the part or mechanism to which power is to be transmitted, the head D, fixed on the driving-shaft, the radial guides E, fixed in the head, the shoes F, fitted and sliding on the guides, the yoke G, mounted loosely on the driving-shaft and having arms *g* resting in recesses in the head, the toggles or links L, pivoted to the shoes and to the arms of the yoke, the collar I, loosely embracing the hub of the yoke, the rock-shaft J, and the links *j''*, connecting the cranks with the collar, all arranged and adapted to operate substantially as herein described.

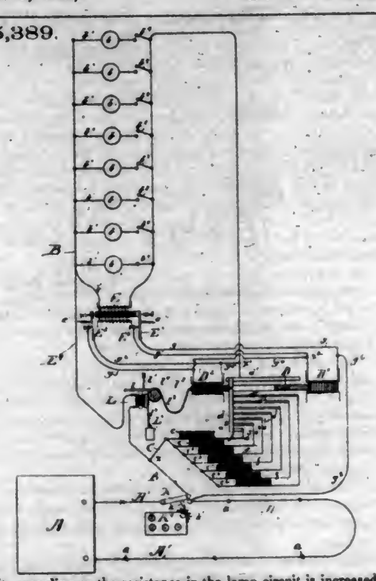
325,389. CIRCUIT FOR ARC AND INCANDESCENT ELECTRIC LIGHTS. HAROLD P. BROWN, Chicago, Ill. Filed Dec. 19, 1884. (No model.)

Claim.—1. The combination of a local or incandescent-lamp circuit, B, having two or more incandescent lamps or other translating devices arranged in parallel group, with an electro-motive device or magnet arranged in said circuit in parallel like one of the lamps, a shunt-circuit having an automatically-variable resistance, and an electro-motive device normally short-circuited, arranged in the main circuit, for varying the resistance in the shunt-circuit, said electro-motive device being put in operation by said electro-motive device in said local circuit B, substantially as specified.

2. The combination of main or high-tension circuit A' with local or lamp circuit B, having incandescent lamps *b*, and electro-magnet E, arranged in parallel, shunt-circuit C, having resistances *c c'*, &c., arranged in parallel, and an electro-motive device operating a contact-maker, *d*, to vary the resistance in said shunt as occasion may require, said electro-motive device being put in operation by said electro-magnet E in the lamp-circuit current, substantially as specified.

3. The combination of a main circuit with a local or incandescent-lamp circuit having a group of incandescent lamps and an electro-magnet, E, in parallel, shunt-circuit C, having variable resistance, a contact-maker, *d*, for varying said resistance in said shunt-circuit, and a double solenoid normally short-circuited in the main circuit and having a movable core, D, for operating said contact-maker *d*, said magnet E operating to put one or the other coil of said double solenoid in the main circuit and cause the same to thus increase or diminish the resistance of the shunt-

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circuit, according as the resistance in the lamp-circuit is increased or diminished by the lighting or extinguishment of some of the lamps, substantially as specified.

4. The combination of a local or incandescent-lamp circuit, B, having two or more incandescent lamps in parallel group, with a shunt-circuit, C, having an automatically-variable resistance, an electro-magnet or relay the coil of which is arranged in parallel with said lamps, and an electro-motive device, normally short-circuited, set in operation by said relay for varying the resistance of said shunt, substantially as specified.

5. The combination, with a main or high-tension circuit, of a number of incandescent lamps in multiple arc or parallel group, a shunt-circuit around the group of lamps having a variable resistance included therein, a relay included in a branch circuit, and an electro-motive device set in operation by said relay for varying the resistance of said shunt, substantially as specified.

6. The combination, with a main or arc-light circuit, of a group of incandescent lamps in multiple arc, a variable-resistance shunt around said group, an electro-magnet or relay included in a branch circuit, and a double solenoid for varying the resistance of said shunt, the action of said solenoid being controlled by said relay, substantially as specified.

7. The combination, with a main or arc-light circuit, of a group of incandescent lamps in multiple arc, a variable-resistance shunt around said group, an electro-magnet or relay in a branch circuit, two switches or contact-pieces operated by said relay, and a double solenoid one coil of which is energized by the movement of one of said switches or contact-pieces and the other by the other of said switches or contact-pieces, and a movable contact or device actuated by the movable core of said solenoid for varying the resistance of said shunt, substantially as specified.

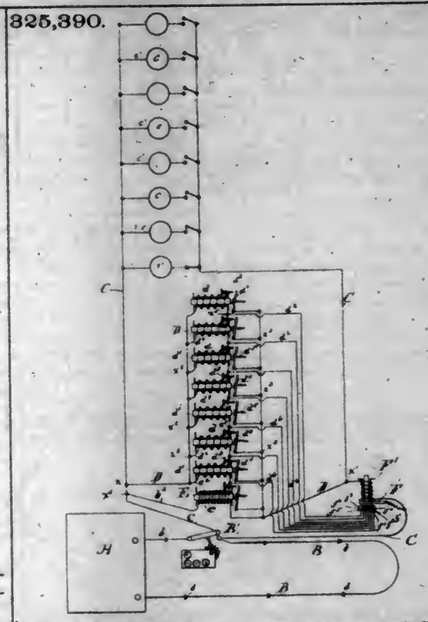
8. The combination, with a main or arc light-circuit, of a group of incandescent lamps in multiple arc, a variable-resistance shunt around said group, an electro-magnet or relay in a branch circuit, an electro-motive device set in operation by said relay for varying the resistance of said shunt, and a device for reducing the resistance of said shunt to a minimum when the current ceases, in order to guard against injury when the current is again turned on.

9. The combination, with a main or arc-light circuit, of a group of incandescent lamps in multiple arc or parallel, a shunt around said group having a variable resistance consisting of a number of separate resistances arranged in parallel, a relay included in a branch circuit, and an electro-motive device set in operation by said relay for varying the resistance of said shunt, substantially as specified.

325,390. ARC AND INCANDESCENT LIGHTING SYSTEM. HAROLD P. BROWN, Chicago, Ill. Filed Jan. 8, 1885. (No model.)

Claim.—1. The combination of main circuit B with local or incandescent-lamp circuit C, having two or more incandescent lamps arranged in parallel group, with the shunt-circuit D, having two or more resistance-coils, *d*, arranged in parallel group, switches connected with said coils, each resistance-coil forming part of an electro-magnet for operating the switch to put each succeeding resistance-coil in the shunt-circuit when required, substantially as specified.

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2. The combination of local or incandescent-lamp circuit C, having a number of incandescent lamps arranged in parallel group, with shunt-circuit D, having two or more resistance-coils, each resistance-coil being provided with a core, *d'*, armature-lever d^4, and contact-piece d^2, whereby each succeeding resistance-coil may be put in the shunt-circuit by the preceding one, substantially as specified.

3. The combination of local or incandescent-lamp circuit C, having a number of incandescent lamps arranged in parallel group, with shunt-circuit D, having two or more resistance-coils, each resistance-coil being provided with a core, *d'*, armature-lever d^4, and contact-piece d^2, and springs d^5 for said armature-levers, each succeeding spring being stronger than the preceding one, whereby said armature-levers will be pulled back in the reverse order, substantially as specified.

4. The combination of local or incandescent-lamp circuit C, having a number of incandescent lamps arranged in parallel group, with shunt-circuit D, having two or more resistance-coils, each resistance-coil being provided with a core, *d'*, armature-lever, and contact-piece d^2, each of said armature-levers being provided with a projecting arm, d^6, overlapping its preceding armature-lever, so that said armature-levers must drop away in the reverse order to that in which they are pulled up, substantially as specified.

5. The combination of local or incandescent-lamp circuit C, having a number of incandescent lamps arranged in parallel group, with shunt-circuit D, having two or more resistance-coils, each resistance coil being provided with a core, *d'*, armature-lever d^4, and contact-piece d^2, electro-magnet F', contact-making lever F, contact-pieces *f f'*, &c., and wires d^3, connecting said contact-pieces with said resistance-coils, whereby all said resistance-coils will be put in the shunt-circuit whenever the current on the circuit C ceases, substantially as specified.

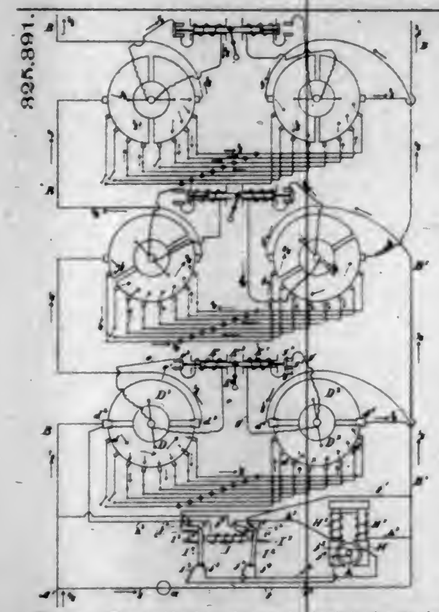
6. The combination of a series of three or more electro-magnets having armature-levers d^4, each provided with an arm or projection, d^7, overlapping its preceding armature-lever, so that said armature-levers must be drawn back in their reverse order, substantially as specified.

7. The combination of a series of electro-magnets having armature-levers d^4, provided with arms or projections d^7, overlapping each preceding armature-lever, and springs d^5, of gradually-increasing strength, so that said armature-levers will drop away in reverse order, substantially as specified.

8. The combination of local or incandescent-lamp circuit C, having two or more incandescent lamps arranged in parallel group, with shunt-circuit D, having two or more resistance-coils, *d*, circuit-closing switches connected with said coils, each of said resistance-coils forming part of an electro-magnet for operating one of said switches, and an electro-magnet, E, the coil of which is in parallel with the lamps for operating one of said switches to close said shunt-circuit D, substantially as specified.

325,391. SYSTEM FOR OPERATING INCANDESCENT LAMPS. HAROLD P. BROWN, Chicago, Ill. Filed Feb. 13, 1885. (No model.)

325,891.



Claim.—1. The combination, with a main circuit having two legs or conductors, of a number of incandescent lamps or other translating devices arranged between said legs in a series of adjustable or shifting groups, as contradistinguished from fixed or prearranged groups, so that the number of groups may change from time to time according to the number of lamps actually in use, substantially as specified.

2. A main circuit having two legs or conductors, a number of incandescent lamps arranged in groups between them, an electro-motive device actuated by the current passing on said legs, and a switch operated thereby to break connection on one of said legs when the fraction of the current thereon falls below that required for one lamp in the group, and thus automatically divide the lamps into groups, substantially as specified.

3. The combination of a main circuit having two legs or conductors with a number of incandescent lamps arranged in groups between them, an electro-motive device actuated by the current passing on said legs, a switch operated thereby to break connection on one of said legs when the fraction of the current thereon falls below that required for one lamp, and a variable resistance to compensate for the resistance of the remaining lamps of a fractional group, substantially as specified.

4. The combination, with a main circuit having two legs or conductors, of a number of incandescent lamps or other translating devices arranged between said legs in a series of adjustable or shifting groups, as contradistinguished from fixed or prearranged groups, so that the number of groups may change from time to time according to the number of lamps actually in use, and a switch for shifting the return-terminal of said main circuit from one of said legs to the other when the number of groups is changed, substantially as specified.

5. The combination of a main circuit having two legs or conductors with a number of incandescent lamps arranged in groups between them, and an electro-motive device actuated by the current passing on said legs, a switch operated thereby to break connection on one of said legs when the fraction of the current thereon falls below that required for one lamp, and a switch for shifting the return-terminal of the main circuit from one of said legs or conductors to the other when the number of groups is changed, substantially as specified.

6. The combination of a main circuit having two legs or conductors with a number of incandescent lamps arranged in groups between them, an electro-motive device actuated by the current passing on said legs, a switch operated thereby to break connection on one of said legs when the fraction of the current thereon falls below that required for one lamp, and a variable resistance to compensate for the resistance of the remaining lamps of a fractional group, and a switch for shifting the return-terminal from one of said legs to the other, substantially as specified.

7. The combination, with a main circuit having two legs or conductors, of a number of incandescent lamps or other translating devices arranged between said legs in a series of automatically adjustable or shifting groups, as contradistinguished from fixed or prearranged groups, so that the number of groups may change from time to time according to the number of lamps actually in use, a switch for shifting the return-terminal from one of said legs to the other when the number of groups is changed, and an electro-motive device actuated by the current on said legs for operating said switch, substantially as specified.

8. The combination of a main circuit having two legs or conductors with a number of incandescent lamps arranged in groups between them, an electro-motive device actuated by the current passing on said legs, a switch operated thereby to break connection on one of said legs when the fraction of the current thereon falls below that required for one lamp, and a variable resistance to compensate for the resistance of the remaining lamps of a fractional group, and a switch for shifting the return-terminal from one of said legs to the other, and an electro-motive device actuated by the current on said legs for operating said switch, substantially as specified.

9. The combination of a main circuit having two legs or conductors with incandescent lamps arranged in groups between them, said lamps being connected to said legs through movable contact-pieces or disks, so that by moving said contact-pieces or disks lamps may be shifted from one group to another, substantially as specified.

10. The combination of a main circuit having two legs or conductors with a number of incandescent lamps arranged in groups between them, a pair of revolving half-disks in each of said legs or conductors, brushes connecting lamps with said disks, a switch to make or break connection between the two half-disks in each leg or conductor, and an electric motor to revolve said half-disks to shift lamps from one group to the other, substantially as specified.

11. The combination, with two parallel conductors, of two or more groups of incandescent lamps arranged between them, and means for shifting the lamps or their connections from one group to the other, substantially as specified.

12. The combination, with two conductors, of two or more groups of incandescent lamps, and movable contact-pieces to which a number of lamps are connected, and an electro-motive device for moving said contact-pieces to shift the lamps from one group to another, as may be required, substantially as specified.

13. The combination, with a main circuit having two legs or conductors, of two or more groups of incandescent lamps arranged between them, means for shifting the lamps or their connections from one group to another, automatic electric switches to make or break connection in each of said legs or conductors, and an automatic electric switch to shift the connection of the return-terminal from one of said legs or conductors to the other when the number of groups is changed, substantially as specified.

14. The combination of a main circuit having two legs or conductors with a number of incandescent lamps arranged in groups between them, a pair of revolving half-disks in each of said legs or conductors, brushes connecting lamps with said disks, a switch to make or break connection between the two half-disks in each leg or conductor, and an electric motor to revolve said half-disks to shift lamps from one group to the other, and a switch to change the return-terminal from one of said legs to the other, substantially as specified.

15. The combination of main circuit A, having legs or conductors B B′, with lamps *a*, arranged in groups between them on cross-wires *b*, revolving half-disks D D′ D^2 D^3, double solenoid E E′, having its coils connected with said half-disks, switches c^2 and g^2, electric motor H, having its field H′ connected with said parallel conductors, electro-magnet I, having armature-levers I′ I^2, provided with switches adapted to make connection with the armature-magnet of said motor and pass the current in opposite directions through said armature-magnet, according as connection is made through one or the other of said levers I′ I^2, substantially as specified.

16. The combination of a main circuit, A, having legs or conductors B B′, with lamps *a*, arranged in groups between them on cross-wires *b*, revolving half-disks D D′ D^2 D^3, double solenoid E E′, having its coils connected with said disks, switches c^2 and g^2, electric motor H, having its field H′ connected with said parallel conductors, electro-magnet I, having armature-levers I′ I^2, provided with switches adapted to make connection with the armature-magnet of said motor and pass the current in opposite directions through said armature-magnet, according as connection is made through one or the other of said levers I′ I^2, and a solenoid, *c c′*, switch c^2 c^3, substantially as specified.

17. The combination of a main circuit, A, having legs or conductors B B′, with lamps *a*, arranged in groups between them on cross-wires *b*, revolving half-disks D D′ D^2 D^3, double solenoid E E′, having its coils connected with said disks, switches c^2 and g^2, electric motor H, having its field H′ connected with said parallel conductors, electro-magnet I, having armature-levers I′ I^2, provided with switches adapted to make connection with the armature-magnet of said motor and pass the current in opposite directions through said armature-magnet, according as connection is made through one or the other of said levers I′ I^2, and a solenoid, *c c′*, switch c^2 c^3, electro-magnet C, and resistance-coil b^2, having cores b^3, and switch-lever armatures b^4, substantially as specified.

18. The combination of a main circuit, A, having legs or conductors B B′, with lamps *a*, arranged in groups between them on cross-wires *b*, revolving half-disks D D′ D^2 D^3, double solenoid E E′, having its coils connected with said disks, switches c^2 and g^2, electric motor H, having its field H′ connected with said parallel conductors, electro-magnet I, having armature-levers I′ I^2, provided with switches adapted to make connection with the armature-magnet of said motor and pass the current in opposite directions through said armature-magnet, according as connection is made through one or the other of said levers I′ I^2, and a solenoid, *c c′*, switch c^2 c^3, electro-magnet C, and resistance-coil b^2, having cores b^3 and switch-lever armatures b^4, and electro-magnet K, connected with the first resistance-coil, and having armature-lever *k*, engaging in notches in the movable core of said solenoid *c c′*, substantially as specified.

19. The combination of revolving half-disks D D′ D^2 D^3 with shaft D^7, parallel conductors B B′, and an electric motor, H, for revolving said shaft, substantially as specified.

20. The combination of revolving half-disks D D′ D^2 D^3 with shaft D^7, parallel conductors B B′, and an electric motor, H, for revolving said shaft, and an electro-magnet actuated by the current on said conductors B B′ to reverse the direction of the current through said motor and turn said shaft in one direction or the other, as may be required, substantially as specified.

21. The combination of revolving half-disks D D′ D^2 D^3 with shaft D^7, parallel conductors B B′, and an electric motor, H, for revolving said shaft, an electro-magnet actuated by the current on said conductors B B′ to reverse the direction of the current through said motor and turn said shaft in one direction or other, as may be required, and an electro-magnet, I, having armature-switch levers I′ I^2 to start said motor in one direction or the other, according as the fraction of the current on one of said legs is greater or less than that required for one lamp, substantially as required.

22. The combination of parallel conductors B B′, lamps *a*, half-disks D D′ D^2 D^3, solenoid E E′, and switches operated thereby, motor H, electro-maguet I, having switch-levers I′ I^2, substantially as specified.

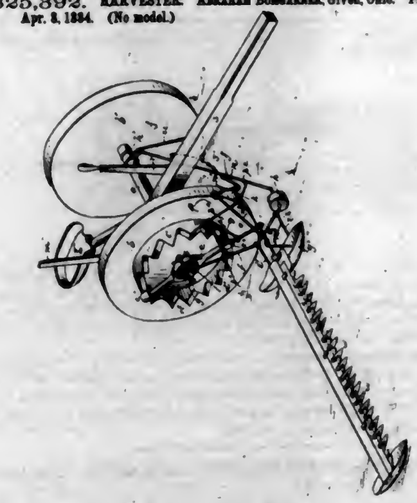
23. The combination of parallel conductors B B′, lamps *a*, half-disks D D′ D^2 D^3, solenoid E E′, and switches operated thereby, motor H, electro-magnet I, having switch-levers I′ I^2, resistance-coils b^2, and electro-magnet C, substantially as specified.

24. The combination of parallel conductors B B′, lamps *a*, half-disks D D′ D^2 D^3, solenoid E E′, and switches operated thereby, motor H, electro-magnet I, having switch-levers I′ I^2, resistance-coils b^2, and electro-magnet C, and solenoid *c c′* and switches operated thereby, substantially as specified.

25. The combination of parallel conductors B B′, lamps *a*, cross-wires *b′*, revolving half-disks D D′ D^2 D^3, insulating-plates D^4 D^5, shaft D^7, brushes *d* d^2 d^3 d^4 d^5, insulated rings F F′ G G′, brushes *f f′ g g′*, and double solenoid E E′ and switches operated thereby, substantially as specified.

26. The system or means of operating a number of incandescent lamps from a suitable source of electric energy, consisting in a main circuit having two parallel legs or conductors, a number of incandescent lamps connected between said conductors, means for opening the circuit in said conductors on alternate sides to arrange said lamps in a series of groups, and means for shifting lamps from one group to another, substantially as specified.

325,892. HARVESTER. ABRAHAM BURGARNER, Girard, Ohio. Filed Apr. 3, 1884. (No model.)



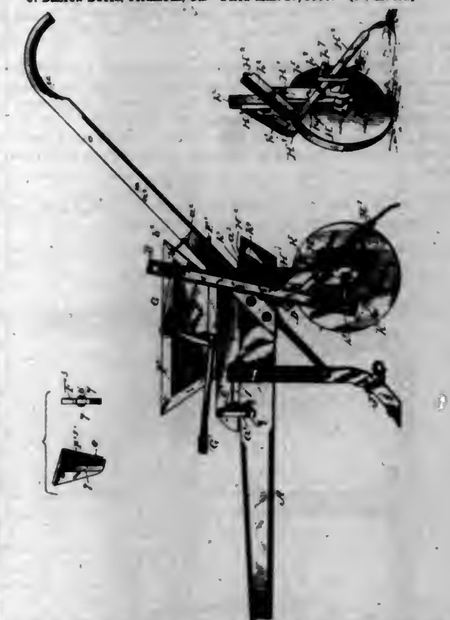
Claim.—1. In a harvester, the combination, with the axle, of the double-crank rod journaled in a bearing on a sleeve on the axle and in a bearing on an arm rising from the bent rod *f*, and connected to an arm on the inner shoe of the finger-bar, the hinged finger-bar, and the bent lever *m′*, connected by a link to the crank-arm on the rear end of the double-crank rod, substantially as specified.

2. In a harvester, the combination of the bent rod *f*, secured to the axle by eyes and provided with the angular brace-rod *p*, connected by an arm, *q*, to the rod *o*, the oscillating lever, the hinged cutter-bar, and the segment-lever *r*, fulcrumed to the tongue and connected to the bent rod *f* by a chain, substantially as specified.

3. In a harvester, the combination, with the bent rod *f*, hinged to the axle, of the ground-wheel, the hinged cutter-bar, and the lever for raising said bent rod, substantially as specified.

4. The combination of the axle, the supporting and driving wheels, wave-wheel *e*, vibrating lever *e*, bent rod *f*, ground-wheel A, journaled thereon, the finger-bar hinged to the rod *f*, the cutter-bar connected to the lever *e*, rod *k*, having cranks *n′* and l^2, said rod journaled to the rod *f* and to a sleeve on the axle, and the crank *n′*, connected to the hinged finger bar, the bent lever *m′*, connected to the crank l^2 and fulcrumed on the axle, tongue *s*, and lever *r*, connected to the rod *f*, substantially as described.

325,893. PLANTER, SEEDER, AND FERTILIZER-DISTRIBUTER. J. BELTON BUTTS, Columbus, Ga. Filed Mar. 27, 1885. (No model.)



Claim.—1. In an interchangeable planter and seeder, the seed-planting hopper F, divided into sections *z z′* by means of a partition, F^3, said partition having a lower central perpendicular cut-away portion, 6, covered by depending spring-tongue 7, said hopper having a bottom provided with a central aperture, *f′*, in combination with a reciprocating slide, F′, having apertures f^3, and having at one side forwardly pivoted thereto a bar, G′, whereby when the device is operated said slide will pass forward and backward through apertures f^3 in the front and rear of said hopper, substantially as described.

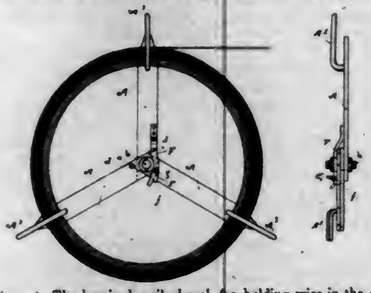
2. In an interchangeable seeder and planter, a drive-wheel, H, having its axle mounted to and between the arms *h* of a hanger, H′, said hanger having a bridge-piece, *h′*, and an upwardly-projecting arm h^2, apertured to receive a bolt, each of the arms *h* having an obliquely-inclined bar, h^4, as and for the purpose intended, substantially as described.

3. In a seeder and planter, a drive-wheel the axle of which is mounted to and between the side arms of a détachable hanger, said arms having pivoted rearward thereto obliquely-inclined coverers, the upper ends of said coverers being connected to helical springs H^3, resting on inclined bars h^4, pivoted to the side bars of the hanger, whereby said coverers will spring upward when their points meet resistance and regain their normal position upon withdrawal of resistance, substantially as described.

4. In an interchangeable seeder and planter, a dropping-hopper having on one side an outwardly-projecting crank pivoted to the upper

end of a pitman, said pitman pivoted at its lower end to a drive-wheel journaled to and between the side arms of a detachable hanger, said side arms having rearwardly-extending obliquely-inclined bars, upon which rest helical springs, said arms also having pivoted thereto followers controlled by said springs, in combination with said hanger and drive-wheel, as and for the purpose intended, substantially as described.

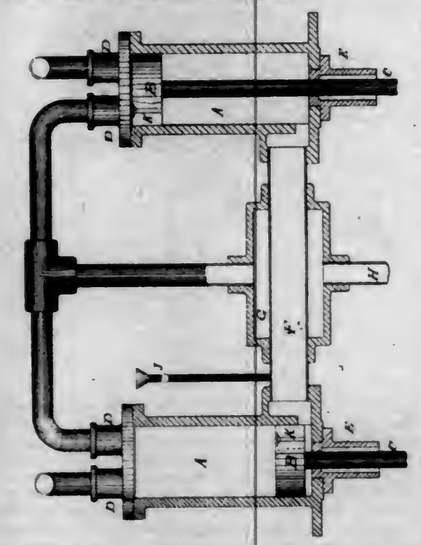
325,394. REEL FOR HOLDING WIRE IN THE COIL. ANDREA CAVALLI, San Francisco, Cal. Filed Aug. 29, 1884. (No model.)



Claim.—1. The herein-described reel for holding wire in the coil, consisting of the folding frame A A A, the wires A', and the stops *d e*, and locking-spring F.

2. A folding reel adapted for insertion into a coil of wire while in the contracted or closed form, and by expansion or opening out to take the coil and give points of support around the circumference of the same, consisting of the arms A, pivoted together with the forked ends A' A', and the stops *d e*, and the catches F, for holding the arms when spread out, and the cam *g*, for operating the spring, substantially as herein described.

325,395. AIR OR GAS COMPRESSING PUMP. JOHN B. CLOT, San Francisco, Cal. Filed May 13, 1885. (No model.)



Claim.—1. In a gas or air compressing pump, the combination of the two cylinders A A, the pistons B B, with a connecting-channel, F, the inlet and outlet valves D D D D, the chamber G, the pipe and cock J, and the valves K K, substantially as shown and described, and for the purposes set forth.

2. In an air or gas compressing pump, the combination of the cylinder, piston, connecting-channel, and surrounding chamber and conduits, with a body of lubricating-fluid by which the heat is abstracted from the walls of the cylinders and transferred to the air or gas which is passing through the chamber on its way to the pumps to be compressed, all substantially as shown and described, and for the purpose set forth.

325,396. FEEDING MECHANISM FOR SEWING-MACHINES. JASPER W. COREY, Cincinnati, Ohio, assignor to Henry Muhlhauser, same place. Filed June 18, 1885. (No model.)

325,396.

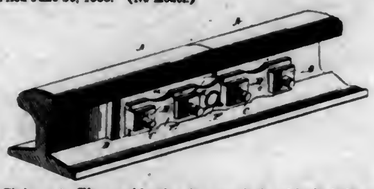


Claim.—1. In a sewing-machine, the combination, with the driving-shaft and its cam, of a connecting-bar having at its upper end a yoke and at its lower end a rigid horizontal arm provided with a pin, a regulating-block on one side of the machine, having a slot in which said pin works, a feed-bar, a feed-lever on the side of the machine opposite to the said block, and a link connecting said lever with the said connecting-bar, substantially as set forth.

2. In a sewing-machine, the combination, with a shuttle-lever having a laterally-projecting arm, and mechanism for vibrating said lever, of a feed-bar, a feed-lever having a bend or incline, an intermittingly-reciprocated connecting-bar, having at its lower end a horizontal arm provided with a pin, a regulating-block having a slot in which said pin works, a link connecting said bar with the said feed-lever, and a spring for lifting the rear end of the feed-lever, substantially as set forth.

3. In a sewing-machine, the combination, with a feed-bar and an intermittingly-moving operating-bar, having a rigid horizontal arm provided with a pin, of a feed-lever on one side of the machine, a link connecting said feed-lever with said operating-bar, a slotted regulating-block on the side of the machine opposite to said feed-lever, in which said pin works, an adjusting-arm rigidly connected with said block and provided with a set-nut, and a bed-plate having a curved projection against which said nut impinges, substantially as set forth.

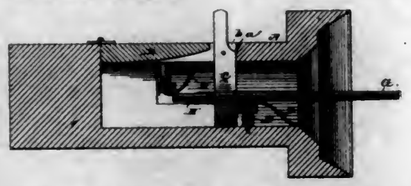
325,397. NUT-LOCK. JOHN CUNNINGHAM, Hampton Junction, N. J. Filed June 30, 1885. (No model.)



Claim.—1. The combination, in a nut-lock, with the bolts and their nuts, of springs fitting on the bolts and engaged by the nuts, said springs being formed with loops, and a locking-plate having a recess, *d*, substantially as set forth.

2. The combination, in a nut-lock, with the bolts and nuts, of the springs substantially U shape in form and bent at their upper ends to form loops G, and the locking-plate having a recess, *d*, substantially as set forth.

325,398. CAR-COUPLING. THOMAS R. DANIEL, Parkville, Mo. Filed May 25, 1885. (No model.)

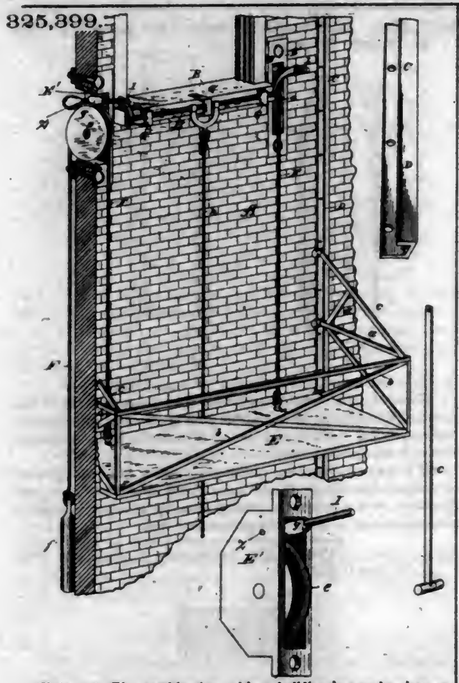


Claim.—1. In a car-coupling, the combination, with a draw-head having an opening on its upper side and a hinged cap adapted to close said opening, of a coupling-pin pivoted to said cap and having a recess or seat on its lower front side, and a projection extending from the bottom of the draw-head, as set forth.

2. The combination, with a draw-head, of the plate D, hinged at its forward end in the bottom thereof, a spring bearing against the under side of the plate, at the rear end thereof, and the spring-actuated plates E' E', hinged at their forward ends to the inner upper side of the draw-head, substantially as set forth.

325,399. FIRE-ESCAPE. DANIEL F. DAVIS, Easton, Pa. Filed July 6, 1885. (No model.)

325,399.

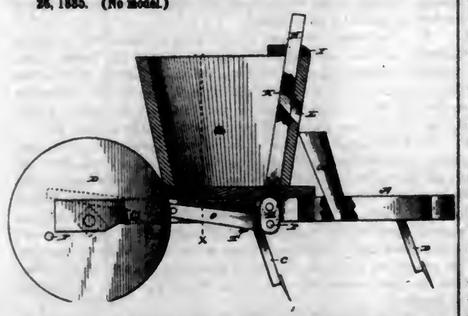


Claim.—1. The combination, with a building having brackets secured thereto, pulleys in said brackets, and a car suspended from ropes passing over said pulleys, of a vertically-moving brake-bar, brake-arms pivoted in the brackets and connected with the brake-bar, brake-shoes on said arms, and a rope for operating the brake-bar to lower the shoes on the pulleys, as set forth.

2. The car having bars *a*, provided with projecting ends carrying rollers, and the inclined rods *c*, having rollers at their ends and braced by the rod *d*, and the vertical tracks in which the rollers work, substantially as described.

3. The combination, in a fire-escape, of the car having the rollers, the vertical tracks therefor, the pulleys in the wall of the building, the ropes attached to the car and passing over the pulleys, and the weights on the free ends of the ropes to raise the car automatically when the same is unloaded, substantially as described.

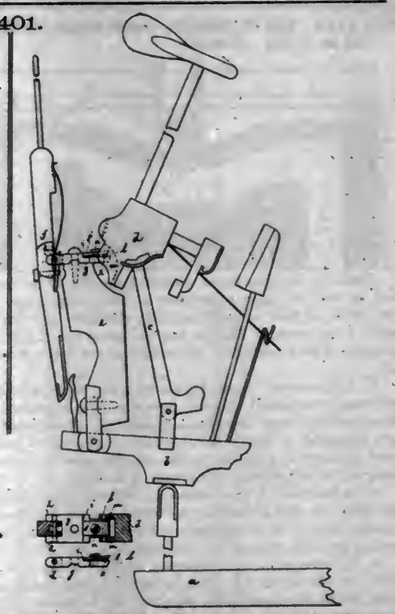
325,400. CORN-PLANTER. LEVI EARLEY, Whitt, Tex. Filed May 26, 1885. (No model.)



Claim.—The combination of the frame and the hopper having the closed bottom and the openings L in one side, with the driving-wheel having the tappet-pins E F, the seed-slides having the openings or cups K, the fulcrumed levers O actuated by the tappet-pins, and connected to the lower ends of the seed-slides, and the cord or strap T, passing over the sheave S, and secured to the free ends of the levers, whereby the seed-slides are reciprocated alternately in opposite directions, substantially as described.

325,401. PIANO-ACTION. FREDERICK EBERHARDT, New York, N. Y. Filed Mar. 9, 1885. (No model.)

325,401.



Claim.—1. The combination of hammer-butt *d* and butt-flange *g*, cut away at the top to form step *i*, with rigid plate *j*, fitting against said step, and with screw *n*, substantially as specified.

2. The combination of hammer-butt *d* with butt-flange *g*, plate *j*, having beveled front edge, and with screw *n*, substantially as shown and described.

325,402. STOP-WATCH. FREDERICK PITT, Chaux-de-Fonds, Neufchatel, Switzerland. Filed July 5, 1884. (Model.)



Claim.—1. In combination with an ordinary watch movement and dial, a sleeve encircling the seconds shaft or pivot provided with a seconds-hand, a disk to bear against the dial, and a heart-cam carrying a friction-spring to act upon said shaft, a spring having its end seated in a groove in said sleeve, and a lever having a V-shaped end working beneath the latter spring and serving to raise and lower the same, substantially in the manner and for the purpose set forth.

2. In combination with plate A and seconds-shaft B of a watch-movement, sleeve C, encircling said shaft and provided with disk *a*, circumferential groove *b*, and cam D, spring F, having its end seated in said groove, and shiftable lever G, provided with head *d* and extending beneath spring F, substantially as and for the purpose set forth.

3. In combination with a watch movement and dial, a sleeve or tubular shaft encircling the seconds-shaft of said movement, bearing the seconds-hand, provided with a light friction-spring resting upon said shaft, and with a disk and a bar adapted and arranged to lift the sleeve and press the disk into engagement with the dial, substantially as shown and described.

4. In combination with a watch movement and dial, a sleeve, C, encircling the seconds-shaft B and provided with disk *a*, groove *b*, and cam D, spring F, secured to the watch-plate and having its free end seated in groove *b*, lever G, extending beneath spring F and provided with head *d*, cam-wheel I', and mechanism, substantially such as described and shown, adapted to impart a step-by-step rotation to the wheel I'.

5. In combination with a watch movement and dial, a sleeve, C, encircling the seconds-shaft B and provided with disk *a*, groove *b*, and cam D, spring F, secured to the watch-plate and having its free end seated in groove *b*, lever G, extending beneath spring F and provided with spur *f* and head *d*, cam-wheel I', provided with notches *f* and faces *g h i*, ratchet-wheel L, lever L, provided with stud M, dog K, carried by said lever, and springs N O P, applied to the dog, the ratchet-wheel, and the lever, substantially as shown and described.

325,403. ROOF OF FURNACES. JOHN H. FLAGLER, New York, N. Y. Filed Jan. 31, 1884. (No model.)



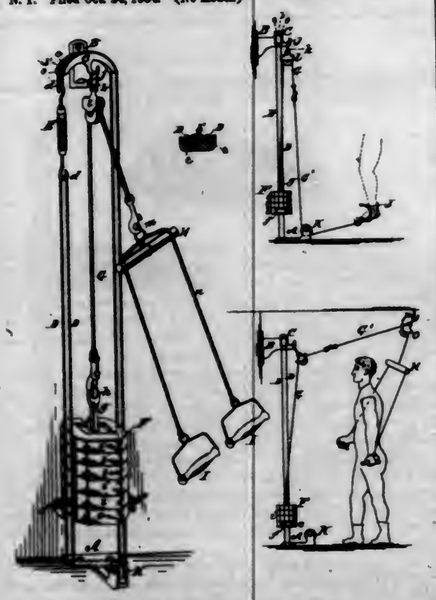
Claim.—1. In furnace-roofs, the combination of a holder hung from above the roof and having a dovetailed or similar recess therein, one or more courses of brick or tile supported by said holder and forming the central or key course of the roof, and roof-arches extending from said key-course to the furnace-walls, substantially as and for the purposes set forth.

2. A furnace-roof formed of a central or key course of brick-work and courses of brick-work extending therefrom to the furnace-walls, said key-course being formed in sections supported by a series of holders having a dovetailed or similar recess therein, and said holders being supported separately by transverse beams extending across the furnace and resting on the furnace-walls, substantially as set forth.

3. In furnace-roofs, the combination, with the holder *f*, supported from above the roof and having the dovetailed recess *l*, of the double-dovetailed brick or tile fitting therein and extending below the holder to form the key of the inverted arch, substantially as set forth.

4. In furnace-roofs, the combination, with the furnace-walls, of the rollers e^2 on the top of said walls, the beams or girders resting on said rollers, and the key-course holder hung from said beams and supporting the key-course of the roof, substantially as and for the purposes set forth.

325,404. EXERCISING-MACHINE. WILLIAM E. FORBES, New York, N. Y. Filed Oct. 24, 1884. (No model.)

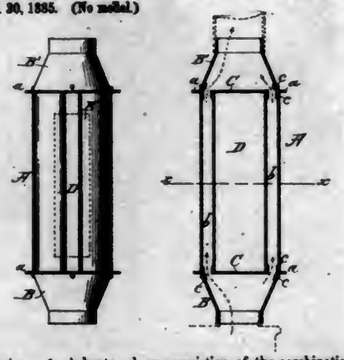


Claim.—1. The combination, with the grooved floor-plate A and the bracket B, provided with a saddle, C, of parallel wires D D, looped at the ends, and a tightener, E, connected with the looped ends of the wires and adapted to render the wires taut, as herein specified.

2. The combination, with the grooved floor-plate A, provided with a leather lining, *b*, and the bracket B, provided with a grooved saddle, C, having a leather lining, *b'*, of parallel wires D D, looped at the ends, and a tightener, E, connected with the looped ends of the wires, as herein specified.

3. The combination with guiding-wires D D, sectional weight F, rope G, swivel-pulley *l*, bracket B, and floor-plate A, of the ceiling-pulley *o* and auxiliary rope G', as herein specified.

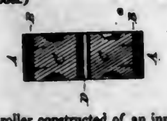
325,405. HEATING-DRUM. PERLEY E. FOX, Marlow, N. H. Filed Mar. 30, 1885. (No model.)



Claim.—1. A heater-drum consisting of the combination of the crescent-shaped drum A, having interior heating-chamber, D, the flanged coupling-pieces C C, the conical pipes B B', and the jacket E, substantially as shown and described.

2. In a heater-drum, the combination, with a drum having crescent-shaped draft-passage and interior chamber, of a jacket or plate adapted to cover a part of the opening into said chamber to create a draft, substantially as and for the purpose described.

325,406. SKATE-ROLLER. JOHN GERAGHE, Bloomfield, N. J. Filed Jan. 12, 1885. (Model.)



Claim.—A skate-roller constructed of an inner or central filling of wood or similar material to form the body thereof, a metallic band fitted to and inclosing the body, and an elastic tire encircling the band, substantially as described.

325,407. BUTTON. HENRY C. GROSS, Waterbury, Conn. Filed July 6, 1885. (No model.)



Claim.—1. A bar-button having a central opening or perforation, and having the bar made from a piece of wire, its two ends turned through openings in the button-blank, the ends riveted down to secure the bar, substantially as described.

2. A bar-button composed of two disks of metal with a central opening, and with perforations through the body of the button at diametrically-opposite points, a bar made from wire having its two ends turned from the body of the bar and corresponding to the perforations in the body of the button and struck onto the face of the button, whereby the said ends are riveted and secured, substantially as described.

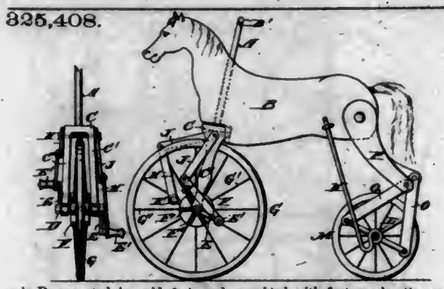
3. A bar-button composed of two disks of metal with a filling between, a central opening through the button, the edges of the two disks turned inward toward each other around the edge of the opening, the body of the button perforated at diametrically-opposite points, the bar made from wire, its two ends turned from the body of the bar and corresponding to the said perforations in the body of the button, the said ends inserted through said perforations and so as to bring the bar upon the face of the button, the bar struck down upon the face of the button, with the ends riveted upon the reverse side of the button, substantially as described.

4. A bar-button having a central opening, *b*, and perforated at diametrically opposite points, a bar made from wire, its two ends inserted through said perforations on the face side of the button and riveted upon the reverse side, the central portion of the bar bent down into the central opening, substantially as described.

325,408. TRICYCLE HOBBY-HORSE. RUSSELL P. HEILMAN, Emporium, Pa., and RICHARD B. PERKINS, Hornellsville, N. Y. Filed May 12, 1885. (No model.)

Claim.—1. In a hobby-horse, the combination, with the horse-body B, of the steering-rod A, passed down through the body at the base of the neck, the fork C, secured to the lower end of said rod, the

325,408.

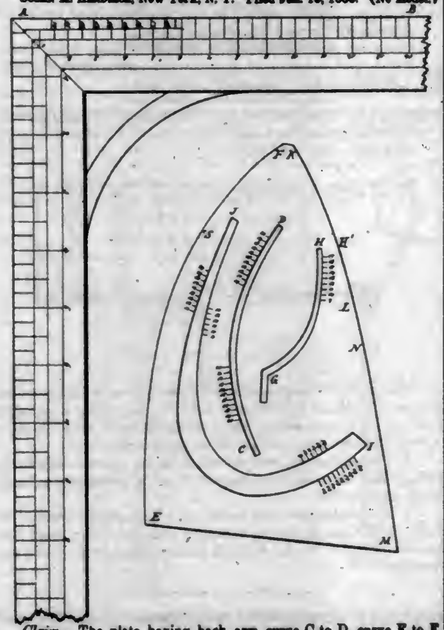


axle D, mounted in said fork and provided with foot-cranks, the connected rods H J, pivoted, respectively, to the crank-axle and to the fork C, the wheel G, and the rear wheels, M, substantially as set forth, whereby the rods H J will be turned by the yoke without interfering with their action, as described.

2. A hobby-horse comprising a horse-body, B, a steering-rod passed down through the base of the neck thereof, a fork, C, axle D, having foot-cranks E, rods H J, pivoted to the cranks and upper part of the fork and to each other to turn with the fork, the rear supporting-rods, K, the crank-axle L, mounted thereon, and the pivoted rods O P, pivotally connected to the cranks of the axle and to the rear part of the horse-body, whereby the front and rear rods, H J O P, will be given a movement similar to the legs of a horse in motion and the forward rods allowed to turn with the fork without having their motion interrupted, substantially as set forth.

3. In a hobby-horse, the combination, with the horse-body, of the front driving-wheel, G, the rear axle, L, the rods K, for holding the same, and the pivoted rods O and bars P, substantially as herein shown and described.

325,409. SYSTEM AND DEVICE FOR MEASURING GARMENTS. SUSAN M. HENDRIX, New York, N. Y. Filed Jan. 15, 1885. (No model.)

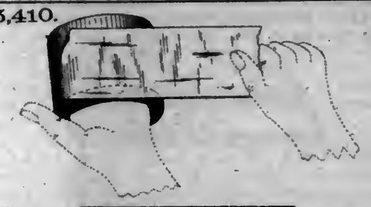


Claim.—The plate having back-arm curve C to D, curve E to F for back-form seam, S to E for shoulders, G to H for front-neck curve, I to J for front arm-size, H' to F for bias-seams, M to N for under-arm seams, N to M for bias below the waist, and H' to N for seams over the hip, the whole arranged substantially as and for the uses and purposes shown and described.

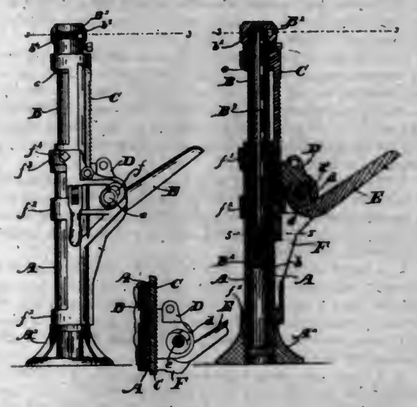
325,410. PACKAGE OF TOILET-PAPER. OLIVER H. HERD, Chicago, Ill. Filed July 10, 1885. (No model.)

Claim.—A bundle of paper consisting of one or more lengths formed into a continuous band whose internal diameter is greater than the thickness of paper, substantially as described.

325,410.



325,411. LIFTING-JACK. ISRAEL HOOSELAND, Indianapolis, Ind., assignor of one-half to George P. Anderson, same place. Filed Apr. 7, 1885. (No model.)



Claim.—1. In a lifting-jack, the combination of a hollow cylinder mounted upon a base, a hollow piston, which also serves as a storage-cylinder, mounted in said cylinder, said hollow piston having a rack-bar secured thereon, and said cylinder having a lever and ratchet-faced block mounted on a bracket thereon, which engages with said rack-bar, a valve in the lower end of the hollow piston, which opens therefrom into the hollow cylinder, and a fluid within said hollow cylinders, which passes from one to the other through said valve as said jack is operated, whereby said piston can be supported in elevated position after being elevated by said lever and rack-bar, substantially as set forth.

2. The combination, in a lifting-jack, of the cylinder A, a hollow piston, B, mounted therein, means of raising said piston, and a valve in the bottom of said piston, consisting of a stem, B^2, passing through an opening in the stuffing-box, with a pin, b^2, through its upper end, and a head upon its lower end, with the spring b^3 interposed between said pin and the upper end of said stuffing-box, said rod having its sides flattened to permit the passage of a fluid between said cylinders, substantially as set forth.

3. The combination, in a lifting-jack, of the cylinder A, hollow piston B, having a valve in its lower end, a nut, b^3, arranged above said valve, and a screw-threaded rod extending from said nut to the top of said piston, whereby said valve may be forced down, and thus opened and held in open position, substantially as set forth.

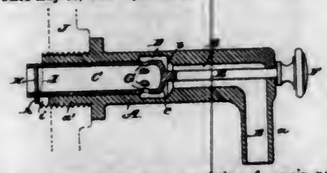
4. The combination, in a lifting-jack, of the main cylinder A, the combined piston and storage-cylinder B, having a valve in its lower end and a lifting-head on its upper end, a bracket-like support, F, mounted upon said cylinder A, a rack-bar, C, mounted on the piston B, a rack block or head, D, and a lever, E, mounted on said bracket-like support, all substantially as shown and specified.

5. The combination, in a lifting-jack, of two cylinders, one arranged within the other, a bracket-like support upon the lower cylinder, the rack-bar upon the upper cylinder, a cam-faced lever mounted in said bracket-like support, and a ratchet-faced block or head engaging with said rack-bar, and having an overhanging face, with which the cam-face of said lever may engage, whereby said cam-faced lever is adapted to raise said block when operated, substantially as shown and specified.

6. The combination, in a lifting-jack, of two cylinders, one mounted within the other, a valve in the lower end of the inner cylinder, the upper end of said valve being covered by a cap-nut, ports through said cap-nut, and a screw-rod passing through said cap-nut for forcing said valve open, substantially as shown and specified.

7. The combination of the cylinder A, the hollow piston B, a valve in its lower end, a screw-rod, B^2, for forcing and holding said valve open, a projection, b^2, on the head of said rod, and a stop with which it will come in contact for limiting its movement, substantially as set forth.

325,412. SELF-CLOSING FAUCET. ANDREW J. HOMAN, New York, N. Y. Filed May 18, 1885. (No model.)



Claim.—1. A self-closing faucet consisting of a main portion or body having a stationary valve-seat and three interior chambers of different diameters, but all having the same center line, a hollow plug-valve having side openings and closed forward end, and a manipulating device that passes through one of the chambers formed in the main portion or body of the valve, substantially as set forth.

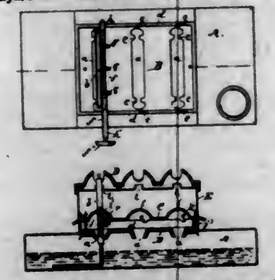
2. A self-closing faucet consisting of a main portion or body having a beveled stationary valve-seat and three interior chambers of different diameters, but all having the same center line, a hollow plug-valve having side openings and closed forward end, and a manipulating device secured to the closed end of the plug-valve and passing through one of the chambers formed in the main portion or body of the valve, substantially as set forth.

3. The combination, with a faucet-body, substantially as described, and its hollow plug-valve having side openings and closed forward end, of a regulating device consisting of a pin, *h*, that is carried by the faucet-valve, and a cam, as I, formed on the main body of the faucet, substantially as and for the purpose stated.

4. A faucet comprising a body, A, having outlet B, chamber D, valve-seat *b*, and a face-cam, I, a hollow plug-valve adapted to be turned axially and fitted in the body A, and having a closed forward end, and apertures G, communicating with chamber D, and provided with a pin, *h*, and means, substantially as described, for turning the valve to open it, substantially as herein set forth.

5. A faucet comprising a body, A, having outlet B, chamber D valve-seat *b*, and face-cam I, and a hollow cylindrical plug-valve, C, fitted to body A, and having a closed forward end, and provided with side apertures, G, communicating with chamber D, and also with a pin, *h*, and also with a stem, E, extended through the body A and provided with a head or button, F, substantially as herein set forth.

325,413. OIL-BURNER AND OIL-BURNING STOVE. RILEY H. HOWARD, Brooklyn, N. Y. Filed June 18, 1884. (No model.)



Claim.—1. In an oil-burner, the wick-tube detached from the cap or covering of the fount and attached to a wick-shaft sleeve that rests upon and is supported by the cap or covering of the oil-fount.

2. In an oil-burner, the combination of a plate provided with an opening, *a*, and flange *d*, the plate C, provided with the opening *i*, formed with the housing *r*, the wick-tube *g*, the sleeves *k k'*, to which the wick-tube is secured, and the shaft *f*, provided with the spur-wheel *g* and fitted to turn in the said sleeves, which rest upon and are supported by the said flange *d*.

325,414. DRILLING APPARATUS. JOHN HUNTER, Kingston, Ontario, Canada. Filed June 19, 1884. (No model.)

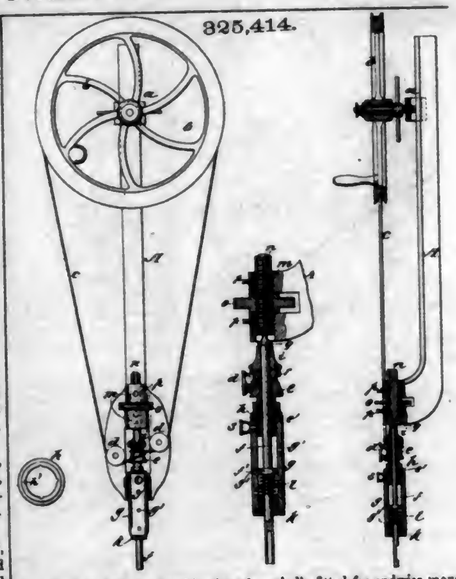
Claim.—1. In a drill, the combination of loose spool *e*, friction-disk *i*, box *g*, and spindle *f*, fitted for endwise adjustment substantially as described.

2. In a drill, the combination of spindle *f*, box *g*, and loose spool *e*, formed with a tubular extension, *e'*, substantially as and for the purpose specified.

3. The combination of box *g*, sleeve *k*, spring *l*, collar *f'*, and spindle *f*, stepped in a bearing at the upper end, substantially as described.

4. The combination of the screw *n* and nut *o* with spindle *f*, disk *i*, and loose spool *e*, substantially as described.

325,414.

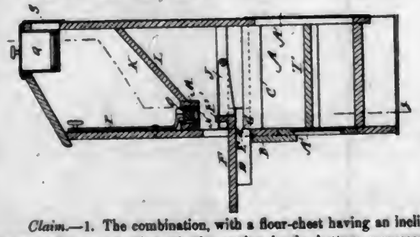


5. In a drill, the combination of a spindle fitted for endwise movement, a friction-disk and a loose sleeve on the spindle, a screw for moving the spindle and causing contact of the disk and spool, and a spring acting to release the parts, substantially as shown and described.

325,415. PAINT. JOHN KLEE, New York, N. Y. Filed Feb. 4, 1885. (Specimens.)

Claim.—A paint composition for priming and filling wood, consisting of white lead, Venetian red or oxide of iron, rosin, spirits of turpentine, and raw linseed-oil, substantially as set forth.

325,416. KITCHEN-SAFE AND FLOUR-CHEST. WILLIAM KNOWLES, Rockville, Ind., assignor to himself and Garrett L. Ten Brook, same place. Filed May 4, 1885. (No model.)



Claim.—1. The combination, with a flour-chest having an inclined bottom, of a concave piece of wire-netting in the bottom, a segmental brush or wiper on the netting, and a pivoted lever to which the wiper is secured, substantially as herein shown and described.

2. The combination, with the safe A, of the grooved cleats C, the sliding rails D, the board F, and the pins E and G, substantially as herein shown and described.

3. The combination, with the safe A, of the grooved cleats C, the sliding rails D, having lugs D' on the rear ends, the sliding board F on the rails D, and of the pins E and G, substantially as herein shown and described.

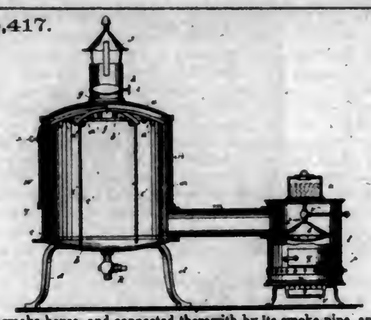
325,417. SMOKE-HOUSE. JOSEPH KREBSER, Springfield, N. Y. Filed Mar. 25, 1885. (No model.)

Claim.—1. The improved smoke-house consisting of the concave flanged bottom *b*, cylindrical body *c*, and dome-shaped top *e*, constructed substantially as described, and having the inlet-pipe for the smoke connected at one side and the discharge-pipe at the top, substantially as herein set forth.

2. The combination, with the smoke-house, of a smoke-generator arranged externally to the same and having a sprinkler attachment adapted for smothering the fire to increase the smoke, substantially as described.

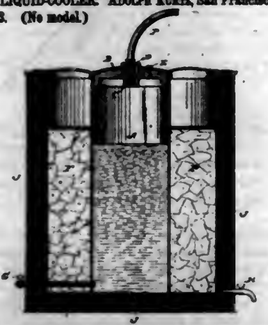
3. The combination, in a meat-smoking apparatus, of the house having a concave bottom, *b*, the smoke-generator arranged externally

325,417.



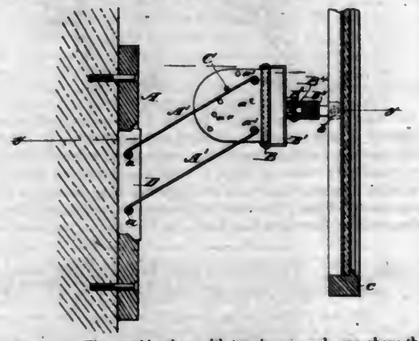
to the smoke-house, and connected therewith by its smoke-pipe, and the sprinkler *s*, applied to said generator, and having a regulating-cock and supply-tank, substantially as described.

325,418. LIQUID-COOLER. ADOLPH KURTZ, San Francisco, Cal. Filed July 23, 1883. (No model.)



Claim.—The beer-cooler described, comprising the chamber A, for containing the beer, a chamber, F, surrounding the same, and adapted to contain ice, a space or chamber, J, between the chamber F and outer side of the tank, a filling of non-conducting material—such as charcoal—in space J, a pipe leading from the beer-chamber A through the ice-chamber, a vent, E, removable cover for the ice-chamber, a cover, B, having a threaded opening, an exteriorly-threaded plug to engage the same, and a pipe fitting said plug, substantially as set forth.

325,419. ADJUSTABLE MIRROR-BRACKET. JOHN J. LANGDON, South Pueblo, Colo. Filed Feb. 2, 1885. (No model.)



Claim.—1. The combination, with two bars or rods, one above the other, pivoted to swing laterally, of a vertical plate pivoted in the free ends of the vertically-swinging plates, and provided with apertures, and a pin passed through one of the said apertures, substantially as herein shown and described.

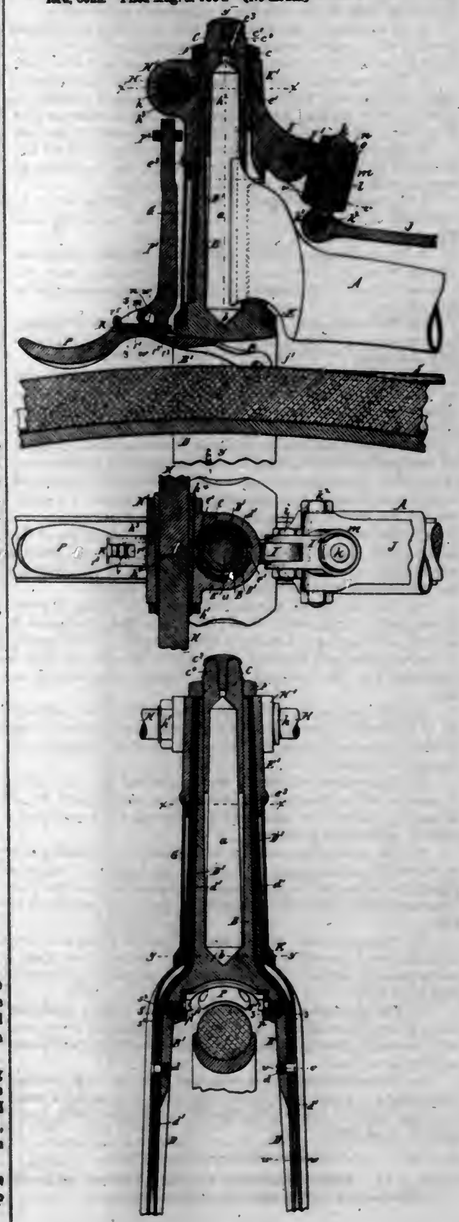
2. The combination, with the bars A', or rods pivoted to swing vertically, and having their free ends slitted longitudinally, of the plate a^2 in the said slits, pins passed through the ends of the plates A and through the plate a^2, the latter plate having apertures a^4, the pins C, and a mirror-frame held to the plate a^2, substantially as herein shown and described.

3. The combination, with the vertically-swinging plates A', of the plate a^2, having apertures a^4, the pin C, the U-shaped piece or stirrup B', pivoted on the plate a^2, and a mirror held to the stirrup, substantially as herein shown and described.

4. The combination, with the vertically-swinging plates A', of the plate a^2, having apertures a^4, the pin C, the stirrup B', pivoted on the plate a^2, the cross-piece B^2, pivoted to the stirrup, and the mirror-frame *c*, pivoted on the cross-piece B^2, substantially as herein shown and described.

5. The combination, with the vertically-swinging plates A', of the plate a^2 to the stirrup B', pivoted on the plate a^2, the cross-piece B^2, pivoted on the stirrup B', and having angle-pieces *b*, provided with pivots *d*, and the mirror-frame *c*, having recesses *b'*, substantially as herein shown and described.

325,420. VELOCIPEDE. ERNEST G. LATTA and ADRIAN G. LATTA, Friendship, N. Y., assignors to the Pope Manufacturing Company, Hartford, Conn. Filed Aug. 2, 1884. (No model.)



Claim.—1. In a velocipede, the combination, with the steering-head B, of forks D, provided with inwardly-curved extensions D', extending upwardly along both sides of the steering-head and removably attached thereto, substantially as set forth.

2. In a velocipede, the combination, with the steering-head B, of forks D, provided with the curved extensions D', arranged on opposite sides of the steering-head B, and a collar or sleeve, E, embracing the extensions D' and securing the same to the steering-head, substantially as set forth.

3. In a velocipede, the combination, with the inclosed head B, of the forks D, provided with curved extensions D', arranged on opposite sides of the head B, collars E E', and tubular dust-guard G, substantially as set forth.

4. In a velocipede, the combination, with an inclosed steering-head provided with a center bearing, *b*, and screw-cap C, of the dust-guard G, collar or sleeve E', and lock-nut F, substantially as set forth.

5. In a velocipede, the combination, with an inclosed steering-head provided with a center bearing, *b*, and screw-cap C, of the removable sleeve E' and lug H', formed on the sleeve E', substantially as set forth.

6. The combination, with the head B, having outwardly-projecting lugs c^2 c^2, and forks D, provided with curved extensions D', arranged on opposite sides of the head B, of the screw-nut E and the sleeve or collar E', provided with inwardly-projecting lugs e' e', substantially as set forth.

7. The combination, with the steering-head and lug H', of the handle-bars H H, and a tapered split sleeve whereby the handle-bars are attached to the steering-head, substantially as set forth.

8. The combination, with the steering-head and lug H', of the handle-bars H H, provided at their inner ends with interlocking hooks h^4, and a tapered sleeve, *h*, substantially as set forth.

9. The combination, with the steering-head and sleeve E', provided with lug H', of the handle-bars H H, having interlocking inner ends, a connecting tapered split sleeve, *h*, having a screw-thread at one of its ends and a screw-nut, *h'*, substantially as set forth.

10. The combination, with the brake of a velocipede, of a sliding bolt arranged in the brake-shoe and adapted to lock the brake, substantially as set forth.

11. The combination, with the steering-head and brake, of a locking device interposed between the brake and the steering-head, and adapted to engage with the steering-head and lock the brake, substantially as set forth.

12. The combination, with the steering-head and brake, of a sliding bolt arranged in an opening in the brake-shoe and adapted to engage between the steering-head and the brake-shoe, and a spring secured to said bolt and adapted to automatically engage in a recess in the brake-shoe and lock the brake, substantially as set forth.

13. The combination, with the steering-head and brake, of the sliding bolt R, adapted to engage under the steering-head, and provided with a spring, *r'*, which engages in a recess formed in the brake-shoe and automatically locks the brake, substantially as set forth.

14. The combination, with the steering-head and brake, of a bolt, R, arranged in an opening, *r*, in the brake-shoe, spring *r'*, secured to said bolt and engaging in a recess, *m*, when the brake is locked, opening *n*, communicating with the recess *m*, and key *n'*, whereby the spring is disengaged from the recess and the bolt released, substantially as set forth.

15. The combination, with the steering-head B, having fork-arms B', of the brake P, provided with a bifurcated rear portion, *p*, and pivoted to the arms B' below the head and in rear of the center-pin, substantially as set forth.

16. The combination, with the steering-head and fork, of the brake P, provided with a bifurcated rear portion, *p*, a trouser-guard, S, and screws *j'* *j'*, whereby the brake and trouser-guard are secured to the forks B', substantially as set forth.

17. The combination, with the steering-head B, constructed with the rearwardly-projecting bracket I, of a pivoted bearing, I', forming a support for the front end of the saddle, and attached to the bracket I by a horizontal bolt, *i*, on which it can swing vertically, substantially as set forth.

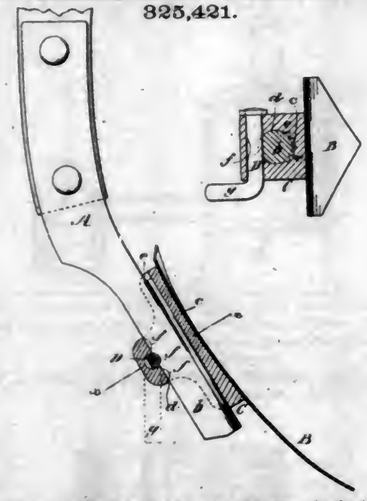
18. The combination, with the steering-head B, having a bracket, I, of a bearing I', pivoted to the bracket I by a horizontal bolt, *i*, and a saddle-spring, J, pivoted to the bearing I' by an upright bolt, *k*, substantially as set forth.

19. The combination, with the steering-head B, of a removable sleeve, E', provided with a lug, H', to which the handle-bars are secured, and a bracket, I, forming a support for the front end of the saddle, substantially as set forth.

20. The combination, with steering-head B and sleeve E', provided with bracket I, of a bearing, I', pivoted to the bracket I, pivot-bolt *k*, seated in a rubber cushion, *l*, formed on the bearing I', and saddle-spring J, substantially as set forth.

325,421. SHOVEL-FASTENER FOR CULTIVATORS. GEORGE W LELLY, Centre, Mo. Filed May 5, 1885. (No model.)

325,421.



Claim.—1. In a shovel-fastener for cultivators, the shank *b* of the standard, provided with a longitudinal rib or elongated cog, *c*, in combination with the fastening shovel-carrier C, constructed with a tubular eye, and having a series of inner longitudinal grooves, *e*, adapted to fit said rib or cog, and the locking cam or rod eccentric D, substantially as specified.

2. The shank *b*, having a series of cross-grooves, *f*, arranged one above the other, in combination with the tubular fastening shovel-carrier C and the locking cam or rod eccentric D, essentially as described.

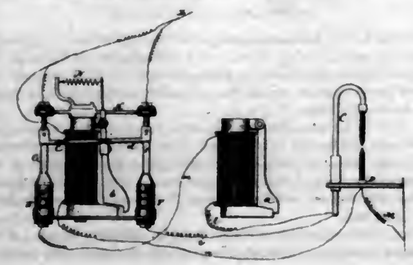
3. The combination, with the standard-shank *b*, having a longitudinal rib or elongated cog, *c*, and a series of cross-grooves, *f*, arranged one above the other, of the tubular fastening shovel-carrier C, having a series of longitudinal grooves adapted to fit said rib or cog, and the locking cam or rod eccentric D, for securing the carrier at different heights or depths and in different lateral positions on the shank *b*, substantially as shown and described.

325,422. GUDGEON FOR WINDOW-SHADE ROLLERS. JOHN LEWIS, Waterbury, Conn., assignor to the Scovill Manufacturing Company, same place. Filed Jan. 26, 1885. (No model.)



Claim.—The herein-described improvement in gudgeons for window-shade rollers, consisting in the cup A, constructed with a central opening, *a*, at its closed end, combined with the gudgeon B, said gudgeon constructed with the head *d* upon one end and with an enlargement, *e*, immediately under the head, the gudgeon introduced through the opening in the cup from the inside outward, to bring the head to a bearing upon the inside of the cup, the enlargement then struck down upon the outside of the cup to form the flange *f*, substantially as described.

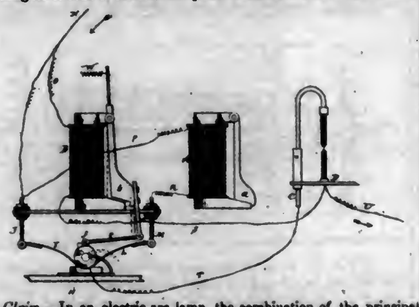
325,423. ELECTRIC-ARC LAMP. NORMAN MCCARTY, Hoosick, N. Y., assignor to John B. Tibbits, same place. Filed June 1, 1885. (No model.)



Claim.—1. The combination of the principal magnet and the shunt-magnet, the armature of the shunt-magnet hinged to produce a vibratory movement in breaking and closing the main circuit, two arms extending from said armature in the direction of the plane of movement of the armature, one in one direction and the other in the opposite direction, and so as to oscillate under the vibratory movement of the armature, two stationary blocks, one in connection with the principal magnet and the other with the main-line shunt, and a corresponding contact for each of said blocks arranged upon vertical spindles and free to move up and down toward the respective blocks, the said movable contacts in loose connection with the respective arms extending from the armature, the said two movable contacts in connection with the main line, substantially as described, and whereby under the movement of the armature one of said contacts will be brought upon its block before the other contact shall be lifted from its block.

2. The combination of the principal magnet and the shunt-magnet, fixed contact-blocks E F at the shunt, the shunt-armature *b*, hinged to receive a vibratory movement in opening and closing, arms *c d*, extending from said armature in the plane of its vibratory movement, and so as to partake of the movement of the armature, and contacts H and J on vertical spindles G I, and corresponding to the respective blocks E F, the said arms extending from the magnet in connection with the said spindles, respectively, by a slot in one and corresponding pin in the other, substantially as described, and whereby under the vibratory movement of the armature one of said contacts is permitted to fall upon and engage its block before the other contact shall be raised from its block, substantially as described.

325,424. ELECTRIC-ARC LAMP. NORMAN MCCARTY, Hoosick, N. Y., assignor to John B. Tibbits, same place. Filed June 1, 1885. (No model.)



Claim.—In an electric-arc lamp, the combination of the principal magnet and the shunt-magnet, the armature of the shunt-magnet hinged to produce a vibratory movement in breaking and closing the main circuit, a commutator the cylinder of which is adapted for partial rotation, an arm extending from the armature of the shunt-magnet into connection with the commutator, and whereby under the movement of the said armature a rotary movement will be imparted to the commutator, and two brushes arranged to bear upon the surface of the said commutator, the commutator constructed with a non-conducting surface between the bearing-points of said brushes, but of less extent than the distance between said bearing-points, substantially as and for the purpose described.

325,425. CASH AND PARCEL CARRIER. ROBERT A. MCCARTY, Detroit, Mich., assignor of one-half to George Maitland, same place. Filed Mar. 1, 1884. (No model.)

Claim.—1. In a cash or parcel carrier, the combination, with a way and carrier adapted to move on said way, of means for giving an impetus to said carrier for the purpose of propelling it upon said way, substantially as set forth.

2. In a cash or parcel carrier, the combination, with a way and carrier adapted to move on said way, of means constructed to give an impetus to said carrier graduated or adjusted according to the length of the way over which said carrier travels, substantially as set forth.

3. In a cash or parcel carrier, the combination, with a way and carrier adapted to move on said way, of a spring constructed and arranged to give an initial impetus to said carrier for the purpose of propelling it on said way, substantially as set forth.

4. In a cash or parcel carrier, the combination, with a way and carrier adapted to move on said way, of a stationary spring constructed and arranged to give an initial impetus to said carrier for the purpose of propelling it on said way, substantially as set forth.

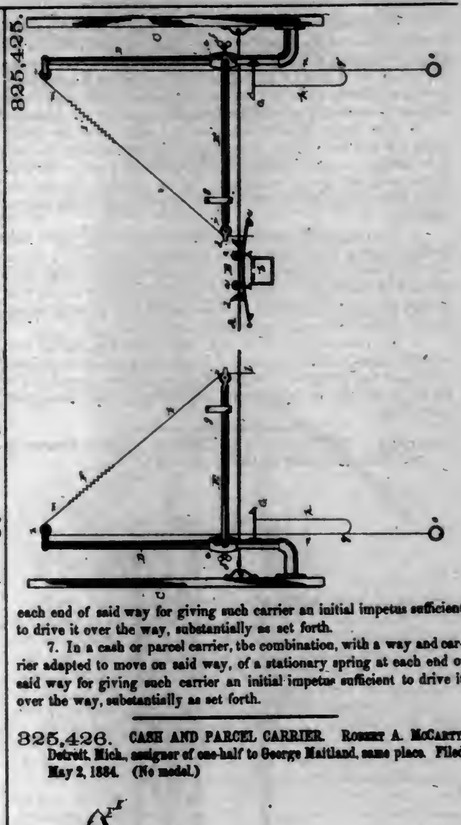
5. In a cash or parcel carrier, the combination, with a way and carrier adapted to move on said way, of a stationary spring constructed to propel said carrier on the way, means for placing said spring under tension, and means for releasing it, substantially as set forth.

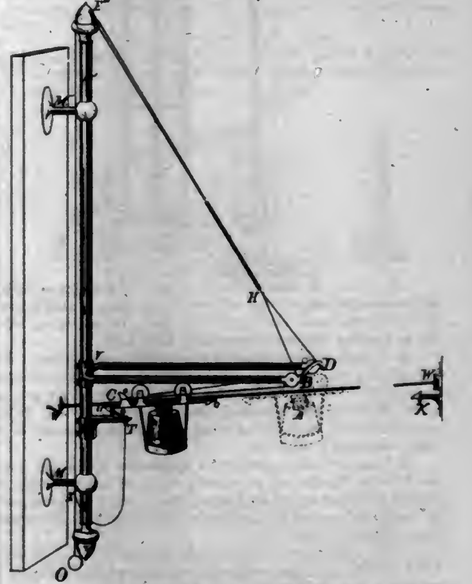
6. In a cash or parcel carrier, the combination, with a way and a carrier adapted to move on said way, of a projecting device located at each end of said way for giving such carrier an initial impetus sufficient to drive it over the way, substantially as set forth.

7. In a cash or parcel carrier, the combination, with a way and carrier adapted to move on said way, of a stationary spring at each end of said way for giving such carrier an initial impetus sufficient to drive it over the way, substantially as set forth.

325,426. CASH AND PARCEL CARRIER. ROBERT A. MCCARTY, Detroit, Mich., assignor of one-half to George Maitland, same place. Filed May 2, 1884. (No model.)

325,426.





Claim.—1. In combination with a carriage adapted to travel on a way, a spring arranged near one end of said way, means, substantially as described, of producing tension in said spring by drawing the same against the rear of said carriage, and a catch adapted to grasp said carriage and hold the same until the desired amount of tension has been produced in said spring to project the carriage to the opposite end of the way.

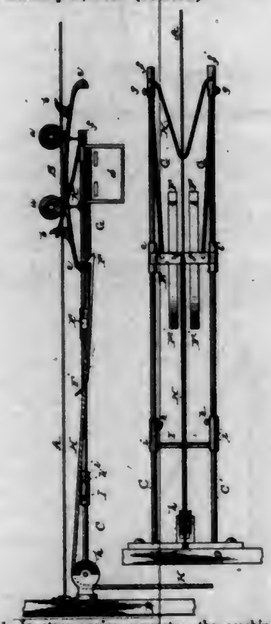
2. A cash-carrier system consisting of a way, a carriage adapted to travel thereon by the force of a spring apparatus, substantially as described, connections therewith in reach of the salesman for compressing said spring, and a catch for holding said carriage against the propulsive force of said spring, and a cord or like connections within reach of the salesman for unclasping said catch, substantially as shown and described.

3. In an engine for propelling a carriage upon a way, the combination of a cord passing from the spring of said engine across the path of the carriage, a spring attached to said cord, and a cord or like connection with said spring within reach of the operator, whereby the spring may be expanded by force applied to said cord, substantially as described.

4. In an engine for propelling a carriage upon a way, and in combination a spring brought into tension by expanding the same, a cord to enable one end of said spring to hold or press against said carriage, and a second cord attachment to the other end of said spring, passing over sheaves and brought downward to enable tension to be produced on said spring, substantially as and for the purposes described.

5. In a cash-carrying system, the combination of an inclined way, a carrier adapted to move thereon, and a projecting apparatus at the lower end of said way giving such carrier an initial impetus propelling it to the top of the way, the carrier being returned by gravity, substantially as set forth.

325,427. STORE-SERVICE APPARATUS. ROBERT A. MCCARTY, Detroit, Mich. Filed July 25, 1885. (No model.)



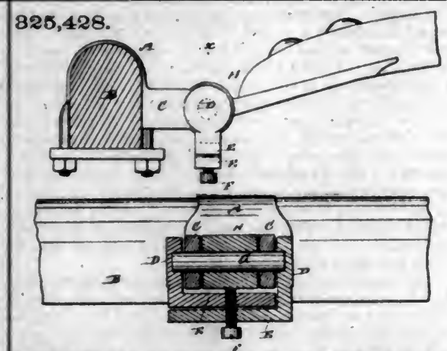
Claim.—1. In store-service apparatus, the combination, with a way, a carrier traveling thereon, and a projecting spring, of a sliding catch for drawing the carrier back against the tension of such spring, and a trip for releasing the carrier, substantially as set forth.

2. In store-service apparatus, the combination, with a way, a carrier traveling thereon, and a projecting spring, of a sliding catch for drawing the carrier against the tension of such spring, and a trip for releasing the carrier, such parts being relatively adjustable to vary the degree of tension of the projecting spring at which the carrier will be released, substantially as set forth.

3. In store-service apparatus, the combination, with a way, a carrier traveling thereon, and a projecting spring, of a sliding catch for drawing the carrier against the tension of such spring, a trip for releasing the carrier, and a spring for returning the sliding catch to its normal position, substantially as set forth.

4. The combination, with the parallel side bars, C C', of the catch F and tail-piece F', sliding on the side bars, the cord H, tripping-bar I, and springs G K, substantially as set forth.

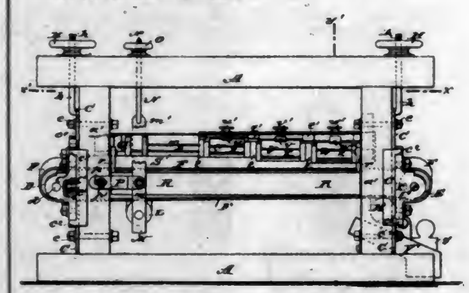
325,428. THILL-COUPLING. ALVERNOW MCDOWELL, Hudson, Ind. Filed May 20, 1885. (No model.)



Claim.—1. The combination, with the clip A, having the jaws C, of the bolt G, projecting through and from the outer sides of the jaws, the caps D having angular arms E, which overlap, and the screw F, passed through the overlapping arms and resting against the thill-eye between the jaws, substantially as herein shown and described.

2. The combination, with an axle-clip, of the bolt G, the caps D, the overlapping arms E, and the set-screw F, substantially as herein shown and described.

325,429. ORE-SEPARATOR. DAVID F. MCKIM, Cable City, Mont. Filed Apr. 23, 1885. (No model.)



Claim.—1. In an ore-separator, the combination, with the endless ore-receiving belt F and the rollers D E, of the boxes B' C', the bearings B C, provided with studs b' c' and end lips, b^2 c^2, and the machine-frame, substantially as herein set forth.

2. In an ore-separator, the combination of the endless traveling ore-receiving belt F, its rollers D E, the journal-boxes B' C', the bearings B C, provided with studs b' c' and end lips, b^2 c^2, the said bearings and boxes C C' being adapted to slide vertically on the machine-frame, the hangers A, and wheel-nuts H, all substantially as herein set forth.

3. In an ore-separator, the combination, with the frame A, ore-belt F, its rollers D E, and their respectively fixed and movable bearing-plates B C, of the frame I, supported on brackets or lugs on the plates B C, and carrying a series of belt-supporting rollers, J, substantially as herein set forth.

4. In an ore-separator, the combination, with the frame A, ore-belt F, and its rollers D E, of the tightening-roller L, adjustable yoke M, links connected to the roller-hangers and the frame, and means for adjusting them horizontally, substantially as herein set forth.

5. In an ore-separator, the combination, with the frame A, ore-belt F, its rollers D E, and the belt-tightening roller L, of the yoke M, hangers N, wheel-nuts O, links P, slotted at p, and the screws or bolts p', substantially as herein set forth.

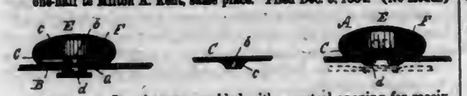
6. In an ore-separator, the combination, with a traveling ore-receiving belt, of a series of water-boxes held over the belt and made adjustable transversely of the belt, to discharge water at different places across the width of the belt, substantially as herein set forth.

7. In an ore-separator, the combination, with a traveling ore-receiving belt, of a series of water-boxes held over the belt and made successively longer toward the rear end of the machine, said boxes being adjustable transversely of the belt, substantially as herein set forth.

8. In an ore-separator, the combination, with a traveling ore-receiving belt adjustable so as to be inclined transversely, of a series of water-boxes made successively longer toward the rear end of the machine, said boxes being adjustable transversely of the ore-belt, substantially as herein set forth.

9. In an ore-separator, the combination, with a traveling ore-receiving belt and a series of water-boxes held over the belt and adapted to slide transversely thereto, of handle rods or plates fixed to the boxes, and set-screws in the box-supports for fastening the boxes at any desired adjustment, substantially as herein set forth.

325,430. BUTTON. ALBERT G. MEAD, Boston, Mass., assignor of one-half to Milton A. Kent, same place. Filed Dec. 5, 1884. (No model.)



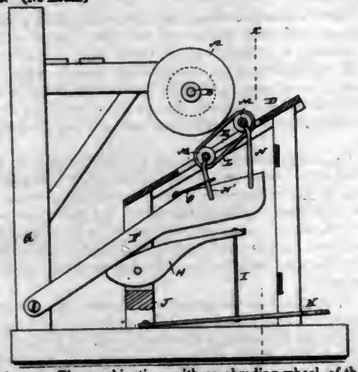
Claim.—1. In a button provided with a central opening for receiving a spring-stud, the combination of an inclosing-cap, a perforated bottom disk, a second disk above the first, the button being attached as a whole to the fabric independent of said stud, substantially as set forth.

2. A convex imperforate cap inclosing the interior of a button, in combination with a disk to which the lower edges of said cap are attached, and which has a central opening, a second disk within said cap, and provided with a central tubular lip which extends downward into the central opening of the first disk, and an eyelet for attaching the latter to the fabric, substantially as set forth.

3. The combination of a plate, having a central opening or bore, with a convex cap, E, inclosing and attached to said plate, and provided with a filling, F, also centrally perforated, substantially for purposes specified.

4. A button constructed with a plate, C, provided with a truncated-cone-shaped opening, b, centrally-perforated lower disk, B, and the integral button-shaped cap E, surmounting the latter and provided with a filling, the whole secured by a fastening-eyelet to the material, whereby a central opening or bore is provided, substantially as and for purposes hereinbefore set forth.

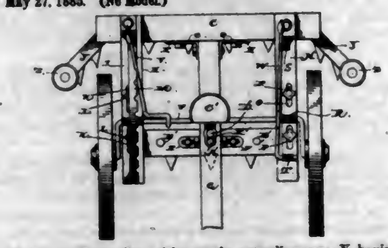
325,431. EMERY AND SAND-PAPER MACHINE FOR DRESSING LEATHER. FREDERICK H. MEYERS, Philadelphia, Pa., Margaret Meyers administratrix of said Frederick H. Meyers, deceased. Filed Jan. 17, 1885. (No model.)



Claim.—1. The combination, with an abrading-wheel, of the table D, having a slot, E, the lever F, rollers, means, substantially as described, for mounting them on lever F, and an endless belt passed over said rollers, and devices for moving the lever F toward the wheel, substantially as herein shown and described.

2. The combination, with the abrading-wheel A, of the lever F, devices for moving it toward the wheel A, the frames N N', the rollers M, the endless belt L, and the hook O, substantially as herein shown and described.

325,432. CULTIVATOR. STILLMAN A. MOULTON, San José, Cal. Filed May 27, 1885. (No model.)



Claim.—1. In a sulky-cultivator, the extending arms Y, having the cultivator-teeth, and the disks at their outer ends for preventing abrasion of the trees, substantially as described.

2. The combination, in a sulky-cultivator, of the frame A, the bar H, hinged thereto at one side, and the sliding bracket on said bar, the sliding bracket N on the opposite side of the frame, and having the slotted standard, and the axle secured in the slotted standard and in the hinged sliding bracket, and the lever W, for raising or lowering the free end of axle, substantially as described.

325,433. WATCH-CASE. VICTOR NIVOIS, New York, N. Y. Filed Apr. 21, 1885. (No model.)



Claim.—1. As an improved article of manufacture, a watch-case having its back plate perforated and provided with jewels projecting a short distance into the said perforations, as set forth.

2. A watch-case having its back plate provided with a series of perforations and its cap-plate with jewels projecting a short distance into the said perforations, substantially as herein shown and described.

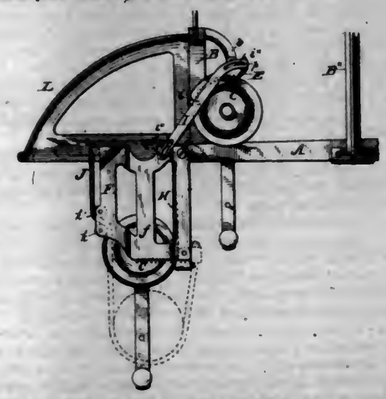
325,434. GAG AND MUZZLE. JOHN R. NOBLE and JEFF D. BULLOCK, Ripley, Miss. Filed May 21, 1885. (No model.)



Claim.—1. The combination of the strap or headstall, the frame B, attached to the strap, and the inner block, C, secured to the lower end of the frame and provided with guides and perforations, with the outer block attached to the frame by connecting-rods, the prickers attached to the outer block, the springs placed between the two blocks, the loops for limiting the movement of the outer block, and the strap for holding the inner block in position upon the animal's nose, as shown.

2. The combination of the two blocks separated from each other by springs, one of which is provided with pricking devices, frames for supporting the blocks in position, loops for controlling the movement of the outer block, the strap for securing the inner block in position upon the nose, and the ropes or cords which are connected to the loops, and are adapted to be fastened around the animal's body, substantially as set forth.

325,435. STORE-SERVICE APPARATUS. SELDEN G. NORTH, Philadelphia, Pa., assignor to the Transit Apparatus Company, (Limited,) same place. Filed Apr. 24, 1885. (No model.)



Claim.—1. In a store-service apparatus, the combination of a track suitably supported or suspended, a carrier-arrester in propinquity to the terminal extremity of the track, a carrier-receiver applied to the terminal extremity of the track, and a lever connecting the said carrier-arrester and the said receiver, substantially as set forth.

2. In a store-service apparatus, in combination with a track suitably suspended or supported, a carrier-arrester in propinquity to the terminal extremity of the track, a carrier-receiver applied to the terminal extremity of the track, and a pivoted bar or lever the upper end of which is adapted to operate in connection with the arrester and the lower end in connection with the receiver, substantially as set forth.

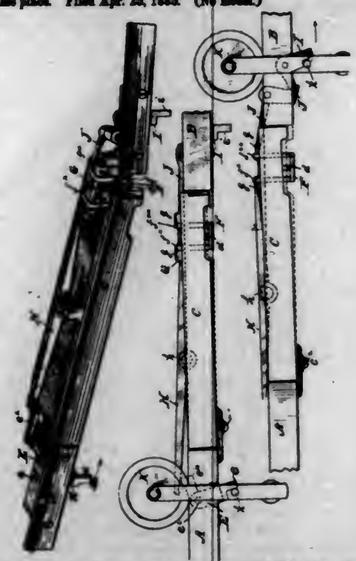
3. In a store-service apparatus, the combination of the track, the pivoted carrier-arrester, the pivoted carrier-receiver, and a lever pivoted at a point intermediate between the pivots of the arrester and of the receiver, and adapted as to its upper or rear extremity to have a connection with the rear arm of the arrester and at its lower extremity to have a connection with the carrier, substantially as set forth.

4. As an article of manufacture, a pivoted carrier-receiver for a store-service apparatus of the class herein recited, having inclosed sides, a cover or brace for fixedly connecting said sides, and a rail or track bar in the region of the floor and secured to one of said sides.

5. As an article of manufacture, a slotted hood, substantially as set forth.

6. In combination, the hinged receiver, the fixed slotted hood, and a cord attached to and adapted to operate the receiver and passing through the slot of the hood, substantially as shown and described.

325,436. **STORE-SERVICE APPARATUS.** SELDEN G. NORTH, Philadelphia, Pa., assignor to the Transit Apparatus Company, (Limited,) same place. Filed Apr. 25, 1885. (No model.)



Claim.—1. In a store-service apparatus, the following elements in combination: an elevated track, a traveling carrier, a switch-rail, and mechanism, substantially such as described, or its equivalent, adapted to be actuated by the carrier to permit the gravitative lateral movement of said switch-rail, substantially as and for the purposes set forth.

2. In a store-service apparatus, the following elements in combination: a main track, a switch-rail, and an inclined plane with respect to which the switch-rail has a gravitative lateral movement, substantially as set forth.

3. In a store-service apparatus, the following elements in combination: a main track, a switch-rail provided with a roller, slide, or traveling bearing, and an inclined plane upon which said roller rests and travels, substantially as set forth.

4. In a store-service apparatus, the following elements in combination: a main track, a traveling carrier, a switch-rail provided with a roller, slide, or traveling bearing, an inclined plane upon which said roller rests and travels, and means adapted to be set in action by the traveling carrier for permitting the gravitative movement of the switch-rail with respect to the inclined plane, substantially as set forth.

5. In a store-service apparatus, the following elements in combination: an elevated track, a traveling carrier, a switch-rail, and mechanism adapted to be actuated by the carrier in its travel, for, first, lifting the switch-rail, and, second, permitting the gravitative lateral movement of said lifted switch-rail, substantially as set forth.

6. In a store-service apparatus, the following elements in combination: an elevated track, a traveling carrier, a switch-rail adapted to move both vertically and laterally, means actuated by the carrier in its travel for raising the switch-rail, and means controlled primarily by the carrier for the gravitative lateral movement of the switch-rail, substantially as set forth.

7. In a store-service apparatus, the combination of a track, a switch-rail, and a compound pivot connecting said switch-rail with said track, the arrangement being such that the switch-rail is adapted both to be lifted and to gravitate laterally with respect to said pivot, substantially as set forth.

8. In a store-service apparatus, the following elements in combination: an elevated track, a traveling carrier, a switch-rail, a movable plane adapted to be inclined toward or away from the switch-rail, a device connected with the switch-rail which bears and travels upon said movable plane, and mechanism adapted to be actuated by the traveling carrier for imparting inclination to said plane, substantially as and for the purposes set forth.

9. In a store-service apparatus, the following elements in combination: a main track, a switch-rail provided with a roller, slide, or traveling bearing, a movable plane upon which said roller rests and travels, and means adapted to be set in action by a traveling carrier for imparting inclination to said plane, for the purpose, first, of lifting said switch-rail, and, second, of permitting its gravitative movement, substantially as set forth.

10. In a store-service apparatus, the following elements in combination: a main track, a continuation thereof, a branch track, a movable switch-rail adapted to connect the main track either with its continuation or with the branch track, a traveling carrier, means applied to the main track and adapted to be actuated by the carrier for first lifting the free extremity of the switch-rail, and then permitting its gravitative movement into the branch track, and means connected with the branch track and adapted to be actuated by the carrier for first lifting the free extremity of the switch-rail, and then permitting its gravitative movement out to the continuation of the main track, substantially as set forth.

11. In a store-service apparatus, the following elements in combination: a main track, a traveling carrier, a switch-rail provided with a roller, slide, or traveling bearing, a movable plane upon which said roller rests and travels, a trigger mechanism adapted to be actuated by the traveling carrier for inclining the plane in one direction, and another trigger mechanism, likewise adapted to be operated by the traveling carrier, for inclining the plane in the opposite direction, substantially as set forth.

12. In a store-service apparatus, the combination of a main track, a switch-rail, a traveling carrier, a movable plane adapted to both lift the free extremity of the switch-rail and permit of the gravitative movement of said free extremity, and mechanism in advance of the switch-rail, adapted to be actuated by a carrier, for occasioning a given movement of said plane and a consequent lift and given gravitative movement of the switch-rail before the carrier runs upon said rail, substantially as set forth.

13. In a store-service apparatus, the combination of the main track, a switch-rail, a branch track, a traveling carrier, a movable plane adapted to both lift the free extremity of the switch-rail and permit of the gravitative movement of said free extremity, and mechanism beyond the switch-rail adapted to be actuated by a carrier for occasioning a given movement of said plane and a consequent lift and given gravitative movement of the switch-rail after the carrier has run off said rail, substantially as set forth.

14. In a store-service apparatus, the combination of a main track, a switch-rail, a branch track, a traveling carrier, a movable plane adapted to both lift the free extremity of the switch-rail and permit of the gravitative movement of said free extremity, mechanism in advance of the switch-rail adapted to be actuated by a carrier for occasioning a given movement of said plane and a consequent lift and given gravitative movement of the switch-rail before the carrier runs upon said rail, and mechanism beyond the switch-rail adapted to be actuated by a carrier for occasioning a given movement of said plane and a consequent lift and given gravitative movement of the switch-rail after the carrier has run off said rail, substantially as set forth.

15. In a store-service apparatus, the combination of a main track, a traveling carrier, a switch-rail provided with a roller, slide, or traveling bearing, a movable plane, an opening-trigger, and an opening-lever, substantially as and for the purposes set forth.

16. In a store-service apparatus, the combination of a main track, a traveling carrier, a switch-rail provided with a roller, slide, or traveling bearing, a branch track, a movable plane, a closing-trigger, and a closing-lever, substantially as and for the purposes set forth.

17. In a store-service apparatus, the combination of a main track, a traveling carrier, a switch-rail provided with a roller, slide, or traveling bearing, a movable plane, an opening-trigger, an opening-lever, a closing-trigger, and a closing-lever, substantially as and for the purposes set forth.

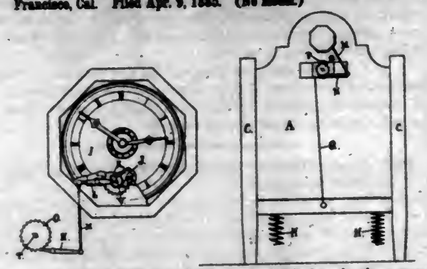
18. In a store-service apparatus, as a device for imparting given inclinations to a movable plane, an opening-trigger, an opening-lever, a closing-trigger, and a closing-lever, substantially as set forth.

19. In a store-service apparatus, the combination of a pivoted switch-rail, the free extremity of which is provided with an inclined face and a shoulder, and a continuation of the main track, the opposing extremity of which is provided with an oppositely-inclined face and a seat, as and for the purposes specified.

20. In a store-service apparatus, the combination of a main track, a switch-rail provided with a compound pivot and with a roller-housing equipped with a roller, and a movable plane upon which said roller treads and travels, substantially as set forth.

21. In a store-service apparatus, the following elements in combination: a main track, a switch-rail, a traveling carrier, an inclined plane, with respect to which the switch-rail has a gravitative lateral movement, and means adapted to be set in action by a traveling carrier for permitting the gravitative lateral movement of the switch-rail with respect to the inclined plane, substantially as set forth.

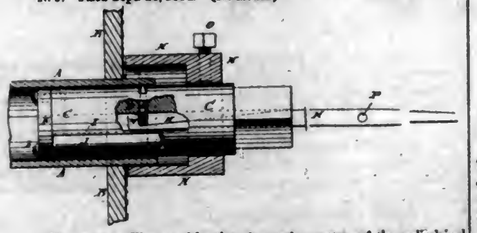
325,437. **ALARM AND WAKING BED.** ADOLPH J. NORDMANN, San Francisco, Cal. Filed Apr. 9, 1885. (No model.)



Claim.—1. In alarms and awakeners for bedsteads, the connecting ratchet-lever L, in combination with the alarm-stops J, K, and V, for the purpose of releasing the ratchet-wheel O and dropping the mattress F, constructed and operated substantially as and for the purposes set forth.

2. The suspension-cord Q, winding-drum P, shaft T, winding-knob S, and ratchet-wheel O, in combination with the ratchet lever or pawl N, the connecting-rod M, and the connecting-lever L, operated by the projection K, for the purpose of dropping the mattress F, constructed and operated substantially as and for the purposes set forth.

325,438. **BOILER-TUBE CUTTER.** GEORGE W. OPDYKE, Elizabeth N. J. Filed Sept. 26, 1884. (No model.)

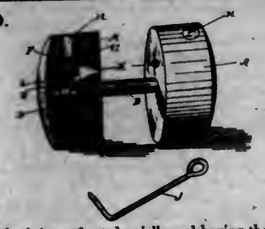


Claim.—1. The combination, in a tube-cutter, of the cylindrical cutter-stock provided with a transverse slot, a cutter therein, a longitudinal aperture and adjusting bar therein, and longitudinal cylindrical recesses extending inward from the outer surface of the stock separate from the longitudinal aperture, and anti-friction rollers held within said recesses and projecting beyond the face of the cutter-stock, said rollers being of greater diameter than the space between the outer edges of the recesses, whereby the necessity of pivoting the roller is dispensed with, substantially as set forth.

2. A tube-cutter consisting, essentially, in the stock C, provided with transverse slot D, longitudinal angular aperture G, and longitudinal recesses I, independent of the longitudinal aperture, anti-friction rollers J, projecting through said recesses and of greater diameter than the spaces between the outer edges of said recesses, the removable cap-plate K, secured to the forward end of the cutter-stock for holding the rollers in place, the slotted cutter E, and the feed-bar H, substantially as set forth.

3. A tube-cutter consisting of the cylindrical stock C, squared at one end and provided with transverse slot D, slotted cutter E, longitudinal central aperture made angular at G, longitudinal recesses I in the outer face of said stock and separate from the longitudinal recess, the anti-friction rollers J therein and of larger diameter than the space between the outer edges of the recesses, the removable end plate, K, the feed-bar H, inclined at its forward end and passed through the slot of the cutter, and the tabular adjustable eccentric collar N, substantially as set forth.

325,439. **WHEEL.** ELISHA W. OTIS, Chelsea, assignor to WM. G. Bell, Boston, Mass. Filed Jan. 22, 1885. (No model.)

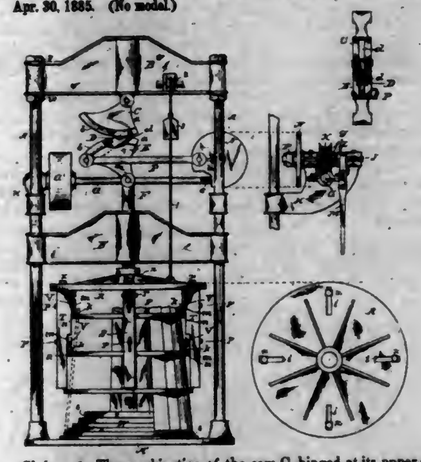


Claim.—1. The grooved spindle B, in combination with the wheel or roller A, having a radial recess, F, through its periphery or tread, and within such recess a locking-piece to engage in the spindle-groove, a spring to press said piece inwardly, and a plug to support said spring and complete the tread-surface of the wheel, substantially as set forth.

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2. The wheel A, perforated axially and having the radial recess F through its tread-surface, and the lateral opening K, in combination with the locking-piece E, spring G, and plug H, located in said recess, substantially as set forth.

325,440. **HOOP-DRIVER.** GEO. W. PACKER, Rock Falls, Ill. Filed Apr. 30, 1885. (No model.)



Claim.—1. The combination of the cam C, hinged at its upper end to the fixed beam B, the cam E, hinged at its lower end to the reciprocating shaft F, the shaft F, sleeved in the beam B', the head R, provided with drivers S T and affixed to such shaft, and suitable mechanism for oscillating said cams, substantially as shown, and for the purpose described.

2. The combination of the cam C, hinged at its upper end to the fixed beam B, the cam E, hinged at its lower end to the reciprocating shaft F, the toggle D, pivotally connected at each end to the engaging faces of the cams C E, the shaft F, sleeved in the beam B', the head R, provided with drivers S T and affixed to such shaft, and suitable mechanism for oscillating said cams, substantially as shown, and for the purpose described.

3. The combination of the crank-head N, actuated in any suitable manner, the pitman P, connecting said crank-head with cam E, the cam C, hinged at its upper end to the beam B, the cam E, hinged at its lower end to the reciprocating shaft F, the shaft F, sleeved in the beam B', the head R, provided with drivers S T and affixed to such shaft, the whole in suitable relation to means for supporting the tub, substantially as shown, and for the purpose described.

4. The base W, provided with the ascending series of annular recesses *t*, and placed in suitable relation to a descending driving-head, R, provided with radially-adjustable drivers S T, and suitable mechanism for actuating such head, substantially as shown, and for the purpose described.

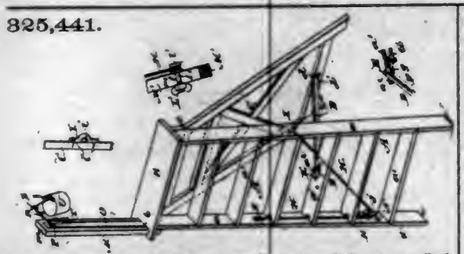
5. The combination of the base A', posts A A, cross-beam B', shaft F, sleeved in such cross-beam, head R, provided with drivers S T, and suitable mechanism for reciprocating such shaft in a vertical direction, substantially as shown, and for the purpose described.

325,441. **STEP-LADDER.** WRIGHT PEARSON, Jamestown, N. Y. Filed June 4, 1885. (No model.)

Claim.—1. A ladder comprising a step-frame, A B, a brace-frame, C, pivoted thereto, a hand-rail guided at the side of the step-frame, and a rope, H, between the frame C and hand-rail, substantially as described, whereby when the brace-frame C is spread the hand-rail will be raised, as herein set forth.

2. A ladder comprising a step-frame, A B, a brace-frame, C, pivoted thereto, a hand-rail supported in guides on the step-frame, and a rope, H, or its equivalent, connected to the frame C, and connected also

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to the hand-rail by an adjustable device, substantially as described, whereby the hand-rail may be raised or not at will as the brace-frame is spread, as herein set forth.

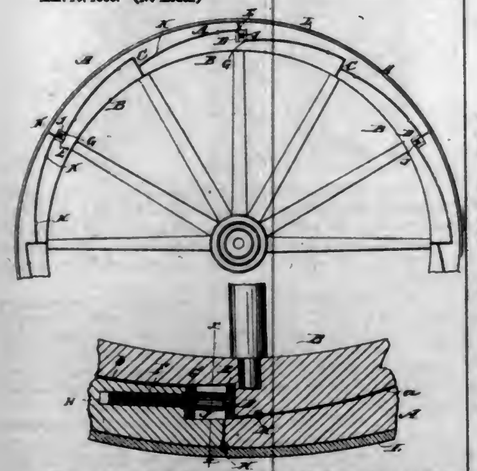
3. The combination, in a ladder, of the step-frame A B, brace-frame C, hand-rail M, guided on the step-frame, rope H, pulleys J K, and bolt and nut L L', substantially as herein set forth.

4. The combination, with the step-ladder frame A B, of a movable hand-rail, M, keeper M^3, and a stop-block, M^3, on the ladder-bar, pivoted brace-frame C, and rope H between said hand-rail and brace-frame, substantially as herein set forth.

5. A ladder constructed with a hand-rail, M, provided with a slot, O *o*, a face-notch, T, and a hook-arm, R, supported on a pin, so as to hang normally within the slot O and adapted to be swung into the notch T, substantially as herein set forth.

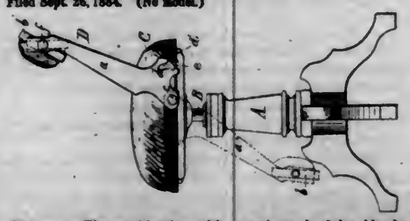
6. The combination, with the ladder hand-rail, slotted at O *o*, and the headed screw or pin P, of the hook-arm R, having an elongated slot, R', and high and low faces, *r r'*, at the slot, substantially as herein set forth.

325,442. TIRE-TIGHTENER. EMORY R. POWERS, Paradise, Cal. Filed Mar. 19, 1885. (No model.)



Claim.—In a wheel, the combination, with the sections A, having shoulders C, and the sections B, having shoulders D, of the plates E on the shoulders D, the nuts G on the ends of the sections A, and the screw-spindles F, provided with ribbed heads J, substantially as herein shown and described.

325,443. MUSIC-STOOL. GEORGE A. RAMSTER, Dobbs Ferry, N. Y. Filed Sept. 26, 1884. (No model.)

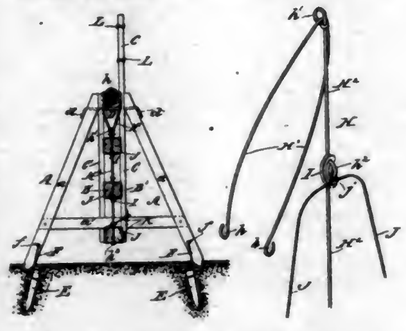


Claim.—1. The combination, with a music-stool, of the side pieces, *a*, pivoted to the stool-seat at their lower forward corners, and provided at their rear lower corners with shoulders, as at *d*, pins *e* in the stool-seat for the shoulders to engage, and a back-rest connecting the side pieces, *a*, at a point slightly greater from the pivots of the side pieces than the distance of the pivots of the side pieces from front edge of the stool, whereby when swung forward the said side pieces will fold below the stool-seat out of the way, substantially as set forth.

2. The combination, with a music-stool, of the side pieces, *a*, pins *c*, pivoting said side pieces to the stool-seat at their forward lower corners, the slots *d'* in the rear lower corners, screw-pins *e*, passing through the said slots into the stool-seat, and the cross-piece *b*, pivoted between the upper ends of the side pieces to clear the front edge of the seat when folded, whereby the angle of the side pieces may be varied, the cross-piece adjusted accordingly, and the said side pieces and cross-pieces folded below the seat, as set forth.

3. A back for stools, consisting of the side pieces, *a*, provided at the forward rear corners of their lower ends with pivot-holes and slots *d'*, respectively, and with a pivoted cross-piece, *b*, near the upper ends of said side pieces, substantially as set forth.

325,444. FENCE. JOHN W. READ, West Salem, Ohio. Filed Mar. 31, 1885. (No model.)



Claim.—1. The combination, m a fence, of the supports A, constructed with posts *a a*, connected by bar *a'*, the braces C C', rods D, passed through posts *a a*, and braces C C', hangers suspending the lower rails from the top rails, and tie-wires K, substantially as herein set forth.

2. The combination, in a fence, of supports A, braces C C' rods, D, top rails, B, hangers suspending lower rails from rails B, tie-wires K, and anchors consisting of stakes E, connected by wires F to opposite posts *a a* of supports A, and driven into the ground, substantially as herein set forth.

3. The combination, in a fence, of supports A, braces C C', rods D, top rails, B, hangers supporting lower rails from rails B, (one of the braces, C, being secured diagonally to the lower fence-rails,) and tie-wires K, substantially as herein set forth.

4. The combination, in a fence, of supports A, braces C C', rods D, top rails, B, hangers supporting lower rails from rails B, (one of the braces, C, being secured diagonally to the lower fence-rails,) the tie-wires K, and anchors consisting of stakes E, connected by wires F to posts *a a* of supports A, and driven into the ground, substantially as herein set forth.

5. The combination, in a fence, of supports A, braces C C', rods D, top rails, B, and hangers supporting lower rails from rails B, one of the opposite pair of braces at the supports A being extended above rails B, and wires L, connected to said extended braces, substantially as herein set forth.

6. The combination, with the supports or posts and top rails of a fence, of hangers for the lower rails, consisting of two sections, the lower section having an eye in its upper end, and the upper section bent upon itself and passed through the eye of the lower section, substantially as herein shown and described.

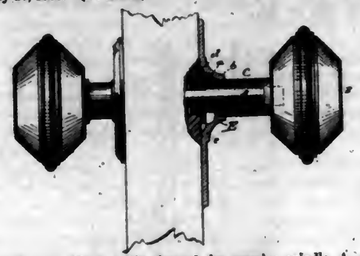
7. The combination, with the supports or posts and top rails of the fence, of hangers H, comprising two sections, H' H^2, connected by an eye, *k'*, and said section H' having hook ends *h h*, substantially as herein set forth.

8. The rail-hanger made with short bends forming half-loops h^2, in combination with button-links I, slipped over the half-loops h^2, and tie-wires J, attached in loops h^2, substantially as herein set forth.

9. The rail-hanger made with short bends forming half-loops h^2, in combination with button-links I, concaved flatwise and slipped over the half-loops, and tie-wires J, attached in loops h^2, substantially as herein set forth.

10. As an improved article of manufacture, the rail-hanger H, made in two connected sections, H' H^2, section H having hooks *h h*, and section H^2 having eyes formed by bends h^2 of the wire, and button-links I, slipped over said bends h^2, and the rail-tie wires J, connected in said eyes, substantially as herein set forth.

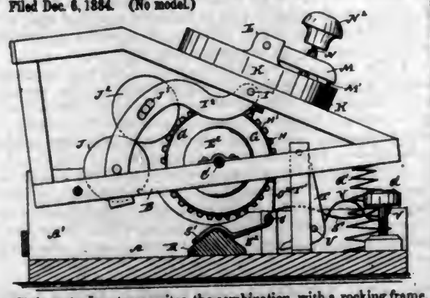
325,445. ATTACHING KNOBS TO SPINDLES. WILLIAM REGAN, Branford, Conn., assignor to the Branford Lock Works, same place. Filed July 27, 1885. (No model.)



Claim.—1. The combination of the angular spindle A, screw-threaded upon its angles, the knob B, with its neck C constructed with an angular longitudinal hole corresponding to the spindle, and with a shoulder, *a*, extending partially around the inner end, and a nut, D, internally screw-threaded to correspond to the thread upon the angles of the spindle, and constructed with a concentric grooved flange, *b*, to engage the shoulder *a* on the neck, and adapted to be secured to the door, substantially as described.

2. The combination of the angular spindle A, screw-threaded upon its angles, the knob B, with its neck C constructed with an angular longitudinal hole corresponding to the spindle, and with a shoulder, *a*, extending partially around its inner end, a nut, D, internally screw-threaded to correspond to the thread upon the angles of the spindle, and constructed with a concentric grooved flange, *b*, to engage the shoulder *a* on the neck, and with an ear, *d*, upon its edge, with a rose constructed with notches *e e*, to engage the ear *d*, substantially as and for the purpose described.

325,446. TYPE-WRITING MACHINE. EDWARD R. ROE, Dixon, Ill. Filed Dec. 6, 1884. (No model.)



Claim.—1. In a type-writer, the combination, with a rocking frame, of a shaft journaled in the same, a cylinder mounted rigidly on the shaft and provided with a spiral row of offsets, a hollow cylinder surrounding the above-mentioned cylinder, a type-wheel sliding on the hollow cylinder and revolving with the same, a tooth projecting from the type-wheel and engaging with the line of spiral offsets on the fixed cylinder on the shaft, and devices, substantially as described, for revolving the shaft the desired distance, substantially as herein shown and described.

2. In a type-writer, the combination, with a rocking frame, of a shaft journaled in the same, a hollow cylinder mounted loosely on the shaft, and a type-wheel mounted on the hollow cylinder to slide on and revolve with the same, substantially as herein shown and described.

3. In a type-writer, the combination, with a rocking frame, of the shaft C, journaled in the same, the hollow cylinder E, mounted loosely on the shaft and provided at one end with a beveled cog-wheel, D', the cylinder F, mounted rigidly on the shaft with the hollow cylinder E and provided with a stepped spiral band, F', the type-wheel G, the tooth G^2, the shaft L, the bevel cog-wheel L', and an indicator connected with the shaft L, substantially as herein shown and described.

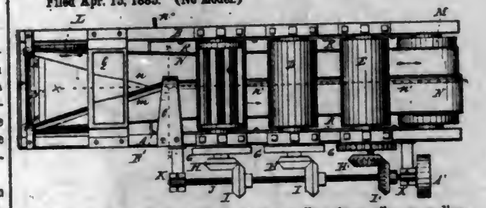
4. In a type-writer, the combination, with the cylinder F, of the spiral band F', secured on the same and having steps or offsets *a*, the cylinder E, surrounding the cylinder F and having the longitudinal slot E', the type-wheel G, and the tooth G^2, projecting from the type-wheel through the slot E' and adapted to engage with the offsets or steps *a*, substantially as herein shown and described.

5. In a type-writer, the combination, with the rocking frame, of the shaft C, the ratchet-wheel O, mounted on the same, the pawl-spring O^2, engaging with the said ratchet-wheel, the cylinder F, mounted on the shaft C, the stepped spiral band F' on the cylinder F, the cylinder E, surrounding the cylinder F, the springs I, and the type-wheel G, mounted on the cylinder E and provided with a tooth, G^2, adapted to engage with the offsets or steps on the band F', substantially as herein shown and described.

6. In a type-writer, the combination, with a rocking frame, of a shaft carrying a cylinder on which a type-wheel is mounted to slide and revolve, the spiral band F', a ratchet-wheel on the end of the shaft, the spring O^2, held adjustably in the socket P, and the pawl-tooth O' on the upper end of the said spring, which tooth is adapted to engage with the teeth of the above-mentioned ratchet-wheel, substantially as herein shown and described.

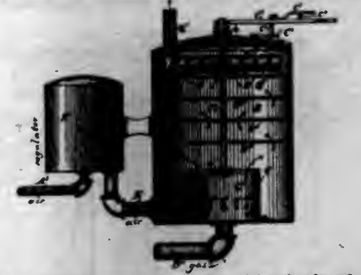
7. In a type-writer, a paper-feeder consisting of the swinging frame T, the plate U', pivoted on the same, a spring for pressing the plate U' on the bottom cross-piece of the swinging frame, and the handle V, substantially as herein shown and described.

325,447. ROLLER-PRESS. CHARLES F. SCHMIDT, Cleveland, Ohio. Filed Apr. 15, 1885. (No model.)



Claim.—In a press for extracting paraffine from oils, an endless fabric apron or belt adapted to run over guiding-rollers and between two series of pressing-rollers, arranged, respectively, above and below the apron, said rollers being journaled in a suitable frame, of which A and B are the sides, and the upper series of pressing-rollers having their journals in yielding boxes, cog-wheels and pinions for operating the pressing-rollers, folding attachment, hooks *d* and *e*, and scraper, constructed and arranged substantially as described, and for the purpose herein set forth.

325,448. APPARATUS FOR MIXING GAS AND AIR. JAMES R. SCRIMSHAW, Brooklyn, N.Y. Filed Nov. 12, 1884. (No model.)



Claim.—1. The combination, with a mixing-chamber of a gas apparatus, of a fixed cylinder, an air-induction pipe communicating with said cylinder through its periphery, a rotary cylinder closely fitted within said fixed cylinder, provided with holes of varying sizes opposite the induction-pipe of the outer cylinder, and means for turning said rotary cylinder to bring different holes opposite said pipe for varying the amount of air admitted to the mixing-chamber, substantially as described.

2. The combination, with the mixing-chamber of a gas apparatus, of a horizontal discharge-pipe provided with transverse or spiral slots, and an eduction-pipe connected to said slotted pipe, substantially as described.

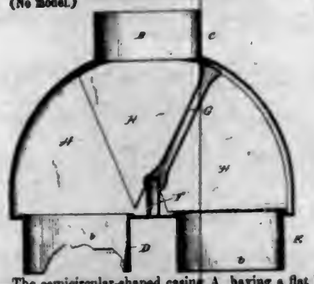
3. The combination, in a gas apparatus, of a mixing-chamber provided with a series of perforated diaphragms, the perforations of one of the diaphragms being opposite the solid portions of the adjacent diaphragms, a horizontal pipe above the upper diaphragm provided with circumferential slots, and an eduction-pipe connected to said slotted pipe, substantially as described.

4. In combination with fixed cylinder C, the rotating cylinder C', provided with apertures *c c' c²*, of varying sizes, the operating rod or shaft C^2, attached to said cylinder for turning it, so as to present any desired one of the said inlet-apertures to the inlet-port of an air-supply pipe, the operating-lever C^3, with its spring-catch c^3, and the segmental guide-plate C^4, graduated with notches or holes for the catch c^3, so as to secure the cylinder C' in proper position to place the required inlet-aperture fairly over the inlet-port of the air-supply pipe, the whole combined and arranged as described.

5. The combination, in a gas apparatus, of the mixing-chamber B, concentric cylinders C C', arranged at the bottom of said chamber, the

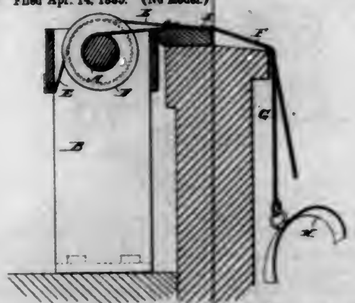
outer of said cylinders being fixed, and the inner one rotary and provided with perforations of various sizes, the gas-induction pipe B', opening through the bottom of said chamber into the inner cylinder, the air-induction pipe E, passing through said chamber and through the shell of the outer cylinder opposite the circumferential perforations of the inner cylinder, a shaft connected to said inner cylinder, means for turning and adjusting said inner cylinder to bring different-sized holes thereof opposite said air-induction pipe, the perforated diaphragms within said chamber above said cylinders, the horizontal slotted eduction-pipe G above said diaphgrams, and the eduction-pipe G', connected to said slotted pipe, substantially as described.

325,449. CUT-OFF. FREDERICK SCHUELER, La Salle, Ill. Filed Aug. 6, 1884. (No model.)



Claim.—The semicircular-shaped casing A, having a flat base, and inlet and outlet openings connecting with the latter at each end, in combination with the partition F, extending upward from the base of the casing between the openings, the valve or cut-off G, turning on a bearing at the upper end of the latter, and having its upper end working against the curved inner face of the casing, quadrantal-shaped flanges H, secured to and projecting from each side of the cut-off or valve, a slot, I, in one side of the casing, and a finger-piece, J, working through the slot and connected to the valve, the said flanges covering the slot and adapted to abut at their ends against the floor or base of the casing over either the inlet or outlet openings, so as to limit the movement of the valve, for the purpose set forth.

325,450. FIRE-ESCAPE. SAMUEL SNYDER, White Sulphur Springs, Mont. Filed Apr. 14, 1885. (No model.)



Claim.—1. In a fire-escape, the combination, with a frame adapted to be secured inside of a room adjacent to a window, of a windlass-drum journaled in the upper part of the same, a rope secured on the drum, a brake-band passed around the drum, and a rope attached to the free end of the band, substantially as herein shown and described.

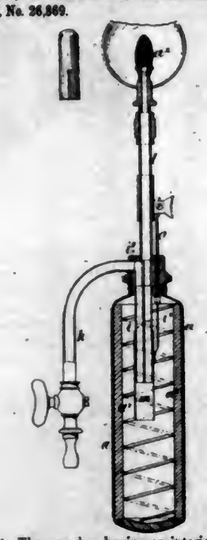
2. In a fire-escape, the combination, with the stationary frame B, of the windlass-drum journaled in the upper part of the said frame, the rope G, the belt H, the brake-pulley D, the brake-band E, and the rope F, substantially as herein shown and described.

325,451. PLOW-COLTER. THOS. C. SARGEANT, Church Stowe, Wooden, County of Northampton, England. Filed Feb. 4, 1885. (No model.) Patented in England Nov. 12, 1884, No. 14,900.



Claim.—In a plow-colter, the stem B, provided with a socket and fastening, combined with the blade A, having a double cutting-edge and hilt, substantially as described, whereby said blade may be caused to present either edge forward without shifting its place as to the plow-beam, &c.

325,452. APPARATUS FOR MIXING AIR AND COMBUSTIBLE VAPOR. GUSTAVE A. SCHOTH, Euston Road, County of Middlesex, England. Filed Apr. 6, 1885. (No model.) Patented in England Nov. 8, 1882, No. 5,337; in France Feb. 8, 1883, No. 153,587, and in Germany May 27, 1883, No. 26,869.

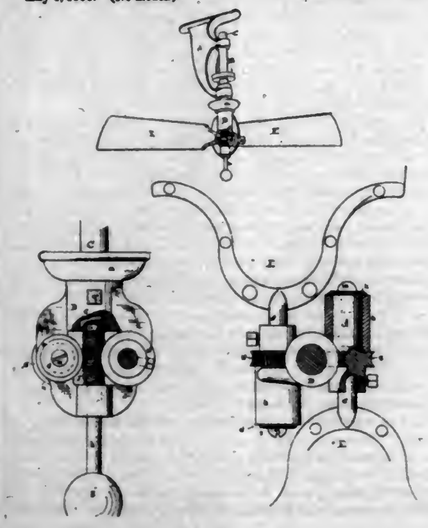


Claim.—1. The vessel *a*, having an interior lining, a^2, of porous material, for absorbing the hydrocarbon, in combination with an air-inlet pipe, and an outlet-pipe to the burner, and an outer sliding sleeve, with means, substantially as specified, for regulating the position of said sleeve on the outlet-pipe, and thereby regulating the amount of hydrocarbon vapor absorbed by the air, substantially as set forth.

2. The vessel *a*, having an interior lining, a^2, of porous material, in combination with the air-inlet pipe *i* and outlet-pipe *i'* to the burner, an outer sliding sleeve, *m*, with regulating-rod *o* attached thereto, a stuffing-box through which the rod *o* passes, and the burner *a'*, consisting of an inner wire-gauze chamber and an outer annular wire-gauze chamber at the end of the pipe *i'*, substantially as set forth.

3. The combination, with the chamber *a*, for mixing air with hydrocarbon vapors, of the air-inlet pipe *i* and the carbureted-air outlet-pipe *i'* alongside each other, and provided with a sliding sleeve, *m*, and with means for adjusting the position of the sleeve *m*, for the purpose of regulating the amount of absorption of carbureting material, substantially as set forth.

325,453. ROTARY FAN. JAMES M. SEYMOUR, Newark, N. J. Filed May 1, 1885. (No model.)

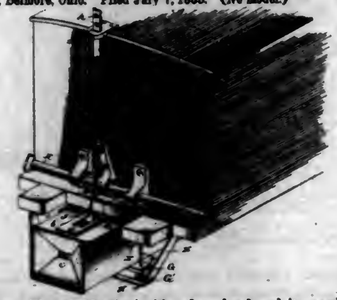


Claim.—1. In combination, a rotating fan whereof each vane is capable of rotation on its own axis to adjust its obliquity to the plane of its motion, and a hand-piece, pendent parallel with the axis of revolution, attached to said vane at a point eccentric to said axis, whereby without stopping the revolution the vane may be partly rotated and its plane of motion may be changed at will.

2. In combination, a rotating fan whereof each vane is capable of rotation on its own axis, and provided with a lateral projection, and a hand-piece, pendent parallel with the axis of revolution, in engagement with said projection, whereby an endwise movement of said hand-piece may without pause in its rotation partly rotate said vane and its obliquity be changed as desired.

3. In combination, a rotating fan whereof each vane is capable of rotation on its own axis, and provided with a lateral projection the end whereof is curved concentric with the axis of said vane, and is furnished with a worm-gear and a screw, H, in engagement therewith, said screw being provided with a hand-piece, whereby it may be seized and the obliquity of the vanes changed as desired.

325,454. CAR-COUPLING. BATHALLEL D. SPARLING and PHILIP S. FITCH, Belmore, Ohio. Filed July 7, 1885. (No model.)



Claim.—The combination, with a draw-head and its coupling-pin, of a shaft journaled in brackets secured to the front of the car, a spline on said shaft, an arm on the shaft having a groove to receive the spline, notches on the inner side of one of the brackets, and a chain connecting the arm and coupling-pin and extending to the top of the car, as set forth.

325,455. FARM-WAGON. MONT SPAULDING, Orleans, Mich. Filed June 2, 1885. (No model.)



Claim.—1. The body A, having the opening *a*, the arch *b*, having the coincident holes b^2 b^2, the fork B, the circle C, and the wheel D, all combined as set forth.

2. The body A, the rectangular frame consisting of the cross-bars *e e* and the end bars, *e' e'*, and the posts *f f g g*, having the coincident holes *h h*, in combination with the wheels F and G, as set forth.

3. The wagon-body A, having the opening *a*, the arch *b*, the fork B, having the coincident holes b^2 b^2, and the wheel D, in combination with the bars *e e e' e'* and the posts *f f g g*, having the holes *h*, coincident, as set forth, and the wheels F and G, all constructed and arranged as described.

325,456. WALL-BRACKET. C. HALDRIDGE SMITH, Adamsea, Iowa. Filed Mar. 2, 1885. (No model.)

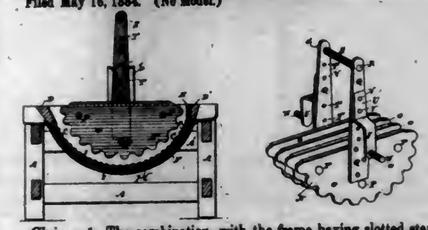


Claim.—1. The combination, with a single-shelf wall-bracket, of an arm or support, F, having a loop at one end, a disk, E, with an arm, C, for grasping and holding the same, and a tension-screw for securing said disk to the shelf of the bracket, substantially as described.

2. The combination of the bracket A, the disk E, with the arm or post C and cross-bar D, and the arm or support F, with loop F' on one end, substantially as described.

3. The combination of the bracket A, the arm or support F, having loop F', the disk E, having post or arm C, with a cross-bar, D, and bolt *a*, with its nut *b*, and the sharp projection E', substantially as described.

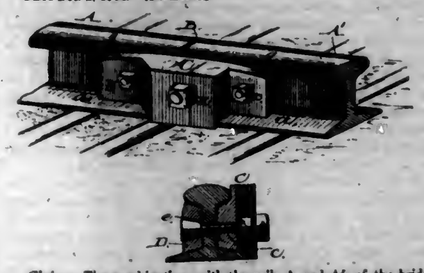
325,457. WASHING-MACHINE. JAMES M. TANNER, Herrick, Ill. Filed May 16, 1884. (No model.)



Claim.—1. The combination, with the frame having slotted standards L, of the suds-box, the rubber H, and the oscillating rubber N, having vertical arms, and the spring-arms U, provided with journals at their lower ends, said spring-arms being adjustably secured to the vertical arms of the oscillating rubber, substantially as described.

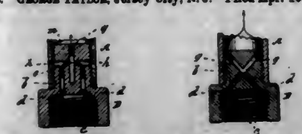
2. The combination, with the wooden plates O, semicircular in form and having escalloped arcs connected, so as to have spaces between them, by the wooden rods P, of the vertical perforated arms Q Q, connected by the rod S, and the adjustable angularly-bent spring-arms U U, provided with the journals W W, and a suds-box and frame having journal-bearings, substantially as described, operating in connection therewith, substantially as specified.

325,458. RAILWAY-RAIL JOINT. CYRUS TAYLOR, Denver, Colo. Filed Dec. 2, 1884. (No model.)



Claim.—The combination, with the rails A and A', of the bridge-bar C, the upper surface of which inclines downwardly from its center toward each end, and having an enlarged central portion ∨-shaped in longitudinal section, a bolt passing through this enlarged portion and between the ends of the rails, a splice-bar provided with square tapering holes, and suitable bolts with square heads passing through the bars and uniting the parts, as herein described.

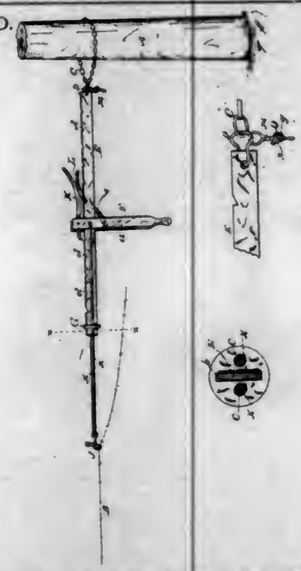
325,459. DEVICE FOR REGULATING THE FLOW OF GASES AND FLUIDS. GEORGE TAYLOR, Jersey City, N. J. Filed Apr. 19, 1884. (No model.)



Claim.—In a gas-burner, the coupling-piece B, having a screw-threaded socket on one end and a plug on the other with exterior threads, said plug having two converging gasways wholly in the body thereof, and an outlet for the gas from the point of convergence of said gasway, the whole constructed whereby the two currents of gas flowing from said plug to the point of convergence serve to check one another, and to automatically compensate for any increase of pressure, substantially as specified.

325,460. WIRE-STRETCHER. ANDREW J. UPHAM, Sycamore, assignor to Washington M. Dillon, Sterling, Ill. Filed Feb. 2, 1885. (No model.)

325,460.

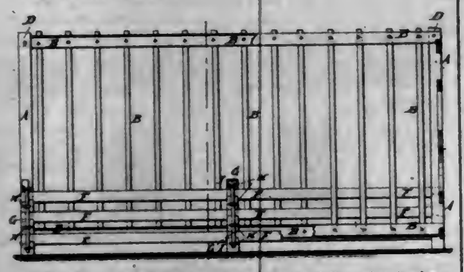


Claim.—1. In a wire-stretcher, the combination of the bar E, provided with notches *d*, the lever F, provided with the slot *a*, through which said bar E is passed, guide-plate G, provided with slot *b* and holes *c c*, the rods H H, the pawl K, the grippers J and M, and the pawl L, provided with the slot *e*, through which the bar E is projected, the upper wall of the slot *e* being adapted to engage the notches *d* alternately with the engaging end of the pawl K, and such pawl L extending above the bar E and adapted to cause the engagement of the pawl K, substantially as shown, and for the purpose described.

2. In a wire-stretcher, the combination of the bar E, provided with notches *d* and detachably connected at its outer end to the post A, the lever F, provided with the slot *a*, through which said bar E is passed, guide-plate G, provided with slot *b* and holes *c c*, the rods H H, the pawl K, the gripper J, and the pawl L, provided with the slot *e*, through which the bar E is projected, the upper wall of the slot *e* being adapted to engage the notches *d* alternately with the pawl K, and such pawl L extending above the bar E and adapted to cause the engagement of the pawl K, substantially as shown, and for the purpose specified.

3. The combination of the bar E, provided with notches *d*, the guide-plate G, provided with slot *b* and holes *c c*, and detachably seated on such bar, the rods H H, the lever F, the pawl K, and the pawl L, provided with the slot *e*, adapted to receive the bar E and engage the notches *d* thereon, the free end of the pawl L being extended above the bar E, and in such relation to the pawl K as to cause the engagement of the latter, substantially as shown, and for the purpose mentioned.

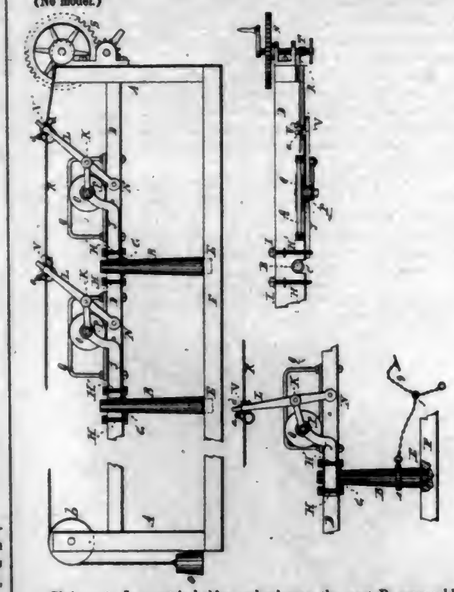
325,461. FEED-RACK. BENJAMIN F. WAGGONER, Litchfield, Ill. Filed Apr. 10, 1885. (Model.)



Claim.—1. A feed-rack constructed substantially as herein shown and described, and consisting of the ends A, having recesses C E, and pins D, the sides B, engaging with the recesses and pins of the said ends, and the guard-bars F, secured in recesses in the posts of the ends by pins and staples G H, as set forth.

2. In a feed-rack, the combination, with the sides B and the guard-bars F, of the brackets I, having recess J, the pins G, and the staples H, substantially as herein shown and described, whereby the middle part of the said rack will be firmly supported, as set forth.

325,462. ANIMAL HITCHING AND RELEASING DEVICE. JOHN WAGNER and WILLIAM WAGNER, Cee Ridge, Ohio. Filed Mar 7, 1885. (No model.)



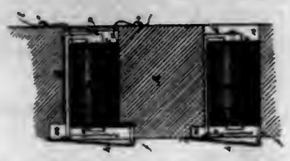
Claim.—1. In a cattle holder and releaser, the post B, removably connected to the stringer D above and to the sill E below, in combination with the sliding bolt J, lever L, and link connecting said bolt to the lever, chain R, and windlass S, for actuating said lever, for the purpose specified, and substantially as described.

2. In combination with the posts B, sliding bolt J, lever L, and link connecting said lever to the bolt, chain R, having one end thereof attached to the windlass S, and the opposite end depending from a sheave from which is suspended a weight, *c*, for the purpose specified, and substantially as described.

3. In combination with the chain or line R, lever L, sliding bolt J, and link connecting the lever to said bolt, the loop or ring V, wrist and pin *a*, for attaching the said chain to the lever, posts B, and staples H H', plate D, and sill for supporting the posts and staples, substantially as described, and for the purposes specified.

4. Pivoted to and in combination with the sliding bolts J, wheels or rollers O, adapted to run upon a track and retained thereon in a vertical position by a frame, Q, within which the rollers run, lever L, sliding bolt, and link connecting the said bolt to the lever, posts B, staples H H', and the devices for supporting the posts and staples, for the purposes specified, and substantially as set forth.

325,463. ANNUNCIATOR. HENRY E. WAITE, New York, N. Y., assignor to Charles F. Livermore, same place. Filed July 11, 1884. (No model.)



Claim.—1. An electric annunciator consisting of a horseshoe-magnet having a bobbin and coil on one pole, the other pole being flattened and bent so as to lie in close proximity to and follow the contour of the coil, as set forth.

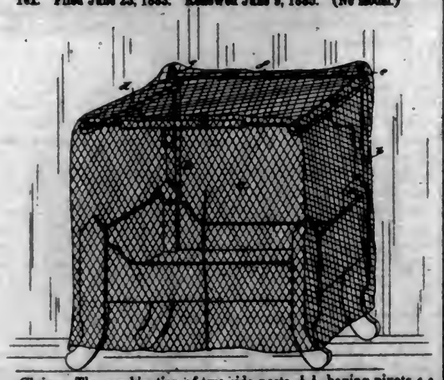
2. An electric annunciator consisting of a magnet, a bobbin and coil, one pole of the magnet being flattened, and an armature or armature-lever connected to the end of the flattened pole, and a pivoted drop adapted to be operated by the armature, as set forth.

3. In an electric annunciator, the combination, with the magnet and coil, of an armature pivoted to the flattened end of the magnet-core, and consisting of a broad flattened end for the reception of the designating character, and a shutter or drop adapted to be operated by the armature, as set forth.

4. An electric annunciator consisting of a horseshoe-magnet having a bobbin and coil on one pole, the other being flattened and arranged in proximity to the coil, an armature or armature-lever pivoted to the flattened pole, a shutter or drop pivoted to a support connected to the bobbin and adapted to be operated by the armature, the whole being arranged so as to be substantially cylindrical in form, as and for the purpose set forth.

5. The combination, with a board having a cylindrical socket, of an annunciator adapted to and placed within said socket, and a plug closing the end of the socket, as and for the purpose set forth.

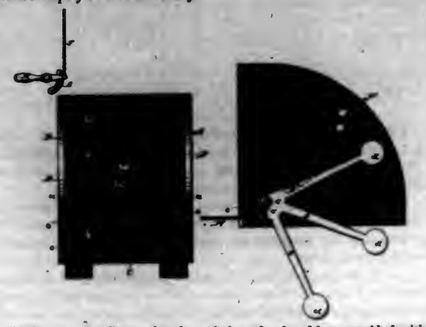
325,464. MOSQUITO-NET FRAME. THOMAS A. WATSON, Houston, Tex. Filed June 23, 1883. Renewed June 9, 1885. (No model.)



Claim.—The combination of two side posts, *b b*, having pivots *s s*, the horizontal arms *d d*, working on said pivots, the bar *f*, connecting the tops of said posts, and the extensible bar *h*, connecting the arm ends *g*, the whole adapted to be used on a bedstead, as described.

325,465. RAILWAY-SIGNAL. CHARLES F. WILLIAMS, Crisman, Ind. Filed Dec. 1, 1884. (No model.)

Brief.—A closed box having a series of openings on either side, a rock-shaft on which are fixed slides for revealing or disclosing the light of a lamp through said openings, and a triangular frame with the three balls *d d d*, all so arranged that a corresponding number of balls and lights are displayed simultaneously.



Claim.—1. A railway-signal consisting of a closed box provided with a series of openings for the display of lights therein, suitable slides on either side for hiding or displaying said openings at night, a series of balls or disks corresponding in number to said night danger-signals, and means for operating said slides and balls, whereby one or more of said balls or openings may be displayed at will, substantially in the manner and for the purposes specified.

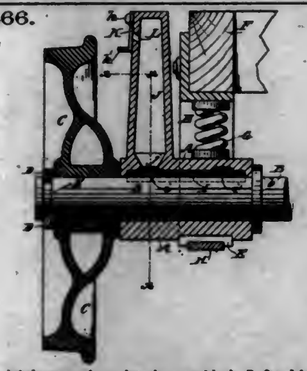
2. A railway-signal consisting of the balls *d d d*, slides E E, and box A, having suitable openings, said slides and balls being connected with a rock-shaft provided with means for tilting the same from a distance, all combined and arranged substantially in the manner and for the purposes above described.

3. A day and night railway-signal consisting of the box A, having a rock-shaft therein, and means for partially revolving the same from a distance, in combination with the slides E E, openings F G, and balls *d d d*, all arranged and constructed substantially as described.

325,466. CAR-AXLE BOX. JESSE S. WILLIAMS, Beaver Dam, Ky. Filed July 2, 1885. (No model.)

Claim.—1. The combination, with the axle B of a car or other wheeled vehicle, of a journal-box, A, provided with a chamber, J, for

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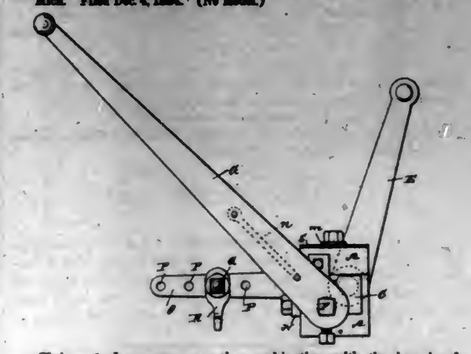
holding a lubricant, and an interior cap-block, I, fitted in box A so as close the outlet of chamber J and bear on the rotating axle, and be opened by the jar of travel to permit the flow of the lubricant to the axle, substantially as herein set forth.

2. In combination, the journal-box A, provided with a chamber, J, an interior cap-block, I, fitted so as to close the outlet of chamber J, an axle, B, fitted to rotate in the journal-box under the block I, and a wheel fitted loosely on the axle next the journal-box, substantially as herein set forth.

3. The journal-box A, made with a body portion adapted to an axle, a superposed lubricant-chamber, J, and an interior cap-block, I, adapted to close the outlet of chamber J and to bear on the axle, substantially as herein set forth.

4. The journal-box A, made with a body portion adapted to an axle, a superposed lubricant-chamber, J, having an outlet, *j*, a supply-aperture, L, and cover-plate K, and an interior cap-block, I, having retaining-legs *i i'*, the lug *i* serving as a valve to chamber J, and said block I adapted to bear on the rotating axle, substantially as herein set forth.

325,467. SAW-SWAGING DEVICE. HENRY WILLIAMSON, Bay City, Mich. Filed Dec. 4, 1884. (No model.)



Claim.—1. In a saw-swage, the combination, with the box A, of a saw-tooth-gripping device, the flat die K, wedge L, and shaft F, provided with a segmental groove forming a die, substantially as herein shown and described.

2. In a saw-swage, the combination, with the box A, of a saw-tooth-gripping device, the flat die K, the wedge L, and the shaft F, on which a die is formed, substantially as herein shown and described.

3. In a saw-swage, the combination, with the box A, of the shaft F, on which a die is formed, the sliding spindle B, having one end screw-threaded, and a jaw, C, secured on the opposite end, and the nut D, held to the box and provided with a handle, substantially as herein shown and described.

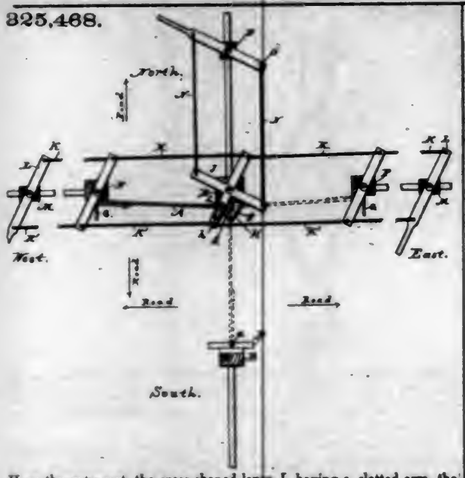
4. In a saw-swage, the combination, with the box A, of a shaft provided with a die, the arm O, and the adjustable support B on the same, substantially as herein shown and described.

5. In a saw-swage, the combination, with the box A, of a tooth-gripping device, the shaft F, on which the die H is formed, the handle G, the spring *n*, and the notched arm S on the box, substantially as herein shown and described.

325,468. GATE. JOHN G. WILSON, Cameron, Tex. Filed July 3, 1884. (No model.)

Claim.—1. The combination, with a pivoted gate having an upwardly-projecting prong, *l*, at its pivoted end, of the triangular frame

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H on the gate-post, the cross-shaped lever J, having a slotted arm, the pivoted levers L, the rods K K', connecting the levers L with two arms of the lever J, the pivoted lever O and the rods N N, connecting the same with the other arms of the lever J, substantially as herein shown and described.

2. The combination, with a pivoted gate having an upwardly-projecting prong *l*, at its pivoted end, of the triangular frame H on the post B, the posts F, having beveled prongs G, the post E, having a notched beveled plate, D, the pivoted cross-shaped lever J, the levers L, the rods K K', connecting two arms of the lever J with the levers L, the pivoted lever O, and the rods N, connecting the same with the other arms of cross-shaped lever J, substantially as herein shown and described.

325,469. PROCESS OF UNITING GOLD AND VULCANITE. JESSE H. WOOD, Lebanon, Ohio. Filed June 17, 1885. (No specimens.)

Claim.—1. In the formation of gold-coated vulcanite, the application of chloride of silver, substantially as described.

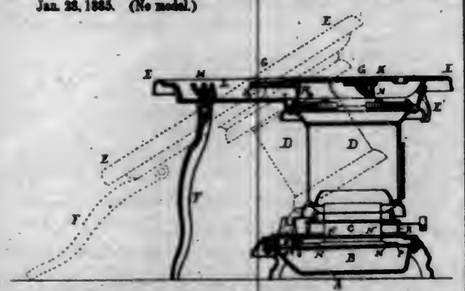
2. The process of uniting gold and caoutchouc, which consists in coating the caoutchouc with chloride of silver, laying on the gold, and vulcanizing the mass, substantially as described.

325,470. CLOTHES-LINE SUPPORT. WILLIAM C. YOUNG, Paterson, N. J. Filed June 4, 1884. (No model.)



Claim.—In a clothes-line support, the bar with its hooked roller end, which receives a clothes-line, provided with a spring-hook to confine the line in the hook at said end of the bar, and having the curved lower end, the curved spring-pressed lever pivoted to the bar to fasten the bar to a second clothes-line, substantially as and for the purpose set forth.

325,471. OIL-STOVE. FRANK A. ARMSTRONG, New York, N. Y. Filed Jan. 23, 1885. (No model.)



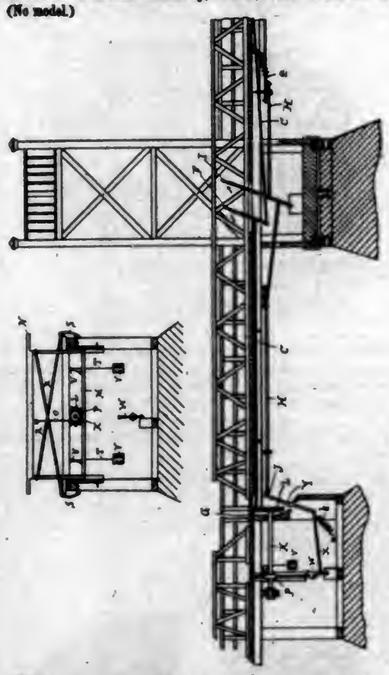
Claim.—1. The loose bridge-plate G, provided with a depending rib, H, and the V-shaped projections K, in combination with the top plate of a stove, substantially as described.

2. The bridge-plate G, having the V-shaped projections, as shown, in combination with the upwardly-projecting deflectors M in the flues or flue-spaces, substantially as described.

3. In an oil-stove, the combination, with the oil-chamber B, having loose cover N', of the inclined drip-plate N, having oil-conducting rib P, and an oil-inlet to the oil-chamber at the lower end of the inclined drip-plate, said conducting-rib converging to or meeting at the said oil-inlet, substantially as described.

4. In an oil-stove, the depending flange or funnel-shaped passage set in an opening in the base-piece and leading into the oil-chamber, said passage converging toward its lower end and extending no farther than the top of said oil-chamber, whereby the supply of oil thereto may be checked at the proper point by the operator seeing the oil as it arrives at the lower end of said funnel, substantially as described.

325,472. SWING-BRIDGE. MARCUS O. ANTHONY, Bay City, assignor of one-half to Isabella Landsbury, Detroit, Mich. Filed Oct. 22, 1884. (No model.)



Claim.—1. A swing-bridge having secured at either end a projecting and retracting rack adapted to engage with a pinion, thereby giving a vertical motion to a gate adapted to project from the floor of the stationary part of the bridge, substantially as described.

2. In combination with a swing-bridge, a detent for holding the gate down and a lever for disengaging such detent, such lever being operated from the center of the swing-bridge, substantially as and for the purposes specified.

3. In combination with a swing-bridge, a gate at each end thereof, a detent for holding down each gate, and a lever operated from the bridge for disengaging said detents simultaneously, substantially as and for the purposes specified.

4. In combination with a swing-bridge, and as a means for operating the gate in the stationary part thereof, a rack-bar conforming in shape to the end of such swing-bridge, and secured beneath the floor of the same at its end, and adapted to be projected or retracted by means of a lever at the center of such swing-bridge, substantially as described.

5. In combination with a swing-bridge, a gate, a detent for holding said gate down, a lever and intermediate connections for disengaging said detent, and a weight attached to said gate for elevating the same when said detent is disengaged, substantially as described.

6. In combination with a swing-bridge, and as means for operating the gate in the stationary part thereof, the shaft K, gear-wheel L, carried by said shaft, rod C, the curved rack-bar G, secured to said rod, and the lever F, arranged at the center of said bridge and constructed to project and retract said rack-bar, substantially as and for the purposes specified.

7. In combination with a swing-bridge, the gate-frame M, shaft K, drum P, carried by said shaft, the crossed arms R, links S, pivotally secured to said arms and to the side walls of the approach, the rope O, chain T, and weight U, all constructed and arranged substantially as and for the purposes specified.

325,473. HOG-TRAP. CORNELIUS ARNOLD, Raymond, Ill. Filed Mar. 20, 1885. (No model.)



Claim.—1. In a hog-trap, the combination, with a frame or pen mounted upon sills, of cross-pieces connecting said sills near the front end of the trap, one of said cross-pieces being provided with a notch or recess, a slide sliding between said cross-pieces, and having a small notch and a series of perforations engaging a pin extending upward from one of the sills, a lever fitted in the notches of the slide and cross-piece, and retained by transverse pins above and below the cross-pieces, cross-pieces at the top of the trap between which the handle of the lever extends, a pawl upon said lever engaging notches in one of said upper cross-pieces, and a vertical post secured between the upper and lower cross-pieces adjoining the said lever, substantially as and for the purpose herein set forth.

2. A hog-trap consisting of a pen or frame, the lower and upper sides of the top and bottom of which are provided with transverse cross-pieces, each provided with a series of notches registering with each other, in combination with the herein-described adjustable and detachable sides, consisting, essentially, of slats connected by vertical and diagonal braces, and the retaining-pins adapted to be inserted through perforations in the top of the trap in rear of the front braces of the sides, substantially as and for the purpose herein set forth.

3. In a hog-trap, the combination, with a pen or frame constructed substantially as described, of a longitudinally-adjustable frame at the front end of said trap having a vertical corrugated rod and a clamping-lever, substantially as and for the purpose herein set forth.

4. The combination, with a hog-trap having the herein-described adjustable neck-holding device, of a longitudinally sliding and adjustable front frame suspended on trunnions in slots at the sides of the upper part of the front of the frame, and having a vertical corrugated rod and a clamping-lever to hold the nose of the hog, and a cross-piece at the front end of the trap-frame, to prevent the lower end of the front frame from swinging forward and outward, substantially as and for the purpose set forth.

5. In a hog-trap, the herein-described sliding and adjustable front frame, having beveled side pieces and a nose-clamping device, substantially as herein shown and described, for the purpose specified.

325,474. APPARATUS FOR OPERATING CAR-BRAKES. JOSEPH S. RADIA, Philadelphia, Pa. Filed Jan. 13, 1885. (No model.)

Claim.—1. In car-brake apparatus, the combination of a shaft, *a*, pivotally supported at one end and capable of lateral movement at the other end, with supports *b b*, a laterally-movable block, *c*, spring *f*, cylinder *i*, piston or plug *g*, and expanding cap or nipple *h*, whereby when air-pressure is applied inside said cap said shaft will be moved in one direction against the resistance of said spring, and when such pressure is relieved it will be moved in the opposite direction, substantially as shown and described.

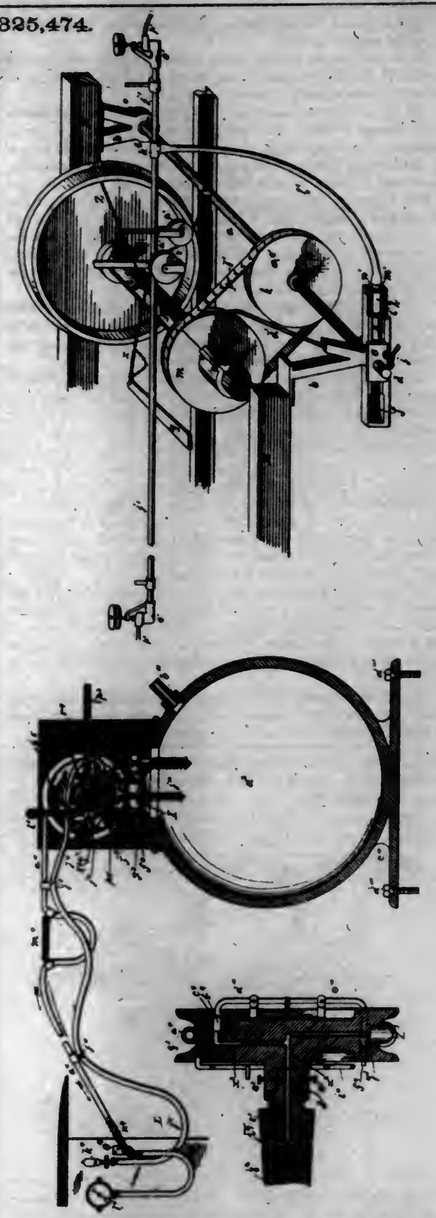
2. In car-brake apparatus, the combination, with a car-wheel axle and a pulley fast thereon, of a shaft, *a*, a pulley, *k*, thereon, and a belt, *b'*, passing over both of said pulleys, said shaft being laterally movable so as to cause said belt to be tightened when the shaft is moved in one direction and to be loosened when moved in the opposite direction, substantially as shown and described.

3. In car-brake apparatus, the combination, with a laterally-movable shaft, *a*, journaled in a sliding box, *c*, and supported in a hanger, *b*, of a spring-catch, *f*, for holding said block in position, substantially as shown and described.

4. In car-brake apparatus, the combination, with a car-axle, M, of a flanged pulley, *m*, having a peripheral groove, a laterally-movable shaft, *a*, a sliding box, *c*, a rod, *d'*, secured to and moving with said box, a belt, *b'*, and a loose pulley, *k*, on said shaft, whereby when said shaft is moved in the direction necessary to loosen said belt said rod will hold the belt out of contact with the pulley *m*, and when said shaft is moved in the contrary direction said rod will retire into the groove in said pulley and permit contact of the belt with said pulley, substantially as shown and described.

5. In car-brake apparatus, the combination, with a grooved pulley, *m*, and belt *b'*, of springs *e'* and anti-friction rollers *f'*, substantially as and for the purpose set forth.

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6. In car-brake apparatus, the combination, with a pulley, *m*, on the car-axle M, and a shaft, *a*, carrying a loose pulley, *k*, said pulleys being connected by a belt, *b'*, and said-shaft being laterally movable by means of pressure and a spring, of pipes for communicating or conveying pressure thereto from an air-reservoir or steam-boiler, substantially as shown and described.

7. In car-brake apparatus, the combination, with a laterally-movable shaft, *a*, and a brake-operating lever, *y*, of a connecting-chain, *v*, with spring X, for maintaining tension in said chain to loosen the brake when relieved of pressure, substantially as shown and described.

8. In car-brake apparatus, the combination, with a laterally-movable shaft, *a*, of a loose pulley, *k*, having internal gear, *k'*, an arm, *p*, fast on said shaft and carrying gear-wheels *q v*, and a fly-wheel, S, having a pinion on its hub, the said fly-wheel being loose on the shaft *a*, whereby when the pulley *k* is caused to rotate it will impart a rapid motion to said fly-wheel, the latter by its resistance to motion carrying the arm *p*

and shaft *a* around, thereby winding the brake-chain, substantially as and for the purpose set forth.

9. In combination with the pulley A, having the internally-located fly-wheel S, the friction-brake for said fly-wheel, consisting of spring d^9 and screw d', substantially as shown and described.

10. In car-brake apparatus comprising pipes for applying pressure for the purposes specified, the combination, with said pipe, of an air-accumulator, a''', having an inlet, b''', and an outlet-valve, f^3, the body of said valve having three passages or ports, h''', i^3, and m^3, communicating with a cock, j^3, which communicates alternately with the brake-pipes p^3, with a pipe, k^3, that connects with a whistle, l^3, and a pipe, j^4, that connects with another whistle, k^4, substantially as shown and described.

11. In car-brake apparatus, the combination, with an accumulator or compressed-air reservoir, a''', of the valve f^3, having enlarged head g^3, cap or casing I', rubber washer o^3, lever n^3, and valve m^3, substantially as shown and described.

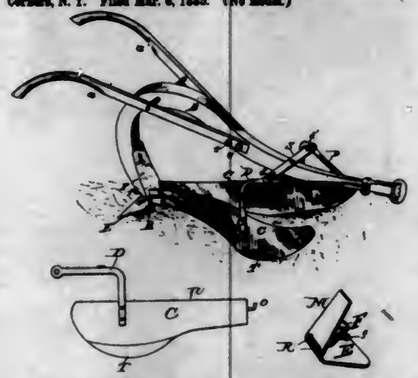
12. In a car-brake apparatus, the combination, with an air accumulator or reservoir, a''', of the cap I, having valve f^3, and cock casing or shell I', having the three ways or ports and a curved way, v^3, with the cock j^3, substantially as shown and described.

13. In a car-brake apparatus, the combination, with a cock, j^3, which controls the application of the air-pressure, and which has a transverse port or way and a longitudinal port communicating therewith, of a pulley, q^3, secured to said cock, said pulley having a central opening or port which communicates with the longitudinal port of the cock and two branches leading therefrom, one of said branches connecting with a hollow elbow, z^3, which connects with a hollow pipe or tube which is in communication with the pressure-gage l^3, the other branch leading to a socket in the pulley, in which is fitted a rubber thimble or flanged cap which abuts against the end of a lever, d^3, connected with another lever, d^4, whose end is bent and passes through the pulley, forming a movable stop, f^4, substantially as shown and described.

14. In car-brake apparatus, the combination, with a cock, j^3, which controls the air-pressure or regulates the same, of a pulley, q^3, secured thereto, a volute spring, z^3, attached to said pulley, a movable stop, f^4, rigid stops g^4 h^4, a flexible tube, c^4, having a tension-spring, m^4, and corrugations n^4, and a hanger or bracket, o^4, substantially as shown and described.

15. In combination with mechanism for actuating car-brakes, whistles for notifying the engineer and train-hands, respectively, when the brakes are applied, substantially as shown and described.

325,475. POTATO DIGGER AND COVERER. CURTIS BAKER, Miller's Corners, N. Y. Filed Mar. 6, 1885. (No model.)



Claim.—1. The beam B, the angular arms D, pivoted thereto, and the plate adjustably connecting said arms, in combination with the coverers secured to arms D, and having hooks *o*, and the coverer E, secured to the beam B, and having openings to receive the hooks *o*, as set forth.

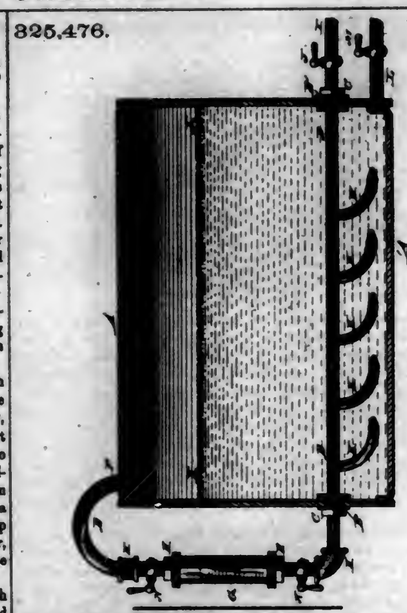
2. The combination, with the plow-beam, of the wings C, having hooks *o*, and the coverer having openings to receive the same, as set forth.

325,476. STEAM-BOILER CLEANER. HENRY B. BAKER, Hulls, Ohio. Filed June 27, 1885. (No model.)

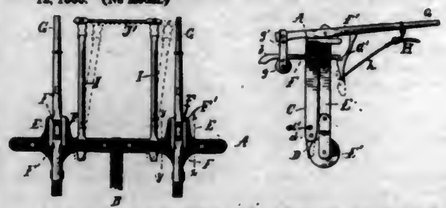
Claim.—1. The combination, with a steam-boiler having the blow-off pipe with stop cock or valve in one head near the bottom, of the pipe B, with curved tubes K and stop cock or valve J, the short pipe D, and the sight-tube G, substantially as specified.

2. The combination, with a steam-boiler having the blow-off with stop cock or valve, of the horizontal pipe B, extending entirely through the boiler and projecting at each end thereof, and provided with small curved pipes K, the short curved pipe D, and the vertical tube connecting the pipes B and D, substantially as specified.

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325,477. CULTIVATOR. THOS. C. BAKER, Ashland, Mo. Filed May 12, 1885. (No model.)

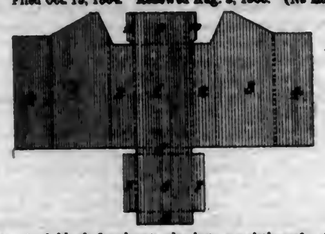


Claim.—1. The combination, with a cultivator provided with a gage-guide working in vertical guides, of an arm-extension, a lever pivoted to the gage-guide, a roller running on the arm-extension, and links connecting the roller and lever, as and for the purposes described.

2. In a cultivator provided with a gage-guide working vertically in bearings, the combination of a lever pivoted to the gage-guide and provided with a shifting fulcrum, a spring-pawl connected to the lever and engaging a ratchet-surface attached to the frame of the cultivator, and a bell-crank and connecting-rod for actuating said pawl, substantially as set forth.

3. The combination, in a cultivator, of a pair of swivel-mounted standards connected by rods branching therefrom, the latter united by a cross-rod pivotally attached to each, with a cultivator-disk journaled in one of said standards, and a runner attached to the other, substantially as and for the purposes described.

325,478. ELEVATOR-BUCKET. CHRIST BAKER and JOHN H. ROBERTS, Pittsburg, Pa.; said Baker assignor to William M. Babbott, same place. Filed Oct. 15, 1884. Renewed Aug. 3, 1885. (No model.)



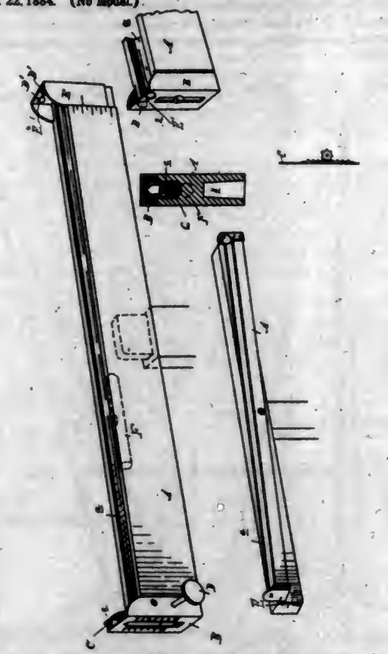
Claim.—1. A blank for elevator-buckets, consisting of a single piece of sheet metal cut or stamped in the shape hereinbefore described—to wit, having a back section, a back incline section adjoining one end of said back section, and having a flange-section on each of its sides, a link-bearing section adjoining each side of the back section, a side section adjoining each link-bearing section, a half-front section adjoining each side section, and a bottom section connected at one side by a bottom fold section to the back section, and having a lap section on each of its three remaining sides, substantially as set forth.

2. An elevator-bucket formed of a single piece of sheet metal, cut and bent as described, and having its edges united by a longitudinal double lap-seam on its front and by lap-seams at the four boundaries of its bottom, substantially as set forth.

3. An elevator-bucket formed of a single piece of sheet metal, cut and bent as described, and having its bottom turned inwardly by a fold against its back and flanged over its sides and front, substantially as set forth.

4. The combination of an open-wire chain-link and an elevator-bucket formed of a single piece of sheet metal, and connected to the sides of the link by having the continuous metal of its body bent around and turned down on the same, so as to form sockets or bearings connected by double thicknesses of metal with the body of the bucket, substantially as set forth.

325,479. SPIRIT-LEVEL. ROBERT BAKER, Lansing, Mich. Filed Oct. 22, 1884. (No model.)



Claim.—1. The combination, in a leveling-instrument, of the bed A, the slotted scale-plate B, secured to one end thereof, and the sliding plate C, having sight-hole *c*, said plate B forming a guide and also a protection for said sliding plate, substantially as described.

2. The combination, with the bed grooved longitudinally from end to end in its upper edge and provided with the spirit-tube in the bottom of said groove, of a slotted scale-plate secured to one end of said bed, and a vertically-reciprocating slide-sight actuated by a rack-wheel at the other end of said bed, substantially as specified.

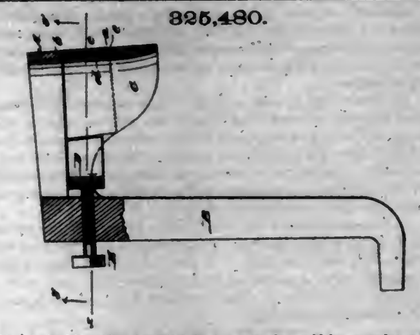
3. The combination, in a leveling-instrument, of the grooved bed A, provided with a spirit-level in the bottom of said groove, the slotted scale-plate secured to said bed, the sliding plate C, having sight-hole *c*, and guided and protected by said plate B, and provided also with a rack, and the pinion provided with a thumb-nut, D, all constructed, arranged, and operating substantially as herein shown and described.

325,480. HACKER FOR CHIPPING PINE TREES. RANDOLPH M. BARROW, Castleberry, Ala. Filed Feb. 17, 1885. (Model.)

Claim.—1. The combination, with the body provided on its inner side with the shoulder *b*, and the bit having its rear end inserted in said body and abutted against the shoulder *b*, of the double-armed brace inserted in the body, and having the ends of its arms bearing one on each side of the bit, and a clamping device engaging said brace, substantially as set forth.

2. In a turpentine-hacker, the combination of the main body part A of the head of the tool, having a half lap-joint portion, *c*, and an attached shank, B, the removable bit C, having a half lap-joint portion, *d*, the clamp or brace D, and the bit holding and releasing screw E, essentially as shown and described.

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325,481. SASH-FASTENER. WILLIAM J. BARROW, Huntsville, Ala. Filed Dec. 4, 1884. (No model.)

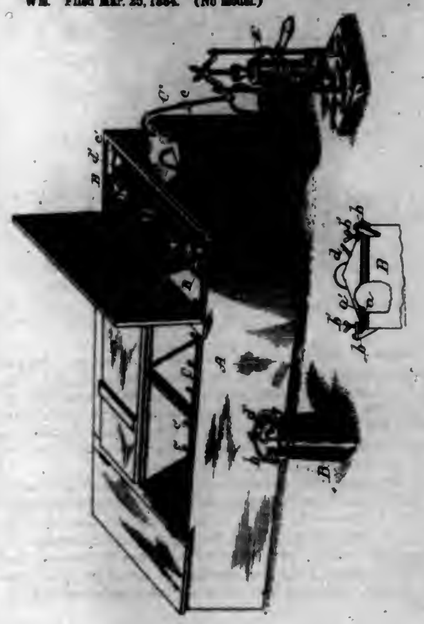


Claim.—1. In a sash-lock, the combination of the sliding toothed rack, the angular catch-bolt connected thereto, and the pinion, with means for rotating the same, substantially as and for the purpose described.

2. In a sash-lock, the combination of the sliding rack, the angular catch-bar connected thereto, the spring, the pinion, and the knob or button, substantially as and for the purpose specified.

3. The combination, with the window-sash provided with a recess or a series of recesses, of the slotted plate T, the catch-bolt E, having the indentation *n*, the rack-bar, pinion, spring, and button, all constructed and adapted to operate substantially as and for the purpose set forth.

325,482. VACUUM-CREAMER. NAPOLEON B. BLACKBURN, Portage, Wis. Filed Mar. 25, 1884. (No model.)

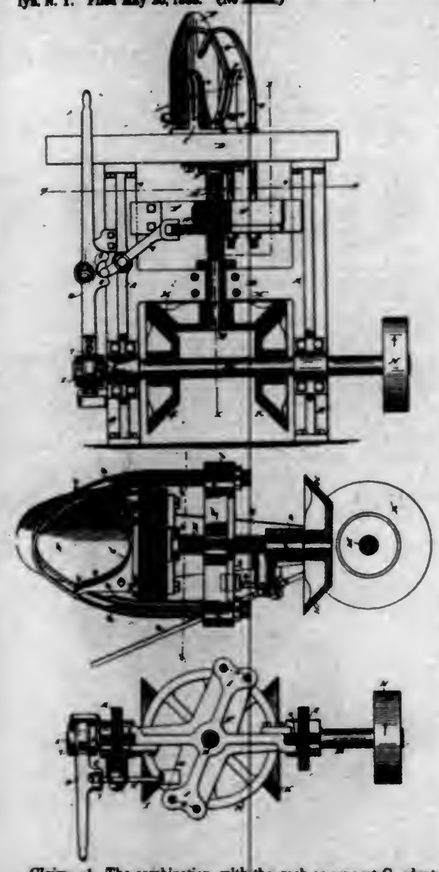


Claim.—1. A water tank or chest having a pipe arranged about its side and end, in combination with milk-receptacles placed therein, tubes attached to the covers of said receptacles and communicating with branch tubes of said pipe, and an air-pump connected with said tubes, substantially as described.

2. A water tank or chest adapted to hold removable milk-receptacles and having arranged about its inner side and end below its lid a pipe provided with branches, in combination with said receptacles provided with closed lids having tubes projecting therefrom, flexible tubes fitted with pinch-cocks and connecting the tubes in the receptacle-lids with the pipe branches, and an air-pump connected with the pipe in the inside of the chest, substantially as set forth.

3. The combination of the water tank or chest A, having interior pipe, C, provided with branches c' c', and arranged along the inner side and end of the chest, receptacles B B, provided with closed covers having projecting pipes d, connecting flexible pipes d', with pinch-cocks c, air-pump E, and intermediate vacuum-chamber, D, and connecting-pipes C' C^2, substantially as set forth.

325,483. WOOD-BUNDLING MACHINE. JOB W. BLAKELL, Brooklyn, N. Y. Filed May 20, 1882. (No model.)



Claim.—1. The combination, with the rack or support C, adapted to receive and hold the bundle, of the yoke or yokes g, attached to the head F and arranged to compress the bundle, and the screw-shaft E, working in the head F, and provided with the wheel H and connections by which it is turned first in one direction and then in the other to operate the head to compress and release the bundle, substantially as described.

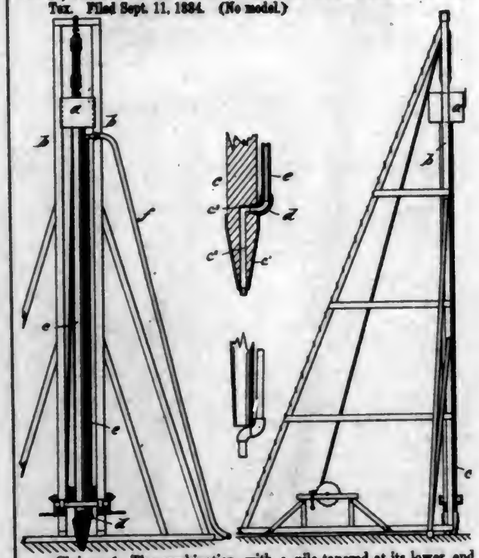
2. The combination, with the rack or support C, adapted to receive and hold the bundle, and having the slots 2, for receiving the cord with which the bundle is to be tied, of the yoke or yokes g, attached to the head F and arranged to compress the bundle, and the screw-shaft E, working in the head F, and provided with the wheel H and connections by which it is turned first in one direction and then in the other to operate the head to compress and release the bundle, substantially as described.

3. The combination, with the rack or support C, adapted to receive and hold the bundle, and provided with the plate P, for squaring the end of the bundle, of the yoke or yokes g, attached to the head F and arranged to compress the bundle, and the screw-shaft E, working in the head F, and provided with the wheel H and connections by which it is turned first in one direction and then in the other to operate the head to compress and release the bundle, substantially as described.

4. The combination, with the rack or support C, adapted to receive and hold the bundle, of the yoke or yokes g, attached to the head F and arranged to compress the bundle, the screw-shaft E, working in the head F and provided with the wheel H, and the wheels I K, mounted upon the sliding shaft M, and arranged to engage with the wheel H, to turn the same first in one direction and then in the other, to operate the head to compress and release the bundle, substantially as described.

5. The combination, with the rack or support C, adapted to receive and hold the bundle, of the yoke or yokes g, attached to the head F, and arranged to compress the bundle, the screw-shaft E, working in the head F and provided with the wheel H and connections by which it is turned first in one direction and then in the other, to operate the head to compress and release the bundle, and a tripping mechanism connected to and operated by the head, whereby the movement of the head and yoke or yokes is automatically arrested at the proper time, substantially as described.

325,484. SINKING HYDRAULIC PILES. LOWELL P. BLAKE, El Paso, Tex. Filed Sept. 11, 1884. (No model.)



Claim.—1. The combination, with a pile tapered at its lower end and provided with the hole c^3 and cross-aperture c^3, of the elbow d and pipe e, substantially as shown and described.

2. The combination, with a pile tapered at its lower end and provided with the hole c^3 and cross-aperture c^3, of the nipple c', elbow d, and pipe e, substantially as shown and described.

3. The combination, with a pile tapered at its lower end and provided with the hole c^3 and cross-aperture c^3, of the elbow d, pipe e, and weight a, substantially as shown and described.

325,485. DIAMOND-SETTING. CHRISTIAN BLANCARD, New York, N.Y. Filed June 1, 1885. (No model.)



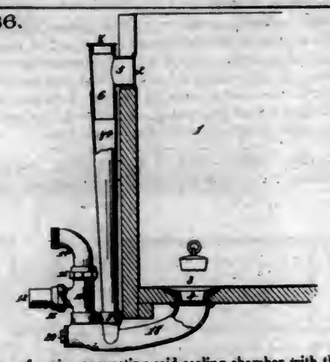
Claim.—A setting for diamonds and other gems, having an upset rim or bezel made integral with the body of the setting, substantially as set forth.

325,486. TRAP FOR BATH-TUBS, SINKS, &c. CHARLES A. BLISSING, Philadelphia, Pa. Filed June 15, 1885. (No model.)

Claim.—1. The combination, with a trap for bath-tubs and sinks, of an overflow having its diameter diminished in one direction and increased in the other, and a coupling rising from the trap immediately in rear of said pipe, substantially as described.

2. In a trap for bath-tubs and other purposes, the combination, with a water-sealing chamber having outlets leading to the waste-pipe and

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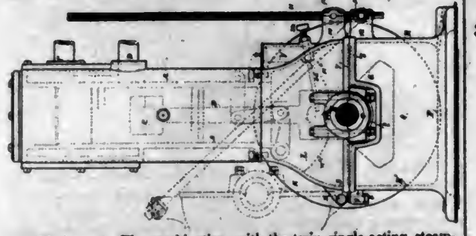
the vent-pipe, of a pipe connecting said sealing-chamber with the overflow-opening of the tub, said pipe being carried above the overflow-opening and provided with a removable cap, substantially as described.

3. In a trap for bath-tubs and analogous purposes, the combination, with the water-sealing chamber, of a T-coupling connecting the waste and vent pipes to the end of the trap, an overflow-pipe entering the trap between said coupling and the tub, a detachable cap upon the upper end of the overflow-pipe and upon the lower projecting end of the water-chamber, substantially as described.

4. In a trap for bath-tubs and analogous purposes, the combination, with a water-sealing chamber having communication with the outlet, of a coupling rising from the rear end of the water-chamber, and having two branches, 11 and 13—the former for the waste and the latter for the vent pipes—and an overflow-pipe, 7^a, entering the chamber between the said coupling and the tub, a septum, 16, depending into the chamber between the overflow and the waste pipes, and having rounded angles 17, substantially as described.

5. In a trap for bath-tubs and analogous purposes, the combination, with the sealing-chamber, of a T-coupling connected to the chamber at its rear end, an overflow-pipe between the coupling and the tub, waste and vent pipes connected to said coupling, the latter having rounded angles 17^a, and a septum, 16, between the overflow and waste, having rounded angles 17, substantially as described.

325,487. STEAM-ENGINE. JOHN L. BOGERT, Flushing, N. Y. Filed Jan. 31, 1885. (No model.)



Claim.—1. The combination, with the twin single-acting steam-cylinders, connecting-rods, cranks, and shaft, of a case bolted to the ends of the cylinders and provided with the journal boxes or bearings and a box-shaped base upon which the edges of the case rest, and hinges to connect the case and base, substantially as set forth.

2. The combination, with the twin cylinders, connecting-rods, and cranks, of a case connected to the cylinders and provided with journal boxes or bearings, a box-shaped base upon which the lower edges of the case rest, and an intervening strip of elastic material—such as felt—to exclude dust, substantially as set forth.

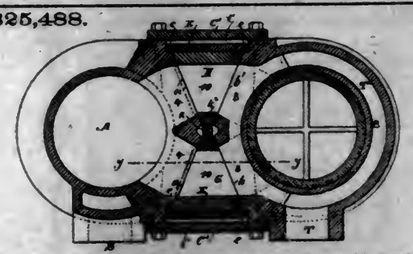
3. The combination, with the engine and the case inclosing the cranks, of a box-shaped base, hinges to connect the case and base, and a screw to clamp the parts together, or to swing the case open to give access to the cranks and other parts, substantially as set forth.

4. The combination, with the twin upright-cylinder engines, of a case surrounding the cranks, and a box-shaped base upon which the case rests, and oil-holders upon the case for lubricating the bearings of the crank-shaft, substantially as set forth.

325,488. VALVE FOR ENGINES. JOHN L. BOGERT, Flushing, N. Y. Filed Jan. 31, 1885. (No model.)

Claim.—1. The combination of two wedge-shaped valve-sections, having their narrowest edges opposite to each other, with two converging valve-seats, steam and exhaust ports through the valves and seats, respectively, a valve-stem between the valves, and mechanism, substantially as specified, for giving motion to the valves and valve-stem, and

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for retaining the valve-sections in their proper relative positions, substantially as set forth.

2. The valve-sections G H_1, each in the shape of a wedge, in combination with the rods l n, passing through lugs on the valve-sections, the springs, and the nuts o^3 o^3, substantially as set forth.

3. The valve-sections, each in the shape of a wedge, in combination with the actuating-rod placed between the sections, and having T-heads to pass into recesses in the respective valve-sections, substantially as set forth.

4. The wedge-shaped valve-sections having their narrowest edges opposite to each other, and having the openings 9, 10, and 11, in combination with the valve-seats a a' b b' at an inclination to each other, and the ports 4 and 5, opening into the cylinders A B, and the recesses 6, 7, and 8, substantially as set forth.

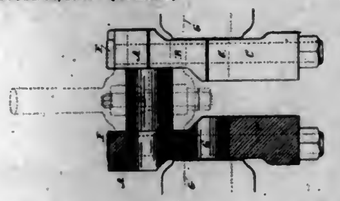
5. The wedge-shaped valve-sections having openings in them, in combination with the valve-seats having ports for the admission of steam and for the exhaust, and recesses opposite to the respective ports for balancing the pressure upon the opposite sides of the valve, substantially as set forth.

6. The valve-seats that converge toward each other, in combination with wedge-shaped valve-sections introduced between such seats, and yielding mechanism for drawing the valve-sections toward each other and pressing them upon the seats, substantially as set forth.

7. The combination, with the valves having their narrowest ends opposite to each other, and having openings through them, of two cylinders, with valve-seats facing each other, and between which seats the valves are introduced and operated, substantially as set forth.

8. The combination, with the wedge-shaped valve-sections having openings through them, of two cylinders having valve-seats facing each other, and ports leading to such cylinders, the port for one cylinder being near one end of the valve, and for the other cylinder near the other end of the valve, substantially as set forth.

325,489. CRANK FOR ENGINES. JOHN L. BOGERT, Flushing, N. Y. Filed Jan. 31, 1885. (No model.)



Claim.—1. The crank composed of the three pieces A B C and the bolts F, to clamp them together and bind the crank pin and shaft, respectively, substantially as set forth.

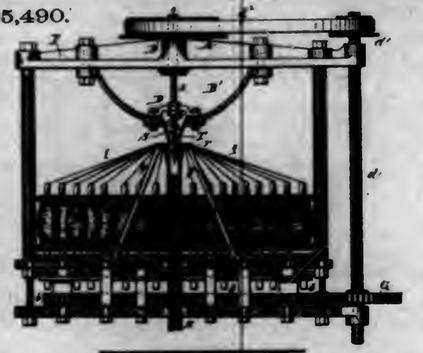
2. The combination, with the crank pin and shaft, of a divided crank with openings bored out in the line of separation for the reception of the crank pin and shaft, respectively, and the tie-bolts that connect the parts of the crank and clamp the divided crank upon the shaft, substantially as set forth.

325,490. MACHINE FOR PRODUCING CYLINDRICAL NON-CONDUCTORS OF HEAT. HANS BOLSE, Brunswick, Germany. Filed Apr. 10, 1884. (No model.) Patented in Germany Mar. 7, 1883, No. 26,262; England Mar. 20, 1884, No. 5,223; in Belgium Apr. 23, 1884, No. 64,911, and in Austria-Hungary Sept. 24, 1884, No. 11,406 and No. 42,933.

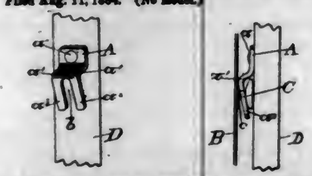
Brief.—To the frame of a braiding-machine is secured a funnel having a screw projecting into its smaller end and operated by gearing, whereby pulverulent material is fed into a tubular fabric as it is being manufactured.

Claim.—The combination, with a braiding mechanism for braiding tubular fabrics, of the funnel T, feed-screw S, operating within the funnel, the driving-shaft d, and means for operating said shaft, and screw for rotating the same, substantially as and for the purpose specified.

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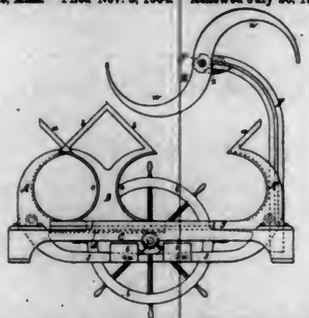
325,491. CURTAIN-FASTENER. GEORGE P. BOWER, Milwaukee, Wis. Filed Aug. 11, 1884. (No model.)



Claim.—1. A curtain-fastener consisting of a metallic plate having tongues formed out of its sides, constituting a fork, the same being bent and inclined so as to receive the crown of the curtain-button, substantially as set forth.

2. In a curtain-fastener, in combination with the curtain B, having the button C, a metallic plate, A, having suitable perforations for the fastening tacks or screws a a, and the tongues a^2 a^2, bent and inclined as shown, to receive the shank and hold the head of the said button, substantially as shown and described, and for the purpose set forth.

325,492. MACHINE FOR BUNDLING HOOPS. WILLIAM BOWERS, Somerville, Mass. Filed Nov. 5, 1884. Renewed July 30, 1885. (No model.)



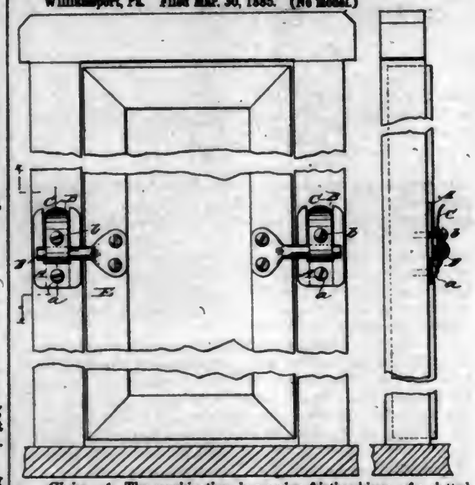
Claim.—1. The combination of the rotary receiver E, the two series of curved standards A and A', and the intermediate set of duplex curved standards, B, these latter standards being movable toward each of the sets A and A', and provided with mechanism for effecting such movement, as set forth, the rotary receiver being arranged over the aforesaid standard, and consisting of the two S-shaped bars w and the horizontal shaft x, extending through them and fixed to them at their middles, all being substantially as represented.

2. The combination of the adjuster G, having mechanism for reciprocating it, as described, with the rotary receiver E, the two sets of curved standards A and A', and the intermediate set of curved duplex standards, B, these latter standards being provided with mechanism for moving them toward either set of standards A and A', as specified, and the adjuster being arranged opposite one bed of the rotary receiver, so as when the receiver is being laden with hoops to move relatively to them in a manner to force them forward to bring into one plane, or thereabout, their ends next adjacent to the adjuster.

3. The combination of the rotary receiver E with the series of duplex curved standards B, movable, and provided with mechanism for moving them, as described, and with the two sets of curved standards A and A', having each of their median standards pivoted to its supporting-base, and provided with an arm and adjustable weight, all being substantially and to operate as set forth.

4. The combination of the two inclined guides a, extending upward from the stationary curved binding-standards A and A', and the two inclined guides b, extending upward from the intermediate movable binding-standard, B, with such standards, and with the rotary receiver E, arranged over them, and consisting of the two S-shaped bars, and the horizontal shaft x, extending through such bars at their middles, all being arranged and to operate substantially as set forth.

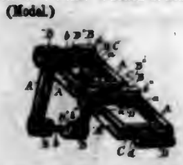
325,493. SPRING-FRICTION MIRROR-PIVOT. OSCAR P. BRESTHUT, Williamsport, Pa. Filed Mar. 30, 1885. (No model.)



Claim.—1. The combination, in a spring-friction hinge, of a slotted base-plate, its means of fastening, a curved apertured spring, and the cylindrical pivot, substantially as and for the purpose set forth.

2. The combination, in a spring-friction hinge, of a slotted and grooved base-plate, A, a curved and apertured spring, C, attached to the base-plate, the screw b, and the cylindrical pivot D, substantially as herein described.

325,494. DRIVE-CHAIN. GEORGE S. BRIGGS, Rockford, Ill. Filed May 13, 1885. (Model.)



Claim.—1. A chain-link provided at one end with a T-head and at its opposite end with two sockets adapted to engage the ends of the T-head, said sockets being provided with notches b' adjacent to the side bars of the link and having a cross-bar, B', uniting the socket-walls, said cross-bar being located at the side of the notches remote from the side bars of the link, whereby the T-head can be inserted into the sockets only by passing it first through the central opening of the link, substantially as described.

2. A chain-link comprising side bars, A A, and a cross-bar, C, and having at one end sockets B B, provided with notches b' b', adjacent to the side bars, and a cross-bar, B', uniting the walls of the sockets and located at the side of the notches remote from the side bars, A A, and at its opposite end a T-head consisting of a cross-bar, D, united with the cross-bar C by a laterally curved or deflected neck, d, substantially as and for the purpose set forth.

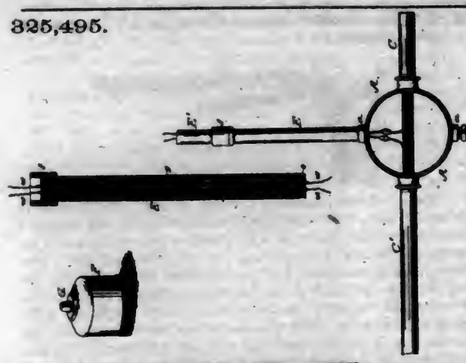
325,495. UNDERGROUND ELECTRICAL CONDUCTOR. D. BROOKE, Philadelphia, Pa. Filed June 3, 1885. (No model.)

Claim.—1. The combination of the main conduit-pipe and junction-box containing a cable and liquid insulating material with a tube containing wires, and a diaphragm of glue and molasses or similar impervious material, and a supporting medium on each side thereof.

2. The herein-described electrical coupling, consisting of a tube containing electrical conductors and having a central diaphragm of glue and molasses or similar impervious material, and a support on each side thereof within the tube.

3. The combination of the main conduit piping and junction-box with a coupling-tube containing electrical conductors in plaster-of-paris, and a diaphragm of glue and molasses or printers' roller composition between the plaster, substantially as described.

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325,496. SEED-PLANTER AND FERTILIZER-DISTRIBUTER. R. M. BROOKS and J. M. BROOKS, Jenkinsville, Ga. Filed Nov. 22, 1884. (No model.)



Claim.—1. The combination, with the hopper and frame mounted on spring-runners, of the axle and distributer, and the rimless wheels arranged to operate substantially in the manner specified.

2. The combination, with the hopper and frame mounted on spring-runners, of the axle, the rimless wheels, and the seed-distributing devices operated thereby, substantially as and for the purposes set forth.

3. The combination, with the opener, of the adjustable smoother attached to the same and having horizontal lateral flanges, the said smoother being adapted to travel in the furrow and prevent filling until the seeds have been deposited therein, substantially as specified.

325,497. SOLDERING-CLAMP. SUMNER BULL, Walden, N. Y. Filed May 13, 1885. (No model.)



Claim.—1. The combination, with the body-plate and a clamp secured thereto, and consisting, essentially, of two rigid bearing adapted to engage the concave face of the frame, and an adjustable bearings located between and adapted to hold the frame in contact with the rigid bearings, of a movable clamp constructed to hold the piece to be soldered to said frame, substantially as set forth.

2. The combination, with a flat plate having a cut-away portion, of the rigid bearings and the adjustable bearing located on one side of said cut-away portion, and the adjustable plate and longitudinally-adjustable rod provided with a clamp located on the other side of said cut-away portion, substantially as set forth.

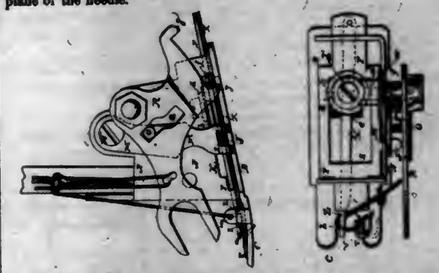
325,498. ALTAR. EDWARD Y. CHEVALIER, Hannibal, Mo. Filed May 4, 1885. (No model.)



Claim.—In an altar of the character described, the base composed of the parts B, C, and E and projections J, in combination with the columns F and tablet H, all detachably secured by the screw-bolts A, substantially as and for the purpose specified.

325,499. EMBROIDERING ATTACHMENT FOR SEWING-MACHINES. FRANKLIN H. CHILTON, New Rochelle, assignor to the Empress Embroiderer Company, New York, N. Y. Filed Mar. 27, 1885. (No model.)

Brief.—The detainer serves to catch the embroidering-thread as the thread-carrier moves forward, and retain it while the carrier moves to the opposite side of the needle-opening and to the front of the vertical plane of the needle.



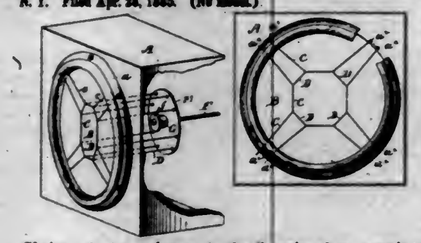
Claim.—1. In an embroidering attachment for sewing-machines, the plate B, foot C, and supporting-bracket, in combination with the longitudinally-reciprocating and laterally-vibrating thread-carrier applied on said plate and perforated at its front end to receive the embroidering-thread, the stationary thread-detainer located on the presser-foot and projecting rearward over the needle-opening in same at one side of the path of the sewing-needle, and mechanism, substantially as described, for communicating motion from the needle-bar of the sewing-machine to the said carrier, substantially as set forth.

2. In an embroidering attachment for sewing-machines, the combination, with a supporting-bracket and presser-foot, of a thread-carrier pivoted at its rear to a reciprocating plate, a stationary hook-shaped thread-detainer projecting rearward over the needle-opening in the presser-foot and at one side of the path of the sewing-needle, and mechanism, substantially as described, for communicating a longitudinally-reciprocating motion to said plate and carrier, and a laterally-vibratory movement to the carrier from the needle-bar of the sewing-machine, substantially as set forth.

3. In an embroidering attachment for sewing-machines, the combination, with a supporting-bracket and presser-foot, of a longitudinally-reciprocating and laterally-vibrating thread-carrier, the thread-detainer

T, secured in a sleeve, *x*, on the presser-foot at one side of the path of the sewing-needle, and mechanism, substantially as described, for communicating motion from the needle-bar of the sewing-machine to the carrier, substantially as set forth.

325,500. ACOUSTIC TELEPHONE. JAMES B. CLEAVER, New York, N. Y. Filed Apr. 28, 1885. (No model.)



Claim.—1. An anchorage for the line-wire of an acoustic telephone, consisting of a series of trussing or anchorage wires drawn tightly across the front face of the diaphragm and connected by means of short parallel wires with a metallic disk of a smaller diameter than the diaphragm and placed behind and slightly-removed from the diaphragm, the said subdiametered metallic disk forming the anchorage proper for the line-wire.

2. The disk E, the line-wire F, anchor-plate *f*, and the cushion G, combined with the anchorage-wires D, trussing-wires C, and diaphragm B, substantially as described.

325,501. STEP-LADDER HINGE. CHARLES J. CLINE, Goshen, Ind. Filed June 27, 1885. (No model.)

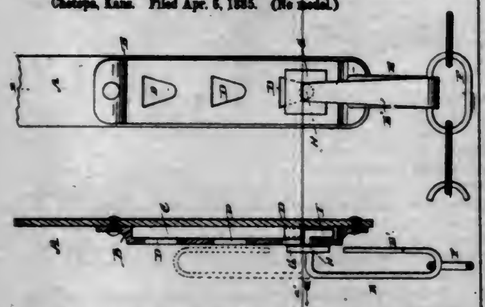


Claim.—1. The strap-iron bent in loop form and provided with the short brace-strap at the bend, and with the perforations *k k*, to serve in a step-ladder substantially as specified.

2. The combination, with the top and rails of a step-ladder, of the loop-form strap D, having the short strap-brace extending over and secured to the edge of said top, and the brace-leg pivoted in the loop of the said loop-strap, substantially as specified.

3. The combination, with the grooved top and the rail seated therein, of the loop-strap secured to the rail, and the leg-brace pivoted in the loop of the said strap, substantially as specified.

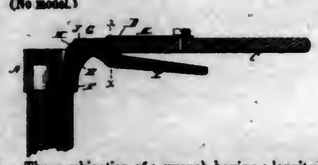
325,502. TRACE-HOLDER FOR BACK-BANDS. ALONZO COLLINS, Chetopa, Kans. Filed Apr. 6, 1885. (No model.)



Claim.—1. In a trace-holder for back-bands, the hook E, having on its lower end the hook E' and on its upper end the shield G, provided with the shank H, having on its inner end the catch I, substantially as shown and described.

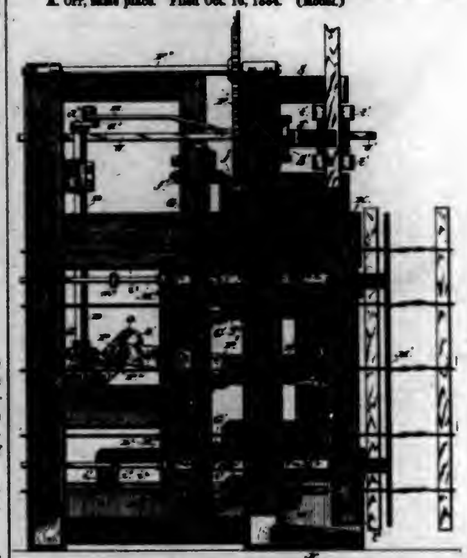
2. In a trace-holder for back-bands, the hook E, having on its lower end the hook E' and on its upper end the shield G, provided with the shank H, having on its inner end the catch I, in combination with the metal plate B, having apertures D and recess C, and adapted to be fastened to the lower end of the back-band A, substantially as shown and described.

325,503. WRENCH. ROSWELL P. COOK, Ilion, N. Y. Filed June 16, 1885. (No model.)



Claim.—The combination of a wrench having a longitudinal slot in its handle near its head, and having a recess in its outer side forming a continuation of the slot, and having a groove or recess in the side of the aperture in the head at a right angle to the groove and slot, a lever having a rectangularly-bent head portion pivoted at its bend in the rectangular recess, and having a handle projecting through the slot in the wrench-handle extending parallel with the wrench-handle, and a flat spring secured at one end to the outer side of the wrench-handle, and bearing with its free end against the inner end of the rectangularly-bent head portion of the clamping-lever, as and for the purpose shown and set forth.

325,504. MACHINE FOR MAKING WIRE AND PICKET FENCING. MATTHEW F. CONNETT, Springfield, Ill., assignor of two-thirds to Chas. A. Orr, same place. Filed Oct. 16, 1884. (Model.)



Claim.—1. In a fence-machine, the means for pushing each successive slat out into place between the wires, which consists in the vertical gate, in combination with a crank and connecting-bar operated by suitable gearing, and adjustable connections between the crank and bar, whereby the throw of the bar and gate can be adjusted, substantially as shown and described.

2. In a fence-machine, in combination with the gate for pushing each successive slat out into place behind the twists in the wires, mechanism for actuating the gate, and adjustable connections between the gate and actuating mechanism, whereby the gate can be adjusted so that its face shall be at any desired angle to the lines of the wires, substantially as and for the purpose described.

3. In a fence-machine, the vertical gate for pushing the successive slats forward into position between the wires, adjustably attached to its moving frame, so as to be capable of adjustment to vary the angle of its face with reference to the lines of the wires, substantially as and for the purpose described.

4. In a fence-machine, the reciprocating gate for moving each successive slat or picket forward into place between the wires, attached to its moving frame by means adapted to allow of its adjustment with reference to the lines of the wires, substantially as shown and described.

5. In a fence-machine, the reciprocating gate for pushing forward each successive slat into place between its wires, in combination with the sliding frame, the screw attaching one end of the gate to one of the frame-bars, and a screw passing through a slot in the other frame-bar and into the gate, substantially as and for the purpose described.

6. In combination with the reciprocating gate, in front of which the slats are successively dropped, the sliding frame, the revolving crank, the connecting-rod pivoted at one end on the crank-pin and at the other provided with a slot, and the pin or stud on the sliding frame engaging such slot, substantially as and for the purpose described.

7. In a wire-fence machine, in combination with the reciprocating gate, means, substantially as described, adapted to move the gate forward or outward beyond the twisters to carry a slat clear of the twisters before they begin to revolve, and means, substantially as described, to move the gate farther outward and to return it again inward into position to receive another slat, substantially as and for the purpose described.

8. In combination with the twisters and the gate and its frame sliding on suitable ways, and means for dropping a slat for a picket down between the ends of the twister-arms in front of the gate as it reaches the inward limit of its movement, the pin or stud on the gate-frame, the connecting-rod provided at one end with a slot engaging such pin or stud and at the other connected with a revolving crank, the cam revolving with the crank and adapted to move the frame and gate outward to clear the twister-arms before the inner end of the slot in the connecting-rod engages the pin or stud on the gate-frame, substantially as and for the purpose described.

9. In combination with the sliding frame and the gate carried thereby, the connecting-rod, the pin on the frame engaged by the rod, the revolving crank, and the adjustable pin on the crank on which is pivoted the rod end, substantially as and for the purpose described.

10. In a fence-machine, the means for preventing the rebounding of the slat or picket as it is fed into place between the wires, which consists of one or more sharp-edged blades adapted to receive the end of the slat or picket, substantially as shown and described.

11. In a fence-machine in which the slats or pickets are dropped into place between the wires to be twisted behind them, the means for preventing rebounding of the slats, which consists in one or more sharp-edged blades placed in position to receive the lower end of each slat as it is dropped into place, substantially as shown and described.

12. In a fence-machine in which the slats or pickets are dropped into place between the wires, in combination with the gate for carrying the slats or pickets outward after being dropped between the wires, means for supporting a picket until the gate has passed inward beyond the line of fall of the slat, constructed and arranged to be operated by the gate to release the slat, substantially as and for the purpose described.

13. In a fence-machine, in combination with the swinging stop kept by a spring normally in position to close the opening through which the slats are dropped into position between the wires, the reciprocating vertical gate for carrying the slats outward after being dropped into position, adapted to operate the stop to drop the picket or slat supported by it as the gate passes inward beyond the line of fall of the slat, substantially as and for the purpose described.

14. In combination with the rack for holding the pickets or slats in a vertical position, provided with a discharge-opening and means for forcing the pickets against the end of the rack and over the opening, the stop normally closing such discharge-opening, means for forcing back all the slats but the one over the opening to allow it to drop onto the stop, and means for actuating the stop at the proper time, substantially as and for the purpose described.

15. In combination with the rack for holding the pickets, the sliding bar provided with the pivoted right-angled piece having the long arm standing out at right angles to the bar, adapted to engage the outer or front picket, and the short arm resting against said bar, to hold the long arm from swinging back, in combination with the spring engaging such short arm and tending to keep it against the bar, and the spring adapted to cause the bar to force the pickets forward in the rack, substantially as shown and described.

16. In combination with the picket-rack constructed to hold a series of pickets or slats in an upright position, provided with means for forcing them toward and against the rear end of the rack, and with a discharge-opening through the rear end of the rack-bottom, the spring-actuated stop closing such opening, means for grasping the slat next to the one over the opening and forcing it with the rest of the series back to release the rear slat and allow it to drop onto the stop, and means for operating the stop to cause it to release the slat at the proper time, substantially as and for the purpose described.

17. In combination with the picket-rack adapted to hold a series of picket-slots in an upright position and provided at its end with a discharge-opening, means for forcing the pickets along against the rack end, a sliding frame beyond such end provided with jaws projecting on each side of and beyond the rack end and the picket against it, and constructed for engagement with the next picket, in combination with means for closing the jaws to grasp that picket and then moving the frame and jaws to force the rest of the pickets away from the one at the rack end, the stop closing the lower end of the discharge-opening, and means for moving the stop to unclose the opening at the proper time, substantially as and for the purpose described.

18. In combination with the sliding frame carrying pivoted jaws adapted to engage the picket next to the one at the discharge end, a spring to keep the jaws normally open, a spring adapted to keep them normally pulled back, a sliding bar provided with cams adapted to engage and spread apart the jaw-shanks to close the jaws, and with a shoulder or squared portion to come in contact with and push the frame forward after the cams have acted to spread the jaw-shanks, and means for actuating the cam-bar, substantially as and for the purpose set forth.

19. In combination with the sliding frame carrying the pivoted jaws, the reciprocating cam-bar adapted to close the jaws and slide the frame forward, provided with a longitudinal slot, and the bar reciprocating at right angles to the cam-bar and provided with a cam-plate adapted to pass through the slot and engage the end thereof to advance the cam-bar, substantially as and for the purpose set forth.

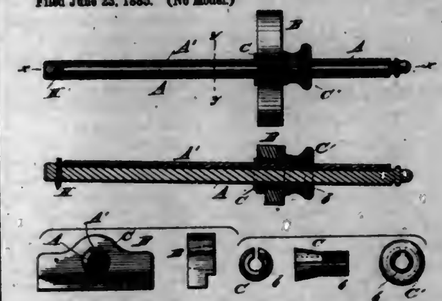
20. In a fence-machine, in combination with the twisters and the jaws constructed and arranged to grip all the wires forward of the twisters, means for operating the jaws and for moving them outward and forward to draw out the wires, substantially as and for the purpose described.

21. In a fence-machine, in combination with the means for pushing each slat forward into place between the wires, means for grasping the several pairs of wires and pulling them forward an equal amount for each twist, substantially as and for the purpose described.

22. In combination with the twisters and the reciprocating gate for pushing forward each successive slat inserted between the wires, gripping-jaws operated through suitable connecting means to close on the wires in front of the slat and pull the wires out through the twisters as the gate moves outward, substantially as and for the purpose described.

23. In a fence-machine, in combination with the twisters and the reciprocating gate for pushing forward each slat as it is inserted between the wires, the jaws extending on each side of the series of wires in front of the slat, carried on bars extending inward through the gate and between the twisters and at their inner ends hinged to a head on a sliding bar, and the projecting arms on the gate adapted to engage inclined projecting portions on the outer side of the jaw-carrying bars to close the jaws as the gate moves forward, substantially as and for the purpose described.

325,505. SCRATCH-GAGE. DAVID S. CONRAD, Waynesborough, Pa. Filed June 23, 1885. (No model.)



Claim.—1. The scribing-gage consisting of the stock-bar having the feather A', the tapering split, and threaded clamp C, the head B, arranged thereon, and the nut C', engaging the threads of the said split clamp, substantially as specified.

2. The combination of the split clamp C, having one end tapering and its opposite end tabular and externally threaded, the slide-head B, and the nut C', all arranged for joint operation on a stock-bar, substantially as specified.

325,506. STEM WINDING AND SETTING WATCH. CHARLES P. COLLINS, Elgin, assignor to the Elgin National Watch Company, Chicago, Ill. Filed June 18, 1885. (No model.)



Claim.—1. As an improvement in stem-winding and hands-setting watches, a winding and hands-setting train which is adapted to be placed in engagement with the winding-wheel by the movement of a stem-arbor, and is normally in engagement with the dial-wheels only when the movement is in a case, substantially as and for the purpose specified.

2. As an improvement in stem winding and setting watches, a winding and hands-setting train which is adapted to be placed in engagement with the winding-wheel by the movement of a stem-arbor, and is held normally in engagement with the dial-wheels by a spring which is operative for such purpose only when the movement is in a case, substantially as and for the purpose shown.

3. As an improvement in stem winding and setting watches, the combination, with a winding and hands-setting train, of a spring which operates to hold said train normally in engagement with the dial-wheels when the movement is in a case, and is inoperative for such purpose when said movement is removed from its case, substantially as and for the purpose shown and described.

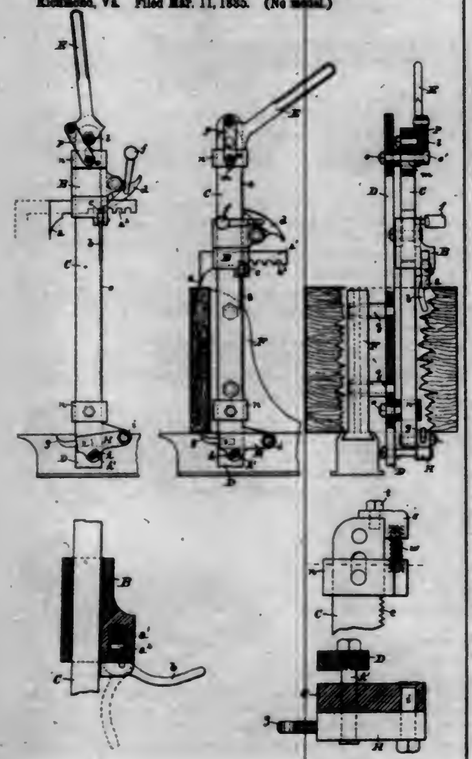
4. As an improvement in stem winding and setting watches, a winding and hands-setting train which, when the movement is cased, is normally held in engagement with the dial-wheels, and when said movement is removed from its case is automatically relieved from constraint and free to engage with the winding-wheel, substantially as and for the purpose specified.

5. In combination with the wheel D, which is journaled upon the arbor C, and is supported upon or by the spring K, the pin L, passing through the movement-plate, and having at one end a bearing upon the lower side of said spring, the cam-plate M, pivoted upon the movement-plate and having an inclined face, *m*, in contact with the opposite end of said pin, and means, substantially as described, whereby said plate may be moved upon its pivotal bearing, so as to cause said pin to be moved longitudinally, substantially as and for the purpose shown.

6. In combination with the cam-plate M, having the pin m^2, and with its connecting parts, the spring N, the pivoted bar O, provided with the cam-arm *o* and stud *o'*, the pin P, placed within the pinion F and engaging with said pin m^2, the stem-arbor G, having its inner end in engagement with said pin P, and made longitudinally adjustable within the case-stem, and the spring Q, having a bearing upon said bar, substantially as and for the purpose set forth.

7. In combination with the pivoted bar O and its connecting parts, the bar S, which is pivoted upon the movement-plate in position to have one end in engagement with the outer end of said bar O, and at its opposite end is provided with a stud, *s'*, that is adapted to be engaged by the pin P when the pinion F is shifted to a bearing one-fourth the circumference of the movement-plate distant from its normal bearing, substantially as and for the purpose shown and described.

325,507. SAW-MILL DOG. ALEXANDER DELANEY and JOHN M. BOND, Richmond, Va. Filed Mar. 11, 1885. (No model.)



Claim.—1. A saw-mill-dog mechanism having in combination a movable vertical slide-bar, C, provided on one edge with ratchet-teeth, and having at its bottom a foot, *s'*, projecting sidewise, an upper dog-bit supported in a carrier to slide up and down on the bar, and provided with a pawl to engage with the said ratchet-teeth, a stationary bar, D, having guides for the movable slide-bar, and a fixed pin, *k'*, projecting laterally under the said slide-bar, and a lower dog-bit supported in a carrier having one end pivoted to the said projecting foot of the slide-bar and fulcrumed on the said pin under the slide-bar, as set forth.

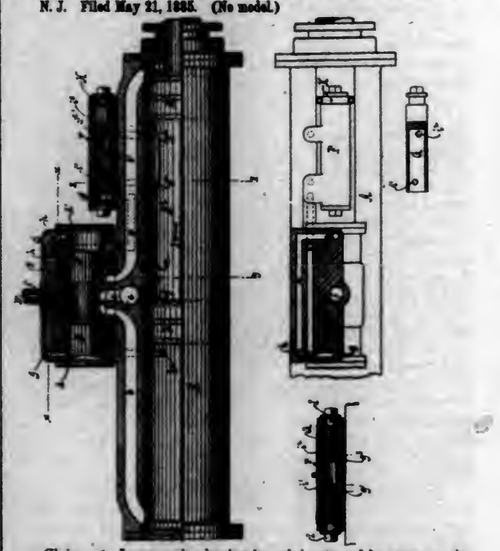
2. A saw-mill-dog mechanism having in combination a movable vertical slide-bar provided with ratchet-teeth, a dog-bit supported in a carrier to slide on the said bar, and provided with a reversible pawl having two ends, either one of which may act on the said ratchet-teeth, as set forth.

3. A saw-mill-dog mechanism having in combination a movable vertical slide-bar provided with ratchet-teeth, a dog-bit supported in a carrier to slide on the said bar, a reversible pawl having two ends, and provided with a tumbling weight to hold either end in contact with the ratchet-teeth, as set forth.

4. A saw-mill-dog mechanism having in combination a movable vertical slide-bar provided with ratchet-teeth, a dog-bit supported in a carrier to slide on the movable bar and provided with a pawl to engage with the ratchet, a stationary bar having guides for the movable bar, a lever pivoted directly to the said movable bar, and a link, *p*, having one end pivoted to a stud on the stationary bar, and the other end pivoted to the said lever, as set forth.

5. A saw-mill-dog mechanism having in combination a movable vertical slide-bar provided with a bracket, *z*, a dog-bit supported in a carrier to slide on the movable bar, a stationary bar having guide-bands for the movable bar, and a spring, *w*, between the said bracket and one of the guide-bands, as set forth.

325,508. STEAM-ACTUATED VALVE. JAMES K. DENTON, Hoboken, N. J. Filed May 21, 1885. (No model.)

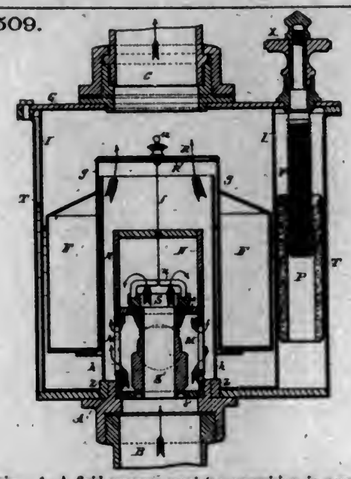


Claim.—1. In an engine having its valve actuated by steam or air from the main cylinder, the combination of the cylinder, the piston, and the valve-chest containing a valve, and having a passage, *h*, connecting with the cylinder, a valve-chamber, F, secured to the exterior of the cylinder at one end of but outside the valve-chest, said chamber having a passage, *g*, connected with one end of the valve-chest and with passages g' g^3, connected with the cylinder, and the regulating-valve arranged in said chamber for governing the said passages and serving to lengthen and shorten the stroke of the main piston, substantially as described.

2. In an engine whose valve is worked by steam or air conducted from the main cylinder to the valve-chest, the combination, with the main cylinder having the exhaust-port *e*, and with the valve-chest having the exhaust-port *e*, of the passages g' g^3 *h*, the annular space *a* between the heads of the main piston and the passage *f*, leading from the main cylinder into exhaust-ports *e* and *e*, substantially as shown and described.

325,509. GAS-PRESSURE REGULATOR. EUGÈNE DERVAL, Paris, France. Filed July 1, 1885. (No model.) Patented in France Feb. 20, 1885, No. 164,948.

325,509.



Claim.—1. A fluid-pressure regulator comprising, in combination with the regulator-valve and a movable device connected with said valve for opening it when the pressure in the regulator diminishes and closing it when it increases, a collecting-chamber provided with openings for the escape of the fluid into the outlet or distributing pipe, and a movable body acted upon in opposite directions by the pressure inside and outside said collecting-chamber and connected with said valve, so that an excess of pressure inside tends to open the valve, substantially as described.

2. The combination, with the regulator-valve, the collecting-chamber provided with escape-openings, and the movable body acted upon in opposite directions by the pressure of the fluid before and after it has passed through said openings, of the adjustable plate or valve for adjusting the size of said openings, substantially as described.

3. The combination of the float, the regulator-valve, and the collecting-chamber forming part of said float and provided with escape-openings, said parts being arranged as explained, so that the valve opens on the rise and closes on the fall of the float, substantially as described.

4. The combination of the float, the regulator-valve, the collecting-chamber forming part of said float and provided with escape-openings, and the valve or adjustable plate for regulating the size of said openings, substantially as described.

5. The combination, with the float or movable device in a pressure-regulator, of the two-part hollow balanced valve and the double valve-seat, substantially as described.

6. The combination, with the body or casing divided into two compartments communicating at the bottom, of the float in one of said compartments and the regulator-valve suspended from said float, said valve being arranged to close the inlet-opening on the fall and open it on the rise of said float, substantially as described.

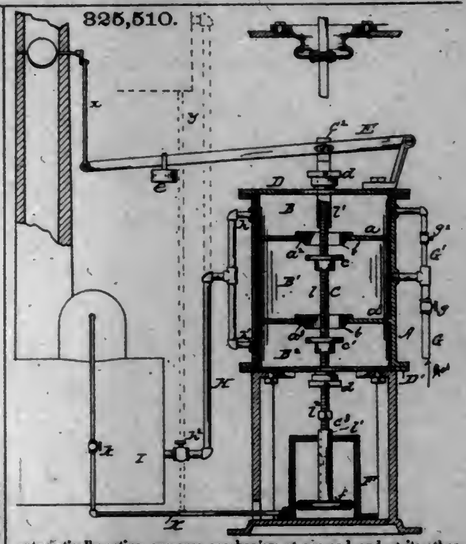
7. The combination, with the body or casing, the partition depending from the top and dividing it into two compartments communicating at the bottom, the float in one compartment, and the regulator-valve connected with said float, of the movable plug closing an opening at the top of the partition, for enabling the two compartments to be put in communication at the top also, substantially as described.

8. The combination of the annular float, the perforated plates forming a collecting-chamber in the middle of said float and one of them being adjustable, and the regulator-valve connected with said float, substantially as described.

9. The combination, with the two-part hollow valve, of the double seat and the cap forming a closed chamber above the upper seat, substantially as described.

325,510. GAS-PRESSURE REGULATOR. ROBERT B. DOE, Philadelphia, Pa. Filed Nov. 19, 1884. (No model.)

325,510.



Claim.—1. In a gas-regulator, a chamber having suitable inlet and outlet-pipes, and a movable valve-stem and valves, which are balanced by the gas-pressure and subject to opposing end-pressures independent of the gas-pressure, substantially as shown and described.

2. In a gas-regulator, the chamber A, having gas inlet and outlet pipes, a movable valve-rod and valves automatically-operating pressure mechanism attached to one end of said valve-rod and at its other end a piston adapted to be operated by a pressure independent of the gas-pressure, substantially as shown and described.

3. In a gas-pressure regulator, the combination of closed chamber A, having partitions *a a'*, provided with valve-seats and inlet and outlet pipes, a valve-rod, having valves adapted to the valve-seats of said partitions, and projecting through both ends of said chamber, and having automatically-acting pressure mechanism at one end and at its other a piston working in a cylinder having connection with pressure devices, substantially as shown and described.

4. The combination, with chamber A, having inlet and outlet pipes, valve-stem C, projecting through both ends of said chamber, and lever E, of a cylinder, F, having piston *f*, connected to said valve-stem, substantially as shown and described.

5. In a device for regulating the supply of gas-fuel to a furnace, a closed chamber, A, having movable valve-rod, one end of which is in gear with a weighted-lever mechanism, and the other connected to a piston working in a cylinder having connection with the boiler of said furnace, substantially as shown and described.

6. A gas-regulator having multiple chambers B B' B^2, valve-seats *b b*, inlet-pipe G for chamber B', outlet-pipes A A' for chambers B' B^2, and valve-stem C, having at one end automatically-acting pressure mechanism and at its other end a piston, *f*, working in a cylinder, F, provided with a pressure-supply pipe, K, substantially as shown and described.

7. A regulator comprising a closed chamber having inlet and outlet pipes G H, a valved branch, G', between pipe G and said chamber, and a valve-stem, C, having at one end a lever, E, and at its other a piston, *f*, working in cylinder F, substantially as and for the purpose set forth.

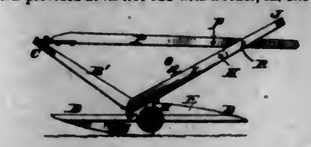
8. The combination, with a steam-boiler furnace, of pipe H, leading to chamber A, having a main supply-pipe, G, and a branch supply-pipe, G', a valve-stem, C, having at one end automatically-acting pressure mechanism and at its other a piston and cylinder device provided with pressure-supply pipe K, leading to the boiler, substantially as shown and described.

9. A gas-pressure regulator for vapor-fuel supply of a steam-boiler furnace, having a valve-stem provided with valves balanced against or to the gas-pressure passing through the regulator, one end of said stem being subjected to automatic pressure-acting devices which control the opening and closing of a damper in the stack for said furnace, and the other end thereof being subjected to the steam-pressure in said boiler, substantially as shown and described.

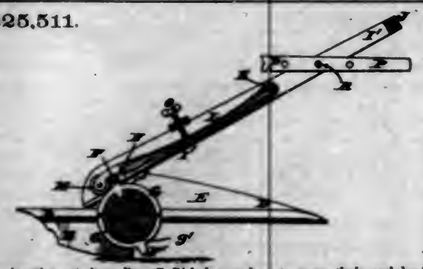
10. In a gas-regulator composed of a closed chamber, A, having inlet and outlet openings, of a sectional adjustable valve-stem, C, extending through said chamber, and connected at one end to lever E, and at the other to a piston, *f*, inclosed in cylinder F, having supply-pipe K, substantially as shown and described.

325,511. REVOLVING HORSE HAY-RAKE. WILLIAM A. DONNELL, Greensburg, Ind. Filed Sept. 22, 1884. (No model.)

Claim.—The combination, in a revolving horse hay-rake, of the head A D, lugs F F', collars G G', handles i I', and spring-lever L, which lever is provided at its free end with a roller, M, and shoulder N,

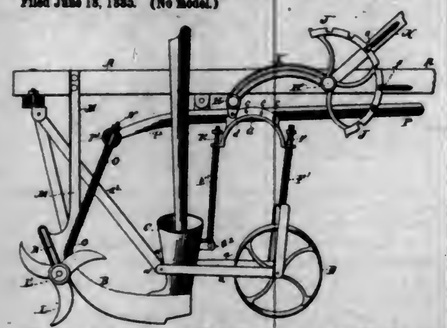


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the location of the collars G G' being such as to cause their peripheries to serve as a track for the roller M to ride upon when said head A D revolves, as herein described.

325,512. GRAIN-DRILL. WILLOUGHBY P. ELAM, Dubuque, Iowa. Filed June 18, 1885. (No model.)



Claim.—1. In a grain-drill, the combination, with the fluke and covering-wheel, of independent pressure-springs and an intermediate connection between said springs, substantially as and for the purpose set forth.

2. In a grain-drill, the combination, with the fluke and covering-wheel, of independent pressure-springs and an intermediate adjustable connection between said springs for regulating their tension, substantially as described.

3. In a grain-drill, the combination, with the fluke and covering-wheel, of independent pressure-springs, an adjustable connection between the two, and means for increasing the tension of one spring over that of the other, substantially as described, and for the purpose set forth.

4. In a grain-drill, the combination, with the fluke and covering-wheel, of independent vertical connecting-rods, surrounding spiral springs, an adjustable connecting-yoke, a horizontal bar having adjustable connection with said yoke, and means for raising and lowering said bar, substantially as described.

5. In a grain-drill, the combination, with the fluke and covering-wheel, of a pair of straight parallel bars supporting the wheel at their rear ends, and pivoted at their front ends only to the front of the fluke, substantially as described, shown, and for the purpose set forth.

6. In a grain-drill, the combination of a trash-cleaner arranged in front alongside each shoe or furrow-opener and an independent vertical spring exerting an adjustable pressure upon the same, substantially as described.

7. In a grain-drill, the combination of a trash-cleaner arranged in front alongside each shoe or furrow-opener, an independent vertical spring pressing upon the same, and a lever for adjusting the pressure of said spring, substantially as described.

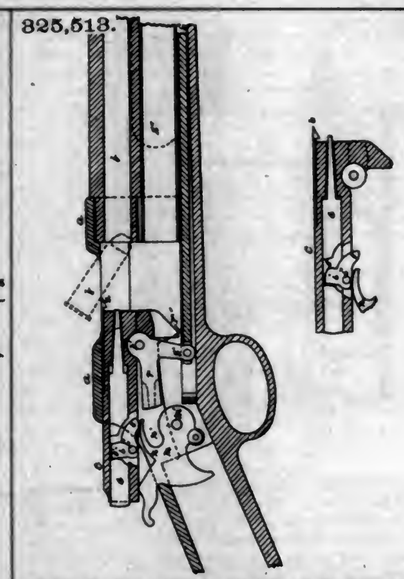
8. In a grain-drill, the combination of a pair of slotted hangers, a shaft having bearings in the slots of said hangers, a series of trash-cleaners mounted on said shaft, an independent vertical rod and surrounding spring at each end of the shaft, and bearing upon the same, and a connecting-lever fulcrumed upon the main frame, substantially as described.

9. In a grain-drill, the combination of a pair of slotted hangers, a series of trash-cleaners mounted on a shaft having end bearings in the slots of said hangers, an independent vertical rod and surrounding spring at each end of said shaft, an upper horizontal connecting-bar, and a lever for elevating and depressing said bar, substantially as and for the purposes set forth.

325,513. FIRE-ARM. WILLIAM H. ELLIOT, Brooklyn, N. Y. Filed July 11, 1885. (No model.)

Claim.—1. In a fire-arm, the combination of the longitudinally-reciprocating bolt *c*, the firing-pin *e*, extending longitudinally through

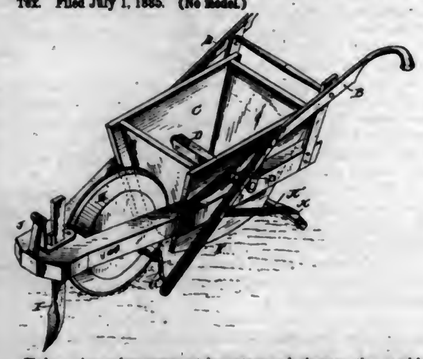
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said bolt, the lever *i*, hung in said bolt, and the hammer *m*, pivoted within the receiver, said lever having one arm, *o*, actuated by the projection *n* of the hammer, and the other arm, *o'*, in connection with said pin, the arrangement of said parts in relation to each other being such that only when the firing-pin is fully retracted will the bolt be far enough back to allow a fresh cartridge to be inserted in the chamber of the arm, substantially as and for the purpose specified.

2. In a fire-arm, the combination of the longitudinally-reciprocating bolt *c*, the firing-pin *e*, extending longitudinally through said bolt, the lever *i*, hung in said bolt, and the hammer *m*, pivoted within the receiver, said lever having one arm, *o*, actuated by the projection *n* of the hammer, and the other arm, *o'*, in connection with said pin, the arrangement of said parts in relation to each other being such that only when the firing-pin is fully retracted will the bolt be far enough back to allow a fresh cartridge to be inserted in the chamber of the arm, and that the retraction of the firing-pin will begin after the hammer has been brought to full-cock by the bolt, substantially as and for the purpose specified.

325,514. COTTON-SEED PLANTER. JOHN J. ELLETON, Halesborough, Tex. Filed July 1, 1885. (No model.)

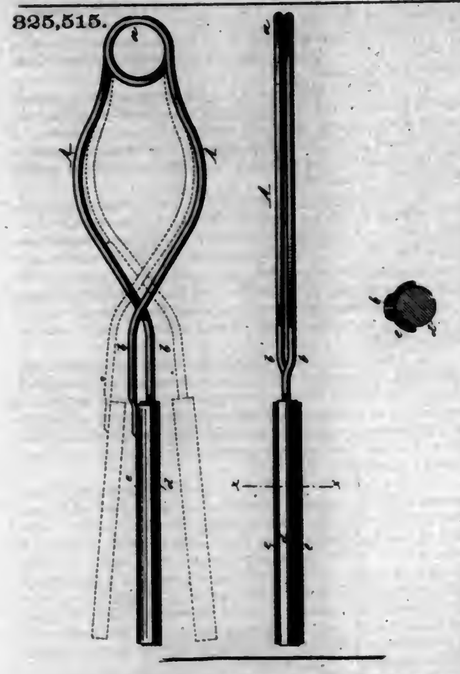


Claim.—As an improvement in cotton-seed planters, the combination, with the main frame, of the hopper having the inclined sides extending down to a point below the level of the feed-opening and curved to adapt them to act as runners, and the feeder and means for operating the same, substantially as set forth.

325,515. HAIR-FRIZZLING IRON. EMIL ELSENHEIMER, Toledo, Ohio. Filed Mar. 28, 1885. (No model.)

Claim.—A hair-frizzling iron consisting of a handle made of one continuous piece of wire, having a spiral spring at one end and sidewise crossing and parallel opposite ends, the latter being provided, respectively, with a cylindrical piece and a semicircular shell, substantially as set forth.

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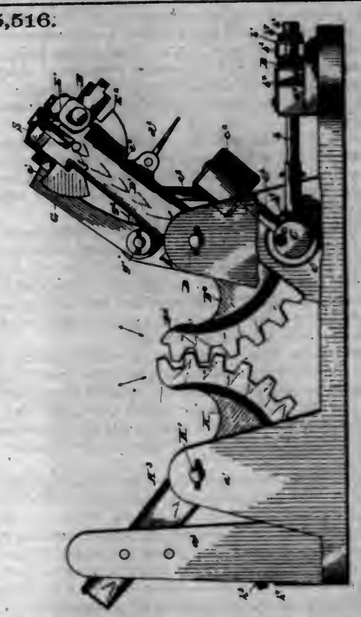
325,516. BUTTON-FASTENING MACHINE. CHARLES ERLANGER, Baltimore, Md. Filed Mar. 2, 1885. (No model.)

Claim.—1. In a button-fastening device, a frame provided with an anvil and button-locking plates, in combination with fixed and swinging die-stocks mounted on the hammer-head of a forwardly-swinging arm, adapted to be successively brought upon said anvil for securing a button and its staple to fabric, substantially as described.

2. In a button-fastening device, a die-stock rigidly fixed to the outer and free end of a swinging arm, and provided upon its face with a swinging die-stock, substantially as described, said die-stocks adapted to be brought alternately into contact with an anvil by the successive downward and upward movement of said swinging arm, substantially as described.



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3. In a button-securing device, a swinging arm extending from a rotatable shaft mounted on and between standards projecting from a frame, said arm provided, substantially as described, with a fixed and swinging die-stock, substantially as described.

4. In a button-securing device, a swinging arm extending from a rotatable shaft mounted on and between standards projecting from a frame, said arm provided with a fixed die-stock and swinging die-stock notched at the upper end of its face-plate, and having a disk with a mutilated periphery and a ratchet-wheel secured at its side, operated by a pawl adapted to bring said die-stocks into and out of alignment, as and for the purpose intended, substantially as described.

5. In a button-securing device, a disk having a mutilated periphery pivoted to the side of a swinging arm near its outer end, said disk provided upon its face with a ratchet-wheel, in combination with a pivoted pawl projecting from a standard and a swinging die-stock pivoted to the free end of said swinging arm and provided with an upper notch adapted to engage with the mutilated periphery of said disk, substantially as described.

6. In a button-fastening device, a swinging arm pivoted to and between forward standards projecting from a frame, said arm provided upon one end with die-stocks and operating ratchet-wheels and ratchets, substantially as described, and upon the other end with a gear-toothed sector, in combination with a similar gear-toothed sector projecting from a rotatable shaft mounted on and between rear standards, substantially as described.

7. In a button-fastening device, a swinging arm projecting from a rotatable shaft journaled to and between standards provided with die-stocks, ratchet-wheels, and a retaining-dog pivoted to said arm, in combination with a sleeved arm pivoted upon a shaft supporting the swinging arm, connecting-links, and an eccentrically-pivoted shaft for operating button-clamping plates, substantially as described.

8. In a button-fastening device, a shaft eccentrically pivoted to and between standards and operating through a strap and connecting-rod, a movable clamping-plate, in combination with a sleeved arm mounted upon a suitably journaled rotatable shaft, said sleeved arm and eccentrically-pivoted shaft being connected by toggle-joint links, as and for the purpose intended, substantially as described.

9. In a button-fastening device, an anvil apertured for passage of a horizontally-propellible rod, said rod provided forwardly with an adjustable angle-plate having a cut-away portion on its horizontal face, in combination with a rearwardly-fixed plate having a similar cut-away portion, said plates comprising a gripping-clamp, substantially as described.

10. In a button-fastening device, an anvil-supporting block having a rearwardly-adjusted fixed clamping-plate and an anvil seated forwardly in said block, in combination with an adjustable or movable angle plate or clamp, as and for the purpose intended, substantially as described.

11. In a button-fastening device, an anvil-block permanently attached or integral with a bed-plate provided with a recessed seat for reception of an anvil, and a back portion apertured for passage of a movable rod, as and for the purpose intended, substantially as described.

12. In a button-fastening device, an anvil seated within a supporting-block, said block and anvil having aligning apertures for passage of a movable rod, in combination with button-gripping plates having similar cut-away portions upon their juxtaposited edges, one of said plates being permanently affixed to said block and the other attached to a horizontally-moving rod passing through said block and anvil, substantially as described.

13. In a button-fastening device, a swinging arm attached to a rotatable shaft provided at its free end with a fixed perpendicularly-depending die-stock and a spring-pressed pivoted swinging die-stock adapted to be sprung over and in alignment with the fixed die-stock, substantially as described.

14. In a button-fastening device, an eccentrically-pivoted shaft mounted to and between standards, said shaft provided with a forwardly-projecting arm pivoted by a connecting-link to an arm projecting forwardly from an upper rotatable shaft mounted to and between said standards, in combination with a forwardly-projecting arm on the eccentrically-pivoted shaft, said arm supplied with a counter-weight, as and for the purpose intended, substantially as described.

15. In a button-fastening device, an eccentrically-pivoted shaft mounted to and between standards and an upper rotatable shaft mounted to and between the same standards, each of said shafts having forwardly-projecting arms and being connected together by a pivoted link, said arms and link forming a toggle-joint whereby said shafts are simultaneously partially rotated, as and for the purpose intended substantially as described

16. In a button-fastening device, an eccentrically-pivoted shaft mounted to and between standards, said shaft having on one end a forwardly-extending arm, pivoted to a link, said link pivoted to an arm of an upper rotatable shaft, the eccentrically-pivoted shaft provided with a forwardly-projecting arm carrying a counter-weight, and at its middle portion being surrounded with a strap from which extends forwardly a horizontally-propellible rod by the propulsion of which end button-gripping devices are opened and closed, substantially as described.

17. In a button-fastening device, a rotatable shaft mounted to and between standards, provided with a forwardly-projecting arm carrying a hammer-head supplied with suitable die-stocks, said arm having pivoted thereto rearward of said hammer-head a dog, in combination with a spring-controlled slip-pin adjusted within an orifice within the free end of an arm extending from a loose sleeve upon one side of said shaft, said slip-pin adapted by rotation of said shaft to be brought into and out of engagement with said dog, as and for the purpose intended, substantially as described.

18. In a button-fastening device, a dog pivoted upon a forwardly-extending arm of a rotatable shaft mounted to and between standards, said shaft being provided at one side with a loose sleeve from which extends forwardly another arm provided with a spring-pressed slip-pin, in combination with a lower eccentrically-pivoted shaft mounted to and between the same standards, provided with a counter-weight side arm and a horizontally-propellible rod, said eccentrically-pivoted shaft and side-extending arm being connected by toggle-jointed links, as and for the purpose intended, substantially as described.

19. In a button-fastening device, a swinging pawl pivoted upon a standard projecting from a frame of the machine, in combination with a ratchet-wheel and disk, having mutilated periphery and hammer-head provided with die-stocks, substantially as described.

20. In a button-fastening device, a swinging pawl pivoted upon a stud projecting from a standard, said pawl provided with movement-limiting arms, in combination with a ratchet-wheel disk having mutilated periphery and a swinging hammer-head provided with fixed and pivoted die-stocks, said pivoted die-stock having a notch at its upper end adapted to mesh with the mutilated periphery of the ratchet-wheel disk, substantially as described.

21. In a button-fastening device, a pawl provided with motion-limiting arms, extending from a loose sleeve surrounding a stud projecting from a fixed standard, a ratchet-wheel operated by said pawl, in combination with a swinging die-stock having an upper notch meshing with the mutilated periphery of a rotatable disk, and said disk, said die-stock pivotally connected to a swinging arm extending from a shaft journaled to and between standards of the frame of the machine, substantially as described.

22. In a button-fastening device, a pawl having movement-limiting arms, said pawl mounted upon a stud projecting from a standard and in the track of a ratchet-wheel and disk with mutilated periphery journaled to a swinging arm, whereby when said swinging arm is alternately raised or lowered the ratchet-wheel is rotated in step-by-step motion by engagement with said pawl, substantially as described.

23. In a button-fastening device, the combination of an arm pivoted upon a shaft mounted to and between standards, said arm provided with a ratchet-wheel and disk having mutilated periphery adapted to alternately engage with and release the notched upper end of a swinging die-stock pivoted to said arm, with a pawl mounted upon a stud projecting laterally from a standard above and in the same plane of said shaft, whereby when said swinging arm is raised and its ratchet-wheel brought into connection with the pawl said ratchet-wheel will be rotated forwardly by the continued upper movement of the arm and consequent lessening of distance between the end of said arm and the end of the pawl, substantially as described.

24. In a button-fastening device, a disk having projecting portions upon its periphery, said portions being equal in dimensions to the intervening spaces, forming alternately open and delay spaces, whereby a spring-pressed pivoted die-stock is operated by its alternate connection with and release from the projections on said disk as the latter is rotated, substantially as described.

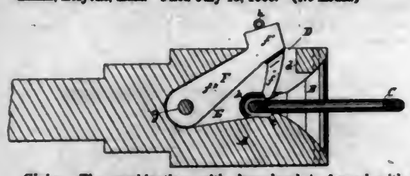
25. In a button-fastening device, and in combination with a spring-pressed die-stock having a cut-away notch at the upper part of its face-plate, pivoted to a swinging arm mounted to and between standards projecting from the frame, a disk having three equal-sized projecting portions extending from its periphery, and equally spaced apart, said disk provided upon its face with a ratchet-wheel, (the disk and wheel having a common mounting,) and a suitably-mounted pawl, whereby said disk is rotated and the spring-pressed die-stock swung to and fro, substantially as described.

26. A button-fastening device provided with a rigidly-adjusted die-stock, and a spring-pressed swinging die-stock, substantially as described, adapted to be brought into alignment upon a hammer-head by operative machinery, said stocks provided with interlocking shoulders and suitable stops to prevent perpendicular and lateral displacement when actuated and at the same time affording protection to the die-face of the fixed die-stock, substantially as described.

27. In a button-fastening device, a rotatable shaft journaled to and between standards projecting upwardly at the rear of the machine, said shaft provided with a rearwardly-extending lever-arm, whereby it is rotated, and having a torsion-spring wound round said shaft, whereby it is returned to its normal position when released from tension, said shaft having a forwardly-projecting swinging arm carrying a gear-toothed sector, in combination with the swinging arm projecting from a similar shaft mounted at the forward portion of the machine, having at its rear end a gear-toothed sector meshing with the sector on the opposite arm, its die-stocks and attachments, as and for the purpose intended, substantially as described.

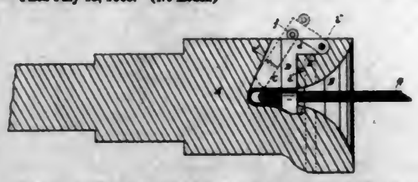
28. In a button-fastening device, a screw-threaded adjusting-post mounted in a suitable casing projecting from a bed-plate, said post provided with a circular head or plate, the periphery of which is provided with a series of spaced detents or notches, in combination with an upwardly-projecting leaf-spring secured to the bed of the machine-frame, its upper end adapted to engage with the notched periphery of the post-head, thereby limiting the action of said lever-arm and its connections to any predetermined degree, substantially as described.

325,517. CAR-COUPLING. AUGUSTUS W. EBLEBEN and FRANK M EAMES, Holyoke, Mass. Filed July 13, 1885. (No model.)



Claim.—The combination, with draw-head A, formed with link-opening B, shoulders *b*, aperture D, having straight front wall, *d*, and chamber E, having notch in its lower wall, of coupling-hook F, comprising a hooked projection, *f*, a rectangular head, *f'*, and a rearwardly-extending arm, *f''*, substantially as described.

325,518. CAR-COUPLING. AUGUSTUS W. EBLEBEN, Holyoke, Mass. Filed July 13, 1885. (No model.)



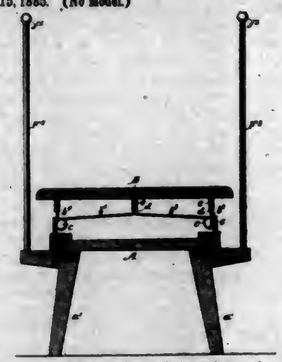
Claim.—1. The combination, with a draw-head in which is formed an opening for the reception of the coupling-link and a vertical recess extending from the top of the draw-head to the point of intersection with the rear end of the link-opening, of a right-angularly-bent coupling-pin, one arm of which is secured by a fixed pivot-bolt to the forward end of the draw-head, and the other arm of which occupies and has a limited upward movement in the said recess, substantially as described.

2. A draw-head in which is formed an opening for the reception of the coupling-link, and a vertical recess extending from the top of the draw-head to the point of intersection with the rear end of the link-opening, the front wall of said recess being at a right angle to the top of the draw-head, and the rear wall having a gradual rearward inclination, in combination with a right-angularly-bent coupling-pin, one arm of which is secured by a fixed pivot-bolt to the forward end of the draw-head, and the other arm of which occupies and has a limited upward movement in the said recess, substantially as described.

3. A draw-head in which is formed an opening for the reception of the coupling-link, a vertical recess extending from the top of the draw-head to the point of intersection with the rear end of the link-opening, the front wall of said recess being at a right angle to the top of the draw-head, and the rear wall having a gradual rearward inclination, and an offset in the lower wall of the link-opening on a line with the front wall of the recess, in combination with a right-angularly-bent coupling-pin, one arm of which is secured by a fixed pivot-bolt to the forward end of the draw-head, and the other arm of which occupies and has a limited upward movement in the said recess, substantially as described.

4. The combination, with a draw-head formed with a link-opening, B, offset *b*, vertical recess C, and depression E, of a coupling-pin bent at a right angle, one arm of the pin being secured by a fixed pivot-bolt in the forward end of said depression, and the other arm occupying and having a limited upward movement in the recess, substantially as described.

325,519. EXERCISING-CHAIR. MOSES G. FARMER, New York, N. Y. Filed June 15, 1885. (No model.)



Claim.—1. An exercising-chair consisting of a stationary support, the yielding seat, the connecting or supporting springs consisting of resilient rods having convolutions formed near one end, spiral sockets receiving the remaining ends, and the handles extending above said seat, substantially as described.

2. An exercising-chair consisting of the yielding seat, a support therefor, four yielding springs extending from a point near the center of each side of said seat toward the respective corners of the same, and means, substantially such as described, whereby the person upon said seat may lift himself, substantially as set forth.

3. The combination, substantially as hereinbefore set forth, of the platform A, the seat B, the connecting and supporting springs *b'*, *b²*, *b³*, and *b⁴*, their respective longitudinally and laterally yielding sockets *c*, and the handle *f*, all organized substantially as and for the purpose set forth.

325,520. APPARATUS FOR TESTING ELECTRICAL CIRCUITS. I. H. FARNHAM, Boston, Mass., assignor to the American Bell Telephone Company, same place. Filed Jan. 16, 1885. (No model.)

Claim.—1. At a station equipped for electrical communication, the combination of a main line, a spring jack or switch, a set of instruments for electrical communication, and a series of plugs, one of which plugs has two insulated terminals connected to the opposite terminals of the communicating instruments, respectively, a second plug connected to ground, and a third plug composed of insulating material for inserting the instruments with respect to the line, grounding the line, and opening the line, respectively, each plug having characteristic marks or designations.

2. At a station arranged for testing a main line, the combination of a spring jack or switch in the main-line circuit, a series of plugs therefor, and an indicator or recorder operated step by step by a pawl and ratchet, all arranged and operating substantially as described.

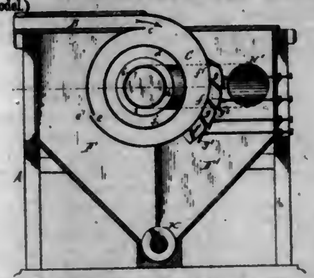
3. At a station located upon an electrical circuit, a case or box containing a spring jack or switch electrically connected into the line-circuit, an indicator or recorder operated step by step by a pawl and ratchet, and a mechanical connection with the pawl and ratchet covering the approach to the spring jack or switch, and operated by the insertion of a plug with respect to said spring jack or switch.

4. At a station arranged for testing or communicating, a main line the terminals of which are inclosed within a box or case and are normally connected together, a series of plugs or electrical connections for varying the normal condition of the said circuit, and an indicator or recorder for registering a change or variation in the normal condition of the circuit produced by the insertion of a plug.

5. The combination, at a telephone-station, of a telephone-set the opposite terminals of which are connected to the opposite terminals of a double conducting-plug, respectively, a second plug, similar in form and size, one face of which is electrically connected to earth, a third plug, similar in form and size, composed entirely of insulating material, a main line the divided terminals of which are normally in electrical connection through a spring-jack, an indicator composed of a dial and pointer operated step by step by a ratchet and pawl, a box or case inclosing the spring-jack and indicator and having an aperture which is covered by a mechanical connection with said pawl controlling the approach to the spring-jack, whereby the insertion of a plug with respect to the case and spring-jack will operate the indicator.

6. At a station equipped for telephonic communication, the combination of a telephone, an indicator or recorder, a switching device by means of which the telephone may be inserted and withdrawn with respect to the main line, a door or cover controlling the approach to the said switching device, and a mechanical connection between the said door or cover and the indicator, whereby the movement of the door or cover will operate the indicator, substantially as described.

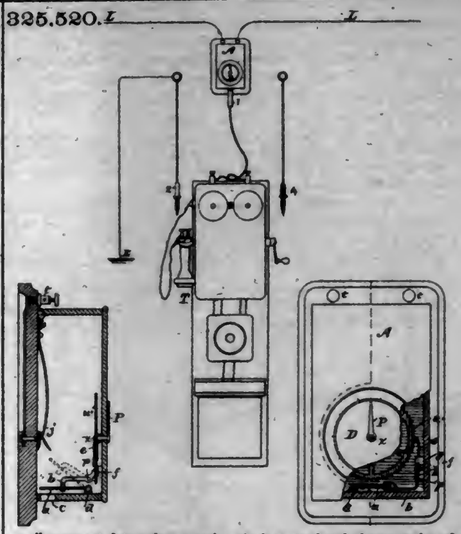
325,521. DUST-COLLECTOR. JOHN M. FINCH, Jackson, Mich., assignor to the Knickerbocker Company, same place. Filed May 15, 1885. (No model.)



Claim.—1. In a dust-collector, the combination, with a separating-case through which the dust-laden air moves with a rotative or gyrating motion, and which is provided with a spout through which the dust-laden air enters, a peripheral opening for the discharge of the outer layer of dust and air, and an opening for the escape of the inner body of purified air, of a chamber which receives the outer layer of dust and air from the peripheral discharge-opening, and an air-passage through which the air escapes from the dust-chamber while the dust remains in the same, substantially as set forth.

2. The combination, with a dust-separating case, C, having an end opening, *d*, provided with a guard-flange, *j'*, for the escape of the purified air, and a peripheral dust-discharge orifice, *e*, of a tangential air-spout, B, through which the dust-laden air enters the case, and a dust-

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chamber, F, provided with a passage for the escape of the air, substantially as set forth.

3. The combination, with the separating-case C, having an air-inlet spout, B, an air-outlet, *d*, at its end, and a dust-discharge orifice, *e*, of the dust-chamber F, and a passage, H, connecting said chamber with the interior of the case, substantially as set forth.

4. In a dust-collector, a separating-case, C, having an air-inlet spout, B, an air-outlet at each end, and small and large dust-discharge orifices for removing the fine and coarse dust particles separately, and dust-collecting chambers, substantially as set forth.

5. The combination, with the separating-case C, having an air-inlet spout, B, an air-outlet at its end, and a perforated section, *f*, of chambers *g*, arranged in rear of said section and provided with adjustable valves *g'*, and a dust-chamber inclosing said chambers *g*, substantially as set forth.

325,522. SHOE-FASTENING. PHILIPP FLAD, Philadelphia, Pa. Filed Mar. 28, 1885. (No model.)

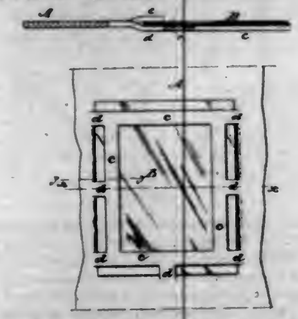


Claim.—1. An improved fastening for a boot or shoe, consisting of the pivoted hooks B, connections D for said hooks, stud C, and spring F, arranged as shown, to keep said hooks normally in engagement with the said studs, substantially as described.

2. The hooks B, having the connections D, in combination with the studs C, and handle E, having rod J, substantially as and for the purpose set forth.

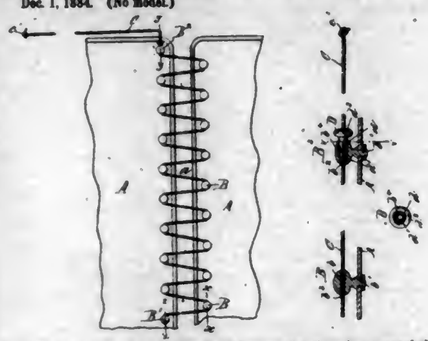
3. An improved fastening device for a boot or shoe, having pivoted catches or hooks and studs, said hooks being connected and adapted to be operated simultaneously, a spring connected to the lower hook and adapted to keep the hooks in engagement with said studs, a handle attached to one of the hooks, and a rod attached to the handle and one of said catches, all of said parts being arranged and combined substantially as described.

325,523. MEANS FOR SECURING GLASS OR MICA IN SHEET-METAL STRUCTURES. CHARLES A. FLETCHER and WILLIAM H. WILDER, Gardner, Mass., assignors to the American Oil Stove Company, same place. Filed Dec. 22, 1884. (No model.)



Claim.—The sheet-metal plate A, having an opening, *b*, designed to be glazed, and provided on its back or inner face with a yielding frame composed of open belts or bands *c*, arranged alongside of the marginal portions of said opening *b*, and flexible lugs or projections *d*, said belts or bands being connected beyond their outside margins with the metal of the plate contiguous to the opening by said flexible lugs or projections, but being detached therefrom along both of their longitudinal edges, excepting where connected by the lugs, substantially as and for the purposes herein set forth.

325,524. GLOVE-FASTENER. SIMON FLORSHEIM, Chicago, Ill. Filed Dec. 1, 1884. (No model.)

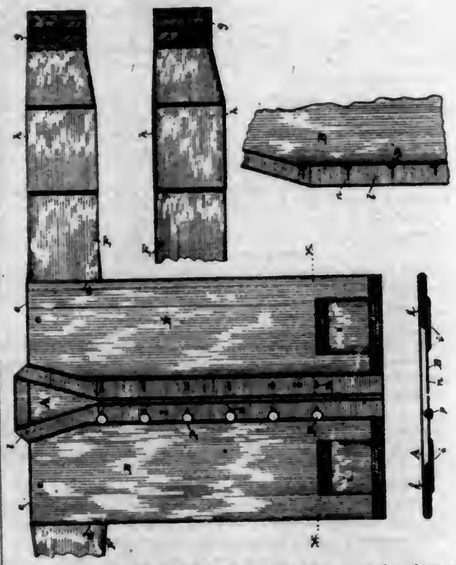


Claim.—1. The herein-described fastener for glove-laces, consisting of a conical split plug surrounding the lace and capable of sliding thereon, and a stud or button having a perforation through which the lace passes, the said perforation being of sufficient size to receive the said plug to clamp it upon the lace, substantially as and for the purposes specified.

2. The combination, with the glove-wrist A, having slit *a*, of suitable lacing-studs arranged upon the edges of the said slit, a lacing-cord passing through the said stud, and a conical split clamping-plug mounted loosely upon said lacing-cord, the end stud being constructed to receive the said plug to clamp it upon the lacing-cord, substantially as and for the purposes specified.

3. The combination, with the glove-studs A, having slit *a*, of suitable lacing-studs arranged upon the edges of the said slit, a lacing-cord passing through the said studs, and a conical split clamping-plug mounted loosely upon the said lacing-cord, one end stud being constructed to receive the said plug to clamp it upon the lacing-cord, and the other end stud having a recess or seat to receive the knot or enlargement of the end of the lacing-cord, substantially as and for the purposes specified.

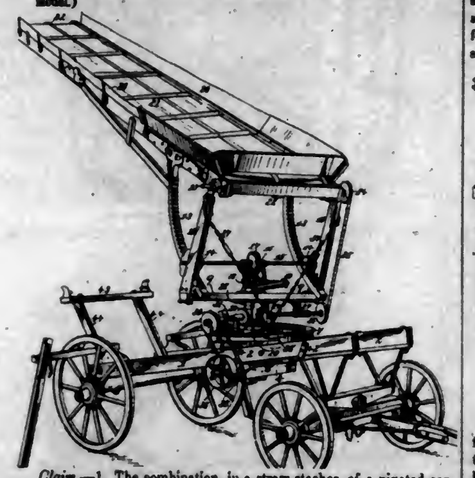
325,525. KNIT JACKET. JACOB FRANKEL, Baltimore, Md. Filed June 1, 1885. (No model.)



Claim.—1. A knit jacket having at the bottom a pocket, *i*, upon the outside and a pocket, *k*, upon the inside, one of said pockets half overlapping the other, and both pockets knit to the garment, as set forth.

2. A knit jacket having each breast-front edge provided with a crocheted border, *l*, alike on both sides, and the border on each edge provided with button-holes, and one border-edge only provided with detachable buttons, as set forth.

325,526. STRAW-STACKER. JOHN M. GAAR, Richmond, Ind., assignor to Gaar, Scott & Company, same place. Filed June 18, 1885. (No model.)



Claim.—1. The combination, in a straw-stacker, of a pivoted conveyer-trough, a pivoted bolster having arms for supporting one end of said trough, a shaft mounted in bearings on said bolster and having a worm-gear and pinions, and segmental racks secured to the opposite sides of the conveyer-trough and meshing with said pinions, whereby the conveyer-trough is raised or lowered and held at any required elevation or angle, substantially as described.

2. The combination, with a vertically and laterally movable conveyer-trough, of a tilting gear-frame, a king-bolt mounted therein, a bolster centrally pivoted on the upper end of said king-bolt and having arms adapted to support the pivoted end of the conveyer-trough, a shaft mounted in bearings on the under side of the bolster and geared at one end with the driving-roller of the conveyer-apron, a flexibly-geared connection at its other end, a transmitting-shaft mounted in fixed bearings, and means for rotating the latter shaft, substantially as described.

3. The combination, with a vertically and laterally movable conveyer-trough, of a centrally-pivoted bolster having arms for supporting the pivoted end of said trough, a flanged ring adapted to serve as a brace and brake, a friction clamp or shoe movable on said ring, and adjustable chains connecting said friction-clamp to the bolster-arms, substantially as described.

4. The combination of a main frame having a fixed brace, as 41, and a movable dog, as 39, a tilting gear-frame pivoted to said main frame and provided with a beveled shoulder, 40, a king-bolt mounted in said tilting gear-frame, a bolster centrally pivoted to the upper end of the king-bolt and having an arm at each end, and a conveyer-trough pivoted to the bolster-arms, substantially as described.

5. The combination of a wheeled frame, a tilting gear-frame pivoted thereto and supporting a driving-shaft with pulley and sprocket-gear, a king-bolt mounted in said gear-frame, a bolster centrally pivoted to the upper end of the king-bolt and having arms at its ends; a conveyer-trough pivoted to the bolster-arms, a ring mounted on the wheeled frame and having a friction-clamp connected by adjustable chains to the bolster-arms, a shaft mounted in bearings on the fixed ring and gearing with the driving-shaft, and another shaft mounted in bearings on the pivoted bolster and having a flexible geared connection at its inner end with the shaft that is mounted on the ring, and carrying at its outer end a sprocket-wheel that is geared with a sprocket-wheel on the driving-roller of the conveyer-apron, substantially as described.

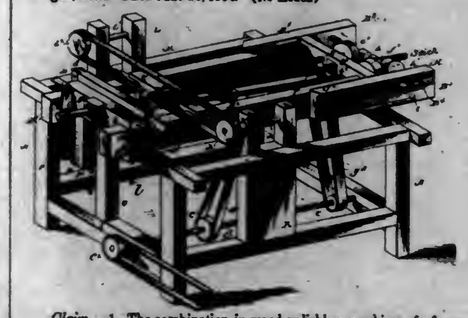
6. The combination, with the pivoted conveyer-trough 11, having segment-racks 13 13, of the swinging bolster 9, having arms 10 10, provided with flanged guide-lugs 12 12, the shaft 15, mounted in bearings on the bolster and provided with a spur-gear, 17, and pinions 14 14, and the worm-shaft 18 and crank 19, substantially as described.

7. The combination, with the pivoted bolster 9, having arms 10 10 for supporting one end of the conveyer-trough, of the flanged ring 7, friction-clamp 38, and the adjustable chains 37 37 for connecting said clamp with the bolster-arms, substantially as described.

8. The combination, with the vertically and laterally movable conveyer-trough 11 and the centrally-pivoted bolster 9, having arms 10 10, supporting one end of said trough, of a shaft, 26, mounted in bearings on the pivoted bolster and having a pinion, 28, and a sprocket-wheel geared with the driving-roller of the conveyer-apron, the loose bevel-gear 29, and the shaft 31, having a pinion 30, and a sprocket-wheel geared with the driving-shaft 5, substantially as described.

9. The combination of the wheeled frame 1, the tilting gear-frame 4, pivoted thereto, the king-bolt 6, mounted in said gear-frame, the bolster 9, centrally pivoted to the upper end of the king-bolt and having arms 10 10, supporting the conveyer-trough, the dog 39, and brace 41 for securing the extended conveyer-trough in working position, substantially as described.

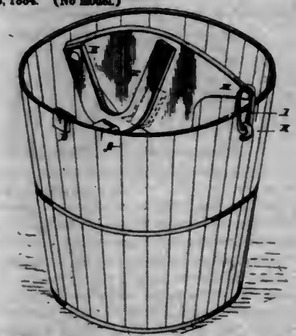
325,527. WOOD-POLISHING MACHINE. FRANKLIN GALE, Muskegon, Mich. Filed June 20, 1884. (No model.)



Claim.—1. The combination, in wood-polishing machine, of a frame, feeding-rollers that are fixed on diverging shafts, one of which has stationary bearings and the other having one of its bearings in a pivoted lever, a spring for bearing down the free end of the lever, a die for directing the stick to be polished, and a polishing-belt, substantially as described.

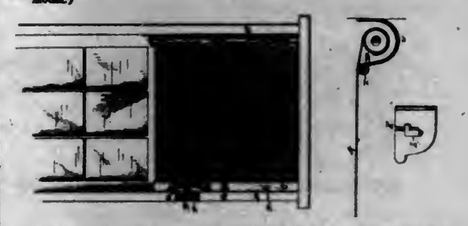
2. The combination, in wood-polishing machine, of a frame, feeding-rollers journaled therein, a die for directing the stick to be polished, a polishing-belt having one of its actuating-pulleys journaled in a fixed standard, the other pulley being journaled in a hinged standard, a spring bearing against the hinged standard, and a friction-roller that is journaled to a vertically-moving support and adapted to raise the under side of the polishing-belt out of contact with the stick, substantially as described.

325,528. MOP-WRINGER. WILLIAM GAVIN, Webb City, Mo. Filed Dec. 18, 1884. (No model.)



Claim.—The combination, with the supporting-plate, the wings, and the bent guide, of the movable plate G, having a projection at its free end extending over the edge of the pail, and the link and its fastening, whereby the pressure of the plate on the mop may be increased, substantially as and for the purposes specified.

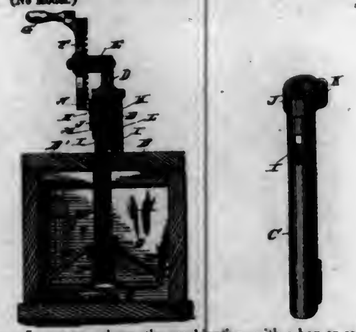
324,529. WINDOW-SCREEN. STEELE F. GILMORE, Princeton, Ind., assignor of one-half to Seth Ward, same place. Filed Apr. 27, 1885. (No model.)



Claim.—A window-screen consisting in the combination of a spring-roller, an extensible screen normally contained thereon, a casing

nearly surrounding the roller, and a top or covering for the casing, having a narrow slot extending from the edge to the center to receive the flattened end of the roller-spindle, and carrying a pivoted hook which normally retains the roller in place, substantially as and for the purpose specified.

325,530. CHURN. RUSSELL L. DORR, Carlisle, Ky. Filed Apr. 20, 1885. (No model.)



Claim.—In a rotary churn, the combination, with a box or casing, of a vertical revolving tubular stem or shaft, a plug inserted detachably in the upper end of the latter and having a pinion, a tube adjusted upon the lower end of said stem and having a transverse tubular brace and suitable wings or dashers, and suitable bearings and operating mechanism for the said stem or shaft, substantially as and for the purpose herein set forth.

325,531. COMBINED RAILWAY-TRACK SUPPORT AND TRACTION-CABLE AND ELECTRIC-CONDUCTOR CONDUIT. JOHN H. GOULD, Philadelphia, Pa. Filed June 3, 1885. (No model.)

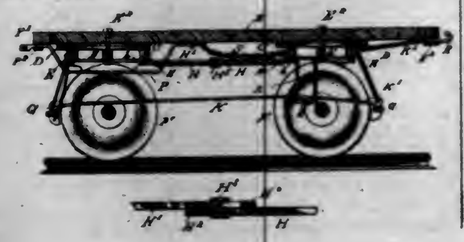


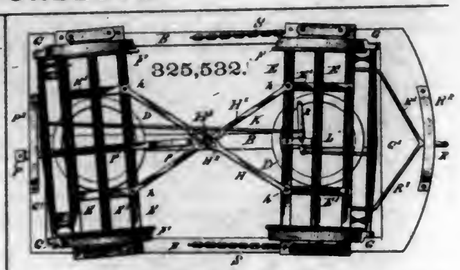
Claim.—1. A combined railway-track support and traction-cable and electric-conductor conduit, the same consisting of two parallel tubes united by cross-pieces, one of said tubes forming a conduit for a traction-cable, and the other a conduit for electric conductors, and both said tubes forming supports for railway-tracks, substantially as shown and described.

2. A combined railway-track support and duplex conduit, the same consisting of two parallel tubes fastened to each other by cross-pieces, one of said tubes having a longitudinal slot in its upper side or top, and the other tube having a man-hole in its outer side, said tubes being adapted to support rails and afford conduits for traction-cables and for electric conductors, as shown and set forth.

325,532. CAR-TRUCK. FRANCIS A. GRAFF, New Albany, Ind. Filed July 2, 1885. (No model.)

Claim.—Combined with car-trucks, centrally-slotted diagonal bars connecting the relatively-opposite ends of said trucks, and a bolt retaining the central portions of the bars together and traveling in the said slots, substantially as and for the purpose specified.





325,533. CARPENTER'S RULE. WILLIAM H. GREENE, Lowell, Mass. Filed Oct. 4, 1884. (Model.)



Claim.—1. The combination of a leg, plates secured thereto having ears provided with circular cavities concentric therewith, another leg, and plates adapted to enter said cavities and to turn therein and to engage with and slide upon said last-named leg, as and for the purpose specified.

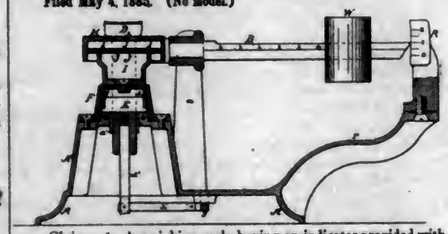
2. The combination of a leg, plates secured thereto having ears provided with circular cavities concentric therewith, another leg, segmental plates adapted to enter said cavities and turn therein and to engage with and slide upon said last-named leg, the segmental binder placed within said cavities, and means, substantially as described, for crowding apart said binder and said segmental plates and forcing them outward against the curved inner walls of said cavities, to prevent said legs from turning on each other, as and for the purpose specified.

3. The combination of a leg, plates secured thereto having ears provided with circular cavities concentric therewith, another leg, segmental plates adapted to enter said cavities and turn therein and to engage with and slide upon said last-named leg, the segmental binder placed within the said cavities, and the wedge placed between said binder and said segmental plates and adapted to be crowded between said binder and said segmental plates and to prevent said legs from turning on each other, as and for the purpose specified.

4. The combination of a leg, plates secured thereto having ears provided with circular cavities concentric therewith, another leg, segmental plates adapted to enter said cavities and turn therein and to engage with and slide upon said last-named leg, the binder, its edges entering said cavities and provided with a spring, and the wedge placed between said binder and said segmental plates and adapted to be crowded between said binder and said segmental plates and to prevent said legs from turning on each other, as and for the purpose specified.

5. A rule having legs united at their ends by a joint and adapted to slide and turn one upon the other in the same plane, as and for the purpose specified.

325,534. WEIGHING-SCALE. DAVID HALLOCK, New York, N. Y. Filed May 4, 1885. (No model.)



Claim.—1. A weighing-scale having an indicator provided with an air-check consisting of a box and a loose diaphragm or diaphragms therein, substantially as described.

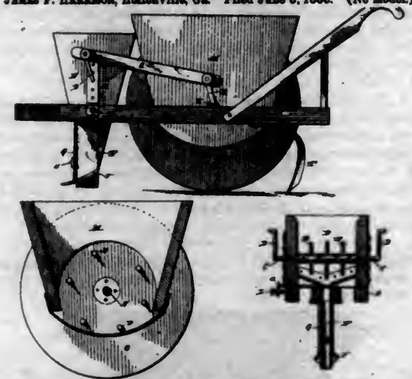
2. The combination of the oscillating beam of a weighing-scale and a box controlled thereby with a support and loose diaphragms adapted to said box and normally resting on the support, as set forth.

3. The combination of the beam of a weighing-scale and pan carried thereby with a jack connected to the pan end of the beam, a series of automatic weights normally carried by the jack, and a support to relieve the jack of the weights successively as the pan descends, substantially as specified.

4. The combination of the beam and indicator-scale of a weighing-scale with a jack carried by the pan end of the beam, a series of automatic weights normally carried by the jack, and a support for the weights when relieved from the jack, the beam being balanced, substantially as described, whereby fractional parts will be indicated as full units.

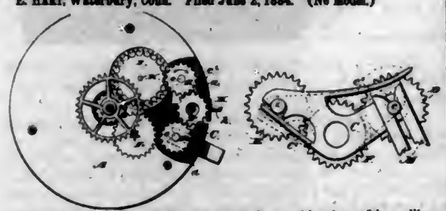
5. A weighing-scale having a graduated beam provided with a movable weight and an indicator-scale and a series of automatic weights, the latter indicating the small units, while the graduations on the beam are multiples of the small units, as set forth.

325,535. COMBINED GUANO-DISTRIBUTER AND SEED-PLANTER. JAMES F. HARRISON, Hollonville, Ga. Filed June 8, 1885. (No model.)



Claim.—A combined seed and fertilizer distributer consisting of a suitable frame, a wheel mounted on a shaft, with crank-continuations, and having projecting pins on one side, a seed-hopper with a side opening for the reception of said pins, a fertilizer-hopper, a contained stirrer with a shaft having crank-continuations, rods connecting the cranks on the wheel-shaft and the stirrer-shaft, and a drill under the fertilizer-hopper, substantially as and for the purpose specified.

325,536. STEM-WINDING ATTACHMENT FOR WATCHES. GEO. E. HART, Waterbary, Conn. Filed June 2, 1884. (No model.)



Claim.—1. In a watch-movement, in combination with a pillar-plate which is composed of two disks that are adapted to be placed one upon the other to form a plate of ordinary form, and are provided within their contiguous faces with coinciding recesses, which together constitute one interior recess, stem winding and setting mechanism placed within said interior recess, substantially as and for the purpose specified.

2. In a watch-movement, in combination with a pillar-plate which is composed of two disks that are placed one upon the other to form a plate of ordinary form, and are provided within their contiguous faces with an interior recess, stem winding and setting mechanism which is placed within such recess, and is held in position therein by the union of said plate-sections, substantially as and for the purpose shown.

3. A stem-winding and hand-setting mechanism for watches, in which the yoke that forms a pivotal bearing for the winding and setting wheels, the ratchet-spring, and the push-spring are constructed from one piece, substantially as and for the purpose set forth.

4. A yoke having a ratchet-spring attached to or forming a part of the same, substantially as and for the purpose shown.

5. A yoke having a push-spring attached to or forming a part of the same, substantially as and for the purpose shown and described.

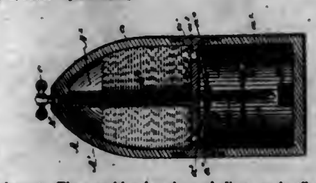
6. A stem-winding and hand-setting attachment for watches, in which the winding-wheel, pivoted thereto, is held in yielding contact with its bearing by means of a spring, substantially as and for the purpose specified.

7. A stem-winding and hand-setting mechanism for watches, in which the push-stud is made separable from the yoke, and is adapted to be connected therewith after the movement is in the case, substantially as and for the purpose shown.

325,537. COATING FOR WIRE-DRAWING. FRANK N. HASKELL, Worcester, Mass. Filed Jan. 16, 1885. (No specimens.)

Claim.—A coating for wire-drawing, composed of lime and soda-ash, substantially as set forth.

325,538. SHELL. CHARLES W. HAYES, Washington, D. C. Filed May 1, 1885. (No model.)



Claim.—1. The combination, in a shell or projectile such as described, of separate compartments or receptacles containing the elements of an explosive compound, and a spindle for liberating the contents of the said receptacles and permitting them to mingle, said spindle extending outside the body of the shell and carrying a stirring or mixing device, substantially as described.

2. In combination with a shell provided with receptacles or compartments charged with the elements of an explosive compound, as described, a spindle for releasing the contents of said receptacles, and a detonator arranged for co-operation with said spindle, substantially as described.

3. In combination with the shell provided with compartments or receptacles containing the elements of an explosive compound, the spindle for releasing the contents of the said compartments or receptacles, provided with the removable propeller located outside the body of the shell, substantially as described.

4. A shell or similar projectile formed with separate compartments or receptacles to contain the elements of an explosive mixture or compound, and provided with communicating passages extending through the walls of the chambers, valves or stoppers for closing said passages, and devices, substantially such as indicated, for operating said valves or stoppers from the exterior of the shell, substantially as and for the purpose set forth.

5. The combination, with a shell or similar projectile provided with separate compartments for the elements of the explosive mixture, and passages leading from said compartments to a mixing-chamber, of valves for closing said passages, and a device—such as a spindle—extending through the wall of the shell, and devices for connecting said spindle to said valves for simultaneously opening the passages and permitting the elements contained therein to mingle, substantially as described.

6. The combination, with a shell formed with separate compartments or receptacles with communicating passages, of valves or stoppers for closing said passages, a spindle connected to said valves, and provided with devices exterior to the shell for actuating said spindle, whereby the contents of the chambers or receptacles are released and caused to mingle, substantially as described.

7. The combination, with a shell having separate compartments or receptacles containing the elements of an explosive compound, of a pneumatic device or motor located in advance or upon the forward end of the shell, and a spindle connected to said motor and operating to release the elements of the explosive contained within the shell, whereby the mixture or mingling of the said elements is effected by the pressure produced upon the atmosphere by and during the flight of the projectile, substantially as described.

325,539. SPROCKET-WHEEL. LUDWIG HERMAN, Cleveland, Ohio. Filed Feb. 24, 1885. (No model.)



Claim.—1. In a sprocket-wheel, sprockets and recesses arranged in such order that each link as it passes over the wheel will occupy a recess upon one side of the wheel formed by two sprockets and bear against the sprocket upon the opposite side, substantially as set forth.

2. In a sprocket-wheel, the combination, with a central annular ridge, of sprockets so arranged that the bearing-surface of the sprockets for a chain-link is a continuation of one face of the annular ridge, substantially as set forth.

3. In a sprocket-wheel, the combination, with a central annular ridge, of sprockets arranged in such order that the wheel bears upon all links of the chain alike, substantially as set forth.

325,540. SOCKET AND CONNECTION FOR ELECTRIC-LIGHT CIRCUITS. GODFREY HIRD, Williamsport, Pa., assignor of three-fourths to Henry Metzger, same place, and George W. Dyer, Washington, D. C. Filed Mar. 13, 1885. (No model.)



Claim.—1. The combination of an electric-lamp socket having a short-circuiting circuit-controller and an ordinary lamp-socket connected in series, substantially as set forth.

2. The combination, with an electric-lamp socket having a short-circuiting circuit-controller, of a lamp-socket having a simple circuit opening and closing device, such sockets being connected in series, substantially as set forth.

3. An electric night-lamp wherein are combined a lighting-lamp, a resistance-lamp, and one or more circuit-controllers throwing the lighting-lamp into and out of circuit separately or in series with the resistance-lamp, the latter only being thrown into circuit in series with the lighting-lamp, substantially as set forth.

4. An electric night-lamp wherein are combined two incandescent electric lamps connected in series, a circuit-controller short-circuiting one lamp and another circuit-controller opening and closing the circuit to both lamps, substantially as set forth.

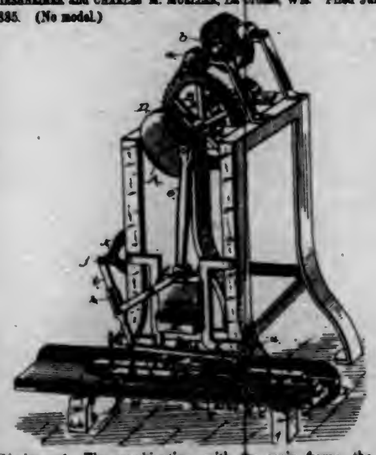
325,541. HARROW. ALBERT HIRSHHEIMER, La Crosse, Wis. Filed Feb. 27, 1885. (No model.)



Claim.—1. In a convertible rigid or flexible harrow, the combination, with the pivoted and perforated links D and E, of an L-shaped locking-bolt adapted to engage the perforations in said links, and an adjusting-nut, whereby the locking-bolt is held into or out of engagement with the links, substantially as described.

2. In a convertible rigid or flexible harrow, the link D, provided with the perforations *g* and *e'*, in combination with the link E, pivoted to the link D, and provided with a perforation, *e*, an L-shaped locking-bolt, F, and an adjusting-nut, *h*, whereby the arm *l* of the locking-bolt is held into or out of engagement with the perforations *e* and *e'*, substantially as and for the purpose herein described.

325,542. MACHINE FOR INSERTING HARROW-TEETH. ALBERT HIRSHHEIMER and CHARLES M. MUELLER, La Crosse, Wis. Filed June 16, 1885. (No model.)



Claim.—1. The combination, with the main frame, the shaft mounted on its top, a drive-wheel on the end of the shaft, and suitable gearing for operating said shaft, of the presser-die, a pitman connecting the presser-die with the drive-wheel, the slotted lever-arm pivoted to the frame, a pitman-rod connected to the presser-die and operating the lever-arm, and a pitman, *l*, adapted to engage a hook and cause the latter to advance the harrow-beam a distance about equal to the space between the harrow-teeth, substantially as herein described.

2. The main frame, the shaft journaled in its upper portion, the drive-wheel on the shaft, the presser-die, and a pitman-rod, *e*, connected to the drive-wheel and operating the presser-die, in combination with the pitman-rod *l*, the connections *g* and *i*, operated by the presser-die, the hook *p*, provided with a slot, *r*, a horizontally-sliding plate, to which the hook is secured, and a spring connected to an eye on the sliding plate and bearing against a pin, *s*, whereby the beam is advanced and the hook automatically placed in position to advance the next succeeding tooth, substantially as herein described.

3. The frame, the main shaft mounted in its upper portion, and the driving mechanism, in combination with the cam B, mounted upon the shaft, a compressor pivoted to the frame and having on its upper end a friction-roller adapted to engage the face of the cam, and a spring bearing against the upper arm of the compressor to force the lower end of the same from the beam, a horizontally-arranged table, and an adjustable binding-guide mounted on the table, substantially as and for the purpose described.

4. The horizontally-arranged table provided with a slot in which the beams move, and an adjustable guide mounted on the table and adapted to have a transverse movement thereon, in combination with the presser-die, a pitman connecting the presser-die with a drive-wheel on the main shaft, the main shaft, the cam mounted thereon, and a compressor operated by the cam, whereby the teeth are driven, the compressor held against the beam, and the beam advanced a distance about equal to the space between the teeth, substantially as herein described.

325,543. JAPANNING WOODEN CLOCK-CASES. EDWD. INGRAHAM, Bristol, Conn., assignor to the E. Ingraham Company, same place. Filed May 25, 1885. (No model.)



Claim.—1. As a new article of manufacture, a japanned wooden clock-case made from lumber japanned in the piece or in case-sections, substantially as set forth.

2. As a new article of manufacture, a japanned wooden clock-case made from lumber japanned in the piece or in case-sections and ornamented by engraving and carving and by gilding, substantially as set forth.

3. An improvement in the art of making japanned wooden clock-cases, consisting in japanning the lumber in the piece or in case-sections, and then working up and assembling the pieces or sections into cases, substantially as set forth.

4. An improvement in the art of making japanned wooden clock-cases, consisting in applying one or more coats of japan to the lumber in the piece or as made into case-sections and hardening each coat by baking, then smoothing the japanned surfaces by rubbing them, then applying one or more finishing-coats to the pieces or case-sections by immersion in a finishing-bath and hardening each coat by baking, then working up and assembling the pieces or case-sections into cases, and ornamenting and trimming the cases, substantially as set forth.

5. An improvement in the art of making japanned wooden clock-cases, consisting in japanning the lumber in the piece or in case-sections, then working up and assembling the pieces or case-sections into cases, and carving, engraving, and gilding the lumber either before or after being worked up and assembled, substantially as set forth.

6. An improvement in the art of making japanned wooden clock-cases, consisting in applying one or more coats of japan to the lumber in the piece or in case-sections and hardening each coat by baking, then smoothing the japanned surfaces by rubbing them, then engraving and carving the pieces or case-sections, then applying one or more finishing-coats by immersing them in a finishing-bath and hardening each coat by baking, then working up and assembling the pieces or case-sections into cases, and gilding the engraved and carved portions of the lumber and trimming the cases, substantially as set forth.

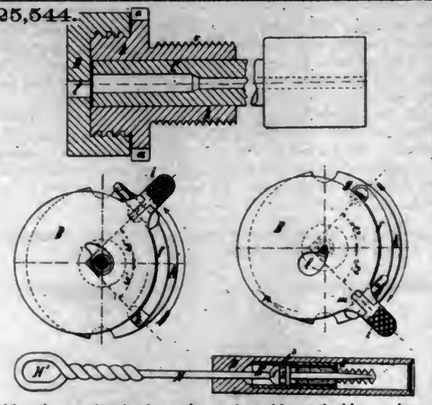
325,544. APPARATUS FOR FIRING ORDNANCE. JOHANN JIRC, Pola, Austria-Hungary. Filed Feb. 19, 1885. (No model.)

Claim.—1. In an igniter for ordnance, the combination, with an exterior metallic casing and an interior casing adapted to contain an igniting-charge, of a wire fastened to or formed integral with an enlargement or piston fitting within said interior casing and passing through a hole in the end of the exterior casing, whereby, when the igniting-charge is discharged, the said piston or enlargement will close the hole through which said wire passes, substantially as described.

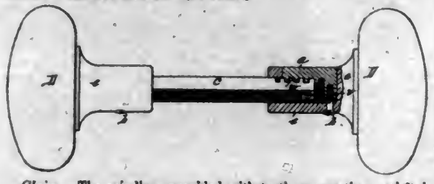
2. The combination of the exterior casing, D, and the interior casing, E, fitting within said exterior casing and provided with a bead, 3, with the wire H, and the enlargement or piston 1, having a groove, 2, all constructed and arranged substantially as described.

3. In a device for firing ordnance, the combination, with a gun having an opening in its breech for the introduction of an igniter, and a movable cap adapted to cover said opening, in which cap is a hole for the passage of the igniter-wire, of an igniter consisting of a casing adapted to contain the igniting-charge and a wire for exploding the same, all constructed and arranged substantially as described.

325,544.

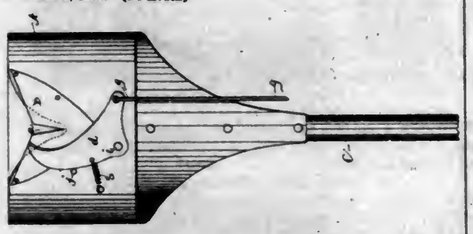


325,545. KNOB ATTACHMENT. ROBERT M. KEATING, Springfield, Mass. Filed Dec. 15, 1884. (No model.)



Claim.—The spindle *c*, provided with teeth or serrations *w* therein, the knob-shank *e*, having the collar *n* thereon, and having a portion of its side cut away, leaving about one-half of a longitudinal section thereof through its axis, and having its interior surface serrated, the cap *a*, having its interior surface serrated and provided with the tapped boss *v*, and the screw *b* passing through the knob-shank and entering said boss, whereby the cap is secured to the shank, all combined and operating substantially as set forth.

325,546. FRUIT-PICKER. EDMUND KIMBALL, Brunswick, N. Y. Filed Dec. 8, 1884. (No model.)



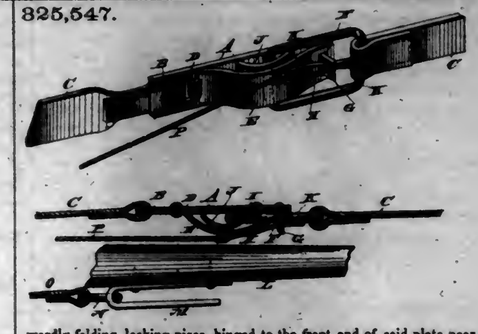
Claim.—In a fruit-picker, the detachable plate D, having the V-shaped notch *a*, provided with a cutting-edge, and inclines *m m*, leading to said notch, in combination with a correspondingly-notched flat side of the receptacle *a*, to which said plate is attached, as shown and described.

325,547. TUG AND HIP STRAP ATTACHMENT FOR HARNESS. JOHN J. LAIN, Brazos Point, Tex. Filed June 6, 1885. (No model.)

Claim.—1. In a harness attachment, the combination, with the traces, of a plate secured thereto, the front end of said plate being provided with a laterally-extending perforated lug or projection, a backwardly-folding locking-piece hinged to the front end of said plate near said projection, and adapted to engage with and retain the front end of the trace, a forwardly-folding locking-piece secured to the rear part of said plate, and provided with a slot in its free end adapted to engage with the perforated projection, a spring-key fitting in said projection, and means for withdrawing said key, substantially as and for the purpose set forth.

2. In a harness attachment, the combination, with a suitable detaching device, of a rearwardly-extending hook upon the side of each one of the thills, and a ring upon the lower end of the hip-strap, substantially as and for the purpose set forth.

325,547.



325,548. ONE-WHEELED VEHICLE. JOHN O. LOEB, Paterson, N. J. Filed Apr. 22, 1885. (No model.)



Claim.—In a unicycle or one-wheeled vehicle without spokes, the combination of the large wheel A, platform O, attachments K' and K, treadle-wheels E' and E², driving-wheels F', F², and D, belting T, idler-wheel H, steering apparatus B, spiral spring R, secured to rod B by collar U, and small steering-wheel N, substantially as shown and described and for the purpose specified.

325,549. GRAIN-CULTIVATOR. ALBERT LOWRY, Lisbon, Dak., assignor of one-half to Geo. N. Lamphere, Moorhead, Minn. Filed June 22, 1885. (No model.)

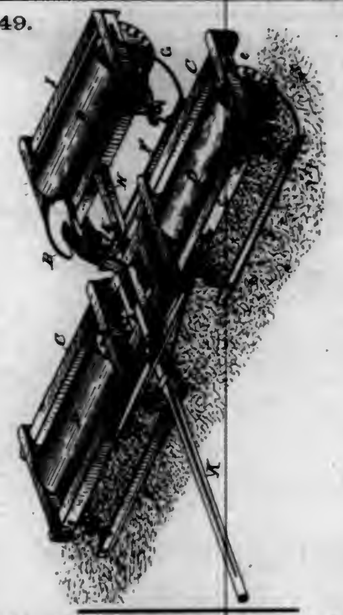
Claim.—1. A grain-cultivator provided with three land-rollers, two abreast and in front, and each roller operating independently of the others, and the third arranged centrally behind, and each roller being provided with an automatic operating-knife in front thereof, all arranged and combined to operate as set forth.

2. In a grain-cultivator, the rollers, each having escapement-teeth on their ends, in combination with the knives in front thereof, the fulcrumed lever having a knuckle-joint, as described, said lever serving to operate the knives when the rollers are propelled forward, and allowing a backward motion of the roller without operating the knives, as set forth and described.

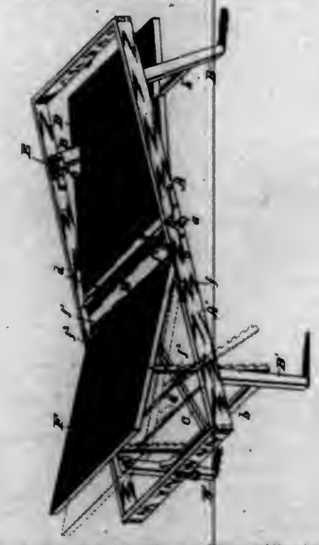
3. The combination, with the hereinbefore-described knives, of the rollers having pins *e*, the fulcrumed lever E, stirrup *i*, slotted stud *g*, hooks *f*, and bent spring G, as set forth.

4. The combination of the rollers, having pins at suitable intervals apart on their ends, the operating-spring, and knuckle-jointed lever, as set forth.

325,549.



325,550. EMBALMING-TABLE. CHARLES M. LUKENS, Springfield Ohio. Filed Sept. 27, 1884. (No model.)



Claim.—1. An embalming-table comprising a folding frame, A A', having folding legs B B', independent body-sections D and F, and means to adjust them vertically and longitudinally with relation to the frame, and an independently-adjustable seat, substantially as described.

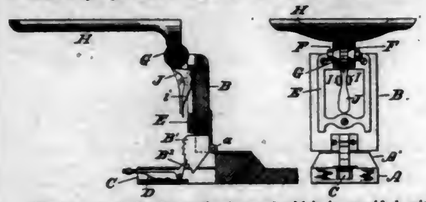
2. An embalming-table provided with a frame-work and seat, and with hinged body-supporting sections adapted to be inclined at different angles with relation to each other, and extended out to lengthen the support for the body, substantially as and for the purpose described.

3. The combination, with a sectional hinged frame-work, of a seat and body-supporting sections independently hinged by trunnions to said frame-work and adapted to be inclined at different angles with relation to each other, and extended out to lengthen the support for the body, and means to support such body-supporting sections in their adjusted positions, substantially as described.

4. The combination, with a seat and the frame-section A', provided with a series of journal bearings or notches in its side sills, as shown, of the body-supporting section F, provided with a shaft or trunnions to engage said journal bearings or notches with a toothed rack adapted to engage a rod extending from one side sill to the opposite sill of the frame-section A', and adapted to be inclined more or less, as desired, and to be extended out by shifting its shaft or trunnions from one of the said journal-notches to the other, substantially as described.

5. The combination, with an embalming-table provided with adjustable body-supporting sections, as described, of an independent sliding seat located between the two body-supporting sections and adapted to be adjusted in the direction of the length of the table to accommodate itself to the body resting thereon, said seat being concaved upon its upper face, substantially as and for the purpose described.

325,551. HEAD-REST FOR EMBALMING-TABLES. CHARLES M. LUKENS, Springfield, Ohio. Filed Oct. 3, 1884. (No model.)



Claim.—1. A head-rest the base of which is provided with a hinged adjustable head-rest-supporting standard provided with a ratchet-wheel or segment, in combination with a pawl or other equivalent to regulate the movement of the said supporting-standard and retain it in adjusted position, said standard being provided with a head-rest plate adjustably connected thereto, substantially as and for the purpose set forth.

2. The combination, with a head-rest having an oblong base provided with an adjustable head-rest-supporting standard and mechanism to regulate the adjustment of the same, of a head-rest plate of a shape conforming to the shape of a head, provided with a ratchet-wheel and adjustably connected to the supporting-standard, and a pawl connected with the said standard to engage the said ratchet-wheel to regulate and retain the head-rest plate in adjusted position, substantially as and for the purpose described.

3. The combination, in a head-rest for embalming-tables, of the base A, slotted at one end, and provided with a pawl and spring, the supporting-standard B, having the ratchet B' to be engaged by the said pawl, said standard being hinged to the base, as described, the open head-rest plate H, having a ratchet-wheel, G, and hinged thereby to a face-plate, E, connected to the said standard B, and the ratchet-engaging pawl J, and its spring pivoted to the plate E to engage the ratchet-wheel and regulate the movement of the head-rest plate, all as and for the purpose described.

325,552. FISH-POND TRUNK. WILLIAM S. MALLARD, Darien, Ga. Filed Apr. 3, 1885. (No model.)



Claim.—1. In a fish-pond trunk, the combination, with the dam, of the passages B and C, a water-wheel, transfer-gate E, and chamber D, provided with the partition *d*, substantially as described and shown, and for the purpose set forth.

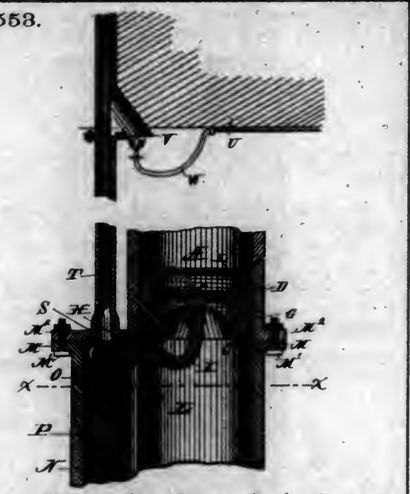
2. In a fish-pond trunk, the combination, with the dam, of the passages B and C, a water-wheel, transfer-gate E, chamber D, provided with the partition *d*, having the opening *d'* therein, and the low-water gate F, substantially as described and shown, and for the purpose set forth.

3. The combination, in a fish-pond trunk, of the grating G, with the chamber D, having partition *d*, the transfer-gate E, and passages B and C, substantially as described and shown.

4. The combination, in a fish-pond trunk of the grating G, the chamber D, provided with partition *d*, having opening *d'* therein, low-water gate F, passages B and C extending through the lower part of the dam, and the transfer-gate E, substantially as described and shown.

325,553. AUTOMATIC VALVE FOR SEWER-PIPES. THOMAS L. MCKEEN, Easton, Pa. Filed Feb. 3, 1885. (No model.)

325,553.



Claim.—The combination of the sewer-pipe, the valve-seat ring arranged in the same and having downward-extending lugs, the valve-carrying lever pivoted between the said lugs, and an apron or deflector hinged in a transverse position directly in front of the said lugs, and having concave or curved lower edge resting loosely upon the correspondingly-shaped upper surface of the valve-carrying lever, substantially as and for the purpose herein set forth.

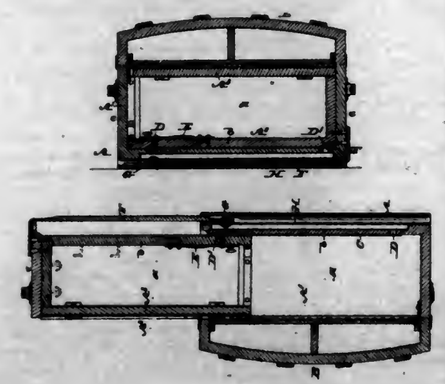
325,554. STEAM-RADIATOR. THOMAS L. MCKEEN, Easton, Pa. Filed Apr. 6, 1885. (No model.)



Claim.—1. In a valve for steam-radiators, the combination, with the radiating-pipe, of a perforated plug at its upper end forming a valve-seat, said plug having a shoulder near its central part and being screw-threaded above and below said shoulder, a rod adjustably secured to the bottom of said pipe, the upper end of which is provided with a valve fitting said perforated plug and having a post passing through said perforation, a cap fitting said plug above said shoulder and provided with a perforation at one side and a perforation in the top above said post on said rod, and means for closing said top perforation, substantially as and for the purpose set forth.

2. In a valve for steam-radiators, the combination, with the radiating-pipe provided with a perforated plug at its upper part, and a valve-rod adjustably secured to the bottom of said pipe, of a cap secured to the top of said perforated plug, having an opening in its side and an opening in the top, and a plug fitting in said top opening, substantially as and for the purpose set forth.

325,555. WARDROBE-TRUNK. OTTO H. MEURER and GEORGE N. KLEIN, Philadelphia, Pa. Filed July 2, 1885. (No model.)



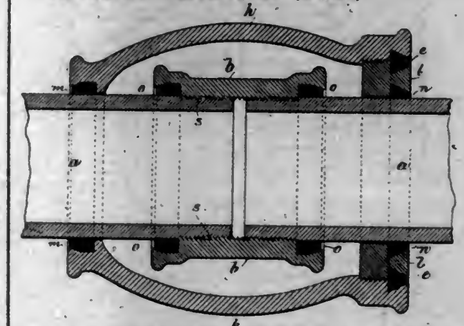
Claim.—1. A wardrobe-trunk composed of two sections, to the inner one of which is secured one end of a brace, the other end of said brace being provided with a stud, and the outer section having a slotted plate in which said stud is adapted to slide, substantially as described.

2. A wardrobe-trunk composed of two sections fitted to each other telescopically, the inner section being provided with a spring-bolt and a brace securely attached thereto, and having a stud working in a slotted plate secured to the outer section, substantially as described.

3. The sections $A' A^2$, in combination with the brace F and slotted plate H, substantially as and for the purpose set forth.

4. A trunk having a lid, B, and a body composed of two sections, one adapted to slide within the other, the inner section having a lid, A^3, whereby, when the body is extended, the lid B overlaps the lid A^3, the two lids forming the lid of the wardrobe, which is locked by the lock of the trunk, substantially as described.

325,556. JOINT FOR METAL TUBES. WILLIAM A. MILES, Copake Iron Works, N. Y. Filed Feb. 16, 1885. (No model.)



Claim.—1. The combination, with the pipes *a*, of a coupling into which the pipes are screwed, and in which coupling there are recesses around the pipes and within the end portions, and separate soft-metal rings slipped into the recesses and calked to make tight joints, substantially as set forth.

2. The combination, with the pipes *a* and coupling, of the safety-sleeve surrounding the coupling, the ring *l*, and the packing, substantially as set forth.

3. The combination, with the pipes *a*, of a coupling into which the pipes are screwed, said coupling having recesses at its ends around the plain portions of the pipes, and soft metal within the recesses calked around the said plain portions, substantially as set forth.

4. The coupling *b*, having internal recesses that are narrowest near the ends of the coupling, in combination with the pipes *a a*, screwed into such coupling, and the soft-metal packing introduced into such recesses and calked, said packing being held around the plain portion of the pipe by the coupling, substantially as set forth.

5. In combination with the pipes *a a* and a screw-coupling to connect such pipes together, a case surrounding the coupling, and a packing of lead or similar material within the coupling and around the pipe, substantially as specified.

325,557. SEPARATOR FOR SIZING ORE, &c. WILLIAM A. MILES, Copake Iron Works, N. Y. Filed Feb. 24, 1885. (No model.)

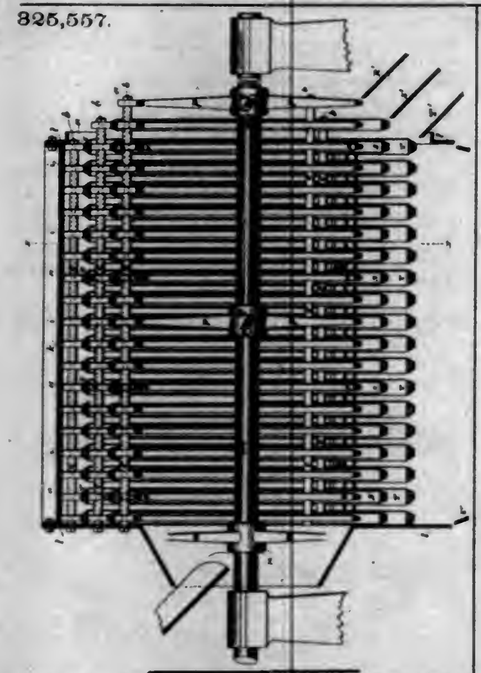
Claim.—1. The combination, in a separator for mineral substances, of a range of rings, each of which is broadest on the inner face and provided with external projections, bolts passing through such projections, and tubular washers around the bolts and between the projections, substantially as set forth.

2. The combination, in a separator for mineral substances, of a range of rings, each of which is broadest on the inner face and provided with external projections, bolts passing through such projections, tubular washers surrounding the bolts, the supporting-bars *k*, and end heads connecting such bars *k*, substantially as set forth.

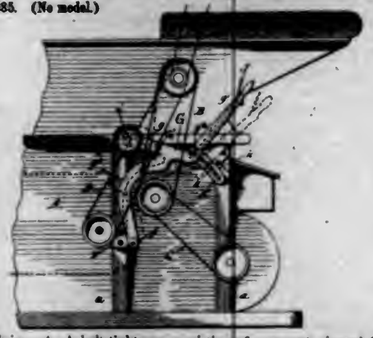
3. The combination, in a separator for mineral substances, of ranges of rings forming separator-cylinders, the inner rings being narrower than the next range of rings, projections connecting one ring with the next outer ring, bolts passing through the projections, and tubular washers surrounding the bolts and maintaining the proper distances between the respective rings, substantially as set forth.

4. The combination, in a separator, of ranges of rings forming separator-cylinders, the inner rings being narrower than the next range of rings, projections connecting one ring with the next outside of it, connecting-bolts, and tubular washers, diagonal arms *p*, hubs *q*, and shaft *m*, substantially as specified, whereby the diagonal arms cause the material to be moved along within the separator as it is revolved, substantially as set forth.

325,557.



325,558. BELT-TIGHTENER. ABRAHAM MILLER, Newark, Ohio, assignor to the Newark Machine Company, same place. Filed July 22, 1885. (No model.)



Claim.—1. A belt-tightener consisting of a curved pivoted frame, as G, carrying an idle-pulley, and having a spring-latch on its lever-arm, combined with a rack arranged upon the arc of a circle having the frame-pivot for a center, as set forth.

2. The combination, with the pivot-bracket F *f* and rack-bracket K *k*, having a slot, *k'*, arranged upon the arc of a circle having the pivot *f* for a center, of the curved frame G, having arms *g g* and pin or bolt g^3, and the idle-roller I, hung on the axle *i*, supported on the arm *g*, as specified.

3. The combination, with the belts B D, the bracket K, having rack *k*, the latch J, pivot *f*, and roller I, of the frame G, having offset G', arms *g g*, and curve g^3, all arranged and serving as and for the purpose set forth.

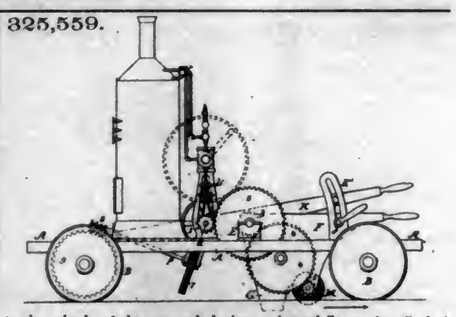
325,559. PORTABLE MILLING-MACHINE. DANIEL MILLS, Philadelphia, Pa., assignor to the Philadelphia Machinery Company, same place. Filed Jan. 30, 1885. (No model.)

Claim.—1. The combination of a car mounted on wheels adapted to traverse the track of a cable railway with an adjustable milling-tool and driving-gear carried by said car, substantially as set forth.

2. The combination of a car mounted on wheels adapted to traverse the track of a cable railway with an adjustable arm carrying a milling-tool and driving-gear, and a guide-finger adapted to enter the slot of the cable-tube, substantially as set forth.

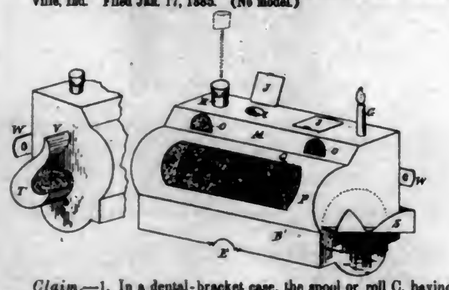
3. The combination of the car adapted to traverse the track of a cable railway and a motor and milling-tool mounted thereon with gearing for transmitting motion to the tool, gearing for transmitting motion

325,559.



to the wheels of the car, and devices, substantially as described, for throwing the latter gear into and out of action.

325,560. DENTAL-BRACKET CASE. JOSHUA H. MORRISON, Connersville, Ind. Filed Jan. 17, 1885. (No model.)



Claim.—1. In a dental-bracket case, the spool or roll C, having wound thereon absorbent material, as herein shown, in combination with the front face of the case, having thereon the serrated edge E, substantially in the manner and for the purposes described.

2. In a dental-bracket case, the spirit reservoir and lamp in the body of the case, in combination with the medicine-reservoirs I O, the lint-rack Q, and the rack or roll C, with the serrated front edge, E, substantially as herein shown.

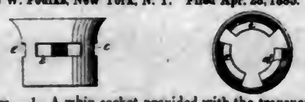
3. In a dental-bracket case, the combination of the spirit reservoir and lamp with the medicine-reservoirs I O, the lint-rack Q, the spool or reel C, having wound thereon absorbent material D, the serrated edge E, the receptacle S, the sponge-receptacle T, and the knife-edge E, the whole arranged as and for the purpose substantially as herein shown.

325,561. BOOT OR SHOE UPPER. THOMAS NALLY, Lynn, Mass. Filed June 23, 1885. (No model.)



Claim.—A quarter for a boot or shoe upper provided with corrugations at that portion of its edge which is drawn inwardly over the re-entrant curve at the under side of the last, as shown and described, for the purposes set forth.

325,562. WHIP-SOCKET. JAMES P. NIEMANN, Brooklyn, assignor to John W. Foulks, New York, N. Y. Filed Apr. 28, 1885. (No model.)



Claim.—1. A whip-socket provided with the transverse slots *c*, and a rubber adapted to be inserted from the outside to hold the whip in position, as described and specified.

2. A whip-socket provided with the transverse slots *c*, in combination with the rubber constructed, as described, with the inwardly-projecting pieces *e*, all as described, and for the purpose herein set forth.

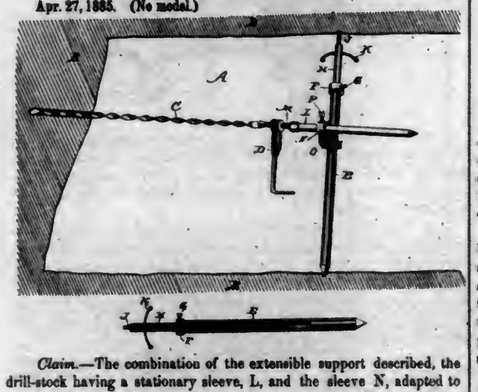
325,563. WHIP-SOCKET. JAMES P. NIEMANN, Brooklyn, assignor to John W. Foulks, New York, N. Y. Filed Apr. 28, 1885. (No model.)



Claim.—1. A whip-socket rubber constructed with the inwardly-projecting bead *a*, adapted to hold said rubber in position, and inverted cone *c*, as and for the purpose specified.

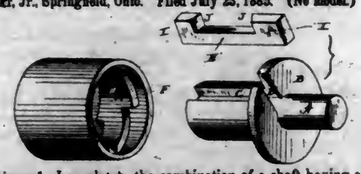
2. A whip-socket rubber constructed with the bead *a*, as described, and the inverted cone *c*, constructed to form, with the side *h*, the apex edge, as described, and for the purposes herein set forth.

325,564. SUPPORT FOR ROCK-DRILLS. GEORGE W. NIXON, Rockwood, assignor to himself and Wm. M. Nixon, Chattanooga, Tenn. Filed Apr. 27, 1885. (No model.)



Claim.—The combination of the extensible support described, the drill-stock having a stationary sleeve, L, and the sleeve N, adapted to encircle the sleeve L, and provided with the set-screw P and with the curved arm O, the latter adapted to partly encircle the said support, substantially as shown and described.

325,565. CLUTCHING DEVICE. CHARLES H. PAXSON and HENRY CROFT, Jr., Springfield, Ohio. Filed July 23, 1885. (No model.)



Claim.—1. In a clutch, the combination of a shaft having a longitudinal groove, a hub having shoulders at the ends of its bore formed with alternating raised and depressed portions and with alternating ratchet-teeth, and a gib sliding in the groove in the shaft and having lugs at its ends for sliding over the raised and depressed portions of the shoulders and for engaging the ratchet-teeth, as and for the purpose shown and set forth.

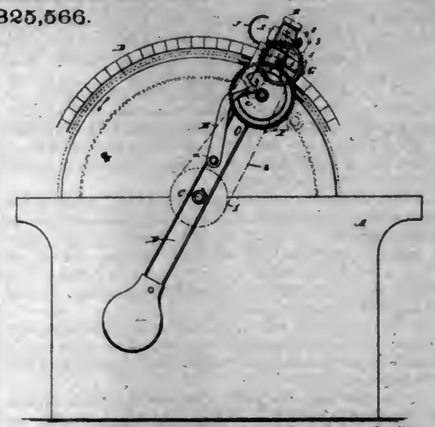
2. In a clutch, the combination of a shaft having a longitudinal groove, a hub having shoulders formed upon the inner side of the ends of its bore, said shoulders having ratchet-teeth corresponding with the spaces between the teeth upon the opposite shoulder, and a gib sliding in the groove in the shaft and having laterally-projecting lugs at its ends sliding with their beveled inner ends upon the faces of the ratchet-teeth and engaging the said teeth, as and for the purpose shown and set forth.

3. In a clutch, the combination of a shaft having a longitudinal groove and a collar having a notch or slot registering with the end of the groove, a hub having interior shoulders at the ends of its bore formed with alternating ratchet-teeth, and a gib sliding in the groove in the shaft and having lugs at its ends engaging the said ratchet-teeth and sliding over their inclined faces, and having its end engaging the slot in the collar upon the shaft, as and for the purpose shown and set forth.

325,566. STRIPPING MECHANISM FOR CARDING-MACHINES. JAMES C. POTTER, Lowell, Mass., assignor to Abel T. Atherton, same place. Filed Feb. 27, 1885. (No model.)

Brief.—To avoid injuring the teeth of the top-flat during the forward movement of the stripper-card, the top-flat is raised above the path of the stripper during the forward movement, and then lowered slightly, that it may be cleaned by the stripper during its return only. To properly clean the stripper, a doffing-bar having card-clothing on its under face is attached to the weight-levers and extends across the machine, so that the stripper is cleaned in its forward movement.

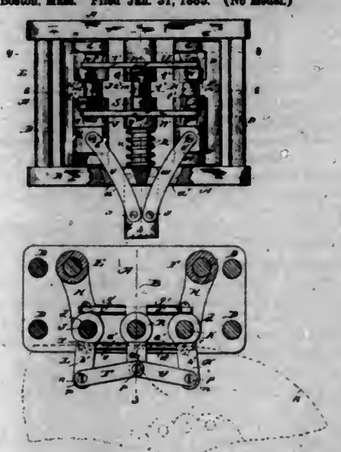
325,566.



Claim.—1. The combination of the top-flats, the top-flat lifter, the stripper-card, and mechanism for actuating said card and lifter, arranged and operating in the manner hereinbefore set forth, so that the top-flat shall be raised above and out of contact with the stripper-card during the forward movement of the latter, and shall have contact with the same only during the return movement of said card.

2. The combination of the weighted lever, the stripping or doffing bar carried by the same, the stripper-card, its lever and actuating mechanism and the top-flat mechanism, arranged and operating, substantially as described, to lift and hold the top-flat above and out of contact with the stripper-card during the forward movement of the latter, and then to lower said flat sufficiently to bring it into contact with the said stripper-card during the return movement, the combination being and acting substantially as hereinbefore set forth.

325,567. MACHINE FOR STRETCHING UPPERS OF BOOTS OR SHOES. ALBERT F. PRESTON, Lynn, assignor to the Preston Machine Company, Boston, Mass. Filed Jan. 31, 1885. (No model.)



Claim.—1. In a machine for stretching the upper of a boot or shoe, two series of jaws adapted to grasp and hold between them the boot or shoe upper, each outer jaw of each series being adapted by mechanism, substantially as described, to move laterally in a circular direction from and toward the middle jaw of its series, in combination with a rod or arm suitably connected to said jaws for operation thereof, substantially as described.

2. In a machine for stretching the upper of a boot or shoe, two series of jaws adapted to grasp and hold between them the boot or shoe upper, each outer jaw of each series being adapted by mechanism, substantially as described, to swing or turn laterally upon a pivot or center at one end from and toward the middle jaw of its series, and at the other end to swing or turn upon a swinging arm, in combination with a rod or arm connected to said jaws for operation thereof, substantially as described.

3. In a machine for stretching the upper of a boot or shoe, two series of jaws adapted to grasp and hold between them the boot or shoe upper, each outer jaw of each series being adapted by mechanism, substantially as described, to swing or swivel laterally from and toward the

middle jaw of its series upon a pivot or center at one end on a bar or arm connected to said middle jaw, and at its other end to swing or swivel upon a swinging arm, in combination with a rod or arm connected to said jaws, for operation thereof, substantially as described.

4. In a machine for stretching the upper of a boot or shoe, the combination, with two series of jaws, the jaws of each series being connected together, and the outer jaws of each series being connected to and arranged to turn upon swinging arms G H, of a push-rod, Z, connected to said swinging arms, and a spring, *u*, for operation substantially as and for the purpose specified.

5. In a machine for stretching the upper of a boot or shoe, in combination with two series of jaws, the jaws of each series being connected together, respectively, by arms T U and V W, and the outer jaws of each series being connected to and arranged to turn upon swinging arms G H, a push-rod, Z, connected by arms *v w c' d'* to collars X Y, respectively, upon said swinging arms, and having a spring, *u*, substantially as and for the purpose specified.

6. The combination, with a jaw, S, of a jaw, Q, having a rib or projection, *t'*, said jaws being suitably constructed and arranged to clamp and hold between them the upper of a boot or shoe, substantially as and for the purpose specified.

7. The combination of a jaw, S, with a jaw, Q, having a longitudinal central rib or projection, *t'*, said jaws being suitably connected and arranged to clamp and hold between them the upper of a boot or shoe, substantially as and for the purpose specified.

8. The combination, with a jaw, S, of a jaw, Q, having a longitudinal central groove or shoulder, *v'*, a rib, *t'*, having a shoulder, *u'*, to fit said groove, and a spring, *z'*, said jaws being suitably constructed and arranged to clamp and hold between them the upper of a boot or shoe, substantially as and for the purpose specified.

325,568. STEM-WINDING WATCH. HERMAN A. T. REINECKE, Thomaston, Conn., assignor to the Seth Thomas Clock Company, same place. Filed Mar. 6, 1885. (No model.)



Claim.—1. A spring which is confined at or near its longitudinal center within a pivoted vibratable bearing, and at one end bears upon and holds a click in engagement with the winding-wheel, and at its opposite end bears upon the winding-yoke and tends to hold the same at one limit of its motion, substantially as and for the purpose specified.

2. A combined click-spring and winding-yoke spring, which at or near its longitudinal center is engaged by and confined within the longitudinally-split end of a pivoted vibratable stud, substantially as and for the purpose shown.

3. A combined click-spring and winding-yoke spring, which at or near its longitudinal center is secured to or within a pivoted vibratable stud, substantially as and for the purpose set forth.

4. As an improvement in stem-winding and hands-setting movements, a bridge which operates to hold in position the winding or ratchet wheel, the click, and the click and yoke spring, and is itself held in position upon and connected with the movement-plate by means of a single screw, substantially as and for the purpose specified.

5. As an improvement in stem-winding and hands-setting movements, a yoke which operates to hold in position the winding or ratchet wheel, the click, and the click-spring, and it is itself held in position upon and connected with the movement-plate by means of a single screw, substantially as and for the purpose shown.

6. The combination of the bridge, the winding or ratchet wheel, the click, and the combined click-spring and yoke-spring, substantially as and for the purpose set forth.

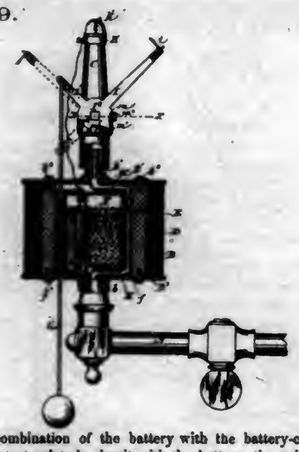
325,569. DEVICE FOR LIGHTING GAS BY ELECTRICITY. FRANCIS H. ROOT, Hyde Park, Ill. Filed Dec. 27, 1884. (No model.)

Claim.—1. An electric generator for gas-lighters, consisting of a spark-coil arranged to encircle a galvanic battery and connected in circuit therewith, substantially as described.

2. In an electric gas-lighter, the combination, with the spark-coil provided with means for attachment to the burner and fixtures, of a battery inclosed by and connected in circuit with the spark-coil, substantially as described.

3. A gas-fixture connected with a burner and provided with a casing, such as described, combined with a spark-coil and battery inclosed one within the other, both inclosed by and within the said casing and connected in circuit with the circuit-breaker of a gas-lighting device, substantially as described.

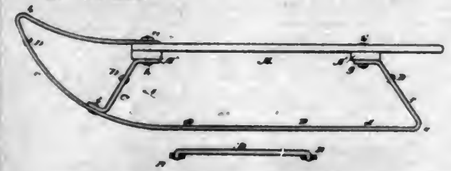
325,569.



4. The combination of the battery with the battery-casing, the burner, the contact-points in circuit with the battery, the swinging arm carrying one of said contact-points, and a pull-bar arranged to pass through the battery-casing and connected with the swinging arm, substantially as described.

5. The combination of the burner with the fixed and swinging electrodes connected in circuit, the stop-cock, the electrode-lever secured to the stop-cock to oscillate therewith, provided with cam-notches *m m'*, extending to and terminating in a common ridge, and a spring-catch, m^2, adapted to seat itself in one or the other of said cam-notches when the lever is at the end of its movement in one direction or the other, substantially as and for the purpose described.

325,570. SLED. JAMES W. RUSSELL, Ellenville, N. Y. Filed Jan. 9, 1885. (No model.)

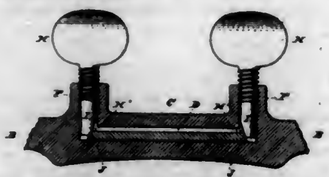


Claim.—1. In a sled, the cross-bars D, constructed with ends turned at right angles, passed through holes in the runners or braces, and riveted down thereupon, thereby forming a light and strong bracing-connection, substantially as set forth.

2. A sled consisting of the combination of board A, runners B B, their front ends fastened to the front of said board and their rear ends fastened to the rear portions thereof, and cross-bars D D, connecting them together at front and rear, substantially as set forth.

3. A sled consisting of the combination of board A, runners B B, their front ends fastened to said board, the diagonal braces C C, their lower ends riveted to the runners and their upper ends fastened to said board, and the cross-bar D, connecting said braces together and stiffening them against lateral strains, substantially as set forth.

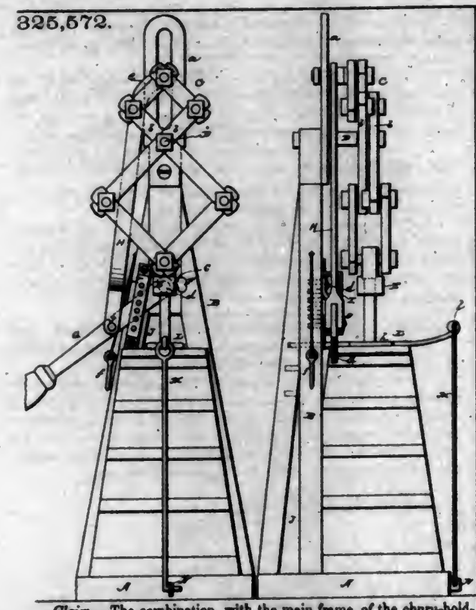
325,571. SPOKESHAVE. CHARLES W. SMITH, Westerly, R. I. Filed June 27, 1885. (No model.)



Claim.—The combination, with the tool-handle having the throat and the hollow studs having threaded upper portions, and the open lower portions communicating with the throat of tool-handle, of the keys I I, provided with longitudinally-beveled faces, and the set-screws for operating the keys to engage the lateral edges of the cutter, substantially as specified.

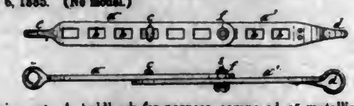
325,572. CHURN. JOHN E. SMITH, Charleston, Ark. Filed Aug. 22, 1884. (No model.)

325,572.



Claim.—The combination, with the main frame, of the churn-holding device having the central vertical aperture for the passage of the dasher-rod, the pivoted hook-arm, and means for connecting the same to the base, and the main frame having recesses for the inner end of the holding device, substantially as specified.

325,573. HOLDBACK. CHARLES SNYDER, Fair Mount, N. Y. Filed July 6, 1885. (No model.)



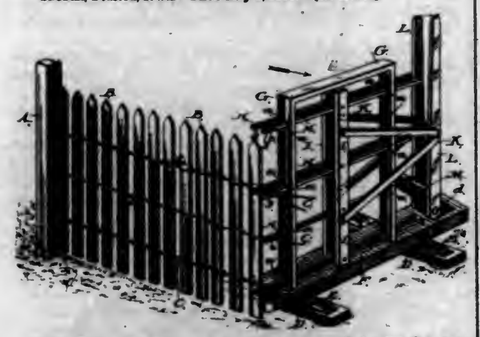
Claim.—1. A holdback for harness, composed of metallic straps spliced together adjustably lengthwise, as set forth.

2. The combination of the metallic strap *a*, provided with perforations *b b*, the metallic strap *a'*, provided with the T-lug *c*, and the clamping-screw *s*, substantially as described and shown.

3. In combination with the metallic strap *a*, the metallic strap *a'*, spliced adjustably on the strap *a*, and the snap-hook *d*, formed integral with the end of the strap *a'*, substantially as described and shown.

4. In combination with the breeching of the harness and the hook or staple *t* on the thills, the metallic strap *a*, provided with the eye *e*, the metallic strap *a'*, spliced adjustably on the strap *a*, and the snap-hook *d* on the end of the strap *a'*, substantially as described and shown.

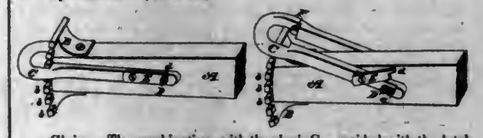
325,574. MACHINE FOR BUILDING PICKET FENCES. JAMES B. SNYDER, Bedford, Iowa. Filed July 6, 1885. (No model.)



Claim.—1. The combination, with the frame G, having the openings *a*, of the double series of parallel oppositely-moving arms H, provided with slots *e* and *g*, the posts I, to which the arms are attached, and the levers for moving the said arms, substantially as herein described.

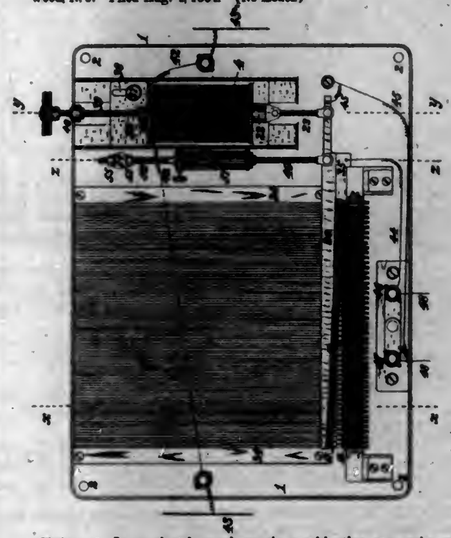
2. The combination of the frame G, the oppositely-moving arms moving within and guided by the frame, and provided with the slots *e* and *g*, the base-timber F, the transversely-placed wheeled trucks, the levers L, moving in opposite directions, the connecting-arms, and the sliding posts I, to which the arms H are connected, substantially as herein described.

325,575. PLOW-CLEVIS. WALDO V. SNYDER, Canton, Ohio. Filed Apr. 28, 1885. (No model.)



Claim.—The combination, with the clevis C, provided with the latch E and the slots *a*, of the cogs *b* and the projection F, substantially as and for the purpose set forth.

325,576. ELECTRIC REGULATOR. WILLIAM STANLEY, Jr., Englewood, N. J. Filed Aug. 4, 1884. (No model.)



Claim.—1. In an electric regulator, the combination of a main regulating-solenoid, a core subject to the attraction of said solenoid, a switch-lever coupled to said core and adapted to make contact with members of a series of plates connected to resistance-coil at different points in its length, an auxiliary solenoid adapted to be connected to the same terminals as the main solenoid, a core subject to the attraction of said auxiliary solenoid, a pair of contact-plates insulated upon said auxiliary-solenoid core and connected with a supplemental winding upon the main solenoid, and pairs of spring contact-plates located above and below the contact-plates of the auxiliary-solenoid core, and connected alternately with opposite terminals of the auxiliary solenoid, substantially as set forth.

2. The combination of a supporting plate or frame, a resistance-coil wound upon a non-conducting support fixed thereto, a series of contact-plates connected to said coil at different points in its length, a regulating-solenoid connected adjustably to the supporting-frame, an adjusting-screw for varying the position of the solenoid relatively to the contact-plates, and a switch-lever coupled to the core of the solenoid and adapted to make and break contact with successive members of the series of contact-plates by the movements of said core, substantially as set forth.

3. The combination of a supporting frame or plate, a resistance-coil, and a series of contact-plates connected thereto at different points in its length, said coil and plates being fixed upon the supporting-frame, a regulating-solenoid and dash-pot connected adjustably to said frame, and a switch-lever coupled to the core of the solenoid and the piston or plunger of the dash-pot, substantially as set forth.

325,577. GATE-LATCH. WASHINGTON I. STOVALL, Winona, Miss. Filed Jan. 30, 1885. (No model.)

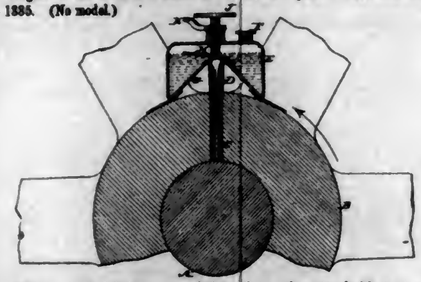
Claim.—1. The combination, with a casing exteriorly threaded at its inner end, and a spring-actuated bolt sliding therein, of a cap or sleeve adapted to be rigidly attached to the inner end of said bolt, said cap being exteriorly threaded at its inner end, and a nut fitted on the threaded inner end of the casing and adapted to engage the threaded inner end of the cap or sleeve, substantially as set forth.

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2. The combination, with a casing and a spring-actuated bolt sliding therein, of a cap or sleeve adapted to be rigidly attached to the inner end of said bolt, an eye or loop formed integral with said cap or sleeve, and an arm or lever having a hooked end to engage said eye or loop, as set forth.

325,578. LUBRICATOR. WILLIAM Y. THOMAS, West Pittston, Pa., assignor of one-third to Willard B. Culver, same place. Filed Feb. 14, 1885. (No model.)



Claim.—1. A lubricator consisting of a casing attachable to a rotating device having a deflector within the same, whereby, by centrifugal action, the oil is directed by the deflector to the discharge-pipe or outlet of the casing, and thus to the journal or shaft to be lubricated, substantially as and for the purpose set forth.

2. A lubricator having a casing which is formed with a bottom bent upwardly, and provided with a discharge-tube communicating with said casing at the upper end of said bottom, substantially as and for the purpose set forth.

3. A lubricator having a casing provided with a discharge-pipe and a deflector within the casing overhanging the pipe, substantially as and for the purpose set forth.

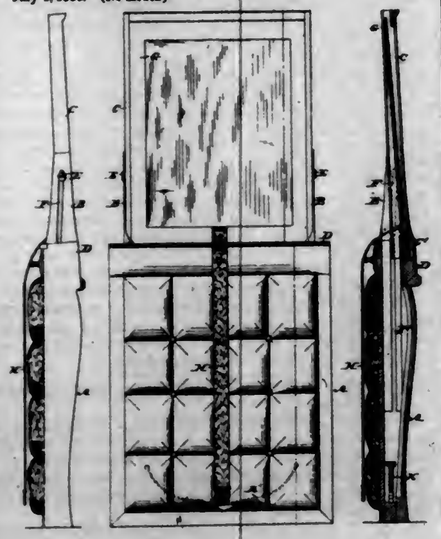
4. A lubricator having a discharge-pipe, a movable deflector within the same, and an adjusting-screw for said deflector, substantially as and for the purpose set forth.

5. In a lubricator, a casing having a discharge-tube, a deflector over the entrance end of said tube, an adjusting-screw for said deflector, and a jam-nut for said screw, substantially as and for the purpose set forth.

325,579. SOLDERING-FLUID. CHARLES N. WATTS, Medford, Mass. Filed Sept. 1, 1884. (No specimens.)

Claim.—A soldering-fluid composed of glycerine and lactic acid, as set forth.

325,580. CARRIAGE-DOOR. PETER WEIMAR, Philadelphia, Pa. Filed July 1, 1885. (No model.)



Claim.—1. The carriage-door A, having side grooves, F', in combination with folding slotted irons B and frame C, having screws E, substantially as described.

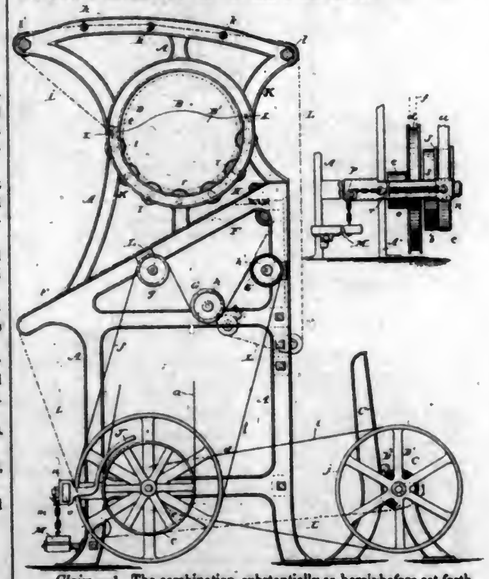
2. The frame C, having side screws, E, and bottom bar, C', the latter having an inner molding, in combination with sliding sash G, fitted in said frame, slotted irons B, hinged to the body A, and body A, having side grooves, F', substantially as and for the purpose set forth.

3. A carriage-door, in combination with a rising and falling frame fitted to said door, a rising and falling sash fitted to said frame, and folding slotted irons hinged to said door and connected with said frame, substantially as and for the purpose set forth.

4. The recessed body A, having side grooves, F', and buffers K, secured in the bottom of the recess of said body, in combination with slotted irons B, hinged to said body, frame C, having side screws working in said slots and grooves, and sash G, all of said parts being arranged, combined, and operating as and for the purpose set forth.

325,581. CLOTH INSPECTING AND TRIMMING MACHINE. JAMES H. WILSON, Lowell, Mass., assignor to the Whitehead & Atherton Machine Company, same place. Filed Oct. 17, 1884. (No model.)

Brief.—The cloth-creel is placed over the inspecting-table and the trimming-brushes under the same, so that the dirt from the brushes will not be thrown upon the cloth. A belt-shipping device is provided, so arranged that when the foot of the workman is removed from it the belt will be shifted from the tight to the loose pulley, stopping the machine. The constant attendance of the workman is thus insured.



Claim.—1. The combination, substantially as hereinbefore set forth, of the inspecting-table, the cloth-holding creel placed above the table, and the rotating winding-up roll whereby the cloth from the creel is pulled through the machine over the inspecting-table and wound up in roll form.

2. The combination of the inspecting-table, the cloth-holding creel above the table, the rotating winding-up roll, and the trimming-brushes, substantially as and for the purposes hereinbefore set forth.

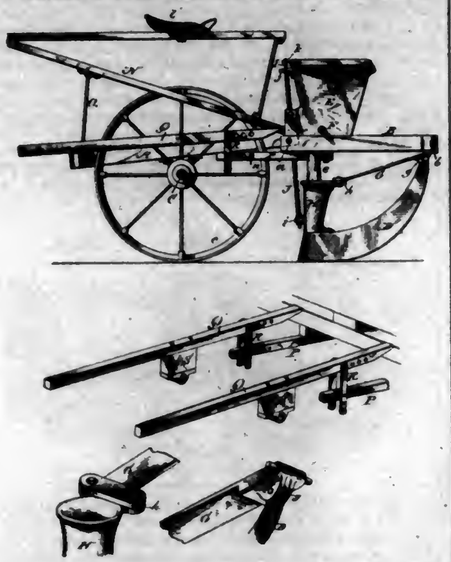
3. The combination of the inspecting-table, the cloth-creel, the power-driven winding-up roll, and mechanism for actuating the same, the fast and loose pulleys and driving-belt, the spring-controlled belt-shipper normally holding the driving-belt on the loose pulley, and the treadle or its equivalent for moving the shipper in a direction to shift the belt from the loose to the fast pulley, substantially as and for the purposes hereinbefore set forth.

325,582. MACHINE FOR THRASHING GRAIN. APOLINAR ARRIETA, Pamplona, Spain. Filed July 11, 1884. Renewed July 14, 1885. (No model.)



Claim.—An improved machine for thrashing grain, comprising a frame, a number of shafts journaled therein, and circular saws mounted thereon, said shafts being adapted to revolve as the machine is drawn over the grain spread upon a thrashing-floor, substantially as described.

325,583. GRAIN-DRILL. JOHN L. ASHURST, Havana, Ill., assignor to Lewis B. Ashurst, same place. Filed June 2, 1885. (No model.)



Claim.—1. In a grain-drill, the combination, with the frame thereof formed in two parts hinged together, of a plate-bar, boot, and runner, the latter being pivoted at its upper end to said bar, which in turn is pivoted or hinged to the front end of the frame and connected to the boot, substantially as and for the purpose set forth.

2. In a grain-drill, a hopper yieldingly supported by the frame thereof, a runner pivotally connected at its upper end to said frame, a boot connected to the runner, in combination with the means described for raising and lowering the runner, substantially as and for the purpose specified.

3. In a grain-drill, the combination of a frame formed of two hinged sections, having at its front ends downwardly-depending lugs, a plate-bar pivoted at its forward end between said lugs, a boot connected to one end of the bar and provided with a runner, the latter being pivoted between ears or lugs depending from the bar, substantially as and for the purpose described.

4. A grain-drill having its frame formed in two hinged sections, a hopper supported thereby, a boot, and a runner pivotally connected at its upper end to a plate-bar, the latter being connected at one end to the boot and at its opposite end pivoted to the forward end of the frame, a rod connecting said boot and hopper, a spring coiled around the rod, and means for regulating its tension, substantially as and for the purpose set forth.

5. In a grain-drill, the combination of a frame formed in two hinged sections, a runner and boot connected together, a plate-bar pivoted to the forward end of the frame and also pivoted to the runner and connected at its rear end to the boot, and an operating-lever controlled by the driver for raising and lowering the front portion thereof, substantially as and for the purpose specified.

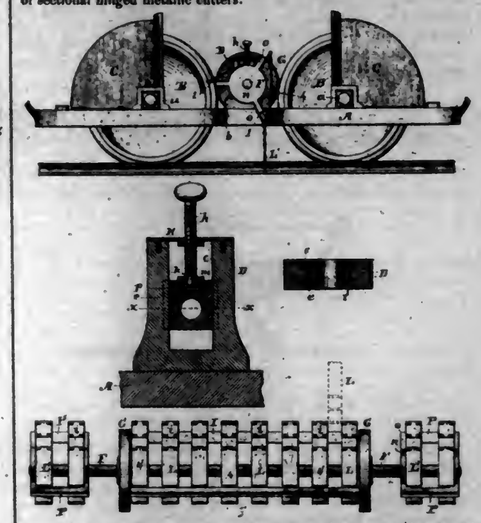
6. In a grain-drill, the frame thereof formed in two hinged sections, in combination with a treadle or foot-lever hinged on the axle of the press-wheels, the forward ends having perforations therein, an adjustable link connecting the treadle with the perforated end of bars forming extensions to the forward section of the frame, substantially as and for the purpose set forth.

7. In a grain-drill, a frame formed in two hinged sections, one of said sections carrying the hopper, the grain-boot and runners connected thereto and together by a pivoted plate-bar, and a rearwardly-extending perforated bar, the other hinged section having a treadle or foot-lever, perforated at its forward end, connected to the perforated bar by an adjustable link, and a sliding seat to operate in connection with the treadle or foot-lever, substantially as and for the purpose specified.

8. In a grain-drill, the combination, with the frame and hopper supported thereby, and the boot and runner pivotally connected thereto, of a lug on said hopper and a lug integral with said shoe, a rod passed through said lugs, and adjusting-nuts, one on either side of the lug on the shoe, as and for the purpose specified.

325,584. MACHINE FOR CUTTING GRASS AND WEEDS FROM RAILROAD-TRACKS. WILLIAM H. BARTELS, Carthage, Ill., assignor of two-thirds to George Edmunds, Carthage, Ill., and Gus Vote, Fairfield, Iowa. Filed Feb. 9, 1885. (No model.)

Brief.—Upon a shaft adjustably mounted in the truck-frame and operated from the truck-wheels by connecting friction-wheels is a series of sectional hinged metallic cutters.



Claim.—1. A grass and weed cutting machine comprising the following instrumentalities: a truck-frame, A, having the supporting-bases *b*, car-wheels B, uprights D, shaft F, wheels G, bars I, hinged plates L L, disks *n*, boxes *e*, screw-bolts *k*, and bars H, substantially as and for the purpose described.

2. The combination, with a car-truck frame and wheels, of the shaft F, friction-wheels G, disks *n*, and plates L L', as and for the purpose set forth.

3. A cylinder or drum for grass and weed cutting machines, comprising the shaft F, the wheels G, the bars I, and the hinged cutting-plates L, substantially as and for the purpose described.

4. The combination, in a grass and weed cutting machine, of the frame A, the wheels B, the plate carrying cylinder E, and hinged cutting-plates, substantially as and for the purpose described.

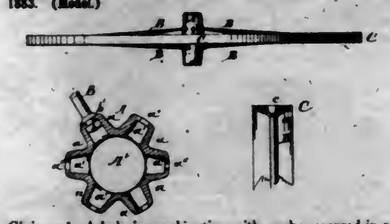
5. In a machine for cutting grass and weeds from railroad-tracks, the combination, with the truck-frame A, the supporting-bases *b*, the uprights D, and the car-wheels B, of the shaft F, adjustable boxes *e*, friction-wheels G, bars I, and suitable cutting-plates attached to said bars, as and for the purpose set forth.

6. A cutter-cylinder for machines for cutting grass and weeds from railroad-tracks, comprising a shaft, friction-wheels, transverse bars secured to said wheels, sectional cutting-plates hinged together and secured to said bars, disks on each end of said shaft having projections, rods secured to the projections, and cutting-plates secured to said rods, substantially as set forth.

7. The combination, with a railroad-car truck and wheels, of a cylinder carrying hinged metallic cutters, as and for the purpose set forth.

8. The combination, with a car truck and wheels, of a cutting-cylinder and means for operating said cylinder by direct connection with the car-wheels, substantially as and for the purpose described.

325,585. WHEEL. WILLIAM P. BETTENDORF, Peru, Ill., assignor to himself and the Peru City Plow Company, same place. Filed Aug. 24, 1883. (Model.)



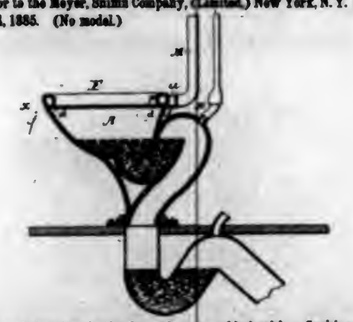
Claim.—1. A hub, in combination with spokes secured in position by a rivet-head within the interior of the hub, and a flange or bead on the exterior, substantially as described.

2. In a wheel, the combination of the hub constructed with tubular projections *a*, with the spokes B, secured in the projections by inner and outer flanges, between which the walls of the projections closely fit, substantially as described.

325,586. MEDICAL COMPOUND. JOHN T. BUNTING, Chicago, Ill. Filed Feb. 27, 1884. (No specimens.)

Claim.—A medicinal compound for the purposes mentioned, consisting of the juice or sap of the white-oak tree, the juice or sap of the blackberry-vine, extract of Jamaica ginger, spirits of camphor, alcohol or equivalent spirituous liquor, and sugar, substantially in the proportions specified.

325,587. WATER-CLOSET. WILLIAM BUNTING, Jr., Boston, Mass., assignor to the Meyer, Sniffin Company, (Limited,) New York, N. Y. Filed Feb. 24, 1885. (No model.)



Claim.—A bowl or basin formed or provided with a flushing-rim, F, having a perforated bottom and a depending lip-like extension at *d*, whereby a final slit-like discharge-orifice, *s*, is formed below the series of discharge-apertures in the bottom of the hollow rim F, all substantially as and for the purposes set forth.

325,588. APPARATUS FOR RAISING WATER. CUTHBERT BURNETT, Hartlepool, County of Durham, England. Filed Apr. 17, 1885. (No model.) Patented in England Oct. 6, 1883, No. 4,755; in France May 15, 1884, No. 162,136, and in Belgium May 24, 1884, No. 65,262.



Claim.—1. The combination, in a steam-vacuum pump, of the valves *h*, the steam-pipe G, vessel A, and connections, the float *t*, stem *t'*, passing through the tubular stem of the lower valve *h*, and the valve t^2 at the upper end of the stem, substantially as set forth.

2. The combination, in a steam-vacuum pump, of the valves *h*, the steam-pipe G, vessel A, and connections, the float *t*, stem *t'*, passing through the tubular stem of the lower valve *h*, the valve t^2 at the upper end of the stem, and the piston *h'* upon the stem of the upper valve *h*, substantially as set forth.

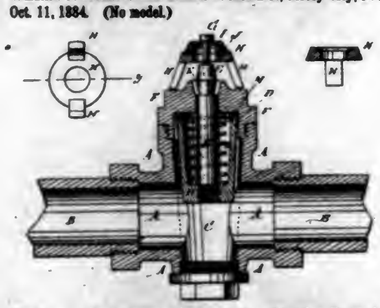
325,589. NUT-LOCK. AUGUSTUS M. CARD, Buffalo, N. Y., assignor of one-half to James A. Skelton, same place. Filed Mar. 23, 1885. (No model.)



Claim.—1. In a nut-lock, the combination of a nut having an annular recess around its threaded bore, with a spring-washer open at one side, having teeth upon its under side, and having ratchet-teeth upon its outer edge facing with their oblique sides against the direction of revolution of the nut when it is screwed home, as and for the purpose shown and set forth.

2. In a nut-lock, the combination of a nut having an annular recess around its threaded bore provided with an outwardly-inclined bottom, with a spring-washer open at one side, having its upper side inclined inward, provided with ratchet-teeth in its edge facing with their inclined sides against the direction in which the nut is screwed home, and provided with teeth upon its under side, as and for the purpose shown and set forth.

325,590. AUTOMATIC STOP-VALVE FOR GAS AND OIL PIPES. WILLIAM F. COSGROVE and ERNEST F. JENNINGS, Jersey City, N. J. Filed Oct. 11, 1884. (No model.)



Claim.—1. In an automatic stop-valve, the plug D, made hollow, and with a central stem, substantially as herein shown and described, whereby the said plug is adapted to receive a spring, to insure its prompt descent when released, said stem being connected to the fusible button I, as set forth.

2. In an automatic stop-valve, the combination, with the screw-cap F, having the upper part of its aperture flared, of the plug-stem E, having its upper part recessed and flared, substantially as herein shown and described, whereby a recess will be formed to receive a soft cement, to prevent leakage should the fusible button bend and allow the plug to have a slight descent, as set forth.

3. In an automatic stop-valve, the combination, with the screw-cap F, the plug-stem E, the screw G, and the fusible button I, of the separate yoke H, substantially as herein shown and described, whereby the said fusible button will be raised away from the said screw-cap, as set forth.

4. In an automatic stop-valve, the fusible button I, made, substantially as herein shown and described, with its lower side recessed, whereby the said fusible button will have the necessary strength to support the plug, and will present a large surface to the heat with a comparatively small amount of metal, as set forth.

325,591. SPRING-ARMORED HOSE-PIPE. JOSEPH A. COULFAUS, Brooklyn, N. Y., assignor to himself and Daniel M. Rollins, same place, and Philemon R. Day, New York, N. Y. Filed June 19, 1884. (No model.)

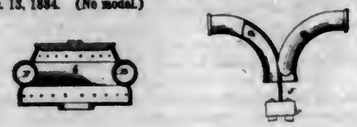


Claim.—1. As an improved article of manufacture, a flexible pipe made with a sphincter-spring armor, substantially as shown and described.

2. The combination, with a flexible pipe, of a sphincter-spring armor, substantially as shown and described.

3. The combination, with a flexible pipe, of a spiral-spring armor of smaller interior diameter than the exterior of the pipe, substantially as described, whereby said spring will press into and strengthen said pipe and render the use of fastening attachments for said armor unnecessary, substantially as described.

325,592. VAPOR-BURNER STOVE. ZEBULON DAVIS, Cleveland, Ohio, assignor to the Standard Lighting Company, same place. Filed Dec. 13, 1884. (No model.)

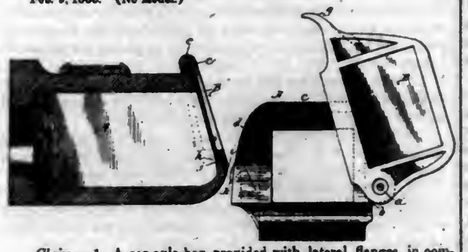


Claim.—1. A vapor-burner, *b*, provided with two horizontal rows of apertures, and having a tube, B, formed therewith, and in between the two rows of apertures, the tube being formed partly within and partly without the burner, substantially as shown.

2. The combination of a generating-burner, a suitable support therefor, a pipe, B', for conducting the vapor, with the conducting-pipes, having their inner ends turned at an angle to the length of the pipe, and the needle-valves located at the ends of the pipes, substantially as set forth.

3. The combination of a generating-burner, a suitable support therefor, a pipe, B', for conducting the vapor, with the conducting-pipes, having their inner ends turned at an angle, the needle-valves located outside of and beyond the ends of the pipes, and a suitable means at the inner ends of the pipes for the purpose of preventing the flame from one burner from interfering with the other burners, substantially as specified.

325,593. CAR-AXLE BOX. CORNELIUS DECKER, Pullman, Ill. Filed Feb. 9, 1885. (No model.)



Claim.—1. A car-axle box provided with lateral flanges, in combination with a cover pivoted to the box, and provided with flanges overlapping and embracing said lateral flanges, substantially as described.

2. A car-axle box provided with lateral flanges having wedge-shaped edges, in combination with a cover pivoted to the box, and provided with flanges conforming to and overlapping said side flanges, substantially as described.

3. A car-axle box provided with lateral flanges the edges of which are both curved and wedge-shaped, in combination with a cover pivoted to said box and provided with corresponding flanges overlapping and embracing said side flanges, substantially as described.

4. A car-axle box provided with lateral side flanges having curved edges, in combination with a cover provided with corresponding flanges embracing said curved edges of said side flanges, and with a pivot connecting said cover and box, substantially as described.

5. The combination, with the box, the curved side flanges thereof, and the straight top flange, of a pivoted cover provided with corresponding side and top flanges, substantially as described.

6. The combination, with the cover, of the box provided with an inclined inner edge meeting the inner face of the cover, substantially as described.

7. The box provided with the inclined outer edge, *h*, and with side flanges, in combination with the cover provided at its lower inner edge with an incline opposing that of the cover, and with side flanges overlapping the flanges of the box, substantially as described.

325,594. STEM WINDING AND SETTING MECHANISM. ELIAS B. DOUGLASS, Cortland, Ind. Filed June 16, 1885. (No model.)



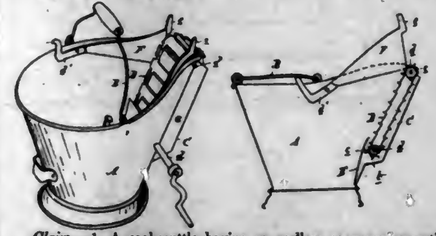
Claim.—1. As an improvement in stem winding and setting watches, the combination of the pivoted yoke having the gear-wheel and end pinions, and formed with the upwardly-projecting arm, the winding-stem having the pinion at its lower end, and the hollow shaft provided at its lower end with the operating-arm, and having at its upper end the adjusting-ring provided with the retaining-pin, all constructed, combined, and arranged to operate in the manner and for the purpose shown and set forth.

2. As an improvement in stem winding and setting watches, the combination of the pivoted yoke having the gear-wheel and end pinions, and formed with the upwardly-projecting arm, the spring for holding the yoke normally in contact with the cog-wheel on the end of the mainspring-shaft, the winding-stem having the cap at its upper end, and provided at its lower end with a pinion, and the spring-actuated hollow shaft provided at its lower end with the operating-arm, and having at its upper end the adjusting-ring provided with the retaining-pin, all constructed, combined, and arranged to operate in the manner and for the purpose shown and set forth.

3. As an improvement in stem winding and setting watches, the combination of the pivoted yoke having the gear-wheel and end pinions, and formed with the upwardly-projecting arm, the winding-stem having the pinion at its lower end, the annular shoulder formed on the upper side of the watch-case and having the upward projections, and the hollow shaft provided at its lower end with the operating-arm, and having at its upper end the adjusting-ring provided with the retaining-pin, all constructed, combined, and arranged to operate in the manner and for the purpose shown and set forth.

4. As an improvement in stem winding and setting watches, the combination of the pivoted yoke having the gear-wheel and end pinions, and formed with the upwardly-projecting arm, the spring for holding the yoke normally in contact with the cog-wheel on the end of the mainspring-shaft, the winding-stem having the pinion at its lower end, the annular shoulder formed on the upper side of the watch-case and having the upward projections, and the spring-actuated hollow shaft provided at its lower end with the operating-arm, and having at its upper end the adjusting-ring provided with the retaining-pin, all constructed, combined, and arranged to operate in the manner and for the purpose shown and described.

325,595. COAL-SCUTTLE. JAMES DUNCAN, Coshocton, Ohio. Filed July 9, 1885. (No model.)

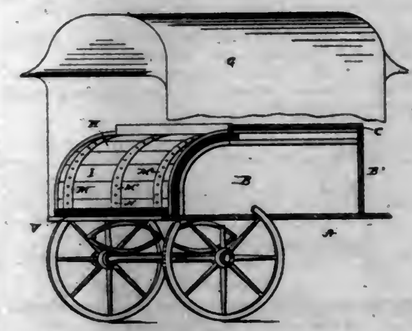


Claim.—1. A coal-scuttle having an endless conveyor operating within its discharge-chute by means of a crank, substantially as and for the purpose described.

2. A coal-scuttle having wings pivotally secured to the sides thereof independent of the bail and working on the inside of said scuttle, combined with a bail pivoted to said scuttle and constructed to operate said wings, as and for the purposes specified.

3. In combination with a coal-scuttle, wings to prevent coal from discharging over the sides of the chute, and an endless conveyor, as described, for forcing the slack coal to discharge.

325,596. TRADE-WAGON. MOSES ESTEN, Slatersville, R. I. Filed June 27, 1885. (No model.)



Claim.—The combination, with a covered wagon-body having the partition B', permanent top C, curved cleats D D, horizontal cleats R R and P P, and the short vertical cleats S, of the flexible slat fabric and sliding door with the finger-strip V, substantially as specified.

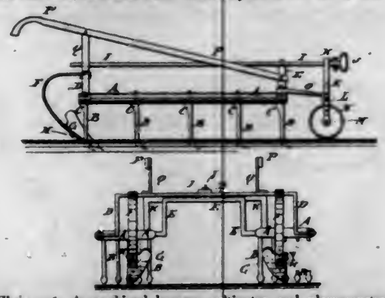
325,597. WEATHER-STRIP. GUERN L. FOWLER, Clarksburg, Mo. Filed July 23, 1885. (No model.)



Claim.—1. The combination of a door having a transverse groove near its lower edge, a strip or plate of a width greater than the distance from the groove in the door to the floor, springs secured to the door and to the strip or plate, drawing it upward, and means for forcing the lower edge of the strip outward, as and for the purpose shown and set forth.

2. The combination of a door having a transverse groove near its lower edge, and having inclined perforations in the space between the groove and the lower edge, a metallic strip secured in the groove and having its upper edge bent out to form a projecting flange, a plate or strip of a width greater than the distance from the groove in the door to the floor, springs secured in the inclined perforations in the door and to the plate or strip at their lower ends, near the upper and lower edges of the said strip or plate, a lever passing through an inclined perforation in the door and pivoted to the strip or plate near its lower edge, and a trigger pivoted in a perforation in the door and bearing with its lower end against the strip or plate near its upper edge, as and for the purpose shown and set forth.

325,598. COMBINED HARROW, CULTIVATOR, AND PLOW. SOLOMON FRANKLIN, Pine Bluff, Ark. Filed July 24, 1884. (No model.)

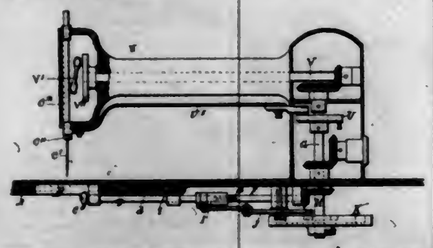


Claim.—1. A combined harrow, cultivator, and plow constructed substantially as herein shown and described, and consisting of the inclined tubular side bars, A, the cultivator-teeth B, the arched cross-bars D E, of unequal length, the bent standards F and their plows, the draw-bar I, and the gage-wheels N and their adjustable support, said standards F having their upper ends secured to the rear cross-bar, D, and said bar I having its forward end connected to the upper portion of the bar K of the gage-wheel N, as set forth.

2. In a combined harrow, cultivator, and plow, the combination, with the side bars, A, and the arched cross-bars D E, of the draw-bar I, the adjustable U-bar K I, the gage-wheels N, and the braces O, substantially as herein shown and described, whereby the depth to which the teeth and plows enter the ground can be regulated, as set forth.

325,599. BUTTON-HOLE SEWING-MACHINE. JOHN S. FRYER, Brooklyn, N. Y. Filed June 21, 1884. (No model.)

Brief.—The looper-shaft has imparted to it a revolving and also a longitudinally-reciprocating movement, the same co-operating with vibrating needle-bar and needle.



Claim.—1. The combination, with needle, the looper, and the looper-shaft, of a mechanism consisting of a horizontal shaft carrying a crank-wheel, and a link connecting said crank-wheel with the needle-bar, for imparting to the needle a vertically-reciprocating motion, a mechanism consisting of a cam, U, and a connecting-rod, U', connecting said cam-wheel with the needle-carrier, for imparting to the needle a laterally-vibrating motion, and a mechanism consisting of the sleeve I, keyed shaft F, bent lever J, cam-grooved wheel K, and gearing connected to vertical shaft H, for imparting to the looper-shaft a combined rotary and longitudinally-reciprocating motion, all substantially as herein shown and described.

2. The combination, with the looper-shaft D, of the auxiliary shaft F, geared to receive a revolving motion, the sleeve I, fixed to the looper-shaft and keyed to the auxiliary shaft to slide thereon and transmit its motion to the looper-shaft, and the operating-lever J, connected to the sleeve for imparting thereto and to the looper-shaft a longitudinally-reciprocating motion.

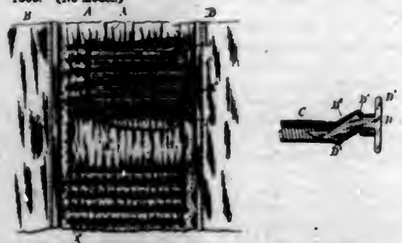
3. The combination, with the feed-wheel having the circular groove *d*, of the feed-dog L, having its forward end provided with grooved jaws T, and the laterally-projecting friction-pawl N, fitted in said jaws of the dog to engage the circular groove of the feed-wheel, and a means for imparting motion to the feed-dog, substantially as and for the purpose described.

4. The combination, with the looper-shaft, the looper-operating levers J, feed-lever O, feed-dog L, and feed-wheel A, of the cam-wheel K, common to both the operating-lever and the feed-lever.

5. The combination, with the feed-dog and feed-lever, of the interchangeable cam P Q, arranged on the feed-lever and constructed to act directly on the feed-dog, substantially as and for the purpose described.

6. The combination of the looper-shaft D, the auxiliary shaft F, the sleeve I, the looper-operating lever, and a means for adjustably connecting the sleeve to the operating-lever, substantially as and for the purpose described.

325,600. CORSET. MARSHALL GARDNER, Aurora, Ill. Filed Feb. 19, 1885. (No model.)

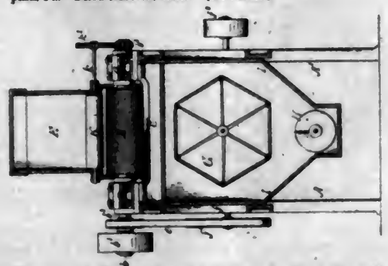


Claim.—1. The combination, with a wire coil, of a fastener for said coil, constructed with a suitable head and a bent and barbed shank which enters and deflects the end of the coil, substantially as described.

2. The combination, with a wire coil, of a fastener constructed with a suitable head and with a bent shank, the latter being provided with barbs directed toward the head and located on its opposite outer angles, substantially as and for the purposes set forth.

3. The combination, with a corset-section provided with one or more pockets, and a coiled-wire spring confined therein, of a fastener constructed with a bent and barbed shank and a head, the bent and barbed shank being fitted into an end of the coiled spring, so as to engage and deflect the same, and the head being suitably held to the fabric at a point beyond the end of the coiled spring, substantially as set forth.

325,601. ROLLER-MILL. WALTER GRISCOM, Philadelphia, Pa., THOMAS MCFEELY, Alexandria County, Va., and ELI T. BUTLER, Hamilton, Ohio, assignors to said Griscom and McFeely, and Samuel E. Griscom, Philadelphia, Pa. Filed June 26, 1883. (No model.)



Claim.—1. The combination of the roller D of the mill and the opposite boxes *a a*, forming bearings therefor, and rigidly connected by a transverse bar, *c*, with the adjusting-screws, wedges, and locking-bolts for said bearings, as set forth.

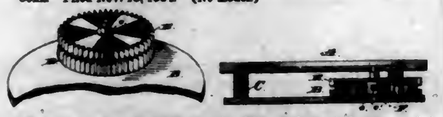
2. The combination of the roller-shaft *b*, the separator and conveyor shafts *g* and *h*, the counter-shaft *f*, driven from the roller-shaft, bevel-gearing connecting said counter-shaft and the separator-shaft, and chain-gearing connecting the separator and conveyor shafts, as set forth.

325,602. BALANCE-WHEEL FOR WATCHES. CHARLES S. GUERNSEY, Waterbury, Conn. Filed Nov. 13, 1884. (No model.)



Claim.—As a new article of manufacture, a watch-balance composed of a rim which is concentric with its axis, and is provided upon its periphery with a series of cylindrical protuberances that are axially arranged upon radial lines, and a cross-bar which extends between opposite sides of said rim, and has one of its sides cut away or sunk below the contiguous edge of said rim, said balance being formed of one piece and its said parts integral, substantially as and for the purpose specified.

325,603. WATCH-BARREL. CHARLES S. GUERNSEY, Waterbury, Conn. Filed Nov. 13, 1884. (No model.)



Claim.—1. A mainspring-barrel which is journaled upon and is adapted to rotate around a hub that is formed upon one of the movement-plates, substantially as and for the purpose specified.

2. A watch-movement in which the mainspring-barrel is journaled upon a hub that is formed upon one of the plates and the spring-arbor is journaled within said hub and the opposite plate, substantially as and for the purpose shown.

3. A watch-movement having its spring-barrel journaled upon a hub that is formed upon one of the plates, its spring-arbor journaled within said hub and the opposite plate, and its main wheel secured to said arbor and adapted to form a cover for said barrel, substantially as and for the purpose described.

325,604. WINDING ATTACHMENT FOR WATCHES. CHARLES S. GUERNSEY, Waterbury, Conn. Filed Nov. 13, 1884. (No model.)

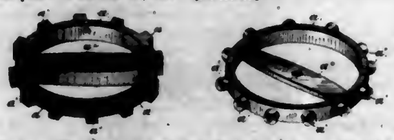


Claim.—1. A winding-yoke having a click-spring that is a part of the same, and adapted to hold in place and pivot two winding-wheels and a click or pawl, substantially as and for the purpose specified.

2. A winding-yoke which is secured upon a movement-plate by a single screw and operates to hold in place and pivot two winding-wheels and a click or pawl, substantially as and for the purpose shown.

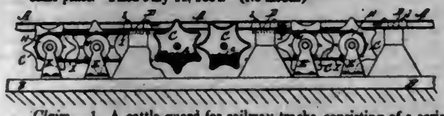
3. The yoke B, provided with the openings *b* and spring *b'*, the screw C, the stud E, the click F, having the pin *f*, and the winding-wheels D and H, in combination with each other and with the plate A, provided with the openings *a*, and the spring-barrel G, journaled upon said plate, substantially as and for the purpose set forth.

325,605. MANUFACTURE OF WATCH-BALANCES. CHARLES S. GUERNSEY, Cheshire, Conn., assignor to the Cheshire Watch Company, same place. Filed Feb. 23, 1885. (No model.)



Claim.—The herein-described method of constructing watch-balances, consisting, first, in forming by means of a die a blank which has the required form in plan view, then by means of a hollow mill giving to the peripheral protuberances a cylindrical form, and, lastly, cutting away from one face of the cross-bar a portion of its thickness, substantially as specified.

325,606. CATTLE-GUARD. LESLIE T. HARDY, Houston Mines, Va., assignor of two-thirds to Rufus P. Kyle and Jacob Danner, same place. Filed July 11, 1884. (No model.)



Claim.—1. A cattle-guard for railway-tracks, consisting of a series of revolving cylinders or chambers having within the same resonant material, which is set in agitation by the movement of the cylinder, as described.

2. A cattle-guard for railway-tracks, consisting of a series of revolving cylinders or rollers, combined with chain-wheels and a chain for gearing them to revolve together.

3. A cattle-guard for railway-tracks, consisting of the hollow cylinder C, having longitudinal flutes, concaved on the outside and convex on the inside, containing a resonant filling, *c*, as and for the purpose described.

4. A cattle-guard for railway-tracks, consisting of the combination, with the revolving cylinders or rollers, of the intermediate plates, D, having cone-like projections *a*, with knobs or balls *b*, as and for the purpose described.

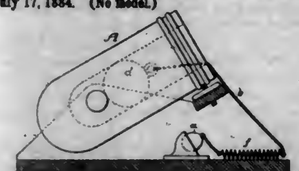
325,607. FEED-BAG HOLDER. WILLIAM G. HOWE, Boston, Mass. Filed Aug. 11, 1884. (No model.)



Claim.—1. A feed-bag holder consisting of a frame formed to receive and hold the mouth of a feed-bag, the latter being separable from the frame, and supports connected to said frame and formed at their outer ends to engage with attachments on the harness, as set forth.

2. The improved feed-bag holder consisting of a frame, *a*, a rod or rods, 2, secured at one end to the frame and adapted to be detachably connected to the harness at the other end, and the rods or braces 3 3, secured to the rod or rods 2 and adapted to be engaged with the harness, as set forth.

325,608. EXPLOSIVE PROJECTILE. JAMES HUNTER, Camden, N. J. Filed July 17, 1884. (No model.)



Claim.—A projectile consisting of a shot adapted to a gun, an explosive bomb, and a flexible and elastic connection between the said shot and bomb, as set forth.

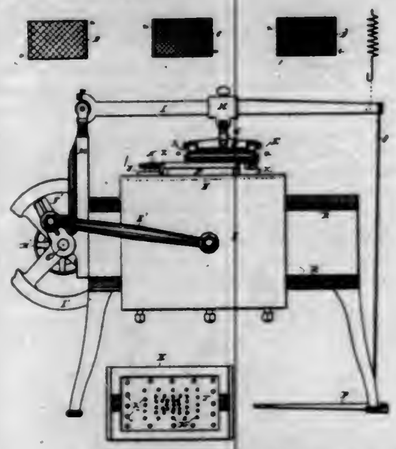
325,609. VEHICLE-SPRING. JOSEPH HUTCHENS, Middlebury, Ind. Filed June 15, 1885. (No model.)



Claim.—1. A spring consisting of a lower leaf or leaves curved longitudinally downward toward the ends, at one end curving upward, a leaf or leaves curving upward from the center and having one end bent into an S-shaped curve, the two parts being secured together, and a V-shaped leaf secured to both parts of the spring near each end, substantially as and for the purpose specified.

2. A vehicle having a transverse bar secured to its body pivotally, and provided with collars to prevent side movement and pivoted to the side bars, and a central spring consisting of two parts connected about centrally and curving in opposite directions, one part having one end formed into a simple curve, and the other part having one end formed into an S-curve, and V-shaped leaves connecting the diverging portions of the spring, substantially as and for the purpose specified.

325,610. MACHINE FOR POLISHING PAINTED, VARNISHED, OR JAPANNED SURFACES. IRVING E. INGRAHAM and ROBERT B. CODLING, Bristol, Conn., assignors to the E. Ingraham Company, same place. Filed June 27, 1885. (No model.)



Claim.—1. In a machine for smoothing, polishing, and finishing japanned, varnished, or painted surfaces upon wood, a rubber, a support for the same, a reciprocating bed adapted to carry the article or object to be rubbed, and devices for securing pressure between the rubber and the article or object being rubbed, substantially as set forth.

2. In a machine for smoothing, polishing, and finishing japanned, varnished, or painted surfaces upon wood, a rubber, a reciprocating bed adapted to carry the article or object to be rubbed, and a support for the rubber constructed for moving the same toward and away from the reciprocating bed, substantially as set forth.

3. In a machine for smoothing, polishing, and finishing japanned, varnished, or painted surfaces upon wood, a rubber, a lever, universal-joint connection between the same and the rubber, and a reciprocating bed adapted to carry the article or object to be rubbed, substantially as set forth.

4. In a machine for smoothing, polishing, and finishing japanned, varnished, or painted surfaces upon wood, a rubber, a bearing to which it is attached, a lever having universal-joint connection with its support, universal-joint connection between the lever and the said bearing, a reciprocating bed adapted to carry the article or object to be rubbed, and connections with the lever for pressing the rubber upon the article or object being rubbed, substantially as set forth.

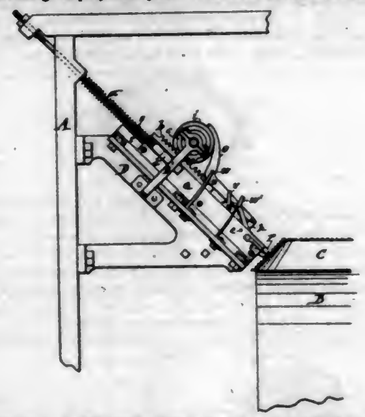
5. In a machine for smoothing, polishing, and finishing japanned, varnished, or painted surfaces upon wood, interchangeable rubbers, a support for the same, a reciprocating bed adapted to carry the article or object to be rubbed, and devices for securing pressure between the rubber attached to the support and the article or object being rubbed, substantially as set forth.

6. In a machine for smoothing, polishing, and finishing japanned, varnished, or painted surfaces upon wood, a rubber, a chambered and perforated bearing to which it is attached, a support for such bearing, and a reciprocating bed adapted to carry the object or article to be rubbed, substantially as set forth.

7. In a machine for smoothing, polishing, and finishing japanned, varnished, or painted surfaces upon wood, a rubber, a bearing to which it is attached, a lever, universal-joint connection between the lever and the bearing, a reciprocating bed adapted to carry the article or object to be rubbed, and pressure and suspension connections with the lever for respectively pressing the rubber upon the article or object being rubbed and supporting it in an elevated position above the reciprocating bed, substantially as set forth.

8. In a machine for smoothing, polishing, and finishing japanned, varnished, or painted surfaces upon wood, a rubber, a reciprocating bed adapted to carry the article or object to be rubbed, and provision, substantially as shown, for collecting the waste water and polishing material, substantially as set forth.

325,611. MACHINE FOR FORMING AND DRIVING WIRE STAPLES. GEORGE D. KING, Oswego, N. Y., assignor to the Wood Board Manufacturing Company, same place. Filed Dec. 18, 1884. (No model.)



Claim.—1. The reciprocating pinchers, in combination with the guides provided with eyes for the reception of the wire blank, as set forth and shown.

2. The combination of the guides provided with the eyes for the reception of wire-blanks, reciprocating pinchers sliding between said guides, and a cam or lever arranged to intermittently compress the pinchers during the reciprocating movement thereof, substantially as described.

3. In combination with the guides provided with eyes for the reception of the wire blank and reciprocating pinchers sliding between said guides, a cam or lever arranged to intermittently compress the pinchers, and spring-jaws in the ends of the guides arranged to press inward the shanks of the staple forced between them by the pinchers in driving said staple, substantially as set forth and shown.

4. In combination with the guides provided with eyes for the reception of the wire blank, the reciprocating pinchers sliding between said guides, a lever pivoted on one of the handles, of the pinchers and engaging the other of said handles, and stops for tripping the aforesaid lever during the reciprocating movement of the pinchers, and thereby automatically open and close the latter, substantially as and for the purposes set forth.

5. In combination with the guides provided with eyes for the reception of the wire blank, a slide between the guides, pinchers attached to the slide, a spring for propelling the slide, and mechanism, substantially as described, for retracting said slide, as set forth.

6. In combination with the guides provided with eyes for the reception of the wire blank, a slide between the guides, pinchers attached to the slide, a propelling-spring connected with the slide, a rack on the slide, and a mutilated pinion engaging said rack to intermittently retract the slide, substantially as set forth and shown.

7. In combination with the guides G G, slide *s*, and the pinchers *p*, attached to said slide, the propelling-spring *a*, rack *b* on the slide, the mutilated pinion *c*, and the latch *d*, for arresting the movement of the slide, substantially as described and shown.

8. In combination with the guides G G, provided with eyes *e e*, and the pinchers *p*, sliding between said guides, intermittent feed mechanism for passing the wire to the eyes of the guides, and a cutter situated between the feed mechanism and guides, substantially as and for the purpose specified.

325,612. CHECK-REIN HOOK. ELIAS KOHLER, York, Pa. Filed Mar. 24, 1885. (No model.)

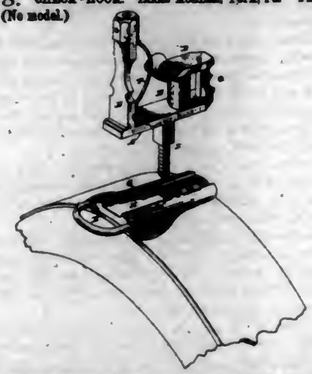


Claim.—1. In a check-rein hook, a spring bearing against the hook proper, said hook having one end inserted in the bed-plate, the other guided in a standard erected on the said plate, and having a loop or enlargement resting in a recess in said standard, substantially as and for the purpose specified.

2. A check-rein hook provided with a standard or post having a socket, and a terret having a shank normally retained in said socket and removable, substantially as and for the purpose specified.

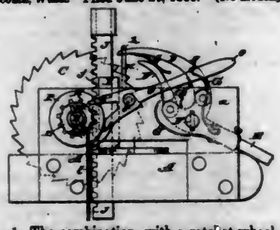
3. As an article of manufacture, a check-rein hook consisting of a hook proper having a friction-roller, a spring normally closing the mouth of the hook, a crupper-loop at the rear, and a standard containing a removable terret, all arranged substantially as and for the purpose specified.

325,613. CHECK-HOOK. ELIAS KOHLER, York, Pa. Filed Apr. 27, 1885. (No model.)



Claim.—An improved check-rein hook consisting of a plate having on it a post carrying a spring, a post having an extension on top, forming a bearing for the spring, a roller between the extension and the plate, and a plate with a longitudinal groove and an integral crupper-loop at one end, said plate resting on top of a harness-saddle and forming a removable seat for the hook proper, substantially as and for the purpose specified.

325,614. HOISTING AND LOWERING APPARATUS. ISAAC I. LANCASTER, Tacoma, Wash. Filed June 20, 1885. (No model.)



Claim.—1. The combination, with a ratchet-wheel and windlass, of pawls D D', lever E, retainer H, and spring G^2, fixed to pawl D to act on pawl D', substantially as herein set forth.

2. The combination, with a ratchet-wheel and windlass, of pawls D D' and lever E, said lever carrying a spring, G, and the pawl D having a pin, *g*, on which said spring acts, and the spring G^2, substantially as herein set forth.

3. The combination, with a ratchet-wheel and windlass, of pawls D D', said pawl D having a pin, *g*, and the springs G G^2 *d*, a retainer, H, and lever E, arranged and operating substantially as herein set forth.

4. In a hoisting and lowering apparatus, the combination, with the frame A, shaft B, ratchet C, pawls D D', springs, substantially as described, adapted to act on the pawls, and lever E, of the pinion K on shaft B, and the removable jack-post J *j*, supported and guided in the frame, substantially as herein set forth.

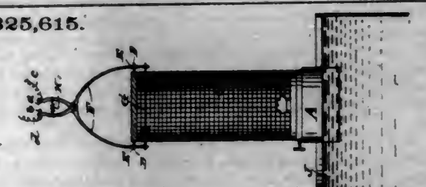
5. In a hoisting and lowering apparatus, the combination, with the frame A, shaft B, having pin N, ratchet C, pawls D D', springs, substantially as described, adapted to act on the pawls, and lever E, of the barrel L, having collar M and disk P, and notched at *m*, and the lever O, pivoted to frame A, notched at *o'* and provided with the brake-arm o^2, substantially as herein set forth.

6. In a hoisting and lowering apparatus, the combination, with the shaft B, having pin N, and the barrel L, provided with disk P, and having its hub M notched at *m*, of the pivoted lever O, notched at *o'* and provided with the brake-arm o^2, substantially as shown and described.

325,615. GAS-DETECTOR FOR MINES. JAMES A. LYON, Washington, Pa. Filed Feb. 3, 1885. (No model.)

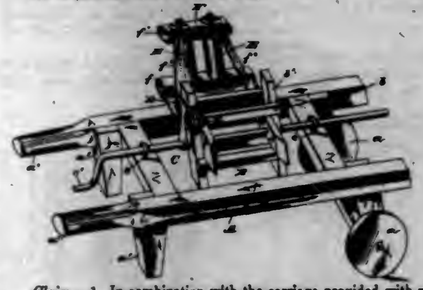
Claim.—1. In a gas and fire-damp detector, the combination, with a wire-netting casing containing a lamp or burner, of the bent levers F, pivoted together and supporting the casing, of the fusible wire or cord G, uniting the lower ends of levers F, and of the spring H, substantially as herein shown and described.

325,615.



2. In a gas and fire-damp detector, the combination, with a wire-netting casing containing a lamp or burner, of the pivoted angular levers F, having eyes or rings E, the pins D, projecting from the sides of the wire-netting casing at the top, and the cord or fusible wire G, uniting the lower ends of the levers F, substantially as herein shown and described.

325,616. REEL FOR FENCE-WIRE. HORACE C. LYONS, Brookfield, Me. Filed June 20, 1885. (No model.)



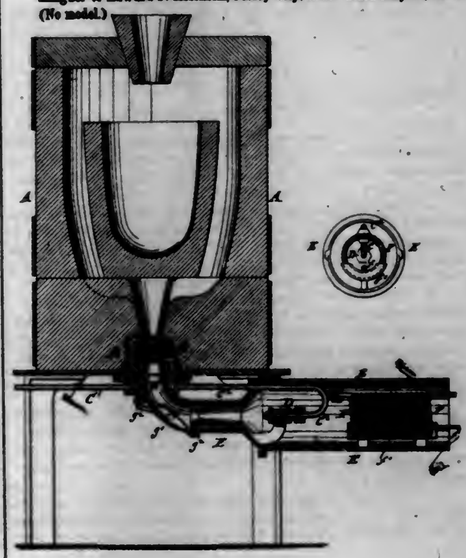
Claim.—1. In combination with the carriage provided with guide-rolls on the side of the frame, a movable shaft extending parallel with the sides of the frame and the handles, and a reel secured thereto through eyebolts *c c*, so that it can be easily detached when desired.

2. The carriage A, as described, the imperforate curved crank-shaft C, journaled in the eyebolts *c c*, reel B, clamp D, secured to the shaft C, set-screw *d*, frame F, and vertical guide-rolls E, all combined, substantially as and for the purposes set forth.

3. In a device as described, the reel B, secured on the crank-shaft C by the clamp D, and the set-screw *d*, combined with the vertical guide-rolls E, secured on the side of frame A, substantially as and for the purposes described.

4. In a reel for fence-wire, the carriage provided with a pair of friction-rolls, and with side and cross pieces, and a wheel in combination with a crank-shaft loosely journaled in said carriage parallel with the side pieces, whereby the wire may be fed or wound up from the side of the carriage as set forth.

325,617. HYDROCARBON-BURNER. GEORGE MACKLE, Elizabeth, assignor to Edward P. Reichelm, Jersey City, N. J. Filed July 15, 1885. (No model.)

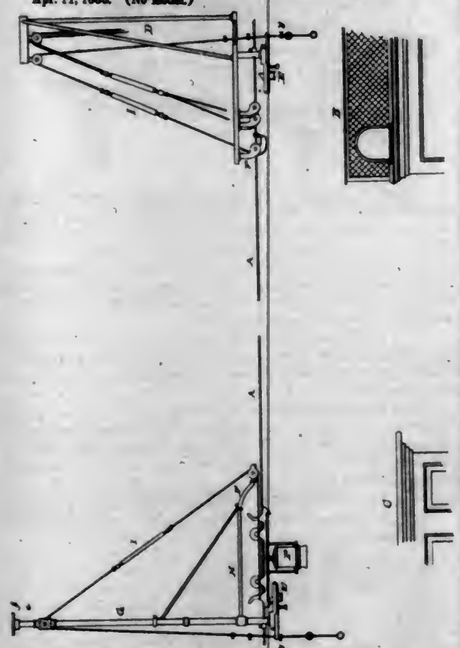


Claim.—1. A hydrocarbon-burner for metallurgical and other furnaces, consisting of an eduction nozzle or throat, a steam-superheating coil located in said nozzle, a mixing-chamber, a tube connecting said mixing-chamber and nozzle, an injector connected to the superheater, an evaporating-coil also connected to the superheating-coil, and a tube for supplying hydrocarbon oil to the evaporating-coil, substantially as set forth.

2. The combination of an eduction throat or nozzle, a steam-superheating coil located in said nozzle, an injector connected to said superheater, a mixing-chamber surrounding the injector, a tube connecting the contracted end of the mixing-chamber with the nozzle, an evaporating-coil located in the mixing-chamber and connected to the superheater, a hydrocarbon-supply pipe, and a trough or drip-pan below said evaporating-coil and supply-tube, substantially as set forth.

3. The combination of an eduction-nozzle, a steam-superheater within said nozzle, an injector connected with said superheater, an evaporating-coil also connected to the superheater, a mixing-chamber surrounding the injector and evaporator, a bent tube connecting the mixing-chamber and nozzle, said tube having a bottom opening closed by a sheet-metal plate, a hydrocarbon-supply pipe terminating in the evaporating-coil, and a trough or drip-pan below the same, substantially as set forth.

325,618. STORE-SERVICE APPARATUS. ROBERT A. MCCARTY, Detroit, Mich., assignor of one-half to George Maitland, same place. Filed Apr. 11, 1885. (No model.)



Claim.—1. A store-service apparatus wherein are combined two or more service-lines diverging from a common point, each running to a single station, carriers traveling upon said lines, and motors for projecting said carriers over said lines, substantially as set forth.

2. A store-service apparatus wherein are combined two or more horizontal service-lines diverging from a common point, each running to a single station, carriers traveling upon said lines, and stationary motors located at both ends of the lines, for projecting the carriers back and forth over said horizontal lines, substantially as set forth.

3. A store-service apparatus wherein are combined two or more lines of varying lengths diverging from a common point, each running to a single station, carriers traveling upon said lines, and adjustable motors for projecting the carriers over said lines, such motors being adjusted with relation to the length of two or more lines, substantially as set forth.

4. In store-service apparatus, the combination, with the cashier's desk or other common point of delivery, of two or more service-lines diverging therefrom, two or more motors for projecting carriers over said lines, and a common frame in which said motors are mounted, substantially as set forth.

5. In store-service apparatus, the combination, with two or more motors mounted in a common frame at a central point, horizontal lines diverging therefrom to separate stations, and separate motors at such stations, all said motors being adapted to project carriers over such lines, substantially as set forth.

6. In store-service apparatus, the combination, with a line, of a spring-motor located at one end thereof in position to receive and stop as well as to project a carrier traveling upon said line, whereby the motor-spring will act also as a buffer, substantially as set forth.

7. In store-service apparatus, the combination, with a line and a carrier traveling thereon, of a spring-motor located at each end thereof in position to receive and stop as well as to project the carrier, substantially as set forth.

8. In store-service apparatus, the combination, with a line and a carrier traveling thereon, of a spring-motor located at one end of the line in position to receive and stop the carrier as well as to project it over the line, a catch with which the carrier engages by its own momentum, and an adjustment to the motor, whereby the motor-spring can be brought into action as a buffer at the proper point to stop the carrier after it has engaged with the catch, substantially as set forth.

9. In store-service apparatus, the combination, with a motor for projecting the carrier, of adjustable operating-stops arranged to cause the motor to act with different force to propel the carrier when lightly or heavily loaded, substantially as set forth.

10. In store-service apparatus, the combination, with a spring-motor for projecting a carrier, of a catch for holding the carrier against tension of the spring, two or more cords for straining the spring, and adjustable stops on said cords for releasing the carrier at different degrees of tension of the spring, substantially as set forth.

11. In store-service apparatus, the combination, with the motor for projecting the carrier, of a catch for holding the carrier carried by a plate pivoted forward of the catch, and extending in rear of catch for engagement with operating-stops, substantially as set forth.

12. In store-service apparatus, the combination, with the motor and carrier, of a compound catch having a latch movable independently of a movable plate upon which it is mounted, substantially as set forth.

13. In store-service apparatus, the combination, with the motor and carrier, of a pivoted spring catch-plate having a spring-latch pivoted thereon and capable of independent movement, substantially as set forth.

14. In store-service apparatus, the combination, with the stretched wire, of the spring-motor hung from ceiling and clamped to such wire, and the lateral stay, substantially as set forth.

15. In store-service apparatus, the combination, with a stretched wire way, of a wheeled carrier traveling thereon, and adjustable screws limiting the vertical movement of the carrier on the wire, substantially as set forth.

16. In store-service apparatus, the combination, with a stretched wire way, of a wheeled carrier traveling thereon and a receptacle suspended beneath the carrier and removably held thereto by a depending ring, substantially as set forth.

17. In store-service apparatus, the combination, with a stretched wire way, of a wheeled carrier traveling thereon, a receptacle removably locked to such carrier, and a spring-cover for the receptacle held permanently by the carrier, substantially as set forth.

325,619. DYNAMO-ELECTRIC MACHINE. CHARLES L. FR. MUELLER, Milwaukee, Wis., assignor of one-half to Emil Schandein, same place. Filed June 18, 1884. (No model.)

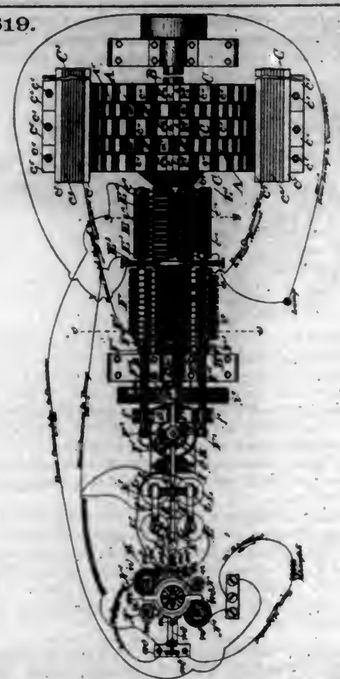
Claim.—1. In a dynamo-electric machine, an armature consisting of a series of flat rings, each having twelve opposite pairs of grooves adapted to receive the bobbins, in combination with a commutator and a switch consisting of a cylinder having plates on its periphery, and springs connected with the commutator-brushes, by means of which the terminals of the bobbins in each row parallel to the axis of the machine are connected in single circuit or in groups of two, three, four, six, or twelve when currents of greater or smaller intensity are desired, substantially as set forth.

2. A dynamo-electric machine having field-magnets consisting of a series of suitably-connected flat rings, forming a cylinder, with ring-shaped spaces to receive the similarly-shaped parts of the revolving armature, said rings being surrounded with wire and having diametrically-opposite extensions to support them and form compact rectangular cores, surrounded also with wire, whereby two double poles are secured, in which the maximum of magnetism is concentrated in close proximity to the revolving armature of the machine, substantially as set forth.

3. In a dynamo-electric machine, the combination, with an armature having numerous bobbins and the commutator connected therewith, of springs connected with the commutator-brushes, and a switch having plates arranged for various conditions of multiple arc and multiple series adapted to move in contact with said springs, whereby the armature-bobbins may be variously grouped while the machine is in action.

4. In a dynamo-electric machine, a commutator composed of semicircular segments of rings suitably insulated from each other, and each having an outer channeled rim to receive the ends of the brushes, in combination with a corresponding number of brushes formed of copper springs and adapted to slide in and come in full contact with the sides of channeled rims of the commutator-rings, substantially as and for the purpose set forth.

325,619.



5. In a dynamo-electric machine, a commutator having semicircular segments of rings provided with an outer channeled rim to receive the ends of the brushes, substantially as set forth.

6. In a dynamo-electric machine, a commutator for the field-magnet current, provided with a worm-wheel, toothed segments in mesh therewith, the arms of said segments being keyed on the ends of shafts whose other ends carry other toothed segments, other toothed segments in mesh with those last named, and brush-holders actuated by the last-mentioned segments, whereby the brushes of the said commutator are adapted to be moved in different positions to temporarily exclude part of the armature-conductors from activity, and to thereby increase or diminish the power of the field-magnets and regulate the exterior current, substantially as set forth.

7. In a dynamo-electric machine, in combination with a commutator adapted to control the current for the field-magnets, a regulating mechanism consisting of the brush-holders mounted on each side of the commutator on rods projecting from arms provided with rings loosely fitted around an extension formed on the rear face of the drving-shaft box, said rings having downward-projecting arms carrying toothed segments, shafts carrying arms with toothed segments at each end, those at one end being in mesh with the segments just named, and those at the other end meshing with a worm-wheel keyed on a vertical shaft, whereby the power of the said current may be increased or diminished, as desired, substantially as set forth.

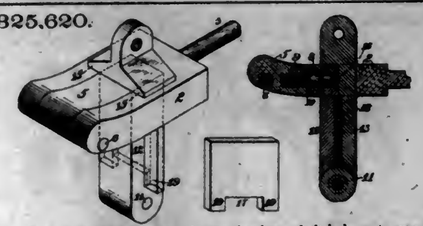
8. In a dynamo-electric machine, in combination with the commutator for the field-magnet current, a permanent steel magnet, and an electro-magnet, a governor consisting of an armature-wheel adapted to vibrate between the poles of the permanent steel magnet and those of the electro-magnet, and to be attracted to either of said poles according to the deviation of the current above or below the point desired, electro-magnets whose circuits are controlled by the vibrating armature-wheel, and mechanism operated by said electro-magnets, whereby the brushes of the latter are moved in one or the other direction to either strengthen or weaken the current in the machine, substantially as set forth.

325,620. SEAL-LOCK. JAMES G. MUSTIN, Pittsburg, Pa. Filed May 23, 1885. (Model.)

Claim.—1. In a seal-lock, the combination of a keeper having a bolt-hole, a tongue pivoted in the keeper, a bolt capable of insertion within the bolt-hole and of engaging the pivoted tongue, and a seal securable to the bolt so as to project therefrom, substantially as and for the purposes described.

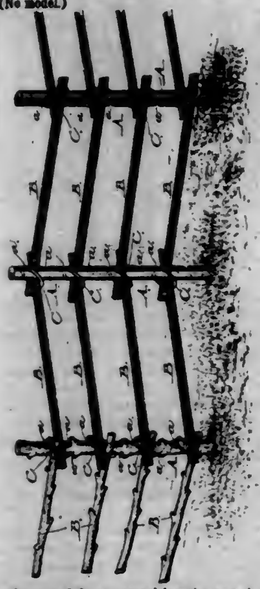
2. The combination of a keeper having a bolt-hole, a tongue pivoted in the keeper, a bolt capable of insertion within the bolt-hole and of engaging the pivoted tongue, said bolt being made of separable parts capable of being opened and closed, and a seal for insertion between the parts of the bolts, substantially as and for the purposes described.

325,620.



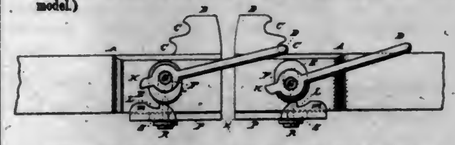
3. The combination of a keeper having a bolt-hole, a tongue pivoted in the keeper, a dog or pin on the tongue, a bolt capable of insertion within the bolt-hole and of engaging the dog or pin of the pivoted tongue, said bolt being made of separable parts capable of being opened and closed, and a seal for insertion between the parts of the bolt, substantially as and for the purposes described.

325,621. FENCE. EPHRAIM MYERS, Creagerstown, Md. Filed Dec. 22, 1884. (No model.)



Claim.—An improved fence comprising the post A, having a series of notches cut into its surface on one side, the diagonally-placed rails B, the outer ends of which lap each other, and removable rings or loops C, adapted to secure the lapped ends of the rails, and also to engage the notches, whereby the rails of any one or more sections may be removed or have a vertical adjustment, substantially as and for the purpose described.

325,622. CAR-COUPLING. JAMES W. NEAL, Roanoke, Va., assignor of one-half to Mort M. Rogers, same place. Filed June 4, 1885. (No model.)

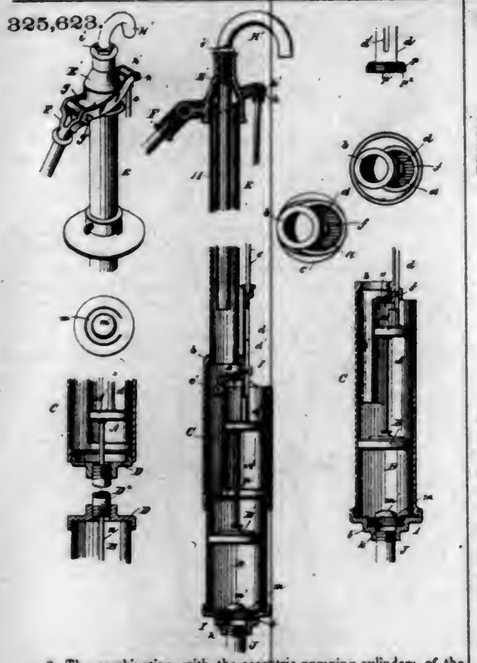


Claim.—The combination, with the draw-head having a front catch-lug, of a slide-plate provided with side notches, and the coupling-link pivoted to the draw-head, and provided with extensions of its arms, forming setting projections, which enter the said notches in the slide-plate, substantially as specified.

325,623. PUMP. JOSEPH M. NORMAND, Springfield, Ohio, assignor of one-half to Jacob Kreider Mower, same place. Filed Mar. 5, 1885. (No model.)

Claim.—1. The combination, with the pump-stock, of two pumping-cylinders eccentric to each other, and a water-passage from the bottom of the upper cylinder to the pump-stock, whereby the water is discharged through said pump-stock without closing the top of the upper cylinder or incasing the pump-rod, substantially as set forth.

325,623.



2. The combination, with the eccentric pumping-cylinders, of the outer casing, forming a passage from the bottom of the upper cylinder, and provided with a neck offset over said upper cylinder, into which the pump-stock is secured, substantially as set forth.

3. The combination, with the pumping-cylinders, of an outer casing adapted to be connected at its lower end to the lower cylinder, and provided at the top with two openings on opposite sides thereof, one of said openings being adapted to receive the end of the upper cylinder, which depends into said casing, and the other adapted to receive the end of the pump-stock connected thereto, whereby the cylinders are placed eccentric to each other, and a water-passage formed from the bottom of the upper cylinder to the pump-stock, substantially as specified.

4. The combination, with the eccentric cylinders, of an outer casing provided with a neck offset over said upper cylinder, a piston-stem provided with a longitudinal slot therein, connected to the upper piston, said piston-stem being adapted to bear against said neck and hold against lateral movement thereon by a bolt extending through said longitudinal groove, substantially as specified.

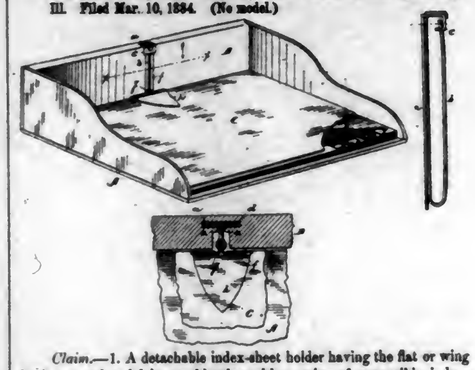
325,624. KNOT-TYING APPARATUS FOR SPOOLING-MACHINES, &c. JAMES H. NORTHROP, Hopedale, Mass., assignor of one-half to George Draper & Son, same place. Filed Nov. 5, 1883. (Model.)



Claim.—1. The case or sleeve B, slotted at its end to receive the material to be tied, and provided with a screw-thread, a standard or support for the sleeve, the screw-threaded spindle and its attached blade D, and the pinion on the spindle, combined with a toothed segment to engage and rotate the said pinion, and with it the spindle, substantially as described.

2. The case or sleeve B, slotted at its end at 2 3, cut through at its side, and provided with a screw-thread and with a projection, *b*, and the screw-threaded spindle, its attached forked blade, composed of two spring plates or portions, *d'* *d²*, and the pinion c^2, combined with the standard or support, the pivot-pin, and the rack to rotate the pinion and spindle, to operate substantially as described.

325,625. PERMANENT AND TEMPORARY LETTER-FILE. GEO. M. PATTEN, Jersey City, N. J., assignor to William A. Amberg, Chicago, Ill. Filed Mar. 10, 1884. (No model.)



Claim.—1. A detachable index-sheet holder having the flat or wing back *a a* and rod *b* in combination with a series of expansible index-sheets movable thereon, substantially as described.

2. The combination of the winged detachable holder *a b* with the file-back B, having the groove *d*, and ledges or shoulders *e*, substantially as set forth.

3. The combination of the winged holder *a b* with the case A B, and removable ledges or shoulders, substantially as specified.

4. The holder formed of the flat or wing back *a a*, adapted to be inserted in the shouldered groove in the case B, and provided with the wire rod *b*, secured to or forming a part thereof, adapted to be inserted in the eyes or loops *g* of the index-sheets, substantially as and for the purpose described.

325,626. ARTIFICIAL TOOTH. THOMAS S. PHILLIPS, Buffalo, N. Y., assignor of one-half to William F. Strasmer, same place. Filed June 20, 1885. (No model.)



Claim.—The method herein shown and described for representing and imitating the gold filling in a natural human tooth, which consists in coating a portion of the surface of an artificial human tooth with liquid prepared gold, and then baking or firing the tooth, all as and for the purpose set forth.

325,627. CIGAR-BOX. DANL. E. POWERS, New York, N. Y., assignor, by direct and mesne assignments, to the Patent Paper Cigar Box Company, same place. Filed Sept. 2, 1884. Renewed Apr. 22, 1885. (No model.)

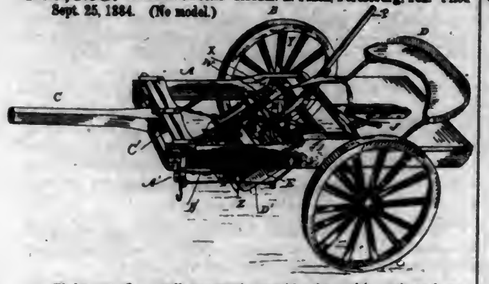


Claim.—1. A rectangular blank for cigar-boxes recessed at its sides, and provided with parallel longitudinal scores along the bottom section, with longitudinal cuts which are continuous with said longitudinal scores and extend from the ends of said scores to the end edges of the blank, with transverse scores which connect the meeting points of said longitudinal cuts and longitudinal scores, and with short transverse scores which extend from said longitudinal cuts to the side edges of the blank, being located endward from said transverse scores a distance equal to the thickness of the blank, substantially as described.

2. A blank for cigar-boxes consisting of the bottom section, *a*, end flaps, *c c*, side flaps, *b b*, and semi-end flaps, *d d d d*, attached to the side flaps and adapted to meet flush against said end flaps, said end and semi-end flaps being deeper than the side flaps, substantially as described.

3. A cigar-box composed of paper-board, and provided with double ends extending above the sides, and with a cover which shuts between said ends flush with the upper edges thereof, the inner layers of the ends being integral with the bottom of the box, and the outer layers thereof being in sections integral with the sides of the box, substantially as described.

325,628. STALK-CUTTER. REUBEN L. PEEK, Forestburg, Tex. Filed Sept. 25, 1884. (No model.)



Claim.—1. In a stalk-cutter, the combination, with a pivoted cutter-frame bearing revolving cutters, and a rake-shaft provided with rake-teeth, of a lever for moving said frame into and out of working position, and a journaled ratchet-segment with which the lever engages, said segment provided with a spring foot-lever for throwing it out of engagement with the operating-lever, substantially as described.

2. The combination, with a pivoted cutter-frame provided with revolving cutters mounted in a carriage, of a rake-shaft loosely mounted in said frame, rake-teeth attached to said shaft and extending in front of the cutters, and an operating-lever fulcrumed at the upper end of the cutter-frame and connected at its lower end by means of a link with a lug on the rake-shaft at about a right angle to the point of attachment of the rake-teeth, whereby the rake may be elevated independently of the cutter-frame, substantially as described.

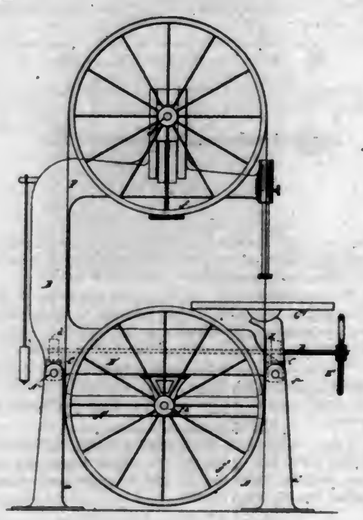
325,629. BAND-SAW MILL. L. T. PYOTT, Philadelphia, Pa. Filed Jan. 20, 1885. (No model.)

Claim.—1. A band-saw machine in which the frame is composed of two parts, the upper part being laterally movable on the lower part or base, and carrying the blade and its driving mechanism, said blade being arranged to travel and cut in a vertical plane, substantially as shown and described.

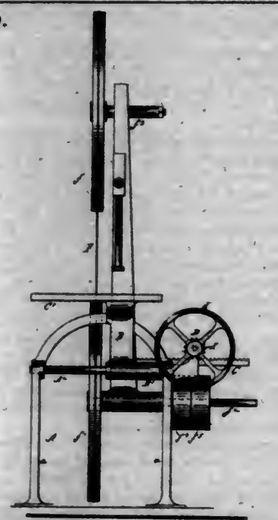
2. In a band-saw machine, the combination of the base A, having rods or rails A^2, with the movable frame B, sustained on said rails and laterally movable thereon, and a saw or blade moving and cutting in a vertical plane, substantially as shown and described.

3. In a band-saw machine having a stationary base and a movable upper frame carrying the blade and its driving or rotary devices, the combination of the shaft D, with pinions *d d* and hand-wheel *d'*, supported on said base, with the racks C C, secured to said movable frame B, and engaging with said pinions, substantially as shown and described.

4. In a band-saw machine having a laterally-movable upper frame, B, supported upon a lower frame, A, and carrying the band saw or blade and the pulleys *f f'*, the combination therewith of the shaft f^2, having fast and loose pulleys f^3 f^4, said shaft being splined in said pulleys, whereby it may be moved in unison with the upper frame of the machine without affecting the position of its belt-pulleys, substantially as shown and described.



325,629.



325,630. INSULATING AND ANTI-INDUCTION TUBE FOR ELECTRIC CONDUCTORS. FRANK B. RAE, Newark, N. J. Filed Nov. 18, 1884. (No model.)



Claim.—1. As a new article of manufacture, a rigid insulating-tube of paper, having a bore adapted to permit an electric conductor to be slipped into place therein after the tube is laid, said tube having an anti-induction sheath incorporated therewith between its inner and outer walls.

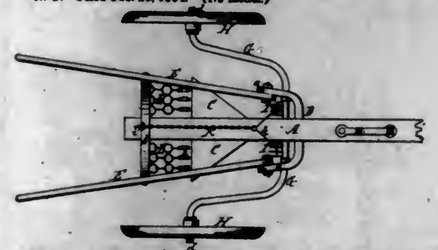
2. As a new article of manufacture, an insulating paper tube having a bore adapted to receive an electric conductor after the tube has been laid, and provided with an anti-induction sheath consisting of a film of metal electroplated in the body of the tube between its inner and outer walls.

3. As a new article of manufacture, a rigid insulating-tube for electric conductors formed of plastic material and provided with a bore, into which the conductor may be slipped after the tube is laid, said tube being provided with an anti-induction conductor incorporated in the body thereof between its inner and outer walls, so that said conductor is protected from injury, while at the same time contributing to give the complete tube the rigidity desirable for permitting the same to be transported and to be laid without injury.

4. As a new article of manufacture, a paper tube having a bore adapted to receive an electric conductor, as described, and formed of paper-pulp having incorporated with it between its inner and outer surfaces an anti-induction sheath or conductor.

5. The combination, with the two sections of insulating-tube, each having an anti-induction conductor terminating in the abutting faces of the sections, of a coupling applied to the sections, so as to hold the same together, while at the same time assisting in making good electric connection between the two anti-induction conductors by forcing their ends together.

325,631. POTATO-DIGGER. WILLIAM D. ROBINSON, Rathbonesville, N. Y. Filed Feb. 20, 1884. (No model.)



Claim.—1. The combination, substantially as set forth, of the main frame, the wheels, the bent axle provided with bearings located to one side of the general plane of the bent axle, spring adjusting devices con-

nected directly with the axle, and an adjustable connection between said spring devices and the main frame.

2. The combination, substantially as set forth, of the main frame, the digging devices, the bent axle, its bearings in the frame, the spring or springs connected with the axle and formed with the upwardly-projecting arms *g*, the adjusting-chain, and means for securing the chain in any adjusted position.

3. The combination of the main frame, the digging devices carried thereby, the bent axle, the wheels, the journal of the bent axle located above or to one side of the plane of the axle, the bearings in the frame located in advance of the wheels, and digging devices, as shown, and the adjustable spring-connection between the axle and the main frame.

4. The combination, substantially as set forth, of the main frame, the shovel, the wheels, the bent axle journaled in the main frame to one side of a vertical line drawn through the axis of the wheels, and an elastic connection between the axle and the main frame.

5. The combination, substantially as set forth, of the main frame, the wheels, the bent axle journaled in the main frame, the springs secured to the axle, and an adjustable connection between the springs and the main frame.

6. The combination, substantially as set forth, of the main frame, the wheels, the bent axle journaled in the main frame, the springs secured to the axle, the spring lever-arms, and an adjustable connection between the lever-arms and the main frame.

7. The herein-described casting having downwardly-projecting lugs to form bearings for the axle, and the inclined handle-supporting arms.

8. The combination, substantially as set forth, of the main frame, the axle, the handles, and the casting having downwardly-projecting lugs, in which the axle is journaled, and the upwardly-inclined arms, to which the handles are secured.

9. The combination, substantially as set forth, of the digging blade or shovel and the drag-chains hinged thereto, each chain consisting of a link hinged to the shovel, a second link hinged between lugs in the preceding link, and succeeding links hinged in like manner to their preceding links, for the purpose specified.

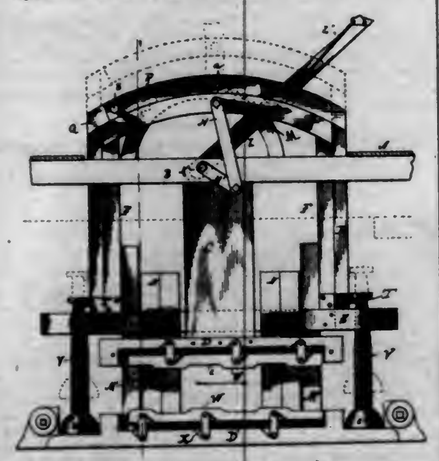
325,632. ENVELOPE-MOISTENER. ELMER RYDER, Hartford, Conn. Filed June 8, 1885. (No model.)



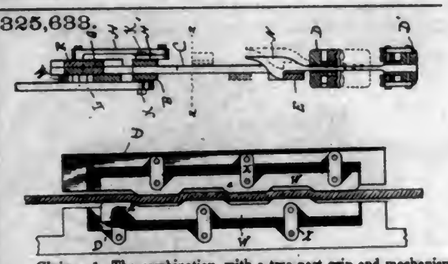
Claim.—1. A sponge-cup adapted to contain and hold a moist sponge, the said cup constructed with a transverse slit, *a*, opening to the sponge within the cup, the surface within the cup from the lower edge of the slit inward constructed to present salient points toward the sponge, substantially as and for the purpose described.

2. A sponge-cup constructed with a transverse slit, *a*, through its side, a raised platform, *c*, in the bottom of the cup, its upper surface substantially flush with the lower edge of said slit, and the said upper surface constructed to present salient bearing-points, substantially as described.

325,633. GRIP FOR CABLE RAILWAYS. CHARLES SCHOLL, Chicago, Ill. Filed June 16, 1885. (No model.)



325,638.



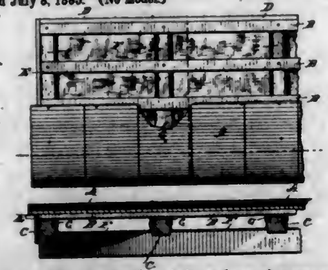
Claim.—1. The combination, with a two-part grip and mechanism for operating the same, of spring-arms to hold the parts together, and suitable mechanism for releasing such arms when desired.

2. The combination, with a two-part grip and mechanism for operating the same, of spring-arms secured to the movable part of the grip, and provided with enlarged heads adapted to rest upon a cross-bar, and a wedge located in the track-groove, as set forth.

3. The combination, with suitable operating mechanism, of a grip consisting of two frames, each provided with a longitudinal bar hung upon suitable arms, as set forth.

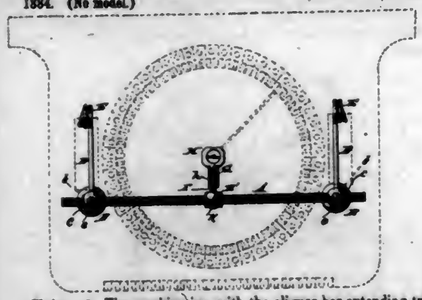
4. The combination, with suitable operating mechanism, of a grip consisting of two frames, each provided with a notched longitudinal bar hung upon suitable arms, around the arbors of which suitable springs are passed, as set forth.

325,634. RAILROAD-CAR ROOF. CHARLES A. SMITH, Minerva, Ohio. Filed July 8, 1885. (No model.)



Claim.—The combination of the under roof-composed of sheet-metal plates supported by carlings, the carlings, the cap-plates placed over the carlings, the purlins resting upon the cap-plates, and the over roof supported by the purlins, substantially as described and shown.

325,635. ALIGNER FOR TYPE-WRITING MACHINES. CLEMENT SMITH, Topeka, Kans., assignor to G. J. Baker, same place. Filed May 23, 1884. (No model.)



Claim.—1. The combination, with the aligner-bar extending transversely, of adjustable arms engaging the ribbon slots of the type-writing machine, substantially as specified.

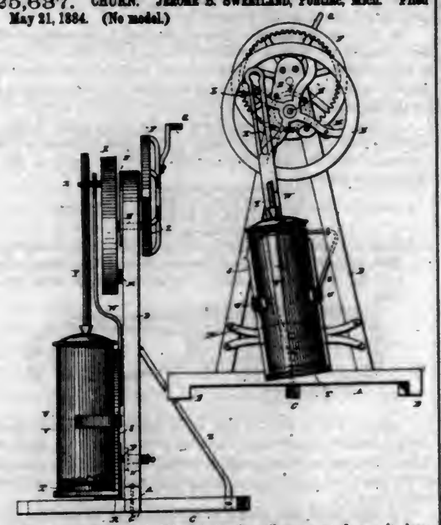
2. The combination, with the transverse aligner-bar, of the supports B, adjustable on said aligner-bar, the arms D, adjustable in said supports, the sleeve-bearing adjustable on the aligner-bar, and the gage-arm adjustable on the sleeve-bearing, substantially as specified.

3. The combination, with the transverse aligner-bar, and its adjustable supports engaging the ribbon slots of the writing-machine, of the adjustable bearing on said bar, and the adjustable gage-arm on said bearing, substantially as specified.

325,636. METHOD OF PRODUCING TYPOGRAPHIC BLOCKS OR PLATES FROM PHOTO-NEGATIVES. GEORGE SUTHERLAND, Adelaide, South Australia. Filed Jan. 22, 1885. (No specimens.) Patented in England June 16, 1884, No. 9,026.

Claim.—The method of producing from photographic negatives blocks or plates for typographic surface-printing, which consists in attaching to a photographic relief a film or sheet of any material which has been impressed with the form of an engraved surface capable of printing in a typographic press a series of marks producing the effect of an even tint or shade, and then rubbing or pressing the surface so produced with a smooth-faced instrument, whereby the size or breadth of the marks on the elevated portions of the relief are increased so as to render them capable of printing a series of marks having the effect of a darker shade or tint than the rest, the surface so produced being thus adapted to print a series of marks large in the darker portions of the picture to be reproduced and smaller in the lighter portions thereof, substantially as described.

325,637. CHURN. JEROME B. SWEETLAND, Pontiac, Mich. Filed May 21, 1884. (No model.)



Claim.—1. A churn-holding chair pivotally supported near its base or lower extremity, and provided with an upwardly-extending slotted arm, through which passes a wrist-pin connected also to the dasher-rod, said rod and arm moving coincident one with the other, substantially as and for the purpose specified.

2. A pivoted churn-supporting chair having an upwardly-extending slotted arm, a base adapted to receive and hold a churn, and two or more spring retaining-arms, all arranged to operate as and for the purpose specified.

3. In combination with a standard having a recessed base, and a pivoted cross-piece, one end of which is connected to the standard by a removable brace, an oscillating churn carrier or chair with an upwardly-extending slotted arm, and the power mechanism, consisting of a fly-wheel to which the arm and dasher-rod are connected, a pinion on the fly-wheel shaft, and a gear-wheel to which the power is applied, all arranged to operate as and for the purpose specified.

325,638. CORN-PLANTER. JOHN C. TURNCLIFF, Galesburg, Ill., assignor to George W. Brown & Company, same place. Filed June 26, 1885. (No model.)



Claim.—1. In a corn-planter of the type herein referred to, in combination, a slide-bar, two pawls hinged thereto and each provided with a single lug at its end, and a seed-wheel having holes G, inclines *g'*, and a flange, H, flattened or straightened between the holes G, substantially as and for the purpose specified.

2. In a corn-planter, in combination, slide-bar B, pawls J J', and seed-wheel D, with holes G, inclines *g'*, and flanges H, having shoulders *h*, substantially as and for the purpose specified.

3. In a corn-planter, in combination, a slide-bar, two pawls hinged thereto, and a seed-wheel having holes G, inclines *g'*, and a flange, H, flattened or straightened between the holes G, substantially as and for the purpose specified.

4. In a corn-planter, in combination with a seed-wheel having holes G and inclines *g'*, pawls J J', formed integral or connected together, substantially as and for the purpose specified.

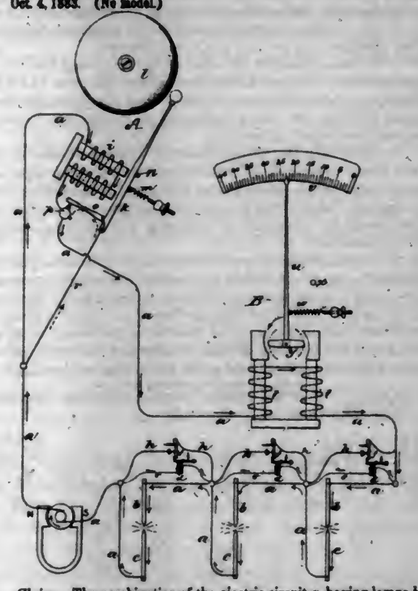
5. In a corn-planter, in combination, a seed-wheel having holes G, inclines *g'*, and flanges H, flattened between the holes G, and a slide-bar to which are hinged pawls connected rigidly with each other, substantially as and for the purpose specified.

6. In a corn-planter, in combination, a seed-wheel having holes G, inclines *g'*, and flanges H, flattened, as described, between the holes G, and provided with shoulders *h*, and a slide-bar to which are hinged pawls J J', substantially as and for the purpose specified.

7. A seed-wheel-actuating device, consisting of two pawls rigidly connected with each other and hinged to the slide-bar or a projection therefrom in such manner that raising one pawl will depress the other, substantially as described, and for the purpose specified.

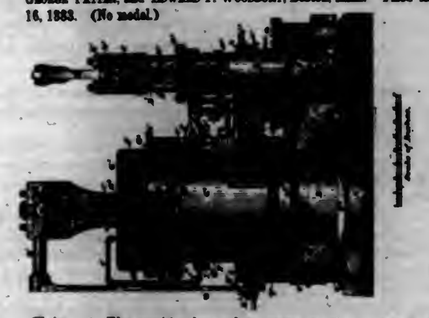
8. In a corn-planter, in combination, slide-bar B, pawls J J', and seed-wheel D, with holes G, inclines *g'*, and flanges H, either flattened as described or made circular, having shoulders *h*, substantially as and for the purpose specified.

325,639. ELECTRIC ALARM. JAS. J. WOOD, Brooklyn, N. Y. Filed Oct. 4, 1883. (No model.)



Claim.—The combination of the electric circuit *a*, having lamps *b b*, or their equivalents, and their individual cut-outs, with the magnet *i*, its armature *k*, and sounder *l*, the shunt *p o r*, contact *o p*, and retracting device *m*, adjusted as described, substantially as and for the purpose set forth.

325,640. HOT-AIR ENGINE. JAMES A. WOODBURY, JOSHUA MERRILL, GEORGE PATTEN, and EDWARD F. WOODBURY, Boston, Mass. Filed May 16, 1883. (No model.)



Claim.—1. The combination and arrangement of a reverser, a pipe leading from the upper part of the regenerator-space to and communicating with the upper end of the interior of one working-cylinder, and another pipe leading from the chamber below the piston of the same reverser to and communicating with the space beneath the piston of another working-cylinder.

2. The combination of the regenerator-cylinder F or F', the cooler-cylinder G, the displacer-cylinder G', and the yielding metallic ring *d*, all arranged and adapted to operate substantially as and for the purposes described.

3. The pipes P^2 and P^4, curved, as set forth, so that their axes a their two ends shall be at an angle to each other, substantially as and for the purposes described.

4. The combination of the by-pass pipe *j j' k* and the valve or cock k^2, to be operated by hand, the valve or cock k^2, the lever k^4, and the governor Q, all arranged and adapted to operate substantially as and for the purposes described.

5. The combination of the pendent arm O, the sleeve N^3, connected thereto, the crank N', the rod N^2, and the spring-actuated latch A, all arranged and adapted to operate substantially as described.

6. The combination of the arm O, the sleeve N^3, the rod N^2, and the taper bolt *i*, all arranged and adapted to operate substantially as described.

7. In combination with the working-cylinder of an air-engine, provided with a piston having a packing arranged to work air-tight in said cylinder, the annular channel or pocket-like groove *v*, formed in the inner periphery of said cylinder, just below the lowest point to which said packing descends, substantially as and for the purposes described.

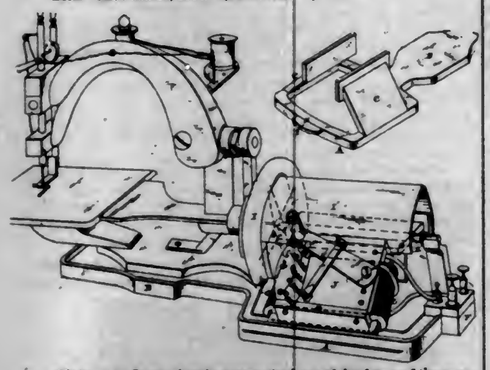
8. The annular deflector *c'*, secured to the interior of the cooler-cover, substantially as and for the purposes described.

9. The combination of the cooler-cover G^2, provided with the annular chamber G^3, connected with the interior of said cover by a series of orifices, *c*, and the deflector *c'*, secured thereto above said orifices and adapted to deflect the cooling medium to the bottom of the cooling-chamber, substantially as described.

10. In an air-engine, the combination of a cooling-chamber through which water is circulated, and provided with air-circulating pipes containing copper, and a reverser-piston provided with composition packing-rings, and having brass or composition surfaces contiguous to said packing-rings for intercepting or preventing galvanic action, substantially as described.

11. In combination with the pendent heater of an air-engine, the fire-brick fire-pot C^3, constructed and arranged as set forth, to substantially close the passage between said brick and the heater for about one-quarter (more or less) of the circumference of said heater opposite to the fire-door, and thus compel the products of combustion to pass upward around said heater at the front and sides, and then pass to the rear around said heater, substantially as and for the purposes described.

325,641. ELECTRIC MOTOR. LEONIDAS G. WOOLLEY, Kalamazoo, Mich. Filed Oct. 27, 1884. (No model.)



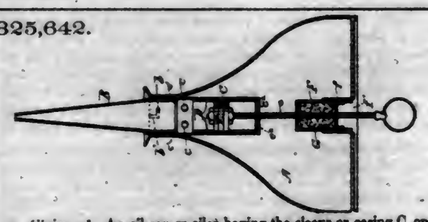
Claim.—1. In an electric motor, the base of the frame of the magnet, having an extension upon one side as a means of attachment to the head of the sewing or other machine, substantially as shown.

2. In an electric motor, the body or frame of the magnet, provided with the extension B, and having its central portion cut away, and having the limbs of the magnet inclined toward each other, substantially as specified.

3. In an electric motor for sewing-machines, the combination of the operating-shaft or balance-wheel of the machine to be driven, with the armature, which is attached directly to the shaft or balance-wheel, and the magnet, provided with an extension, B, upon one end, substantially as set forth.

4. The combination of the magnet A, having its limbs C inclined toward each other, with the operating-shaft or fly-wheel of the machine to be driven, the armature, which is connected directly to the shaft or wheel, and a rheostat for controlling the speed, substantially as specified.

325,642. OIL-CAN. CHARLES H. WORTHEN, Lawrence, Mass. Filed June 5, 1885. (No model.)



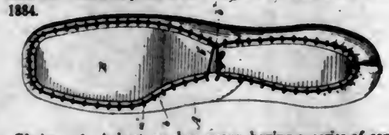
Claim.—1. An oil-can or oiler having the sleeve or casing C, opening into a discharge-passage, and having one or more ports, *c*, with the sleeve D, movable therein, and the piston E, movable in said sleeve, all substantially as and for the purposes described.

2. The combination, in an oiler, of the body A, the casing or cylinder C, having one or more openings or ports, *c*, the sleeve D, movable in said cylinder or casing, and the piston E, movable in said sleeve, and stops for controlling the movements of the sleeve, all substantially as and for the purposes described.

3. The combination, in an oil-cup or oiler, of the nozzle B, the casing or cylinder C, arranged in relation to the nozzle as shown, and having ports *c*, with the sleeve D and piston E, all substantially as and for the purposes described.

REISSUES.

10,642. LASTING BOOTS OR SHOES. WILLIAM C. CROSS, Boston, Mass., assignor to the Standard Boot and Shoe Lasting Company, Portland, Me. Filed May 21, 1885. Original No. 306,589, dated Oct. 14, 1884.



Claim.—1. A boot or shoe upper having a series of connected loops upon one face and around but back of the edge of the upper, and a draw-cord passing through said loops and held thereby upon the face of the upper back of the edge, substantially as and for the purposes hereinbefore set forth.

2. The combination, with a boot or shoe upper, of the draw-cord *b*, laid along the edge and upon one of the sides of the upper, and the loop-cord *a*, laid along the edge and upon the other side of the upper, and bent at intervals into loops *a'*, whose bights pass through to the opposite side of the upper and receive the draw-cord, as and for the purposes hereinbefore set forth.

10,643. CREAM-TRANSPORTATION TANK. CORNELIUS D. ELDER, Osage, Iowa. Filed June 18, 1885. Original No. 285,248, dated Sept. 18, 1883.



Claim.—1. In a cream-transportation tank, the combination of the lining having the drawing-off tube or pipe, and the casing with a removable end having an aperture for said tube, substantially as set forth.

2. In a cream-transportation tank, the combination of the removable lining having the drawing-off tube or pipe, and the casing having a removable end having an aperture for said tube, substantially as set forth.

3. In a cream-transportation tank, the combination of the removable lining having the drawing-off tube or pipe, the casing with a removable end having an aperture for said tube, and the removable cover, substantially as set forth.

4. The combination, in a cream-transportation tank, of the removable lining having the drawing-off tube or pipe, the casing with a removable end having an aperture for said tube, the removable cover having a hinged door suitably packed, and the wings or flaps adapted to fold sidewise upon the door when the same is closed, substantially as set forth.

5. The cover constructed with a hinged door suitably packed, and having the wings or flaps hinged on opposite sides of the door, and adapted to fold down upon the same when it is closed, whereby guards are formed on three sides of the opening when the door is raised, substantially as set forth.

N. PETERS, Photo-Lithographer, Washington, D. C.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

DECISIONS OF THE U. S. COURTS.

U. S. Circuit Court—Northern District of Illinois.

CRANDELL *et al. v.* PLANO MANUFACTURING COMPANY *et al.*

ROYALTY—JURISDICTION.

In this case the bill prayed that the defendants be required to account with the complainants and pay over all royalties at the rate of $3 for each machine not heretofore reported and paid for. *Held*, that the complainants had a plain, adequate, and complete remedy at law under the terms of the license, as stated in the bill.

Messrs. Banning & Banning for the complainants.
Messrs. Coburn & Thatcher for the defendants.

BLODGETT, *J.*:

The bill in this case is demurred to on the ground that the complainants by the showing of the bill have a plain, adequate, and complete remedy at law.

The bill shows the issue of letters patent to one Bramer for certain devices pertaining to mowing-machines and a license from Bramer to use the patent to the defendant, for which it was to pay, as royalty, the sum of $3 for each machine, with the right to an abatement in case of prompt payment. The death of Bramer after making the license, and the appointment by him of complainants as executors of his will and trustees of the patent, is also averred. The bill charges that a large sum is due the complainants under this license, both for royalties which accrued before Bramer's death as well as since, and that the complainants do not know, and are unable to ascertain, the exact number of machines made by defendants for which royalties are due under the license; and that complainants have demanded an accounting and payment as to the royalties so due, but that the defendant has failed to comply with such demands. It is also charged that through the defendant, W. H. Jones, who is the president of the defendant company, some kind of settlement has been made with the heirs and devisees of Bramer for the sum of $3,000, for which the note of the defendant company has been given, when, in fact, as much as $15,000 was due under the said license, and that such pretended settlement is wholly void as against the complainants, who have the sole right to collect said royalty. The prayer is that the Plano Manufacturing Company be required to account with the complainants and pay over all royalties at the rate of $3 for each machine not heretofore reported and paid for.

I can see no reason why the complainants have not a "plain, adequate, and complete remedy at law" under the terms of the license as stated in the bill. The only question to be established is the number of machines made by the defendants under the license which they have not accounted and paid for heretofore, and this can be established as readily and completely in a suit at law as in equity. Section 724 (Rev. Stat.) clothes the courts of law with full power to compel the production of books and papers in evidence under all circumstances where they might be compelled to produce the same in chancery cases; and this power, with the unquestioned right of complainants to examine all the agents and employés of the licensee as witnesses, seems to me to give all the facilities required for a complete remedy at law. The fact that this licensee has, by its president, obtained some kind of settlement with the heirs and legatees of Bramer can, it seems to me, cut no figure upon the question of jurisdiction in equity at the suit of complainants. If the defendants have, by their dealings with these heirs and legatees, acquired a defense as to this claim for royalties, which can only be set up in a court of equity, they are the proper parties to invoke the aid of that court for that purpose. If the relations between the trustees and the heirs or devisees of Bramer were such that the payment to the heirs and legatees might furnish an equitable defense to an action on this license, then the defendant may be obliged to come into a court of equity, but that does not clothe the complainant with the right to do so.

The decision of the Supreme Court of the United States in *Root* v. *Railway Company* (105 U. S., 189) seems to proceed upon the ground that all patentees have an adequate remedy at law in suits against infringers, except in cases where there is a right to an injunction as part of the relief sought; but that in all cases where the only question is as to the amount of profits and damages, and the complainant is not entitled to an injunction, the remedy is at law. This being the rule of jurisdiction as against the infringers, there is certainly less ground for going into a court of equity to recover the royalty stipulated in a license where there is no question of infringement or the validity of the patent to be considered; but the only question is as to how much is due from the licensee under his contract.

The demurrer to the bill is sustained, and leave given to the complainants to amend by the next rule-day.

U. S. Circuit Court—Southern District of New York.

ANHEUSER-BUSCH BREWING ASSOCIATION *v.* PIZA.

TRADE-MARK—GEOGRAPHICAL NAME—"ST. LOUIS LAGER BEER"—FRAUDULENT SIMULATION OF LABELS—INJUNCTION.

Complainant, a brewer in St. Louis, Missouri, made and exported to Panama and South American ports beer in bottles, with a label bearing the words "St. Louis Lager Beer." Defendant, a shipper of beer from New York city, and a competitor of complainant in trade in Panama and South America, labeled his bottles "St. Louis Lager Beer." *Held*, that although complainant could not have an exclusive property in the words

"St. Louis" as a trade-mark, or the exclusive right to designate his beer by the name of "St. Louis Lager Beer," yet, as his beer had always been made at that city, his use of the designation upon his labels was legitimate, and that defendant, whose beer was made in New York, should be enjoined from diverting his trade by simulating his labels or representing in any other way his products as those of complainant.

WALLACE, *J.:*

The complainant, a corporation doing business at St. Louis, Missouri, has for many years been accustomed to export its beer in bottles with a label bearing the words "St. Louis Lager Beer." It had acquired a considerable market for its product in South America and Panama. During this time there were many other manufacturers and venders of lager-beer at St. Louis, but so far as appears none of them had an export trade, and none of them were accustomed to use labels with the words "St. Louis Lager Beer" printed upon them. The defendant is a shipper of beer at New York city, and a competitor of the complainant in trade at Panama and various places in South America. The affidavits show beyond doubt that in these places the beer, which is known as "St. Louis Lager Beer," is in demand, and it is doubtless because of this fact that the defendant, whose beer is made in New York, labels his bottles so as to represent that his beer is made at St. Louis, and so as to represent that his firm are the sole agents of the "St. Louis Lager Beer" at New York. He alleges that purchasers of beer at Panama and the other places in question in South America do not discriminate between the complainant's article and other beer made in the United States, but buy it simply because they suppose St. Louis lager-beer is beer produced in the United States as distinguished from German and English beer. This may be true; but if it is, it does not seem to be conclusive against the right of the complainant to the injunction which he seeks. As the goods of the parties go to the same markets it can hardly fail to happen that the complainant will lose sales, and the defendant will get customers, in consequence of the defendant's acts. Although the complainant cannot have an exclusive property in the words "St. Louis" as a trade-mark, or an exclusive right to designate its beer by the name "St. Louis Lager Beer," yet, as its beer has always been made at that city, its use of the designation upon its labels is entirely legitimate; and if the defendant is diverting complainant's trade by any practices designed to mislead its customers, whether these acts consist in simulating its labels or representing in any other way his products as those of the complainant, the latter is entitled to protection.

It is no answer for the defendant, when the complainant asks for protection, to say that it has no exclusive right to designate its product in the manner it has, although this might very properly be asserted by a competitor selling beer made at St. Louis, or who, by reason of any circumstances, might be entitled to represent his product as originating there. (*Canal Co.* v. *Clark*, 13 Wall., 322.)

It must be assumed upon the facts as they are now disclosed that complainant, by its enterprise and the quality of its product, has acquired a foreign market for its beer under the designation of "St. Louis Lager Beer;" that no one else having a right to use this designation was a competitor of the complainant in this market until the defendant became one, and that the defendant has attempted to interfere with the complainant's trade and divert it to himself by selling a different article under the same name, and in this behalf has been guilty of false and deceitful conduct toward the public. It is manifest that the complainant's trade must be more or less injured by the defendant's acts.

The case is similar in some of its facts to that of *Newman* v. *Alvord*, (51 N. Y., 189.) There the plaintiff used the word "Akron" to designate a cement manufactured by him at the village of Akron, New York. The defendant, who was a manufacturer at another place in the same State, was enjoined from designating his cement as "Akron Cement," although he prefixed his own name and added the real place of its manufacture. In the opinion delivered in that case by Earl, J., it was assumed that other persons at Akron had the right equally with the plaintiff to call their cement "Akron Cement;" but he added:

Yet it is quite clear that the plaintiffs, upon the facts, are entitled to protection against the defendant. It is sometimes said in the cases to which our attention has been called that the claimant to a trade-mark must have the exclusive right to it. This form of expression, I apprehend, is not strictly accurate—the right must be exclusive against the defendant. It is generally sufficient in such cases if the plaintiffs have the right and the defendant has not the right to use it. The principle upon which the relief is granted is that the defendant shall not be permitted, by the adoption of a trade-mark which is untrue and deceptive, to sell his own goods as the goods of the plaintiff, thus injuring the plaintiff and defrauding the public.

The following cases, in which a party has been protected in the use of the name of a place to distinguish a particular business or product, are apposite: "Glenfield Starch," in *Wotherspoon* v. *Currie*, (L. R., 5, H. L., 508, 513;) "Anatolia Liquorice," *McAndrew* v. *Bassett*, (10 Jur., N. S., 492;) "Sexio Wine," in *Sexio* v. *Provezende*, (L. R., 1 Ch., App. Cas., 192.)

It is unnecessary for present purposes to consider whether the complainant has a valid trade-mark or can have a technical trade-mark in the name "St. Louis." It is sufficient that it was lawful for the complainant to use that name to designate its property; that by doing so it has acquired a trade which is valuable to it, and that the defendant's acts are fraudulent and create a dishonest competition detrimental to the complainant. Upon the argument of this motion the impression was entertained that the "Piza label No. 2" was not such a simulation of the complainant's label as would be likely to mislead purchasers. Upon further consideration this impression has been removed. It is not unreasonable, in view of the defendant's purpose to deceive the public by adopting this label, to resolve any doubt which may remain in favor of the complainant.

The motion for an injunction is granted.

DECISIONS OF STATE COURTS.

Circuit Court of Cook County, Illinois.

MCVEAGH *et al. v.* VALENCIA CIGAR FACTORY *et al.*

Decided 1885.

TRADE-MARK—ASSIGNMENT OF.

A trade-mark cannot be assigned as a mere abstract right and independent of or disconnected from the business in which it is used.

Messrs. Kraus & Mayer and *Mr. John H. Hammond* for the complainants.

Messrs. Moses, Newman & Reed and *Messrs. Banning & Banning* for the defendants.

MORAN, *J.:*

(Orally:) The bill in this case was filed to restrain the use of what is claimed to be a trade-mark—that is, the use of the word "Buck," in connection with certain figures on a scroll. The bill alleges that for many years prior to 1884 a certain firm styled Louis Cohn & Son, was engaged in the business of manufacturing and selling cigars at wholesale, and that as early as 1862 the firm, or one of the members of the firm, invented and first used this trade-mark in connection with the manufacture of a certain brand of cigars; that about the year 1884 the firm of Cohn & Son made a contract with the complainants for the purpose of manufacturing for the exclusive use of the complainants and sale by them of this certain brand of cigars having a certain trade-mark hereinafter referred to; that under the contract the complainants sold great quantities of the cigars manufactured for them by said Cohn & Son under that trade-mark; that some time in July, 1884, the firm of Cohn & Son became insolvent, and failed for a large amount, and had no visible assets; that among the creditors of the firm was Henry Oppenheimer, and that for the purpose of making some payment to him the firm of Cohn & Son made a contract with Oppenheimer by which they attempted to transfer or assign all the firm's right, claim, and interest to the trade-mark, which is described in this way:

To the following trade-mark and all rights and interests thereunder of the said firm of Louis Cohn & Son, to wit, the "Buck" trade-mark. The said trade-mark having, as hereinbefore alleged, been used by the firm of Louis Cohn & Son in connection with and as the name of a certain brand of cigars.

The bill further alleges that Cohn & Son also by the contract guaranteed said Oppenheimer the sole and exclusive right to use said trade-mark and all the figures, pictures, and designs which the said firm of Cohn & Son had theretofore used in connection with the trade-mark, and they agreed that all the rights transferred to Oppenheimer by said contract should inure to and belong to Oppenheimer's executors, administrators, and assigns; that said Cohn & Son also sold to Oppenheimer the exclusive right to sell cigars in connection with said trade-mark; that a true and correct copy of said contract is hereto attached and marked "Exhibit A." The bill then goes on to allege that shortly after that sale to Oppenheimer, Oppenheimer sold to Franklin McVeagh & Co., who are the complainants in this bill, in consideration of $500, and transferred to McVeagh & Co., all the rights that he gained by the contract with Cohn & Son. It is alleged that the complainants had, while the cigar manufactured under the trade-mark had been furnished to them by Louis Cohn & Son, sold great quantities of it, and advertised it extensively, and that it came to be a well-known brand of cigars substantially through the efforts of complainants. The bill goes on, then, to allege that the defendants have started a factory for the manufacture of cigars, and that they have taken the same word, "Buck," and put it upon their cigar-boxes, and have used substantially the same symbols—that is, they have used the two animals bringing their heads together in a belligerent attitude, and so on, in every respect similar to the label or alleged trade-mark designed by Cohn & Son. The allegation in the bill that Cohn & Son sold to Oppenheimer, and engaged to give to Oppenheimer the sole and exclusive right to manufacture cigars under that brand is not borne out—that is, that allegation of the bill, the bill referring as it does to a correct copy of the contract, the copy of the contract being filed controls the allegations of the bill, and the contract contains no sale whatever to Oppenheimer of any right to sell or manufacture cigars. When we examine "Exhibit A," it is a sale of the two trade-marks known, the one as "Buck" and the other as "Punch"—

said trade-marks having been used by us in connection with and as the name of certain brands of cigars, and hereby grant to Oppenheimer the sole and exclusive right to the exclusive use of the said trade-marks, and do further sell, transfer, and assign to said Oppenheimer all the figures, pictures, and designs which we have heretofore used in connection with said trade-marks, and all the rights and interests hereby conveyed and transferred to said Henry Oppenheimer, shall inure to and belong to said Henry Oppenheimer, his executors, administrators, and assigns.

The contract does not attempt to protect the manufacture by Oppenheimer of any particular brand of cigars or any cigars at all. In fact the contract is simply a bare sale or attempted sale of a word which is undoubtedly a word capable of being used as a trade-mark—that is, it is a fanciful word, an arbitrary term, applied to and used in connection with a certain article manufactured and sold, which word is not descriptive of the article, and is not used to designate the place where the article is manufactured; simply an arbitrary fanciful name which, it is well established by the authorities, may be adopted by any person and applied to his goods, and used by him to designate the ownership or origin of a particular brand or quality, it might be, of goods, and those goods may become known and get a reputation under that fanciful or arbitrary name.

Now, the question arising in this suit is not whether such a name can be a trade-mark, nor whether Louis Cohn & Son, as they allege, originated this trade-mark, designed it, and used it in connection with their manufacture and sale of cigars. Whether or not they had got a good trade-mark is not the question. Manifestly for all the purposes of this cause it may be assumed that in the hands of Louis Cohn & Son and in their use, and as applied by them to a brand of cigars manufactured by them, this was a trade-mark, in the use of which they would be protected by the operation of an injunction issuing from a court of equity. The sole question in the case is whether such arbitrary sign or trade-mark can be assigned or sold, no matter what the consideration may be, or be transferred as a bare sign, as a bare trade-mark, a word, a fanciful term, to some other person regardless of the question whether that person is engaged in the business of manufacturing the article in connection with which the term has been used, or regardless of the fact whether that person takes the good-will of the business, buys out the entire business, and takes the business in connection with which the sign or arbitrary trade-mark had been used.

I have examined very carefully all the authorities cited by counsel in the case, and the question seems to me to be free from all doubt. There is no case that can be found, none cited by counsel at all, which in any manner supports the proposition that a bare trade-mark, aside from the property, can be assigned, sold, or a good title given to it. The philosophy underlying the history of the law in connection with trade-marks, and the final absolute recognition of trade-mark property, forbids the conclusion that anything of that kind can obtain. It is not necessary for me to go farther in the matter of this opinion than the elementary books

on the question of trade-marks. In one of the cases the court say:

Inasmuch as the court protects the owner of trade-marks, he is entitled to authorize another when he hands over his business to him to place that mark on his goods. That is a right which should be protected by a court in chancery, may be disposed of for value, may be bought and sold, and is, therefore, in that sense of the word, property.

That is the language of Vice Chancellor Wood in *Ainsworth* v. *Wamsley*, (Law Reports, First Equity, 518.) That language states as fairly, perhaps, as it has been stated, although it has been repeated by various courts, the extent to which the courts go. "He is entitled to authorize another when he hands over his business to him to place that mark on his goods." Now, of course that does not mean that he is to sell out his whole business, but if he has some particular or special article manufactured in a special manner, for which he has a trade-mark and to which he has acquired a property, and he sells out the right to another person to manufacture that particular article and to supplant him in the business of carrying the manufacture of that particular article under the trade-mark which he has obtained. It is not necessary that a man should sell out his whole establishment to do that, but it must be the manufacture and sale of an article where there is some special method with reference to it which could not, in the nature of the case, apply to the manufacture of cigars. They are a general commodity, and may be manufactured by any and all persons, with reference to which there is no specialty. The only advantage that can be gained by a name, by the use of a trade-mark, is in the particular excellence of that cigar, or its particular cheapness, its particular flavor, the particular tobacco of which he sees fit to manufacture it, not mixing it and not reducing its quality, so that the smoker acquires a taste for that particular cigar which is manufactured under that name, and which the consumer purchases under that name. Any person, however, may manufacture the same cigar in the same way, and the right to manufacture a cigar in that way is not the subject of transfer. That is, a man could have no property in the right to the manufacture of a cigar in that way at all. The same question has been in various other ways stated by chancellors. In substance says Vice-Chancellor James:

There is no distinction between the sale of the business or goodwill by a trader himself and the sale by his assignees in bankruptcy. Therefore in the sale of a business by a trader's assignees in bankruptcy the trader has no right to open a store after his discharge and use the trade-marks of his old business, or in any other way to represent himself as carrying on the identical business which was sold out, although he has a right to set up again in business of the same kind next door to his old place of business. In such a case it is one objection that a purchaser might come for the assistance of a court in chancery, alleging that he has continued to use the name of the old business which he found there—that is, the application of a trade-mark to a business that had some fanciful name. The property in a trade-mark passes by assignment and by the operation of law to any one who takes at the same time the right to manufacture and sell the particular merchandise to which said trade-mark has been attached. There is no property in it as a mere abstract right. (*Dixon Crucible Company* v. *Guggenheim*, Second Brewster, 321.) Property in a trade-mark may be obtained by transfer from one who has made the primary acquisition, though it is essential that the transferee should be possessed of the right either to manufacture or sell the merchandise to which the trade-mark has been attached.

In Brown on Trade-Marks the question has been treated, and the rule as it has been deduced from the cases is

that the property or right to a trade-mark may be passed by assignment or by operation of law to any one who takes at the same time the right to manufacture and sell the particular merchandise to which such trade-mark has been attached. As a mere abstract right having no reference to any particular person or property, it is conceded that it cannot exist, and so cannot pass by assignment or descend to a man's legal representatives. A trade-mark and the right to a trade-mark accrue to the owner from its adoption and use for the purpose of designating the particular goods which he manufactures or sells, and indeed has no separate abstract existence, but is appurtenant to the goods designated.

It is not necessary to multiply authorities on the rule. The authorities point all one way. The authorities supposed to deviate in any respect from this established rule, which I have read, will be found on a close examination to support the rule instead of to depart from it. Now, in this case there was no sale to either Oppenheimer or McVeagh & Co. of a factory where this "Buck" cigar was made, or of the business of Louis Cohn & Son. To say that the sale to McVeagh & Co. was a right to sell, under the name of "Buck," any cigars that they saw fit to put into the box under the name of "Buck," would be simply to say that the contract undertook to give to McVeagh & Co. the exclusive right to use that word "Buck" for the purpose of imposing upon the public, because to allow them to sell any brand of cigars under the name of "Buck" would be to allow them to use the reputation gained by Louis Cohn & Son under that name to sell something else, perhaps, which of course would not be supported at all by the authorities. So that it comes to this: The bill is based solely upon the transfer of a bare fanciful term or word in connection with the scroll and device that was used by Louis Cohn & Son to a person for that person to sell and use as if it were his property. It might as well be sold to a doctor as to be sold to a man carrying on the grocery business. The transfer of it to a physician or surgeon or to a livery-stable keeper would pass it just as completely as it can possibly pass in an assignment by such a contract. It is not necessary in this opinion for the court to say whether the defendants have any trade-mark or not. That is outside of this case, and it is of no consequence. The point is whether there is any trade-mark now in existence that is the subject of property to any person which can be protected by any operation of a court of chancery. If there is any such property it is not in these assignees. They could not gain it under the circumstances, and, therefore, as the bill is demurred to the demurrer must be sustained, and the injunction must be dissolved.

THE OFFICIAL GAZETTE OF THE United States Patent Office.

[BY AUTHORITY OF CONGRESS.]

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The Official Gazette.

The OFFICIAL GAZETTE is published every Tuesday, simultaneously with the weekly issue of patents. From January 1, 1872, (the commencement of its publication,) to June 30, 1883, it was published and bound in semi-annual volumes; since July 1, 1883, in quarterly volumes. All subscriptions must commence with the beginning of a volume; none taken for less than three months. Terms: To all subscribers within the United States and Canada, $5 per annum; to foreign subscribers, $7; single copies, 10 cents; bound semi-annual volumes, (prior to June 30, 1883,) full sheep, $4 per volume; bound quarterly volumes, (subsequent to July 1, 1883,) full sheep, $2.75 per volume. No club rates. *Payment in advance.* All orders should be addressed to "The Commissioner of Patents, Washington, D. C."

Attorneys.

DEPARTMENT OF THE INTERIOR,
OFFICE OF THE SECRETARY,
Washington, D. C., August 28, 1885.

SIR: I am directed by the Secretary to inform you that the order of the Department, dated December 20, 1884, disbarring Homer R. Bisbee, of Valentine, Nebraska, from practice before the Department and its bureaus, has this day been rescinded.

Very respectfully,
GEO. M. LOCKWOOD,
Chief Clerk.

The Commissioner of Patents.

DEPARTMENT OF THE INTERIOR,
OFFICE OF THE SECRETARY,
Washington, D. C., August 28, 1885.

SIR: I am directed by the Secretary to inform you that he has ordered that Thomas N. J. Hynes, of O'Neill, Holt county, Nebraska, be not recognized from and after this date as attorney in the prosecution of any claim or other matter before the Department of the Interior or any bureau thereof.

I am, sir, very respectfully, your obedient servant,
GEO. M. LOCKWOOD,
Chief Clerk.

The Commissioner of Patents.

32 O G—10—i

English Patent Law.

AMENDMENTS OF AUGUST 14, 1885.

SECTION 1. Construction and short title.
SEC. 2. Amendment of section 5 of 46 and 47 Vict., C. 57.
SEC. 3. Amendment of sections 8, 9, and 12 of 46 and 47 Vict., C. 57.
SEC. 4. Specifications, &c., not to be published unless application accepted.
SEC. 5. Power to grant patents to several persons jointly.
SEC. 6. Amendment of section 103 of 46 and 47 Vict., C. 57.

AN ACT to amend the Patents, Designs, and Trade-Marks Act, 1883.

Be it enacted by the Queen's Most Excellent Majesty, by and with the advice and consent of the Lords Spiritual and Temporal, and Commons, in this present Parliament assembled, and by the authority of the same, as follows:

1. This act shall be construed as one with the Patents, Designs, and Trade-Marks Act, 1883, (in this act referred to as the principal act.)

This act may be cited as the "Patents, Designs, and Trade-Marks (Amendment) Act, 1885," and this act and the principal act may be cited together as the "Patents, Designs, and Trade-Marks Acts, 1883 and 1885."

2. Whereas, subsection 2 of section 5 of the principal act requires a declaration to be made by an applicant for a patent to the effect in that subsection mentioned, and doubts have arisen as to the nature of that declaration, and it is expedient to remove such doubts: Be it therefore enacted that the declaration mentioned in subsection 2 of section 5 of the principal act may be either a statutory declaration under the Statutory Declarations Act, 1835, or not, as may be from time to time prescribed.

3. Whereas, under the principal act a complete specification is required (by section 8) to be left within nine months, and (by section 9) to be accepted within twelve months from the date of application, and a patent is required by section 12 to be sealed within fifteen months from the date of application, and it is expedient to empower the comptroller to extend in certain cases the said times: Be it therefore enacted as follows:

A complete specification may be left and accepted within such extended times, not exceeding one month and three months, respectively, after the said nine and twelve months, respectively, as the comptroller may on payment of the prescribed fee allow, and where such extension of time has been allowed a further extension of four months after the said fifteen months shall be allowed for the sealing of the patent; and the principal act shall have effect as if any time so allowed were added to the said periods specified in the principal act.

4. Where an application for a patent has been abandoned, or become void, the specification or specifications and drawings (if any) accompanying or left in connection with such application shall not at any time be open to public inspection or be published by the comptroller.

5. Whereas, doubts have arisen whether under the principal act a patent may lawfully be granted to several persons jointly, some or one of whom only are or is the true and first inventors or inventor: Be it therefore enacted and declared that it has been and is lawful under the principal act to grant such a patent.

6. In subsection 1 of section 103 of the principal act the words "date of the application" shall be substituted for the words "date of the protection obtained."

Issue of September 8, 1885.

Patents	443—	No. 325,643	to No.	326,085, inclusive.
Designs	24—	No. 16,222	to No.	16,245, inclusive.
Trade-Marks	14—	No. 12,552	to No.	12,565, inclusive.
Labels	5—	No. 4,566	to No.	4,570, inclusive.
Reissues	1—	No. 10,644.		
Total issue	487			

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks and Labels.	States.	Patents and Designs.	Trade-Marks and Labels.
Alabama	1	.....	Nebraska	1	.....
Arizona Territory	.....	.....	Nevada	.....	.....
Arkansas	4	.....	New Hampshire	.....	1
California	19	1	New Jersey	23	.....
Colorado	1	.....	New Mexico Territ'y	.....	.....
Connecticut	14	1	New York	66	7
Dakota Territory	1	.....	North Carolina	3	.....
Delaware	.....	.....	Ohio	27	.....
District of Columbia	5	.....	Oregon	.....	.....
Florida	1	.....	Pennsylvania	84	1
Georgia	3	.....	Rhode Island	5	.....
Idaho Territory	.....	.....	South Carolina	1	.....
Illinois	43	1	Tennessee	2	.....
Indiana	12	.....	Texas	6	.....
Indian Territory	.....	.....	Utah Territory	.....	.....
Iowa	6	1	Vermont	1	.....
Kansas	4	.....	Virginia	2	.....
Kentucky	6	.....	Washington Territ'y	.....	1
Louisiana	.....	.....	West Virginia	2	.....
Maine	1	.....	Wisconsin	11	.....
Maryland	9	1	Wyoming Territory	.....	.....
Massachusetts	40	4	United States Army	.....	.....
Michigan	18	.....	United States Navy	.....	.....
Minnesota	4	.....			
Mississippi	1	.....	Total to citizens of the United States	444	19
Missouri	17	.....			
Montana Territory	.....	.....			

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Labels.	Countries.	Patents and Designs.	Trade-Marks and Labels.
Argentine Republic	.....	.....	Germany	4	.....
Austria-Hungary	1	.....	Holland	1	.....
Barbadoes	.....	.....	Ireland	1	.....
Belgium	.....	.....	New Zealand	.....	.....
Bermuda	.....	.....	Russia	.....	.....
British Columbia	.....	.....	Scotland	.....	.....
Canada	4	.....	Spain	.....	.....
Chili	.....	.....	Sweden	.....	.....
Colombia, U. S. of	.....	.....	Switzerland	1	.....
Cuba	.....	.....	West Indies	.....	.....
Denmark	.....	.....			
Ecuador	.....	.....	Total to citizens of foreign countries	23	
England	8	.....			
France	3	.....			

DESIGNS.

16,222 and 16,223.—PLATE FOR CARRIAGE-STEPS.—*James H. Alexander*, Philadelphia, Pa., assignor to *Thomas Devlin & Co.*, same place. Applications filed June 8, 1885. Term of patents 14 years.

16,224.—BABY-CARRIAGE BODY.—*George A. Ellis*, Gardner, Mass. Application filed June 20, 1885. Term of patent 7 years.

16,225 to 16,238, inclusive.—PANEL.—*Frederick Manley*, Williamsport, Pa. Applications filed July 18, 1885. Term of patents 7 years.

16,239 to 16,243, inclusive.—SURFACE ORNAMENTATION OF WALLS, &c.—*Frederick Manley*, Williamsport, Pa. Applications filed July 18, 1885. Term of patents 7 years.

16,244.—BAR-HANDLE.—*Alfred J. Manning*, Irvington, N. Y., assignor to *The Yale & Towne Manufacturing Company*, Stamford, Conn. Application filed June 8, 1885. Term of patent 7 years.

16,245.—HOSIERY.—*Elmer E. Scotchard*, Philadelphia, Pa., assignor of one-half to *Ellen Eddishaw*, same place. Application filed May 27, 1885. Term of patent 7 years.

TRADE-MARKS.

[Certificate of registration of Trade-Marks numbered 8,191 and upward are registered under the act of March 3, 1881.]

12,552.—PRINTING-PRESSES.—*The Babcock Printing Press Manufacturing Company*, New London, Conn. Application filed August 13, 1885.

"The word-symbol 'OPTIMUS.'"

12,553.—WASHING-MACHINE.—*Charles A. Bentzen*, New York, N. Y. Application filed August 14, 1885.

"The words 'THE WASHBOARD MUST GO.'"

12,554.—LAUNDRY-STARCH.—*Benjamin Brown*, New York, N. Y. Application filed August 12, 1885.

"The word 'MAGIC.'"

12,555.—RUBBER HOSE.—*The Commercial Rubber Company*, New York, N. Y. Application filed August 6, 1885.

"The word 'HERCULES.'"

12,556.—MEDICINAL BEVERAGE MADE FROM FERMENTED MILK.—*Markar G. Dadirrian*, New York, N. Y. Application filed August 7, 1885.

"The arbitrarily-selected word-symbol 'MATZOON.'"

12,557.—LIQUID HAIR-RESTORATIVE.—*S. V. R. Ford & Co.*, Fuller's Station, N. Y. Application filed August 3, 1885.

"The title 'HOPE FOR THE BALD.'"

12,558.—CANNED VERTEBRATE FISH, AS SALMON.—*Kariuk Packing Company*, San Francisco, Cal. Application filed February 2, 1885.

"The representation of a horseshoe and a monogram or cipher composed of the initial letters of the name of the registrant—viz., 'K P Co.'"

12,559.—HATS FOR MEN AND BOYS.—*Edson Keith, Alexander B. Adam, Albert E. Fazon*, and *Osborn R. Keith*, (Special,) Chicago, Ill. Application filed August 1, 1885.

"The word 'TIGER' before the word 'HAT.'"

12,560.—POWDERED OR GRANULATED SOAP.—*John Loughrey*, Cambridge, Mass. Application filed August 3, 1885.

"The word 'SOAPLETS.'"

12,561.—AERATED WATERS.—*George T. Maginnis* and *William J. Blackwell*, Seattle, Wash. Ter. Application filed December 4, 1884.

"The representation of a bottle having the words 'SEATTLE SODA WORKS' printed lengthwise on it."

12,562.—PLUG AND SMOKING TOBACCO.—*Leonard H. Neudecker*, Baltimore, Md. Application filed December 5, 1883.

"An elliptical tag having an elliptical opening therein."

12,563.—REFINED PETROLEUM.—*Henry W. Peabody & Co.*, Boston, Mass. Application filed July 13, 1885.

"The word 'WHITELIGHT.'"

12,564.—VELVETS.—*Frederick S. Pinkus*, New York, N. Y. Application filed August 13, 1885.

"The arbitrary words 'THE MODEL VEL-VEL.'"

12,565.—PREPARATION FOR THE CURE OF PARALYSIS AND MENTAL DISEASES.—*Augustin Thompson*, Lowell, Mass. Application filed July 16, 1885.

"The arbitrary word 'MOXIE.'"

LABELS.

4,566.—Title: "L. WOLFF & CO., COPAHINE."—*W. T. Baker*, Philadelphia, Pa. Application filed August 3, 1885.

4,567.—Title: "THE POSITIVE CATARRH CURE."—*Henry Franz*, New York, N. Y. Application filed August 10, 1885.

4,568.—Title: "THE IOWA SHOE."—*Gifford & Douglas*, Cedar Rapids, Iowa. Application filed August 14, 1885.

4,569.—Title: "CATHOLICON" (FOR MEDICINE.)—*Henry W. Webster*, Nashua, N. H. Application filed August 12, 1885.

4,570.—Title: "IMPROVED GERMAN FLY PAPER."—*B. F. B. Willson*, Boston, Mass. Application filed August 1, 1885.

DISCLAIMER.

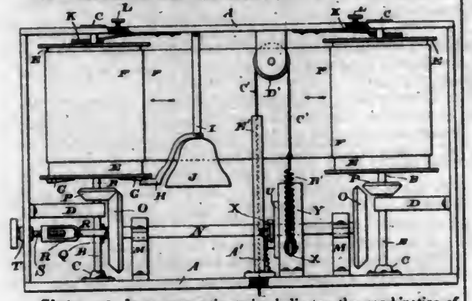
222,002.—*Joseph Locke*, Somerville, assignor to *William L. Libbey*, Newton, and *Edward D. Libbey*, Boston, Mass. Patent dated July 24, 1883. IMPROVEMENT IN GLASSWARE. Disclaimer filed August 29, 1885, by *Edward D. Libbey*, present assignee.

Enters his disclaimer to "all that part of the specification of said patent which is in the following words: 'I have described an amber glass mixture, containing gold as the one from which I have obtained beautiful results; but I desire to be understood that other metals and substances employed to give color to glass compounds may be found to produce a glass which, when subjected to heat, as described, will show developed colors differing from those produced with amber glass;' and disclaims all glassware except that compound of homogeneous stock presenting different colors blended into each other and made from an amber glass mixture containing the metal gold, such as is used for making ruby glass by treating the same in the manner described in the said specification; and further disclaims any method of manufacturing articles of glass of homogeneous stock, except the method described in said letters patent, when applied to the amber glass mixture containing the metal gold, such as is used for making ruby glass referred to in said specification."

PATENTS

GRANTED SEPT. 8, 1885.

325,643. STATION-INDICATOR. MARK ANTHONY, San Francisco, Cal. Filed June 18, 1884. (No model.)



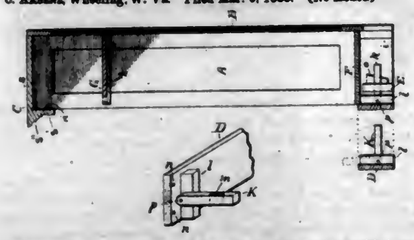
Claim.—1. In an automatic station-indicator, the combination of the ribbon-reels E E, one of which is provided with lugs or detents G G, the spring-rod I, having prong H, and the bell J, secured to said rod, substantially as described.

2. In an automatic station-indicator, the combination of the shafts B B, carrying ribbon-reels E E and pinions P P, the intermittently rotary shaft N, having collar Q and carrying bevel-gears O O, the clutch R, and the adjusting-screw S, substantially as described.

3. In an automatic station-indicator, the combination of the ribbon-reels E E, mounted on vertical shafts B B, carrying pinions P P, the horizontal shaft N, carrying bevel-gears O O and having an endwise adjustment to bring either gear O into engagement with its corresponding pinion, the pin-wheel U and vibratory frame X, mounted on the shaft N, and the pawl W, carried by said vibratory frame and adapted to engage the pin-wheel under the pressure of a spring, Z, substantially as described.

4. In an automatic station-indicator, the combination of the vertical shafts B B, carrying pinions P P, the ribbon-reels E E, mounted on said shafts, the horizontal shaft N, having an endwise adjustment and carrying-gears O O, the pin-wheel U, vibratory frame X, carrying pawl W the springs A' B', cord C', pulley D', spring-rod F', shank K', carrying a roller, L', and the incline N', substantially as described.

325,644. PORTABLE WARDROBE AND BOOK-CASE. FREDERICK C. ARENDT, Wheeling, W. Va. Filed Mar. 9, 1885. (No model.)

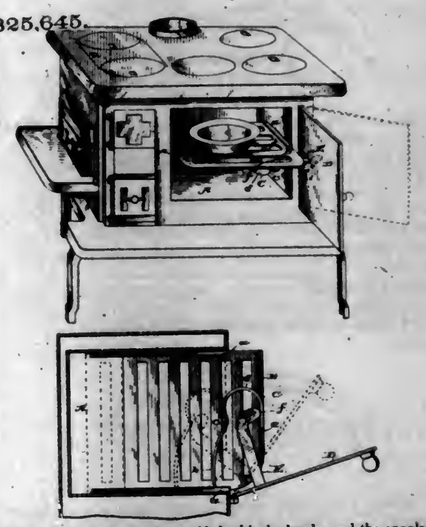


Claim.—The combination, with the sides A A', provided with dowels *b b* and mortise blocks E E, of the base D, having swinging bars K K, attached to the side pieces, *l l*, dowel-sockets *n n*, and wedge *o*, substantially as herein shown, and for the purpose set forth.

325,645. OVEN-SHELF. MONTEREY ARRINGTON, Spring City, Pa. Filed Mar. 16, 1885. (No model.)

Claim.—1. The stove-oven having the shelf sliding therein and a flanged strip depending from the under side of the shelf, said strip consisting of the main arm *b*, provided with the bend *c* and the annular or curved arm *d*, which is cut off at *e*, in combination with the door provided with an arm having its outer end carved or bent at an angle to the body, the arm on the door operating against the bend *c* to close the shelf, and against the arm *d* to draw it outward, the cut-off portion *e* allowing the arm on the door to become disengaged from the shelf when the latter has been drawn out to a convenient distance, as set forth.

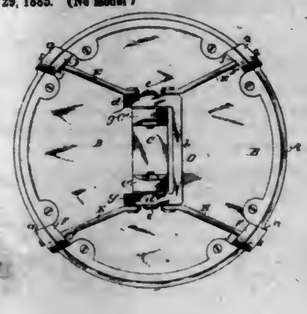
325,645.



2. The stove-oven having the shelf sliding therein and a flanged strip depending from the under side of the shelf, and comprising a long arm, *b*, and a short arm, *d*, in combination with the door provided with an arm to act against the said arms *b d*, the shortness of the arm *d* allowing the arm on the door to become disengaged therefrom, to enable the door to be swung back without further moving the shelf, as set forth.

3. The stove-oven having the shelf sliding therein and contact-arms *b d*, provided on the under side of the shelf, in combination with the door provided with an arm to operate upon the arms *b d*, the latter arm, *d*, being cut off to allow the arm to become disengaged therefrom, as set forth.

325,646. CHURN-COVER. JOHN C. AUTLEY, Rock Falls, Ill. Filed June 29, 1885. (No model.)



Claim.—1. The combination of the fulcrum C, the lever D, pivoted thereto, and arms E, pivoted to such lever respectively, as shown, for the purpose described.

2. The combination of a fixed fulcrum, C, provided with upwardly-extended lugs or ends, the lever D, pivoted vertically on such fulcrum, and arms E, having their inner ends respectively pivoted to such lever above and below the pivotal point of the latter, whereby the lateral oscillation of such lever drives such arms radially outward, substantially as shown, and for the purpose specified.

3. The combination of the churn A, provided with perforated ears *a*, the lid B, fulcrum C, vertically-pivoted lever D, and radial arms E, substantially as shown, and for the purpose named.

325,647. SPECULUM. GEORGE D. BAILY, Spiceland, Ind. Filed June 18, 1885. (No model.)



Claim.—1. In a speculum, the combination, with the blades, of two lever-arms of different lengths, pivotally secured to the blades, whereby the upper blade is raised in a nearly perpendicular line, substantially as specified.

2. The combination, in a speculum, of the blades, with the connecting-arms, the rack-lever pivoted on one of the connecting-arms, the operating-lever secured to one of the blades, and the hook pivoted upon the operating-lever and engaging the rack-lever, substantially as shown and described.

325,648. THILL-COUPLING. GEORGE W. BEAVER, Mann's Choice, Pa., assignor of three-fourths to Harvey Gregory, Frank Leonard, and J. A. Wyand, same place. Filed May 23, 1885. (No model.)



Claim.—1. In a thill-coupling, the combination of a clip having extensions C C', a sliding bolt having free movement in said extensions and provided with an operating-lever, and a spring locking device secured to the under side of the extension C at or about its middle portion, and having one of its ends resting on the axle-beam and the other looped and securing the sliding-bolt lever, substantially as described.

2. In a thill-coupling, the combination of the clip B, having extensions C C', a sliding bolt, D, having a lever, D', moving in said extensions, a spring, C^3, on the under side of extension C, one end of which spring rests against the axle-beam A, and the other looped, as c^3, and engaging the lever D', and an anti-rattler, F, constructed substantially of the form described, for the purposes specified.

325,649. BALANCE-VALVE. ANDREW BECKERT, Baltimore, Md. Filed June 26, 1885. (No model.)



Claim.—1. In a balance-valve, a ring having in its bottom a recess provided with a flexible inner wall, substantially as described.

2. In a balance-valve, a split ring having in its bottom a recess provided with a flexible inner wall, substantially as described.

3. In a balance-valve, a tangential split ring having in its bottom a recess provided with a flexible inner wall, substantially as described.

325,650. FASTENING FOR OVERSHOES. LEWIS B. BELKNAP, Newton, Mass. Filed Apr. 14, 1884. (No model.)



325,650.



Claim.—1. As an improved article of manufacture, a fastening device comprising a socket having yielding sides, substantially as specified, and adapted to receive and hold a ball or other fastening, and a strap-clamp or other similar strap-fastening device, to which the socket is permanently fastened, and by which it is adapted to be adjustably secured to a strap, all substantially as and for the purposes described.

2. The combination, in a fastening, of a socket having yielding sides of the character described and a strap-clamp or similar strap-fastening device, substantially as and for the purposes described.

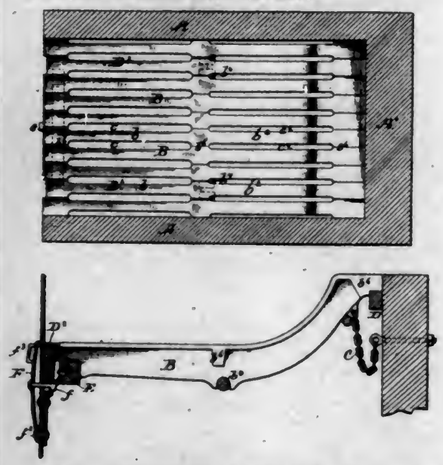
3. The combination of a strap with a strap receiving and holding clamp, or other similar strap-fastening device, and a socket of the character specified, attached to said clamp, all substantially as and for the purposes described.

4. In a fastening, a strap-clamp or other similar strap-fastening device, the arm a^3, fastened thereto, and a socket of the character specified, adapted to receive a ball or other member of a fastening device, and carried by said arm a^3, all substantially as and for the purposes described.

5. The combination of a fastening comprising the strap-clamp or other similar strap-fastening device, a socket of the character specified, fastened to said clamp, and the ball or button *b*, all substantially as and for the purposes described.

6. In a fastening device, a socket of the character described, hinged to its support, as specified, to provide it with a swinging movement in relation thereto, all substantially as and for the purposes described.

325,651. FURNACE-GRATE. GEORGE W. BLACKBURN and WILLIAM F. CORDRAY, Columbus, Ohio; said Cordray assignor to Harriet Cordray same place. Filed Mar. 22, 1884. (No model.)



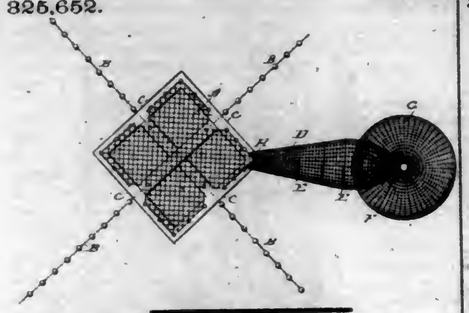
Claim.—1. The combination of stationary grate-bars, having their rear portion curved upward and provided with trunnions or their described equivalents, with the grate-bars B^3, connecting-bar E, having lug *e*, and the latch *f*, substantially as and for the purpose described.

2. The combination of stationary grate-bars, having their rear portion curved upward in substantially the form of a segment of a circle, with similarly-curved bars adapted to have their forward end tipped downward, and a connecting-bar having its ends entering recesses in the pivoted grate-bars, substantially as and for the purpose described.

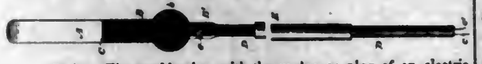
325,652. FISHING-NET. THOMAS S. BROWN, Greenfield, Mich., assignor of one-half to Wm. D. Lobin and D. Farrand Henry, both of Detroit, Mich. Filed Aug. 16, 1884. (No model.)

Claim.—In a deep-water net, the combination of a central pond or inclosed space having guarded openings with leaders radiating therefrom, with a tunnel having at its end a bag or purse with guarded opening, substantially as described, and for the purposes set forth.

325,652.

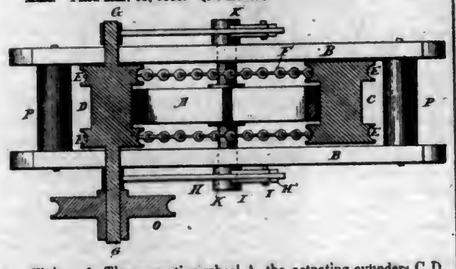


325,653. ELECTRIC-SWITCH PLUG. JESSE H. BUNNELL, Brooklyn, N. Y. Filed Nov. 13, 1884. (No model.)



Claim.—The combination, with the wedge or plug of an electric switch-board, of a projection upon the handle of said wedge or plug for receiving the conducting-wires, and a flexible tubular sleeve for inclosing said projection and protecting said wires, as set forth.

325,654. TRACTION-CHAIN GEARING. GEORGE E. BURT, Harvard, Mass. Filed Mar. 18, 1885. (No model.)



Claim.—1. The supporting-wheel A, the actuating-cylinders C D, and propelling-chains, constructed and arranged substantially as described, for the purpose set forth.

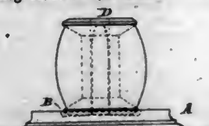
2. Traction-chain gearing constructed with actuating-cylinders arranged to rest on the chord of a circle and held in position on the periphery of a supporting-wheel by propelling-chains, substantially as described.

3. Traction-chain gearing constructed with a supporting-wheel and arranged with cylinders automatically operated, and propelling-chain to transmit power to actuate machinery, substantially as described.

4. The supporting-wheel A, actuating-cylinders C and D, propelling-chain F F, shaft G, arms H H, and axle K, constructed and arranged substantially as described, for the purpose set forth.

5. In combination with a supporting or propelling wheel, actuating-cylinders D and C, propelling-chain Y Y, and arms H H, arranged substantially as described.

325,655. PORTABLE SPOOL-HOLDER. EDWARD CARLSON, San Francisco, Cal. Filed Aug. 23, 1884. (No model.)



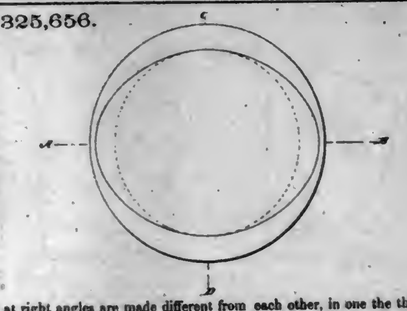
Claim.—The herein-described portable spool-holder, consisting of the disk A, slightly concaved on its under side, and provided on its upper surface with a circular depression, B, slightly elevated in the center, and having a beveled rim, and the central pin or standard, C, as and for the purpose specified.

325,656. LENS. JOHN W. CLOUD, Altoona, Pa., assignor of one-third to Charles F. Houghton, Corning, N. Y. Filed July 8, 1885. (Model.)

Claim.—1. A lens having a concave spherical surface and a convex spheroidal surface, arranged and adapted to serve substantially as shown and described, and for the purposes set forth.

2. A lens having a concave surface in form of a section of a sphere and a convex spheroidal surface, whereby two cross-sections of the lens

325,656.



at right angles are made different from each other, in one the thickness being uniform and in the other being thickest at the center, thereby causing the beam of light, after passing through the lens, to be of elliptical cross-section, as set forth.

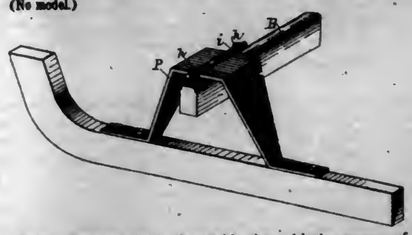
325,657. FARM-GATE. EDEN M. COOMBS, Memphis, Ind. Filed Apr. 10, 1885. (No model.)



Claim.—1. A farm-gate having a short upright, A', and long upright A'', rigidly connected to each other by longitudinal rails A''' and by a diagonal brace, B, secured at the upper end to a vertical piece, K, the upper rail, A''', being provided with a piece, D, having an incline, *h*, and notches H, in combination with rails A A'''', pivoted to brace B at B' B'', and frame C, bolted to rail A by bolt *b*, said frame C having a friction-roller secured at its upper end adapted to engage with notches H, as described, and for the purposes set forth.

2. A farm-gate having a short upright, A', provided with a notch, the said upright A' being connected to the upright A'' by two or more rails, A''', the upper one of which has a pin, E, in combination with rails A A'''', pivoted to the brace B, said rail A being pivoted to the frame C, and the latter having notches *c c'*, and the said rail A'''' having pins F and F', as described, and for the purposes set forth.

325,658. SLED. PERRY COY, East Toledo, Ohio. Filed Feb. 26, 1885. (No model.)



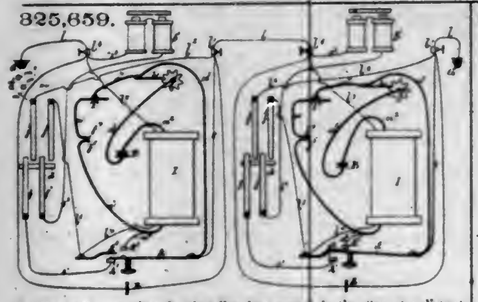
Claim.—In a bob-sleigh, the combination, with the runners, of the standards or benches P, having an overlapping top plate or rod attached, the eyebolts, and the swinging axle, which is thereto adapted and suspended, substantially as shown, and for the purpose specified.

325,659. TELEPHONE SYSTEM. ADOS E. DOLBEAR, Boston, Mass. Filed Apr. 16, 1883. (No model.)

Claim.—1. In combination, two or more inductoriums, each having two primary circuits, a transmitter in one primary circuit of each inductorium, a circuit-breaker in the other primary circuit of each inductorium, and signal-instruments and receivers in the line formed by the secondaries of the inductoriums, as set forth.

2. In combination, two or more inductoriums, the secondaries of which form a line grounded at each end, signaling-instruments in that line, and a circuit-breaker in the primary of each inductorium, the operation of the circuit-breaker at either station causing induced currents in

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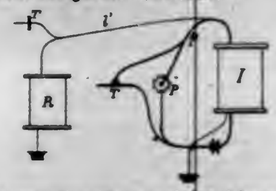


the line and operating the signaling-instrument in the line at a distant station, substantially as described.

3. An inductorium having in its primary circuit both a transmitter and an apparatus for rapidly making and breaking the circuit, and both a signaling-instrument and a receiver in its secondary circuit, whereby the sudden makes and breaks of the primary circuit induce in the secondary currents sufficient to operate the signaling-instrument, as set forth.

4. In combination, two or more inductoriums, the secondaries of which form a closed-line circuit and the primaries of which contain telephonic transmitters, with one or more receivers, each consisting of two plates, one plate of each receiver being connected to the line at a point between two secondary coils, substantially as described.

325,660. MEANS FOR INCREASING THE EFFICIENCY OF TELEPHONES. AMOS E. DOLBEAR, Boston, Mass. Filed Apr. 16, 1883. (No model.) Patented in England Dec. 3, 1882, No. 5,870.



Claim.—In combination with the metal plate of the receiver coated with a dielectric, as explained, an inductorium whose primary contains a circuit-breaker adapted, when in operation, to induce a high electromotive force in the secondary circuit, and thereby charge the dielectric coating of the plate.

325,661. SEAL-LOCK. JOSEPH M. EDGAR, Argentine, Kans., assignor to John Z. Rorabeck, Kansas City, Mo. Filed Dec. 18, 1884. (Model.)



Claim.—1. A seal-lock consisting of a plate having suitable transverse slots, and a seal-holder upon said plate adapted to receive a seal and cover a slot in said plate, and a hasp suitably inclosing said seal-holder and provided with a keeper and a latch, and a staple, one prong of which staple is adapted to serve as a pivot for said latch and the opposite prong as a lug for the latch to rest upon, as described.

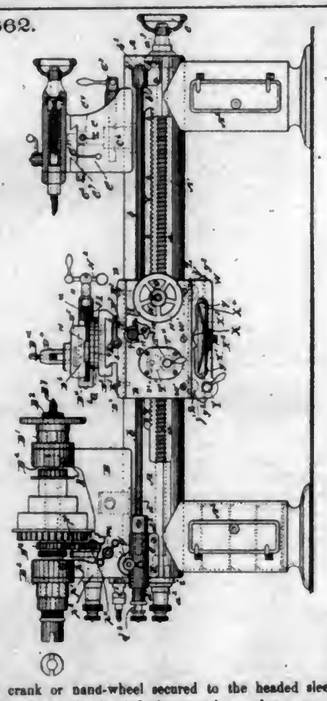
2. The combination, with the seal-plate provided with suitable transverse slots, and a seal-holder upon said plate adapted to receive a seal and inclose a slot in said plate, of a hasp partially inclosing said seal-holder and provided with a keeper, and a latch pivotally attached to said seal-plate adapted to engage said keeper, and inclined as shown and described.

325,662. ENGINE-LATHE. VICTOR H. ERNST, Jersey City, N. J. Filed Feb. 20, 1885. (No model.)

Claim.—1. In an engine-lathe, the combination, with the lathe-carriage apron, of a revoluble sleeve carrying a worm-wheel, a friction device arranged in the worm-wheel, a headed sleeve mounted revolubly in the worm-wheel sleeve, a hand-wheel mounted on the headed sleeve, and a shaft having a gear-wheel, which shaft is mounted to slide in the headed sleeve, substantially as shown and described.

2. In an engine-lathe, the combination, with the carriage-apron, of a revoluble sleeve having a worm-wheel, a friction device arranged in the worm-wheel, a headed sleeve mounted revolubly in the worm-wheel

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sleeve, a crank or hand-wheel secured to the headed sleeve, a shaft mounted to slide in the headed sleeve and carrying a gear-wheel, and means for connecting the headed sleeve and sliding shaft, substantially as set forth.

3. In an engine-lathe, the combination, with the carriage-apron, of a revoluble sleeve having a worm-wheel, the sleeve G, wheel H, the disk S, the sliding shaft I, having a gear-wheel meshing with a rack and devices for holding and means for limiting the movement of the sliding shaft, substantially as herein shown and described, whereby the friction-disk is kept from crowding against the rack, as set forth.

4. The combination, with the worm-wheel sleeve and worm-wheels, sleeve G, wheel H, and screw-sleeve K, friction-disk S, shaft I, and wheel U, of the disk Q of absorbent material, substantially as shown and described, whereby the oil will be absorbed and retained from working into and between the friction device, as set forth.

5. The combination of apron E, provided with sleeve E', the revoluble sleeve F, having worm-wheel P, the headed sleeve G, provided with disk H', the wheel H, screw-sleeve K, the sliding shaft I, having gear-wheel U, the screw J, shaft I, the button L, adjustably mounted on screw J, and devices, substantially as shown and described, for limiting the sliding movement of shaft I, and for adjusting and stopping the screw J, as set forth.

6. In combination with headed sleeve G, the disk H', hand-wheel H, screw-sleeve K, and the shaft I, having gear-wheel U, the screw J, the shaft I, the button L, adjustably mounted on screw J, and stop devices, as shown and described, on sleeve K, and button L, as set forth.

7. The disk Q of absorbent material mounted in a cavity in worm-wheel P surrounding shaft I, and covered by friction-disk S, substantially as shown and described, and for the purpose set forth.

8. The combination, with saddle D', having pockets A^4, of the yoke W, connecting the saddle D' and the apron E, substantially as shown and described, and for the purpose set forth.

9. The combination of yoke W, having the rib X', and provided with a pocket or recess, in which is mounted a truck carrying rollers, a spring arranged to exert a pressure on the truck, and a device to adjust the tension of the spring on the truck, and the rollers, substantially as shown and described.

10. The combination of yoke W, having rib X' and recess X^4, and the truck X, having rollers Z, arranged with a cam to take on the roller-truck, substantially as shown and described.

11. In an engine-lathe, the combination, with the saddle D' and the slide D^2, of the saddle D^4, having swivel stem 5 F, the nut-gear wheel D^6, and the gear-wheel D^6, having a bearing-stem for operation, substantially as shown and described, and for the purpose set forth.

12. The compound rest-saddle D^4, having the circular base 6 G, arranged with an annular beveled recess in the under side, in which takes the annular rib or track D^{10}, formed on the face of the projecting hub of

slide D^2, the threaded stem 5 F, and a nut gear-wheel arranged to take on the threaded stem, and devices for operating the gear-nut, all in combination, substantially as shown and described, and for the purpose set forth.

13. In an engine-lathe, the combination, with the apron E and the saddle D', of the feed-screw 2 B, having a gear-wheel, 7, the bevel-wheel 3, mounted on apron E, the connected bevel-wheel 4, and gear-wheel 5, mounted revolubly on stud 15, and an intermediate gear-wheel mounted on an eccentric bearing, and devices whereby the intermediate gear-wheel can be simultaneously thrown into gear with or out of gear from the gear-wheels 5 and 7, substantially as shown and described, and for the purpose set forth.

14. In an engine-lathe, the combination, with the carriage-apron, of the shaft 9, having the disk 16, provided with the eccentric bearing-stud 10, the gear-wheel 6, mounted on stud 10, the stop 17, and the adjustable stop 18 19, substantially as shown and described, and for the purpose set forth.

15. In an engine-lathe, the combination, with the carriage-apron, of an adjustable movable stop secured in frictional contact with the apron, a shifting stop rigidly mounted on a shaft, and a gear-wheel mounted revolubly on an eccentric formed on the shaft, substantially as shown and described, and for the purpose set forth.

16. In an engine-lathe, the combination, with the bed A, of the bracket-sleeve *e*, the sleeve *d*, mounted revolubly in the bracket-sleeve, and having the annular rack d^4 and an enlarged head, d^3, and the pinion *f*, having the shaft *f'*, handle *g*, and thumb-nut *h*, substantially as shown and described, and for the purpose set forth.

17. In an engine-lathe, the combination, with the bed A, of the telescopic-headed racked sleeve *d*, mounted revolubly on the bracket-screw, the feed-rod *b*, having one end mounted to slide and turn with the headed sleeve, and the pinion *f*, operating to telescope the headed screw *d* on the feed-rod, substantially as shown and described, and for the purpose set forth.

18. In an engine-lathe, the combination, with the lathe-bed, of a bracket-sleeve, a headed sleeve having an annular rack mounted revolubly in the bracket-sleeve, and a pinion mounted in the bracket-sleeve to engage the annular rack, substantially as shown and described, whereby the headed sleeve can be moved forward or backward, as set forth.

19. In an engine-lathe, the combination, with the head-stock, of the bearing-bushings B^2, having annular grooves b^2, connected by spiral cross or reverse grooves B^4, and provided with a cleaning-hole closed by a screw-plug, B^4, to retain the oil, substantially as shown and described, and for the purpose set forth.

20. In an engine-lathe, the combination, with the head-stock, of a pivoted yoke, a knuckle-joint bar, a shifting-screw, and a thumb-nut mounted on the shifting-screw, substantially as shown and described, and for the purpose set forth.

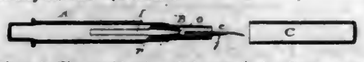
21. In an engine-lathe, the saddle D', having the pockets A^4, in combination with the head-stock B, and the foot-stock *c*, substantially as shown and described, and for the purpose set forth.

22. In an engine-lathe, the combination, with the head-stock having recess j^4, of the pivoted yoke *p*, having knuckle-recess *k'*, bar j^3, the shifting-screw *l*, provided with the lever-handle *m*, and thumb-nut *n*, substantially as shown and described, and for the purpose set forth.

23. In an engine-lathe, the offset foot-stock, provided with an adjustable dovetailed set-over slide, slotted transversely from its top to form a spring clamping-jaw to clamp the said dovetailed set-over slide, and a clamping-screw for operation, substantially as shown and described, and for the purpose set forth.

24. In an engine-lathe, the combination, with the foot-stock C, having a vertical slot, C', and the spring clamping-jaw C 7, of the adjustable set-over slide C^2, and the clamp-screw C^3, substantially as shown and described, whereby the set-over slide can be rigidly fastened, as set forth.

325,663. FOUNTAIN-PEN. LE ROY W. FAIRCHILD, New York, N. Y. Filed May 20, 1885. (No model.)



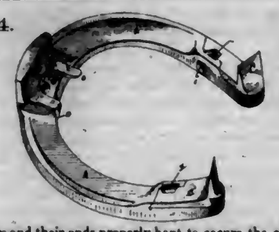
Claim.—1. The combination of the tubular handle or reservoir A, having its upper end permanently closed, the tubular pen-holding section B, and the reversible and adjustable ink-feeder I, all constructed and arranged to operate substantially as shown and described.

2. As an improvement in fountain-pens, the ink-feeder I, consisting of a tube having a reduced orifice, *o*, at its lower end, and having a prong, *l*, extending from one side of said orifice downward, as shown, to bear against and conduct the ink to the back or to the under side of the pen, as set forth.

325,664. HORSESHOE. JAMES B. FINCH, Newark, N. J., assignor of one-half to Andrew Albright, same place. Filed May 2, 1885. (Model.)

Claim.—1. A horseshoe having an undercut recess, and an abutment having openings, a removable calk having beveled edges adapted to fit in said recess and provided with prongs, said prongs passing through

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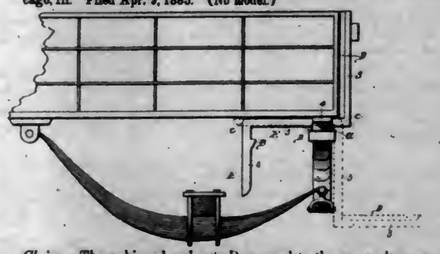


said openings and their ends properly bent to secure the calk to the shoe, substantially as shown and described.

2. A horseshoe having undercut toe and heel recesses, each recess provided with an abutment having one or more openings, removable toe and heel calks adapted to fit in said recesses and provided with one or more prongs, whereby the calks are secured to the shoe by having said prong or prongs properly bent into engagement with said shoe, substantially as specified.

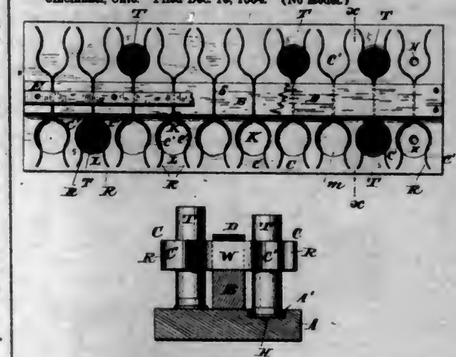
3. A horseshoe having undercut heel recesses and perforated abutments, removable heel-calks having beveled edges, and each provided with a securing-prong, said calks adapted to fit in said recesses with their prongs passing through the perforations in the abutments and properly bent to secure the calks to the shoe, substantially as described

325,665. COMBINED STEP AND END-GATE. EDWIN R. FISH, Chicago, Ill. Filed Apr. 9, 1885. (No model.)



Claim.—The unhinged end-gate D, secured to the wagon by means of the bent arms 3 3 and the loops 4 4, substantially as and for the purpose herein shown and described.

325,666. HOLDER FOR CARTRIDGE-SHELLS. WILLIAM H. FISHER, Cincinnati, Ohio. Filed Dec. 15, 1884. (No model.)



Claim.—1. A cartridge-holder consisting of a rigid upright having an extended supporting-base, and a pair of spring-arms projecting from the side of the upright, substantially as described.

2. A cartridge-holder consisting of an inflexible upright having an extended supporting-base, and having a series of spring-arms, arranged in pairs, projecting from each side of the upright, substantially as described.

3. A spring cartridge-shell holder having horizontal laterally yielding spring-arms, and rigid upright and basal portion extending under the said arms, said base provided with depression F under the space between the arms, substantially as and for the purposes specified.

4. A spring cartridge-shell holder having horizontal curved laterally-yielding opening-arms, and rigid upright and basal portion provided under the space K, with a depression or opening, H, centrally under the space between the spring-arms, substantially as and for the purposes specified.

5. A spring cartridge-shell holder having horizontal laterally-yield-

ing spring-arms, and base provided under space, with depression F, and opening H centrally under said space, substantially as and for the purpose specified.

6. A spring cartridge-shell holder having curved horizontal laterally-yielding arms, and base having depression F, opening H, and chamber J, said opening and space centrally under the space between the spring-arms, substantially as and for the purposes specified.

7. The combination of the laterally-yielding spring-arms C' and extensions R and shanks W, upright B, into which said shanks extend, and base A, substantially as and for the purposes specified.

8. The combination of the yielding spring-arms C' with extensions R and shanks W, upright B, provided with slit S, receiving the shanks and base A, substantially as and for the purposes specified.

9. The combination of the laterally-yielding pieces P, provided with central shank W and at each end with an arm C', and an extension, R, upright B, having slit receiving the shanks of the pieces P, substantially as and for the purposes specified.

10. The combination of the laterally-yielding pieces P, provided with central shank W and at each end with an arm, C', and an extension, R, upright B, having slit receiving the shanks of the pieces P, and base A, extending outwardly under the arms, substantially as and for the purposes specified.

11. The laterally-yielding arms having extensions R and shanks W, and the upright and base, the upright having a slit, S, receiving the shank, and a superimposed securing-strip, substantially as and for the purposes specified.

12. The pieces P, each composed of a shank, W, having at each end a laterally-yielding arm and bent extensions, and the base, and upright secured to base and provided with slit S, receiving the said shanks, each shank having a recess *t* at bottom and a superimposed securing-strip, substantially as and for the purposes specified.

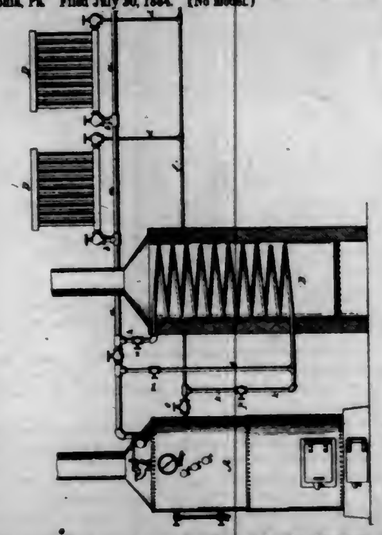
13. The pieces P P, constructed with shanks and arms and extensions, each shank being provided with upper recess, *t*, and superimposed securing-strip entering therein, and upright receiving said shanks, and base extending under said arms, substantially as and for the purposes specified.

14. The combination of pieces P P, constructed with shanks and arms and extensions, each shank being provided with upper recess and lower recess, and upright receiving said shank, and superincumbent strip entering said upper recess, and base, as A, substantially as and for the purposes specified.

15. A series of spring-holders composed of pieces P, having central shanks, and an each end an arm and extensions, and an extended upright having slits S, receiving said shank, part of said holders being on one side of said upright and part on the other side of said spring-holders, substantially as and for the purposes specified.

16. A cartridge-holder consisting of an upright and a pair of spring-arms extending from the side thereof, the proximate faces of the arms being concave and the arms flaring at the top.

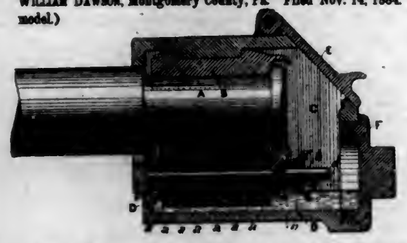
325,667. SYSTEM OF STEAM-HEATING. MILTON FOREMAN, Philadelphia, Pa. Filed July 30, 1884. (No model.)



Claim.—1. The mode herein described of heating by steam, said mode consisting in first generating steam under low pressure, then raising the temperature of the steam without increasing the pressure, and then circulating the low-pressure high-temperature steam through the radiators, as set forth.

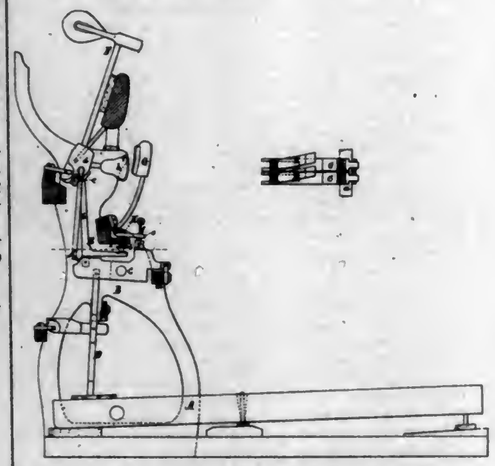
2. The mode herein described of heating by steam, said mode consisting in first generating steam under low pressure, then raising the temperature of the steam without increasing the pressure, then passing the low-pressure high-temperature steam to the radiators, and conveying the water of condensation from said radiators to the superheaters, as set forth.

325,668. CAR-AXLE BOX. EDWARD J. FROST, Philadelphia, and WILLIAM DAWSON, Montgomery County, Pa. Filed Nov. 14, 1884. (No model.)



Claim.—The combination, with the journal and the journal-box, of the receptacle D, forming the bottom of said journal-box, the lateral flanges *d d*, the frame G, having elliptical springs H H, which rest upon said flanges, and the roll of absorbent material journaled in said frame, substantially as set forth.

325,669. UPRIGHT-PIANO ACTION. IGNATIO FUSO, Boston, Mass. Filed Mar. 30, 1885. (No model.)



Claim.—The combination of the adjustable jack-stop arranged between the tails of two next adjacent back catches and screwed upward into a stationary bar placed below such tails, with the jack-tail projected obliquely over the space between the elevator of such jack and that of the next adjacent jack and underneath the said adjustable stop, all being substantially as set forth.

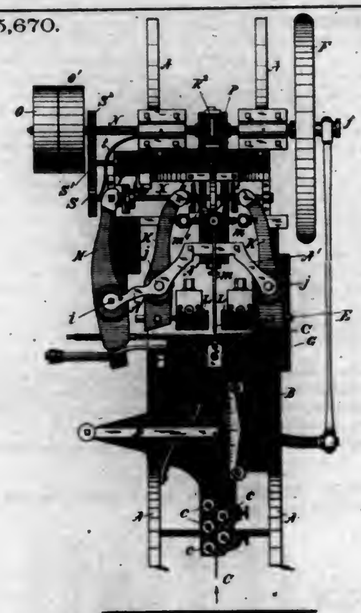
325,670. NAIL-MACHINE. BURTON H. GEDGE and HENRY METERER, Covington, Ky., assignors to the American Wire Nail Company, same place. Filed Oct. 20, 1884. (No model.)

Claim.—1. In a wire-nail machine, the combination of the wire-feeding devices, wire-holding device, hammer R, shaft N, crank or cam *n*, bearings P, and guides R' R², and nippers, substantially as and for the purposes specified.

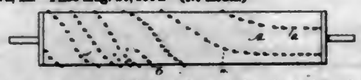
2. In a wire-nail machine, the combination of the wire-feeding devices, wire-holding device, hammer R, shaft N, crank or cam *n*, bearings P, guides R' R², and adjustable connections W, and nippers, substantially as and for the purposes specified.

3. The combination of the rollers C, feed D, lever E, crank *f*, jaws G, lever H, cam I, spring *i*, cutters L L, levers K, fingers or snappers M M', cams *k*, shaft X, gears S S' S², shaft N, crank or cam *n*, bearings P P, guide-slides R' R², and hammer R, substantially as and for the purposes specified.

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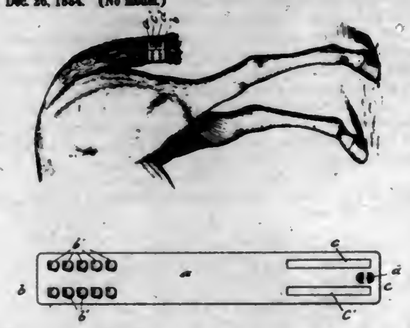


325,671. CYLINDER FOR CORN-SHELLERS. JOHN H. GILMAN, Ottawa, Ill. Filed Aug. 20, 1884. (No model.)



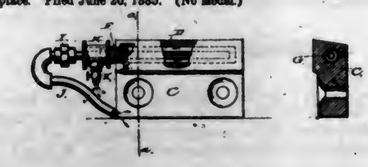
Claim.—In a corn-sheller of the kind described, the cylinder A, provided at its mouth or hopper end with a series of spiral rows of teeth of quick pitch, and for the remainder of its length with a series of spiral rows of teeth beginning where the first series ends, and of lesser pitch and greater number of rows, substantially as shown and described.

325,672. BAND OR COLLAR. WILLIAM GRAY, Hartford, Conn. Filed Dec. 26, 1884. (No model.)



Claim.—An improved band or collar made of thin metal, one end of the band having projecting buttons or hooks, and the other end having corresponding sockets, the outer end having also a thumb-piece, all substantially as described.

325,673. SHEAR-BLADE FOR HOT BLOOMS, BARS, &c. SAMUEL M. GUSS, Reading, Pa., assignor of one-half to Jacob S. Ammon, same place. Filed June 20, 1885. (No model.)



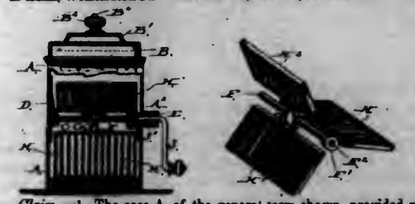
325,673.



Claim.—1. As an improvement in the construction of shears for shearing heated metal bars, &c., a hollow or chambered cutting-blade, jointly with a tube for conveying water to and through the same, and having an orifice closed by a cock for discharging and regulating the flow of water therefrom, substantially as shown, described, and for the purpose set forth.

2. The combination, with a hollow or chambered shear-blade having a circulating-pipe forming a part of the same, as described, of a reservoir or pressure-head of water by pipe J and union I, the supply of water to and the circulation of the same within said chambered blade being controlled by the cock K, substantially as and for the purpose set forth.

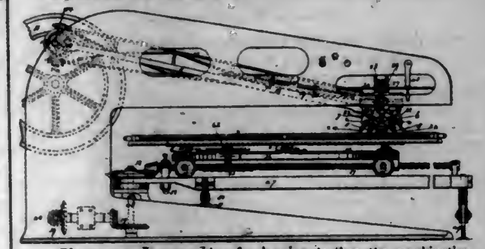
325,674. EGG-BEATER, BATTER-MIXER, AND CHURN. THOMAS E. HAAK, Wenalsdorf, Pa. Filed Jan. 22, 1885. (No model.)



Claim.—1. The case A, of the general form shown, provided with a removable cap, B, feet A', a packed nozzle, A², internal knee-bearings, C' I', and lock-spring D, in combination with the shaft F, beaters, H, H', and H², collar F', and crank J, substantially as and for the purpose set forth.

2. The shaft F, with collar F', threaded hole F², central disk, G, three or more rectangular beater-frames secured thereto, the beaters in said frames H' H², respectively, being placed at reverse angles with each other, the alternate frame H having a larger number of bars or beaters set square therewith, in combination with the bearings C' I', lock D, case A, packed nozzle A², and crank J, as and for the purpose set forth.

325,675. LEATHER-DRESSING MACHINE. SAM HALEY, Bramley, near Leeds, England. Filed Apr. 14, 1885. (No model.) Patented in England Mar. 11, 1884, No. 4,677.



Claim.—1. In a machine for dressing leather, the combination, with an oscillating head-stock, substantially as described, of the main driving-shaft and crank and the connecting-rods 9 and 12, coupled to the crank and head-stock, substantially as described, whereby the head-stock, in addition to its reciprocating motion, has imparted to it a lifting motion, for the purposes set forth.

2. In a machine for dressing leather, the combination, with the table 2, of the carriage 47, on which it is mounted, constructed to swing radially, and the tracks on which said carriage 47 runs, all arranged substantially as shown, whereby one table and carriage may be moved out of the way and another wheeled into its place, for the purposes specified.

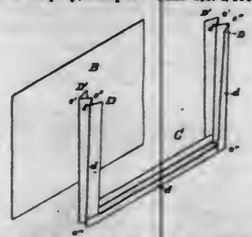
3. In a machine for dressing leather, the combination, with the reciprocating head-stock, and its operating mechanism constructed substantially as described, of the table 2, its carriage 36, mounted on a track, and the screw mechanism, substantially as described, whereby the table bearing the leather may be automatically moved in a direction opposite to that in which the tools move, for the purposes set forth.

4. In a machine for dressing leather, the combination of two sets of tables and their carriages and tracks, constructed and arranged substantially as described, and their operating mechanism, whereby one table may be prepared while the other is under the tools, and the working capacity of the machine be thus increased, as set forth.

5. In a machine for dressing leather, the combination of the table 2, its carriage 36, provided with wheels 65, and the turn-table 56, provided with inclined planes or wedges 64 and rotatively mounted on carriage 36, whereby table 2 may be raised and lowered, as set forth.

6. In a machine for dressing leather, the combination of the table 2, the carriage 36, provided with the wheels 65, the turn-table 56, mounted rotatively on carriage 36, and provided with inclines or wedges 64, the bell-crank lever 58, coupled to said turn-table, and having a segment-rack, 60, and the pinion 62 and its shaft, all arranged to operate substantially as set forth.

325,676. PAPER-FILE. JOHN M. JARDINE, Cincinnati, Ohio, assignor to the Globe Files Company, same place. Filed Apr. 4, 1885. (No model.)



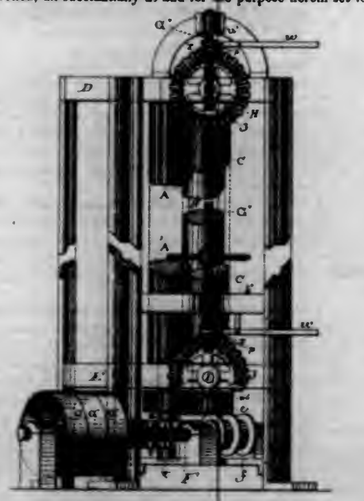
Claim.—1. A paper-file consisting of the combination of cheeks A A', partitions B, and partially severed, crimped, bent, lapped, and pasted gores or gusset-sections formed from blanks C, Fig. 2, which, having been partially severed by cuts *c* that extend transversely from each edge inward at the places for the file-corners, are interiorly crimped, as shown at *c' c'' c'''*, Fig. 3, each section having wings D D', to which the lower and end marginal portions of the said cheeks and partitions are pasted, as and for the purposes set forth.

2. In a paper-file, the combination of the cheeks A A', the partitions B, the crimped and folded gusset-sections C, each of which is conterminous with the bottom and sides of the partitions B, each of said partitions being secured between the wings D D' of two consecutive gusset-sections, and the re-enforce E, pasted to the outer side of the upper margins of the gussets to prevent their separation, substantially as set forth.

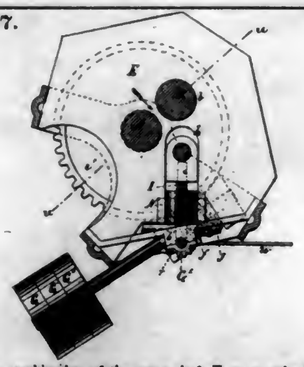
3. In a paper-file, the gusset composed of gores or sections formed from blanks C, Fig. 2, which, having been partially severed by cuts *c* that extend transversely from each edge inward at the places for the file-corners, are interiorly crimped, as shown at *c' c'' c'''*, Fig. 3, one section being applied to each compartment, each section being partially severed, crimped, bent, lapped, and pasted, and having wings D D' for attachment by pasting of the partitions B, in the manner set forth.

325,677. ROLL FOR BENDING PLATE METAL. ROBERT KENT, Brooklyn, N. Y. Filed Jan. 18, 1884. (No model.)

Claim.—1. In "vertical plate-bending rolls," so called, the longitudinally-grooved roll A, and the vertically-removable roll B, in combination with the top and bottom bearings, gearing for rotating the rolls A B in unison, the roll C, and a screw for adjusting the roll C in a horizontal direction, all substantially as and for the purpose herein set forth.

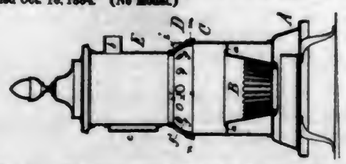


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2. The combination of the worm-shaft F, worm-wheel *e'*, pinions *a* and *e*, shaft G*, bevel-pinions *r*, bevel-gears J, and screw-shafts H and I, in combination with the slotted top and bottom portions, D and E, of the frame, the vertical rolls A B, the vertical roll C, and the sliding bearings of said roll C, all substantially as and for the purpose herein set forth.

325,678. HEATING-STOVE. JOHN H. KEYSER, New York, N. Y. Filed Oct. 16, 1884. (No model.)



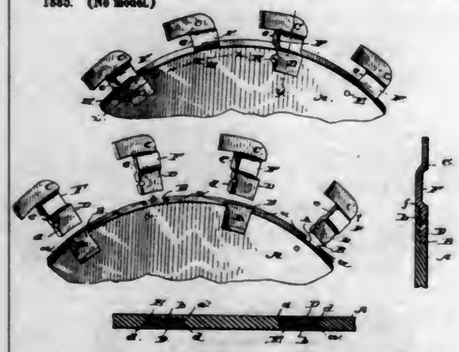
Claim.—1. The stove comprising section E, having door *c* and exit-passage *b*, intermediate or middle section, D, of upwardly-tapered form, and provided with holes *f*, sliding upwardly-tapered ring-damper F, having ventilation-holes *f'*, and the lower section, C, having grate B, substantially as and for the purpose described.

2. The stove comprising middle or intermediate cast-metal section, D, having an upward tapered form and perforated, and provided with upper and lower flanges, *g* and *h*, the upwardly-tapered sliding damper having ventilating-holes *f'*, the sheet-iron sections C E, united to the middle section, and the upper section being smaller than the lower one and provided with a door, *c*, and exit *b*, while the lower section is provided with a grate, B, substantially as described.

3. The stove comprising the middle or intermediate section, D, having the described tapered form, holes *f*, and foot-rest *m*, the tapered sliding damper having holes *f'*, the section E, having door or exit *b*, and the section C, having grate B, substantially as described.

4. The combination, with the sections C and E of the stove, of the intermediate or middle section, D, having ventilation-openings *f*, foot-rest *m*, shoulder flanges, *g h*, and a sliding ring-damper, F, having openings *f'*, substantially as and for the purpose described.

325,679. SAW. JOSEPH LEDWARD, Westerly, R. I. Filed Jan. 29, 1885. (No model.)



Claim.—1. In a saw, the blade having recesses formed therein at the outer edge or periphery, which recesses do not extend entirely through the blade, but form a closed wall, in combination with the teeth having their shanks fitted within the recesses against the closed wall.

said teeth being pressed out on the same side as the closed wall to provide planing-irons which have their cutting-edges on a line with the face of the blade, as and for the purpose set forth.

2. In a saw, the teeth pressed out on one side to provide a planing-iron the cutting-edge of which is on a direct line with the face of the saw-blade, as and for the purpose set forth.

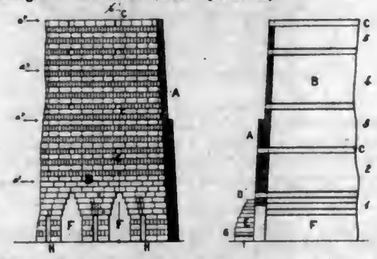
3. In a saw, the combination, with the blade, of the planing-irons having their cutting-edges on a direct line with the face of the blade, as and for the purpose set forth.

4. In a saw, the combination, with the blade, of the herein-described detachable tooth, made of the same thickness throughout, which thickness is less than that of the blade, as and for the purpose set forth.

5. In a saw, the herein-described tooth, having its shank, body, and cutting-edge of the same thickness and of thinner steel than the blade, a portion of the tooth being pressed out on one side to provide a planing-iron which has its cutting-edge on a line with the face of the blade, as set forth.

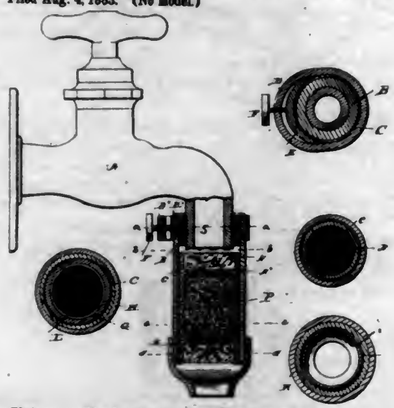
6. In a saw, the herein-described teeth, constructed of thinner metal than the blade, and carring planing-irons which have their cutting-edges on a line with the face of the blade, as and for the purpose set forth.

325,680. DRYING AND BURNING BRICKS. PHILIP LICHTENSTADT, Chicago, Ill. Filed Mar. 10, 1885. (No model.)



Claim.—The herein-described method or process of stacking bricks made from wet or plastic clay in the kiln directly from the mold or former without resetting, and drying them within the kiln in position for burning, substantially as specified.

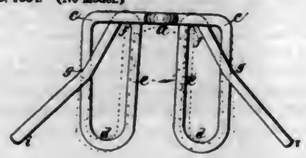
325,681. WATER-FILTER. OSMUND S. LINDON, San Francisco, Cal. Filed Aug. 4, 1883. (No model.)



Claim.—1. The herein-described filter comprising the chamber G, with end strainer-chambers and the central filter-chamber, P, the outer case, C, having the grooves and slitted ends, the clamping-ring D, the crescent-shaped clamping-ring, and the set-screw adapted to bear against the same, substantially as set forth.

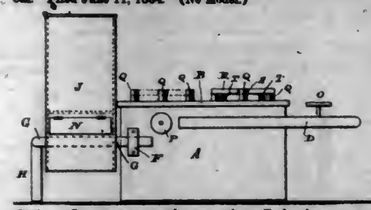
2. In water-filters, the clamping-ring D and crescent clamp E, in combination with the grooved and slotted end of the outer case, C, and the packing B, substantially as and for the purposes set forth.

325,682. BROOM-HOLDER. NATHAN H. LONG, Muncie, Ind. Filed Mar. 28, 1884. (No model.)



Claim.—A broom-holder consisting of a piece of wire bent at *a b, c, d, f,* and *g*, forming a holder, substantially as shown and described.

325,683. LID FOR GAS-STOVES. SARAH B. LONG, San Francisco, Cal. Filed June 11, 1884. (No model.)

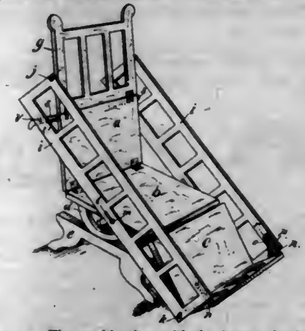


Claim.—In a gas-stove, the top plate, B, having cones or lugs Q immediately surrounding the stove-holes, and stove-lid R, having scallops S and lugs T, substantially as shown, and for the purpose set forth.

325,684. APPLICATION OF CHLORIDE OF LIME TO BLEACHING PURPOSES. GEORGE LUNGE, Hottingen, near Zurich, Switzerland. Filed Feb. 5, 1885. (No specimens.) Patented in France Aug. 8, 1884, No. 163,691, and in Belgium Aug. 30, 1884, No. 65,986.

Claim.—Increasing and hastening the action of chloride of lime and saving the usual operation of souring after the bleaching without injuring the fiber in any way by the action of acetic or formic acid, as described.

325,685. COMBINED CRIB AND CHAIR. ELIAS E. MATTHEWS, Indianapolis, Ind. Filed June 17, 1884. (No model.)

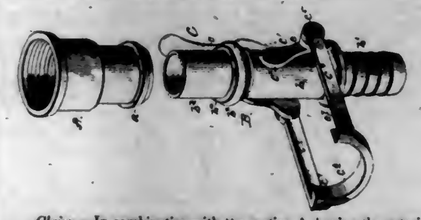


Claim.—1. The combination, with the bottom having three parts hinged together, the head-board hinged to the bottom, and the foot-board rigidly secured thereto, of a pair of side frames pivoted at diagonally-opposite corners to the head and foot boards, and pins projecting from opposite edges of the bottom and engaging slots in said side frames, whereby the head-board is raised when the foot-board is depressed, substantially as set forth.

2. In a combined crib and chair, the combination, with the seat and its support, of bottom piece, *c*, foot-board *h*, side pieces, *i i*, and pins projecting therefrom, of a pair of plates, *n n*, each having slot *o*, provided with an offset, *p*, adapted to engage said pins, all substantially as and for the purpose specified.

3. In a combined crib and chair, the combination, with the seat and its support, of piece *a*, head-board *g*, hinged thereto, side frames, *i i*, and pins projecting therefrom, of a pair of plates, *s s*, having slot *t* and offset *u*, adapted to engage said pins, all substantially as and for the purpose specified.

325,686. PIPE-COUPLING. CHARLES A. MAY and THOMAS SIDDALL, Trenton, N. J. Filed July 20, 1885. (No model.)



Claim.—In combination with the section A, having the exterior annular end collar, *a*, formed with an inclined rear wall, and the coupling-section B, formed with an annular collar, b^2, and projecting end b^3, hav-

ing packing-ring b^1, of the yoked lever C, pivoted to pintles c^3 on the section B, and having short lever-arms c^4 and a coupling-clamp, c^5, pivotally secured to the short arms of the lever, and formed with the circular yoke or stirrup c^6, having a turned-in wedge-shape lip, c^7, to set against the inclined rear wall of the ring on the end of the pipe-section, substantially as described, and for the purpose stated.

325,687. EMBOSSED FABRIC FOR DECORATING WALLS, &c. T. McGOVERN, New York, N. Y. Filed May 7, 1885. (No specimens.)



Claim.—1. As an improved article of manufacture, a compound fabric composed of a face fabric of thin textile material and a back fabric of thicker soft material, said compound fabric having figures formed in relief on its face, substantially as set forth.

2. As an improved article of manufacture, a strip or molding of textile material, substantially as described, having figures in relief formed on its face, and smooth or unplaited margins, as set forth.

3. As an improved article of manufacture, a fabric composed of a face fabric of thin textile material and a back fabric of thicker felted material, said fabric having figures formed in relief on its face, as described, and a substantially smooth and level back, the raised figures being solid, substantially as set forth.

4. As an improved article of manufacture, a molding consisting of a face fabric, *a*, of thin textile material and a back fabric, *b*, of thicker felted material, in the form shown, superimposed and stitched at the edges and having figures *d* in relief formed on the face by embossing, substantially as set forth.

325,688. BUTTON. ALBERT G. MEAD, Boston, Mass., assignor to the Ball and Socket Fastener Company, Nashua, N. H. Filed Feb. 2, 1885. (No model.)



Claim.—1. A flanged ball or sphere formed from a sheet of metal intact, and provided with an interior chamber, with a fastening-rivet adapted to be inserted and flattened within said ball, for the purpose set forth.

2. A flanged tubular fastening-rivet constructed in one piece and provided with a head and neck, in combination with a flanged hollow ball which receives said head, and is held to the material by said rivet, for the purpose set forth.

3. In a fastening device, the flanged rivet composed of the head, the contracted or crippled part *j*, and the neck, whereby, upon compression, the head is spread laterally, and the ball member of the fastening is secured to the fabric, all substantially as and for the purposes herein set forth.

4. In a fastening device of the nature described, the inclosing portion composed of a hollow socket centrally secured to the fabric by a button-head, F, and with the inclosing portion disposed upon the under side of the flap, substantially as stated.

5. The combination, with a member of fastening device composed of a hollow socket, with spring or yielding lips disposed upon the under side of the flap and centrally secured to the latter by a button-head, of the ball constructed and secured to the outside of the material, in the manner substantially as set forth.

6. A member of a fastening device consisting of a hollow socket, in combination with a rivet and button-head, whereby it is centrally attached to the fabric, substantially as set forth.

7. A member of a fastening device composed of a hollow socket, D, centrally attached by an eyelet, *l*, the latter resting upon and within an annular depression, *q*, formed in a concaved collet or disk, E, substantially for purposes herein set forth.

325,689. ANVIL FOR RIVET-SETTING MACHINES. GEORGE H. MEADE, Quincy, assignor to Mellen Bray, Newton, Mass. Filed Oct. 15, 1884. (No model.)



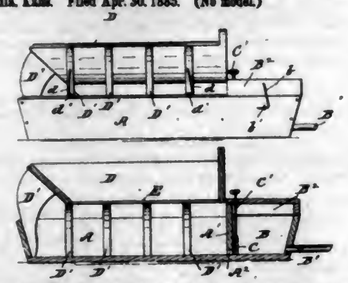
Claim.—1. An anvil for setting rivets, having its upper end provided with two plane or curved surfaces inclined in directions opposite to each other, substantially as shown and described.

2. An anvil for setting rivets, provided with the inclined planes or curved surfaces *c*, *c'*, and *f*, all arranged substantially as shown and described.

3. An anvil for setting rivets, provided with a suitable cutting-knife extending through the center thereof, and also provided with two plane or curved surfaces, each inclining in a direction opposite to the other, substantially as shown and described.

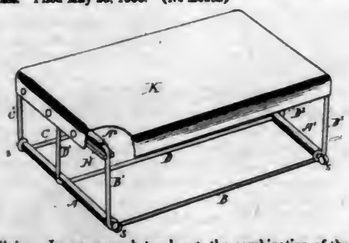
4. An anvil for setting rivets, provided with the knife *b* and the inclined planes or curved surfaces *c*, *c'*, and *f*, all arranged substantially as shown and described.

325,690. HOG-TROUGH. JAMES NELSON and LARITS P. LARSON, Concordia, Kans. Filed Apr. 30, 1885. (No model.)



Claim.—The herein-described feeding device, consisting of the trough partitioned near one end to form a water-chamber, a passage leading therefrom to the trough, a valve controlling said passage, and a hopper supported over said trough on legs which form stalls, the parts being constructed, arranged, and operating substantially as shown and described.

325,691. HEAD-REST FOR HAMMOCKS. ARIS NEKERSON, Boston, Mass. Filed May 23, 1885. (No model.)



Claim.—In a hammock head-rest, the combination of the base end pieces, A A, and upper end pieces, A^2, connected by the side wires and posts, B B' B^2 C C' C^2, with the rod D D' D^2, adapted to be turned down and to hold the bars H, said bars H having notches *h h*, and being adapted to hold the cloth K, all operating together substantially as described, and for the purpose set forth.

325,692. HUB-BAND. ABIJAH S. PARKER, Cincinnati, Ohio. Filed Aug. 4, 1884. (No model.)



Claim.—1. A wrought-metal hub-band made of previously-prepared seamless tubing, substantially as described.

2. A wrought-metal hub-band, made of sheet metal or tubing, having an interior circular flange apart from the metal of the band itself, substantially as described.

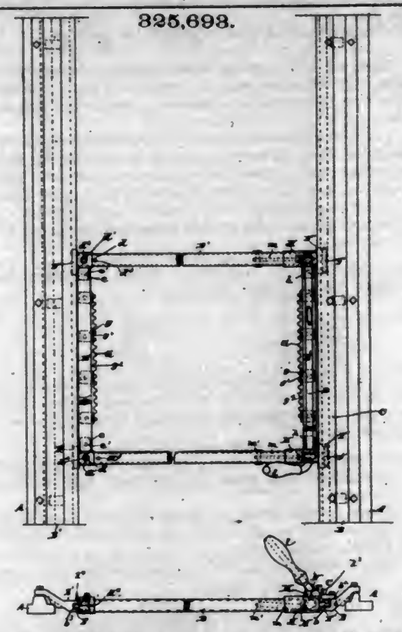
325,693. SHINGLE-SAWING MACHINE. WILLIS J. PERKINS, Grand Rapids, Mich. Filed Sept. 18, 1884. (No model.)

Claim.—1. The combination, with the sides of a shingle-machine carriage and a stationary dog connected therewith, of a movable dog consisting, essentially, of a tube or pipe provided with holding-teeth.

2. The combination, with the sides of a shingle-machine carriage and a movable dog connected therewith, of a stationary dog consisting, essentially, of a tube or pipe provided with holding-teeth.

3. The combination of the sides of a shingle-machine carriage, a stationary dog, and a movable dog, each of said dogs consisting, essentially, of a tube or pipe provided with holding-teeth, substantially as set forth.

325,693.



4. In a shingle-machine carriage, the combination, with two sides and a stationary dog secured thereto, of a movable dog forming an end girder for the sides.

5. In a shingle-machine carriage, the combination, with sides and a stationary dog, of a movable dog provided at its opposite ends with sleeves, which latter encircle the sides of said carriage, substantially as set forth.

6. In a shingle-machine carriage, the combination, with sides and a stationary dog secured thereto, of a movable dog forming an end girder of said carriage, and provided at opposite ends with sleeves which embrace the side rails, substantially as set forth.

7. The combination, with a shingle-machine carriage consisting, essentially, of two sides and a stationary and a movable dog, of a rod connected to and moving with the movable dog, arms attached to the rod, and links connecting the arms with the sides of the carriage, substantially as set forth.

8. The combination, with a shingle-machine carriage consisting, essentially, of two sides and a stationary and a movable dog, of a rod journaled to the movable dog and connected by one or more links to the carriage, whereby the rod is carried backward and forward with the movable dog, substantially as set forth.

9. The combination, with a shingle-machine carriage and a movable dog having boxes or bearings, which rest and slide on the sides of the carriage, of lugs secured to or formed integral with said dog or its bearings, and a bell-crank operating-rod journaled in said lugs, substantially as set forth.

10. The combination, with the sides of a shingle-machine carriage, of two sets of sliding bearings secured thereto, one set of said bearings being plain flat bearings, while the other set is L-shaped or its equivalent in cross-section, for the purpose of taking all the side-thrust of the carriage, substantially as set forth.

11. The combination, with the sides of a shingle-machine carriage, of a stationary dog, fittings secured within the ends of the dog, and provided with sleeves for embracing the sides of the carriage, said fittings being secured to the dog and to the sides of the carriage.

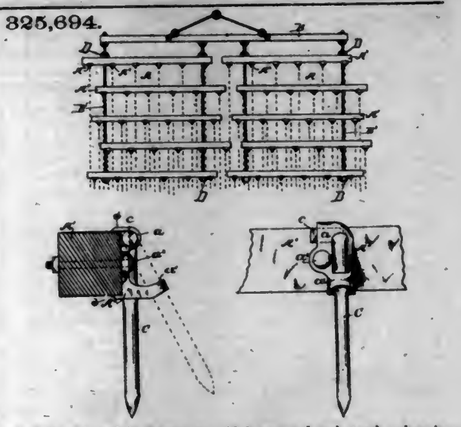
12. In a shingle-sawing machine, the combination, with a machine-frame, a saw, and a longitudinal rib or ribs secured to the frame and extending upwardly above the carriage, of a carriage mounted on the frame, the sides of said carriage being parallel with the rib or ribs, substantially as set forth.

13. A shingle-machine carriage consisting, essentially, of two sides and two ends, the latter forming end girders and dogs, substantially as set forth.

325,694. HARROW. JAMES F. PLATT, Sterling, Ill. Filed June 11, 1885. (No model.)

Claim.—1. In combination with the beam A', placed at right angles to the line of draft, the box A^2, seated against the side of said beam, and the tooth C, pivoted near the top of the beam, so as to swing in the line

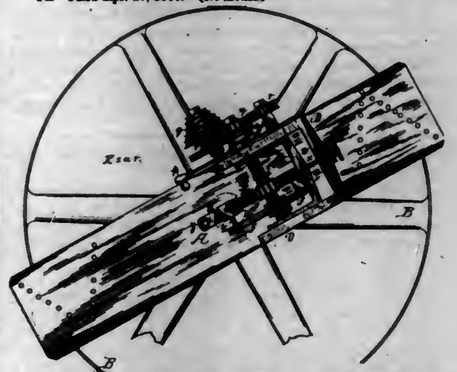
325,694.



of draft and at right angles to said beam, and such tooth, when in a vertical position, being supported against pressure by said beam, substantially as shown, and for the purpose specified.

2. In a harrow, the beam A', located at right angles to the line of draft, the box A^2, provided with the tooth-seat *a* and stay-slot *a'*, and attached to the beam A' with the slot *a'* at right angles to the beam, and the tooth C, pivoted in said box and adapted to swing automatically in the slot and at right angles to the beam, substantially as shown, and for the purpose described.

325,695. KEY-SEATING MACHINE. DAVID W. PORTER, Pittsburg, Pa. Filed Apr. 27, 1885. (No model.)



Claim.—1. The combination, with the rack-bar *a*, bearing the cutter-head, of the pinion *d*, and movable shaft C, upon which it is mounted, and means, substantially as described, for automatically withdrawing the carriage upon which the shaft C is mounted.

2. The combination, with the rack-bar *a*, pinion *d*, and shaft C, of the movable carriage F, in which said shaft is mounted, the spring *i* for withdrawing the carriage, and the lever *f*, provided with pin *e* for holding the carriage, as set forth.

3. The combination of the rack-bar *a*, the pinion *d*, shaft C, and movable carriage F, in which said shaft is mounted, with the spring *i*, for withdrawing the carriage, and the lever *f*, upon which the pin *e* is mounted, with the opposite end of which lever the bar *a* comes in contact at the end of its forward movement.

4. The combination of the rack-bar *a*, pinion *d*, and movable shaft, with the spring for withdrawing the carriage upon which shaft is mounted and the lever *k* for throwing it back into engagement, as set forth.

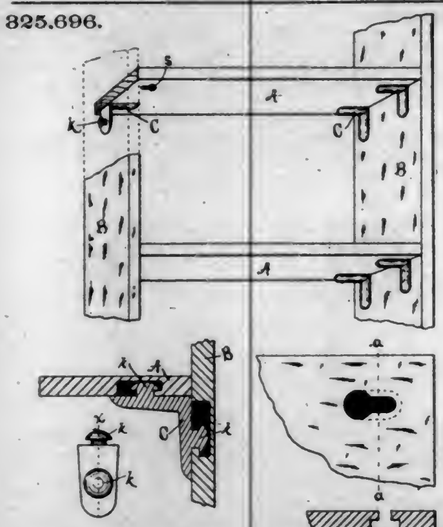
5. The combination of the rack-bar *a*, the movable shaft and pinion, the spring for withdrawing the shaft, and the second pinion for withdrawing or moving the rack-bar backward mounted upon another shaft.

6. The combination, with the shaft C, pulley *q*, and gear *r*, loose thereupon, and gear C^*, fast thereon, of the gears S and *u*, and the gears *v* and *n*, the latter being loose on shaft *l*, and the friction-clutch o also on said shaft *l*, and pinion *m*, all arranged to operate as set forth.

7. The combination of the rack-bar *a*, pinion *m*, and shaft *l*, with the carriage E, and set-screw *x*, as and for the purpose set forth.

325,696. PORTABLE SHELVING. CHARLES H. POST, Guilford, Conn. Filed Sept. 22, 1884. (No model.)

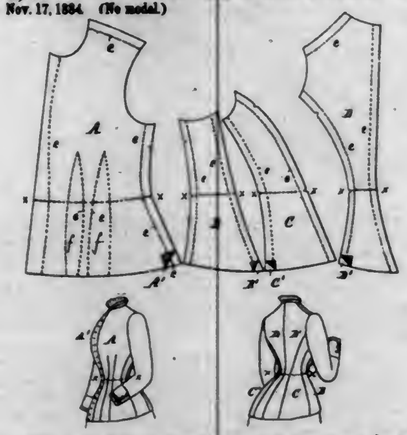
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Claim.—1. In combination with a shelf and its adjoining siding, both having the openings *s* leading into undercut recesses, one or more angular supporting-brackets, C, provided with knobs *k k*, adapted to enter openings *s*, and when so entered to slip into and interlock with said recesses, substantially as herein described, and for the purpose specified.

2. In combination with a shelf and its adjoining siding, both having the openings *s* leading into undercut recesses, one or more angular supporting-brackets, C, provided with knobs *k k*, adapted to enter openings *s*, and when so entered to slip into and interlock with said recesses, said brackets being so extended at their free ends that they serve to cover the openings *s* when the several parts are properly assembled, substantially as described.

325,697. WAIST-LINING. JULIA REINHARDT, St. Louis, Mo. Filed Nov. 17, 1884. (No model.)



Claim.—The improved dress or waist lining composed of the front, under arms, side backs, middle backs, and sleeve parts, all of cloth, with the external lines ready cut, further having the waist-line consisting of one continuous line of perforations (of the character of sewing-machine stitches with the thread left out) extending from notch to notch completely encircling the waist, also having similar perforations to constitute the complete length of all lines for basting, including the darts, substantially as and for the purposes set forth.

325,698. GLOVE-FASTENING. WILLIAM S. RICHARDSON, Boston, Mass. Filed Dec. 22, 1884. (No model.)



325,698



Claim.—1. The fastening device comprising a capped prong or pointed rivet, C, and the socket D, secured to the cap by the prong or pointed rivet, as described, all substantially as and for the purposes set forth.

2. The combination of the cap A, the intermediate piece, B, the pointed fastening C, and the socket member D, through the top of which the pointed fastening is passed, and upon the under surface of which it is headed or clinched, all substantially as and for the purposes described.

3. The cap A, having the side section or tapering sleeve, *s*, in combination with the socket-piece D, all substantially as and for the purposes described.

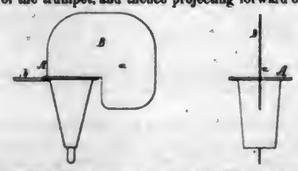
325,699. GLOVE-FASTENING. WILLIAM S. RICHARDSON, Boston, Mass. Filed Feb. 9, 1885. (No model.)



Claim.—In a fastening for gloves and other articles, the jaw or socket-piece having the yielding sides *b'* and flange *b*, from which the sides project, and by which they are held, all substantially as and for the purposes described.

325,700. SLIVER TRUMPET OR GUIDE FOR SPINNING MULES OR FRAMES. EZRA ROUNDS, Lawrence, Mass. Filed JUNE 22, 1885. (No model.)

Brief.—In order to keep two slivers of different colors apart during their passage to and through the trumpet, the trumpet is provided with a middle partition extending above its mouth for a distance about the length of the trumpet, and thence projecting forward of the trumpet.



Claim.—The sliver-trumpet provided with the partition extending across its interior and above its mouth, and forward in advance thereof, all substantially as set forth.

325,701. ORE-FEEDER. WILLIAM S. SHARPNECK, Denver, Colo., assignor to H. N. Nichols, same place. Filed May 5, 1885. (No model.)



Claim.—1. In an ore-feeder, the combination, with a hopper, B, and the disk C, having an aperture connected with said hopper and provided with a central bearing, C', of the cylinder D, mounted to revolve on said central bearing, substantially as described.

2. In an ore-feeder, substantially as described, the combination, with a hopper, B, and the disk C, having an aperture which connects with said hopper B, and having shaft C', of the cylinder D and operating-lever I, both mounted on said shaft C', substantially as described.

3. The combination, with the hopper B, chute *b*, and the disk C, having aperture *c* and shaft C', of the cylinder D, operating-lever I, and

adjustable arm E, having adjusting-screw e^3, all mounted on said shaft, substantially as specified.

4. In an ore-feeder, substantially as described, the combination, with the hopper, stationary disk, revolving cylinder, and feed-connections, of a loose disk hung in journals at an incline with the axis of motion of the cylinder, and having its periphery closely adjacent to the inner surface of the cylinder at an angle, as and for the purpose set forth.

5. In an ore-feeder, substantially as described, the combination, with the hopper, the stationary disk C, and the cylinder D, having spherical surface c^3, of a revolving disk, M, arranged diagonally across such spherical surface, and means for imparting to said disk a speed greater than that of the surfaces to which it is adjacent, substantially as set forth.

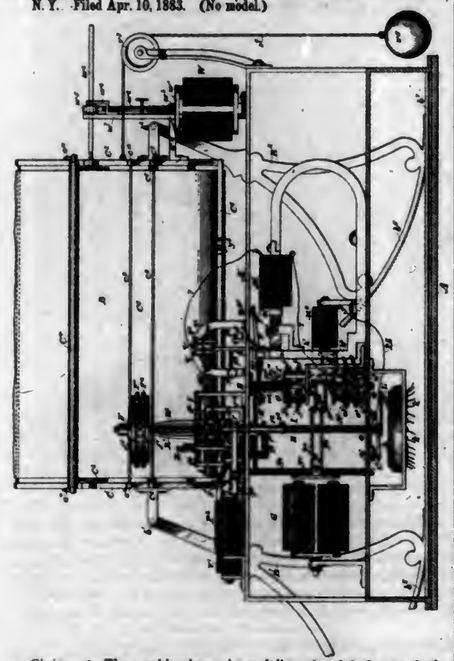
6. The combination, with the hopper, the disk C, having feed-chute opening *c*, and the revolving cylinder having concave surface c^3 and bevel *s*, of the shaft M, disk M', and frictional pulley M^3, all arranged and adapted to serve as and for the purposes set forth.

7. In an ore-feeder, substantially as described, the combination, with the hopper, the stationary disk, the revolving cylinder having cross-bars *f*, and ring G, of the adjustable arm E, adjusting-screw e^3, and operating mechanism H I, &c., as specified, for the purposes set forth.

8. The combination, with the standard-frame A A' and hopper B, having chute *b*, of the stationary disk C, having shaft C', and weighted door c^4, and with the movable cylinder fitting loosely around the disk, as set forth.

9. The combination, with the hopper, the disk C, having feed-aperture, and the cylinder D, having ring G, with flange *g*, of the arm H, having pins *h*, and the operating-lever I, mounted on a fulcrum substantially in the center of the cylinder and disk, as set forth.

325,702. PRINTING-TELEGRAPH. ROBERT J. SHERRY, New York N. Y. Filed Apr. 10, 1883. (No model.)



Claim.—1. The combination, substantially as hereinbefore set forth, of an annular series of independently-movable type, a shaft upon which said series is supported, means for revolving and for arresting said shaft, a paper-carriage and means for moving said carriage laterally before said series of type, means for causing the particular type which confronts said paper-carriage to be moved toward the same and to effect an impression upon a sheet of paper upon said carriage, means for withdrawing the same after it has been thus actuated, means for advancing said carriage step by step after effecting such impression, means for moving said carriage in the opposite direction from any point in its excursion, and means for feeding the paper upward a line-space at any time, and for arresting the series of type in a predetermined position relative to the paper-carriage when said carriage has returned to one limit of its excursion.

2. The combination, substantially as hereinbefore set forth, of an annular series of independently-movable type, means, substantially such as described, for causing said type to be successively presented to a paper sheet, means, substantially such as described, for arresting said series of type with any desired type confronting said paper sheet, a lever for causing the particular type confronting said paper sheet to be imprinted thereon, a toothed wheel for actuating said lever, an electro-magnet, its armature and armature-lever for actuating said toothed wheel, and means, substantially such as described, for vitalizing said electro-magnet when said type have been arrested.

3. The combination, substantially as hereinbefore set forth, of two annular series of independently-movable type, means, substantially such as described, for causing the type in each of said series to be successively presented to a paper sheet, two levers—one for actuating the type in each of said series—two toothed wheels respectively applied to said levers, each arranged to cause the character represented by the particular type confronting the paper to be imprinted upon the same, and means, substantially such as described, for actuating said wheels.

4. The combination, substantially as hereinbefore set forth, of two annular series of independently-movable type, means, substantially such as described, for revolving and for arresting said series, two levers—one for actuating the type in each of said series—two toothed wheels respectively applied to said levers, each arranged so as to cause the type confronting the paper to be imprinted thereon, means, substantially such as described, for actuating said wheels, and means, substantially such as described, for preventing the movement of either of said wheels when the other is being actuated.

5. The combination, substantially as hereinbefore set forth, of a revolving shaft, a disk carried thereon, vertically-removable pins carried upon said disk, levers extending above said disk, and means, substantially such as described, for actuating said levers at will, a shaft extending beneath said disk, a movable wedge or block secured to one end of said shaft, and a forked arm secured to said shaft and arranged to be engaged by one or the other of said pins, and to thereby rock said shaft and to place said wedge in the path of one or the other of said wheels.

6. The combination, substantially as hereinbefore set forth, of two pawls, two toothed wheels respectively actuated by said pawls, and a movable block or wedge acting to prevent one or the other of said pawls from engaging the teeth of the corresponding wheel, and means, substantially such as described, for actuating said block or wedge.

7. The combination, substantially as hereinbefore set forth, of a longitudinally-movable paper-carriage, two segments of wheels upon which said carriage is supported in a constant horizontal plane, longitudinal racks, and teeth formed upon said wheels meshing with the teeth of said racks.

8. The combination, substantially as hereinbefore set forth, of a movable paper-carriage, two or more toothed segments of wheels upon which said carriage is supported in a constant horizontal plane, longitudinal racks upon which said segments of wheels rest, a force tending to advance said carriage, a rack-bar extending longitudinally upon said carriage, a pinion engaging said rack-bar, an electro-magnet, its armature and armature-lever acting through the instrumentality of said pinion and rack-bar to control the movements of said carriage in response to said force.

9. The combination, substantially as hereinbefore set forth, of a movable paper-carriage, two toothed segments of wheels for supporting said carriage, rack-bars with which said segments engage, an electro-magnet, its armature and armature-lever for imparting to said carriage a step-by-step motion in a given direction and in opposition to a force exerted in the opposite direction, means, substantially such as described, for retaining the carriage in its advanced position, and a second electro-magnet brought into action at will for releasing said carriage from said retaining and advancing devices.

10. The combination, substantially as hereinbefore set forth, of a movable paper-carriage, a weight or other device tending to impel said carriage in one direction, a pinion and rack-bar for advancing said carriage in opposition to said weight, a pawl and detent for controlling the position of said pinion, and a cam automatically operated by a stop carried upon said carriage at one extreme of its excursion, to release said pinion from said pawl and detent, and a second stop arranged to operate said cam at the opposite extreme of its excursion, to allow said pawl and detent to again act upon said pinion.

11. The combination, substantially as hereinbefore set forth, with a paper-feeding roller of a longitudinally-movable paper-carriage, of an angular shaft extending therefrom, a toothed wheel loosely mounted upon said shaft, and means, substantially such as described, for actuating said toothed wheel and thereby rotating said paper-feeding roller at any point in the excursion of said carriage.

12. The combination, substantially as hereinbefore set forth, of the annular series of type, the supporting-shaft, the disk carried on said shaft, the vertically-movable pins carried upon said disk, the electro-magnets, the shunt-levers for causing either of said electro-magnets to be vitalized through the instrumentality of said pins, and means, substantially such as described, for actuating said pins.

13. The combination, substantially as hereinbefore set forth, of a series of type, one or more levers for actuating the type of said series, the toothed wheels for actuating said levers, the pawls for revolving

said wheels, a lever for actuating said pawls, and an electro-magnet and its armature for actuating the last-named lever.

14. In an electrical type-writer or printing-instrument, the combination, substantially as described, of the series of independently-movable type, the electro-magnet for actuating same, the circuit-transferring device, and a second electro-magnet, its armature and armature-lever acting through the instrumentality of said circuit-transferrer to complete the circuit through the first-named electro-magnet.

15. The combination, substantially as hereinbefore set forth, of an electro-magnetic motor, a printing-magnet, an electro-magnet normally included in the circuit of said motor, and an armature applied thereto, means, substantially such as described, for arresting the movement of said motor in any required position, a circuit-transferring device operated by the movement of said armature when said motor is arrested to substitute for the circuit through said motor a circuit through said printing-magnet, and means, substantially such as described, for re-establishing the normal connections through said motor after said printing-magnet has been vitalized.

16. The combination, substantially as hereinbefore set forth, of a motor-shaft, a pinion loosely mounted upon said shaft and having a yielding connection therewith, an annular series of type, a shaft for supporting the same, a mechanical connection between said supporting-shaft and pinion, a scape-wheel revolving with said pinion, and means, substantially such as described, for controlling and arresting the movement of said scape-wheel.

17. The combination, substantially as hereinbefore set forth, of a series of type, a supporting-shaft for said type, an electro-magnetic motor, its shaft, a mechanical connection between said shafts, and a circuit-controller for said motor, consisting of a series of contact-springs, a series of contact-points respectively applied to said springs and electrically connected with the electro-magnets comprised in said motor, and a series of cams carried upon said motor-shaft, whereby said springs are successively placed in contact with their respective contact-points.

18. The combination, substantially as hereinbefore set forth, of a paper-carriage, a series of type, a revolving shaft upon which said type are supported, a pin or stop fixed upon said shaft, a movable pin normally held out of the path of said fixed pin, a wedge-shaped arm carried upon said paper-carriage, and acting when said carriage is moved into a given position to force said movable pin into the path of said fixed pin or stop.

19. The combination, substantially as hereinbefore set forth, of a series of type, a revolving shaft upon which said type are carried, a pin or stop fixed to said shaft, a movable pin normally held out of the path of said fixed pin or stop, a wedge-shaped arm, and means, substantially such as described, for causing said arm to place said movable pin in the path of said fixed pin or stop, a series of levers, substantially such as described, for moving said wedge-shaped arm out of engagement with said movable pin, and means, substantially such as described, for actuating said levers.

20. In a type-writer or printing-instrument, a revolving type-shaft, a pin or stop moving with said shaft, a movable pin normally held out of the path of said stop, a paper-carriage, an arm or cam moving with said carriage, and acting, when said carriage is moved into a given position, to force said movable pin into the path of said stop, and to thereby arrest the motion of said shaft in a predetermined position, and means, substantially such as described, for simultaneously moving said arm or cam out of engagement with said movable pin and for moving said carriage out of said given position.

21. The combination, substantially as hereinbefore set forth, of a series of type, a motor, a motor-shaft, means, substantially such as described, for automatically arresting the movement of said shaft in a predetermined position, a spring through which said motor-shaft acts to revolve said series of type, and means, substantially such as described, for permitting said series of type to advance a predetermined distance after said motor-shaft is arrested, and for retaining the same in a position dependent upon the position in which said shaft is arrested.

22. The combination, substantially as hereinbefore set forth, with a series of type and its supporting-shaft, of a revolving shaft, a toothed wheel rigidly mounted upon said revolving shaft, a detent automatically actuated for arresting the movement of said wheel and revolving shaft, a scape-wheel loosely mounted upon said revolving shaft, means, substantially such as described, for limiting the independent revolution of said scape-wheel relative to said revolving shaft, mechanism for communicating the movement of said scape-wheel to said series of type, and an automatically-actuated escapement-arm engaging said scape-wheel.

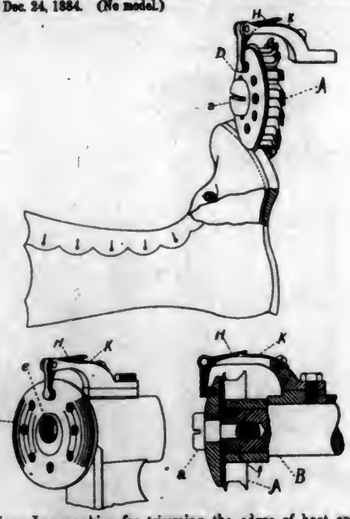
23. The combination, substantially as hereinbefore set forth, of a battery, an electro-magnetic motor, means, substantially such as described, for transmitting electric currents through the electro-magnets of said motor in succession, an electro-magnet acting, when vitalized, both to interrupt the circuit through said motor and to arrest its movement.

24. In a type-writer or printing-machine, a battery, a series of circuit-closing keys, a segmental ring having its respective conducting-segments electrically connected with the anvils of said keys, a revolving type-shaft, a contact-brush carried thereon and caused by its movements to be placed in connection with said conducting-segments in succession, whereby the circuit of said battery is completed through any one of said keys which is depressed when said brush makes contact with the corresponding conducting-segment, an electro-magnet included in the circuit thus completed, and acting, when vitalized, to arrest the movement of said shaft and contact-brush, a circuit-interrupter included in the circuit with said electro-magnet, and means, substantially such as described, for actuating said interrupter.

25. The combination, substantially as hereinbefore set forth, of a battery, an electro-magnet included in the circuit of said battery, a series of keys, a segmental contact-ring having its conducting-segments respectively connected with said keys, a contact-brush acting to complete the circuit of said battery through any key which is depressed, the corresponding contact-segment and the electro-magnet, and a circuit-interrupter placed in said circuit and acting to automatically interrupt the same independently of the movement of said key.

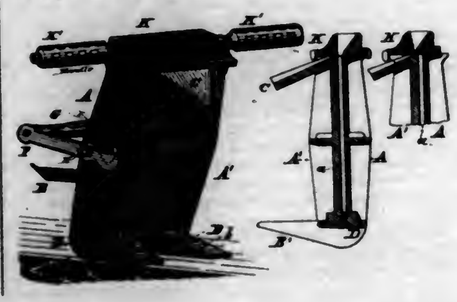
26. The combination, substantially as hereinbefore set forth, of a motor-battery, an electro-magnetic motor actuated by currents from said battery, a series of keys, and devices, substantially such as described, co-operating with said keys to arrest the movement of said motor in any required position, a pole-changing device actuated by the movements of said motor, a second battery having its circuit completed through said pole-changing device, a series of type controlled by the movements of said motor and said pole-changing device, a printing-magnet for actuating any of said type, and an electro-magnet acting to automatically place said printing-magnet in the circuit of said second battery when said motor is arrested.

325,703. SOLE-TRIMMING MACHINE. AARON F. SMITH, Lynn, Mass. Filed Dec. 24, 1884. (No model.)



Claim.—In a machine for trimming the edges of boot and shoe soles, the combination of a rotary edge-trimmer, a circular edge-gage fixed eccentrically to the trimmer-head, recesses in the face of said gage, and a locking mechanism, substantially as described, adapted to engage therewith, whereby the said gage may be adjusted and held after such adjustment in fixed relation to the trimmer, substantially as described.

325,704. SOLDER-MOLD. MICHAEL J. STARK, Buffalo, N. Y. Filed Aug. 11, 1883. (No model.)



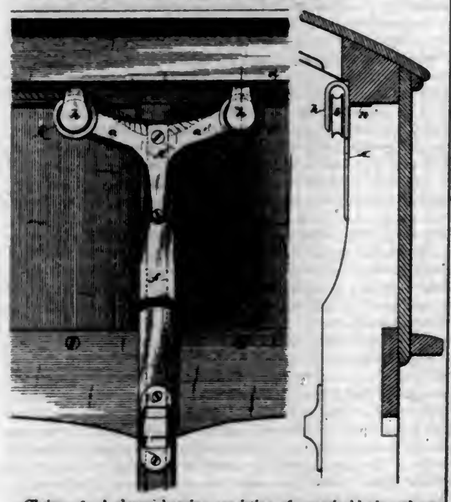
Claim.—1. A solder-mold consisting of two movable plates, A A', the sliding gate K, and a clamping mechanism, substantially as described, for holding said plates in close contact, said plate A being provided with a fixed spout, whereby the gate is arranged to discharge its surplus metal through said spout, substantially in the manner as and for the object specified.

2. In solder-molds, the clamping mechanism specified, consisting of the levers F, pivoted upon the eccentric bolts H, connecting-bar G, and clamping-pins I, said levers F being provided with the curved parts *f*, substantially in the manner as and for the object stated.

3. A solder-mold having adjustable clamping mechanism substantially as described, a sliding gate, and a fixed discharge-spout for the surplus metal of the gate, substantially in the manner as and for the object specified.

4. The combination, with the mold-plate A, having the grooves *a*, of the plain plate A', having the spout C and suitable supporting-legs, and a set of clamping-levers secured to one of said plates with an eccentric pin (or its described equivalents) and to one another by the handle G, the whole being constructed and combined for operation in conjunction with a properly-arranged gate, substantially in the manner as and for the object specified.

325,705. TRAM-CAR SIGNAL-CORD SHEAVE. JOHN STEPHENSON, New York, N. Y. Filed July 1, 1885. (No model.)



Claim.—1. A sheave-housing consisting of a vertical body and two arms extending in opposite directions, each arm terminating in a palm holding the end of an axle, the forearm bent over to bring the palm parallel with it, and lodging the other end of the axle in the forearm, as and for the purpose set forth.

2. A sheave-housing with two arms bent over at their wrists, the palms parallel with the forearms and each holding a sheave-wheel on an axle with one end in the palm and the other in the forearm, as and for the purpose set forth.

3. A sheave-housing with a body and two arms uplifted and bent forward at the wrists, bringing the palms parallel with the forearm, and each holding a sheave on its axle, the wrist at the bend being elevated above the sheave and formed to retain and guide an operating-cord, as and for the purpose set forth.

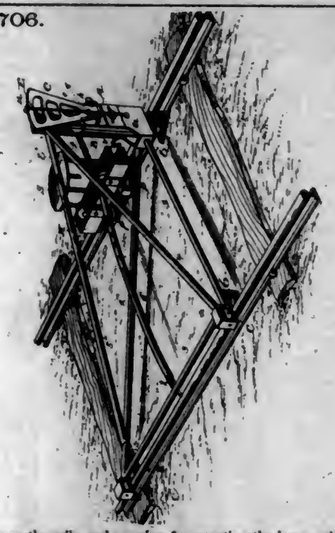
4. A sheave-housing with two arms, each holding a sheave-wheel, and at the posterior side, near the elbows, projecting lugs with holes for fastening-screws, as and for the purpose set forth.

325,706. GAGE AND LEVEL INDICATING DEVICE FOR RAILROAD-TRACKS. FRANCIS B. STEVENS, Hoboken, N. J. Filed Nov. 15, 1884. (No model.)

Claim.—1. The combination of an upright supported on a roller and having on its top a scale, a spring-actuated lever bearing a roller and index, a movable sector having a scale on its arc, a pendulum, an index-rod operated by the pendulum and bearing an index, a series of rods extending from the upright between the rails and connected by a horizontal rod, and rollers which bear upon the upper and inner surfaces of the rails, substantially as described.

2. The combination of an upright adapted to move upon a rail and having on its top a scale, a lever fulcrumed therein and bearing a roller and index, a series of rods extending from the upright between the rails, a straight or horizontal rod connecting the same, rollers which bear upon

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and between the rails, and a spring for actuating the lever, substantially as and for the purpose described.

3. The combination of an upright carrying at its upper and lower ends, respectively, a scale and a roller, a spring-actuated lever carrying an index moving over the scale and at its lower end a roller, a series of rods extending from the side of the upright in directions at right angles and diagonally thereto, a horizontal rod connecting the same, and vertical and horizontal rollers borne at their points of juncture for moving upon and against the rails, substantially as described.

4. The combination, with the upright and spring-lever, each bearing a roller, and the horizontal rod 3, and rollers *b c*, of the series of rods extending between said rod and upright, forming thereby sets of triangular connecting-braces, substantially as and for the purpose set forth.

5. The combination, with the upright and its scale, the connecting-braces and rollers, and the spring-actuated lever and its index, of the pendulum and movable sector suspended from the same support, the index-rod operated by the pendulum through a pin-like connection, and a graduated plate for indicating the degree of adjustment of the sector, substantially as described.

6. The combination, with a frame extending between the rails of a track, rollers moving on and against said rails, and mechanism for forcing them in contact therewith, of the pendulum, a movable sector carrying on its arc a scale, an index-rod operated by the movements of the pendulum and carrying an index which moves on the scale, and a graduated plate having graduations at such distances apart as to indicate the actual extent of movement of the sector when brought to conform to known inequalities of level between the rails, substantially as described.

7. The combination, with the upright A, formed in its front side with openings or slots, and provided at its top with an opening and scale and a vertical roller journaled at its bottom, of the spring-actuated lever B, fulcrumed between the sides of the upright and bearing at its upper and lower ends, respectively, an index and horizontal roller, the pendulum suspended, also, between the sides, the sector C, suspended without or within to the pendulum-support, and having slot *g*, index-rod E, and its index, and a set-screw or equivalent for securing the sector at points of adjustment, the whole being borne upon the rails by a suitable connecting-frame and rollers, substantially as described.

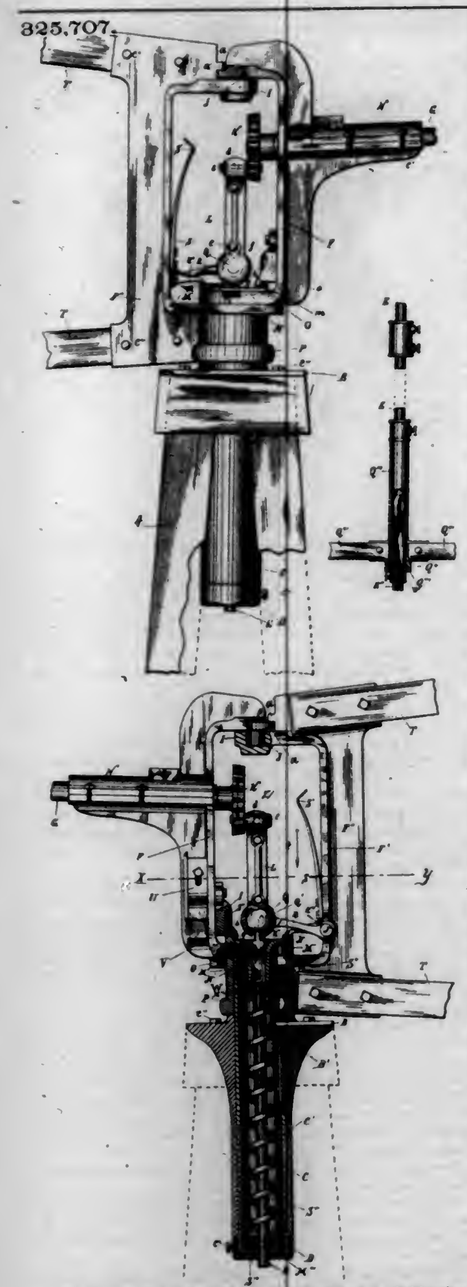
8. The combination, with the sector and pendulum, and the upright A, on which they are mounted, of the index-rod, counter-balance *s*, pin *t*, the connection *m*, the slotted disk, and the stem E', substantially as described.

9. The combination, with an apparatus for indicating variation of gage and level of railroad-tracks, of a carriage connected thereto, adapted to travel one rail, and a rod or bar extending from its side to the opposite rail, and a spring and rollers for maintaining said carriage in its position on the track, substantially as described.

10. The combination, with the apparatus and its connecting-frame, constructed substantially as herein described, of the carriage H, bearing the wheels *f f*, the side rollers, *p p*, and the seat 8, and the rod 8, extending from the side of the carriage and passing through the opposite portion, 3, of the frame, and the spring 9, borne on the end of the rod between said portions, substantially as described.

325,707. WINDMILL. DANIEL C. STOVER, Freeport, Ill. Filed May 22, 1884. (No model.)

325,707.



porting casting from its normal position in one direction but to permit such rotation in the opposite direction, and a spring connecting said vane and said wheel-supporting casting and adapted to resist the horizontal rotation of said wheel-supporting casting from its normal position in the direction permitted by said stop or stops.

3. In a windmill, the combination of the two independently-pivoted main castings thereof, a regulating-vane rigidly attached to one of said castings, and a wind-wheel shaft journaled in the other and normally parallel or nearly parallel to the vane, a suitable stop or stops adapted to prevent horizontal rotation of wheel-supporting casting from its normal position in one direction but to permit such rotation in the opposite direction, and a coiled spring whose ends are connected with said main castings, respectively, whereby the horizontal rotation of the wheel-supporting casting from its normal position toward the vane in the direction permitted by said stops subjects said coiled spring to a torsional strain, and the reaction of the spring tends to force the wheel-supporting casting to its normal position.

4. In a windmill, the combination of a pivoted regulating-vane, a wheel-supporting casting pivoted on a vertical axis coincident with the vertical axis of the mill, a wind-wheel shaft journaled in the wheel-supporting casting and parallel or nearly parallel to the vane when in its normal position, a suitable stop or stops adapted to prevent horizontal rotation of the wheel-supporting casting from its normal position in one direction but to permit such rotation in the opposite direction, and a coiled spring coiled about the vertical axis of the mill and having its ends connected with said vane and said wheel-supporting casting, respectively, whereby the rotation of the wheel-supporting casting from its normal position toward the vane in the direction permitted by said stops exerts a torsional force on said coil, and the reaction of the coil tends to return the wheel-supporting casting to its normal position.

5. In a windmill, the combination of the two main castings thereof, pivoted on a common axis coincident with the vertical axis of the mill, a regulating-vane rigidly attached to one of said castings, and a wind-wheel shaft journaled in the other and parallel or nearly parallel with the vane when in its normal position, a stop or stops adapted to prevent horizontal rotation of the wheel-supporting casting from its normal position in one direction but to permit such rotation in the opposite direction, and a coiled spring coiled about the vertical axis of the mill and having its ends attached to said main castings, respectively, whereby the rotation of said wheel-supporting casting from its normal position in the direction permitted by said stops exerts a torsional force on said coil, and the reaction of the coil tends to return said wheel-supporting casting to its normal position.

6. In a windmill, the combination of a suitable stationary vertical bearing attached to the tower, the two pivoted main castings of the mill, one having a tubular base journaled in said stationary bearing and the other a tubular base journaled within the base first mentioned, a regulating-vane fastened to one of said main castings, and a wind-wheel shaft journaled in the other and parallel or nearly parallel to the vane when in its normal position, a stop or stops adapted to prevent horizontal rotation of the wheel-supporting casting from its normal position in one direction but to permit such rotation in the opposite direction, and a coiled spring coiled within the outer of said journaled tubular bases and having its ends attached to said bases, respectively, whereby the rotation of the wheel-supporting casting from its normal position in the direction permitted by said stops subjects said coil to a torsional strain, and the reaction of the coil tends to return said wheel-supporting casting to its normal position.

7. The combination of the stationary tubular bearing C, the vane-casting F', and tube C', formed integrally therewith or rigidly attached thereto and journaled in the bearing C, the wheel-supporting casting F, and its tubular base M', journaled in the tube C', the cap D, attached to the lower end of the tube C', and the spring S''', having its ends attached to the tubular base M' and the cap D, respectively, substantially as shown and described, and for the purpose set forth.

8. The combination, in a windmill, of the two pivoted main castings thereof, a suitable lug or projection formed on one of said castings, and a corresponding notch or depression formed in the other, whereby said castings may be connected or disconnected when placed in given relative positions, and a detachable stop attached to one of said castings, and adapted, when in place thereon, to prevent said castings from assuming the necessary relative positions for connecting or disconnecting.

9. The combination of the pivoted castings F F', socket I in the casting F', pivot J on the casting F, notched flange *a* and lug *a'*, formed integrally with the castings F F', respectively, and the latch R, attached to the casting F', and adapted, when in position on said casting, to prevent the two castings from reaching such relative positions as to permit the lug *a'* to pass through the notch *a''* of the casting *a*, substantially as shown and described, and for the purpose set forth.

10. In a windmill, the combination of the wind-wheel shaft, a horizontally-rotating wheel-supporting casting in which said shaft is journaled, a pump-rod passing through the base of said wheel-supporting casting and receiving vertical reciprocal motion from said wind-wheel shaft, and means connecting said pump-rod and said wheel-supporting casting, whereby the rotation of the rod rotates the wheel-supporting casting.

Claim.—1. In a windmill, the combination of a suitable wheel-supporting casting rotating freely about the vertical axis of the mill, a wind-wheel shaft journaled in said wheel-supporting casting and lying normally parallel or nearly parallel to the line of direction of the wind, a suitable stop or stops adapted to prevent horizontal rotation of the wheel-supporting casting from its normal position in one direction but to permit such rotation in the opposite direction, and a spring adapted to resist horizontal rotation of said wheel-supporting casting from its normal position in the direction permitted by said stop or stops.

2. In a windmill, the combination of the independently-pivoted regulating-vane and wheel-supporting casting, a wind-wheel shaft journaled in said casting and normally parallel or nearly parallel to the vane, a stop or stops adapted to prevent horizontal rotation of the wheel-supporting casting from its normal position in one direction but to permit such rotation in the opposite direction, and a spring connecting said vane and said wheel-supporting casting and adapted to resist the horizontal rotation of said wheel-supporting casting from its normal position in the direction permitted by said stop or stops.

11. In a windmill, the combination of a suitable wheel-supporting casting, rotating about the vertical axis of the mill, a wind-wheel shaft journaled in said wheel-supporting casting and lying normally parallel or nearly parallel to the line of direction of the wind, said wheel-supporting casting being susceptible of horizontal rotation in one direction from its normal position, means adapted to oppose a varying resistance to such horizontal rotation of the wheel-supporting casting, a pump-rod passing through the base of said wheel-supporting casting and receiving vertical reciprocal motion from said wind-wheel shaft, and means connecting said pump-rod and said wheel-supporting casting, whereby the wheel-supporting casting may be rotated by rotating the pump-rod.

12. In a windmill, the combination of the pivoted main castings thereof, a regulating-vane attached to one of said castings, and a wind-wheel shaft journaled in the other and parallel or nearly parallel to the vane when in its normal position, a suitable stop or stops adapted to permit horizontal rotation of the wheel-supporting casting from its normal position in one direction but to prevent such rotation in the opposite direction, means adapted to oppose a varying resistance to the horizontal rotation of the wheel-supporting casting from its normal position in the direction permitted by said stop or stops, a pump-rod passing through the base of the wheel-supporting casting, and means connecting said casting and said pump-rod, whereby the rotation of the pump-rod rotates the casting.

13. In a windmill, the combination of the two pivoted main castings of the mill, a regulating-vane attached to one of said castings, and a wind-wheel shaft journaled in the other and normally parallel or nearly parallel to the vane, a stop or stops adapted to prevent rotation of the wheel-supporting casting toward the vane in one direction but to permit such rotation in the opposite direction, a pump-rod receiving motion from the wind-wheel shaft and connected with the wheel supporting casting by means whereby the rotation of the pump-rod rotates the wheel-supporting casting about the vertical axis of the mill, and a spring coiled about the pump-rod and connecting the two main castings of the mill, whereby the rotation of the wheel-supporting casting toward the vane in the direction permitted by said stops applies a torsional force to the spring, and the reaction of the spring tends to return the wheel-supporting casting to its normal position.

14. The combination of the pivoted casting F', having the tubular base C', pivoted in the tower of the mill, the casting F, having the tubular base M', pivoted in the base C' of the casting F', the pump-rod E E', passing through the tubular base M' and connected therewith by means adapted to communicate rotary motion of the rod to the base M', the stops O V, attached to the castings F' F, respectively, and the coiled spring S''', attached at top and bottom to the tubular bases M' C', respectively, and tending to hold the stops O V in contact, substantially as shown and described, and for the purpose set forth.

15. The combination, in a windmill, of the two pivoted main castings thereof, one supporting the wind-wheel and the other the regulating-vane, a hook attached to one of said castings, and a coacting lug or stop attached to the other and adapted to engage with the hook when the wind-wheel is fully out of the wind, and means whereby one of said coacting locking parts may be thrown into or out of working position at will, thus rendering said locking mechanism operative or inoperative, as desired.

16. The combination, in a windmill, of the two pivoted main castings thereof, one supporting the wind-wheel and the other the regulating-vane, suitable locking devices attached to said main castings, respectively, and adapted to engage when the wind-wheel is fully out of the wind and prevent rotation of said main castings with reference to each other, and a stop pivoted to one of said castings and adapted when in working position to prevent the rotation of the wind-wheel fully out of the wind, and means whereby said pivoted stop may be rotated about its supporting-pivot and thrown into or out of working position at will, thereby preventing or permitting, as desired, the swinging of the wind-wheel fully out of the wind and rendering the locking device operative or inoperative at pleasure.

17. In a windmill, the combination of the two pivoted main castings, one supporting the wind-wheel and the other the regulating-vane, suitable locking devices adapted to engage when the wind-wheel swings fully out of the wind and lock the main castings against rotation with the swinging of the wind-wheel fully out of the wind, and a pump-rod connected with such adjustable device and adapted by its rotation to adjust the same, whereby the turning of the pump-rod renders the locking devices operative or inoperative at will.

18. The combination of the castings F F', latch R, provided with hook R' and arm R'' and pivoted to the casting F', lug V, formed on the casting F, and adapted to engage with the hook R' when the wind-wheel is fully out of the wind, the plate N, provided with the flange *m'* and having limited independent rotation within the base M of the casting F, and the pump-rod E E', passing through the plate N and adapted when rotated to rotate the plate, substantially as shown and described, and for the purpose set forth.

19. The combination of the castings F F', latch R, provided with hook R' and arm R'', the lug V and block U on the casting F, the plate N, provided with flanges *m m'*, the squared pump-rod E E', passing through the square opening in the plate N, and the bolt *h*, attached to the casting F and co-operating with the flange *m*, substantially as shown and described, and for the purpose set forth.

20. In a mill constructed substantially as described, the combination of the rotating crank-plate K, the pitman L, the pump-rod E E', above the pump, and the pump-rod E''', extending into the pump, the pump-rod E E' being connected with the pitman K and rod E'' by swivel-joints, insuring simultaneous vertical motion of the three parts, but permitting rotation of the rod E E' independent of the pitman K and rod E'', substantially as and for the purpose set forth.

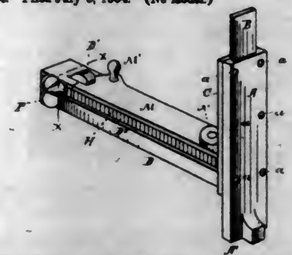
21. The combination of the castings F F', wind-wheel shaft G, notched crank-plate K, and spring S', said crank-plate being adapted to engage with said spring and act as a brake on the wind-wheel shaft when the wheel swings fully out of the wind.

325,708. SAND-PAPER ROLL. FREDERICK S. STROWG, East Bridgewater, Mass., assignor to the Carver Cotton Gin Company, same place. Filed June 23, 1884. (No model.)



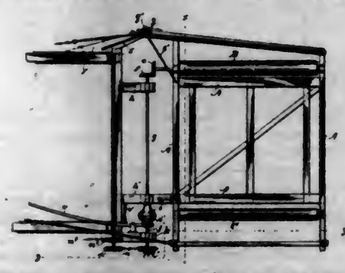
Claim.—In a sand-paper roll, the combination of the casing A C D, the buttresses K K, and stop A' with the crank-disk N, spring S, having jaws S' S', and the drag-pin H, whereby a yielding tensile strain is brought to bear on the covering of the wheel, all substantially as described, and for the purpose set forth.

325,709. WEDGE-DRIVING MACHINE. FREDERICK S. STROWG, East Bridgewater, Mass., assignor to the Carver Cotton Gin Company, same place. Filed July 5, 1884. (No model.)



Claim.—In a wedge-driving machine for saw-cylinders for cotton-seed linters and gins, the combination of the wedge-holding trough D, sliding box E, spring S, end clamping-screw P with the standard A, having a downward-projecting part, A', adapted to pass between the saws and to deliver the wedge at the desired point, and the driving slide B, all substantially as described, and for the purpose set forth.

325,710. BUNDLE-CARRIER FOR HARVESTER-BINDERS. GEO. A. STROUT, Lisbon, Dak. Filed Dec. 13, 1884. (No model.)



Claim.—1. The combination, with a harvester-binder, of a bundle-carrier hinged to the frame of said binder, so as to be swung toward and away from the binding-table, and having an endless platform for receiving the bound bundles as they drop from the binding-table, and mechanism, substantially as described, for operating the endless platform by the driving mechanism of the binder, as set forth.

2. The combination, with a binder, of a bundle-carrier hinged to the binder so as to be swung toward or away from the binding-table, and having an endless platform for receiving the bundles as they drop from the binding-table, mechanism, substantially such as described, for operating the endless platform from the driving mechanism of the binder, and the clutch under the control of the driver for throwing the endless platform into or out of action, substantially as described.

3. The combination, with a binder, of a bundle-carrier hinged to said binder and having an endless platform or belt, a gear on one of the rollers of said platform, a shaft mounted on the binder and having the gear for meshing with the gear on the roller, and the friction-clutch under the control of the driver, substantially as described.

4. The combination, with the binder, of the bundle-carrier hinged thereto having the endless platform for receiving the bound bundles of grain and adapted to be swung toward or away from the binding-table, and a locking-device, substantially as described, for locking the free end of the carrier-frame when swung around into operative position, substantially as described.

5. The combination, with the binder, of the bundle-carrier hinged thereto having the endless platform for receiving the bound bundles of grain and adapted to be swung toward and away from the binding-table, a timber for supporting the free end of the carrier when swung into operative position, and means for locking the carrier to said timber, substantially as described.

6. The combination, with the timber projecting from the binder-frame, of the bundle-carrier hinged to said timber, the other timber upon which the free end of the carrier is supported, the caster-wheel upon the carrier-frame, and the jointed rods or chains connecting the inner vertical posts of the carrier-frame to the frame of the binder, substantially as described.

7. The combination, with the timber projecting from the binder-frame, of the carrier-frame having the vertical post or standard hinged to said timber, the collar upon said vertical post, and the diagonal brace-rods connected to said collar and fastened at their lower ends to the carrier-frame and to the timber to which said frame is hinged, respectively, substantially as described.

325,711. CONFECTION CAPSULE. JOHN STUCKER, Jr., Chicago, Ill. Filed Apr. 8, 1885. (No specimens.)



Claim.—1. A candy capsule adapted to be charged or filled with a liquid suitable to form a beverage and then hermetically sealed, substantially as set forth.

2. A candy capsule filled with a dry or liquid composition, hermetically sealed, and adapted to form a beverage when dissolved in water, substantially as described.

325,712. DRAWER-KNOB. JAMES R. SUTLIFF, Meriden, assignor to Foster, Merriam & Co., West Meriden, Conn. Filed Feb. 19, 1884. (No model.)



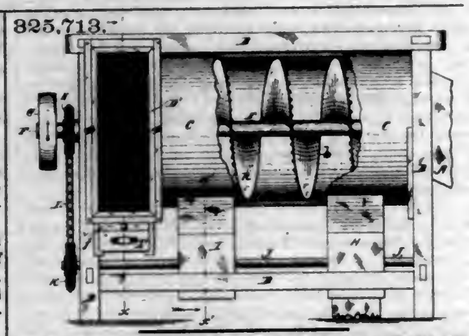
Claim.—The combination of the knob E, the disk or rosette *f*, having the hole *f'*, the headed spindle *e'* and the fastening-fins A, all substantially as and for the purposes described.

325,713. COMBINED DUST CATCHER AND SEPARATOR FOR MIDDLINGS-PURIFIERS. JAMES R. TAYLOR and PETER LOCKWOOD, Marshall, Mich. Filed Dec. 4, 1884. (No model.)

Claim.—1. The herein-described combined dust catcher and separator for middlings-purifiers, comprising the cylinder C, discharge-spouts H and I, roller-valves R' R', shafts F and J, conveyer R, dust-chamber D, slide *f*, and drawer T, substantially as and for the purpose hereinbefore set forth.

2. The combination of the dust-chamber D, conveyer R, having lagging *b*, cylinder C, and discharge-spouts I and H, provided with roller-valves R' R', substantially as herein described.

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325,714. ARMATURE FOR DYNAMO-ELECTRIC MACHINES AND ELECTRIC MOTORS. SYLVANUS F. VAN CHOATE, New York, N. Y. Filed Dec. 23, 1884. (No model.)



Claim.—1. The combination of spine C and spinal coils of iron wire *g*, as and for the purposes stated.

2. The combination of the wooden or non-magnetic plates B and the coils or helices A, the wooden or non-magnetic plates being located between the coils or helices, as described and shown, and for the purposes stated.

3. The combination of the hub and spinal frame having projecting points or teeth, the latter fitting into the grooves or slots of the former, as shown and described.

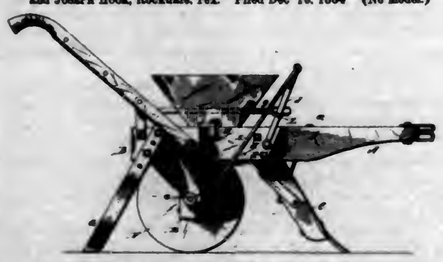
4. The combination, in an armature, of the coils or helices and the non-magnetic material between said coils or helices, and forming a smooth, even exterior surface, as shown and described, and for the purpose stated.

325,715. MOUTH-PIECE FOR WIND-INSTRUMENTS. OLIN A. WATSON, Chicago, Ill. Filed Mar. 25, 1884. (No model.)



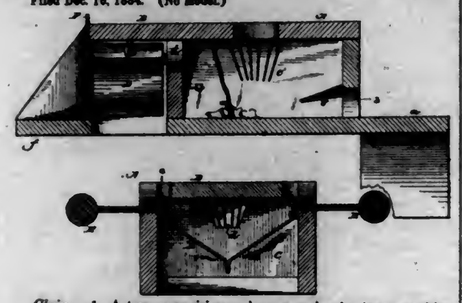
Claim.—In a mouth-piece as described, the combination, with the cap-piece A, of the ferrule B, provided with the inwardly-projecting flange *b*, the tubular shank C, provided with the enlarged end D, the spiral spring E, and the tension-nut *d*, all constructed and arranged to operate as set forth.

325,716. CORN AND COTTON PLANTER. GEORGE W. WILLIAMS and JOSEPH HOOK, Rockdale, Tex. Filed Dec 16, 1884. (No model.)



Claim.—The combination, with the main frame *a*, constructed as shown and described, provided with the hopper, covers G, and transporting-wheel F, of the vibrating-lever J, pivoted at its lower end to the side of the frame, and pivoted at its middle to the lateral arm L, secured to the feed-slide *g* and operated by means of the pitman I, which is connected at its lower end to the crank-axle *e*, the upper end thereof being pivoted to the upper end of the lever J, the whole arranged to operate as shown and described.

325,717. RAT AND MOUSE TRAP. THOMAS P. WEBB, Richmond, Va. Filed Dec. 16, 1884. (No model.)



Claim.—1. A trap comprising a box or casing having a partition or wall, C, which divides the casing into two compartments, an opening or passage, *d*, provided in the partition or wall to allow communication between the compartments, one of the latter having openings for the entrance of the victim, which openings are guarded to prevent it from escaping, and the other compartment having an open bottom, which is closed by a drop or drops, and a glass or transparent pane closing the end of this compartment opposite the partition C, as set forth.

2. In a trap, the box or casing divided by a partition or wall, C, into two compartments, the forward compartment having openings for the entrance of the rat and communicating with the rear compartment, the latter having an open bottom, in combination with a drop or drops for closing the bottom, the end of the rear compartment being closed by a transparent pane, F, the hinged drop being located between the partition C and the pane, as set forth.

3. The combination, with a trap having an open bottom, of hinged drops to close said bottom, and weighted arms detachably secured to the drops and working in slots in the box or casing, substantially as set forth.

325,718. PROCESS OF MAKING AND COMPOSITION FOR PAVEMENTS, &c. JOHN E. WYNKOOP, Pottsville, Pa. Filed Feb. 20, 1885. (Specimens.)

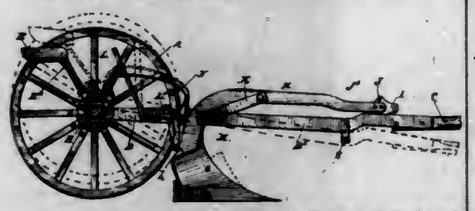
Claim.—1. In a concrete pavement, a layer composed of furnace-slag, in grains about three-fourths of an inch in size, three parts, and furnace-slag, in grains of about one-half an inch in size, three parts, said grains being mixed with a mortar composed of fine slag or sharp sand, four parts, and Portland cement, four parts, substantially as described.

2. A pavement comprising an under layer composed of furnace-slag in grains of regulated sizes, as described, and Portland cement, in about the proportions set forth, dampened with lime-water containing adhesive matter, and the mass thoroughly tamped, and an upper layer composed of furnace-slag in grains of regulated sizes, as described, mixed in about the proportions set forth, with a mortar composed of fine furnace-slag or sharp sand and Portland cement, in about the proportions specified, substantially as described.

3. A cinderlithic drier for concrete pavements, composed of dry granulated furnace-slag and Portland cement, in substantially the proportions specified.

4. A cinderlithic drier for concrete pavements, composed of dry granulated furnace-slag and Portland cement, in substantially the proportions specified, sifted and floated upon the top layer of the pavement, substantially as described.

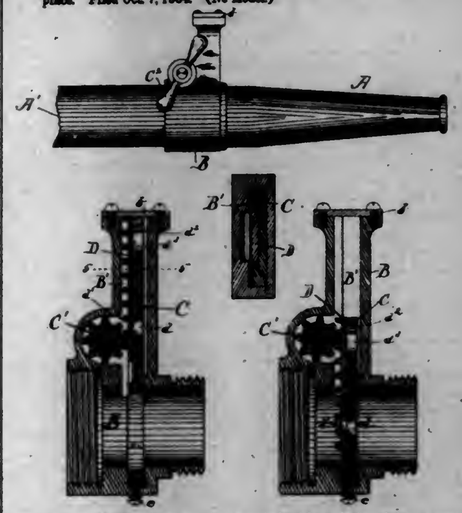
325,719. SULKY-PLOW. JOSEPH M. YOUNG, Bean's Station, Tenn. Filed June 27, 1885. (No model.)



Claim.—1. The combination of the axle B, beams D D', the one clamped to the axle, the other fitted to the outer end thereof, stirrup S, uniting the forward end of said beams, plow-beam H, pivotally supported between the beams D D', and limited in its downward movement by the stirrup S, lever L, pivotally connected with the plow-beam in the rear of the pivotal support of the latter, and a ratchet to engage the lever, as and for the purposes set forth.

2. The combination of the axle B, seat-standard E', beams D D', the rear end of the former bent parallel with the axle, to which it is clamped by clips F F', the seat-standard being held between said bent end and the axle, the rear end of beam D' being passed over the outer end of the axle, stirrup S, uniting the forward ends of said beams, the plow-beam H, pivotally supported between the beams D D' by straps K K', lever L, link M, connecting the lever and plow-standard, and the curved rack-bar N, to engage the lever and hold it in an adjusted position, substantially as described.

325,720. VALVED HOSE-NOZZLE. JOHN AINSWORTH, Chicago, Ill., assignor to himself, Charles S. Petrie, and Dennis J. Sweenie, all of same place. Filed Oct. 7, 1884. (No model.)



Claim.—1. The hose-nozzle provided with and closed by a gate-valve, which is itself provided with a small stream-opening located, when the valve is closed, in the main bore, and a valve for closing such opening, substantially as specified.

2. The hose-nozzle provided with and closed by a gate-valve provided with a small stream-opening and carrying a rack-faced pierced valve adapted to register with said opening, and a single pinion for operating both valves, substantially as specified.

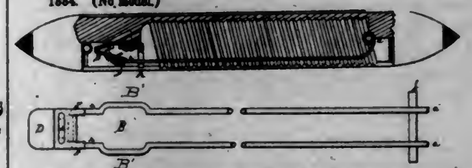
3. As a new manufacture, the hose-nozzle having the two sliding valves, one for shutting off the full stream and the other the small stream, and both operating in the bore of the nozzle, substantially as specified.

4. The combination, in a hose-nozzle, of the main valve, the rack-carrying slide-valve secured, substantially as described, to the main valve, and the operating-pinion meshing with said rack, essentially as set forth.

5. The hose-nozzle having two slide or gate valves, one adapted to shut off the full stream and the other to shut off the small stream, the latter valve being mounted upon the former, substantially as specified.

6. The combination, in a hose-nozzle, of the gate-valve having a small stream-opening, the rack and pinion for moving said valve, and the screw e for positioning the valve when closed, whereby the small stream-opening is caused to occupy the center of the water-way, substantially as specified.

325,721. LOOM-SHUTTLE. HENRY BARDSLEY, Philadelphia, Pa., assignor of one-half to George Brooke & Son, same place. Filed Dec. 4, 1884. (No model.)



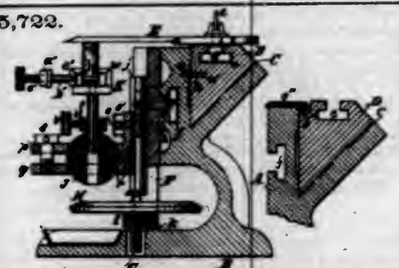
Claim.—1. The combination of a cop-binder, B, formed of wire with the pin *b*, catch A, and the body of a loom-shuttle, as shown, described, and for the purpose specified.

2. The combination of the wire cop-binder B with the pin *b*, catch A, friction-plates D and D', and the body of a loom-shuttle, as shown, described, and for the purpose specified.

325,722. MICROTOME. EDWARD BAUSCH, Rochester, N. Y. Filed Apr. 17, 1885. (No model.)

Claim.—1. In a microtome, the combination, with V-shaped guide and a V-shaped knife-carrying slide capable of sliding in the guide, of a

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spring adapted to hold the said V-shaped slide in the slot of the V-shaped guide, substantially as herein shown and described.

2. The combination, in a microtome, of a section-cutting knife, the knife-carrying slide provided with a T-shaped slot, a T-headed bolt adapted to clamp the section-cutting knife in any position along the length of the knife-carrying slide, and an object-holder adapted to support the object from which the sections are to be cut in the path of the section-cutting knife, as herein specified.

3. The combination, in a microtome, of a knife-carrying slide adapted to be slid the entire length of the main frame and an object-holder movable along the entire length of the frame, substantially as herein specified.

4. In a microtome, the combination, with the frame F and object-carrier and micrometer-screw carried thereby, of the frame A, having a slotted base and curved back to admit of moving the frame F and micrometer-screw along the frame A, as specified.

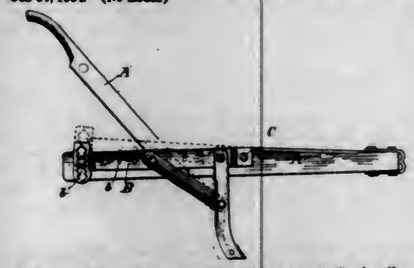
5. In a microtome, the combination, with the section-cutting knife and its slide, of a clamp arranged to support the object from which the section is to be cut, and a ball-and-socket holder for supporting the said object-clamp in any desired position, as specified.

6. The combination, with the vertically-adjustable slide *j*, of the arms *p q*, adjustable up and down on the said slide, the spherical holder J, and means for clamping the holder in any desired position, as specified.

7. The combination, in a microtome, of the arms *p q*, screw *s*, axially-bored spherical holder J, adapted to be held by and between the said arms *p q*, the clamping-screw *v*, and the object-clamp K, as herein specified.

8. In a microtome, the combination, with the slide D, of a curved arm, M, provided with a mortise, *f'*, as herein described, and two screws, *h' i'*, entering into the mortise and adapted to clamp the back and side of a razor, as described.

325,723. CULTIVATOR. STEPHEN B. BELL, Cedartown, Ga. Filed Oct. 31, 1884. (No model.)



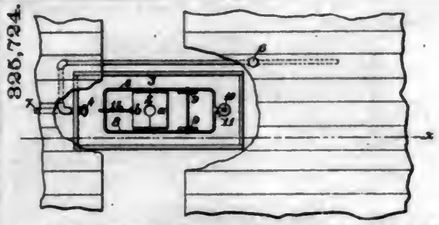
Claim.—1. The combination, with the beam and the handles secured to the beam, as shown, of a support, B, vertically adjustable at one end, set off from and arranged parallel with the beam, and having its ends secured to the said beam approximately equidistant in front and rear of the lower ends of the handles, the movable standard E, adjustable along the supporting-bar to the front or rear of the lower handles, and the brace F, pivoted to the standard and adjustable to the front and rear, substantially as set forth.

2. The combination of the beam, the handles fixed thereto, the support B, pivoted at one end to the beam and secured adjustably at its other end thereto, whereby it may be set vertically up or down, and the standard pivoted to the support and having an adjustable brace, F, whereby the standard may be set to and held at any desired angle independently of the angle of the support, substantially as set forth.

325,724. APPARATUS FOR COOLING GLASS-MOLDS. GEORGE W. BLAIR and WILLIAM BUTTLER, Pittsburg, Pa. Filed May 29, 1885. (No model.)

Claim.—1. The combination, with a stationary mold for blowing articles of glassware, of a water-pipe having its orifice directed so as to be capable of discharging water upon the mold and upon its inner surface, substantially as and for the purposes described.

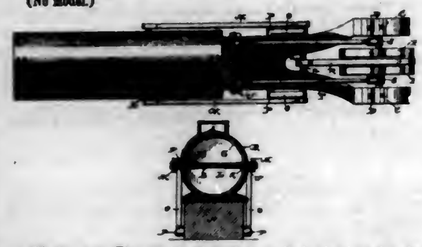
325,724.



2. The combination, with a stationary mold for blowing articles of glassware, of a water-pipe having its orifice directed so as to be capable of discharging water upon the mold and upon its inner surface, and a valve for controlling the discharge of water, substantially as and for the purposes described.

3. The combination, with a stationary mold for blowing articles of glassware, of a water-pipe having its orifice directed so as to be capable of discharging water upon the mold and upon its inner surface, and a valve for controlling the discharge of water, said mold being situate in a receptacle having a discharge-outlet for water, substantially as and for the purposes described.

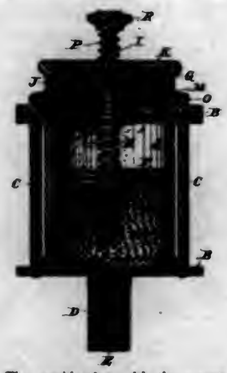
325,725. STEAM-ENGINE. THOMAS BRAINTLEY, Fort Valley, Ga., assignor of one-half to Walter H. Sawyer, same place. Filed Apr. 18, 1885. (No model.)



Claim.—1. The combination of the cylinder having the slots F, the piston, and the tapered pins that pass through the slots and enter the piston, said pins having the screw-coupling at their inner meeting ends, substantially as described.

2. The combination of the bed-plate, the cylinder having the slots F, the exhaust-ports H, and valves for controlling the admission of steam into the cylinder, the piston having pins working in slots F, the side side arms, M, connected to the pins, the rock-arms O, fulcrumed to the bed-plate and having the connecting-shaft N, to which the free ends of the arms M are connected, the crank-shaft E, bearings therefor, and the rod R, connecting the crank-shaft to the shaft N, substantially as described.

325,726. GREASE-CUP. FRANK H. BOLTE, Milwaukee, Wis., assignor to H. J. Delany and R. C. Gilfoham, same place. Filed Jan. 22, 1885. (No model.)



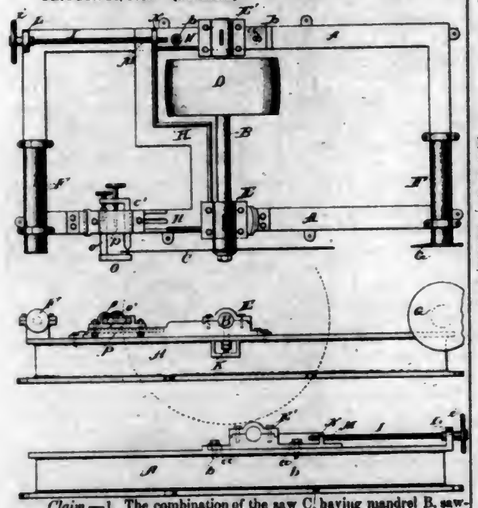
Claim.—1. The combination, with the receptacle of a lubricator-cup, of a piston, a screw or piston rod operating said piston, a coiled spring affixed at one end to said screw or piston rod, and at its other end to an inclosing-cover for winding and holding the outer end of said spring when wound, substantially as set forth.

2. The combination of the receptacle A, having a discharge-duct, E, piston F, having a central screw-cut aperture, screw H, cover O, spring G, and cover K, said spring being affixed at one end to said screw H, and at the other end to said cover, as set forth.

3. The combination, with the receptacle A, piston F, screw H, and spring G, of the cover O, provided with catch or pawl N, and the cover K, provided with the annular ratchet M, substantially as and for the purpose specified.

4. The combination, with the cover O, provided with catch N, and cover K, provided with ratchet M, engaging upon said pawl, of the spring P and knob R, said spring being interposed between said cover K and said knob, and adapted to hold said ratchet down upon said pawl while it yields to permit said ratchet to be turned over said pawl while winding said spring, as set forth.

325,727. CIRCULAR-SAW MILL. AARON BROSDEN, Oshkosh, Wis. Filed Feb. 24, 1885. (No model.)

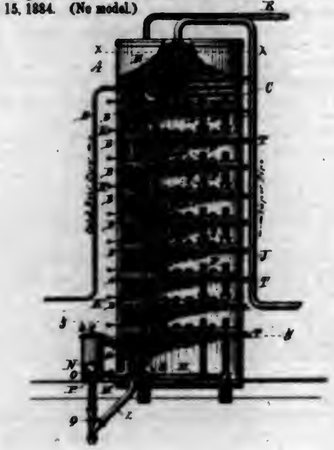


Claim.—1. The combination of the saw C, having mandrel B, saw-frame A, yoke H, furnishing connected bearings E E' for said mandrel B and pivoted to said frame A on the side thereof adjacent to said saw C, and adjusting-rod I, having a fixed or swiveled bearing in frame A and threaded to engage with said yoke H, substantially as and for the purposes set forth.

2. The combination of the saw-frame A, yoke H, resting therein and pivoted thereto and provided with connected bearings for the reception of the saw-mandrel B, the saw-guide O, and mandrel B, substantially as and for the purposes herein set forth.

3. The combination of the saw C, having a mandrel, B, the saw-frame A, yoke H, forming connected bearings E E' for said mandrel B and pivotally mounted upon said frame A, and the saw-guide O, adjustably attached to said yoke H and adjustable therewith, substantially as and for the purposes set forth.

325,728. STILL. GUSTAV R. BRUCHMANN, Milwaukee, Wis. Filed Dec. 15, 1884. (No model.)



Claim.—In a still, the combination of a cylinder, A, subdivided into a series of compartments by partitions B, provided with upward-opening steam-valves I and downward-extending ducts F, having their upper ends projecting above the upper surfaces of said partitions, and their lower ends terminating in receptacles S, cocks T, located at the upper ends of the several compartments, slide-valve K, receptacle N, provided with float O and valve P, said receptacle N communicating at its lower end with the lower compartment of the cylinder A through an upturned pipe, M, and at its upper end through a duct, *a*, and ducts Q and L, all substantially as and for the purpose set forth.

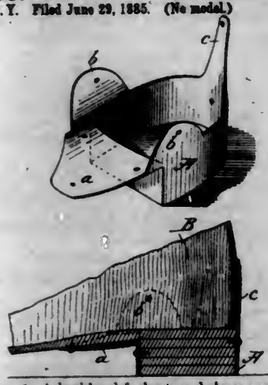
325,729. BOX. JOSEPH P. BUCKINGHAM, New York, N. Y. Filed Dec. 3, 1884. (No model.)



Claim.—1. A folding re-enforced paper tube consisting of an outer piece of material joined at its edges to form a tube, and strips of re-enforcing material secured to each of the inner sides, leaving spaces between their contiguous edges of a width sufficient to form the edge folds and to permit the tube to be folded flat, substantially as described.

2. The combination, with a re-enforced tube consisting of an outer piece of material having re-enforcing strips secured to the sides, and having the flaps F extending beyond the re-enforced portions, of end pieces, E, having projections, one of which is secured between the outer and the re-enforcing piece, and the other being adapted to tuck into the tube, substantially as described.

325,730. HEEL-BAND FOR BOOTS AND SHOES. GOSWIN CASTLE, Ava, N. Y. Filed June 29, 1885. (No model.)



Claim.—1. A heel-band for boots and shoes, consisting of the band A, encircling the heel and secured thereto, and having a horizontally-extending flange, *a*, and perforated vertically-extending flanges *b b* and *c*, substantially as shown and described.

2. The combination, with a boot or shoe, of a band, A, completely encircling the heel, and provided with flange *a*, attached to and supporting the shank, and perforated vertical flanges *b b* and *c*, secured to the back portion of the shoe and supporting the same, substantially as and for the purpose specified.

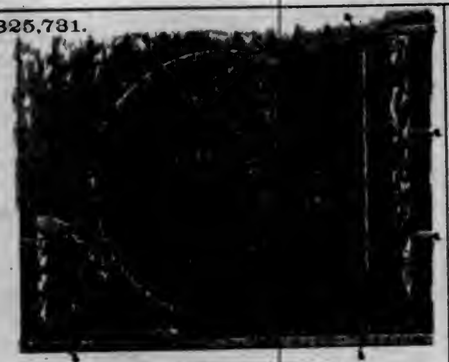
325,731. MAN-HOLE FOR FIRE-ENGINE HOUSES. ELBRIDGE O. CRANE, Lynn, Mass. Filed July 18, 1885. (No model.)

Claim.—1. In combination with an opening through the floor of a building and a vertical post or shaft set centrally therein, a pair of doors arranged to open downward and outward to permit the passage of a person through said opening, and counterbalance-weights arranged to close said doors when the force which opened them is removed, substantially as described.

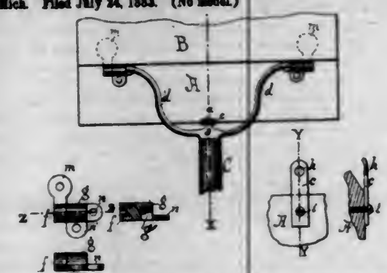
2. In combination with a door arranged to open downward and about a horizontal axis, a counter-weight so arranged relative to the axis of motion of said door that the center of gravity of said weight shall be below said axis when the door is in its normal or closed position, and upon that side of said axis toward which the door moves in opening when said door is opened.

3. The combination of the man-hole C, the vertical shaft D, the doors F F, and the shafts G, provided with the counter-weights *g*, formed in one piece therewith, and having the grooves *g'*, all arranged and adapted to operate substantially as described.

325,731.



325,732. CARPET-SWEEPER. ERWIN B. CLARKE, Grand Rapids, Mich. Filed July 24, 1883. (No model.)



Claim.—1. In a carpet-sweeper, the combined hinge and bail-ear *f g*, consisting of the perforated part *f* and the part *g*, provided with a projecting lug or pintle fitting in the perforated part *f*, and having a recess, *g'*, in which is fitted one end of the bail, substantially as shown and described.

2. In combination with the bail *d d'*, hinged to the casing, as shown, and provided with the lug or projection *a*, the spring-catch *c*, secured to the rear end of the casing and having the perforation or recess *h*, all arranged and constructed substantially in the manner shown and described, and for the purpose specified.

325,733. BARB-FENCE-WIRE MACHINE. LEWIS W. CONNELL, Joliet, Ill. Filed June 22, 1885. (No model.)

Brief.—The strand-wire is drawn through the machine by an intermittingly-rotating wheel carrying jaws arranged to grip the wire, feed it forward a certain distance, and then release it. The wire passes through an oil bath before it is operated on. Two barb-wires are fed in and two barbs applied simultaneously. After the barb-wires are fed in, the tool-heads carrying the dies are forced toward each other, and the slides within the dies are caused to hold the barb on the main wire. A further movement of one of the tool-heads severs the barb. Wrapping-pins—one at each end of each of the two severed barb-blanks—are then rotated to wrap the blanks, still held by the slides, about the strand-wire. The tool-heads are then forced still nearer together, and cause the dies to bend the barb and the strand-wire.

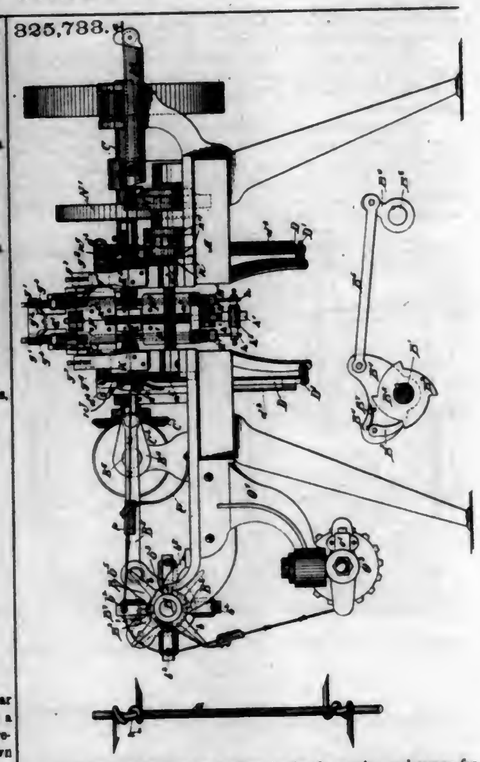
Claim.—1. The combination of a coiling-head for wrapping a barb around a fence-wire, constructed and arranged to form two coils in the barb near each extremity of it and connected by its middle portion lying spirally or diagonally around the fence-wire, substantially as described, a pair of crimping-dies constructed and arranged to support the barb and fence wire at the two extreme coils of the barb, and to form a kink in the wire between those coils, and mechanism for operating the coiling-head and crimping-dies, these elements being arranged and their operating mechanism timed to first wrap and afterward crimp, substantially as specified.

2. The combination of a coiling-head, a pair of crimping-dies, each of which is made in two parts, G *g* and H *h*, the one movable on the other, means for operating one pair of said parts to clamp the barb and fence wire, means for then operating the coiler, and means for finally operating the other pair of said parts to clamp and crimp the coiled barb and wire, substantially as specified.

3. The combination, with two oppositely-revolving coiling-heads, as K K', of a pair of crimping-dies, as G H, provided with slides *g h*, substantially as specified.

4. The combination, with a coiling-head, of means for feeding the barb-wire diagonally across the fence-wire, knives for severing the barb, a pair of crimping-dies to form crimps in the fence-wire, and means for operating the several specified devices, the parts being arranged and timed to first feed, cut, and wrap, and then crimp, substantially as specified.

325,733.



5. The combination, with a coiling-head, of means for feeding the barb-wire across the fence-wire, knives for severing the barb, a pair of fence-wire crimping-dies, and means for operating the several specified devices, the parts being arranged and timed to crimp the fence-wire after the barb is wrapped thereon, substantially as specified.

6. The combination, with two oppositely-revolving coiling-heads, of means for feeding the barb-wire diagonally across the fence-wire, knives for cutting off the barbs, clamps, as *g* and *h*, to hold the barb and fence wire, and dies, as G and H, to form crimps in the fence-wire, substantially as specified.

7. The combination, in a machine for applying two barbs at once to a fence-wire, of two coiling-heads, as K and K^2, revolving in the same direction and having a coiling-finger at their adjoining ends, with an intermediate coiling-head, as K', having a coiling-finger at each end and revolving in the opposite direction, substantially as specified.

8. The combination, with coiling-heads K, K', and K^2, said coiling-head K' revolving in the opposite direction to the other two, of means for feeding two barb-wires diagonally across the fence at different points, two pairs of knives for severing the barbs, and two pairs of slides, as *g h g h*, for holding the barbs, substantially as specified.

9. The combination, with oppositely-revolving coiling-heads K' and $K K^2$, of two pairs of dies, G H, having slides *g* and *h*, substantially as specified.

10. The combination, with tool-heads F and F^2, of dies G and H, provided with slides *g* and *h*, knife E', mounted in said head F, stationary knife E, and coiling-heads, as K K', substantially as specified.

11. The combination, with coiling-heads K K' K^2, of levers F' F^2, head F, provided with knives E' E', and dies G G, with slides *g g*, head F^2, provided with dies H H and their slides *h h*, and stationary knives E E, substantially as specified.

12. The combination, with a coiling-head, of a pair of spring-actuated slides to hold the barb and a pair of dies to form crimps or kinks in the fence-wire, and a barb coiled around the same, substantially as specified.

13. The combination, with means for feeding the barb-wire across the fence-wire diagonally, of a pair of knives to sever the barb-wire, two oppositely-revolving coiling-heads having fingers provided with grooves or shoulders to wrap the barb about the fence-wire and wrap the barb into substantially two right-angle coils united by the spiral or diagonal middle portion of the barb, and a pair of dies adapted to support the fence-wire and barb at such coils and to bend or kink the same between them, substantially as specified.

14. The combination, with a means for wrapping a barb spirally around a fence-wire, of a pair of dies constructed and adapted to support the barb and fence wire at the two extreme coils of the barb and to bend or crimp the fence-wire between the two extreme coils of the barb, substantially as specified.

15. The feed-wheel B, provided with arms or jaws *b'*, and movable arms or jaws b^2, and a cam, as b^4, for operating said movable jaws b^2, substantially as specified.

16. The feed-wheel B, provided with forked arms *b*, jaws *b'*, pivoted jaws b^2, and cam b^4, substantially as specified.

17. The combination, with wheel B, having arms *b*, jaws *b'*, and pivoted jaws b^2, of a fixed cam-collar, b^4, and mechanism for intermittently revolving said wheel, substantially as specified.

18. The combination, with a barb-fence machine, of a trough or vessel, M, provided with a pair of wire-clamps, *m m'*, to immerse the wire in the liquid in said vessel and put a tension upon the same, substantially as specified.

19. The combination, with a barb-fence machine, of trough M, provided with clamps *m m'*, and a pivoted lever, m^3, having weight m^4, for operating said clamp *m'*, substantially as specified.

20. The combination, with trough M, of clamps *m m'*, lever m^3, and weight m^4, substantially as specified.

21. The combination of vibrating feed-lever D, provided with jaws *d* and *d'*, said jaw *d'* being pivoted to jaw *d*, and link d^3, connected to said pivoted jaw for operating said feed-lever and at the same time opening and closing said jaw *d'*, substantially as specified.

22. The combination of feed-lever D, provided with jaw *d* and pivoted jaw *d'*, with link d^3, connected to said pivoted jaw, said jaw *d'* having a lip or projection, d^{11}, and set-screw d^{12}, to adjust the feed-stroke, substantially as specified.

23. The combination, with a coiling-head, of dies G and H, and slides *g* and *h*, and heads F and F^2, said slide *g* being provided with a notch or recess, g^4, and said head F having a spring-pawl, g^5, whereby said slide *g* is retracted, substantially as specified.

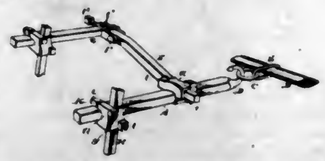
24. The combination, with two oppositely-revolving coiling-heads, of a pair of dies adapted to form crimps or bends in the fence-wire between the two extreme coils of the barb, said dies having each a narrow sliding part adapted to hold the barb after it is severed and while it is being coiled, and means for operating said sliding parts independently of said dies, substantially as specified.

25. The combination, with feed-lever D, of jaws *d* and *d'*, link d^3, lever d^4, link d^5, and lever d^7, substantially as specified.

26. The combination, with duplicate feed-levers D, having jaws *d* and *d'*, of links d^3, levers d^4, links d^5, and lever d^7 d^{10}, and cam d^{10}, for operating the same, substantially as specified.

27. The combination, with means for coiling a barb around a fence-wire into two coils connected by the middle portion of the barb lying spirally or diagonally across the fence-wire, substantially as shown and described, of means for forming a kink or crimp in the fence-wire between the two coils of the barb, and operating mechanism for these devices, whereby the barb is first coiled and the crimp afterward effected, substantially as specified.

325,734. HARROW. JOHN CULLEN, Janesville, Wis. Filed May 22, 1885. (No model.)



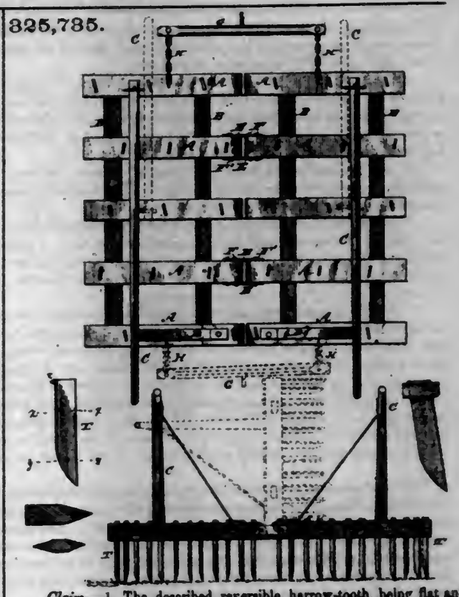
Claim.—1. In a harrow, the combination, with a drag-bar, of a cross-bar adjustably secured to said drag-bar, and a clip pivotally secured to said cross-bar and adapted to support a second drag-bar, substantially as set forth.

2. In a harrow, the combination, with a drag-bar and the lock-plates secured thereto, of the cross-bar adjustably secured to the lock-plates, the clip pivoted to said cross-bar, and a second drag-bar secured to the clip, substantially as set forth.

3. The combination, with a drag-bar, the plate G, having recess *g'* and grooves *h'*, and the plate K, having recess *k*, of the tooth, and the bolts, all of the above parts constructed and combined substantially as set forth.

325,735. HARROW. JOSEPH DARBY, Washington, D. C. Filed June 10, 1885. (No model.)

325,735.



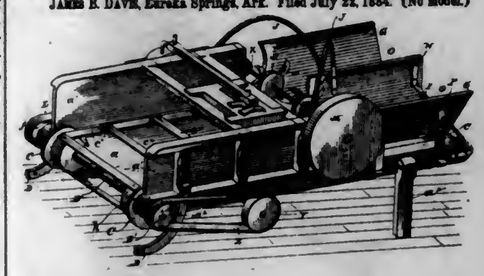
Claim.—1. The described reversible harrow-tooth, being flat and thin like a knife-blade, and having a straight sharp edge on one side and a curved edge at the point on the opposite side, substantially as set forth.

2. In combination with a reversible harrow-frame, the described teeth, each having a straight sharp edge on one side and a short curved edge at the point on the opposite side, and set inclined downward and forward, as shown, so as to dip into the ground, substantially as set forth.

3. In a hinged sectional harrow, the harrow-teeth herein described, in combination with the two series of transverse bars A, having oblique mortises therein, one series of teeth being set in said mortises so as to turn the furrows to the right, and another series set to turn the furrows to the left, substantially as described.

4. The described reversible harrow-tooth, thin and flat like a knife-blade, and having a straight sharp edge on one side, and a curved edge at the point on the other side, and a projection or lug, *i*, substantially as set forth.

325,736. BAND-CUTTING FEEDER FOR THRASHING-MACHINES. JAMES R. DAVIS, Eureka Springs, Ark. Filed July 22, 1884. (No model.)



Claim.—1. In a band-cutter and feeder, the combination, with the carrier, of the double arrangement of feeding-chutes, comprising the inclined guide-boards and springs, whereby they are supported above the carrier at each side of the frame, the vertical guide-board arranged between the inclined guide-boards, and spring-rods supporting said vertical guide-board, as set forth.

2. In a band-cutter and feeder, the combination, with the frame, of the spring-supported inclined boards G, the vertical guide-board H, arranged between the same, spring-braces attached to the frame and secured to one end of the vertical guide-board, and curved spring-supports attached to the other end of the said vertical board and adapted to prevent the sheaves from working upward while being acted upon by the cutters, as set forth.

3. In a band-cutter and feeder for thrashing-machines, the combination, with the frame, of the spring-supported inclined guide-boards, the vertical guide-board arranged between the inclined boards, and spring-

rods supporting said boards, the revolving shaft carrying the cutters thereon, which are arranged in line with the chutes formed by the guide-boards, the carrier, and the spreader, as set forth.

4. In a band-cutter and feeder for thrashing-machines, the combination of the supporting frame-work and endless apron or rake, the band-cutting knives, and a swinging board arranged centrally above the apron or rake, lengthwise of the same, and between the support of the knives and the outer end of the carrier-frame, as set forth.

5. In a band-cutter and feeder for thrashing-machines, the receiving-hopper constructed with a central partition dividing it into sheaf-compartments, and laterally-yielding side boards, as set forth.

6. The herein-described spreader, comprising longitudinal bars, slotted extended end bars connecting the longitudinal bars, ways or guides for the end bars to work in, spreading-rods attached to the bars and curving downwardly and forward, and operating means for the spreader, as set forth.

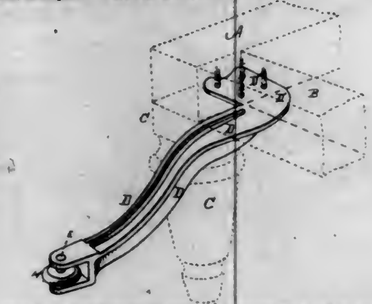
7. In a band-cutter and feeder, the combination, with the frame, of the spring-supported inclined guide-boards, and the spring-supported vertical guide-board arranged between the same to form the double arrangement of chutes, the revolving shaft carrying the cutters, curved spring-supports extending over the inner end of the chutes adjacent to the cutters, so as to prevent the sheaves from working upward while being acted upon by the knives, the carrier, and the reciprocating spreader working laterally in guides or ways from one side of the frame to the other to scatter the grain entirely over the surface of the carrier, as set forth.

8. In a band-cutter and feeder for thrashing-machines, the combination, with the frame, of the inclined and vertical guide-boards, forming the double chutes, the revolving shaft carrying the cutters, the carrier, the reciprocating spreader, comprising a suitable frame having slotted extended ends and the spreading-rods, bars attached to the frame of the machine and forming ways or guides for the slotted ends of the spreader, and operating means for the same, as set forth.

9. In a band-cutter and feeder for thrashing-machines, the combination, with the frame, of the double arrangement of chutes and cutters, the carriers, side boards erected upon the frame, bars attached to the side boards, a reciprocating spreader-frame working between the bars, and the spreading-rods attached to the frame, one series of the rods being arranged in rear of the other and having a much less curvature, as set forth.

10. In a band-cutter and feeder, the combination, with the band-cutting mechanism, of the reciprocating spreader-frame working laterally across the carrier from one side to the other between ways or guides and carrying the spreading-rods, one series of the latter being in rear of the other, and shorter and having a much less curvature than the same, as set forth.

325,737. ATTACHMENT FOR ARTICLES OF FURNITURE. WM. F. DAVIS, Attleborough, Mass., assignor of one-half to Frederick L. Barden, same place. Filed Oct. 24, 1884. (No model.)



Claim.—The hereinbefore-described attachment for sofas, bedsteads, and other articles of furniture, for preventing the same from coming into contact with the walls of the room, consisting of the bar or arm D, provided at its outer end with a rubber wheel free to rotate in said bar, and at its inner end with suitable means whereby it may be attached to the article of furniture, substantially as and for the purpose set forth.

325,738. COMBINED DERRICK AND CARRIER. JOHN N. FINK, St. James, New Brunswick, Canada. Filed July 23, 1885. (No model.) Patented in Canada June 5, 1884, No. 30,777.

Claim.—1. The combination, with the running-gear A, having side bars, *a*, and platform A', as described, the derrick-frame, the block and tackle, and the operating-cranks arranged on a transverse shaft, as set forth.

2. In a derrick and carrier as described, the combination, with the block and tackle, the drum and gear, and the shaft F, having provisions for throwing its pinion *f* out of mesh, of the brake-lever M, arranged to

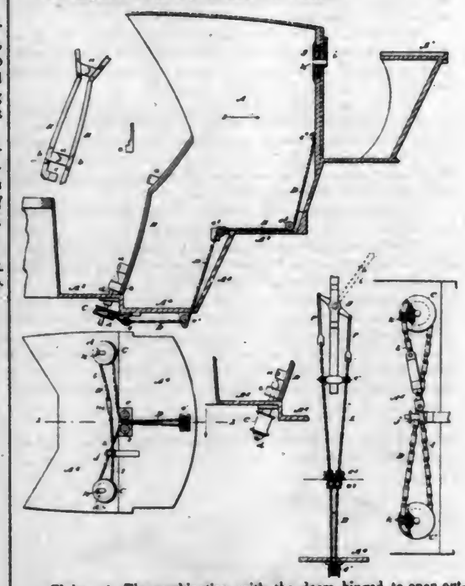
325,738.



apply friction to the drum and allow the load to be lowered at will, as specified.

3. In a machine as described, the combination, with the derrick-frame B' B², having its braces g' g^2 arranged to provide for gear mechanism, of the transverse drum, and shaft F, having collars I, the tackle, the pinion *f*, gear E, and the latch H, all arranged and adapted to serve with the running-frame having platforms A', as and for the purposes set forth.

325,739. MEANS FOR OPENING AND CLOSING THE DOORS OF HANSOM-CABS. FREDERICK FORDER and CHARLES FORDER, Wolverhampton, England. Filed May 15, 1885. (No model.)



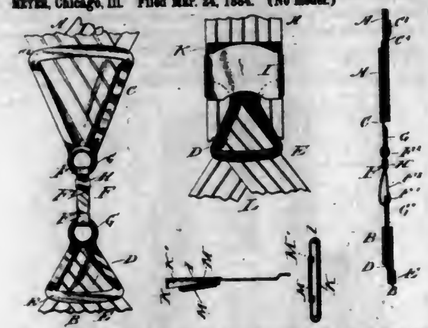
Claim.—1. The combination, with the doors hinged to open outwardly, of the pulleys C C, mounted on axes fixed to the doors, and the endless chain D, mounted on and secured to said pulleys at *k k*, and the part *l* of said chain left slack, whereby one door is enabled to move a little in advance of the other, substantially as set forth.

2. The combination, with the doors of a hansom-cab, of the pulleys C C, mounted on pins or axes *d*, fixed to the doors at the bottom, the chain D, fixed to said pulleys, crossed and arranged to pass over suitable guide-sheaves to the back of the cab, the said guide-sheaves, the rock-lever, to which the chain is connected, its spindle, and the handle whereby the driver manipulates the chain, all arranged to operate substantially as set forth.

3. The combination, with the pulleys C C, of the chain D, fixed thereto, and the turn-buckle or screw-coupling *m*, arranged in the part *l* of said chain, substantially as and for the purposes set forth.

4. The combination of the pulleys C C, the chain D, mounted on said pulleys and crossed, as described, and the sheave *j*, arranged between said chains at the crossing-point, substantially as and for the purposes set forth.

325,740. SUSPENDERS. ALVA M. FREEMAN and JOHN B. OVERMEYER, Chicago, Ill. Filed Mar. 24, 1884. (No model.)



Claim.—1. The combination, with a suspender, of a plate provided near one end with a slot, C', formed transversely to the line of connection between the said straps, and having its said end bent outwardly at the end of the slot and on a line parallel with the same, so as to convert the extreme end of the plate into a loop standing out from the plane of the plate, substantially as shown and described, and for the purpose set forth.

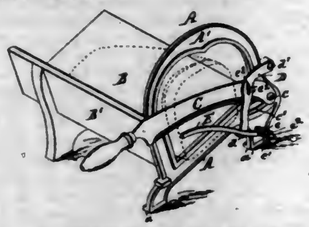
2. The combination, with a suspender, of the front attachment consisting of a sleeve fitted to slide on the shoulder-strap, and a binding-plate provided with side edges converging toward each other, adapted to slide and wedge in between the said sleeve and strap, and having front and rear bearing-faces converging to its lower end, in combination with the pantaloon-strap, and means, substantially as described, for connecting the same with the lower end of the wedge-shaped binding-plate, for the purpose set forth.

3. In a suspender, the combination, with the web and the sleeve arranged to slide upon the web, of the binding-plate provided at its lower end with an eye and a plate, substantially as described, connected with the strap and suspended by a snap-link from the binding-plate.

4. In a suspender, the front attachment for the front strap, consisting of a sleeve and a wedge-shaped binding-plate adapted to wedge in between the sleeve and the web, in combination with plate D, connected with the binding-plate, and having its lower end slotted transversely and bent outwardly to form a loop, substantially as described.

5. The combination, with the web and binding-plate from which a suspender-strap is suspended, of the sleeve fitted upon the web and formed of a metal plate bent into shape and having its meeting ends secured together by a fastening-plate, substantially as described.

325,741. BREAD-CUTTER. HENRY A. GRIMM, St. Louis, Mo. Filed Nov. 10, 1884. (No model.)



Claim.—1. The combination, with the frame A, having curved slot c', of the knife C, provided with pins c c^2, and spring-bar D, slotted at c^2, and fastened to said frame, substantially as set forth.

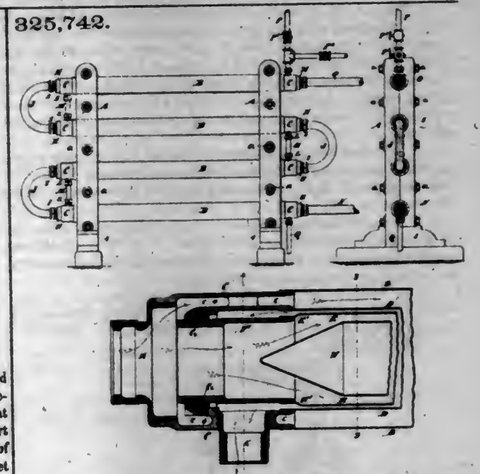
2. The combination, with the frame A, having arch A', curved slot c', and bread-table B B', of the knife C, provided with pins c c^2, and spring-bar D, slotted at c^2, and attached to said frame, substantially as and for the purposes set forth.

3. In a bread-cutter, the combination, with the bread-table B B' and frame A, having curved slot c', of the knife C, provided with pins c c^2, and the spring-bar D, slotted at c^2, and attached to the frame, substantially as described.

325,742. APPARATUS FOR COOLING BEER, &c. WM. H. HAYES, Paterson, N. J. Filed Jan. 15, 1885. (No model.)

Claim.—1. In an apparatus for cooling beer and analogous liquids, the annular pipes B, D, and E, in combination with each other and with means, substantially as set forth, for causing a thin annular stratum of beer to move in one direction and a current of the cooling-liquid, as water, to move in the opposite direction, both outside and inside of the former, as herein specified.

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2. In an apparatus for cooling beer and analogous liquids, the filling-tube or idle-piece W, arranged within the inner pipe, E, in combination with such pipe, and with the exterior pipes, D and B, and with means for causing currents to flow in opposite directions, as herein specified.

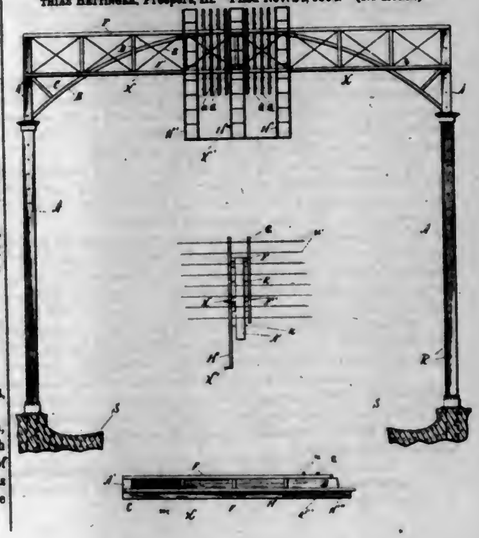
3. In an apparatus for cooling beer and analogous liquids, the nut G, threaded tubular casting F, and conical seat, in combination with each other, and with the annular chambered casting C and concentric tubes D B, substantially as herein specified.

4. In an apparatus for cooling beer and analogous liquids, a series of two or more concentric sets of tubes, B, D, and E, in combination with each other and with connections J and M, one joining the beer-spaces in one set with the beer-space in other set, and the other joining both water-spaces in one set with both water-spaces in the other set, all substantially as herein specified.

5. In an apparatus for cooling beer and analogous liquids having two or more sets of concentric tubes, as B D E, and partly annularly-chambered casting C, a detachable thimble, K, arranged as shown, to allow the outer tube, B, to be applied by slipping it endwise over the end casting after the other parts are soldered together, as herein specified.

6. In an apparatus for cooling beer and analogous liquids, the series of concentric tubes and connections between each set and the next, as shown, in combination with each other and with the pipe P and cock P', and the hand-pipe and cock P^2, communicating with a source of steam at high pressure, arranged to serve substantially as herein specified.

325,743. MEANS FOR SUPPORTING TELEGRAPH-WIRES. MATHIAS HETTINGER, Prospect, Ill. Filed Nov. 24, 1884. (No model.)

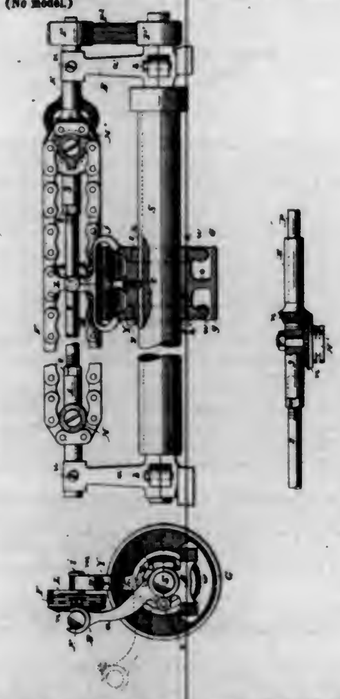


Claim.—1. In an improved construction for suspending telegraph-wires or telephone-wires in a street, the combination of two supports on opposite sides of said street, a suitable cross-member resting on said supports and extending across said street, a series of preferably vertical spars fastened to said cross-member, a cross-walk fastened to said cross-member and affording access from one or both of said supports to said spars, and a series of insulators fastened to said spars and adapted to sustain said wires.

2. The combination of the posts or columns A A, the truss resting on said posts, the spars G, and insulators *a*, the cross-walks K and K', and the ladders H H' H'', substantially as shown and described, and for the purpose set forth.

3. The combination of the posts A A, the truss F F' D E, the arch B, the spars G, and insulators *a*, the ladders H H' H'', walk K', suspended therefrom, and the walks K K, substantially as shown and described, and for the purpose set forth.

325,744. CARD-GRINDING MACHINE. NEHEMIAH HICKS, Attleborough, MASS., and GEORGE A. METCALF, Woonsocket, R. I. Filed July 2, 1884. (No model.)



Claim.—1. The combination, with a rotating shaft and grinding-wheel connected to slide upon said shaft, of a continuous driving belt or chain arranged outside of and parallel to said shaft, and a yoke encircling the hub of the grinding-wheel, and provided with an arm connected by a pivoted link to the driving-belt, substantially as set forth.

2. The combination, with the rotating and sliding grinding-wheel and yoke connected thereto so as not to turn therewith, of a continuous driving-chain carrying a link pivoted to the yoke at a point midway between the sides of the chain, substantially as set forth.

3. The combination, with the shaft carrying the rotating and sliding grinding-wheel, of a yoke encircling the hub of said wheel, a swinging frame carrying supporting-wheels, and a continuous chain passing around said supporting-wheels and connected by a link to the yoke, substantially as described.

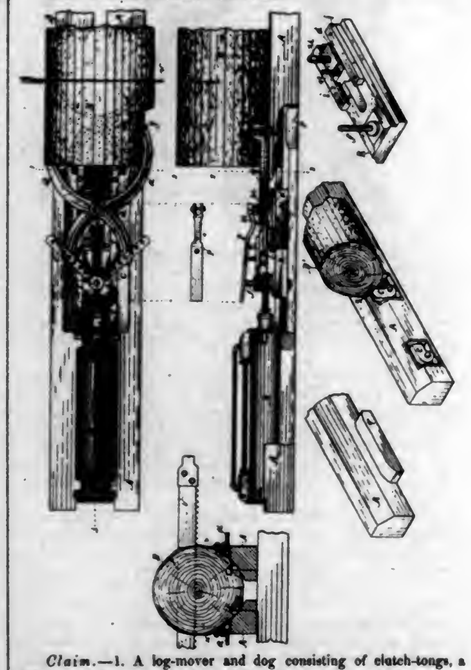
4. The combination, with the rotating and sliding grinding-wheel and driving-chain, of a yoke having an arm connected by a link to said chain and a ring encircling an annular flange, *s*, substantially as set forth.

5. The combination of the sliding and rotating grinding-wheel provided with annular flanges *s* upon the opposite ends, and a yoke consisting of two independently-detachable ring-sections having arms extending around and connected detachably together opposite the rim of the wheel, substantially as described.

6. The combination, with the sliding and rotating grinding-wheel, of a yoke inclosing a flange thereof and weighted at the lower side, for the purpose set forth.

7. The combination of the main frame and a swinging frame, B, pivoted thereto, carrying a driving-chain, and a shaft carrying the grinding-wheel having its bearings between the two frames and connections between the driving-chain and grinding-wheel, substantially as described.

325,745. LOG-MOVER AND DOG. WILLIAM E. HILL, Kalamazoo, Mich. Filed Jan. 31, 1885. (No model.)

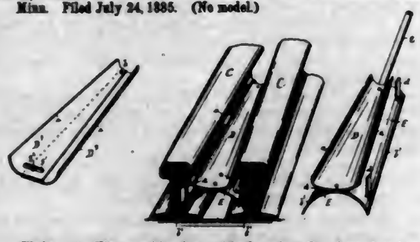


Claim.—1. A log-mover and dog consisting of clutch-tongs, a sliding pivotal support therefor, a sliding block carrying said support, but having an independent action, an engine or other suitable power connecting said sliding block, a suitable guide-support for the latter, and bars pivotally connecting the handle ends of the tongs with the sliding block, whereby the log is moved and held against endwise and lateral displacement, substantially as set forth.

2. A log-moving machine consisting of clutch-tongs, a sliding pivotal support therefor, a sliding block carrying said support, but having an independent action, an engine or other suitable power connecting said sliding block, a suitable guide-support for the latter, bars pivotally connecting the handle ends of the tongs with the sliding block, and a lock-bar for holding the sliding support of the tongs and the sliding block against independent action when the tongs are open, substantially as set forth.

3. The combination of the foundation-beams provided with log-trough and stops, suitable power, and the trip-block, the sparred tongs pivoted to a sliding block, said block provided with the puppet-pin and lock-bar, a connected independently-sliding block connected with the power, and bars pivotally connected with the latter sliding block and the arms of the tongs, all substantially as set forth.

325,746. RAILWAY FOOT-GUARD. LAFAYETTE S. KEELER, Hokah, Minn. Filed July 24, 1885. (No model.)

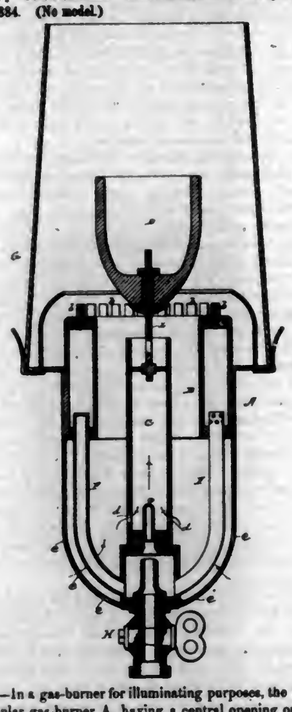


Claim.—1. The combination, with the plate D, adapted to be inserted between the rails of railroad-frogs, guard-rails, &c., of a supporting stay-plate, E, substantially as and for the purpose set forth.

2. The combination, with the plate D, adapted to be inserted between the rails of railroad-frogs, guard-rails, &c., of a supporting stay-plate E, and stay-rod *e*, substantially as and for the purpose set forth.

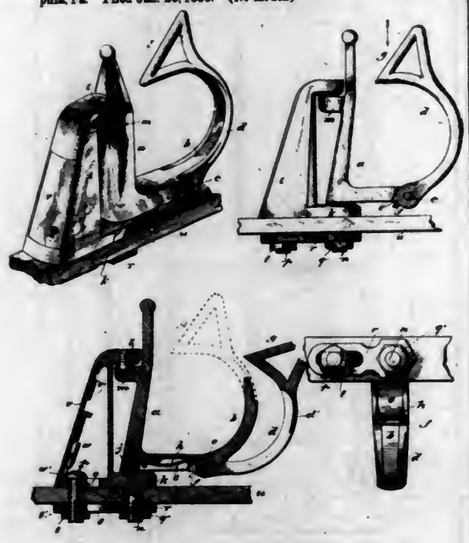
3. The combination, with the plate D, adapted to be inserted between the rails of railroad-frogs, guard-rails, &c., of a supporting stay-plate, E, and stay-rods *d*, substantially as and for the purpose set forth.

325,747. GAS-BURNER. ISAAC KENDRICK, Philadelphia, Pa. Filed Aug. 7, 1884. (No model.)



Claim.—In a gas-burner for illuminating purposes, the combination, with the annular gas-burner A, having a central opening or passage, B, of the auxiliary or heating burner tube C, its jet or jets *c*, and air-inlets *d*, the cone or cup shaped deflector D, arranged so as to have the flame pass on the outside thereof, the draft-collar E, and the regulating-valve H, substantially as specified.

325,748. OAR-LOCK. JOHN KLENK and SAMUEL H. HAAS, Philadelphia, Pa. Filed Jan. 20, 1885. (No model.)



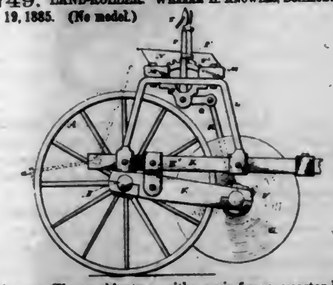
Claim.—1. In a rowlock, the arm *a*, having the upright finger *b*, combined with the spring-hook *d*, having its lower end forked and shaped to conform to the outline of the finger and embracing said finger and pivoted to said arm at the lower end of the finger and overhanging the space between the arm and its finger, substantially as described.

2. In a rowlock, the arm *a*, having the upright finger *b*, the hook *d*, having its lower end forked and shaped to conform to the outline of and embrace said finger and pivoted to said arm at the lower end of the finger, with its upper hooked end overhanging the space between the arm and its finger, and a spring, *e*, arranged in a recess in the arm and engaging a cross-bar, *f*, on the hook, combined with a standard to which said arm is swiveled, substantially as described.

3. In a rowlock, the arm *a*, having the upright finger *b*, and the spring-hook *d*, having its lower end forked and shaped to conform to the outline of the finger and embrace it and pivoted to said arm at the lower end of the finger and overhanging the space between the arm and its finger, combined with the standard to which the arm is swiveled, and means to lock said arm to the boat, substantially as described.

4. In a rowlock, the oar-receiving device, combined with a hollow standard having a locked door, and screw-bolts, nuts therefor, and locking devices for such nuts, substantially as described.

325,749. LAND-ROLLER. WILLIAM H. KNOWLES, Bellmont, Ill. Filed Feb. 19, 1885. (No model.)

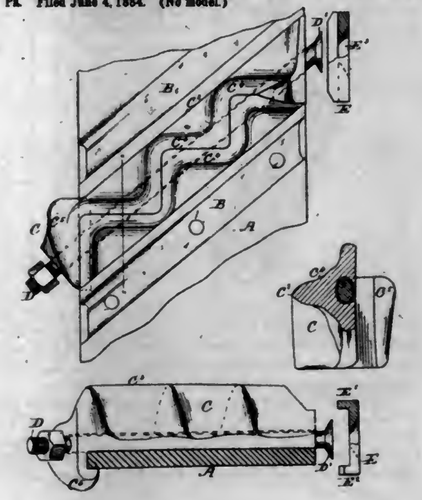


Claim.—1. The combination, with a main frame, a sector-bar secured thereto, and a swinging frame, the latter consisting, essentially, of two rock-arms pivoted to said main frame, and land-rollers and cutters supported by the rock-arms, of a lever pivoted to them ain frame and connected to the swinging frame, and devices for locking the lever to the sector-bar, substantially as set forth.

2. The combination, with a main frame and a swinging frame, consisting, essentially, of two rock-arms pivoted to the main frame, of axles journaled in the ends of the rock-arms, cutters and rollers mounted on said axles, a sector-bar secured to the main frame, a lever pivoted to the main frame and connected to the swinging frame, and a spring-actuated dog for locking the lever, substantially as set forth.

3. The combination, with a main frame and a swinging frame carrying cutters, and a land-roller, the latter located behind the cutters, of a seat adjustably secured to the main frame and adapted to be moved back and forth, as described.

325,750. TRACTION-WHEEL. FRANK F. LANDE, Waynesborough, Pa. Filed June 4, 1884. (No model.)



Claim.—1. A traction-rib for wheels of traction-engines provided with zigzag steps, having one edge of said steps formed parallel with the end of said rib and the other edge perpendicular to the first-stated edge, substantially as specified.

2. A traction-rib having a corrugation of steps of zigzag outline arranged diagonally across the tire, substantially as specified.

3. A traction-rib provided with zigzag steps, having one edge of said steps formed parallel with the end of said rib, and an extension at said end adapted to embrace the edge of the tire, substantially as described.

4. The combination of a tire, an edge clamp, and bolt, with traction-ribs arranged diagonally thereon and provided with zigzag steps, having one edge of said steps formed parallel with the edge of said tire, substantially as and for the purpose described.

5. The combination of the tire A, the rib-section C, having the zigzag or stepped rib C^4, a side cleat or cleats, B, and a bolt, D, substantially as shown and described.

6. The combination of the tire A, the cleats B, the zigzag rib-section C^4, cleat E, and bolt D, substantially as shown and described.

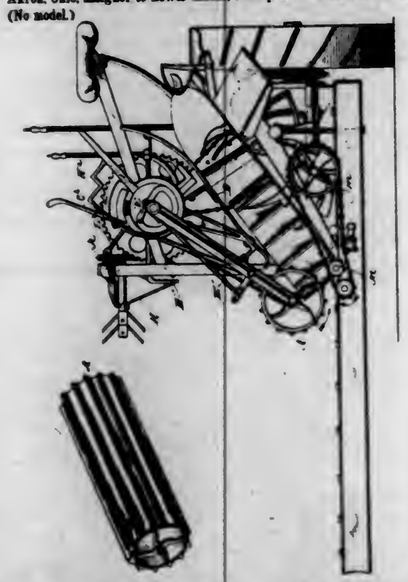
325,751. BASKET. THOMAS F. LAWSON, Athens, Ga. Filed July 18, 1885. (No model.)



Claim.—1. A basket composed of two or more angular strips detachably secured together one within the other and forming the bottom and side ribs of the basket, a hoop supported by the upper ends of the ribs, and having a flexible body portion suspended within and upon said hoop, substantially as described.

2. A folding basket consisting of a series of angular strips pivotally joined as described, a hoop detachably supported within and at the upper ends of said strips, and a removable flexible body suspended from said hoop, substantially as and for the purpose set forth.

325,752. GRAIN-BINDING HARVESTER. THOMAS C. MARSHALL, Akron, Ohio, assignor to Lewis Miller, same place. Filed Dec. 8, 1883. (No model.)



Claim.—1. In a grain-binding harvester, a feeding-roller located over the moving grain at the inner end of the horizontal platform-carrier and at the foot of the inclined binder-table, in combination with and supported by a pivoted frame hinged to the binder-gear standard, and means for vibrating said frame and roller, substantially as described.

2. In a grain-binding harvester, a feeding-roller located between the horizontal platform-carrier and the inclined binder-table and binding mechanism, carried by and in combination with a pivoted frame hinged at its inner end to the sleeve supporting the knotter-actuating shaft, and means for vibrating said frame and roller, for the purpose and substantially as specified.

3. In a grain-binding harvester, a roller located between the platform-carrier and the binding mechanism, and having its bearings in a frame hinged to the sleeve supporting the knotter-actuating shaft, in combination with means connecting said frame with the knotter-actuating shaft, whereby during the operation of binding the grain the frame and its roller will be lifted away from the moving grain, substantially as described.

4. In a grain-binding harvester, a roller located between the platform-carrier and the binding mechanism, said roller being mounted in a hinged or pivoted frame, in combination with a rock-shaft mounted in bearings in or upon said frame, a lever for rocking said rock-shaft, and a second lever or arm secured to said rock-shaft and bearing upon a projection of the breast-plate, whereby the hinged frame supporting the roller may be raised for relieving the moving grain of its pressure, substantially as and for the purpose described.

5. In a grain-binding harvester, the combination, with the inclined elevating binder-table, of a feed-roller located above the moving grain and adapted to rise and fall in the manner substantially as set forth, and a second feed-roller located beneath the moving grain, for the purpose and substantially as described.

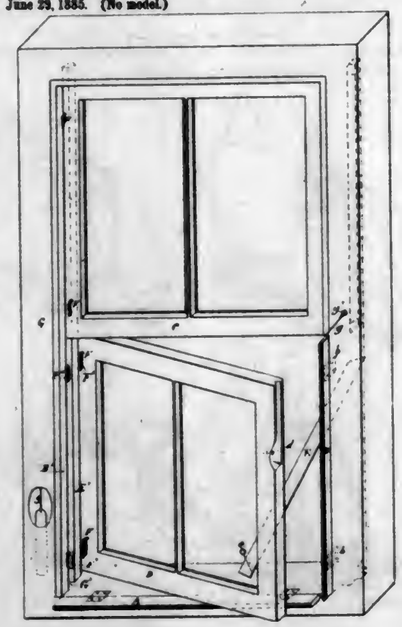
6. The roller-supporting frame hinged to the sleeve supporting the knotter-actuating shaft and provided with a rock-shaft journaled in said frame, said rock-shaft being provided with an arm or lever bearing upon the knotter-shield or breast-plate, and a lever for actuating said rock-shaft, in combination with a cam-wheel and connecting-rod for vibrating said lever, for the purpose and substantially as described.

7. The roller-supporting frame hinged to the sleeve supporting the knotter-actuating shaft and provided with a rock-shaft journaled in said frame, said rock-shaft having an arm or lever bearing upon the knotter-shield or breast-plate, and a lever for actuating said rock-shaft, in combination with a cam-wheel and connecting-rod for vibrating said lever, said cam-wheel being secured upon and rotating with the knotter-actuating shaft, adapting the cam-wheel to rotate only when the binding mechanism is in operation, whereby the roller-supporting frame is vibrated during the operation of binding a bundle, substantially as described.

8. In a grain-binding harvester, the reel post or standard supported at its lower end upon the binder-frame in advance of the finger-bar and bull-board, in combination with the seat-standard connecting said post at or near its upper end with the sleeve of the binder-gear standard, substantially as described.

9. The reel post or standard supported at its lower end in advance of the finger-bar and feed-roller upon an angular bracket secured to the binder-frame, and connected at its upper end through the seat-standard with the binder-gear standard, in combination with a reel mounted in a yoke pivoted to said reel-standard, a link pivoted to said yoke, and a crank-shaft mounted in bearings attached to the binder-gear standard and reel-post for actuating said link and adjusting the reel, substantially as described.

325,753. WINDOW. RAFAEL MARTINEZ, New York, N. Y. Filed June 29, 1885. (No model.)



Claim.—1. A window-frame having hinge-sockets F' on one side, permanently projecting from said frame, vertically-sliding sashes provided with sash-cords, and hinge-pintles projecting from the sashes to engage with said hinge-sockets, substantially as and for the purpose described.

2. The combination of a window-frame, its hinged strips B, and hinge-sockets F, secured to the vertical strips of said frame, with vertically-sliding sashes and hinge-pintles projecting therefrom, substantially as and for the purpose described.

3. The combination of a window-frame, its vertical hinged strip B, hinged sill-strip A, and hinge-sockets F, secured to the vertical strips of said frame, with vertically-sliding sashes capable of passing each other, and hinge-pintles projecting therefrom, substantially as and for the purpose described.

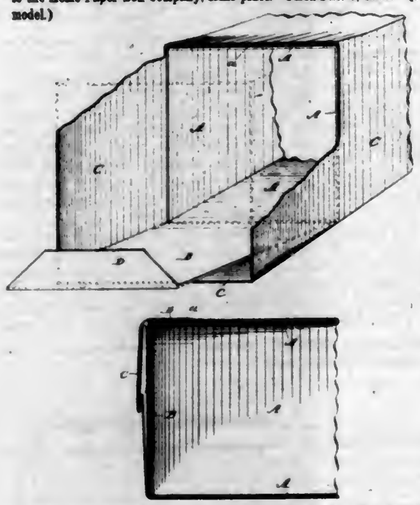
325,754. SASH-FASTENER. JOHN M. MCCORMICK and CALVIN MCKINNON, Laurinburg, N. C. Filed June 30, 1885. (No model.)



Claim.—1. The window-frame, in combination with the sash, a curved or arc-shaped plate having an extension, a slot in the extension, and a pin passing through the slot and pivotally securing the plate to the sash, as set forth.

2. The combination, with a window-frame provided with pins or projections, of a curved or arc-shaped plate having an extension formed with a slot, and a headed pin passing through the slot and pivotally securing the plate to the window-sash, and a finger-piece formed by bending the end of the extension at right angles to its body, as set forth.

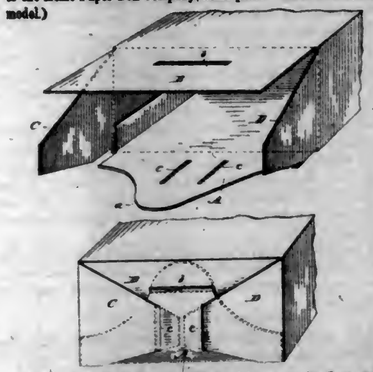
325,755. FOLDING BOX. RUFUS S. MERRILL, Boston, Mass., assignor to the Acme Paper Box Company, same place. Filed Feb. 6, 1885. (No model.)



Claim.—A folding box or package in which the sides A and a wrapper, B, connected together so as to provide a pocket, *a*, are combined with the end flap, B, provided with a tongue, D, to enter said pocket when the flap is closed, as and for the purposes hereinbefore set forth.

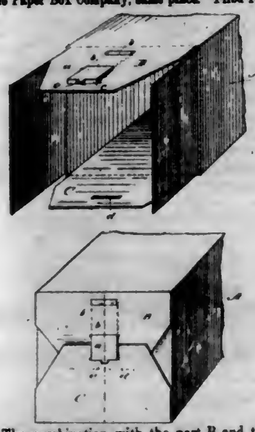
325,756. WITHDRAWN

325,757. FOLDING BOX. RUFUS S. MERRILL, Boston, Mass., assignor to the Acme Paper Box Company, same place. Filed Feb. 6, 1885. (No model.)



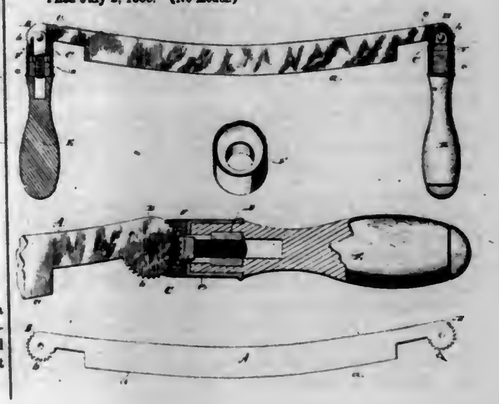
Claim.—A folding box provided with two main flaps united by a tongue-and-slot connection, and with two side flaps adapted to be tucked into slots formed for their reception in the main tongue-flap, substantially as and for the purposes hereinbefore set forth.

325,758. PAPER BOX. RUFUS S. MERRILL, Boston, Mass., assignor to the Acme Paper Box Company, same place. Filed Feb. 6, 1885. (No model.)



Claim.—The combination, with the part B and the hook-carrying spring-tongue *a*, applied to the same, substantially as described, of the overlapping slotted flap C, adapted to be inserted between the part B and said tongue, and in this position to be engaged by the hook on said tongue, as and for the purposes set forth.

325,759. DRAW-SHAVE. WILLIAM MILLSPAUGH, Middletown, N. Y. Filed July 2, 1885. (No model.)



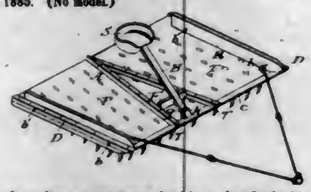
Claim.—1. The combination, with a blade provided with rounded ends, of threaded tangs pivotally secured at the centers of the rounded ends, and handles adapted to engage the tangs and turn into locked adjustment against the edges of the rounded ends, substantially as set forth.

2. The combination, with a blade provided with rounded ends having teeth or projections on the edges, of threaded tangs pivotally secured at the centers of the rounded ends, and handles provided with female screw-threads adapted to engage the threaded tangs, and thereby move the handles into and out of locked adjustment with the toothed edges of the rounded ends, substantially as set forth.

3. The combination, with a blade provided with circular-shaped ends having sharp teeth on their edges and threaded tangs pivotally secured at the centers of the circular-shaped ends, of handles adapted to screw on the tangs, and concave-faced washers located between the handles, and circular ends adapted to be forced into contact with the sharp teeth, and thereby lock the handles in the desired angular adjustments, substantially as set forth.

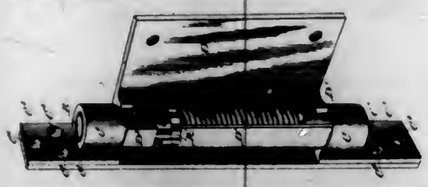
4. The combination, with a blade having rounded ends and handles, substantially as described, adjustably secured to said rounded ends, of concave-faced washers interposed between the handles and blades, substantially as set forth.

325,760. RIDING-HARROW. PETER MOUSEY, Sterling, Ohio. Filed Mar. 23, 1885. (No model.)



Claim.—In a harrow constructed with a closed platform, P, provided with a series of rows of rearwardly-curved knife-teeth, the V-shaped frame attached to the platform, in combination with fulcrum-bar F, and the detachable seat-standard B, provided with hook *g* and staple *h*, substantially as and for the purpose specified.

325,761. SPRING-HINGE. SIDNEY S. NILES, Chicago, Ill. Filed Apr. 8, 1884. (No model.)



Claim.—1. A hinge provided with a pair of eyes or pintle-bearings formed independent of one another and attached to a common bed-plate formed separately from the eyes or pintle-bearings, and adapted to be secured to a door-jamb or other support, substantially as described.

2. The combination, in a hinge, of the independent pintle-bearings, each having a perforated flanged base portion, with an independent bed-plate provided with perforations adapted to register with the perforations in the base-flanges of the pintle-bearings when the latter are secured in place upon the said bed-plate, substantially as described.

3. In a hinge, the independent pintle-bearings, each provided with a flanged base portion having a stud or studs projecting from the under side thereof, in combination with an oblong bed-plate provided with slots, in which the studs of the base portions of the pintle-bearings are received, said bed-plate and pintle-bearings being adapted to be secured together, substantially as described

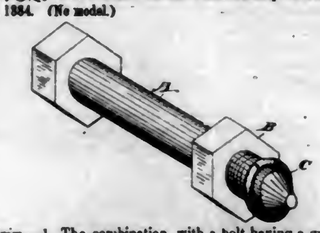
4. The separate and opposing pintles, and a spring-connection between said pintles, in combination with a toothed disk rigid upon one of said pintles, a similar disk secured to the spring, and a key fitting between the teeth of and locking said disks together, substantially as described.

5. The two opposing pintles, a lug on one of said pintles, a bearing and a leaf, each provided with independent stops engaging with the pintle-lug, and a leaf bearing on the pintle, in combination with a spring-connection between said pintles, a toothed disk on the spring, a similar disk on the other pintle, and a key locking said disks together, all substantially as described.

6. The combination, in a hinge, of the pintle eyes or bearings with a bed-plate made separate from the pintle-eyes, and provided upon its face with a stop or abutment, against which the base portion of one or both of the pintle-eyes shall abut when the latter are applied to the bed-plate, substantially as described.

7. The combination, in a hinge, of the pintle eyes or bearings with a bed-plate made separate from the pintle-eyes, and provided upon its face with a longitudinal rib constituting a stop for the pintle-eyes, and serving to close the space between the bed-plate and that portion of the hinge which is embraced between the pintle-eyes, substantially as described.

325,762. NUT-GUARD. EWALD OVER, Indianapolis, Ind. Filed Nov. 12, 1884. (No model.)



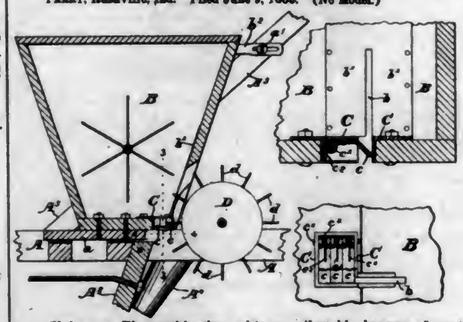
Claim.—1. The combination, with a bolt having a groove near its point, of a ring adapted to enter said groove and form a nut-guard.

2. The combination, with a bolt having a conical point and a groove, *a*, of a ring, C, substantially as described, and for the purposes specified.

3. The combination of a bolt having a groove, and reduced in size between the groove and point, and a ring adapted to enter said groove, substantially as set forth.

4. The combination of the bolt A, having groove *a*, a conical point, and a portion between said groove and said conical point smaller than the body of the bolt, and a ring, C, adapted to be placed in said groove and form a nut-guard, substantially as set forth.

325,763. FEEDING APPARATUS FOR PLANTERS. DAVID M. PARRY, Rushville, Ind. Filed June 9, 1885. (No model.)

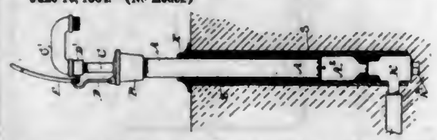


Claim.—1. The combination, with an adjustable hopper, of a set of spring-fingers mounted in its bottom, and a force-feeding device arranged to force open and operate upon said spring-fingers, said hopper being adjustable to a position to place any number of said fingers in the path of said feeding device, substantially as set forth.

2. The combination of the hopper adjustably mounted upon the frame and provided with a slot in one side, a series of spring-fingers mounted in its bottom in front of and extending across said slot, and a force-feeding device provided with arms which projects through said slot and operate upon those fingers which are placed in its path by the adjustment of the hopper, substantially as set forth.

3. The combination, in a planter, with the hopper and feeding device, of a cut-off device consisting of a casing and spring-fingers mounted therein at an angle with the sides of the casing, whereby a small receptacle is provided for a small quantity of seed, the bottom of which consists of said spring-fingers, said receptacle being arranged in front of the arms of the force-feeding device, substantially as set forth.

325,764. HYDRANT. OLIVER P. PENCE, Des Moines, Iowa. Filed June 16, 1884. (No model.)



Claim.—1. In a hydrant, the combination of a vertically-reciprocating stand-pipe, a detachable and adjustable clip having a bearing to support a pivoted lever, a lever of the first order pivoted to the adjustable clip, and a hinged fulcrum having a semicircular bend at its top, to operate in the manner set forth, for the purposes stated.

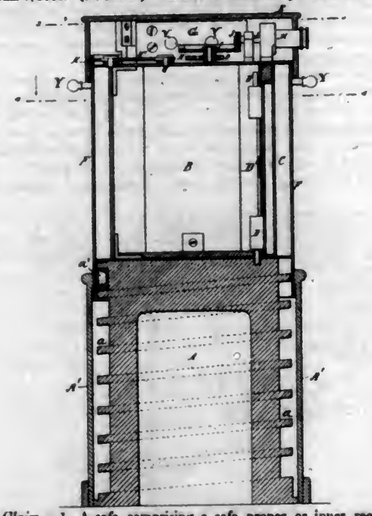
2. The stationary hydrant-case and top A B, the moving stand-pipe C C', the hinged fulcrum D, having a semicircular bend at its top end, the clip D', and a lever-handle, F, arranged and combined as and for the purposes shown and described.

3. A metal tubular casing having waste-openings at its lower end, a detachable valve-chamber having open screw-threaded ends, a detachable valve-seat having an angular top and waste-vents, a sliding valve having slots or water-way openings, and an annular groove and waste-way intersecting the water-way openings, and a reciprocating stand-pipe and delivery-spout, arranged and combined to operate in the manner set forth, for the purposes specified.

4. In a hydrant, the combination of a valve-chamber having an open screw-threaded top, a detachable valve-seat having an angular and perforated top of diminished diameter, and a sliding tubular valve having one or more water-ways near its lower closed end, and an annular groove in its outside surface intersecting the top ends of the water-ways, to operate in the manner set forth, for the purposes stated.

5. The combination of a valve-chamber having an open screw-threaded top end, a contracted open and screw-threaded bottom end, a detachable valve-seat having a perforated top of smaller diameter, a tubular sliding valve having water-ways near its lower closed end and an annular groove intersecting the water-ways, a reciprocating stand-pipe and tubular case extending into the valve-chamber and provided with vents at its lower end, to operate in the manner set forth, for the purposes specified.

325,765. SAFE. EMILE PETIT, St. Denis, near Paris, France. Filed Jan. 7, 1885. (No model.) Patented in France July 1, 1884, No. 163,080.

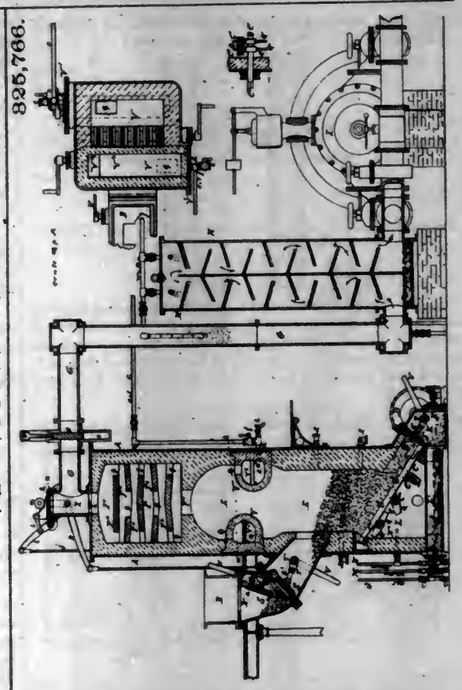


Claim.—1. A safe comprising a safe proper or inner receptacle, provided with a cap which incloses a locking or fastening mechanism, an exterior envelope constructed to be raised and lowered, for the purposes specified, the upper edge of which envelope is constructed to take within a pendent flange on the said cap, and a fastening arranged within the cap for securing the exterior envelope in its elevated position, substantially as described.

2. A safe comprising a cylindrical pedestal, provided with an inclined way, as shown, a safe proper mounted on said pedestal, an exterior cylindrical envelope provided with rollers which travel over the inclined way on the pedestal when the said envelope is raised and lowered by rotating it, and a fastening for securing the said envelope in its raised position, substantially, as described.

3. The combination of the pedestal provided with an inclined way, the fixed exterior casing arranged to inclose the pedestal, the safe proper or inner receptacle mounted on the pedestal and provided with a cap, and the movable exterior casing, F, adapted to be raised and lowered, all substantially as and for the purposes set forth.

325,766. APPARATUS FOR GENERATING ILLUMINATING-GAS. ROBERT M. POTTER, Jersey City, N. J., and REINHOLD BOEKLEN, Brooklyn, N. Y., assignors of one-third to Israel Cook, Brooklyn, N. Y. Filed June 23, 1885. (No model.)



Brief.—The bed of fuel is raised to a high heat by an air-blast, and the fixing-chamber at the top of the furnace is heated by the products of combustion. Then the blast from the blower is shut off, fresh gas-coal is supplied to the bed of fuel, the exhauster is started, and a small supply of air thereby drawn into the fuel and gas drawn from the generator. A small supply of steam is also admitted to the fuel, and gases distilled from the coal and resulting from the decomposition of steam and air are enriched with hydrocarbon oil or gas generated in retorts in the furnace-walls. The mixture of gas and vapors is converted into a fixed gas in the fixing-chamber and in a separate superheater, should the latter be required. A fuel-hopper provided with valves, an inclined grate and rakers, and a sealed chamber for ash and spent fuel at the lower end of the grate provide for charging and cleaning the generator during the manufacture of gas.

Claim.—1. In combination with a cupola gas-generator, the continuous fuel feeder or charger, the inclined grate, and a sealed discharge-chamber for spent fuel, arranged and operating as described.

2. The combination, in a cupola for generating gas, of a sealed coal-feeder, a sealed discharge-chamber with a water-receptacle, and a fixing-chamber, an air-inlet pipe opening into such receptacle, and a fixing-chamber, substantially as herein described.

3. In combination with the cupola-generator, the sealed coal-feeder, the sealed discharge-chamber, the oil-vaporizing retorts arranged in the walls of the cupola, a fixing-chamber, and a separate superheater for the generated gas, substantially as herein described.

4. In a gas apparatus, the combination of the cupola-furnace having an air-inlet pipe and means for vaporizing oil with a superheater, W, and its retort W' and gas-exhauster, substantially as and for the purpose herein set forth.

5. In a gas-generating cupola-furnace, the combination of the ash-pit, its water-receptacle, and an air-supply pipe opening into it, with the inclined grate, the rakers or spent-coal forwarders, the sealed inlets for coal, and sealed outlets for refuse coal and ashes, substantially as herein described.

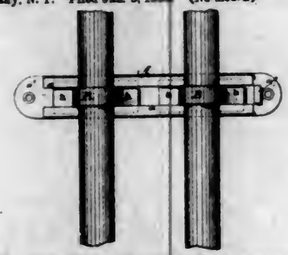
6. In combination with a cupola gas-generator, the sealed continuous fuel feeder or charger, the inclined grate, the rakers secured below such grate, and a sealed discharge-chamber for refuse arranged at the lower end of such grate, for the purpose described.

7. In a gas-generating cupola, the inclined grate and rakers, a sealed outlet and a sealed refuse-chamber arranged at the lower end of the grate, in combination with a double-sealed fuel-supply hopper, a distilling-chamber, and oil-vaporizing retorts, substantially as herein set forth.

8. In a gas-generator, the combination of the inclined grate, the sealed fuel-supply hopper, and the sealed outlet, arranged as described, with the oil-vaporizing retorts, and a fixing-chamber provided with tile shelves arranged as described, for the purpose set forth.

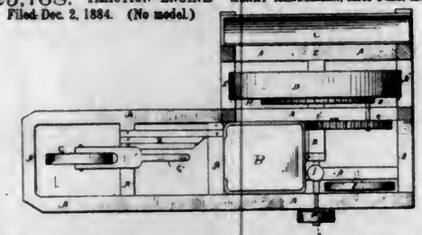
9. The cupola gas-generator having horizontal openings in its side walls, in combination with the removable oil-gas-generating retorts secured in such side-wall openings, for the purpose described.

325,767. DEVICE FOR HOLDING STEAM-PIPES, &c. THOMAS W. PRIDE, Albany, N. Y. Filed Jan. 8, 1885. (No model.)



Claim.—The combination, with a longitudinally-grooved fastening-plate, A, provided with inturned side flanges, *a*, of the arch-piece B, provided with flanges *b*, which project laterally to engage under the flanges *a* of the fastening-plate, so that the opening through said arch-piece will range transversely to the groove *a'*, as and for the purpose herein specified.

325,768. TRACTION-ENGINE. HENRY RENDLEMAN, Alto Pass, Ill. Filed Dec. 2, 1884. (No model.)



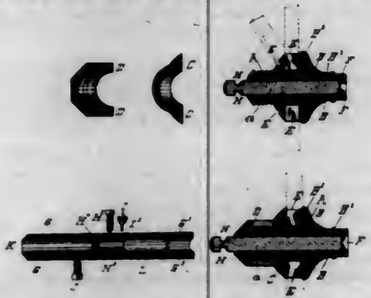
Claim.—1. The frame A, provided with side extension, A', and having the guide-wheel G in front and traction-wheel D and guide-wheel F at the rear thereof, actuated as illustrated.

2. The traction-wheel D at a rear corner of the machine, having an integral cog-wheel, H, concentric therewith, in combination with the crank-shaft K, actuated as shown, the pinion *l*, gear-wheel *m*, pinions *n n* on the same shaft, and the frame A, having side extension, A', as set forth.

3. The frame A, in combination with the boiler B, tank C, and traction-wheel D, said tank and boiler being placed on opposite sides of the wheel, to maintain the equilibrium of the machine and increase the tractive power of the wheel by adding to or adjusting the weight upon it, as set forth.

4. The frame A, having floor R, whence the guide-wheel G may be diverted by its handle G', in combination with the wheels D F, located as shown, the boiler B and tank C of the machine, cylinder I, and the means, herein shown and described, whereby the power so generated is utilized either in the propulsion of movable loads or in the operation of stationary mechanisms, for the purposes and in the manner and relation specified.

325,769. VEHICLE HUB AND AXLE. COMMODORE P. ROBERTSON and JAMES R. HEKE, Kansas City, Mo. Filed July 2, 1885. (No model.)



Claim.—1. A removable or detachable bearing-piece having a socket formed in one end, whereby it is attached to the axle, and having a bearing for a rotatable spindle formed in the opposite extremity, substantially as specified.

2. The combination, with a non-rotatable axle, of a removable bearing-piece having a socket formed in one end for rigidly engaging the axle, and having a socket for containing a rotatable spindle at the opposite extremity, and a hub provided with a recess and carrying a spindle which engages the last-mentioned socket, substantially as described.

325,770. CAN-OPENER. HENRY SAUERBIER, Newark, N. J. Filed Apr. 9, 1885. (No model.)



Claim.—1. The combination, with the casting having a handle, longitudinal slot, guards or guides, punch, and prongs, of a cutter, threaded cutter-carrier, and set-screw, said parts being arranged and operating substantially as set forth.

2. In a can-opener, the combination of the downwardly-extending punch a^3, the cutter, and the forwardly and laterally projecting prongs a^4, to prevent the opener from rocking, substantially as set forth.

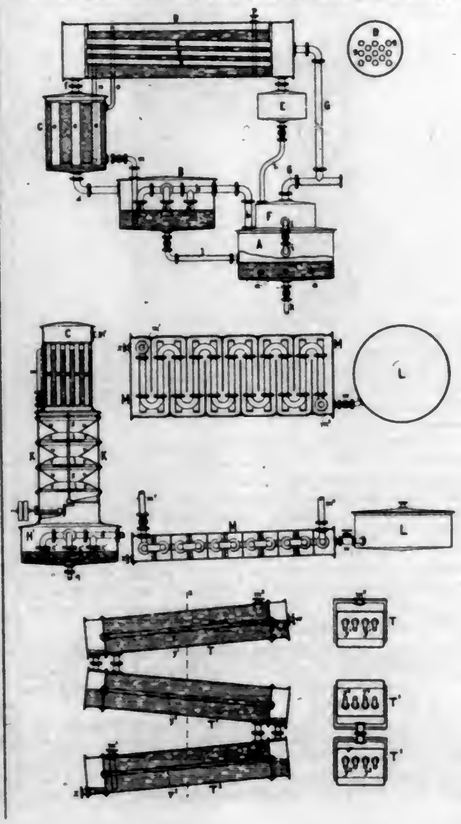
325,771. APPARATUS FOR PRODUCING AMMONIA. CARL H. SCHNEIDER, Freiburg, Germany, assignor to Buhl & Keller, same place. Filed Oct. 11, 1883. (No model.) Patented in Germany May 31, 1882, No. 21,252.

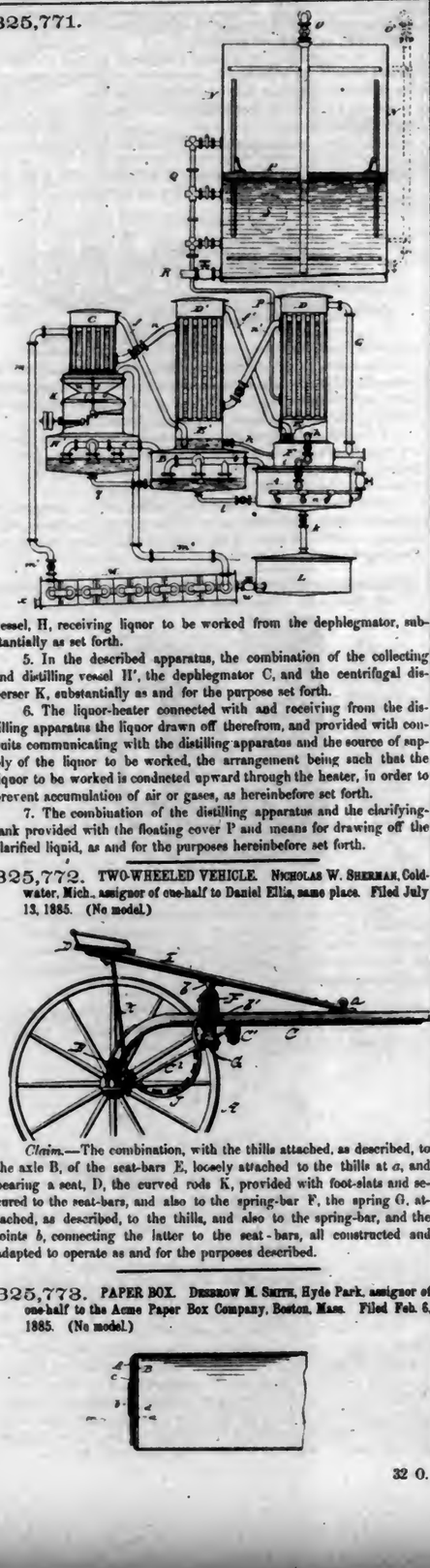
Claim.—1. In a distilling apparatus for ammonia, the dephlegmator C and a condenser, D, consisting of a system of narrow pipes within which vapors are condensed by the liquor to be worked and which surrounds the tubes, substantially as specified.

2. The combination of the distilling apparatus, the dephlegmator C, and the condenser receiving the liquor to be worked, provided with pipes for passage of the vapors and with a mud-collector, I, as and for the purposes hereinbefore set forth.

3. The combination, with the dephlegmator C, of a condenser, D, for ammoniacal vapors, comprising a number of narrow upright tubes communicating at their lower ends with a receiver, E, which receives the vapors and the liquid of condensation, and is provided with separate and distinct outlets for the escape of the vapor and liquid, respectively, as described, and shown in Fig. 8 of the accompanying drawings.

4. The combination, with the distilling apparatus, of a collecting-





vessel, H, receiving liquor to be worked from the dephlegmator, substantially as set forth.

5. In the described apparatus, the combination of the collecting and distilling vessel H', the dephlegmator C, and the centrifugal disperser K, substantially as and for the purpose set forth.

6. The liquor-heater connected with and receiving from the distilling apparatus the liquor drawn off therefrom, and provided with conduits communicating with the distilling apparatus and the source of supply of the liquor to be worked, the arrangement being such that the liquor to be worked is conducted upward through the heater, in order to prevent accumulation of air or gases, as hereinbefore set forth.

7. The combination of the distilling apparatus and the clarifying-tank provided with the floating cover P and means for drawing off the clarified liquid, as and for the purposes hereinbefore set forth.

325,772. TWO-WHEELED VEHICLE. NICHOLAS W. SHERMAN, Coldwater, Mich., assignor of one-half to Daniel Ellis, same place. Filed July 13, 1885. (No model.)

Claim.—The combination, with the thills attached, as described, to the axle B, of the seat-bars E, loosely attached to the thills at *a*, and bearing a seat, D, the curved rods K, provided with foot-slats and secured to the seat-bars, and also to the spring-bar F, the spring G, attached, as described, to the thills, and also to the spring-bar, and the joints *b*, connecting the latter to the seat-bars, all constructed and adapted to operate as and for the purposes described.

325,773. PAPER BOX. DEXBROW M. SMITH, Hyde Park, assignor of one-half to the Acme Paper Box Company, Boston, Mass. Filed Feb. 6, 1885. (No model.)



Claim.—A paper box in which the slotted part B is combined with a flap, A, overlapping the part B, and provided on the inner face of its overlapping part with a sliding tongue held in place by leaves *b*, passed through slot c in said flap, and spread apart and bent down upon the outer face of the flap, substantially as and for the purposes set forth.

325,774. MAGAZINE FIRE-ARM. PITT W. STRONG, Brockville, Ontario, Canada. Filed July 11, 1885. (No model.)



Claim.—1. The combination of two barrels, the one having a smaller caliber than the other, and an independent breech-block arranged in front of the forearm of the gun, and an independent firing-pin adapted to be thrown into the path of the hammer, substantially as specified.

2. In a gun of the class described, the combination of a longer barrel of larger bore with a shorter barrel of smaller bore, provided with an independent breech-block arranged at the front end of the forearm of the gun, substantially as specified.

3. In a gun of the class described, the combination of two barrels, the first or principal barrel having a bore or caliber larger than that of the second barrel, and having an independent breech-block and firing-pin, and the second barrel having an independent breech-block arranged at the front end of the forearm of the gun, and a firing-pin formed in sections, one of which is arranged within the said breech-block, and another of which is adapted to be thrown into the path of the hammer, substantially as specified.

4. In a gun of the class described, the combination of two barrels, one longer and of larger caliber than the other, an independent breech-block for the smaller barrel, a sectional firing-pin, the rear section of which is mounted in a pivoted plate at the rear of the larger barrel, and a hammer provided with a recess for the reception of the projecting end of said section of the firing-pin, substantially as specified.

5. The combination of the barrels A and C', the former having a large caliber and the latter a small caliber, the pivoted breech-block D, adapted to expose when open the rear end of the smaller barrel, and connected with the extractor E, and capable of longitudinal movement in front of the forearm C, whereby cartridges may be inserted and shells extracted from the smaller barrel without operating the breech mechanism of the larger barrel, substantially as specified.

6. The combination of the longer and larger calibered barrel A, having its independent breech-block and firing mechanism, with the shorter barrel C, extending to the muzzle of the longer barrel, and having its breech-block D arranged in front of the forearm C, and the sectional firing-pin F F' F², the latter section being mounted in and carried by the breech-block D, the pivoted plate G, having the groove G', for carrying

the section F' of the firing-pin, and a recessed hammer, substantially as specified.

325,775. HAND-PLOW. CLAYTON W. TREPENDS, Bedford, Iowa. Filed June 30, 1885. (No model.)



Claim.—1. The combination of the beam or handle, a bent shank, and the shovel C with the bent rod or frame, the shovels F, and the bolt for securing the parts together, substantially as shown.

2. The combination of the beam or handle, the grooved or recessed shank having a shovel attached thereto, the bent frame having a shovel attached to each end, and a clamping-bolt, the shovels being reversible in relation to each other, substantially as set forth.

3. The combination of the beam, which is shaped like a handle, with a number of shovels, which are attached thereto, and which shovels are reversible in relation to each other, substantially as described.

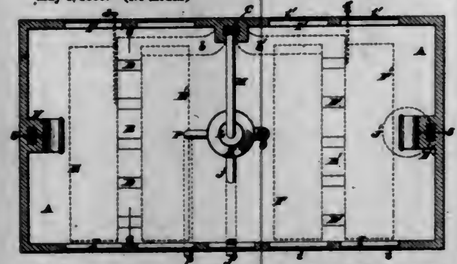
325,776. SEATING FOR BOTTLE-STOPPERS. JOHN J. VAPLEY, Phœnix Villas, Merton, County of Surrey, England. Filed June 16, 1885. (No model.) Patented in England Nov. 22, 1884, No. 15,424.



Claim.—1. A seating for insertion in grooves in the necks of bottles having internal stoppers, made of vulcanized india-rubber with a core of hemp or other like material, substantially as and for the purposes hereinbefore described.

2. A seating for insertion in a groove in the neck of a bottle in which an internal stopper is used, constituted, as described, of a short rubber tube, *a*, wound in part with fibrous material to form a core, and having the ends of the tube turned over upon such fibrous material and joined together to inclose such core, all as set forth.

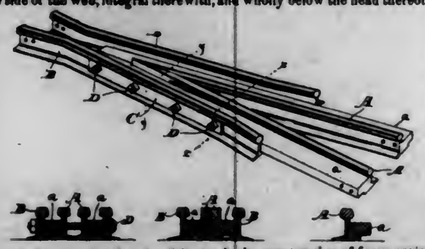
325,777. FRUIT-DRIER. BURRELL A. WRIGHT, Pasadena, Cal. Filed May 1, 1885. (No model.)



Claim.—The combination, in a drying apparatus, of the room A, provided with a series of racks, arranged in pairs, each pair, as E E', F F', having aisles, as *e f*, between them, which aisles communicate with channels B B' by means of the registers D D', said channels being located at the bottom of said aisles and having outlets *b b'* leading into the flue C, to which latter is connected the smoke-pipe of the stove or other heater employed for warming said room, as herein described.

325,778. RAILROAD FROG, CROSSING, &c. HIRAM N. WRIGHT, Indianapolis, Ind. Filed July 29, 1884. (No model.)

Brief.—A railroad-rail formed with a heavy projecting flange upon one side of the web, integral therewith, and wholly below the head thereof.

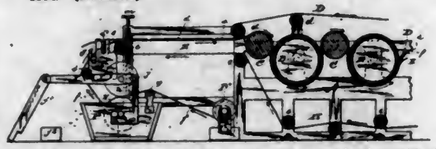


Claim.—1. A railroad-rail for use in the construction of frogs, crossings, &c., provided upon one side with a heavy flange, *a*, which is adapted to fit against the web of the adjacent rail and thus form a solid structure, substantially as shown and described.

2. A railroad frog or crossing, a portion of the rails of which are formed with a heavy projecting flange upon one side, which bears against the webs of the adjacent rails, substantially as set forth.

3. As a new article of manufacture, a railroad-rail provided with a heavy flange projecting from one side of the web and constructed integrally therewith, substantially as described, and for the purposes specified.

325,779. STRAW-BOARD-LINING MACHINE. JOHN ALSEY, Montclair, N. J., assignor to F. A. Wheeler & Co., same place. Filed Dec. 8, 1884. (No model.)



Claim.—1. In a board-lining machine, the combination, with the guide-rolls i i' i^2 and the upper and lower pasting-rolls, of mechanism for lifting said guide-rolls and the upper pasting-roll simultaneously, thereby separating the pasting-rolls, for the purpose specified.

2. In a board-lining machine, the combination, with the guide-rolls and upper pasting-roll, of a pivoted frame upon which said guide and pasting rolls are journaled, provided with a lifting-arm, all said parts being arranged and operating for the purpose set forth.

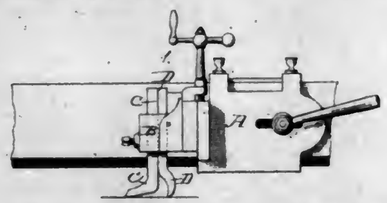
3. In a board-lining machine, the combination of a lining-roll, F, guide-roll to direct the lining-paper to the pasting-rolls, pasting-rolls, guide-rolls i i' i^2, and aprons E and D, all said parts being arranged and operating for the purposes set forth.

325,780. SIEVE FOR SIFTING FLOUR, MEAL, &c. EDWIN L. BARBER, Chicago, Ill. Filed June 8, 1885. (No model.)



Claim.—As an article of manufacture, a sieve composed of a body provided with a handle, a flat screen, an agitator, a stem joined to the agitator at its periphery and extending up to the top of the body, then bent outwardly, and terminating in a hand-piece, all constructed substantially as described.

325,781. ELECTROTYPE-PLATE-SHAVING ATTACHMENT FOR ROUGHING-MACHINES. EDWARD A. BLAKE, Chicago, Ill. Filed May 12, 1885. (No model.)

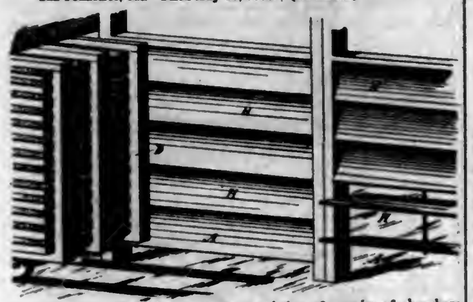


Claim.—1. The combination, with the carrier of a roughing-machine, of the chisels C and D, the latter designed to follow the former, substantially for the purpose set forth.

2. In a roughing-machine, the combination, with chisel C, having a convex cutting-edge, of the chisel D, having a cutting-edge adapted to reduce the ridges or irregularities left by the concave incisions of chisel C.

3. In a roughing-machine, the combination, with chisel C, of a chisel, D, placed after and following said chisel C, said chisel C having a convex cutting-edge, and chisel D having a cutting-edge which is cut away at its transverse center, so as to travel over the concave incisions made by chisel C, and so as to reduce the ridges made thereby.

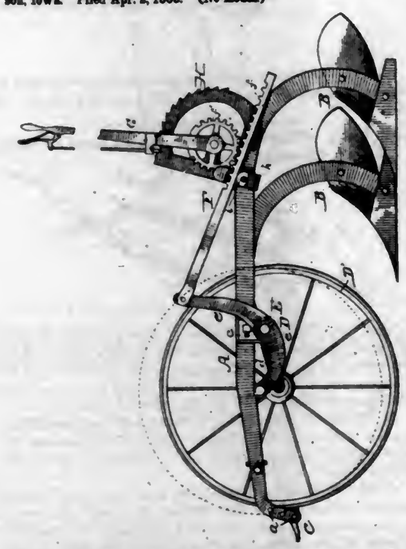
325,782. FRUIT-DRIER. AMBROSE BLATCHLY and ANDREW J. HATCH, San Francisco, Cal. Filed May 25, 1885. (No model.)



Claim.—1. A drying apparatus consisting of a series of chambers formed by the partitions and valves or shutters H, and cars carrying fruit-trays adapted to run into or out of chambers at right angles to the air-current, vertically-sliding doors which may be opened and closed to admit and confine the cars, a heater at one end of the series, and an exhaust apparatus at the opposite end, whereby currents of air may be drawn through the fruit-trays, substantially as herein described.

2. In a drying apparatus, a series of chambers arranged horizontally side by side, and adapted to receive tray-supporting cars, and vertically-sliding doors for their admission and exit, in combination with valves or shutters arranged in the walls between the chambers, and a controlling mechanism whereby the shutters may be opened, closed, or adjusted to deflect the heated air to any point, substantially as herein described.

325,788. WHEEL GANG-PLOW. WILLIAM J. BROWNE, Fort Madison, Iowa. Filed Apr. 2, 1885. (No model.)



Claim.—1. The combination, in a wheel gang-plow, with the plows B, having their beams extending forward parallel to each other, of the adjustable bearings *c*, having elongated bolt-holes therein, the oscillatory axle-tree journaled in the same, arms *d* and *e*, extending from the ends of the axle-tree, which have spindles extending from their extremities on which the wheels are journaled, and means, as set forth, for oscillating said axle-tree and arms *d* and *e* thereof.

2. The combination, with plows B, having beams extending forward parallel to each other, of the axle-tree D, arm *d*, lever E, having arm *e*, pitman F, lever G, quadrant-frame, and suitable means for entering notches in said quadrant-frame for holding lever G in any desired position.

3. The combination, with plows B, having their beams extending forward parallel to each other, of axle-tree D, arm *d*, lever E, having arm *e*, pitman F, having a portion of its upper edge serrated to form rack *f*, quadrant-frame, lever G, pinion *f'*, concentric to the fulcrum of lever G, engaging said rack *f*, and means for entering notches in said quadrant-frame, whereby said lever G is maintained in any desired position.

325,784. SPIROMETER. D. ABBO A. BUSH, Waterbury, Conn. Filed Apr. 19, 1884. (No model.)



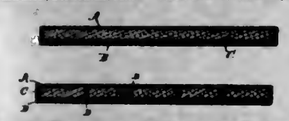
Claim.—1. In combination with the main casing A, the cylinder D, closed at one end and attached at that end to the side of the casing A, the cap E at one end fitting upon and over the open outer end of the cylinder, and at the other reduced in size to form a nozzle for the attachment of a flexible tube, and the spring-piston in the chamber having the inner end of its rod passing through the inner end of the cylinder and adapted to actuate suitable indicating mechanism within the casing A, substantially as and for the purpose described.

2. In combination with the cylinder D and casing A, the piston within the cylinder, the piston-rod extending through the cylinder end into the casing A, the spring around such rod between the piston and the cylinder end, the screw-nut on the inner end of the piston-rod adapted to be screwed up against the cylinder end to adjust the rod longitudinally, and suitable registering or indicating means within the casing adapted to be operated by endwise movement of the projecting rod end, substantially as and for the purpose described.

3. In combination with the cylinder and piston-head therein, the piston-rod G, projecting through the cylinder end, the spiral spring around the rod between the piston-head and the cylinder end, the pivoted toothed segment N, the radial arm on the segment unconnected with the piston-rod, but adapted to be engaged by it as it is thrust inward by the movement of the piston-head, the arbor M, the pinion thereon meshing with the segment, the index hand or pointer on the arbor, and a friction device adapted to hold the arbor as rotated by the action of the piston-rod upon the segment, substantially as and for the purpose described.

4. In a spirometer, in combination with the casing having on one end a suitable scale, an arbor journaled in the casing ends, bearing on one a pointer and on the other a thumb piece or head, a friction-spring to hold the arbor as rotated, a pinion on the arbor, a pivoted toothed segment engaging the pinion, a radial arm attached to the segment, a cylinder, a piston-rod in the cylinder adapted to engage with its inner end the arm on the segment when pushed in, the piston-head on the outer end of the rod, and a spring normally pressing such piston-head outward in the cylinder, substantially as and for the purpose described.

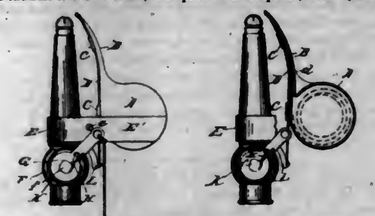
325,785. FABRIC FOR SHOE-SOLES AND OTHER PURPOSES. G. F. BUTTERFIELD, Stoneham, Mass. Filed Dec. 6, 1884. (No specimens.)



Claim.—1. The new material herein described, consisting of the thick yielding felted or equivalent body C, having the water-proof coatings A and B secured thereon, substantially as set forth.

2. The improved material herein described, consisting of the perforated yielding body C and the two rubber surfaces A and B, united through such perforations, as at D, substantially as set forth.

325,786. GAS-LIGHTER. JOHN A. CABOT, New York, N. Y., assignor of one-half to C. G. Worden, same place. Filed Apr. 25, 1885. (No model.)

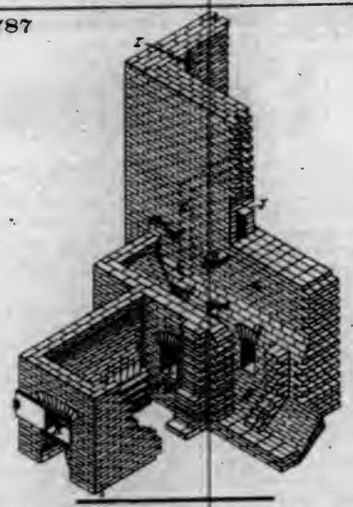


Claim.—The combination, with a gas-burner, and with the supply-cock thereof, of a case, A, a tangential channel, B, thereon, a feeding and igniting spring, D, all supported and secured to the burner by a clamp-ring, E, a spring-actuated lever, G, pivoted upon the stem of the supply-cock and connected with the feeding-spring, a ratchet-stem, *f*, and a spring-actuated pawl, H, all substantially as and for the purpose set forth.

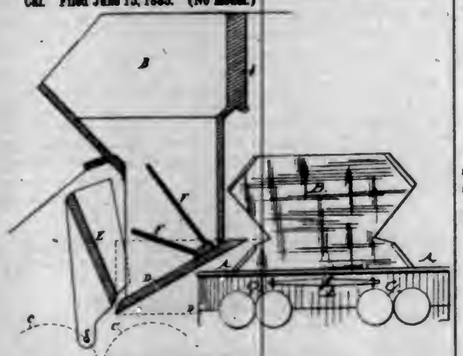
325,787. BRICK-BURNING KILN. HENRY R. CASSIDY, Delhi, Ohio, and ANTHONY FRIES, Brookville, Ind. Filed Sept. 25, 1884. (No model.)

Claim.—The combination, in a brick-kiln, of a burning-chamber having its inner corners rounded, a furnace, and suitable heat-supplying ducts, all arranged and operating substantially as shown and described.

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325,788. MILL-STOCK FEEDER. GEORGE CUTTELL, San Francisco, Cal. Filed June 15, 1885. (No model.)



Claim.—1. In a mill-stock feeder, the combination of a hopper, an inclined shaker below the hopper and reciprocating parallel with its delivery-edge, and a swinging gate forming the front wall of the throat of the hopper and arranged in relation with the delivery-edge of the shaker, said gate having its pivotal center at a point below its lower edge and back of the plane of its center of gravity, whereby its action is automatic, substantially as herein described.

2. In a mill-stock feeder, the shaker D and spring arms or hangers *d*, in combination with the mechanism by which it is given a reciprocating motion parallel to its delivery-edge, consisting of the driving-shaft H, having cam I, and the pin or stud J on one side of the shaker impinging against the cam, the spring L, and set-screw M, and the arms K on the other side of the shaker, substantially as herein described.

3. In a mill-stock feeder, the main frame and the shaker D, having the pin or stud J on one side and the arms K on the other, in combination with the spring arms or hangers *d*, the rotating cam I, impinging against the pin, the spring L, and set-screw M, acting on arms K, substantially as herein described.

325,789. APPARATUS FOR MOLDING SAND-PAPER. FREDERICK W. COY, Boston, Mass., assignor to George H. P. Flagg, trustee, same place. Filed Apr. 9, 1883. (No model.)

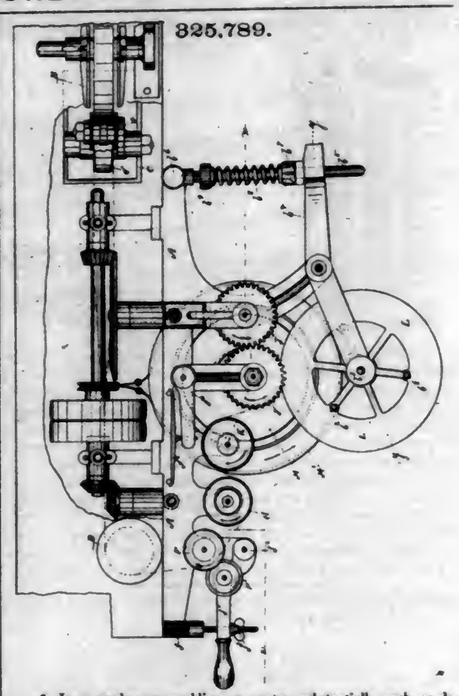
Claim.—1. The apparatus above described for molding sand-paper, consisting, essentially, of the disk with a convex periphery and the tension and feeding devices, substantially as described, adapted to strain the abrasive strip over the convex surface as it is fed through the apparatus, all substantially as set forth.

2. In combination, the moistening apparatus, the tension device, the convex-edged disk, and the feed-rolls, substantially as described.

3. In a sand-paper-molding apparatus, the disk G, toothed and having the teeth backed off, substantially as shown.

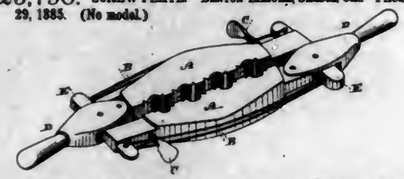
4. The finishing-roll L, made in two parts, adjustable for different widths of strip, and each of the two parts having a peripheral cushion, as and for the purposes specified.

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5. In a sand-paper-molding apparatus, substantially such as described, the guide-roll K between the disk G and feed-rolls J J', as described.

325,790. SCREW-PLATE. BENTON ELMORE, Shasta, Cal. Filed June 29, 1885. (No model.)

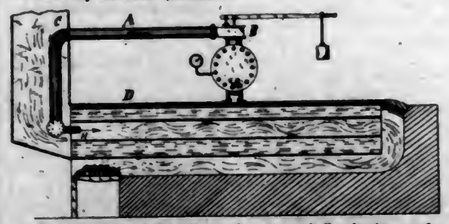


Claim.—1. The screw-plates having their adjacent faces threaded, and having transverse extensions at their opposite ends, as shown, in combination with the springs B, passing over the backs of the plates, having one end attached, and the other sliding loosely in the opposite extensions, substantially as and for the purpose herein described.

2. The parallel plates having their adjacent faces threaded and the transverse extensions at their opposite ends, in combination with the compressing-springs B, attached as shown, and the gage-screws C, substantially as herein described.

3. The plates having their adjacent faces threaded and having the transverse extensions from their opposite ends, with the gage-screws and compressing-springs B, as shown, in combination with the levers D, fulcrumed in the transverse extensions, and connected with opposite ends of the plates A, substantially as herein described.

325,791. DRAFT-REGULATOR. JOHN Q. EVERSON, Pittsburg, Pa. Filed May 25, 1885. (No model.)



Claim.—The combination, with a steam-boiler having a safety-valve and fire-flues on the inside, of a tube connecting at one end with the opening closed by said valve, and at the other provided with branch pipes, each of which enters a fire-flue in the boiler, as and for the purpose specified.

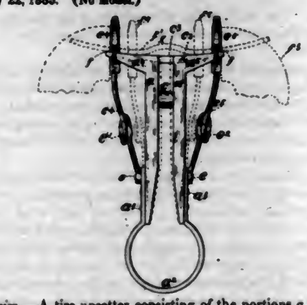
325,792. DISH-WASHER. SALLY M. FENTON, Salinas, Cal. Filed Feb. 18, 1885. (No model.)



Claim.—1. The loop A, having slotted shank *a*, and a socket, B, with a hole, *b*, and the handle H, fitted in said socket, in combination with the removable loop A', having shank *a'*, with a hook or lug, a^2, adapted to engage the hole *b*, and a slot, C', having an enlarged opening, *c'*, and the sliding stud D with heads *d d'*, whereby the two shanks are secured together, substantially as and for the purpose herein described.

2. The dish-washer herein described, consisting of the loop A, having slotted shank *a*, and a socket, B, with a hole, *b*, the handle H, fitting said socket, the removable loop A', having shank *a'*, with a hook or lug, a^2, adapted to engage the hole *b*, and a slot, C', having an enlarged opening, *c'*, the sliding double-headed stud D, joining the shanks through their slots, and the endless dish-cloth F, fitted in both loops, substantially as herein described.

325,793. TIRE-UPSETTER. GEORGE W. FORD, Elba, N. Y. Filed July 22, 1885. (No model.)

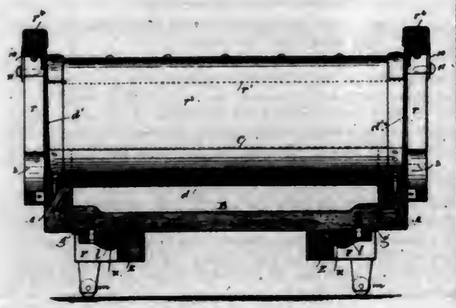


Claim.—A tire-upsetter consisting of the portions *a a'*, secured to a spring at the bottom and provided with wedge-shaped portions at the top, in combination with the side springs, c^1 c^2, provided with jaws d^1 d^2, for the purposes described.

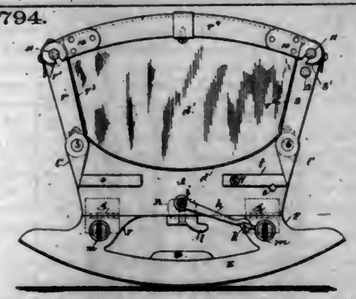
325,794. FOLDING SETTEE, CRIB, AND CRADLE. AUGUSTUS M. FREEMAN, Ocean Grove, assignor to himself and Alexander C. Kelly, Metuchen, N. J. Filed Apr. 14, 1884. (No model.)

Claim.—1. The combination, with the seat *d*, end frames, A, connecting-rails B C, and frame *r r'*, of the frame *s s'*, pivoted at 6 and capable of being swung up or down, stops 4 and *t*, and the rockers E, hinged to the end pieces, A, and the casters or wheels upon the sides of the rockers, substantially as set forth.

2. The combination, with the frame A B C C, of the side frame *r r'*, pivoted at 3 to the end pieces, A, and the stops 4, the side frame



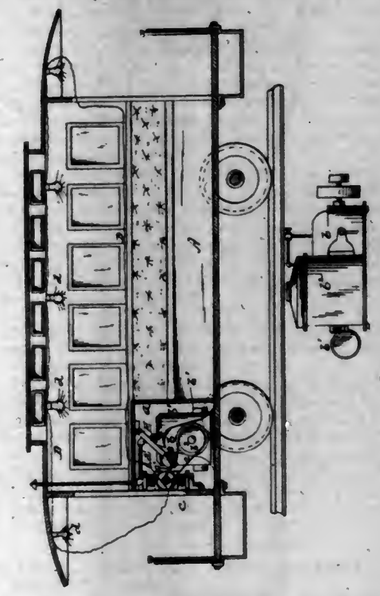
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s s', pivoted at 6 to end pieces, A, and the movable stops *t*, substantially as set forth

3. The combination, with the frames A C C, of the side frames *r r' s s'*, pivoted to the end pieces, A, and the movable cross-rails *r*^{4}, slotted end plates, 10, and headed pins 11, substantially as set forth.

325,795. LIGHTING RAILWAY-CARS. HARRY E. FREESE, Philadelphia, Pa. Filed Mar. 14, 1885. (No model.)



Claim.—1. In a car, the combination of a boiler-furnace, a fuel-reservoir connected with said furnace, a steam-engine, an electric circuit including a dynamo-electric generator which is geared to the engine, and a case which incloses the furnace, engine, fuel-reservoir, and the generator and prevents the heat from radiating in the car, substantially as described.

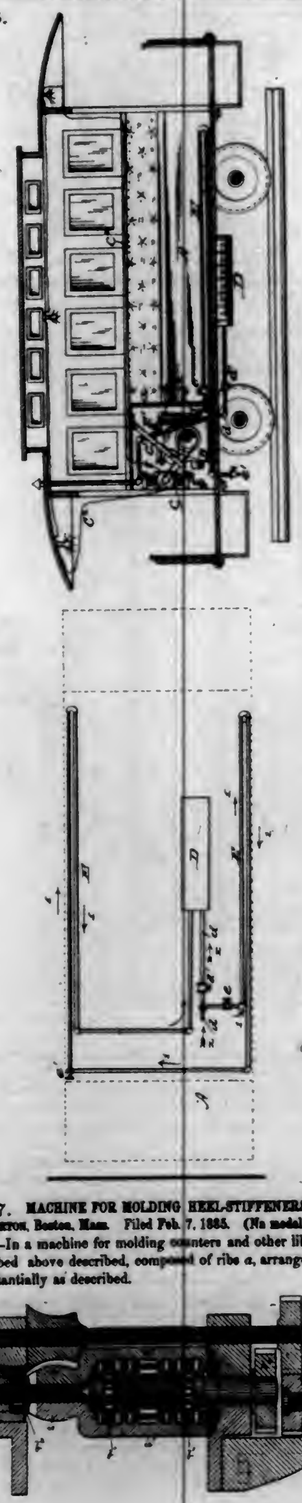
2. In a car, the combination of a boiler-furnace, a fuel-reservoir connected with said furnace, a steam-engine, an electric circuit including a dynamo-electric generator which is geared to the engine, a case which incloses the generator, the furnace, and the fuel-reservoir, and a gravity belt-tightener pivoted to the case to prevent the jarring of the car from vibrating the belt connecting said engine and generator, substantially as described.

325,796. CAR-HEATER. HARRY E. FREESE, Philadelphia, Pa. Filed Mar. 14, 1885. (No model.)

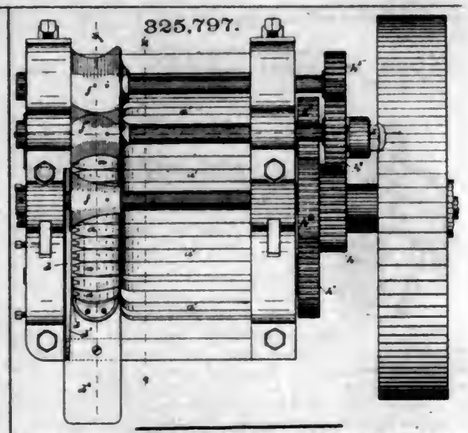
Claim.—1. The combination, with a railway-car, of engine B and its boiler, a condenser for the exhaust-pipe of the engine-cylinder, a system of radiator or heating pipes having connection with said exhaust-pipe and boiler and also with the condenser, and valves *d'* and *e* for the exhaust and radiator pipes, substantially as shown and described.

2. In a car, the combination of engine B, having exhaust-pipe *d*, with valve *d'*, condenser D, and steam-heating pipes E, having valve *e*, and connected at one end to exhaust-pipe *d* of engine-boiler and at the other to condenser D, substantially as shown and described.

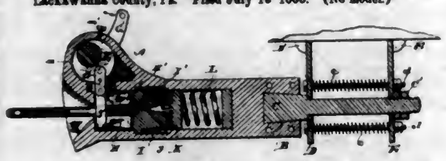
325,796.



325,797.



325,798. CAR-COUPLING. CHARLES H. GRAMS, North Abington, Lackawanna County, Pa. Filed July 16 1885. (No model.)



Claim.—1. The combination, with the swinging coupling-pin, of the pivoted gripping-jaws and the spring for closing said jaws, substantially as described.

2. The combination, with the swinging coupling-pin, of the pivoted gripping-jaws slotted for the accommodation of the coupling-pin and the spring for closing said jaws, substantially as described.

3. The combination, with the jaws, the spring for closing them, the coupling-pin made in two parts hinged together, and means for raising the latter, substantially as described.

4. In an automatic car-coupling, a draw-head made in two parts united by a dovetail connection, substantially as described.

5. In an automatic car-coupling, a draw-head made in two sections, the forward one containing apparatus for coupling cars automatically and the rear section formed into a shank, said sections being connected removably together, whereby the forward section may be removed and another substituted without removing the shank, substantially as described.

6. The combination, with the two jaws constructed with the slotted forward ends and the ribs or projections on their outer faces, of the spring between the rear ends of said jaws, substantially as described.

7. The combination, with the two gripping-jaws, the spring between their rear ends, and the spring L, substantially as described.

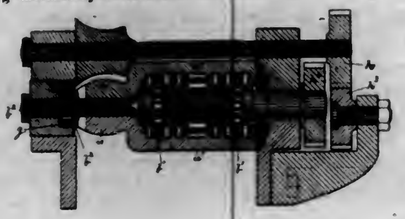
8. The combination, with the coupling-pin, of the roller or shaft upon which it is pivoted, and the spring bearing upon said roller or shaft to prevent accidental movement, substantially as described.

9. The combination, with the coupling-pin made in two sections hinged together, of the spring for operating upon the lower section to keep it normally in position, substantially as described.

10. The combination, with the coupling-pin made in two sections hinged together and eccentrically pivoted upon a shaft or roller, and a spring operating to keep the lower portion of the pin in position, the gripping-jaws and the spring between them, substantially as described.

325,797. MACHINE FOR MOLDING HEEL-STIFFENERS. GEORGE A. FULLERTON, Boston, Mass. Filed Feb. 7, 1885. (No model.)

Claim.—In a machine for molding counters and other like articles, the molding-bed above described, composed of ribs *a*, arranged and operating substantially as described.



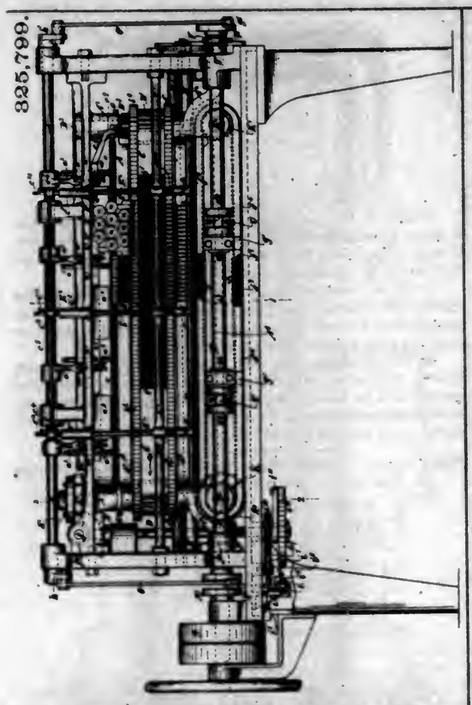
325,799. QUILTING-MACHINE. JOHN B. HAGENBÜCHLE, New York, N. Y. Filed May 8, 1885. (No model.)

Claim.—1. In a sewing-machine, the combination, with an endless moving chain carrying needles, of an endless moving chain carrying complementary stitch-forming mechanisms, substantially as specified.

2. In a sewing-machine, the combination of an endless moving chain carrying needles, an endless moving chain carrying complementary stitch-forming devices, and mechanism for feeding past the same work to be stitched, substantially as specified.

3. In a sewing-machine, a moving endless chain, needle-holders fitted to guides on the chain and adapted to be reciprocated in a plane transverse to the movement of the said chain, and a needle-bar reciprocated in a plane transverse to the movement of said chain, all being combined and organized so that the needle-holders will be successively engaged with and disengaged from the needle-bar, so as to be operated thereby, substantially as described.

325,799.



4. In a sewing-machine, the combination of a chain, as C b^3, drums around which the same passes, needle-holders, as B, and a needle-bar reciprocating in a plane transverse to the movement of the chain, substantially as specified.

5. In a sewing-machine, the combination of an endless chain, as C b^3, the needle-holders B, the bar G, and a needle-bar reciprocating in a plane transverse to the movement of the chain, substantially as specified.

6. In a sewing-machine, the combination of an endless chain, as C b^3, drums around which the same passes, projections, as d^3, extending from the chains, rails, as d^2, provided with grooves along which said projections travel, needle-holders, as B, a bar, as G, and a needle-bar, as A, reciprocating in a plane transverse to the movement of the chain, substantially as specified.

7. In a sewing-machine, the combination of a chain, as C b^3, drums, as D and D' D^3, around which the same passes, needle-holders, as B, a bar, as G, a reciprocating needle-bar, as A, a rod, as I, operating in conjunction with the portion D^3 of the drum D' D^3 and sliding lengthwise of the said needle-bar, and the slider-bar H, deriving motion from the rod I, and serving to aid in the transfer of the heads of the needle-holders between the bar G and the needle-bar, substantially as specified.

8. In a sewing-machine, the combination of a chain, as C b^3, drums, as D and D' D^3, around which the chain passes, needle-holders, as B, a bar, as G, a reciprocating needle-bar, as A, a rod, as I, and a slider-bar, as H, having at the ends heads e^3 e^4, the rod I being operated in one direction by the portion D^3 of the drum D' D^3, and in the reverse direction by a spring, as e^7, substantially as specified.

9. In a sewing-machine, the combination of a moving endless chain, needle-holders fitted to guides on the chain, and thread-holders carried by the chain, substantially as specified.

10. In a sewing-machine, the combination of a moving endless chain, needle-holders fitted to guides on the chain, and spool-holders consisting of plates b^3, arranged upon the chain and carried thereby, substantially as specified.

11. In a sewing-machine, the combination of an endless moving chain, needle-holders fitted to guides on the chain, and tension devices operating in conjunction with the needle-holders, substantially as specified.

12. In a sewing-machine, the combination of an endless moving chain, a reciprocating needle-bar, as A, the bar G, needle-holders fitted to guides on the chain, a tension device operating in conjunction with each of the needle-holders, and a take-up operating in conjunction with each of the needle-holders, both said tension device and take-up being operated only when the needle-holders are operated, substantially as specified.

13. In a sewing-machine, the combination of a moving endless chain, needle-holders fitted to guides on the chain and adapted to be reciprocated in a plane transverse to the movement of the said chain, a needle-bar reciprocating in a plane transverse to the movement of the said chain, and a presser-bar arranged adjacent to the position occupied by the needle-holders when the latter are reciprocated, and having a vertically-reciprocal movement only, substantially as specified.

14. In a sewing-machine, the combination of an endless moving chain, needle-holders carried by said chain, a needle-bar reciprocating in a plane transverse to the movement of the chain, an endless chain provided with shuttle-races, and shuttle-drivers for operating the shuttles in the races when said shuttles are brought opposite the place where the needle-holders are reciprocated, substantially as specified.

15. In a sewing-machine, the combination of the endless moving chain J *f*, provided with shuttle-races, drums around which said chain passes, shuttle-drivers, and the bar M, for operating said shuttle-drivers, substantially as specified.

16. In a sewing-machine, the combination of the endless moving chain J *f*, provided with shuttle-races, drums around which said chain passes, shuttle-drivers for moving the shuttles in their races, a bar, M, for operating the shuttle-drivers, and a bar, M', along which the shuttle-drivers travel when desired to impart no motion to the shuttles, substantially as specified.

17. In a sewing-machine, the combination of an endless moving chain carrying needles, drums around which the same passes, an endless moving chain provided with shuttle-races carrying shuttles, drums around which this chain passes, and mechanism for imparting motion intermittently and synchronously to said chains, substantially as specified.

18. In a sewing-machine, the combination of an endless moving chain carrying needles, drums around which the same passes, an endless moving chain provided with shuttle-races carrying shuttles, drums around which this chain passes, mechanism for imparting motion intermittently and synchronously to said chains, and feed-rollers for the goods being sewed, substantially as specified.

19. In a sewing-machine, the combination of the endless moving chains J *f*, provided with shuttle-races, and a throat-plate, as f^6, with which each of said shuttle-races is provided, substantially as specified.

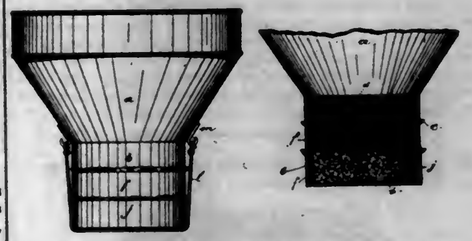
20. In a sewing-machine, the combination of an endless moving chain carrying needles, an endless moving chain carrying shuttles, feed-rollers for the goods being sewed, and a cutter for cutting the threads from the shuttles and needles after the needles have ceased to operate on the goods, substantially as specified.

325,800. PROCESS OF DRAWING WIRE. CHARLES S. HALL, ADDISON B. CLEMENCE, and H. F. AUG. SETTERWALL, Worcester, Mass. Filed Oct. 20, 1884. (No specimens.)

Claim.—1. As an improvement in the art of making wire, the same consisting in first cleaning the wire, then coating with lead by immersion in a bath of acetate of lead, acetic acid, and water, finally reducing by drawing or otherwise, substantially as described.

2. As an improvement in the art of making wire, consisting in first cleansing the wire, then coating with lead by immersion in a bath of acetate of lead, acetic acid, and water, then coating with flour, meal, or any well-known anti-friction lubricant, finally reducing by drawing or otherwise, substantially as described.

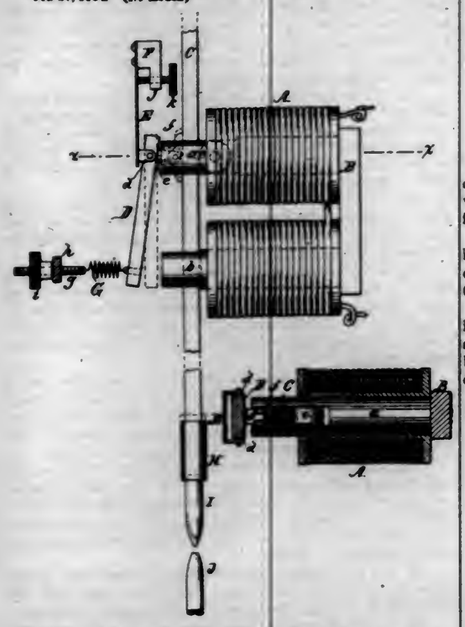
325,801. MILK-STRAINER. FREDERICK HEYL, Newark, N. J. Filed Sept. 16, 1884. (No model.)



Claim.—1. In combination with the funnel, removable and separable rings and diaphragms, a cord, *l*, secured to said funnel, substantially as and for the purposes set forth.

2. In combination, the funnel *a*, having the mouth *b*, the inner ring, *c*, removable from said mouth and extending below the same, a diaphragm, *d*, held in place by said ring, a ring, *f*, having a shoulder, *h*, securing a diaphragm, *e*, over the mouth or end of the downwardly-extending ring *c*, said diaphragm *e* forming a chamber, *g*, to receive charcoal, and a diaphragm, *i*, secured over the end of the ring *f*, the ring *j* holding said diaphragm *i*, and said diaphragm *i* forming a chamber, *k*, for the reception of sand, all substantially as set forth.

325,802. ARC LAMP. GEORGE M. HOPKINS, Brooklyn, N. Y. Filed Oct. 27, 1884. (No model.)



Claim.—1. In an electric-arc lamp, the combination of an electro-magnet having prolonged and slotted cores, a carbon-holding rod passing through the slots of the magnet-cores, an armature pivoted near one end to a movable support and provided with an arm and clamping-foot, and a spring adapted to draw the free end of the armature away from the magnet, substantially as herein shown and described

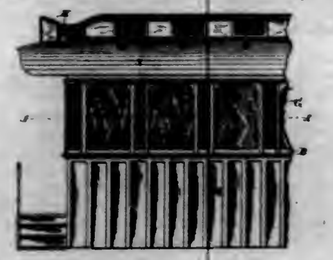
2. The combination, in an electric-arc lamp, of the electro-magnet A, carbon-holding rod C, armature D, provided with the arm *e*, the clamping-foot *f*, supporting-spring E, and the spring G, substantially as herein described.

3. In an electric-arc lamp, the combination, with the armature D, having the arm *e*, and a foot for pressing the carbon-holding rod, of a supporting-spring, E, pivoted to the armature, and capable of drawing it away from the core of the magnet when the current passing through the lamp is diminished, and a regulating-screw, *k*, for adjusting the tension of the spring E, as and for the purpose specified.

4. The combination, with the magnet-core *a*, carbon-holding rod C, and clamping device for holding the rod C, of a roller, *c*, journaled in the slot in the magnet-core, and adapted to guide the rod C, and receive the lateral pressure thereof when the rod is clamped, substantially as described.

5. In an electric-arc lamp, an electro-magnet, and a lever-armature having its ends normally in magnetic fields of different strength, the pivoted end of the lever-armature being provided with a clamping device adapted to hold the carbon-holding rod, the free end of the lever-armature being provided with a spring acting in opposition to the magnet, the said lever-armature being adapted to swing by the action of the magnet or its spring to form or vary the arc, as herein specified.

325,803. FILTER-VENTILATOR. THOMAS B. HOWE, Scranton, Pa. Filed July 6, 1885. (No model.)



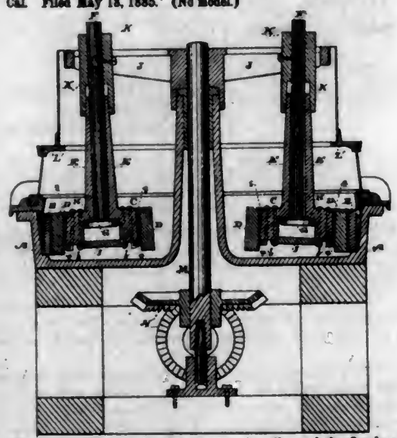


Claim.—1. The combination, with a car, of a supplemental frame or casing inclosing the windows thereof and provided with the storm-windows corresponding to the windows of the car, and one or more air-filters located in said casing, substantially as described.

2. The combination, with a car, of a supplemental frame or casing inclosing the windows thereof and provided with the storm-windows corresponding to the car-windows, and a series of air-filters located between the storm-windows, substantially as described.

3. The combination, with a car, of a supplemental frame or casing inclosing the windows thereof, provided with the storm-windows corresponding with the car-windows, and a series of removable filters located between the storm-windows, whereby said filters can be removed when desired and be replaced by solid panels, substantially as described.

325,804. CRUSHING-MILL. FRANK A. HUNTINGTON, San Francisco, Cal. Filed May 18, 1885. (No model.)



Claim.—1. The pan having the interior die, and the fixed or non-rotating shafts suspended from above and having heads or enlargements upon their lower ends, in combination with rollers turning loosely about said shafts, substantially as herein described.

2. The pan having the interior circular die, the rotating disk, and the vertical shafts suspended from said rotating disks and having heads at their lower ends, in combination with rollers fitted loosely upon said shafts, having closed chambers within which the heads are contained, and extensions or sleeves extending upward around the shafts, substantially as herein described.

3. The pan having the interior die, the driving-disk, the suspended shafts, and the loosely-fitted rollers having sleeves extending upwardly from them and surrounding the shafts, in combination with secondary sleeves having trunnions by which they are suspended from the driving-disk, and having the lower ends chambered so as to project downward over the sleeves of the rollers, substantially as herein described.

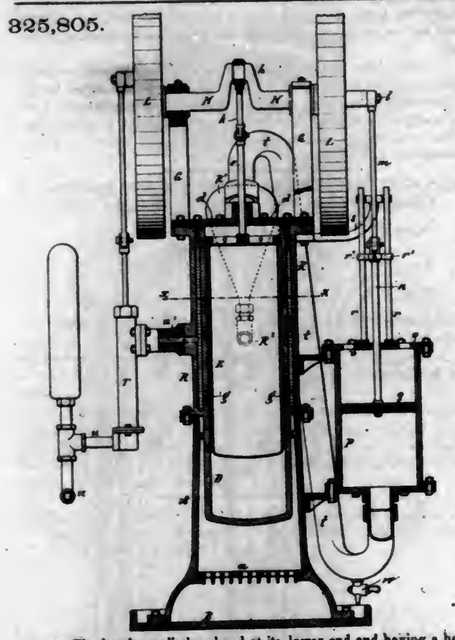
4. The pan, in combination with the suspended and rotating rollers, the latter having surrounding dies with interior flanges fitting against their bottoms, and bolts for holding the dies in place, substantially as herein described.

5. The combination, with the pan, the suspended and rotating rollers having the surrounding flanged dies, the securing-bolts, and the intermediate fastening-wedges, substantially as herein described.

325,805. HOT-AIR ENGINE. ALFRED P. HURD, New York, N. Y., assignor to the J. L. Mott Iron Works, same place. Filed Jan. 2, 1885. (No model.)

Claim.—1. The combination, with the vertical power-cylinder and piston, of piston and connecting rods, a shaft, fly-wheel, cranks at right angles, connecting and displacer rods, a displacer, a heating-cylinder in which the displacer is moved up and down, a head through which the displacer-rod passes, and a pipe connecting the upper end of the heating-cylinder with the lower end of the power-cylinder, substantially as set forth.

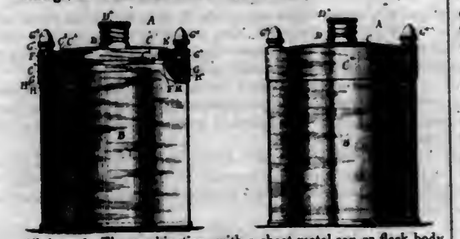
325,805.



2. The heating-cylinder closed at its lower end and having a head at the upper end, in combination with the inclosing-case, pump, and the water-jacket, and through which the water is pumped, a displacer within the heating-cylinder, a rod to the same passing through the cylinder-head, the cranks, shaft, fly-wheel, power-cylinder, piston, and rods, and the pipe extending from the top of the heating-cylinder to the bottom of the power-cylinder, substantially as set forth.

3. The combination, in a hot-air engine, of a vertical power-cylinder and piston, a heating-cylinder, a displacer within the same, the connecting-rods, cranks, shaft, and fly-wheel, and a pipe extending from the bottom of the power-cylinder to the top of the heating-cylinder and a cock in such pipe, substantially as set forth.

325,806. MILK OR COFFEE FLASK. ABRAHAM ABRAHAMSON, Chicago, Ill. Filed Feb. 24, 1885. (No model.)



Claim.—1. The combination, with a sheet-metal can or flask body provided with an internal ledge of cast metal secured to the open top of the body, of a cover having a discharge-aperture and stopper therefor, and provided with a rigid portion, C^3, opposed to the ledge when the parts are placed together, an elastic washer interposed between the rigid part of the cover and the ledge, and fastening-screws for holding the cover upon the body, substantially as described.

2. The combination, with a sheet-metal can or flask body provided with an internal rigid ledge of cast metal secured to the open top of the body, of a sheet-metal cover provided with a discharge-aperture and stopper therefor, and having a rigid portion, C^3, opposed to the ledge when the cover is in place, an elastic washer interposed between the rigid portion of the cover and the ledge of the body, and fastening-screws engaged with the said rigid part of the cover and the ledge for holding the cover upon the body, substantially as described.

3. The combination, with the sheet-metal can or flask body B, having an internal cast-metal ledge, H, secured to the body, and provided with one or more ribs, F, of a cover provided with a rigid portion, C^3, of a washer secured upon said rigid portion of the cover, and fastening-screws connecting the said rigid part of the body and the ledge, substantially as and for the purpose set forth.

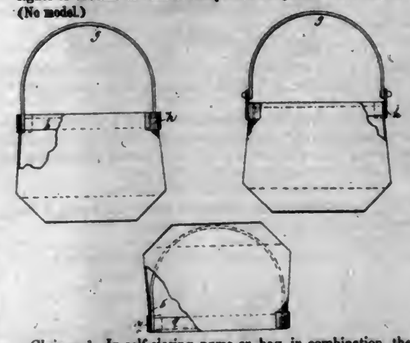
4. The combination, with a can or flask body, of a removable cover constructed with a marginal flange and a central portion of sheet metal, a cast-metal portion intermediate of and rigidly uniting its said sheet-metal portions, and suitable fastening or binding screws, for which the rigid cast-metal part of the cover provides appropriate bearings, substantially as described.

5. The combination, with a can or flask body, of a removable cover therefor constructed with a cast-metal portion, C^3, having a flange, C', and united to a central sheet-metal portion, C^2, formed with a central screw-neck and a marginal flange, and a washer, E, secured between said flange of the central portion and the under side of the cast-metal portion of the cover, substantially as described.

6. The combination, with a sheet-metal can-body having an internal cast-metal ledge secured to its upper edge and provided with threaded sockets, of a cover provided with a discharge-aperture and a stopper therefor, and having a rigid portion, C^3, a packing interposed between the portion C^3 of the cover and the ledge, and fastening-screws rotatively connected with the said rigid portion of the cover, substantially as and for the purpose set forth.

7. The combination, with a sheet-metal can-body having an internal cast-metal ledge provided with a continuous rib, F, of a cover having a rigid portion, C^3, opposed to the said ledge when the cover is upon the body, and an elastic washer interposed between the rigid portion of the cover and the ledge, the said rigid portion of the cover being provided with a continuous groove opposite the rib F, into which a portion of the washer may be forced by the rib, and means for clamping the cover upon the can-body, substantially as described.

325,807. PURSE, BAG, &c. GEORGE B. ADAMS, Newark, N. J., assignor of one-half to Charles Campbell, same place. Filed May 9, 1885. (No model.)



Claim.—1. In self-closing purse or bag, in combination, the body thereof having a flexible mouth, a spring operating to keep the mouth of said bag stretched longitudinally, the ends of which are secured in the ends of said mouth, and clamping-clips or metallic plates bent around the ends of the mouth of the bag or purse and the spring, and bind the material of the bag around the end of said spring and draw the sides of said mouth together, for the purposes set forth.

2. A self-closing purse or bag having a flexible mouth, a spring arranged without said bag acting as a handle and operating to keep the mouth of said bag stretched longitudinally, the ends of said spring being secured in the ends of said mouth, and clamping-clips or metallic plates bent around the ends of the mouth of the bag or purse and the spring, and bind the material of the purse around the end of said spring and draw the sides of said mouth together, for the purposes set forth.

3. A self-closing purse or bag having a flexible mouth, and provided with a spring-handle operating to keep the mouth of said bag stretched longitudinally and secured to said bag by suitable means, substantially as and for the purpose specified.

325,808. COMBINED FELT AND KNIT FABRIC. SAMUEL G. ALEXANDER, Detroit, assignor to C. E. Wakeman & Co., Pontiac, Mich. Filed Apr. 3, 1884. (Specimens.)



Claim.—A boot or similar article consisting of a knit or woven wool fabric and one or more layers of woolen felt, the two subsequently united and incorporated by felting and fulling, substantially as described.

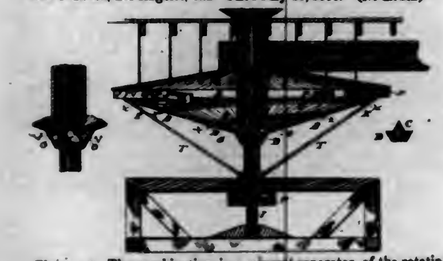
325,809. HOOP FOR BARRELS, TUBS, &c. JAMES H. BARD, Jackson, Tenn. Filed June 3, 1885. (No model.)



Claim.—1. In a hoop for barrels, tubs, &c., made of wire, the construction of the extremities of the wire with a lock, substantially as described, the same consisting of a bend of each wire and a coil of the extremities of the wire loosely fitting upon each side of the bend, as set forth.

2. The combination, with the hoop between the two coils, of a spacing-sleeve, substantially as and for the purpose herein described.

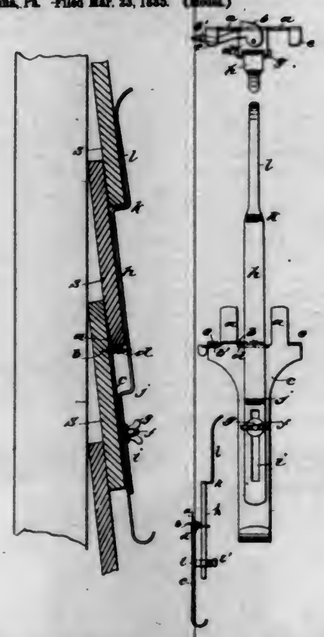
325,810. MINERAL SEPARATOR AND AMALGAMATOR. ALLEN G. BEEBE, Los Angeles, Cal. Filed July 16, 1885. (No model.)



Claim.—1. The combination, in a mineral-separator, of the rotating funnel-shaped pan A, spiral riffle B, annular riffle E, central cone, C, penstock H, and fingers O.

2. The combination, in a mineral-separator, of a rotating separating-pan having blast-fans mounted thereon near the periphery thereof, a cover extending over such pan, and a conduit for the admission of air near the center of the pan, substantially as set forth.

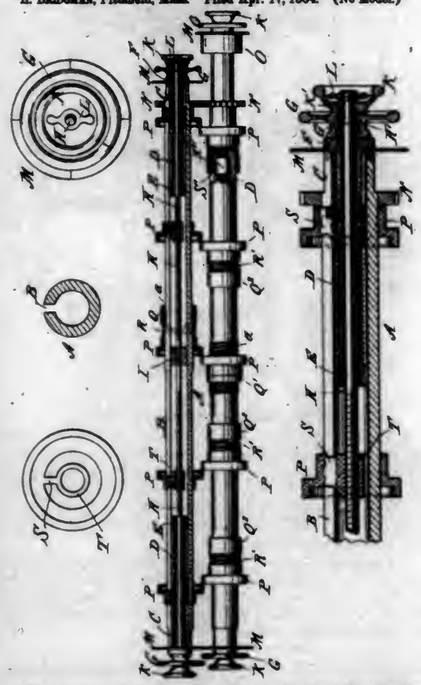
325,811. SIDING-GAGE. LEANDER C. BENSON and EUGENE F. PERRY, Susquehanna, Pa. Filed Mar. 23, 1885. (Model.)



Claim.—1. As an improved article of manufacture, the siding-tool herein shown and described, the same consisting, essentially, of the flat plate *c*, formed with upward-projecting blades *a* and outward-projecting flange *d*, the holding-lever *b'*, pivoted to said flange and having a blade, *b*, the spring-plate *h*, adjustably secured to the plate *c*, in the longitudinal plane thereof, as shown, and provided with an outward bend, and an arm, *l*, extending upward therefrom, substantially as set forth.

2. In a siding-tool, the combination, with the flat plate *c*, formed with upward extending blades *a*, an outward-extending notched flange, *d*, between the said blades, and outward-extending stop-flanges *e e*, of the spring-plate *h*, adjustably secured to the said plate *c*, in the longitudinal plane thereof, and bent outward and upward to form an arm, *l*, substantially as set forth.

325,812. SLITTER-SHAFT FOR PAPER-CUTTING MACHINES. E. H. BRIDGMAN, Pittsfield, Mass. Filed Apr. 17, 1884. (No model.)



Claim.—1. The combination, with a hollow shaft having a longitudinal slot, of cutter-disks mounted on the shaft, and provided with lugs or wings projecting through the slot, and having nuts on the inner ends of the wings, and of screws passed longitudinally through the shaft and through the said nuts, substantially as herein shown and described.

2. The combination, with a tubular shaft, of cutter-disks mounted on the same, and screws passed longitudinally through the tubular shaft and adapted to move the cutter-disks, substantially as herein shown and described.

3. The combination, with a tubular shaft, of cutter-disks mounted on the same, nuts or collars on the said shaft, and of screws extending longitudinally through the shaft and engaging with the nuts, substantially as herein shown and described.

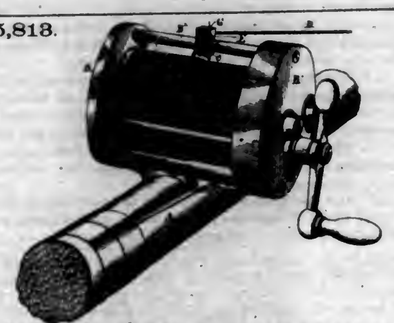
4. The combination, with a hollow shaft, of cutter-disks mounted on the same, a tubular screw held within the hollow shaft and adapted to act on one of the cutter-disks, and of a screw-spindle passed through the tubular screw and adapted to act on the other cutter-disks, and of hand-wheels on the ends of the spindle and the tubular screw, substantially as herein shown and described.

5. The combination, with a hollow shaft, of cutter-disks mounted on the same, a tubular screw held within the said hollow shaft and adapted to act on one of the cutter-disks, of a screw-spindle passed through the tubular screw and adapted to act on the other cutter-disk, of hand-wheels upon the ends of the spindle and the tubular screw, and of a jam-nut on the outer end of the spindle, substantially as herein shown and described.

6. The combination, with a hollow shaft, A, having a longitudinal slot, B, of a block, I, the screw-spindles H, journaled in the outer ends of the shafts and in the block I, the hollow screw D, held around the spindle H and in the shaft A, and of the cutter-disks adapted to be acted upon by the spindle and tubular screws, substantially as herein shown and described.

325,813. LINE-REEL FOR FISHING-TACKLE. CHARLES H. BRIGGS, Kankakee, Ill. Filed July 10, 1885. (No model.)

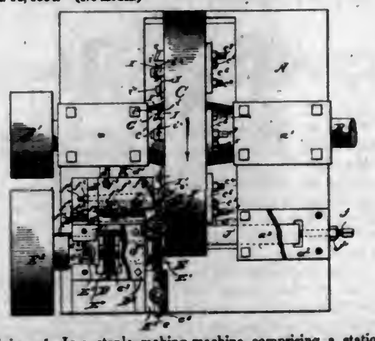
325,813.



Claim.—1. The combination, with a line-reel, of a cross-bar, B', supported upon the reel-frame parallel with the axis of the reel, a pulley mounted to freely rotate and slide upon said bar, and means constructed to retain the line within the groove of the pulley, substantially as described.

2. The combination, with a line-reel and a frame therefor provided with a cross-bar, B', of a pulley mounted to freely rotate and slide longitudinally upon the said bar, and a metal loop, E, embracing the peripheral portion of the pulley, and also constructed to slide and rotate upon the bar, substantially as described.

325,814. STAPLE-MAKING MACHINE. ORLANDO P. BRIGGS, Chicago, Ill., assignor to the Thorn Wire Hedge Company, same place. Filed Oct. 18, 1884. (No model.)



Claim.—1. In a staple-making machine comprising a stationary shear-blade and bender and one or more movable shear-blades and benders, the combination, with the parts mentioned, of feed-rollers for the wire and a clamping device for guiding the wire to the shear-blades, consisting of an adjustable jaw, H, and an opposing yielding jaw, H', substantially as and for the purpose set forth.

2. In a machine for making staples, the combination, with the feed-rollers E E and the shear-blades, of a clamping device comprising a stationary part or jaw, H, a movable jaw, H', and a spring applied to the movable jaw to hold it yieldingly in contact with the wire, substantially as and for the purpose set forth.

3. In a machine for making staples, the combination, with the feed-rollers E E and the shear-blades, of a clamping device comprising a stationary part or jaw, H, a movable jaw, H', a spring applied to the movable jaw to hold it yieldingly in contact with the wire, and means, substantially as described, for adjusting the force of the spring, substantially as and for the purpose set forth.

4. In a machine for making staples, the combination, with the feed-rollers E E and the shear-blades, of a guide, *d'*, for directing the wire from the feed-rollers to the shear-blades, provided with notches d^9 d^{10} at its end adjacent to the shear-blade, and a clamping device comprising a stationary jaw, H, and an opposing yielding jaw, H', said jaws being arranged with their adjacent ends within the said notches, substantially as and for the purpose set forth.

5. In a machine for making staples, the combination, with the feed-rolls E E and the shear-blades, of a clamping device comprising a stationary jaw, H, a movable jaw, H', a sliding bolt, h^3, having bearings in the machine-frame and adapted to bear upon the said movable jaw, and provided with a nut, *h'*, and a spring interposed between a stationary part of the frame and the nut, the nut being adjustable upon the bolt for the purpose of varying the pressure of the clamp, substantially as and for the purpose set forth.

6. In a machine for making staples, the combination, with the machine-frame provided with a recess, D^4, and an upright, D^2, provided with a rib, d^{10}, of the shear-blade F, having a shank, F', a wedge, *f''*, inserted between the side wall of the recess and the shank F' for holding the shear-blade from lateral displacement, and a gib, f^9, adapted to bear upon the top of the shank F' and the rib d^{10}, and a screw-bolt, f^{10}, for adjustably holding said gib in place, substantially as described.

7. In a machine for making staples, the combination, with the machine-frame provided with a recess, D^4, of a bender, G, a wedge, *f'*, and set-screw *g'*, for holding said bender in place within the recess, substantially as and for the purpose set forth.

8. In a machine for making staples, the combination, with the machine-frame provided with a recess, D^4, and a cap, f^4, placed over said recess, of a shear-blade, F, having a rectangular shank, F', located within the said recess, a bender, G, a spacing-piece, *f*, inserted between the shank F' and the bender, and a wedge, *f'*, for clamping the shear-blade and bender within the recess, substantially as and for the purpose set forth.

9. In a machine for making staples, the combination, with a revolving disk, C, provided with L-shaped recesses C^3, of shear-blades *c*, and benders *c'*, inserted in said recesses, and wedges c^3 and c^3, adapted to bear at right angles upon the said shear-blades and benders to secure the latter in place, substantially as described.

10. In a machine for making staples, the combination, with a disk, C, provided with recess C^3 and with plates c^3, covering said recesses, of shear-blades *c*, wedges for securing the said shear-blades in place within the recesses, and set-screws c^3, inserted through the said plates and bearing upon the shear-blades, substantially as and for the purpose set forth.

11. The combination, with a stationary shear-blade and a stationary bender, of a revolving disk carrying one or more shear-blades and a corresponding number of benders, and one or more cam-plates, I, secured to the said disk, and adapted to engage the finished staples and remove them from the bender, substantially as described.

12. The combination, with a stationary shear-blade and bender and a revolving disk carrying one or more shear-blades and a corresponding number of benders, of a block, J, adapted to bear upon the marginal portion of said disk at its side opposite the stationary shear-blade, substantially as and for the purpose set forth.

13. The combination, with the frame of a staple-making machine, a stationary shear-blade and bender thereon, and a revolving disk carrying one or more shear-blades and a corresponding number of benders, of a block, J, secured upon the frame, and adjustable thereon with reference to the disk, substantially as and for the purpose set forth.

14. In a staple-machine, the combination, with the machine-frame and a revolving disk, C, of a block, J, mounted upon the machine-frame and provided with a projection, J', at its end, forming an extended bearing-surface in contact with the disk, substantially as and for the purpose set forth.

15. In a machine for making staples, the combination, with a bed-plate, A, of a casting, D, adjustably attached to said bed-plate, a stationary shear-blade and bender secured upon the said casting D, and a revolving disk, C, mounted upon the said bed-plate and carrying one or more shear-blades and a corresponding number of benders, whereby the said stationary shear-blade and bender may be adjusted with reference to the disk, substantially as described.

16. In a machine for making staples, the combination, with the bed-plate A, provided with a rib, a^4, of a casting, D, provided with a groove, *d*, adapted to fit over the said rib, and bolts d^3 d^3, for securing the said casting to the bed-plate, a stationary shear-blade and bender secured upon the said casting D, and a revolving disk mounted upon the said bed-plate and carrying one or more shear-blades and a corresponding number of benders, substantially as and for the purpose set forth.

17. In a machine for making staples, the combination, with the bed-plate A, provided with a rib, a^4, upon its upper surface, of a casting, D, provided with a groove, *d*, bolts d^3 d^3, for securing the casting to the bed-plate, and a set-screw, *d'*, for determining the position of the casting upon the bed-plate, substantially as described.

325,815. NEEDLE-PRESSER FOR KNITTING-MACHINES. ALPHONSO H. BROTHERS, Naugatuck, Conn., assignor to the Dunham Hosiery Company, same place. Filed July 30, 1884. (No model.)



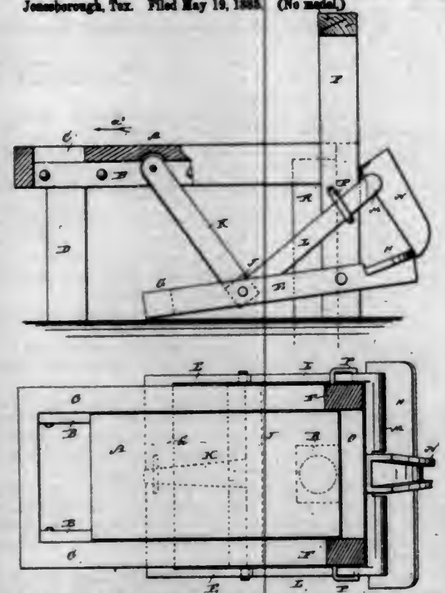
Claim.—1. The combination of the needle-cylinder, needles, the presser-post, and the removable standard, with the horizontal base-plate formed with a vertical sleeve to fit over the removable standard, and the unpliant non-metallic and absorbent presser-plate horizontally secured on the base-plate with its needle-impressing edge projected beyond the inner edge of the base-plate, and slightly concaved eccentric to the

circle of the face-line of the needles to impress the needles with increasing pressure from the point of engagement to the point of discharge, substantially as described.

2. In combination, the presser-post B, the removable standard C, formed with an annular collar, *b*, the presser D, formed with the vertical sleeve *f* and horizontal plate *e*, having a seat, G, and the unpliant non-metallic and absorbent presser-plate E, secured to the horizontal plate, substantially as described.

3. In combination, the presser-post B, the removable standard C, the presser D, formed with a vertical sleeve, *f*, and horizontal plate *e*, and the presser-plate secured on the horizontal plate, substantially as described.

325,816. WELL-COVER. HENRY P. BULLOCK and HENRY B. COOK, Jonesborough, TEX. Filed May 19, 1885. (No model.)



Claim.—1. The combination, with a sliding cover, of pivoted levers united by a step and connected by a bar with the sliding cover, substantially as herein shown and described.

2. The combination, with a sliding cover, of the pivoted levers E, united in front of the pivots by a step, H, the cross-bars J, uniting the levers between their pivots and their inner ends, and the bar K, connecting the cross-bar J with the cover, substantially as herein shown and described.

3. The combination, with a sliding cover and a hinged spout, of pivoted levers connected by a bar with the sliding cover, and of arms projecting from the levers and united by a cross-bar under the hinged spout, substantially as herein shown and described.

4. The combination, with the sliding cover A, of the posts F, the levers E, the step H, the bar K, connecting them with the sliding cover, the arms L, united by cross-bar M, and of the hinged spout N, substantially as herein shown and described.

325,817. SIGN-BOARD. WILLIAM H. BURDWELL and WILLIAM H. VAN GILDER, Perrysville, Ohio. Filed Apr. 10, 1884. (No model.)



Claim.—1. A sign-board having all its surfaces covered with sheet metal, substantially as herein shown and described.

2. A sign-board having its front, rear, top, and bottom surfaces covered by a single piece of sheet metal secured to the board at the bottom edge of the same, substantially as herein shown and described.

3. A sign-board having its front, rear, top, bottom, and end surfaces covered by a single continuous piece of sheet metal, substantially as herein shown and described.

4. A sign-board having all its surfaces covered with metal and provided with a guard at its top, substantially as herein shown and described.

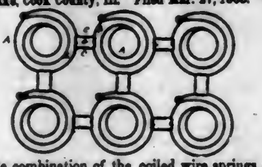
5. A sign-board covered with metal and having a flange or guard projecting from the front and from the rear surfaces at the top edges of the same, substantially as herein shown and described.

6. The combination, with a sign-board, of the metal end pieces, D, nailed to the top and bottom edges of the board, and the sheet-metal covering B, forming a projecting flange or guard, C, and nailed or fastened to the board at the bottom, substantially as shown and described.

7. The combination, with a sign-board covered with metal, of malleable-iron letters secured on the covering and board, substantially as herein shown and described.

8. As a new article of manufacture, a sign-board having all its surfaces covered with metal and provided with a guard at its top, and with malleable-iron letters on said metal covering, as set forth.

325,818. ATTACHMENT FOR CONNECTING COIL-SPRINGS. CHAS. CARLETON, Lake, Cook County, Ill. Filed Mar. 27, 1885. (No model.)



Claim.—The combination of the coiled wire springs with the connecting-plate having the wings *b*, which are looped over the coils of the springs to hold them together, and the wings *c*, bent over the wings *b* to hold them and to keep the springs separated, substantially as described.

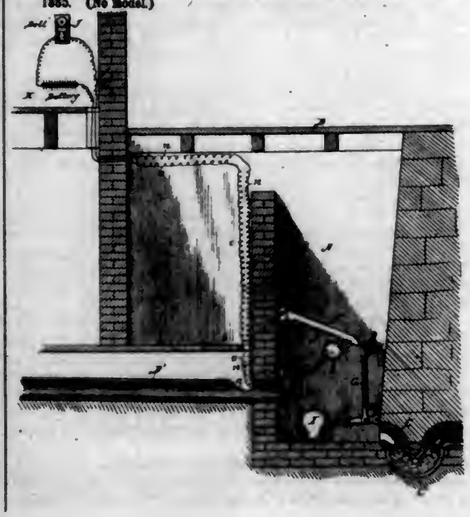
325,819. CAR-COUPLING. DANIEL CARLOUGH, Paterson, N. J. Filed Feb. 7, 1885. (No model.)



Claim.—1. The combination, with the pawl B, pivoted on bolt S, the pawl having enlargements and an eye to accommodate link N, and having a curved front part to engage link C, of the bolt S, with slots R, for pivoting the pawl B adjustably on said bolt S, with draw-head A', having said slots R in the sides thereof, the draw-head having a slot, H, in the top of the same, to accommodate said pawl B, with recess H', to protect the pawl laterally, with link N, for actuating the pawl, substantially as described.

2. The combination, with the pawl B, and bolt S for pivoting said pawl, and draw-head having slots R, of the coupling-links C, pivoted adjustably on said bolt S, arranged in said slots R, the links having an open center with solid sharpened end C^2, to engage the pawl B, and enlargements C' for strength, the draw-head having an open flaring curved front, A^3, with swell H^3, for supporting link C in nearly horizontal position, with opening H^2 for the escape of dirt, washers S', and pin S^2, substantially as described.

325,820. SEWER. JAMES H. CLARK, Chicago, Ill. Filed June 29, 1885. (No model.)



Claim.—1. A valve automatically operated to cut off communication between the house drain-pipe and the main sewer-pipe, substantially as described.

2. The valve, in combination with means for causing the said valve to automatically cut off communication between the house drain-pipe and the main sewer-pipe, substantially as described.

3. A hinged or pivoted valve and a weight rigidly secured thereto having a lug projecting from said weight, in combination with a notched or toothed bar, whereby the valve may be suspended, substantially as described.

4. A hinged or pivoted valve and a weight rigidly secured thereto having a lug projected from said weight, in combination with a float and a separable connection between said weight and float, substantially as described.

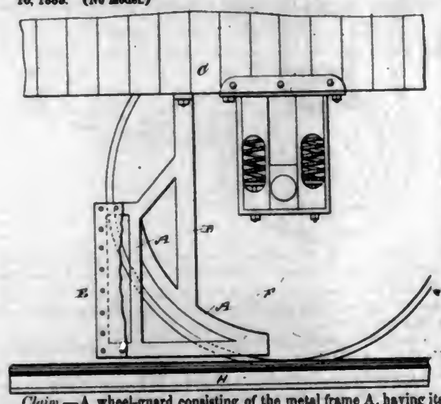
5. A hinged or pivoted valve, E, and the weight A, rigidly secured thereto, having a lug projecting from said weight, in combination with the pivoted bar F, the adjustable connecting-rod G, and pivoted rod H, provided with a float at its free end, substantially as described.

6. The automatically-operating valve, in combination with means for automatically producing an alarm, substantially as described.

7. The hinged or pivoted valve, in combination with means for producing an alarm automatically operated by said valve, substantially as described.

8. The hinged or pivoted valve having a metal plate upon one face thereof adapted to form a connection to complete the circuit between the two disconnected poles of a battery when the said valve is seated, substantially as described.

325,821. WHEEL-GUARD. ALMA B. COLE, Kingston, Ill. Filed July 10, 1885. (No model.)



Claim.—A wheel-guard consisting of the metal frame A, having its top curved down toward the rear, the upwardly-projecting bars B, and the sheet-metal covering E, substantially as herein shown and described.

325,822. PROCESS OF MAKING PLATES OR MASSES OF CARBON. SAMUEL J. COXETER and HENRICH NERMER, 23 Grafton Street East, County of Middlesex, England. Filed July 7, 1884. (No specimens.) Patented in England May 22, 1884, No. 8,083; in France May 30, 1884, No. 162,472, and in Germany June 1, 1884, No. 30,042.

Claim.—The method of obtaining solidified compositions of matter, consisting of carbon and silica, by first mixing the carbon with an alkaline silicate to form a pasty mass, drying the same, then immersing the dried mass in a solution that will decompose and remove the alkaline silicate in the compound and precipitate the silica intimately among the particles of the carbon, then boiling the composition in water, and finally drying the mass.

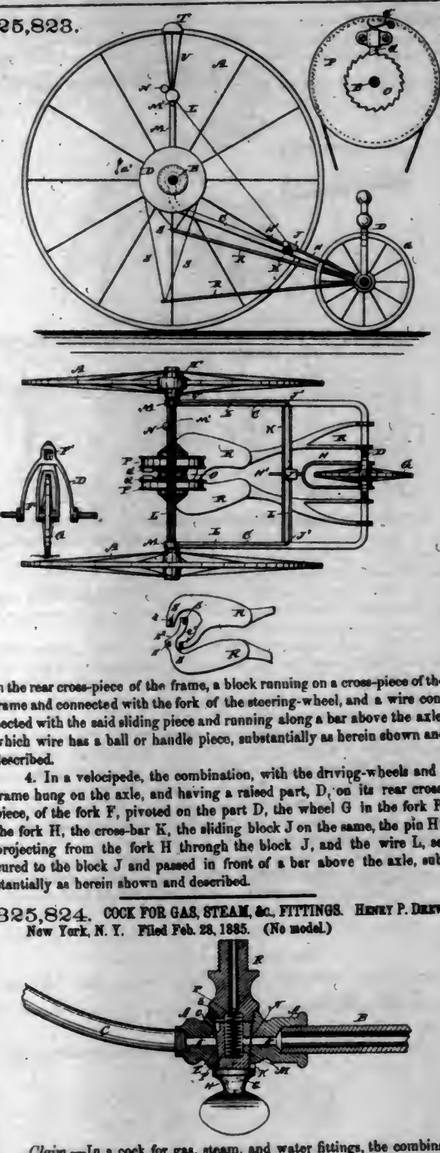
325,823. VELOCIPEDE. JAS. M. DILLON, Birmingham, Ala. Filed Feb. 12, 1885. (No model.)

Claim.—1. The combination, with a shaft, of a ratchet-wheel mounted rigidly on the same, pulleys mounted loosely on the shaft and having pawls or bolts for engagement with the teeth of the ratchet-wheel, bands secured on each pulley, and two foot-levers, each of the above-described bands having one end secured on the free end of each foot-lever, substantially as herein shown and described.

2. The combination, with a shaft, of the double ratchet-wheel O, the pulleys P, having bolts Q or pawls, the bands S, secured on the rims of the pulleys, and the foot-levers R, of which one has the prongs $r\,r'$ and the other the prong r^2, the bands S each having one end secured to the prong r^2, and the other end to the prong r or r', substantially as herein shown and described.

3. In a velocipede, the combination, with the driving-wheels and a frame hung on the axle, of a steering-wheel journaled in a fork pivoted

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in the rear cross-piece of the frame, a block running on a cross-piece of the frame and connected with the fork of the steering-wheel, and a wire connected with the said sliding piece and running along a bar above the axle, which wire has a ball or handle piece, substantially as herein shown and described.

4. In a velocipede, the combination, with the driving-wheels and a frame hung on the axle, and having a raised part, D, on its rear cross-piece, of the fork F, pivoted on the part D, the wheel G in the fork F, the fork H, the cross-bar K, the sliding block J on the same, the pin H', projecting from the fork H through the block J, and the wire L, secured to the block J and passed in front of a bar above the axle, substantially as herein shown and described.

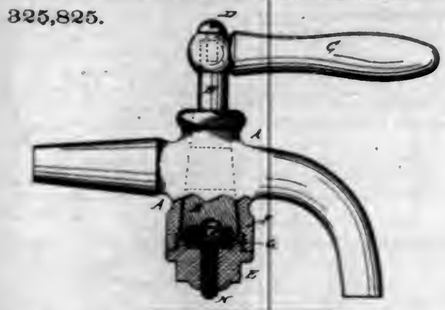
325,824. COCK FOR GAS, STEAM, &c., FITTINGS. HENRY P. DREW, New York, N. Y. Filed Feb. 23, 1885. (No model.)

Claim.—In a cock for gas, steam, and water fittings, the combination, with the stock A, having a longitudinal perforation, A', a downwardly-tapering perforation, E, and a recess O, in the front wall of the said perforation E, the downwardly-tapering plug F, having a recess, M, opening into the upper part of the perforation E and communicating with the said recess O, and a lateral perforation, N, adapted to register with the stock-perforation A', and the spring P of the nozzle R, fitting into the top of the perforation E, the spring P bearing against the inner end of the nozzle R and the bottom of the recess M, and the thumb-piece I on the lower end of the downwardly-tapered plug F, substantially as herein shown and described.

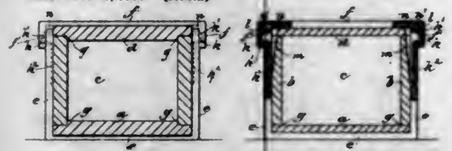
325,825. FAUCET. HENRY P. DREW, New York, N. Y. Filed July 28, 1885. (No model.)

Claim.—The combination, with the stock A, the plug B, the spring F, and the screw-plug E, having a screw-threaded hole, of the washer G, interposed between the spring and screw-plug, and the screw H, resting against the said washer, substantially as herein shown and described, whereby the tension of the said spring can be readily increased or lessened, as set forth.

325,825.



325,826. BURIAL-VAULT. LEONARD DYDYNSKI, Buena Vista, Ohio. Filed June 16, 1885. (Model.)



Claim.—1. The burial-vault herein shown and described, consisting of the slabs *a b c d*, held together by the U-irons *e* and locking cross-pieces *f*, constructed to engage with locking-hooks attached to the extremities of the irons *e*, substantially as described.

2. The U-irons *e*, provided with spring-catches, in combination with the cross-pieces *f*, formed with recesses *k* to receive the locking-heads of the spring-catches, substantially as described.

3. The combination, with the bar or cross-piece *f*, formed with downward-bent ends *f'*, having recesses *k'* formed therein, of the U-iron *e*, having openings *l* in its ends, and spring-catches secured to the inner surfaces of said ends, and having heads K projecting through the openings *l*, substantially as set forth.

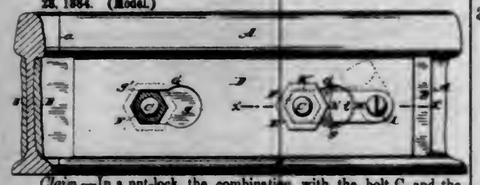
325,827. MANUFACTURE OF VIOLET DYE-STUFFS. FRIEDRICH FISCHER, Barmen, assignor to Farbenfabriken, vormals Friedr. Bayer & Co., Elberfeld, Germany. Filed Apr. 25, 1885. (Specimens.)

Claim.—The process of producing a violet dye-stuff herein described, which consists in treating diethyl-aniline by perchlormethylmercaptan, substantially as described.

325,828. VIOLET METHYL DYE-STUFF. FRIEDRICH FISCHER, Barmen, assignor to Farbenfabriken, vormals Friedr. Bayer & Co., Elberfeld, Germany. Filed Apr. 25, 1885. (Specimens.)

Claim.—The product herein described, having the properties specified.

325,829. NUT-LOCK. ALFRED FISHER, Edwards, Miss. Filed June 23, 1884. (Model.)



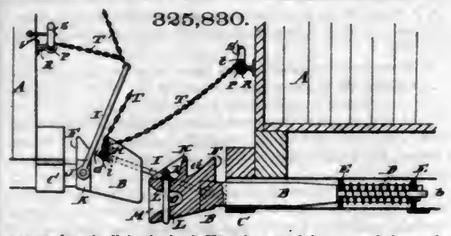
Claim.—In a nut-lock, the combination, with the bolt C and the nut E, provided with the projection F on its inner face, of the locking-plate D, provided with the slot G, having the enlarged portion *g* and the contracted portion *g'*, and the dog H, pivoted to the said locking-plate and provided with the projection *i* on its inner face, adapted to enter the portion *g* of the slot G when the dog is in position to hold the locking-plate, substantially as herein shown and described.

325,830. CAR-COUPLING. WINSLOW FORBES, Riverhead, N. Y., assignor to himself and FRANK B. LAWRENCE, same place. Filed Dec. 12, 1884. (No model.)

Claim.—1. In a car-coupling, the combination, with a draw-head, B, provided with the horn H, and the side lugs, K, of the link I, pivoted to studs on the said side lugs, and means for raising and lowering the link from the top or side of the car, substantially as herein shown and described.

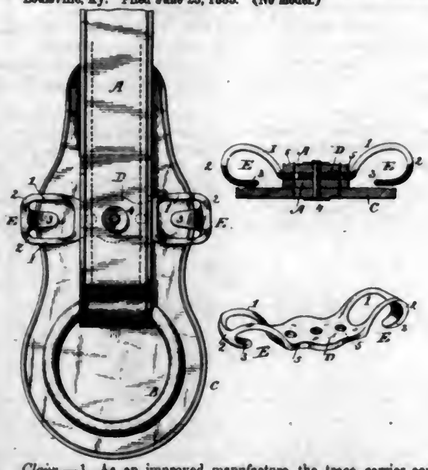
2. In a car-coupling, the combination, with the draw-head B, and the link I, pivoted thereto, of the shaft P, journaled on the end of the car and provided with cranks S, the chain T, wound on the shaft and

325,830.



connected to the link, the hook U at the top of the car, and the catches V, substantially as herein shown and described.

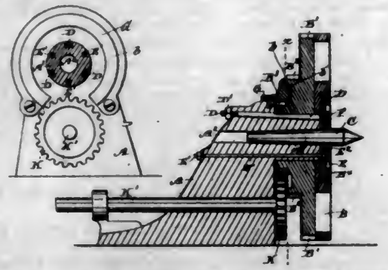
325,831. TRACE-CARRIER FOR HARNESS. JOSIAH B. GATHRIGHT, Louisville, Ky. Filed June 23, 1885. (No model.)



Claim.—1. As an improved manufacture, the trace-carrier composed of the base-plate and the hooks rigidly fastened to or in one piece with said plate, said hooks curving outward from opposite ends of said plate, and having each a narrow point underlying the wider open body of the hooks, substantially as described.

2. The trace-carrier composed of the base-plate and the hooks rigidly fastened to or in one piece with said plate, said hooks curving outward from opposite ends of said plate, and having each a narrow point underlying the wider open body of the hook, in combination with the pad and back-strap, the base-plate of said carrier being fastened crosswise of and under said strap, between it and the pad, and the hooks lying on either side of said strap, substantially as described.

325,832. LATHE. JACKSON O. HAAS, Hepler, Pa. Filed June 23, 1885. (Model.)

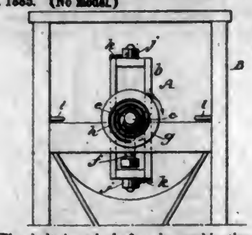


Claim.—1. The combination, with the head-stock A, having the longitudinally-apertured hub A', of the plug C, the head B, journaled on the said hub and having the gears B' B^2 B^3, of varying diameters, on its periphery, the shaft K', the gear K thereon meshing with the gear B^3, and the shifting gears I' I^2, adapted to mesh with the gears B' B^2, substantially as set forth.

2. In a lathe, the head-stock A, provided with the projection or hub A', having the aperture A^2, the bolts D, the nuts D', the disk E, provided with the hub E^2, and the pointed center plug, C, in combination with the face-plate B, provided with the gear-wheels B', B^2, and B^3, and the plate F, substantially as shown and described.

3. In a lathe, the combination, with the hub A, having projection A', and the face-plate B, of the plate E, the cover G, and the bolts E', substantially as shown and described.

325,833. FLOUR-BOLT. GEORGE HALLIDAY, Winnebago City, Minn. Filed May 19, 1885. (No model.)

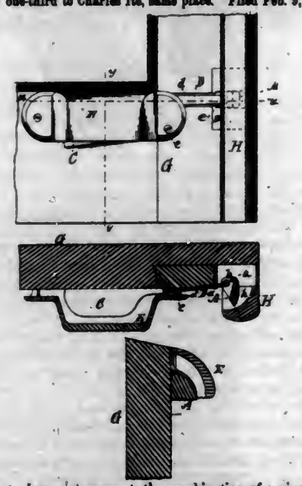


Claim.—1. The bolt A and shaft *c*, in combination with pulley *g*, placed loosely on the shaft, and the connecting-spring *h*, whereby periodically-accelerated motion is given to the bolt, substantially as and for the purposes set forth.

2. The combination of the bolting-chest, the bolt-frame A, provided with bolting-cloth knockers *j* at its side edges, and the pins or projections *l*, placed at the sides of the bolt-box *l* to cause the knockers to strike while the bolting-cloth is in horizontal position, substantially as described.

3. The bolt A, comprising a frame, two parallel bolt-cloths, *a*, and a shaft, *c*, in combination with the pulley *g* and spring *h*, connecting the pulley *g* to the shaft *c*, substantially as and for the purposes described.

325,834. SASH-FASTENER. JOHN H. HAMAKER, Canton, Ohio, assignor of one-third to Charles Ita, same place. Filed Feb. 9, 1885. (No model.)



Claim.—1. In a sash-support, the combination of a pivoted swinging catch, A, bell-crank weight C, and connecting-bar D, substantially as and for the purpose herein specified.

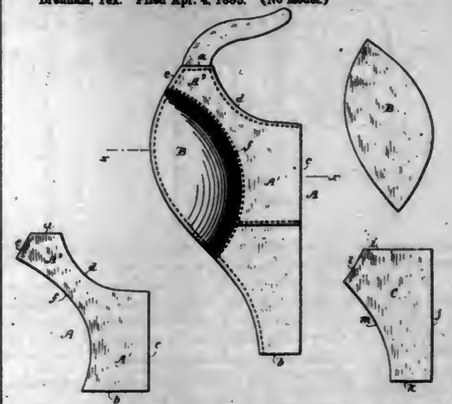
2. The combination of the catch A, weight C, and connecting-bar D, composing the sash-support, and a sash-lift, E, the weight being located in or behind the lift, substantially as and for the purpose herein specified.

325,835. APPARATUS FOR CONCENTRATING ORES. HOWARD C. HENDERSON and JAMES A. HENDERSON, Cherokee, Iowa. Filed Oct. 4, 1884. (No model.)



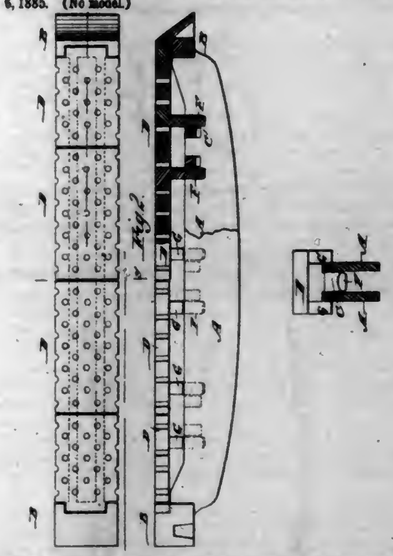
Claim.—The apparatus herein described for concentrating ores, the same consisting of an outer tank, A, an inner filtering-tank, B, provided with fabric ends, and the perforated feed-box C, having its lower end below the top edge of the tank B, a space being left between the sides, ends, and bottom of the tanks B A, whereby, when the water is received by the perforated feed-box, it will pass into the tank B and slowly filter through the fabric ends thereof and flow over the top edge of the tank A, the fabric ends preventing the formation of a current and causing the particles of ore to be precipitated, substantially as set forth.

325,836. PATTERN FOR BRIDLE-BLINKERS. CHRISTIAN W. HESS, Brenham, Tex. Filed Apr. 4, 1885. (No model.)



Claim.—The patterns for a bridle-blinker consisting of the parts A, B, and C, substantially as herein described.

325,837. CULM-BAR. SILAS M. HESS, Bloomsburg, Pa. Filed May 6, 1885. (No model.)



Claim.—1. A culm-bar consisting of two parallel bars united by cross-pieces and perforated sections placed longitudinally of the parallel bars and provided on their under sides with transverse lugs, the lugs of each section fitting between two cross-pieces of parallel bars, substantially as set forth.

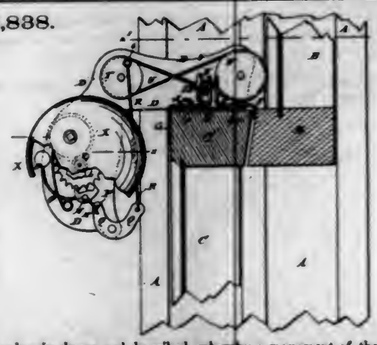
2. The combination, with the bars A, united by cross-pieces C, of the perforated sections D, having lugs F, provided with wings G, substantially as herein shown and described.

325,838. BURGLAR-ALARM. FREDERICK D. HILL, New York, N. Y. Filed Oct. 9, 1884. (No model.)

Claim.—1. A burglar-alarm comprising an attaching-plate, a securing-clamp thereon constructed to engage the top rail of a sash, a bell, a hammer for striking the same, a friction-roller adapted to be operated by the movement of the article to which the alarm is secured, and connections between the friction-roller and the bell-ringing mechanism, substantially as set forth.

2. In a burglar-alarm for windows, the combination, with the angular plate D and a clock-work, L, having an arm, N, attached to its escapement-post M, of the lever Q, having a projecting pin, P, the connecting-rod R, the pulleys and band T V U, and the roller W, substan-

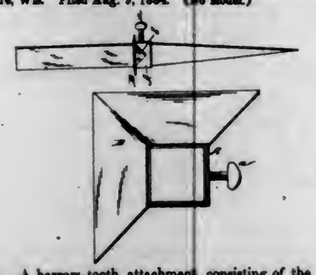
325,838.



tially as herein shown and described, whereby a movement of the window-sash can be made to spring the alarm, as set forth.

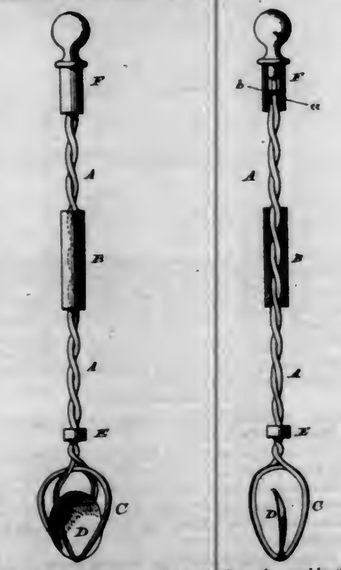
3. In a burglar-alarm for windows, the combination, with the angular plate D, carrying the operating mechanism and having a flange, E, of the clamp F G I K, substantially as herein shown and described, whereby the said alarm can be readily secured to a window-sash, as set forth.

325,839. HARROW-TOOTH ATTACHMENT. CHARLES E. HOGEBOOM, Eau Claire, Wis. Filed Aug. 9, 1884. (No model.)



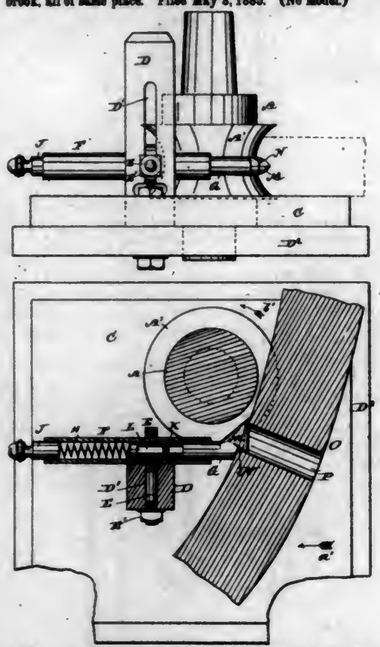
Claim.—A harrow-tooth attachment consisting of the collar or band A, having a set-screw, *a*, and the blade B, having its rear side notched and formed with flanges *b* riveted to the band, substantially as set forth.

325,840. EGG-BEATER AND LIQUID-MIXER. EARL F. HOOER, Oakland, Cal. Filed Oct. 16, 1884. (No model.)



Claim.—In an egg-beater and liquor-mixer, the combination of the stem A and beaters C, formed of a single wire, said stem being composed of two spirally-twisted strands, one of which is extended beyond the end of the other and provided at or near its end with a lug or collar, *b*, the internally-spirally-grooved thimble B, loosely mounted on said stem, and the hollow handle or cap F, having a perforated diaphragm or bearing, *a*, substantially as shown and described.

325,841. MACHINE FOR MAKING PELLETS. HENRY D. JEFFREY, Winona, Minn., assignor to himself, Calvin A. Bierce, and Frank B. Holbrook, all of same place. Filed May 3, 1885. (No model.)



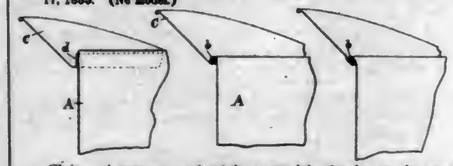
Claim.—1. The combination, with a cutter-head, of a standard, an eyebolt in the same, and a gage-rod held in the eye, substantially as herein shown and described.

2. The combination, with a cutter-head, of a standard, a tube held on the same, a gage-rod in the tube, and a spring interposed between the inner end of the said gage-rod and the closed end of the tube, substantially as herein shown and described.

3. The combination, with a cutter-head having blades for cutting, of the standard D, the tube F, held on the said standard, and the bolt G, held in the said tube and provided at one end with a head, M, substantially as herein shown and described.

4. The combination, with a cutter-head, of the standard D near the cutter-head, the tube F, held on said standard, the bolt G, having one end passed into the said tube, and the head M on the other end, which head has a notch, N, substantially as herein shown and described.

325,842. MEASURE. GEO. W. KNAPP, Baltimore, Md. Filed July 17, 1885. (No model.)



Claim.—A measure made of sheet metal, having its top rim turned over to form a beaded edge, and provided with a lip, some part of which is inclosed in the said beaded edge, as set forth.

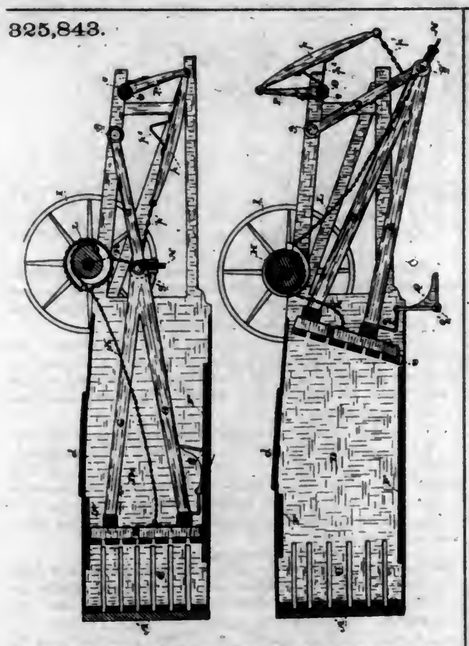
325,843. BALING-PRESS. LEVI B. LATHROP, Hollister, Cal. Filed Apr. 27, 1885. (No model.)

Claim.—1. In a baling-press, the parallel-spaced stripe F in the press-chamber for folding in the material to be baled and finishing its surface, substantially as herein described.

2. In a baling-press, the parallel-spaced stripe F, located in the bottom and top of the press-chamber and adapted to fold in and finish the ends of the bale, substantially as herein described.

3. In a baling-press having a horizontal chamber and a horizontally-reciprocating follower adapted to press a bale in an upright or upended position, the parallel and spaced stripe F in the bottom and top of

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the chamber adapted to fold in and finish the ends of the bale, substantially as herein described.

4. In a baling-press, the reciprocating follower E, in combination with the toggle G, secured rigidly and solidly to the back of the follower and provided with a long arm, which is forked and engages the follower near the top and bottom, substantially as herein described.

5. In a baling-press, the reciprocating follower E, in combination with the toggle G, secured rigidly and solidly to the back of the follower and at points distant from its longitudinal central line, substantially as shown and described.

6. In a baling-press having a follower, E, toggle G, and driving-wheel I, the deep-grooved pulley *j* on the shaft of the driving-wheel, and the chain K, attached to said pulley and to the back of the follower, substantially as and for the purpose herein described.

7. In a baling-press, the follower E, toggle G, driving-wheel I, and shaft H, in combination with the double conical pulley J on the shaft, having a deep grooved central face, *j*, and side conical faces, *j'*, the chains L, secured to faces *j'* and to the toggle, and the chain K, attached to face *j* and to the back of the follower, substantially as herein described.

8. In a baling-press, the toggle G, by which the follower is reciprocated, and the chains L, connecting said toggle with the driving-shaft, in combination with the pivoted equalizer N, pivoted on the toggle at its joint, and having the chains L, connected with its ends, substantially as herein described.

9. In a baling-press, the follower E, toggle G, and shaft H, having pulley J, in combination with the pivoted equalizer N, pivoted to the toggle at its joint, and the chains L, connecting the ends of the equalizer with the pulley J, substantially as herein described.

10. In a baling-press having a follower, E, and a toggle, G, by which it is reciprocated, the means by which the toggle is drawn fully back, consisting of the spring-shaft O, crank-arm P, and bar *p*, connected with the toggle, substantially as herein described.

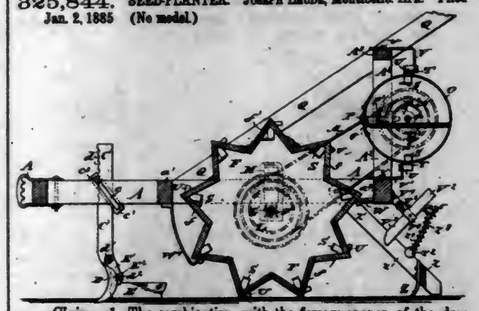
11. In a baling-press having a follower, E, and a toggle, G, by which the follower is reciprocated, the spring-shaft O having crank-arm P, the bar *p*, pivoted to the crank-arm and connected with the toggle, and the guide-iron p^3 on the bar, adapted to throw said bar away from the shaft, substantially as herein described.

12. In a baling-press, the follower E and toggle G, by which it is reciprocated, in combination with the means by which the follower is locked when returned and the vibratory tendency of the toggle prevented, consisting of the weight Q, attached by angle-arm *q* to the follower and adapted to drop over the back of the press, and rollers *q'*, mounted in said arm, substantially as herein described.

13. In a baling-press, the door-latch mechanism comprising the straps *a* on the door, and having beveled end catches, *a'*, the spring-arms *r* on the press, and the grooved shaft R, journaled in the spring-arms and having beveled catches r^3, with which the catches *a'* of the door engage, and the handle *r*, substantially as herein described.

14. In a baling-press having a follower, E, toggle G, and operating-wheel I, with power-transmitting devices by which the wheel operates the toggle, the brake mechanism consisting of the pivoted brake-lever W, impinging on the wheel, the hook U on the toggle, the oscillating shaft V on the press-frame, the crank-arm *v* on one end of the shaft engaged by the hook, and the crank-arm *v'* on its other end bearing under the brake-lever, substantially as herein described.

325,844. SEED-PLANTER. JOSEPH LAUDE, Monticello, Ark. Filed Jan. 2, 1885. (No model.)



Claim.—1. The combination, with the furrow-opener, of the drag held to the rear side of the opener, and having upwardly-diverging wings extended laterally beyond the sides of the furrow-opener, whereby the running depth of the latter may be gaged, substantially as set forth.

2. In a seed-planter, the combination, with the furrow-opening plow and its standard, of the drag E, constructed with diverging wings *e e*, and an arm, E', pivoted to the standard at d^2, and having the angle hook-plate E^2, engaging the standard, and the bolt d^2, substantially as herein set forth.

3. As an improved article of manufacture, the drag E, made with a horizontally-ranging bottom part provided with diverging wings *e e*, and an arm, E', having a hook-shaped angle-plate, E^2, substantially as herein set forth.

4. In a seed-planter, the combination, with the seed-drum F, its shaft F', and the machine-frame, of the yoke-plates H, loose boxes G, the removable blocks I, and caps J, substantially as herein set forth.

5. The combination of a lower seed-drum having cone-pulleys, a second drum journaled adjacent to said lower seed-drum, and also provided with cone-pulleys, an adjustable support for one of said drums, whereby they may be adjusted toward each other and apart, and belts connecting the pulleys of said drums, substantially as set forth.

6. The drum O, provided on the inner sides of its opposite ends with approximately-radial guideways, combined with a partition, O', extended longitudinally of the drum O, and having its ends removably held within guideways thereof, substantially as set forth.

7. The combination, with the seed-drum O, of the partition O', extended longitudinally thereof, substantially as herein set forth.

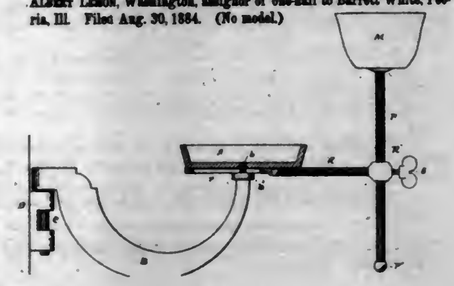
8. In a seed-planter, the combination, with the seed-pockets R and pivoted valve-plates S T, of separate gage-plates X, held adjustably to the seed-drum and entering the pockets by their flanges X', substantially as herein set forth.

9. In a seed-planter, the combination, with the seed-pockets R, of the gage-plates X, held adjustably to the seed-drum, and provided with the gaging-flanges X' and inner flanges, X^3, substantially as herein set forth.

10. In a seed-planter, the combination, with the seed-drum O and its seed-dropping devices, of the spout V^2, held to the frame-bracket V^4 by a clip or yoke, V^3, having slots in its side arms, and a screw, v^3, substantially as herein set forth.

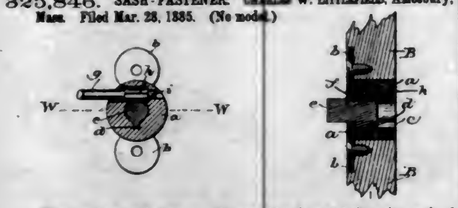
11. The combination, with the movable seed-drum O and its seed-dropping valve-plates S T U, of the adjustable tappets V V', substantially as herein set forth.

325,845. LAMP ATTACHMENT FOR SHOW-Gglobe BRACKETS. ALBERT LEMON, Washington, assignor of one-half to Barrett White, Peoria, Ill. Filed Aug. 30, 1884. (No model.)



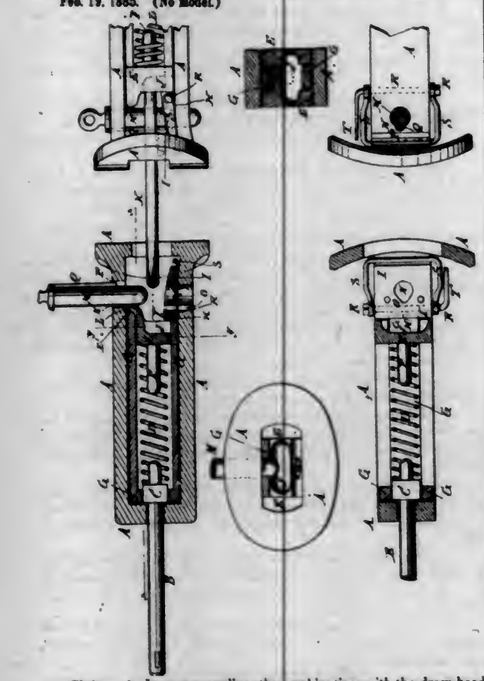
Claim.—In a lamp attachment for show globe brackets, the combination of the bracket having the threaded lug *b*, the globe-shelf A, having a threaded central opening by which it is screwed to said lug, the rod R, having at one end the opening R', and at the other end the longitudinal slot *r*, through which passes said lug, the rod P, removable in said opening R', and held therein by the set-screw S, and the lamp-receiver M, secured to the upper end of said rod P, as and for the purposes set forth.

325,846. SASH-FASTENER. CHARLES W. LITTLEFIELD, Amesbury, Mass. Filed Mar. 28, 1885. (No model.)



Claim.—In a sash-fastener, the combination of bolt *e*, its rack *f*, and feather *d*, the pinion *h*, its journal *i*, and rod *g*, and cylindrical case *a*, its securing-ears *b*, an axial passage with a slot at one side to receive cylindrical bolt *e* and its feather *d*, a transverse passage for pinion *h*, and a diminished continuance thereof for journal *i*, all substantially as specified.

325,847. CAR-COUPLING. THOMAS L. MCKEEN, Easton, Pa. Filed Feb. 19, 1885. (No model.)



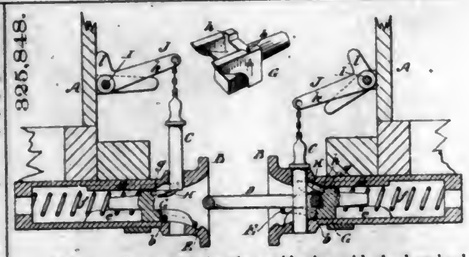
Claim.—1. In a car-coupling, the combination, with the draw-head A, having the removable longitudinal guides G, of the follower E, having grooves E' in its upper and lower faces, substantially as herein shown and described.

2. In a car-coupling, the combination, with the draw-head A, having the guides G, of the spring-pressed follower E, having grooves E', and projecting beyond the end of the upper guide, and the coupling-pin M, provided with the pin or stud L, substantially as herein shown and described.

3. The inclined link-block I, secured to the draw-bar in front of the follower E, to guide the link and carry and protect the link-lifter S, as set forth.

4. The link-lifter S, in combination with the link-block I, as shown and described.

325,848. CAR-COUPLING. THOMAS L. MCKEEN, Easton, Pa. Filed May 23, 1885. (No model.)

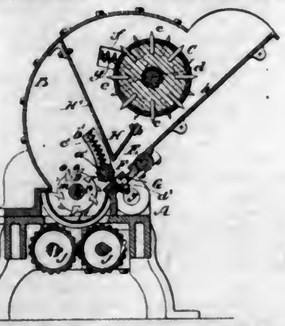


Claim.—1. In a car-coupler, the combination, with the draw-head B, its sliding block G, and spring for forcing out said block, of the coupling-pin-supporting flap H, pivoted to said block, for operation in relation with the coupling-pin, substantially as specified.

2. The combination of the draw-head B, the sliding block G, and its spring *f*, the pivoted coupling-pin-supporting flap H, the coupling-pin C, and the rocking-link guide E, constructed and arranged to act as a stop to arrest the sliding block at the limit of its forward movement, essentially as described.

3. The combination, with the draw-head, coupling-pin of the coupler, and the sliding block G, with its pivoted flap H, which supports the coupling-pin when raised, of the shaft I, by which said pin is lifted when required to uncouple, and a stop-arm applied to said shaft, arranged to limit the height to which the coupling-pin should be raised to admit of the pivoted flap falling into position beneath said pin when raised, substantially as specified.

325,849. BARK-MILL. JOHN MCKENDRICK, New York, N. Y., assignor to William F. Monaghan, same place, and Simeon Hartley and Constant C. Hodgman, both of Newark, N. J. Filed Oct. 30, 1884. (No model.)



Claim.—1. In a bark-mill, the combination, with the rotary cutting-cylinder, of the feed-cylinder journaled above and in advance thereof, sliding boxes or bearings in which the ends of the feed-cylinder shaft are mounted, the guides or guideways *f*, curved on the arc of the cutting-cylinder, the springs *g*, and suitable gearing between the cutting-cylinder and the feed-cylinder for rotating the latter, whereby the cutting-cylinder and the feed-cylinder will always be the same distance apart, thereby preventing disconnection or straining said gearing, substantially as set forth.

2. In a bark-mill, a close cover or case and a rotary cutter-head or cylinder, in combination with a pressure-roller, F, cutting block or plate G, and the guide H, arranged in relation with said roller as described, whereby the bark as it is being fed is prevented from passing over said roller, substantially as specified.

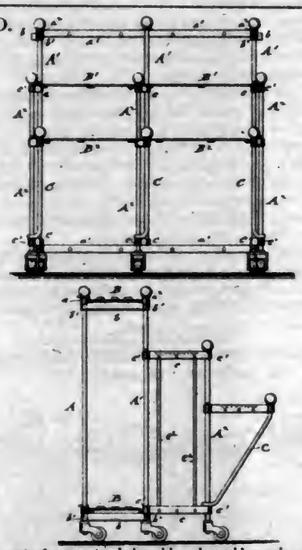
3. The combination of the close cover or case B, the rotary cutting-cylinder D, the yielding pressure-roller F, the cutting or face plate G, the spike-armed feed-roll C, and the combined guide and guard H H', arranged in relation with said feed-roll and cutting-cylinder, substantially as specified.

325,850. FOLDING FLOWER-STAND. HERMANN MECKE, New York, N. Y. Filed Sept. 19, 1884. (No model.)

Claim.—The combination of upright rear posts connected by rigid brace-pieces, front posts connected with each other by hinged braces provided with headed pins and with the rear posts by hinged pieces, shelves hinged to the connecting-braces of the rear posts, and means for locking said shelves in horizontal position to the pins in the connecting-braces of the front posts, substantially as set forth.

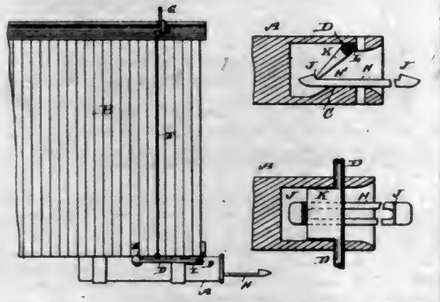
2. The combination of the upright rear posts connected by rigid braces, front posts connected with each other and with the rear posts by hinged strips, shelves hinged to the connecting-braces of the rear posts, means for locking the shelves to the connecting-braces of the front posts, panels hinged to the front posts, shelves hinged to said panels, and means for locking said shelves in horizontal position, substantially as set forth.

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3. The combination of the rear posts connected by fixed braces, front posts connected with each other and with the rear posts by hinged strips, folding shelves hinged to the braces of the posts, means for locking the shelves in horizontal position, intermediate panels hinged to the front posts, folding shelves hinged to the said panels, means for locking said shelves to the panels, and front brackets hinged to the posts of the intermediate panels and provided with hinged shelves, and means for locking the front shelves into horizontal position, substantially as and for the purposes set forth.

325,851. CAR-COUPLING. OTTO C. MEISSBACH, Marion, Tex. Filed June 26, 1885. (No model.)



Claim.—The combination, with the draw-head A, having the raised portion C in the bottom of its cavity, of the shaft D, journaled in the draw-head and extending to the sides of the car, and provided with the tongue K, of the same width as the cavity of the draw-head, and having its ends bent and provided with weights E, the lever G, pivoted on the top of the car, and the rod F, connected to said lever and one bent end of the said shaft, substantially as herein shown and described.

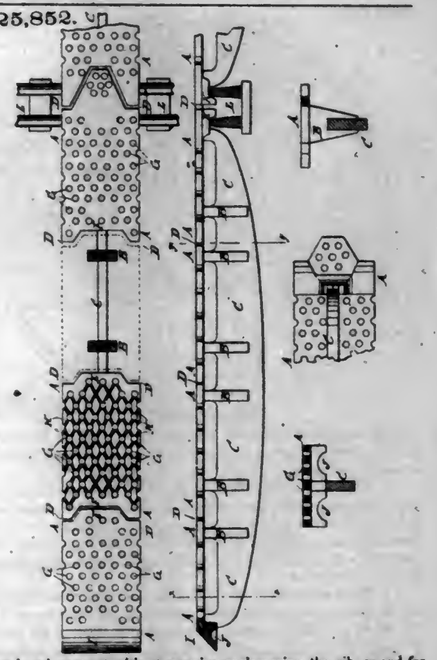
325,852. GRATE-BAR. JOSEPH B. MILLER, Wilkes-Barré, Pa. Filed Mar. 28, 1885. (No model.)

Claim.—1. A grate-bar made substantially as herein shown and described, with perforated and grooved top plates having narrow spaces between their adjacent ends, and cast upon lugs cast upon the supporting-ribs, whereby the air can circulate freely through and around the said top plates, as set forth.

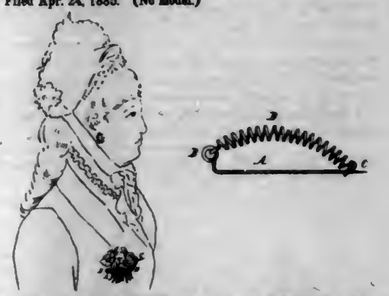
2. In a grate-bar, the top plates, A, cast solid with the lugs B, cast upon the ribs C, and having the adjacent ends of the said top plates provided with a projection, E, on one end and a corresponding recess, F, in the other end, substantially as herein shown and described.

3. A grate-bar consisting of the rib, the lugs cast upon and projected above the said rib, whereby air can freely circulate between and around them, and the top plates cast upon the said lugs, the meeting ends of the adjacent plates being separated, whereby such plates may expand and contract without warping or damaging the rib, as and for the purposes specified.

325,852.



325,853. BOUQUET-FASTENING. MARGARET MILNE, Brooklyn, N. Y. Filed Apr. 24, 1885. (No model.)



Claim.—As an article of manufacture, a bouquet-fastener consisting of a pin, A, having a point, C, at one end and a right-angled arm with an eye, B, at the other, and a spiral wire spring-band, D, loosely attached to said eye at one end, whereby any of the coils of the free end may be made to engage the point of the pin, substantially as described.

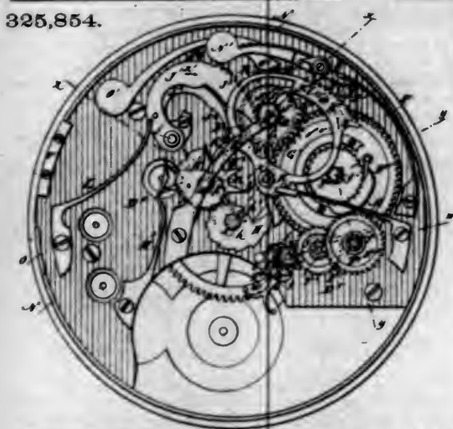
325,854. REPEATING-WATCH. CHARLES MORLEY and EUGENE DUPUIS, New York, N. Y. Filed Mar. 7, 1884. (No model.)

Claim.—1. The combination, with a watch, of a repeating mechanism, gearing for operating the repeating mechanism from the mainspring, and mechanism, substantially as set forth, for disengaging the ratchet-wheel on the spindle of the mainspring from its pawl in the operation of starting the repeating mechanism, substantially as herein shown and described.

2. The combination, with a watch, of a repeating mechanism, a lever or spring for starting the repeating mechanism, gearing for operating the repeating mechanism from the mainspring of the watch, mechanism, substantially as set forth, for disengaging the pawl from the cog-wheel mounted on the spindle of the mainspring, and mechanism, substantially as set forth, for disengaging the winding mechanism from the said cog-wheel, substantially as herein shown and described.

3. The combination, with a watch, of a repeating mechanism, gearing for operating the repeating mechanism from the mainspring of the watch, mechanism, substantially as set forth, for disconnecting the winding-gear from the winding cog-wheel on the spindle of the mainspring, mechanism, substantially as set forth, for throwing the pawl from the

325,854.



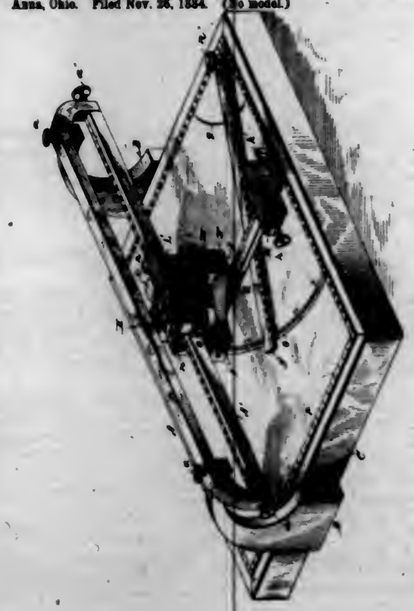
said cog-wheel, and mechanism, substantially as set forth, for throwing the said pawl back against the cog-wheel when the winding mechanism is turned, substantially as herein shown and described.

4. The combination, with a watch, of a repeating mechanism, gearing for operating the said repeating mechanism from the mainspring of the watch, a device for starting the repeating mechanism, the pawl B′ for locking the cog-wheel B on the spindle of the mainspring, which pawl has a shoulder, B^3, and of the spring B^2, substantially as herein shown and described.

5. The combination, with a watch, of a repeating mechanism, gearing for operating the said repeating mechanism from the mainspring of the watch, a device for starting the repeating mechanism, the pawl B′ for engaging with the cog-wheel B on the spindle of the mainspring, which pawl has a projection, B^5, the lever C, and the cog-wheel A^3, engaging with the winding cog-wheel B, substantially as herein shown and described.

6. The combination, with a watch, of a repeating mechanism, means for operating the said repeating mechanism from the mainspring of the watch, a device for starting the repeating mechanism, the pawl B′ for engaging with the winding cog-wheel B on the spindle of the mainspring, which pawl has projections B^5 and B^4, the lever C, the cog-wheel A^3, engaging with the winding cog-wheel B, and the bolt or pin B^6, having a beveled end adapted to engage with the teeth of the cog-wheel A^3, and having its opposite end resting against the inner edge of the projection B^4 of the pawl B′, substantially as herein shown and described.

325,855. GLASS-CUTTING APPARATUS. WILLIAM H. MUNFORD, Anna, Ohio. Filed Nov. 26, 1884. (No model.)



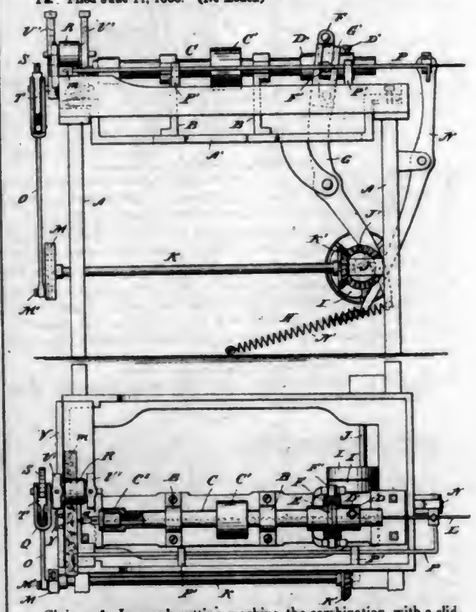
Claim.—1. In a glass-cutting apparatus, the combination, with the base and graduated removable arm A′, of a traveling head-block, E, provided with the friction-rollers and an index-pointer, substantially as and for the purpose set forth.

2. In a glass-cutting device, a traveling head consisting of the pieces E F, centrally pivoted, the upper one being provided with friction-rollers and an index-pointer, the lower one having tongue-grooves at right angles to each other, substantially as and for the purpose set forth.

3. In a glass-cutting device, the combination, with the traveling head consisting of two pieces centrally pivoted and adapted to move together or separately about the pivot, of the movable bar G, having guide-heads moving in the slots in the lower piece of the traveling head, substantially as and for the purpose set forth.

4. In a glass-cutting device, the combination, with the traveling head consisting of two pivoted plates, one of which is slotted on its under side, of the movable bar G and the cutter-head H, adjustably secured to said bar and provided with means for securing a glass-cutter, substantially as and for the purpose set forth.

325,856. CORK-CUTTING MACHINE. JAMES L. MURPHEY, Pittsburg, Pa. Filed June 11, 1885. (No model.)



Claim.—1. In a cork-cutting machine, the combination, with a sliding and revolving tubular shaft, of a rod passed loosely through the same, a pivoted lever connected with the rod passed through the tubular shaft, a cam acting on said lever, a rod for pushing out the cores of corks cut out of the piece of cork by the cutter, which pushing-rod is connected with the rod passed through the cutter, so as to move with the same, substantially as herein shown and described.

2. In a cork-cutting machine, the combination, with the sliding tubular shaft C, of the sleeve D on the same, having a collar, E, the clamping-pieces F, clamped on the collar E of the sleeve D, and having the pivots F′, the lever G, suitably pivoted, and having a forked end, in the prongs of which the pivots F′ are held, a spring connected with the lever G to act on the same, and a cam acting on said lever, substantially as herein shown and described.

3. In a cork-cutting machine, the combination, with a shaft, K, of the lever G, operated from the shaft K by means of suitable gearing and cams, a sliding revolving tubular shaft held in the upper forked end of the lever G, and the upper and lower feed-rollers, R and R′, of which the latter is operated from the shaft K by means of suitable devices, substantially as herein shown and described.

4. A cork-cutting machine provided with a sliding revolving tubular shaft for holding a cutter, a pivoted lever connected with said tubular shaft, and a cam acting on said lever, substantially as herein shown and described.

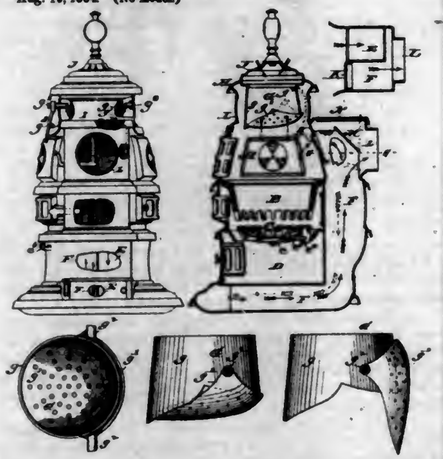
5. In a cork-cutting machine, the combination, with the frame, of a sliding and revolving tubular shaft for carrying the cutter, a pivoted lever connected with the shaft, a cam acting on the lever, a rod passed through the shaft for the purpose of holding the cork in place during the time the same is being cut, a lever connected with said rod, and a cam acting on the lever, substantially as herein shown and described.

6. In a cork-cutting machine, the combination, with a sliding revolving tubular shaft, of a rod passed through the same, a lever connected with the rod, a pushing-rod connected with said lever, and feed-rollers for moving the cork past the cutter on the end of the tubular shaft, the said rods and feeding devices being operated from the same shaft, substantially as herein shown and described.

7. In a cork-cutting machine, the combination, with a shaft, K, of the pivoted lever G, operated from the same, a sliding revolving tubular shaft held on said lever G, the feed-rollers R and R′, the ratchet-wheel S on the shaft of the latter, the rocking lever Q, the pawl T, and the cross-piece M on one end of the shaft K, in which cross-piece the lower end of the rod O is held adjustably, substantially as herein shown and described.

8. In a cork-cutting machine, the combination, with the frame having the partition V, provided with the aperture W, of a sliding revolving tubular shaft carrying the cutter, a rod passed through the shaft, and a pushing-rod having one end opposite the aperture W, substantially as herein shown and described.

325,857. HEATING-STOVE. JOHN O'KEEFE, St. Louis, Mo. Filed Aug. 19, 1884. (No model.)



Claim.—1. A heating-stove having a perforated cover or top, and also a perforated support above or in the upper part of the combustion-chamber, upon which the fuel can be placed, and thence dropped through the combustion-chamber into the fire-pot, as described.

2. A heating-stove having a perforated cover or top, and also a hopper above or in the upper part of the combustion-chamber, said hopper being suitable for receiving fuel, and being provided with a perforated removable bottom, as and for the purposes described.

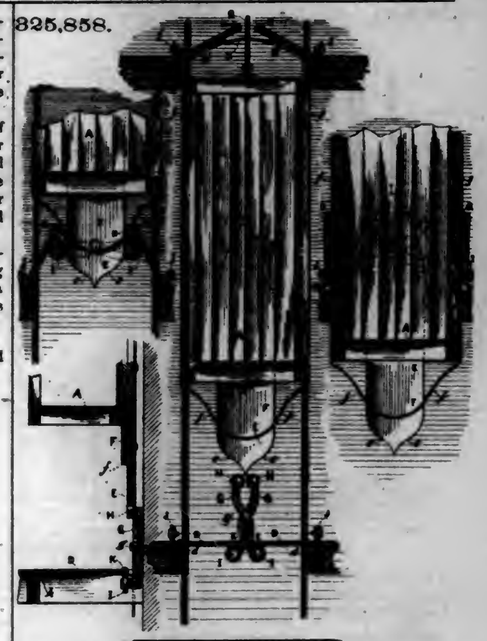
3. The combination, in the herein-described heating-stove, of the fire-pot, the descending flue E, the ascending flue F, the door M, the cover N, and the damper K, said damper being used to close the entrance into the ascending flue, and said door being used to open the descending flue at its upper end, substantially as described.

325,858. DEVICE FOR AUTOMATICALLY OPENING AND CLOSING HATCHES OF ELEVATORS. JOHN T. PAGEY, Philadelphia, Pa., assignor of one-half to Alexander Ewing, same place. Filed July 28, 1885. (No model.)

Claim.—1. The combination of a hatch, a lever-arm, one end of which engages beneath said hatch, and an elevator-car provided with two cam-surfaces, one of which engages with the free end of said lever-arm, but passes freely by said hatch, and the other of which passes freely by the lever-arm, but engages with said hatch when the same is raised beyond an angular position of forty-five degrees to the horizon, the whole operating substantially as set forth.

2. The combination of the hinged hatch D, having at its free end the roller K on one side thereof, the lever-arm G, having at one end a friction-roller, I, of sufficient lateral projection to engage beneath said hatch, and having at its other end a friction-roller, H, whose lateral projection is such as to permit it to pass freely by said hatch, the elevator-car A, the cam-pieces projecting below and behind said car, the cam-surfaces *e* and *f*, whose lateral projection corresponds, respectively, with the rollers H and K, the cam-surfaces *l* behind said car, and the arch-piece C on top of said car, the whole arranged and operating substantially in the manner set forth, whereby the opening and closing of the hatches is effected on the movement of the car in either direction.

325,858.



325,859. NAIL. EDWIN K. PAGE, Worcester, Mass. Filed Oct. 25, 1884. (No model.)



Claim.—1. A nail substantially rectangular in its cross-section, having two of its opposite sides parallel and the remaining two sides tapering or wedge-shaped, and having on said tapering sides teeth so formed as to present cutting-edges in the direction of the point of the tooth for severing the grain of the wood and prevent splitting, substantially as described, and for the purpose set forth.

2. A nail substantially rectangular in its cross-section, having two of its opposite sides straight and parallel, and the remaining two sides having a series of cutting-teeth formed thereon, presenting their cutting-edges toward the point of the tooth, the thickness of said nail being increased at each tooth, and the spaces between the cutting-teeth forming parallel sides, substantially as described, and for the purpose set forth.

3. A nail having a series of steps or shoulders whereby the thickness of the nail is increased by gradations from the point to the head, forming steps or shoulders on the side of the nail, the spaces between the shoulders being placed opposite the shoulders upon the opposite side of the nail, as and for the purpose set forth.

4. A nail having a series of shoulders or steps whereby the thickness of the nail is increased by gradations from the point to the head, each step or shoulder forming a cutting-tooth for severing the grain of the wood, and each of said teeth placed obliquely across the sides of the nail, as and for the purpose set forth.

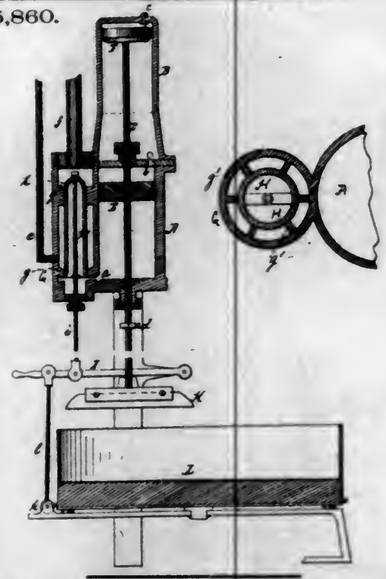
325,860. POWER MECHANISM FOR ACTUATING STEAM-HAMMERS, &c. JOHN W. PERRY, Pittsburg, Pa., assignor of one-half to George E. Williams, same place. Filed Sept. 24, 1884. (No model.)

Claim.—1. In a power-motor for actuating a tool, the combination of a steam cylinder and piston, an auxiliary air-cylinder and piston, said pistons being coupled together, a valve for controlling the port of the steam-cylinder, and an ejector, substantially as and for the purposes specified.

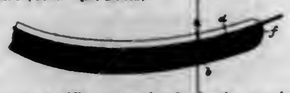
2. The combination, with a steam-cylinder, of a valve-chamber having a steam supply and exhaust port, and a hollow valve which controls the steam-port of the cylinder and is arranged with relation to the steam supply and exhaust ports to form an ejector, substantially as and for the purposes specified.

3. The combination, with a steam-cylinder having a port *a*, of the valve-chamber having the steam-supply pipe *e* and exhaust-pipe *f*, and the hollow cylindrical sliding valve H, having the ports *h h*, substantially as and for the purposes specified.

325,860.



325,861. STIFFENER FOR BUSTLES. EMILIE POHL, Baltimore, Md. Filed Apr. 14, 1885. (No model.)

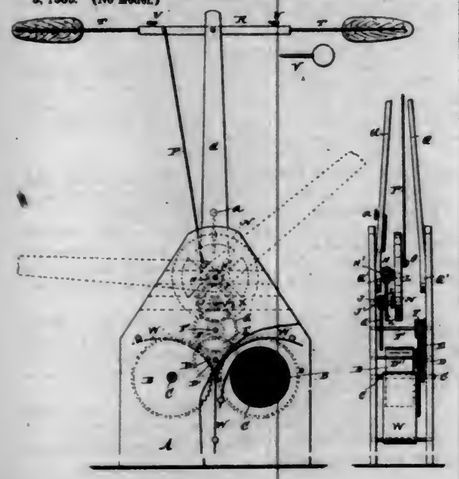


Claim.—1. A stiffener or spring for bustles, panniers, or like articles of personal wear, consisting of a pocket or tube having one side composed of fabric the threads of which are diagonal with respect to the length of the tube, and thereby is elastic when drawn lengthwise, and the other side composed of material that is inelastic when drawn lengthwise, and a stuffing of compact but pliable material, as set forth.

2. A stiffener or spring for bustles, panniers, or like articles of personal wear, consisting of a fabric pocket or tube the material of one side of which is cut straight with respect to one portion of the threads, and the material of the other side cut bias, and a suitable stuffing material filling the said pocket or tube, as set forth.

3. A stiffener or spring for bustles, panniers, or like articles of personal wear, consisting of a fabric pocket or tube having one side composed of fabric the threads of which are diagonal with respect to the length of the tube, and a stuffing of granulated cork, as set forth.

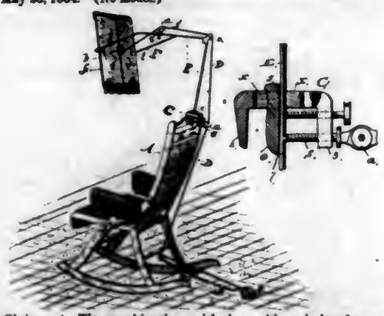
325,862. AUTOMATIC FAN. ALBERT M. RICHARDSON, Charleston, S. C., assignor to himself and George B. Edwards, same place. Filed July 3, 1885. (No model.)



Claim.—1. The combination, with a case, springs, and a train of gearing in the same, of a driving-wheel operated by the train of gearing, standards mounted to swing concentrically with the driving-wheel, a rocking arm for carrying one or more fans pivoted to the standard, and a rod for operating the rocking arm from the driving-wheel, together with a latch or retaining device to hold the standard at its point of adjustment, substantially as herein shown and described.

2. The combination, with the case A, of the short shafts H' J', the cross-pieces L, a train of gearing in the case A, the wheel N on the shaft H', the pivoted standard Q, the lever R, pivoted on the same, and the rod P, for connecting the lever R with the wheel N, substantially as herein shown and described.

325,863. FAN ATTACHMENT. HENRY P. ROBERTS, Jamestown, N. Y., assignor of one-half to Joseph D. King, Brantford, Ontario, Canada. Filed May 23, 1884. (No model.)

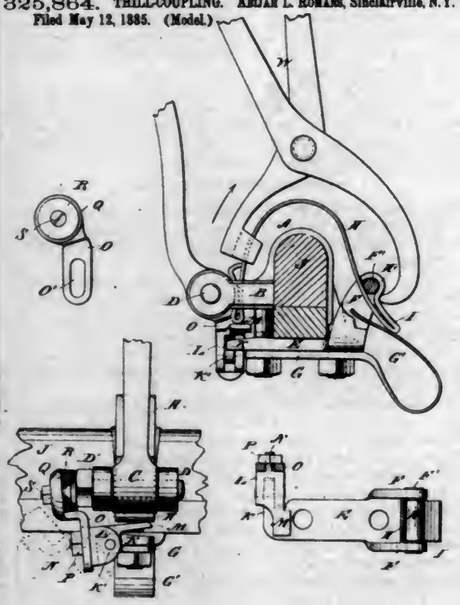


Claim.—1. The combination, with the rocking-chair, of a rectangular wire frame, a spring-roller located at the center of the side of the frame and between the fans, lips formed on the roll, and swinging fans provided with eyelets, and metallic strips adapted to engage the lips and frame, substantially as and for the purpose set forth.

2. The combination, with a rocking-chair, of a rectangular wire frame, F, a spring-roll upon said frame, suitable lips formed on said roll, the fans *f*, provided with metallic strips *l* for attachment to the spring-roll in the lips, the standard E for supporting the frame, and a cord attached to a lever on the chair and to said spring-roller and operating the fans, substantially as herein described.

3. The combination, with a rocking-chair, of a standard, E, suitable guide-pulleys upon the standard, a perforated casting, 8, on the end of the standard, a set-screw adapted to enter the casting, an adjustable wire frame, suitable fans provided with metallic strips, and a spring-roll having lips adapted to engage the strips and secure the fans, substantially as described.

325,864. THILL-COUPLING. ARIJAH L. ROMANS, Sinclairville, N. Y. Filed May 12, 1885. (Model.)



Claim.—1. The combination, with an axle-clip having jaws for holding a thill-coupling bolt, of a spring secured to said clip and having one end rested against one end of a spring extending over the axle, and having its other end rested against the thill-eye, substantially as herein shown and described.

2. The combination, with an axle-clip, of the plate E, having jaws F, the spring H, held on the said jaws, and projecting over the axle and resting against the thill-eye, and the spring G', held on the bottom of the clip and having its free end rested against the spring H, substantially as herein shown and described.

3. The combination, with an axle-clip, of the plate E, having the jaws F, the pin F', held on the same, the spring H, having the loop H', and the lip I, the front end of the spring H resting against the thill-eye, and the spring G', held by the clip and having its free rear end rested against the lip I, substantially as herein shown and described.

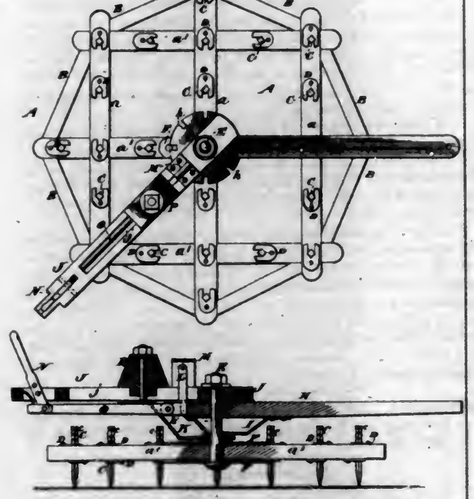
4. The combination, with an axle-clip having jaws between which the thill-eye is pivoted, of a spring resting against the thill-eye, and of a latch pivoted to a plate held by the clip, the latch resting against the end of the coupling-bolt, and of a lug projecting from the latch and resting against the end of the spring resting against the thill-eye, substantially as herein shown and described.

5. The combination, with the axle-clip A, having the jaws B, of the spring H, resting against the thill-eye, the pivoted forked piece L, having the lug M, and the latch O, held on the forked piece L, and having the cushion R, substantially as herein shown and described.

6. The combination, with the axle-clip A, having the jaws B, of the spring G', the plate E, having jaws F, and the spring H, having the latch I, acted on by the spring G', substantially as herein shown and described.

7. The combination, with the axle-clip A, having jaws B, of the plate E, having jaws F, the spring G', the spring H, on which the spring G' acts, the pivoted forked piece L, having the lug M, and the latch O, secured to the forked piece, substantially as herein shown and described.

325,865. ROTARY HARROW. SYLVESTER P. SAYRE, New Martinsville, assignor of one-half to Charles W. Barrack, Wetzel County, W. Va. Filed Oct. 3, 1884. (No model.)



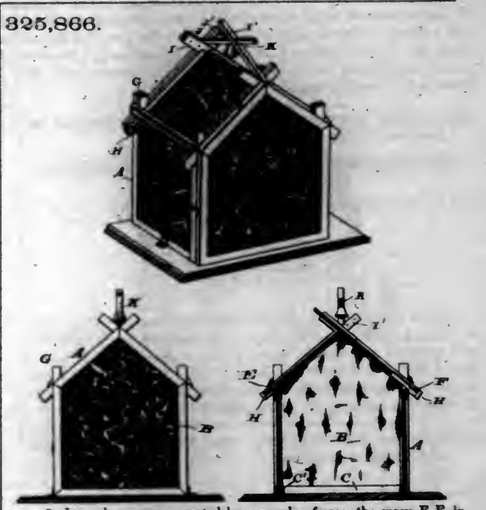
Claim.—1. In a harrow, the combination, with a tooth-bar and rectangularly-notched tooth C, of two V-shaped plates, D D, arranged diagonally opposite to each other on the top and bottom of said tooth-bar, as shown in Fig. 3 of the drawings, and for the purpose specified.

2. The combination, in a rotary harrow, with hand-bar and draft-beam having a notched disk at its inner end, of a pivoted angular catch, L, a pivoted rod, O, and a hand-lever, N, all arranged to operate substantially as described.

325,866. GLASS CASE FOR CLOCKS, &c. JOHN G. SCHULTHEIS, San Francisco, Cal. Filed Feb. 18, 1885. (No model.)

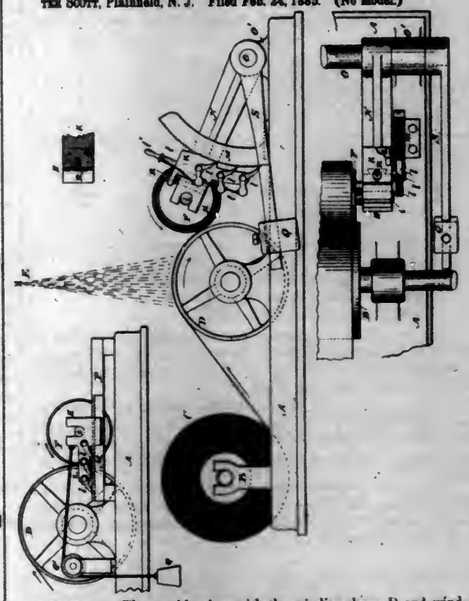
Claim.—1. The means herein described of supporting and keeping the end and side pieces of crystal or glass sheets in frame-work, consisting of the wooden clamps C C' and the thin strips E, intermediate between the clamps C C' and the outer frame, through which the holding-screws pass, constructed, arranged, and operating substantially in the manner as described.

325,866.



2. In a glass case supported by a wooden frame, the ways F F, in which the crown-sheets slide, and the notched keys I I and stops I' I', for keeping the sheets in position, as described.

325,867. DAMPENING-MACHINE FOR PRINTING-PRESSES. WALTER SCOTT, Plainfield, N. J. Filed Feb. 24, 1885. (No model.)



Claim.—1. The combination, with the winding-drum D and winding-roller F, of the journal-boxes H, stock K, pawl *l*, and rack M, substantially as set forth.

2. The combination, with the winding-drum D and winding-roller F, journal-boxes H, stock K, and rack M, of two or more pawls pivoted upon the stock, and catching successively upon the rack-teeth, substantially as set forth.

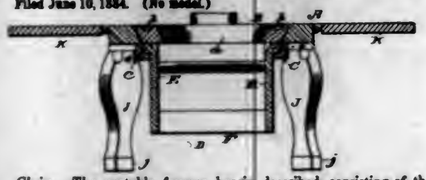
3. The combination, with the winding-drum D, winding-roller F, journal-boxes H, arms N, and cross-shaft O, of the stocks K, rack M, the pawls *l* upon the stocks, the cords or chains *t*, and handle *t'*, whereby the pawls can be all lifted together, substantially as specified.

4. The combination, with the winding-drum D and winding-roller F, of the arms N, the cross-shaft O, to which said arms are rigidly connected, and the journal-boxes H, for the winding-roller F, one of which is adjustable in a direction at right angles to one arm N, substantially as specified.

5. The combination, with the winding-drum D and winding-roller F, of arms N, a cross-shaft, O, to which said arms are rigidly connected,

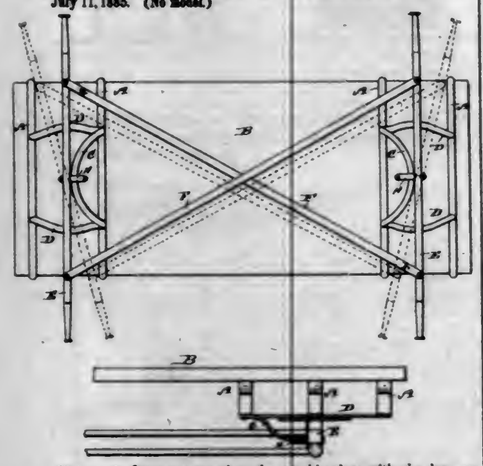
the journal-boxes H, for the winding-roller F, one of which is constructed with a dovetail which fits a corresponding slot in the stock K at the end of one arm N, and the screw R, to adjust said journal-box in a direction at right angles to one arm N, so as to give an equal pressure upon the paper as it is wound, substantially as specified.

325,868. KETTLE-HOLDER. ELIZABETH A. SEELY, Bloomfield, Ind. Filed June 10, 1884. (No model.)



Claim.—The portable furnace herein described, consisting of the top plate, A, having detachable legs J, and provided on its under side with guides C and near its rear end with a smoke-hole, A', and a fire-pot having at its upper opposite edges ribs *e*, fitted to and movable on the guides E, whereby the pot is supported and may be conveniently detached from the top plate, substantially as set forth.

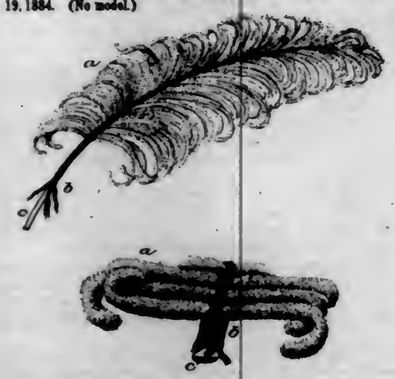
325,869. WAGON-GEARING. HENRY SEEMAN, Durham, N.C. Filed July 11, 1885. (No model.)



Claim.—1. In wagon-gearing, the combination, with the box or frame B, of the segmental guides C, the axles E, the clips H for holding the axles to the guides C, and the crossed bars F, uniting the axles, substantially as herein shown and described.

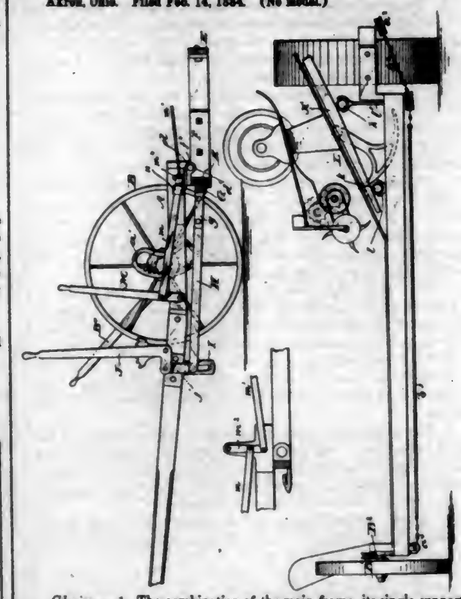
2. In a wagon-gearing, the combination, with the box or frame B, of the segmental guides C, the axles E, the clips H for holding the axles to the guides C, the guides D at the sides of the guides C, and the crossed bars or braces F, uniting the axles, substantially as herein shown and described.

325,870. ARTIFICIAL FEATHER. FRANCIS SEYMOUR, Paterson, N. J., assignor of one-half to John Hinchliffe, Jr., same place. Filed July 19, 1884. (No model.)



Claim.—The combination of the wire chenille *a*, with the single tapering flexible quill *c*, against one side of which quill *c* the wire chenille *a* is braided with the fibrous material *b*, substantially as specified.

325,871. GRAIN-BINDING HARVESTER. JOHN F. SHERERLING, Akron, Ohio. Filed Feb. 14, 1884. (No model.)

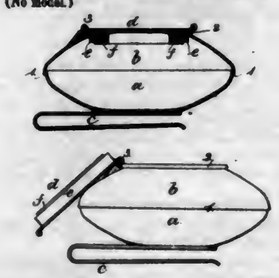


Claim.—1. The combination of the main frame, its single supporting and main drive wheel, the grain-platform connected to the main frame at or near the rear inner corner by a single transverse hinge arranged to support the main wheel in an upright position and allow said platform to rock, the brace connected as described, a binding apparatus located on the inner end of said hinged platform-frame, and means for adjusting the same, substantially as described.

2. The combination of the main or wheel frame, the platform-frame connected with said main frame by a transverse hinge at or near the inner rear corner of the latter, the adjustable binder-frame located on the inner end of said hinged platform-frame, and a jointed link connecting said binder-frame with an adjusting lever on the main frame, substantially as described.

3. In a harvesting-machine having a single supporting-wheel for the main frame, the grain-platform connected to said main frame at or near the inner corner of the latter by means of a single transverse hinge adapted to hold the drive-wheel frame in proper working position, in combination with the braces H and N, rigidly secured at their rear ends to said platform, and at their other ends connected to the rigid tongue or main frame by an adjustable connection adapted in connection with said transverse hinge to support said platform and allow the same to be tilted, substantially as described.

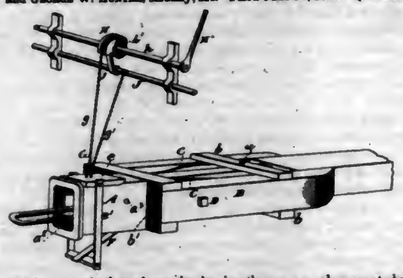
325,872. ARTIST'S PALETTE-CUP. HAROLD SERRELL, Plainfield, N. J., assignor to Newman E. Montross, New York, N. Y. Filed Apr. 13, 1885. (No model.)



Claim.—1. The combination, with an elliptical-shaped cup and clip for connecting said cup to the palette, of a cover hinged to the upper part of the cup, and a flexible packing connected to said cover, substantially as specified.

2. The combination, in a palette-cup, with the two-part elliptical cup *a b* and clip *c*, of the cover *d*, hinged at 3, a packing, *e*, formed of a ring or disk of rubber or other flexible material, and a plate or ring of metal, *f*, for securing said packing to the cover, substantially as set forth.

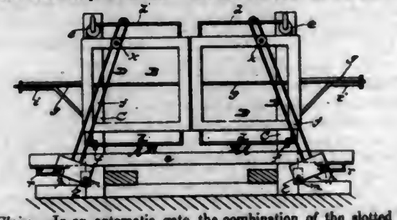
325,873. CAR-COUPLING. RICHARD S. SHAFFER, JOHN K. ADAMS, and GEORGE W. HUNTER, Albany, Mo. Filed June 30, 1885. (No model.)



Claim.—1. A pivoted coupler having the cap *e*, and connected with a spring, F, by the yoke *e'*, whereby the coupler will yield to the link, allow it to enter, and then be forced down into the link-slot by said spring, as described.

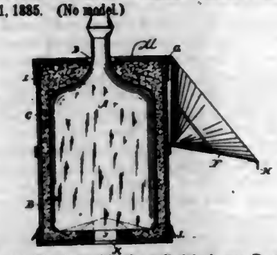
2. The combination, with a pivoted coupler, of a top chain having one long and one short branch, a shaft having cam and crank-arm, and a shaft having detent, whereby the brakeman, by operating the crank-arm, can raise the coupler out of and above the link, raise a detent to fit in a notch under cam, and hold up the coupler, as described.

325,874. RAILROAD-GATE. JOHN A. SMITH, St. Paul, Ark., assignor of one-half to Isaac Shelton Smith, William Ake Marrs, Elbert Sawyers Smith, John Bunyan Peach, William Harrison Belinger, James Madison Williams, George Washington Rassie Smith, Zachariah Taylor Reynolds, and William Benjamin Sumner. Filed Apr. 13, 1885. (No model.)



Claim.—In an automatic gate, the combination of the slotted levers D, provided at their lower ends with the rods *l p*, the gate-sections having the upper and lower guide-rods, *d*, the posts C, provided with the pulleys *e* and hooks or staples *f*, the brackets *i*, adapted to receive the rod *g* on the gate-sections, and the rails hinged at *a* and provided with the cross-ties *c*, having the slotted bearings *r* to engage the rods of the levers D, the whole arranged as shown, described, and for the purpose specified.

325,875. BOXED DEMIJOHN. GEORGE L. SOLTER, Philadelphia, Pa. Filed May 21, 1885. (No model.)

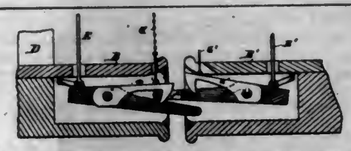


Claim.—In combination with the cylindrical case B and the body of the bottle inclosed therein, with its neck projecting through the top of the box, a cover of sheet metal conical in form, having its base of substantially the dimensions of the case-top and resting thereon, and with its pointed top covering the neck of the bottle, all as set forth.

325,876. CAR-COUPLING. FRANK H. STANFORD, Elizabeth, N. J., assignor of one-fourth to John H. Corwin, same place, and Benjamin S Clark, New York, N. Y. Filed July 18, 1884. (No model.)

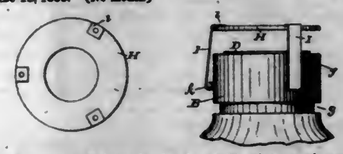
Claim.—1. A coupler composed of link A, with opening *f*, hook *a*, rod C, and chain G, substantially as set forth, and for the purpose specified.

325,876.



2. A coupler composed of link A, hook *a*, rod C, chain G, and rod E, substantially as set forth, and for the purpose specified.

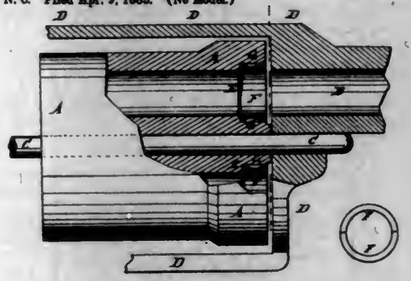
325,877. FRUIT-JAR. ELIZABETH A. TAYLOR, Baltimore, Md. Filed June 12, 1885. (No model.)



Claim.—1. A fruit-jar having in combination a neck provided with an external annular groove, *g*, a cover, D, a metal top plate, H, and open coil-shaped hooks *k*, each having a flexible shank, with its upper end bent and forming a right-angle part, *l*, which rests on the upper surface of the said top plate and is secured thereto, as set forth.

2. A fruit-jar having in combination a neck provided with an external annular groove, *g*, a cover, D, a metal top plate, H, having notches or gains I' on its rim, and hooks, each having a flexible shank with its upper end bent and forming a right-angle part, *l*, which rests on the upper surface of the said top plate and is secured thereto, while the downward-extending part occupies one of the said notches or gains, as set forth.

325,878. GAS-CHECK FOR FIRE-ARMS. JOHN E. TYLER, Rozebel, N. C. Filed Apr. 9, 1885. (No model.)



Claim.—1. In a revolving fire-arm, the combination, with the cylinder and barrel, of a gas-check made in two longitudinal sections, a recess being formed at the juncture of the cylinder and barrel bores to receive said gas-check, substantially as set forth.

2. In a revolving fire-arm, the tubular gas-check formed in two longitudinal sections, the meeting edges of said sections fitting within each other, substantially as set forth.

3. In a fire-arm, the tubular gas-check formed in two longitudinal sections grooved on their outer surfaces, substantially as set forth.

4. As an improved article of manufacture, a tubular gas-check for revolving fire-arms, formed in two longitudinal sections and provided with a groove around its outside and beveled inward at one end, substantially as set forth.

5. In a fire-arm, the tubular gas-check formed of two longitudinally-divided sections, substantially as set forth.

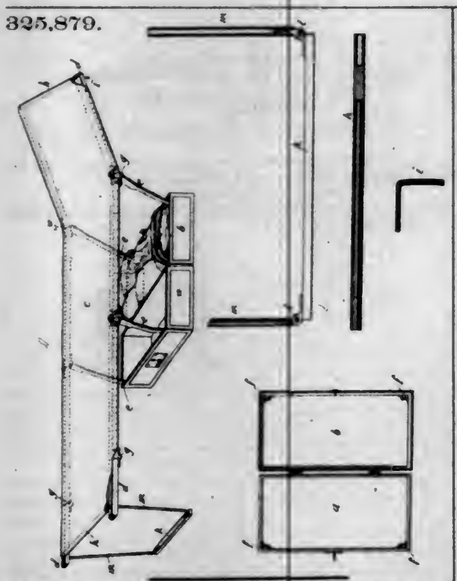
6. In a revolving fire-arm, the combination, with the barrel B, having an annular recess, E', at the rear end of its bore, the cylinder A, and the frame D, of the gas-check F, made in two parts and placed loosely in the said recess of the barrel, substantially as herein shown and described, whereby gas generated by the discharge of a cartridge will be prevented from escaping through the space between the revolving cylinder and the barrel, as set forth.

325,879. COMBINED TRUNK AND CAMP-BEDSTEAD. GEORGES VUITTON, Paris, France. Filed June 17, 1885. (No model.) Patented in France Jan. 19, 1885, No. 166,513.

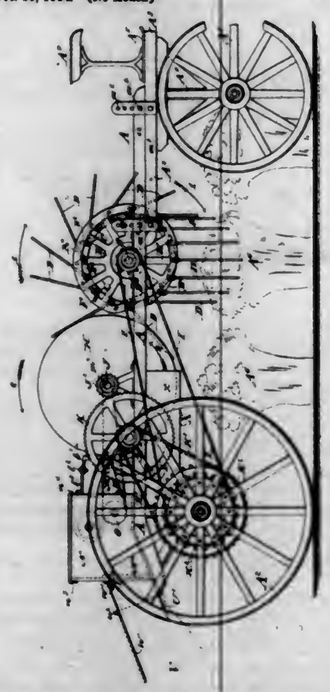
Claim.—1. The combination of the trunk *a b*, having inner corner sheaths, *f f*, with the cot having side bars, *d d*, hinged legs *e e*, and end support, *m k*, substantially as herein shown and described.

2. The sacking *c*, combined with sectional jointed side bars, *d d*, transverse stretchers *h h*, hinged middle legs, *e e*, and end support, *m k*, for use in connection with a trunk, *a b*, having sheaths *f f*, as set forth.

325,879.



325,880. COTTON-HARVESTER. CHARLES L. WALTER, Boston, Mass. Filed Dec. 10, 1884. (No model.)



Claim.—1. In a cotton-harvester, the following elements in combination: a suitable supporting-frame, one or more series of rotating picker-fingers mounted on the frame, a series of disks rotating behind the fingers, and between the brushing sides of which the fingers pass as they rise from the cotton-plant, stripping-plates acting to remove the picked cotton from the disks, a series of toothed belts running between the stripper-disks, and a series of intermediate toothed belts running between the first-named belts and behind the stripper-disks, said belts acting to transfer the picked cotton to a receiver, and means within the receiver for removing the cotton from the belts, substantially as herein set forth.

2. In cotton-harvesters, the picker-fingers fixed in transverse rows on bars journaled in end plates of a rotating frame, and mechanism for giving said fingers an independent sidewise movement as they pass through the cotton-plant, substantially as herein set forth.

3. In a cotton-harvester, the combination, with the picker-fingers D, fixed on bars C, journaled in end plates, B' B^2, of a rotating frame, and cranks F on the bars C, of a cam, E, having the lower portion of the groove *e* provided with a notched base portion, *e'*, whereby the picker-fingers are maintained in about vertical positions as they pass through the plants and at the same time have imparted to them a sidewise movement, substantially as herein set forth.

4. In a cotton-harvester, the combination, with the picker-fingers D, fixed on bars C, journaled in end plates, B' B^2, of a rotating frame, and cranks F on the bars C, of a cam having a notched portion, *e'*, on which the ends of the cranks act, and springs tending to carry the bars C toward the cam, whereby the picker-fingers are guided through the plants and at the same time have imparted to them a lateral reciprocation, substantially as herein set forth.

5. In a cotton-harvester, the combination, with the picker-fingers D, fixed on bars C, journaled in end plates, B' B^2, of a rotating frame, and cranks F on the bars C, of a fixed cam, E, having a groove, *e*, sheped substantially as specified, and said groove also having a notched portion, *e'*, and springs acting to force the bars C toward the cam E, whereby the fingers are maintained in about vertical positions as they pass through the plants, and at the same time have imparted to them a lateral reciprocation, substantially as herein set forth.

6. In a cotton-harvester, the combination, with the picker-fingers D, secured to bars C, journaled in end plates, B' B^2, mounted on a shaft, B, of the collars c' c^2 c^3, and springs C on the bars C, substantially as herein set forth.

7. In a cotton-harvester, the combination, with the picker-fingers D, secured to bars C, journaled in end plates, B' B^2, of a rotating frame, of the guide-plate G, substantially as herein set forth.

8. In a cotton-harvester, the picker-fingers D, constructed with their portions which enter the plants made in triangular form in cross-section and fixed to supporting-bars with one angle facing their direction of movement and with their two forward diverging faces provided with grooves D' having teeth D^2 set therein with their points lying at or below the general plane of the faces of the fingers, substantially as herein set forth.

9. In a cotton-harvester, the picker-fingers D, constructed with their portions which enter the plants made triangular in cross-section and with the apex of one of the angles toward the front fixed to bars which are journaled in a rotating frame, and said fingers having teeth D^2 set in grooves, with their points lying within the general plane of the face of the finger, and means for rotating the finger-bar frame, substantially as herein set forth.

10. In a cotton-harvester, the combination, with the picker-fingers D, having teeth D^2, and rotating in one direction, of the stripper-disks H, having brush material H' on their opposing faces, between which the fingers D pass, and said disks H rotating in the opposite direction, whereby the brushes will act on the fingers as they rise from the plant in the direction of the length of the teeth and toward the points of the teeth, substantially as herein set forth.

11. In a cotton-harvester, the combination, with the rotating picker-fingers D, and the stripper-disks H, rotating in reverse directions, as specified, of a cam acting to impart a quick movement to the fingers as they pass between the stripper-disks, substantially as herein set forth.

12. In a cotton-harvester, the combination, with the rotating picker-fingers D and rotating-disks H, of stripper-plates acting to remove the picked cotton from the disks, and toothed belts M, running between the plates and receiving the cotton from the stripper-plates and conveying it to a receiver, substantially as herein set forth.

13. In a cotton-harvester, the combination, with the stripper-disks H and conveyer-belts M, of stripper-plates extending above the upper sides of belts M and supported at their forward ends by the passage of the disk-shaft through them, substantially as herein set forth.

14. In a cotton-harvester, the combination, with the stripper-disks H and cooveyer-belts M, of stripper-plates L, made broad or deep to extend above and below the opposite running sides of the belts, substantially as herein set forth.

15. In a cotton-harvester, the combination, with the stripper-disks H and conveyer-belts M, of stripper-plates L, extending above and below the opposite running sides of the belts M, and hung at their forward ends on the shaft J of the stripper-disks, substantially as herein set forth.

16. In a cotton-harvester, the combination, with the stripper-disks H and conveyer-belts M, of stripper-plates L, extending above and below the opposite running sides of the belts M, and hung at their forward ends on the shaft J of the stripper-disks, and connected at their rear ends by bars l' to a transverse bar, l^2, substantially as herein set forth.

17. In a cotton-harvester, the stripper-plates constructed in pairs L L, having forward holes, L', and connected at their shanks by a tie-bar, l^2, substantially as herein set forth.

18. In a cotton-harvester, the combination, with the stripper-disks H, stripper-plates L, and shaft J, of the washers L^2, substantially as herein set forth.

19. In a cotton-harvester, the stripper-disks H, mounted rigidly on the shaft J, the washers L^2 on the shaft next the body portions of the disks, the stripper-plates L, held on the shaft outside the washers, the bushings m^2 on the shaft between the plates L, and the belts M, running over the bushings m^2, all combined and operating substantially as herein set forth.

20. In a cotton-harvester, the combination, with the stripper-disks H, stripper-plates L, and belts M, running between the disks H and running over a rear roller, O, of intermediate belts, M', running over roller O and over a roller, O', located behind the disks H, substantially as herein set forth.

21. In cotton-harvesters, the combination, with the rotating picker-fingers D, stripper-disks H, stripper-plates L, and conveyor-belts M M', of the brush Q, substantially as herein set forth.

22. In cotton-harvesters, the combination, with the brush Q and toothed belts M M', of the stripper-plates R S, substantially as herein set forth.

23. In cotton-harvesters, the cotton-receiving box N, constructed with a sloping floor having slots or openings T, substantially as herein set forth.

24. In cotton-harvesters, the cotton-receiving box constructed with a sloping floor having slots or openings T, with rear openings U, adapted to be closed by a vertically-sliding door, N', and with rods W, having hooks *w*, on which to hang the bags to receive the cotton, substantially as herein set forth.

325,881. COMPOSITION OF MATTER FOR THE MANUFACTURE OF AXLE-BEARINGS. ISAAC P. WENDELL, Philadelphia, Pa., assignor to Charles P. Tasker, same place. Filed Feb. 14, 1885. (No specimens.)

Claim.—A composition of matter consisting of talc or soapstone and silicate of soda, substantially as above set forth.

325,882. COMPOSITION OF MATTER FOR THE MANUFACTURE OF AXLE-BEARINGS, &c. ISAAC P. WENDELL, Philadelphia, Pa., assignor to Charles P. Tasker, same place. Filed Feb. 14, 1885. (No specimens.)

Claim.—A composition of matter consisting of asbestus, talc or soapstone, and silicate of soda, substantially as above set forth.

325,883. COMPOSITION OF MATTER FOR THE MANUFACTURE OF AXLE-BEARINGS, &c. ISAAC P. WENDELL, Philadelphia, Pa., assignor to Charles P. Tasker, same place. Filed Feb. 14, 1885. (No specimens.)

Claim.—A composition of matter consisting of asbestus, litharge, and silica of soda, substantially as set forth.

325,884. COMPOSITION OF MATTER FOR THE MANUFACTURE OF AXLE OR JOURNAL BEARINGS. ISAAC P. WENDELL, Philadelphia, Pa., assignor to Charles P. Tasker, same place. Filed Feb. 14, 1885. (No specimens.)

Claim.—A composition of matter consisting of talc or soapstone, litharge, and silicate of soda, substantially as above set forth.

325,885. COMPOSITION OF MATTER FOR THE MANUFACTURE OF AXLE-BEARINGS, &c. ISAAC P. WENDELL, Philadelphia, Pa., assignor to Charles P. Tasker, same place. Filed Feb. 14, 1885. (No specimens.)

Claim.—A composition of matter consisting of asbestus, litharge, plumbago, and silicate of soda, substantially as set forth.

325,886. COMPOSITION OF MATTER FOR THE MANUFACTURE OF AXLE-BEARINGS, &c. ISAAC P. WENDELL, Philadelphia, Pa., assignor to Charles P. Tasker, same place. Filed Feb. 14, 1885. (No specimens.)

Claim.—A composition of matter consisting of talc or soapstone, litharge, plumbago, and silicate of soda, substantially as set forth.

325,887. COMPOSITION OF MATTER FOR THE MANUFACTURE OF AXLE-BEARINGS, &c. ISAAC P. WENDELL, Philadelphia, Pa., assignor to Charles P. Tasker, same place. Filed Feb. 14, 1885. (No specimens.)

Claim.—A composition of matter consisting of asbestus, litharge, sulphur, and silicate of soda, substantially as above set forth.

325,888. COMPOSITION OF MATTER FOR THE MANUFACTURE OF AXLE-BEARINGS. ISAAC P. WENDELL, Philadelphia, Pa., assignor to Charles P. Tasker, same place. Filed Feb. 14, 1885. (No specimens.)

Claim.—A composition of matter consisting of asbestus, talc or soapstone, sulphur, plumbago, and silicate of soda, substantially as set forth.

325,889. COMPOSITION OF MATTER FOR THE MANUFACTURE OF AXLE-BEARINGS, &c. ISAAC P. WENDELL, Philadelphia, Pa., assignor to Charles P. Tasker, same place. Filed Feb. 14, 1885. (No specimens.)

Claim.—A composition of matter consisting of asbestus, litharge, plumbago, sulphur, and silicate of soda, substantially as set forth.

325,890. COMPOSITION OF MATTER FOR USE AS INSULATING MATERIAL. ISAAC P. WENDELL, Philadelphia, Pa., assignor to Charles P. Tasker, same place. Filed Feb. 14, 1885. (No specimens.)

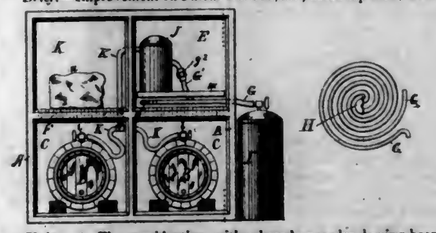
Claim.—A composition of matter consisting of asbestus, antimony, sulphur, and silicate of soda, substantially as set forth.

325,891. COMPOSITION OF MATTER FOR USE AS INSULATING MATERIAL. ISAAC P. WENDELL, Philadelphia, Pa., assignor to Charles P. Tasker, same place. Filed Feb. 14, 1885. (No specimens.)

Claim.—A composition of matter consisting of asbestus, litharge, antimony, and silicate of soda, substantially as set forth.

325,892. BEER-COOLING APPARATUS. FRANK WIDMER, Newark, N. J., assignor of one-half to Andrew Albright, same place. Filed July 1, 1885. (No model.)

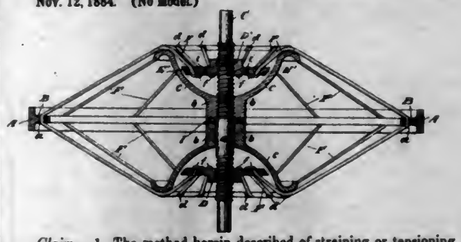
Brief.—Improvement on Patent No. 315,699, dated April 14, 1885.



Claim.—1. The combination, with a beer-keg cooler having beer-chambers C and ice-chambers E, of the coil formed of double parallel spiral pipes applied to the floor of the ice-chamber, and connected, respectively, with the gas-receiver I and kegs B, as and for the purpose set forth.

2. In a beer-cooler having beer-keg chambers C and ice-chambers E, the combination, with a grated floor beneath one of the ice-chambers, of the double spiral coil formed of pipes G G', connected together at the center of the coil, the coil being covered with a removable grating, *m*, and the pipe G being extended through the wall A to connect with the gas-receiver I, substantially as and for the purpose set forth.

325,893. WHEEL. SAMUEL T. WILLIAMS, Red Bank, N. J. Filed Nov. 12, 1884. (No model.)



Claim.—1. The method herein described of straining or tensioning the spokes of a wheel by the rotation of nuts on the axle, operating to force the spoke-disks toward each other, and thus drawing the spokes over the flaring rims of the hubs, substantially as herein shown and described.

2. In a wheel having flexible spokes connecting the tire or felly with the axle, the combination of hubs having flaring ends bearing against the spokes, and disks to which the spoke ends are fastened, with nuts on the axle adapted to be rotated, to move said disks toward each other, and thus tension the spokes without varying the proximity of the hubs or increasing the spread of the spokes, substantially as herein shown and described.

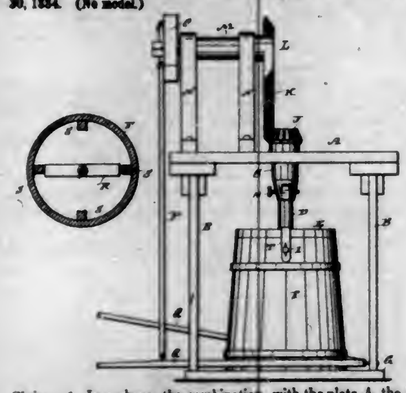
3. The combination, in a wheel, of an axle having a threaded nib, a hub in two parts, each composed of a sleeve surrounding the axle, and a flaring or dish-shaped end, a conical nut engaging the threaded nib of the axle at each end, a disk or ring supported by each nut, and a spoke series connected to the tie or felly and the disks or rings, substantially as herein shown and described.

4. In a tension-wheel, the axle C, provided with the two spoke-supporting portions, each consisting of a sleeve, *b*, having the outwardly-flaring dish-shaped flanges *c*, and a series of spoke-retaining notches, *d*, combined with the spoke-receiving rings or disks E E', located in the

dish-shaped portion, and means for moving and holding said rings or disks in place, substantially as shown, and for the purpose specified.

5. In a tension-wheel of substantially the construction described, the combination of one of the spoke-receiving disks and its nut with a spring or band of rubber, or other flexible material, coiled in a groove between the bearing of the disk and nut, as set forth, for the purposes described.

325,894. CHURN. ELI H. WOOD, Cherry Valley, Mo. Filed Aug. 30, 1884. (No model.)



Claim.—1. In a churn, the combination, with the plate A, the legs B, and the cream box or tub F, of the shaft M, the cross-piece O, the foot-levers Q, the connecting-rods P, the segment-rack K, the pinion J, and the shaft C, journaled in the plate A and connected with the dasher, substantially as herein shown and described.

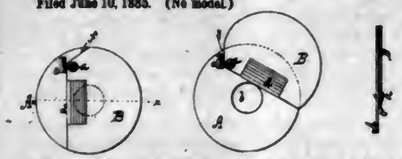
2. In a churn, the combination, with the plate A, the legs B, and the cream box or tub F, of the shaft M, the cross-piece O, the foot-levers Q, the connecting-rods P, the segmental rack K, the shaft C, journaled in the plate A and having its lower end forked, the bevel-pinion J on the shaft C, and the dasher having its shaft connected with the forked end of the shaft C, substantially as herein shown and described.

325,895. PIPE-COUPLING. JAMES AGNEW, Allegheny, and WILLIAM AGNEW, Pittsburg, Pa. Filed June 18, 1885. (No model.)



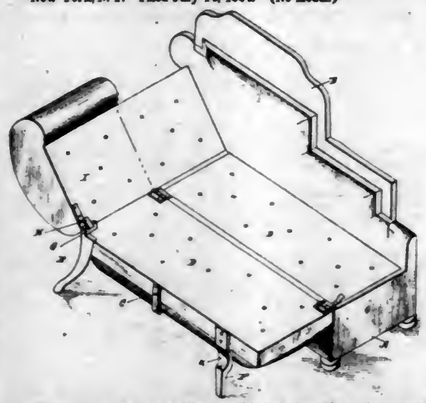
Claim.—In a pipe-coupling, the combination, with the screw-threaded pipe ends, of an interiorly-threaded sleeve to receive said ends, a central ring arranged within said sleeve and having beveled ends, as described, and yielding or elastic rings or gaskets interposed between the ends of the central ring and the pipe ends, substantially as and for the purpose set forth.

325,896. CIGAR-TIP CUTTER. CHARLES S. ALDEN, Rochester, N. Y. Filed June 10, 1885. (No model.)



Claim.—A device for cutting cigar-tips, consisting of the two disks A B, pivoted together at one edge, the disk A being provided with a central hole to admit the cigar-tip, and with a lug, *c*, struck out from its body near the pivot, the disk B being squared on one side, having a cutter, *d*, which sweeps over the hole, and provided above the pivot with a backward bevel, *f*, whereby the cutter-disk is stopped in either direction at the end of its sweep by striking the lug, as set forth.

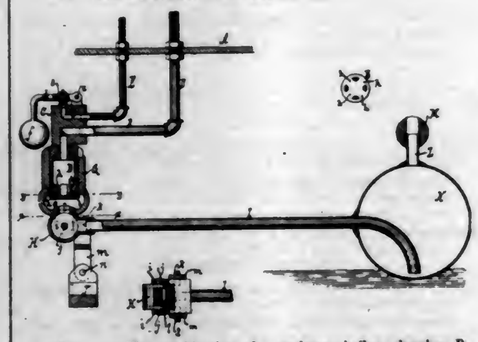
325,897. BED-LOUNGE. OSCAR ALEXANDER and MAX ALEXANDER, New York, N. Y. Filed July 14, 1884. (No model.)



Claim.—1. In a bed-lounge, a hinged extending piece provided with an angular curved leg on which is formed an extension or flange, in combination with a head having on it a catch engaging with the extension on the leg.

2. A bed-lounge having a hinged extension provided at the foot with a leg having an indent or concave recess, and at the head an angular curved leg with an extension at its base, and a head having a catch which engages with the extension on the leg, the hinged extension folding on the body of the device to form the lounge and out from it to form the bed.

325,898. BOILER-FEED AND ALARM. THOMAS BARBER, Flatbush, N. Y. Filed May 28, 1885. (No model.)



Claim.—1. The combination of a stationary hollow chamber, B, having a pipe, D, for connecting with a feed-pump, a valve, G, sliding vertically on the chamber and having a valve-seat at its lower end, and a rotary hollow valve pivoted below the said valve-seat, with the pipe I, connected with the rotary valve, and the float K, having an opening through which steam can enter, and with which float the said pipe communicates, substantially as described.

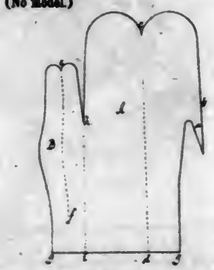
2. The combination of a hollow stationary chamber, B, having an alarm-valve, an alarm-pipe, E, and a pipe, D, for connecting with a feed-pump, a valve, G, sliding vertically on the chamber and having a

valve-seat, and a rotary valve seated upon said valve-seat, with the pipe I, connected with the rotary valve, and a float, K, having an opening through which steam can enter and with which float the said pipe communicates, substantially as described.

3. The combination, substantially as herein described, of the float, the pipe or opening admitting steam into the float, the tubular stem I, the pivoted head H, the valve G, slidable vertically on the chamber B and the steam-pipe D.

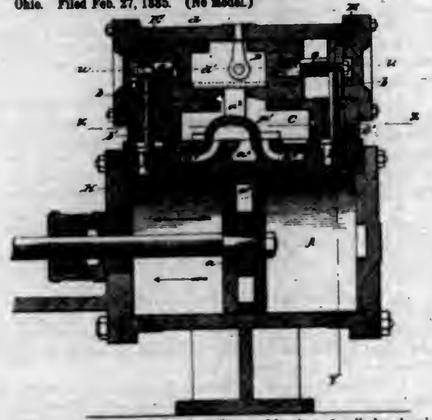
4. The combination, substantially as herein described, of the float, the pipe or opening admitting steam into the float, the tubular stem I, the pivoted head H, the valve G, slidable vertically in chamber B, the lever *d*, the alarm-valve *c*, and the alarm-pipe E.

325,899. GLOVE. RUDOLPH F. BARTEL, Jersey City, N. J. Filed Nov. 20, 1884. (No model.)



Claim.—As a new article of manufacture, a mitten composed of a single blank having the gore *a* on the side opposite to the thumb portion, said blank being folded on the lines *c d e f* and *h i* to bring the gore *a* into the thumb portion of the mitten, and the abutting edges of the blank being united by means of a main seam, *c e*, extending from the tip *c* of the little-finger end of the mitten over the rest of the fingers to the tip *e* of the thumb, and a return-seam, *e g*, extending from the tip of the thumb to the tip of the gore *a*, and thence in a separate line to the hand-opening of the mitten, substantially as described.

325,900. STEAM-ACTUATED VALVE. JOHN S. BARTLETT, Akron, Ohio. Filed Feb. 27, 1885. (No model.)



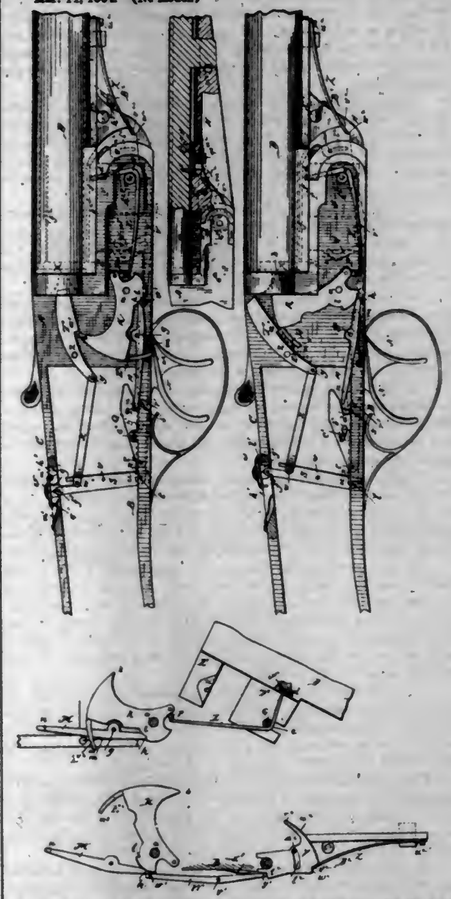
Claim.—1. In a steam-engine, the combination of cylinder A, piston *a*, slide-valve *a'*, having lug a^3, tappets B, having stems *b*, heads E, provided with connecting-piece *e*, piston D, having channels *f f* and *g g*, and holes *f' f'* and *g' g'*, cylinder *d*, having channel g^2, and the passages f^2, g^2, and g^4, substantially as described and shown, and for the purpose set forth.

2. In a steam-engine, the combination of the tappet B, actuated by the piston at the ends of its stroke, the head E, receiving rotary motion from said tappet-valve, connecting-piece *e*, and piston D, provided with channels for admitting steam behind it, substantially as shown and described.

3. In a steam-engine, the combination of the tappet B, head E, connecting-piece *e*, piston D, receiving rotary motion from said tappet, and having channels *f* and *g* and holes *f''* and *g'* therein, cylinder *d*, having channel g^2, and the passages f^2, g^2, and g^4, substantially as described and shown.

4. The combination, with a steam piston and cylinder having tappets B, of a set of ports and valves, and rotary piston D, all arranged obliquely to the axis of the cylinder to permit said tappets to operate on one side of the axis of the rotary piston, substantially as described and shown.

325,901. BREECH-LOADING FIRE-ARM. ERNEST A. BARRETT, Boston, Mass., assignor to himself and Nathaniel M. Lowe, same place. Filed Mar. 11, 1884. (No model.)



Claim.—1. In a breech-loading gun, in combination with the hammer and its sear, a plate, Q, adapted to engage with the sear and engaging with a pin, *c'*, and connected to a lever, S, by which the plate Q can be moved to engage with said sear to lock it with the hammer when in its cocked position.

2. In a breech-loading gun, the combination, with the hammer and its trigger, of a plate, Q, having a projection, *s'*, to engage with a slot, *r*, of said trigger, and engaging with a pin, *c'*, and connected to a lever, S, by which the plate Q can be moved to engage with said trigger to lock it when the hammer is in its cocked position.

3. In a breech-loading gun, the combination, with the hammer, its sear and trigger, of a plate, Q, having a slot, *q*, to engage with an arm, *n*, of the sear, a projection, *s'*, to engage with a notch, *r'*, in said trigger, and engaging with a pin, *c'*, and connected to a lever, S, by which the plate Q can be moved to engage with said sear and trigger to lock them when the hammer is in its cocked position.

4. In a breech-loading gun, the combination, with the barrel, of a bar, R, provided at one end with the plate Q to engage with the sear, said bar being located and arranged to slide in the breech-block, and having its other end, V, in position for the barrel as it is swung down to abut against said end V and move said bar forward, for the purpose specified.

5. In a breech-loading gun, in combination with the hammer and its sear, of a plate, Q, having a slot, *q*, to engage with arm *n* of sear, and provided with a slot, *b'*, engaging with and arranged to slide over a pin, *c'*, and connected to a lever, S, by which the plate Q can be moved to engage with said sear to lock it and the hammer when in its cocked position.

6. In a breech-loading gun, in combination with the sear M, of a plate, Q, adapted to engage with the sear and connected to an operating-lever, S, which connects with a lever, T, having a shoulder, *a'*, for

abutment and locking of the hammer, substantially as and for the purpose specified.

7. In a breech-loading fire-arm, the combination, with the barrel having a lug, E, provided with an inclined bearing-surface, *s'*, of a bar, R, having an inclined arm, V, to engage with said bearing-surface, said bar being adapted by its other end to engage with the sear M to secure it when interlocked with the hammer, substantially as and for the purpose specified.

8. In a breech-loading fire-arm, the combination, with the barrel having a lug, E, provided with an inclined bearing-surface, *s'*, of a bar, R, having an inclined arm, V, to engage with said bearing-surface, and connected to a plate, Q, having an opening, *q*, to engage with the sear to secure it when interlocked with the hammer, substantially as and for the purpose specified.

9. In a breech-loading fire-arm, the combination, with the barrel having a lug, E, provided with an inclined bearing-surface, *s'*, of a bar, R, having an inclined arm, V, to engage with said bearing-surface, and connected to a plate, Q, having a projection, *s'*, to engage with the trigger to prevent movement of the same, substantially as described.

10. In a breech-loading fire-arm, the combination, with the barrel having a lug, E, provided with an inclined bearing-surface, *s'*, of a bar, R, having an inclined arm, V, and connected to a plate, Q, having an opening, *q*, and projection *s'*, to engage, respectively, with the sear and trigger, all substantially as and for the purpose specified.

11. In a breech-loading fire-arm, in combination with the barrel having a recess, *f*, of a spring having a bearing by its middle portion on the breech-block, and arranged by one arm to engage with said recess, and by its other arm to bear against the breech-block, substantially as and for the purpose specified.

12. In a breech-loading fire-arm, the combination, with a pivoted plate, Y, and its spring Z, located below the barrel, of a bearing, C^2, of the barrel, said plate having an arm, n^2, arranged to act against a guide-rod, f^2, of a plate, X, adapted to fit the rear end of the barrel, and provided with a shoulder, b^2, substantially as and for the purpose specified.

13. In a breech-loading fire-arm, the combination, with a pivoted plate, Y, having a spring, Z, said plate being arranged to abut by its shoulder t^2 against the end of a lever, W, pivoted to the breech-block, and held to such abutment by the hammer, said plate having an arm, n^2, arranged to act against a guide-rod, f^2, of a block or plate, X, adapted to fit the rear end of the barrel, and provided with a shoulder, b^2, substantially as and for the purpose specified.

14. In a breech-loading fire-arm, the combination, with a plate, Y, arranged for operation to move a plate or block, X, to eject the cartridge, of a spring secured by one end to the barrel or fore-end, and engaging by its free end with said plate, and to act against a bearing, C^2, of the barrel, substantially as and for the purpose specified.

15. In a breech-loading fire-arm, the combination, with a plate, Y, arranged to operate to move a plate or block to eject the cartridge, of a spring, Z, adjustably secured by one end to the barrel or fore-end, and arranged to bear by its free end upon said plate, and to act against a bearing, C^2, substantially as and for the purpose specified.

16. In a breech-loading gun, the combination, with the barrel or fore-end provided with an abutment, C^2, and a spring, Z, attached thereto, of a plate, Y, having a shoulder, v^2, for a bearing for the free end v^2 of the spring Z, and arranged by its end r^2 to bear against an arm, f^2, of the cartridge-ejecting plate X, substantially as and for the purpose specified.

17. In a breech-loading gun, a hammer provided with a rear projecting arm, E^2, in combination with an opening, v^2, in the trigger-plate, into or through which opening said arm will project when the hammer is moved into its cocked position for it to be seen from the outside of the plate, substantially as described.

18. In a breech-loading gun, the combination, with the hammer and its sear, of a spring-lever, W, pivoted to the breech-block and in position for the sear to bear on one, *n*, of its ends when the hammer is moved into a cocked position, and for its other end, *y'*, to engage with a shoulder, t^2, of a plate, Y, to hold said plate from movement for the cartridge-ejector to abut against it to eject the cartridge as the barrel is lowered or swung down, substantially as and for the purpose specified.

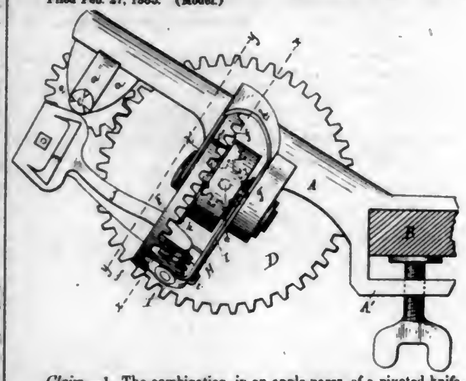
325,902. STIRRUP. WALTER F. BRAGG, Buffalo, N. Y. Filed June 23, 1885. (No model.)



Claim.—1. The stirrup-frame A, having its side pieces provided with buttons or headed studs *b*, rigidly secured thereto, adapted to receive a suitable hood, substantially as set forth.

2. The combination, with the stirrup-frame A, having its side pieces provided with buttons or headed studs *b*, rigidly secured thereto, of a hood, C, provided with button-holes *c*, whereby it can be attached to the buttons, substantially as set forth.

325,903. APPLE-PARER. JONAS BITTENBENDER, Mifflinville, Pa. Filed Feb. 27, 1885. (Model.)



Claim.—1. The combination, in an apple-parer, of a pivoted knife-carrying arm with a revolving driving-disk to engage said arm and a spring connected with the arm-support and with the main frame for returning said knife-arm when released from said driving-disk, substantially as described, for the purpose specified.

2. In an apple-parer, the combination of a pivoted knife-carrying arm with a revolving driving-disk for said arm and a spring having one end secured to a hub of the arm-support and the other end to the main frame, whereby the knife-arm is carried forward against a yielding force which operates to return it, substantially as described, for the purpose specified.

3. In an apple-parer, the combination of the pivoted knife-carrying arm and the revolving driving-disk therefor having diametrically-arranged shoulders *f f*, engaging the knife-arm at every half-revolution of said disk, and a retracting-spring connected to the knife-arm support and to the frame and wound and released at every half-revolution of said disk, with a fixed cam arranged to intercept the path of said arm and place it under the returning force of said spring, substantially as described, for the purpose specified.

4. In an apple-parer, the knife-arm, the revolving driving-disk therefor having diametrically-arranged shoulders *f f*, a fixed cam, *h'*, a retracting-spring, L, connected with the stock, and an arm, I, to which the knife-arm is pivoted, operating to wind said spring during the advance movement of said knife-arm, all combined and mounted upon an arm of the stock, substantially as described, for the purpose specified.

5. In an apple-parer, the combination of the knife-arm, its pivoted support, and a coil-spring connected by one end to said pivoted support and by its other end to the stock-arm, with a gear-carrier and a fixed releasing-cam, the parts being constructed, arranged, and operating substantially as described.

6. The combination of the knife-arm, its pivoted support, and a coil-spring connecting the pivoted support to the stock-arm, with a gear-carrier diametrically notched or shouldered and a cam located within the path of said notches and extending beyond the periphery of the gear-carrier, as and for the purpose set forth.

7. The combination of a knife-arm, a gear-carrier to engage the same and carry it forward to its work, with a releasing device, a spring to return said knife-arm, and a stop to limit the retrograde movement of said knife-arm under the action of said spring.

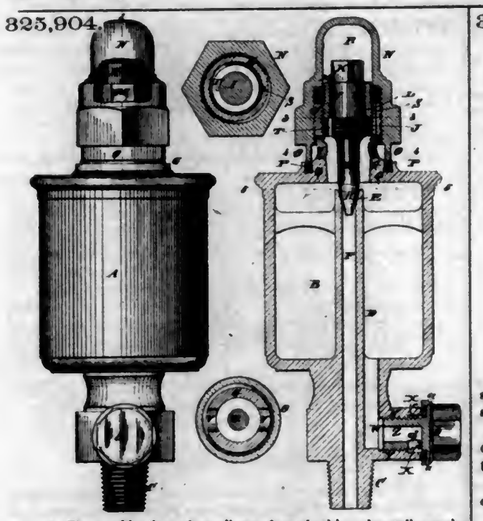
8. The combination, in an apple-parer, of a pivoted knife-carrying arm, a pivoted support, I, therefor, having a hook, *i*, a fixed segmental plate, H, embraced by said hook and having a stop, M, with the driving-disk F, a spring, L, wound upon a hub of said knife-arm support as the latter is carried forward to its work, and means, substantially such as described, for releasing the knife-arm from its driver.

9. In combination with the knife-arm, its gear-carrier and spring L, and, as a means for steadying said knife-arm and releasing it from its gear-carrier, the segmental guide-plate H, provided with the fixed stop M, and an outwardly and upwardly extending arm, *h*, terminating in a cam-extension, *h'*, substantially as shown and described.

325,904. LUBRICATOR. FRED BOLD, St. Louis, Mo., assignor of one half to William M. Stanton, same place. Filed May 1, 1885. (No model.)

Claim.—1. The combination of an oil-cup formed with a screw-threaded neck, G, having an orifice, V, in its side, a seat having a recess surrounding said neck, a soft-metal filling in said recess, and a cap, N, having an interior screw-thread by which it is secured to said neck, and a rim or flange, O, bearing on said filling, substantially as set forth.

325,904.



2. The combination of an oil-cup formed with a dovetail annular recess, Q, and a screw-threaded neck, G, having an orifice, V, in its side, a soft-metal seat occupying said recess, and a cap, N, screwing on said neck, and having a flange or rim, O, seating on said seat, substantially as set forth.

3. The combination of an oil-cup formed with an interiorly screw-threaded neck, G, a valve, H, having a stem I, formed with a screw-threaded portion, J, within the neck G, and a tubular jam-nut, L, seating on said portion within said neck, substantially as set forth.

4. The combination of an oil-cup formed with a waste-pipe, W, having a counter-bore, X, at the mouth, and interior screw-thread, Y, and a hollow plug, Z, having a flange, *b*, closing said pipe and orifice *d*, substantially as set forth.

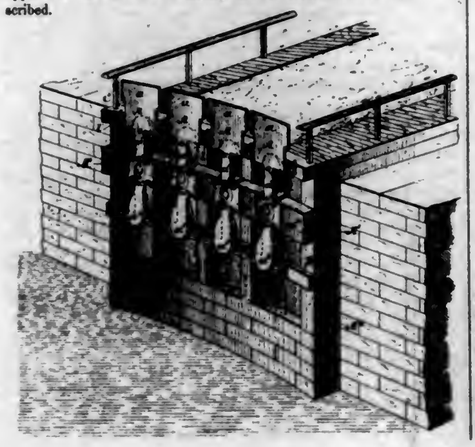
5. The combination of an oil-cup formed with a waste-pipe, W, having a seat, *c*, counter-bore X, and interior screw-thread, Y, and the hollow plug Z, having a flange, *b*, formed with a dovetail recess provided with a soft-metal filling, *a*, screw-thread, and orifice *d* in said screw-thread, substantially as set forth.

325,905. GUARD FOR DRAW-BRIDGES. ANDREAS BOSCH, Prairie du Chien, Wis. Filed Apr. 15, 1885. (No model.)

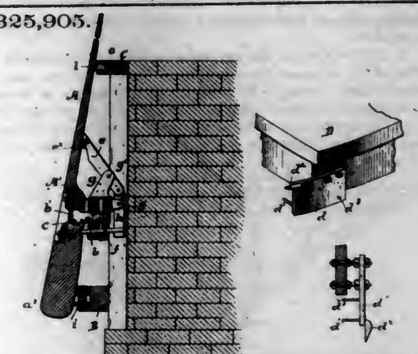
Claim.—1. In a draw-bridge, a fence consisting of a series of guard-sections, A, loaded at a^2, and provided with cams or wings a^3, in combination with ball-and-socket joints and devices described for actuating and holding said sections, substantially as described.

2. The combination of loaded guard-sections, connected to a supporting-timber by ball-and-socket joints, with the blocks, springs, and intermediate rollers, as described, for the purpose of arresting the said sections and aiding in holding them upright, as specified.

3. The combination of the upper and the lower rollers with the section having intermediate ball-and-socket connection and devices applied to the draw for actuating said sections, substantially as described.



325,905.



4. The combination, with the guard-sections and their ball-and-socket connections, of the blocks and their intermediate rollers and chain, substantially as described.

5. The combination, with the pivoted guard-sections, as described, of the pivoted bifurcated keys *e*, and latches *f*, and releasing devices therefor applied to the end of the draw, substantially as described.

6. The combination of the keys having rollers e^2 and latches, their connections, and guard-sections A, substantially as described.

7. The combination, with the loaded guard-sections, latching devices, and opening devices, as described, of the spring-actuated bearings K, substantially as and for the purposes described.

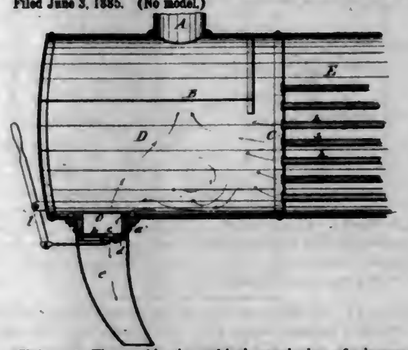
325,906. NUT-LOCK. NICOLAS BOSHAMN, Buffalo, N. Y., assignor of one-half to Frederick P. Ackerman, same place. Filed May 20, 1885. (No model.)



Claim.—1. The nut B, having a lateral cavity, *d*, which extends from the outside of the nut to the bore thereof, and a spring detent-plate, C, rigidly secured with its outer end in the cavity *d* by a wedge, and projecting with its free inner end into the bore of the nut to engage in a longitudinal groove in the screw-bolt, substantially as set forth.

2. The nut B, having a lateral cavity, *d*, which opens into the bore of the nut, and a spring-detent plate, C, rigidly secured with its outer end in the cavity *d* by a backing, *e*, and wedge *f*, and projecting with its free inner end into the bore of the nut, substantially as set forth.

325,907. SPARK-ARRESTER. FREDRICK S. BRAGG, Corning, N. Y. Filed June 3, 1885. (No model.)



Claim.—1. The combination, with the smoke-box of a locomotive-boiler, of a cinder-discharge opening in the bottom of said smoke-box at the end farthest from the flue-sheet, a valve or gate across said opening and limited to leave a permanent opening, substantially as and for the purpose set forth.

2. The combination, with the smoke-box of a locomotive-boiler, of a cinder-discharge opening in the bottom of said smoke-box at the end farthest from the flue-sheet, a gate across said opening and provided with an air-inlet port through it, and a supplemental valve or gate for

regulating said inlet, substantially as described and shown, for the purpose set forth.

3. The combination, with the smoke-box of a locomotive-boiler, of a wire-netting interposed between the ends of the flues and stack, a cinder-discharge opening in the bottom of said smoke-box at the end farthest from the flue-sheet, a gate across said opening and provided with an air-inlet port through it, and a supplemental valve or gate for regulating said inlet, substantially as described and shown, for the purpose set forth.

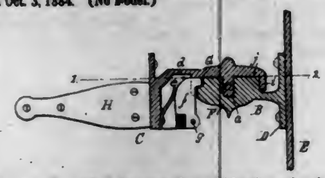
325,908. STREET-CAR. FRANKLIN W. BROOKS, New York, N. Y. Filed July 17, 1885. (No model.)



Claim.—1. In a closed street-car, a longitudinal foot-walk, A, in combination with a rail or boldfast arranged against the side of the car above the foot-walk and independent thereof, substantially as and for the purpose set forth.

2. In a street-car, the longitudinal foot-walk A, hinged or pivotally connected to the side of the car, in combination with suitable mechanical means connected to the car under the control of the conductor or driver for swinging the foot-walk into or out of position, substantially as and for the purpose set forth.

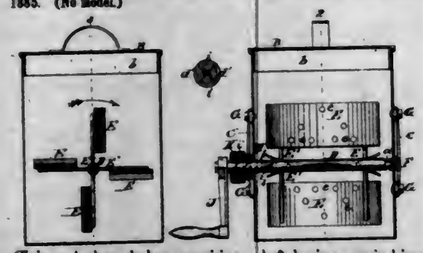
325,909. LOCK-HINGE. ALPHEUS B. BROWN, JR., Boston, Mass. Filed Oct. 3, 1884. (No model.)



Claim.—1. In a blind-fastener, the combination of a head and a cap that incloses it with a pintle formed on one of said parts and fitting into a recess in the other, and a latch attached to one of said parts and catching into a notch in the other, the flanges of the cap and the periphery of the head serving to take the strain from the pintle, substantially as set forth.

2. In a blind-fastener, A, the combination, with the recessed cap G, pintle *c*, and slotted arm *d*, of the inclosed head F, with peripheral slots *b b'*, the spring-actuated latch *f*, and lever *h*, combined to operate substantially as set forth.

325,910. CHURN. WARREN CASE, Collinsville, Ill. Filed Mar. 2, 1885. (No model.)



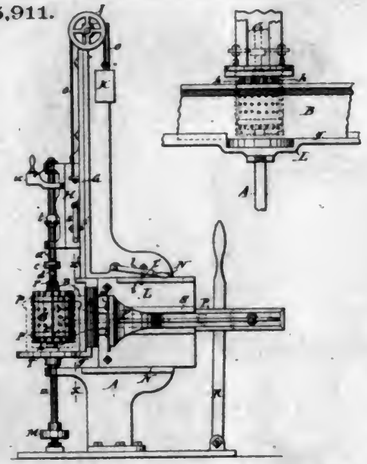
Claim.—A churn-dasher comprising a shaft having a conical inner end, *d*, sectors *d'* at its outer end, and shaft-section I, having sectors *i*, in combination with a bearing-boss, F, having conical countersink *f*, a stuffing-box, a collar surrounding the shaft-section in the stuffing-box, and a screw-cap, K, substantially as set forth.

325,911. MACHINE FOR FORMING EARTHEN AND STONE WARE. DENISON S. CHENEBRO, Geddes, N. Y. Filed June 16, 1885. (No model.)

Claim.—1. A machine for forming hollow ware from plastic material, comprising a turn-table upon which to revolve the material, and a pivoted core arranged over the center of the turn-table to revolve with the same and receive around its exterior the material for the body of the ware and sustain said material while turning it to shape externally, substantially as set forth.

2. In combination with the turn-table and pivoted core, a breast arranged movable at the side of the core to apply thereto the material carried on said breast, substantially as described.

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3. In combination with the turn-table and pivoted core, a tangential guide at the side of the turn-table, and a breast mounted movably on said guide to apply to the core the material carried on said breast, substantially as set forth and shown.

4. In combination with the turn-table and pivoted core, a tangential guide at the side of the turn-table, the breast mounted movably on said guide, and vertical rollers back of the guide to sustain the breast in its vertical position, substantially as described and shown.

5. In combination with the turn-table and core, a cutter extended across the bottom of the core for forming the interior bottom of the ware, substantially as specified.

6. In combination with the turn-table and core, cutters arranged at the sides of the core to cut the same loose from the enveloping material, substantially as set forth.

7. In combination with the turn-table, a vertical shaft arranged over the center of the turn-table, the core pivoted on said shaft, a yoke fastened to said shaft above the core, a horizontal cutter extended across the bottom of the core and attached to the aforesaid shaft, cutters at the outside of the core attached to the ends of the horizontal cutter and yoke, and a clutch for restraining the rotation of the vertical shaft, substantially as described and shown.

8. In combination with the turn-table, a vertical guide, a slide in said guide, and the core arranged over the center of the turn-table and carried by the aforesaid slide, substantially as and for the purpose specified.

9. In combination with the turn-table, the core C, having perforations in its sides, substantially as and for the purpose set forth.

10. In combination with the turn-table, the vertical shaft *a*, arranged central over the turn-table, the core C, pivoted on said shaft, the cutter *b*, rigidly secured to the lower end of the shaft, the yoke *c*, rigidly attached to the shaft above the core, hangers *d d*, having screw-threaded shanks extending through the ends of the yoke, adjusting-nuts on said shanks, and the cutters *e e*, attached to the ends of the cutter *b* and to the hangers *d d*, substantially as described and shown.

11. In combination with the turn-table, the core C, pivoted central over said table and provided with circumferential flanges and perforations, and the straight cutters *e e* at the outside of said core, contiguous to the flanges thereof and clear of the perforated body of the same, whereby a body of material is maintained on the core, substantially as set forth.

12. In combination with the turn-table, the vertical guide G, the slide H, pulleys I I, counter-weight K, connected with the slide by cords or chains running over the pulleys, the vertical shaft *a*, journaled on the slide, the angular collar *f* on the shaft, the clutch connected movably to the slide, the core C, pivoted on the shaft *a*, the cutter *b* and yoke *c*, rigidly attached to the shaft, respectively, beneath and above the core, and the cutters *e e*, attached to the ends of the cutter *b* and yoke *c*, substantially as described and shown.

13. In combination with the turn-table and core, a slide arranged radially at the side of the turn-table, a tangential guide attached to the slide, and a breast mounted movably on said guide to apply to the core the material for the body of the ware to be formed, substantially as described and shown.

14. In combination with the turn-table and core C, the slide L, arranged radially at the side of the turn-table, the tangential guide *g*, attached to the slide, the breast B, mounted on the guide, and the rollers *h h*, pivoted on the slide back of the guide *g*, substantially as described and shown.

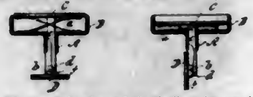
15. In combination with the turn-table and core, the frame A, provided with a radial guide, N, the slide L, provided with the looking-eye *i*, the guide *g*, attached to said slide, the breast B, mounted on the guide *g*, rollers *h h*, pivoted on the slide back of guide *g*, and the latch *l*, having the lug *l'* adjustably connected thereto, substantially as and for the purpose set forth.

16. In combination with the turn-table and core, the slide P, and the scraper *m*, attached to said slide, substantially as and for the purpose specified.

17. In combination with the turn-table, the core C, pivoted over the turn-table independently thereof; cutters *b e e* across the bottom and up the sides of the core, and the case D, mounted removably on the turn-table and embracing the material surrounding the core, substantially as and for the purpose set forth.

18. In combination with the turn-table, the core C, carried on a vertically-movable shaft, *a*, cutters *b e e* underneath and at the sides of the core, and the case D, mounted removably on the turn-table and embracing the material surrounding the core, substantially as and for the purpose set forth.

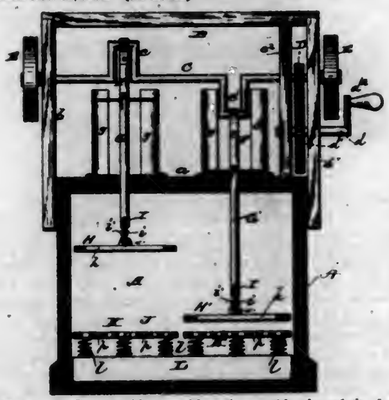
325,912. BUTTON. LEON P. CONARD, London, England, assignor of one-half to Charles Ferdinand Veit and George Dickman, both of same place. Filed Jan. 23, 1885. (No model.)



Claim.—1. The combination of the hollow button-head B, the disk C, fitting therein, the rod *e*, rigidly attached to such disk, and sliding, when acted on, in the stem or shank of the button-head, the shoe D, of one piece, attached and pivoted to such rod and adapted to be brought into a plane parallel with the shank, and the spring supporting the disk, and normally acting to hold it in position to close the open top of the button-head, substantially as described.

2. The combination, substantially as hereinbefore described, with the button-head B and the shank A, of the leaf D, connected to the shank by the pivot *b*, the lug *f*, projecting from the leaf on one side of the pivot *b*, the spring-supported disk C, and the elastic rod *e*, connecting the lug *f* with the disk.

325,918. WASHING-MACHINE. SAMUEL CONVERSE, Middletown, Conn. Filed Nov. 15, 1884. (No model.)



Claim.—1. In a washing-machine, the combination of the box A and false bottom J, composed of the strips L, plates K, and springs *l*, with the dasher-plates H H', springs I and *i'*, rods *i*, dasher-rods G G', and mechanism, substantially as described, to reciprocate the said dasher-rods vertically and alternately.

2. In a washing-machine, the combination of the tub A, false bottom J, dasher-plates H H', and rods G G', connected to said plates by springs I and *i'*, the connection-rods F F', crank-shaft C, and means, substantially as described, for rotating the latter.

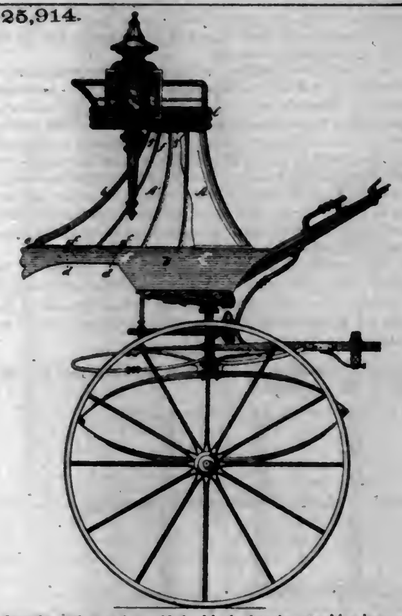
325,914. BOOT FOR DRIVERS' SEATS FOR VEHICLES. MARTIN H. CRANE, Cincinnati, Ohio. Filed June 13, 1885. (No model.)

Claim.—1. The combination, with a vehicle and driver's seat, of a hollow cast-metal boot provided on its lower edge with a molding, to prevent the passage of water under it, and secured to the platform with an interposed layer of cement, substantially as described.

2. A hollow cast-metal boot for vehicles, having interior attaching-lugs, *c*, and flanges *f*, substantially as described.

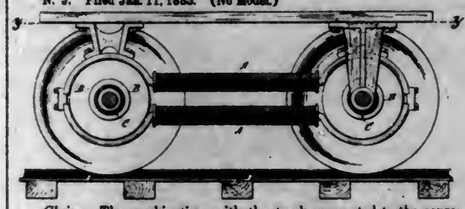
3. A hollow cast-metal boot for vehicles, made in sections screwed

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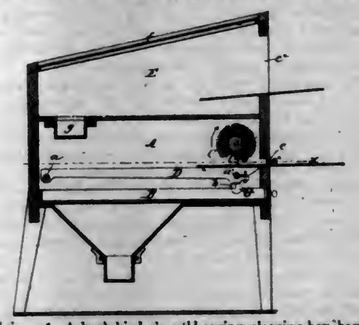
or riveted together, and provided with the interior attaching-lugs, *c*, and flanges *f*, substantially as described.

325,915. ELECTRIC LOCOMOTIVE-ENGINE. LEO DAFT, Greenville, N. J. Filed Jan. 11, 1883. (No model.)



Claim.—The combination, with the track connected to the source of electricity, of a field-magnet, two armatures driven thereby, driving-wheels supporting the engine, directly connected with the armatures, and adapted to receive the current from the track and circuit-connections, substantially as described, whereby the current from the track passes through the wheels and to and through the armature and field-magnet coils, substantially as described.

325,916. BOOK-BINDER'S GOLD-SAVING CLEANING-BOX. THOS. DANIELS, Jr., New York, N. Y. Filed Feb. 11, 1885. (No model.)



Claim.—1. A book-binder's gold-saving cleaning-box having two gold cleaning and saving compartments, one supplementing the other, one having a revolving brush and the other a glass cover, and each having a front opening, substantially as described, for the purpose specified.

2. A book-binder's gold-saving cleaning-box having a substantially-closed compartment containing a cleaning-brush supplemented by a hand-

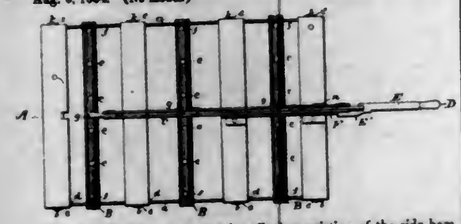
cleaning compartment, both compartments having glass tops whereby the workman can observe the work in both compartments from the top of the box, substantially as described.

3. In a book-binder's gold-saving cleaning-box, the combination of a revolving brush with an open adjustable bed-frame and a removable gold-collecting receptacle, said box having an opening provided with adjustable sliding covers whereby to regulate the area of the opening for the introduction of the work and to close said opening, as described.

4. A book-binder's gold-saving cleaning-box provided with an open work-bed, a removable receptacle, a revolving cleaning-brush, and spring-coiled straps arranged to form slides to regulate the area of the box-opening for introducing the work to suit the size thereof and for closing said opening, and clamping-screws for holding said spring-sliding straps, all constructed substantially as herein set forth.

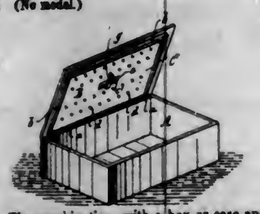
5. The combination of the box having a front opening for the introduction of the work, and a revolving brush, with a work-bed composed of fingers D, a pivot cross-rod, *a*, and a front cross-rod, *a'*, and eccentrics *b b*, having outside knobs for adjusting the non-pivoted end of the said bed, as shown and described.

325,917. HARROW. FRANK DAWSON, Sr., Williamsport, Pa. Filed Aug. 6, 1884. (No model.)



Claim.—The harrow-frame described, consisting of the side bars, *a a*, provided with recesses *d*, the cross-bars *b b*, set in said recesses and bent down at their ends at right angles and bolted or riveted to the side bars, the tooth-bars B B, mounted in said side bars without the use of collars or washers, and the harrow-teeth *e* and *f*, all combined and arranged substantially as described, shown, and for the purposes set forth.

325,918. TOBACCO-BOX. WILLIAM DEMUTH, New York, N. Y. Filed Apr. 2, 1885. (No model.)



Claim.—1. The combination, with a box or case and a cover, of a sheet of bibulous material on the inside of the cover, and a catch having an exterior head and rotating in and extending through the cover and bibulous sheet, and having a shoe for confining the sheet in place, substantially as described.

2. The combination, with a box or case and a cover, of a sheet of bibulous material on the inside of the cover, a perforated covering-plate on the sheet, and a catch having an exterior head and rotating in and extending through the cover, the sheet, and the plate, and having an interior shoe, substantially as and for the purpose described.

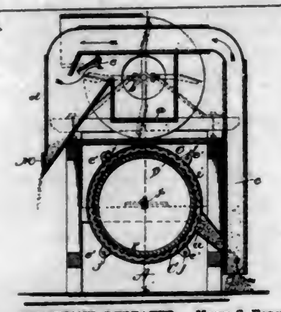
3. The combination, with a box or case and its cover having the recess *a*, of the bibulous sheet, and the perforated plate lying in said recess and provided with slots or holes *c c'*, and the catch D, having a shank, *f*, which extends through the cover and the slots *c c'*, and is provided with a retaining-shoe, *g*, substantially as shown and described.

325,919. GRAIN SCOURING AND CLEANING MACHINE. AUGUSTUS G. DRESOLD, Bloomington, Ill. Filed Apr. 3, 1885. (No model.)

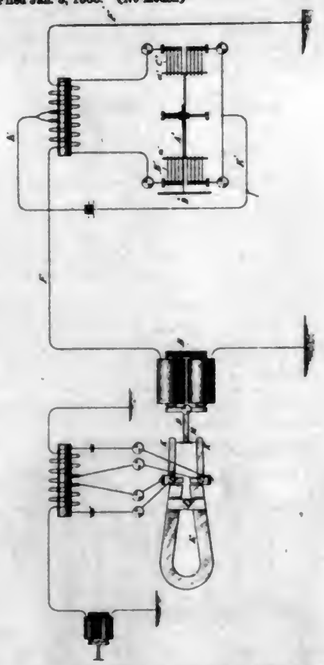
Claim.—1. A grain scouring and cleaning machine comprising the revolving cylinder and its casing, each being constructed of a cylindric shell whose contiguous surfaces are provided with series of oblique ribs secured by screws, and two heads having inner flanges or beads, the two air-flues, the revolving fan, the valve for regulating one of said flues, and a hopper into which the extraneous substances are received, the said hopper having at its lower end a flexible valve, all substantially as described.

2. In a grain scouring and cleaning machine, the combination of the revolving cylinder and its stationary casing, each being constructed of two heads having inner flanges or beads, and a cylindric shell held between such heads, having on their contiguous surfaces series of oblique ribs secured thereto by screws, substantially as described.

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325,920. TELEPHONE-REPEATER. MOSES G. FARMER, Newport, R. I. Filed Jan. 8, 1885. (No model.)



Claim.—1. A telephonic repeater consisting of an electro-magnet having a polarized vibrating armature and connected with one circuit, in combination with pivoted strips or blades held in contact with a projection from the armature and connected with a second circuit, as set forth.

2. A telephone-repeater consisting of an electro-magnet having a vibrating armature and connected with one circuit, in combination with pivoted strips or blades carrying armatures, a permanent magnet acting upon said armatures for holding the strips in contact with a projection from the vibrating armature, and circuit-connections through said strips, as set forth.

3. A telephonic repeater consisting of an electro-magnet having a polarized vibrating armature and connected with one circuit, in combination with two sets or groups of pivoted strips or blades bearing upon a projection from the polarized armature, and circuit-connections through said strips, as set forth.

4. The combination, with an electro-magnet, a vibrating polarized armature pivoted in face of the poles of the magnet, an arm extending from the center of the armature, and two insulated metal plates carried by said arm, of two sets of pivoted strips or blades carrying armatures, a permanent magnet acting upon the armatures to hold the strips in contact with insulated plates carried by the vibrating arm, and circuits connecting with the strips or blades in the manner specified.

5. The combination, with an electro-magnet, a vibrating polarized armature pivoted in face of the poles of the magnet, an arm extending from the center of the armature, and two insulated metal plates carried by said arm, of two sets of pivoted strips or blades carrying armatures, a permanent magnet acting upon the armatures to hold the strips in contact with the insulated plates on the vibrating arm, circuits through the pivoted strips, and an induction-coil the primary coil of which is formed by the wires of said circuits, as and for the purpose set forth.

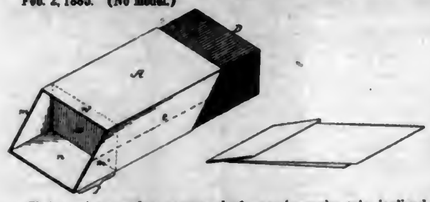
325,921. PEN-HOLDER. RICHARD C. FAY, Jersey City, N. J. Filed June 11, 1885. (No model.)



Claim.—1. A pen-holder for a pen or brush handle, having a finger-rest composed of a single piece of metal having parallel sides and rounded ends secured obliquely to the said holder, and having grooves parallel thereto, substantially as shown and described.

2. A holder having a finger-rest composed of a single piece of metal having grooves parallel to said holder, the said rest being secured obliquely to the holder, and also having a portion thereof on one side of the holder extending below the portion on the other side thereof, substantially as described.

325,922. PAPER BAG. HENRY P. FENSTER, Philadelphia, Pa., assignor to Martin Nixon and William H. Nixon, both of same place. Filed Feb. 2, 1885. (No model.)



Claim.—A paper bag composed of a quadrangular tube inclined at the end, and having a bottom consisting of folds *m m'* and *n n'*, substantially as specified.

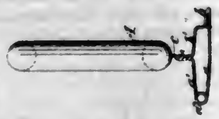
325,923. CAR-COUPLING. GEORGE J. FERGUSON, Greenville, Tex. Filed June 4, 1885. (No model.)



Claim.—1. The combination, with a draw-head, of a tilting and sliding coupling device made in the general shape of the small letter h, with its front or stem portion fitted to bear against shoulders at the front of the draw-head, and its rear curved part being connected to the draw-head by a slot and pivot-pin, and a spring and shoe or bearing for the spring adapted to be shifted from one side to the other of the pivot-pin, substantially as and for the purpose described.

2. The h-shaped coupling device B, having slot *e*, in combination with the draw-bar having bearings *c c'*, abutments C' and A, the pivot and guide pin C, and the spring and shoe D E, adapted to be shifted from side to side of the pivot-pin, as and for the purpose described.

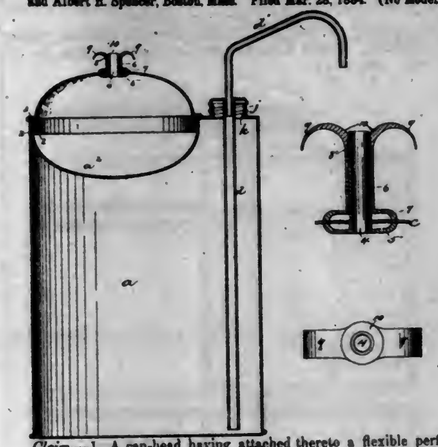
325,924. DRAPERY-PIN. GEORGE W. FERGUSON, Jr., New York, N. Y. Filed Jan. 16, 1885. (No model.)



Claim.—1. The combination, with a pole-ring, A, of a drapery-pin having a shank which is inserted directly into the ring, whereby the pin is attached to the pole-ring without the intervention of an eye, substantially as set forth.

2. The drapery-pin herein described, composed of two pieces of wire, one forming the pin *a*, coil *a°*, and arm *a'*, and the other forming the shield *b* and arm *b'*, the arms *a' b'* being twisted together at °, and one of them being prolonged to form a shank, *c*, substantially as set forth.

325,925. CAN OR RECEPTACLE. MILTON H. GARLAND, Everett, assignor of two-thirds to John S. Rice, Cambridge, and Newton W. Payne and Albert H. Spencer, Boston, Mass. Filed Mar. 28, 1884. (No model.)



Claim.—1. A can-head having attached thereto a flexible perforated diaphragm, and having beneath the diaphragm an apertured portion depressed below the plane of the head and capable of receiving the diaphragm when depressed, and having in the remaining portion of the head a discharge-tube extending downward into the can, substantially as described.

2. A can-head having an apertured depressed portion below the plane of the head, a flexible perforated diaphragm secured to the head and adapted to be expanded out of and forced into the depressed portion of the head by means of a suitable handle secured to the apertured diaphragm, and an opening in the can-head provided with a removable discharge-tube extending into the can, substantially as described.

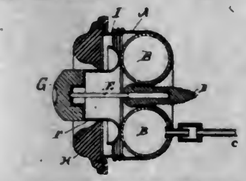
3. The diaphragm having clamping-rings 2 2 at its margin, the outer one of said rings having a flange, 3, combined with a can or receptacle having a seat or support for the flanged ring, as set forth.

4. A can or receptacle having a flexible diaphragm provided with an air-hole, and a swiveled discharge-tube adapted to be engaged with the air-hole of the diaphragm for the purpose of sealing the can, as set forth.

5. The diaphragm having the flanged tube 4, flanged collar 6, and nut 8, the latter having handles 9 9 and a thumb seat or bearing, 10, as set forth.

6. The combination, with a vessel having a large perforated depression formed in its top, of a flexible perforated diaphragm secured to the vessel and covering the depression, a filling-opening in the top at the side of the depression, and a detachable spout or tube fitting said opening, as set forth.

325,926. AIR-PUMP. ROBERT P. GARSED, Norristown, Pa. Filed July 3, 1885. (No model.)



Claim.—1. In combination, in an air-pump, a cup, A, an annulus-shaped flexible container, B, held within said cup, a hollow screw, D, and a plunger with stem E, the screw D adapted to support the device in place and guide the plunger in its motions, substantially as and for the purposes set forth.

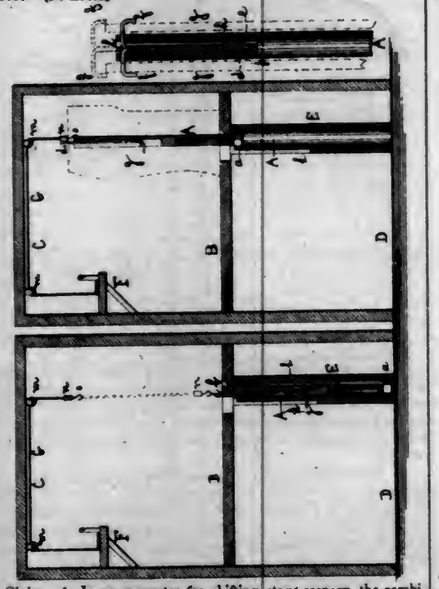
2. In an air-pump, the combination of cup A, container B, held thereby, plunger F, with a projecting part adapted to hold a thumb-tip and afford room for end of screw D, said screw D, and the thumb-tip G, substantially as and for the purposes set forth.

3. In an air-pump, the combination of metal cup A, with connecting-threads, the rubber container B, the plunger F, the wooden top H, with metal screw-rim attached, and a screw, D, adapted to hold the device in place and guide plunger F in its motions, substantially as and for the purposes set forth.

4. In an air-pump, the combination of metal cup A, rubber annulus-shaped container B, held thereby, a plunger with projecting top, a screw adapted to hold the device in place, the top or cover H, with cen-

tral opening and with its threaded connections, and the coupling C, extending within cup A and container B, and serving as a means to convey air.

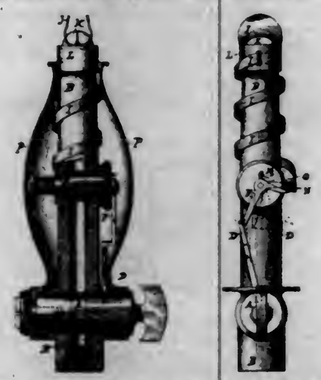
325,927. APPARATUS FOR HOLDING AND SHIFTING STAGE SCENERY. WATSON H. GIFFORD, Fort Hamilton, N. Y. Filed Feb. 17, 1885. (No model.)



Claim.—1. In an apparatus for shifting stage scenery, the combination of the post A, clamp *d*, and hoisting-tackle, substantially as and for the purposes described.

2. The movable post A, provided with clamp *d*, in combination with the fixed casing E, into which it can be lowered, and with the tackle to raise and lower said post, all substantially as and for the purposes described.

325,928. AUTOMATIC SAFETY GAS-BURNER. JOHN H. J. HAINES and JAMES F. STRONG, Flushing, N. Y. Filed Sept. 12, 1884. (No model.)



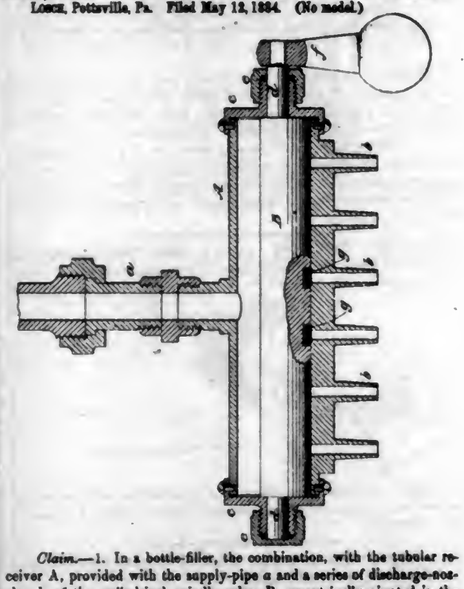
Claim.—1. The combination, in a gas-burner, of the valve E, provided with the spring H and arm G, the spring I, composed of brass and steel, or their equivalents, provided with the lips N O, the ring L, and wings J J, substantially as and for the purposes set forth.

2. In a gas-burner, the combination of the valve A, provided with the arm D, the valve E, provided with the arms F G and spring H, the spring I, composed of brass and steel, or their equivalents, and provided with the lips N O, the ring L, and wings J J, substantially as and for the purposes set forth.

3. The combination, in a gas-burner, of the valve E, provided with the spring H and arm G, and the expansive spiral spring I, composed of brass and steel, or their equivalents, provided with the lips N O, and operated by heat derived from the gas-jet, for the purposes set forth.

4. In a gas-burner, the combination of the valve A, provided with the arm D, the valve E, provided with the arms F G and spring H, and the expansive spiral spring I, composed of brass and steel, or their equivalents, and provided with the lips N O, and operated by heat derived from the gas-jet, for the purposes set forth.

325,929. BOTTLE-FILLER. LAVENDER B. HARMER and WILLIAM G LOSCH, Pottsville, Pa. Filed May 12, 1884. (No model.)



Claim.—1. In a bottle-filler, the combination, with the tubular receiver A, provided with the supply-pipe *a* and a series of discharge-nozzles, *b*, of the cylindrical spindle-valve B, eccentrically pivoted in the said receiver, substantially as herein shown and described, whereby when the spindle is turned in one direction it closes over the apertures of the discharge-nozzles and rises therefrom when turned in the opposite direction, as set forth.

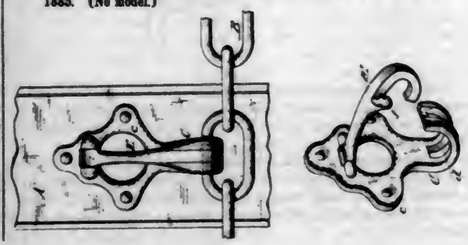
2. In a bottle-filler, the combination, with the tubular receiver A, having removable heads *c*, and provided with the supply-pipe *a* and a series of discharge-nozzles, *b*, of the cylindrical spindle-valve B, provided with the eccentric journals *d*, the handle *f* on one of the journals, and the packing-disks *g*, substantially as herein shown and described.

325,930. METALLIC COVER FOR BARREL-HEADS. ABRAHAM M. HELLMAN, St. Louis, Mo. Filed June 27, 1885. (No model.)



Claim.—In combination with the barrel having a wooden head, a metallic disk covering the entire outer surface of the head of the barrel and extending with the head into the croze, substantially as shown and described, for the purpose set forth.

325,931. BACK-BAND HOOK. LESLIE HEWITT, Louisville, Ky., assignor of one-half to Pratt & Letchworth, Buffalo, N. Y. Filed June 12, 1885. (No model.)



Claim.—1. In a back-band hook, the combination, with the stationary hook C, provided with an attachment whereby it is secured to the back-band, of the guard-hook E, pivoted to said attachment, both hooks being provided with jaws, substantially as described, which interlock side by side, whereby the movable hook is held in engagement with the stationary hook by the chain-links supported on the hooks, substantially as set forth.

2. The combination, with the stationary hook C, provided with a plate, *c*, and having its jaw constructed with a slot, *d*, of the guard-hook E, pivoted to the plate *c*, and having its jaw constructed to enter the slot *d*, substantially as set forth.

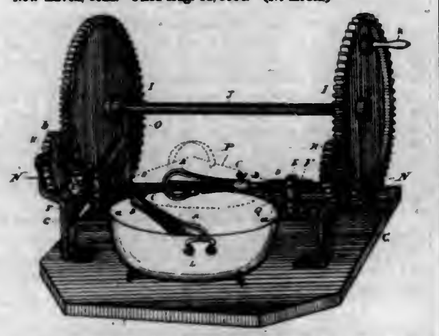
3. The combination, with the stationary hook C, provided with an attachment whereby it is secured to the back-band, of the hook E, pivoted to said attachment and provided with an inwardly-projecting guard, *f*, both hooks being constructed with jaws which interlock side by side when closed, substantially as set forth.

325,932. ROTARY HARROW. JAMES R. HEXE, Kansas City, Mo. Filed Sept. 15, 1884. (No model.)



Claim.—The combination of the cross-beam E, two harrows vertically journaled thereto, a circular hood covering the top of each harrow, forked rods I, fitted to slide vertically through the beam E, rollers H, journaled in the forked rods above and in contact with the said hoods to roll thereon, the yokes L above the beam E, the springs J, acting between the yokes and shoulders upon the rods I to press the rollers H upon the hoods, and adjusting screw-bolts M, securing the yokes to the cross-beam, substantially as shown and described.

325,933. MIXING-MACHINE FOR BAKERIES. GEORGE H. IVES, New Haven, Conn. Filed Aug. 11, 1884. (No model.)



Claim.—1. A mixing and beating machine having independent beaters extending toward each other from opposite directions, a receptacle located beneath them, and means for revolving them on inclined axes converging in the receptacle, substantially as set forth.

2. A mixing and beating machine having independent beaters extending toward and beyond each other, a receptacle located beneath them, and means for revolving them on inclined axes converging in the receptacle, substantially as set forth.

3. A mixing and beating machine having independent beaters revolving on inclined axes through eccentric paths, as described, and a receptacle located beneath them, substantially as set forth.

4. A mixing and beating machine having independent beaters extending toward each other from opposite directions and revolving on inclined axes through eccentric paths, as described, a receptacle located beneath them, and a cover for the receptacle adapted to fit over them, substantially as set forth.

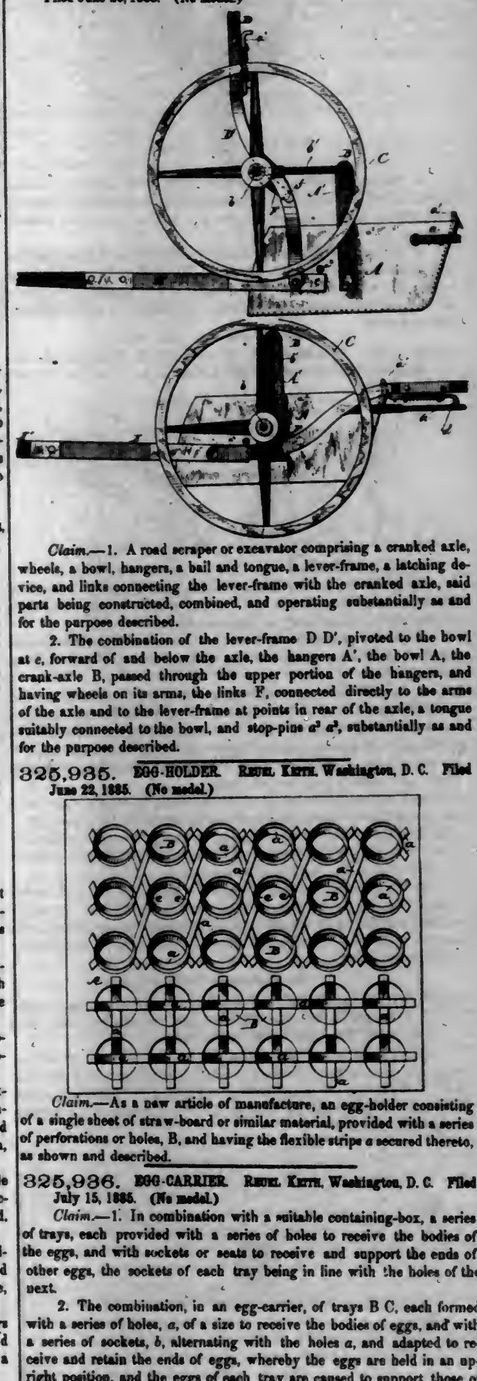
5. A mixing and beating machine having independent removable beaters extending toward and beyond each other from opposite directions and revolving on inclined axes through eccentric paths, as described, and a receptacle located beneath them, substantially as set forth.

6. A mixing and beating machine having skeleton beaters extending toward each other from opposite directions and revolving on inclined axes through eccentric paths, as described, and a removable receptacle, substantially as set forth.

7. A mixing and beating machine having removable skeleton beaters extending toward and beyond each other from opposite directions and revolving on inclined axes through eccentric paths, as described, and a removable receptacle, substantially as set forth.

8. A mixing and beating machine having beaters, a receptacle, levers to which the beaters are attached, universal bearings for the levers, and pinions centered above the said bearings and having the levers flexibly and eccentrically connected with them, substantially as set forth.

325,934. ROAD-SCRAPER. WILLIAM E. JACOBS, Columbus, Ohio. Filed June 26, 1885. (No model.)



Claim.—1. A road scraper or excavator comprising a cranked axle, wheels, a bowl, hangers, a bail and tongue, a lever-frame, a latching device, and links connecting the lever-frame with the cranked axle, said parts being constructed, combined, and operating substantially as and for the purpose described.

2. The combination of the lever-frame D D', pivoted to the bowl at *e*, forward of and below the axle, the hangers A', the bowl A, the crank-axle B, passed through the upper portion of the hangers, and having wheels on its arms, the links F, connected directly to the arms of the axle and to the lever-frame at points in rear of the axle, a tongue suitably connected to the bowl, and stop-pins a^3 a^3, substantially as and for the purpose described.

325,935. EGG-HOLDER. REUEL KEITH, Washington, D. C. Filed June 22, 1885. (No model.)

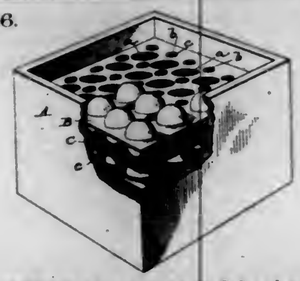
Claim.—As a new article of manufacture, an egg-holder consisting of a single sheet of straw-board or similar material, provided with a series of perforations or holes, B, and having the flexible strips *a* secured thereto, as shown and described.

325,936. EGG-CARRIER. REUEL KEITH, Washington, D. C. Filed July 15, 1885. (No model.)

Claim.—1. In combination with a suitable containing-box, a series of trays, each provided with a series of holes to receive the bodies of the eggs, and with sockets or seats to receive and support the ends of other eggs, the sockets of each tray being in line with the holes of the next.

2. The combination, in an egg-carrier, of trays B C, each formed with a series of holes, *a*, of a size to receive the bodies of eggs, and with a series of sockets, *b*, alternating with the holes *a*, and adapted to receive and retain the ends of eggs, whereby the eggs are held in an upright position, and the eggs of each tray are caused to support those of the trays above.

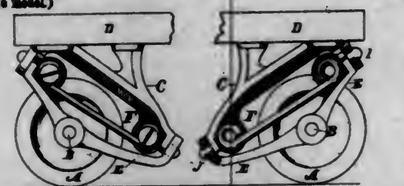
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3. The combination of two or more trays, B C, each tray provided with a series of holes, *a*, of a size to receive the bodies of eggs, and with intermediate rings, *c*, cemented or otherwise secured to the trays between the holes *a*.

4. In combination with a suitable box, a series of trays provided with sockets to receive the points of one tier of eggs, and with holes to receive the bodies of another tier of eggs, and supporting-strips placed between the bottom and the next tray, substantially as and for the purpose explained.

325,937. ROLLER-SKATE. WILLIAM KELLEY, West Florence, Ohio, assignor of one-half to Martin Kelley, same place. Filed May 30, 1885. (No model.)



Claim.—1. In a roller-skate, a straight spring having one end attached to the platform-carrier and the other end to the frame which carries the rollers, substantially as herein set forth.

2. In roller-skates, the platform-carrier and the roller-carrier pivoted together and having interposed the torsional springs, substantially as herein set forth.

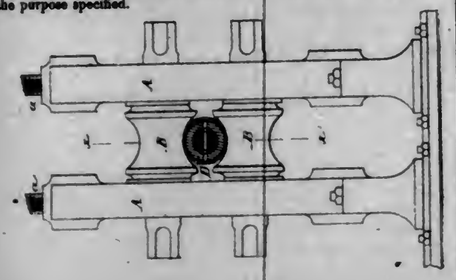
3. In roller-skates, the platform-carrier having at one end a socket and at the other end a pivotal lug, and the roller-frame having at one end a pivotal lug and at the other end a socket, hinged together and provided with a straight or torsional spring secured to the platform-carrier and roller-frame at opposite ends on a straight line with said pivotal points, substantially as herein set forth.

4. The combination of the platform-carrier C, having at its upper end the socket and at an angle downwardly therefrom the pivotal lug J, with the roller-carrier frame E, having at its upper end the pivotal lug I, and at its lower end a socket, with the spring F, substantially as herein set forth.

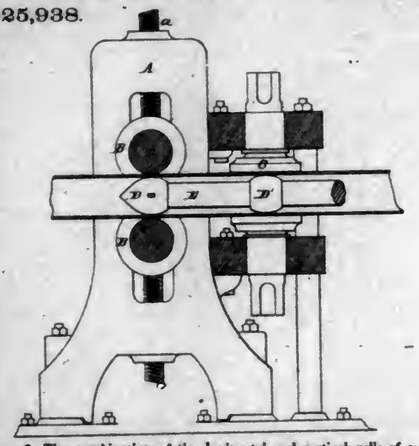
5. The combination of the platform D, having the inclined carrier-frame C, having at opposite ends the lug and socket, with the roller-carrier frame having at opposite ends corresponding lug and socket, with the spring F, the whole arranged as and for the purpose substantially as herein set forth.

325,938. TUBE-ROLLING MACHINE. CHARLES KELLOGG, Buffalo, N. Y., assignor to W. C. Dunn, David W. Burt, and Richard Tayler, all of same place. Filed Apr. 4, 1884. (No model.)

Claim.—1. As an improvement in machinery for manufacturing tubes and other hollow cylindrical articles, the combination of the mandrels D D', having the same diameter and affixed to a suitable mandrel-rod, with the horizontal and vertical rolls of a universal rolling-mill, for the purpose specified.



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2. The combination of the horizontal and vertical rolls of a universal rolling-mill, a mandrel composed of the solid stationary parts D D', having equal diameters and placed in the pass of the rolls, with the bearing-surfaces of the said parts respectively in line with the axes of the rolls B C, the mandrel-rod, and the forked standard E', substantially as specified.

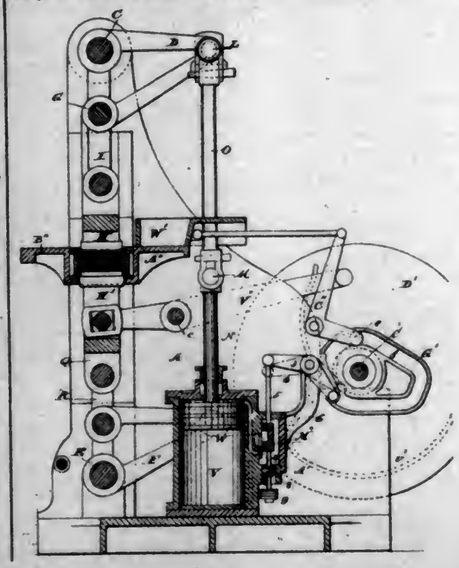
325,939. BRICK-MACHINE. LEWIS B. KENNEDY, St. Louis, Mo. Filed June 17, 1885. (No model.)

Claim.—1. A brick-machine in which the upper and lower plungers are moved toward each other simultaneously from a piston-rod of a steam-cylinder, as set forth.

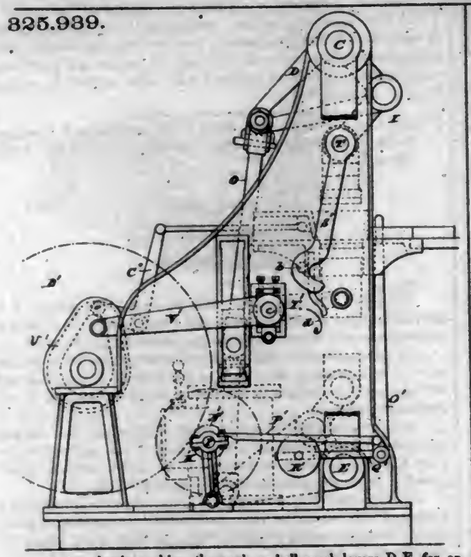
2. A brick-machine of the character described, the upper and lower plungers of which are connected to and operated by bell-crank and toggle levers attached to the cross-head of a piston, said piston being driven by steam or other suitable power, as set forth.

3. In a brick-machine, the angle or bell-crank levers D F, secured to cross-bars pivoted in the sides of the machine, said levers being connected or adapted to operate on the plungers by means of links or knuckle-joints which yield or work in opposite directions, the angle-levers being secured to and operated upon by a vertically-moving piston, as set forth, whereby the plungers are simultaneously brought to bear on the clay within the mold, as set forth.

4. In a steam cylinder or engine for operating the upper and lower plungers of a brick-machine, a steam-chest connected to said cylinder, provided with valves for controlling the supply of steam to the cylinder, said valves being connected to levers which are operated by cams on an independently-driven shaft, as set forth.



325,939.



5. In a brick-machine, the angle or bell-crank levers D F, for operating the upper and lower plungers, connected to the cross-head of a steam-actuated piston, the cylinder of which is provided with ports, said ports being opened for the passage of steam into the cylinder by means of slide-valves operated upon by cams secured to a continuously-rotating shaft, as set forth.

6. A brick-machine in which the upper and lower plungers are operated simultaneously from a steam-actuated piston, the slide-valves for controlling the supply of steam to the cylinder being raised by a system of levers and cams, as described, to open the ports, said ports being closed by the pressure of steam in the steam-chest when the levers are free from the action of the cams.

7. A device for operating the plungers of brick-machines, consisting of a steam-cylinder having the usual steam-ports, a steam-chest, and slide-valves operating in the same to control the passage of steam to each end of the cylinder, said slide-valves being connected at their upper ends to cam-actuated levers, as described, while the lower ends of the valves are provided with pistons or weights which return the valves to close the ports when the valve-levers are not operated upon by the cams, as set forth.

8. In devices for operating the plungers of brick-machines, the slide-valves M', provided with the rods 7 and pistons 8, adapted to work in openings in the steam-chest, in combination with the rods 5, pivoted levers 3 4, and cams E' and F', mounted on the rotating shaft C', as set forth.

9. In a brick-machine, the hooked rods S', secured to the upper plungers and adapted to engage with lugs on the lower plungers, whereby the upper and lower plungers are locked together and raised by the action of the upper plungers until the brick has been ejected from the mold, as set forth.

10. The lower disconnected plungers adapted to rest on and be operated by the cross-bar Q, in combination with the hooked bars S', secured to the upper plungers, and the operating parts, substantially such as described, for operating the plungers, whereby the lower plungers are raised to eject the brick from the mold by the same power which raises or withdraws the upper plungers, as described.

11. The hooked bars S', provided with the lug *b*, in combination with the cams T', whereby the hooks are disengaged from the lower plungers when the same have reached the top of the mold.

12. The hooked bars S', provided with the lugs *b*, in combination with the guides or springs *d*, whereby the hooked bars, in the downward movement of the upper plungers, are brought into engagement with the lugs on the lower plungers, as set forth.

13. The lever V', pivoted in the frame, as described, the forward end of which is secured to the lower plungers, in combination with the cam U' on the wheel D', adapted to operate on the rear end of the lever V' in the manner set forth, whereby the lower plungers are held up after the bars S' have been unhooked and said plungers gradually lowered into proper position in the mold.

14. The swinging bracket K', in which the shaft I' is mounted and driven by the band-pulley M', in combination with the friction paper-wheel N', lever O', and connecting-bar P, whereby the friction-wheel N' is thrown into or out of engagement with the wheel D' to start or stop the machine, as set forth.

15. The lever O', connected to the swinging bracket or support K', in combination with the arm Q' and adjustable weight R, whereby the friction-wheel N' is held in contact with the wheel D', as set forth.

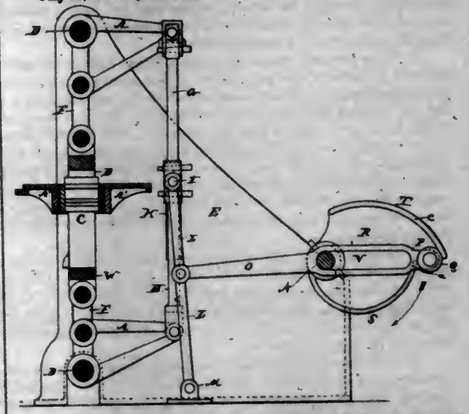
16. The shaft C', provided with the cams E' and F' for controlling the slide-valves of the cylinder, in combination with the cam-disk G', bell-crank lever C'', and feed-hopper W', whereby the plungers and feed-hopper are worked alternately from the same shaft, as set forth.

17. In a brick-machine of the character described, the cross-bars C and E, mounted in bearings in the sides of the machine, in combination with the connecting-rods 2 2, whereby the sides of the machine are relieved of the end pressure of the plungers, as set forth.

18. In a brick-machine, the mold-carrying frame F'', provided with the communicating cavities *g*, in combination with the mold G'', felt strips *l*, and plungers I'', as set forth.

19. A brick-machine having two or more mold-cavities, the division-plates of which are made hollow and communicate with the cavities in the main frame, said division-plates being perforated on their lower edge, and provided with strips of felt, as and for the purpose set forth.

325,940. BRICK-MACHINE. LEWIS B. KENNEDY, St. Louis, Mo. Filed July 16, 1885. (No model.)



Claim.—1. In a brick-machine, the angle or bell-crank levers A, pivoted in the sides of the machine, as described, said levers being connected to the plungers by means of links or knuckle-joints which yield in opposite directions, the outer ends of the angle or bell-crank levers being connected together by a bar which is raised and lowered by toggle-levers operated from a continuously-revolving shaft, as set forth.

2. A brick-machine in which the upper and lower plungers are operated by angle or bell-crank levers, the outer ends of said levers being joined by means of pitmen or rods which are connected together and to a cross-head, said cross-head being raised and lowered by means of toggles operated from a continuously-rotating shaft, as set forth.

3. A brick-machine the upper and lower plungers of which are connected to and operated by angle or bell-crank and toggle levers, as described, said bell-crank levers being connected to a cross-head sliding in ways in the sides of the machine by means of pitman-rods, the cross-head being raised and lowered by means of toggle-levers operated from a continuously-rotating shaft, as set forth.

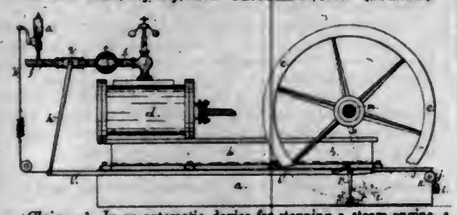
4. In a brick-machine, the shaft N, provided with the double cam-plate R, in combination with the slotted pitman O and toggle-levers L, whereby said toggle-levers are straightened and operate the plungers to compress the clay, and also bend the toggles and separate the plungers by a single rotation of the shaft, as set forth.

5. The double cam-plate R, mounted on the axis or shaft N, said cam-plate being provided with the cam-surface S, diverging from the axis or shaft, in combination with the slotted pitman O, having the extension P and friction-wheel Q, and the toggle-levers L, with their connections to the angle or bell-crank levers and plungers, whereby the toggles are straightened and the plungers gradually brought toward each other to compress the clay in the mold, as set forth.

6. The double cam-plate R, mounted on the axis or shaft N, said cam-plate being provided with the flanged cam-surface T, converging toward the axis, in combination with the slotted pitman O, having the extension P and friction-wheel Q, and the toggle-levers L, with their connections to the angle or bell-crank levers and plungers, whereby the toggles are bent and the plunger B and cross-head W are caused to recede from the point of compression, as set forth.

7. In a brick-machine, the shaft N, provided with the converging and diverging cams, as set forth, in combination with a slotted pitman, and toggle-levers for operating the plungers, as described.

325,941. AUTOMATIC DEVICE FOR STOPPING STEAM-ENGINES. JAMES M. LAING, Bay City, Mich. Filed June 25, 1885. (No model.)



Claim.—1. In an automatic device for stopping a steam-engine, a dog pivoted by one end to a revolving portion of the engine, the opposite free end being provided with an extended catch, and a retaining-spring holding the free end of the said dog in one position at a predetermined speed and allowing it to move outward at an increased speed, in combination with a throttle-valve in the steam-pipe, means, substantially as described, for closing the said throttle-valve by a weight or spring, a trip-lever holding the said throttle-valve open, and means, substantially as described, for tripping the said trip-lever by the extended free end of the said dog when the speed of the engine is increased, substantially as and for the purpose specified.

2. In an automatic device for stopping steam-engines, the combination of a throttle or stop valve placed in the steam-pipe, and a lever attached to the valve, with a connecting-rod having one end pivoted to the said lever and the opposite end provided with a weight or spring operating to move the rod and close the said valve, a recess in the rod arranged to engage with a fixed catch and hold the valve open, a trip-lever holding the said rod in engagement with the said catch, and means, substantially as described, for tripping the said trip-lever, and thereby releasing the said rod from the catch when the motion of the engine is increased beyond a predetermined speed, substantially as and for the purpose specified.

3. In an automatic device for stopping steam-engines, the dog *a*, pivoted at one end to the side of the wheel *c*, and provided at the opposite free end with the projecting catch *t*, in combination with a retaining-spring, *u*, having one end secured to the free end of the said dog and the opposite end secured to the eye *v* by the nuts *w*, substantially as and for the purpose set forth.

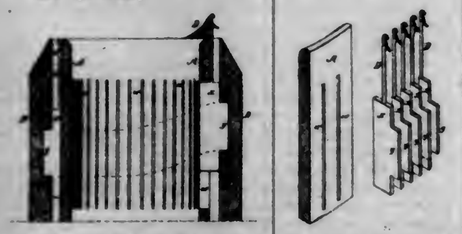
4. In an automatic apparatus for stopping a steam-engine, the combination of a throttle-valve in the steam-pipe and a lever attached to the said valve for opening the same, and means, substantially as described, for automatically closing the said valve at an increased speed of the engine, in combination with an alarm-whistle attached to the said steam-pipe, and a cord attaching the lever of the whistle to the said valve-lever in such a manner that when the throttle-valve is closed the whistle will sound an alarm, substantially as and for the purpose set forth.

325,942. WRENCH. BRADFORD P. LANCASTER, Augusta, Me., assignor of one-half to Richard W. Mack, same place. Filed Jan. 29, 1885. (No model.)



Claim.—The wrench consisting of jaws A and B, side bars, C C, and yoke D, through which passes screw E, which screw is pivoted to jaw B, and which contains ratchet-wheel G, controlled by catch A, substantially as shown and described.

325,943. KNITTING-MACHINE. THOMAS LANGHAM, Philadelphia, Pa., assignor of one-half to Alfred Oliver, same place. Filed Sept. 15, 1884. (No model.)



Claim.—1. The combination of the needle-carrier of a knitting-machine, having slots *w*, needle-operating cam or cams, needles placed side by side on the carrier, and having their jacks in contact and under control of said cam or cams, and supporting-jacks guided in the slots of the carrier and also under the control of the needle-operating cam or cams, as set forth.

2. The combination of the needle-carrier of a knitting-machine, having slots *w*, the needle-operating cam or cams, and needles placed side by side on the carrier with their jacks in contact, said jacks being under control of the cam or cams and some of the needle-jacks entering the slots *w*, as specified.

325,944. VELOCIPEDE. ERNST G. LATTA, Friendship, N. Y., assignor to the Pope Manufacturing Company, Hartford, Conn. Filed Oct. 15, 1884. (No model.)



Claim.—1. The combination, with the central solid portion, A, of the axle provided with tubular ends, of the end portions, A' A', secured in the tubular ends of the central portion, substantially as set forth.

2. The combination, with the central solid portion, A, of the axle provided with tubular ends *a a*, of the end portions, A' A', made solid with the crank, and removably attached to the central portion, A, substantially as set forth.

3. The combination, with the central solid portion, A, of the axle provided with tubular ends *a a*, of the hubs C and end portions, A', made solid with the cranks and secured to the central portion by screw-threads *a'* and *c*, and a key, *b*, substantially as set forth.

4. The combination, with the axle and cranks of a wheel, of a key, *b*, adapted to be inserted in a key-seat formed in the crank and axle from outside the crank, and be driven out from the inside of the wheel, substantially as set forth.

5. The combination, with the axle, hub, and crank of a wheel, of a key-seat extending from outside the crank to the inside of the hub, whereby a key may be inserted from one end of the key-seat and driven out from the opposite end, substantially as set forth.

6. The combination, in a ball-bearing for velocipedes, of an inclosing bearing-box surrounding the balls, and two cone-bearings provided, respectively, with right and left hand screw-threads and overlapping sleeves or collars having interlocking ribs and projections whereby both cone-bearings are compelled to turn together while being permitted to slide one upon the other, and an axle provided with right and left hand screw-threads upon which said cone-bearings are mounted, substantially as set forth.

7. The combination, with the fork G, provided with jaws G' G', having an inwardly-projecting bead, *g*, of an annular screw, G^2, adjustably secured to the jaws G', and provided with an inwardly-projecting bead, g^2, and a bearing-box, H, having spherical outer edges and arranged in the jaws G' G' and resting upon the beads $g\ g^2$, substantially as set forth.

8. The combination, with the fork-jaws G'-G', annular screw-nut G^2, and inwardly-projecting beads $g\ g^2$, of a bearing-box, H, provided with a central bead or rim, A', and outer spherical edges, and secured between the jaws with its outer edges resting upon the beads $g\ g^2$, substantially as set forth.

9. The combination, with the fork-jaws G' G', provided with lugs g^2, of a bearing-box, H, having spherical outer edges, and secured between the jaws G' by an annular screw-nut, G^2, and bolt I, substantially as set forth.

10. The combination, with the rim and hub of a wheel, of tangent-spokes, each constructed of a strip of sheet metal or flattened wire turned with its edges in the direction in which the wheel moves, and having its bent portion passed through an opening in the hub at an angle to a radial line, and its ends secured to the rim of the wheel, substantially as set forth.

11. The combination, with the hub or rim of a wheel, of a sheet-metal spoke made wider at its end and adapted to be folded and provided with a screw-thread, K, substantially as set forth.

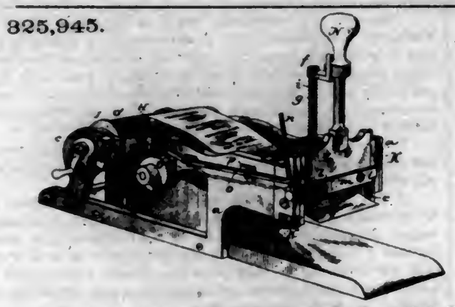
12. The combination, with the rim of a wheel, and a spoke, K, provided with a screw-thread, K, of a tapered split nipple provided with an internal and external screw-thread and a lock-nut adapted to engage over said nipple and compress the latter around the spoke, substantially as set forth.

325,945. ADDRESSING-MACHINE. ALPHONSO LE ROY, Dunkirk, and BENJAMIN MARTINONI, Westfield, N. Y.; said Martignoni assignor to Galen B. Everts, Dunkirk, N. Y. Filed Mar. 23, 1885. (No model.)

Claim.—1. The herein-described addressing-machine, consisting of a frame, paste box or receptacle B, rolls C E F, endless belt G, paper-feed roll I, plunger L, carrying cutter M and arm *n*, stationary cutter *k*, ratchet-wheel D, and arm *o*, provided with pawl *q*, all substantially as shown and described.

2. In an addressing-machine, the combination of a frame, box B, roll C, belt G, carried thereby, roll I, and the combined guide and scraper H, secured to the rear side of the box B, as and for the purpose set forth.

325,945.



3. In an addressing-machine, the combination of a frame, blocks K, bar *d*, connecting the latter and provided with arm *h* and rod *g*, and plunger L, moving in the blocks K, and provided with arms *f*, and a spring, *i*, between the arms *f h*, as and for the purpose set forth.

4. In an addressing-machine, the combination of a frame, rolls C F, the former provided with ratchet-wheel D, belt G, carried by said rolls, plunger L, having inclined rod *n*, reciprocating rod *o*, encircling and moved by rod *n*, and provided with pawl *q*, as and for the purpose set forth.

5. In an addressing-machine, the combination of a frame, a feeding device with a ratchet-wheel, a plunger, a reciprocating rod moved by said plunger and having a pivoted tail or extension provided with a pawl, and an adjustable bracket secured upon the frame and adapted to vary the movement or action of the pawl.

325,946. COCKEYE. GEORGE J. LEICHWORTH, Buffalo, N. Y. Filed Jan. 15, 1885. (No model.)



Claim.—As an improved article of manufacture, a cockeye composed of a loop, A, cross-bar B, central shank, *b*, and side braces, *c c*, connecting the loop with the cross-bar on opposite sides of the central shank, and bar or bolt D, substantially as set forth.

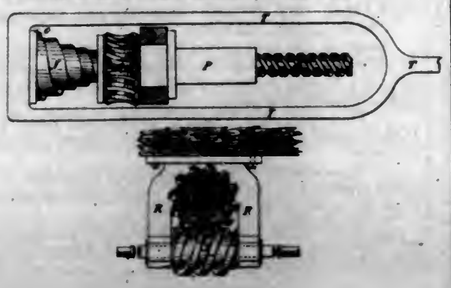
325,947. CAR-COUPLING. PHILIP LINDO, Delft, Holland. Filed Mar. 27, 1885. (No model.) Patented in England Jan. 15, 1885, No. 605; in Belgium Mar. 14, 1885, No. 68,194; in Italy Mar. 30, 1885, No. 18,144, and in Austria May 26, 1885, No. 11,312.

Claim.—1. The improved coupling consisting of a pair of rule-jointed links connected with the head of the draw-bar and a barrel with chains lifting the links to a position to drop onto hooks on the opposite draw-bar head, substantially as described.

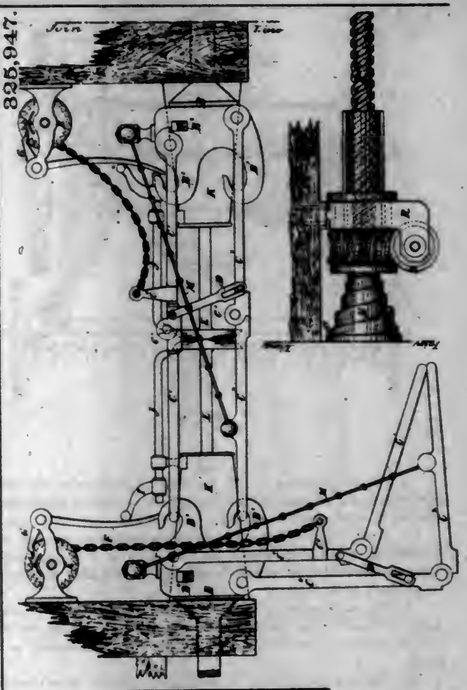
2. The apparatus for effecting the automatic liberation of the coupling-links, enabling them to engage with the hooks of the draw-bar, consisting of a sliding rod operated by the buffer when driven in and lifting a retaining-pawl, substantially as described.

3. The combination of the rule-jointed link or links connected with the head of the draw-bar, the barrel with pawl and chains lifting and retaining the link or links in a position to drop onto the hook or hooks on the opposite draw-bar head, and the sliding rod releasing the said pawl when two carriages are brought together, substantially as described.

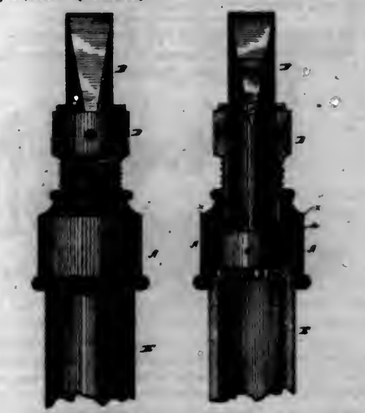
4. The apparatus for adjusting the draw-springs, consisting of a worm and worm-wheel and a sleeve on which the draw-spring abuts, the said sleeve sliding through the wheel and working as a nut on a screw-thread on the draw-bar, substantially as described.



325,947.



325,948. PIPE-REAMER. RUFUS G. MARCY, Kansas City, Mo. Filed July 23, 1885. (No model.)



Claim.—The shaft B, with its head and cutters, the shell A, with its enlargement and internal threads at each end, and the feed-sleeve D, the several parts being combined and adapted to operate substantially as and for the purpose set forth.

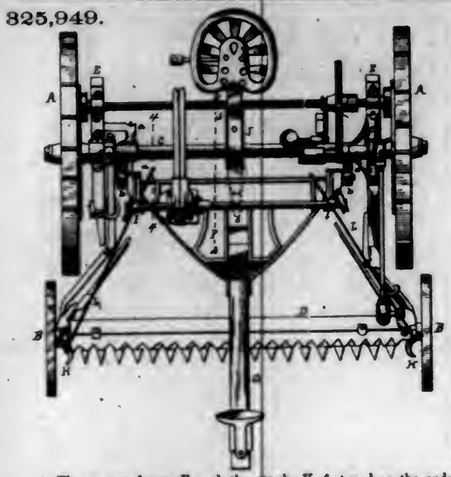
325,949. MOWING-MACHINE. DEWITT C. MARKHAM, Towanda, Pa., assignor to the Eureka Mower Company, Utica, N. Y. Filed July 15, 1884. (No model.)

Claim.—1. In a mowing-machine, the tongue-frame hinged to the main frame of the machine, in combination with the seat and seat-holder, said seat-holder being separate from the tongue-frame and secured to the axle of the machine and being adapted to support the tongue-frame and counterbalance its weight, substantially as set forth.

2. In a mowing-machine, the axle and the seat-holder mounted thereon, in combination with the tongue-frame hinged to the frame of the machine and adapted to be supported and counterbalanced by said seat-holder, substantially as set forth.

3. The tongue-frame hinged to the frame of a mowing-machine, in combination with the seat-holder and a roller mounted on said seat-holder, on which the tongue-frame is supported, substantially as set forth.

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4. The tongue-frame F and the staple K, fastened on the under side thereof, in combination with the seat-holder J, which passes through said staple, substantially as set forth.

5. A seat-holder composed of two parts connected together, substantially as set forth, in combination with the axle of a mowing-machine, one part being located above said axle and the other part below, substantially as set forth.

6. The combination of the axle C, the bracket *f*, and the seat-holder, composed of two parts, *h* and *i*, the lower part, *i*, being provided with an aperture, *j*, which fits over the bracket *f*, substantially as set forth.

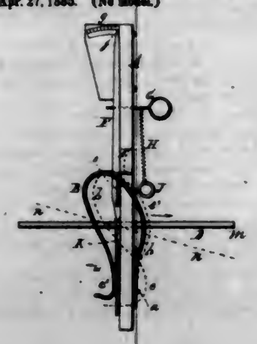
7. The wire glass-rods L, in combination with the shoes to which the rods are secured at their lower ends, and the brackets I, provided with the eyes *l*, through which eyes the upper ends of the said rods freely pass, substantially as described.

325,950. BELL-CRANK FOR MOWING-MACHINES. DEWITT C. MARKHAM, Towanda, Pa., assignor to the Eureka Mower Company, Utica, N. Y. Filed July 15, 1884. (No model.)



Claim.—The knife of a mowing-machine, in combination with a bell-crank, which imparts reciprocating motion to said knife, said bell-crank being provided with heels on each side of its lower arm, substantially as and for the purpose set forth.

325,951. SAW-SETTING DEVICE. GEO. H. MASSINGHAM, Saybrook, Ohio. Filed Apr. 27, 1885. (No model.)

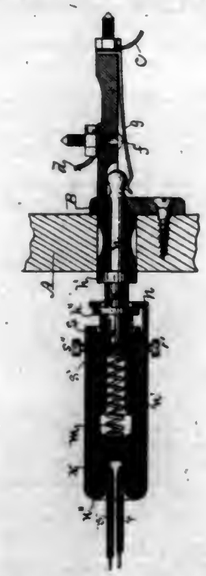


Claim.—1. In a saw-set, the back A, having secured thereto the binding-spring B, vibratory lever D, suspended in an opening in said back A by swinging hangers, the lower ends of which are the pivoted axis or fulcrum of the lever, the said lever having therein a slot, *k*, in combination with the indicator pivoted to the side of the back in a vertical relation to the lever D, and in alignment with the slot *k* therein, substantially as described, and for the purpose specified.

2. In a saw-set, in combination with the indicator-scale *g*, spring and pin, the lever D, co-operating therewith, for the purpose specified, and substantially as described.

3. The combination of the binding-spring and back A, lever D, having therein a slot, and suspended in an opening in said back by swing-hangers, the lower ends of which are the axis or fulcrum of the lever, indicator F, having its lower end in close proximity to the lever D and to the slot therein and the upper end of the indicator, an index-scale, *g*, spring H, and pin, constructed and arranged to operate substantially as described, and for the purpose specified.

325,952. TELEPHONE-SWITCH-BOARD PLUG. CHESTER K. MEAD, Des Moines, Iowa. Filed Dec. 20, 1884. (No model.)



Claim.—1. An improved plug for telephone switch-boards, composed of a tubular insulator and handle having a metal conductor fixed to its front end extended over the opposite end, and a conducting-wire combined therewith to extend to a transmitting-strip on the board, a conductor fixed to the rear end, and a wire combined therewith to extend to a battery, a plug adapted to slide in the tubular handle and provided with two flanges or projections to alternately engage the two distinct conductors on the handle, and a spring to press the plug outward relative to the tubular handle, for the purposes specified.

2. The plug *h*, having flanges *h'* and *h''*, and a tubular extension, *h'''*, the tubular insulator and handle *k*, having a spring, *m*, inclosed, the fixed conductor *n n' n''*, having a wire, *r*, attached, and the fixed conductor S, having a wire attached, constructed, arranged, and combined to operate in the manner set forth, for the purposes specified.

325,953. CAR-COUPLING. ALLEN MIDDLETON, Philadelphia, Pa. Filed Apr. 10, 1885. (No model.)

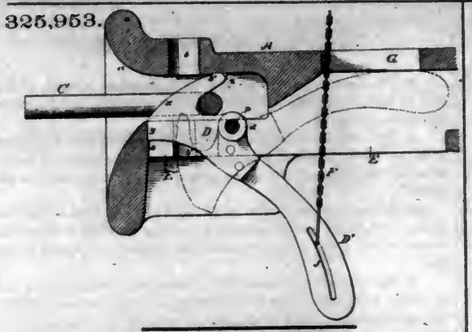
Claim.—1. The combination of the draw-head having shoulders *e e*, a pivoted hook having bosses *d d*, adapted to engage with said shoulders, and a pivot-pin smaller in diameter than the hole in the pivoted hook, substantially as set forth.

2. The coupling-hook D, made of cast-steel, and having an arm, D', made separately therefrom, but rigidly secured thereto, substantially as specified.

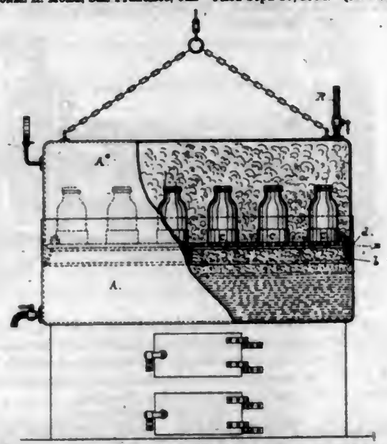
3. The combination of the pivoted hook of a car-coupling with the counterweighting-arm, having a slot, *f*, and the lifting device adapted to said slot, as and for the purpose set forth.

4. The draw-head having the pin-hole *b* in the upper part and the slot E in its lower part, provided with recesses *b'* in line with the pin-hole, as and for the purpose described.

325,953.



325,954. FRUIT AND VEGETABLE PRESERVING APPARATUS. LIONEL H. MOORE, San Francisco, Cal. Filed Sept. 19, 1884. (No model.)



Claim.—1. The combination, with the two-part steaming case or receptacle A A°, of which the parts or sections are separable on a substantially horizontal line and the one removable from the other, of the perforated floor or supporting-surface B, provided with sockets C, and placed within one of said sections in such position with respect to the line of separation that when the parts or sections are separated the jars are exposed outside of the compartment for ready handling and removing, substantially as hereinbefore described.

2. The herein-described machine or apparatus for steaming and otherwise treating fruit and like matter in close receptacles to preserve the same for future use, consisting of the stationary part or chamber A, having a platform or supporting-surface situated over the steam-generating space of said chamber and in close relation to the top edge or rim of said chamber, and the removable upper part or chamber, A°, adapted to fit over and inclose the jars when placed on the supporting-surface, and when removed to expose the jars or receptacles to the atmosphere and insure their speedy cooling and the speedy disappearance of the steam and vapor, suitable connection of said apparatus being made with a steam-supply or with a heating-furnace.

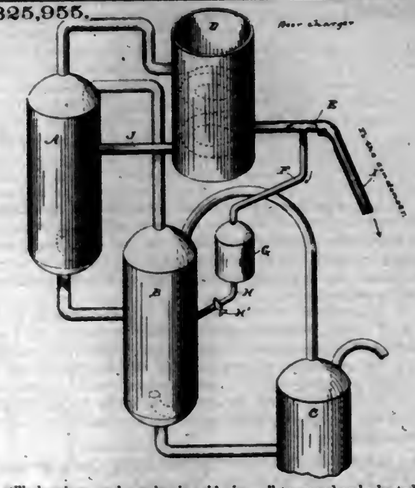
3. The combination, with the stationary case A, having the perforated supporting-surface B, with jar-holders, the removable top or upper part, A°, with steam-outlet R and steam-gage S, and the channel or space *d* in the stationary part around the margin, of the perforated support to receive the rim of the removable part of the case, substantially as described.

325,955. STILL. MARTIN V. MONARCH, Owensborough, Ky. Filed July 14, 1885. (No model.)

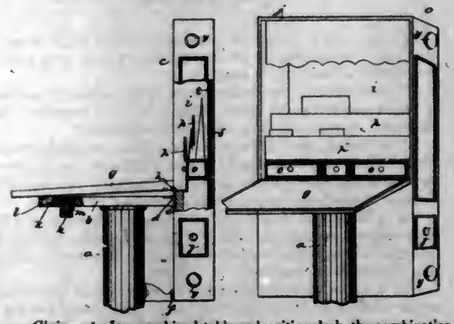
Claim.—1. The combination of a still, a discharge-pipe or worm leading from one of the chambers of the still to the condenser, a dam or stop located within said pipe between the still-chamber and the condenser, and a receiver communicating with the pipe between the dam and the still-chamber, substantially as set forth.

2. The combination, substantially as herein described and shown, consisting of the still, the beer charger or chamber, the pipe or worm conducted through said charging-chamber, a receiver connected with said pipe beyond the said chamber, a stop or dam located in the said pipe between the condenser and the point of connection of the receiver with such discharge-pipe, a pipe connecting the receiver and one of the still-chambers, and a valve in said pipe, all arranged and adapted to operate substantially as set forth.

325,956.



325,956. COMBINED TABLE AND WRITING-DESK. IRA W. MOORE, New York, N. Y., assignor of one-half to Henry Salomon, same place. Filed Apr. 24, 1885. (No model.)



Claim.—1. In a combined table and writing-desk, the combination, with the top *c*, having a stationery-chamber between its upper and lower sides, and being hinged on the lower side, and about midway from its center to its back edge, to the back edge of the stand *a b*, of the desk-top *g*, hinged at its back edge to the lower side of the table-top, forward of the hinge-joints connecting the table-top and stand, and the thrust-bearing *f*, located below the top of the stand and relatively to the extension of the table-top back of the back edge of the stand, substantially as described.

2. The improved combined table and writing-desk consisting of the stand *a b*, the table-top *c*, hinged to the stand *a b*, and the writing-desk top *g*, hinged to the table-top, said table-top being adapted to be swung up and to rest in an upright position, said desk-top being adapted to be raised up automatically, and be supported in a sloping or inclined position, and said desk-top also having a sliding motion on the supporting-stand, and an automatic locking and unlocking catch, *k l*, substantially as described.

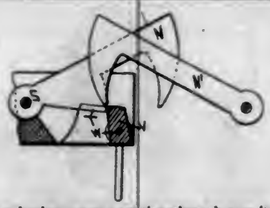
3. The improved combined table and writing-desk consisting of the stand *a b*, the table *c*, hinged to the stand *a b*, and the writing-desk top *g*, hinged to the table-top, said stand *a b* having an ink-bottle receptacle, *m*, under the writing-desk top, and said desk-top and stand having a fastening device, *k l*, substantially as described.

4. In a combined table and writing-desk, a chambered top for stationery, hinged to the stand forward of the back edge for self-support when set upright, said top having a drawer, *z*, located back of the hinges and opening at the end of the top for access when the top is raised, substantially as described.

325,957. CAR-COUPLING. BENJAMIN B. MORGAN, Ann Arbor, Mich. Filed July 20, 1885. (No model.)

Claim.—1. A draw-bar having a recess cut therein and a lug across its front end, a swinging hook pivoted in the draw-bar, and a lateral toe, T, connected with the hook and rising in said recess when the hook is raised, substantially as shown and described.

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2. A draw-bar having a recess cut therethrough near its front end, a lug extending across the draw-bar in front of said recess, and having both faces inclined toward the rear end of the draw-bar, a hook having a curved end and having its shank pivoted in the draw-bar, a toe connected with said hook, and means for raising said hook, substantially as shown and described.

3. In combination with the draw-bar L, pivoted hook N, having the toe T thereon, connecting-rod D, rock-shaft B, having arm K and lever F thereon, and stop-pin H, substantially as shown and described.

4. The combination of the draw-bar L with the pivoted hook N, toe T, and connecting-rods C D, substantially as shown and described.

5. In combination with the draw-bar L, having the lug V across its front end, the link M, pivoted on the pin W, substantially as shown and described.

325,958. INCANDESCENT ELECTRIC LAMP. OTTO A. MOSES, New York, N. Y. Filed July 30, 1884. (No model.)



Claim.—1. A filament for incandescent electric lamps, formed in the shape of two incomplete circles united with each other by a curved continuation, substantially as described.

2. A filament for incandescent electric lamps, formed in the shape of two incomplete circles having different radii and united with each other by a curved continuation, substantially as described.

3. A filament for incandescent electric lights, consisting of a conductor formed in an arched loop the sides of which are united by a curved continuation, are approximately parallel, and are bent to form curves, the free ends of which loop are supported, substantially as described.

4. A filament for incandescent electric lamps, consisting of a loop of incandescent material, the sides of which are bent so as to form two incomplete circles, and are united with each other by a curved continuation, substantially as described.

5. A carbon filament for incandescent electric lamps, having its respective extremities electroplated with metal before being attached to the conductors, and having its ends bare, substantially as described, in combination with supporting-conductors, to which it is secured by mechanical compression.

6. A carbon filament for incandescent electric lamps, having its outer extremities covered with a metal which has been applied by electro-deposition, and its ends bare, substantially as described.

7. A carbon filament for incandescent lamps, having its extremities first coated with a metal by electro-deposition, in combination with supporting-conductors, to which it is united by mechanical compression and with which it is afterward soldered, substantially as described.

8. A carbon filament for incandescent electric lamps, having its ends first coated by electro-deposition, in combination with metallic supporting-conductors, to which the respective ends so coated are secured by mechanical compression, substantially as described.

9. An incandescent electric lamp having a carbon filament formed in a curve of greater diameter than the diameter of the opening through which it was inserted.

10. In combination with the inclosing-chamber of an incandescent electric light, a carbonized filament formed into a loop having a curved bight, which loop is constructed in a curve the radius of which is greater than that of the opening through which it is inserted into the chamber.

325,959. LEAD AND CRAYON HOLDER. OTTO A. MOSES, New York, N. Y. Filed Mar. 11, 1885. (No model.)

Claim.—1. The combination, substantially as hereinbefore set forth, of a lead or crayon holding tube, said tube being provided with jaws for grasping the crayon, and a coil-spring inclosing the same and constituting a handle and serving to compress said jaws through its resilience.

2. A lead or crayon holder consisting of the combination, substantially as hereinbefore set forth, of a lead or crayon holding tube terminating at one end in resilient jaws and having enlargements formed upon or in said jaws, and a coil-spring compressed between said enlargements and the remaining end of said tube, which spring constitutes the handle of the same.

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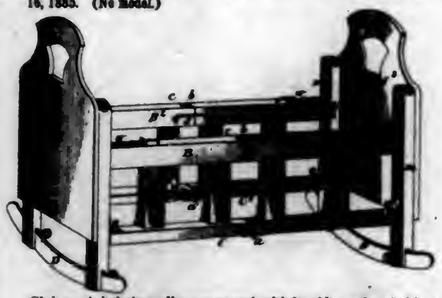
3. The combination, substantially as hereinbefore set forth, of the lead or crayon tube, the coil-spring inclosing the same, and the nut or nuts upon said spring.

4. The combination, substantially as hereinbefore set forth, of a lead or crayon holding tube and a coil-spring inclosing the same, the convolutions of which spring have angles formed in them, substantially as described.

5. A lead or crayon holder consisting of a tube and one or more inclosing springs, and means, substantially such as described, whereby the tension of said spring or springs causes the crayon to be grasped in said tube.

6. The combination, substantially as hereinbefore set forth, of a lead or crayon tube terminating in jaws having enlargements and a spring surrounding said tube and having one end normally in contact with said jaws.

325,960. CRADLE. GEORGE H. NEAL, Falls City, Nebr. Filed June 16, 1885. (No model.)



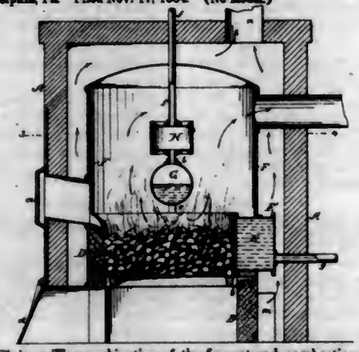
Claim.—A baby's cradle constructed with its sides and ends hinged to its bottom portion, the bottom hinged centrally, the sides united to each other in the center by tongue-and-groove joints and to the ends by dovetail joints, and properly secured, the cradle being adapted to fold together in a flat condition, substantially as described.

325,961. BURGLAR-ALARM. JOHN G. NEWELL, New Haven, Conn. Filed Feb. 9, 1885. (No model.)



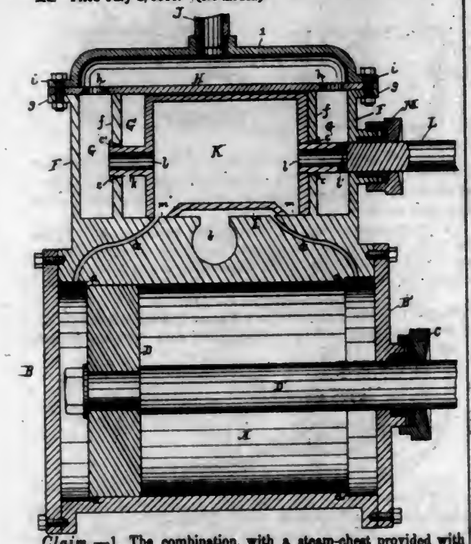
Claim.—The combination of the tube A, provided with the removable cap B at one end, and constructed with a diagonal slot, *b*, the said slot turned transversely at its end to form a notch, *d*, the spindle D, arranged in the cylinder for free longitudinal movement, spring F in the cylinder adapted to force the spindle toward the removable cap, the said spindle provided with a finger, G, extending through the said slot, the said tube constructed for attachment substantially as described.

325,962. AIR AND STEAM HEATER. GEORGE NIXON, Jr., Philadelphia, Pa. Filed Nov. 17, 1884. (No model.)



Claim.—The combination of the fire-pot and combustion-chamber of the furnace with the water-heater E, forming part of the casing of the fire-pot, the steam-generator G, located directly above the fire-pot and communicating with said water-heater, and the superheater H above the generator and within the combustion-chamber, all substantially as set forth.

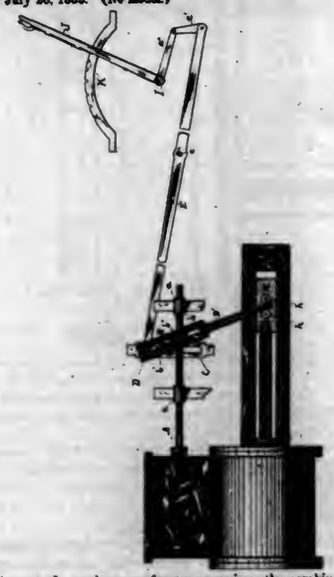
325,963. BALANCED VALVE. MORRILL N. PACKARD, Baltimore, Md. Filed July 2, 1885. (No model.)



Claim.—1. The combination, with a steam-chest provided with steam-chambers and a valve-chamber, said steam-chambers communicating with the steam-supply from the boiler, of a slide-valve located in the valve-chamber and provided with means, substantially as described, for admitting steam to its interior and excluding it from the interior of the valve-chamber.

2. The combination, with a steam-chest provided with a steam-chamber at each end in communication with the steam-supply from the boiler, and a valve-chamber between them, of a slide-valve provided with a barrel at one end and a valve-stem at the other, both of which are provided with steam-inlets and work in openings through the inner walls of the steam-chambers, which openings are packed above with spring-packing and below with ordinary steam-packing, substantially as described, and for the purposes set forth.

325,964. VALVE-GEAR. MORRILL N. PACKARD, Baltimore, Md. Filed July 20, 1885. (No model.)



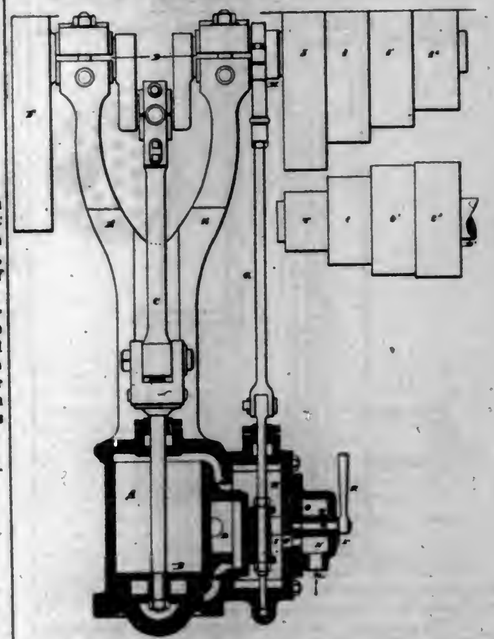
Claim.—1. In a valve-gear for steam-engines, the combination, with a valve-stem, of a vibrating lever whose upper portion forms a link pivoted to the stem, and a fulcrum-block fitted in said link and adapted to be moved by suitable actuating mechanism to positions above or below the pivotal point of the link, substantially as described, and for the purpose set forth.

2. The combination, with a cross-head and a valve-stem of a steam-engine, of a lever whose upper portion forms a link pivoted to the stem, and a fulcrum-block fitted in said link and adapted to be moved by suitable actuating mechanism to positions above or below the pivotal point of the link, substantially as described, and for the purpose set forth.

3. The combination, with a cross-head and a valve-stem of a steam-engine, of a lever whose upper portion forms a link pivoted to the stem, a fulcrum-block fitted in said link, a guide secured to any suitable part of the engine, a guide-block fitted to slide therein, a shaft connecting the fulcrum-block and the guide-block, and a lever for actuating the shaft, substantially as described.

4. The combination, with a valve-stem of a steam-engine, of a vibrating lever whose upper portion forms a link pivoted to the stem, a fulcrum-block fitted in said link, and an actuating-lever on the end of which the fulcrum-block is journaled, in the manner and for the purpose set forth.

325,965. HYDRAULIC ENGINE. PAUL R. PERKINS, North Springfield, Mo. Filed May 11, 1885. (No model.)



Claim.—1. The combination, with an engine, a valve-casing, and a valve located within said casing, of a second valve-casing communicating with the first-mentioned casing by a single orifice and a valve located within the second valve casing for regulating the supply of motor-fluid to the first-mentioned valve-casing, substantially as set forth.

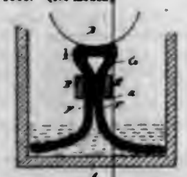
2. The combination, with an engine and a valve for admitting the motor-fluid to the cylinder in amounts bearing predetermined ratios to the full head, of cone-pulleys secured on the engine-shaft and cone-pulleys secured on the line-shaft in reverse position to the pulleys on the engine-shaft, whereby the speed of the line-shaft is maintained at a uniform rate during the variations of the power.

3. The combination, with a graduated valve for admitting the water to the cylinder, of a cone of pulleys on the engine-shaft and a reversed cone of pulleys on the line-shaft, whereby the line-shaft is maintained at a uniform speed during the variations of the power, substantially as set forth.

4. The combination, with an engine, a valve-chamber, and a valve located within said chamber, of an inlet-chamber secured to the valve-chamber, a port connecting the two chambers, a rotary valve-disk provided with different-sized perforations adapted to register with said port, and a lever for adjusting said disk.

5. The combination, with an engine, a valve-casing, and a valve, of a second valve provided with a series of different-sized openings, each bearing a predetermined ratio to the full opening, an operating-lever, and a graduated scale or index located in convenient proximity to a pointer on the operating-lever, substantially as set forth.

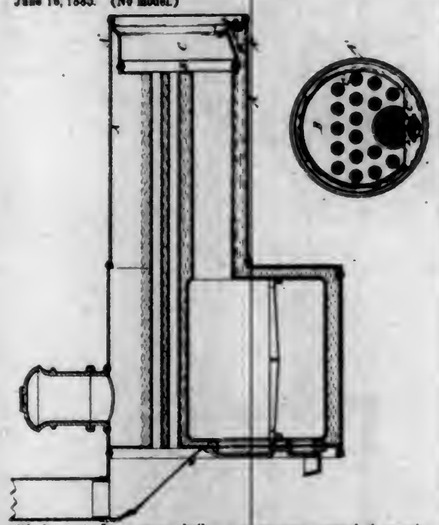
325,966. LUBRICATING CAR-AXLES. ORIORN A. PIERCE, Detroit, Mich. Filed June 4, 1885. (No model.)



Claim.—1. In a journal-lubricator, the slotted bar E, combined with a mat made of loose cotton yarn secured in said bar in the form of a loop, and an elastic material within the fold of said mat, substantially as and for the purposes specified.

2. The combination, with a car axle-box, of the slotted bar E, secured therein, the mat F of cotton wick, the ends of which are inserted through the slot in said bar to form a loop or head, *b*, above the bar, and the looped hair-cloth G in the fold of said mat, substantially as herein shown and described, and for the purposes specified.

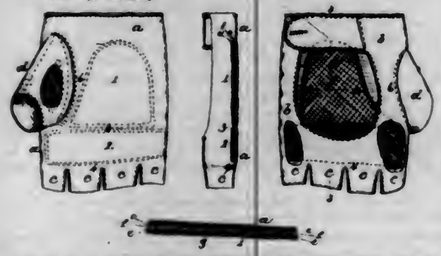
325,967. STEAM-BOILER. GEO. A. PORTER, Syracuse, N. Y. Filed June 16, 1885. (No model.)



Claim.—1. In a steam-boiler, a water-space around the smoke-box, and deepened at its outer end, and a hand-hole in said end of the water-jacket for the purpose of cleaning the same, as set forth.

2. The combination, with the boiler-shell extension forward from the flue-sheet, of the smoke-box shell extending the length of the boiler-shell extension and formed with an upward deflection at the end of the boiler-shell extension, and a hand-hole in the said deflected portion of the smoke-box shell, substantially as described and shown.

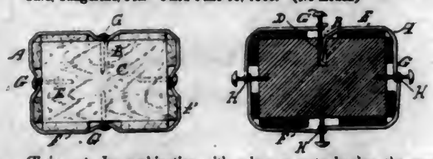
325,968. GLOVE. GEORGE H. RAWLINGS, St. Louis, Mo. Filed Mar. 23, 1885. (No model.)



Claim.—1. A glove having a pad, 1, in the palm thereof, consisting of two layers of felt having a layer of rubber interposed between them, and a lining of leather, substantially as set forth.

2. A glove having a pad in the palm thereof, consisting of two or more layers of felt, having one or more layers of rubber interposed between them, and a lining of leather, substantially as set forth.

325,969. BINDING FOR BOXES OR CRATES. WILLIAM F. REDDING, Tangerine, Fla. Filed June 18, 1885. (No model.)



Claim.—1. In combination with a box or crate having the recess D, the wire A, having the flange B, and the loops H, secured in position about said box, and made taut by nails G, substantially as and for the purpose specified.

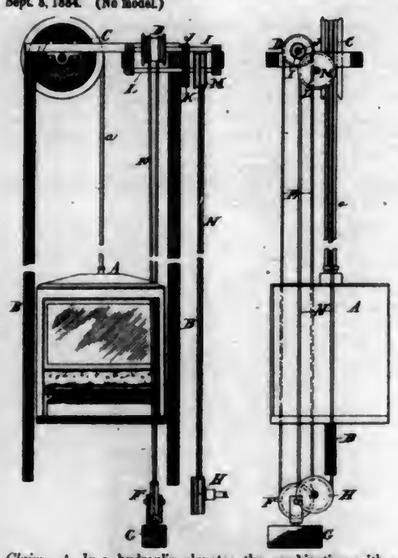
2. In combination with the box or crate, having a recess, D, the wire A, having the flange B, the said flange also provided with the point C, and secured by the nail G, substantially as and for the purpose set forth.

325,970. MUCILAGE-BOTTLE. WILLIAM H. REDINGTON, Chicago, Ill., assignor of one-half to William Rodiger, same place. Filed July 15, 1885. (No model.)



Claim.—In a mucilage-bottle, the combination of a distributing or applying sponge and the top piece, C, having its sides beveled and sloping upwardly and outwardly from its contact with the sponge, whereby a cup or funnel-shaped space around the sponge is formed to catch the mucilage and prevent its overflowing the bottle, substantially as described.

325,971. ELEVATOR. HENRY J. REEDY, Cincinnati, Ohio. Filed Sept. 8, 1884. (No model.)



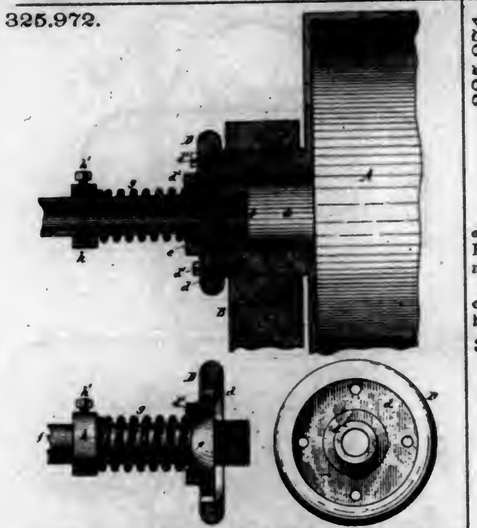
Claim.—1. In a hydraulic elevator, the combination, with a cab, A, of a main cable, E, connecting therewith, a secondary cable, N, connecting with a valve, and intermediate back gear connecting with said cables for moving cable N at a slower speed than cable E, substantially as described.

2. In a hydraulic elevator, the combination of cable E, shifting-pulley D, around which said cable passes, pulley I and valve-pulley H, cable N, connecting said pulleys I and H, and gears J and K, of varying diameters and connecting with pulleys D and L, to move cable N at a slower speed than E, substantially as described.

325,972. STEAM-PIPE JOINT FOR ROTARY PAPER-DRYING CYLINDERS, &c. MICHAEL J. ROACH, Lockport, N. Y., assignor of one-half to Joseph Clark and Daniel McKim, same place. Filed Sept. 23, 1884. (No model.)

Brief.—Improvement on Patent No. 298,624, dated May 13, 1884, to same inventor.

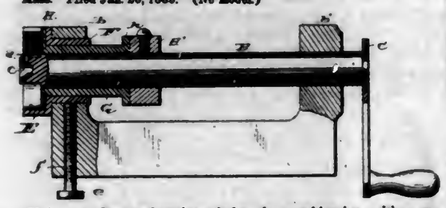
325,972.



Claim.—1. In a steam-pipe joint for hollow revolving journals, the combination, with the journal having a valve-seat formed on its inner side and exposed to the steam-pressure, of a pipe entering said journal and provided with a valve, which is held in the seat of the journal by the steam-pressure, and a spring, which also holds the valve in its seat, whereby the valve is held in its seat by the cumulative pressure of the steam and spring when steam is applied, and by the spring alone when the steam is shut off, substantially as set forth.

2. In a steam-pipe joint for hollow revolving journals, the combination, with the head D, having a valve-seat, *d*, of a pipe, *f*, provided with a valve, *e*, arranged in said valve-seat, a spiral spring, *g*, surrounding said pipe, and a collar, *h*, secured to said pipe, whereby said valve is held in its seat, substantially as set forth.

325,973. MAINSPRING-WINDER. ALBERT F. ROBBINS, Orange Mass. Filed Jan. 26, 1885. (No model.)



Claim.—1. In a mainspring-winder, the combination, with a supporting-frame having a shaft journaled therein, of a removable barrel having a notch and a disk having a nib to engage said notch, said disk being adapted to be moved to force the mainspring from the barrel, as set forth.

2. In a mainspring-winder, the combination, with a supporting-frame having a shaft journaled therein, said shaft having a countersunk end and a pin, as shown, of a removable barrel and a disk adapted to be moved to force the spring from said barrel, substantially as set forth.

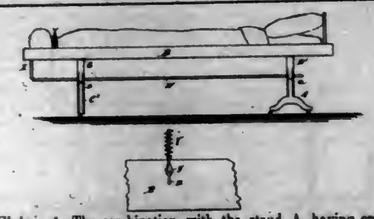
3. In a mainspring-winder, the combination, with a supporting-frame having a shaft journaled therein, said shaft having a countersunk end and a pin, as shown, of a removable barrel having a notch and a disk having a nib to fit the same, substantially as set forth.

4. In a mainspring-winder, the combination, with a supporting-frame having a shaft journaled therein, said shaft having a countersunk end and a pin, as shown, of a removable barrel having an integral sleeve, a sleeve fitting within the same, and a disk on the end of said last-mentioned sleeve, as set forth.

5. In a mainspring-winder, the combination, with a supporting-frame having a shaft journaled therein, said shaft having a countersunk end and a pin, as shown, of a removable barrel having a notch and an integral sleeve, a sleeve fitting within the same, a disk on the end of said last-mentioned sleeve, which is also provided at its other end with a flange, said disk having a nib, and an adjustable collar on the shaft, substantially as set forth.

325,974. FOLDING BED. WILLIAM T. SALTER, New York, N. Y. Filed Apr. 8, 1884. (No model.)

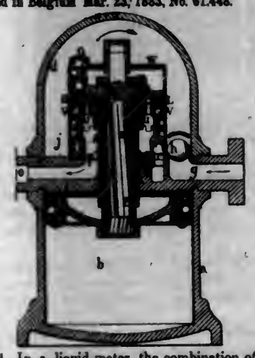
325,974.



Claim.—1. The combination, with the stand A, having cross-bar *a*, of the frame B, hinged to said stand, the legs C, hinged to the frame B, and having cross-bars *c*, and the screen W and strip X, loosely connected to the frame, as set forth.

2. The spiral spring Y and snap-hooks *y y*, one at each end, in combination with a folding bed, and arranged to serve therewith as herein specified.

325,975. LIQUID-METER. PIERRE SAMAIN, Paris, France. Filed Apr. 14, 1884. (No model.) Patented in France Oct. 28, 1882, No. 151,794, and in Belgium Mar. 23, 1883, No. 61,448.



Claim.—1. In a liquid-meter, the combination of an annular distributing-valve capable of an oscillating motion on its axis and having slots formed in its interior surface, with a valve-seat having two series of ports capable of being alternately placed in communication with said slots by the oscillation of the valve, substantially as herein set forth.

2. The combination, with an annular distributing-valve and its seat and a cap inclosing the same capable of imparting rotary motion to the valve, of a measuring-cylinder and piston and suitable mechanism, as B Z y F, for controlling said cap, substantially as herein specified.

3. The combination of the stationary guide-tube A, having one or more vertical ridges on its interior surface, the piston-rod B, having corresponding grooves exteriorly and being threaded interiorly, and the threaded rod Z, carrying the plate *y*, with the valve-controlling cap W, and the rods F, having their upper and lower ends seated, respectively, in said cap and in the plate *y*, and with means, as M N, for limiting the angular motion of said cap, substantially as described.

4. The combination, with the annular distributing-valve having a stop, K, of the three-armed lever, H, arranged to lock the valve in position in ordinary circumstances, but to liberate it at the end of each stroke of the main piston, substantially as set forth.

5. The combination, with the measuring-cylinder and the valve-seat having two series of ports, of the oscillating valve having slots and passages, as shown, to operate in connection with the ports in the cylinder alternately, and the central plate, *c*, having inlet and outlet passages, as set forth.

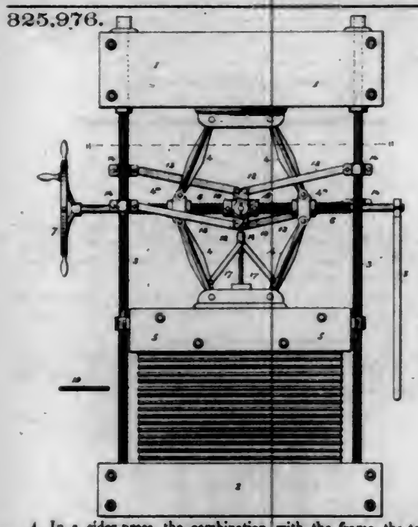
325,976. CIDER OR WINE PRESS. MARCUS P. SCHENCK, Fulton, N. Y. Filed July 13, 1884. Renewed Mar. 6, 1885. (No model.)

Claim.—1. In a cider-press, the combination, with the press-frame and the actuating-screw, of a system of equalizing-levers connected to said screw and to the opposite sides of the frame, whereby said screw is permitted to move freely in a vertical plane and is held against endwise movement, as explained.

2. In a cider-press, the combination, with the actuating-screw, of a sleeve fitted loosely thereon and confined against longitudinal movement relatively thereto, of a rock-arm journaled on said sleeve transversely of the screw, and rods or bars for connecting the opposite ends of said rock-arm with opposite sides of the press-frame.

3. The combination, with the operating-screw, a loose sleeve confined thereon, as described, and suitable equalizing-levers connecting said sleeve with the opposite sides of the press-frame, of an arm projecting from said sleeve and working in an opening in a part of the press which is stationary as regards horizontal motion, in the manner and for the purpose set forth.

325,976.



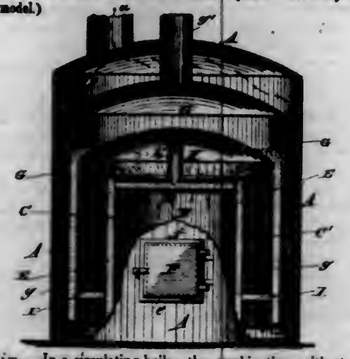
4. In a cider-press, the combination, with the frame, the toggle-levers, the operating-screw having a sleeve loosely confined thereon, and an arm projecting therefrom and working in an opening through the follower, of a pair of toggle-jointed levers connected at their free ends to the lower arms of the operating-toggles and at their joint to a sleeve fitted loosely on the above-mentioned arm, as and for the purpose set forth.

5. In a cider-press, the combination, with the operating-screw and the toggle-levers, of a system of equalizing-levers connected to the lower arms of said toggle-levers and to a stayed part of the press, as and for the purpose set forth.

6. The combination, with a cider-press, of a press-board gradually increasing in thickness toward its edges, as explained.

7. The combination, with a cider-press, of a press-board decreasing in thickness for a suitable distance from its margins and having a flat center, as explained.

325,977. CIRCULATING-BOILER. WILLIAM SCHMPF, Shenandoah, Pa., assignor of one-third to O. A. Keim, same place. Filed May 11, 1885. (No model.)



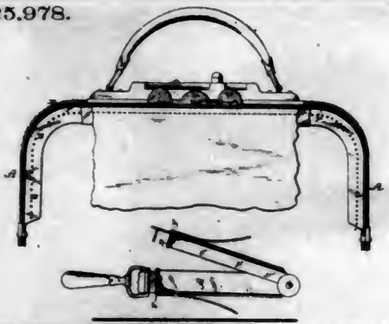
Claim.—In a circulating-boiler, the combination, with the boiler having downwardly-projecting extensions, of the fire-box consisting of two shells and connecting-rings forming the water-space, an inverted-T-formed pipe connecting the fire-box water-space with the boiler proper, and side pipes connecting said water-space with the extended sides of the boiler, substantially as described.

325,978. BAG OR SATCHEL. MORRIS SCHWERIN, Newark, N. J. Filed June 10, 1885. (Model.)

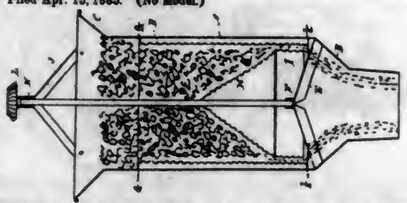
Claim.—1. A bag-frame provided with a series of perforations through which the material which forms the bag is sewed to the frame, and with a projecting flange around its outer edges to come flush with and hide the edges of the material, substantially as shown.

2. In a bag-frame, the combination of the frame A, provided with a series of perforations, B, with the separate and independent pieces D, which are secured to the frame and have their outer edges to form the flanges F, to come flush with and hide the edges of the material out of which the bag is formed, substantially as specified.

325,978.



325,979. HOP-BREAKER. FREDRICK L. SEBASTIAN, Toledo, Ohio. Filed Apr. 15, 1885. (No model.)

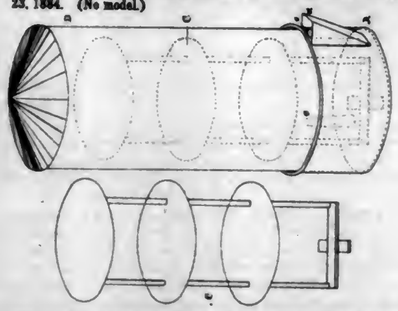


Claim.—1. A hop-breaking device consisting of a stationary grated cylinder, a vertical revolving shaft, and a grated cone and vertical grater carried by said shaft, whereby the hops as they pass through such device are broken by the slow revolution of the cone and vertical grater, as set forth.

2. A device for breaking hops, consisting of an outer cylinder, A, an inner grated cylinder D, and a shaft, G, stepped centrally within the cylinder A and above its discharge end, and carrying a grated cone terminating in a shortened cylinder, the parts being constructed, arranged, and operating substantially as and for the purposes described.

3. A hop-breaking device consisting of the cylinder A, terminating in a spout, B, and having a hopper, C, upon its upper end, in combination with an interior grated cylinder having a space closed at the top between such last-named cylinder and the cylinder A, and grated cone terminating in a short grated cylinder at its bottom, and to which movement is given by the rotation of a shaft, G, to which such connection is attached, substantially as and for the purposes specified.

325,980. STEAM-COOKER. JOHN A. SHAW, Ayer, Mass. Filed Apr. 23, 1884. (No model.)

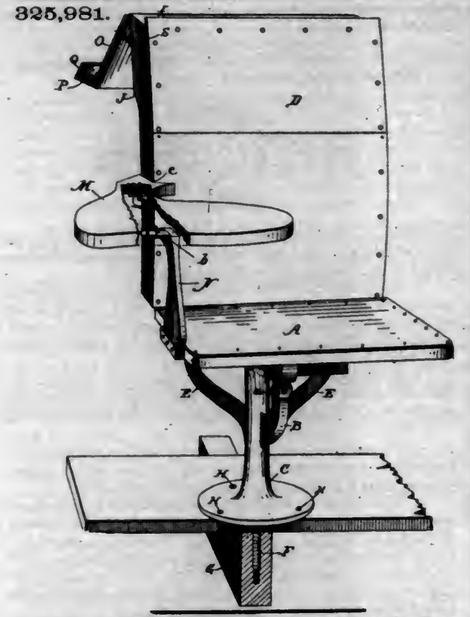


Claim.—In a steam-cooking utensil, the combination of the upright food-rack C, the water-base A, surrounding the foot of the food-rack, and having the supply-spout *a* and the escape-tube *e*, and the inverted inclosing-jacket D, inclosing the food-rack and telescoping within the body of the water-base to a point below the water-level and below the supply-spout to cut off the escape of steam, as set forth.

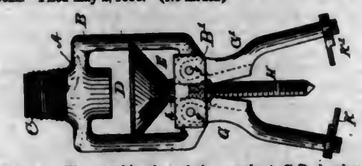
325,981. SCHOOL-DESK. ELGIN R. SHEPARD, Northfield, Minn. Filed May 10, 1884. (No model.)

Claim.—The combination of the base C, adapted to be secured to the floor, the back D, rigidly secured to the said base, the seat A, hung to the base by a horizontal hinge parallel to the back, the bracket N, secured rigidly to the seat and rising vertically therefrom, and the table M, hung upon the top of the said bracket by a horizontal hinge whose pin is at right angles to the back, the table being provided with a shoulder, *c*, adapted to temporarily engage the back as a brace, substantially as shown and described, whereby the table holds the seat in a horizontal position, as set forth.

325,981.

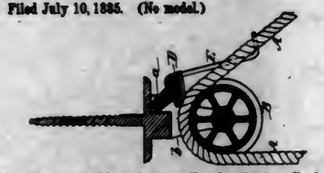


325,982. FIRE-EXTINGUISHER. DARIUS B. SMITH, Pine Meadow, Conn. Filed May 2, 1885. (No model.)



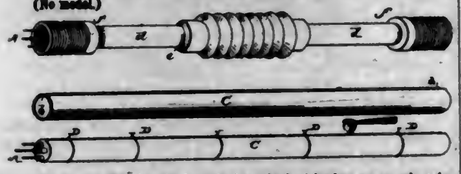
Claim.—The combination of the nozzle A C D, having arms B B, terminating in a recessed head or yoke, B', all made integral, the clamps G G', provided with semicircular screw-threaded recesses G^2, and pivotally connected to the yoke B', the fusible link constructed as described, the bolt H, and nozzle-cap E, all arranged to operate as and for the purpose set forth.

325,983. SUSPENDER CLUTCH-PULLEY. JOHN SMITH, Columbus, Ohio. Filed July 10, 1885. (No model.)



Claim.—The suspending clutch-pulley herein described, consisting of the hanger, the grooved pulley, and the brake or shoe pivoted to said hanger, provided with a bail hanging at one side of the pulley outside of the rope, forming an automatic releasing device for the brake-shoe, substantially as herein set forth.

325,984. METHOD OF LAYING ELECTRIC WIRES. WALTON D. SMITH, Prophetstown, Ill., assignor of three-fourths to Cyrus Emery, Charles E. Emery and Cora L. Emery, same place. Filed Sept. 13, 1884. (No model.)



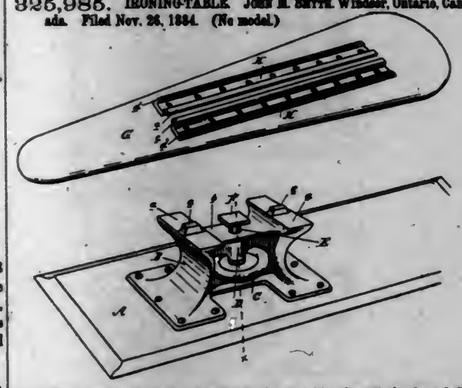
Claim.—1. The herein-described method of laying telegraph, telephone, and other wires to form the entire system, consisting in the following steps, viz: first, insulating or covering the wires, except the ends thereof, and then connecting the wires together in a bunch or series; second, incasing the bunch or series in a shell or case and insulating them therein to complete the connection; third, placing this shell containing the wires into a section of pipe, the uncovered ends of the wires protruding beyond the sections; fourth, coupling the uncovered ends of the wires together; fifth, coupling the sections of the pipe together and insulating the wires at each joint to form an unbroken connection, and, sixth, attaching the service-boxes and elbow-joints at the various points desired, as set forth.

2. The herein-described sub-method of insulating the wires, preparatory to their reception into the pipes, of each section of the entire system, consisting in the following steps, viz: first, insulating or covering the wires, and then connecting them together in a bunch or series; second, incasing the bunch into a shell; third, pouring insulating material through the shell around the wires, and, finally, binding the shell and wires together, as set forth.

3. The herein-described sub-method of coupling together each section of the entire system, consisting in, first, passing the uncovered ends of the wires projecting from the pipes into perforated disks in which they meet; second, coupling the sections of pipe together, and, finally, pouring insulating material through the coupling-joints around the wires and disks to form an unbroken connection, as set forth.

4. The herein-described sub-method of forming each section of the entire system, consisting in the following steps: first, cutting the wires to proper lengths, insulating them, and connecting them together in a bunch or series; second, incasing the bunch or series in a cylindrical shell and insulating it therein to complete the connection; third, binding the shell and bunch together, and, fourth, placing this shell with its wires in a section of pipe, the uncovered ends of the wires projecting beyond the pipe, as set forth.

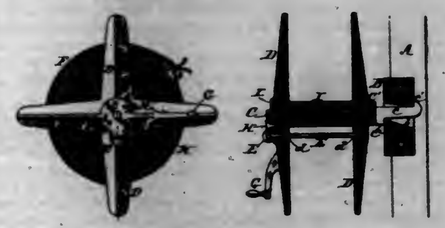
325,985. IRONING-TABLE. JOHN M. SMITH, Windsor, Ontario, Canada. Filed Nov. 26, 1884. (No model.)



Claim.—1. In an ironing-board, the combination of the board G, provided with the flanged plates H, with the stand B, having studs *e*, and the means, substantially as described, for locking the parts together at any point within the length of the plates H, substantially as and for the purposes set forth.

2. In an ironing-board, the combination of the stand B, having formed integral therewith the studs *e*, hand-wheel C, working in a recess in said stand, bolt E, having flanged head, board G, and flanged plates H, all constructed, arranged, and operating substantially in the manner and for the purposes described.

325,986. BELT-REEL. WILLIAM E. SPANGLE, Lima, Wis. Filed Apr. 25, 1885. (No model.)



Claim.—1. The combination, with a frame-support and a casting attached thereto having an oblique slot formed therein, of a reel-spindle having its end fitted to said slot, and provided with a hooked termination and a shoulder, substantially as shown, and for the purpose described.

2. The combination, with a reel and its carrying-spindle, of a pin, E, passing through its arms, substantially as and for the purpose set forth.

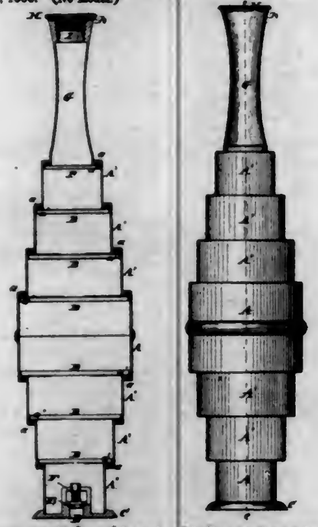
3. The combination, with a reel provided with an adjustable stop, H, on one of its sides, and a reel-carrying spindle, of a pin, I, passing transversely through the reel-spindle to engage said stop, as and for the purpose described.

4. The combination, with a reel having a series of openings in its side arranged around its axial line of rotation, and a spindle provided with a pin, I, passing transversely therethrough, of a set-screw, H, to enter one of said openings and contact with the pin of the spindle, as and for the purposes set forth.

5. In combination with a spindle detachably connected to a frame-support, of a reel detachably mounted on said spindle, and a pin, I, passing through said spindle to hold the reel in place, and an adjustable stop, H, connected with the reel to contact with the pin, whereby the movement of the reel is limited, as and for the purposes described.

6. In combination with a reel, a spindle, and a rod passing through the reel-arms, of an adjustable stop connected with the side of the reel, and a pin passing through the spindle to engage said stop, substantially as shown, and for the purpose described.

325,987. INDIAN CLUB. CHARLES H. SPARKS, St. Louis, Mo. Filed June 15, 1885. (No model.)



Claim.—1. An Indian club made of hollow sections telescoped together, substantially as set forth.

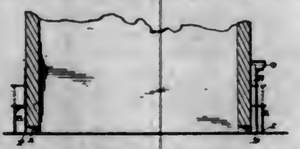
2. An Indian club made of hollow sections telescoped together and having flanges *a a'*, substantially as and for the purpose set forth.

3. The combination, in an Indian club, of the hollow sections, telescoped together and having flanges *a a'*, and the packing B at the joints, substantially as set forth.

4. An Indian club made of hollow sections telescoped together, and provided with a check-valve for the entrance of liquid, and with a stopper, for the purposes set forth.

5. In an Indian club, the combination, with the hollow neck thereof, of the screw-stopper H and the expansion-plug I, substantially as and for the purpose set forth.

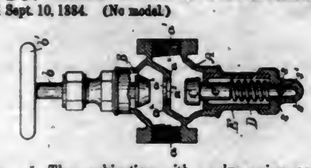
325,988. BEE-HIVE ATTACHMENT. WILLIAM R. SPRAY, Newton, Ill., assignor of one-half to J. W. Honey, same place. Filed July 15, 1885. (Model.)



Claim.—1. The combination of the passage-way having its lower end formed of wire-gauze or perforated metal, with a box having suitable entrances for the millers and moths, and which is vertically adjustable upon the passage-way, substantially as shown.

2. The combination, with a bee-hive, of the passage-way B, having the cap or cover at its top and provided with the wire-gauze at its bottom, with a vertically-adjustable box, which is applied to the passage-way, and which is provided with entrances for the moths and millers, substantially as set forth.

325,989. GAS-SERVICE VALVE. HENRY A. STEARNS, Lincoln, R. I. Filed Sept. 10, 1884. (No model.)



Claim.—1. The combination, with a valve-casing containing a single valve-seat, of a hand-valve and an auxiliary automatic valve arranged to close said seat, substantially as described.

2. The combination, with a valve-casing containing a single valve-seat, of a hand-valve and an automatic auxiliary valve arranged to close said seat, the automatic valve being held in open condition by solder, and provided with a spring to throw said valve into closed condition, substantially as set forth.

3. The combination, with a casing having a single valve-seat, of a hand-valve and an automatic auxiliary valve disposed in alignment upon opposite sides of the casing and operating to close the seat, substantially as specified.

4. The combination, with a valve-casing having a single seat, of a hand-valve and an auxiliary automatic valve provided with a catch to hold said valve in closed condition, substantially as set forth.

5. The combination, with a valve-casing having a single seat, and a hand-valve, and an automatic valve for closing said seat, of a detachable casing containing the automatic valve, substantially as specified.

6. The combination, with the casing A, having the partition a^3, with its orifice or valve-opening a^2, of the hand-valve, and the automatic valve C, the stem *c*, the spring D, and the casing for said automatic valve, secured detachably to said casing A, as set forth.

7. The combination, with the casing A, having the partition formed with the orifice a^3, of the hand-valve, the detachable automatic-valve casing, and the plug C, having the recess c^2, the latch C' and its spring c', and the spring D, for throwing said valve into closed condition, as set forth.

8. The combination, with the casing A, having the partition a^3, with its orifice a^2, and the detachable valve-casing, of the hand-valve, the automatic valve and its spring, and the latch with its spring and removable plug, as specified.

325,990. HOSE-WAGON. ERNST P. STECK, Chicago, Ill. Filed June 9, 1885. (No model.)



Claim.—1. A hose-wagon provided with a broad upper hose-receptacle arranged over the body of the wagon and extended beyond the sides thereof, substantially as and for the purpose described.

2. A hose-wagon provided with two separate hose-receptacles, the one consisting of a spring-supported box-body open at its rear end, and the other consisting of a flexible deck, E, suspended between the longitudinal sides of the box-body, and arranged over the bottom thereof at a height to permit the hose to be conveniently placed and held either within the body or upon the flexible deck, substantially as herein described, and for the purposes specified.

3. A hose-wagon provided with two separate hose-receptacles, the one consisting of a spring-supported box-body open at its rear end, and the other consisting of a flexible deck, E, suspended between the longitudinal sides of the box-body by means of rotary adjustable rollers, and arranged over the bottom of said body at a height to permit the full quantity of hose to be carried by the wagon to be either placed within the body below the flexible deck or to be thrown and held upon the latter, substantially as described, and for the purposes set forth.

4. A hose-wagon having a box-body forming a hose-receptacle open at the rear end of the wagon, combined with the guards consisting of rollers arranged along the rear end edges of the bottom and longitudinal sides of the box-body, substantially as shown and described, and for the purposes set forth.

5. A hose-wagon provided with an upper and a lower horizontally-arranged hose-receptacle, in combination with rollers arranged, substantially as herein described, at the rear open end of the box-body of the wagon which forms the said lower hose-receptacle, whereby hose can be more readily passed in under the upper receptacle and injury to the hose avoided, substantially as described.

6. The perforated sheet-metal hose-wagon body secured within a rigid frame of angle-iron, substantially as described.

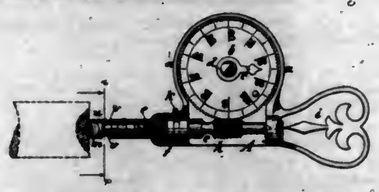
7. In combination with the hose-wagon body provided at its sides with the sill-plates G, the driver's seat supported upon and rigidly connected with the sill-plates, substantially in the manner and for the purpose described.

8. A hose-wagon provided with a hose-receptacle consisting of the body A, formed of four sheet-metal plates respectively constituting a bottom, two longitudinal sides, and a front end, combined with the upright metal side bars a', the longitudinal side bars a^3, to which the upright side bars are secured at their lower ends, the cross-bars a^3, extending across the under side of the bottom of the body and projecting beyond the sides of the same, and the braces H, connecting the projecting ends of the bottom cross-bars with the upright side bars, said bars and sheet-metal plates being secured together, all substantially as herein described.

9. A hose-wagon provided with a hose-receptacle consisting of the metal body A, composed of separate sheet-metal plates, combined with the metal sill-plates G, the upright metal side bars a', the transverse bottom bars, a^3, horizontal sill-supporting bars K, and the inclined brace-rods H and L, respectively connecting the upright bars with the transverse bottom bars and the sill-supporting bars, said side and bottom bars being secured to the sheet-metal sides and bottom of the body, substantially as and for the purpose herein described.

10. In a hose-wagon, a hose-receptacle formed by the body A, composed of separate sheet-metal plates suitably braced by side and bottom bars of angle-iron, in combination with the sills G, the deck E, suspended from and between rollers which are mounted upon the said sills, and the inclined braces H and L, serving to brace the sides and sills against such weight as may be sustained by the flexible deck, substantially as described.

325,991. SPEED-INDICATOR. HARRIS TABOR, New York, N. Y. Filed July 18, 1885. (No model.)



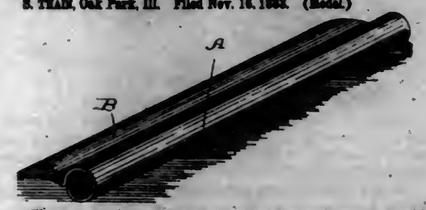
Claim.—1. In a speed-indicator, the combination, with the tip to engage the revolving shaft or machine and a spindle or axis geared with indicating mechanism, of a clutch arranged between the tip and its spindle and capable of being thrown into and out of engagement by voluntary movements of the operator, substantially as and for the purpose set forth.

2. In a speed-indicator, the combination, with the indicating wheel or device and spindle geared thereto, of a movable engaging tip on the end of said spindle, a spring arranged to constantly project said tip, and a clutch between said tip and the end of said spindle adapted to be closed against the stress of said spring, substantially as and for the purpose set forth.

3. The combination, with the spindle *e* and indicating-gearing, driven thereby, of the tip *m*, stem *t*, projecting spring *p*, and clutch-points *u v*, arranged and operating substantially as and for the purpose set forth.

4. The combination, with the spindle *e* and indicating-gearing, of the tip *m*, stem *t*, plunger *o*, spring *p*, clutch *u v*, and stop *s*, substantially as shown and described.

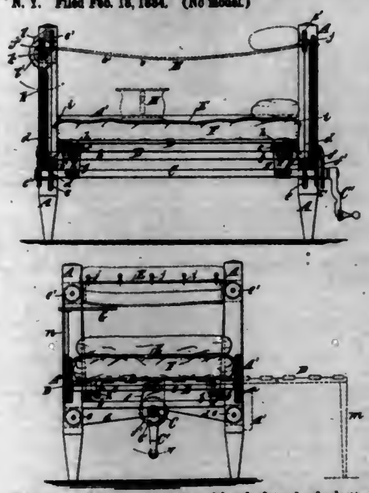
325,992. COMBINATION RULER AND PAPER-CUTTER. REHARD S. THAIN, Oak Park, Ill. Filed Nov. 16, 1883. (Model.)



Claim.—1. As an improved article of manufacture, a combined ruler and paper-cutter consisting of a cylindrical or prismoidal portion and an auxiliary blade, the former being developed outwardly from the rear edge of the blade, and both edges of the blade being below the central horizontal plane of said cylindrical portion, substantially as shown and described.

2. As an improved article of manufacture, a combined ruler and paper-cutter consisting of a cylindrical or prismoidal portion and an auxiliary blade springing in arched or concave form from below the central horizontal plane of said portion, substantially as shown and described.

325,993. INVALID-BEDSTEAD. WILLIAM P. UNDERHILL, Brooklyn, N. Y. Filed Feb. 18, 1884. (No model.)



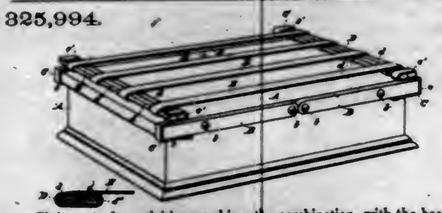
Claim.—1. The combination, with a bedstead, of a bottom or main frame, B, serving to support the mattress, and shoulders *b'*, forming fixed supports for said main frame when lowered, a single windlass, C, flexible connections *d g*, wound in opposite directions on said windlass and attached to the bottom or main frame, pulleys *e e'* for the connections *d*, whereby the bottom or main frame may be both positively raised and lowered bodily, a sacking, E, resting upon the mattress and to be raised with the main frame, and elevated and fixed supports *j j'* at the top of the bedstead, to which the sacking is to be secured when the bottom or main frame is raised, substantially as herein described.

2. The combination, with a bedstead, a bottom or main frame, and a windlass, flexible connections, and pulleys for raising and lowering the same, of a sacking provided with holes *o o' o'* to receive the seat and legs of the patient, and elevated supports to which the sacking may be secured when raised, substantially as herein described.

3. The combination, with a bedstead, the bottom or main frame, B, composed of longitudinal and cross bars or pieces *b c*, a sacking and elevated supports therefor at the top of the bedstead, and a windlass, flexible connections, and pulleys for raising said main frame, with the sacking and patient upon it, of a false bottom or frame, D, resting upon said main frame, and hangers *k*, attached to the false bottom and extending below said main frame, and provided below the main frame with rollers *k'*, which bear upon the cross-bars thereof, substantially as herein described.

325,994. PLANTING-BOARD. PETER T. VANNER, Clarinda, assignor of one-half to J. C. Wickersham, Red Oak, Iowa. Filed Feb. 19, 1885. (No model.)

325,994.

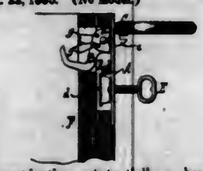


Claim.—1. In a plaiting-machine, the combination, with the base-plate A and levers B, secured to the edges thereof by the screws *b*, of the brackets C, end bars, D, composed of the similar strips *d* and bands E, substantially as specified.

2. In a plaiting-machine, the combination of the plaiting-tool F with the base-plate A, having the levers B attached, brackets C, end bars, D, and bands E, substantially as specified.

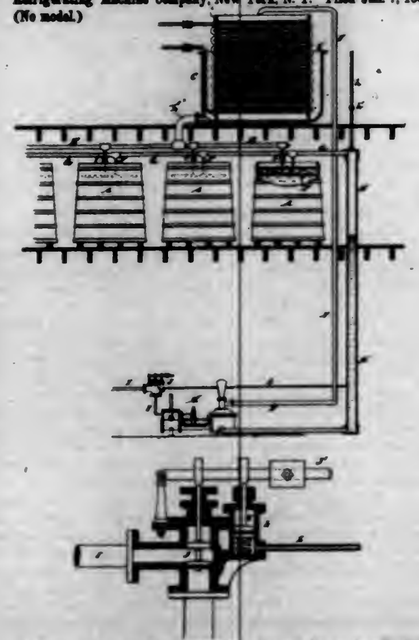
3. The combination, with the main frame and the lateral levers, of the brackets arranged on the outer ends of the said levers, the band-strips and the transverse strips supported by the said brackets, and adapted to secure the ends of the said band-strips, substantially as specified.

325,995. TRUNK-LOCK. CHARLES FERDINAND VERT, London, England. Filed Jan. 22, 1885. (No model.)



Claim.—The combination, substantially as hereinbefore described, with the lock-plate, the lugs projecting from the inner surface of this plate, and the pivot secured in these lugs, of the hook swinging on said pivot, the arm or handle projecting from the hook through the lock-plate, the stop projecting from said arm, and the bolt which co-operates with said stop.

325,996. APPARATUS FOR COOLING BEER AND OTHER LIQUIDS. ELLIS WAINWRIGHT, St. Louis, Mo., assignor to the De La Vergne Refrigerating Machine Company, New York, N. Y. Filed Jan. 7, 1885. (No model.)



Claim.—1. In a cooling apparatus substantially as described, the combination of a stand-pipe, as H, and a steam-pump, of a cylinder having its interior connected with the interior of said stand-pipe, and a piston operated by the pressure of water in said pipe to automatically control the steam-supply to the pump, as set forth.

2. In an apparatus as described, the combination, with a reservoir, a stand-pipe, a steam-pump and connections for allowing the cooling-liquid to make a complete circuit, of the cylinder K, the pipe L, connecting said cylinder to the stand-pipe, the weighted piston *k*, and connections with the steam-supply, as and for the purposes set forth.

3. The combination of the stand-pipe H and cylinder K, connected to the steam-controlling valve J, steam-pump M, delivery-pipe N, open tank C, and pipe F, with a controlling-cock, *f*, arranged to serve as herein specified.

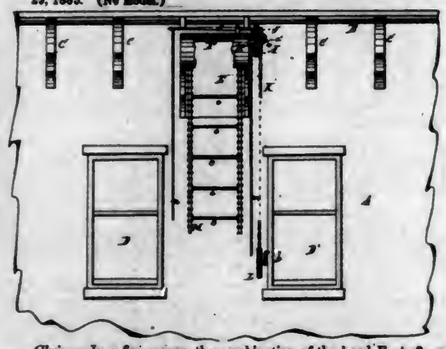
4. The combination of the series of tanks A, adapted to contain beer or other liquid to be cooled, the series of pipes F therein, and controlling-cocks *f*, the pipes E G, stand-pipe H, with its ventilating-pipe A and cock *h'*, steam-pump M, delivery-pipe N, open tank C, and cooling means D in the latter, arranged for joint operation substantially as herein specified.

325,997. CANNED FISH AND METHOD OF CANNING. JOHANNES H. G. WALKHOFF, Hamburg, Germany. Filed Jan. 23, 1882. (No specimens.)

Claim.—1. The process of preserving fish hereinbefore described, which consists of first salting the fish, eviscerating and drying them, then smoking the fish until they acquire a yellow color with a golden tinge, and finally packing them with sweet-oil into suitable vessel, hermetically closing the same, and exposing them and their contents to a moderate heat, substantially as and for the purpose set forth.

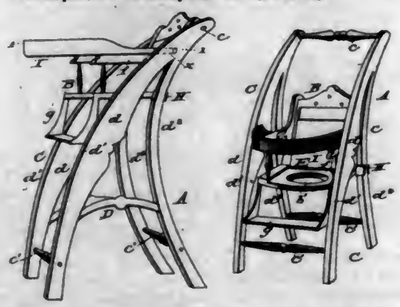
2. The above-described product, which consists of eviscerated canned fish impregnated with salt, the volatile products of combustion, and oil, by which their natural flavor is modified and improved upon, and the fish rendered preservable for long periods, substantially as set forth.

325,998. FIRE-ESCAPE. JOHN WALSH, Cleveland, Ohio. Filed May 29, 1885. (No model.)



Claim.—In a fire-escape, the combination of the hood E, shaft, and ladder attached to said shaft, spring, pawl and ratchet-wheel, and brake consisting of the wheel I and rubber *a'*, pull-cord, sprocket-wheels and chain for operating the shaft-lever O, link *i*, and pull-cord, all constructed and arranged to operate substantially as described, and for the purpose specified.

325,999. CONVERTIBLE CHAIR. CHARLES H. WEBSTER, Jr., Philadelphia, Pa. Filed July 12, 1884. (No model.)

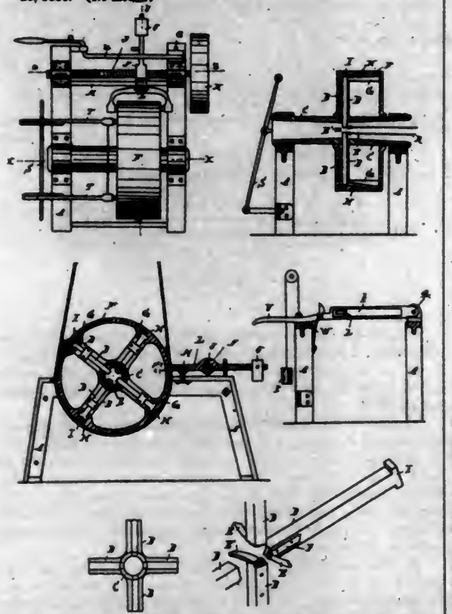


Claim.—1. A convertible chair-frame, A, comprising sides C C, composed of rear concave or segmental bars, d^2, front bars, *d*, having outer convex or rocking edges *d'* and connecting cross-bars *e e'*, in combination with an adjustable chair, B, having hooks G and swiveled side guides, H, substantially as shown and described.

2. In a convertible chair, the combination of chair-frame A, having rear side bars, d^2, and connecting cross-bars *e e'*, and a chair, B, having foot-rest *g*, hooks G, and swiveled side guides, H, adapted to move up and down on bars d^2, substantially as shown and described.

3. In a convertible chair, the chair-frame A, comprising sides C C, composed of rear bars, d^2, front bars, *d*, having rocking edges *d'*, rollers *m*, and connecting cross-bars *e e'*, in combination with chair B, having hooks G and guides H, substantially as and for the purpose set forth.

326,000. LATHE. FRANCIS A. WELLMAN, Owosso, Mich. Filed Mar. 25, 1885. (No model.)



Claim.—1. In a lathe for the purpose described, a revolving cutter-head axially apertured and provided with radial knife-holders, the inner ends of which form a screw-cutter and guide for the stick, and having seats for knives projecting in opposite directions from the screw substantially as described.

2. In a lathe for the purpose described, a revolving cutter-head axially apertured and provided with radial knife-holders sliding in said apertures, and the inner ends of which are screw-threaded to feed and guide the stick, in combination with the knives E, secured to said knife-holders and cutting in advance of said screw, substantially as set forth.

3. In a lathe for the purpose described, a revolving cutter-head having radial knife-holders the inner ends of which are screw-threaded and adapted to feed and guide the stick, in combination with the knives E E', carried by said knife-holders and cutting in advance and in rear of said screw, all arranged substantially as described.

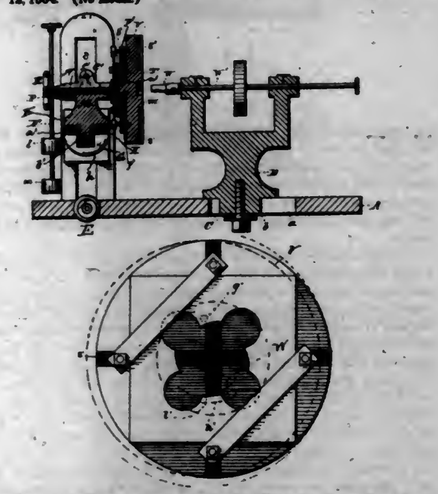
4. In a lathe for the purpose described, the spider B, formed with hollow hub C, the radially-movable knife-holders D, secured to the arms of the spider and having their inner ends screw-threaded, and knives E E', secured thereto, the drum F, sleeved upon the hub and having the seats G, and inclined guideways H formed therein, all combined and arranged substantially as and for the purposes specified.

5. In a lathe for the purpose described, a centrally-apertured cutter-head revolving in stationary bearings and having knives secured to radially-movable knife-holders the inner ends of which are screw-threaded, in combination with a laterally-sliding drum provided with inclined guideways into which the outer ends of the knife-holders engage, substantially as described.

6. In a lathe for the purpose described, the combination of a hollow hub, C, journaled in stationary bearings and provided with the radial grooved arms B, of the radially-movable knife-holders D, screw-threaded upon their inner ends, and having knives E E' secured thereto, of the sliding drum F, having straight guideways G, for guiding it laterally, and inclined guideways H, into which the outer ends of the knife-holders engage, and of the forked lever L, and feed-screw J, for pushing the drum laterally, all arranged substantially as and for the purposes set forth.

7. In a lathe for the purpose described, in combination with a cutter-head, such as formed by the hub C, arms B, knife-holders D, and knives E, journaled in stationary bearings, a laterally-sliding drum inclosing said cutter-head and forming the means for imparting motion to it and guiding its knife-holders radially by means of inclined guideways into which the knife-holders engage, substantially as described.

326,001. DIE-GRINDING MACHINE. ELISHA S. WHITE, Cleveland, Ohio, assignor of one-half to George C. Julier, same place. Filed June 12, 1884. (No model.)



Claim.—1. The combination, with disk K, having depending pivot *b'*, of disk H, having hole *a'*, the wall of the latter having slit *c'*, and set-screw L, clamping the walls of said slit together, substantially as set forth.

2. The combination, with disk K, having depending pivot *b'*, of disk H, having hole *a'*, provided with slit *c'*, lugs *d'*, respectively depending from said disk on either side of said slit, and set-screw L, clamping said lugs together, substantially as set forth.

3. The combination, with a die-holder, V, and spindle P, of intermediate adjusting mechanism which maintains said die-holder at different points of adjustment in a rotary movement eccentric to said spindle, substantially as set forth.

4. The combination, with a die-holder V, and a spindle, P, of a disk, S, secured to the latter, and adjusting-mechanism which maintains said die-holder at different points of adjustment on said disk in a vertical rotary movement eccentric to said spindle, substantially as set forth.

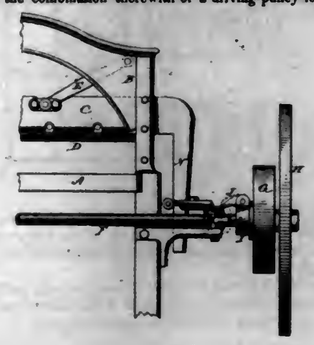
5. The combination, with spindle P and disk S, secured to latter and provided with slot *h'*, of disk T, pivoted at *g'* to disk S, screw *l'*, and die-holder V, substantially as set forth.

6. The combination, with die-holder V, spindle P, and disk S, rigid with latter, of disk T, located between the die-holder and disk S, said die-holder being pivoted to disk T, and clamps which secure the two latter parts together at the desired point of rotary adjustment, substantially as set forth.

7. The combination, with spindle P and disk S, of disk T and adjusting means which maintain said disk T at a desired point of adjustment on said disk S in a vertical rotary movement eccentric to said spindle, said die-holder being pivoted on disk T, and provided with clamps *p'*, for maintaining it in desired position, substantially as set forth.

326,002. PAPER-CUTTING MACHINE. STORRS WHITLOCK, Birmingham, Conn. Filed June 15, 1885. (No model.)

Claim.—1. In a cutting-machine in which the cutter-bar in its movement toward and from the table also receives a longitudinal movement, the combination therewith of a driving-pulley loose on the driv-



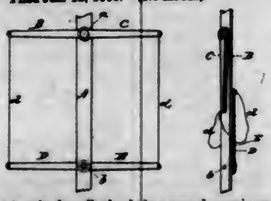
326,002



ing-shaft, a clutch between said pulley and driving-shaft, a sleeve upon said shaft adapted to engage or disengage said clutch, a hand-lever arranged to impart longitudinal movement to said sleeve, a cutter-bar constructed with a downwardly-projecting arm, N, in rear of said shaft and lever, and a spring-follower on said lever arranged to move into the path of said arm under the swinging movement of said lever, substantially as described.

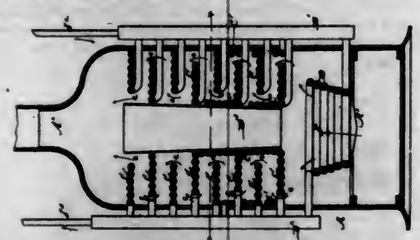
2. In a cutting-machine in which the cutter-bar in its movement toward and from the table also receives a longitudinal movement, the combination therewith of a driving-pulley loose on the driving-shaft, a clutch between said pulley and driving-shaft, a sleeve, K, upon said shaft, adapted to engage or disengage said clutch between the shaft and pulley, a hand-lever, L, arranged to swing in a horizontal plane, and in engagement with said sleeve K, whereby under the swinging movement of the lever a corresponding longitudinal movement will be imparted to said sleeve K, the inner arm of said lever turned to one side at substantially right angles, and in substantially the same horizontal plane as the body of the lever, a spring-follower arranged upon the inner end of the said turned portion of the arm, and adapted to move on said arm in a line at one side of but parallel with the line through the fulcrum of the lever, the cutter-bar constructed with an arm, N, extending downward in rear of said follower, the said follower adapted to be moved into the path of the said arm under the movement of the lever, substantially as described, and whereby, in the movement of the said sleeve to produce the said clutching action between the said pulley and the shaft, the said spring-follower will be brought into contact with the adjacent surface of the said arm and thereby forced forward, and so as to escape from the said arm as it moves under the action of the cutter-bar, and so escaping the follower will spring into the path of the arm on its return, substantially as described.

326,003. PORTABLE CAR-WINDOW GUARD. ELI WHITNEY, New Haven, Conn. Filed Jan. 12, 1885. (No model.)



Claim.—The herein-described window-guard, consisting of the bar A, serrated at its lower end to rest upon the window-sill, and constructed with a shoulder at its upper end to receive the sash, combined with one pair of arms, B C, hung upon one side of the bar near one end, and a like pair of arms, E, hung upon the opposite side of the bar near the opposite end, and so as to swing in parallel planes to or from the surface of the said bar, substantially as described.

326,004. HEATER. ELIJAH S. WILSON, Chicago, Ill. Filed June 1, 1885. (No model.)



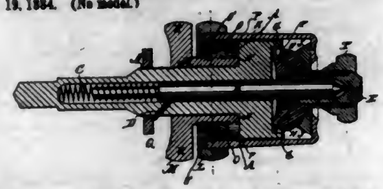
Claim.—1. In a heater, the combination, with the shell and its fire-pot, of a series of horizontal pipe-coils having smoke-escape openings alternately at their periphery and center, substantially as and for the purpose set forth.

2. In a heater, a shell formed of a series of sections, each made in two parts hinged together, whereby any portion of the interior may be opened up at will, substantially as and for the purpose set forth.

3. In a heater for steam or hot water, a shell provided with vertical stand-pipes to take the supply and exhaust to and from the radiators, in combination with a series of pipe-coils arranged horizontally within the shell, having alternate escape-openings through them for the smoke, and connections between them and the stand-pipes, whereby the smoke and heated gases are caused to circulate under and over all parts of each heating-coil, substantially as and for the purpose set forth.

4. In a heater, the shell A, formed with several hinged two-part sections, *a a*, and having a central reservoir or feeder, B^3, in combination with the stand-pipes B' B^2, connected to the radiating system, the coil of pipe *b*, forming the fire-pot, and the horizontal coils C, having openings *c* alternately at their outer and inner edges, all of these coils connected to one of said stand-pipes at a lower level than their connection with the other, substantially as and for the purpose set forth.

326,005. LATHE-CHUCK. CALVIN WILSON, Caro, Mich. Filed Dec. 19, 1884. (No model.)



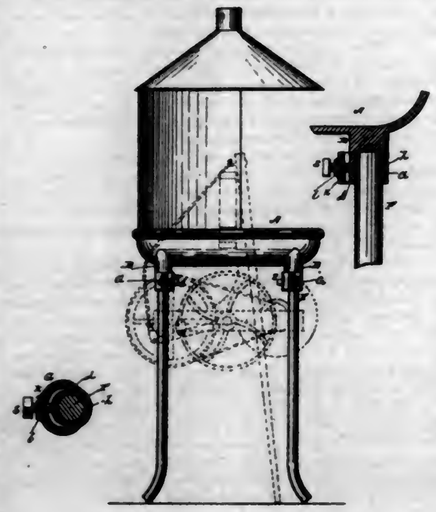
Claim.—1. The combination, with the centrally-bored body A, provided with a slanting hole in its side, of the centering-rod B, the spring C, the pin D, fitted to the said slanting hole, and the nut Q, screw-threaded upon the body to engage the said pin, substantially as shown and described.

2. The combination, with the body A, having a plane front end, and the shell K, having the inner face of its front end plane, both of the said planes being at right angles to the axis of revolution of the chuck, of the base-piece F, having a plane rear side and convex front side, the intermediate piece, H, having a concave rear side, a convex front side, and a forward-projecting screw-threaded sleeve, and the forward cup, J, having a plane front and a concave rear side, substantially as shown and described.

3. The combination, with the body A, the centering-rod B, the spring C, the shell K, the plano-convex base-piece F, the concavo-convex intermediate piece, H, having a screw-threaded forward projection, and the nut T, threaded upon the said projection, of the split jaw-piece E, fitting into the piece H and the nut T, substantially as shown and described.

4. The combination, with the shell K and the ring L, removably secured thereon, the internally-screw-threaded nut O, provided with wings O', and the screw M within the nut O, and provided with the flange R, of the body A, fitting within and against the front end of the screw surrounding the nut O, and provided with apertures for the wings O', substantially as shown and described.

326,006. ADJUSTABLE LEG FOR FORGES. JAMES F. WINCHELL, Springfield, Ohio, assignor to the Foos Manufacturing Company, same place. Filed Jan. 15, 1885. (No model.)

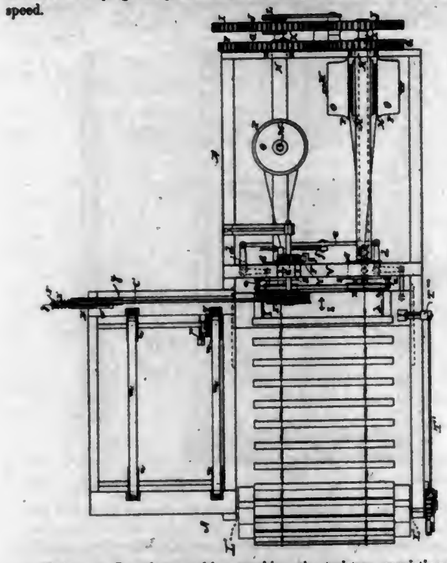


Claim.—1. The half-socket bearing formed by the stub B and its curved flange *c*, extending downward from one side to serve with a leg and clamping device, substantially as specified.

2. The combination, with the half-socket stub B, having the lateral flange *d* and the shoulder *s*, of the clamping-band C and its set-screw *s*, substantially as specified.

326,007. MACHINE FOR MAKING FENCES. JOSEPH ZEIGEL, Quincy, Ill. Filed Aug. 12, 1884. (No model.)

Brief.—The twister-disks being in their rearmost position, the picket is fed in between the wires. The beater-carriage and the twister-disks move forward and then back to their rearmost position. The wires are then twisted about the picket. By the forward and back movement of the twister-disks a given length of untwisted wire is left between them and the picket last inserted. The twister-disks rotate intermittingly. The sleeve carrying the spools rotates constantly, but at a slower rate of speed.



Claim.—1. In a fence-making machine, the twisters, consisting of the axles K, having the hubs S, containing apertures T, disks X, and tubes W, carried by said disks, and having their rear portion within said apertures T, in combination with mechanism for giving the disks X and tubes W a horizontal longitudinal movement, whereby, when the picket has been inserted between the wires and the disks moved forward and then rearward again, a proper length of untwisted wire will be left between them and the picket for the purpose of securing it by subsequent twisting without drawing from the reels, substantially as set forth.

2. In a fence-making machine, the twisters, consisting of the shafts K, hubs S, disks X, and tubes W, in combination with the carriage Z, bell-crank levers *d*, bar *e*, levers *f g*, shaft *h*, lever *i*, and cam *k*, substantially as and for the purpose set forth.

3. In a fence-making machine, the traveling carriage Z, in combination with the rods T' S', plate P', carrying a pawl, Q', the ratchet O', and reel K', substantially as and for the purpose set forth.

4. In a fence-making machine, the reel K', provided with the hinged bars M' and blades N', substantially as and for the purpose set forth.

5. In a fence-making machine, the traveling carriage Z, rod T, rod S', plate P', pawl Q', ratchet O', and reel K', in combination with the hinged rod W' and wheel Y', substantially as and for the purpose set forth.

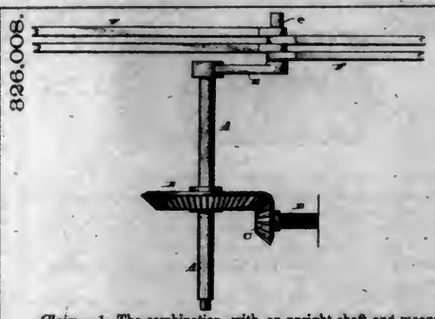
6. In a fence-making machine, the feed device, consisting of the frame *w*, pawl *x*, ears *y y*, rod *z*, head A', and spring B', in combination with the guide *u'*, and traveling cord C', connected with the said rod *z*, substantially as and for the purpose set forth.

7. In a fence-making machine, the feed device, consisting of the frame *w*, pawl *x*, ears *y y*, rod *z*, head A', and spring B', in combination with the guide-rod *u'*, cord C', connected with the rod *z*, pulleys D' E', rack F', and pinion G', substantially as set forth.

8. In a fence-making machine, the axles K, having hubs S, containing apertures, in combination with the disks X, tubes W, plate Y, traveling carriage Z, and pins *a*, substantially as and for the purpose set forth.

326,008. CONVERTING MOTION IN OIL-PUMPING APPARATUS. GEORGE ALLEN, Franklin, Pa. Filed July 3, 1885. (No model.)

326,008.

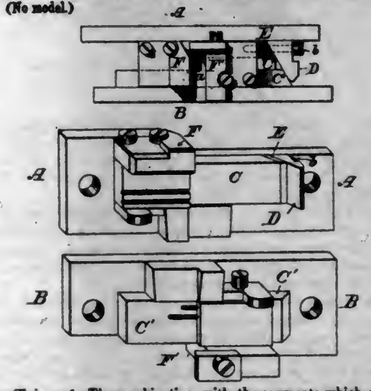


Claim.—1. The combination, with an upright shaft and means for revolving it, of a crank secured thereto, and pump-actuating rods pivotally secured on the wrist-pin of the crank and leading in different directions therefrom, substantially as set forth.

2. The combination, with an upright shaft and means for revolving it, of a crank secured to the upper end of the shaft, and pump-actuating rods pivotally secured on the wrist-pin of the crank and leading in any desired direction therefrom, for the purpose substantially as set forth.

3. The combination, with the upright shaft provided with the bevel-gear, and a main driving-shaft provided with a bevel-gear pinion adapted to engage said gear on the upright shaft, of a crank secured to the upper end of the upright shaft, and pump-actuating rods loosely secured on the wrist-pin of the crank and leading in different directions therefrom, substantially as set forth.

326,009. TYPE-MOLD. ISAAC BAAS, Jr., and LEVI BOYD BENTON, Milwaukee, Wis., assignors to Benton Waldo & Co. Filed May 19, 1884. (No model.)



Claim.—1. The combination, with the segments which compose a type-mold, of a stop-block, D, substantially as and for the purposes set forth.

2. The combination of the carriages C C', of a type-mold having their ends beveled in parallel planes, and the beveled stop-block D, attached to the beveled end of carriage C, substantially as and for the purposes set forth.

3. The combination, with a type-mold composed, as described, of two segments, A and B, of the carriages C C', stop-block D, adjustably attached to one of said carriages, and the plate E, inserted between block D and the carriage to which it is attached, substantially as and for the purposes set forth.

326,010. INTERFERING-PAD FOR HORSES. DANIEL B. ELSNER, Manitowoc, Wis. Filed May 5, 1885. (No model.)



326,010.



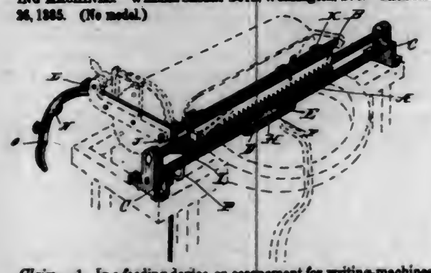
Claim.—1. In an interfering-pad, the combination, with the securing-strap, of a metallic plate formed with bearings and a roller whose shaft or axle is supported in said bearings, substantially as set forth.

2. In an interfering-pad, the combination, with the securing strap or band, of a plate formed with an inwardly-extending guard-frame and provided with bearings, and a roller mounted upon a shaft supported in said bearings, substantially as set forth.

3. The combination, with the securing band or strap of an interfering-pad, of a metallic plate secured to said band or strap, a roller mounted upon a shaft adapted to revolve in bearings of said plate, and a suitable lining for the band or strap, substantially as set forth.

4. The combination, with the band or strap formed of two thicknesses of material, of a metallic plate secured between said plies or thicknesses, and a roller arranged to revolve, substantially as set forth.

326,011. ESCAPEMENT OR FEEDING DEVICE FOR TYPE-WRITING MACHINES. WILLIAM SAMUEL BOYD, Washington, D. C. Filed Feb. 26, 1885. (No model.)



Claim.—1. In a feeding device or escapement for writing-machines, the combination, with a toothed rack, of a rocking rod provided with a rigid tooth, a tooth sliding longitudinally on said rod, and means, substantially as described, for sliding the said tooth, substantially as described, and for the purpose set forth.

2. In a feeding device or escapement for writing-machines, the combination, with a toothed rack, of a rocking rod provided with a rigid tooth, a slotted sleeve provided with a tooth or projection fitting and sliding longitudinally on said rod, and means for sliding said sleeve, substantially as described, and for the purpose set forth.

3. In a feeding device or escapement for writing-machines, the combination, with a toothed rack, of a rocking rod provided with a rigid tooth, a slotted sleeve provided with a tooth or projection and having a bore part of its length greater than the diameter of the rod upon which it slides, and a coiled spring working between the sleeve and the rod and having one of its ends secured to the rod and the other end secured to the sleeve, substantially as described, and for the purpose set forth.

4. In a feeding device or escapement for writing-machines, the combination, with a toothed rack, of a rocking rod provided with a rigid tooth, a slotted sleeve provided with a tooth or projection and having a bore part of its length greater than the diameter of the rod upon which it slides and provided with teeth or notches at the end of the part having said larger bore, a coiled spring working between the sleeve and the rod and having one of its ends secured to the rigid pin on said rod and the other end secured in the notches of the sleeve by means of two projections upon the last coil of said spring, substantially as described, and for the purpose set forth.

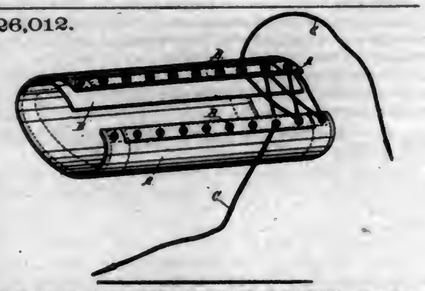
5. In a tripping device for feeding attachments for writing-machines, the combination of a spring-actuated rocking-escapement device, a horizontal bail or rod pivotally secured to the carriage of the machine by means of upwardly-extending L-shaped arms, a thumb-lever pivotally attached to the hand-lever of the carriage, and a rod or wire connecting the thumb-lever and the tripping bail or rod, substantially as described, and for the purpose set forth.

326,012. HOSE-PATCH. SAMUEL T. BROOKS, San Francisco, Cal., assignor of one-half to Marshall A. Bates, same place. Filed June 30, 1885. (No model.)

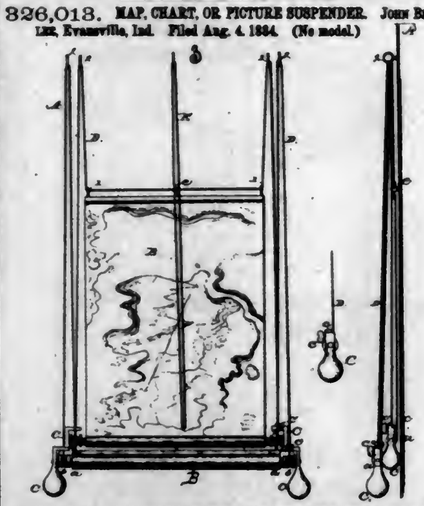
Claim.—1. In a hose-patch, the stocking A, provided with eyelet-holes B, and a tongue, D, adapted to be tucked in around the hose underneath one side or edge of the stocking, and the whole laced or secured by lacings or cords in the manner described.

2. In combination with a hose-patch, the interposed packing of cotton or other fibrous material placed around the hose over the fracture in the manner as herein set forth and specified.

326,012.



326,013. MAP, CHART, OR PICTURE SUSPENDER. JOHN BROWNLEE, Evansville, Ind. Filed Aug. 4, 1884. (No model.)

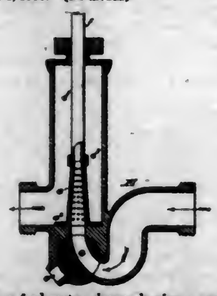


Claim.—1. The combination, with a map, chart, or picture, of the roller *a*, provided at each end with a rigid pulley, the continuous suspending-cord attached at each end to said pulleys and passing through eyelets 1 and 2, as shown, the weights having the perforated angle-arm through which said cord is guided, and the elevating-cord provided with the spring clamp or snap, all substantially as set forth and described.

2. The combination, with a map, chart, or picture having the lower roller provided at each end with a rigid pulley, and the suspending and elevating cords, of the weights having the perforated angle-arm and provided with block *c* and set-screw *c'*, substantially as set forth and described.

3. The combination of two or more maps, charts, pictures, or the like suspended from the same support in a wall or other structure, and over the same space, each one provided at its lower ends with weights, and adapted to be separately rolled and unrolled, the suspending-cord of the innermost one being shorter than the next outer, substantially as described and set forth.

326,014. FEED-WATER CLEANER. JAMES T. BRYANT, Richmond, Va. Filed Apr. 1, 1885. (No model.)



Claim.—1. In a feed-water cleaner having a water-inlet, the combination of a three-way cock, a strainer situated above said cock, and a steam-pipe provided with a stop-valve and communicating with the top of the strainer, substantially as described and shown, and for the purpose set forth.

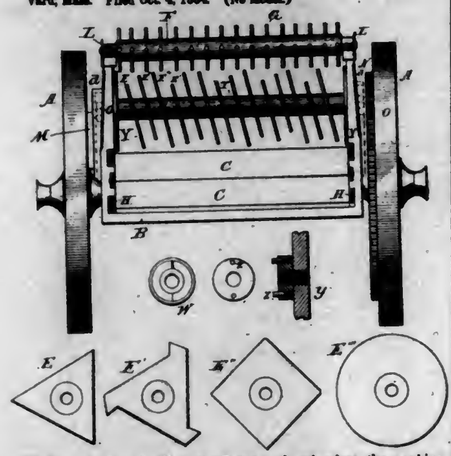
2. In a feed-water cleaner having a water-inlet, the combination of a three-way cock, a strainer situated above said cock, an air-vessel formed in the upper part of said cleaner, and a steam-pipe provided with a stop-valve, passing through the said air-vessel and communicating with the top of the strainer, substantially as described and shown.

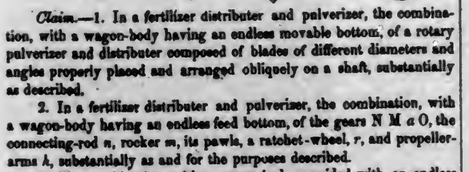
3. The combination of the cleaner E, having a water-inlet and a discharge-opening, e^4, the strainer e', steam-pipe f, having stop-valve F, the discharge-cock, the lever e^2, and rod e^3, substantially as described and shown.

4. The combination, in a feed-water cleaner having a water-inlet and a discharge-cock, of a tubular strainer having foraminated sides and open at its opposite ends, and having one end communicating with the water-inlet, and a blast-pipe connected with the opposite end of the tubular strainer, substantially as set forth.

5. A feed-water cleaner having a water-inlet, and an air-chamber projected upwardly above said inlet, and provided with a strainer located in the lower end of the air-chamber, and a blast-pipe, substantially as set forth.

326,015. PULVERIZER AND SPREADER. GEORGE E. BURT, Harvard, Mass. Filed Oct. 4, 1884. (No model.)





Claim.—1. In a fertilizer distributer and pulverizer, the combination, with a wagon-body having an endless movable bottom, of a rotary pulverizer and distributer composed of blades of different diameters and angles properly placed and arranged obliquely on a shaft, substantially as described.

2. In a fertilizer distributer and pulverizer, the combination, with a wagon-body having an endless feed bottom, of the gears N M *a* O, the connecting-rod *n*, rocker *m*, its pawls, a ratchet-wheel, *r*, and propeller-arms *h*, substantially as and for the purposes described.

3. The combination, with a wagon-body provided with an endless feed bottom and a rotary fertilizer pulverizer and distributer, of the gears N M *a* O, the connecting-rod pivoted eccentrically to wheel M and detachably connected to an arm of the rocker *m*, the pawls *p p'*, the ratchet-wheel, and the propeller-arms *h* on the shaft of said ratchet-wheel, substantially as described.

4. The endless feed bottom composed of sections C, jointed together by means of angular pieces I, bearing wheels H, one edge of each section C being grooved, for the purpose described.

5. For a fertilizer distributer and pulverizer, a shaft, D, having oblique angular and circular blades and intermediate spacing-blocks secured upon the shaft, substantially as described.

6. The combination of a movable bottom constructed of sections, pivoted with angle-pivots, arranged to make self-clearing joints, with pulverizer and distributer constructed and arranged with angular zigzag plates, substantially as described.

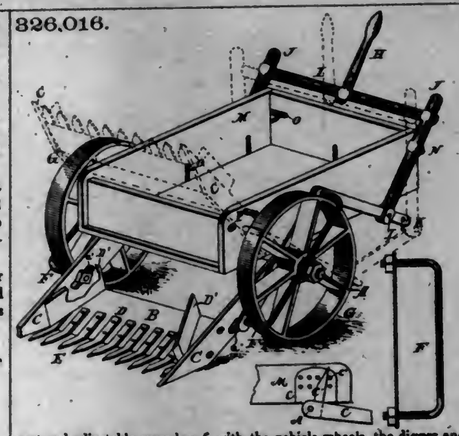
326,016. AUTOMATIC-LOADING CART. GEORGE E. BURT, Harvard, Mass. Filed Nov. 6, 1884. (No model.)

Claim.—1. The combination, with the wheels of a cart, of a pivoted elevator, the clamps F, constructed with projecting arms adapted to said wheels, as described, and pivoted to the arms of the elevator, the connecting-rods K, and the levers J, substantially as described.

2. The combination, with the wheels of a vehicle, of the vibrating digger and loader pivoted to the axle thereof, the clamps and their lever-connections, and arm C', perforated plate, and stop-pin, substantially as described.

3. The combination of adjustable clamps composed of the U-shaped

326,016.

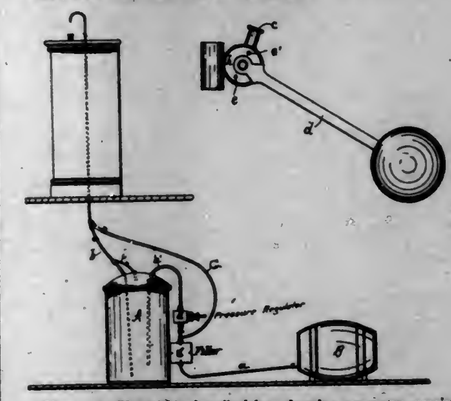


part and adjustable cross-bar *f*, with the vehicle-wheels, the digger and loader, and the lever and rod connections, substantially as described.

4. The digger and loader, consisting of an inclined plane terminating in a sharp rear edge, the pointed fingers, the diverging end boards, the arms pivoted to the axle of wheels G, the pivoted clamps, connecting-rods, levers, cross-bar, and hand-lever, substantially as described.

5. The combination of the yoked clamps F, a pivoted elevator connected thereto, as described, and the rods K, connected to the upper ends of said clamps, substantially as specified.

326,017. BEER-DRAWING APPARATUS. JOHN A. BUTTON, Norwich, Conn. Filed June 19, 1885. (No model.)



Claim.—1. The within-described beer-drawing apparatus, consisting of the barrel B, filter C, pressure-regulator E, cylinder A, and a pipe or pipes connecting said elements with each other, and a suitable outlet-pipe leading from said cylinder, all being combined substantially as described, and for the several objects set forth.

2. In combination with the barrel B, filter C, pressure-regulator E, and cylinder A, a pipe connecting said elements and extending nearly to the bottom of said cylinder, an outlet-pipe for the liquid, and a ball-float cock so connected with a gas-discharge pipe that it acts to relieve the gas-pressure and allow the liquid to enter the cylinder, all being substantially as described, and for the objects set forth.

326,018. MACHINE FOR MAKING DRAIN-TILE. ROBERT J. CARSON and WILLIS D. SHERMAN, Dixon, Ill.; said Sherman assignor to Samuel B. Wadsworth, Charles D. Hayes, and Benjamin F. Wadsworth, Oregon, Ill. Filed Mar. 9, 1885. (No model.)

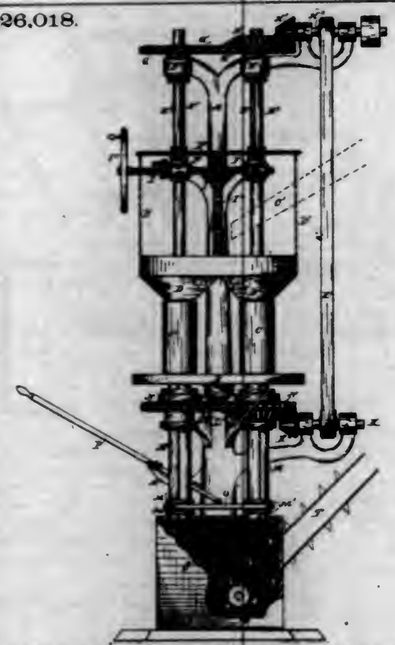
Claim.—1. In a tile-machine, the combination of the molds C, packers E, and augers M, substantially as shown, and for the purpose described.

2. In a tile-machine, the construction and relation, substantially as shown, of the molds C, packers E, and augers M, for the purpose specified.

3. In a tile-machine, the combination of the molds C, packers E, and augers M, plate O, and lever P, substantially as shown, and for the purpose described.

4. The combination of the molds C, packers E, sprocket-wheels G, chain G', bevel-gears H and H', and shaft H^2, substantially as shown, and for the purpose specified.

326,018.

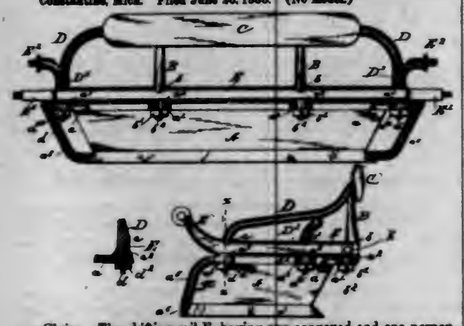


5. The combination of the augers M, molds C, sprocket-wheels N, chain N', gear-wheels K^2 and I, and shaft K, substantially as shown, and for the purpose described.

6. The combination of the packer H, shaft I, pinion I', frame A, and gear-rack I^2, substantially as shown, and for the purpose mentioned.

7. The combination of the hoppers D, chains D', cross-tree D^2, and packers E, substantially as shown, and for the purpose described.

326,019. SHIFTING-RAIL FOR BUGGY-SEATS. SIMON COTHERMAN, Constantine, Mich. Filed June 20, 1885. (No model.)



Claim.—The shifting-rail E, having one convexed and one perpendicular side meeting in sharp edges, in combination with the seat-irons a, having circular heads a', provided with dovetailed recesses for fitting over the lower edge of the shifting-rail, the lazy-back irons B, provided with dovetailed recesses for fitting over the upper edge of the shifting-rail, and the lazy-back irons D D', provided with dovetailed recesses for fitting over the upper edge of the shifting-rail, and arranged to secure the position of the same, as set forth.

326,020. AGRAFFE FOR PIANOS. GARRETT J. COCHRAN, Chicago, Ill. Filed July 14, 1884. (No model.)



Claim.—1. An individual agraffe for each string of a note, provided with a self-adjusting bearing for the string, whereby, when the string is tightened or relaxed, the bearing shall move with the string independently of the adjacent bearing, thereby permitting a uniform tension throughout such string, as described.

2. An agraffe provided with a self-adjusting bearing for the string, combined with means for securing the said bearing in its adjustment, substantially as described.

3. The combination, in an agraffe, of the case with the sliding bearings, provided with bent angular passages for the strings and working through said case, substantially as described.

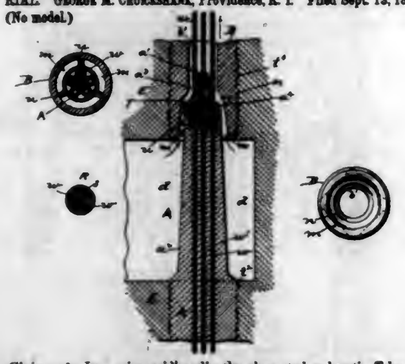
4. In an agraffe, the oblong curved case, in combination with the sliding bearings for the strings and the set-screws for securing the sliding bearings after the strings have been tuned, substantially as described.

5. In an agraffe, the sliding bearing for a string, provided with the passages converging from the ends to the middle portion of one edge of the said bearing, substantially as described.

6. In an agraffe, the sliding bearing for a string, provided with the passages and converging from the ends of the bearing to a diagonal channel substantially intermediate of the ends of the sliding bearing, substantially as described.

7. In an agraffe, the sliding bearing for a string, provided with an angular passage composed of channels formed on opposite sides of the sliding bearing, and holes formed through the latter from its ends, substantially as described.

326,021. DIE FOR COVERING WIRE WITH INSULATING MATERIAL. GEORGE M. CRUICKSHANK, Providence, R. I. Filed Sept. 13, 1884. (No model.)



Claim.—1. In a wire-guiding die, the elongated end or tip T herein described, the outer end thereof having a central hole around which are arranged one or more rows of holes, the under surface of the latter being exposed, substantially as shown, and for the purpose set forth.

2. In a wire-guiding die having the grooved and apertured elongated tip T herein described, the guide-wings *u*, arranged and secured to the exterior of the barrel of said die and near the end thereof, substantially as and for the purpose set forth.

3. In a machine adapted for making insulated-wire cables, the combination of the shaping-die B with the wire-guiding die, the latter being provided with the elongated tip T, having grooves and holes *w'* therein, said dies being arranged in relation to each other and adapted for use substantially as shown, and for the purpose set forth.

4. In a machine adapted for making insulated-wire cables, the combination of the shaping-die B with the wire-guiding die A, the latter having the elongated tip T, provided with grooves and apertures *w'*, the die A being further provided with guide-wings *u*, the whole combined, arranged, and adapted for use substantially as shown and set forth.

326,022. GAGE-COCK. CHARLES H. DE WITT, Weatherly, Pa. Filed Apr. 11, 1885. (No model.)



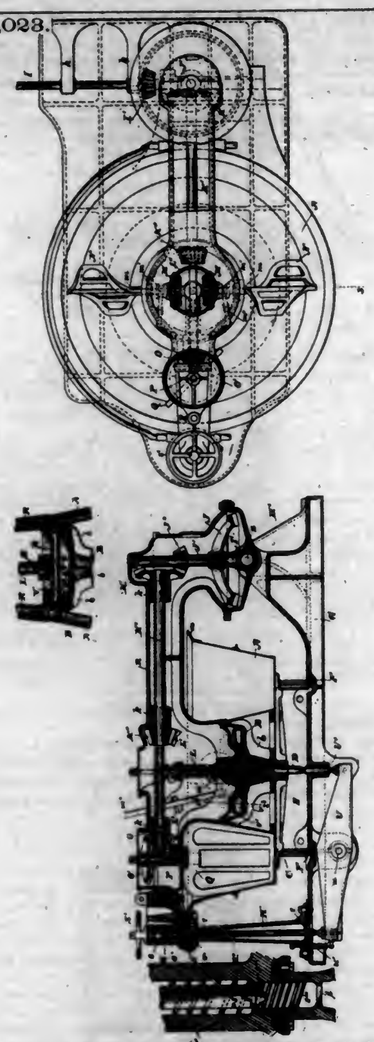
Claim.—1. A gage-cock having its valve and valve-stem freely connected by having a projection on one of the said parts fitting in a recess of the other, substantially as described.

2. A gage-cock having a double valve, a valve-stem freely connected with the valve, and a spring, substantially as described.

3. A gage-cock having a double valve, a valve-chamber with two seats, a valve-stem freely connected with the valve, and a spring bearing against the latter and pressing it toward the stem, substantially as described.

326,023. DOUGH-KNEADER. LOUIS DURAND, Ticonderoga, N. Y. Filed Aug. 24, 1883. (No model.)

326,023.



Claim.—1. In a dough-kneading machine, the combination of a bed-plate having a pair of standards rising therefrom, a removable pan having a central pivot, a lever pivoted to the bed-plate, upon one end of which the pan's pivot bears, a frame hinged to one of said standards, a shaft rotating the pan carried by said frame, a hand-screw for locking the free end of said frame to the other standard above mentioned, and a rod passing through said standard and bearing upon the other end of the aforesaid lever, which is depressed by the hand-screw, in the manner and for the purposes set forth.

2. In a dough-kneading machine, the combination of the bed-plate G, having the standard H' rising therefrom, the frame R, hinged to said standard, the kneaders, and the shaft L, having the wings *v*, carried by said frame, with the centrally-pivoted pan A, having the wings *v'*, as and for the purpose set forth.

3. In combination, a bed-plate, a standard rising therefrom, a frame hinged to said standard, a rotating shaft carried by said frame, a removable pan having a central pivot projecting downwardly therefrom, and a truck having a central aperture for the passage of said pivot, and anti-friction rollers upon which the pan rests and is rotated by the shaft above mentioned, substantially as and for the purpose set forth.

4. A bed-plate, a standard rising therefrom, a frame hinged to said standard, and the kneaders, in combination with a removable pan having a central pivot projecting downwardly therefrom, a rotary shaft and connections with the movable parts, a truck having a central aperture for the passage of the pan's pivot, and a vertically-movable step upon which it rests, as and for the purpose set forth.

5. The combination of a bed-plate having a standard rising therefrom, a removable pan, a central pivot upon which said pan revolves, a frame hinged to said standard, the stirrers mounted in said frame, a shaft mounted vertically in said frame and having connections with the pan, the main shaft carried by said frame, and connections between said main shaft and the vertical shaft and stirrers, substantially as and for the purposes set forth.

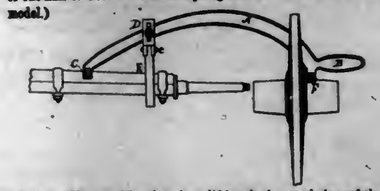
6. In combination, a bed-plate, a standard rising therefrom, a frame hinged to said standard, a shaft mounted vertically in said frame, a pan having a central pivot, connections between said shaft and pan, a truck having a central aperture for the passage of said pivot, a step or bearing in said bed-plate, and a track or way, all constructed and arranged substantially as and for the purpose set forth.

7. In combination with a removable pan having a central pivot, a truck having anti-friction rollers upon its upper side, and a central aperture for the passage of the pan's pivot, and a vertically-movable step upon which said pivot rests, as and for the purposes set forth.

8. The combination, with the hinged frame R, having the beveled pinion J, kneaders, and connections between said pinion and kneaders, of the beveled pinion I', mounted upon an axis concentric with the hinge of the frame R, and gearing with the pinion J, as and for the purposes set forth.

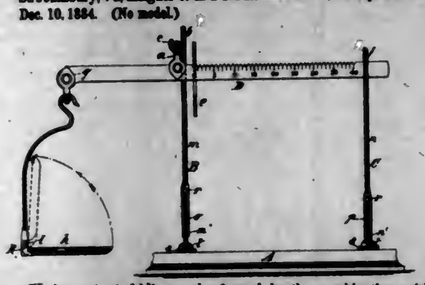
9. The combination, with the bed-plate G, having standard H', and the removable pan A, having pivot D and wings *v'*, of the hinged frame R, carrying the main shaft K', and the shaft L, having wings *v*, intermeshing with the wings *v'*, substantially as and for the purposes set forth.

326,024. CARRIAGE-JACK. JOHN R. ENOS, Buffalo Hart, assignor of one-half to Geo. W. Bullard, Springfield, Ill. Filed July 11, 1885. (No model.)



Claim.—The combination, in a lifting-jack, consisting of the bowed arm A, with the handle B, the fulcrum-bearing foot C, the adjustable lifting-hooks E E', and the supporting-foot F, all substantially as described, and for the purposes specified.

326,025. PORTABLE OR FOLDING SCALE. FRANKLIN FAIRBANKS, St. Johnsbury, Vt., assignor to E. & T. Fairbanks & Co., same place. Filed Dec. 10, 1884. (No model.)



Claim.—1. A folding scales formed by the combination, with a sustaining-base, of supporting-standards arising from said base and capable of being folded down against the same, and a removable scale-beam with its necessary adjuncts adapted to be suspended to and detached from said standards, substantially as herein set forth.

2. In a folding scales, the combination, with the beam and suitable supports therefor, of the scale-pan *h*, with the hanger *i*, formed in one piece, bent into a suspensory hook at one end and hinged at the opposite end to the scale-pan, substantially as herein shown and described.

3. In a folding scales, the combination, with a removable beam and a sustaining-base, of separate supporting-standards pivoted or hinged at or near the base, and capable of being raised into an upright position to support the beam, or of being folded down recumbent upon the base, substantially as herein shown and described.

4. In a folding or separable scales, the combination, with a removable beam, of a folding beam-supporting standard hinged or pivoted at or near the base, and capable of being placed in upright or recumbent positions, with a spring-catch arranged to hold the standard in its erect position, substantially as set forth.

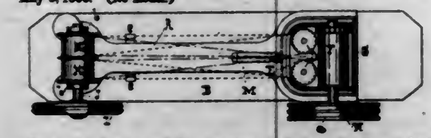
5. In a folding scales, the combination, with the base and the beam with its necessary adjuncts, of folding standards made in two overlapping sections, such as *n o*, pivoted together, and having an engaging spring-catch, *m*, substantially as herein shown and described.

6. In a separable or folding scales, the combination, with a base and an upright folding standard having a hook, *c*, of the separable or detachable beam D, with its fulcrum-loop *d*, arranged to hook onto the hook *c*, substantially as and for the purpose set forth.

7. In a separable scales, the combination, with a base, of two standards, B C, the standard B being provided with hook *c*, and the standard C with eye *f*, in combination with the detachable beam D, having the fulcrum-loop *a*, adapted to slip onto the hook *a* of one standard, while the tip of the beam is adapted to enter the eye *f* of the other standard, substantially as shown and described.

8. In a scales, the combination, with a supporting-base and a scale-beam and its necessary adjuncts, of standards arising from the base to support the beam, formed of wire bent into eyes *s*, which are screwed to the base, substantially as shown and described.

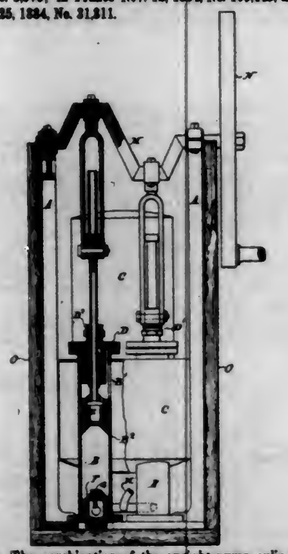
326,026. PEA-SHELLER. GEORGE W. FISHER, Baltimore, Md. Filed May 8, 1885. (No model.)



Claim.—1. In a pea-sheller, a pair of hollow-faced rollers, a knife situated between the said rollers, and feed-belts adapted to conduct the pods to between the said rollers, all combined substantially as specified.

2. In a pea-sheller, the combination of a pair of hollow-faced rollers, belts to convey pods to the said rollers, a knife situated between the said rollers, and a pair of shelling-rollers, substantially as specified.

326,027. ICE-MACHINE. HENRY A. FLEMER, Newtown, Isle of Wight, England. Filed Dec. 10, 1884. (No model.) Patented in England Feb. 26, 1884, No. 3,978; in France Nov. 13, 1884, No. 165,443, and in Germany Nov. 25, 1884, No. 31,311.

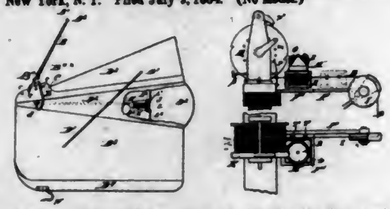


Claim.—1. The combination of the upright pump cylinder or cylinders, the piston for each cylinder, the cylinder-tank containing liquid (such as water) communicating with the interior of the upper part of each cylinder, the inlet-valve at the bottom of each cylinder, the outlet-valve of each piston, the vaporizing-vessel, the collection-chamber or upper portion of the cylinder-tank containing a light volatile liquid (such as amyl-hydride) insoluble in the liquid of the cylinder-tank, and the pipe by way of which the collection-chamber and vaporizing-vessel communicate, these members being and operating substantially as set forth.

2. The combination of the cylinder-tank, the vertical pump-cylinder having an opening near its upper end by which it communicates with the liquid contained in the cylinder-tank, a coned projection at the bottom of the pump-cylinder, the inlet-valve, the pump-piston made concave on its under side to correspond with the coned projection, the outlet-valve at the top of this concavity, the vaporizing-vessel, the pipe leading from the top of the cylinder-tank to the vaporizing-vessel, and a pipe leading from this vessel and communicating with the inlet-valve, substantially as and for the purpose set forth.

3. The combination, in a freezing-machine, of the cylinder-tank, the vertical pump-cylinder having the coned projection at its bottom, the piston having its under side formed with a concavity corresponding with said coned projection, the inlet and outlet valves of the cylinder and piston, respectively, and means for injecting liquid into the cylinder at the end of each outward stroke of the piston, substantially as and for the purpose set forth.

326,028. SHALLOW-WATER INDICATOR. FERDINAND E. FORSTER, New York, N. Y. Filed July 9, 1884. (No model.)



Claim.—1. In a shallow-water indicating device, the sounder D, having a tapering barrel, D^2, hollow and buoyant at the rear, in combination with the wings D', arranged obliquely thereto and adapted to be drawn at a depth below the surface of the water by a connection, B, to a moving vessel, A, as herein specified.

2. The flexible connection B, sounding device D, having the elongated barrel D^2, obliquely-arranged wings D', and loaded upright plane D^3, in combination with each other and with provisions C for varying the point of attachment of B to D, all substantially as herein specified.

3. In combination with a sounder having wings adapted to engage the water and be carried at a uniform depth therein, the hook D, arranged to serve therewith, substantially as and for the purposes herein specified.

4. In a shallow-water indicator, the combination of a telephone-transmitter and suitable telephonic-connection devices with a sounding device and its connecting-cord, substantially as and for the purposes herein specified.

5. A buoy, M, cord N, and weight O, in combination with each other and with a sounding device, D, cord B, and yoke R, arranged for joint operation, substantially as herein specified.

326,029. FENCE-MAKING MACHINE. STEPHEN D. FRY, Attica, Ind. Filed June 4, 1885. (No model.)

Brief.—A picket having been placed between the wires and in front of the beaters, the clamp is closed upon it by pressing the foot on a treadle. By pressing on another treadle the beaters are actuated to force the picket forward to its place, and at the same time the spacing device is lifted out of the way of the picket.

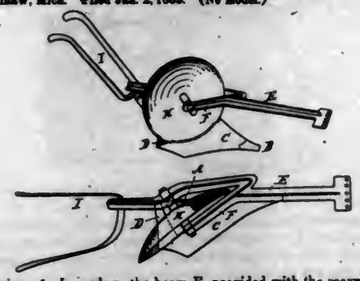


Claim.—1. In a fence-making machine, a twisting device consisting of twisting-heads with wire-passages through them and cog-teeth on them, rack-bars, one for each drum, having teeth on two surfaces, one at right angles to the other, and an operating-shaft with pinions engaging with the bars, substantially as and for the purpose specified.

2. In a fence-making machine, a device for holding the palings, consisting of a fixed jaw, a pivoted jaw under the same, a rock-shaft operated by a treadle, and an arm on said shaft engaging under said movable jaw and operating to lift it toward the said fixed jaw, substantially as and for the purpose specified.

3. The combination, with the frame holding the twisting-heads, of brackets projecting through said frame and normally spring-retained, a treadle connected to said brackets by a strap, a rock-shaft on the frame, having an arm connected to the treadle by a link or rod, and slotted arms projecting from said shaft and carrying adjustable angle-arms, substantially as and for the purpose specified.

326,030. ROTARY-MOLD-BOARD PLOW. EZRA G. GODDARD, East Saginaw, Mich. Filed Jan. 2, 1885. (No model.)



Claim.—1. In a plow, the beam E, provided with the rearwardly-projecting arm F, formed integral therewith, said beam and arm being constructed as shown, whereby a recess is left between the two, said recess extending forward beyond the longitudinal center of said beam, substantially as described.

2. In a plow, the beam E, +-shaped in cross-section and provided with a bend, as shown, and with the rearwardly-projecting arm F, formed integral therewith, leaving a recess between said beam and arm, said recess extending forward beyond the longitudinal center of said beam, and said beam and arm enlarged to receive the shaft G, in combination with said shaft G, and the disk H, carried by said shaft and revolving in said recess, substantially as and for the purpose specified.

326,031. VEHICLE-SPRING. THEODORE GRAETNER, Detroit, Mich. Filed June 22, 1885. (No model.)



Claim.—1. A spring-coupling consisting of a case adapted to be secured to the body or side bars, having in combination therewith a spindle journaled therein, said spindle slotted to receive the end of the spring, and said case constructed with an orifice to permit the engagement of the spring with said spindle, substantially as described.

2. The combination, with a vehicle-spring constructed with a straight end, of a coupling consisting of a case adapted to be secured to the body or side bars, having in combination therewith a spindle journaled therein, said spindle slotted to receive the end of the spring, and said case constructed with an orifice to permit the engagement of the spring with said spindle, substantially as described.

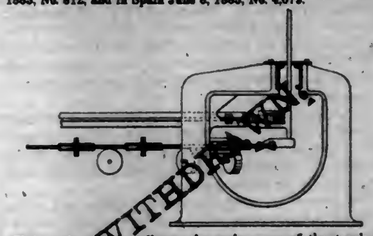
3. A spring-coupling consisting of a case adapted to be secured to the body or side bars, having in combination therewith a spindle journaled therein, said spindle slotted to receive the end of the spring, and said case constructed with an orifice to permit the engagement of the spring with said spindle, and provided with an oil-pocket, substantially as described.

4. A spring-coupling consisting of a case adapted to be secured to the body or side bars, having in combination therewith a spindle journaled therein, said spindle slotted to receive the end of the spring, and said case constructed with an orifice to permit the engagement of the spring with said spindle, the construction being such that the spring may have room to lengthen in the socket of the spindle when compressed, substantially as described.

5. The combination, with a vehicle-spring constructed of two semi-elliptic springs bound together in reverse position, and having a long bearing intermediate of their extremities and constructed straight at their ends, of a coupling consisting of a case adapted to be secured to the body or side bars, having in combination therewith a spindle journaled therein, said spindle slotted to receive the end of the spring, and said case constructed with an orifice to permit the engagement of the spring with said spindle, substantially as described.

6. The combination, with a spring provided with a spindle at its end, of a case sleeved upon said spindle, said case constructed to be secured in place, substantially as described.

326,032. TRAMWAY FOR CURVES AND CABLE-GRIPS. ANDREW S. HALLIDIE, San Francisco, Cal. Filed Feb. 12, 1884. (No model.) Patented in England Dec. 13, 1879, No. 5,107; in Victoria July 10, 1880, No. 2,863; in New South Wales Oct. 19, 1880, No. 880; in Queensland Nov. 12, 1880, No. 323; in New Zealand Nov. 19, 1880; in Belgium Dec. 5, 1882, No. 59,750; in Italy Dec. 27, 1882, No. 14,903; in Portugal Jan. 23, 1883, No. 812, and in Spain June 8, 1883, No. 4,079.



Claim.—In a cable railway, the main curve of the track and slot, in combination with the guide-rail beneath, and the cable-carrying sheaves for carrying the cable around the curve, and a grip as set forth.

326,033. ELECTRIC BATTERY. EMIL G. HAMMER, Brooklyn, N. Y. Filed Sept. 8, 1884. (No model.)



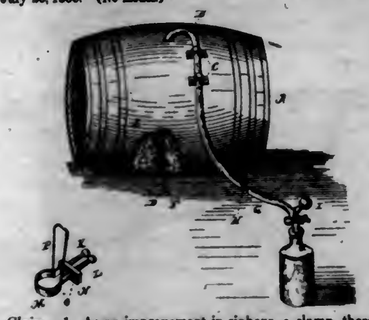
Claim.—1. The combination, with a battery element, of a permeable sack secured to the same and charged with the attacking-salt.

2. The combination, with a battery element, of a permeable sack surrounding and inclosing the same and secured thereto, and charged with the attacking-salt.

3. The combination, with a battery element, of a permeable sack or bag inclosing the element and charged with the chemicals of the battery, the upper portion of said sack above the liquid-level of the battery being rendered impervious by varnish or its equivalent.

4. An improved battery, consisting of an external containing-cup, *a*, formed of a corrodible metal constituting the soluble element of the battery, with a conducting element, *b*, and and a permeable sack, *d*, inclosing and secured to the element *d*, and a charge of the active battery-chemical in a dry state within said sack, whereby the battery is rendered portable and is ready for action when a dissolving-liquid is poured into the space between the sack and cup, substantially as herein set forth.

326,034. SIPHON-STARTER. LEO HIRT, New Kiowa, Kans. Filed July 20, 1885. (No model.)



Claim.—1. As an improvement in siphons, a clamp therefor, consisting of two arms joined by an integral spring, and a toothed frame secured to one arm and surrounding the other, substantially as and for the purpose specified.

2. The combination, with the siphon, of a filter consisting of a filter-chamber with a base or support and a projecting stem, and a clamp consisting of two arms integrally connected by a spring, and a toothed frame secured to one arm and surrounding the other arm, said clamp being supported from the siphon-tube by hangers, substantially as and for the purpose specified.

3. The combination, with the pipe or branch carrying a bulb by means of a short neck, of a clamp engaging around the pipe and provided with hangers engaging with the said pipe at its conjunction with the said bulb-neck, substantially as and for the purpose specified.

4. The combination, with the pipe or branch carrying a bulb by means of a short neck, of a clamp consisting of spring-connected arms, a toothed frame connected to one arm and surrounding the other, and hangers connected to said clamp and engaging with the pipe at its conjunction with the bulb-neck, substantially as and for the purpose specified.

326,035. PROCESS OF PRESERVING ANIMAL MATTERS. GEO. HOLGATE, Philadelphia, Pa. Filed Aug. 3, 1885. (No specimens.)

Claim.—1. The process for preserving animal matters which consists in first extracting the animal heat, then causing a vacuum, and thus removing the air and moisture therefrom, and then impregnating the animal matter with anhydrous sulphurous-oxide gas, substantially as and for the purpose specified.

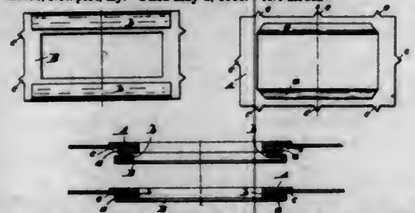
2. The process for preserving animal matters—such as hams—which consists in first extracting the animal heat, air, and moisture therefrom, then subjecting the exhausted hams to the action of anhydrous sulphurous-oxide gas, and then treating said hams to the pickle bath, substantially as and for the purposes specified.

3. The process for preserving animal matters—such as hams—which consists in first extracting the animal heat, air, and moisture therefrom, then subjecting the exhausted meats to the action of anhydrous sulphurous-oxide gas, then treating the said meats to the pickle, then again extracting the air and moisture from the pickled hams, and, finally, subjecting the hams in that condition to the smoking process, substantially as and for the purpose specified.

4. In the process of preserving foods, the treatment consisting of impregnation by sulphurous anhydride followed by impregnation with smoke.

5. In the process of preserving foods, the treatment consisting of impregnation by sulphurous anhydride followed by impregnation with smoke under pressure, as specified.

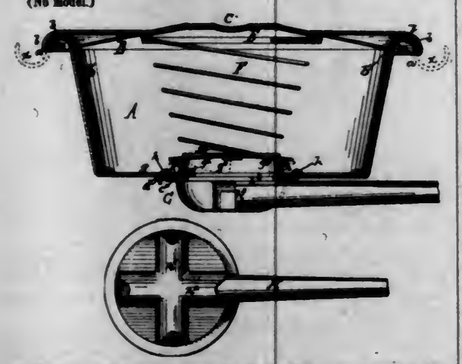
326,036. CURTAIN-LIGHT FRAME FOR CARRIAGES. JOHN H. HOORE, Newport, Ky. Filed May 2, 1885. (No model.)



Claim.—1. A sheet-metal frame for carriage-curtain lights, consisting of two rectangular members, A and B, provided with flaps *a*, turned from opposite interior edges of one member inward, and *b*, turned from opposite interior edges of the other member outward, to engage the two members together with the curtain between, substantially as set forth.

2. The sheet-metal frame for carriage-curtain lights, consisting of the part A, provided with interior flaps, *a*, and exterior tongues, *c*, and the part B, provided with exterior flaps, *b*, and tongues *c'*, as set forth.

326,037. INSECT-POWDER GUN. WALDO P. HOUGHIN, New York, N. Y., assignor to Thomas W. Houghin, same place. Filed July 9, 1884. (No model.)



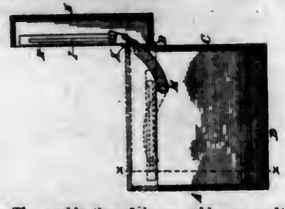
Claim.—1. In a powder-gun, the elastic diaphragm, in combination with a center piece made of plastic material, the latter adhering to the former, the material of the center piece sticking or clinging to that of the diaphragm without extraneous fastening, as set forth.

2. In a powder-gun, the stopper having a diametric groove, in combination with the spout held in such groove and extending from the stopper, as set forth.

3. A powder-gun stopper having the grooves n' n^2, located as described, and the spout H, as set forth.

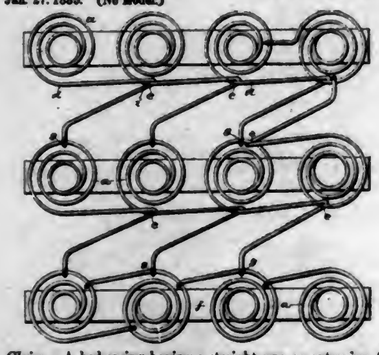
4. A powder-gun stopper having the holes o', located as described, the grooves n' n^2, and the spout H, as set forth.

326,038. TRUNK-LID SUPPORT. CHARLES P. HOWELL, Covington, Ky. Filed Jan. 17, 1885. (No model.)



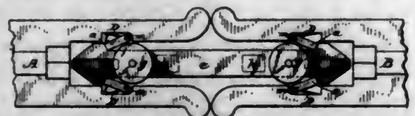
Claim.—The combination of the curved brace-arm K, having a pin, O, and head P at its upper end, and the bearing-block N and pivot M for supporting the lower end of said brace-arm, and the slotted guide H, having notch J, and adapted to receive and guide the pin and head of the brace-arm, with the body L and the lid E, respectively, carrying the brace-arm and slotted guide at the inner sides of their end walls, substantially as described.

326,039. SPRING. EDGAR A. JONES, Three Rivers, Mich. Filed Jan. 27, 1885. (No model.)



Claim.—A bed-spring having a straight arm or extension forming a continuation of the upper coil thereof, the said straight arm being provided with a continuation extending rearwardly in a diagonal direction, the latter having a hook-shaped end, the said straight arm adapted to rest parallel or approximately parallel with the slat and in a line, and interlock with the straight arm of the next spring, whereby the springs can be moved toward and away from each other without straining the springs or arms, substantially as described.

326,040. CAR-COUPLING. LORENZO D. KERRER, Scranton, Pa. Filed Jan. 26, 1885. (No model.)



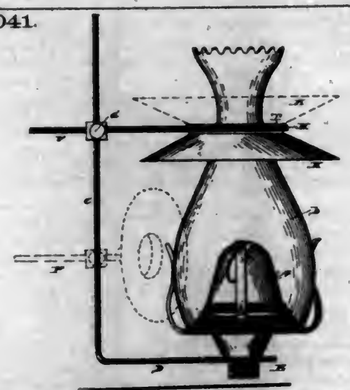
Claim.—1. The combination, with the draw-head having opposite interior recesses in its sides, and in its top a slot, of a separate jaw and spring held in each recess by a single pin, and the button for separating the jaws, having an operating-handle which extends upwardly through the slot in the draw-head, substantially as and for the purpose described.

2. The combination, with the draw-head having in its top a slot and formed with opposite interior recesses, of coupling-jaws held in such recesses, springs also held therein operating against the jaws, the disconnecting-buttons operated by a handle through the slot in the draw-head, and the coupler or pin for engaging the jaws, having projections at its ends, substantially as described.

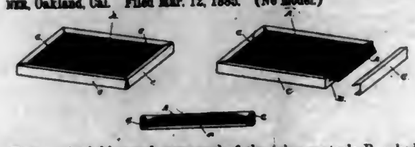
326,041. REVERSIBLE REFLECTOR. GEORGE W. KENNEDY, Danville, Ill., assignor of one-half to Franklin P. Kissinger, same place. Filed Dec. 2, 1884. (No model.)

Claim.—The reflector K, having reflecting-surfaces on both sides, and provided with central opening, P, collar S, and flange T, in combination with the standard D, and the adjustable cross-arm F, having forked end H, as and for the purpose set forth.

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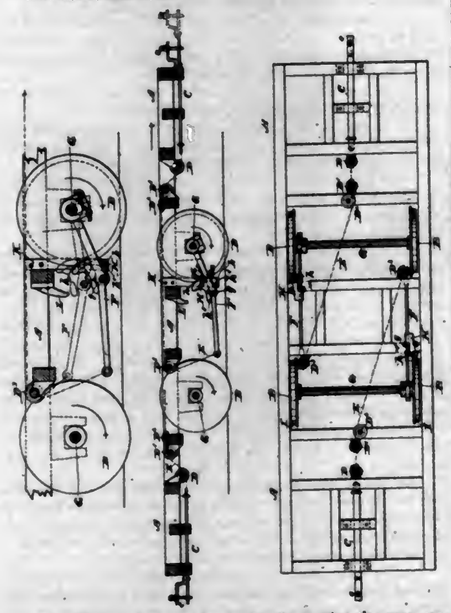


326,042. INKING-PAD FOR HAND-STAMPS. CHARLES A. KLINKNER, Oakland, Cal. Filed Mar. 12, 1885. (No model.)



Claim.—An inking-pad composed of the ink-receptacle B, a body or filling of absorbent material, distributing-surface A, and clamps C C, constructed and combined substantially as described.

326,043. CAR-STARTER. ADOLF KRÖMER and FLORIAN TRITSCHERT, Vienna, Austria-Hungary. Filed May 18, 1885. (No model.) Patented in Luxemburg May 1, 1885, No. 525; in England May 4, 1885, No. 5,489; in Austria-Hungary May 23, 1885, and in Italy June 6, 1885, XIX, 18,335; XXXVI, 244.



Claim.—1. In a street-car, mechanism for starting the same, consisting of the angle-lever F, loosely mounted upon one of the wheel-axles, and the segmental shoe H, pivoted to said lever and having a rectilinear face, h', in combination with the bracket K, the draft-bar of the car with which the free end of the lever is connected, and one of the driving-wheels or its specified equivalent, said parts being arranged for operation substantially as described.

2. In a street-car, the combination, with one of the wheel-axles and driving-wheels, or the specified equivalent of the latter, the angle-lever F, loosely mounted on said wheel-axle, and the draft-bar of the car with which the free end of the lever is connected, of the segmental shoe H, pivoted to lever F and provided with a projection or tail-piece, h^2, said parts being arranged for operation substantially as and for the purpose specified.

3. In a street-car, the combination, with one of the wheel-axles and driving-wheels, or the specified equivalent of the latter, the angular lever F, loosely mounted on said axle, the draft-bar of the car with which the free end of the lever is connected, and the segmental shoe H, provided with a projection or tail-piece, h^2, of a tripping device adapted to engage the tail-piece of the shoe and trip the same, substantially as and for the purposes specified.

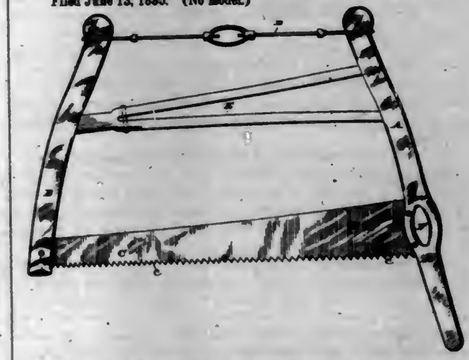
4. The combination, with the draft-bar of a street-car, one of the driving-wheels or its specified equivalent, and one of the wheel-axles, of a lever loosely mounted on said wheel-axle and connected with the draft-bar, a segmental friction-block or shoe pivoted to the lever and arranged to rotate the wheel-axle by the power exerted on the lever through the draft-bar, and a stop to throw the friction device out of operation when the lever has reached the limit of its movement in either direction, as and for the purpose specified.

326,044. INKSTAND. THOMAS J. LITTLE, Philadelphia, Pa. Filed Mar. 31, 1885. (No model.)



Claim.—An inkstand having a well and a flat top, in combination with a hopper-shaped cover adapted to receive an automatic ball-stopper, and having a flat under side, *f*, and a flange, *e*, around its inner upper edge, substantially as and for the purpose described.

326,045. BUCK-SAW. ALBERT H. LOOMIS, Rochester, assignor to the Wheeler, Madden & Clemson Manufacturing Company, Middletown, N. Y. Filed June 13, 1885. (No model.)



Claim.—1. In a buck-saw, the combination, with the head and foot section, the former being provided at a point between its ends with a supplemental handle, F, of a saw secured to the lower end of the foot-section, and to head-section at a point opposite the handle F, and braces connecting the head and foot sections, substantially as set forth.

2. In a buck-saw, the combination, with the head and foot sections, the former being provided at a point between its ends with a supplemental handle, F, of a saw-blade increasing in width from its foot to its head, secured to the lower end of the foot-section and to the head-section at a point opposite the supplemental handle F, and braces connecting said head and foot sections.

326,046. PISTON FOR STEAM-ENGINES. JOHN J. LOVE, New York, N. Y. Filed May 20, 1885. (No model.)



Claim.—1. In a piston, the combination of a body having a ring-like portion, a packing-ring outside the latter, and intermediate uniformly semi-elliptical springs, G G′, arranged in pairs and rigidly secured together midway of their lengths and having their outer ends bent toward each other, the ends of the springs of one pair coming in contact with the ends of the springs of the next adjacent pair, substantially as specified.

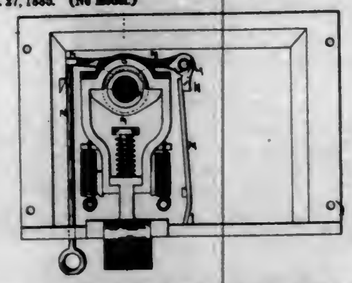
2. In a piston, the combination of a body having a ring-like portion, an outer packing ring, an intermediate shoe, and screws working in tapped holes in the ring-like portion of the body and impinging against the shoe, substantially as specified.

326,047. PROCESS OF TREATING GYPSUM. WILLIAM MANNING, Holyoke, assignor to Thomas Manning, Boston, Mass. Filed Oct. 23, 1884. (No specimens.)

Claim.—1. The process of treating gypsum herein described, the same consisting in subjecting the gypsum to grinding, calcining, and agitating in water, then floating the same in a floating apparatus to effect purification, then forcing it through a filter-press, and afterward subjecting it to heat to effect drying, and finally crushing and grinding the same to an impalpable powder, substantially as set forth.

2. As a new article of manufacture, alabaster in the form of a dry precipitated powder made and prepared as above set forth.

326,048. KNOB ATTACHMENT. THOMAS J. MORGAN, Woodlawn Park, Ill., assignor of one-half to William McCombie, Chicago, Ill. Filed Apr. 27, 1885. (No model.)



Claim.—1. A latch having a knob formed of two pieces, the spindle of one knob passing partly into the other knob, combined with a latch or snap contained within the casing and normally retaining the said parts in conjunction, and a rod or pin extending to the exterior of said casing and operating the snap, substantially as and for the purpose specified.

2. The combination of a knob-spindle having a partly screw-threaded and a partly plain continuation with a flattened or similarly-formed end, with a knob having a sleeve, which latter is recessed to receive the spindle, the said sleeve having a slotted continuation, and a snap or catch engaging in said slot, substantially as and for the purpose specified.

3. The combination, with a knob-spindle having a continuation partly screw-threaded and with a flat or similarly-shaped end, of a knob having a sleeve, which latter is recessed to receive the spindle, said sleeve having a slotted and beveled continuation, a cam provided with an internally-screw-threaded sleeve, and a catch formed of a spring-retained lever with an enlargement fitting in the slot, and a rod or pin engaging with the said lever, the whole operating substantially as and for the purpose specified.

4. The combination, with an internally-screw-threaded sleeve having a cam at one end, of a knob having a sleeve with a continuation resting against the cam, and a knob with a partially screw-threaded spindle and a snap or catch engaging with the continuation of the sleeve, substantially as and for the purpose specified.

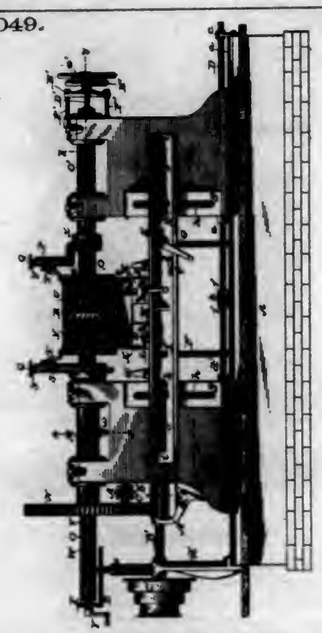
326,049. MACHINE FOR BORING CYLINDERS. WALTER J. MUNCASTER, Cumberland, Md., assignor of one-half to Merwin McKaig, same place. Filed Apr. 23, 1885. (No model.)

Claim.—1. In a cylinder boring or dressing machine, the combination of base A, heads B C, vertically-adjustable table E, longitudinally-movable bar O, and cutter R, carried by said bar.

2. In a machine for boring cylinders, the combination of a vertically-adjustable table, E, slides K K, adjustable transversely upon said table heads B C, one or both adjustable relatively to the table, a boring arbor or shaft, O, mounted in and longitudinally adjustable through the head or stock, and a boring head or tool secured to said shaft or bar.

3. The combination, substantially as described and shown, of base A, heads B C, provided with slots *h*, screw-shaft D, having right and left threaded portions *d e*, bed or table E, provided with slots *j*, bolts *k*, passing through slots *h* and *j*, hollow arbor M, carried by head or stock B, and provided with gear-wheel N, boring-bar O O′, cutter R, shaft B′, and pinion A′.

326,049.



4. In combination with base A, heads or stocks B C, and boring bar or shaft O O′, screw-shaft D, adapted and arranged to advance and recede the heads, substantially as set forth.

5. In combination with base A and heads B C, boring arbor or shaft O O′, and vertically-adjustable table E.

6. In combination with base A, heads B C, provided with slots *h*, table E, provided with arms *i*, extending along the sides of the heads and provided with slots *j*, and bolts *k*, passing through the slots and serving to bind the heads and bed or table together.

7. In combination with base A, heads B C, and boring-bar O, bed or table E and adjusting-screws F G for said table.

8. In combination with base A, heads B C, and boring-bar O, table E, vertical screws F G, provided with pinions *l*, and shafts H I J, provided with pinions *m*, all substantially as described and shown.

9. In combination with heads B C and a boring-shaft carried thereby, a vertically-movable table, and screws F G at each end of said table, adapted to be turned simultaneously or independently to raise the table bodily or at one end only.

10. In combination with heads B C, and with a boring-bar carried thereby, table or bed E, right and left screws F and G, provided with pinions *l*, cross-shafts H I, provided with pinions *m*, connecting the screws F G, pivoted at one end and carried in an adjustable block, *o*, at the other end, and an eccentric, *p*, for raising and lowering said block.

11. In combination with base A and heads or stocks B C, the stock B, adjustable upon the base, hollow arbor or spindle M, carried by head B and provided with gear M, boring-bar O, passing through said arbor or spindle, standard *d′*, mounted upon base A, grooved shaft B′, journaled in said standard and extending into head B, pinion A′, provided with a rib to enter the grooved shaft B′, upon which it is mounted, and arm *s′*, attached to head B and serving to move pinion A′ as the head is moved.

12. In a cylinder-boring machine, the combination of a base, heads mounted upon said base, and a boring-bar made in two sections, one section mounted in each head and one adapted to slide through the head in which it is mounted, whereby the boring-bar may be withdrawn to permit the placing of a cylinder between the heads.

13. In combination with base A and heads B C, a boring-bar composed of sections O O′, one provided with a tenon and the other with a socket to receive the tenon, and a pin or key passing through the interlocking ends and serving to unite them, as set forth.

14. In combination with heads B C, boring-bar O and cross-feed arm S, secured to the boring-bar, as and for the purpose set forth.

15. In combination with heads B C, boring-bar O O′, provided with boring-head R, and with cross-feed arm P offset to permit the hub of the cutter to pass under it.

16. In combination with heads B C, hollow arbor or spindle M, mounted in head B, boring-bar O, provided with groove or key-seat *u*, key *v*, seated in said groove and in the hollow arbor, and set-screw *w*, bearing upon said key, substantially as shown.

17. In combination with heads B C, boring-bar O, provided with groove W, screw V, seated in said groove, and boring tool or head R, mounted upon the boring-bar and engaged with the screw, substantially as described and shown.

18. In combination with heads B C and boring-bar O, divided cutter or boring-head R.

19. In combination with heads B C, boring-bar O, feed-screw V, seated in said bar and provided with star-wheel X, boring-head or cutter R, mounted upon the bar O and engaged with the screw, and stop Z, located in the path of star-wheel X and adapted to partially rotate the same at each revolution of the boring-bar.

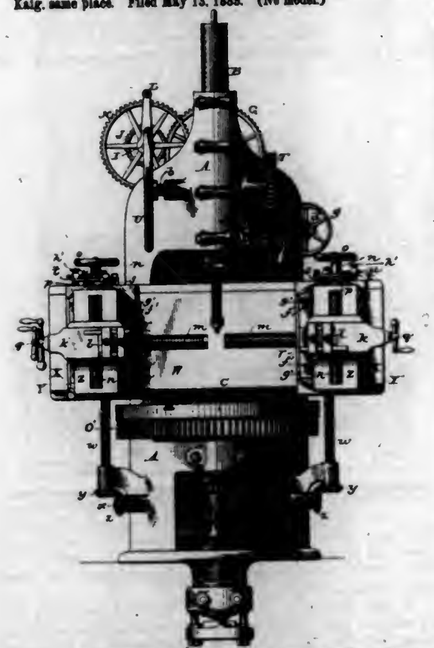
20. In combination with heads B C and table or bed E, boring-bar O, a radial arm mounted in said bar and provided with a movable tool post or holder, a feed-screw, *y*, for moving said tool-holder, a star-wheel fixed upon said screw, and a stop, *a′*, placed in the path of the star-wheel and serving to turn the wheel and screw as the radial arm moves past it.

21. In combination with base A, heads B C, and elongated pinion A′ carried by head B, hollow arbor M, journaled in head B and provided with gear-wheel N, boring-bar O, passing through arbor M, extension O′, mounted and arranged to rotate and slide in head C′, screw D′, swiveled in the end of extension O′, and a radial tool-carrying arm secured upon the boring-bar, all substantially as described and shown.

22. In combination with heads B C, hollow arbor M, and boring-bar O, provided with a radial tool-carrying arm, means, substantially such as described and shown, for imparting a longitudinal reciprocation to the boring-bar while the same is rotating.

23. In combination with heads B C and table E, boring-bar O, provided with tool-carrying arms P S, having tool posts or supports, and tools adapted to be adjusted in line with the axis of the boring-bar.

326,050. MACHINE FOR BORING AND TURNING PULLEYS. WALTER J. MUNCASTER, Cumberland, Md., assignor of one-half to Merwin McKaig, same place. Filed May 13, 1885. (No model.)



Claim.—1. In a machine for boring and turning pulleys, the combination of a frame, a rotary bed to receive and hold the work, a boring-tool stock, and turning-tool holders wholly independent of the boring-tool stock, and its feed mechanism adjustable toward and from the center of the bed, substantially as and for the purpose set forth.

2. In combination with the main frame, a rotary bed or table, a drill or boring-tool stock perpendicular to the table, and a tool-holder adjustable to and from the drill-stock, and wholly independent of said stock and its feed.

3. In combination with a frame, a rotary bed or table, a drill or boring-tool stock perpendicular to the bed, and a tool-holder adjustable to and from the drill or boring-tool stock, and also adjustable in the direction of the length of the boring-tool stock, said tool-holder being wholly independent of the boring-tool stock and its feed.

4. In combination with a frame, a rotary bed, a drill or boring-tool stock perpendicular to the bed and a tool-holder adapted and arranged to be moved toward or from the drill-stock, to be moved in line with the axis of said stock, and to move at an angle to said axis but in the direction of its length.

5. In combination with a frame, a rotary bed, a drill or boring-tool stock perpendicular to and adjustable to and from the bed, and a rotary support mounted upon the frame and adapted to be adjusted vertically, horizontally, and at intermediate angles, substantially as set forth.

6. The herein-described pulley boring and turning machine, consisting of frame A, boring-tool stock B, rotary bed C, upright face W, sliding block X, plate Y, slide Z, and cross-slide *k*, the block X and slides Z *k* being each provided with a fixed or adjustable screw, all combined and arranged to operate substantially as described.

7. In combination with a supporting-frame and a vertically-movable drill or boring-tool stock, a feed-shaft provided with a pinion to engage with and move said rack, and with a hand-wheel and a worm-wheel, a worm, a shaft carrying said worm adapted to be moved to throw the worm into or out of gear with the worm-wheel and connected with a rotating member of the machine, and a crank or handle applied to said shaft by which to turn it manually, whereby a power-feed may be produced automatically or manually at will and a quick return of the drill-stock may be effected independently of the power-feed.

8. The combination, substantially as described and shown, of frame A, vertically-adjustable stock B, shaft *b*, provided with pinion *a*, worm-wheel T, and hand-wheel U, and shaft *c*, provided with worm V, handle *j*, and pinion *g*, to receive motion from the driving-gear, said shaft and worm being adjustable to and from the worm-wheel.

9. The combination, substantially as described and shown, of frame A, vertically-adjustable stock B, bed C, shaft *b*, provided with pinion *a*, worm-wheel T, and hand-wheel U, shaft *c*, provided with worm V, handle *j*, and flexible joint *d*, box *e*, supporting said shaft, and eccentric *f*, adapted to move said box and shaft and throw the worm and worm-wheel into and out of gear.

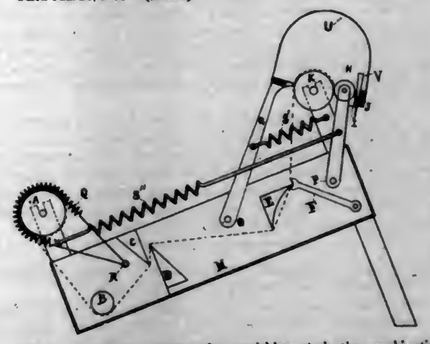
10. In combination with frame A, stock B, and rotary bed C, upright face W, vertically-movable slide Z, feed-screw *n*, ratchet-wheel *p*, plate *t*, dog *s*, carried by said plate, crank-disk *v*, and pitman U, connecting the plate *t* and crank-disk, substantially as described and shown.

11. In combination with frame A, stock B, and rotary bed C, upright face W, rocking plate Y, slide Z, mounted upon said plate, feed-screw *n*, provided with ratchet-wheel *p*, plate *t*, dog *s*, carried by said plate, crank-disk *v*, and pitman *u*, connected with the crank-pin of disk *v* by a universal joint and adjustably connected with the plate *t*, substantially as set forth.

12. In a machine for turning pulleys, the combination of a frame, a rotary bed to receive and hold the work, and turning-tool holders adjustable to and from the center of the bed, substantially as and for the purpose set forth, and wholly independently of the boring-tool stock and its feed.

13. In a machine for turning pulleys, the combination of a frame, a rotary bed to receive and hold the work, a stock movable to and from the center of the bed, and turning tool holders adjustable to and from the center of the bed and wholly independent of the boring-tool stock and feed.

326,051. VARNISHING-MACHINE. CARL E. MYERS, Mohawk, N. Y. Filed Jan. 26, 1885. (Model.)



Claim.—1. In an apparatus for varnishing cloth, the combination of vat M, containing varnish or coating matter to be applied, the feed-roller A, submerged coating-roller B, and receiving-roller K, arranged to coat simultaneously both sides of a sheet of cloth and remove excess by means of as many of the several scrapers C D E F G as may be necessary to modify the thickness or character of the coating applied, for the purpose of producing an impervious fabric.

2. In an apparatus for varnishing cloth, inclining the vat M, together with the attached rollers, scrapers, and cloth surface, at such an angle as to facilitate the flow of varnish to the submerged cloth passing underneath the varnish surface at B.

3. In combination with the feed-roller A, the coiled spring Q, acting to bind by its elasticity and restrain delivery of the cloth.

4. In an apparatus for varnishing cloth, the coating-roller B, acting to submerge the cloth passing under it and completely saturate and coat the same, by contact, pressure, and suction, as specified.

5. In a machine for simultaneously varnishing both sides of a sheet of cloth, the combination of a fixed scraper, D, acting upon the under varnished surface of the cloth, to force varnish into pores and remove surplus, and a movable scraper, C, acting upon the upper varnished surface for the same purpose, and also to increase friction upon the passing fabric.

6. In a machine for varnishing cloth, the double-edged scraper E, acting upon the upper varnished surface of the cloth, in combination with a flap-scraper, F, pressing against the lower varnished surface of cloth and edge of scraper E, as shown.

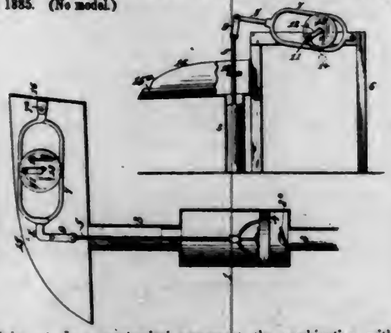
7. In a machine for varnishing cloth, the roller H, pressed by springs S'' against the roll of cloth winding on receiving-rolls K, constructed and arranged to operate substantially as described, and for purposes stated.

8. In a machine for varnishing cloth, the sharp-edged scraper G, pressed by springs S' against the roll of cloth winding on receiving-roller K, and acting to remove surplus varnish.

9. In a machine for varnishing cloth, the scraper G and roller H, acting, in combination with clamps U, to press between them the roll of cloth winding upon K, substantially as described, and for the purposes mentioned.

10. In an apparatus for varnishing cloth, the combined roller-scraper H, pressed by springs S'' against the sheet of cloth winding upon receiving-roller K, and revolving at a lesser speed, as described.

326,052. MECHANICAL MOVEMENT. CHARLES H. NEWBURY, Merrill, Wis., assignor of one-half to David Phinney, same place. Filed Mar. 10, 1885. (No model.)



Claim.—1. In a mechanical movement, the combination, with a yoke or oval frame having pivotal support at one end, of a shaft passing through said yoke and having a crank carrying a grooved friction-roll engaging with it, and means for imparting revolution to said shaft, substantially as described.

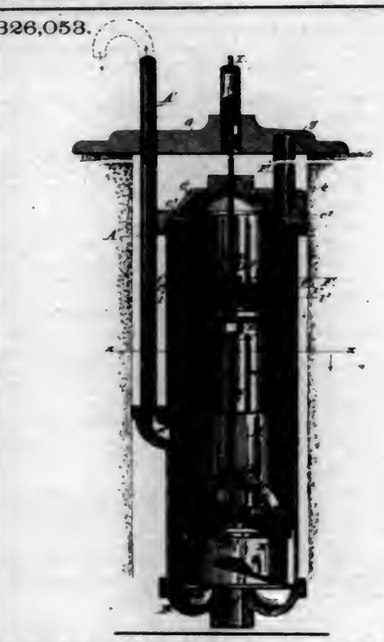
2. In a mechanical movement, the combination, with a yoke or oval frame having pivotal support at one end, of a shaft passing through said yoke and having a crank, a friction-wheel carried thereby, and having a grooved periphery engaging with the frame, a link pivoted to the free end of the frame, and a connecting-rod pivoted to the link, substantially as described.

3. In a mechanical movement for operating pumps, the combination, with a pump-cylinder and a pipe leading therefrom, of a trough mounted upon said pipe, a yoke or oval frame pivotally mounted on the closed end of said trough, a shaft passing through the yoke and having a crank, a roll carried by the crank and having a grooved periphery engaging with the frame, and a connecting-rod linked to the end of the frame and moving in the pipe, substantially as described.

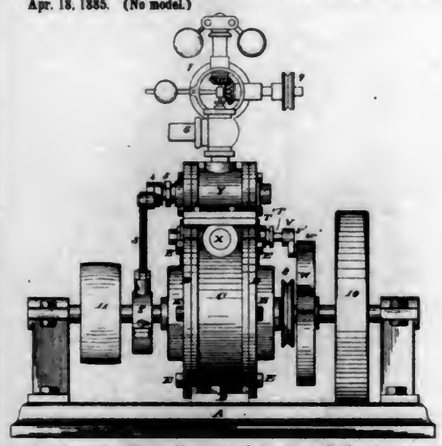
326,053. DOUBLE-ACTING FORCE-PUMP. DAVID J. NISEWANDER, New Carlisle, Ohio. Filed May 19, 1885. (No model.)

Claim.—The combination, with the outer and inner cylinders and the discharge-pipe, of the piston-rod having the lifting-bucket composed of the metal bracket having the annular lower portion formed integral therewith and adapted to brace and hold in its operative position the upwardly-extending flange of the leather disk, the combined washer, plunger-packing, and valve formed of a single piece or disk of leather, and the metal ring and binding-screws, and further provided with the automatic piston arranged to work in the inner cylinder, and consisting of the stationary disk, the washer, and the upper binding-nut provided with the registering apertures, and the movable disk adapted to slide upon the vertical sleeve and prevented from falling too low by the jam-nut, substantially as set forth.

326,053.



326,054. ROTARY ENGINE. WM. O'KEEFE, St. Louis, Mo. Filed Apr. 18, 1885. (No model.)



Claim.—1. The tumbler occupying a recess in the circumference of the steam-space, in combination with the shaft for operating said tumbler, and the loose connection between said shaft and tumbler, whereby the latter is allowed to move laterally independently of the former, for the purpose set forth.

2. The combination, with a tumbler, S, for the purpose set forth, of a rock-shaft with projections working between projections within said tumbler, and a cam actuating the rock-shaft by means of a crank on said shaft.

3. The combination of the tumbler S, having interior projections, *t s*, a rock-shaft having projections *t*, working between the projections *s*, and spring U, for the purpose set forth.

4. The combination, with the hub, of the projection thereon having a number of overlapping packing-plates adjustable radially and longitudinally with respect to said hub, as and for the purpose set forth.

5. The combination, with the hub and the bracket projecting therefrom, of the overlapping packing-plates secured thereto, and a spring for forcing said plates radially outward and longitudinally relatively to said hub, as set forth.

6. The combination, with the hub H and the bracket M, of the packing-plates reduced in thickness and overlapping each other at their contiguous edges, the expansion-ring Q, and a bolt for securing them to the bracket, as set forth.

7. The combination, with the hub H and the bracket M, projecting therefrom, of the plates N, movable radially and longitudinally with respect to said hub, and the cover-plate O, and bolt P, for holding said plates in place on said bracket, as set forth.

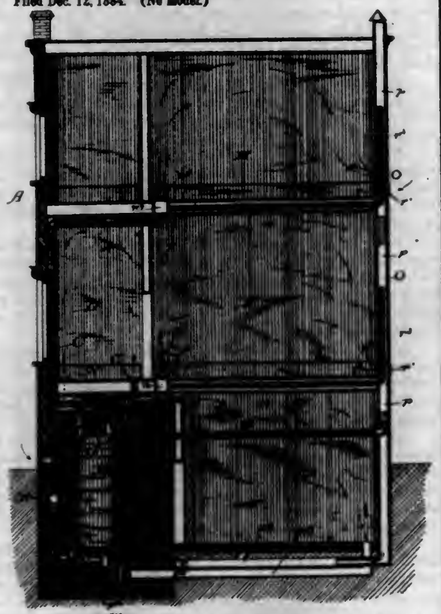
8. The combination, with the hub H and the bracket M, of the movable packing-plates N, each cut away at one corner, as described, the cover-plate O, and the shoulder-bolt P P², for securing said plates to said bracket, as set forth.

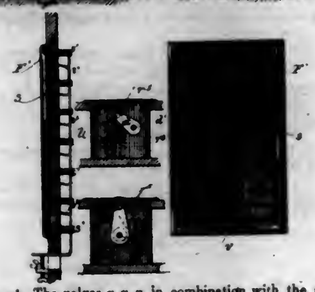
9. The combination, with the cylinder, the rotary piston fitted therein, the annular spaces at the ends of said cylinder, and the tumbler, of expansion packing-rings fitting in said recesses, and springs for forcing them against the ends of said cylinder, whereby said tumbler and cylinder are packed, substantially as set forth.

10. The combination, with the main shaft of a rotary engine and the rotary piston, of a tumbler, a cam carried by the said shaft for operating said tumbler, an oscillatory valve, and an eccentric on said shaft for operating it, substantially as and for the purposes set forth.

11. In a rotary engine, the combination of the rotary piston, the segmental tumbler having circular heads, a recess in the circumference of the cylinder in which said tumbler works, and annular recess in which said circular heads fit, as set forth.

326,055. VENTILATING BUILDINGS. IRA J. ORDWAY, Chicago, Ill. Filed Dec. 12, 1884. (No model.)





Claim.—1. The valves *v v v*, in combination with the slats *s s s*, hinged in front, and capable of being entirely closed or set at any desired angle, thus, by arresting the motion of the valves, controlling the size of the air-passages and the quantity of air that can pass in a given time, substantially as described.

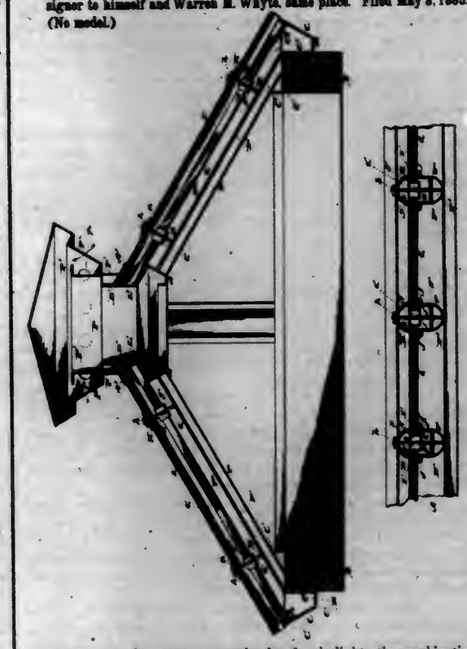
2. The combination of a heater or a heating-pipe communicating with the chamber to be heated, and a branch pipe leading from the heater or its connections to the ventilating-flue, whereby the hot air from the heater may either be used for heating or for exhausting foul air from the chamber by accelerating the draft of the ventilating-flues, as shown and described.

3. The connecting-pipe r³, in combination with the hot-air-register box r⁴, and the ventilating-flue P, so constructed and combined that said hot-air-register box, by means of said connecting-pipe, shall furnish to said ventilating-flue directl from the hot-air supply a current of heated air, thus forcing the exhaustion of foul air from any and every room connected with said flue.

4. The pivoted disk *d*, in combination with the hot-air register r⁴, these parts being connected as described, so that the movement of the register in opening and closing will, by operating the disk, open and close the pipe r³, that leads to the ventilating-flue P, substantially as described.

5. The disk *d*, attached to the hot-air register r⁴, and made adjustable by means of a set-screw or other suitable device, and combined with the register, as described, so that when the register is open said disk shall either partially or entirely, as may be desired, close the end of the pipe r³, thus giving complete control of the volume of heated air that shall at any given time be supplied to the ventilating-flue P, substantially as set forth.

326,056. SKYLIGHT. BERNARD OVERMAN, Washington, D. C., assignor to himself and Warren M. Whyte, same place. Filed May 3, 1885. (No model.)



Claim.—1. In a glass-supporting bar for skylights, the combination of the concave outer portion having its edges turned outward, and the single longitudinal gutter therein having its edges turned outward and resting upon the edges of the main portion, substantially as and for the purpose described.

2. In combination with the longitudinal gutter having its edges turned outward, the concave bar inclosing the same, having its edges turned outward and then inward over the edges of the gutter, and elastic strips placed longitudinally upon the upper sides of the edges of the gutter and held in place thereon by the inturned edges of the concave bar, substantially as and for the purpose described.

3. In combination with the longitudinal gutter having its edges turned outward, the bar inclosing such gutter U-shaped in cross-section and having its edges turned outward to receive the edges of the gutter and then inward over the same, and the longitudinal strips of elastic or semi-elastic material held in place by having their outer edges clamped between the inturned edges of the U-shaped bar and the upper faces of the gutter edges, substantially as and for the purpose described.

4. In combination with the concave inclosing-bar, the longitudinal gutter having its upper edges fastened to the bar, and the T-shaped bar placed below the gutter and resting on the bottom of the concave inclosing-bar, substantially as and for the purpose described.

5. The glass-supporting bar for light-frames, consisting of the gutter having its upper edges turned outward, the concave bar inclosing such gutter, having its upper edges turned outward to receive and support the edges of the gutter and then inward over such gutter edges, and a T-bar placed longitudinally within the concave inclosing-bar under the gutter, substantially as and for the purpose described.

6. The glass-supporting bar for light-frames, consisting of the longitudinal interior gutter, the external concave bar inclosing and fastened to the same, provided with suitable bolts for fastening down the cap-bar of the frame, fastened at their lower ends to the bottom of the interior gutter, substantially as and for the purpose described.

7. As a means for supporting and holding the adjacent edges of the sheets of glass in a light, the supporting-bar having the interior longitudinal gutter, the bolts passing up through the bottom of the gutter, having heads on their lower ends engaging the under side of the gutter-bottom, the concave cap-bar through which the upper ends of the bolts pass, and nuts on such upper ends of the bolts, substantially as and for the purpose described.

8. In a roof or other light, in combination with a supporting-bar adapted to receive and support adjacent sides of sheets of glass, the concave or arched cap-bar adapted to rest at its lower edges upon the sheets of glass, arched clips embracing the arched portion of the cap-bar and supported on both sides independently of such arched portion, the bolts at their lower ends fastened to the supporting-bar extending up through the cap-bar and clips, and the nuts on the bolts, substantially as and for the purpose described.

9. In a roof or other light, in combination with a supporting-bar, an arched or concave cap-bar above the same, having its lower edges turned outward to rest upon the glass, arched clips embracing the cap-bar and at their lower ends resting upon the outturned edges of the bar, and suitable bolts passing from the supporting-bar up through the cap-bar and clips, and provided with nuts engaging the tops of the clips, substantially as and for the purpose described.

10. The arched cap-bar for roof or other lights, in combination with the clips K K, embracing the entire arch of the bar and supported at each side at their lower ends, and means for fastening and holding the clips in place, substantially as and for the purpose described.

11. In combination with the cap-bar, the arched clips resting at each side upon the outturned edges of the bar, substantially as and for the purpose described.

12. In a roof or other light, as a means for keeping the sides of adjacent sheets in proper relative positions, distance-pieces placed between the sheets, each engaging the opposing edges of both adjacent sheets, substantially as and for the purpose described.

13. In a roof or other light, in combination with the supporting-bars and the sheets of glass supported thereon, one or more braces, G' G', placed between the sides of adjacent sheets of glass, substantially as and for the purpose described.

14. In combination with a supporting-bar adapted to support the sides of adjacent sheets of glass, the metal distance-pieces between the sheets of glass, having at their sides upright portions adapted to engage the sides of the sheets of glass, and the outwardly-extending lips at the tops of such sides extending over the upper sides of the glass sheets, substantially as and for the purpose described.

15. In combination with the supporting-bar and the adjacent sheets of glass supported at their sides thereon, the metal braces or distance-pieces adapted to engage the sides of the sheets of glass and keep them apart, and the cap-bar fastening-bolts extending from the supporting-bar passing up through such distance-pieces to hold them from moving, substantially as and for the purpose described.

16. The base-frame for a roof or other light, having the portion adapted to be supported upon the curb, and the gutter having its outer side at a point below the inner edge of the curb portion bent downward and then inward at a right angle to form a ledge for the lower end of the sheets of glass, adapted to support the glass at such a height as to clear the curb-engaging part of the base-frame, substantially as and for the purpose described.

17. The base-frame consisting of the part adapted to rest upon the curb, having its inner edge turned up, the downwardly-extending portion adapted to engage the side of the curb, the outwardly-extending part forming the bottom of the gutter provided with openings, the upwardly-extending portion forming the outer side of the gutter, having its upper edge lower than the upturned inner edge of the curb portion, the downwardly-bent part resting against the inner side of the outer gutter-wall, and the inwardly-turned part adapted to form a ledge having its inner edge turned downward, substantially as and for the purpose described.

18. In combination with the base-frame provided with a gutter outside of the curb, one or more supporting-bars having longitudinal internal gutters, and so attached to the base-frame as to bring their gutters into communication with the gutter in the base-frame, substantially as and for the purpose described.

19. In combination with the base-frame having the gutter beyond the curb, and having on the outer side of the gutter the glass-supporting ledge, one or more supporting-bars for the sides of the sheets of glass to be used, having the longitudinal outturned lips or flanges at their sides, said bars being attached at their lower ends to the base-frame above the curb, and having their side lips or flanges extending across the gutter in the frame and attached to the upper side of the ledge on the outer side of the same, substantially as and for the purpose described.

20. The ridge-bar provided with a surface adapted to support the upper ends of the sheets of glass of a roof or other light, a shield or shed above the same, and a socket adapted to receive and hold the upper edge of a supplemental shield adapted to rest at its lower edge upon the glass in the frame, substantially as and for the purpose described.

21. In combination with the ridge-bar having the shield or shed near its top, and a longitudinal and vertical socket, the supplemental shield having the upright portion adapted to be inserted at its upper edge into the socket in the ridge-bar, and having the outwardly and downwardly extending portion, substantially as and for the purpose described.

22. The ridge-bar formed of the two similarly-shaped halves of sheet metal, each half consisting of the plate having its lower portion vertical, then being bent outward, then upward and outward, then upward and inward, then upward in the same plane with the lower upright portion, then downward parallel to the upper upright portion, and then outward, and having their upright portions fastened together, substantially as and for the purpose described.

23. The ridge-bar consisting of the bottom vertical web, the expanded hollow portion above such web, the vertical web above this hollow portion, and the plates bent downward at each side from the top of this web and then outward to form shields or sheds, substantially as and for the purpose described.

24. The sheet-metal ridge-bar formed of the two sheets of metal, having the upright lower portions fastened together, thence being bent outward and then upward at an angle, then inward to form a supporting-ledge for the glass sheets, then upward vertically, and having such vertical portions fastened together, and then downward vertically, and, finally, outward and downward, as shown and described.

25. In combination with the ridge-bar formed of two similar halves of sheet metal fastened together, the longitudinal cap fitting over and covering the upper edge of the bar, substantially as and for the purpose described.

26. In a frame for roof and other lights, in combination with the supporting-bars for the sides of the sheets of glass, the cross-bar for supporting the adjacent ends of glass sections fastened at its ends to the bars at such an angle that one end is lower than the other, substantially as and for the purpose described.

27. In a frame for roof and other lights, in combination with the supporting-bars for the sides of the sheets of glass, provided with longitudinal gutters, the inclined cross-bar also having a longitudinal gutter fastened at its ends to the other bars, and having its gutter at its lower end communicating with that of one of such bars, substantially as and for the purpose described.

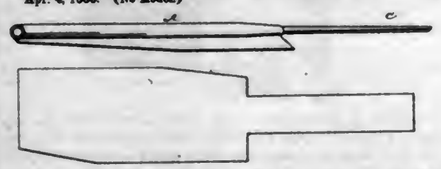
28. In a light-frame, in combination with the longitudinal supporting-bars provided with gutters, the transverse bar also provided with a gutter fastened to the supporting-bars and having its gutter in communication with one or both of the gutters of the other bars, substantially as and for the purpose described.

29. The transverse bar, consisting of the interior gutter with its upper edges turned outward, and the concave bar embracing the gutter and having its edges turned outward under the edges of the gutter and then over the same, and longitudinal elastic or semi-elastic material along the upper faces of the sides of the bar, substantially as and for the purpose described.

30. In combination with the adjacent ends of the sections of glass, the clip consisting of the portion overlapping the edge of the lower section, the portion extending down between and below the sections, the upwardly-bent portion, and the portion bent so as to extend under and in contact with the under side of the upper section, substantially as and for the purpose described.

31. The clip formed of sheet metal, having the portion adapted to overlap the upper edge of the lower section of glass, then bent downward to extend down between and below the sections, then upward, and then at a right angle, so as to engage the lower side of the upper glass section, substantially as and for the purpose described.

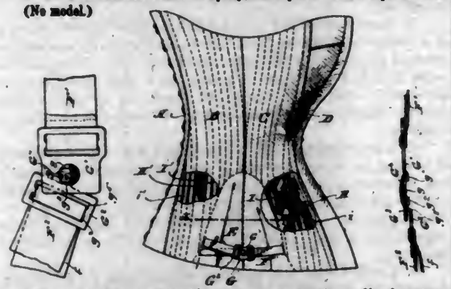
326,057. MINER'S SQUIB. JOHN R. POWELL, Plymouth, Pa. Filed Apr. 4, 1885. (No model.)



Claim.—1. In a mining-squib, the shell, case, or tube made from a piece of paper, having at only a portion of its edge or end the match projecting therefrom, so that when the case or tube is rolled or formed the match is correspondingly twisted or wound, and thus forms a seal for the front end of the shell, case, or tube, as set forth.

2. In a mining-squib, the shell, case, or tube made from a piece of paper, and the match projecting from the same at the center of its top edge or end, so as to leave space on one side for the roll to be formed before reaching the match, and space on the other side for the case or tube to be turned over in completing the connection, as set forth.

326,058. CORSET. ANDREW E. PROUDFIT, Madison, Wis., assignor to the M. K. Bertree Corset Company, same place. Filed Apr. 2, 1884. (No model.)

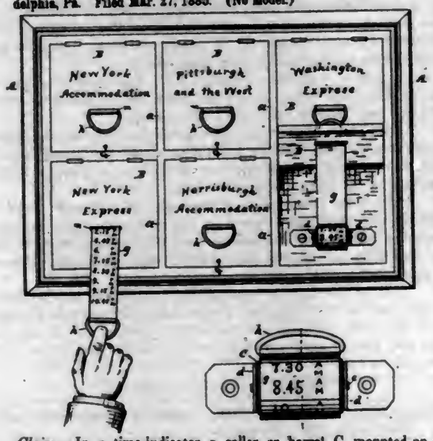


Claim.—1. The combination, with a corset, of an adjusting-strap for the lower part of the corset, provided with a swivel-joint, substantially as and for the purpose set forth.

2. The combination, with a corset having a relatively thin and flexible hip-section, of an adjusting-strap secured to the body of the corset at either side of said flexible section, and provided with a swivel-joint, substantially as and for the purpose set forth.

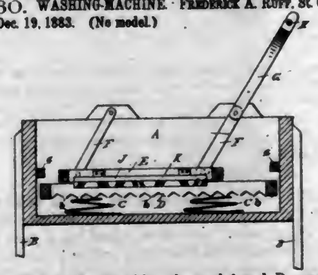
3. The combination, with the side pieces of a corset, in which bones are omitted over the crown of the hip, of converging bones H H', extending obliquely from the front and rear margins of the side pieces at the top thereof to the lower edges of said side pieces at either side of the hip, bones I I', arranged in the side pieces parallel with the bones H H', and terminating at their lower edges above the hip, and an adjusting-strap secured to the side pieces at either side of the hip, substantially as and for the purpose set forth.

326,059. RAILROAD TIME-INDICATOR. JOHN P. RHOADS, Philadelphia, Pa. Filed Mar. 27, 1885. (No model.)



Claim.—In a time-indicator, a roller or barrel, C, mounted on a shaft and provided with a spring, *c*, and an indicating-strip, *g*, in combination with casing, with a lid, B, having an aperture, *m*, substantially as shown and described.

326,060. WASHING-MACHINE. FREDERICK A. RUFF, St. Clair, Mich. Filed Dec. 19, 1883. (No model.)



Claim.—In a washing-machine, the wash-board D, consisting of a rectangular box-like frame provided with a perforated corrugated zinc bottom, in combination with a frame, E, resting on and traversing over said wash-board frame, and a reciprocating rubber, J, hinged to said frame, and provided with slats extending below the rubber frame into the space inclosed by the wash-board frame, leaving a space between said slats and said perforated bottom, whereby injury to the clothes or buttons thereon is prevented, substantially as set forth.

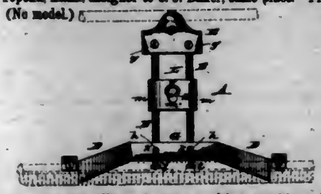
326,061. DRAWER FOR DRAWING-PAPER AND DOCUMENTS. ALEXANDER RUSSELL, Hot Springs, Ark., assignor to Ed. H. Johnson. Filed Jan. 25, 1884. (No model.)



Claim.—1. The combination of the drawer B F, having an open forward end, and the forward portion of its bottom open, a forward end, C, and a portion of a bottom, G, hinged at the rear edge of the latter to the drawer, and a lid, D, hinged at its rear edge to the top of the drawer and grooved at E, to receive the upper edge of the front C, substantially as shown and described.

2. The combination of a drawer open at its forward end and the adjacent portion of its bottom, a door fitting said open end and bottom, hinged at its rear edge to the said bottom and provided with a shoulder to engage the bottom at a given angle, and a lid hinged to the top of the drawer at its rear edge, substantially as shown and described, whereby the door may serve to support papers standing endwise thereon, and the lid may at the same time serve as a back rest for the said papers, as set forth.

326,062. TYPE-ALIGNER FOR TYPE-WRITING MACHINES. C. SMITH, Topeka, Kans., assignor to C. J. Baker, same place. Filed May 1, 1884. (No model.)



Claim.—1. A type-aligner for type-writing machines, having adjustable arms braced against abutments of the machine to hold said aligner in position, substantially as specified.

2. A type-aligner consisting of parallel guide wires or bars B, an upwardly and outwardly turned arm on the horizontal portions of said bars, downwardly and outwardly turned arms on the vertical portions of said bars, and the aligning-guide slide engaging said bars, substantially as specified.

3. The combination, with the parallel bars of a type-aligner, of an adjustable aligning-slide having an opening, *m'*, and guides by which to fix the position of the type not only in the horizontal plane, but also vertically, substantially as specified.

4. A type-aligner having one of its supporting-arms fitted to and adjustable on the index-bridge of a type-writing machine to ascertain the position of said type-aligner, substantially as specified.

326,063. CARPET-STRETCHER. OSCAR L. SPRAGUE, Andover, Ohio, assignor of one-half to E. Watson Morley, same place. Filed May 12, 1885. (No model.)

326,063.

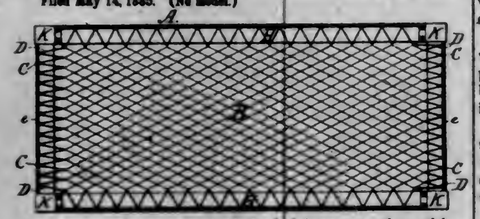


Claim.—1. A carpet-stretcher consisting of a frame provided with retaining pins or hooks at one end and a roller at the other, a stretcher proper pivoted to a lever, a rack to which the lever is pivoted and pawl-retained, and a pivoted holder, substantially as and for the purpose specified.

2. A carpet-stretcher consisting of a suitable frame, a lever pivotally supported in said frame, a stretcher-head connected directly to said lever, and a holder-head having a pivotal connection to the frame independent of said stretcher-head, substantially as and for the purpose specified.

3. A carpet-stretcher consisting of a suitable frame with retaining hooks or pins at one end and a roller at the other, a sector-rack supported by said frame, a lever straddling said rack, pivoted to its center and pawl-retained, a stretcher-head having pivotal connection to said lever, and a holder-head having pivotal connections to said frame, substantially as and for the purpose specified.

326,064. WOVEN OR KNITTED CORD FURNITURE. J. SPRINGER, Chicago, Ill., assignor to the Woven Cord Furniture Company, same place. Filed May 14, 1885. (No model.)



Claim.—1. A structure suitable for bed-bottoms or other articles, consisting of a netting in which the meshes are made or drawn in an elongated form and securely held as formed, in combination with a frame consisting of inflexible end and side pieces, the said netting being drawn taut on the frame, and having a uniform longitudinal tension, a less but uniform lateral tension, and a uniform diagonal tension, substantially as described.

2. A bottom for beds or other articles, composed of a netting of cord or other suitable material in which the meshes are securely held as formed, provided with loops or meshes of larger size on the sides thereof and at one or both ends, whereby the same may be readily attached to a suitable frame or detached therefrom, and the meshes when attached to the frame may be easily drawn into an elongated shape, substantially as described, and for the purposes set forth.

3. A structure suitable for bed-bottoms or other articles, consisting of a netting in which the meshes are rigidly held as formed, in combination with a facing-cord and a frame consisting of inflexible end and side pieces, the said netting being drawn taut on the frame and having a uniform longitudinal tension and a less but uniform lateral tension, substantially as described.

4. A netted structure, in combination with a bed or other frame composed of side and end rails, the end rails being higher than the side rails, each of said rails being provided on its side with a groove having holders therein to secure the netting, the holders being thus placed out of the way and protected from injury, substantially as described.

5. In combination with a suitable frame composed of side and end rails, each rail being provided on its side with a groove, the holders placed in said groove, and the netting having its meshes arranged substantially in a direct longitudinal and lateral line with said holders to aid in the production of uniform tension and uniform elasticity, substantially as described.

6. A structure suitable for bed-bottoms or other articles, consisting of a netting in which the meshes are made or drawn in an elongated form and rigidly held as formed, in combination with a lacing-cord inserted through a portion of said meshes, and a frame and holders, the said netting being drawn taut on the frame, and the meshes being stretched longitudinally with the frame and elongated, substantially as described.

7. A structure suitable for bed-bottoms or other articles, consisting of a netting having the meshes drawn in an elongated form and rigidly held as formed, in combination with a suitable frame and netting-holders, the said netting being drawn taut on the frame, and having a uniform longitudinal tension, a less but uniform lateral tension, a uniform diagonal tension, and a substantially uniform elasticity, substantially as described.

8. In combination with the frame provided with the metallic corner-straps, the piece of metal inserted between the end and side rails at the corners of the frame and within the corner-straps, whereby a metallic bearing to the four sides of the end rails at the intersection with the side rails is afforded, substantially as described.

9. The netting provided with larger meshes or loops at the end and sides, whereby the netting is more easily attached to the frame, and the knots joining the meshes are brought inside of but not against the frame, substantially as described.

10. The end rail having an upper surface tapering from the center to the ends and provided with a groove on the outer side thereof, and holders inserted in said groove, in combination with the remaining rails, whereby, when the netting is applied thereto, it is raised higher at the center than at the sides, to aid in preventing sagging, substantially as described.

11. A structure suitable for bed-bottoms and other articles, consisting of a netting having its meshes drawn in an elongated form and rigidly held as formed, in combination with a knockdown frame, the said netting being drawn taut on said frame and having a uniform longitudinal tension, a less but uniform lateral tension, a uniform diagonal tension, and a uniform elasticity, whereby the frame and netting are readily disconnected or put together, substantially as described.

12. A knockdown frame composed of two side and two end pieces, the said end pieces resting on said side pieces, and the corner-straps for securing them together, substantially as described.

13. The end rail having an upper surface tapering from the center to the ends and provided with the groove on the side, in combination with the remaining rails and the corner-straps connecting the rails, substantially as and for the purpose described.

14. A frame composed of the side and end rails, each provided with a groove on the side thereof, the end rails being above and supported by the side rails, and holders placed within said grooves, whereby the netting may be suspended above the side rails, except where it is attached thereto, substantially as described.

15. As a new article of manufacture, a netted structure, in combination with the side rails, the end rails, each of the said rails provided with the groove, the hand-tight corners for connecting the said end and side rails, and the netting-holders placed within the said groove, substantially as described.

326,065. SPECTACLE-CASE. GEORGE H. STRIKER, Buffalo, N. Y. Filed Nov. 26, 1884. (No model.)

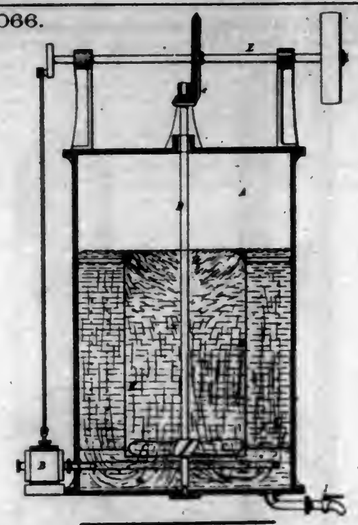


Claim.—The combination, with a spectacle-case, of the plate C, secured to the case and provided with lugs *e e* and turned-up ends *i i*, a bar, *b*, pivoted to the lugs *e e* and provided with a lug, *k*, and a spring, *A*, confined between the ends *i i* of the plate and bearing against the lug *k*, whereby the lower end of the bar *b* is held against the case, substantially as set forth.

326,066. PROCESS OF MAKING HYDRATES OF BARIUM AND OF STRONTIUM. WILLIAM G. STRIPP, Wicklow, Ireland. Filed Jan. 8, 1885. (No specimens.) Patented in England Dec. 20, 1884. No. 16,769.

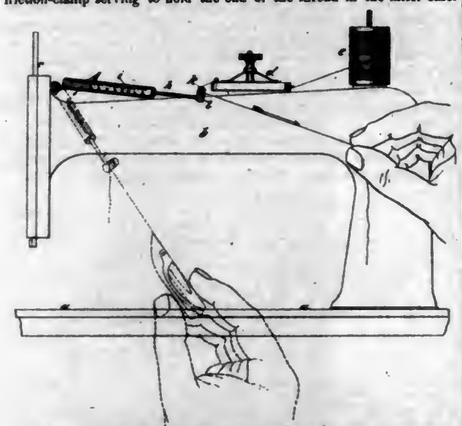
Claim.—The mode herein described of producing hydrates of baryta or strontia, said mode consisting in subjecting a solution of a sulphide of barium or strontium to the action of currents of air in the presence of an oxide of iron, substantially as set forth.

326,066.



326,067. SEWING-MACHINE. ALBERT A. STURTEVANT, Hartford, Conn. Filed July 1, 1884. (No model.)

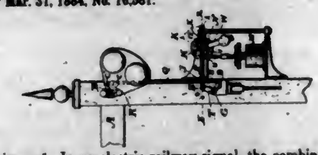
Brief.—The tension for the needle-thread, as also that for the lower or shuttle thread, may be regulated or tested by the device, the positive friction-clamp serving to hold the end of the thread in the latter case.



Claim.—1. The combination, with a sewing-machine, of the spring-scale A, having its fixed part attached to the machine, and provided with graduations representing degrees of thread-tension, with a positive friction-clamp on its movable part to hold the thread, substantially as set forth.

2. In combination with a sewing-machine, the thread-tension scale A, graduated with divisions representing degrees of thread-tension, and provided with the beveled clamp-seat *l*, in combination with the rotary beveled clamp-knob *k*, substantially as and for the purpose set forth.

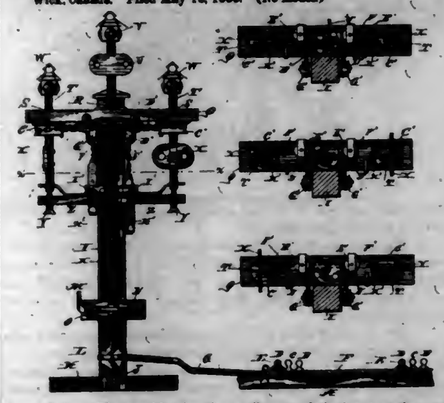
326,068. RAILWAY-SIGNAL. ILLIUS A. TIMMS and STANLEY C. C. CURRIE, London, County of Middlesex, England. Filed Mar. 15, 1884. (No model.) Patented in England Dec. 12, 1883, No. 5,718; in France Feb. 29, 1884, No. 148,128; in Belgium Mar. 6, 1884, No. 64,388, and in Italy Mar. 31, 1884, No. 16,581.



Claim.—1. In an electric railway-signal, the combination, with a movable signal and lever-arms attached to the same and so connected together that in a certain position of the signal their pivotal connections will be in alignment and the signal thereby locked, of an electro-magnet whose armature is connected to the said levers and so arranged, substantially as described, that when attracted by the magnet the alignment of the levers will be broken and the signal moved, as set forth.

2. In a railway-signal, the combination, with a movable signal and an electro-magnet whose armature is attached to and adapted to revolve a shaft, of a rod attached at one end to the signal and at the other to a crank upon said shaft, whereby when the armature is released the said rod will assume a position of alignment with the crank, and thereby lock the signal against accidental movement, substantially as described.

326,069. RAILWAY-SIGNAL. JOHN S. TRITES, Moncton, New Brunswick, Canada. Filed May 12, 1885. (No model.)



Claim.—The combination, in a railway-switch signal, of the crank-rod having the switch-operating crank and the handle, the upright having the platform forming the vertical bearings, the side rods journaled in the bearings in the platform, the signals secured upon the crank-rod and the side rods, the pulleys upon the crank-rod and pulleys having one-fourth of their circumference cut away secured upon the side rods, two pins projecting from the platform, so as to engage with the notches in the sides of the pulleys, a chain passing over around the rear side of the pulley on the crank-shaft and around the pulleys on the side rods, and over pulleys on the under side of the platform and at the sides of the upright post, and weights secured to the ends of the chain, as and for the purpose set forth.

326,070. RELIEF-VALVE FOR ENGINES. CHESTER B. TURNER, Detroit, Mich. Filed June 4, 1885. (No model.)



Claim.—The combination, with the steam-chest A and cylinder having ports B, of the slide-valve C, having removable cap C', and the relief-valve D, operating loosely between said valve and cap, as set forth.

326,071. LOOM. ALWILL URBAHN, Paterson, N. J., assignor of one-half to Abraham G. Jennings, Brooklyn, N. Y. Filed May 31, 1884. (No model.)

Claim.—1. The combination of the spool-creel for carrying the figure-threads with the bar *q*, roller *r*, bar *s*, and bar O, said bar O having pins *v* and *w*, which enter between the figure-threads and project between the bar *q* and roller *r*, and between the bar *s* and roller *r*, respectively, as specified.

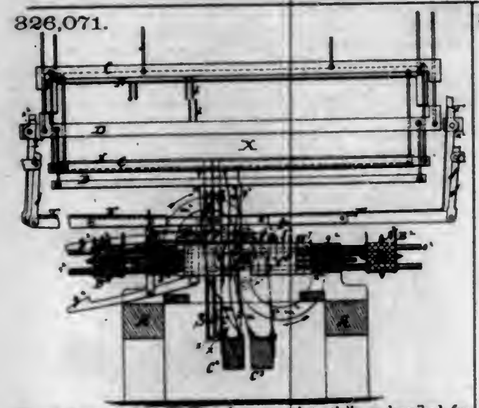
2. The combination of the jointed heddle-frame N with mechanism, substantially as described, for moving it up and down, the pivoted quadrangular frame T, which embraces the frame N, and has check-pieces *z*, and rollers b^2, and mechanism, substantially as described, for vibrating the frame T, as and for the purpose described.

3. The combination of the heddle-frames C D with mechanism, substantially as described, for moving them vertically at the same time, and with the pivoted frame E and with the pivoted frame F, having uprights *j*, and mechanism, substantially as described, for vibrating the frame F, as specified.

4. The combination of the slide V with the ground-warp heddle-frames C D, shouldered rod U^2, and pivoted frames E and F, and with means, substantially as described, for moving said slide V, as specified.

5. The combination of the figure heddle-frame N with the jointed hook S, treadle C^2, having projection *y*, pivoted frame T, shouldered rod

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U, and Jacquard slides V^6 V^6, and means, substantially as described, for operating said slides, as specified.

6. The combination of the heddle-frames C D N with outer pivoted frames, E F T, jointed hook S, rods U^3 U, slides V V^6 V^6, and means, substantially as described, for moving said slides, treadles C^7 C^8, and cords *m n*, the treadle C^7 having the projection *y*, substantially as herein shown and described.

7. The Jacquard slides V V^3 V^3, provided with the projecting pins d^3 d^3 of unequal lengths, and with the upwardly-projecting pins f^3, in combination with the locking-frame D^3, and means, substantially as described, for moving said Jacquard slides and said locking-frame, as specified.

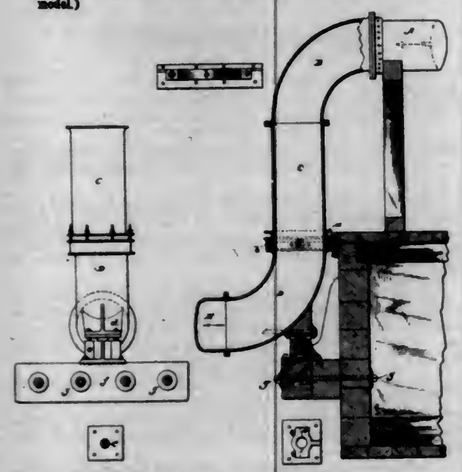
8. The combination of the treadles C^7 C^8, straps h^3 i^3, and rock-shaft W', having cranks P, with the rods n^3, blocks n^3, Jacquard cylinders A^3, and Jacquard slides V V^3, substantially as and for the purpose described.

9. The combination of the oscillating shaft W, and means, substantially as described, for turning it alternately in opposite directions, with the cam projection s^3, curved plate *u*, spring v^3, guide-pin w^3, frame D^3, and pin i^3 thereon, substantially as described.

10. The combination of the treadles C^7 C^8 with the cords *m*, *n*, and z^3, hook projection *y*, heddle-frames C D N, hooks S, and means, substantially as described, for moving said heddle-frames laterally, and controlling the position of the hooks S, as set forth.

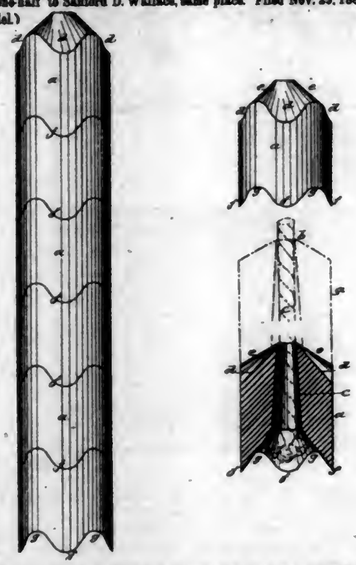
11. The combination of the heddle-frames C D N, having perforated needle-like heddles *d*, with the single reed I and its batten, frames E, F, and T, and means for moving said heddle-frames vertically, and for moving the frames E, F, and T laterally, as specified.

326,072. DISCHARGE-PIPE FOR DREDGING-MACHINES. ALEXEY W. VON SCHMIDT, San Francisco, Cal. Filed Nov. 3, 1884. (No model.)



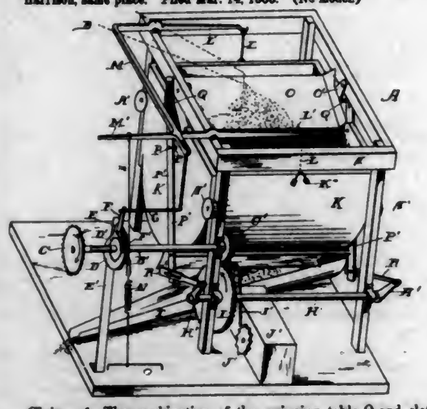
Claim.—The clamp-strap *b*, in combination with movable elbow-joint D, and iron pin or gudgeon *c*, and packing-gland *a*, elbow-pipe B, and straight pipe C, with bracket-bearing *d*, substantially as and for the purpose set forth.

326,073. SASH-WEIGHT. REUBEN VOSBURGH, Oregon, Ill., assignor of one-half to Sanford D. Wallace, same place. Filed Nov. 29, 1884. (No model.)



Claim.—A sectional weight having its top formed with pointed or conical-shaped scallops *d* and ridges *e*, extending from the outer wall to the rope-channel, forming a serpentine wall-line below the apex, its lower end cup-shaped, having inclined scallops extending from and forming a serpentine edge at its wall, whereby the sections will join at the wall upon surfaces inclined to the vertical line of the wall to avoid a ledge at the joining, for the purpose set forth.

326,074. AUTOMATIC WEIGHING-MACHINE. VALENTIN WEBER and JAMES R. HARRISON, Princeville, Ill., assignor of one-third to William Harrison, same place. Filed Mar. 14, 1885. (No model.)



Claim.—1. The combination of the swinging table O and slotted vibrating levers P', pivoted to said table O, with the rods R, crank-shaft H H', and the sliding floor, substantially as described.

2. The combination, with a hopper suspended and divided as described and provided with discharging-gates, of a table or chute, O, hung as described, a spout, B, leading into the hopper from the grain-discharge of a thrashing-machine, and a discharge-spout below said gates, substantially as described.

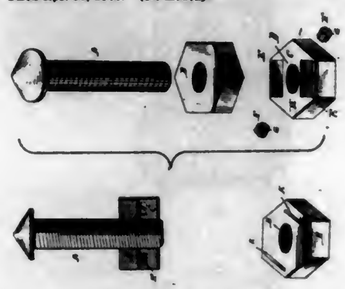
3. The combination, in a grain-weighing machine, of a registering apparatus, a suspended vibrating hopper, means, as described, to connect said hopper and said registering device, a sprocket-wheel and a ratchet-wheel, both fixed on the same shaft, the lever-pawl pivoted to a cam on the said shaft B', with the compound scale-beam, and the angular arm G, rigidly connected to said compound scale-beam from which said hopper is suspended, substantially as described.

4. The combination of a centrally-divided hopper, a vibrating table suspended therein, gates pivoted to the bottom thereof, and an automatic weighing and registering device, and the adjustable tension-rod *m*, all

constructed and adapted to operate substantially as and for the purposes set forth.

5. The combination of a compound scale-beam and a vibrating hopper suspended therefrom, guide-rollers A', the angular trip-rod G, a pawl operated thereby, the shaft B', carrying a suitable ratchet-wheel, the register proper, and suitable intermediate connections between said shaft and the register, substantially as described.

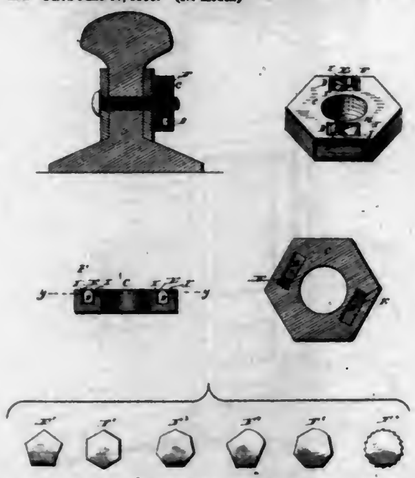
326,075. NUT-LOCK. LUTHER N. WHITE, Columbia City, assignor of one-half to William W. Worthington and Robert C. Bell, Fort Wayne, Ind. Filed Apr. 30, 1885. (No model.)



Claim.—1. In a nut-lock, the combination of a bolt, a washer, a nut provided on opposite sides of its hole with beveled parallel recesses in its inner face, and serrated or ratchet-toothed rollers seated in said recesses, the dimensions being such that when the said rolls are at the bottoms of their respective recesses their teeth shall project beyond the inner face of the nut, substantially as and for the purpose set forth.

2. In a nut-lock, the combination, with the nut having the beveled recesses in its inner face, of the hollow or tabular serrated or ratchet-toothed rolls seated in the said recesses, substantially as and for the purpose set forth.

326,076. NUT-LOCK. LUTHER N. WHITE, Columbia City, assignor of one-half to William W. Worthington and Robert C. Bell, Fort Wayne, Ind. Filed June 17, 1885. (No model.)

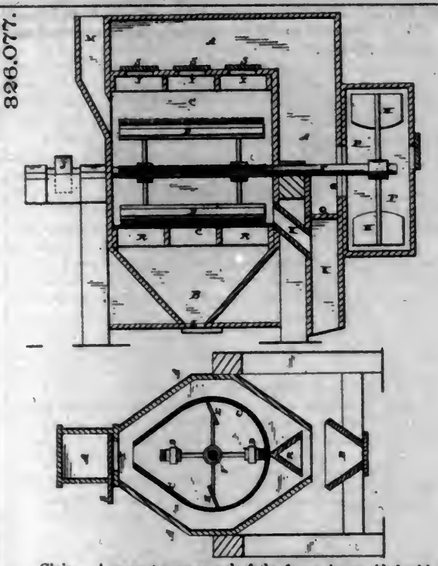


Claim.—1. In a nut-lock, the combination of a nut the inner face of which is provided with one or more beveled or inclined recesses, friction-rollers seated in the said recesses, and lugs or projections formed upon the sides of said recesses and serving to retain the said friction-rollers securely while the nut is being adjusted upon the bolt, substantially as and for the purpose herein set forth.

2. In a nut-lock, the combination, with a nut provided on its inner face with inclined or beveled recesses, of friction-rollers seated in the said recesses, said friction-rollers being mainly polygonal in shape, but with one or more rounded sides, if desired, and lugs or projections formed upon the inner sides of the said recesses and serving to retain the said rollers in position while the nut is being adjusted upon the bolt, substantially as and for the purpose herein set forth.

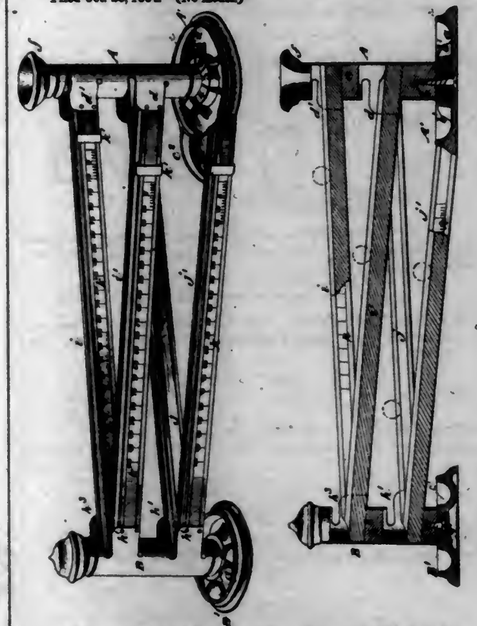
326,077. SEPARATOR. ABRAHAM N. WOLF, Allentown, Pa. Filed May 12, 1885. (No model.)

326,077.



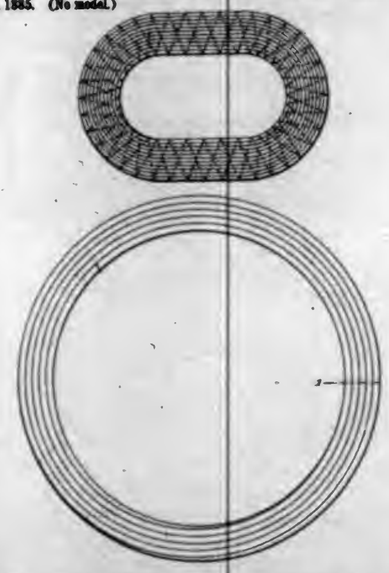
Claim.—A separator composed of the frame A, provided with the air-passages I G, valves S Q, which control the passages and regulate the draft of the fan, the open-topped perforated cylinder, the shaft F, carrying brushes and wings and having the fan secured thereto, the discharge-spout K, and the fan-box, substantially as shown and described.

326,078. RAILWAY GAME APPARATUS. JOHN B. WOOD, Providence, assignor to the R. Bliss Manufacturing Company, Pawtucket, R. I. Filed Oct. 23, 1884. (No model.)



Claim.—As an article of manufacture, the within-described railway game apparatus, having tubular standards and circular supporting base-plates, a series of inclined half-tubular tracks extending from one standard to the other, the ends of each track being within the standards, one standard having a cup opening on top for dropping marbles onto the highest track, in one base-plate a receiver having a series of pockets or stalls, consecutively numbered, to receive the marbles rolling from the under track of the series, and one or more counter-scales of different colors adapted to the tracks, for marking the points won in the game, constructed substantially as described.

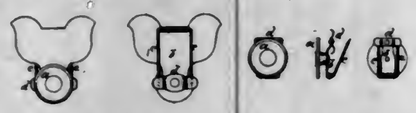
326,079. ASBESTUS PACKING-RING. WILLIAM WOOD, Philadelphia, Pa., assignor of one-half to Josiah Bibley, same place. Filed July 2, 1885. (No model.)



Claim.—1. A packing ring or gasket composed of strands or cords of asbestus fiber coiled and secured together side by side so as to form the gasket, as set forth.

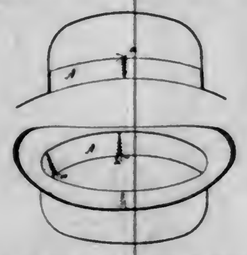
2. A packing ring or gasket composed of strands or cords of asbestus fiber coiled into the shape of the ring or gasket, and having the coils secured together by cross-stitching, as specified.

326,080. BUTTON. GEORGE W. CAVELL, Cleveland, Ohio. Filed Feb. 13, 1885. (No model.)



Claim.—The combination, with the button *a* and plate *b*, provided with the double pin *c c*, of the swivel cross-bar *d*, as and for the purposes described.

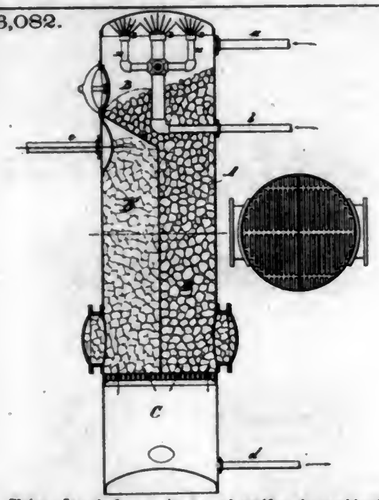
326,081. HAT-SWEAT. JOHN N. HARSON, New Haven, Conn., assignor to M. Joseph Harson, Providence, R. I. Filed Nov. 17, 1884. (No model.)



Claim.—The herein-described improvement in hat-sweats, consisting in vertical V-shaped openings in the sweat, the edges of the openings perforated, and combined with lacings through said perforations, and whereby the sweat may be contracted from its lower edge upward, substantially as described.

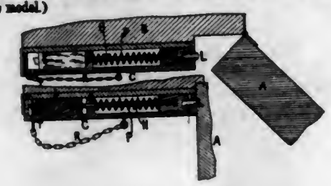
326,082. FEED-WATER HEATER AND PURIFIER. MILTON W. HAZELTON, Chicago, Ill., assignor of one-half to the Babcock & Wilcox Company, New York, N. Y. Filed Jan. 29, 1885. (No model.)

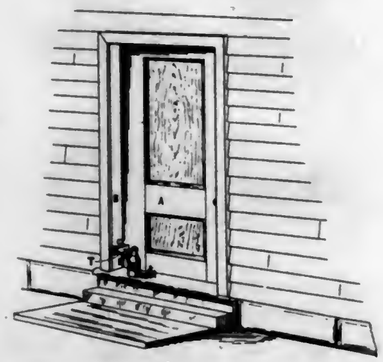
326,082.



Claim.—In a feed-water heater and purifier, the combination of a steam-chamber partially filled with lumps of coke or similar substance, a separated filtering-chamber containing suitable filtering material, and a connecting settling-chamber located beneath and adjacent to both, substantially as set forth.

326,083. MILK-CAN LOCK. WILLIAM J. HURSEY, Boston, Mass., assignor of one-half to Henry A. Owen, same place. Filed Feb. 28, 1884. (No model.)



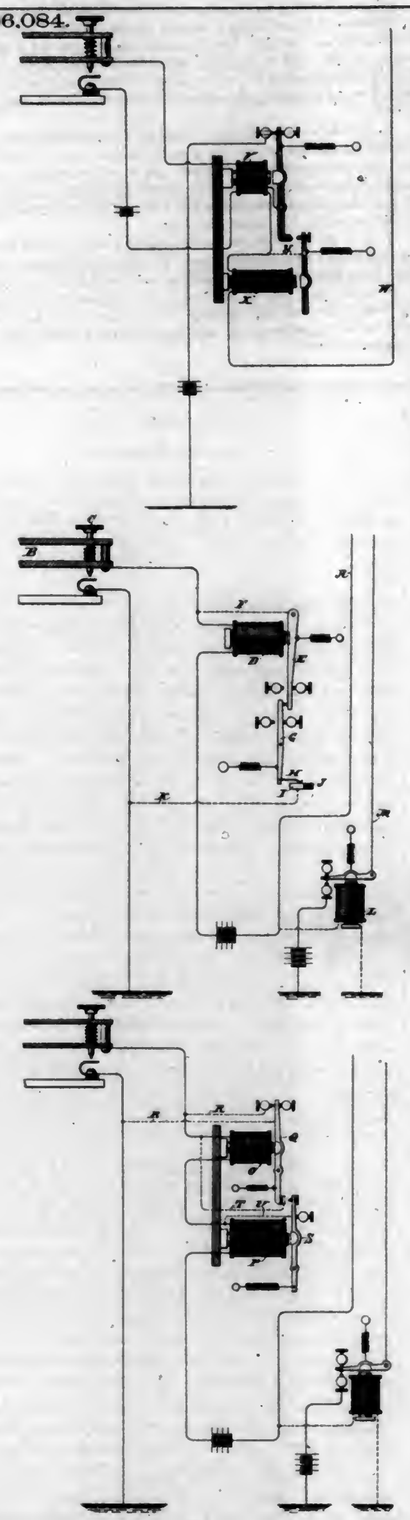


Claim.—The combination, with the case C, having the sliding catch-bolt E, rod H, block K, rubber spring L, and spiral spring P, of chain R, having the link T, adapted to be secured within and released from said case, substantially as described, as and for the purposes set forth.

326,084. CONTROLLING PRESS-CIRCUITS OF PRINTING-TELEGRAPH. CLARENCE L. HEALY, Brooklyn, assignor to Stephen D. Field, Yonkers, N. Y. Filed Apr. 15, 1885. (No model.)

Claim.—1. The combination, in a printing-telegraph, of a press-circuit, a key for establishing a current in said circuit, an electro-magnet connected with the press-circuit and brought into action by the closements, of an electro-magnet whose armature is arranged to first short-circuit said key, and thereby maintain the press-current until the printing is effected, and to then break the press-circuit.

326,084.



ing of said key, and mechanism operated by said magnet to hold the circuit closed independently of said key.

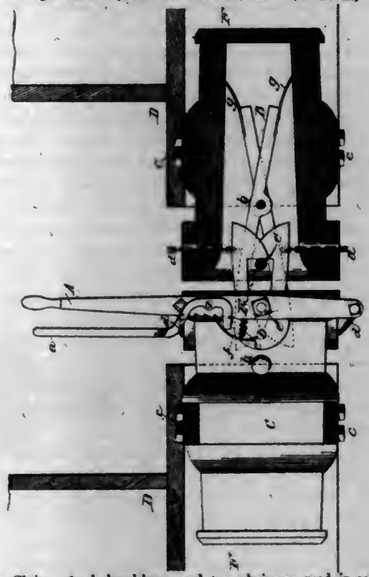
2. The combination, in a printing-telegraph, of a press-circuit, a key for establishing a current in said circuit, an electro-magnet which is brought into action by the closing of said key and holds the circuit closed independently of the key, and mechanism operated by said magnet which breaks the press-circuit when the printing has been effected.

3. The combination, in a printing-telegraph, of a press-circuit having one or more printing-instruments placed therein, a local circuit provided with a key or similar means for establishing a current in said circuit and operating a relay to correspondingly open and close the press-circuit, and an electro-magnet connected with said local circuit, with mechanism operated by such magnet for prolonging the printing-current when once established.

4. The combination, in an electric circuit containing a key for operating the press mechanism of one or more printing-telegraph instruments, of an electro-magnet whose armature is arranged to short-circuit or disconnect the key when the circuit has once been closed and maintain the current operating the said press mechanism, and an electro-magnet arranged to shunt said short-circuiting magnet, and thus open the circuit.

5. The combination, in an elastic circuit containing a key for operating the press mechanism of one or more printing-telegraph instruments, of an electro-magnet whose armature is arranged to first short-circuit said key, and thereby maintain the press-current until the printing is effected, and to then break the press-circuit.

326,085. CAR-COUPLING. ALEXANDER J. JERNAGAN, Starrville, Tex., assignor of six-eighths to Albert Marshall Clinkscales and Benjamin Irdell Egerton, same place. Filed Dec. 29, 1884. (No model.)

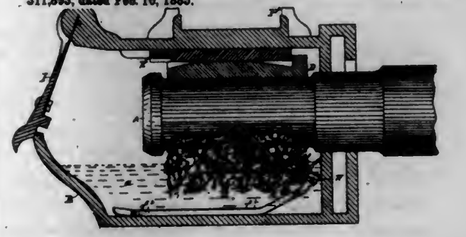


Claim.—1. A hand-lever and two chains as used in combination with the spring latch-catches.

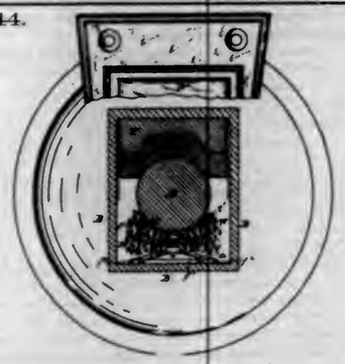
2. A brake-lever attached to main lever, a spring and spiral to hold said main lever in place, and a chain to main lever attached to the spring latch-catches aforesaid of each draw-head.

REISSUES.

10,644. CAR-AXLE OILER. JOHN GIBSON, West Troy, N. Y., assignor to the Menesly Hardware Company. Filed June 15, 1885. Original No. 311,893, dated Feb. 10, 1885.



10,644.



Claim.—1. In an oiler for a car-axle, the combination of a two-part wick-holder frame, the parts hinged to each other at one end, a spring between the two parts of the frame adjacently to where hinged, and a wick or waste holder on the upper part of the frame, said parts being constructed and arranged to operate substantially as and for the purposes set forth.

2. In a car-axle oiler, the combination of a two-part frame, said parts being hinged together at one end, a spring between said parts of the frame adjacently to where thus hinged, and an oil or wick holder constructed to have a pivotal connection with the upper part of said frame, said parts being constructed and arranged to operate in the manner substantially as and for the purposes set forth.

3. In a car-axle oiler, the combination of a two-part wick-frame, said parts being hinged together at one end, a spring between said parts of the frame adjacently to where hinged, and a wick-holder adjustably pivoted to the upper part of said frame, said wick-holder being made with teeth on the inner and outer edges of its sides, said parts being constructed and arranged to operate substantially in the manner as and for the purposes set forth.

PHOTO LITH. NORRIS PETERS WASHINGTON D.C.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF UNITED STATES COURTS IN PATENT CASES.

DECISIONS OF THE U. S. COURTS.

U. S. Circuit Court—District of New Jersey.

MUNDY *v.* KENDALL *et al.*

Decided March 16, 1885.

INFRINGEMENT—PRELIMINARY INJUNCTION—LACHES.

Where a patentee has known of infringement by a party of his patent, and acquiesced therein for a considerable length of time, a preliminary injunction will not be granted without an explanation of such acquiescence.

NIXON, *J.*:

This is a motion for a preliminary injunction against the infringement of Reissued Letters Patent No. 9,289, and is resisted by the defendants on the ground that the mechanism used by them does not infringe the complainant's invention. The original patent was numbered 158,967, dated January 19, 1875, and was granted to the complainant for improvement in friction-drums. This was surrendered and canceled, and the reissue was granted July 13, 1880, on amended specification. Three new claims were added to the reissue, and the single claim of the original patent was retained. The bill of complaint only alleges the infringement of that claim.

The question on this motion lies in a very narrow compass. The validity of the patent has been sustained and the claim construed by Judge Wheeler, in *Mundy* v. *Lidgerwood Manufg. Co.*, (20 Fed. Rep., 114.) In deciding the motion I shall deem the patent valid and accept the construction given to it by the learned judge in that case. The invention relates to new and useful improvements in friction-drums for pile-drivers and hoisting-machines, and is said in the specification to consist in making the friction-surface of the drum of pieces of wood confined endwise in a shell formed on the inner side of the gear-wheel, such pieces of wood being dovetailed in, and turned at an angle of thirty to forty degrees, to fit within a conically-recessed disk on the drum.

The claim is for a combination, as follows:

4. The combination of a tubular and sliding drum, A, loose on a shaft, G, and a friction-cone, D, of the fast-driven spur-wheel E, having spring P, to repel the said cone, and provided with a side flange supporting the cone N, as and for the purpose described.

It contains six elements: (1) a drum, (2) a shaft, (3) friction-cone, (4) a spur-wheel, (5) a spring, and (6) a side flange. The harmonious connection of these parts in an organized mechanism constitutes the complainant's friction-drum, and the proofs show that its addition to a hoisting-engine has been found so useful and its use so popular in the trade that it has become quite difficult to sell a hoisting-engine unless it is supplied with a friction-drum containing the essential features of the complainant's invention. The machine of the defendants which is alleged to infringe has substantially the same organization. It has the tubular and sliding drum, the shaft in which the drum runs loose, a friction-cone, a driving-wheel fastened to the shaft, springs to regulate the pressure between the friction-surfaces and to throw the parts out of connection with promptness when required, and a side flange to support the friction-surface. The differences are that the friction-surface of the complainant's patent is wood, and that of the defendant's leather; that the complainant has one spring to regulate the pressure, and the defendant two; that in the complainant's machine the bearing of the friction-surface is between the inner face of the drum-flange and the outer face of the friction-cone, while in the defendant's it is between the outer face of the drum-flange and the inner face of the friction-cone. But these changes are merely mechanical, or the substitution of well-known equivalents.

I should have no doubt about the propriety of issuing the injunction if it was not so plainly to be inferred from the complainant's affidavits that he has been familiar with the defendant's infringement, and has assigned no reason why he has not proceeded more promptly in stopping it. The affidavits nowhere disclose when he first had knowledge. A patentee need not expect to obtain a preliminary injunction in this district where he has known of the defendant's infringement, and has acquiesced in the same for any length of time without first explaining the reason for his acquiescence. As this matter was not adverted to by the counsel on either side at the hearing, I will give the parties ten days in which to supply affidavits on the subject of the knowledge and acquiescence of the complainant in this regard. When these affidavits are put in I will determine whether an injunction should be ordered or refused, or whether the proper relief will not be an order that the defendants give a bond, with satisfactory security, for the payment of all damages which may arise for infringement after the date of this application, if the complainant's patent shall be sustained in final hearing.

U. S. Circuit Court—Northern District of New York.

MAGIN *v.* MCKAY. THE SAME *v.* WELKER.

Decided August 20, 1885.

The invention secured by Letters Patent No. 248,646, which was made in 1879, was anticipated by an apparatus used by one Meinhard in 1877, though the latter was less perfect and useful, and was without the non-conducting jacket; it was not invention to add the non-conducting jacket to what Meinhard had.

Mr. George B. Selden for the plaintiff.

Mr. Josiah Sullivan for the defendants.

BLATCHFORD, *J.*:

These suits are brought on Letters Patent No. 248,646, granted to Charles Gordon, October 25, 1881, for an im-

provement in apparatus for cooling and drawing beer. The specification says:

My invention relates to an improved apparatus having for its object the keeping of beer, ale, or other liquid at a low temperature during the operation of drawing the same for consumption; and it consists in surrounding the supply-pipe through which the beer is delivered to the faucet with a cold-air passage, for the purpose of maintaining a low temperature in the liquid in the supply-pipe.

My invention also consists in surrounding the cold-air passage and the faucet with a non-conducting jacket, and in the combination, with the ice-box and the lower chamber for storing the beer, of the supply-pipe and the cold-air passage communicating between the ice-box and chamber, as hereinafter more fully set forth.

A keg of the liquid is placed in a chamber in the cellar. A supply-pipe leads upward from it to a faucet from which the liquid is drawn for consumption. An outer pipe surrounds the supply-pipe, leaving an air-space around it its whole length, from the lower chamber to an upper ice-box, through which the supply-pipe passes, and with which the outer pipe is connected. As many supply-pipes as are used may pass through the air-space. A non-conducting jacket surrounds the outer pipe. The air cooled by the ice in the ice-box and the water produced by the melting of the ice flows down through the air-space and reduces the temperature of the liquid in the supply-pipe. An air-forcing apparatus connected with the keg forces up the liquid. A pipe packed with a non-conducting substance surrounds the faucet. There are four claims:

1. The combination of the ice-box, supply-pipe, faucet, and cold-air passage surrounding the supply-pipe. 2. The combination, with the ice-box, of the supply-pipe and faucet, the latter having its jacket. 3. The combination, with the ice-box, supply-pipe, and faucet, of the cold-air passage and the non-conducting jacket of the latter. 4. The combination of the ice-box, supply-pipe, faucet, lower chamber, and cold-air passage communicating between the ice box and the lower chamber.

In the McKay suit infringement is alleged of claims 1 and 4; in the Welker suit, of claims 1, 3, and 4. Gordon made his invention in June, 1879. So far as claims 1 and 4 are concerned, the invention was anticipated by an apparatus invented and put in use by one Meinhard in Rochester, New York, in the summer of 1877, and which was continued in use about four years. That apparatus had the upper ice-box, the supply-pipe, the faucet, the lower chamber, and the cold-air passage surrounding the supply-pipe and communicating between the ice-box and the lower chamber. It had three faucets, each with a supply-pipe. Each supply-pipe led separately to a barrel in the lower chamber, and each was surrounded by a cold-air passage, created as to its upper part by a surrounding tin pipe, and as to its lower part by a rubber hose which embraced closely the lower end of the tin pipe. The water of the melted ice and the cold air flowed down around the supply-pipe into the lower chamber. The lower ends of the three pieces of rubber hose went into the lower chamber through a common opening, and it was not tightly closed around them; but the apparatus was a practical and successful one and embodied the same principle as that of Gordon. It may have been inferior in degree in utility and perfection; but the invention was there, and the apparatus continued in use for nearly two years after Gordon obtained his patent. It did not contain the non-conducting jacket surrounding the outer wall of the cold-air passage, which is a feature in claim 3 of the patent; but there was no patentable invention in adding a non-conducting jacket to the elements found in claim 1 or to those found in claim 4. The jacket is merely a space filled with non-conducting material, to prevent the absorption of heat by the air in the cold-air passage. It was common knowledge, and not invention, to add this to what Meinhard had.

The bills are dismissed, with costs.

U. S. Circuit Court—Northern District of Illinois.

AMES *et al. v.* THE CARLETON SPRING BED COMPANY *et al.*

Decided July 27, 1885.

Letters Patent of July 27, 1869, to Alois Kneppler are void, because, in view of the prior use of coiled-wire springs to support a bed-mattress and the occupant, there was no invention in placing them underneath a woven-wire fabric used for bed-bottom purposes.

Letters Patent of May 24, 1881, to Levi C. Boyington, whose improvement upon the Kneppler patent consisted in the removal of the side rods to which his wire fabric was attached, are void, because at said date it required no invention to make the alteration.

Messrs. Manahan & Ward and *Mr. Charles H. Roberts* for the complainants.

Mr. G. L. Chapin for the defendants.

BLODGETT, *J.*:

This is a bill filed to obtain an injunction and accounting for the alleged infringement by defendants of, first, a patent granted July 27, 1869, to Alois Kneppler for an improvement in spring bed-bottoms; second, of a patent granted May 24, 1881, to Levi C. Boyington for an improved spring bed-bottom. Both these devices are applicable to what are known as "woven-wire" bed-bottoms, in which the bottom is constructed by extending a fabric made of coiled spiral springs from end rail to end rail of the frame. The Kneppler device seems to have been one of the early efforts to utilize the woven-wire fabric for bed-bottom purposes, and instead of suspending the fabric from end rail to end rail, leaving the sides free, the sides were more or less supported by a side rod or wire, which seems to have been supposed to be necessary in order to give the requisite degree of strength and form to the bed-bottom. Later inventors demonstrated that the best, if not the only practicable mode of utilizing the woven-wire fabric for a bed-bottom, was by suspension from end to end with no side fastenings. In the use of this fabric, suspended from end to end, such a degree of tension was necessary as would give the requisite amount of firmness to the bed so that it would not sag or sink too much by the weight of the occupant, and to some extent the degree of tension thus required was found objectionable. Kneppler placed underneath the coiled-wire fabric vertical spiral springs, partly relieving the fabric from the burden of the occupant's weight, and dispensing, to some extent, with the necessity of so rigid an endwise tension upon the coiled-wire fabric.

The Boyington device is the same in principle and mode of application as the Kneppler, with the exception that the coiled-wire fabric swings free from end rail to end-rail; but he placed underneath the middle portion of the woven-wire fabric, between the side rails, a series of vertical spiral springs resting upon slats connected with the side rails so that the woven-wire fabric need not be stretched to the degree of tension required when no intermediate support is interposed, the claim of his patent being—

in combination with the end and side rails of a bed-bottom and spiral springs supported on slats connected therewith, a stretched woven-wire mattress connected permanently and directly with the end rails, said stretched mattress having no other support than the end rails and spiral springs, all substantially as and for the purpose specified.

The defenses interposed are: 1. Want of novelty. 2. That the defendants do not infringe.

It is admitted that the Kneppler device as constructed and shown was inoperative and useless, inasmuch, as has been before said, the side fastenings made the woven-wire fabric bag down in the middle and assume what is termed by the witnesses a "hammock" shape. All that Boyington did was, in the light of the experience of other improvers of the woven wire-mattress bed, to remove the side fastening from the Kneppler bed and place Kneppler's vertical spiral springs under the middle part of the wire fabric as an auxiliary support, instead of relying wholly upon the tension of the fabric; and the only question as far as the Boyington device is concerned is, was there any invention in doing this, or was it a mere mechanical improvement? As has been already stated, other inventors before Boyington had made successfully woven-wire-mattress beds by swinging the fabric from end rail to end rail; but, so far as disclosed by the proof in this case, none of them had placed an auxiliary support either in the form of spiral or other springs under the woven-wire fabric. Boyington took the Kneppler construction, removed the side fastenings and side rods, and received his patent for so doing. It seems to me this was nothing but such a mere mechanical alteration of Kneppler's device as any person familiar with the use of the woven-wire fabric for bed-bottom purposes could have done at the date of Boyington's patent, because it had become well established at that time that the woven-wire fabric must be suspended from end rail to end rail, and that side fastenings were not only objectionable, but absolutely prevented the effective operation of the woven-wire fabric for the purposes of the bed-bottom. It is therefore my opinion that Boyington's change in the Kneppler mode of construction was only mechanical and did not involve the use of the inventive or creative faculty.

As to the Kneppler patent, as already stated, it was wholly inoperative and useless in the form shown; and this leads me to consider for a moment whether the interposition of these vertical spiral springs underneath the coiled-wire fabric can be said to amount to invention. The proof shows that bed-bottoms have been constructed prior to the date of the Kneppler patent of coiled-wire springs, set vertically upon slats or otherwise fastened, so as to bear the weight of the mattress and the occupant of the bed. In some cases these springs were interlaced or fastened together, and in others they stood independently of each other, the mattress forming, as it were, a connecting web between them. In that case the coiled-wire springs were the only support of the mattress and the occupant of the bed. To interpose vertical spiral springs underneath the coiled-wire fabric after they have been used with an ordinary mattress for the purpose of acting as an auxiliary support to the coiled-wire fabric, or to relieve the necessity of the severe strain or tension upon the coiled-wire fabric, seems to me not to have required inventive skill. The coiled-wire fabric and the spiral springs perform no new function, and a bed-bottom composed of coiled-wire fabric and spiral springs, combined as shown either in the Kneppler or Boyington devices, is but an aggregation of old parts, where no new function is performed by either of these elements by bringing them together, but each continues to perform the same function it did when used in accordance with the old art. The proof also shows a patent for a bed-bottom granted to P. P. Simmons, April 21, 1868, antedating the Kneppler by over a year, in which a fabric composed of transverse wooden slats and longitudinal wires was stretched from end rail to end rail and supplemented by vertical spiral springs placed underneath the same. It is true that the fabric shown in the Simmons patent differs from that shown in the Kneppler and Boyington patents, but after the introduction of the woven-wire fabric for bed-bottom purposes there was no possible room for invention in substituting the woven-wire fabric for the wooden slat and w re fabric in Simmons' device, and when that was done you had exactly, in construction and mode of operation, the Boyington bed and all there was of merit in the Kneppler bed.

I am, therefore, of the opinion that this patent is void, and that the bill in this case should be dismissed for want of equity.

U. S. Circuit Court—Northern District of New York.

THE ALBANY STEAM TRAP COMPANY *v.* FELTHOUSEN *et al.*

Decided August 22, 1885.

In view of the recent decisions o the Supreme Court relative to reissues, the claims of the Blessing reissued patent herein involved—which were broadened upon application made four and a half years after the original grant without change in the specification—may not be construed more broadly than the claims of the original.

Messrs. Dickerson & Dickerson for the plaintiff.

Mr. E. H. Bottum for the defendants.

BLATCHFORD, *J.*:

Although a rehearing was granted by the court, held by the circuit judge and the district judge sitting together, as to the second Blessing patent, the reasons which prevailed with them to grant it are not presented, while the grounds on which they held, at the original hearing, that on a proper construction the second Blessing patent was not infringed are set forth in the decision in 22 Blatchford, Circuit Court Reports, 169, 175. It was held that there was no infringement of the Merrill patent, or of the first or the second Blessing patent. No rehearing has been granted as to the Merrill patent or as to the first Blessing patent. In the first decision it was said, referring to the Merrill patent and the three Blessing patents:

The object of the invention in each of these patents was, as in the Merrill patent, to return the waters of condensation automatically to the boiler, to accomplish the same result upon similar principles, but by different and improved mechanism. In view of the prior state of the art, and of the construction given to the Merrill or foundation patent, it may be said at the outset that the claims now to be examined should be confined within exceedingly narrow limits. Each invention must be restricted to the specific improvement and the particular device described and claimed by him.

It was held that there was a material difference between the defendants' apparatus and its mode of operation and the plaintiff's apparatus and its mode of operation, as shown in the second Blessing patent.

In view of the recent decisions of the Supreme Court as to reissues, the claims of the second Blessing patent cannot be construed more broadly than the claims of the original. The reissue was applied for more than four and a half years after the original was granted. The reissue was taken solely to enlarge the claims. The descriptive parts of the two specifications are alike. The claims are enlarged and generalized. The defendants' apparatus does not infringe any claim of the original patent, and, therefore, does not infringe any claim of the reissue, properly construed. The first claim of the reissue discards the short pipe of the first claim of the original, which short pipe is not found in the defendants' apparatus. The other claims of the reissue must be construed as discarding the short pipe, in order to make out infringement. The short pipe is an element in each of the claims of the original patent.

There must be a decree for the defendants as to the second Blessing patent.

U. S. Circuit Court—District of Vermont.

AMERICAN DIAMOND ROCK BORING COMPANY *v.* SHELDONS AND SLASON. SAME *v.* SUTHERLAND FALLS MARBLE COMPANY *et al.* SAME *v.* GILSON, CLEMENT AND WOODFIN.

Decided July 13, 1885.

In view of the decisions of the Supreme Court in relation to reissues, a rehearing is granted, but without prejudice to the proceedings before the master.

Mr. E. G. Thompson for the plaintiffs.

Mr. E. T. Rice and *Mr. Aldace F. Walker* for the defendants.

WHEELER, *J.*:

These causes are pending for the purposes of an accounting before a master pursuant to an interlocutory decree made upon hearing in chief. (17 Blatchf., 208, 303.) They have now been heard upon motion for a rehearing on the merits. The decision was made largely upon the authority of and following *American Diamond Rock Boring Company* v. *Sullivan Machine Company*, (14 Blatchf., 119,) upon the same patent. The change in what were understood to be the principles of law governing reissuing patents since these decisions has been found to be sufficient to change that made in the former case. (*American Diamond Drill Co.* v. *Sullivan Machine Co.*, 21 Fed. Rep., 74.) That affords sufficient ground for granting a rehearing to review the decision made in this case upon which the decree for an accounting rests. (*Coon* v. *Wilson*, 113 U. S., 268.) Still the expenses of taking testimony before the master should not be lost in case it can in any event be of use in the case. The same decree may be made again upon rehearing or on appeal. What the result may be cannot be foretold with certainty. Therefore it seems proper that the rehearing should be granted without prejudice, so far as may be, to the proceedings before the master. Therefore the motion is to be granted upon the express condition and order that, in case there shall be a decree in the cause for an accounting, the testimony already taken before the master shall stand for use before the same or any other master in the cause as if taken by the parties, respectively, upon such new accounting.

Motion granted, but without prejudice to the right to use the testimony already taken before the master on any accounting in the cause.

U. S. Circuit Court—Northern District of New York.

ARDEN *v.* JEWETT, RECEIVER, &c.

Decided August 28, 1885.

As the reissue was taken out solely to enlarge the claims, the delay of nearly eight years in applying for it, in the absence of any excuse therefor, is fatal to the enlarged claims, Nos. 1 to 7. As to claims 8 to 12, which were substantially the five claims of the original patent, there is no infringement. Bill dismissed, with costs.

Mr. Elihu Root and *Mr. Samuel B. Clarke* for the plaintiff.

Mr. Frederic H. Betts and *Mr. William D. Shipman* for the defendant.

BLATCHFORD, *J.*:

The original patent in this case was granted May 5, 1868. The reissue was applied for March 25, 1876, and granted April 11, 1876. Within the rule laid down by the Supreme Court in recent cases, particularly *Mahn* v. *Harwood* (112 U. S., 354) and *Wollensack* v. *Reiher*, (115 Id., 96,) the delay in applying for this reissue is fatal to the enlarged claims, numbered from 1 to 7, introduced into the reissue, in the absence of any excuse therefor. Moreover, there was no defect, inadvertence, accident, or mistake apparent in the original patent, the description was adequate to support the claims, the claims were fully such as the description warranted. New matter has been introduced into the reissue, and it was taken out solely to enlarge the claims, and with a knowledge of, and with a view to cover, the defendant's hoist. The five claims of the original patent are substantially repeated as claims 8 to 12 of the reissue. They are all claims for combinations of distinct mechanical appliances. As to claim 8 the defendant uses no shaft. As to claim 9 he uses no shaft C or pulley D, or rope or chain E. As to claim 11 he uses no shaft C or pulley D. As to claim 12 he uses no shaft C or pulley D, or rope or chain E. As to claim 10 it is limited by the specification itself to the arrangement by which the beams F and the lifters or lifting-hooks *b* are so combined that the lifters slide on the beams or rollers and cannot tip outward. The defendant uses no such arrangement.

The bill is dismissed, with costs.

THE
OFFICIAL GAZETTE
OF THE
United States Patent Office.
[*BY AUTHORITY OF CONGRESS.*]

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The Official Gazette.

The OFFICIAL GAZETTE is published every Tuesday, simultaneously with the weekly issue of patents. From January 1, 1872, (the commencement of its publication,) to June 30, 1883, it was published and bound in semi-annual volumes; since July 1, 1883, in quarterly volumes. All subscriptions must commence with the beginning of a volume; none taken for less than three months. Terms: To all subscribers within the United States and Canada, $5 per annum; to foreign subscribers, $7; single copies, 10 cents; bound semi-annual volumes, (prior to June 30, 1883,) full sheep, $4 per volume; bound quarterly volumes, (subsequent to July 1, 1883,) full sheep, $2.75 per volume. No club rates. *Payment in advance.* All orders should be addressed to "The Commissioner of Patents, Washington, D. C."

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Attorneys.

DEPARTMENT OF THE INTERIOR,
Washington, September 10, 1885.

SIR: I am directed by the Secretary to inform you that the order of June 8, 1880, disbarring Mr. William Hobbs, of Boston, Massachusetts, from practice before the Department and the bureaus thereof has this day been rescinded.

Very respectfully,

GEO. M. LOCKWOOD,
Chief Clerk.

The Commissioner of Patents.

Issue of September 15, 1885.

Patents	451	No. 326,086 to No. 326,536, inclusive.
Designs	9	No. 16,246 to No. 16,254, inclusive.
Trade-Marks	18	No. 12,566 to No. 12,583, inclusive.
Labels	3	No. 4,571 to No. 4,573, inclusive.
Reissues of patents	None.	
Total issue	481	

TO CITIZENS OF THE UNITED STATES.

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Louisiana	3	1	Washington Territ'y	1	
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Minnesota	3		United States Navy		
Mississippi	2				
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Bermuda			Mexico		
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Canada	6		Russia		
Cape of Good Hope			Scotland	1	
Colombia, U. S. of			Spain	1	
Cuba			Sweden	2	
Denmark			Switzerland		
Egypt					
England	12	1	Total to citizens of foreign countries	27	1
France	2				

DESIGNS.

16,246.—SHOW-CARD.—*Fred Eberlein*, Chicago, Ill. Application filed October 13, 1884. Term of patent 3½ years.

16,247.—CARPET.—*Edwin Fisher*, Boston, assignor to *The Lowell Manufacturing Company*, Lowell, Mass. Application filed June 13, 1885. Term of patent 3½ years.

16,248.—SOFA.—*Adolph Hauske*, Chicago, Ill. Application filed May 28, 1884. Term of patent 3½ years.

16,249 and 16,250.—CARPET.—*Henry Horan*, East Orange, N. J., assignor to *The Lowell Manufacturing Company*, Lowell, Mass. Applications filed June 13, 1885. Term of patents 3½ years.

16,251.—ARM-REST SUPPORT.—*Theodore A. Kochs*, Chicago, Ill. Application filed June 16, 1885. Term of patent 7 years.

16,252.—TRIMMING.—*Edward Kumke*, New York, N. Y. Application filed July 6, 1885. Term of patent 7 years.

16,253.—CANDY-BOX.—*Bernard Meyer*, New York, N. Y. Application filed April 11, 1885. Term of patent 7 years.

16,254.—JEWELRY-BOX.—*Henry B. Sommer*, Philadelphia, Pa. Application filed March 3, 1885. Term of patent 3½ years.

TRADE-MARKS.

[Certificates of registration of Trade-Marks numbered 8,191 and upward are registered under the act of March 3, 1881.]

12,566.—CHOLERA PREVENTIVE.—*George C. Beresford*, New York, N. Y. Application filed June 29, 1885.

"A picture-symbol of the head and bust of a human figure wearing a necklace to which is attached a small bag."

12,567.—BOOTS, SHOES, AND SLIPPERS.—*Alfred J. Cammeyer*, New York, N. Y. Application filed August 17, 1885.

"The words 'THE KATHARINE.'"

12,568.—LAUNDRY-SOAP.—*James S. Kirk & Co.*, Chicago, Ill. Application filed September 15, 1884.

"The word 'POST-BOY.'"

12,569.—LAUNDRY-SOAP.—*James S. Kirk & Co.*, Chicago, Ill. Application filed March 12, 1885.

"The words 'IMPERIAL OLIVE.'"

12,570.—LAUNDRY-SOAP.—*James S. Kirk & Co.*, Chicago, Ill. Application filed March 12, 1885.

"The word 'SELECT.'"

12,571.—LAUNDRY-SOAP.—*James S. Kirk & Co.*, Chicago, Ill. Application filed March 13, 1885.

"The word 'LEHIGH.'"

12,572.—LAUNDRY-SOAP.—*James S. Kirk & Co.*, Chicago, Ill. Application filed March 14, 1885.

"The word 'DOME.'"

12,573.—LAUNDRY-SOAP.—*James S. Kirk & Co.*, Chicago, Ill. Application filed March 17, 1885.

"The word 'BULLION.'"

12,574.—SHEETINGS, SHIRTINGS, DRILLS, AND JEANS.—*Fearon, Low & Co.*, New York, N. Y. Application filed August 15, 1885.

"The picture of three goats and four Chinese characters at the right of the picture."

12,575.—SHEETINGS, SHIRTINGS, DRILLS, AND JEANS.—*Fearon, Low & Co.*, New York, N. Y. Application filed August 15, 1885.

"The picture of two Chinese boys and four Chinese characters at the right of the picture."

12,576.—SHEETINGS, SHIRTINGS, DRILLS, AND JEANS.—*Fearon, Low & Co.*, New York, N. Y. Application filed August 15, 1885.

"The Chinese picture of a butterfly and four Chinese characters at the right of the picture."

12,577.—SHEETINGS, SHIRTINGS, DRILLS, AND JEANS.—*Fearon, Low & Co.*, New York, N. Y. Application filed August 15, 1885.

"The picture of a melon and four Chinese characters at the right of the picture."

12,578.—SHEETINGS, SHIRTINGS, DRILLS, AND JEANS.—*Fearon, Low & Co.*, New York, N. Y. Application filed August 15, 1885.

"The picture of a deer and four Chinese characters at the right of the picture."

12,579.—WASHING COMPOUND.—*James S. Kirk & Co.*, Chicago, Ill. Application filed June 17, 1885.

"The word 'LAVOLITE.'"

12,580.—SILVER-PLATED TABLE-WARE AND FANCY ARTICLES.—*The Pairpoint Manufacturing Company*, New Bedford, Mass. Application filed August 12, 1885.

"A diamond-shaped shield having the letter 'P' upon it."

12,581.—LADIES' DRESS-GOODS.—*B. Priestley & Co.*, Bradford, England. Application filed May 22, 1885.

"A board having its edges or ends rounded and covered with varnish, so that the grain of the wood will be visible, and projecting from the center of a bolt of fabric."

12,582.—SHOE-KID LEATHER.—*Rose, McAlpin & Co.*, New York, N. Y. Application filed August 15, 1885.

"The representation of a star inclosing two concentric circles."

12,583.—GLASS FRUIT-JARS.—*Woodbury Glass Works*, Woodbury, N. J. Application filed August 14, 1885.

"The combination of the word 'WOODBURY' with a monogram of the letters 'W G W.'"

LABELS.

4,571.—Title: "OLD FASHION BOURBON" (FOR WHISKY.)—*Geis & Co.*, Zanesville, Ohio. Application filed July 30, 1885.

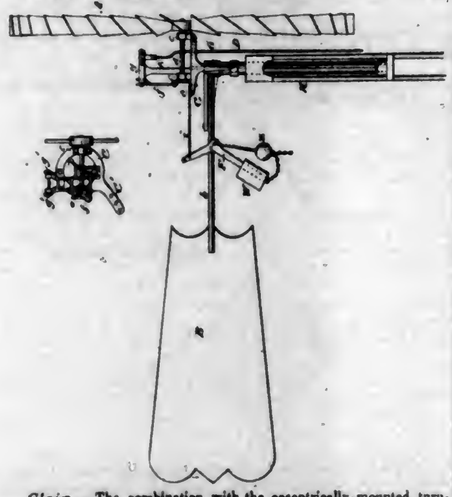
4,572.—Title: "POTATOE JUICE TOILET SOAP."—*Clifford & Co.*, Boston, Mass. Application filed August 24, 1885.

4,573.—Title: "LANDRY'S FRENCH SYRUP." (FOR A COUGH MEDICINE.)—*J. Omer Landry*, Thibodeaux, La. Application filed August 21, 1885.

PATENTS

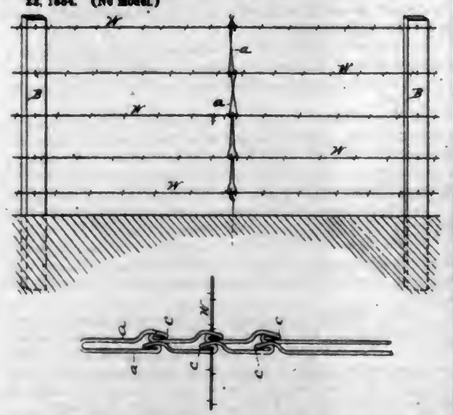
GRANTED SEPT. 15, 1885.

326,086. WIND-WHEEL. LORENZO D. ADRIANS, Tuscola, Ill. Filed Nov. 22, 1884. (No model.)



Claim.—The combination, with the eccentrically-mounted turntable C, of the vane B, the connecting-rod *b*, the lever F, and rod *i*, and the adjustable weights W and Z, connected by a chain, as described, the whole adapted to operate substantially in the manner and for the purposes set forth.

326,087. WIRE FENCE. WILLIAM J. ADAM, Joliet, Ill. Filed Sept. 22, 1884. (No model.)

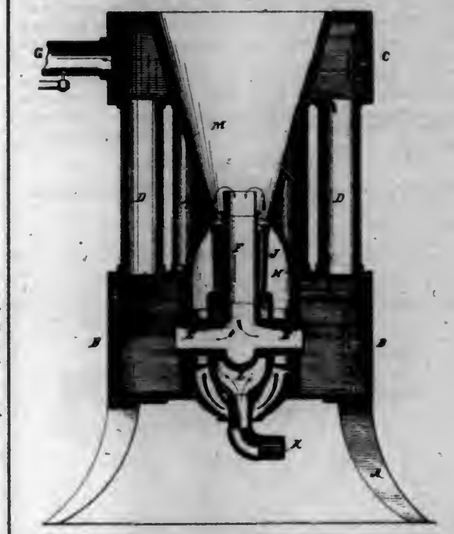


Claim.—The stay for wire fences described, consisting of a single wire bent centrally to form the two parts *a a*, each having hooks *c* formed therein at intervals along their length, the hooks on one part being reversed from those on the other part and opposite thereto, and arranged to inclose and support the fence-wires *w*, as and for the purpose set forth.

326,088. METHOD OF RENDERING CLOTH, WOOD, PAPER, &c., WATER-PROOF. NILS A. ALEXANDERSON, Stockholm, Sweden. Filed Sept. 22, 1884. (No specimens.)

Claim.—The described method of waterproofing cloths and other textile materials, consisting in impregnating the same with a solution of some basic salt of aluminium prepared by putting an equivalent quantity of the hydrates or carbonates of the alkalies or of the alkaline earths to a neutral salt of aluminium; next, if needed, mixing the same with tartaric or citric acid, and then carefully rinsing the cloth, and, finally, subjecting it to a quick drying, all substantially as above set forth.

326,089. GAS-STOVE. JOHN W. BAKER, Philadelphia, Pa. Filed Dec. 5, 1884. (No model.)



Claim.—1. A gas-stove consisting of the combination, with a lower annular drum or hollow ring, B, of a like upper drum or ring, C, and a series of upright radiating flue-tubes D D, placed between them and connecting said drums with each other, a central flue-chamber, F, supported within said series of upright flue-tubes and between said drums, and connecting air-tight at its base with said lower drum, a gas-chamber, L, and a series of gas-tubes, J J, surrounding said central flue, the said parts being constructed and arranged substantially as described, in order that the products of combustion of the ignited gas will be drawn into and down through said central flue-chamber to the lower drum, and from thence upward through said series of flue-tubes and upper drum to the chimney, and impart heat by radiation to the surrounding atmosphere.

2. The combination of the upper and lower annular drums, C and B, with a series of connecting upright flues placed between them, and a central flue-chamber connected at its base with the lower drum, B, and located within said series of flue-tubes and between said drums, a gas-chamber and a series of gas tubes surrounding said central flue and extending nearly to the top thereof, and a chimney, M, supported within said upper annular drum, C, and extending down to said gas-jets, the said parts being constructed and arranged substantially as and for the purpose set forth.

326,090. SASH-FASTENER. FRANK A. BARCOM, Greenville, Pa. Filed Mar. 31, 1885. (No model.)



Claim.—In a window-sash fastening or supporting device, the combination, substantially as set forth, of the housing C, the actuating-lever D, having an internally-screw-threaded cylindrical head, D', journaled in said housing, and the externally-screw-threaded bolt E, fitting in said head D' and having a presser-plate, E', at its outer end.

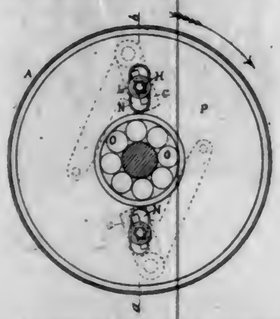
326,091. FRICTION-CLUTCH. ALBERT B. BEAN New Haven, Conn. Filed July 3, 1885. (No model.)



Claim.—1. In a clutch, a friction-band having one end bolted rigidly to the pulley, gear-wheel, or other revolving part, and the other end engaged with and actuated by a lever, thereby being adapted to clutch a friction disk or drum secured to the shaft, substantially in the manner described.

2. In combination, the pulley A, friction-band C, rigidly bolted thereto, the disk E, secured to the shaft, the lever *m*, pivoted to the pulley and engaged with the band, the adjustable screw *n* at the end of the lever, and the sliding cone P, all arranged and operated substantially in the manner set forth.

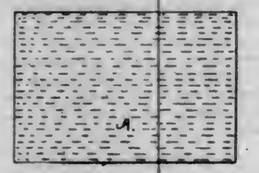
326,092. STEAM-ENGINE GOVERNOR. JULIUS BISTHUP, Elizabeth, N. J. Filed June 16, 1885. (No model.)



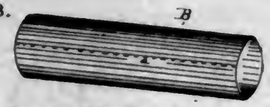
Claim.—1. In an automatic governor, the combination of disks or disk P, mounted on roller-bearings on the engine-shaft, said disks or disk having slots N, containing the rollers M, mounted on sleeves I on bolts H, these bolts being adjustable on the levers G, and retained in position by nuts K with the shafts F, having slotted levers G to receive the bolts H, substantially in the manner and for the purpose set forth.

2. In an automatic governor having a loosely-journaled disk, P, a slotted projection, S, on the arm R, to receive the head of an adjustable bolt, H, in combination with the sleeve I and roller M, substantially in the manner and for the purpose set forth.

326,093. ASBESTUS OR AMIANTHUS STOVE AND FURNACE PIPE. ANDREW R. BENNETT, Utica, N. Y. Filed Sept. 16, 1884. (Specimen.)



326,093.



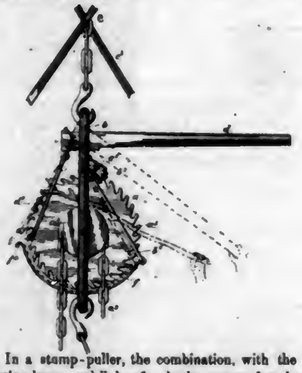
Claim.—As a new article of manufacture, a pipe made of sheet asbestus in the manner and for the purpose described, being formed with a joint or seam solidified by pressure or in dies while in a substantially pulpy state.

326,094. DECORATED STOVE-PIPE. ANDREW R. BENNETT, Utica, N. Y. Filed May 25, 1885. (No model.)



Claim.—The herein-described process of decorating and constructing stove-pipe formed of fibrous material.

326,095. STUMP-PULLER. HARNELL I. BENNETT, Westerville, Ohio. Filed July 31, 1885. (No model.)



Claim.—1. In a stump-puller, the combination, with the power-wheel, the operating-lever, and link, of a brake arranged to bear upon the periphery of the wheel, and having one end pivoted to the yoke or frame, and its other end adapted to be engaged by the operating-link, substantially as set forth.

2. The combination, with the yoke, the power-wheel, the hand-lever, and link d', of the bail b^4, pivoted to the yoke above the power-wheel and arranged opposite to the link d', and the brake having one end pivoted to the lower end of the bail, and its other end extended to the opposite side of the yoke and provided with a hook, substantially as and for the purposes set forth.

3. The combination, with the yoke and the power-wheel, of the pawl pivoted to the yoke and a retracting-hook supported in the yoke and adapted to be caught upon and automatically lift the pawl, substantially as set forth.

4. The combination, with the yoke and the cross-bar b^3, of the spring-arm *e*, having its shank coiled around the cross-bar b^3, the hook e', pivoted to the inner end of the spring-arm and its outer end arranged to engage the end of the pawl b^2, and the stop b^5, arranged behind the spring-arm, substantially as set forth.

5. The combination, with the yoke *b* and the link d', of the yielding hook *g*, substantially as and for the purposes set forth.

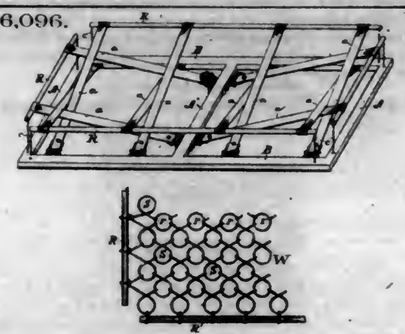
6. The combination, with the yoke, the power-wheel, and the pivoted brake passed between the side bars of the yoke, of a guide and support, *f*, arranged below the brake, substantially as and for the purposes set forth.

7. The combination, with the yoke, the power-wheel, the hand-lever, the lifting-link, and the pawl, of the pivoted bail b^4, the brake *f*, having one of its ends pivoted to the bail, and its other end provided with a hook and extended to the opposite side of the wheel in position to be engaged by the lifting-link, and the retracting-hook arranged above in position to engage the end of the pawl, substantially as set forth.

8. The combination, with the power mechanism and the derrick having the adjustable runner on its single leg, of the clip c^3, secured to the leg c', and provided with the round pin c^4, adapted to fit into the round mortise in the runner c^2, substantially as and for the purposes set forth.

326,096. BED-BOTTOM. CHARLES BIGELOW, Cincinnati, Ohio. Filed Dec. 12, 1884. (No model.)

326,096.



Claim.—1. The elastic mat for bed-bottoms, composed of the detachable and interchangeable wire loops S, formed and hung together as shown, the free arms of one connecting with the circles of adjacent loops, and joined along one or more medial lines and to the containing frames with plain rings or links, substantially as set forth.

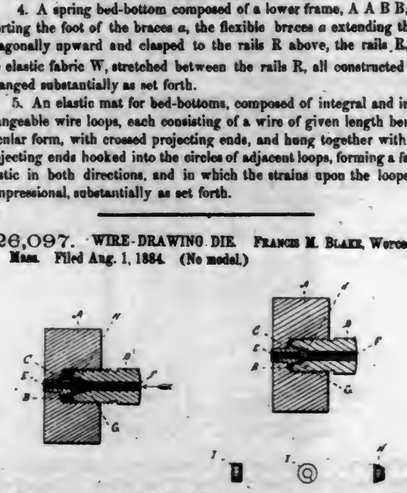
2. In a spring bed-bottom, the combination of a permanent base-frame, an upper frame for the wire fabric, consisting of separate and independently-movable end and side rails, and spring-braces secured at one end to the rail of the upper frame and passing diagonally beneath and across the fabric to the lower frame, so that the depression of the upper frame tends to thrust the corresponding upper rails apart, substantially as set forth.

3. The combination, in a spring bed-bottom, of a wire fabric elastic in both directions, a supporting-frame consisting of separate side and end pieces, a permanent base-frame, and spring-braces supporting the end and side pieces of the mat-frame from opposite or intermediate braces of the base-frame, substantially as set forth.

4. A spring bed-bottom composed of a lower frame, A A B B, supporting the foot of the braces *a*, the flexible braces *a* extending thence diagonally upward and clasped to the rails R above, the rails R, and the elastic fabric W, stretched between the rails R, all constructed and arranged substantially as set forth.

5. An elastic mat for bed-bottoms, composed of integral and interchangeable wire loops, each consisting of a wire of given length bent to circular form, with crossed projecting ends, and hung together with the projecting ends hooked into the circles of adjacent loops, forming a fabric elastic in both directions, and in which the strains upon the loops are compressional, substantially as set forth.

326,097. WIRE-DRAWING DIE. FRANCIS M. BLAKE, Worcester, Mass. Filed Aug. 1, 1884. (No model.)



Claim.—1. An adjustable die for drawing wire, consisting of a spiral coil having connected means for applying radial pressure to its outer surface, whereby it may be contracted and its internal diameter or bore reduced to compensate for wear or to vary the size of the wire, as and for the purpose set forth.

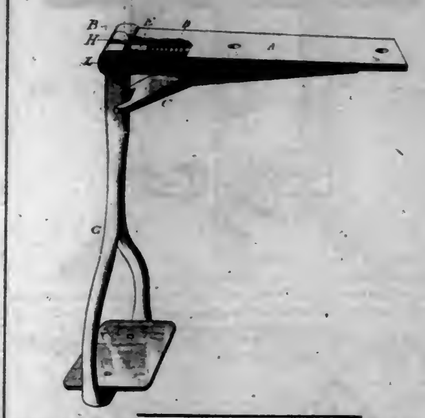
2. An adjustable die for drawing wire, consisting of a conical spiral coil with an internal bore, through which the wire rod is drawn, said spiral coil being held in a tapering chamber, and having connected means for sliding the coil endwise in said chamber, whereby the diameter of the coil may be reduced, combined and operating as described, as and for the purpose set forth.

3. In an adjustable die for drawing wire, the combination of block A, having a screw-threader chamber, B, hollow conical follower C, screw D, with hole F and tapered section G, and spiral coil H, held in said tapered section, as and for the purpose set forth.

326,098. WAGON-STEP. ELAM BODMAN, Gibbon, Nebr. Filed Apr. 30, 1885. (Model.)

Claim.—The hinge-step, with its supporting-brace and spring, applied to wagons, all substantially as set forth.

326,098.



326,099. CAKE OF CURED FISH AND METHOD OF PREPARING. AUSTIN B. BRAY, Gloucester, Mass. Filed Mar. 28, 1885. (Specimens.)

Claim.—1. The method of preparing cured or salted fish for the market by subjecting the disintegrated flesh of such fish to the action of hot water and then forming it into cakes or blocks under pressure, substantially as described.

2. As a commercial article of food, cakes of fish composed of small pieces or shreds of cured or salted fish stuck together by their inherent gelatine and pressed into compact masses, substantially as described.

326,100. RIVET. WILLIAM C. BRAY, Newton, Mass. Filed June 29, 1885. (No model.)



Claim.—A rivet having a head provided with an annular flat surface at its outer edge at right angles to the axis of its shank, and an elevated central portion of greater thickness than said flat surface, substantially as described.

326,101. MEANS FOR LOCKING BOLTS. NICHOLAS H. BROWN, Mobile, Ala. Filed Feb. 19, 1885. (No model.)



Claim.—1. In a bolt-lock, the combination, with a bar or plate having a screw-threaded hole therein, and a sliding plate having an oblong slot and a lug or projection, of a screw-threaded bolt adapted to be screwed into the screw-threaded opening in the bar or plate and provided with a head adapted to rest in contact with the lug or projection on the sliding plate, substantially as set forth.

2. In a bolt-lock, the combination, with rails and a fish-plate having a series of screw-threaded openings therein, of screw-bolts having angular heads, and the sliding fish-plate having oblong slots, and the lugs or projections, all of the above parts combined and operating substantially as set forth.

326,102. CENTER OR OTHER TABLE. WILLIAM T. BURROUGHS, Fort Worth, Tex. Filed June 8, 1885. (No model.)

Claim.—1. A table-top or other like article of furniture having a central standard provided at or near its lower end with slot and rods extending across the same, in combination with supporting-legs provided with hooks adapted to engage with the slots and rods, substantially as and for the purpose set forth.

2. In a table, stool, or other like article of furniture, the combination, with a slotted standard and rods extending across the slots, of the legs having dowel-pins entering holes in the under side of the table-top, and

326,102.



cam-shaped hooks connected to the legs and engaging with the slots and rods of the standard, as and for the purpose specified.

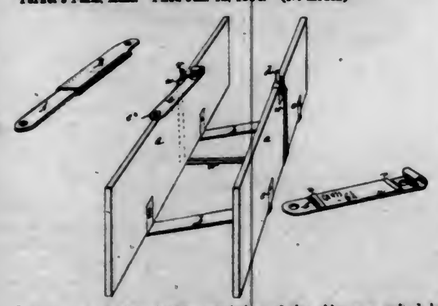
326,103. FEED-BAG FOR HORSES. MATTHEW BURTON, Philadelphia, Pa. Filed Aug. 14, 1884. (No model.)



Claim.—1. The combination of the bottom A, shallow walls B, having the re-enforcing wire C, metal plate D, having lugs *d*, which rest upon the bottom A and form passages under said plate D, bag F, and supporting-straps H *g*, substantially as and for the purpose specified.

2. In a horse feed-bag, the wooden base or bottom A, having notches A', in combination with the metal plate D, having lugs or extensions *d*, which fit into the notches A', and thereby hold the said plate from displacement, and also holes *d'*, by which said plate is secured to the leather portion of said feed-bag, either by rivets or sewing leather portion B around one part of the base or bottom A, secured to the lower part of the division-plate D, and the rear or bag portion, F, secured to the bottom or base and also to the sides and upper edge of the plate D, substantially as and for the purpose specified.

326,104. SELF-CLOSING GLOVE-HOLDER. CHARLES CONNOLLY, Turner's Falls, Mass. Filed Jan. 12, 1884. (No model.)



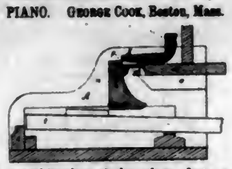
Claim.—1. A glove-holder consisting of the sides *a a*, united by pivoted parallel bars *b b* on one side and by the label-holder *c* on the other side, and having the pins *v* and *d* in the edges of the sides, and the spring-strip *w*, combined and operating substantially as described.

2. The combination, in a glove-holder, of the side pieces, *a a*, and the parallel bars *b b*, loosely pivoted at their ends to the bottom edges of the side pieces, so that said pieces may flare at the top, substantially as described.

3. The combination, in a glove-holder, of the side pieces, *a a*, the parallel bars *b b*, loosely pivoted to the bottom edges of said side pieces, and the single label-bar *c*, pivoted at the top of one of the sides *a*, and having a catch for engagement with the other side.

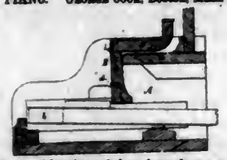
4. The combination, in a glove-holder, of the side plates, *a a*, a pair of bars loosely pivoted at their ends to the bottom edges of the side plates, a single label-bar loosely pivoted at the top edge of one of the side plates and having a catch for engagement with the other side, and an elastic band attached to the side opposite the pivot of the label-bar, extending under both side plates and connected to the label-bar near its free end, substantially as described.

326,105. PIANO. GEORGE COOK, Boston, Mass. Filed June 8, 1885. (No model.)



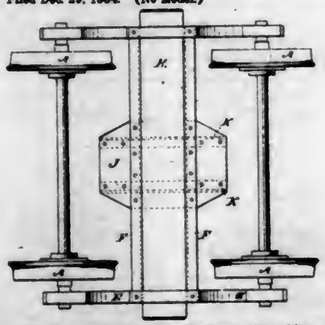
Claim.—The combination of the piano-forte case and a shelf arranged above the keys, and movable laterally in the said case and provided with lips, as described, with a compound key-fall consisting of two sections hinged together, and having the rear section or name-board provided with an extension to project between the said lips and serve with them to effect lateral movements of the shelf during the movements of the key-fall, as explained, the front section, when entirely back, extending over such shelf, all being substantially as represented.

326,106. PIANO. GEORGE COOK, Boston, Mass. Filed June 8, 1885. (No model.)



Claim.—The combination of the piano frame or case provided with the stationary shelf arranged above the keys with the compound key-fall or cover hinged at its rear to such case or frame, and constructed in two sections hinged to each other and arranged, as described, so that when the cover is turned wholly back the rear section shall bear against the front edge of the shelf and the front section extend over and rest upon the said shelf, and when the said cover is closed its rear section or name-board shall extend a short distance underneath and against the shelf, all being substantially as set forth.

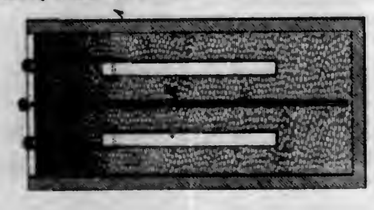
326,107. TRUCK FOR CABLE-CARS. JOHN J. ENDRES, Hoboken, N. J. Filed Dec. 29, 1884. (No model.)



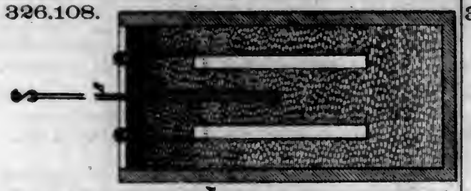
Claim.—1. In combination with the truck of a cable-road car consisting of the tie-bars C, braces D and E, and trusses F, supports for a cable-gripping mechanism attached to the frame of the truck at a point central to the four truck-wheels, as and for the purpose set forth.

2. In a truck for cable-road cars, consisting of the tie-bars C, braces D and E, and trusses F, supports for a cable-gripping mechanism arranged upon the truck-frame at a position central to the four truck-wheels, and extensions M of the truck-frame, reaching beyond the truck-wheels, as and for the purpose set forth.

326,108. METALLIC SHINGLE. MOSES G. FARMER, Newport, R. I. Filed July 9, 1885. (No model.)



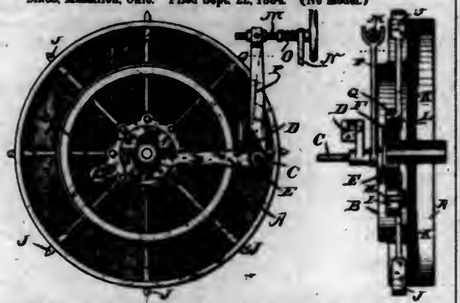
326,108.



Claim.—1. As a new article of manufacture, a copper-plated sheet-iron shingle the coating or plating of which is thicker on the lower or exposed portion of the shingle than on the remaining portion, as set forth.

2. The combination, with a sheet-iron shingle, of a protective coating of electro-deposited copper, the coating being re-enforced or deposited to a greater thickness over one-half, or thereabout, of the shingle than on the remainder, as set forth.

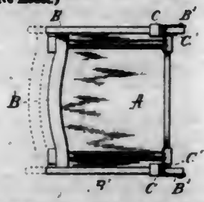
326,109. WHEEL FOR TRACTION ENGINES. CHARLES M. GIDDINGS, Massillon, Ohio. Filed Sept. 22, 1884. (No model.)



Claim.—1. In a traction-engine, a pair of traction-wheels, a tumbling-shaft, levers secured to the tumbling-shaft, eccentrics rigidly secured to the levers, eccentric-straps, yielding drivers connecting the driving-wheels with the eccentric-straps, sliding flukes connected pivotally to the eccentric-straps, and an adjusting screw and lever for adjusting and actuating the tumbling-shaft, combined substantially as and for the purpose set forth.

2. In a traction-wheel, the combination, with flukes, eccentric-straps, eccentrics, and adjusting-levers and adjusting-screw, of the spring O, substantially as and for the purpose set forth.

326,110. NURSERY-CHAIR. MIKE M. GOOCH, Jefferson, Tenn. Filed Feb. 7, 1885. (No model.)



Claim.—1. The combination, with a chair, of collars pivoted to two of its supports, a fender consisting of a cross and side bars, the free ends of the ladder passed through said collars and adapted to slide therein, substantially as shown and described.

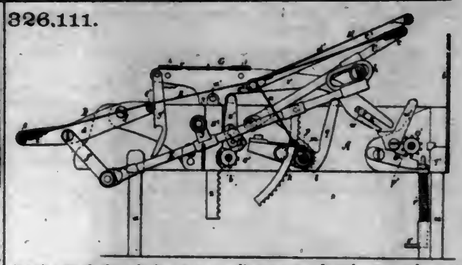
2. The combination, with a chair, of collars pivoted to its supports, a fender the side bars of which pass loosely through said collars, buttons pivoted to the side of said bars in rear of the collars to engage the latter, substantially as described, and for the purposes specified.

3. The combination of a chair, collars having arm-extensions by which they are pivoted to the rear supports of the chair, a fender consisting of a cross and side bars, the free ends of the latter passed loosely through the collars, buttons pivoted to the sides of the fenders, side bars in the rear of the collars and arranged to enter a depression in the side of the collar when the fender is in a normal position, substantially as shown, and for the purposes set forth.

326,111. INVALID-BEDSTEAD. ASAHEL J. GOODWIN, Brookline, Mass. Filed May 1, 1882. Renewed Apr. 14, 1884. (No model.)

Claim.—1. The combination, with the supporting-frame, of the rocker-frame E, provided with segmental rack and pivoted to the supporting-frame, the shaft *m*, provided with gear *l*, the sacking B, a support for the sacking connected with the rocker-frame at one end thereof, a carrier C, pivoted to the main frame, to which the other end of the sacking is attached, and the stays *n*, all constructed and arranged as set forth.

326,111.

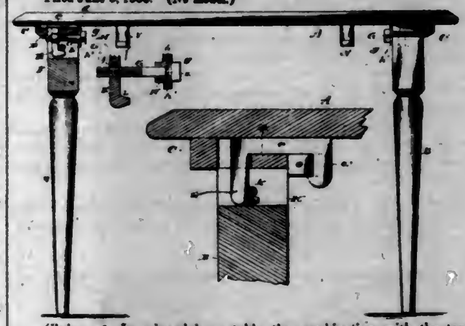


2. The combination of the sacking B, its movable upper carrier, C, and a support at the other end of the sacking, with a main supporting-frame, and the auxiliary back H, pivotally connected with the supporting-frame, and resting on carrier C, as set forth.

3. The combination, with the main supporting-frame, of the two carriers C and D, pivoted thereto, the sacking B, attached to such carriers, the carrier D having a bar, *e'*, extending across and under said sacking, the rocker-frame E, connected to said carriers and supporting-frame, and having the rack *k*, the stays *n*, and shaft *m*, provided with gear *l*, as set forth.

4. The combination of the furcated bars *e* with the auxiliary seat *r*, and with the frame A, and the racks *z*, shaft *b'*, and pinion *c'*, as set forth.

326,112. KNOCKDOWN TABLE. HENRY F. GRAY, Columbus, Ohio. Filed June 8, 1885. (No model.)



Claim.—1. In a knockdown table, the combination, with the top and the legs having slots in their upper ends and pins extending across the slots, of sliding hoops secured to the top and adapted to engage the pins and lock the legs securely to the top, substantially as set forth.

2. In a knockdown table, the combination, with the top and legs, of cleats secured to the top and adapted to form seats for the ends of the legs, and sliding hooks secured in the cleats for locking the legs to the top, substantially as set forth.

3. In a knockdown table, the combination, with the top cleats secured thereto, and legs provided with slots in their ends and pins extending across the slots, of inclined-faced hooks secured in sliding adjustment in the cleats, and means for forcing the hooks into engagement with the pin, substantially as set forth.

4. In a knockdown table, the combination, with a leg provided with a slot and pin extending transversely across the slot, of a sliding screw-operated hook adapted to engage the pin and draw the leg snugly into contact with the top, substantially as set forth.

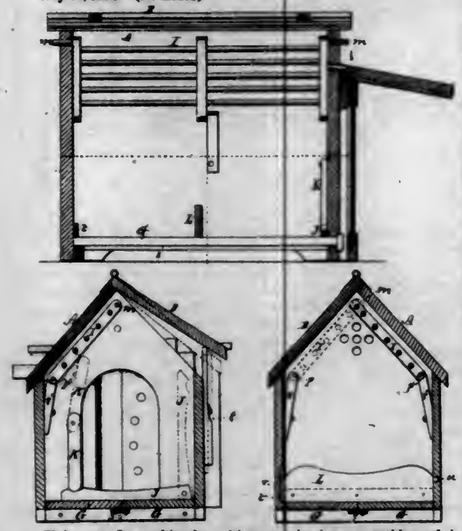
5. The combination, with the top and the cleats provided with transverse slots, of sliding inclined-faced hooks secured in the slots, and adapted to engage pins secured in the legs, substantially as set forth.

6. The combination, with the cleats provided with the transverse slots, and hooks located in the slots and provided with threaded perforations, of screw-bolts secured in bearings attached to the edge of the cleat and adapted to engage the threaded perforation in the hooks, for the purpose substantially as set forth.

7. The combination, with the cleats provided with the slots, and locking-hooks secured in the slots and having threaded perforations formed in their shanks, of the bolts and the bolt-bearings secured to the edges of the cleats and adapted to hold the bolts against longitudinal displacement, substantially as set forth.

8. A folding table consisting, essentially, of the top provided with the slotted cleats, locking-hooks located within the slots, and legs having slotted ends with transverse pins, the legs being connected in pairs, and adapted to be secured in a folded position beneath the top and between the cleats, substantially as set forth.

326,113. POULTRY-COOP. HENRY J. HAIBERT, New York, N. Y. Filed May 14, 1884. (No model.)

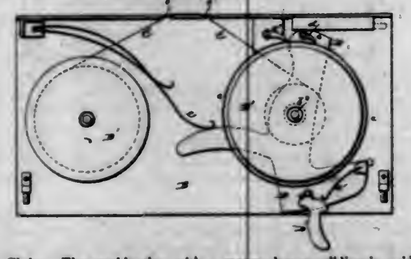


Claim.—1. In combination with a coop having a movable roof, A, a lattice, I, adapted to swing inside of the coop, either to cover the roof-opening or to be moved away therefrom, and to be held by hooks or pins *p p'* in either position, substantially as herein specified.

2. The combination of the divided bottom G, the fixed holding-cleat *t*, the swinging bar J, and fastening-button K, substantially as and for the purpose herein specified.

3. In combination with the divided bottom G, adapted to be raised in the middle for removal, the removable nest-board I, shutting down over and across the said bottom, substantially as and for the purpose herein specified.

326,114. REGISTER FOR MONEY-DRAWERS. WILHELM G. HINRICHS, Chicago, Ill., assignor of one-half to Herman Hein, same place. Filed Dec. 20, 1884. (No model.)



Claim.—The combination, with a money-drawer sliding in guides beneath a counter, and an arm or stop secured to said counter, of the case B, having one side removable, and formed with the slots *b b*, the two spools B B, connected by a tape, C, passing through said slots, a retaining-pawl, *c'*, engaging teeth *c* on one of said spools, a spring-actuated arm, D, hinged in the case, and having the feeding-pawl *d*, and the spring-actuated trigger D' on the end of this arm, projecting through the case and contacting with the arm or stop on the counter, substantially as and for the purpose set forth.

326,115. COMPOSITION OF MATTER FOR LINING OR COATING BOXES, &c. ADOLF HOLLNER, Dennison, Ohio. Filed Mar. 19, 1885. (No specimens.)

Claim.—The herein-described compound to be used as a lining or coating for boxes and other receptacles, consisting of glue, skimmed milk, and calcareous material or materials, in or about the proportions specified.

326,116. VEHICLE RUNNING-GEAR. NATHAN L. HOLMES, Racine, Wis. Filed Nov. 24, 1884. (No model.)

Claim.—1. The combination, with the hounds and sway-bar made straight upon their adjacent faces and provided with notches *a* and *b*, of a coupling-piece, C, having a horizontal portion or plate, *c'*, curved side

326,116.



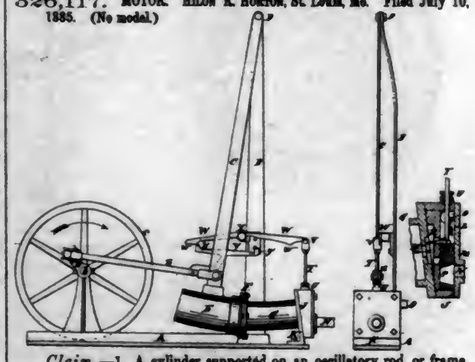
walls, and provided with vertical studs *c c*, engaged with the said notches, substantially as and for the purpose set forth.

2. The combination, with the hounds and sway-bar of a wagon, provided with notches *a* and *b* upon their inner or adjacent faces, of a coupling-piece, C, having curved side walls and provided with vertical studs *c c*, united by a flange, *c'*, substantially as and for the purpose set forth.

3. The combination, with the hounds and sway-bar provided with notches *a* and *b*, a flanged casting, C, provided with projections *c*, and with a flange or rib, *c'*, uniting the projections *c*, and having its end portions, *c²*, adapted to afford a bearing-surface for the inner faces of the hounds and sway-bar, substantially as described.

4. The combination, with the hounds and sway-bar of a wagon, and flanged castings C C, uniting said hounds and sway-bar at their ends, of a strap, D, secured to the sway-bar, and extending at its ends over and attached to the hounds, substantially as and for the purpose set forth.

326,117. MOTOR. HILON R. HORTON, St. Louis, Mo. Filed July 10, 1885. (No model.)



Claim.—1. A cylinder supported on an oscillatory rod or frame, and working over a fixed plunger, substantially as set forth.

2. The combination of an oscillating hanger-rod, a cylinder supported on the same and curved concentrically with the axis of oscillation, and a fixed plunger on which the cylinder works, and which has a passage through it for the entrance and exit of fluid, for the purpose set forth.

3. The combination of a fixed plunger having a passage extending through it, an oscillating cylinder working over it, and a slide-valve constructed to operate, substantially as described, and actuated by connection with the oscillating parts.

4. The combination of an oscillating hanger-rod, a cylinder attached to said rod and working over a fixed plunger having a passage through it, a slide-valve governing the current of fluid through said passage, and having a working bar or lever connected to the valve-stem, and actuated by a bar or frame attached to a pitman which connects the hanger-rod to the crank of a balance-wheel.

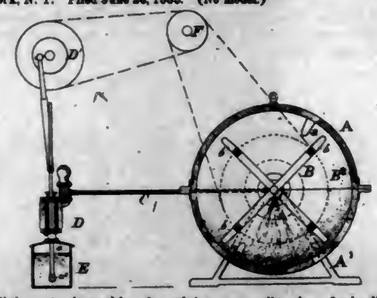
5. The combination of the oscillating hanger-rod C, the pitman Z, with bar Y attached to it, and the working bar or lever W, having connection with the valve-stem T, substantially as and for the purpose set forth.

326,118. INKSTAND. MARSHALL J. HOUSER, Jersey City, N. J. Filed Oct. 8, 1883. (No model.)



Claim.—The herein-described inkstand consisting of the body 10, provided with two ink-wells, 13 14, the mouths of which are separated from each other by the thin diaphragm or partition 12, having the upward projection 15, substantially as described.

326,119. PROCESS OF MAKING SOLID COMPOUNDS FROM SOLUBLE NITRO-CELLULOSE. JOHN W. HYATT AND JOHN EVERDDS, Newark, N. J., assignors to the Celluloid Manufacturing Company, New York, N. Y. Filed June 26, 1885. (No model.)

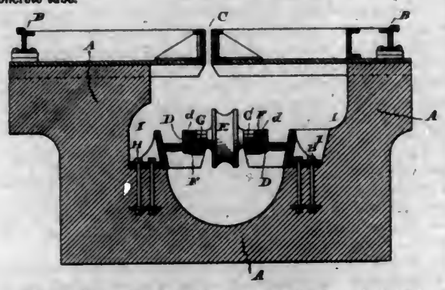


Claim.—1. A machine for mixing pyroxyline in a finely-divided state with spirits of camphor or other solvents, consisting of the combination of a vessel wherein the pulp is stirred, substantially as described, and a perforated pipe or sprinkler by which the solvents are sprayed upon the pyroxyline pulp, substantially as described.

2. In a machine for mixing pyroxyline pulp with spirits of camphor or other solvents, a cylindrical vessel to be partly filled with pyroxyline pulp, a sweep or agitator for stirring up the pulp, and a spray-pipe or sprinkler supplied by a pump, substantially as described.

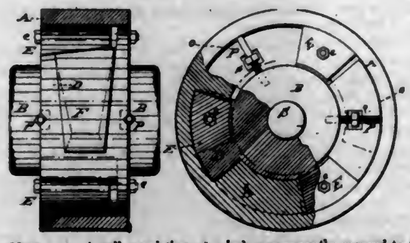
326,120. STREET CABLE RAILWAY. JOHN D. ISAACS, Oakland, Cal. Filed Oct. 30, 1884. (No model.)

Brief.—The cable-pulleys are supported in boxes by brackets which surround the pulleys, said brackets resting in recesses in the walls of the concrete tube.



Claim.—In combination with a concrete tube for underground cable railways, the frame or bracket D, made in plan to surround the carrying-pulley, and supporting on each side the boxes for the pulley-spindle, and having projections resting in recesses molded in opposite sides of the tube, so that the bracket will be firmly held in place, and a clear drainage-way be left on bottom of the tube, substantially as and for the purpose herein described.

326,121. ROLL FOR ROLLER-MILLS. JAMES W. JACKSON, Denver, Colo. Filed Mar. 16, 1885. (No model.)



Claim.—1. A roll consisting of a hub permanently secured to the axle and formed with circumferential recesses in its periphery, said recesses being provided with transverse openings therein, and an outer portion or shell formed in a single piece and provided internally with circumferential keys registering with the recesses in the hub, and adjusting-blocks fitting the transverse openings in the recesses in the hub, substantially as set forth.

2. The combination of the hub B, having depressions *d*, and side wings, D, with the shell A, formed with the wedge-shaped keys F, adapted to enter the said recesses *d*, and the wedge-shaped blocks E, and means, substantially as described, for adjusting said blocks.

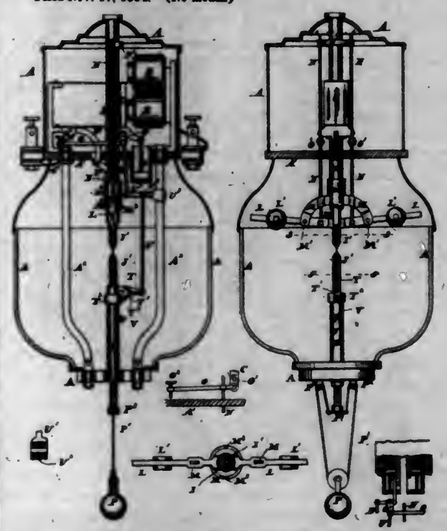
3. The combination, with the recessed hub B, of the shell A, formed with keys registering with the recesses in the hub, the adjusting-screws P, and blocks for insertion behind the keys F, substantially as described.

326,122. HERNIAL TRUSS. NATHANIEL JONES, Berkeley, Cal. Filed Feb. 12, 1885. (No model.)



Claim.—As an improved article of manufacture, a truss-plate having in its upper corner or corners a circular opening, and a perforated pad having a corresponding opening secured in contact with the opening of the plate by means of screws connecting a nut and washer of the plate and pad, as shown and described, and for the purpose set forth.

326,123. ELECTRIC-ARC LAMP. RICHARD F. JONES, St. Louis, Mo. Filed Nov. 17, 1884. (No model.)



Claim.—1. In an electric-arc lamp, the combination of the levers for grasping the upper carbon, armature-rods connected to and extending upward from the levers, plates connected to the armature, and through which the lever-rods pass, and set-screws in the free ends of the plates adapted to come against a fixed object as the armature falls, substantially as and for the purpose specified.

2. In an electric-arc lamp, the combination of the tube for receiving the upper carbon, collar on the tube provided with arms, levers pivoted to said arms and adapted to grasp the carbon, adjustable weights on the levers, rods connected to and extending upward from the levers, armature-plates connected to the armature, and through which the lever-rods pass, and set-screws in the outer ends of the plates, arranged and operating substantially as and for the purpose set forth.

3. In an electric-arc lamp, the combination of the tube for receiving the upper carbon, collar on the tube provided with arms, levers pivoted to said arms and adapted to grasp the carbon, adjustable weights on the levers, rods connected to and extending upward from the levers, armature-plates connected to the armature by links, and through which the lever-rods pass, set-screws in the free ends of the plates, and the yoke for connecting the upper ends of the lever-rods, substantially as and for the purpose set forth.

4. In an electric-arc lamp, the combination of the tube for holding

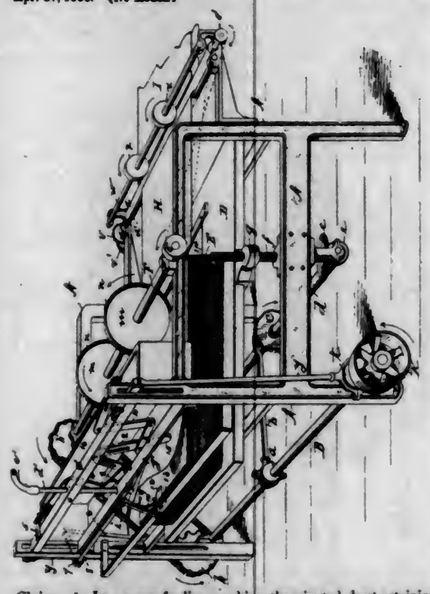
the lower carbon, plate upon which the carbon is set, weight connected to the plate by a cord or chain passing over pulleys secured to the bottom of the lamp, dog adapted to be pressed against the carbon by a spring, armature and rods connecting the outer end of the lever with the armature to release the carbon when the armature falls, substantially as and for the purpose set forth.

5. In an electric-arc lamp, the combination of the tube for holding the lower carbon, plate upon which the carbon is set, weight connected to the plate by a cord or chain passing over pulleys secured to the bottom of the lamp, dog pivoted to an extension of a collar on the tube, spring for holding the dog against the carbon, armature, and rods, and lever U^2 for connecting the carbon-lever to the armature, substantially as and for the purpose shown and described.

6. In an electric-arc lamp, in combination with the tube for holding the lower carbon, weight for raising the carbon and armature, and connections for releasing the carbon, the pivoted dog V, adapted to rest against the lower carbon and prevent its falling out, substantially as set forth.

7. In an electric-arc lamp, in combination with the tube for receiving the upper carbon, sliding collar surrounding said tube provided with arms, levers pivoted to said arms and adapted to grasp the carbon, means for operating said levers electro-magnetically, and a pin or stop on said tube for limiting the downward movement of said collar, substantially as set forth.

326,124. PAPER-FEEDING MACHINE. JOSEPH C. KNEELAND, Northampton, Mass., assignor to M. H. Spaulding, guardian, same place. Filed Apr. 27, 1885. (No model.)



Claim.—1. In a paper-feeding machine, the pivoted sheet-retaining finger 12, the guide-bar 13, mechanism, substantially as described, to impart to said finger a horizontal reciprocating motion, and a spring to bear it against the paper, combined and operating substantially as described.

2. In combination, the guide-bar 13, having the shoulders *s s*, the finger 12, having curved bearing-surfaces to act against said shoulders, the arm 9, pivoted to said finger, spring 10, and suitable mechanism for giving a vibratory motion to said arm, substantially as set forth.

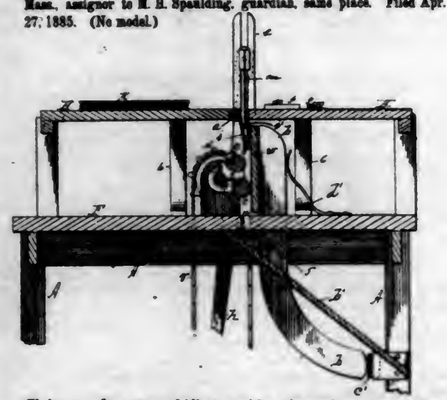
3. The separators 2 2, having slots therethrough, pivoted to the back board, 16, by pins passing through said slots, the elbow-levers 4 4, also pivoted to said board, connected with the separators, and mechanism, substantially as described, for imparting a vibratory motion to said levers, combined and operating substantially as set forth.

4. The separators 2 2, having slots therethrough pivoted to the back board, 16, by pins passing through said slots, the elbow-levers 4 4, also pivoted to said board and connected to the separators, and mechanism, substantially as described, for imparting a vibratory motion to said levers, combined with the suction-pipe *d'*, suitable air-exhausting devices connected with the latter, and mechanism, substantially as described, for imparting a vertically-reciprocating motion to said pipe, substantially as set forth.

5. In combination, the suction-pipe *d*, suitable air-exhausting devices connected with said pipe, mechanism, substantially as described, for giving to the latter a vertically-reciprocating motion, the retaining-finger 12, the guide-bar 13, spring 10, and mechanism, substantially as described, for imparting to said finger a reciprocating movement, substantially as set forth.

6. In a paper-feeding machine, the combination, with the feed-rolls *m* and the delivery-rollers thereof, of the flexible extensible apron H, springs E, shaft *a'*, and means, substantially as described, for preventing the latter from turning by the tension of the springs E, substantially as set forth.

326,125. FOLDING-MACHINE. JOSEPH C. KNEELAND, Northampton, Mass., assignor to M. H. Spaulding, guardian, same place. Filed Apr. 27, 1885. (No model.)



Claim.—1. In a paper-folding machine, the reciprocating folding-blade and suitable mechanism for operating the same, the slotted table thereunder, a rock-shaft hung at one side of said table-slot, a pending semi-rigid friction-faced apron secured to said shaft, a similar second apron secured at the edge of said slot opposite the first-named one, and mechanism, substantially as described, for operating said rock-shaft, combined and operating substantially as set forth.

2. In a paper-folding machine, the reciprocating folding-blade and suitable mechanism for operating the same, the slotted table thereunder, a rock-shaft hung at one side of said table-slot, a pending semi-rigid friction-faced apron secured to said shaft, a similar second apron secured at the edge of said slot opposite the first-named one, mechanism, substantially as described, for operating said rock-shaft, and an abutment located at the side of said second apron, having a face in a plane therewith, combined and operating substantially as set forth.

3. In a machine for folding paper, the combination, with one or more fold-compressing rolls supported in bearings on a rotating shaft in a line diagonal to the axis of the latter, but whose ends are equidistant from said shaft, of a yielding abutment against which said roll or rolls act, the face of which is parallel with said shaft, substantially as set forth.

4. In a paper-folding machine, the combination, with one or more fold-compressing rolls supported in bearings on a rotating shaft in a line diagonal to the axis of the latter, but whose ends are equidistant from said shaft, a yielding abutment against which said roll or rolls act, the face of which is parallel with said shaft, the aprons *i i'*, the former attached to the rock-shaft *a*, the slotted table, and the reciprocating folding-blade *m*, substantially as set forth.

5. The pivoted table-sections H H, the rock-shaft *a*, arm *o*, cam *e*, aprons *i* and *i'*, the blade *m* and mechanism for operating the latter, the abutment *w*, the shaft B, and rolls *c c*, hung in bearings upon and having a motion around said shaft, combined and operating substantially as set forth.

326,126. SINK-TRAP. ALOIS KORDEL, Milwaukee, Wis. Filed June 3, 1885. (No model.)

Claim.—The automatic gas and water tight sink-trap consisting of two closed chambers, *d* and *d'*, placed one above the other, the upper one being provided with an inlet-pipe, *c*, and the lower one being provided with an outlet-pipe, *c'*, the flange *e* extending inwardly from the wall of the upper chamber and forming the partition between the two chambers, the outwardly downwardly beveled valve-seat *f* on the lower side of the flange *e*, the circular valve *h*, having its periphery beveled inwardly upwardly, and adapted to be lifted against the seat *f* and close the apertures between the chambers *d* and *d'*, said valve having a vertical movement within the lower chamber, and being supported, moved, and guided by the upwardly-extending stem *i*, affixed rigidly centrally to said valve and passing out through the top of the upper chamber, the sleeve *j*, rigid to the top of chamber *b* and adapted to guide the stem *i* in its vertical movements, and the lever *m*, pivoted and supported on an arm on the case of the upper chamber, said lever at one end being attached to the top of stem *i*, and being provided on its other arm with the movable weight *o*, all substantially as described, and for the purpose set forth.

326,126.



326,127. BUNG AND BUSH. CHRISTIAN KÜHNER, Canton, Ohio. Filed Dec. 29, 1884. (Model.)

Brief.—To remove the bung turn back the locking-latch with a small key, and then with a wrench unscrew the bung from the bushing.



Claim.—1. A bush interiorly threaded and provided with an annular seat and a bung exteriorly threaded to coincide with the interior of the bush, and provided with an annular flange corresponding to the seat in the bush, in combination with a pin carrying a locking-latch to lock the bung and bush together when the flange of the bung is drawn in close contact with the seat of the bush by the threads, substantially as described.

2. The bush A, interiorly threaded and provided with an annular seat and a depending lug, *l*, in combination with the bung B, exteriorly threaded and provided with an annular flange coinciding with the seat of the bush, and a pin passing vertically through the bung, and provided on its upper end with an irregular-shaped head and on its lower end with a latch to engage the lug of the bush, substantially as and for the purposes specified.

326,128. CASH AND PARCEL CARRIER. WILLIAM S. LAWSON AND EDWIN L. GILES, Lowell, Mass. Filed June 9, 1885. (No model.)

Claim.—1. The combination, in a store-service apparatus, of main forwarding and return tracks, corresponding branch tracks extending from the said main tracks, and graduated switching appliances, substantially as described, elevators at the ends of the main and branch tracks, constructed to receive and convey the carriers from one track to the other, and carriers adapted to said tracks and elevators and to automatically operate the said switches, substantially as set forth.

2. The combination, in a store-service apparatus, of the corresponding main and branch tracks, elevators at the ends of the main tracks and branches, and carriers adapted to travel continuously upon said tracks, provided with receptacles, and extensible connections whereby the receptacles are maintained normally in contact with the frames of the carriers, but so as to be capable of being drawn down independently of the frames, substantially as described.

3. A store-service apparatus provided with main tracks having branches and automatic graduated switching appliances, and with elevators at the ends of the main tracks and branches, and carriers adapted to travel upon the tracks without being detached therefrom, and provided with movable receptacles, substantially as described.

4. The combination, in a store-service apparatus, of main and branch tracks provided with automatic graduated switching appliances, and with elevators arranged to convey the carriers between the contiguous ends of the tracks, and carriers provided with movable receptacles and constructed each to operate one of the switches, substantially as and for the purposes set forth.

5. The combination, with the corresponding upper and lower tracks of a store-service apparatus, and with an elevator constructed to convey the carriers from one track to the other, of a detent arranged to arrest the movement of the carriers toward the elevator, and connections, substantially as described, between the detent and the elevator, for the purpose set forth.

6. The combination, with the vertically-moving carrier-elevator and corresponding tracks leading thereto and therefrom, of a detent, and connections, substantially as described, between the elevator and the detent, whereby the latter is held in position to obstruct the track, except when the elevator is in position to receive the carrier, substantially as set forth.

7. The combination, with the elevator, corresponding tracks leading thereto and therefrom, of a detent arranged to obstruct the track leading to the elevator, an arm or bracket upon the elevator, and connections between the detent and the said arm, substantially as described.

8. The combination, with the receiving and return tracks of a store-service apparatus, of an elevator guided to travel between the said tracks and having an opening and a tilting track-section extending through said opening and arranged to be brought to coincide with both the tracks, substantially as described.

9. The combination, with the elevator and the return and delivery tracks, of a catch upon the elevator adapted to hold the carriers, and a stop arranged to make contact with and withdraw said catch when the elevator is brought in position to deliver the carrier to the forwarding-track, substantially as described.

10. The combination, with the elevator-frame F, having an opening therein, of a track-section consisting of two connected rails extending through and swinging in said opening and adapted to receive and deliver the carriers, and a detent whereby the carriers are retained, and devices, substantially as described, for withdrawing said detent as the track-section is brought to coincide with the delivery-track, substantially as described.

11. The combination, with the track-section forming part of the elevator, of an elastic buffer, substantially as set forth.

12. The combination of the elevator-frame, tilting track-section, and stops arranged to limit the movement of the tilting section, substantially as described.

13. The combination of the elevator-frame, track-section and yoke connected to the track-section, and trunnions supporting the latter, substantially as set forth.

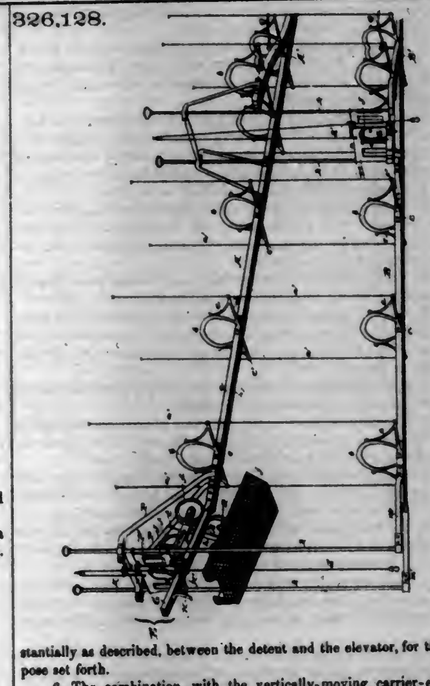
14. The combination, with the forwarding and delivery tracks, of an elevator carrying a tilting track-section, and lips *q* at the ends of the delivery-track, substantially as set forth.

15. The combination of the forwarding and delivery tracks and elevator carrying the tilting track-section, and plates *r*, extending from the ends of the forwarding track-rails, substantially as and for the purpose described.

16. The combination of the forwarding and delivery track and elevator provided with a tilting track-section, and elastic blocks n^2, substantially as and for the purpose set forth.

17. A store-service apparatus provided with main and branch tracks extending in unbroken courses between the desk and stations, and ele-

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vators arranged to receive the carriers from and deliver them to the open ends of the tracks, substantially as described.

18. The combination, with the upper and lower tracks of a store-service apparatus, of yokes connected to the tracks and provided with laterally-extended arms, and flexible suspensories connected to the said arms, substantially as described.

19. The combination, with the upper and lower tracks of a store-service apparatus, arranged one directly above the other, of yokes having lateral arms arranged upon the upper track directly above similar yokes upon the lower track, and flexible suspensories, each connected to yokes in the same vertical plane, substantially as described.

20. The combination, with the tracks, of yokes having laterally-extended perforated arms, flexible suspensories extending through the perforations in said arms, and set-screws for securing the yokes to the suspensories, substantially as described.

21. The combination of the parallel rails, yokes connected thereto, and laterally-extended arms and braces, substantially as set forth.

22. The combination, with the parallel rails of a store-service track, and with guide-rods supporting an elevator, of arms *m*, connected to the sides of the rails and bent outward and attached to the rods, substantially as set forth.

23. The combination, with the vertical rods *k* and parallel rails, of connecting-arms P, substantially as described.

24. The combination, with the main and branch rails, and with a switch-tongue, of a tongue-operating lever arranged to be struck by standards upon the carriers, substantially as set forth.

25. The combination, with the main and branch tracks, tongue, and operating-lever, of guides arranged adjacent to the said lever to direct the course of standards upon the carriers, substantially as set forth.

26. The combination of the main and branch tracks, tongue, lever Q, connected to said tongue and extending over the track, and guide-plates *u u*, substantially as and for the purpose described.

27. The combination, with the main and branch tracks and switch, of an overarching yoke, switch operating lever pivoted to an arm of the yoke, and guide-plates *u*, supported by the yoke, substantially as set forth.

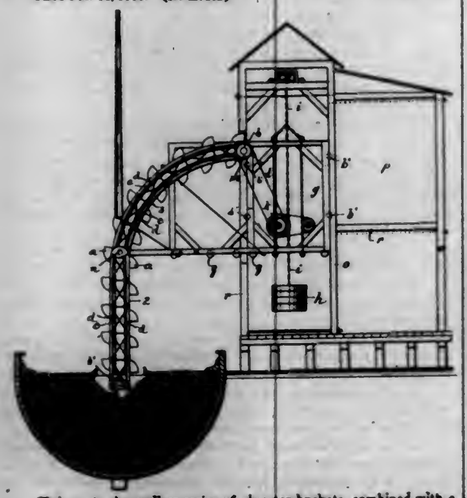
28. The combination of the switch-tongue provided with an arm and rod extending upward therefrom, and an operating-lever overhanging the track, connected to the said rod, substantially as set forth.

29. The switch-tongue provided with an extension or projection, *w*, in combination with the track-rail having a recess, *x*, substantially as and for the purpose described.

30. The combination, with the ways of a store-service apparatus, of vertical rods at the terminus of the ways, or the branches thereof, and elevators moving upon said rods, substantially as set forth.

31. The combination of the ways and vertical rods connected by brackets with the ends of the ways, and elevators supported by said rods, substantially as described.

326,129. COAL-ELEVATOR. WALTER LAWTON, Winthrop, Mass. Filed Feb. 11, 1885. (No model.)



Claim.—1. An endless series of elevator-buckets, combined with a supporting and guiding frame formed to conduct the ascending or loaded buckets vertically and laterally from the space over the receptacle from which material is taken from the buckets, and to continuously support said loaded buckets, as set forth.

2. An endless series of elevator-buckets, combined with a supporting and guiding frame composed of the curved section 3, attached to a support, and the section 2, pivoted to the lower end of the curved section, as set forth.

3. The combination of the vertically-movable frame or elevator, the guiding-frame 2 3, attached thereto, and the endless series of elevator-buckets supported and guided by said frame, as set forth.

4. The curved guiding-frame, combined with the endless series of elevator-buckets and the intermediate pans, as set forth.

5. The curved guiding-frame having parallel rails *c c*, combined with the endless series of buckets having rollers *d d*, as set forth.

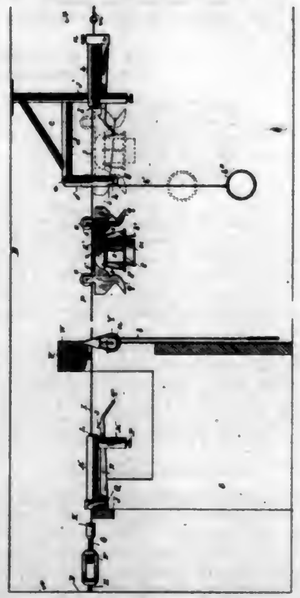
6. The vertically-movable elevator supporting the series of buckets and their guiding-frame, and provided with a motor which moves with the elevator, whereby said buckets are impelled, as set forth.

7. The elevator supporting the bucket-guiding frame 2 3, and having wheels *q*, combined with the recess *p*, adapted to receive the elevator, as set forth.

8. The sections 2 3, having the guide-rails *c c*, and rollers *d' d'* between the proximate ends of the rails, combined with the endless series of buckets having rollers *d*, as set forth.

9. The vertically-movable elevator supporting the series of buckets and their guiding-frame, and provided with anti-friction rolls *b'*, combined with vertical guides on which said rolls bear, as set forth.

326,130. CASH-CARRIER. DAVID LIPPY, Mansfield, Ohio, assignor of one-half to Peter Ott, same place. Filed July 7, 1885. (No model.)



Claim.—1. In a cash-carrier, the combination, with a track and a carriage movably secured thereon, of rope or chain for imparting a sudden impetus to the carriage, and means for automatically locking the carriage at the stations, substantially as set forth.

2. In a cash-carrier, the combination, with a track secured to the walls of a room, and a carriage movably secured on said track, of rope or chain for imparting a sudden impetus to the carriage, and means for automatically locking the carriage at the stations, substantially as set forth.

3. In a cash-carrier, the combination, with a track or way and spring-actuated tongues for locking the carriage, of a carriage and ropes or chains for releasing the carriage and imparting a sudden impetus thereto.

4. In a cash-carrier, the combination, with a track or way and spring-actuated tongues for locking the carriage against movement, of a carriage mounted on said track or way, and ropes or chains located in close proximity to the tongues, and adapted to release the carriage and impart a sudden impetus thereto, substantially as set forth.

5. In a cash-carrier, the combination, with a track, tubes adapted to receive the track, and a carriage movably secured on said track, of spring-actuated tongues pivotally secured on said tubes, and devices for imparting a sudden impetus to the carriage, substantially as set forth.

6. In a cash-carrier, the combination, with a track, tubes adapted to receive the track and provided in their ends with bumpers, and a carriage movably secured on the track, of spring-actuated tongues pivoted to said tubes, and means for imparting a sudden impetus to the carriage, substantially as set forth.

7. In a cash-carrier, the combination, with a track, tubes adapted to receive the ends of the track, and a carriage movably secured on the track, of tongues pivoted to the tubes, and springs impinging against the tongues adapted to secure the carriage, and means for imparting a sudden impetus to the carriage, substantially as set forth.

8. In a cash-carrier, the combination, with a track, tubes adapted to receive the ends of a carriage movably secured on the track, spring-actuated tongues pivotally connected with the tubes, and a cord or other device engaging said carriage and tongue, whereby a sudden impetus may be imparted to the carriage, substantially as set forth.

9. In a cash-carrier, the combination, with a track and brackets having spring-actuated tongues pivotally secured thereto, of a carriage movably secured on said track, and a cord or other device depending from arms or brackets adapted to engage the carriage and impart a sudden impetus thereto, substantially as set forth.

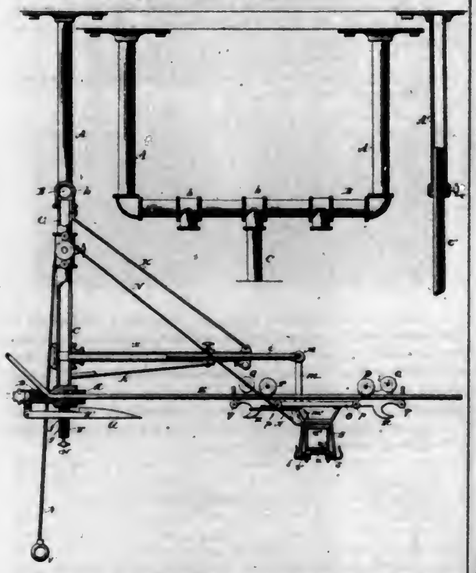
10. In a cash-carrier, the combination, with a track and brackets having spring-actuated tongues pivotally secured thereto, of a carriage provided at each end with curved arms, and a cord or other device depending from arms or brackets and adapted to engage the curved arms, whereby a sudden impetus may be imparted to the carriage, substantially as set forth.

11. In a cash-carrier, the combination, with a track, tubes located in close proximity to the track, tongues pivotally connected with the tubes, springs impinging against the bottom of the tongues, and means for tightening the springs, of a carriage having a carrier removably secured therein, substantially as set forth.

12. In a cash-carrier, the combination, with a track, of a carriage provided centrally on its bottom with a leg, and arms supporting a ring adapted to receive and secure the carrying-cup, substantially as set forth.

13. In a cash-carrier, the combination, with a track and carriage movably secured thereon, of a spring secured to the carriage and adapted to engage the track, and thus regulate and balance the carriage, substantially as set forth.

326,131. CASH-CARRIER. DAVID LIPPY and PETER OTT, Mansfield, Ohio. Filed Aug. 6, 1885. (No model.)



Claim.—1. In a cash-carrier system, a depending-bracket having a horizontal bar provided with T-couplings located at suitable intervals thereon for the attachment of track-supporting standards, substantially as set forth.

2. In a cash-carrier system, the combination, with a depending bracket having a horizontal bar provided with couplings located at suitable intervals thereon and adapted to secure track-supporting standards at the cashier's terminus, of single vertically-adjustable standards adapted to support the track at the clerk's terminus, substantially as set forth.

3. The combination, with the track-supporting standards, of track guides or holders secured to the lower ends of the standards, and elastic bumpers secured in recesses formed in the inner ends of the guides or holders, and the track extending centrally through the bumpers, substantially as set forth.

4. The combination, with the track-supporting standards, the track guides or holders secured to their lower ends, and a carriage adapted to be reciprocated on the track, of bevel-faced carriage-retaining hooks pivotally secured to the outer ends of the track guides or holders and held in elevated adjustment below the track by spring-cushions, substantially as set forth.

5. The combination, with the track-supports and carriage, of carriage-retaining hooks pivotally secured below the track, spring-cushions for holding the hooks in the desired normal adjustment, and means for increasing or diminishing the tension of the spring-cushions, substantially as set forth.

6. The combination, with the track, the track-supports, and the carriage adapted to run on the track, of a hanger adapted to give the desired direction to the carriage-impelling cord, said hanger consisting, essentially, of a U-shaped depending standard secured to the end of a horizontally-adjustable arm located above the track, the ends of the U-shaped standard being provided with sheaves and anti-friction rollers, substantially as set forth.

7. The combination, with the track, the track-supports, the carriage adapted to be reciprocated on the track, and the horizontal arm for giving directions to the impelling-cord, of the brake-plate located in an inclined position between the said arm and track and adapted to engage a friction-wheel on the carriage, substantially as set forth.

8. The combination, with the longitudinally-adjustable arm adapted to change the direction of and support the impelling-cord, of the top brace and the adjustable side braces for adjusting and steadying the arm, substantially as set forth.

9. The combination, with the carriage-body and its supporting-wheels, of the anti-friction rollers journaled in the body and adapted to prevent the body from touching the track, substantially as set forth.

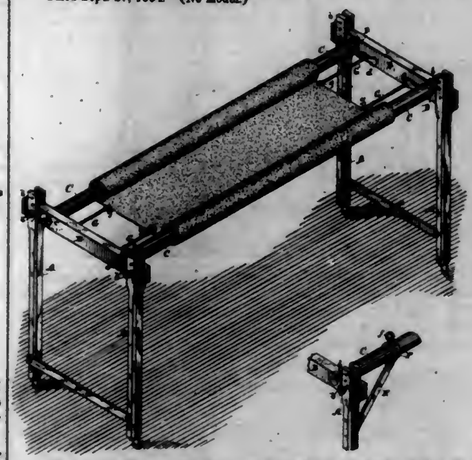
10. The combination, with the carriage-body and its supporting-wheels, of the greater friction-rollers located above the track and the smaller anti-friction rollers located below the track, for the purpose substantially as set forth.

11. The combination, with the carriage adapted to be reciprocated on the track, and the circular car depending therefrom, of the cash-box adapted to be inserted in the car through its lower end, and the spring-catch for locking it in position within the car, substantially as set forth.

326,132. METHOD OF APPLYING GUM-BALATA FOR INSULATING WIRES. PETER C. MATHERSON, Landisville, N. J. Filed Feb. 28, 1884. (No model.)

Claim.—The improvement in the method of applying gum-balata for insulating wires, consisting in dissolving the gum in a volatile solvent, and then passing the wire through the solution to receive a film thereof, substantially as herein described.

326,133. QUILTING-FRAME. JOHN H. MCGEE, Eurekaton, Texas. Filed Sept. 27, 1884. (No model.)



Claim.—1. The combination, substantially as set forth, of the bifurcated standards having a series of apertures through their bifurcated ends, the tenoned cross-bars, the thumb-bolts, and the cloth-rollers journaled in the cross-bars.

2. The combination of the bifurcated standards, the cross-bars, the rollers, the collars which embrace the rollers, the braces which extend from said collars to the standards, and the collar-pin locking the rollers and collars together.

326,134. FISHING-FLOAT. JAMES MCNEAL, Washington, D. C., assignor of one-half to Chas. H. Seaton, same place. Filed Feb. 2, 1885. (Model.)



Claim.—1. A fishing-float provided with line-attaching devices consisting of bent loops at its end at about right angles to the axis of the float, whereby twists, bights, or sudden changes in direction of the line are avoided, substantially as set forth.

2. A fishing-float provided with a body, A, in combination with a wire, B, passing through its length, and having on its ends fastening devices having a movement in the arc of a circle to engage the line, for the purpose specified.

3. In a fishing-float, the central wire, B, extending entirely through the float, and provided at its ends with loops *b*, bent at right angles, and having their ends adapted to be sprung open to receive the line, substantially as described.

4. In a fishing-float, the body A, provided with the slot *a*, in combination with the central wire, B, provided with loops *b* on its ends, adapted to move across the ends of the slot, substantially as set forth.

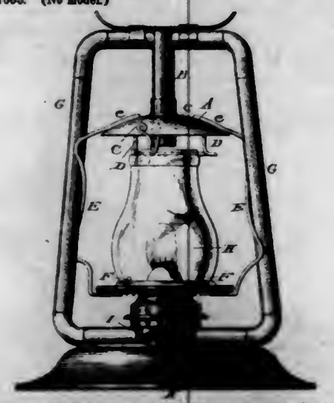
326,135. EAR-WIRE CATCH FOR EAR-RINGS. SAMUEL F. MERRITT Springfield, Mass. Filed Nov. 17, 1884. (No model.)



Claim.—1. In combination with an ornament, a wire hook hinged to the upper portion thereof, and a forked catch for said hook hinged to the lower portion thereof, substantially as described.

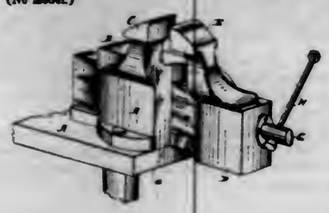
2. In combination with an ornament, a hook hinged to the upper portion thereof, and a forked catch hinged to the lower portion thereof, said catch having a short arm, *w*, above the hinge to bear against the base-plate of the ornament, substantially as described.

326,136. LANTERN. FERDINAND METZROE, St. Louis, Mo. Filed May 2, 1885. (No model.)



Claim.—In a tubular lantern, the combination, with the reservoir and burner, of the tubes B G G, the globe H, the perforated globe-rest F F, engaging the lower end of the wire rods E E, the swaged or bent wire rod or rods E E, fastened at their upper end to the disk A, and engaging the tubes G G for vertical adjustment, substantially as described.

326,137. VISE. V. MUMFORD MOORE, Chicago, Ill. Filed June 23, 1885. (No model.)

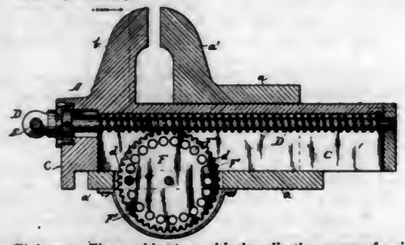


Claim.—1. A vise wherein the working or gripping faces of the jaws extend laterally from a movable slide carrying one of the jaws, and in which a plane passing vertically through the said slide in the longitudinal direction of the latter is parallel to a plane passing vertically through the jaws midway between their ends and at right angles to the gripping-faces of the jaws, substantially as and for the purposes specified.

2. A vise wherein the jaws are set out laterally from a plane passing vertically through the axis of the clamping-screw, substantially as and for the purposes specified.

3. The combination of the block B, having thereon the jaw C, and having therein a recess, *a*, the fixed internal screw-threaded stud F, the recessed sliding block D, having thereon the jaw E, the screw G, in operative connection with the slide D and stud F, and a handle or lever for turning the said screw, the said jaws being set out laterally from the plane passing vertically through the axis of the said screw, substantially as and for the purposes specified.

326,138. VISE. V. MUMFORD MOORE, Chicago, Ill. Filed Aug. 6, 1885. (No model.)



Claim.—1. The combination, with the adjusting-screw of a vise, of a cogged wheel adapted and arranged for engagement with the said screw, and a locker for temporarily preventing the rotation of the said wheel.

2. The combination, in a vise, of the screw D, the wheel F, and bolt or locker G, substantially as and for the purpose specified.

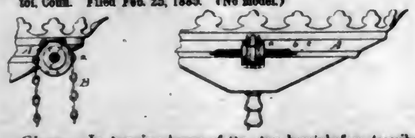
3. The combination, in a vise, of the screw D, wheel F, having holes F' F' therein, and yielding bolt or locker G, substantially as and for the purposes specified.

326,139. FISHING-NET. BASILIOS K. MOSCOPOULOS, New York, N. Y. Filed Jan. 23, 1885. (No model.)



Claim.—The compound fishing-net constructed, substantially as herein described, of an upper division of single comparatively fine netting, in combination with a lower division consisting of a central section of fine netting faced on either side with coarser netting loosely attached thereto.

326,140. FRICTION-PULLEY FOR LAMP-CHAINS. JUNIUS S. OAKLEY, Forestville, assignor to the Bristol Brass and Clock Company, Bristol, Conn. Filed Feb. 25, 1885. (No model.)

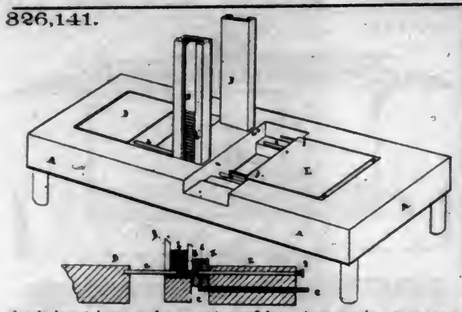


Claim.—In hanging lamps of the class hereinbefore described, a friction device consisting of the pulley-frame A, an ordinary pulley, *a*, the hollow or grooved axle *b*, curved longitudinally, and having its ends which project from the sides of said pulley secured to said frame, and the spring-wire *c*, inclosed within said curved axle, substantially as described, and for the purpose specified.

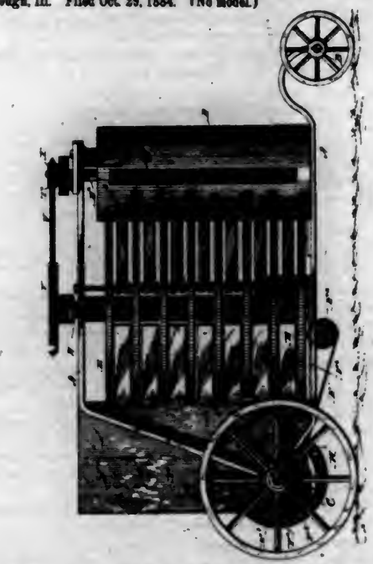
326,141. MACHINE FOR INSERTING RIVETS IN KNIFE-HANDLES. WILLIAM A. C. OAKS, Antrim, N. H., assignor to the Goodell Company, Antrim, N. H. Filed July 17, 1885. (No model.)

Claim.—A rivet-sticking machine consisting of the combination of one or more magazines for containing a supply of rivets and two reciprocating carriages, one provided with loose pins upon which the pieces into which the rivets are to be inserted are placed, by means of previously bored holes, and a second set of loose bars or wires to support the article in which the rivets have been inserted, the other carriage having two fixed pushing-pins of the same diameter as the rivets and placed in one right line with the lowest rivet of the magazine and the supporting-pins previously mentioned, the whole operated by link-motion and treadles or other suitable devices, all substantially as shown and described.

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326,142. COTTON-HARVESTER. E. FRANK O'HAVER, Murphysborough, Ill. Filed Oct. 29, 1884. (No model.)



Claim.—1. A gathering-reel for a cotton-harvester, comprising arms provided with teeth and ribs, alternately arranged side by side on said arms, substantially as specified.

2. A gathering-reel for a cotton-harvester, comprising arms having alternately-arranged parallel ribs and teeth upon their upper and their lower surfaces, and across the same, substantially as specified.

3. A gathering-reel for a cotton-harvester, comprising arms having alternately-arranged parallel teeth and ribs, and a strengthening hoop or rim, substantially as specified.

4. A tooth for a cotton-harvester having the outline or form of a curved cone, and the integral base united to said tooth by curved surfaces and perforated for attachment to an arm, substantially as specified.

5. In a cotton-harvester, the combination of a series of teeth and a series of ribs arranged parallel with each other and transversely on horizontally-rotating arms, so that a rib follows a tooth to prevent collecting fibers delivered from a preceding tooth, substantially as specified.

6. In a cotton-harvester, the combination of a vertical fan having independent separated discharge-spouts, with a series of gathering-arms arranged and rotated between the spouts, substantially as specified.

7. In a cotton-harvester, the combination of a vertical fan having a series of independent discharge-spouts, a series of gathering-arms arranged to rotate between the spouts, and intermediately-arranged rotating brushes, substantially as specified.

8. In a cotton-harvester, the combination of a vertical fan having a series of independent discharge-spouts, a series of gathering-arms arranged to rotate between the spouts, and a receiver, substantially as specified.

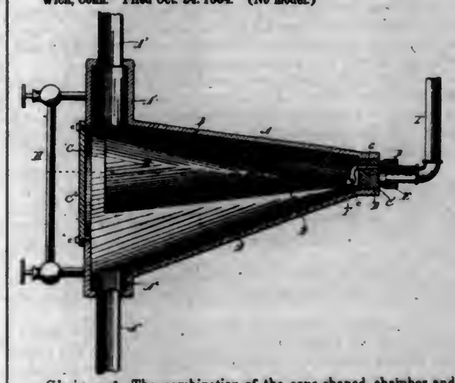
9. In a cotton-harvester, a vertical fan having a series of independent discharge-spouts, a series of gathering-arms arranged to rotate between the spouts, and a series of rotary brushes arranged between the arms and adapted to rotate at a greater speed than the disks, substantially as specified.

10. The combination of a suitable frame-work, A, a fan, a cylinder or air-chamber having independent discharge-spouts D^4, and a series of gathering-arms arranged to project outwardly from the frame-work, and a receiver, F, substantially as shown and described.

11. The combination of the frame A, axles B and C, provided with suitable ground-wheels, and gears F^4 F^3, the endless belt F^5, the roll F^2, the plate F^1, and the receiver F, substantially as shown and described.

12. The combination of the frame A, axle C, master-gear H, the horizontal shaft J, the vertical shafts N and Q, the gears Q', R, and S, fan-shaft D^3 gathering-shaft W, sprocket-wheels T V, and chain U, substantially as shown and described.

326,143. AUTOMATIC BOILER-FEEDER. WILLIAM H. PAGE, Norwich, Conn. Filed Oct. 24, 1884. (No model.)

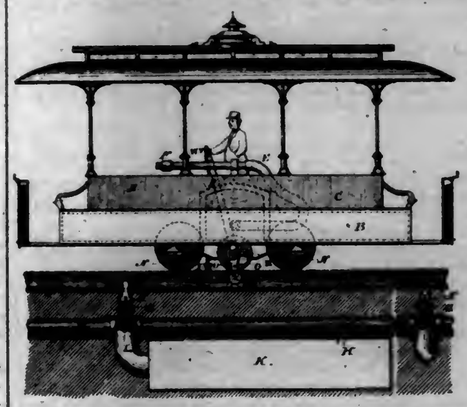


Claim.—1. The combination of the cone-shaped chamber and a cone-shaped float with an outwardly-removable plug to which said float is hinged, whereby the pivotal connection between the plug and float can be exposed, substantially as shown and described.

2. The combination of the water-chamber and float with an outwardly-removable plug having an inlet-aperture to which said float is hinged, as and for the purpose set forth.

3. The combination, with the cone-shaped chamber having supplemental chambers communicating with the steam and the water pipes, said conical chamber having openings in opposite ends thereof, the larger end having a gage and the smaller end an outwardly-removable plug to which the float is hinged and to which the water-pipe is connected, as and for the purpose set forth.

326,144. MEANS FOR PROPELLING RAILWAY-CARS. GEORGE PARDY, San Francisco, Cal. Filed June 5, 1884. (No model.)



Claim.—1. In pneumatic railways, the combination of a storage and supply conduit provided with numerous valved outlets contiguous to the track, and means for connecting said outlets with the receivers on the motor, substantially as described, whereby the receiver may be replenished with compressed air at substantially any point along the route

within the periods of rest occurring when loading or unloading passengers or freight.

2. In pneumatic railroads, the combination, with a storage and supply pipe conveying compressed air along the route contiguous to the track, of valved outlets placed below the track, connected with said pipe and arranged so as to be accessible to refill the receivers on the motor at intermediate points on the route, substantially as and for the purpose herein described.

3. In pneumatic street-railroads, the combination of a storage and supply pipe conveying compressed air along the route contiguous to the track, a series of underground valvular outlets attached thereto, and a flexible pipe-connection with the receivers on the motor arranged so as to be coupled with the valvular outlets, substantially as and for the purpose described.

4. In pneumatic street-railroads, the combination of a storage and supply pipe conveying compressed air along the route, a series of underground valvular outlets therefrom, and suitable mechanism, substantially as described, to connect said outlets with the receivers on the motor without obstructing the street, as and for the purpose described.

5. In pneumatic railroads, in combination with a supply and storage pipe, as described, and a motor having storage-tanks, the flexible connection between the two consisting of the rubber hose and metal nozzle with check-valve therein, as and for the purpose described.

6. In pneumatic railways, the combination of a conduit provided with valved outlets and a pipe for conducting the air from the conduit to a receiver on a motor, the valve in the outlets being adapted to be opened by the act of connecting the pipe with the outlet and closed automatically when the pipe is withdrawn, substantially as described.

7. In pneumatic railways, the combination of a storage and supply conduit provided with valved outlets and a flexible connection for filling the receiver on a motor adapted to be connected to the outlets, both of which being provided with valves which are unseated by the act of attaching or connecting and closed automatically when disconnected, substantially as shown.

8. In pneumatic railways, a low-pressure storing and supply conduit provided with auxiliary storage reservoirs adjacent to the conduit, as set forth.

9. In pneumatic railways, the combination of an air-pipe passing along the route and having valved outlets between the rails, a motor having an air-receiver and an elongated opening in its flooring, and a tubular connection with said receiver adapted to be passed through said opening to connect with said valved outlets in the act of replenishing the motor with air.

10. In pneumatic railways having a supply and storage pipe contiguous thereto, and a motor having an air-storage tank, a tubular valved connection attached to said tank and adapted to be connected with valved outlets on said pipe by an attendant standing upon the motor while said motor is at rest.

11. In pneumatic railways having a supply and storage pipe contiguous thereto, and a motor having an air-storage tank, a tubular connection attached to the tank, having an automatic valve therein, and adapted to be connected with valved outlets on said pipe by an attendant standing upon the motor while said motor is at rest.

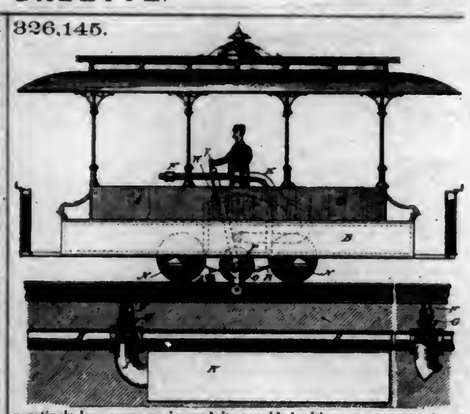
12. In pneumatic railways having a supply and storage pipe contiguous thereto, and a motor having an air-storage tank, a tubular valved connection attached to said tank and adapted to be connected with an automatic valve on said pipe by an attendant standing upon the motor while said motor is at rest.

13. In pneumatic railways having a supply and storage pipe contiguous thereto, and a motor having an air-storage tank, a tubular connection with said tank provided with an automatic valve and adapted to be connected with an automatic valve on said supply-pipe by an attendant standing upon the motor while said motor is at rest.

14. In pneumatic street-surface railways, an air supply and storage pipe passing along the route, having valved outlets therefrom at intermediate points placed below the road-bed, and adapted to permit the ordinary street traffic to pass over them, as shown, in combination with suitable means of connecting said outlets with the receivers on the motor when at rest.

15. In pneumatic railways, the combination of a supply and storage pipe extending from end to end of the route, and having valvular outlets and stop-cocks at intermediate points, with suitable air-compressing machinery supplying said pipe at both ends, as and for the purpose described.

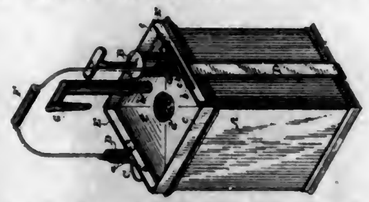
326,145. METHOD OF PROPELLING RAILWAY-CARS. GEORGE PARDY, San Francisco, Cal. Filed Feb. 19, 1885. (No model.)



Claim.—1. In a low-pressure pneumatic-railway system, the method of maintaining the working pressure in a receiver on the motor which consists in frequently replenishing the receiver with compressed air from a conduit at substantially any point along the route while the car is stopped so as to receive or unload passengers or freight, substantially as described.

2. In pneumatic-railway systems, the method of operating motors which consists, first, in conducting and storing compressed air at comparatively low pressures in conduits provided with numerous valved outlets contiguous to the track; second, in replenishing the receivers on the motors at substantially any point along the route with compressed air from said outlets while the car is stopped, (as to load or unload,) and, finally, applying the air to the engine, substantially as described.

326,146. PORTABLE PUMP, &c. REUBARD PHILLIPS, Nacogdoches, Tex. Filed June 12, 1885. (No model.)



Claim.—1. The combination, with the pump, of the tray secured near the upper end of the cylinder thereof, said tray having an opening in its bottom and holding-pins on its under side, substantially as described.

2. The combination, with a vessel, of the band passing beneath the same and extending up the sides and above the edge thereof, grooved or folded strips E to engage the edge of said vessel, and means for securing said strips to the ends of said band, substantially as described.

3. The combination, with a vessel, of the band passing beneath the same and extending up the sides and beyond the edge thereof, the grooved strips E, engaging the edges of the vessel, means for securing the same to the band, and a bail secured to the projecting ends of said band, as set forth.

4. The combination, with the band for extending around a vessel substantially as described, of the grooved or folded strips adapted to engage the upper edge of a vessel, and means for securing said strip to the ends of said band, as set forth.

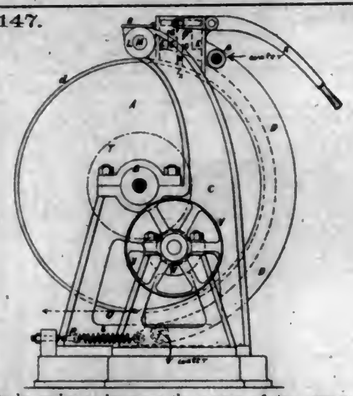
5. The combination, with the band for extending about a vessel as shown, of a folded or grooved strip to engage the edge of a vessel, means for securing said strip to the ends of said band, and a bail connected with the ends of said band, as set forth.

326,147. APPARATUS FOR CASTING STEEL AND OTHER METAL BARS, RODS, &c. CARL M. PIELSTICKER, London, County of Middlesex, England, and FRIEDRICH C. G. MÖLLER, Brandenburg-on-the-Havel, Prussia, Germany. Filed Nov. 28, 1884. (No model.) Patented in England Oct. 28, 1884, No. 14,252; in France Dec. 2, 1884, No. 165,715, and in Germany Dec. 12, 1884, No. 32,127.

Claim.—1. An apparatus for the continuous production of rods, bars, or wire direct from the molten metal, consisting, essentially, of a hollow drum or cylinder formed with a groove in its periphery and having connections for constantly supplying water to its interior, and a hollow segment provided with a constant water-supply and pivotally supported in contact with the periphery of the drum or cylinder, the face of the segment closing the groove in the cylinder, and means for increasing or decreasing the pressure of the segment against the drum, substantially as set forth.

2. An apparatus for the continuous production of rods, bars, or wire direct from the molten metal, consisting, essentially, of a hollow drum or cylinder formed with a groove in its periphery and having connections for constantly supplying water to its interior, and a grooved segment also hollow and provided with a constant water-supply and pivotally supported in contact with the periphery of the drum or cylinder, the groove in the segment registering with the groove in the cylinder, and

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means for increasing or decreasing the pressure of the segment against the drum, substantially as set forth.

3. An apparatus for the continuous production of steel and other metal wire, plates, rods, bars, direct from the molten metal, consisting, essentially, in a cooling-tube formed in two parts, the one part movable and consisting of a groove formed in the face or periphery of a hollow drum mounted upon a horizontal hollow axis, the other portion being fixed and consisting of a hollow semicircular segment inclosing and covering a portion of the groove, as set forth.

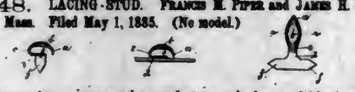
4. In an apparatus for the continuous production of rods, bars, or wires from molten metal, the combination, with a hollow drum or cylinder formed with a groove in its periphery and adapted to be constantly supplied with water, and means for rotating the same, of a segment corresponding to the periphery of said cylinder, means, substantially as described, for varying the pressure of the segment upon the drum or cylinder, and connections whereby the segment may be constantly supplied with water, as set forth.

5. The combination, with the supports C and the drum A, of the segment D, provided with the spindle M and suitable bearings therefor, the tension-spring S, and an adjusting-screw, P, substantially as set forth.

6. The combination, with the supports C and drum A, of the segment D, provided with spindle M, having bearings N, the stop *r*, a tension-spring, and suitable adjusting-screw, substantially as set forth.

7. The combination, with the pivoted segment and a revolving drum or cylinder, of the blocks G G', formed with the channel H, the pivoted lever K, and connections between said lever and the block G', whereby vertical motion can be communicated thereto by said lever, substantially as shown and described.

326,148. LACING-STUD. FRANCIS M. PIPER and JAMES H. REED, Lynn, Mass. Filed May 1, 1885. (No model.)



Claim.—As an improved manufacture, a lacing-stud blank of the form shown, cut from sheet metal, and having the portion designed from the crown of the stud of a convex shape, said crown being provided with downwardly-projecting edges A, and having at one end a beak which will project, when the stud is formed, downward to the level of the plate, and at the other a neck and a plate, *e*, provided with means whereby the finished stud may be secured to the material, substantially as shown and described.

326,149. EVAPORATING-PAN. JOHN F. PORTER, Red Wing, Minn. Filed Dec. 27, 1884. (No model.)

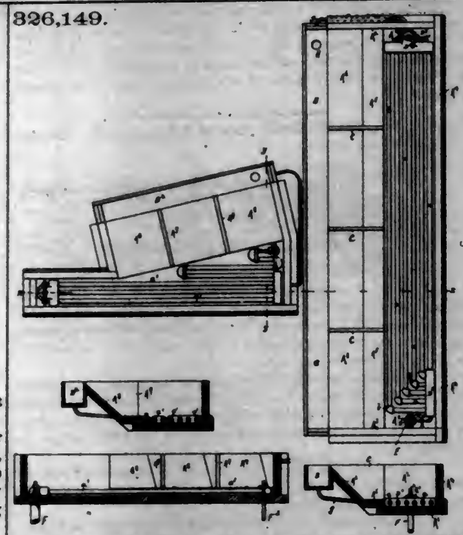
Claim.—1. An evaporating-pan composed of a single compartment having one side inclined outward, and having stop-walls arranged transversely at intervals on said inclined side, but which do not extend across the main portion of the pan, whereby back currents along said inclined side are prevented, substantially as set forth.

2. An evaporating-pan and steam inlet and drip pipes which enter said pan through the bottom thereof, in combination with a removable system of steam-pipes which rest on the bottom of said pan and are removably connected with said inlet and drip pipes, substantially as set forth.

3. An evaporating-pan and a bushing set in the bottom thereof, in combination with a pipe which enters the bottom of said pan and terminates in said bushing, a casting which sets over said bushing, and a swinging yoke which holds said casting in place on said bushing, substantially as set forth.

4. The manifold D', having extension D^3, in combination with the swinging yoke G', which passes over said extension and holds said manifold in place, substantially as set forth.

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5. The manifold D', having extension D^3, in combination with the swinging yoke G', which passes over said extension, and a set-screw, d^3 which passes through said yoke and presses against said extension, substantially as set forth.

6. In an evaporating-pan, a bushing, E', set into the bottom of said pan, and having a steam-pipe, F, fitting into it, a manifold, D', from which pipes *a* lead, and having an extension, D^3, fitting over said bushing, manifold D^3, adapted to receive the opposite ends of said pipes, drip-pipe *c*, connecting said manifold D^3 with a hollow connection, and an outlet, F^2, leading from said hollow connection through the bottom of said pan, substantially as set forth.

7. An evaporating-pan consisting of bottom A', perpendicular side A^4, and ends A^2 A^2, inclined side A^6, raised section A^5, and a system of steam-piping lying in the bottom said pan on a line even with or below the top of said raised extension, and adapted to be supplied with steam through the bottom of said pan, whereby all parts of said piping come below the surface of the sirup in the pan, substantially as set forth.

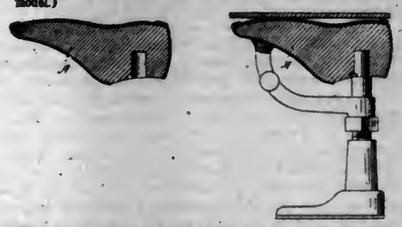
8. In an evaporating apparatus, a finishing-pan composed of a single compartment whereby an unobstructed flow of the sirup from the receiving to the finishing end thereof is permitted, said compartment being of a length greater than its width, and of a width which is less at the finishing than at the receiving end, whereby the sirup as it approaches completion is confined and is thus easily manipulated, substantially as set forth.

9. In an evaporating apparatus, a finishing-pan of decreasing width from the receiving end toward the finishing or discharge end, and having a portion of one side, A^8, inclining outward and provided with transverse stop-walls A^9, substantially as set forth.

10. An evaporating-pan and steam-pipes at the bottom thereof, in combination with triangular filling-strips between and below adjacent steam-pipes, whereby the sirup is confined to the portion of the pan above said pipes, substantially as set forth.

11. An evaporating-pan and a system of removable steam-pipes at the bottom thereof, in combination with a set of removable triangular filling-strips below said steam-pipes, each filling-strip being between adjacent steam-pipes, substantially as set forth.

326,150. METHOD OF ATTACHING SOLES OF BOOTS OR SHOES. FREEBORN F. RAYMOND, 2d, Newton, Mass. Filed July 20, 1885. (No model.)



Claim.—The method of bottoming boots or shoes, consisting in mounting the lasted upper and outsole upon a last or work-support arranged upon a suitable jack, and then pressing the outsole to the form of

the surface of said last or work-support, driving the fastenings or attaching-nails while the sole is thus held by the former or presser to said surface, and without removing the boot or shoe from the jack, and finishing and completing the shape of the outsole by submitting it to the action of a beating-out form or mold, all substantially as and for the purposes described.

326,151. ROLLER-SKATE. CHARLES D. RICE, Corry, Pa. Filed Apr. 4, 1885. (No model.)



Claim.—1. In a roller-skate, the combination of the truck-bearing A', having a central oil-chamber. A^4, and pillars A^3, and the truck B, forming therewith a disk-bearing, *b*, the slotted arm B', and transverse pin *b'*, with the foot-plate A, spring C, and parallel rod D, substantially as and for the purpose described.

2. In a roller-skate, the combination of the casting A', provided with pillars A^3 and screw-threaded perforation A^2, and the oil-chamber A^4, with the casting B, provided with a slotted arm, B', rivet *b'*, journal-bearings B^3, and oil-channel b^2, substantially as and for the purpose described.

3. In a roller-skate, the metal spring C, in combination with the rod D, clamp D^2, and casting B, provided with slotted arm, substantially as and for the purpose described.

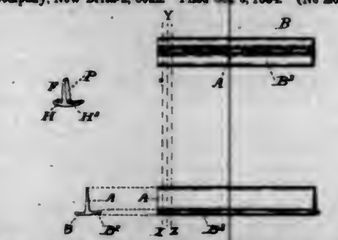
4. In a roller-skate, the rod D, provided with upwardly-bent screw-threaded ends D', and shoulders D^2 thereon, and the clamping device D^3, in combination with the spring C, the two castings A' and B, roller-spindle F, and foot-plate, substantially as and for the purpose described.

5. In a roller-skate, the combination of the four clamps E, provided with upright ends *e*, links E' and E^2, provided with perforations e^4, and lever E^3, provided with eccentric stud-pin e^4, substantially as and for the purpose described.

6. In a roller-skate, the clamp E, metal links E' and E^2, and lever E^3, in combination with the foot-plate A. castings A', having pillars A^3, trucks B, and rollers, substantially as and for the purpose described.

7. In a roller-skate, the foot-plate A, provided with perforations *a* at both ends thereof, in combination with the castings A' and trucks B, provided with oil-channels A^4 and b^2, substantially as and for the purpose described.

326,152. STOCK FOR MAKING BUTTON-FASTENERS. FRANCIS H. RICHARDS, Springfield, Mass., assignor to the American Button Fastener Company, New Britain, Conn. Filed Oct. 6, 1884. (No model.)



Claim.—1. As an improved article of manufacture, the improved button-fastener stock herein described, it consisting of a head, B B^3, Fig. 3, concaved to correspond with the curved head of a fastener, and the web A, tapered from near said head toward the point thereof, substantially as shown and described.

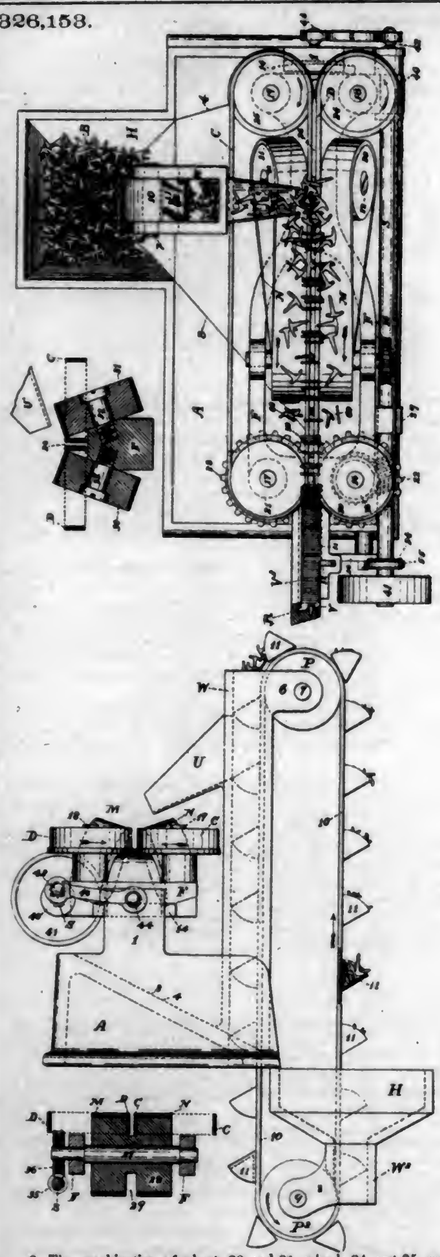
2. As an improved article of manufacture, the improved button-fastener stock herein described, it consisting of a head, B B^3, Fig. 3, corresponding to the head of a fastener, and the web A, corresponding to the prong of a fastener, said prong being soft and said head being harder than said prong, substantially as and for the purpose set forth.

326,153. BUTTON-FASTENER-FEEDING MACHINE. FRANCIS H. RICHARDS, Springfield, Mass., assignor to the American Button Fastener Company, New Britain, Conn. Filed Dec. 26, 1884. (No model.)

Claim.—1. In a button-fastener-feeding machine, the combination of carrier-belts C and D, having between their faces or broad sides a channel for receiving the prongs of button-fasteners, mechanism, substantially as described, for carrying said belts, and a magazine forming a continuation of said channel, substantially as set forth.

2. The combination of two carrier-belts forming the walls of a channel for receiving the prongs of button-fasteners, the traveling fastener-supporting aprons adjoining said channel-walls, and mechanism, substantially as described, for carrying said belts and aprons, substantially as described.

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3. The combination of wheels 20 and 21, wheels 24 and 25, carrier-belts C D, drum 28, wheels 30 and 31, set obliquely, as described, aprons M N, and means, substantially as described, for operating said parts, substantially as set forth.

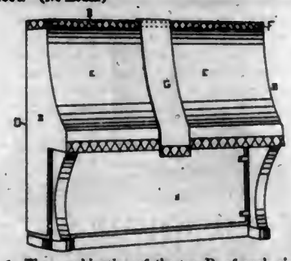
4. The combination of the carrier-belts and the endless aprons, mechanism for supporting and operating said belts and aprons, a magazine for receiving button-fasteners from said carrier-belts, and means, substantially as described, for supplying said fasteners to said aprons, substantially as set forth.

5. In a button-fastener-feeding machine, the combination, with a suitable base, and with a fastener-receiving magazine fixed thereon, of a frame pivoted to said base near the end of said magazine, and adapted to carry a fastener-feeding mechanism, a fastener-feeding mechanism, substantially as described, carried on said frame, and means, substantially as described, for operating said mechanism, and for imparting a

laterally-reciprocating movement to the unpivoted end of said frame, all substantially as described, and for the purpose specified.

6. The combination of magazine R, finger 52, and mechanism, substantially as described, for operating said finger, substantially as set forth, and for the purpose specified.

326,154. PIANO-COVER. SARAH E. REMEY, Chicago, Ill. Filed June 16, 1884. (No model.)

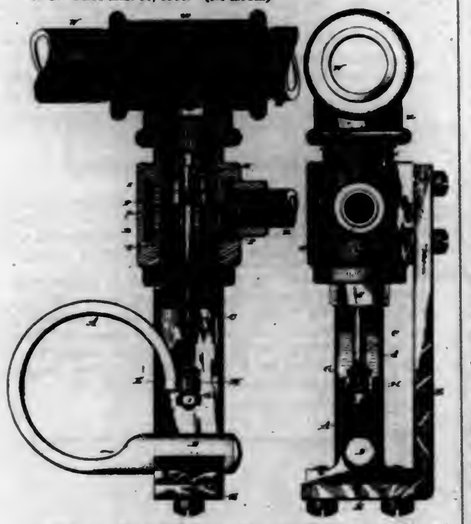


Claim.—1. The combination of the top B, of such size and shape as to conform to the top of the piano, with a back and sides to secure the whole in place, a rod in the forward edge of the top of the cover, and curtains which move laterally on such rod, and when parted in the middle uncover the front of the instrument.

2. A piano-cover having a front rod, curtains thereon, and a sash which covers the line of meeting of the curtains.

3. A piano-cover provided with a rod in the forward edge of its top, curtains hung thereon, a sash to cover the place of meeting of the curtains, and an apron which covers the front of the instrument under the key-board.

326,155. AUTOMATIC SPRINKLER. ALEXANDER K. RIDER, Walden, N. Y. Filed Mar. 30, 1885. (No model.)



Claim.—1. The combination, with a sprinkler and a water-supply pipe, of a valve located between the sprinkler and supply-pipe, a valve-rod, and a thermostat consisting, essentially, of a flattened metallic tube, curved as shown, and filled or partly filled with an expanding fluid and connected with the valve-rod.

2. The combination, with a sprinkler and a water-supply pipe, of a balanced valve located between the sprinkler and the supply-pipe, a valve-rod, and a bent-tube thermostat connected with the valve-rod for operating the valve, substantially as set forth.

3. The combination, with a sprinkler, a water-supply pipe, and a valve located between the sprinkler and the supply-pipe, of a bent-tube thermostat connected with the valve and having an enlarged reservoir, forming a part of and communicating with the bent tube, whereby an increased movement is obtained for giving rise or fall in temperature, substantially as set forth.

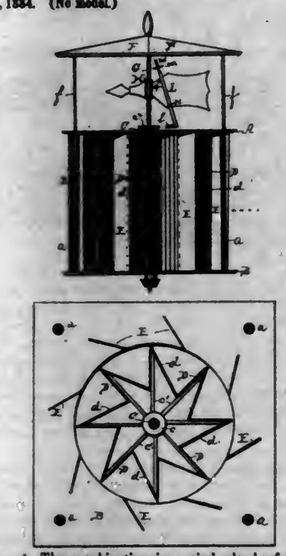
326,156. LUBRICATOR FOR JOURNALS. WILLIAM ROBINSON, Middlesbrough-on-Tees, England. Filed May 11, 1885. (No model.) Patented in England Apr. 29, 1884, No. 6,967, and in Belgium Apr. 27, 1885, No. 68,659.

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Claim.—A lubricator for journals and bearings, consisting of a closed bag composed of porous material—such as canvas—within which a lubricant—such as grease—is inclosed and confined, whereby the action of the moving part against the said bag forces the lubricant through the pores thereof, substantially as described.

326,157. WIND-WHEEL. JOHN S. ROHRER, Lancaster, Pa. Filed Oct. 11, 1884. (No model.)



Claim.—1. The combination, in a wind-wheel, of the blades upon which the wind acts with the guard for preventing the passage of the wind between said blades, substantially as set forth.

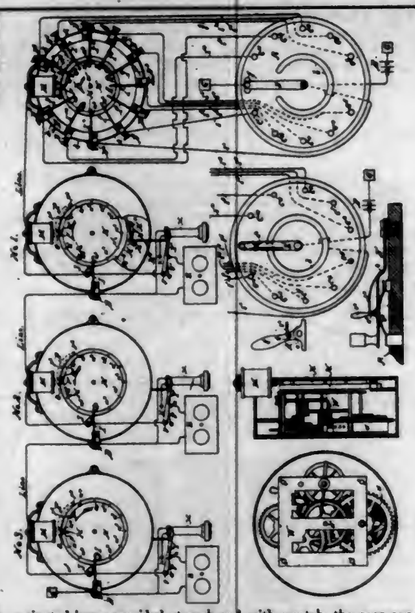
2. The combination, with the pulley a^3 of the shaft C, of the vane-rod G, the vane H, and the lever L, having the blade M, and foot-piece *l*, substantially as herein specified.

326,158. ELECTRIC SIGNALING APPARATUS. FREDERICK G. SARGENT, Westford, Mass. Filed Apr. 8, 1884. (No model.)

Claim.—1. The combination of the disk provided with teeth having inclined faces and with a half-tooth or a tooth having a straight front face and an inclined rear face, a lever pivoted near its middle and provided at each end with a catch, the rear one of said catches having inclined front and rear faces, and the other one of said catches having an inclined front face and a straight rear face, the inclination of said teeth and catches being such as to allow said teeth to slide by said catches and to rock said lever on its pivot when said disk is rotated, clock-work to rotate said disk, an electro-magnet and its armature secured to said lever above the front catch thereof, whereby said disk will be stopped at the end of a complete rotation by said front catch engaging said half-tooth, and will be stopped whenever said armature is attracted by said magnet by said rear catch being held against the front face of one of said teeth, as and for the purpose specified.

2. The combination of the central-office switch-board, provided with metallic contact-spots, one of which is grounded, and with a metallic contact-strip, a battery in electrical connection with the ground and with said strip, a switch-lever adapted to be brought into simultaneous contact with said strip and with any one of said contact-spots, except the one which is grounded, the central-office caller consisting of a metallic disk provided with teeth having inclined faces, and with a tooth having a straight front face and an inclined rear face, and with a metallic pin, clock-work to rotate said disk, a series of metallic contact-springs equal in number to said contact-spots and arranged and adapted successively to be struck and pushed aside by said pin when said disk is rotated, each of said springs being in electrical connection with one of said contact-spots, an electro-magnet in electrical connection with said

326,158.

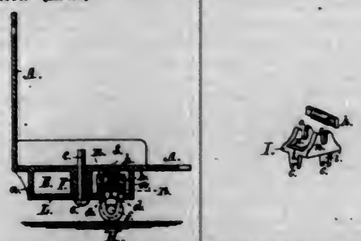


disk, a pivoted lever provided at each end with a catch, the rear one of said catches having inclined front and rear faces, the front catch having an inclined front face and a straight rear face, the inclination of said teeth and catches allowing said teeth to slide by said catches when said disk is rotated, and the armature of said electro-magnet secured to said lever above said front catch, whereby, when said switch-lever is in contact with said strip and any one of said contact-spots, said disk will be caused to rotate until said pin comes in contact with that one of said springs which is electrically connected with such spot, as and for the purpose specified.

3. The combination, with a main-line circuit, of an arbor, a disk secured thereto and provided with a pin, a clock-work to rotate said disk, a shunt for a signal and a receiving telephone, a spring-switch normally closing said shunt and adapted to be struck and pushed aside by said pin once in each rotation of said disk to open said shunt, another disk secured to said arbor and provided with a stop-pin, a stop-lever, a pivoted telephone-supporting switch connected to said stop-lever and adapted, when raised, to throw the free end of said lever in front of said stop-pin, and thereby to arrest the rotation of said disk when said shunt is open, as and for the purpose specified.

4. The combination, with a main line, of a disk provided with a pin, and clock-work to rotate said disk when the line is used, a local battery in a shunt-circuit, a switch normally closing said shunt, but adapted to be moved by hand to open said shunt, another switch adapted to close a shunt around said battery and first-named switch, but normally held open by said pin pressing against it when said disk is at rest and the line is not in use, whereby said local battery is always out of circuit when the line is in use, as and for the purpose specified.

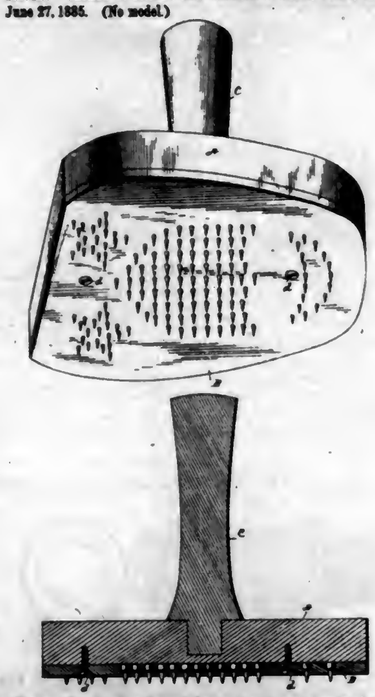
326,159. CASTER. MORRIS SCHWEIM, Newark, N. J. Filed May 12, 1885. (Model.)



Claim.—1. The combination, in a caster, of the plate A and revolving plate L, carrying the two rollers M and H, arranged at right angles to each other at or near the periphery of the plate L by means of the separable frame I and journal-boxes *d d*, substantially as shown and described.

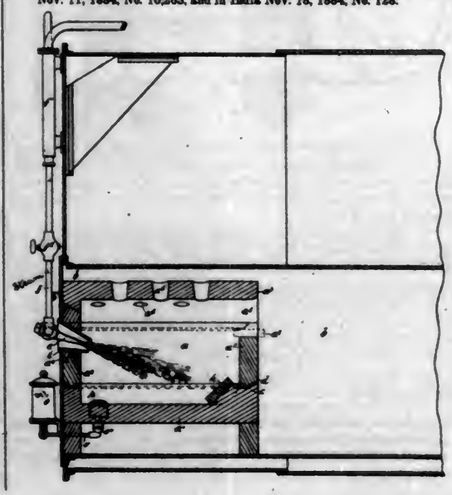
2. The combination, in a caster, of the flanged plate A and the revolving plate L, carrying the two rollers M and H, arranged at right angles to each other at or near the periphery of the plate L by means of the separable frame I and journal-boxes *d d*, substantially as shown and described.

326,160. TOOL FOR PIERCING HOLES IN SOLES OF BOOTS OR SHOES. GEORGE F. BEAVER AND CHARLES G. MORK, Joliet, Ill. Filed June 27, 1885. (No model.)



Claim.—In a tool, substantially as shown and described, the combination, with the block having the outline of a sole or heel, of a similar-shaped block provided with awls having the cylindrical heads *a*, shoulders *b*, and the piercing end or point *c*, substantially as set forth.

326,161. FURNACE FOR THE COMBUSTION OF LIQUID FUEL. JASPER H. SELWYN, Gloucester Crescent, Hyde Park, County of Middlesex, England. Filed Mar. 29, 1884. (No model.) Patented in England Aug. 24, 1883, No. 4,106, and Jan. 25, 1884, No. 2,160; in France Feb. 22, 1884, No. 160,494; in Belgium Feb. 22, 1884, No. 64,243; in Germany Mar. 1, 1884, No. 30,269; in Italy Mar. 31, 1884, XXXIII, 46; in Austria-Hungary Nov. 11, 1884, No. 10,263, and in India Nov. 18, 1884, No. 128.



Claim.—1. In a furnace for generating heat by combustion of liquid fuel with steam, the combination, with the injector provided with compound nozzles for injecting liquid fuel to the combustion-chamber, of the telescopic pipes or tubes and the inclosing pipes, within which the former have a telescopic action, whereby the said injector is readily moved clear of the opening in the furnace-wall, substantially as and for the purpose specified.

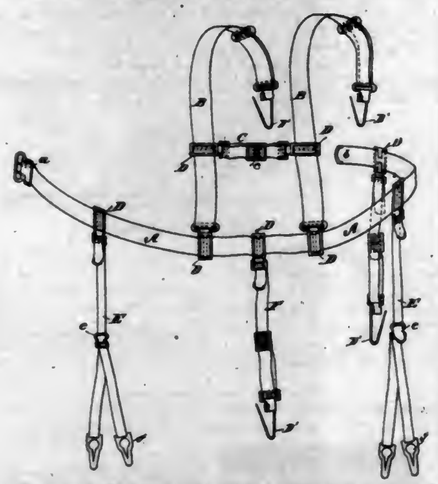
2. In a furnace for generating heat by combustion of liquid fuels with steam, in combination with the oil-pipe, the injector, the movable part a^4, provided with air-openings, and through which the injector projects, and the plate or plates placed in the said movable part, whereby when the said plate or plates are pulled outward or pushed inward the area of the air-space around the nozzle of the injector is increased or diminished, and the supply of steam and air thereby regulated, substantially as described.

3. A furnace for generating heat by combustion of hydrocarbon oils with steam, provided with a plumbago or graphite plate, brick, or lining placed within said furnace, said furnace being constructed of other refractory substances, in combination with steam and oil jets whereby the steam used to blow in the liquid fuel is decomposed, substantially as and for the purpose described.

4. In a furnace for generating heat by combustion of liquid fuels with steam, provided with the combustion-chamber *a*, in combination with means whereby the air is admitted thereto in the form of an annulus or ring, an adjustable injector for projecting the liquid fuel into said chamber, the dash brick or slab *h*, against which the fuel is projected, the dome-shaped covers *p p*, through which flame issues into the combustion-chamber, the liquid-hydrocarbon reservoirs provided with pipes and valves, casing and air-holes whereby the flame or flames may be maintained in said combustion-chamber, and the opening in the back wall of the combustion-chamber and the series of openings in its top, through which the products of combustion escape, substantially as described.

5. A furnace for generating heat by combustion of liquid fuels, provided with a plumbago or graphite plate, brick, or lining, in combination with a steam-jet, a liquid-fuel injector, a slab or dash-brick against which the liquid fuel is projected, and the means, substantially as described, for regulating the air-space around the injector and for admitting the air to the furnace in the form of an annulus or ring, whereby the steam is decomposed and solid carbon is continuously formed and deposited, as herein set forth.

326,162. GARMENT-SUPPORTER. CHRISTOPHER C. SHELBY, New York, N. Y. Filed May 23, 1885. (No model.)

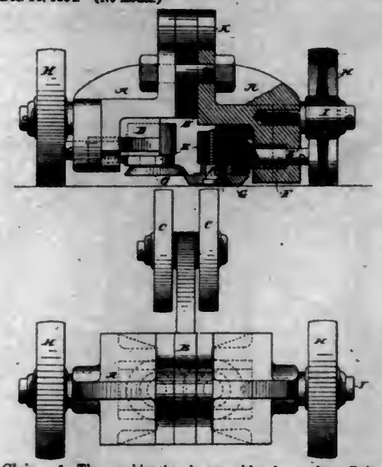


Claim.—1. The belt A, in combination with the brace-straps B and stocking-supporters E, said straps and supporters being secured to the belt by slides, which permit the same to be circumferentially adjusted on the belt, substantially as set forth.

2. The belt A, in combination with the brace-straps B and safety-straps F, both sets of straps being secured to the belt by slides which permit the same to be circumferentially adjusted on the belt, substantially as set forth.

3. The belt A, provided with the brace B C, stocking-supporters E, and safety-straps F, the parts B, C, E, and F being secured to the belt and to each other by devices, substantially as described, which permit their easy adjustment to suit the requirements of the wearer, substantially as set forth.

326,163. ROTARY SHEARS. EDWIN SHEPARD, Staunton, Va. Filed Dec. 16, 1884. (No model.)



Claim.—1. The combination, in a machine for cutting off the seams of sheet-metal roofs or other like surfaces, of revolving cutters mounted in a carrier and arranged to shear the seams, and wheels attached to the carrier, by which the machine can be moved along the seams, as and for the purpose set forth.

2. The combination, in a sheet-metal-cutting machine designed to be moved over a roof or other like sheet-metal surface to remove the seams thereon, of revolving cutters arranged to shear the seams, a carrier for supporting said cutters, which is provided with wheels whereby the machine can be rolled along the surface, and a guide attached to the carrier in front of the cutters, and arranged to engage the seam and direct the machine, as and for the purpose set forth.

3. In combination, in the herein-described machine, the brackets A, the carrier B and guide-wheels C, the wheels H, and the yielding cutters G, as and for the purpose set forth.

326,164. SAW-SWAGE. WALLACE D. SHERMAN, Grand Rapids, Mich. Filed Mar. 30, 1885. (No model.)

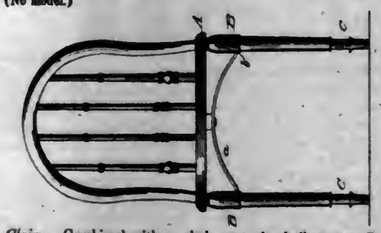


Claim.—1. A hand-swage for saws, consisting of the cam-lever A, yoke B, swage C in pivoted spring-holder C', standard H, anvil D in holder D', and clamp E E, all combined, constructed, and arranged substantially as and for the purpose specified.

2. The combination, with a swage, C, and anvil D, of the two clamp-screws E E, all relatively arranged as shown and described.

3. The combination, with the parts C' D' F, of the standard H, passing up through said parts, having shoulder *h*, and provided with pivot *h'*, as and for the purpose specified.

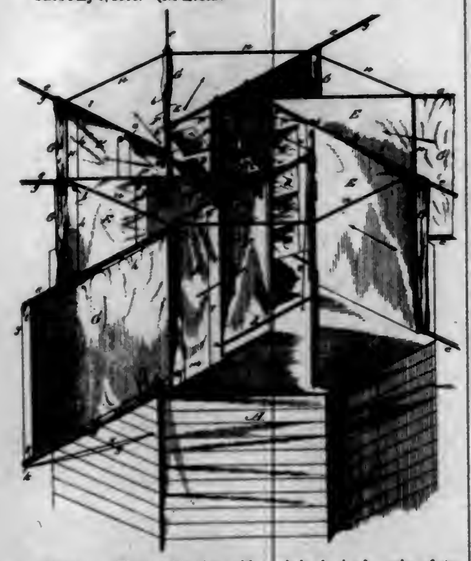
326,165. CHAIR. JOHN SHORT, Columbus, Ohio. Filed July 23, 1883. (No model.)



Claim.—Combined with a chair-seat, the hollow legs B, having the slot *b*, the solid legs C within the said hollow legs, and leaf-springs *a*, one for each pair of legs, secured at the middle to the chair-bottom,

and having their ends extending through the slots *b* and resting on the solid legs, substantially as described.

326,166. WIND-WHEEL. THOMAS J. SIMPSON, Worthington, Minn. Filed July 9, 1885. (No model.)



Claim.—1. The combination, with a wind-wheel, of a series of stationary, vertical, and tangential wind-guides, each provided at its inner end with an adjustable gate, for the purpose of admitting more or less wind to the wheel, substantially as set forth.

2. The combination, with a wind-wheel, of a series of stationary wind-guides, each provided with extensible sails at their outer ends, substantially as and for the purpose specified.

3. The combination, with a wind-wheel, of a series of stationary, vertical, and tangential wind-guides provided at their inner ends with adjustable gates and at their outer ends with extensible sails, for lengthening the wind-guides and contracting the wind-current, substantially as and for the purpose described.

4. A wind-wheel consisting of a vertical shaft provided with radial arms carrying sails, said sails, upon the extremity of each arm, being at right angles to each other and of such length as to overlap when the sails are in the same vertical plane, substantially as and for the purpose set forth.

326,167. GIN-SAW-FILING MACHINE. FRANK M. SISK, Newnan, Ga. Filed Aug. 30, 1884. (No model.)



Claim.—1. In a machine for sharpening saws, the combination of the operating-wheel having its edge waved and provided with a continuous cam-groove in said edge, the levers pivoted at their lower ends, one on each side of the wheel and extended above the same, and provided with pins or studs projected into the cam-groove thereof, the file-bar supports, the file-bars held and movable in the supports, and the arms connecting the file-bars and levers, substantially as set forth.

2. In a machine for sharpening saws, the combination of the operating-wheel having its edge waved and opposite diametrical points of it being swelled in opposite directions, the pivoted levers engaged with said wheel in a diametrically-opposite line, whereby they are reciprocally operated, and the file-bars held movable in suitably supports and connected with and actuated by the levers, substantially as set forth.

3. In a machine for sharpening saws, the combination of the supports pivoted midway their ends to the framing, the file-bars held and movable in said supports, the slotted links held adjustably to the supports, and a spring connecting said links and the necessary operating mechanism, substantially as set forth.

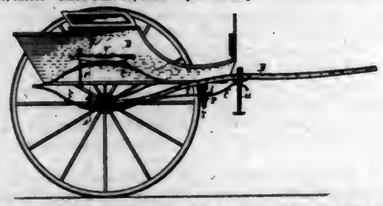
4. The combination of the framing, the bolts E E, having nuts E' E', the brackets F, formed with slots *f* and placed on the bolt E between nuts E' E', the supports G G, pivoted on the brackets F, the file-bars, and the necessary operating mechanism, substantially as set forth.

5. The combination of the shaft C, having cam C' C² and cam-wheel D, the feed-bar K, the supports G G, the file-bars, the levers, the spring L, links M M, and presser or head N, having stem N', all arranged and operating substantially as set forth.

6. The combination, with the pivoted lever and operating means therefor, of the pawl K', having slot K² and opening K³, communicating with slot K², the said pawl being pivoted eccentrically to the extremity of the feed-bar, substantially as set forth.

7. The combination of the wheel D, having cam-groove D', the levers I, provided with pins or studs I', the bars I², the supports, the file-bars, and the connecting-arms J, connecting the file-bars and the bars I², substantially as set forth.

326,168. TWO-WHEELED VEHICLE. HOBART B. SORTOR, Kalamazoo, Mich. Filed Jan. 16, 1885. (No model.)

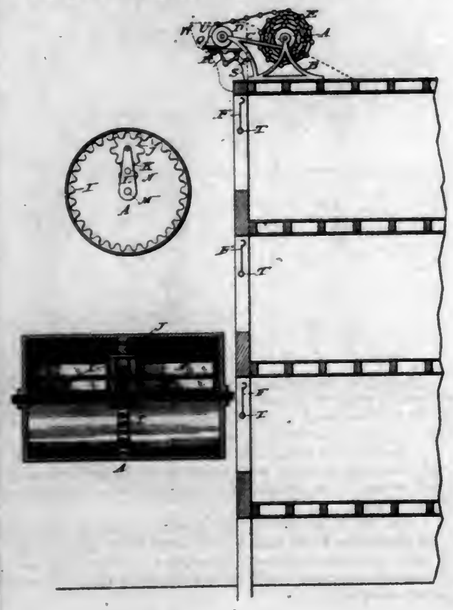


Claim.—1. The combination, with the body, axle, and thills having the spring-supporting loops, of elliptical side springs, the lower part being severed and the rear half thereof extended forward through said loops, substantially as set forth.

2. The combination of the body, axle, thills having spring-supporting loops, elliptical side springs, the lower part severed, the forward half thereof secured on top of the axle, the lower half secured on under side of axle and extended forward through said loops, and the brace-blocks having the end recesses, substantially as set forth.

3. A vehicle-spring consisting of the upper and lower ellipse, the latter being substantially centrally severed, and the rear half thereof provided with the forward extension, substantially as set forth.

326,169. FIRE-ESCAPE. FREDERIK STEINBACH and HERMAN WRIGHT, New York, N. Y. Filed Jan. 19, 1885. (No model.)



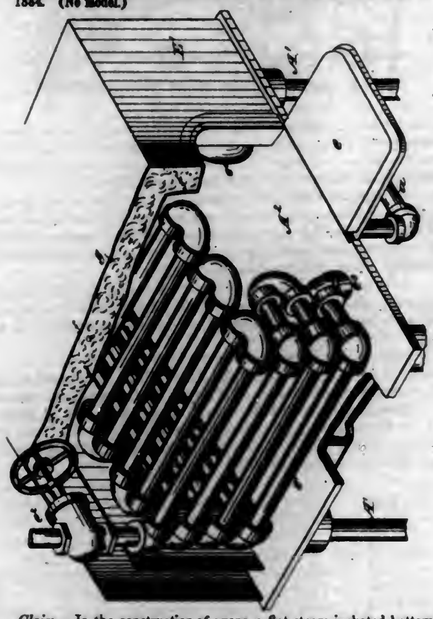
Claim.—1. In combination with the flexible ladder E, a hollow cylindrical drum to revolve around a stationary shaft held in a suitable frame, the said drum being provided inside with a fan or fans supported by the said shaft, as shown, whereby the said fan or fans are revolved by the rotation of the drum by means of suitable gearing, substantially as described, for the purpose of retarding the descent or unreeling of the ladder, as set forth.

2. In combination with the flexible ladder E, a fire-proof flexible rope or cable provided with a fire-proof basket or bag at one end, while the other end is left free for operating the same, the said rope or cable to be supported at or near the top round of the ladder and adapted to be rolled or reeled up with the said ladder, substantially as shown and described, for the purpose set forth.

3. In a fire-escape, the combination of the flexible ladder E with the hollow drum A, provided inside with revolving fans N, all being supported by frame B, provided with overhanging branch C and sustaining-drum D, all as arranged and described, for the purpose set forth.

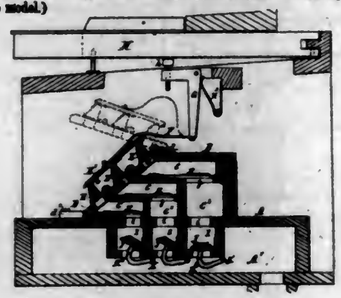
4. In a fire-escape, the combination, with a flexible ladder, E, of auxiliary weight Q and releasing-bar P, operated by bell-crank O, and cord or rod R, all as arranged, for the purpose set forth.

326,170. STEAM-OVEN. THOMAS C. ST. JOHN, Willoughby, Ohio, assignor to the New York Steam Company, of New York. Filed Sept. 27, 1884. (No model.)



Claim.—In the construction of ovens, a flat steam-jacketed bottom, A², and a series of horizontal coils arranged to inclose the top and sides, with the steam introduced through the valve e^3 at the highest point in the coils, and the water of condensation carried with the steam throughout the length of the coils to the steam-jacketed bottom, and thence to the waste-pipe, in combination with an inclosing-jacket, E', packed with non-conducting material *g*, substantially as and for the purposes described.

326,171. ORGAN-ACTION. FRANK STONE, Worcester, Mass., assignor to the Munroe Organ Reed Company, same place. Filed Apr. 1, 1882. (No model.)



Claim.—1. A tube-board for musical instruments, provided with three or more sets of reed-tubes arranged upon each other in overlying rearwardly-offsetting courses, with the air-passages of the overlying sets respectively opening directly into chambers, as C', situated beneath the respective offsets and in rear of the lower courses in the order illustrated, and substantially as set forth.

2. The tube-board B, constructed with several sets of reed-tubes arranged in courses above and offsetting each other, with air-passages *b* and chambers *c'*, disposed in the order shown, in combination with a series of mutes or shutters, as J, arranged in auxiliary chambers, as I, beneath the respective courses, for isolating or independently stopping off the several sets of reeds, substantially in the manner shown and described.

3. The combination, as described, of the tube-board B, having three or more courses of reed-cells arranged in overlying offsetting order, with inclined front, the removable seat-plate J, having air-passages *a* leading into the several cells, the valves E for closing said passages, and means for detachably confining said plate firmly upon the face of the tube-board, as shown, for the purposes set forth.

4. The combination, with the reed-board and sounding devices, of the auxiliary chambers I, depending from the sound-board beneath the air-ducts from the respective sets of reeds, the upwardly-opening mutes or shutters J, arranged within said chambers, and means for operating said shutters, substantially as shown and described.

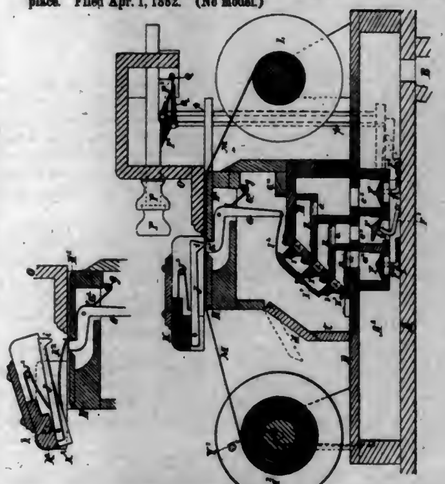
5. The combination, with the mutes or shutters arranged within the close chambers I for opening upward, in the manner set forth, of the cranked rocking wires K, arranged along the exterior of said chambers within the wind-chest, and having their ends turned at an angle and bent upward, as at K', for action against said shutter, in the manner shown and described.

6. In combination, substantially as described, the tube-board B, having the inclined face and provided with three or more courses of reed-cells and reeds disposed in the relative order indicated, the valve-seat piece D, with series of air-ducts *a* formed therein, detachably secured to the face of said tube-board, the valves E, hinged to said seat-piece and connected in series of three or more to the bars E', the flexible attachment F, and actuating-lever G, substantially as and for the purposes set forth.

7. The combination, with an organ-action having keys H, reeds S, and valves N, of the tube-board B, having overlying series of reed-cells C, with reeds R and air-chambers C', externally-arranged valves E, and inside mutes or shutters, J, substantially as shown, the pitmen M, having flanges *m m'*, the levers G, and the flexible connecting-straps F, as and for the purposes set forth.

8. The combination, with the valves E, flexible connections F, and operating-levers G, of the movable fulcrum-bar L, for changing said levers in relation to the operators or pitmen and throwing the valves into and out of action, substantially as set forth.

326,172. MECHANICAL MUSICAL INSTRUMENT. FRANK STONE, Worcester, Mass., assignor to the Munroe Organ Reed Company, same place. Filed Apr. 1, 1882. (No model.)



Claim.—1. In a mechanical musical instrument, the combination, with the winding spool or roll, of a flexible apron or connecting-strip permanently attached thereto and adapted to extend through the raceway to a convenient position for attachment to the music-sheet at the front of the instrument, substantially as hereinbefore set forth.

2. The combination, with the music-rack H, of the finger-rail K, for supporting the fingers J, and springs J', pivoted or hinged, as at *k*, for swinging action, and provided with springs K^2, for elevating its fingers from the music-sheet, for the purpose set forth.

3. The combination of the series of tipping-valves I, connected to the bar I', the flexible strap I^2, the angle-levers G, and the fingers J, provided with actuating-springs J', arranged for action in connection with the music-sheet, substantially as and for the purposes set forth.

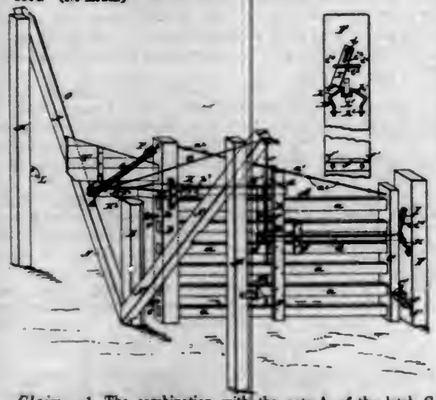
4. In a mechanical musical instrument, the combination, as shown and described, of the race-bar H, containing the angle-levers G, with exposed heads G', the finger-rail K, supported above the race and containing the actuating-springs J', and vibrating fingers J, with triangular heads *i*, for engaging said angle-levers, and the stop or cushion-rail G^4 at the back of said levers, said parts being organized and arranged for operation in connection with a traveling perforated sheet substantially as set forth.

5. The combination, with the music-race H, the tube-board E with reeds R, and the removable valve-seat piece E', of the hinged swell S and removable strip *t* beneath said swell, whereby ready access to the reeds is obtained from the front of the instrument, as shown and described.

6. In a mechanical musical instrument, the combination of the tube-board E, having reeds R, arranged as shown, the subjacent chambers *e'* with mute valves F, the rocker-wires F', levers P^2, pitmen *p*, rockers Q, and pulls P with the music-sheet, winding-spools, and valve-operating mechanism, substantially as herein shown and described.

7. The combination, with the music-sheet M, its spool M', and its supporting-bearings Y, of the gear-pinion M^2, mounted on a socketed stud, *m'*, the spool-journal *r*, fitted and locked thereto by lug *n* and recess *n'*, and the adjustable guard-piece Y^2 and spring-latch Y', for the purposes set forth.

326,173. GATE. WILLIAM G. STOKE, Ellisville, Ill. Filed May 21, 1884. (No model.)



Claim.—1. The combination, with the gate A, of the latch G, pivoted at *g*, the lever K, pivoted to the rear upright, B, at *k* and connected to the inner end of the latch G by a link, J, said lever K being weighted at the back end so as to depress the outer or acting end of the latch G, and the cords O, fastened to the lever K at *o* and leading over pulleys or guides P on the upright B, pulleys Q on the outer end of the lever K, and pulleys *n*, hung on posts at the sides of the roadway, substantially as shown and described.

2. The combination, with the pivoted latch G, the lever K, pivoted near the center of its length to the rear upright of the gate and connected to the latch, and the operating-cords O, of the arms S, having vertical portions *s* projecting laterally from the rear end of said lever, substantially as herein shown and described, whereby the said arms will be acted upon by the cords in operating the gate to depress the forward end of said lever and thereby raise the latch, as set forth.

3. The latch-operating lever K, made with a wooden end bar, K', and a weighted end, K^3, formed of metal bars *k'*, secured together at their outer ends, branched outward and along opposite sides of the rear upright, B, and secured at k^3 to the end bar, K', in combination with the gate A, the latch G, and the operating-cords, substantially as shown and described.

326,174. ART OF MANUFACTURING SHOW-CARDS. JAMES THOMSON, Brooklyn, N. Y. Filed Mar. 17, 1885. (No model.)

Claim.—In the manufacture of show-cards and analogous objects, the process herein described, which consists in enameling cardboard, printing in flock on such surface, as herein described, and finally embossing the white characters so produced, for the purpose set forth.

326,174.



326,175. BOLTING-CHEST. REUBEN M. TRUE, Cincinnati, Ohio. Filed Sept. 5, 1884. (No model.)

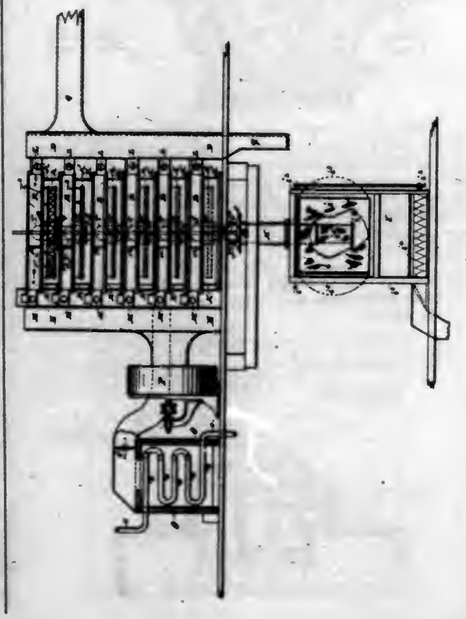


Claim.—1. The combination of the bolting-chest frame, the conveyer-shaft, the driving-shaft, the counter-shaft, and the conveyer-box extending beyond the frame to form a support for the driving-shaft and counter-shaft, substantially as and for the purpose specified.

2. The combination of the bolting-chest, the driving-shaft, the conveyer-shaft, the gearing, the conveyer-box extended beyond the bolting-chest, as described, and the heads *d d'*, the whole forming a housing for the gears and a support for the driving-shaft and counter-shaft, substantially as and for the purposes specified.

3. In a bolting-chest, the combination of the bolting-chest, the conveyer-box extending beyond the bolting-chest, and the driving-shaft and accompanying gearing supported by said conveyer, substantially as set forth.

326,176. DUST-COLLECTOR. PIETER VAN GELDER, Sowerby Bridge, County of York, England. Filed Nov. 12, 1882. (No model.) Patented in England Oct. 30, 1883, No. 4,998; in France Nov. 16, 1883, No. 158,591; in Belgium Nov. 17, 1883, No. 63,245; in Italy Nov. 30, 1883, No. 16,122; in Germany Dec. 1, 1883, No. 28,517, and in Austria-Hungary Nov. 7, 1884, No. 12,117 and No. 51,333.



Claim.—1. In a filtering apparatus, the combination of a series of independent filters, a dusty-air supply-trunk and an outlet-trunk and a warm-air trunk, each common to all the filters, valves controlling communication between the dusty-air trunk and the filters, and valves controlling communication between the outlet and warm-air trunks and the filters, substantially as shown and described, whereby any filter of the series may be closed to the dusty-air and outlet trunks and opened to the warm-air trunk.

2. In an air-filtering apparatus, the combination of a filter, an inlet for dusty air, an outlet for purified air, an inlet for warm air, a valve for controlling the dusty-air inlet, and a valve common to the purified-air outlet and warm-air inlet, and adapted to simultaneously open one and close the other.

3. The combination, substantially as described and shown, of casing K, a filter located within said casing, trunk R, provided with inlet and outlet openings at its ends, and with an additional warm-air inlet, m^2, valve L, controlling the main inlet, and valve M, constructed and arranged, substantially as shown and described, to simultaneously open the inlet m^2 and close the outlet or open the outlet and close the inlet m^2.

4. In an air-filtering apparatus, the combination of a series of filtering-chambers, a trunk communicating with a dusty-air supply-spout, and by separate passages with the respective filtering-chambers, valves interposed between said trunk and the respective chambers, a second trunk communicating independently with the respective chambers and serving as an outlet therefor, a third trunk likewise communicating independently with the respective chambers, and with a heating apparatus and independent valves, each common to the second and third trunks, and serving to close the outlet and open the warm-air inlet, or to close the warm-air inlet and open the outlet, substantially as set forth.

5. The combination, with a filtering apparatus, of a hot-air apparatus, air-passages, and valves, substantially as described, by which hot air can be forced through the filter in a contrary direction to that taken by the dusty air when being filtered.

6. The combination of a filter, a dusty-air inlet therefor, an outlet for purified air, air-passages from the inlet to the outlet, a warm-air inlet, a valve controlling the dusty-air inlet, a valve common to and controlling the air-outlet and warm-air inlet, and a connecting device between said valves, adapted to first completely close the dusty-air inlet, then to close the outlet-valve and open the warm-air inlet-valve, substantially as shown and described.

7. The combination of a filter, a dusty-air inlet therefor, an outlet for purified air, a warm-air inlet, a valve for controlling the dusty-air inlet, a valve common to and controlling the air-outlet and warm-air inlet, and a connecting device between said valves, adapted substantially as explained, to first close the dusty-air inlet-valve, then to close the outlet-valve and open the warm-air inlet-valve, next to close the warm-air inlet-valve and open the outlet-valve, and, finally, to open the dusty-air inlet-valve.

8. The combination, substantially as described and shown, of chamber K, filter A, mounted therein, dusty-air trunk D, valve L, controlling communication between trunk D and chamber A, outlet-trunk E, valve M, controlling communication between trunk E and chamber A, connecting-rods d^3 e^3, having a sliding connection with the valves, and means, substantially such as described, for reciprocating said rod.

9. In combination with a series of independent filters, a common air-supply trunk, and a series of jarring or shaking devices, one for each filter, constructed and arranged substantially as shown and described, to come into operation successively, whereby the shaking action is confined to one filter at a time.

10. In combination with a series of filters, A, and supporting-rods therefor, a rotary shaft for each filter, provided with cams to lift the rods and filters, and a driving-chain common to all the shafts, substantially as and for the purpose set forth.

11. The combination, in a filtering apparatus, of a suspended filter, valves, and operating mechanism such as described and shown, a divided shaft carrying cams to lift and drop the filter, a clutch to connect and disconnect the two parts of the shaft, and a worm, a cam-plate rotated by said worm and having two independent cam-grooves and two independent levers, each having a stud working in a groove of said plate, said levers being connected, respectively, with the clutch and with the valve mechanism, substantially as described and shown.

12. In combination with chamber K, filters A and their suspending-rods, levers *d e*, trunks D E, and valves L M, shafts Y Y', cams *b' c'*, and clutches X, carried by said shafts, cam-plate V, provided with two cam-grooves, and levers W *w*, actuated by said cam-plate, and connected, respectively, with the valves and the clutch, all substantially as described, and for the purpose set forth.

13. In combination with a filter, A, the shaking devices consisting of the stationary rods g^{11}, sustaining the upper part of the filter, the vertically-reciprocating rods *d' e'*, carrying the lower part of the filter, and having stops g^5, by which means, when the rods *d' e'* are raised to near their full length, they lift the upper part of the filter and shake it also, substantially as described.

14. A dust-filtering chamber having a rigid frame and loose baggy sides of flexible filtering material, and thereby adapted to be moved and shaken by the intermittent passage of air-currents through it.

15. In combination with a dust-collector provided with means for producing an air-current through the same, and with valves for reversing said current, an outlet-spout, i^2, of flexible cloth, provided with a ring, i^3, at its lower end, substantially as and for the purpose explained.

16. In combination with a series of superimposed filtering-chambers, a discharge-spout at one side common to the several chambers, gravitating valves opening laterally from said chambers into the trough, and curved scrapers, arranged substantially as shown and described, to sweep the floors of the respective chambers and force the material therefrom through the lateral openings.

17. In an air-filter, the combination of the metal rings *a a' a^2 a^3* with the two sets of spokes or bars a^6 a^4, alternating with each other, and the filtering-cloth stretched around one set and secured to the other, and cloth end pieces, as described.

18. In a filter for filtering air, in combination with a cloth surface, metallic electrical conductors in intimate contact with the cloth, by which means the electricity is carried off as formed and prevented from attracting light material.

19. In a filter, the combination, with two flexible filtering-surfaces, of an intermediate perforated cage adapted to prevent the contact of said surfaces and to permit a free passage of air at all times through and between each.

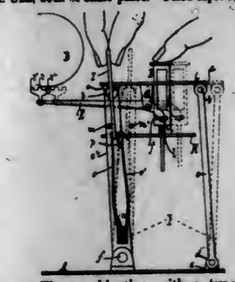
326,177. BARREL-COVER HOLDER. SAMUEL E. VINCENT, Bridgeport, Conn. Filed July 6, 1885. (No model.)



Claim.—1. A band for holding barrel-covers, &c., consisting of a single strand of wire having its ends doubled back upon itself and twisted, the doubled portion being provided at suitable intervals with eyes for nails.

2. A band for holding barrel-covers, &c., consisting of a single strand of wire having its ends doubled back upon itself and twisted, the doubled portion being provided at suitable intervals with eyes E for nails, and the band itself provided with one or more eyes, G, as set forth.

326,178. TYPE-WRITING MACHINE. FRANK X. WAGNER, New York, N. Y., assignor, by direct and mesne assignments, to Stephen T. Smith and Henry H. Uhl, both of same place. Filed Apr. 9, 1885. (No model.)



Claim.—1. The combination, with a type-bar carrying two or more types and a key for actuating it, of a vibratory frame which carries the type-bar, and which can be instantly adjusted to bring either of the types on the type-bar in the line of printing, substantially as shown and described.

2. The combination, with the vibratory frame F, of a series of type-bars, E E', and a series of keys, D D', substantially as shown and described.

3. The combination, with the vibratory frame F, of the key-board C, the keys D D', mounted in the key-board, the hangers G, secured to the key-board, and the type-bars E E', mounted in said hangers, substantially as shown and described.

4. The combination, with the vibratory frame F, the keys D D', and the type-bars E E', of the handle I, the springs *o o'*, the stop *p*, and the stops *m m'*, substantially as shown and described.

326,179. PACKING FOR AXLE-BOXES. ENOCH WAITE, Franklin, Mass. Filed May 23, 1885. (Specimens.)

Claim.—As a new manufacture, a packing for car-axle boxes for supplying the lubricant to the bearings, consisting of pieces of felted fibrous material strung or secured together, substantially as described.

326,179.



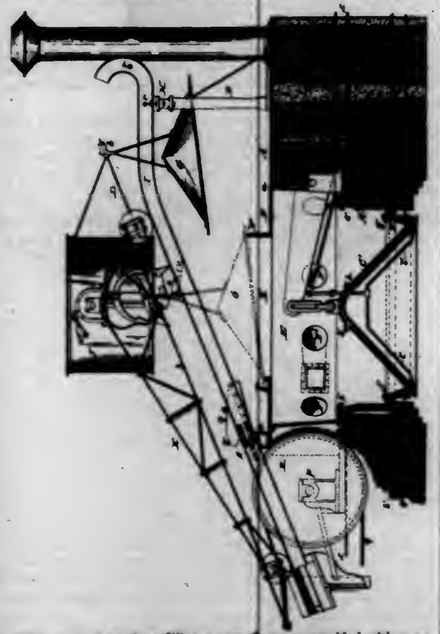
326,180. COMBINED PLANTER, HARROW, AND CULTIVATOR. JAMES M. WALKER, Roopville, Ga. Filed May 14, 1885. (No model.)



Claim.—1. The combination, with a frame, of the hopper, the handles, the rods C, connecting the handles and beams, plates *d*, having outturned slotted ends engaging the rods C and secured to the hopper, the slotted extension *e*, and a bolt and nut extending from bar *e* and engaging the slotted extension, as set forth.

2. The clamp H, consisting of the divided plate *o*, having transverse slots, a plate, *p*, engaging said slots and having vertical openings, and a curved plate, *r*, to which the furrow-opener is attached, said plate *r* engaging the openings of plate *p*, and a set-screw for clamping the parts together, substantially as set forth.

326,181. MEANS FOR FILLING FURNACES. PETER L. WEIMER and HENRY T. EUSTON, Lebanon, Pa. Filed June 3, 1885. (No model.)



Claim.—1. A stock or filling car for furnaces provided with a projecting prow, in combination with a removable sealing-cover of a furnace, substantially as described.

2. A stock or filling car for furnaces provided with a forward-projecting prow and a rearward extension of the frame of the truck, in combination with a track extending across the tunnel-head, a sheath, and a cable, substantially as and for the purpose set forth.

3. The combination of a furnace-stack, provided with a sealing-cover, and a filling-car having a projecting prow adapted to seat and unseat the cover, substantially as described.

4. The combination of a furnace-stack, a sheave or pulley arranged on one side of the stack, and a filling-car provided with a rearwardly-projecting frame of sufficient length to permit the car to be moved over the furnace without exposing the cable to the heat thereof, substantially as described.

5. A stock or filling car for furnaces, provided with a cone and swinging doors in its bottom, in combination with a shoe-piece secured between the rails of the track and adapted to close the doors, substantially as described.

6. A shoe-piece provided with double incline sides and a flat surface, substantially as shown, secured between the rails of the track, in combination with a car provided with swinging doors in its bottom, as and for the purpose described.

7. A stock or filling car for furnaces, provided with swinging doors in its bottom, means, substantially as shown, for opening the doors automatically, in combination with a shoe-piece provided with double inclined surfaces, and a flat surface adapted to close the doors of the car when passing over it.

8. A stock or filling car for furnaces, suspended upon trunnions secured thereto above the vertical center of the car and provided with a notched rack, a pawl, and a retaining-spring, in combination with a furnace-stack and a track crossing the same, substantially as described.

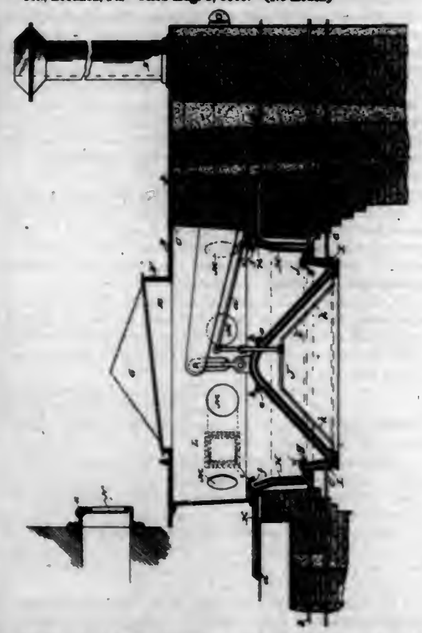
9. A stock or filling car for furnaces suspended upon trunnions secured thereto above the vertical center of the car, a notched rack, a pawl and retaining-spring, in combination with projections secured to the roadway or track and adapted to release the pawl and permit the car to swing, substantially as and for the purpose set forth.

10. The combination of the filling-car, provided with a projecting prow and having an annular opening in the bottom, a furnace having a sealed charging-chamber or hopper, a removable cover, and a charging-bell, substantially as described.

11. A stock or filling car for furnaces, provided with swinging doors in its bottom, spring-actuated latches secured to the sides of the car for supporting and retaining the doors, a T-lever pivoted between the latches, in combination with a stop secured to the track, and a furnace-stack, substantially as described.

12. The combination of a furnace-stack, a track crossing the same above the tunnel-head and provided with hinged rails, and a horizontal support for said rails whereby they are adapted to be moved laterally, substantially as and for the purpose set forth.

326,182. BLAST-FURNACE. PETER L. WEIMER and HENRY T. EUSTON, Lebanon, Pa. Filed Aug. 3, 1885. (No model.)



Claim.—1. A furnace-hopper provided with double walls, a cooling-chamber formed integral therewith and extending throughout the entire hopper, and suitable supply and discharge openings, substantially as described.

2. A furnace-hopper having a chamber formed in the casting between its inner and outer walls, a supply-opening, and a discharge-opening adapted to conduct a cooling medium to the inside of the hopper, substantially as described.

3. A furnace-hopper having a cooling-chamber between its walls, a suitable supply and a discharge opening provided with a protecting-hood, substantially as described.

4. A hollow furnace-hopper provided with means, substantially as described, for admitting a cooling medium thereto and discharging it over the inner surface of the wall of the hopper.

5. A furnace-hopper provided with double walls, a cooling-chamber formed between said walls, a supply-opening to admit a cooling medium, and a discharge-opening provided with a deflecting plate or hood adapted to direct said cooling medium over the inner surface of the wall of the hopper, substantially as described.

6. A furnace-hopper having double walls and provided with a cooling-chamber formed between said walls, in combination with an air-supply and a draft chimney or stack, whereby air is supplied automatically to cool the hopper, substantially as described.

7. A hollow furnace lip-ring adapted to receive a cooling medium, substantially as described.

8. A hollow furnace lip-ring adapted to receive a cooling medium and to discharge it through the inner wall of said ring, substantially as described.

9. A hollow furnace lip-ring adapted to receive a cooling medium, and provided with means, substantially as shown, to discharge it over the inner surface of its wall, as and for the purpose set forth.

10. A furnace lip-ring having a cooling-chamber formed in the casting and a discharge-opening provided with a hood, substantially as described.

11. A furnace lip-ring having a cooling-chamber formed in the casting, in combination with a suitable supply and discharge opening, substantially as described.

12. A furnace lip-ring provided with a cooling-chamber, in combination with an air-supply and a draft chimney or stack, substantially as described.

13. A furnace charging-bell provided with double walls, a chamber formed between said walls and integral therewith, and suitable supply and discharge openings, substantially as described.

14. A hollow furnace charging-bell provided with means, substantially as shown, for admitting a cooling medium and discharging it over the outer surface of the bell.

15. A furnace charging-bell having a cooling-chamber formed in the casting, and a discharge-opening provided with a hood, substantially as shown.

16. A furnace charging-bell having a cooling-chamber formed in the casting, air-inlets at its base, and an outlet near the apex provided with a hood adapted to direct a cooling medium over the inner surface of the bell, substantially as described.

17. A furnace charging-bell having double walls and provided with a cooling-chamber, in combination with an air supply and a draft chimney or stack, substantially as described.

18. A hollow furnace seat-ring having a cooling-chamber formed in the body thereof, and provided with a suitable air-supply pipe, in combination with a hopper supported by said ring, substantially as described.

19. The combination of a hopper lip-ring and charging-bell provided with chambers adapted to receive a cooling medium, and suitable supply-pipes communicating, respectively, with each chamber, substantially as described.

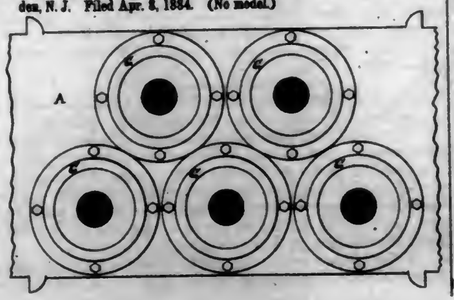
20. A furnace-stack surmounted by a ventilating-chamber provided with air-inlets and communicating with a stack or chimney, substantially as described.

21. A furnace-stack in combination with a ventilating-chamber having a series of passages leading to the atmosphere, and provided with automatic air-supply valves, substantially as described.

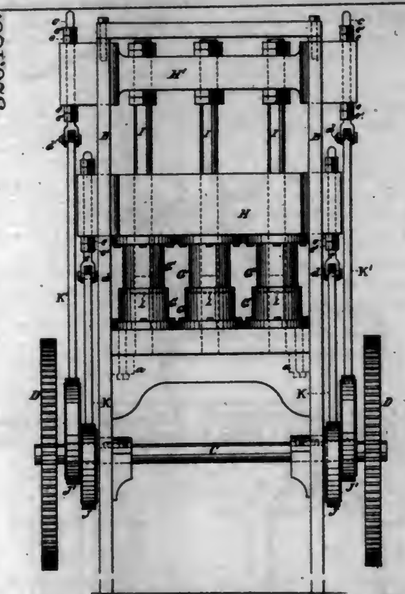
22. The combination of a furnace-hopper and its appurtenances with a ventilating-chamber communicating with the atmosphere, and a chimney or stack, substantially as described.

23. The combination of a hollow hopper, lip-ring, and charging-bell, having cooling-chambers formed therein, suitable air-supply inlets, a ventilating-chamber communicating with the atmosphere, and a draft chimney or stack, substantially as described.

326,183. SHEET-METAL-CUTTING PRESS. WILLIAM WHITE, Camden, N. J. Filed Apr. 8, 1884. (No model.)



326,183.

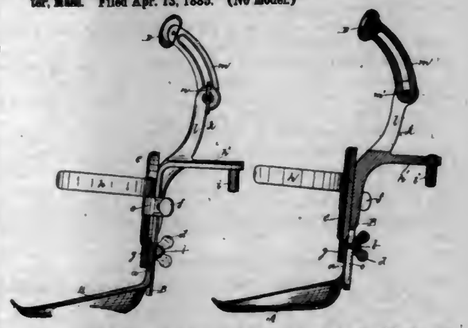


Claim.—1. The combination of the reciprocating beam H', having punches I, with the beam H, having upper dies, G', and die-plate A, provided with lower dies, G, substantially as and for the purpose set forth.

2. The combination of the eccentrics J' J', having rods K', with the shaft C and beam H', for giving reciprocating movements to the punches I, substantially as described.

3. The combination of the eyebolts *c*, having nuts *e* and jam-nuts *e'*, with the beam H', and connecting-rods K and K', as and for the purpose set forth.

326,184. CHILD'S PHOTOGRAPHER'S CHAIR. OTIS C. WHITE, Worcester, Mass. Filed Apr. 13, 1885. (No model.)



Claim.—1. The combination of the seat and back with the two independently-adjustable waist-clasps, as set forth.

2. A chair such as described, consisting of the back B, the seat A, adjustable on said back, the waist-clasps *h h*, also adjustable, and the head-rest D, adjustable, as set forth.

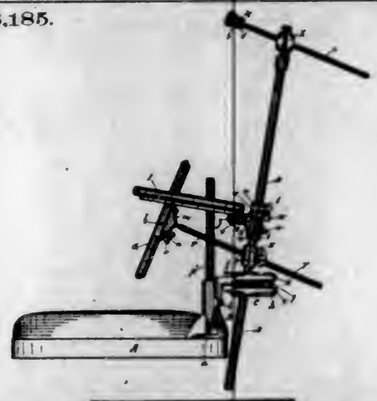
3. A photographer's child-supporting chair, consisting of the back B, having the pivot *i*, the seat A, the independent waist-clasps *h h*, and the head-rest D, all adjustable on said back, as set forth.

326,185. DENTIST'S OR PHOTOGRAPHER'S CHAIR. OTIS C. WHITE, Worcester, Mass. Filed Apr. 20, 1885. (No model.)

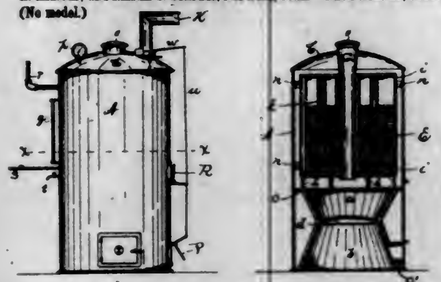
Claim.—1. The ball-clamp C, substantially as described, composed of the two parts *d* and *e*, socketed to receive between them the ball, the screw-nut and its sustaining-cap applied to one of such parts, and the handle provided with the screw to engage with the part *d*, and the said rest, all being essentially as set forth.

2. The combination of the head-rest clamp, having its jaw *b'* provided with the slot *d'*, with the cylinder *e'*, going through the said clamp and connected at its middle to the rod L by being screwed thereon, all being substantially as set forth.

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326,186. STEAM-GENERATOR. M. MATURIN WHITTEMORE, ROUSE H. ARNOLD, and ELISHA S. STAPLES, Norwich, Conn. Filed June 20, 1885. (No model.)

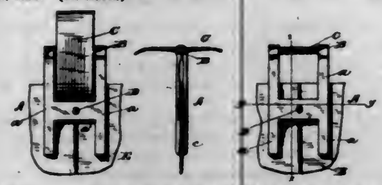


Claim.—1. In a steam-generator of the class herein referred to, the combination of the outer cylindrical shell, A, crown-sheet C, a fire-pot having an integral upper ring concentric with said outer shell and a series of integral legs, *h*, and a boiler-section, substantially as herein described, resting on legs *h*, and located immediately over the fire-pot, as and for the object specified.

2. In combination with case A and a fire-pot having both a ring, *c*, and legs *h*, a boiler-section formed as a cylindrical chamber corrugated longitudinally, and provided with a series of vertical draft-tubes, *k*, and a series of wedges, *n*, so interposed between the boiler and outer shell, A, that an annular fire-space is formed around said boiler, all being arranged substantially as described, and for the objects specified.

3. In combination with the cylindrical case A, a fire-pot having ring *c*, concentric with said case, and a series of upwardly-projecting legs, *h*, a boiler-section of the form described, arranged to rest on said legs *h*, the crown-sheet C, and a coal-chute suspended in said crown-sheet and extending through the center of the boiler-section nearly to the fire-pot, all being substantially as described, and for the object set forth.

326,187. BOOT-STRAP. JOHN M. WILKINSON, Iuka, Miss. Filed Feb. 14, 1885. (No model.)



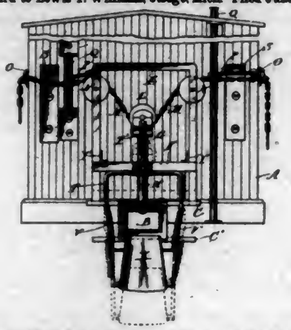
Claim.—1. A metallic strap-plate adapted to be secured to a boot-leg, and provided with a pull plate or bar pivoted thereto, and adapted to be swung into a horizontal position when in use and into a vertical position when not in use, as and for the purpose specified.

2. The combination of a metallic strap adapted to be attached to a boot-leg with a pivoted pull-plate, C, arranged substantially as shown and described.

3. The combination of a metallic strap adapted to be secured to a boot-leg, having corrugated surfaces, with a pivoted pull-piece adapted to be swung into either a horizontal or a vertical position, as and for the purpose specified.

4. The combination, with a pull-piece, of the metallic strap folded upon itself, and having bearings for the trunnions of the pull-piece and corrugated surface, as and for the purpose specified.

326,188. CAR-COUPLING. JOHN G. WILLIAMS, Chicago, Ill., assignor of one-third to Lewis T. Williams, Otsego, Mich. Filed June 8, 1885. (No model.)



Claim.—1. The combination, with the draw-head B, the coupling-pin G, and mechanism for raising such pin, of link T', bent arm T, springs V, arms W, and plates X, as set forth.

2. The combination, with coupling-pin G, chain M, and suitable pulleys for such chain, of arm P, shaft Q or Q', and spring-catch S, as set forth.

3. The combination, with plate F, coupling-pin G, mounted therein, chain M, and suitable pulleys for such chain, of arms P P', shafts Q Q', and spring-catch S, as set forth.

326,189. NON-CONDUCTING COVERING FOR MILK-CANS. THOS. WILLIAMS, New York, N. Y. Filed Feb. 21, 1884. (No model.)



Claim.—1. The combination, with a non-conducting cap for the lid of a milk-can, as felt incased in canvas, of spring hooks or fastenings attached to the sides of said cap for engaging the edge of the lid, substantially as described.

2. A non-conducting covering for the bottom of a milk-can, composed of felt protected by canvas, leather, or similar material, and secured thereto by a suitable spring bearing against the flange of the can, substantially as described.

3. The combination, with a non-conducting cap for the lid of a milk-can, as felt incased in canvas, of metal hooks attached thereto by means of elastic loops secured by rivets, substantially as shown, and for the purpose described.

4. The combination, with a non-conducting covering for the bottom of a milk-can, of a spring or elastic hoop surrounding the edge of said covering, and a transverse strip secured to the covering, having its ends bent or turned to embrace the hoop for holding the same, substantially as described and shown.

326,190. WALL-PAPER. WILLIAM WILSON, Edgewater, N. J. Filed June 27, 1885. (Specimens.)

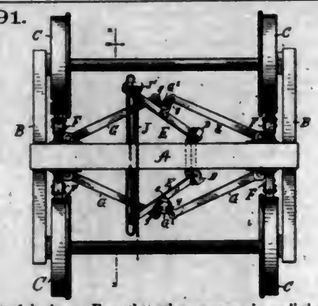
Claim.—As a new article of manufacture, a wall-paper having the back or under surface coated or covered with a composition or material consisting of clay mixed in proper proportions of glue and water, or any other suitable composition or material, as and for the purposes hereinbefore set forth.

326,191. CAR-BRAKE. GILBERT L. ADAMS, Altoona, Pa., assignor of one-third to Alexander S. Herr. Filed Oct. 22, 1884. (No model.)

Claim.—1. The brake-levers G, fulcrumed to the central bolster or spring-beam, A, and arranged to have their shorter arms press the brake-shoes H against the wheels, and their longer arms actuated by primary levers E, which are also fulcrumed to the central bolster or spring-beam, A, and operated by a single chain or cord, J, which is operated so as to draw together the free or moving ends of the primary levers E, substantially as shown and set forth.

2. The levers E and G, respectively fulcrumed to the central beam, A, and the ends of the levers G, coupled by links or clevises G' to the

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central part of the levers E, so that when pressure is applied to the said levers the fulcrum-strains are all pressing against the central beam, A, and with equal force to each side of it, substantially as shown and set forth.

3. The hanger-pieces F, secured to the sides of the beam A near its ends, and constructed to form fulcrum-blocks for the levers G, and also holders or arms for the brake-shoes, with which and with the levers G they are combined, as described and set forth.

326,192. MEANS FOR SUPPLYING WATER. JOHN BAKER, Sedalia, Mo. Filed Apr. 30, 1885. (No model.)

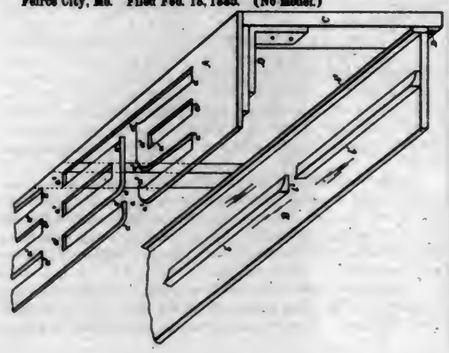


Claim.—1. The combination, with a shaft having a water-reservoir in its lower end, of a casing open at its upper end and water-tight at its lower end and let down into the reservoir, and provided with one or more plugs or inlet-pipes and cut-offs, and pipes connected with said plugs to convey the water to the surface, substantially as described.

2. The combination, with a shaft having a reservoir in its lower end, of a casing water-tight at its lower end, open at its upper end, let down into the reservoir, one or more inlets or plugs tapped into the side of the casing, one or more force-pumps or water-engines arranged at the bottom of the casing and connected with the plugs or inlets, and the necessary pipe or pipes for connecting the force pump or pumps with the pumping-machine at the mouth of the shaft, substantially as set forth.

3. The hereinbefore-described means for securing a water-supply, consisting of a shaft sunk to a water-supplying vein, a casing water-tight at its lower end, and of less dimensions than and let down into the shaft, whereby a water-receiving reservoir is formed between said casing and the wall or side of the shaft, and pipes or plugs tapped into the sides of the casing below the surface of the water in the reservoir, through which water may be drawn, substantially as described.

326,193. COMBINED BROOM AND TOOL RACK. JOHN H. BARBER, Peirce City, Mo. Filed Feb. 18, 1885. (No model.)



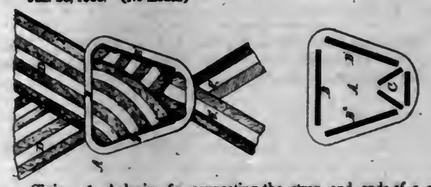
Claim.—1. A rack for holding brooms and tools, composed of a top piece, A, having openings *a* and slots *a'* a^2 a^3 a^4, a bottom piece, B, having a cleat, *b'*, and back piece, b^2, connecting-pieces C, and braces D, all substantially as shown and described.

2. In a rack, the combination of a top piece, A, having openings *a* and slots *a'* a^2, a foot-piece, B, having a cleat, *b'*, and back piece, b^2, connecting-pieces C, and braces D, substantially as and for the purpose set forth.

3. The combination, in a rack, of a top, A, having slots *a'* a^2, opening *a*, rounded corners a^7 a^8 a^9 a^{10}, and sharp inturned corners a^5 a^6 a^{10} a^{10}, foot-piece B, having a back piece, b^2, and a cleat, *b'*, in which is an opening, b^3, connecting-pieces C, and braces D, all substantially as shown and described.

4. A combined broom and tool holder composed of the part A, having openings *a*, and a piece, a^{11}, having openings for tools, foot-piece B, having back piece, b^2, and cleat *b'*, in which is an opening, b^3, connecting-pieces C, and braces D, all substantially as shown and described, for the purpose set forth.

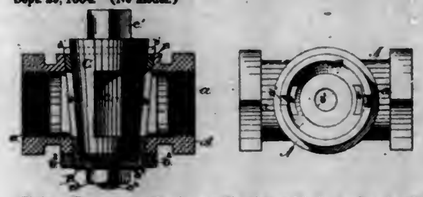
326,194. SUSPENDERS. CHARLES B. BIRD, Sioux City, Iowa. Filed Jan. 28, 1885. (No model.)



Claim.—1. A device for connecting the strap and ends of a suspender, comprising a plate having slots B B' B^2 to receive the strap, and slots C, arranged within or partly within the area of the slots B B' B^2, to receive the end, substantially as described.

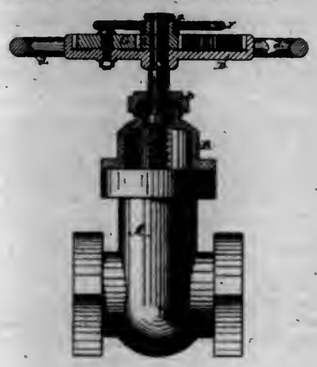
2. The combination, with a suspender, of a slide consisting of a piece of sheet metal, A, in the form of a triangle with rounded corners, and provided with one series of slots, B B' B^2, parallel to its edges, and with another series of slots, C, partly within the contour of the first-mentioned three slots, as shown and described, whereby both the long and short straps of the suspender may be held by one slide in a single piece, and whereby the larger strap will partly cover the small strap to economize space, as set forth.

326,195. TURNING PLUG. JAMES H. BLESSING, Albany, N. Y. Filed Sept. 29, 1884. (No model.)

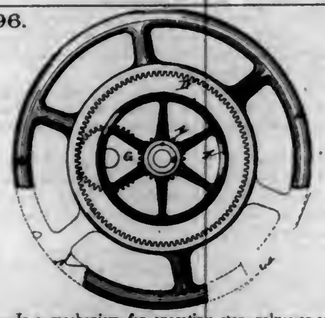


Claim.—In a stop-cock, the combination, with the casing A, of the removable sleeve B, provided with openings *b*, which coincide with the openings of the branches *a*, and the turn-plug C, the said sleeve being fitted into the bore of the casing A and adapted to be rotated therein, so as to entirely close up the openings through the lateral branches *a*, as and for the purpose herein specified.

326,196. MECHANISM FOR OPERATING VALVES. JAMES H. BLESSING, Albany, N. Y. Filed June 30, 1885. (No model.)

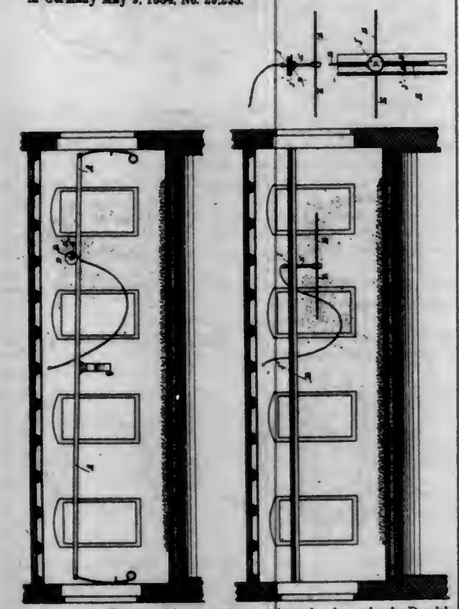


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Claim.—In a mechanism for operating stop valves or cocks, the combination, with a central stem or stud having an internal gear-wheel, D, fixed thereon, of a pinion, E, provided with a hand-wheel, F, or its equivalent, and fitted to rotate on said central stud or stem, and the idler-pinion G, all substantially as herein specified.

326,197. SPRAYING APPARATUS FOR MALT-FLOORS. OSCAR BOTTNER, Leipsic, Germany. Filed Feb. 24, 1885. (No model.) Patented in Germany May 9, 1884, No. 29,293.

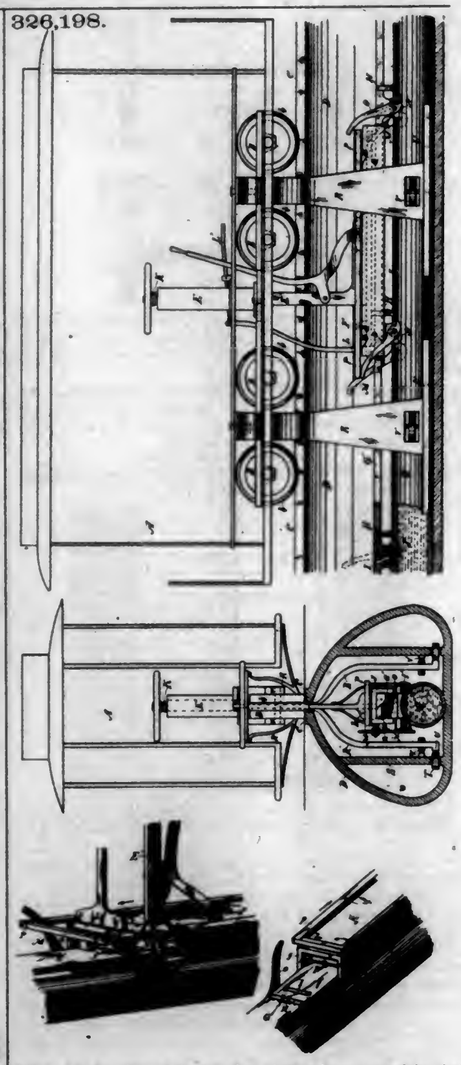


Claim.—1. The combination of a carriage having wheels D with air-tube E and water-tube F, with discharge-nozzles G G', communicating near their discharge-openings, to discharge their contents in the form of a spray, substantially as specified.

2. The combination of rails A with spray-carriage having wheels D, and with tubes E F, that communicate near their nozzle, and with means for propelling the carriage above the floor, substantially as specified.

3. The combination of rail B, having rack J', with spray-carriage having toothed wheel J, and with tubes E F and nozzles G G', substantially as specified.

326,198. HYDRO-MOTOR FOR STREET-RAILWAYS. RICHARD F. BRIDEWELL, San Francisco, Cal. Filed Feb. 15, 1884. (No model.)



Claim.—1. A means for propelling cars, consisting of a water-tube laid in a slotted underground tunnel and having a flattened top plate with ports and vertically-moving abutments at short regular intervals, in combination with a shoe, a casing fitting over the shoe, the sides extending down over the edges of the top plate, an abutment or gate at the front of the casing, and means for moving the gates and opening and closing the ports of the water-pipe as the casing and shoe pass them, substantially as herein described.

2. A means for propelling and stopping cars, consisting of a water-tube laid in a slotted underground tunnel, a plate or shoe fitting the flattened top of the tube, and an exterior casing inclosing the shoe and fitting over the edges of the top plate of the tube, a water-tight abutment extending down through the casing against the top of the tube, and vertically-moving abutments within the tube which may be raised into the casing, and ports through which water may be admitted into the space between the abutments, in combination with a screw or mechanism within the car connected with the plate or shoe, and by which it may be forced down upon the tube to act as a brake, substantially as herein described.

3. The water-tube with flattened upper-surface abutments and ports, as shown, a rectangular casing with sides fitting the edges of the tube-surface and an abutment fitting the interior of the casing and the top of the tube in front, in combination with a plate or shoe within the casing, having a shank extending up into the car-body, and a screw or mechanism by which the plate may be raised or lowered to increase or diminish the area of the space within the casing, substantially as herein described.

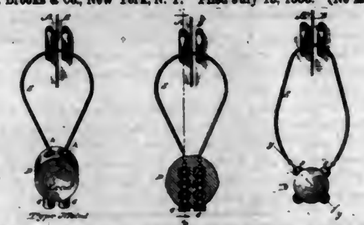
4. The water-tube with flattened upper-surface abutments and ports, as shown, and a rectangular casing, the sides of which inclose and fit the upper part of the tube, in combination with an abutment fitted to the front of the casing and a lever or means by which it may be let down to fit against the top of the tube or raised to open a passage out at the front, substantially as herein described.

5. The water-tube with a flattened upper surface, a rectangular casing, the sides of which inclose and fit the upper part of the tube, and an abutment in the front part of the casing by which it may be closed, in combination with vertically and automatically moving abutments within the tube, levers by which they may be successively raised up to fit the interior of the casing, and a plate, P, connected with the casing, having a lever by which it may be lowered so as to engage the gate-levers or raised above them, substantially as herein described.

6. In a railway, an underground tunnel with an open slot at the top, a water-tube extending along the bottom, with abutments and ports, as shown, a rectangular casing fitting the water-tube, so as to form a chamber within which the pressure of water from the tube may be caused to act continuously by the successive opening of the ports, in combination with a car with wheels journaled to it, so as to travel upon the rails forming the open slot, arms extending downward from the car-body through the slot, rails supported from these arms in close proximity with the sides of the tunnel, and wheels or rollers journaled in the sides, against which the rails travel and by which the car is steadied, substantially as herein described.

7. In a railway, an underground tunnel with an open slot at the top, cars having wheels journaled in line so as to travel upon the rails forming the slot, arms extending down from the car-body into the tunnel and diverging so as to carry short rails which move in contact with rollers journaled in the sides of the tunnel, in combination with rollers journaled upon the arms above the rails, and corresponding rails bent to fit the inside of the curves where such occur and upon which the rollers travel while turning a curve, substantially as herein described.

326,199. SEAL. EDWARD J. BROOKS, East Orange, N. J., assignor to E. J. Brooks & Co., New York, N. Y. Filed July 15, 1885. (No model.)

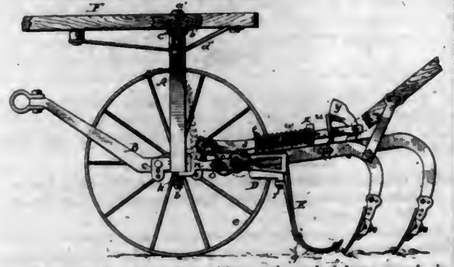


Claim.—1. A flexible metallic shackle provided at each or either of its ends with a non-compressible securer cast fast thereon and constructed with permanent withdrawal-resisting shoulders, in combination with a compressible seal-disk of soft metal, having a threading-hole or threading-holes to admit said securers, substantially as herein specified.

2. The combination, substantially as herein specified, of a flexible metallic shackle having each or either of its ends provided with a non-compressible securer cast fast thereon, and a compressible seal-disk of soft metal, corresponding substantially in diameter or depth with the length of said securers, and having a threading-hole or threading-holes extending through from edge to edge to admit the securers, whereby the upper ends of the securers are effectively sunk below the upper edge of the seal-disk when their lower ends are projected below its lower edge, as set forth.

3. The combination, substantially as herein specified, of a flexible metallic shackle of single wire, having its respective ends indented and provided with non-compressible securers cast fast thereon, and a compressible seal-disk of soft metal, having a pair of threading-holes to admit said securers, for uniting the latter, and therewith the shackle ends, in the manner set forth.

326,200. WHEEL-CULTIVATOR. WILLIAM P. BROWN, Zanesville, Ohio. Filed May 25, 1885. (No model.)



Claim.—1. In a tongueless cultivator, the arched frame or axle, in combination with the wheel-carrying plates united thereto by vertical pivots and provided with inclined surfaces, and the springs applied, as described, to hold the axle in contact therewith, whereby the swinging motion of the wheels is resisted.

2. The axle having divided ends, in combination with the recessed axle-plates seated therein, the vertical pivot-bolts, and the spring applied to contract the axle upon the plates.

3. In a cultivator, an arched frame or axle, in combination with wheel-carrying plates united to its ends by vertical pivots, said plates having front arms to receive the draft devices and rear arms to which laterally-swinging runners or casters are attached, substantially as described and shown, whereby the frame is maintained in an upright position and the wheels and runners permitted to swing horizontally to follow the changing lines of draft.

4. The arched axle and the two wheels applied directly at the respective ends of said axle to carry its entire weight, in combination with plows coupled to said axle, and trailing runners or casters located in rear of the axle and connected thereto through the medium of vertical pivots, whereby the weight of the machine is carried on the main wheels and the runners required only to prevent the axle from tipping backward.

5. The arched axle having its ends carried by two wheels swiveled thereto to turn or swing horizontally, in combination with rearwardly-extending arms arranged to swing with said wheels, and trailing runners or casters united to the rear ends of said arms by vertical pivots, whereby they are caused to maintain the axle in an upright position, but permitted to swing laterally, and thus permit the course of the wheels and draft to be readily changed.

6. In a wheeled cultivator, the runner provided with a removable and reversible shoe, substantially as described.

7. The combination, with a carrying-arm therefor, of a trailing runner consisting of two separate bars bolted or otherwise secured together at their lower ends, their upper ends being bent forward above and below the carrying-arm, respectively, to receive the pivot, as shown.

8. In a tongueless cultivator, the combination, with an arched wheeled frame or axle, the plows jointed thereto, and the spring connection between the plows and frame, of elastic trailing runners extending backward from the axle, substantially as described, whereby the axle is sustained in position and the parts relieved from vibration by the yielding of the runners as they pass over inequalities in the surface of the ground.

9. In combination with the wheeled axle and an arm, B, extending rearward therefrom, the runner-carrying arm D, attached to the first-named arm by a horizontal pivot, and a clamping device, *i*, whereby the runner may be fixed in position.

10. In a tongueless cultivator, the combination, with a carrying-arm, B, of the runner-carrying arm D, formed with a semicircular head and pivoted to arm B, and a clamping device, *i*, for securing the arm D in different positions, whereby the vertical adjustment of the runner with respect to the other parts is permitted.

11. In combination with the wheeled frame or axle, the plows jointed thereto to swing vertically and laterally, and the rod or bar extending longitudinally through guides on the plow-beams and pivoted at the forward end, substantially as described, whereby it is caused to hold the frame from falling forward.

12. The arched wheeled axle, the plate attached thereto by a vertical pivot, and the plow-head attached to the plate by a horizontal pivot, in combination with the rod or bar extended through guides on the plow and attached by a horizontal pivot to the plate, as shown.

13. In combination with the wheeled frame or axle, the plow jointed thereto to rise and fall, the rod extended through a guide on the beam and pivoted at the front to a non-rotating part, and the spring applied to the rod, whereby the spring is caused to exert a lifting action on the plow.

14. In a tongueless cultivator, an arched wheeled frame or axle, in combination with the runners or casters extending rearward therefrom to maintain it in an elevated position, plows jointed to the frame to swing vertically, and a spring-connection between the frame and beam to exert a lifting effect on the plows, whereby the runners are rendered available to prevent the springs from tipping the frame backward and enable them to aid in raising the plows.

15. The axle and the plow jointed thereto to swing vertically, in combination with the lifting-rod *s*, the lifting-spring *w*, and a dog or locking device to hold said rod against end motion when the plow is in an elevated position.

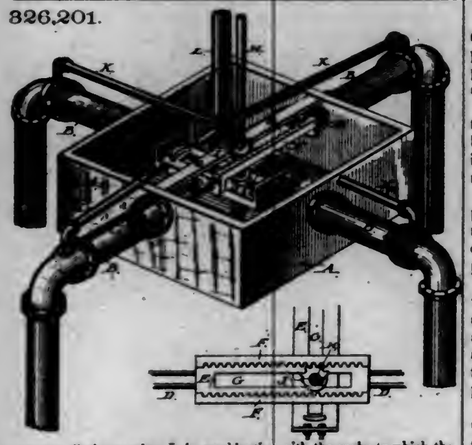
16. The frame or axle and the plow jointed thereto to swing vertically, in combination with the lifting-rod *s*, the spring *w*, and the pivoted dog having the preponderating upper end, substantially as described, whereby the plow is automatically locked when lifted out of action.

17. In combination with the wheeled axle and a plow jointed thereto to swing vertically and laterally, arms Z, extending from the plow in position to engage the axle or equivalent part when the plow is lifted, whereby lateral motion of the plow is prevented when it is in an elevated position.

326,201. PUMP. JOHN P. COBB, College City, Cal. Filed May 4, 1885. (No model.)

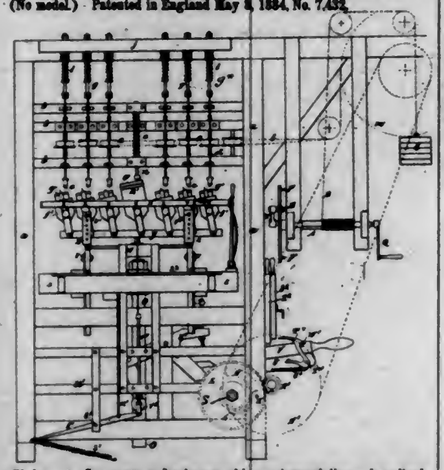
Claim.—In a pump, the central casing having the oppositely-arranged radial pump-cylinders, with the plungers working therein, the piston-rods extending into the casing, and the pipes K, extending from the pump-cylinders at a point beyond the outward limit of the pump-piston to

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a common discharge-pipe, L, in combination with the racks to which the piston-rods are connected, the vertical driving-shaft, and the mutilated gear or pinions secured thereto, said pinions adapted to engage the racks alternately, substantially as set forth.

326,202. BORING-MACHINE. STANISLAS F. COHIN, Villaines-la-Gonais, assignor to Roquet & Cohin, Rouen, France. Filed June 23, 1884. (No model.) Patented in England May 6, 1884, No. 7,432.



Claim.—1. In a pattern-boring machine, substantially as described, the series of boring-spindles *d* and their operating means *e l*, the vertical sliding frame O, for carrying the material up to the boring-bits, and the pivoted frames for holding the material, combined with the regulator-pins *g*, one arranged above and in line with each boring-spindle, and springs *i* for holding the pins *g* into contact with the boring-spindles, as and for the purposes set forth.

2. In combination with a horizontal rail, *b*, of the main frame, and the series of boring-spindles working loosely through said rail, the spring-levers *f*, pivoted on the frame and working under collars upon the spindles to support them, as shown, combined with the corresponding series of regulator-pins, *g*, the springs *i*, and the frames *h*, pivoted at g^2, as shown, and having pivoted fingers *k*, which engage the material to be bored and limit its motion, as herein set forth.

3. The frames *u*, carried by the slide O and pivoted at *v*, and the wood-holding boxes *f'*, yoked together and pivoted so as to rock in a direction at right angles to the motion of the frames *u*, combined with the corresponding boring-spindles, *d*, the pattern-holder *n'*, pivoted to the bar *y* and moving with the wood-holding boxes *f'*, and the guide-pin *n*, and spring *o*, arranged in the frame of the boring-spindles and parallel with said spindles, as and for the purposes set forth.

4. In combination with the pattern-holder *n'* and the wood-holding boxes *f'*, yoked together and pivoted at right angles to the pivots of their supporting-frames *u*, and with a pattern, O', supported in the holder *n'*, and having a connected series of grooves, the guide-pin *n*, its spring *o*, slide O, and means, as described, for automatically operating said slide, as set forth.

5. The pattern O', having connected series of grooves, and inclined surfaces between adjacent holes as shown, the holder *n'* and boxes *f'*, pivoted to the bar *y* so as to move together, combined with the guide-pin *n*, and spring *o*, operating to hold said guide-pin to the pattern, as and for the purposes set forth.

6. The pattern O', having grooves and inclines, as described, and the guide-pin *n*, held down by the constant force of the spring *o*, combined with the sliding carriage O, the flexible pins *r'*, operating loosely in the flexible frame *y'*, and operating through the pattern O', all arranged and adapted to operate as and for the purposes set forth.

7. The sliding carriage O, the frames *u*, carried on said carriage on pivots *v*, and the boxes *f''*, pivoted in said frames so as to rock in a direction at right angles thereto, combined with the yokes *z* and bars *y*, connecting the several boxes, the boring-spindles, the pattern, and guide-pin, as herein specified.

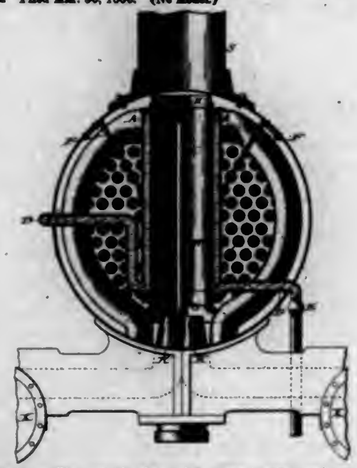
8. The frames *u*, pivoted at *v*, and having a series of holes so as to vary the adjustment, combined with the series of boxes *f''*, two of which are pivoted at *u'* in the frames *u*, the box *n'*, connected to the boxes *f*, and the boxes *f''* with each other in each set by the yoke *z* and bar *y* above and below the pivots, respectively, the bar *a'*, connecting the different sets of frames *u*, the crank-pin E, and connections, as and for the purposes set forth.

9. In combination with the boxes *f''* and their connections, as described, the levers *h'*, pivoted near the bottoms of said boxes at *i'*, and carrying supports h^2, the wood-holding clamps *l*, the diagonal springs *k'*, actuating the clamps, and side clamps, *m'*, secured to the supports h^2, as and for the purposes set forth.

10. In combination with the rocking frames *u z* and link *a'*, the flat windlass A, crank-pin E, cord B, and weight C, and connections *c' d' c' b'* with said link *a'*, whereby a differential force is given as the cord is suspended from an edge nearer to or farther from the axis of motion of the windlass, as set forth.

11. In combination with the sliding carriage O and its wood-holding boxes, as described, the cam-wheel R and its connections with the pulley N', the roller T, mounted on the lever U, the links U' W, connecting said lever with the slide O, the lever V, pivoted to the lever U, and the catch T* for locking the levers U and V together to throw the carriage and power into working connection, as set forth.

326,203. FEED-WATER HEATER. HANNIBAL CUMMINGS, Meadville, Pa. Filed Mar. 30, 1885. (No model.)



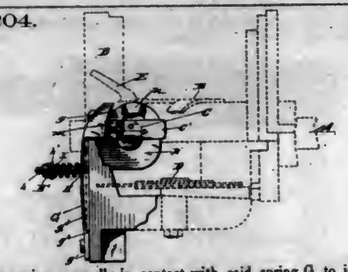
Claim.—The combination, with a smoke-pipe and surrounding water jacket, of a pipe, C, starting near the top and on the inside of said jacket, passing thence down through the smoke-pipe, and connecting with the boiler at N, as and for the purpose specified.

326,204. TWINE-BINDER. WINDSOR S. DAVEY, Beloit, Wis., assignor of one-half to the Manitor Works, same place. Filed Dec. 15, 1883. (No model.)

Claim.—1. In a grain-binding harvester, the combination of the friction-roller upon the heel of the movable jaw of the rotating tying-hook, a spring, G, secured at one end to the frame and provided at its opposite end with a cam-block normally sustained in the path of said friction-roller, and a spring bearing against and adapted to limit the elasticity of said spring G, substantially as described.

2. In a grain-binding harvester, a spring, G, attached at one end to the frame of the machine and provided at its opposite ends with a cam-block normally sustained in the track of the friction-roller upon the heel of the movable jaw of the rotating tying-hook, in combination with an

326,204.

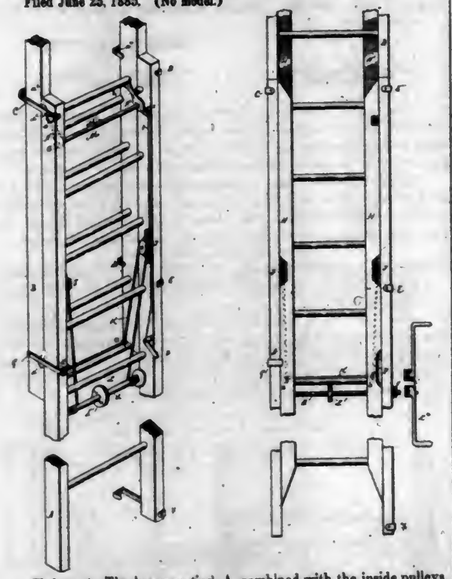


adjustable spring normally in contact with said spring G, to impart a greater or less degree of elasticity thereto, substantially as described.

3. In a grain-binding harvester, a compound spring comprising a flat leaf-spring and a spiral spring in contact and properly supported, in combination with the friction-roller upon the heel of the movable jaw of the rotating tying-hook, substantially as described.

4. In a grain-binding harvester, the combination of the rotating tying-hook provided with a jaw or finger having a friction-roller mounted upon its heel end, a spring, G, provided at its lower end with a boss, g^2, and at its upper end with a cam-block, *g*, screw-threaded stud H, thumb-screw H', washer *h'*, and spiral spring I, arranged and operating substantially as herein described.

326,205. EXTENSION-LADDER. WALTER N. DERBY, Etna, N. H. Filed June 25, 1885. (No model.)



Claim.—1. The lower section, A, combined with the inside pulleys, J, the rope K, attached to the upper section, B, and to a windlass on the lower section, the inside weighted catch or catches, N, the lever P, and connecting-wire *t*, and the upper section, B, held to the lower by clamps having friction-rolls, substantially as set forth.

2. The lower section, A, provided with windlass L, the inside pulleys, J J, and the double catches N, connecting with lever P by wire *t*, combined with the upper section, B, having staples *c c* on the lower round, the rope K, attached to said staples and in connection with the windlass and pulleys, and the clamps C D. E. and G, having friction-rolls a'' a^2 a^3, as set forth.

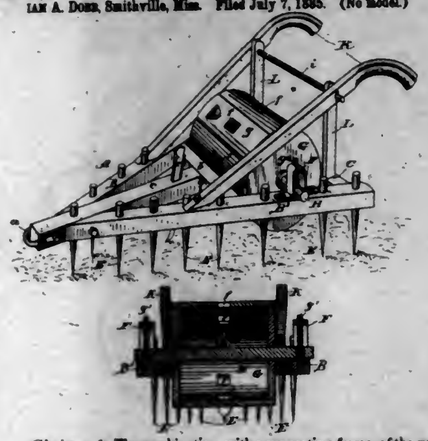
3. The clamps C and D, provided with the rings *a a*, adapted to receive guide-ropes, combined with the sections A and B, operated substantially as shown, as and for the purpose set forth.

4. The lower section, A, having the windlass-spool *d*, with loose disk L^2, and a projecting end, with pin *f*, combined with the crank L^3, having diagonal slots *e e*, the rope K, and the upper section, B, as set forth.

5. The lower section, A, provided with the catch or catches N, consisting of the weighted head concaved at *h*, and an angular shank, combined with the wire *t*, lever P, rope K, and the upper section, B, as set forth.

6. The lower section, A, having the side plate, *s*, with an angular perforated shelf, and the catch N, consisting of the weighted head concaved at *h*, and the perforated angular shank connected with lever P by wire *t*, combined with the rope K and the upper section, B, as set forth.

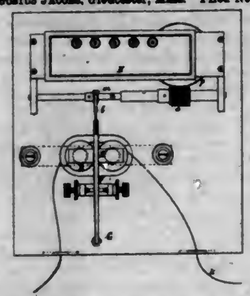
326,206. COMBINED HARROW AND COTTON-PLANTER. WILLIAM A. DOSS, Smithville, Miss. Filed July 7, 1885. (No model.)



Claim.—1. The combination, with a supporting-frame, of the vertically-movable non-rotating shaft having the stirrer-arm, and the seed-hopper or cylinder mounted to rotate on said shaft, substantially as described.

2. The combination, with the harrow having the vertical rods *g'*, of the shaft H, arranged to slide vertically on said rods, and having the stirrer-arm I, and the seed hopper or cylinder mounted to rotate on the shaft H, substantially as described.

326,207. ELECTRO-MAGNETIC LOG. LORENZO BRAGG FAVOR and CHARLES AUGUSTUS JACOBS, Gloucester, Mass. Filed Nov. 17, 1884. (No model.)



Claim.—1. The propeller-supporting case A, provided with the electric diaphragm B and its spring *c*, and the metallic point *h*, as described, in combination with the propeller C, having to its spindle *f* the stud *g*, to operate with the spring, substantially as set forth.

2. The propeller-supporting case A, constructed in two tubular parts, *a* and *b*, screwed together, and having held by and between them, as specified, an electric water-proof diaphragm provided with a spring or its equivalent, to be moved by a cam or stud on the propeller-spindle while such may be in revolution, all being substantially and for use as set forth.

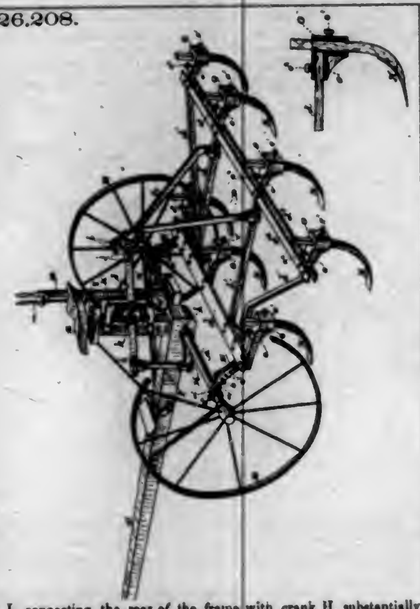
326,208. CULTIVATOR. GEO. W. FORBES, Gubserville, Cal. Filed Apr. 16, 1885. (No model.)

Claim.—1. In a cultivator, a wheeled axle having rearwardly and forwardly extending cranks, and a tooth-carrying frame behind, in combination with pivoted connections between the front of the frame and the rearwardly-extending cranks, and pivoted connections between the rear of said frame and the forwardly-extending crank, whereby the oscillation of the axle raises or lowers the frame, substantially as herein described.

2. In a cultivator, the wheeled axle A, having cranks *a* H, the tongue C, and seat G, supported by said tongue over the axle, in combination with the tooth-frame D behind the axle, and devices connecting the front and rear of said frame with the cranks of the axle, whereby said frame is adapted to be raised and lowered, substantially as herein described.

3. In a cultivator, the wheeled axle A, having rearwardly-extending end cranks, *a*, and forwardly-extending middle crank, H, and a lever, M, in combination with the tooth-frame D, the links E, connecting the front of the frame with cranks *a*, and the link I, lever J, and

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yoke L, connecting the rear of the frame with crank H, substantially as and for the purpose herein described.

4. In a cultivator, the wheeled axle A, having cranks *a* and H and a lever, M, in combination with the tooth-frame D, teeth N, the links E, having a series of holes, *e'*, whereby the front of the frame may be adjustably connected with the cranks *a*, and mechanism connecting the rear of said frame with the crank H, substantially as and for the purpose herein described.

5. In a cultivator, the wheeled axle A, having cranks *a* and H and a lever, M, in combination with the links E, connecting the front of the frame with the cranks *a*, and the means for adjustably connecting the rear of said frame with the crank H, consisting of the link I, yoke L, having holes *l* in its top, and the intervening lever J, having a series of holes, *j*, whereby it may be adjustably pivoted to its several connections, substantially as herein described.

6. In a cultivator, the wheeled axle A, having cranks *a* and H and lever M, the tongue C, the standard F on said tongue, and the seat G on the standard, in combination with the tooth-frame D, the links E, connecting the front with the cranks *a*, and the mechanism for connecting its rear with the crank H, consisting of the link I, yoke L, and lever J, pivoted to a bearing on the seat-standard and connected at either end with the link and yoke, all arranged and adapted to operate substantially as herein described.

7. In a cultivator, the independent removable sockets provided with horizontal and vertical slots O, adapted to be adjusted and fixed on the bars of the frame and to receive and secure the teeth, substantially as herein described.

8. The independent tooth-sockets O, having set-screws *o'*, for fixing the teeth, and socketed arms *o*, fitting on the bars of the frame, and adapted to be fixed by set-screws *o²*, substantially as herein described.

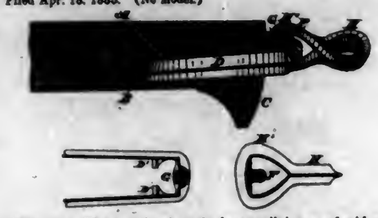
9. In a cultivator, the frame having bars *d'*, in combination with the teeth and the means for securing them to the bars, consisting of the independent removable sockets O, and having socketed arms *o*, fitting on the bars, and the set-screws *o' o²*, fixing the teeth in the sockets on the bars, substantially as herein described.

326,209. MEANS FOR FORMING TRACKS OR RUTS IN ICE-COVERED LOGGING-ROADS. ALEXANDER GALLINGER, Oshkosh, Wis. Filed Feb. 27, 1885. (No model.)



Claim.—The combination, with the sled-runner, of the timber having the cutting-bit, and the slot for receiving the material removed by the bit from the track and discharging said material to one side of the track, and means, substantially as described, for rigidly connecting said timber to the sled-runner, as set forth.

326,210. PLOW-CLEVIS AND LINK. LEWIS GIBBS, Canton, Ohio. Filed Apr. 18, 1885. (No model.)



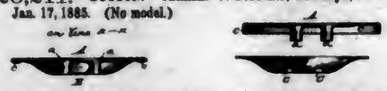
Claim.—1. The combination of a loop or link, one of said parts being provided with an inwardly-projecting lug and the other part with a recessed seat for the reception of said lug.

2. The combination, with a toothed segment and a draft-loop having detents and an inwardly-projecting lug, of a link having a recessed seat for the reception of said lug, substantially as set forth.

3. The combination, with a plow-beam, a draft-loop having an inwardly-projecting bearing, and devices, substantially as described, for locking the loop in position, of the link having a cup-shaped depression, substantially as set forth.

4. The combination of a draft-loop and link, respectively provided with a projecting lug and recess, whereby the pivotal or contact point between the link and loop is in the rear of a line describing the inside of the front end of the draft-loop.

326,211. BUTTON. CHARLES V. GODDARD, Brooklyn, N. Y. Filed Jan. 17, 1885. (No model.)

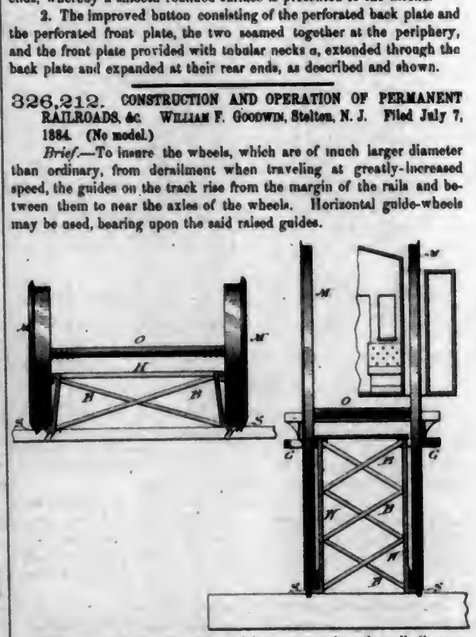


Claim.—1. The improved button consisting of perforated front and back plates, one of said plates having integral therewith tubular necks extended through the opposite plate and expanded at their outer ends, whereby a smooth rounded surface is presented to the thread.

2. The improved button consisting of the perforated back plate and the perforated front plate, the two seamed together at the periphery, and the front plate provided with tubular necks *a*, extended through the back plate and expanded at their rear ends, as described and shown.

326,212. CONSTRUCTION AND OPERATION OF PERMANENT RAILROADS, &c. WILLIAM F. GOODWIN, Stelton, N. J. Filed July 7, 1884. (No model.)

Brief.—To insure the wheels, which are of much larger diameter than ordinary, from derailment when traveling at greatly-increased speed, the guides on the track rise from the margin of the rails and between them to near the axles of the wheels. Horizontal guide-wheels may be used, bearing upon the said raised guides.

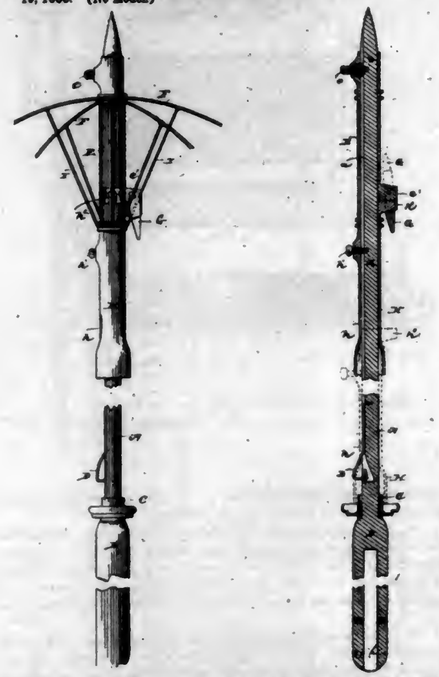


Claim.—1. In a railway for quick transportation, the rails S, combined with the guides W and wheels M, of large diameter, said guides rising from the margin of the rails to near the axles of the wheels, to insure the wheels against derailment when running at a greatly-increased speed, as set forth.

2. In a railroad for quick and safe transportation, the combination of the rail S and carrying rail or flange W' with the guide-flange W, constructed and arranged in relation to the wheels M in the manner and for the purpose substantially as described.

3. In a railroad for quick and safe transportation, in combination with the high guides W and high wheels M, the guide-wheels G G, arranged in the manner and for the purpose substantially as described and illustrated.

326,213. UMBRELLA. FREDERIK HAITZ, Towanda, Ill. Filed Mar. 19, 1885. (No model.)



Claim.—1. The combination of the stick, the thimble E, sliding thereon, and having the notches *e'*, the thimble H, having the lugs or ears h^3, that enter the notches *e'*, and a device for securing said thimbles together, substantially as described.

2. The combination of the stick, the sliding thimble E, having notches *e'* and laterally-projecting stud e^3 and keeper G, and the sliding thimble H, having ears h^3, adapted to enter the notches of thimble E, and stud h^3, whereby the thimbles may be secured together and removed from the stick, substantially as described.

326,214. UMBRELLA-SUPPORT. FREDERIK HAITZ, Towanda, Ill. Filed Mar. 31, 1885. (No model.)

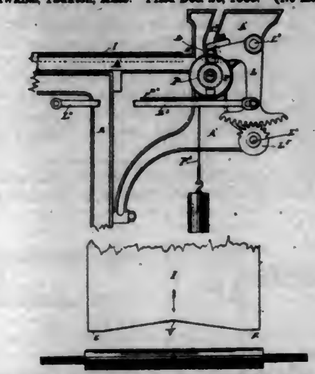


Claim.—1. The combination of the vertical post, the dovetailed bars secured together, one of said bars being socketed in the post, the horizontal platform pivoted on the upper end of one of the bars, the horizontal bar journaled to the platform, the segmental rack secured to the bar, and the bolt for engaging the rack, substantially as described.

2. The combination of the bar C, the circular rack secured thereto, the platform pivoted on the bar, the pin for securing the platform to the rack, the hinge secured to the platform, the horizontal bar journaled in the hinge, the segmental rack secured to the said bar, and the bolt for engaging with said rack and locking the bar, substantially as described.

3. The combination of the post A, bar B, socketed in said post, bar C, dovetailed to bar B, the circular rack secured to bar C, the platform pivoted on the said bar, the pin for securing the platform to the rack, the hinge fulcrumed in the platform, the horizontal bar journaled in the hinge, the segmental rack secured to said bar, the bolt for engaging with said rack, the bracket sliding on the horizontal bar, and the set-screw for securing the bracket to the bar, substantially as described.

326,215. INKING APPARATUS FOR PRINTING-MACHINES. JOHN T. HAWKINS, Taunton, Mass. Filed Dec. 26, 1883. (No model.)

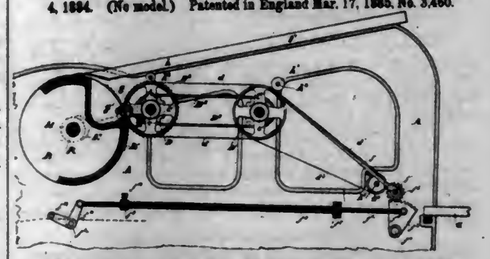


Claim.—1. In an inking apparatus of a printing-press, a ductor or transfer roller, as D, operated by means of two sector bell-crank levers, L L', engaging two other sectors, as L^2 L^2, secured to a shaft, as L^2, so that the ductor or transfer roller may be raised and lowered perfectly level in all positions, substantially as and for the purposes set forth.

2. In an inking apparatus of a printing-press in which the ink-fountain is placed beneath the ink-plate, an ink-plate having its free edge of a V form, as at V, Fig. 3, substantially as and for the purposes set forth.

3. In an inking apparatus of a printing-press, a slotted coupling, as $P' P^2$, connecting the shaft of the inking-roller to a permanent actuating mechanism, so that, when the slot of the coupling is brought in line with the direction in which the fountain must move to be taken out of the machine, said fountain may be so removed or replaced without obstruction from said coupling, substantially as and for the purposes set forth.

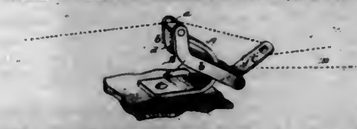
326,216. SHEET-DELIVERY FOR OSCILLATING-CYLINDER PRINTING-MACHINES. JOHN T. HAWKINS, Taunton, Mass. Filed June 4, 1884. (No model.) Patented in England Mar. 17, 1885, No. 3,460.



Claim.—1. In an oscillating-cylinder printing-press, the combination, with an impression-cylinder, as B, of a gear-wheel, as B', rotating with said cylinder, a delivery-cylinder or series of cylinders, as C, carrying grippers, as *g*, and intermittently actuated by means of a gear-wheel, as B^2, meshing with said gear-wheel B', and running freely upon the shaft of said delivery-cylinder or series of cylinders, and carrying a pawl engaging a single-toothed ratchet secured to the shaft of said delivery-cylinder or series of cylinders, substantially as and for the purposes set forth.

2. In a cylinder printing-press, in combination with an oscillating impression-cylinder, as B, and an intermittently-actuated delivery mechanism, substantially as described, an automatic brake, as E, actuated from any suitable moving part of the machine, whereby the momentum of the delivery mechanism is absorbed and the same brought to rest simultaneously with the arrest of the impression-cylinder, substantially as and for the purposes set forth.

326,217. CHECK-REIN HOOK. HENRY H. HOBART and EDWIN T. COOMBS, Westfield, Pa. Filed June 24, 1885. (No model.)



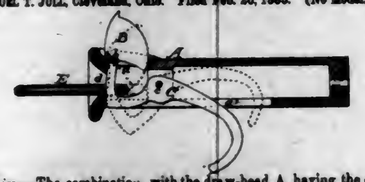
Claim.—1. The combination of a hook, a bent lever pivoted in the upper end of the hook above the plane of the check-rein, and adapted to be turned backward thereby, a loop pivoted to the forward end of the

lever, and a cord connected directly with the check-rein and passing through the pivoted loop, as set forth.

2. The combination, with the hook, of the pivoted lever, a leather loop pivoted to the end thereof, and a cord connected with the check-rein hook and passing through said loop and extending to the vehicle, as set forth.

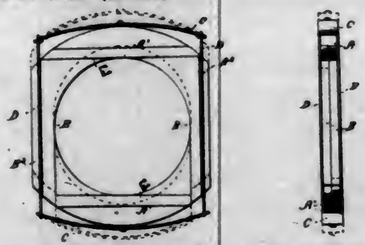
3. The combination, with the hook, of an arm or lever pivoted to the end thereof, and consisting of two plates, a pin connecting the plates at one end, a loop on said pin, said loop having an opening, and a cord attached to the check-rein and passing through said opening and extending to the rear of the same, as set forth.

326,218. CAR-COUPLING. JAMES [illegible], Millerstown, Pa., and SAMUEL T. JULL, Cleveland, Ohio. Filed Feb. 20, 1885. (No model.)



Claim.—The combination, with the draw-head A, having the opening *a* and slot a^2, of the block B, pivoted in the opening *a*, and the hooked lever C, fulcrumed in the slot a^2, said parts being constructed and operating substantially as and for the purpose specified.

326,219. CAR-AXLE BOX. SAMUEL R. HUGHES, Benton Harbor, Mich. Filed Feb. 7, 1885. (No model.)



Claim.—1. A washer for surrounding a car-axle, consisting of two sections, each of which is provided with a body portion, A', and legs or side extensions, B', the parts B' of the two sections overlapping and lying upon each other when in use, and the springs C and connections D, substantially as set forth.

2. The combination of the sections A A, having the body portions A' A,' and the legs or side extensions, B' B', the latter parts overlapping each other when in use, flat springs C, secured to the body portions A' and provided with notches in their ends, and the side connections, D, each of which is placed over one end of each spring, as shown, and for the purpose set forth.

326,220. MANUFACTURE OF COMPOUNDS OF INDIA-RUBBER, GUTTA-PERCHA, AND LIKE MATERIALS. ALFRED H. HUTH, 17 Kensington Square, County of Middlesex, England. Filed Feb. 23, 1884. (Specimens.)

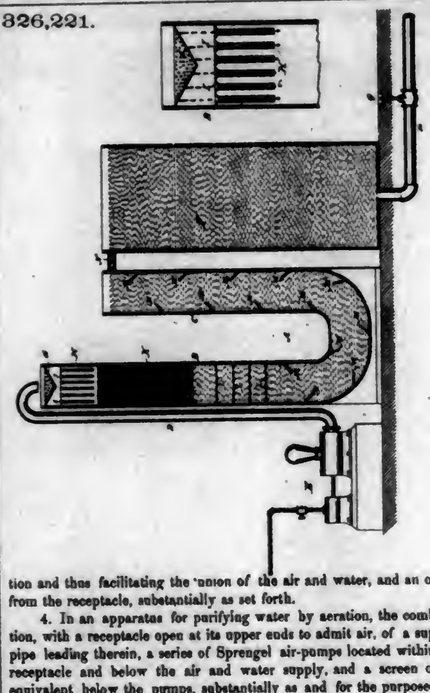
Claim.—In the manufacture of rubber or gutta-percha compounds, the improvement or combination produced by mixing earth-wax and gums or resins, fusing them and keeping them in a state of fusion until all matters volatile at the fusing temperature are expelled, then cooling, powdering, and mixing them with india-rubber, gutta-percha, or analogous substance, substantially as set forth.

326,221. ART OF PURIFYING WATER. JOHN W. HYATT, Newark, N. J. Filed Feb. 26, 1885. (No model.)

Claim.—1. An apparatus for purifying water, consisting, essentially, of a receptacle constructed substantially as described, and a supply-pipe leading therein, a filter separated from but in communication with said receptacle, and adapted to receive the water after passing through the latter, and agitators located within the receptacle, for agitating and commingling the air and water before passing from the receptacle and prior to its entrance into the filter, substantially as set forth.

2. In an apparatus for purifying water by aeration, a receptacle having at its open upper end a screen for articulating the stream of unpurified water, and a series of Sprengel air-pumps below said screen to receive the articulated divisions of the stream, in combination with a water-supply, substantially as set forth.

3. In an apparatus for purifying water by aeration, the combination, with a water-supply, of a receptacle open at its upper end to admit air, a series of Sprengel air-pumps located within the receptacle below the inlet for air and water, agitators below said pumps for keeping in agitation and thus facilitating the union of the air and water, and an outlet from the receptacle, substantially as set forth.



4. In an apparatus for purifying water by aeration, the combination, with a receptacle open at its upper ends to admit air, of a supply-pipe leading therein, a series of Sprengel air-pumps located within the receptacle and below the air and water supply, and a screen or its equivalent below the pumps, substantially as and for the purposes set forth.

5. In an apparatus for purifying water, the combination, with a receptacle, an air-supply, and a supply-pipe for water at its upper end, of a series of Sprengel air-pumps located within the receptacle below the air and water supply, agitators for distributing the flow of the water and air below said pumps, and a filter in communication with said receptacle, substantially as set forth.

6. In an apparatus for purifying water by aeration, the combination, with the receptacle A, open to admit air, of a series of Sprengel air-pumps, H, located therein, and having inverted-cone-shaped mouths I, and a water-supply above said pumps, substantially as set forth.

7. In an apparatus for purifying water by aeration, the combination of a water-supply with a receptacle, A, open at its receiving end to admit air, and composed of branches B C, a screen, G, for articulating the inflowing current of water, a series of Sprengel air-pumps, H, below said screen, a bed of broken stone or gravel below said pumps, and a delivery, substantially as set forth.

8. An apparatus for purifying water, consisting of the receptacle A, composed of branches B C, the former being taller than the latter, and both having their upper ends open, a water-supply leading to the receptacle, and screens within the receptacle for subdividing the water and air, thus facilitating their union, and a filter removed from but in communication with said receptacle, substantially as set forth.

9. In an apparatus for purifying water, the receptacle A, composed of the branches B C, the former, being open to admit air, taller than the latter and containing the articulating-screen G, and Sprengel air-pumps H, in combination with the supply-pipe D, a filter containing a bed of filtering material, and a connection between the filter and branch C, substantially as set forth.

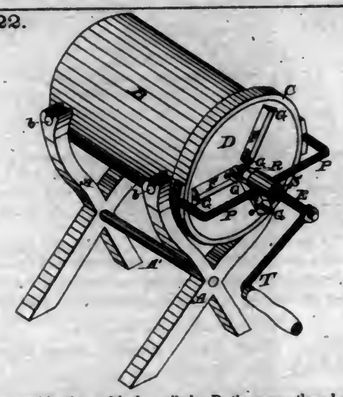
326,222. VEGETABLE-CUTTER. AUGUST JOHN, Massillon, Ohio. Filed Sept. 15, 1884. (No model.)

Claim.—1. The cutter-head P, provided with the ears G and the recesses and holes *g*, in combination with the knives F, provided with the curved slotted arms *e*, and the blocks and pins *f*, substantially as and for the purpose specified.

2. The combination, with the follower H, of the clamp I, formed in pieces or halves, the post L, provided with the arms M and handle N, and the spring J for pressing the clamps together when the arms M are thrown out of engagement with the pieces of the clamp, substantially as described

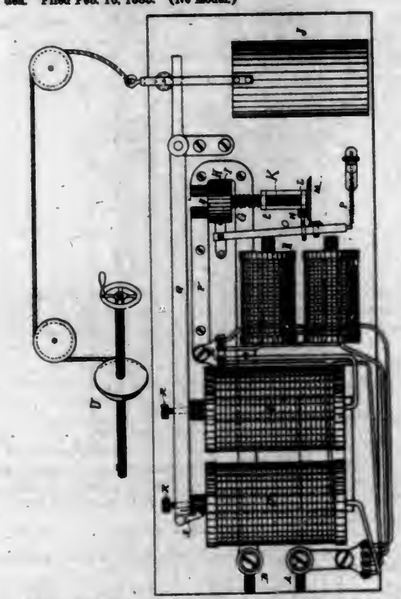
3. The combination, with the follower H, of the clamp I, formed in pieces or halves and pivoted to the follower, the post L, provided with the arms M and handle N, the spring J for forcing the pieces of the clamp together, and the stop O for limiting the movement of the arms M of the post L, substantially as described.

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4. The combination, with the cylinder B, the screw-threaded shaft E, provided with fixed cutter-head D, having ears G, and the adjustable knives F, with slotted arms *e* for securing the knives to ears G, of the follower H, provided with spring-clamp I, made in halves and embracing the shaft E, substantially as described.

326,223. AUTOMATIC STOP APPARATUS FOR MOTORS DRIVING DYNAMO-ELECTRIC MACHINES. OSCAR F. JOHNSON, Stockholm, Sweden. Filed Feb. 10, 1885. (No model.)



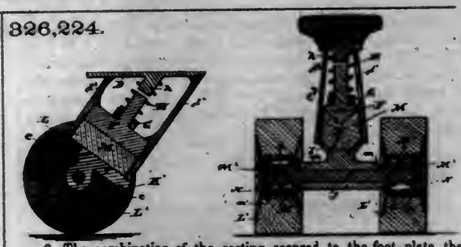
Claim.—Automatic stop apparatus for motors driving dynamo-machines, consisting of two electro-magnets, C and D, in the main circuit, acting each upon its lever-armature, in combination with a string and weight, J, strips F and G, and movable vessel I, which contains mercury and is controlled by one of the electro-magnets, the said stop apparatus effecting in an automatic manner the stopping of the motor driving the dynamo-machine in the event of interruption of the circuit or short-circuiting, substantially as described.

326,224. ROLLER-SKATE. JOHN D. KEYSER, Quincy, Ill. Filed Mar. 30, 1885. (No model.)

Claim.—1. The combination of the casting secured to the foot-plate of the skate and containing the rubber, the plate pivoted to said first-mentioned casting, to which the rollers are attached, the rubber, the plate resting on the rubber, and the spring and adjusting-nut, substantially as described.

2. The combination of the casting secured to the foot-plate of the skate, the casting to which the rollers are attached, pivoted to it, and having the plate, the trunnion on one end of the plate and the screw forming a trunnion on the other end, the rubber, the plate resting upon the rubber, and the spring, substantially as described.

326,224.



3. The combination of the casting secured to the foot-plate, the casting to which the rollers are attached, pivoted to it, and having the plate bearing against the rubber, the trunnion formed on one end of the plate, and the screw forming the trunnion on the other end, the rubber, the plate resting upon the rubber, and the spring and adjusting-nut, substantially as described.

4. The combination of the casting secured to the foot-plate of the skate, and the casting to which the rollers are attached, pivoted to the former, and having the plate bearing against the rubber, the rubber, the plate resting upon the rubber, and having the screw-threaded stud, the spiral spring, and the adjusting-nut, substantially as described.

5. The combination of the casting secured to the foot-plate of the skate, and the casting to which the rollers are attached, pivoted to it, and having the plate bearing against the rubber, the rubber, the V-shaped plate resting upon the rubber and having the screw-threaded stud, the adjusting-nut, and the stud on the casting attached to the foot-plate for holding the spring in position, substantially as described.

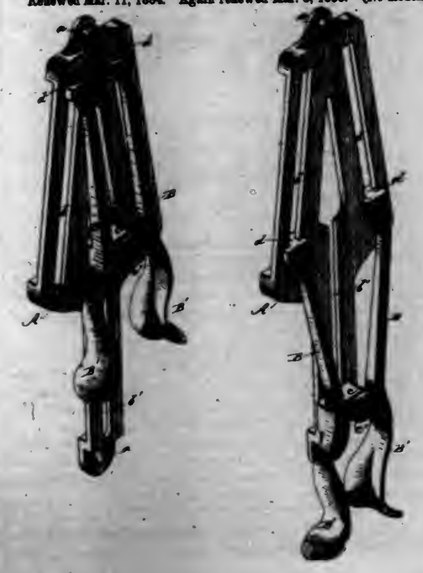
6. The combination, with the axle, of the bushing secured in the wheel or roller having the perforation in its end for the passage of the axle, the rollers forming the bearing for the axle, the plate or washer for confining said rollers within the bearing, and the cap M^2, substantially as described.

7. The combination, with the axle, of the bushing secured within the wheel or roller, the series of rollers forming the bearing for the axle, consisting of cylindrical and elliptical rollers, an elliptical roller being placed between each pair of cylindrical rollers, substantially as described.

8. The combination, with the casting secured to the foot-plate of the skate, the casting pivoted to it, made in two parts, recessed, as shown, and united by the screw-thread, the series of rollers mounted in the recess and bearing on the axle of the rollers or wheels, and the axle, substantially as described.

9. The combination, with the casting secured to the foot-plate of the skate, the casting pivoted to it, made in two parts and united by screw-threads, as shown, the series of elliptical rollers mounted in the recess and forming the bearing for the axle, the axle, and the rollers or wheels mounted thereon, substantially as described.

326,225. BRUSH AND BROOM HOLDER. DOMINIK D. LAVERY, Chicago, Ill., assignor to George T. Giles, same place. Filed Nov. 3, 1882. Renewed Mar. 11, 1884. Again renewed Mar. 5, 1885. (No model.)



Claim.—In a device for suspending brooms or similar articles, the plate A, having two converging slots, *b b*, and a vertical slot, *b'*, in combination with the pivoted levers B B, provided with gripping-jaws B' B' upon one end, headed lugs or projections *d d* upon their opposite ends, and central lugs, *c c*, connected by a pivot, *c'*, the whole arranged to slide in the slots in the base-plate, substantially as and for the purpose set forth.

326,226. SASH-HOLDER. HENRY LAURENCE, Chicago, Ill. Filed June 27, 1885. (No model.)



Claim.—1. An automatic anti-window-rattler made from spring material, bent in U form, the end of one arm provided with a roller and the crown provided with a loop, substantially as shown and described.

2. In an automatic anti-window-rattler made from spring material and in U form, the combination of the two arms, one of which is provided with a roller, the loop E at the crown, and the loop J at or near the ends of the arms, all constructed and arranged substantially as shown.

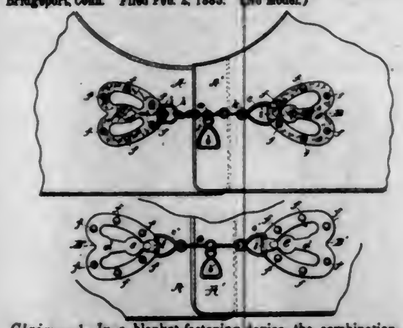
326,227. PROCESS OF COATING AND COLORING COFFEE. WILLIAM S. LOSS, St. Louis, Mo., assignor to himself, Dwight Treadway, William J. H. Brown, and Louis C. Good, all of same place. Filed Feb. 24, 1885. (No specimens.)

Claim.—1. The herein-described process for coloring, polishing, and sealing the pores of coffee and analogous products, consisting in agitating, mixing, and rubbing together the berries of the product and a coarse oil-bearing intermedium, such as bran impregnated with oil or an oil-bearing seed, substantially as set forth.

2. The herein-described process for coloring, polishing, and sealing the pores of coffee and analogous products, consisting in agitating, mixing, and rubbing together the berries of the product and a coarse oil-bearing intermedium, such as bran impregnated with oil or an oil-bearing seed, said intermedium having also combined with it a coloring-pigment, substantially as set forth.

3. The herein-described process for coloring, polishing, and sealing the pores of coffee and analogous products, consisting in agitating, mixing, and rubbing together the berries and an oil-bearing seed, as cotton-seed, substantially as set forth.

326,228. FASTENING FOR HORSE-BLANKETS. FREDRIK A. LOOK, Bridgeport, Conn. Filed Feb. 2, 1885. (No model.)



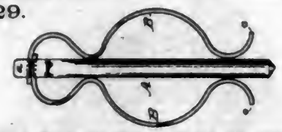
Claim.—1. In a blanket-fastening device, the combination, substantially as described, of the chain-plate, the connecting-links attached thereto, and the snap-plate adapted to engage and hold said links, said plates rigidly secured to and re-enforced by plates on the reversed side of the blanket, substantially as set forth.

2. The combination, substantially as set forth, of the chain-plate C and its re-enforcing plate D, riveted thereto, chain *a*, secured to its lower end and having links *b c*, with snap-plate B and its re-enforcing plate D', riveted thereto, said snap-plate having snap-hook *i* at its lower end to engage with said links, substantially as described.

3. A blanket-fastening device consisting of the snap-plates B' B'' and a suitable connecting device, said snap-plates rigidly secured to and re-enforced by plates on the reversed side of the blanket, substantially as shown, and for the purpose described and set forth.

326,229. OX-BOW FASTENING. JOHN LOWE, New Britain, Conn. Filed June 27, 1885. (No model.)

326,229.



Claim.—1. The herein-described ox-bow pin, consisting of the pin A, having the head *a*, provided with a transverse slot, and the spring-arms secured within said transverse slot, and having the outwardly-curved forward ends, *c c*, substantially as described, and for the purpose specified.

2. The herein-described ox-bow pin, consisting of the pin A and the separately-formed spring-arms upon both sides thereof, having the semicircular bend for embracing the bow end, and the lesser semicircular bend on the head end, substantially as described, and for the purpose specified.

326,230. CORSET-CLASP. BERNARD J. MALONE, Flatlands, N. Y. Filed Mar. 23, 1885. (No model.)



Claim.—The combination of a stay having headed studs with a stay having eyes with curved slots and enlargements at the upper ends of the slots, the terminal eye having a straight slot in line with the ends of the curved slots and an enlargement at the lower end of said slot, substantially as set forth.

326,231. BULLET. FRANKLIN MANNING, Marysville, Cal. Filed Oct. 9, 1884. (No model.)

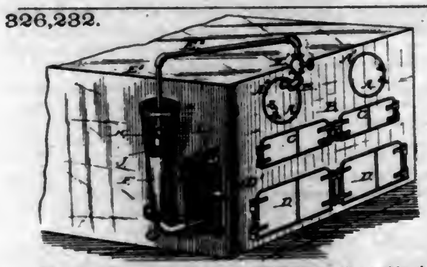


Claim.—A bullet or projectile for guns or fire-arms, having a series of approximately equal and alternate rings and grooves surrounding the rear portion, the rings having an approximately equal diameter sufficient to fit the rifling of the gun, and the grooves increasing in depth from the base of the bullet forward, a head having a smaller diameter than the rings or the interior of the gun, and a groove or channel between the forward ring and the rear of said head, substantially as herein described.

326,232. STEAM AND AIR INJECTOR FOR FURNACES. WILLIAM MATHEWS, St. Clair, assignor of one-half to Frank A. Hill, Philadelphia, Pa. Filed May 9, 1885. (No model.)



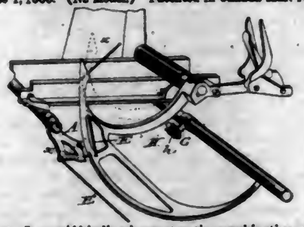
326,232.



Claim.—1. In a combined steam and air injector, the combination of the trumpet-shaped air-pipe, F, provided with a delivery-pipe connected to its smaller end, the steam-nozzle body placed within the said pipe F and provided with a steam-connection pipe, the central hub, H^2, and wings H^3, the screwed stud I, projecting from the hub H^2, the adjustable disk J, adapted to slide loosely upon the stud I, and the nut I', for securing the disk to the nozzle-body, substantially as described and shown, and for the purpose set forth.

2. In a combined steam and air injector, the combination of the steam-nozzle body adapted to screw on a steam-pipe, and provided with the central hub, H^2, and the wings H^3, cast integral with it, the screwed stud I, securely fastened into the hub H^2, the adjustable disk J, adapted to slide loosely upon the stud I, and the nut I', for securing the disk to the nozzle-body, substantially as described and shown, and for the purpose set forth.

326,233. GRAIN-BINDER. JOHN C. MCLACHLAN, London, Ontario, Canada, assignor to the Johnston Harvester Company of Batavia, N. Y. Filed June 1, 1885. (No model.) Patented in Canada Mar. 16, 1885, No. 21,279.

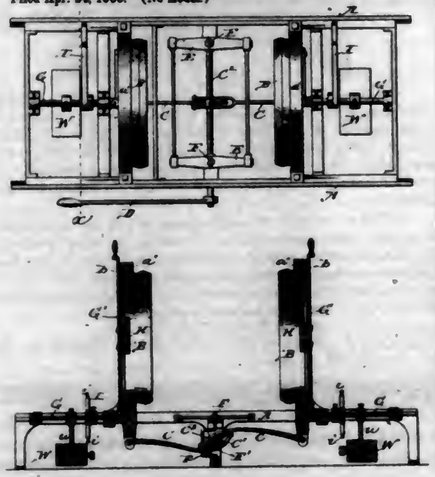


Claim.—1. In a self-binding harvester, the combination of the fixed tension-bracket in the rear of the needle, the spring tension-bar flexibly secured to the bracket, the binding-twine, and the twine-carrying needle, all arranged and operating substantially as described.

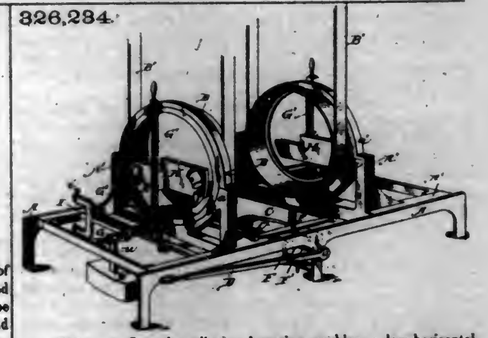
2. In a self-binding harvester, the combination of the bent tension-bar, the tension-bracket, the flanges, and the tension-bar holding ears, all arranged and operating substantially as described.

3. The combination of the twine needle-arm, the spring-top, and bracket G, arranged and operating substantially as described.

326,234. MACHINE FOR CROZING AND HOWELING BARRELS. GEORGE J. MILLER, Lake View, assignor to Daniel W. Ryan, Chicago, Ill. Filed Apr. 24, 1885. (No model.)



326,234.



Claim.—1. In a howeling and crozing machine, a low horizontal frame provided with a sliding frame at each end carrying the barrel-holding rings provided with belt-flanges and a vertically-movable barrel-support, said sliding frames and barrel-support being connected with cams on a rock-shaft arranged to operate the sliding frames and barrel-support simultaneously; substantially as specified.

2. In a howeling and crozing machine, two sliding frames for supporting the barrel-holding rings, arranged to slide toward and from each other, and a barrel-supporting frame arranged between the holding-rings and being movable vertically, in combination with a rock-shaft provided with a cam and links connecting with said sliding frames, and one or more cams, as F', connecting said rock-shaft with and thereby operating the barrel-supporting frame, all substantially as shown.

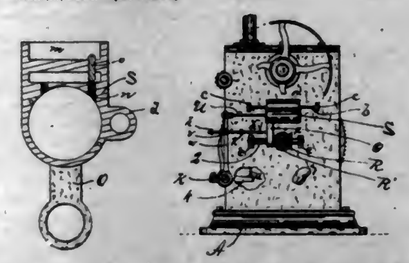
3. In a howeling and crozing machine, the howeling, chamfering, and crozing tools mounted on a plate, H, attached to an oscillating lever, G', and the leveling-knife A^3 on an arm of said lever, said lever being supported in front of the barrel-holding ring, so as to bring and oscillate the plate transversely of the barrel and within its end when placed in the ring, and the leveling-knife just outside the barrel near the face of the ring, substantially as specified.

4. In a howeling and crozing machine, the howeling, chamfering, and crozing tools mounted on a plate, H, attached to a lever, G', and the leveling-knife A^3 on an arm of said lever, said lever being supported in front of the barrel-holding ring on a rock-shaft, so as to bring and oscillate the plate transversely of the barrel and within its end when placed in the ring, and the leveling-knife just outside the barrel and near the face of the ring, said rock-shaft being provided with a bifurcated arm, I, and weight W, as and for the purpose specified.

5. In a howeling and crozing machine, the barrel-clamping frames connected to a rock-shaft, as C^2, by links C, hinged to the opposite end of an S-shaped cam on the rock-shaft, said links at the ends next to the cam being curved in opposite directions, so that the extreme ends or points of connection with the cam may be turned past the center of motion, as and for the purpose specified.

326,284.

326,285. SPEED-GOVERNOR. JAS. MORTON, Norwich, Conn. Filed June 12, 1884. (No model.)



Claim.—1. In combination with the gate-operating shaft of a water-wheel and clutch-disks revolving in opposite directions on said shaft, a suitable governing device, by means of which said clutches are caused to act at the proper time, and an oil-filled receptacle and a piston, said oil-filled receptacle and piston being so connected with the gate-shaft and to the clutch-operating mechanism that it forms, when in motion, a cushion of compressed oil and exerts a force against the governor proper for the purpose of releasing the clutch mechanism, as described.

2. In combination with the gate-operating shaft, the clutch-disks constantly rotating in opposite directions on said shaft, the rock-shaft carrying friction-arms adapted (when operated by a fly-ball or other suitable governor) to engage the clutch-disks, and a cylinder and oil-filled reservoir and piston, substantially as hereinbefore described, said cylinder being connected with the gate-operating shaft by beveled gears, and

a screw-shaft, as at Q, and arranged to travel on said screw-shaft, and having screws *o* so located relative to the openings *n* which connect the cylinder and reservoir that as said screws are advanced they partially close said openings for the purpose of regulating and controlling the flow of oil, as described.

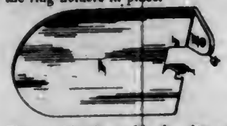
3. The combination, with the gate-operating shaft, and mechanism for automatically moving said shaft to open or close the wheel-gate, of an oil-filled reservoir and cylinder and a piston, all so connected with the gate-operating shaft and its moving mechanism that when in action a cushion of compressed oil is formed, which acts against the force of the governor proper for the purpose of checking the movement of the gate-operating shaft at a desired point, substantially as described.

4. In combination with the shaft C, the screw-shaft Q, actuated by gears R R', and an oil-filled reservoir and cylinder arranged to travel on said screw-shaft, said cylinder being provided with a suitable piston or plunger so connected with the mechanism which controls and moves the shaft C that the compressed oil in the traveling cylinder acts against the power of the fly-ball governor for the purpose of checking the movement of the gate-shaft, as described.

5. In combination with the shaft C, the screw-shaft Q, actuated by gears R R', and a liquid-filled reservoir and cylinder arranged to travel on said screw-shaft, said cylinder being provided with a suitable piston or plunger, and with one or more openings, *n*, at each end, through which the liquid may freely pass from the reservoir to the cylinder, or from the cylinder to the reservoir, and having also at each end a secondary opening, *s*, with a valve, *r*, so arranged that the liquid may pass freely into the cylinder, said valve being then automatically closed by the compressed liquid as the cylinder moves on the screw-shaft, preventing the escape of the liquid, substantially as hereinbefore described.

326,236. THREAD-SEPARATOR AND TRAVELER-CLEANER. J. H. CEDORN, Evansville, Ind. Filed Mar. 9, 1885. (No model.)

Brief.—The separator consists of a plate interposed between two adjacent spindles having a laterally-projecting tongue integral with itself, that constitutes the traveler-cleaner, and having a pair of oppositely-projecting feet, wherewith the plate is secured to the rail by the same devices that retain the ring-holders in place.



Claim.—1. The combination, with the ring-rail, spindles, rings, and travelers, of a thread-separator consisting of a plate interposed between two adjacent spindles, said plate being furnished with a laterally-projecting tongue that constitutes the traveler-cleaner, substantially as herein described.

2. The combination, with the ring-rail, spindles, rings, and travelers, of a thread-separator consisting of a plate interposed between two adjacent spindles, said plate being furnished with a laterally-projecting integral tongue that constitutes the traveler-cleaner, substantially as herein described.

3. The combination, with the ring-rail, spindles, rings, and travelers, of a thread-separator consisting of a plate interposed between two adjacent spindles, said plate being furnished with a laterally-projecting tongue that constitutes the traveler-cleaner, and having a pair of oppositely-projecting feet, wherewith said plate is secured to the ring-frame, substantially as herein described.

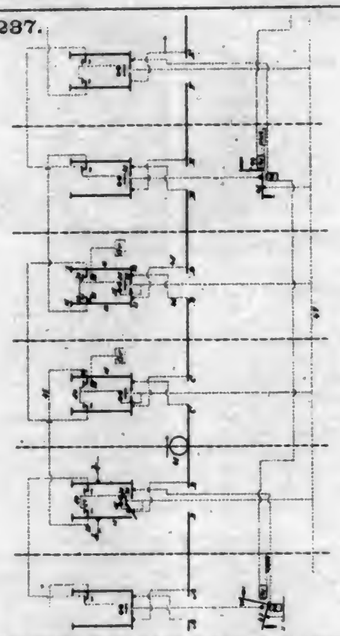
4. The combination, with the ring-rail, spindles, rings, and travelers, of a thread-separator consisting of a plate interposed between two adjacent spindles, said plate being furnished with a laterally-projecting tongue that constitutes the traveler-cleaner, and having a pair of oppositely-projecting feet, wherewith said plate is secured to the ring-frame by the same devices that retain two adjacent ring-holders in place, substantially as herein described.

326,237. ELECTRICAL CONDUCTOR FOR RAILWAYS, &c. JOHN PERRY, Falgarth Road, and WILLIAM E. AYRTON, Cowper Street, County of Middlesex, England. Filed June 25, 1883. (No model.) Patented in England Feb. 24, 1881, No. 783, and May 11, 1883, No. 2,396.

Claim.—1. The combination, in an electric railway, of (*a*) a main insulated conductor or electric main conveying the propelling-current; (*b*) a number of comparatively short service-conductors fairly well insulated from one another and from the earth; (*c*) metallic brushes or equivalent connections coupling a motor on the train with the service-conductors; (*d*) contact-makers connecting the main conductor with the section of the service-conductor in the vicinity of the train and disconnecting the same when the train has passed.

2. The combination of the electric main, a number of comparatively short service-conductors that are moved successively into electric connection with the electric main by the passing train, and the conductors that connect the electric main with the service-conductors when thus moved.

326,237.



3. The combination, in an electric railway, of (*a*) a main insulated conductor or electric main; (*b*) a number of comparatively short service-conductors fairly well insulated; (*c*) contact boxes or instruments controlling the connections between the main and the service conductors, and operating to electrically connect with the main conductor the section of the service-conductors in which the train is entering and to separate from it the section which the train has left, substantially as described.

4. The combination, in an electric railway, of (*a*) a main conductor or electric main; (*b*) a number of comparatively short service-conductors fairly well insulated; (*c*) contact boxes or instruments which put the current on from the main to a service conductor when a train passes, and (*d*) electro-magnetic appliances in connection with the said contact-boxes with circuits successively closed and reopened by a train in its progress, and which operate in the contact-boxes within a prearranged distance behind a train to prevent connection being established between the main conductor and the service-conductor, substantially as described.

326,238. STOP-VALVE. JULIUS PFAU, Lansingburg, assignor of one half to James W. Blessing, Albany, N. Y. Filed Feb. 12, 1885. (No model.)



Claim.—1. The combination, with a valve-casing, A, having a valve-chamber, *a*, provided with the vertical ribs a^4 and horizontal ribs a^3, as described, of the stirrup D, provided with wedges *d*, the sliding gates F, having inclined planes f' and snugs f^2, and the tilting dogs E, provided with hooks *e'*, adapted to engage between the lower end of the stirrup D and the snugs f^2, in the manner and for the purpose herein specified.

2. The combination, with valve-casing A, having a valve-chamber, *a*, provided with vertical ribs a^4 and horizontal ribs a^3, as described, of the stirrup D, sliding gates F, and tilting dogs E, the said dogs being provided with hooks *e'*, which are adapted to engage under the lower end of the stirrup D, as herein set forth, all of said parts being constructed and arranged to operate as and for the purpose specified.

326,239. MINER'S SQUIB. JOHN R. POWELL, Plymouth, Pa. Filed July 10, 1885. (No model.)

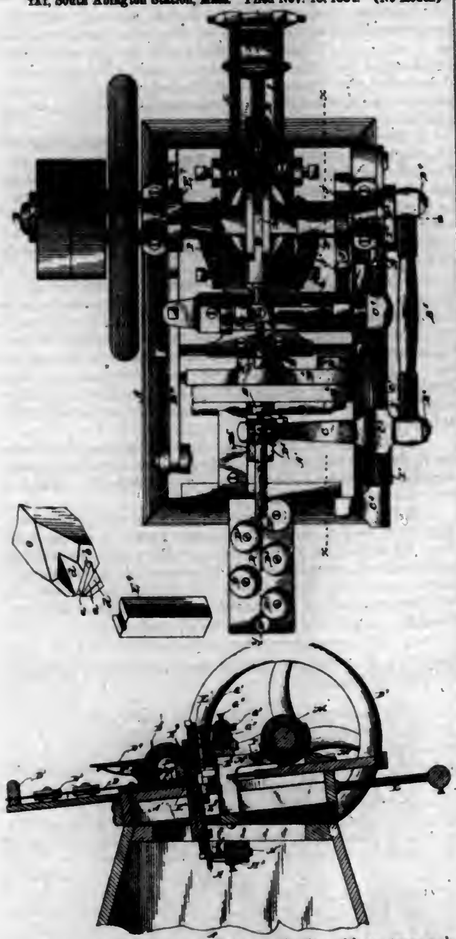


Claim.—1. The combination, with the squib-tube, of the herein-described seal formed of grains of powder held in a compact mass within the tube by the addition of suitable adhesive substance, openings or spaces being left between the grains of powder forming the mass and the side of the tube, as set forth.

2. The miner's straw or paper squib, in combination with the herein-described seal formed by a mixture of powder and oil-varnish, gilder's oil-size, or other suitable composition which will not dissolve the powder, but hold it in a compact mass and cause it to adhere to the interior of the squib-tube, as set forth.

3. The combination, with the tube or shell, of the herein-described seal formed of a mixture of powder and a suitable composition which will hold the grains of powder in a mass and cause the latter to adhere to the interior of the squib-tube, as set forth.

326,240. MACHINE FOR MAKING SHOE-NAILS. AMBROSE PRENTAT, South Abington Station, Mass. Filed Nov. 18, 1884. (No model.)



Claim.—1. The driving-shaft, in combination with the tongs or levers operated by the latter, and dies carried by the tongs to close around the wire on opposite sides with such force as to compress the metal and form the flattened point, as set forth.

2. In a machine for making nails from a continuous wire, the dies O O', having on their contiguous faces flat portions to compress the end of the blank on opposite sides, and parallel horizontal cutting-edges *a* for shearing away from the sides of the blank the surplus metal projected laterally by the act of compression, as set forth.

3. In a machine for making nails from a continuous wire blank, the dies O O', which co-operate to form the point of the nail and shear off the sides thereof, in combination with the independent cutting mechanism arranged to sever the completed nail from the blank, as set forth.

4. The tongs or levers carrying the dies O O', which co-operate to form the point of the nail, in combination with the independent cutting mechanism arranged to sever the nail from the blank as soon as the dies recede or separate from the nail, as set forth.

5. The dies O O', which co-operate to form the point of the nail, in combination with the upper and lower cutters working simultaneously to cut the nail from the blank as soon as the dies have completed their action, as set forth.

6. The driving-shaft provided with the cams J' and B^3, and the cam M, in combination with the upper and lower cutters, the feed-slide, and the hammer, as set forth.

7. The driving-shaft, in combination with the upper and lower rock-shafts, the cutters connected to the rock-shafts, and connecting devices between the latter and the driving-shaft to cause the simultaneous movement of the cutters, as set forth.

8. The lower cutter, H, and the rock-shaft connected thereto, in combination with the spring-actuated lever H^4, the angular lever I^2, and the cam B^3 on the driving-shaft, as set forth.

9. The upper cutter, E', and the rock-shaft G^2, connected thereto, in combination with the lever J and the cam on the driving-shaft for working the lever, as set forth.

10. The upper cutter, E', in combination with the rock-shaft G^2, connected thereto and operated by the driving-shaft of the machine, as set forth.

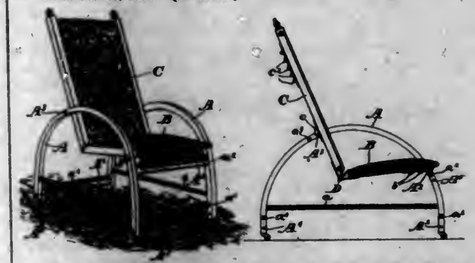
11. The lower cutter, H, in combination with the rock-shaft H^2, connected thereto and operated by the driving-shaft of the machine, as set forth.

12. The vertically-movable arm E^2, carrying the upper die, in combination with the lower die, devices for feeding the wire forward between the dies, the upper cutter working vertically in but independent of the arm E^2 in rear of the dies, and the lower cutter, as set forth.

13. The mechanism for feeding the wire, the hammer for forming the head, and the threading-dies, in combination with the pointed dies carried by the tongs or levers to form the flat point on the nail, and the cutters operating between the tongs and the threaded dies to sever the nail at the point from the wire blank, as set forth.

14. The mechanism for feeding the wire, forming the head on the advance end thereof, and threading the shank, in combination with the devices for compressing or flattening the opposite sides of the blank and shearing away from the sides of the blank the surplus metal projected laterally by the act of compression, and independent cutting mechanism for cutting or severing the nail at the end of the point from the wire blank, as set forth.

326,241. CONVERTIBLE CHAIR. JOHN PRESTON, Indianapolis, Ind. Filed Oct. 23, 1884. (No model.)



Claim.—1. The combination, in a chair, of the back and seat hinged together and provided with catches on their under and rear sides adapted to engage with rods in a frame-work, said frame-work consisting of curved or semicircular side pieces connected with rungs and rods, said rods being adapted to engage with the catches on the chair back and seat and support the same both when said frame-work rests upon the ends of the curved side pieces, or when it rests upon the curved surface thereof, whereby said chair is adapted to be used in a variety of positions, substantially as set forth.

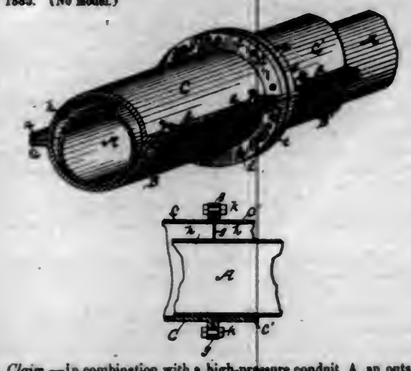
2. The combination of the frame consisting of the semicircular side pieces, A, secured together by rungs, and the rods A' A^3 A^2 A^4, arranged at appropriate points to support a chair back and seat in various positions, the seat B, and back C, said seat and back being hinged together, said seat being provided with rack-bars *b*, which engage with said rods, and said back being also provided with rack-bars, which engage with said rods, whereby a chair is provided capable of a variety of adjustments, substantially as set forth.

3. The combination easy, reclining, and rocking chair and cradle, consisting of a frame composed of curved side pieces secured together by rungs and rods, and an adjustable chair back and seat provided with catches adapted to engage with the rods of said frame when said frame is either side up, whereby the functions of the various articles are combined in one piece of furniture, substantially as set forth.

4. In a combination-chair, the combination of the frame consisting of semicircular side pieces connected by rungs, and having rods extending across from one side piece to the other at appropriate points to support the back and seat in various positions, and said back and seat hinged together and mounted between said side pieces, the under side of the seat

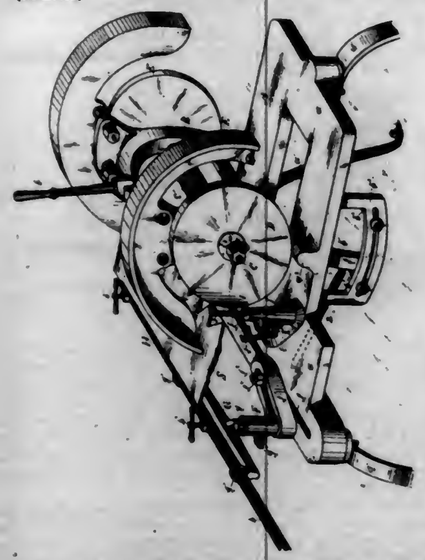
and rear side of the back being provided with catches adapted to engage with said rods, whereby said back and seat are secured in position, substantially as set forth.

326,242. MEANS FOR HOLDING AND PREVENTING GAS FROM ESCAPING. THOMAS PROSSER, Franklin Square, Ohio. Filed May 4, 1885. (No model.)



Claim.—In combination with a high-pressure conduit, A, an outside pipe or cover constructed in sections C B, provided with outwardly-projecting flanges *a* and *c*, whereby they form a continuous interior passage when the sections are put together, disk-like gaskets *g*, secured at intervals between the flanges *c*, forming compartments, from which pipes of small diameter lead to the surface, and bolts uniting said sections and gaskets, as shown and described.

326,243. SAW GUMMER AND SHARPENER. SQUIRE J. RANDALL, Moodyville, New Westminster, British Columbia. Filed Mar. 6, 1885. (No model.)



Claim.—1. In a saw grinder, gummer, and sharpener, the inverted-U-shaped bracket B, the legs of which are pivoted to a stand or table, one of said legs having an extension, *b'*, and the wheel-carrying arbor C, mounted in said bracket, in combination with the slotted arc b^2 on the stand, and the adjustable limiting-stops b^3 in said arc, between which the extension *b'* of the bracket plays, substantially as and for the purpose herein described.

2. In a saw grinder, gummer, and sharpener, the table or stand A, having a slotted arc, b^2, with the adjustable limiting-stops b^3, in combination with the inverted-U-shaped bracket B, having a handle, *b*, and legs pivoted to the top of the stand or table, one of said legs having an extension, *b'*, playing between the stops b^3, the spring Z, secured to the stand and to the extension, and the grinding-wheel-carrying arbor C, mounted in the bracket, substantially as herein described.

3. In a saw grinder, gummer, and sharpener, the vertically and rotary adjustable holder G and the socket F, in combination with the longitudinally and rotary adjustable grooved bar H, mounted in the holder and adapted to receive and hold the saw-blade, substantially as herein described.

4. In a saw grinder, gummer, and sharpener, the socket F, mounted on a table or stand, and the holder G, having leg *g* fitted in the socket and set by a screw, g^2, and curvilinear-faced arms *g'*, in combination with the longitudinally-grooved bar H, mounted in the arms *g'*, and adapted to receive and hold the saw-blade, substantially as herein described.

5. In a saw grinder, gummer, and sharpener, the socket F, adapted to be adjusted in the arc of a circle and to various places on the stand or table on which it is mounted, in combination with the holder G, having leg *g* fitted in the socket, and arms *g'*, and the longitudinally-grooved bar H, mounted in the arms and carrying the saw-blade, substantially as herein described.

6. In a saw grinder, gummer, and sharpener, the stand or table A, having an elongated slot, *f*, in its top, and the socket F, having a slotted foot, *f'*, and a bolt, f^2, passing through it and the slot *f*, in combination with the holder G, having leg *g* fitted in the socket and set by a screw, g^2, and arms *g'* on its ends, and the longitudinally-grooved bar H, mounted in the arms and carrying the saw-blade, substantially as herein described.

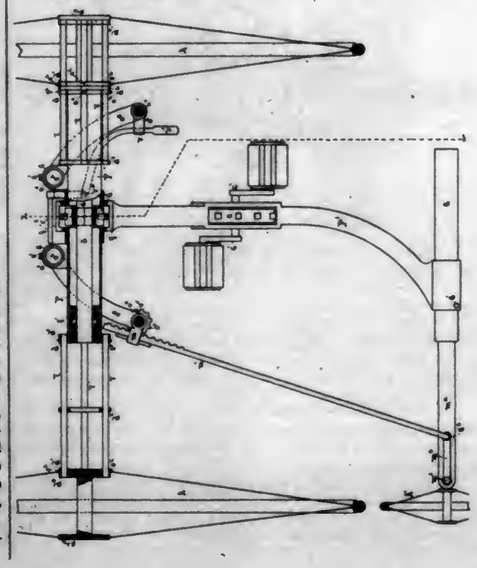
7. In a saw grinder, gummer, and sharpener, the stand or table A, the swinging bracket B, pivoted to the stand and adapted to move forward and back through an arc in a vertical plane, and the arbor C, mounted in the bracket and carrying the grinding-wheels D, in combination with the adjustable socket F, the vertically and rotary adjustable holder G, and the longitudinally and rotary adjustable grooved bar H, carrying the saw-blade, all arranged and adapted to operate substantially as herein described.

8. In a saw grinder, gummer, and sharpener, the stand or table A, having a top, *a*, with a longitudinal slot, *f*, in its front, the swinging bracket B, pivoted to the top *a*, and the arbor C, mounted in the bracket and having grinding-wheels D, in combination with the socket F, having a slotted foot, *f'*, the bolt f^2, passing through said foot, and the slot *f* in the top *a*, the holder G, having arm *g'* on each end, and leg *g*, fitted in the socket and set by a screw, g^2, and the longitudinally-slotted bar H, mounted in the arms *g'* and carrying the saw-blade, substantially as herein described.

9. In a saw grinder, gummer, and sharpener, the adjustable grooved bar H, adapted to receive the back of the saw-blade, in combination with the adjustable spindles J J, adapted to support its front, the sockets I I, and set-screws *j*, substantially as herein described.

10. In a saw grinder, gummer, and sharpener, the combination of the table or stand A, the swinging handled bracket B, pivoted to the stand, and carrying the wheel-driving arbor C, the adjustable socket F on the stand, the adjustable holder G in the socket, the adjustable longitudinally-grooved bar H in the holder and carrying the saw-blade, and the adjustable spindles J J, adapted to support the front or inner portion of the saw-blade, substantially as herein described.

326,244. TRICYCLE. DAVID H. REES, Lowell, Mass. Filed May 27, 1885. (No model.)



Claim.—1. The combination of the vehicle-frame, the shaft *s*, journaled therein, and an extension of said shaft projecting into the hub of the wheel A, and adapted to allow the wheel to slide outward and inward upon the same, the said shaft-extension and wheel revolving together, substantially as described.

2. The combination of the vehicle-frame, the shaft *s*, journaled therein, the extension portion of said shaft revolving with and sliding upon the journaled portion inward and outward around the latter and its bearing, and the wheel A, attached to and turning with the shaft, substantially as described.

3. The combination of the vehicle-frame, the shaft *s*, journaled therein and provided with the disk *d*, attached thereto, the extension of said shaft attached to and projecting from said disk into the wheel-hub, and provided at its outer end with the attached disk d^4, and the wheel-hub provided with the disk *d'*, and adapted to slide to and fro upon said extension and have the faces of its disk or disks brought against the faces of those attached to said shaft and extension, said wheel revolving with the latter and said shaft, substantially as described.

4. The combination of the vehicle-frame, the shaft *s*, journaled therein and having the attached disk *d*, the portion of said shaft revolving with and sliding upon the journaled portion and its disk inward and outward around the bearing of the latter provided with the disk d^3, adapted to be brought against the disk *d*, and the wheel A, attached to and revolving with said sliding portion of said shaft and the latter, substantially as described.

5. The combination of the vehicle-frame, the shaft *s*, journaled therein and having the disk *d* attached thereto, the rods *r r*, attached to said disk and extending and adapted to slide through the wheel-disk *d'*, and having the disk d^4 attached thereto within the hub of the wheel, substantially as described.

6. The combination of the vehicle-frame, the shaft *s*, journaled therein and having the attached disk *d*, the wheel A, having attached thereto the disk *d'*, and the rods *r r*, projecting and adapted to slide inward from the latter through said disk *d* and around its journal-bearing, and provided upon their inner ends with the attached disk d^2, substantially as described.

7. The combination of the vehicle-frame, the shaft *s*, journaled therein and provided with attached disk *d*, the wheel A, and the rods *r r*, extending and sliding through the wheel-disk *d'* and into the wheel-hub in one direction and through the shaft-disk *d* and around its journal-bearing in the opposite direction, and provided at each end with suitable stops or disks for confining their ends within said wheel-hub and outside of said journal-bearing, substantially as described.

8. The combination of the vehicle-shaft extension formed of rods *r r*, said rods being provided with notches or depressions *n n*, with a disk or collar provided with holes fitting around and sliding over said rods, and screws in said disk passing transversely through a portion of said holes and engaging with said notches, substantially as described.

9. The combination of the vehicle-frame provided with bearings *f f*, stationary with relation to each other, the shaft *s*, journaled therein and provided with a sliding or telescoping extension, and the wheel A, attached to said extension and moving out and in therewith, said shaft, extension, and wheel all attached and revolving together, substantially as described.

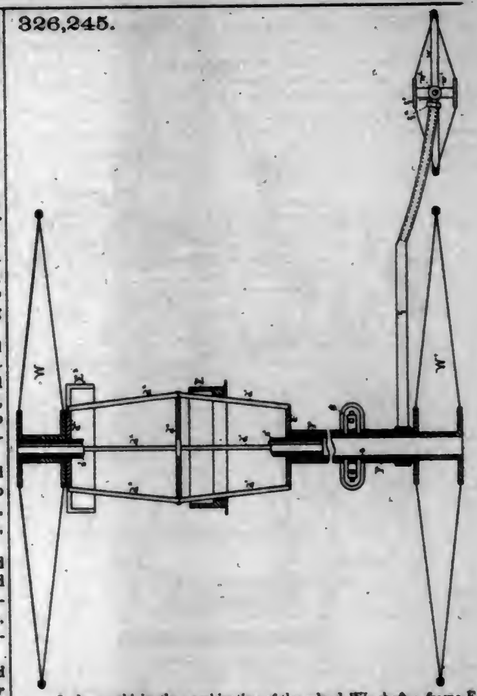
10. The combination of the vehicle-frame, the brake-lever *v'*, pivoted to move horizontally outward and inward and remain rigid vertically, the swinging arm o^3, carrying the handle-shaft o^4 and mounted in bearings on said frame, and the strap *v*, embracing said brake-lever and pivoted to arm o^3, substantially as described.

11. The combination of the vehicle-frame F F' with the extensible shaft mounted in bearings therein and carrying the wheel A, and the wheel A', mounted upon the rod m^4, adjustable laterally in said frame, the said wheels being capable of adjustment to travel the same track, substantially as described.

12. The combination of the vehicle-frame F F', the steering-wheel A', attached to the laterally-adjustable bar m^4, and provided with pivot m^5 and crank-arm m^3, the steering-bar *m'*, the pinion o^7, having its shaft o^5 mounted in bearings attached to said frame, and the strap *m*, embracing said bar and pivoted upon said shaft, substantially as described.

13. The combination of the vehicle-frame, the shaft *s*, journaled therein and provided with disk *d* at its end, extending outward radially beyond the shaft-journal, the tubular extension of said shaft sliding inward through or upon said disk and around the projecting end of said shaft-journal, and the handle-shaft o^5 or o^6, mounted alongside of said extension upon arm o^2 o^3, attached at its inner end to said frame beyond the path of said tubular shaft-extension and extending outward and around the said path behind the front side of said frame, beneath the rider's seat, substantially as described.

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2. In a vehicle, the combination of the wheel W', shaft *s*, frame F, and jointed rods *d' d²*, carrying the wheel W, and capable of expanding it outward and contracting it inward, with the disk d^3, and suitable clamping mechanism adapted to secure said rods to said disk, substantially as described.

3. The combination, with the wheels W W', frame F, and arm *f*, of the wheel *w*, mounted in a support expansible and contractible lengthwise of the track of the wheels carried by the arm *f*, substantially as described.

4. In combination with the frame F and arm *f*, the wheels W W', mounted upon a support expansible and contractible transversely of the wheel-track, and the wheel *w*, mounted upon a support expansible and contractible longitudinally of said wheel-track, substantially as described.

5. The combination of the shaft *s* and wheel W with the jointed rods *d' d²*, forming an extension of said shaft when expanded, and having the rods d^2 made shorter than the rods *d'*, measured from the shaft outward, whereby the rods are caused to incline toward the wheel when closed together, substantially as described.

6. The combination, with the wheel W', frame F, and shaft *s*, of the jointed rods *d' d²*, carrying the wheel W, and capable of expanding it outward and contracting it inward, and a clamping mechanism adapted to secure said rods in their expanded position, substantially as described.

7. The combination, with the wheel W', frame F, and shaft *s*, of the jointed rods *d' d²*, carrying the wheel W, and capable of expanding it outward and contracting it inward, and a clamping mechanism adapted to secure said rods in their contracted or closed position, substantially as described.

8. The combination of the wheel W', frame F, and shaft *s* with the disk *d*, jointed rods *d' d²*, disk d^3, and wheel W, substantially as described.

9. The combination of the wheel W', frame F, shaft *s*, disk *d*, jointed rods *d' d²*, disk d^3, and wheel W with the clamping-collar E or d^4, substantially as described.

10. The combination of the wheel W', frame F, shaft *s*, disk *d*, jointed rods *d' d²*, disk d^3, and wheel W with the clamping-bolt O, substantially as described.

11. The combination of the frame F and wheel W' with the hollow curved arm *f*, and the curved sliding rod *f''*, carrying the wheel *w* and crossing the track of the wheel W' at two points in its path of expansion or contraction, substantially as described.

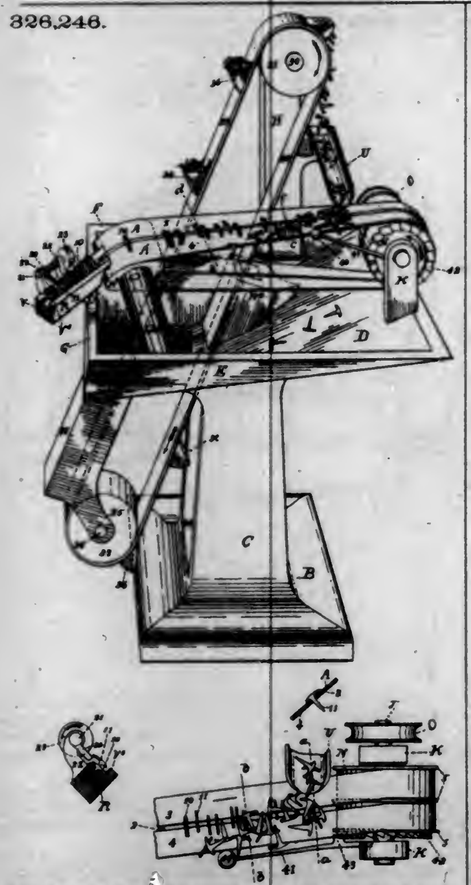
326,246. TRICYCLE. DAVID H. REES, Lowell, Mass. Filed July 25, 1885. (No model.)

Claim.—1. In a vehicle, in combination with the wheel W', shaft *s*, and frame F, the jointed rods *d' d²*, carrying the wheel W, and capable of expanding and contracting it outward and inward, substantially as described.

326,246. BUTTON-FASTENER-FEEDING MACHINE. FRANCIS H. RICHARDS, Springfield, Mass., assignor to the American Button Fastener Company, New Britain, Conn. Filed Dec. 26, 1884. (No model.)

Claim.—1. The combination of an endless apron having a continuous slot, substantially as described, mechanism for supporting and oper-

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sting said apron, means, substantially as described, for supplying button-fasteners to said apron, and a channel for receiving fasteners from said apron, all arranged to operate substantially as specified.

2. In a button-fastener-feeding machine, the combination of the channel K, finger 20, and mechanism for operating said finger, substantially as described.

3. In a button-fastener-feeding machine, the combination of the endless apron A, divided into two parts, 3 and 4, drum N, having flanges 5, one of which runs between said two parts 3 and 4, and drum N^2, substantially as described, and for the purpose specified.

4. The combination of the traveling endless slotted apron A, hammer 40, and mechanism for operating said hammer, substantially as described, and for the purpose specified.

326,247. EXERCISING-MACHINE. JOHN B. ROOT, Port Chester, N. Y. Filed Feb. 16, 1885. (No model.)

Claim.—1. In an exercising-machine, the combination of a fly-wheel and a handle or handles connected by a crank with and for operating said fly-wheel, as and for the purpose described.

2. In an exercising-machine, the combination of a fly-wheel and a foot lever or levers connected by a crank with and for operating said fly-wheel, as and for the purpose set forth.

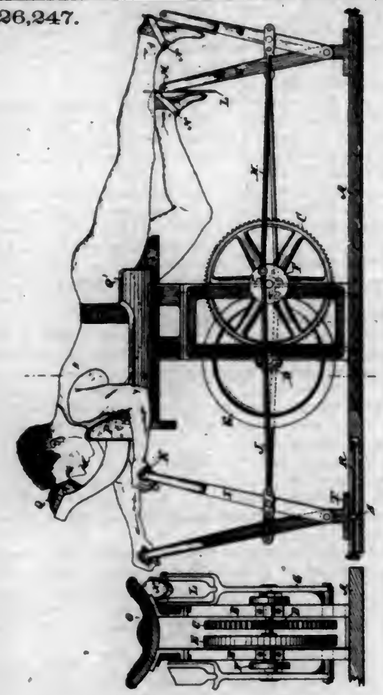
3. In an exercising-machine, the combination of a fly-wheel and hand and foot levers connected by a crank thereto for operating the same, as and for the purpose set forth.

4. In an exercising-machine, the combination of a fly-wheel, hand and foot levers attached thereto and for operating the same, and a horizontal body-support or saddle, as and for the purpose set forth.

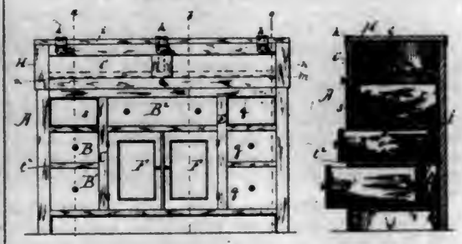
5. In an exercising-machine, the combination of a saddle, O, adapted to the shape of and for holding a person's body, and a head rest or brace, Q, as and for the purpose set forth.

6. In combination, the fly-wheel E, the operating-levers pivoted to a plate, T, provided with the lug S, and the screw R, as and for the purpose set forth.

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326,248. KITCHEN-DRESSER. JOHN F. ROTH, Chicago, Ill. Filed July 5, 1884. (No model.)



Claim.—1. A kitchen-dresser, A, having a hinged cover, H, and divided into compartments by vertical partitions C and E, forming side compartments, one containing drawers B B', and a receptacle, D, above the said drawers, and the other containing a receptacle, D', and forming a middle compartment containing a drawer, B^2, in its upper portion and a cupboard, F, underneath the drawer B^2, a removable narrow shelf, *n*, extending across the said compartments, and a removable knead-board, G, provided with a stop, *k*, on its under side, the whole being constructed and arranged substantially as described.

2. The combination, with a kitchen-dresser, A, of a draw or drawers provided with ledges *o* on each inner side, substantially as described, and for the purpose set forth.

326,249. THRASHING-MACHINE. JOHN W. ROWETON, Clarksburg, Ohio. Filed Apr. 29, 1885. (No model.)

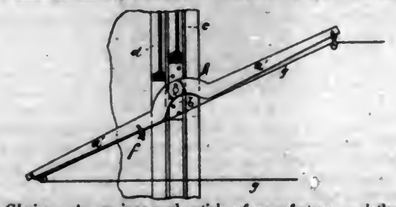
Claim.—1. In a thrashing-machine, the combination, with the thrashing-cylinder, the carriers, the riddle-shoes, one arranged below and in rear of the other, and the tailings-conveyers thereof, of a tailings-return elevator arranged at an inclination corresponding with the arrangement of the shoes and receiving the tailings from each, substantially as and for the purpose set forth.

2. In a thrashing-machine, the combination, with the cylinder thereof, of the concave consisting of an upper toothed and slotted plate and a lower plate having teeth projecting up through the slots, and hooked hangers engaging with loops on the upper plate to form supports for the lower one, substantially as and for the purpose specified.

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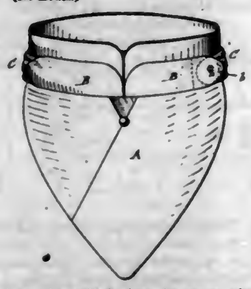


326,250. CLOTHES-LINE. ULYSSE SAVOYE, Jr., Brooklyn, N. Y., and WILLIAM R. SEARING, Newark, N. J. Filed Nov. 12, 1884. (No model.)



Claim.—As an improved article of manufacture, a clothes-line holder consisting of a bar having a curved central portion, *a*, and arms *a'*, with line-pulleys attached thereto, in combination with a plate to which said bar is pivoted at its central curved portion, adapted to be secured in the outer sash-groove of a window-frame, the curved portion *a* when the holder is in operative position projecting beneath the outer sash and the arms *a'* lying without the vertical line of the outer sash between the same and the shutter, for the purpose specified.

326,251. NECKSCARF. DAVID SCHLESINGER, New York, N. Y. Filed Apr. 4, 1885. (No model.)



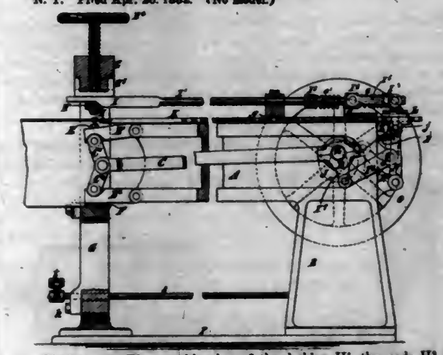
Claim.—1. A scarf provided along its upper edge with two upwardly-extending bands whose inner ends meet at the center of said scarf, substantially as described.

2. A scarf provided along its upper edge with two upwardly-extending bands whose inner ends meet at the center of said scarf, the upper corners of said meeting ends being rounded, substantially as described.

3. The combination, with a scarf provided along its upper edge with two upwardly-extending bands whose inner ends meet at the center of said scarf, of a neckband secured at one end to one of said bands, and having its free end provided with means for detachably connecting it with the other of said bands, substantially as described.

4. The combination, with a scarf provided along its upper edge with two upwardly-extending bands whose inner ends meet at the center of said scarf, of a neckband secured at one end to one of said bands, and having its free end provided with means for detachably connecting it with the other of said bands, said neckband being elastic, substantially as described.

326,252. RIVETING-MACHINE. WILLIAM H. H. SHUM, Brooklyn, N. Y. Filed Apr. 20, 1882. (No model.)



Claim.—1. The combination of the holder H', the rods H^3, the springs H^3, and the bar I, comprising a wedge, substantially as specified.

2. The combination of the holder H', the rods H^3, the springs H^3, the plate H^5, the screw H^4, and the bar I, comprising a wedge, substantially as specified.

3. The combination of the holder H', the bar I, comprising a wedge, the rod I', the collars I^2 I^3 I^4, the springs *e e'*, and means for operating the collar I^4, substantially as specified.

4. The combination of the holder H', the bar I, the rod I', the collars I^2 I^3 I^4, the bell-crank lever I^6, and the crank *a*, substantially as specified.

5. The combination, in a riveting-machine, of a movable header and a movable shoe, hinged arms to which they are attached and which are adapted to enter a boiler-body, toggles for operating said hinged arms, and a rod connected with the center joint of the toggles for actuating them, substantially as specified.

6. The combination, in a riveting-machine, of a movable header and a movable shoe, hinged arms to which they are attached, a stake to which said arms are pivoted, all adapted to enter a boiler-body, and toggles for actuating said header and shoe, substantially as specified.

7. The combination of the header E, shoe F, hinged arms B' B^2, the toggles C C^2, the rod C, and the crank *a*, substantially as specified.

8. The combination, in a riveting-machine, of a movable abutment for sustaining a rivet, a wedge for moving said abutment, a movable header, a hinged arm carrying said header, and a toggle for operating said header, substantially as specified.

9. The combination, in a riveting-machine, of a movable abutment, a wedge for moving said abutment, a movable header, and a movable shoe adapted to enter a boiler-body, hinged arms, to which said header and shoe are attached, and toggles for operating said arms, substantially as specified.

10. The combination, in a riveting-machine, of a stake adapted to enter a boiler-body, an abutment for sustaining a rivet, a wedge for operating the abutment at each heading operation, a movable header, means for operating the header, and a frame which sustains the strain exerted by the means which operate the header, substantially as specified.

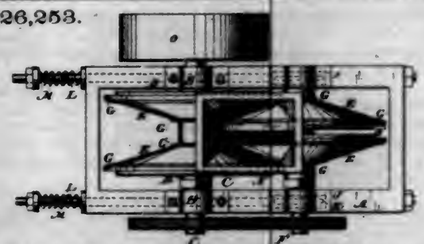
11. The combination of the slider-bar K, the reciprocating slide L, provided with the pawl *k*, the arms N N', spring N^2, and cam J, substantially as specified.

12. A riveting-machine having, in combination, a support for the work to be riveted, a pair of moving and automatically-acting dies for heading rivets arranged on opposite sides of the work to be riveted, mechanism for automatically and intermittently feeding forward the work to be riveted while the dies are not acting, and mechanism for operating the two dies.

326,253. CRUSHING AND-GRINDING MILL. WILLIAM C. STILES, San Francisco, Cal. Filed Apr. 24, 1884. (No model.)

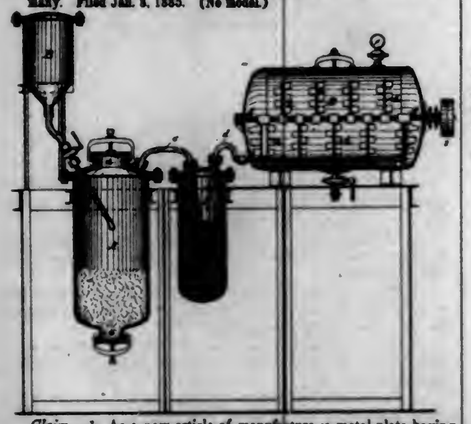
Claim.—The parallel shafts C and F and the conical-faced disks D D D', arranged as described, and having their faces opposing and

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passing each other as they move in the same direction, said disks having removable grinding-surfaces in sections, formed with exterior and central smooth portions and intermediate corrugated portions, in combination with means for moving one shaft to or from the other, whereby the grinding-faces are caused to approach to or recede from each other, substantially as herein described.

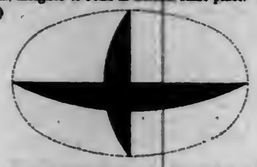
326,254. ARTIFICIAL LITHOGRAPHIC STONE. WILHELM VON PITTLER, Leipsic, assignor to Wessel & Naumann, Renditz, Leipsic, Germany. Filed Jan. 3, 1885. (No model.)



Claim.—1. As a new article of manufacture, a metal plate having a covering of crushed lithographic stone dissolved by muriatic acid and reunited with its carbonic acid, substantially as specified.

2. The process of producing artificial lithographic stone, which consists in crushing lithographic stone, liberating the carbonic acid, reuniting the stone with the acid by a mechanical mixer, and finally covering metal plates with the mixture, substantially as specified.

326,255. LENS FOR OPTICAL INSTRUMENTS. ANTON WAGNER, Philadelphia, Pa., assignor to John L. Bersch, same place. Filed May 1, 1885. (Model.)



Claim.—1. A lens for optical purposes the surface of which has a greater degree of curvature in the direction of one axis than in the direction of the other axis, substantially as set forth.

2. A lens for optical purposes the surface of which is ground in the direction of one axis to a smaller radius than in the direction of the other axis, substantially as set forth.

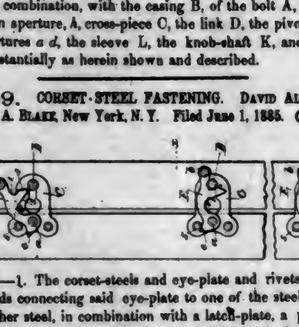
3. A lens for optical purposes the surface of which is ground with a greater degree of curvature at the shorter axis or meridian and with a smaller degree of curvature in the direction of the longer axis, substantially as set forth.

326,256. CAR-WHEEL. NATHAN WARDNER, Boston, Mass. Filed Oct. 1, 1884. Renewed Aug. 10, 1885. (No model.)



Claim.—The improved car-wheel, substantially as described, as made with its tire welded to the rim and connected therewith by two flanged rings extended with their flanges into the tire, and placed against opposite sides of the rim and connected to it by bolts going through it and them, all being substantially as set forth.

326,257. WASHING-MACHINE. VALENTIN WILHELMI, Paterson, N. J. Filed Nov. 7, 1884. (No model.)



Claim.—In a washing-machine, a suds-box constructed of wooden sides covered with sheet metal, and having interior ribs made of corrugated sheet metal, and of a transverse body of corrugated sheet metal attached to the sides by soldering and transverse stay-rods, substantially as set forth.

326,258. LATCH. RUDOLF E. WOODRICH, New York, and CHARLES LANGBEIN, Brooklyn, N. Y. Filed Nov. 21, 1884. (Model.)

Claim.—1. In a lock, the combination, with the casing, of a sliding bolt having a cross-piece, a pivoted plate in the casing, and a link connecting the pivoted plate with the cross-piece of the bolt, substantially as herein shown and described.

2. In a lock, the combination, with a casing, of a sliding bolt, a knob-shaft, a pivoted plate connected with the knob-shaft and the bolt, a sleeve surrounding the knob-shaft, and a sliding latch in the sleeve for locking the said pivoted plate in place, substantially as herein shown and described.

3. In a lock, the combination, with a casing, of the sliding bolt A, cross-piece C, and link D, the pivoted plate H, having apertures *a d*, and the latch Q, substantially as herein shown and described.

4. The combination, with the casing B, of the bolt A, the partition F, having an aperture, A, cross-piece C, the link D, the pivoted plate H, having apertures *a d*, the sleeve L, the knob-shaft K, and the sliding latch Q, substantially as herein shown and described.

326,259. CORSET-STEEL FASTENING. DAVID ALCORN, Jr., and ROBERT A. BLAKE, New York, N. Y. Filed June 1, 1885. (No model.)

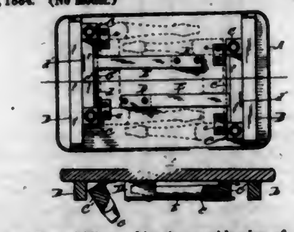


Claim.—1. The corset-steels and eye-plate and rivets having projecting heads connecting said eye-plate to one of the steels, and a stud upon the other steel, in combination with a latch-plate, a pivot for the same adjacent to the rivets of the eye-plate, and having the recess in the outer end to receive and lock the stud, and a stop or projection on the plate, near the pivot thereof, to take against one of the eye-plate rivets to limit the downward movement of the plate, substantially as set forth.

2. The corset-steels A and B, the stud D on the steel B, the eye-plate C, and rivets with projecting heads for securing said eye-plate to the steel A, in combination with the latch-plate E, a pivot for the same near the rivets that attach the eye-plate, so that said rivets limit the movement of the latch-plate in each direction, said latch-plate having a thumb-knob at the outer end, and a recess, 1, and incline 2 below said recess, substantially as and for the purposes set forth.

3. The combination, with the corset-steels A B, eye-plate C, and stud D, of a pivotally-connected plate, E, stops to limit the movement in both directions, said plate having an incline at 3 to be automatically operated in clasping the corset, and a recess for locking the stud D, substantially as specified.

326,260. FOLDING TABLE. GEO. H. ALLEN, Brooklyn, N. Y. Filed Nov. 26, 1884. (No model.)



Claim.—1. In a folding table, the combination of a top, legs arranged in pairs connected at their upper ends by cross-bars having recesses *d*, a block or support, and a spring secured to said block, the outer free end of which rests upon the cross-bar of the legs, substantially as herein shown and described.

2. In a folding table, the combination, with a table-top having battens or cleats secured near its ends, of two pairs of supporting-legs connected at their upper ends by cross-bars having recesses *d d'* and hinged to the top, a block or support secured at the center of the table-top, and a spring of wood secured at its middle to the said block, and having its outer free ends adapted to bear against the cross-bar within the recess *d* when the legs are folded, substantially as herein shown and described.

3. The combination, in a folding table, of the table-top, to the lower surface of which spring-supporting blocks are attached at unequal distances from the cross-bars of the hinged legs, two or more springs, and the hinged legs, as and for the purpose set forth.

4. In a folding table, the combination of a table-top having battens secured thereto near its ends, two pairs of supporting-legs connected at their upper ends by cross-bars having recesses *d d'*, blocks or supports secured beneath the top, near the center thereof and in a plane below the upper surface of the cross-bars, and springs secured at one end to the blocks, and having their outer free ends bear against the cross-bars of the legs thereof, to hold the same in an extended or folded position, substantially as shown and described.

5. In a folding table, the combination of a top, A, having battens B secured to the under surface, near the ends thereof, two pairs of supporting-legs C C, hinged to said top, as at *c*, and connected at their upper ends by cross-bars C' C', having recess *d d'* formed therein, as described, said bars being of a thickness equal to the depth of the battens B, blocks D, secured to said top, near the center thereof, and arranged in a plane below the upper surface of the cross-bars C', and springs E E, having one of their ends secured to the blocks, and their outer free ends adapted to bear against the cross-bars within the recesses thereof, to hold the same in an extended or folded position, substantially as herein shown and described, and for the purpose set forth.

326,261. ROLLER-SKATE. HOLLIS W. BARROWS, Muncie, Ind. Filed July 14, 1885. (No model.)



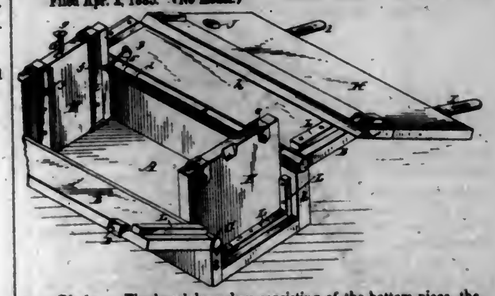
Claim.—1. The combination, with the rubber spring, of a hinged or two-part tension-plate and set-screws for adjusting each division of said plate, as set forth.

2. The combination of the tension-plate consisting of two portions, each provided with opposite tongues, with the hanger-posts having a corresponding groove or guide, the rubber spring, the truck, and set-screws for adjusting each division of the plate, as set forth.

3. The combination of the tension-plate consisting of two separate plates, each provided with opposite tongues and a lateral depending flange, with the hanger-posts having a groove to hold and guide said tongues, the rubber spring, the truck, and set-screws, operated through or below the sole-plate, for adjusting each division of the plate, as set forth.

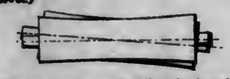
4. A two-part tension-plate having the meeting edges of the divisions terminating in opposite tongues, combined with the hanger-posts provided with a corresponding groove, the rubber spring, the trucks, and the set-screws, whereby the plate acts as a hinge, or either division may be adjusted to level up the truck, as set forth.

326,262. KNOCKDOWN BOX. HOLMAN T. BOULDEN, Millersburg, Ky. Filed Apr. 2, 1885. (No model.)



Claim.—The knockdown box consisting of the bottom piece, the lower side sections fixed thereto, the end pieces hinged to the bottom, the upper side sections hinged to the lower ones, the cover made in longitudinal sections, and brace-cleats secured to the bottom and side pieces and resting flush with the outer sides of the end pieces when the box is adjusted for use, substantially as set forth.

326,263. PROCESS OF DRESSING ROLLS. RICHD. BROWN, Youngstown, assignor to Cleveland, Brown & Co., Cleveland, Ohio. Filed Jan. 3, 1885. (No model.)



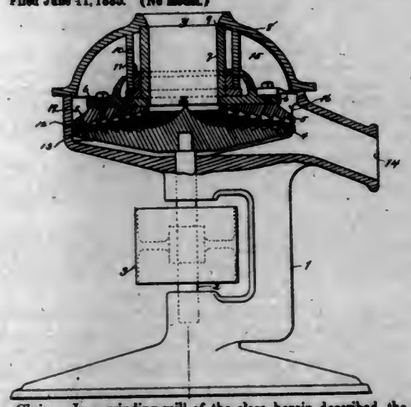
Claim.—1. The process or method herein described of dressing so-called plate-rolls, or rolls for the manufacture of metal plates, sheets, and similar work, and consisting, essentially, in running the rolls together, with their axes arranged more or less oblique to each other, according to the concavity desired on the face of the rolls, substantially as set forth.

2. The process or method herein described of dressing so-called plate-rolls, or rolls for the manufacture of metal plates, sheets, and similar work without removing the rolls from housings, and consisting, essentially, in running the rolls together, with their axes arranged more or less oblique to each other, according to the concavity desired on the face of the rolls, substantially as set forth.

3. The process or method herein described of dressing plate-rolls, or rolls for manufacturing metal plates, sheets, and other similar work, and consisting, essentially, in running the rolls together, with the axes oblique to each other, and applying sand, emery, or other hard material to the surface of the rolls while they are being so revolved together, substantially as set forth.

4. The method of dressing concave rolls, consisting in first adjusting the axes of said rolls to a predetermined relative obliquity originally known and fixed and dependent upon the degree of concavity desired, and then running or revolving the faces of said rolls against each other, substantially as and for the purpose specified.

326,264. GRINDING-MILL. WILLIAM H. BROWER, Brooklyn, N. Y. Filed June 11, 1885. (No model.)



Claim.—In a grinding-mill of the class herein described, the combination, with the lower power-driven mill-plate, the upper mill-plate driven thereby, and a ring-plate secured to the upper mill-plate, of a wing, as 15, attached to the ring-plate and rotating therewith, the said

wing being of such form as to dislodge any accumulation of material from the dome of the casing, the dislodged material finding egress by gravity, substantially as described.

326,265. TRUNK-CATCH. WILLIAM BRUEN, Newark, N. J. Filed Feb. 9, 1884. (No model.)

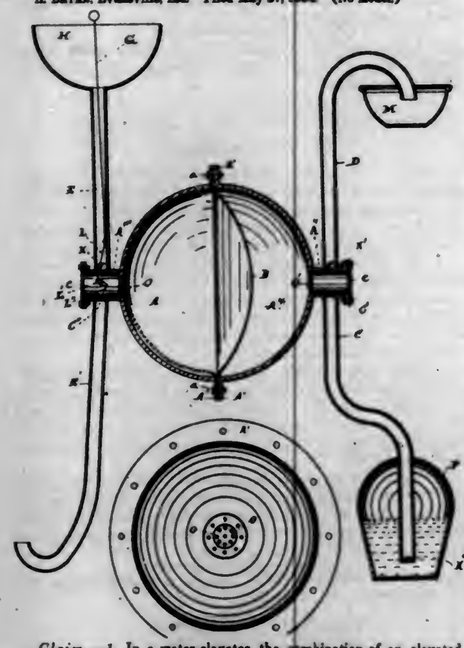


Claim.—1. A trunk-catch containing therein a plate, A, having a projecting dowel thereon, a plate, B, having a socket to receive said dowel, a spring-tongue secured to one of said plates to engage a suitable projecting in the other, and a removable finger-piece permanently secured in bearings in one of said plates and adapted to throw said spring-tongue, substantially as and for the purposes set forth.

2. In a trunk-catch, the combination of a spring-tongue, a catch to engage therewith, and a sliding finger-piece, arranged and operating substantially as set forth.

3. In a trunk-catch, a spring-tongue, a catch-plate, B, adapted to interlock therewith, in combination with a finger-piece adapted to engage said tongue to release the same and to drop automatically from an engaging position, substantially as set forth.

326,266. AUTOMATIC PUMP AND WATER-ELEVATOR. ANTHONY H. BRYAN, Evansville, Ind. Filed May 27, 1884. (No model.)



Claim.—1. In a water-elevator, the combination of an elevated waste-water reservoir, of descending waste-water pipes leading into and from a chamber attached to a hemisphere having suitable openings for the flow of water, of a diaphragm attached thereto, with suitable valves located within said chamber, and means for opening and closing the same, as described, and for the purposes set forth.

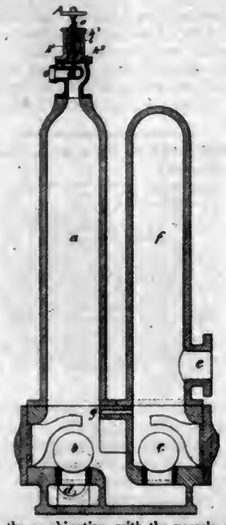
2. In a water-elevator, the waste-water reservoir H, the pipe E, the rod G, the chamber A'", the valves K and C', link L, lever L', link L", and pipe E', with the hemisphere A, provided with diaphragm B, as shown and described, and for the purposes set forth.

3. In a water-elevator, hemispheres A A', having diaphragm B and chambers A" A'", in combination with elevator-pipes C D and descending pipes E E', as shown and described, and for the purposes set forth.

326,267. APPARATUS FOR RAISING WATER. CUTHBERT BURNETT, Hartlepool, County of Durham, England. Filed Oct. 24, 1884. (No model.) Patented in England Oct. 6, 1883, No. 4,755; in France May 15, 1884, No. 163,136; in Belgium May 24, 1884, No. 65,262, and in Germany June 29, 1884, No. 30,762.

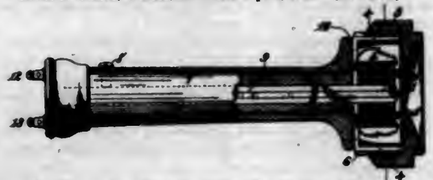
Claim.—1. In a pump, the combination, with the vessels *a* and *f*, the inlet-pipe *d*, discharge-pipe *c*, and valves *b c*, of the steam-inlet pipe G and valves *h*, the piston A' and valve A^2, spindle *o*, and air-inlet tube at *i*, substantially as specified.

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2. In a pump, the combination, with the vessels *a* and *f*, the inlet-pipe *d*, discharge-pipe *c*, and valves *b c*, of the injection-pipe *g*, for water to pass into the vessel *a* and condense the steam, the steam-inlet pipe G, and valves *h* and h^2, and air-inlet tube at *i*, substantially as specified.

326,268. TELEPHONIC RECEIVER. WILLIAM BURNLEY, North East, Pa., assignor of two-thirds to Charles A. Hitchcock, same place, and Lewis F. Watson, Warren, Pa. Filed Sept. 4, 1884. (No model.)



Claim.—1. In a telephone-receiver, the combination, with a permanent magnet and a diaphragm, of a helix having bunches of wires of magnetic material, forming additional poles, placed within the helix, substantially as and for the purpose set forth.

2. In a telephone-receiver, the combination of a compound permanent magnet having the center leaf extended beyond the others toward a diaphragm, right-angled magnets projecting therefrom on opposite sides and passing around a helix, a helix surrounding the end of the permanent magnet, and independent cores within the windings of the helix, substantially as and for the purpose set forth.

3. In a telephone-receiver, the combination of a diaphragm, a compound permanent bar-magnet having an extended pole in proximity thereto, a helix surrounding the end of such permanent magnet and containing independent cores formed of wires inclosed in its windings, and permanent L or right-angled magnets in contact with the bar-magnet, independent cores, and diaphragm, substantially as and for the purpose set forth.

4. In a telephone-receiver, the combination, with a permanent magnet and a diaphragm, of a helix having the windings of its successive layers starting always from the same end or head, and independent cores formed by bunches of wires secured within its windings, substantially as and for the purpose set forth.

5. In a telephone-receiver, the combination of the diaphragm 1, the compound permanent magnet 9, with central extension, 11, the helix 2, and the independent poles 5 5 within its windings, substantially as and for the purpose set forth.

6. In a telephone-receiver, the combination of the diaphragm 1, the compound permanent magnet 9, having central extension, 11, the right-angled or L magnets 4-4, the helix 2, and the independent poles 5 5 within the windings of the helix, substantially as and for the purpose set forth.

7. In a telephone-receiver, the combination of the diaphragm 1, the case 6, and right-angled magnets 4 4 in contact with the diaphragm, the bar permanent magnet 9, made of several laminæ, and having the central one, 11, projecting toward the diaphragm, the helix 2, and the independent cores or poles 5 5, secured within the windings of the helix and contacting at one end with the magnets 4, substantially as and for the purpose set forth.

8. In a telephone-receiver, the containing-case 6, formed with the grooves 15 upon its sides, corresponding grooves upon its bottom leading thence to the central aperture, and the apertures 16, whereby the angular or L-shaped magnets may be slipped into position and secured, the magnet 9, and angular magnetic pieces 4 4, substantially as described.

326,269. TELEPHONE-TRANSMITTER. WILLIAM BURNLEY, North East, Pa., assignor of two-thirds to Charles A. Hitchcock, same place, and Lewis F. Watson, Warren, Pa. Filed Oct. 13, 1884. (No model.)



Claim.—1. In a telephonic transmitter, the combination, with the diaphragm, of two carbon-pencil electrodes influenced thereby and parallel to the face thereof, both loosely supported in or by a suitable framework and in contact throughout their length, substantially as described.

2. In a telephone-transmitter, the combination of a diaphragm, two carbon-pencil electrodes influenced thereby and parallel to the face thereof, a suitable frame-work, as shown, for loosely supporting both pencil-electrodes, and a boss or projection upon the face of the diaphragm taking upon and against one of the pencil-electrodes, substantially as described.

3. In a telephone-transmitter, the combination of a diaphragm, a yoke secured beneath it, and two electrodes mounted loosely therein and contacting throughout their length, substantially as and for the purpose set forth.

4. In a telephone-transmitter, the combination of a diaphragm, two electrodes contacting throughout their length, a yoke supporting the electrodes, and a spring supporting and retaining the yoke in position, substantially as and for the purpose set forth.

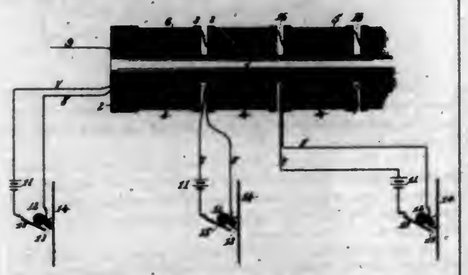
5. In a telephone-transmitter, the combination of a diaphragm, two electrodes controlled thereby and contacting throughout their length, a yoke supporting and carrying the electrodes, and means for controlling and regulating the normal contact-pressure of the diaphragm and electrodes, substantially as and for the purpose set forth.

6. In a telephone-transmitter, the combination of the diaphragm 16, having boss or projection 15, the yoke 5, having slotted ends 8, and the electrodes 1 2, loosely supported therein, substantially as and for the purpose set forth.

7. In a telephone-transmitter, the combination of the ring 11, diaphragm 16, yoke 5, electrodes 1 2, loosely supported therein, and spring 6, retaining the yoke and electrodes in position, substantially as and for the purpose set forth.

8. In a telephone-transmitter, the combination of the ring 11, diaphragm 16, yoke 5, electrodes 1 2, supported thereby and contacting throughout their length, spring 6, retaining the yoke and electrodes in position, and adjusting devices 14, for controlling the action of the spring, substantially as and for the purpose set forth.

326,270. INDUCTION-COIL. WILLIAM BURNLEY, North East, Pa., assignor of two-thirds to Charles A. Hitchcock, same place, and Lewis F. Watson, Warren, Pa. Filed Apr. 16, 1885. (No model.)

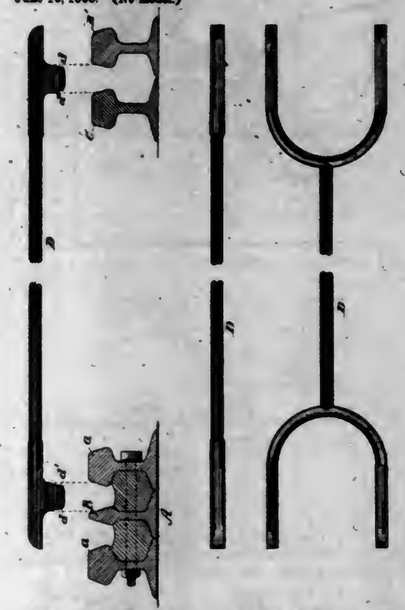


Claim.—1. An induction-coil consisting of a continuous core having a series of disks mounted thereon in pairs, whereby the length of said core is divided into several sections, a primary wire wound in two or more independent sections adapted to be connected in independent circuits, and a secondary wire also wound in sections, substantially as described.

2. An induction-coil consisting of a core, a series of disks thereon dividing the length of the coil into two or more sections, a primary wire wound in two or more independent sections, each section having its own terminals, and a secondary wire wound continuously thereover in one continuous coil, substantially as described.

3. In an induction-coil, the combination of a single continuous core, a series of primary coils wound thereupon, and one or more sections of secondary coil wrapped therearound and adapted to be connected to a line in series or in multiple circuit, substantially as described.

326,271. TRACK-GAGE. REINARD CAFFREY, White Haven, Pa. Filed June 16, 1885. (No model.)



Claim.—1. A railroad-track gage consisting of a bar provided with projections depending from the ends of it, so that the distance between the outside of the projections forms the gage for the main-track rails and the distance between the inside of the said projections forms the gage for the guard-rails, substantially as and for the purposes set forth.

2. A railroad-track gage consisting of a bar forked at one or at both ends, and having projections depending from each end, so that the distance between the outside of the projections forms the gage for the main-track rails, and the distance between the inside of the said projections forms the gage for the guard-rails, substantially as and for the purposes set forth.

326,272. BOTTLE-STOPPER. GEORGE W. CANTERBURY, Bondsville, Mass. Filed May 14, 1885. (Model.)



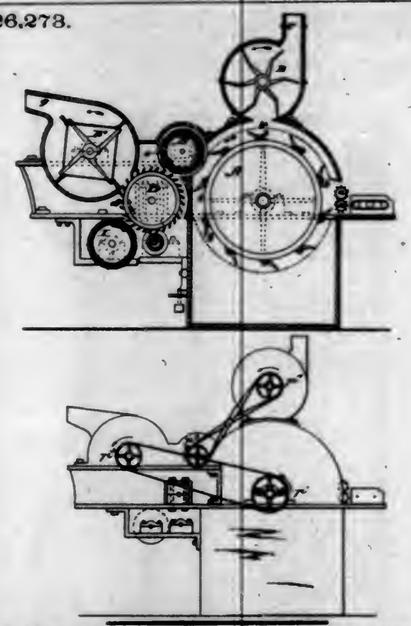
Claim.—The within-described improved stopper for bottles, consisting of a cork, B, a washer gas-check, D, and side strips H, all combined and operating as and for the purpose set forth.

326,273. MACHINE FOR PICKING AND BURRING WOOL OR COTTON. JOHN R. CLARK and HENRY TINDELL, Harrison, N. J. Filed Dec. 11, 1883. (No model.)

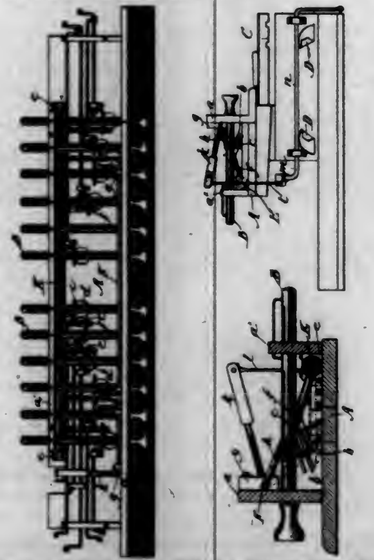
Brief.—A cylindrical brush is provided, arranged in contact with the burring-cylinder and between the clipper and the fan, for removing the wool, said cylindrical brush revolving in an opposite direction to said burring-cylinder at their point of contact, to brush from the wool the "shives" and other remaining impurities.

Claim.—In a machine for picking and burring wool, &c., the combination of a burring-cylinder, a clipper to remove the burrs clinging to the wool thereon, a fan or brush to remove the wool from said burring-cylinder, and a brush arranged between said clipper and fan or brush to brush particles of foreign matter from the wool while the latter moves on and with said burring-cylinder and after its passage under the influence of the clipper, and means, substantially as described, suitable for driving said parts, all said parts being arranged and operating substantially as and for the purposes set forth.

326,273.



326,274. REED-ORGAN STOP-ACTION. MELVILLE CLARK, Chicago, Ill. Filed Dec. 17, 1884. (No model.)



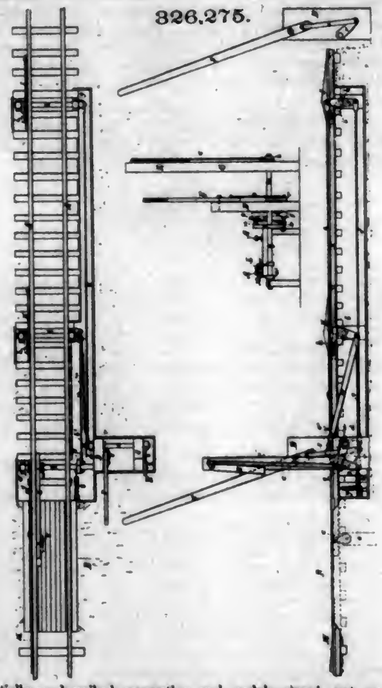
Claim.—1. In an organ, the combination, with the stops and stop-wires, of a roller provided with an arm for each stop-wire, a shaft provided with one or more projections to engage with a corresponding number of said arms, a knee-swell, and suitable intermediate mechanism for operating the shaft from the knee-swell, as set forth.

2. In an organ, the combination, with the stops and stop-wires, of a roller provided with an arm for each stop-wire, a shaft provided with one or more projections to engage with a corresponding number of said arms, and also provided with a suitable crank-arm, a knee-swell, and a rod connecting said crank-arm and knee-swell, as set forth.

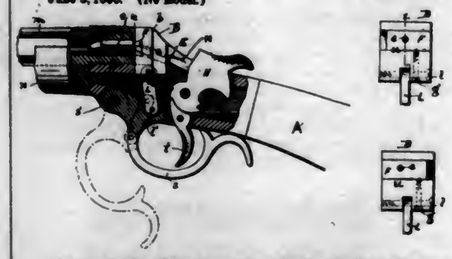
326,275. MECHANISM FOR OPERATING ROAD-CROSSING GATES. JOHN H. CLAYTON, St. Johnsbury, Vt. Filed Dec. 19, 1884. (No model.)

Claim.—The combination, with the railway-track A A, the lever-signal E, and gate F, of the three pedals I, K, and L, the spiral springs *y* and *t*, the hooked lever M, its toothed sector *a'*, and mechanism, substantially as described, connecting such pedals, signal, and gate, such mechanism consisting of the shaft *a*, *h*, *l*, and *q*, cranks *b*, *i*, *k*, *r*, *v*, and *w*, connecting-rods *c*, *e*, *f*, *n*, *o*, and *u*, link *s*, and the levers *d*, *m*, and *p*, all being arranged with a road-crossing and to operate essentially and for the purposes as set forth.

326,275.



326,276. FIRE-ARM. WM. H. DAVENPORT, Uxbridge, Mass. Filed June 3, 1885. (No model.)



Claim.—1. The sliding breech-block having the firing-pin mounted therein, substantially as hereinbefore described, in combination with the apertured plate adjustably secured to the face of said block, as and for the purpose set forth.

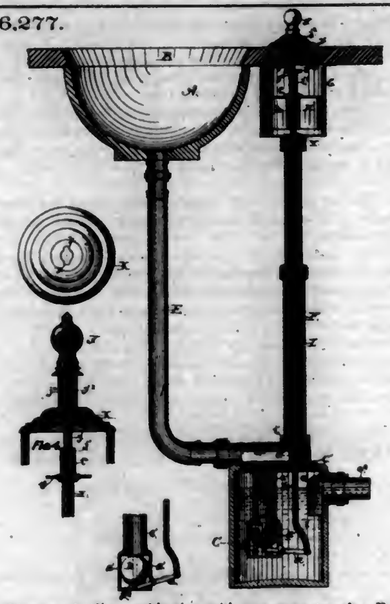
2. In a rifle, the breech-block B, having the firing-pin mounted therein, and further provided with the apertured plate F, adjustably secured to the face thereof, in combination with the swinging guard S, and link L, connecting said block and guard, substantially as shown, and for the purpose hereinbefore set forth.

3. The breech-block B herein described, having the elongated apertures d^2 d^3 formed therein, substantially in line with the axis of the barrel *m*, in combination with the apertured plate F, adjustably mounted and secured to the face of said block, and means to connect the block with the guard, substantially as shown, and for the purpose set forth.

4. The breech-block herein described, having the elongated aperture therein, and further provided with the apertured plate F, adjustably secured to the face of the block, in combination with the firing-pin E, loosely mounted within said block and plate, whereby the forward end of the firing-pin is adapted to be adjusted both for rim and center fire cartridges, substantially as shown and set forth.

326,277. AUTOMATIC TRAP FOR WASH-BASINS. WILLIAM E. DELEHANTY, Albany, and EDWARD J. MURPHY, Greenbush, N. Y. Filed Aug. 15, 1884. (No model.)

326,277.

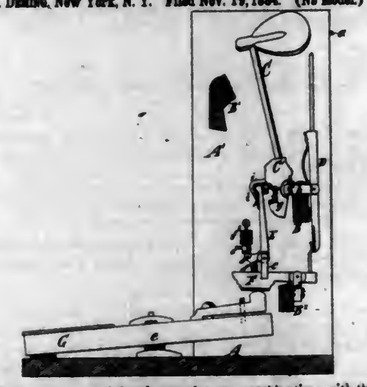


Claim.—1. The combination, with a waste-water pipe, E, for a wash-basin or other similar article, and a branch pipe, F, connecting said waste-water pipe with the float-chamber G, of the trap-chamber C, provided with an outlet-pipe, c^2, the trap-valve D, arranged inside of the trap-chamber C, and adapted to close with an upward movement against the lower end of the pendent pipe *c'*, the valve-operating rod I, and float H, as and for the purpose herein specified.

2. The combination, with a trap-chamber, C, having a detachable cover, C', containing an upwardly-closing valve, D, and provided with an outlet-pipe, c^2, and conical seat c^4, of the valve-operating rod I, provided with the valve i', arms i^3, and weight i^4, lever *d*, and the float H, all being constructed and arranged to operate substantially as and for the purpose herein specified.

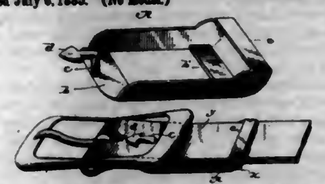
3. The combination, with a trap-chamber, C, having a detachable cover, C', with a pendent pipe, *c'*, the said trap-chamber being provided with an outlet-pipe, c^2, which is above the plane of the lower end of the pendent pipe *c'*, of the upwardly-closing valve D, contained inside of the trap-chamber C, and resting loosely on a cap, d^2, attached to the free end of the lever *d*, the said lever being connected to a weighted operating-rod, I, provided with a float, H, all being constructed and arranged to operate substantially as and for the purpose herein specified.

326,278. REPETITION-ACTION FOR UPRIGHT PIANOS. LYSANDER F. DEMING, New York, N. Y. Filed Nov. 19, 1884. (No model.)



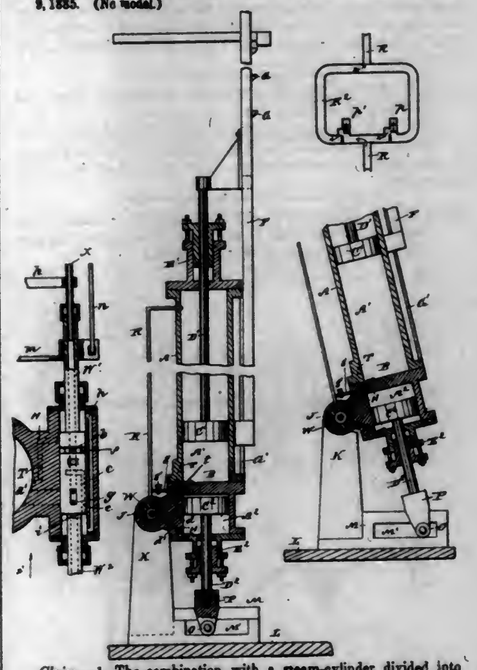
Claim.—In an upright-piano action, the combination, with the hammer-butt C', having the notch *g*, of the jack E, having the hook or tooth *h*, and opposite said hook or tooth an outward swell or projection, and a back-check, *i*, consisting of an elastic piece fixed in the hammer-butt and having its lower end portion curved inward toward the hammer-butt, so as to come below the outward swell or projection on the jack, substantially as herein described.

326,279. BUCKLE. CHARLEY A. DRAPER, Centralia, Ill., assignor of two-thirds to P. R. Bryant and Emadeus Probst, both of same place. Filed July 6, 1885. (No model.)



Claim.—The fastener herein described, comprising the longitudinal parallel side plates, connected at their ends by bars *b b'*, a leg, *c*, projecting from the bar *b*, and having a spear-shaped head, and a bar, *c*, connecting the side plates on their upper sides at the end at which the bar *b'* is located, as set forth.

326,280. LOG-TURNER. JOSHUA EVERED, Duluth, Minn. Filed June 9, 1885. (No model.)



Claim.—1. The combination, with a steam-cylinder divided into two compartments, of a piston in each compartment, a hollow projection on the cylinder, forming a valve-chamber, a valve in said chamber operating with both cylinders, standards on which the valve in the cylinder is mounted, which valve forms a pivot on which the cylinder can rock, and a log-rolling bar connected with one piston-rod, substantially as herein shown and described.

2. The combination, with a steam-cylinder divided into two compartments, of a piston in each compartment, a hollow projection on the cylinder, forming a valve-chamber, a valve in said chamber, which valve is mounted to rock and move lengthwise on its longitudinal axis and operating with both cylinders, and a log-rolling bar connected with one piston-rod, substantially as herein shown and described.

3. The combination, with a steam-cylinder divided into two compartments, of a piston in each compartment, a hollow projection on the cylinder, forming a valve-chamber, a valve mounted on standards to rock and reciprocate on its longitudinal axis, which valve is in the above-mentioned chamber and forms a pivot for the cylinder, the said valve being provided with two sets of ports, one set for conducting the steam into the upper part of the cylinder and the other for conducting the steam into the lower compartment, and a log-rolling beam connected with one of the pistons, substantially as herein shown and described.

4. The combination, with a pivoted steam-cylinder divided into two compartments, of a piston in each compartment, and a log-rolling bar connected with one of the pistons, the other piston serving to adjust the angle of the cylinder and rolling-bar, and suitable valves and ports for said compartments, substantially as herein shown and described.

5. The combination, with a steam-cylinder divided into two compartments by a partition, of a piston in each compartment, the piston-rods of which pistons project from the opposite ends of the cylinder, and a log-rolling bar connected with one of the piston-rods, and a grooved or slotted bearing-plate in which the outer end of the other piston is guided, and suitable valves and ports for said chambers, substantially as herein shown and described.

6. The combination, with the pivoted cylinder A, divided into the compartments A' and A^2 by the transverse partition B, of the pistons C' C^2, the piston-rods D' D^2, the toothed bar F, connected with the piston-rod D', and the guide M, in which a roller works pivoted on the lower end of piston-rod D^2, whereby the position of the cylinder is governed, substantially as herein shown and described.

7. The combination, with the base L and the standard K, of the cylinder A, mounted to swing on the standard and divided into two compartments, the piston-rods D' D^2, the pistons C' C^2 in said compartments, the log-rolling rod F, operated by the piston C', the head P on the outer end of piston D^2, the roller O on said head and bearing on the base, and suitable valves and ports for the cylinder, substantially as set forth.

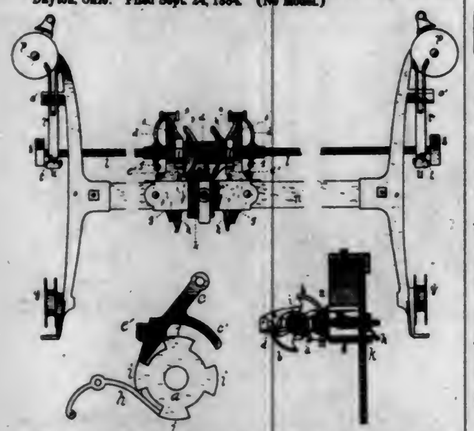
8. In a log roller, the combination, with a cylinder pivoted to swing in the vertical plane, of a log-actuating bar connected with a piston-rod projecting from the top of the cylinder and a piston-rod for swinging the cylinder projecting from the lower end of the same, substantially as herein shown and described.

326,281. SACCHARINE COMPOUND. CONSTANTIN FAHLBERG, New York, N. Y. Filed June 26, 1885. (No specimens.)

Brief.—Improvement on Patent No. 319,082, dated June 2, 1885.

Claim.—A saccharine compound consisting of a mixture of starch or grape sugar and benzoic sulfinide, substantially as and for the purpose set forth.

326,282. CHECK-ROWER FOR CORN-PLANTERS. ROBERT FARIS, Decatur, Ill., assignor to the Farmers Friend Manufacturing Company, Dayton, Ohio. Filed Sept. 24, 1884. (No model.)



Claim.—1. The combination, in a check-rower, of an oscillating lever, a shaft adapted to be partially rotated in reverse directions alternately by the oscillating lever, a cam-cylinder and ratchet loose on said shaft and adapted to be intermittently rotated in one direction by the shaft, and suitable means of conveying the motion of the cam-cylinder to the seed-slide of a planter, substantially as set forth.

2. The combination, in a check-rower, of an oscillating lever, a shaft adapted to be partially rotated in reverse directions alternately by the oscillating lever, a cam-cylinder and ratchet loose on said shaft and adapted to be intermittently rotated in one direction by the shaft, a swinging lever adapted to be oscillated by the cam-cylinder, and suitable means of conveying the motion of the swinging lever to the seed-slide of a corn-planter as set forth.

3. The combination, in a check-rower, of an oscillating lever adapted to be thrown in one direction by knots on a check-row wire, a shaft provided with a drive-pawl and adapted to be partially rotated in reverse directions alternately by the oscillating lever, a cam-cylinder provided with a ratchet-wheel and adapted to be intermittently rotated in one direction by the pawl on the shaft, suitable means of conveying the motion of the cam-cylinder to the seed-slide of a corn-planter, and suitable means of automatically returning the shaft and lever to their original position after the termination of every throw of the knots on the check-row wire, as set forth.

4. The combination, in a check-rower for corn-planters, of oscillating rod *l*, provided with rigid arm *d*, pawl *c*, hinged to the outer end of arm *d*, intermittently-rotating cylinder *a*, provided with ratchet-teeth *i* and deflected projections *b*, and lever *k*, provided with a friction-roller, as and for the purpose set forth.

5. The combination of cylinder *a*, ratchets *i*, projections *b*, rod *l*, arm *d*, pawl *c*, lever *f*, pawl *h*, and spring *g*, extending from projection *f* to pawl *h*, as and for the purpose set forth.

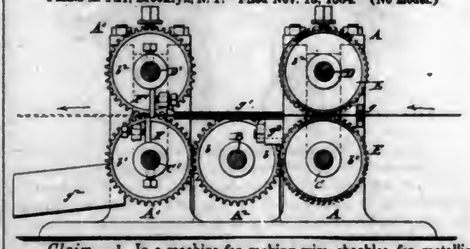
6. The combination, with intermittently-rotating cylinder *a*, having deflected projections *b*, and with a vibrating lever, *k*, of cone-shaped roller *m*, adapted to be adjusted with relation to the projections *b* for the purpose of regulating the vibration of the lever *k*, substantially as set forth.

7. The combination, with tappet *r*, having slot *r'* and bifurcated termination *u*, of adjustable block *s*, pin *t*, and shaft *l*, as and for the purpose set forth.

8. The combination of drive-pawl *c*, ratchet *i*, and rigid locking projection *c'*, located as described, so that the pawl will become interposed between the projection and a ratchet-tooth at the termination of every stroke, and thereby effect an absolute stop both in the ratchet and pawl, substantially as and for the purpose set forth.

9. The combination, with a ratchet-wheel of a check-rower, of a spring-pawl adapted to fit against a ratchet-tooth and prevent backward movement, and also press against a following tooth and prevent forward motion to the extent of the strength of the spring, substantially as set forth.

326,283. MACHINE FOR MAKING WIRES FOR METALLIC SEALS. FRANK A. FAY, Brooklyn, N. Y. Filed Nov. 13, 1884. (No model.)



Claim.—1. In a machine for making wire shackles for metallic seals, a set of shaping-rolls consisting of a pair of upper rolls and a pair of lower rolls, the rolls of each pair being arranged adjoining each other and provided with circumferential rings having at two or more portions edge grooves, and at intermediate portions with alternating projections and indentations, that mesh with the indentations and projections of the other rolls, substantially as set forth.

2. In a machine for making wire shackles for metallic seals, a shaping-roll consisting of a web and a circumferential steel ring, being grooved at two or more portions of its circumference with edge grooves, and at the intermediate portions with alternating projections and depressions, substantially as set forth.

3. The combination of four shaping-rolls, arranged in pairs and provided with edge grooves at two or more parts, and with alternating projections and depressions at intermediate portions of its circumference, with an intermediate guide-tube and rotating cutters, substantially as set forth.

326,284. AXLE FOR VEHICLES. GOVERNEUR M. FORBES, Salt Lake City, Utah. Filed Aug. 14, 1884. (No model.)



Claim.—1. The axle A for vehicles, provided with crank-arms at its ends and cams *c*, the arms carrying spindles for the wheels, substantially as described.

2. The combination, with a cranked axle on a vehicle, of cams *c* and boxes *d*, substantially as and for the purpose specified.

326,285. CAR-COUPLING. EZRA N. GIFFORD, Cincinnati, Ohio, assignor to himself, Washington McLean, and John R. McLean, same place. Filed June 25, 1885. (No model.)



326,285.



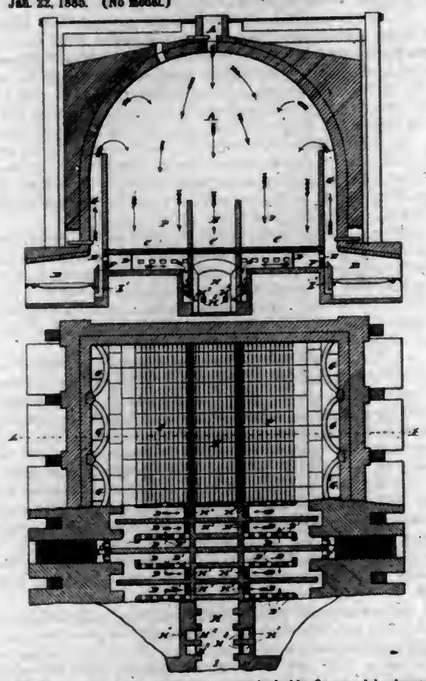
Claim.—1. In a car-coupler, the combination, with the draw-head and a swinging hook pivoted thereto, of a locking-pin working in an arc-shaped slot in the draw-head, and a cam-lever adapted to swing the pin out of engagement with the hook and elevate it, substantially as set forth.

2. In a car-coupler, the combination, with the draw-head and a hook pivoted thereto, of a gravity locking-pin working in an elongated slot formed in the draw-head, a lever embracing the pin and fulcrumed on the draw-head, and inclined sections on the lever and draw-head, whereby the swinging of the lever elevates the pin and simultaneously throws it out of engagement with the hook, substantially as set forth.

3. In a car-coupler, the combination, with a draw-head and a swinging hook pivoted thereto, of a gravity locking-pin resting in an arc-shaped slot in the draw-head adapted to rest against the end of the hook-shank when in locked adjustment, and to be released therefrom by a movement parallel with the surface of the said end, substantially as set forth.

4. In a car-coupler, the combination, with a draw-head provided with a curved slot and a gravity-pin adapted to move laterally within the slot, of a swinging hook pivoted to the draw-head, the end of the shank of the hook resting against the pin when in coupled adjustment, and adapted to force the pin into snug contact with the end of the slot when strain is exerted upon the hook, substantially as set forth.

326,286. BRICK-KILN. WILLIS N. GRAVES, St. Louis, Mo., assignor of one-half to the Hydraulic Press Brick Company, same place. Filed Jan. 22, 1885. (No model.)



Claim.—1. In a brick-kiln having vertical side flues and horizontal flues beneath the floor of the kiln, the furnaces communicating with said flues, in combination with flues located behind the bridge-walls of the furnaces, substantially as and for the purpose set forth.

2. In a brick-kiln having furnaces, a floor and flues located beneath the floor and communicating with the furnaces, the flues located behind the bridge-walls of the furnaces, substantially as shown and described, for the purpose specified.

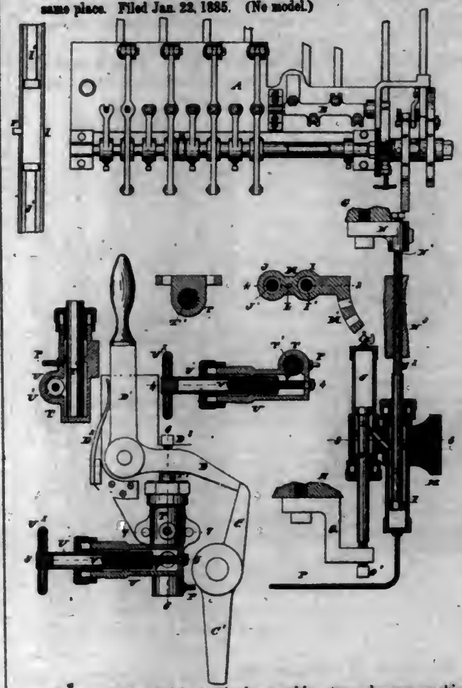
3. The combination, with the chamber A, the furnace B, and the passages E, placing the lower part of said chamber in communication with the said furnace, of the flue E', discharging cold or partially-heated air into the current of highly-heated air as it passes from the furnace to the chamber, substantially as and for the purposes set forth.

4. The combination, with the chamber A, having the perforated floor C and the flues D located thereunder, of the furnaces B, the passages E, connecting said flues and furnaces, and the flues E', discharging cold or slightly-heated air at the openings E, as and for the purposes set forth.

5. The combination of the chamber A, the floor C, the flues D beneath said floor, communicating with said chamber, the exit-flue H, also beneath said floor, the chimney I, with which it communicates, and the flues H', connecting said flues D and H, substantially as and for the purpose set forth.

6. The combination, with the chamber A, having the perforated floor C and openings above said floor for the ingress of air, of the flues D and exit-flue H, located beneath said floor, and the flues H', connecting said flues, provided with stoppers H^2, substantially as and for the purpose set forth.

326,287. BRICK-MACHINE ATTACHMENT. WILLIS N. GRAVES, St. Louis, Mo., assignor of one-half to the Hydraulic Press Brick Company, same place. Filed Jan. 22, 1885. (No model.)



Claim.—1. In a brick or similar machine, two plungers working in a liquid cylinder or cylinders, one of which is adapted to be moved by the upper and the other by the lower follower to displace the liquid and actuate a trip, substantially as and for the purpose set forth.

2. In a brick or similar machine, two liquid-cylinders connected by a pipe or port and provided with plungers, one of which is adapted to be moved by the upper and the other by the lower follower, to force the liquid through a pipe common to both cylinders to actuate a trip, substantially as and for the purpose specified.

6. In a brick or similar machine, two liquid-cylinders connected by a pipe or port and provided with plungers, one of which is adapted to be moved by the upper and the other by the lower follower, to force the liquid through a pipe common to both cylinders into a cylinder provided with a plunger adapted to throw a trip when operated, substantially as and for the purpose set forth.

4. In a brick or similar machine, the combination of three liquid-cylinders provided with plungers, two of the cylinders being connected by a pipe or port and their plungers adapted to be operated by the followers of the machine, and the third cylinder being connected to the two former by a pipe common to all, through which the liquid is forced as the followers of the machine approach each other, to operate a trip and arrest the approaching movement of the followers, substantially as and for the purpose set forth.

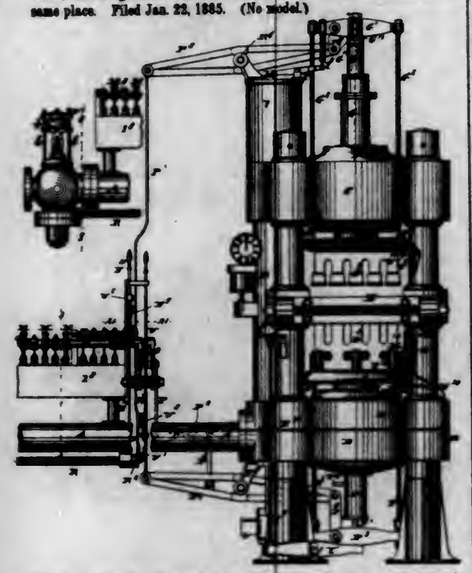
5. In a brick or similar machine, the combination of two liquid-cylinders connected by a pipe or port, plungers in said cylinders adapted to be operated by the followers of the machine, liquid-cylinder connected to the follower-cylinders by a pipe common to both, plunger in said cyl-

inder, and trip adapted to be operated by the plunger as the liquid is forced into its cylinder from the follower-cylinders by the followers approaching each other, substantially as and for the purpose set forth.

6. In a brick or similar machine, the combination of two liquid-cylinders connected by a pipe or port and provided with plungers adapted to be moved by the followers of the machine, a liquid-cylinder provided with a plunger and connected to the said follower-cylinders by a pipe, a trip adapted to be operated by the plunger as the liquid is forced into its cylinder from the plunger-cylinders by the followers approaching each other, a cylinder communicating with the trip-cylinder, and an adjustable plug fitting in said cylinder to compensate for loss of oil, substantially as shown and described, for the purpose set forth.

7. In a brick or similar machine, the combination of two liquid-cylinders connected by a pipe or port and provided with plungers adapted to be moved by the followers of the machine, a liquid cylinder provided with a plunger and connected to the said follower-cylinders by a pipe, a trip adapted to be operated by the last-mentioned plunger as the liquid is forced into its cylinder from the follower-cylinders as the followers approach each other, and a plug fitting in one end of a cylinder communicating with the trip-cylinder, and formed to receive a threaded rod made fast to the other end of its cylinder, substantially as shown and described, for the purpose set forth.

326,288. HYDRAULIC BRICK-MACHINE. WILLIS N. GRAVES, St. Louis, Mo., assignor of one-half to the Hydraulic Press Brick Company, same place. Filed Jan. 22, 1885. (No model.)



Claim.—1. In a hydraulic brick-machine, the combination, with a valve-box and two sets of valves therein, of a rock-shaft having arms or tappets projecting from its opposite sides, and connections between said arms and the respective sets of valves, whereby one or the other set is opened, according to the direction in which the shaft is rocked, substantially as set forth.

2. In a hydraulic brick-machine, the combination of the upper follower, water-engine located over the follower, beam secured to the piston-rod of the engine, and rods connecting the beam to the piston of the follower, substantially as and for the purpose set forth, the engine consisting of a cylinder, casing within the cylinder, piston having a flange on its lower end and fitting within a flange on the lower end of the casing, packing-rings on the piston between the said flanges, disk on the upper end of the piston-rod, and set-screws passing through the disk and into the upper end of the casing to tighten the packing-rings and supporting the casing, as specified.

3. In a hydraulic brick-machine, the box supplied with valves, in combination with the rock-shafts for operating the valves of the upper follower and charger-pipes, one fitting over the other and the two acting independently of each other, substantially as set forth.

4. In a hydraulic brick-machine, the box supplied with valves, in combination with the shafts fitting one over the other, acting independently of each other, means for rocking the shafts, and arms and levers connecting the shafts to the valve-stems, substantially as set forth.

5. In a hydraulic brick-machine, the box supplied with valves, in combination with rock-shafts connected to the stems of the valves, and means for operating the shafts independently of each other, substantially as set forth.

6. In a hydraulic brick-machine, the box supplied with valves, in combination with rock-shafts connected to the stems of the valves, quadrants, and bars connected to the followers and charger of the machine and provided with dogs or brackets for moving the quadrants to rock the shafts and operate the valves, substantially as set forth.

7. In a hydraulic brick-machine, the box supplied with valves, in combination with rock-shafts connected to the stems of the valves, quadrants, bars secured to the followers and charger of the machine, and having dogs or brackets for moving the quadrants to rock the shafts and operate the valves, and the high-pressure valve, the stem of which is adapted to be operated by the said follower-bar, substantially as shown and described.

8. In a hydraulic brick-machine, the box provided with valves, in combination with rock-shafts, arms, and levers connecting the shafts with the stems of the valves, quadrants, bars connected to the followers and charger of the machine and provided with dogs for operating the quadrants, high-pressure valve, shaft provided with a crank connected to the stem of said valve, and crank secured to said shaft provided with a pin fitting in a slot in the lower end of the bar connected to the upper follower and adapted to be engaged by dogs on the last-mentioned bar and on the bar connected to the lower follower, said bars being moved in the opposite direction to the followers to which they are respectively connected, as set forth.

9. In a hydraulic brick-machine, the bars connected to the followers of the machine, in combination with the high-pressure valve, rock-shaft provided with a crank connected to the stem of said valve, crank on said shaft provided with a pin fitting in a slot in the lower end of the bar connected to the upper follower to operate the stem of the valve, and dogs on the said bars for coming against the ends of the said pin, substantially as and for the purpose set forth.

10. In a hydraulic brick-machine, the bars connected to the followers of the machine, in combination with a rock-shaft which the bars move as the followers are operated, a crank on the shaft, high-pressure valve, and a fulcrumed lever connected at one end to the valve-stem and at the other end to the crank on the rock-shaft, substantially as shown and described, for the purpose set forth.

11. In a hydraulic brick-machine, the bars connected to the followers of the machine, in combination with a rock-shaft which the bars operate as the followers are moved, a crank on the rock-shaft, high-pressure valve, a fulcrumed lever connected at one end to the valve-stem and at the other end to the crank on the rock-shaft by means of a rod and bars passing through plates between which is placed a spring, and a spring beneath the lever, substantially as and for the purpose set forth.

12. In a hydraulic brick-machine, the combination of the box supplied with valves, rock-shaft for operating the charger-valves, quadrant for rocking the shaft, bars connected to the followers of the machine, and dogs on said bars for moving the quadrant to rock the shaft and operate the valves, substantially as set forth.

13. In a hydraulic brick-machine, the combination of the box supplied with valves, rock-shaft for operating the charger-valves, quadrant for rocking the shaft, bars provided with dogs for moving the quadrant to rock the shaft and operate the valves, as specified, the bars being connected to the followers of the machine in such a manner as to move in an opposite direction to the followers to which they are respectively connected, substantially as and for the purpose set forth.

14. In a hydraulic brick-machine, the combination of the box supplied with valves, rock-shaft for operating the charger-valves, quadrant for rocking the shaft, bars provided with dogs for moving the quadrant to rock the shaft and operate the valves, as specified, the bars being connected to the followers of the machine by means of pivoted beams, cross-heads, links connecting the beam to the cross-heads, and rods connecting the beams with the follower-pistons, substantially as set forth.

15. In a hydraulic brick-machine, the combination of the box supplied with valves, rock-shaft for operating the charger-valves, downwardly-extending arms on said shaft, quadrant having two surfaces against which said arms bear, bars connected to the followers of the machine, and dogs on the bars to move the quadrant to rock the shaft through means of the arms to operate the valves, substantially as set forth.

16. In a hydraulic brick-machine, the combination of the box supplied with valves, rock-shaft for operating the charger-valves, downwardly-extending arms on said shaft, quadrant having two bearing-surfaces against which said arms bear, bars connected to the followers of the machine, dogs on the bars for moving the quadrant to rock the shaft through means of the arms to operate the valves, cam on one of the bars and a pin on the other, the cam adapted to come against the pin to move its bar laterally, substantially as shown and described, for the purpose set forth.

17. In a hydraulic brick-machine, the combination of the high-pressure valve, rock-shaft provided with a crank and connected, as described, to the stem of said valve, bars connected to the followers of the machine, one of which has a slot to receive a pin on said crank, and dogs secured to the bars, adapted to come in contact with said pin and turn the shaft, substantially as and for the purpose set forth.

18. In a hydraulic brick-machine, the combination of the high-pressure valve, rock-shaft provided with a crank and connected, as described, to the stem of said valve, bars connected to the followers of the machine, and a pin in said shaft against which the dogs strike and turn the shaft to operate the valve-stem, substantially as and for the purpose set forth.

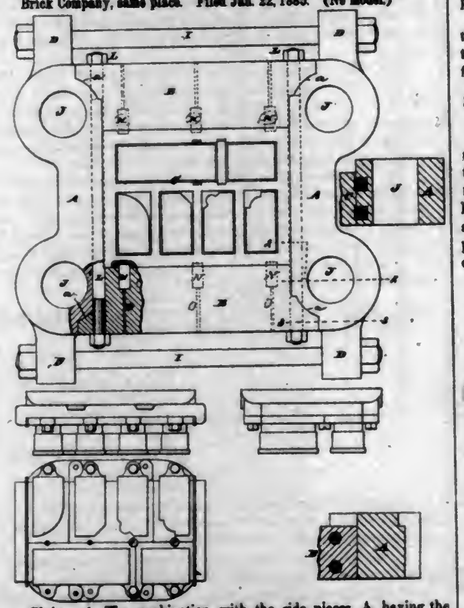
19. In a hydraulic brick-machine, the combination of the box supplied with valves, rock-shaft for operating the upper follower-valves, quadrant for rocking the shaft, bars connected, respectively, to the charger and lower follower of the machine and adapted to engage and move said quadrant to rock the shaft and operate the valves, substantially as and for the purpose set forth.

20. In a hydraulic brick-machine, the combination of the box supplied with valves, rock-shaft for operating the upper follower-valve, quadrant for rocking the shaft, bars connected, respectively, to the charger and lower follower of the machine, short bars secured to the quadrant and provided with a hook with which a hook on the charger-bar engages to move the quadrant in one direction, dog on the follower-bar to disconnect said hooks, and a second dog on said bar to engage a pin on the quadrant and move the quadrant in the opposite direction from which it was moved by the charger, substantially as set forth.

21. In a hydraulic brick-machine, the combination of the box supplied with valves, rock-shaft for operating the upper follower valves, arms on said shaft, quadrant on which said arms bear to rock the shaft, bars connected, respectively, to the charger and lower follower of the machine and adapted to engage and move said quadrant to rock the shaft and operate the valves, as specified, said bar being connected to the lower follower by a pivoted lever, beam, link connecting the lever to the beam, bar or cross-head, link connecting the beam to the bar, and rods connecting the bar to the follower-piston, substantially as shown and described, for the purpose set forth.

22. In a hydraulic brick-machine, the combination of the bar or cross-head connected to the lower follower-piston, engine for pulling said follower down, pivoted bar, against one end of which the said bar rests when the follower is in its lower position, and screw-rod for adjusting the bar to regulate the fall of the follower, as and for the purpose set forth.

326,289. BRICK-MACHINE MOLD AND FRAME THEREFOR. WILLIS N. GRAVES, St. Louis, Mo., assignor of one-half to the Hydraulic Press Brick Company, same place. Filed Jan. 22, 1885. (No model.)



Claim.—1. The combination, with the side pieces, A, having the shouldered ends and the bolts I for securing them together, of the end pieces, B, bearing upon the shouldered side pieces, as described, and the bolts L, passed through said end pieces, substantially as set forth.

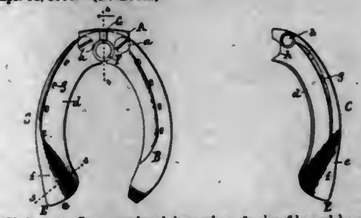
2. The combination, with the mold-box having longitudinal grooves in its sides, of a frame having correspondingly-grooved side pieces, a removable end piece, and suitable bolts adapted to occupy said grooves and retain the end pieces in place, as set forth.

3. The combination, with the mold-box having longitudinal grooves in its sides, of a frame having correspondingly-grooved side pieces, a removable end piece, and suitable bolts, square in part, for occupying the aforesaid grooves, whereby the mold-box is supported and the removable end piece held in place, substantially as set forth.

4. The combination, with the press-box C, having the longitudinal grooves in the sides thereof, of the frame having correspondingly-grooved side pieces, A, removable end pieces, B, and the double-ended bolts L, made square in part occupying the said grooves and pressed at their respective ends through the end pieces, B, substantially as and for the purposes set forth.

5. In combination, the mold-box C, having the longitudinal grooves in its sides and notches in its ends, the side pieces, A, having the corresponding grooves in their inner sides, the end pieces, B, having the blocks N projecting inwardly therefrom and occupying said notches, and the bolts L, occupying said grooves and securing said end pieces, substantially as set forth.

326,290. HORSESHOE. WILLIAM W. HALLENBECK, Locke, N. Y. Filed Apr. 11, 1885. (No model.)



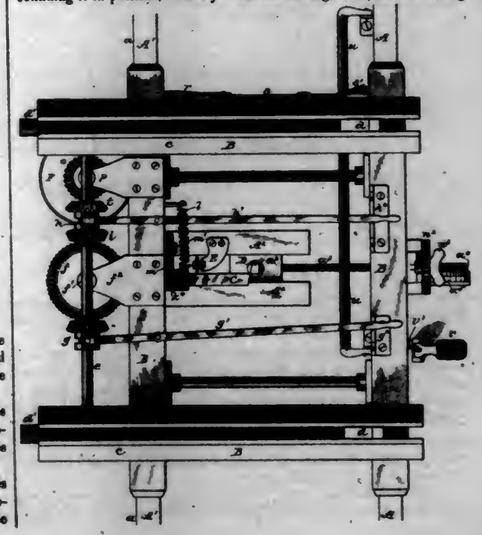
Claim.—1. In a sectional horseshoe for hoof-bound horses, a pivoted section, the heel portion of which is bent outwardly and downwardly and sharpened to form a heel-calk, the upper surface of said heel portion having a downward and outward curve upon which the hoof may spread, and the lower surface being curved in a similar manner, substantially as set forth, whereby elasticity of the shoe is secured and the lodgment of foreign matters beneath the hoof is prevented.

2. In a sectional horseshoe for horses whose hoofs are contracted on one side only, a toe-plate, in combination with two sections pivoted thereto, one of said sections having a flat upper surface throughout its entire length, and the other section having the upper surface of its heel portion curved downwardly and outwardly, substantially as set forth.

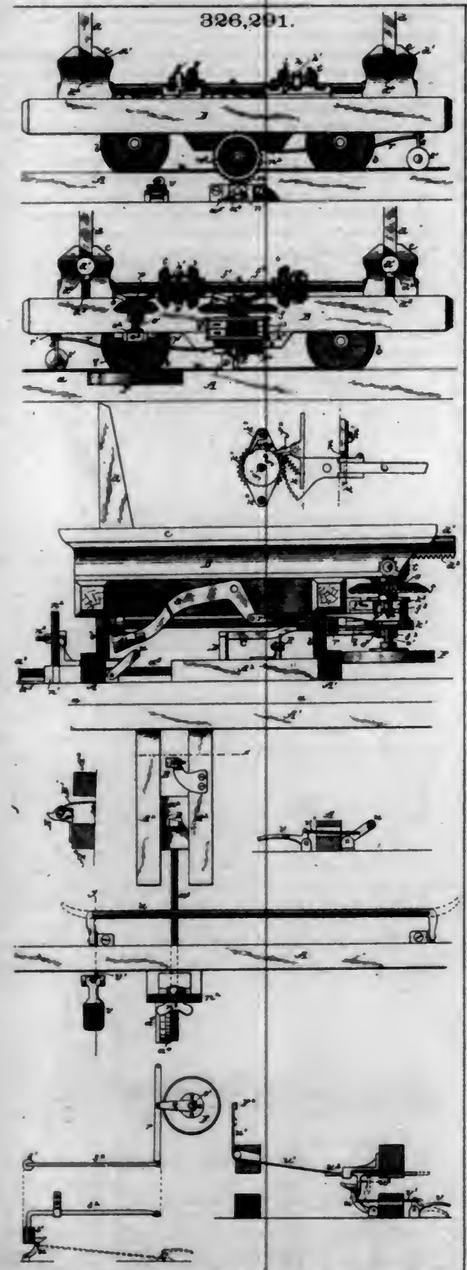
3. In a sectional horseshoe, a toe-plate and two sections pivoted thereto, in combination with an elastic cushion or washer secured to said toe-plate between the adjacent ends of said sections, substantially as set forth.

326,291. SAW-MILL SET-WORKS. GEORGE HAMSON and CHARLES D. CLARK, Massillon, Ohio. Filed May 9, 1885. (No model.)

Claim.—1. The combination, substantially as hereinbefore described, with a saw-mill carriage having a rotative knee-shaft for simultaneously advancing the log-knees on said carriage, of pawl-and-ratchet mechanism geared to said knee-shaft and controlled by a horizontal knee-setting arm or lever below the carriage, and carried thereby, and a vertical stop or stud sliding crosswise in the path of the carriage, and provided with an adjusting-screw for moving said stop to and fro and confining it in position, whereby while the carriage is in motion the log-



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knees may be simultaneously advanced to a degree varied according to the particular adjustment of the stop with relation to the path of the knee-setting arm or lever as it is carried by the carriage.

2. The combination, with a saw-mill carriage and its knees, of a knee-shaft geared to said knees and provided with a clutch-gear, a knee-setting lever having a quadrant-gear thereon, a pawl-frame having a pinion engaging with said quadrant-gear, and a shaft having a fixed ratchet-wheel thereon surrounded by said pawl-frame, and a gear for engaging with the clutch-gear on the knee-shaft, substantially as described, whereby the knees will be moved step by step at each vibratory movement of the knee-setting lever.

3. The combination, with a saw-mill carriage and knee-shaft, of the gear *f*, its ratchet-wheels, pawls, pawl-frame, and pinion, and the knee-setting lever having a quadrant-gear engaging with said pinion, substantially as described.

4. The combination, with a saw-mill carriage, the knee-shaft, and its intermittent driving-gear rotatable in but one direction, of a pair of clutch-gears on said shaft at opposite sides of the driving-gear and separately engaging therewith, substantially as described, whereby said knee-shaft may be intermittently rotated step by step in either direction, according to which of said clutch-gears is operatively connected with said driving-gear.

5. The combination, with a saw-mill carriage and its knee-shaft, and the driving-gear *f* and its ratchet mechanism, of the horizontal knee-setting lever free to rise at its outer end, the vertical spring-tappet, and a vertical stop for said lever in the path of the carriage, substantially as described, whereby said lever is free to abut against said stop and rotate the knee-shaft while the carriage moves forward, but is lifted by said tappet over said stop when the carriage moves backward.

6. The combination, with a saw-mill carriage, its knees, and a knee-shaft controlled by a horizontal ratchet arm or lever, of the vertical stop sliding laterally in the path of the carriage, and provided with an adjusting-screw for moving said stop to and fro and confining it in position, and a gage, substantially as described, whereby on operating said screw said stop may be accurately moved and adjusted with relation to said lever for causing the knees to be advanced to certain predetermined positions.

7. The combination, with a saw-mill carriage having a knee-setting ratchet lever or arm, the knee-setting stop located in the path of the carriage, a spring for keeping the ratchet-arm in its normal position, and an adjustable stop on the carriage by which the position of the ratchet-arm can be varied, substantially as described, and for the purposes specified.

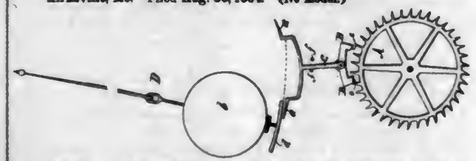
8. The combination, with a saw-mill carriage, its knees, and knee-shaft, of a setting arm or lever geared to said shaft, the adjustable stop-plate on the carriage for varying the normal position of said arm or lever, and the adjustable sliding stop in the path of the carriage provided with a gage-plate, substantially as described, whereby the positions of the knees on the carriage may be always accurately indicated by the gage-plate.

9. The combination, with a saw-mill carriage and a track-rail, of a knee-actuating shaft, a friction-wheel adapted to be forced into contact with said rail, and gearing for coupling it to said shaft, and a cam-bar in the path of said carriage for forcing said friction-wheel into contact with its rail while the carriage is passing over said bar, substantially as described.

10. The combination, with a saw-mill carriage and one of its track-rails, of a knee-actuating shaft, a vertical swinging shaft on said carriage, having a gear at its upper end and a friction-wheel at its lower end, adapted to be forced and held into engagement with the side of said track-rail, and a gear on the knee-shaft for coupling it with the gear on the swinging shaft, substantially as described.

11. The combination, with a saw-mill carriage and one of its rails, of the friction-wheel and its pendent swinging shaft geared to the knee-shaft, the complex lever for swinging the friction-wheel shaft, and the cam-bar in the path of the carriage for engaging with the lever, substantially as described, and thereby forcing the friction-wheel to engage with the side of the track-rail, and to rotate the knee-shaft during the movement of the carriage over the bar.

326,292. PENDULUM-ESCAPEMENT FOR CLOCKS. WILLIAM HART, Kirksville, Mo. Filed Aug. 30, 1884. (No model.)



Claim.—1. The combination, with a vibrating pendulum, of an escapement adapted to act on the swinging end of the pendulum for imparting motion thereto, substantially as described.

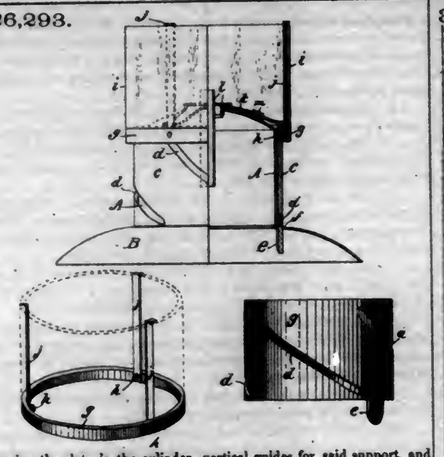
2. The forked arm C and pallets B B, combined with pendulum D and wheel A below the pendulum, substantially as described.

3. The combination of pendulum D, bar *d*, forked arm C, having prongs *n*, pallets B B, and wheel A, combined for operation substantially as described.

326,293. SIGNAL-LANTERN. ALBERT W. HAZELRIGG, FRANK A. JACOB, and HARRISON P. HOOD, Indianapolis, Ind., assignors, by direct and mesne assignments, to said Hazelrigg, Horace Scott, Jefferson County, Ky., and Marshall C. Woods, Indianapolis, Ind. Filed June 4, 1885. (Model.)

Claim.—1. In a signal attachment for lanterns, the lamp-reservoir, the cylinder having inclined slots and fitting loosely over said reservoir, so as to turn thereon, the shade-support having inwardly-projecting pins

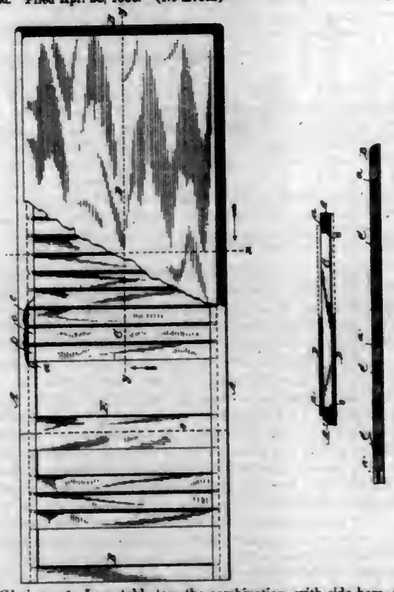
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engaging the slots in the cylinder, vertical guides for said support, and the shade, all combined and arranged to co-operate in the manner and for the purpose specified.

2. In a signal attachment for lanterns, the combination, with the lamp, the cylinder *e*, and ring *g*, having bars *j* secured thereto, of plate *k*, arranged to embrace one or more of said bars and removably secured to the lamp, substantially as and for the purpose specified.

326,294. SEWING-MACHINE TABLE-TOP. NICHOLAS A. HULL, Peru, Ind. Filed Apr. 28, 1885. (No model.)



Claim.—1. In a table-top, the combination, with side bars, of a series of parallel slats or strips arranged the required distance apart to form a space between them and connected at their ends to said bars, substantially as and for the purpose set forth.

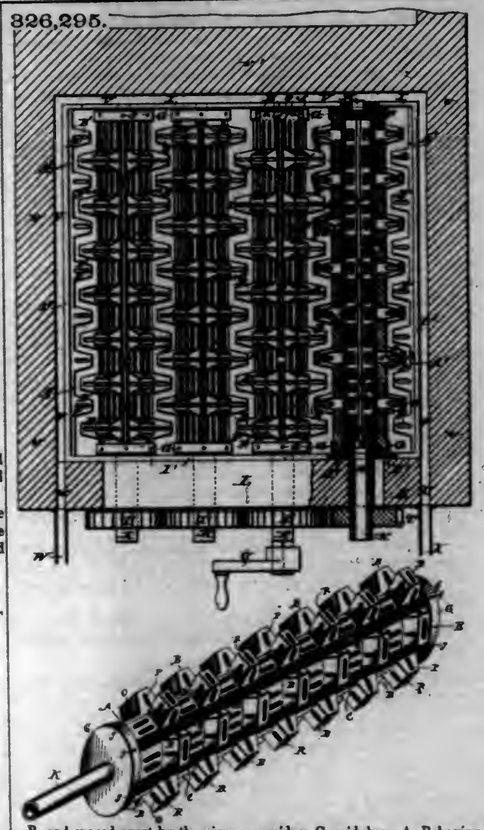
2. A table-top consisting of a suitable frame, a series of parallel slats or strips connected at their ends to the side bars thereof and arranged the required distance apart to form a space between them, and a covering consisting of veneers connected to the top and bottom thereof, substantially as and for the purpose specified.

326,295. GRATE FOR FURNACES. SILAS H. HUNTINGTON, West Pittston, Pa. Filed Sept. 13, 1884. (No model.)

Claim.—1. A grate-bar constructed of separate perforated bars A, having hollow perforated teeth B, and spaced and braced apart by the rings or spiders C, having lugs *c*, and having means for binding the bars A together at the ends, substantially as shown and described.

2. A grate-bar constructed of separate bars A, having hollow teeth

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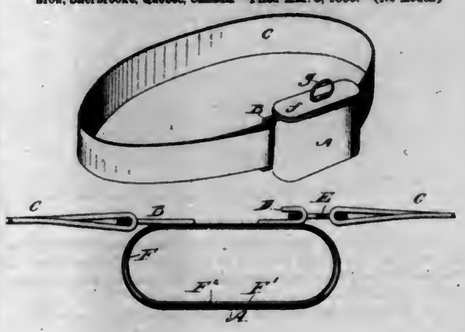
B, and spaced apart by the rings or spiders C, said bars A B having means for binding them together at the ends, and having openings M N O P R, substantially as shown and described.

3. A grate-bar constructed of separate bars A, having hollow teeth B, and spaced apart by the rings or spiders C, said bars A B having openings M N O P R, and being bound together at the ends by the dovetailed head-plates E F, having journals or gudgeons, and secured by caps G G, to form a hollow roller grate-bar, substantially as shown and described.

4. A grate-bar constructed of separate bars A, having hollow teeth B, and spaced apart by rings or spiders C, said bars A B having openings M N O P R, and being bound together at the ends by the dovetailed head-plates E F, having end journals, and the head-plate F, having a hollow journal, K, substantially as shown and described.

5. The side plates, I', of the grate-frame, constructed with hollow teeth B', having openings O P R, communicating with the interior of said hollow teeth, in combination with the adjacent toothed roller grate-bars, substantially as shown and described.

326,296. COMBINED BELT-BUCKLE AND CUP. WALTER R. JOHNSTON, Sherbrooke, Quebec, Canada. Filed Mar. 3, 1885. (No model.)

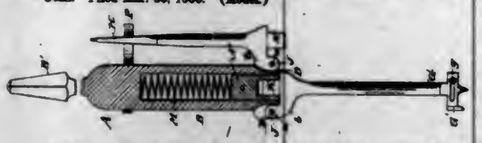


Claim.—1. The cup A, provided at the back with the metallic loop B, to receive one end of the belt C, and also with the hook D, to receive the plate E of the belt, substantially as described.

2. The cup A, having the loop B and hook D, in combination with the inner box, F, having side opening and door, F' F², substantially as and for the purposes set forth.

3. The cup A, having loop B and hook D, and packing *a* at its upper edge, in combination with the inner box, F, having flanges *f* and side opening and door, F' F², substantially as and for the purposes set forth.

326,297. COMBINATION-TOOL. WILLIAM B. KENNEDY, Silver Reef, Utah. Filed Mar. 25, 1885. (Model.)



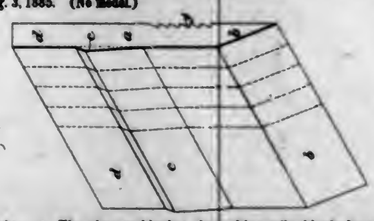
Claim.—1. As an improved article of manufacture, a combination-tool made as herein shown and described, consisting of a stem having an interior spring-socket and a series of tools provided with shanks to fit the socket, said tools being hinged to the lower extremity of the stem and operated in connection with the spring-socket, as set forth.

2. The combination, with the stem, of a spring-socket, a series of tools hinged to the stem, and a spring for holding back the tools, substantially as shown and described, whereby the tools not in use are held out of the way while a tool is being used, as set forth.

3. The combination, with the stem having slot *c*, spring-socket N O, and screws *d*, passed through the slots into the sockets, of the hinged tools provided with shanks fitting the aperture O in the socket, substantially as set forth.

4. The combination, with the stem B, having recesses D, of a series of hinged tools having shanks K, and of the spring-socket N, substantially as shown and described.

326,298. SPIKE-BLANK. WM. KEPLER, Youngstown, Ohio. Filed Aug. 3, 1885. (No model.)

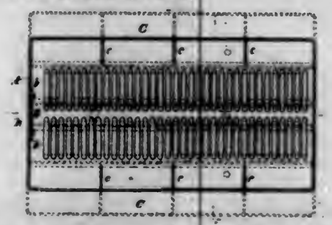


Claim.—1. The plate or blank *a*, for making spike-blanks by transverse cuts, said plate having a swelled or enlarged portion, *c*, tapering toward the point-edge, forming a tapering fillet at the junction of the head and shank, and a portion, *d*, beyond the enlarged portion for the formation of the upset head, substantially as and for the purposes described.

2. The plate *a*, having a beveled edge, *b*, a tapering enlargement, *c*, forming a tapering fillet at the junction of the head and shank, and a flat portion, *d*, for forming an upset head beyond the enlargement *c*, substantially as and for the purposes described.

3. The plate *a*, having a beveled edge, *b*, a tapering enlargement, *c*, a flat portion, *d*, and ratchet-grooves *f*, substantially as and for the purposes described.

326,299. EVAPORATING-PAN. THOMAS P. KRAJEWSKI, New York, N. Y. Filed Mar. 9, 1885. (No model.)



Claim.—1. The combination of a pan and a heating-chamber so arranged that liquid in the pan will be subjected to varying degrees of heat in a direction from the center toward two opposite sides, substantially as specified.

2. The combination of a pan, a heating-chamber, and intercommunicating compartments in the heating-chamber, whereby liquid in the pan will be subjected to varying degrees of heat, substantially as specified.

3. The combination of a pan, a heating-chamber, compartments in the heating-chamber, and pipes or passages connecting said compartments, substantially as specified.

4. The combination, with a pan, of a heating-chamber having a sinuous passage for the circulation of steam, substantially as specified.

5. The combination, with a pan, of a heating-chamber having sinuous passages for the circulation of steam extending in opposite directions, substantially as specified.

6. The combination of a pan, a heating-chamber, a compartment into which steam enters, and pipes or passages opening at one end into said compartment, extending thence into the pan, and opening at their other ends into a second compartment, substantially as specified.

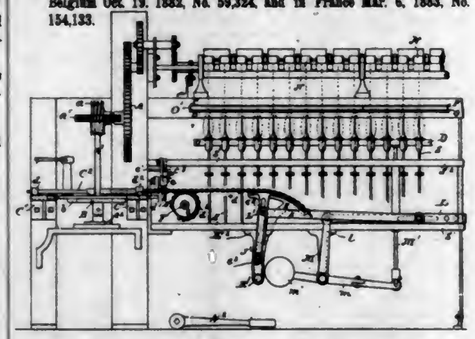
7. The combination of the pan A, the heating-chamber B, the compartment D, pipes or passages *b*, the compartments F F', the partitions E, and the compartments G G', substantially as specified.

8. The combination of a pan, a heating-chamber, compartments in the heating-chamber, pipes or passages connecting the compartments, and cooling-surfaces at opposite sides of the pan beyond the heating-chamber, substantially as specified.

9. The combination of a pan, a heating-chamber, and aprons or partitions *c* in the pan, substantially as specified.

10. The combination of a pan, a heating-chamber, compartments in the heating-chamber, pipes or passages connecting the compartments, and a top or cover for the pan, substantially as specified.

326,300. MACHINE FOR SPINNING AND DOUBLING YARN. W. LANCASTER, Accrington, County of Lancaster, England. Filed Oct. 2, 1883. (No model.) Patented in England Sept. 7, 1882, No. 4,263; in Belgium Oct. 19, 1882, No. 59,324, and in France Mar. 6, 1883, No. 154,133.



Claim.—1. The combination, with a ring-rail and rods and rock-arms for supporting and moving the same vertically, of means, substantially as described, for actuating said rock-arms and moving the ring-rail and automatically increasing and decreasing the extent of the movement imparted to the ring-rail during the operation of building a cop.

2. The combination, with a ring-rail, of rods and rock-arms for supporting and moving the same vertically, means, substantially as described, for actuating said rock-arms and moving the ring-rail, said means including a sector provided with a radial slot, a pin traveling in said slot, a pivoted arm supporting said pin, devices for vibrating said sector and shifting said pin in the slot of the sector during the operation of building the cop, whereby the said ring-rail is raised and lowered and the extent of the motion imparted thereto is automatically varied during the different stages of the work, substantially as described.

3. The combination, with a ring-rail, of rods and rock-arms for supporting and moving the same vertically, means, substantially as described, for actuating said rock-arms and moving the ring-rail, said means including a sector provided with a radial slot, a pin traveling in said slot, a pivoted arm supporting said pin, a constantly-reciprocated plate, means, as described, for reciprocating said plate, a fork mounted upon the plate, and means, substantially as described, for moving said fork farther away from the sector with each reciprocation of the plate, and connections between the fork and the sector, whereby the sector is vibrated and the ring-rail raised and lowered, and the extent of the motion imparted thereto automatically varied during the operation of building the cop, substantially as described.

4. The combination, with the ring-rail, of vertical supporting-rods, rock-arms connected thereto for communicating motion to said ring-rail, a pivoted sector formed with a radial slot, a pin traveling in said slot, a pivoted arm supporting said pin, and connecting-rods extending therefrom to the rock-arms, a constantly-reciprocating plate, means, as described, for reciprocating said plate, a fork carried on said plate, a chain connecting the pivoted sector and the fork, and means, substantially as described, whereby the ring-rail is raised and lowered, and at each movement of the plate the fork is carried farther from the sector, thereby

gradually altering the relative positions of the parts and lengthening or shortening the traverse of the ring-rail, as set forth.

5. The combination, with a ring-rail, of the vertical supporting-rods, rock-arms connected thereto for communicating motion to said rail, a connecting-rod attached to said rock-arms, a pivoted sector formed with a radial slot, a vertical pivoted arm adapted to support said connecting-rod, and provided at its free end with a pin, said pin passing through the end of the connecting-rod and moving in said slot, a constantly-reciprocated plate, and means, as described, for reciprocating the plate, a movable fork carried on said plate, and means, substantially as described, for causing said fork to gradually recede from its starting-point, and connections between said forks and the periphery of the sector, whereby the reciprocations of the plate are communicated to the sector, and the oscillations of the sector are gradually brought nearer to the sliding plate, altering the relative positions of the sector and levers, substantially as described.

6. The combination, with the ring-rail, of vertical supporting-rods, rock-arms connected thereto for communicating motion to said ring-rail, a pivoted sector, connections between said sector and the rock-arms, a fork, d^2, a drum or roller mounted between the fork and sector and formed to receive a hand-lever, and connections extending from the sector to the drum, and from the drum to and detachably secured to the fork, and a hand-lever adapted to engage the drum, and whereby when in position the connection between the drum and fork can be detached, and the ring-rail raised or lowered during the operation of the machine, as set forth.

7. The combination, with a ring-rail, of vertical rods and rock-arms for supporting and imparting vertical motion thereto, a horizontal connecting-rod attached to said rock-arms, a pivoted sector formed with a radial slot, a vertical pivoted arm adapted to support the connecting-rod, and provided at its free end with a pin passing through and connecting the horizontal rod and vertical arm and traveling in said slot, a constantly-reciprocated plate, and means, as described, for imparting motion thereto, a movable fork carried on said plate, a ratchet and screw for gradually moving the fork away from its starting-point, a drum mounted between the fork and its sector, a chain extending from the sector to the drum and from the drum to the moving fork, and an adjustable projection upon the periphery of the drum in the path of the chain, as described.

8. The combination, with the ring-rail D, its vertical supporting-rods, and rock-arms, substantially as described, for imparting motion thereto, of the pivoted sector E, formed with a radial slot, e^2, and means, substantially as set forth, for imparting motion thereto, the pivoted arm J', the connecting-rod K, and the fulcrum-pin L', adapted to move in the slot e^2, substantially as described.

9. The combination, with the ring-rail, its vertical supporting-rods, of the pivoted sector E, formed with radial slot e^2, the pivoted arm J', the rod K, and connections, substantially as described, between the said rod and the rail-supporting rods, and the fulcrum-pin L', adapted to move in the slot e^2, and mechanism for imparting a gradually-receding reciprocating motion to the sector, and thereby altering the traverse of the ring-rail, consisting of the sliding plate C and fork d^2, and means, as described, for reciprocating said plate and moving the movable fork d^2, carried thereon, shaft O^2, pawl *e*, supporting-arm *e'*, the wedge O^3, chain d^4, the drum G, and the chain d^3, substantially as described.

10. The combination, with the ring-rail and its vertical supporting-rods, of means for communicating motion thereto, consisting of the pivoted sector E, formed with a radial slot, e^2, and pivoted arm J', rod K, and connections, substantially as described, between the said rod and the rail-supporting rods, and fulcrum-pin L', adapted to move in the slot e^2, a drum, G, a chain, d^4, extending from the sector to the periphery of said drum, and a chain, *d*, also secured to said drum and extending therefrom to the moving fork d^2, and the sliding plate C, and fork d^2, and means, as described, for reciprocating said plate, and moving the fork d^2, supported thereon, substantially as described.

11. The combination, with the ring-rail and its vertical supporting-rods, of the pivoted sector E, arm J', provided with pin L', and rod K and connections, substantially as described, between the said rod and the rail-supporting rods, a chain, d^3, a drum, G, to which said chain is attached, a hand-lever, N^2, fork d^2, a chain, d^3, detachably secured to the fork d^2, and attached to the periphery of the drum G, and adapted to be readily detached to allow independent movement of the drum G, and the raising and lowering of the ring-rail while the spindles are in motion, substantially as described.

12. The combination, with the ring-rail and its vertical supporting-rods, of the pivoted sector E, formed with a radial slot, e^2, the pivoted arm J', rod K and connections, substantially as described, between the said rod and the rail-supporting rods, and fulcrum-pin L', adapted to move in the slot e^2, and thereby to vary the traverse of the ring-rail, a drum, G, and chain d^3, extending therefrom to the sector, and a chain, d^3, also attached to said drum, the movable fork d^2, to which said chain d^3 is also attached, means for moving the said fork d^2, and an adjustable projection, H, extending from the periphery of the drum G into the path of the said chain, whereby the oscillation of the drum and the movement of the sector are temporarily delayed during the formation of a portion of the cop, substantially as described.

13. The combination, with the belt-shifting lever, of a friction-pulley, a pivoted brake-carrying lever normally resting upon the periphery of said pulley, and a lever pivoted to the frame and supporting the free end of the brake-lever at one end, and having its opposite extremity in the path of the shipping-lever, and adapted to be elevated or depressed by the movements of the same, and thereby to raise or lower the brake-lever, substantially as described.

14. The combination, with the shaft A^2 and pulley E^2, of the pivoted brake-lever A^7, the belt-shifting lever D^2, provided with the stud or roller c^5, and the horizontally-pivoted lever B^2, substantially as described.

15. The combination, with the herein-described plates, suitably apertured to receive the spindle, of a traveler having bifurcated extremities formed integral therewith, said extremities extending above and below the plate and supporting the traveler thereon, and adapted to allow horizontal, radial, and circular motion to be imparted to the said traveler, substantially as set forth.

16. The combination, with the herein-described ring-holding plates, suitably apertured to receive the spindle, of rings or flanges of a width exceeding the thickness of the ring-supporting plates inserted within and forming lining for said apertures, and a traveler having bifurcated extremities formed integral therewith, said extremities embracing the ring and supporting the traveler thereon and adapted to allow horizontal, radial, and circular motion to be imparted to the said traveler, substantially as set forth.

17. The herein-described ring-holding plates, having a series of apertures for the reception of the spindles, each aperture being provided with a thin ring or flange, 18, projecting above and below the surface of the ring-supporting plate, as set forth.

18. A traveler or drag-fork having bifurcated extremities formed integral therewith, substantially as set forth.

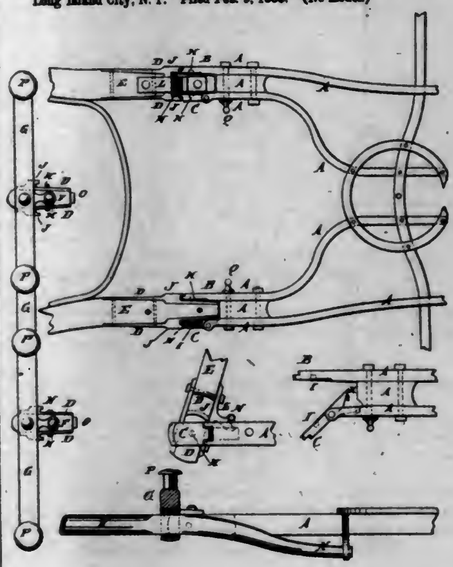
19. A traveler or drag-fork having bifurcated extremities formed integral therewith, and provided with projections or hooks for retaining the same in position on the ring, substantially as described.

20. A traveler or drag-fork having bifurcated extremities and provided with projections *q* for retaining or holding the same in position on the ring, and also with additional projections *q'*, adapted to support more or fewer coils of yarn, whereby to increase the tension between the traveler and the cop or spindle and to loosen it between the said traveler and the delivery-rollers, substantially as described.

21. The combination, with a spinning-ring, of a spindle and a traveler mounted upon the ring and having bifurcations for retaining it in position thereon, and provided with projections for guiding the yarn to the spindle, the said spindle and the yarn forming the fulcra from which the rotation of the traveler is communicated, substantially as set forth.

22. The combination, with two spinning-rings secured in position one above the other, of a traveler, 18, having a portion of its delivery-fork 19 removed, so as to reduce its weight and facilitate the piecing up of broken ends, substantially as described.

326,301. POLE OR SHAFTS FOR VEHICLES. THEOPHILE LAUDON, Long Island City, N. Y. Filed Feb. 9, 1885. (No model.)



Claim.—1. Coupe-stay couplings for draw-bars and shafts constructed substantially as herein shown and described, and consisting of the stationary and hinged plates B C, having sockets I and rabbeted ends, and the plates D, having pins H and undercut shoulders J, as set forth.

2. The combination, with the stays of a coupe and the ends of the shafts or draw-bar arms, of the stationary and hinged plates B C, having pin-sockets I and rabbeted ends, and the plates D, having pins H and undercut shoulders J, substantially as herein shown and described, whereby the said stays and shafts or draw-bar can be readily connected and disconnected, as set forth.

3. The combination, with the shafts E, the stationary plates B, and the hinged plates C, having rearwardly-projecting ends, of the stop-brackets L, having cross-arms M, substantially as herein shown and described, whereby the hinged plates C will be held from opening and the shafts supported in place when raised past a vertical position, as set forth.

326,302. ATTACHMENT-HOLDING DEVICE FOR USE ON SEWING-MACHINES. JOSEPH P. LAVINES, New Haven, Conn., assignor to Jane Halliwell, same place. Filed June 25, 1885. (No model.)

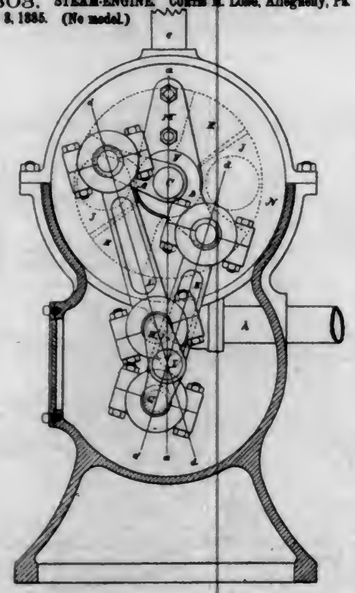
Brief.—The socket-piece or the presser-foot piece pivoted thereto is provided with a transverse recess to inclose the finger which extends transversely from the arm of the attachment.



Claim.—1. The combination of the socket-piece A, the presser-foot B, constructed with a body, C, pivoted to the socket-piece, and so as to turn therefrom to the right or left, the attachment to be applied constructed with an arm, F, having a tranverse finger, G, extending therefrom, the body of the presser-foot and socket-piece constructed with a recess between them adapted to receive the said transverse finger and thereby support the attachment, substantially as described.

2. The combination of the socket-piece A, constructed with an inclined under face, the presser-foot B, constructed with a body, C, inclined to the presser-foot corresponding to the inclined surface of the socket-piece, the said body constructed with a slot, *a*, a pivot connecting said presser-foot through said slot with said socket-piece, the presser-foot also constructed with a recess, *d*, upon its upper face, and the socket-piece with a corresponding downward projection, *e*, the socket-piece and body of the presser-foot constructed with a transverse recess, *f*, between them, the attachment to be applied constructed with an arm, F, and with a transverse finger, G, adapted to be set into the recess between the body of the presser-foot and socket-piece, the said recess and finger constructed to interlock one with the other, substantially as described.

326,303. STEAM-ENGINE. CURTIS H. LOWE, Allegheny, Pa. Filed July 8, 1885. (No model.)



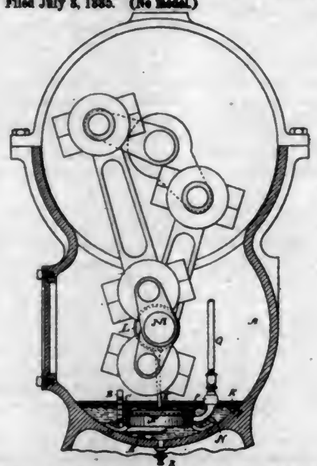
Claim.—1. In an engine of the oscillating-piston type, the duplicate double pistons D and E, working side by side within a single cylinder, and the duplicate crank-arms, cranks, and pitmen arranged to work opposite to each other, substantially as and for the purpose set forth.

2. In combination with the cylinder N, the duplicate double pistons D and E, working side by side, and the web *x* between the pistons, substantially as set forth.

3. The balanced oscillating valves and ports within the septa, in combination with the cylinder N and the duplicate double pistons D and E, substantially as set forth.

4. The combination of the sleeve F, the crank-arm B, and piston E with the crank-arm A, shaft C, and piston D, substantially as and for the purpose described.

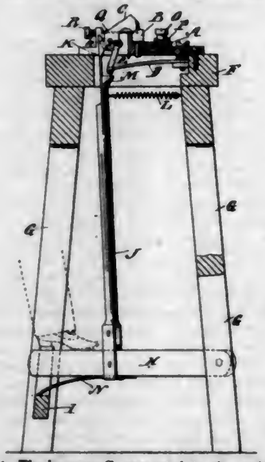
326,304. LUBRICATING APPARATUS. CURTIS M. LOWE, Allegheny, Pa. Filed July 8, 1885. (No model.)



Claim.—1. In combination with a revolving engine or other shaft, a suitable casing or receptacle for liquid, the perforated inlet-pipe B, the cup F, provided with diaphragm H and jet-pipe, the valves G and O, and the eccentric and rod for vibrating the diaphragm and agitating and forcing out the liquid, substantially as set forth.

2. In combination with a revolving engine or other shaft, a suitable casing or receptacle for liquid, the perforated inlet-pipe B, the cap F, provided with inlet and outlet valves G and O, and jet-pipe, the eccentric and rod, and a vibrating diaphragm, or equivalent mechanism, for forcing out the lubricant, substantially as set forth.

326,305. SAW-SET. JOHN S. LOWE, Murphysborough, Ill., assignor to himself and Joseph Bastien, same place. Filed Nov. 12, 1884. (No model.)

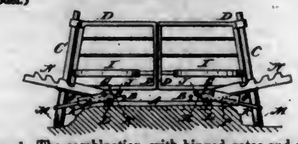


Claim.—1. The hammer C, connected to the spring D, in combination with a plate or shoulder, M, for lifting the hammer and permitting it to be lowered upon the anvil or saw-teeth before each blow, substantially as and for the purposes set forth.

2. The rod J, attached to spring-treadle H, formed with shoulder M, and provided with hook *k*, in combination with hammer C, notched at *c*, link E, and spring D, the distance from hook *k* to shoulder M being greater than the distance from notch *c* to the lower end of link E, substantially as and for the purposes set forth.

3. The combination, in a saw-set, with the screw O, of the wedge P, placed upon the screw, substantially as and for the purposes set forth.

326,306. RAILROAD-GATE. AUSTIN LOWE, Minneapolis, Kans., assignor to himself and Thomas D. Hale, same place. Filed Jan. 30, 1885. (No model.)



Claim.—1. The combination, with hinged gates and yielding rails, of pivoted levers arranged approximately at right angles to the yielding rails, with their inner ends projecting under the same, and latches pivoted to said levers and having their free ends projecting outward, for engaging the gates when swung open, substantially as herein shown and described.

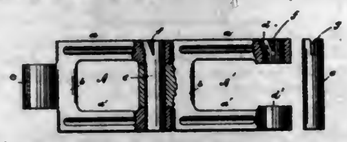
2. The combination, with hinged gates and yielding rails, of pivoted and spring-actuated levers arranged approximately at right angles to the yielding rails, with their inner ends projecting under the same, and spring-latches pivoted to said levers and having their free ends projecting outward, for engaging the gates when swung open, substantially as herein shown and described.

3. The combination, with the gates D and the yielding rails J, of the pivoted levers K, having their inner ends projecting under the yielding rails, the spring M, the latches N, pivoted to the levers K, and the spring O, substantially as herein shown and described.

4. The combination, with the gates D, provided with the springs I, the cords G, and the weights E on the end of the cords, of the spring-rails J, the pivoted and spring-actuated levers K, having their inner ends projecting under the yielding rails, and the spring-latches N O, pivoted to said levers, substantially as herein shown and described.

5. A spring-latch consisting of a lever pivoted at one end to a standard and held by a spring at the opposite end, and a toothed spring-latch pivoted to said lever, in combination with a gate and means for operating the latch, substantially as herein shown and described.

326,307. DRIVE-CHAIN. RODNEY F. LUDLOW, Springfield, Ohio. Filed Dec. 29, 1884. (No model.)



Claim.—1. The combination, with the links of a chain having intermeshing tubular bosses or sleeves, one of said bosses being provided with a wedge-shaped rib extending across the opening therein, and a correspondingly-tapered opening, of a connecting-pin provided at one end with a slot and adapted to be spread into said tapered opening by said wedge-shaped rib, substantially as set forth.

2. In a chain-link, the combination, with the circular boss *d*, having a tapered opening therein and wedge-shaped rib *f* extending across said opening, of a pin, *e*, having slot *g*, substantially as specified.

3. The combination, with a pin provided at one end with a slot therein, and adapted to connect the intermeshing links of a chain, of a tapered or wedge-shaped rib extending across the opening in one of said links, and adapted to spread the end of said pin in the said opening, which is correspondingly tapered, said rib and opening being respectively tapered on one side only, substantially as and for the purpose set forth.

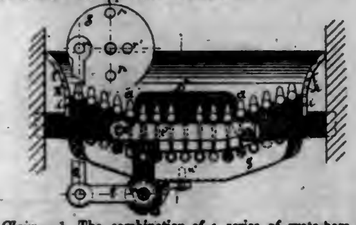
326,308. SAW-SET. GIDEON MARSH, Mancelona, Mich. Filed Aug. 29, 1884. (No model.)



Claim.—In a saw-set, the combination, with a bar or stock, B, having a notch, C, and a shoulder, *s*, of the die H, held in the notch, the band E, surrounding the stock and die, and the screw D, substantially as herein shown and described.

326,309. FURNACE-GRATE. CHAS. MARTIN, Paris, France. Filed July 3, 1884. (No model.)

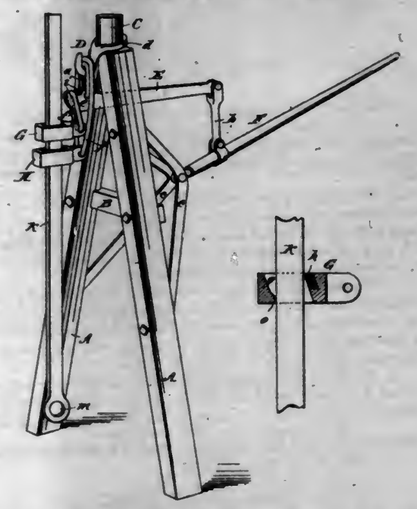
Brief.—Alternate bars rock in opposite directions and crush the clinkers between the upper ends of the bars.



Claim.—1. The combination of a series of grate-bars, each composed of two oval longitudinal ribs united by a vertical web, the upper rib being provided with an upwardly-projecting longitudinal fin, and means for oscillating the adjoining bars of the series in opposite directions, substantially as described.

2. The combination of a fixed transverse main piece having a horizontal middle portion and inclined side portions, grate-bars supported thereon, said grate-bars being composed of two oval longitudinal ribs connected by a vertical web, the upper rib being provided with journals at its ends, and with an upwardly-projecting tapering longitudinal fin, transverse rack-bars engaging the lower ribs of alternating grate-bars, a crank-shaft supported in hangers of the main pieces and connected by crank-pins to said rack-bars, and means for reciprocating the rack-bars simultaneously in opposite directions, substantially as described.

326,310. STUMP-PULLER. JAMES L. MARTIN, Decker's Point, Pa. Filed July 20, 1885. (No model.)



Claim.—1. In a stump-puller, the combination, with the supporting frame, of a hook, D, lever E, and grip H, and connecting-links, a grip, G, connected to the lever E by a link, *f*, a manipulating-lever, F, connected to the lever E by a link, *b*, and a lifting-bar, K, substantially as described.

2. The herein-described grip, provided with the steel plug *h*, and the slot *g*, and the shoulder *o*, substantially as described.

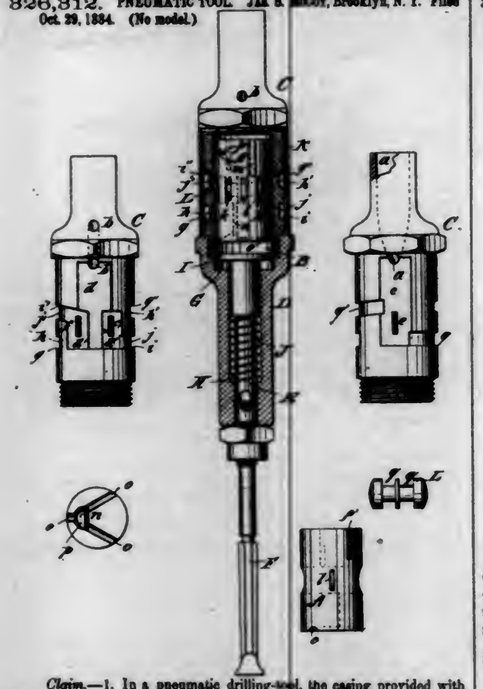
3. In a stump-puller, the combination of the following elements: supporting-frame, hook D, levers E F, links *a*, *b*, *f*, and *p*, grips G and H, formed with shoulders *o*, and steel plugs *h*, and a bar, K, substantially as set forth.

326,311. LUBRICATING COMPOSITION. ALBERT A. MARTINEZ, New Orleans, La. Filed June 24, 1885. (No specimens.)

Claim.—1. The herein-described composition of matter to be used in connection with oil for lubricating purposes, consisting of Central American scrap rubber or caoutchouc, alum, plumbago, and rosin-soap, in the proportions substantially as specified.

2. The herein-described composition of matter to be used for lubricating machinery, consisting of caoutchouc, alum, plumbago, and rosin-soap, in the proportions substantially as specified, combined and mixed with oil substantially in the proportions and manner described.

326,312. PNEUMATIC TOOL. JAS. S. MCCOY, Brooklyn, N. Y. Filed Oct. 29, 1884. (No model.)



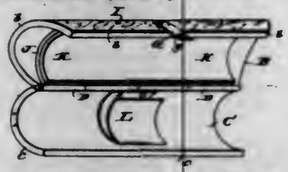
Claim.—1. In a pneumatic drilling-tool, the casing provided with an inlet and an exhaust port, in combination with the striker having a vertical passage extending upward from the slots in the bottom of said striker and the transverse valve, substantially as and for the purpose set forth.

2. In a pneumatic drilling-tool, the casing provided with an inlet and an exhaust port and carrying a spindle, in combination with the valved striker placed in the casing and having recesses or slots formed in its lower end and a vertical passage connecting with said passages or slots, substantially as and for the purpose set forth.

3. In a pneumatic drilling-tool, the casing having an inlet and an exhaust port and carrying a spindle having a plate secured to its inner end, in combination with the valved striker having recesses or slots in its lower end and a vertical passage connecting with said recesses or slots, substantially as and for the purpose set forth.

4. In a pneumatic drilling-tool, the valved striker A, formed with the slot P', in combination with the pin p', fitted in the casing C, for causing the striker to move in a straight line, substantially as described.

326,313. SAD-IRON HOLDER. WILLIAM M. MCDYTRR, Pittsburg, Pa. Filed Nov. 22, 1884. (No model.)

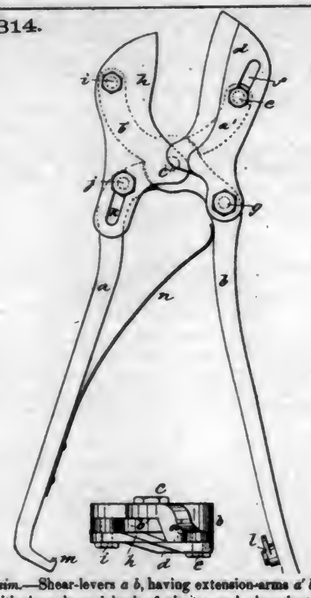


Claim.—1. A holder for smoothing-irons, made with a handle portion consisting of two hinged sections and a clasp, and with a spring held to one of the sections and constructed to bear on the smoothing-iron handle, substantially as herein set forth.

2. A holder for smoothing-irons, consisting of the handle-sections B C, hinged together at D, and having a clasp, as at G, and covered outside with yielding material I, said section B having the layers J K of felt and pasteboard, respectively, secured at its inner surface, the spring L, attached to section C and adapted to press on the iron handle, and the guard M, fixed by its ends *m n* to handle-section C, and curving lengthwise below it, and provided with a non-conducting layer, O, all substantially as herein set forth.

326,314. PRUNING-SHEARS. ISAAC M. MCKAY, Pomona, Cal. Filed June 1, 1883. Renewed June 23, 1885. (Model.)

326,314.



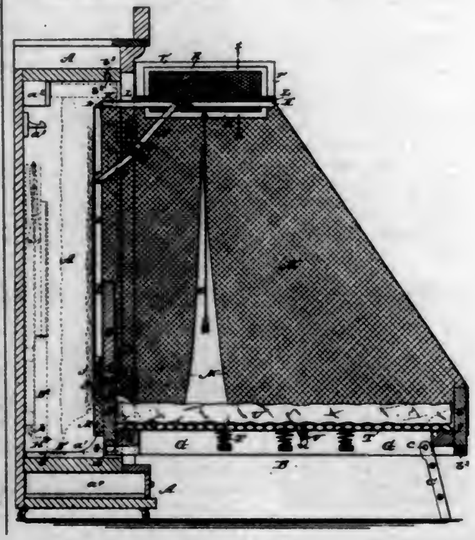
Claim.—Shear-levers *a b*, having extension-arms *a' b'*, blade *d*, pivoted positively to lever *b* back of pivot *c*, and also pivoted movably to end of arm *a'*, and blade *h*, pivoted positively to end of arm *b'*, and also pivoted movably to lever *a* back of pivot *c*, whereby said blades have reverse shear motion, substantially as described.

326,315. COFFIN. JOHN C. MEYER, New York, N. Y. Filed Aug. 12, 1885. (No model.)



Claim.—As an improved article of manufacture, a burial-casket consisting of a box and cover provided with an exterior covering of plastic material on the outer surface of which ornaments are produced in relief, substantially as herein shown and described.

326,316. WARDROBE-BEDSTEAD. ROBERT MITCHELL, Atlanta, Ga. Filed June 9, 1884. (No model.)



Claim.—The combination, with a folding bed, its case, and the hinged part B² of the bedstead head-board, of the staff I, and the bar K, supporting a mosquito-canopy top consisting of frames L R and folding braces N O, substantially as herein shown and described.

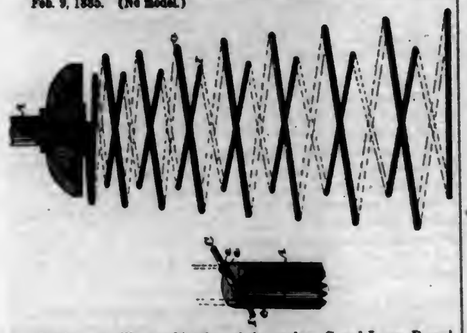
326,317. MANUFACTURE OF ARTIFICIAL STONE OR MARBLE. SCOTT MIXER, Cincinnati, Ohio. Filed Mar. 30, 1885. (No specimens.)

Claim.—1. In the manufacture of artificial stone or marble, a solution in water of soda-alum, a sodium salt, soluble glass, bichromate of potash, and ferrous sulphate, substantially as and for the purposes specified.

2. In the manufacture of artificial stone or marble, a solution in water of soda-alum, a sodium salt, soluble glass, bichromate of potash, and ferrous sulphate, combined with a mixture of litharge and glycerine to form the liquid compound, as and for the purposes specified.

3. In the manufacture of artificial stone or marble, a solution in water of soda-alum, a sodium salt, soluble glass, bichromate of potash, and ferrous sulphate, combined with a mixture of litharge and glycerine to form the liquid compound, and hydraulic cement, sand, and gypsum, chalk or plaster, and colors or coloring-pigments, substantially as and for the purposes specified.

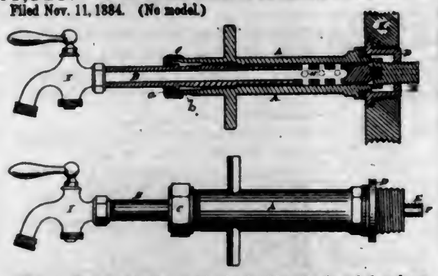
326,318. CHURN-DASHER. WM. L. MONROE, Omaha, Nebr. Filed Feb. 9, 1885. (No model.)



Claim.—1. The combination of the springs C and I, cap B, and handle A, all formed and arranged substantially as shown, for the purposes specified.

2. In combination with the handle A and springs C and I, bent and arranged as shown, the holders *s* and cap B, substantially as shown, for the purposes specified.

326,319. FAUCET AND BUSHING. HENRY NADORFF, Louisville, Ky. Filed Nov. 11, 1884. (No model.)



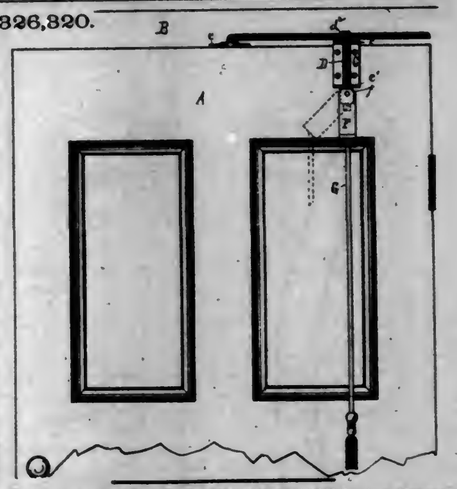
Claim.—The combination, with the bushing D, threaded and perforated, as shown, and the part-threaded valve E, operating through the bushing and having a rectangular aperture, of the sleeve A, engaging the bushing by thread and packing, the faucet B, passing through the sleeve and having a perforated body and a closed square end to engage the valve, all constructed and operating as set forth.

326,320. DOOR-CHECK. JAMES E. NEWCOMB, Rock Island, Ill. Filed Oct. 20, 1884. (No model.)

Claim.—1. In a door-check, the combination of a rod pivoted to the lintel of the door with the plate C, perforated ears *c c'*, pin D, provided with an orifice near its upper end, the collar *d*, mounted upon said pin, and the cam-arm F, pivoted to said collar, substantially as and for the purpose set forth.

2. In a door-check, the combination of a pin turning freely in bearings attached to the door and a rod pivotally connected with the lintel, which rod slides freely within an orifice in the upper end of said pin, with a cam pivoted to the lower end of said pin, whereby a pressure is applied against said rod, which prevents its movement within said pin, substantially as and for the purpose set forth.

326,320.



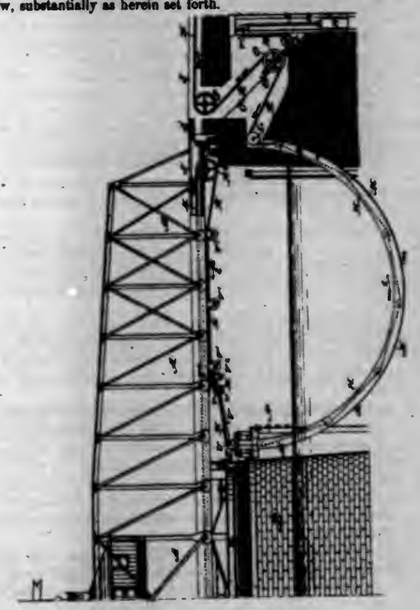
326,321. NET ATTACHMENT FOR HAMMOCKS. AMOS NICKERSON, Boston, Mass. Filed May 4, 1885. (No model.)



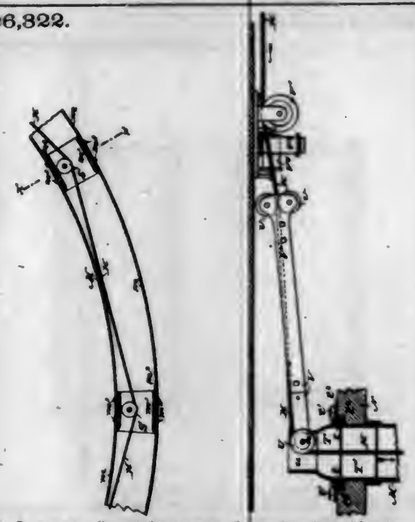
Claim.—In a hammock, the combination of the hammock-net A and stretcher-bars D D', having socket-pieces E E' F F', with the semicircular pieces N M, curved bars K K, and netting H H H' H', all operating together substantially as described, and for the purpose set forth.

326,322. RAILWAY-CABLE-BRIDGE SYSTEM. JOHN G. OSGOOD, Chicago, Ill. Filed Apr. 21, 1885. (No model.)

Claim.—1. In a cable-railway-bridge system, the combination, with a draw, of a cable guided along the draw and beneath the drawway and slack-take-up devices for the cable next the end or ends of the draw, substantially as herein set forth.



326,822.



2. In a cable-railway-bridge system, the combination, with a draw, of a cable extending along the draw, a conduit ranging beneath the drawway through which the cable passes, guides for the cable between the end of the draw and one end of the conduit, and slack-take-up devices for the cable, substantially as herein set forth.

3. In a cable-railway-bridge system, the combination, with a draw, of a cable extending along the draw, a pipe or conduit ranging beneath the drawway, and guides for the cable between the end of the draw and one end of the conduit, consisting of sheaves on the draw and a swinging arm pivoted to the cable-conduit, and slack-take-up devices for the cable, substantially as herein set forth.

4. In a cable-railway-bridge system, the combination, with a draw, of a cable extending along the draw, a conduit beneath the drawway, a turn-table pivoted on one end of the conduit, a swinging arm carrying sheaves held on the turn-table, guides for the cable between the end of the draw and the end of the swinging arm, and a slack-take-up device for the cable, substantially as herein set forth.

5. In a cable-railway-bridge system, the combination, with a draw of a cable extending along it and through a pipe or conduit ranging beneath the drawway, guides for the cable arranged between the end of the draw and one end of the conduit, and slack-take-up devices consisting of one or more bight-wheels fitted to slide next the end of the draw, substantially as herein described.

6. In a cable-railway-bridge system, the combination, with a draw, of a cable extending along it and through a pipe or conduit ranging beneath the drawway, guides for the cable arranged between the end of the draw and one end of the conduit, and consisting of sheaves on the draw and a swinging arm carrying sheaves hung to a turn-table pivoted to the top of the cable pipe or conduit, and slack-take-up devices consisting of one or more bight-wheels fitted to slide next the end of the draw, substantially as herein set forth.

7. In a cable-railway-bridge system, the combination of the draw A, the endless cable H I, cable-slack take-up devices, substantially as specified, the submerged pipes M, and sheaves or rollers S, fitted in pipes M, as herein set forth.

8. In a cable-railway-bridge system, the combination of the draw A, the endless cable H I, cable-slack take-up devices, substantially as specified, operating at the bridge-abutments, pipes M, swinging arms V, end guide-sheaves, V', and the guide-rollers V^1 V^2, substantially as herein set forth.

9. In a cable-railway-bridge system, the combination, with the draw, its abutment, the endless cable, and the cable guide-pipes M, of cable-slack take-up devices consisting of one or more bight-wheels, O, mounted in a carriage fitted to slide in the abutment, substantially as herein set forth.

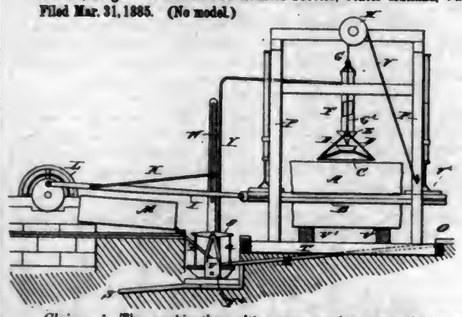
10. In a cable-railway-draw-bridge system, the combination, with the draw, the endless cable, and the pipes M, of slack-take-up devices consisting of one or more bight-wheels, O, mounted in a sliding carriage and weighted, as at R R', substantially as herein set forth.

11. In a cable-railway-bridge system, a cable guide-pipe, M, crossing the drawway, constructed with connected necks m' at one end of its sections, allowing the joined sections to be calked from the inside, substantially as herein set forth.

12. In a cable-railway-bridge system, the combination, with the cable guide-pipe M and swinging arm V, of turn-table T, flanged at t and resting in an annular recess at the head of pipe M, or of a cap fitted thereto and confined by plates or blocks t', substantially as herein set forth.

13. In a cable-railway-bridge system, the combination, with the draw, its abutment, the endless cable, and end guide-sheaves on the draw, of cable grip-guides offset as they approach and leave the joint of the draw with the abutment, and provided at the said joint with lateral extensions, substantially as and for the purpose set forth.

326,823. PUMPING-MACHINE FOR STONE-SAWS. FRED K. PATCH, Proctor, assignor to himself and Redfield Proctor, Center Rutland, Vt. Filed Mar. 31, 1885. (No model.)

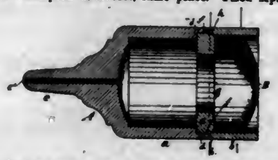


Claim.—1. The combination, with a stone-sawing gang, of a pump for raising sand and water and a rod for connection with and for operating the said pump from the gang or pitman, substantially as herein shown and described.

2. In a stone-sawing machine, the combination, with the adjustable distributing-board C, of the funnel E and the vertical tube F, connected with the supply-pipe, substantially as herein shown and described.

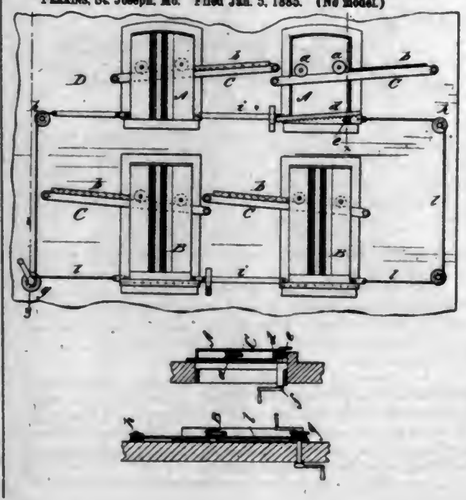
3. In a stone-sawing machine, the combination, with the adjustable distributing-board C and the funnel E, of the vertical tube F, emptying into said funnel, the rope G, suspending the said tube from the pulley-shaft J, the pulley H on the said shaft, and the rope G, substantially as herein shown and described.

326,824. POWDER-GUN. JOHN A. PEER, Brooklyn, N. Y., assignor of one-half to Thompson & Norris, same place. Filed Apr. 6, 1885. (No model.)



Claim.—A powder-gun composed of two hollow wooden sections detachably secured together, one of said sections being provided with a circumferential shoulder, and a bellows within said last-mentioned section bearing at its inner edge against said shoulder, substantially as specified.

326,825. MEANS FOR OPERATING DOORS AND SHUTTERS. E. PERKINS, St. Joseph, Mo. Filed Jan. 5, 1885. (No model.)



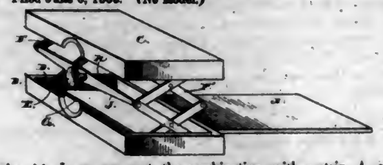
Claim.—1. The combination of inclined tracks C with shutters and doors having rollers a and guide-arms b, substantially as described.

2. The combination, with the shutters and doors of different floors of a building, of pulleys and ropes or chains passed over said pulleys and reversely around the drum of a common windlass, substantially as and for the purpose set forth.

3. The combination, with the shutters and doors mounted to travel upon inclined tracks or ways and having connecting-arms, of the ropes and pulleys, the ropes passing over said pulleys and actuated by a common windlass, substantially as and for the purpose set forth.

4. The combination, with the shutters and doors, of the bars, one connecting the shutters of one floor, and the other bar connecting the doors or shutters of another floor, the pulleys and the ropes or chains passed over said pulleys and reversely around the drum of a common windlass, substantially as and for the purpose set forth.

326,826. HAND AND ARM REST. ALFRED C. PERRY, Covington, Ga. Filed June 8, 1885. (No model.)



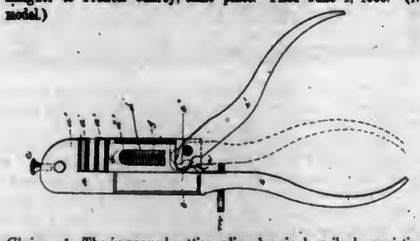
Claim.—1. In an arm-rest, the combination, with a strip, A, of a case, B, secured thereon, lazy-tongs arranged in said case at each end thereof, an arm or hand rest, C, secured to said lazy-tongs and adapted to rest on the case B to form a cover thereto when the tongs are closed, and cross-bars carrying a feed-screw adapted to lock the tongs together, substantially as described.

2. In an arm-rest, the combination, with a strip, A, carrying a case, a vertically-adjustable arm-rest, lazy-tongs arranged at each end of said case, brackets secured in said case, rods G H, connecting the set of tongs at each side together at their upper and lower ends, transverse bars J, connecting each set of tongs at their middle, and a feed-screw arranged in alignment with the tongs and bearing in the bars J, substantially as described.

3. The combination, with a box or casing having slotted brackets, and the arm-rest provided with similar brackets, of lazy-tongs connected by rods working in said slots, rods connecting the lazy-tongs, and a feed-screw, as set forth.

4. The combination, with the strip A, of the box located on the outer end thereof, lazy-tongs adapted to fit within said box or casing, and a hand-rest supported upon the upper ends of the lazy-tongs and adapted, when the same are lowered, to serve as a cover for box B, as set forth.

326,827. CUTTING-PLIERS. ALVA L. PERKEY, New Haven, Conn., assignor to Francis Caffrey, same place. Filed June 1, 1885. (No model.)



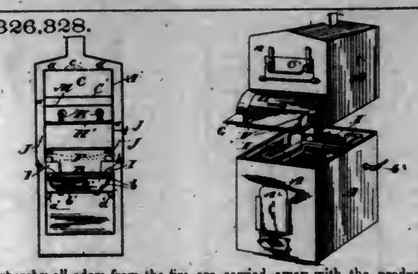
Claim.—1. The improved cutting-pliers herein described, consisting of the handled portion a, having the elongated cutter-receiving projection or head a^2, extending at a right angle thereto, a box or casing A, open at both ends on said portion a, a reciprocating cutter-block, d, fitted in said box or casing, a transverse pin, d^2, extending through the slot of the reciprocating cutter and secured in said box or casing, a spring interposed between said pin d^2 and the lower end of the slot, and a cam-lever pivoted below the end of the reciprocating block, substantially as set forth.

2. The combination, in cutting-pliers, of the handled portion a, casing or box A, open at both ends, the cutter-block d, having its lower portion provided with the projection n, having an inwardly-curved face, o, and a pivoted cam-lever having a rounded head, e^2, extending and operating in connection with the curved projection, as set forth.

326,828. BROILER. ADOLPHE PILLAULT, Cleveland, Ohio. Filed Aug. 26, 1884. (No model.)

Claim.—1. The combination, with a broiler and a fire-box located below the same, of an air space or flues passing upwardly alongside of the broiler, and openings into said flues between the fire-box and broiler,

326,828.

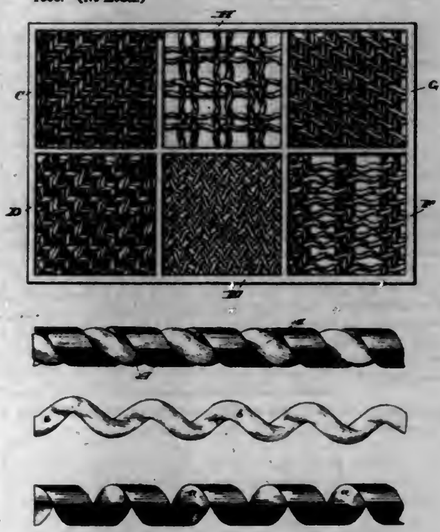


whereby all odors from the fire are carried away with the products of combustion.

2. The combination, with a broiler, a fire-box located below the same, and air space or flues located outside of the broiler and communicating with the fire-box below the broiler, of an oven located above the broiler, air-spaces partly surrounding said oven and communicating with the air space or flues leading from the fire-box, whereby the oven is heated from the waste heat of the broiler, substantially as set forth.

3. The combination, with a broiler, a fire-box located below the same, an air space or flues partly surrounding the broiler, and openings into said air space or flues between the broiler and fire-box, of the dampers J, located within said air space or flues above said openings, substantially as set forth.

326,829. INTERLOCKING SPIRAL MOLDING AS AN ARTICLE OF MANUFACTURE. MOSES Y. RANSOM, Cleveland, Ohio. Filed June 27, 1885. (No model.)



Claim.—1. As an article of manufacture, a pattern of open or ornamental work composed of machine-made interlocking or interwoven spiral moldings, substantially as set forth.

2. As an article of manufacture, a pattern of open or ornamental work composed in part or entirely of machine-made spiral moldings, said moldings being interlocked or interwoven, substantially as set forth.

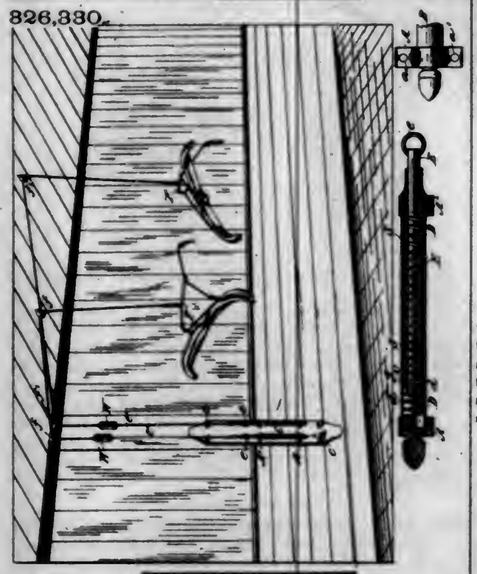
3. As an article of manufacture, a pattern of open or ornamental work composed wholly or in part of machine-made spiral moldings, said moldings being interlocked, intermixed, or interwoven, substantially as set forth.

326,830. HARNESS-SUPPORT. JOHN E. RICKER, Boston, Mass. Filed June 8, 1885. (No model.)

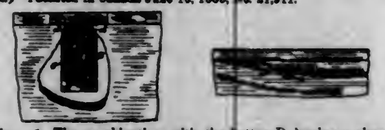
Claim.—1. The herein-described harness-supporting apparatus, composed, essentially, of a piston, piston-rod, and spring thereon, and the cylinder within which the piston-rod works, in combination with a rope and pulleys to support it, the end of the rope farthest from the cylinder serving to suspend the harness, substantially as described.

2. The hollow cylinder B, head-pieces or supports A A', piston D, piston-rod E and spring S, the rope e', weight W, and pulleys f', combined with the harness-supporting bar, substantially as and for the purposes set forth.

326,330.



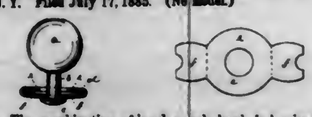
326,331. SPRING CATCH OR FASTENING. JOHN D. RIPSON and ROBERT WATSON, Toronto, Ontario, Canada. Filed June 6, 1885. (No model.) Patented in Canada June 16, 1885, No. 21,911.



Claim.—1. The combination, with the button D, having a pierced projection, as shown, of the spring-metal plate C, having projecting pins *d* for engaging the holes in said button, and the separator B, all arranged and operating substantially as and for the purposes specified.

2. The fastener described, consisting of the plate A, flanged to form a support for the separator, the U-shaped spring-plate C, having projections *b* and secured to said plate thereby, and inwardly-projecting lips on its free ends, the button D, and the pivoted separator B, the shank of which passes through said plate A and support *a*, all arranged and operating substantially as herein shown and described, and for the purpose specified.

326,332. BUTTON AND BUTTON-FASTENER. CHARLES RETTER, Brooklyn, N. Y. Filed July 17, 1885. (No model.)



Claim.—1. The combination of head *a* and shank *b*, having cap *c*, with perforated base-plate *d*, bent upon itself, the free ends of the bent portions adapted to clasp or partially encircle the shank, substantially as specified.

2. The combination of head *a* and shank *b*, having cap *c*, with base-plate *d*, composed of central perforated portion, *e*, and notched end flaps, *f f*, substantially as specified.

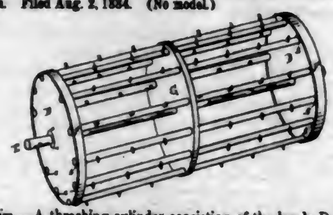
326,333. NUT-LOCK. FRANK P. ROSS, Monongahela City, Pa. Filed Feb. 4, 1885. (No model.)



Claim.—1. The improved twin-nut lock consisting of the brace E, having its ends bent around to form spirals *b b'*, which have their extremities spread or flared, substantially as described, and for the purpose set forth.

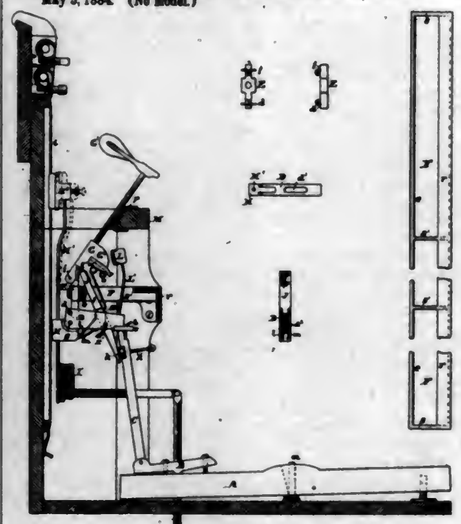
2. A spirally-bent nut-locking bar having the extremity of the spiral spread or flared to form a projection or tooth which will bite into or obtain a purchase on the nut, as set forth.

326,334. THRASHING-CYLINDER. GEO. A. ROBERTS, Three Rivers, Mich. Filed Aug. 2, 1884. (No model.)



Claim.—A thrashing-cylinder consisting of the heads D D, having recesses *c* formed in their periphery, with a solid portion between each two recesses, the tubular bars A, provided with teeth B, and inserted in said recesses with their highest point on a line with such periphery, and the bands F, shrunk on said heads and over the ends of the bars, as shown, to retain said bars in place, substantially as and for the purposes specified.

326,335. PIANO-ACTION. CHARLES E. ROGERS, Boston, Mass. Filed May 5, 1884. (No model.)



Claim.—1. The metallic flange-rail F, composed of the bars *r* and *e*, the end ties, *s s*, and one or more intermediate ties, *s' s'*, all arranged substantially as and for the purposes described.

2. In combination with the rail F, provided with the bars *r* and *e*, the flange E, secured to and projecting above and below the bar *r*, the hammer-butt G, pivoted to the upper end of said flange, the lever D, pivoted to the lower end of said flange and provided with the slot *d'*, the "fly" J, pivoted to the lever D and arranged to engage with and lift the hammer-butt G, the jack C, and the key A, all arranged and adapted to operate substantially as described.

3. The lever D, provided with the projecting felt pad *c*, in combination with the jack C, provided with the pin *b*, extending above the upper end of said jack and through said felt, substantially as described.

4. The combination of the flange E, the lever D, pivoted thereto, the damper-block H, pivoted to the lever D, and the spring *m*, all arranged and adapted to operate substantially as described.

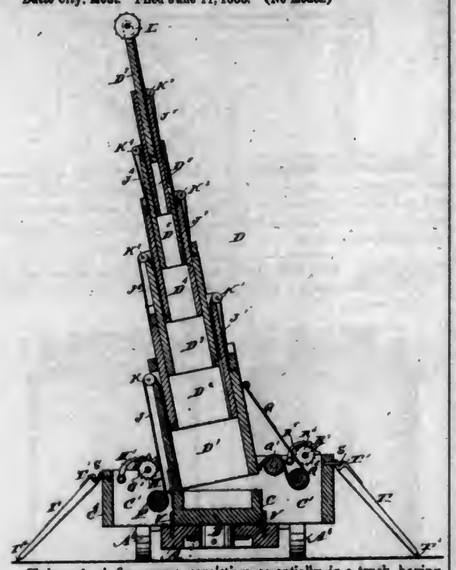
5. The hammer-butt G, provided with the flexible projecting pad *n*, in combination with the fly J and the spring *o*, all arranged and adapted to operate substantially as described.

6. The combination of the lever D, flange E, hammer-butt G, provided with the projection G^2, the check L, and the springs *l* and *o*, substantially as described.

7. In combination with the damper-rod H', projecting above and below the fulcrum-block H and carrying at its upper end the damper H^3, the pedal-operated rocking rail I, constructed, arranged, and adapted to operate substantially as and for the purposes described.

8. The flange E, provided with one or more transverse grooves, *f'*, and one or more clamping-screws, *d'*, in combination with the fulcrum pin or pins of a pivoted part of the action, substantially as described.

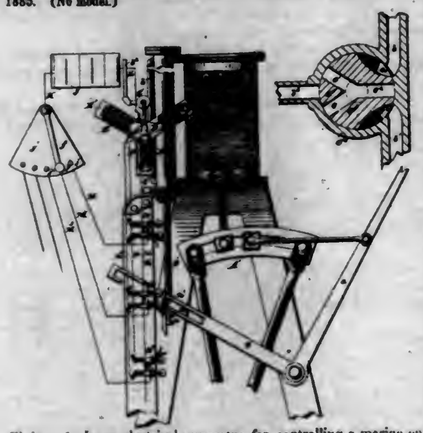
326,336. FIRE-ESCAPE. JOHN E. SANDERS and MAGNUS AKERON, Battle City, Mont. Filed June 11, 1885. (No model.)



Claim.—1. A fire-escape consisting, essentially, in a truck having a body, A, a base, C, swiveled thereon, and having sides C' and ends C^2, a series of telescopic sections, D' D^2 D^3 D^4 D^5 D^6, the lower one of which is hinged at one edge to one side of the swiveled base C, the drum F, journaled in the sides C', the pulley K on the upper end of the bottom section, D', the cable J, passed from the drum over pulley K to the lower end of the section D^2, the cables J' J^2 J^3 J^4, connecting the remaining sections in the manner set forth, the top piece, D^7, and its cable J^5, the pulley M on the top piece, the drum P on the bottom section, D', the cable N, passed from the drum P over the pulley M, and having the basket O, the cable Q, secured at both ends to the lower telescopic section, D', the drums Q' Q^2, around which said cable is wound between its ends, and the operating-shaft R^2, substantially as set forth.

2. In a fire-escape, the combination, with the base and the hinged section D', secured thereto, of the cable Q, secured at its opposite ends to the upper and lower ends of said section, the drums Q' Q^2, around which said cable is wound between its ends, and the operating-shaft and gears, substantially as set forth.

326,337. ELECTRICAL APPARATUS FOR CONTROLLING MARINE ENGINES. LOUIS M. SANDERS, Rossville, Mich. Filed Mar. 31, 1885. (No model.)



Claim.—1. In an electrical apparatus for controlling a marine engine, the combination, with a steam-cylinder, of ports to admit steam alternately into the upper and lower ends of said cylinder, a valve to control the admission of steam through said ports provided with a pendulum-armature for operating the same, said armature governed by electro-magnets D E F, substantially as described.

2. In an electrical apparatus for controlling a marine engine, the combination, with a steam-cylinder, of ports to admit steam alternately into the upper and lower ends of said cylinder, a valve to control the admission of steam through said ports provided with a pendulum-operating armature, said armature governed by a series of electro-magnets, said magnets electrically connected with a switch-board, substantially as described.

3. In an electrical apparatus for controlling a marine engine, the combination, with a steam-cylinder, of ports to admit steam alternately into the upper and lower ends of said cylinder, a valve to control the admission of steam through said ports provided with an operating-armature, said armature governed by a series of electro-magnets, said magnets electrically connected with a series of commutators, said commutators electrically connected with a switch-board, and said switch-board electrically connected with a battery, substantially as described.

4. In an electrical apparatus for controlling a marine engine, the combination, with a steam-cylinder and its piston-rod, of a lever connected with the link-motion and with said piston-rod by an intervening cross-head, ports to admit steam alternately into the upper and lower ends of said cylinder, and an electrically-controlled valve to govern the admission of steam through said ports, said lever provided with an elongated slot in which the cross-head travels, substantially as described.

5. In an electrical apparatus for controlling a marine engine, the combination, with a steam-cylinder and its piston-rod, of a lever connected with the link-motion and with said piston-rod, ports to admit steam alternately into the upper and lower ends of said cylinder, a valve to control the admission of steam through said ports, provided with an operating-armature governed by a series of electro-magnets, said magnets electrically connected with a series of commutators, said commutators electrically connected with the switch-board, and a cam connected with the piston-rod or cross-head for operating said commutators, substantially as described.

6. In an electrical apparatus for controlling a marine engine, the combination, with a steam-cylinder and its piston-rod, of a lever connected with the link-motion and with said piston-rod, ports to admit steam alternately into the upper and lower ends of said cylinder, a valve to control the admission of steam through said ports, provided with an operating-armature governed by a series of electro-magnets, said magnets electrically connected with a series of automatic retracting-commutators, said commutators electrically connected with a switch-board, and a cam connected with the piston-rod or cross-head for changing the current through said commutators as the piston-rod is reciprocated, substantially as described.

7. In an electrical apparatus for controlling a marine engine, the combination of a steam-cylinder having ports for admitting steam into its upper and lower ends, a valve having an armature connected therewith for controlling the passage of steam through said ports, a series of magnets for operating the armature electrically connected with a series of commutators, and through said commutators with a switch-board, the switch of the board permitting the passage of the current through any desired commutator, and a battery electrically connected with said magnets and switch-board, whereby the current may be directed through the switch-board to any desired commutator and through said commutator to the desired magnet, substantially as described.

8. In an electrical apparatus for controlling a marine engine, the combination, with a steam-cylinder and its piston-rod, of a lever connected with said piston-rod for operating the link-motion, ports to admit steam alternately into the upper and lower ends of said cylinder, a valve for controlling the admission of steam through said ports, provided with an operating-armature, a series of electro-magnets for governing said armature, said magnets electrically connected with a series of commutators, said commutators electrically connected with a switch-board, a battery electrically connected with said switch-board and magnets, the construction and arrangement being such that said commutators will be operated as the piston-rod is reciprocated, substantially as described.

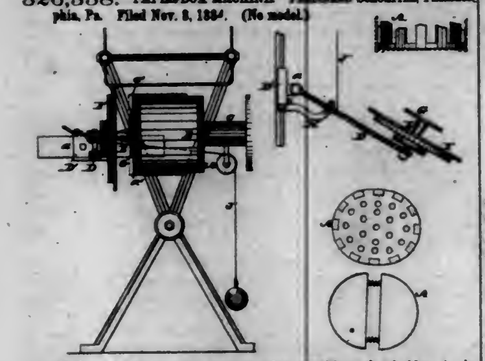
9. The combination, with a series of commutators, of a series of magnets, and a switch-board electrically connected therewith, said commutators consisting of reciprocatory conducting-bars, said bars provided with sleeves i i' i^2 i^3 and connectors i^4 i^5 i^6 i^7, and a vibratory escapement-lever, and binding-screws severally connected with one of said magnets, all arranged to operate substantially as and in the manner described.

10. A commutator consisting of reciprocatory conducting-bars, said bars provided with sleeves i i' i^2 i^3 and connectors i^4 i^5 i^6 i^7, and a vibratory escapement-lever, and binding-screws severally connected with one of said magnets, all arranged to operate substantially as and in the manner described.

11. In an electrical apparatus for controlling the admission of steam to a steam-cylinder, the combination, with said cylinder, of a valve for controlling the admission of steam thereto, magnets to operate said valve, and a series of commutators to control the circuits to said magnets, substantially as described.

12. In an electrical apparatus for controlling admission of steam to a steam-cylinder, a series of commutators to control the circuit, said commutators operated by the reciprocation of the piston-rod of said cylinder, substantially as described.

326,338. PAPER-BOX MACHINE. FERDINAND SCHOETTLE, Philadelphia, Pa. Filed Nov. 3, 1884. (No model.)



Claim.—1. In a paper-box-covering machine, the holder A, in combination with a movable arm, D, the latter having at its outer end a piece, E, a portion of which is tapering or conical, and the said piece having attached to its end a head, G, and a slapper, F, substantially as described.

2. In a paper-box-covering machine, a movable arm provided with an end piece having a conical portion and a head, in combination with a slapper mounted on said end piece, and having an opening the diameter of which is larger on the side toward the said head than on the opposite side, substantially as and for the purpose set forth.

3. The movable arm D, provided with a piece, E, a head, G, and a slapper, F, in combination with the catch H and bracket D', said bracket being adjustably mounted on its support and carrying said arm D and catch H, substantially as and for the purpose set forth.

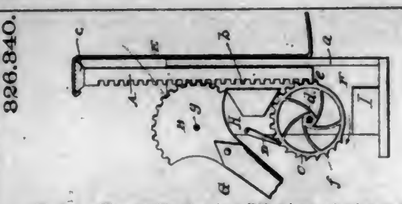
4. In a paper-box-covering machine, a box-holder, a head, a slapper, and a movable arm carrying said head and slapper, in combination with a weighted cord for holding said head against the holder, and a catch for holding it from the same, substantially as and for the purpose set forth.

326,339. WASHING-MACHINE. CALEB R. SELL and WINFIELD S. DAVIS, Blandinsville, Ill. Filed June 27, 1884. (No model.)



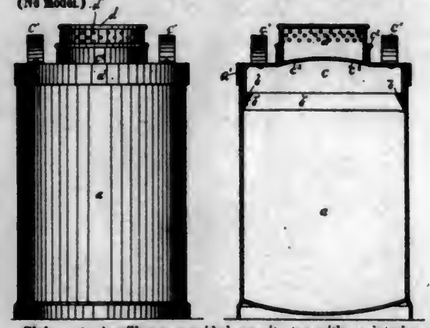
Claim.—The combination, with a segmental wash-tub, of a pivoted segmental roller-bottom, 1, an oscillating rubber, a double-hinged cover, a vibrating frame, vibrating rubber-arms, and a tension-spring, substantially as described.

326,340. LIFTING-JACK. JONATHAN C. SILSBEE, Arbela, Tuscola County, Mich. Filed Aug. 21, 1884. (No model.)



Claim.—The combination, in a lifting-jack, of a bar, a device—such as a segmental rack—for elevating said lifting-bar, a wheel having on a part of its face a series of inclined teeth, and a pivoted pawl for engaging said inclined teeth to lock said wheel against rearward rotation, substantially as set forth.

326,341. MILK-CAN. EDWIN SLAGHT, Gowanda, assignor of one-half to F. S. Oakes and S. F. Burger, Cattaraugus, N. Y. Filed Nov. 6, 1883. (No model.)



Claim.—1. A milk-can provided near its top with an interior annular shelf having an upwardly and inwardly inclined inner face, combined with a cover having a vertical flange which is outside of the upper edge of the interior face of said shelf, substantially as set forth.

2. A milk-can provided near its top with an interior annular shelf having an upwardly and inwardly inclined inner face, combined with a doubly-perforated cover having a vertical flange which is outside of the upper edge of the interior face of said shelf, substantially as set forth.

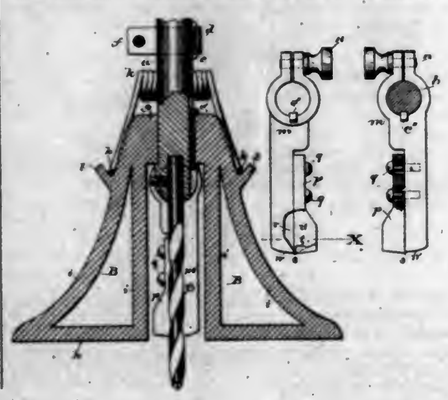
3. The combination, with a milk-can, of a cover having an outer annular flange and a perforated top portion which is smooth and hollowing or concave interiorly, whereby said cover, when reversed, is adapted to serve as a strainer, substantially as set forth.

326,342. ADJUSTABLE CONCENTRIC CHANNELER. JAMES C. SMITH, Boston, Mass., assignor of one-half to Thomas G. Newgent, same place. Filed May 20, 1885. (No model.)

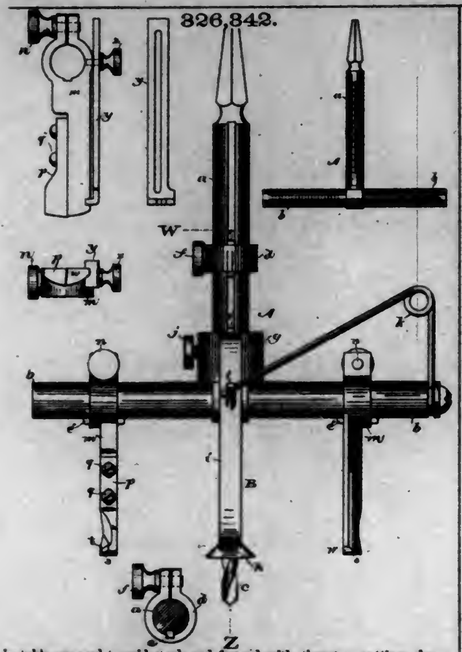
Claim.—1. The combination, with a concentric channeler, of a spring-advanced gage constructed and arranged to be adjusted and locked at will to control the penetration of the channel-forming cutters, substantially as specified.

2. The combination, in a concentric channeler, of adjustable set-collar *d* and the sliding spring-advanced gage B, substantially as specified.

3. The channel-forming cutters consisting of stock *m*, formed to be secured upon bar *b*, and having throat *v*, and face *w*, and cutter *p*, adjustably secured to said stock and formed with throat *u*, cutting-edge *s*, and spur *t*, all substantially as specified.

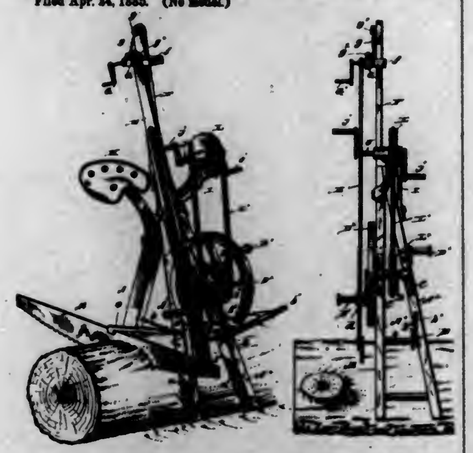


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4. In a concentric channeler, the combination, with sliding gage B, of arm-spring *k*, secured on bar *b*, and connected with and arranged to depress said gage, substantially as specified.

326,343. SAWING-MACHINE. WILLIAM W. SMITH, Boyne, Mich. Filed Apr. 24, 1885. (No model.)



Claim.—1. A sawing-machine having a tripod-frame with the legs or branches thereof provided with teeth adapted to engage a log, a windlass journaled in two of the legs and connected with the opposite leg by means of a chain, substantially as specified.

2. A tripod-frame having a windlass journaled in two of its legs or branches, a chain connecting the opposite leg with the windlass, a ratchet on the said windlass, a pawl engaging the ratchet, and a hand-lever carrying a pawl adapted to engage the ratchet and rotate the windlass, whereby the legs of the tripod may be brought to engage a log, substantially as specified.

3. The combination, with the tripod-frame, of the frame F, rising therefrom, and provided with the pulley *g'* at its upper end, the slide-frame *f*, arranged on the said frame F, and carrying a drum, pawl, and ratchet, a chain connecting the slide-frame with the drum and passing over the pulley *g'*, the slotted saw-frame E, pivoted at its upper end to the slide-frame *f*, and the pedal-levers adapted to vibrate the saw-frame by engaging the slot therein, substantially as specified.

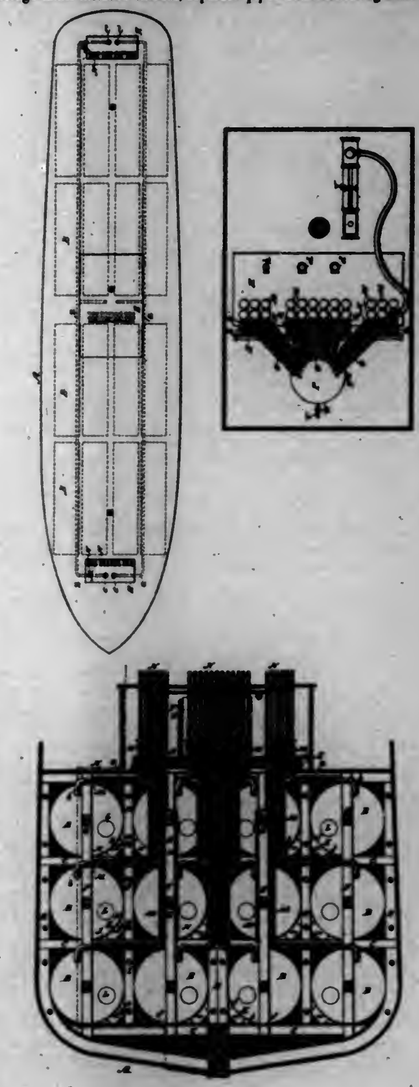
4. In a sawing-machine, a horizontally-vibrating slotted saw-frame pivoted at its upper end to a vertically-movable frame or block, a shaft journaled in the main frame and having one of its pedal-levers passing through the slot in the saw-frame to vibrate the same, a sprocket-wheel arranged on the pedal-lever shaft, a sprocket-wheel having a crank-arm and journaled above the pedal-lever shaft, and a chain connecting the said sprocket-wheel, whereby the pedal-levers and hand-levers may be operated simultaneously, substantially as specified.

5. In a sawing-machine, the combination, with a main frame, of a vibratory saw-frame longitudinally slotted and pivoted at its upper end, a shaft having pedal-levers journaled in the main frame and adapted to vibrate the said saw-frame and saw by having one of the pedal-levers engage the said saw-frame, substantially as specified.

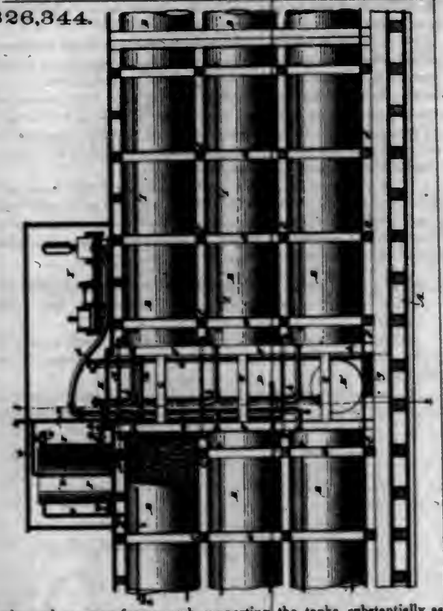
326,344. VESSEL FOR TRANSPORTING LIQUID CARGOES IN BULK. LOUIS V. SOUZ, New York, N. Y. Filed June 12, 1885. (No model.)

Claim.—1. In combination with the hull of a vessel, a series of separate and independent storage-tanks, and a supply-pipe connecting to each tank.

2. In combination with the hull of a vessel, a series of independent storage-tanks inclosed therein, separate pipes communicating with said



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tanks, and an open frame-work supporting the tanks, substantially as described.

3. In combination with the hull of a vessel, a series of separate and independent tanks arranged therein, a supply-pipe for each tank, and a pump located near said pipes and constructed for convenient connection with any of the supply-pipes.

4. In combination with the hull of a vessel, a series of separate and independent tanks contained therein, and a stand-pipe connected to each tank.

5. In combination with the hull of a vessel, a series of independent tanks therein, a stand-pipe connected with each tank, and a pressure-reservoir common to a number of such pressure-pipes.

6. In combination with the hull of a vessel, a series of independent main tanks, an auxiliary tank or tanks, and pipe-connections to the auxiliary tank or tanks.

7. In combination with a series of main storage-tanks arranged within the hull of a vessel, a pressure-tank located above the level of the main tanks and provided with pipe-connections for discharging its contents into the main tanks.

8. In combination with the hull of a vessel, a series of main storage-tanks an overflow-tank above the level thereof, with pipe-connections leading from such overflow-tank to the main tanks and to an auxiliary tank.

9. In combination with the hull of a vessel, a series of main storage-tanks, a pressure-tank above the level thereof, pipe-connections provided with stop-cocks leading from the pressure-tanks to the main tanks, and an indicator connected with the pressure-tank.

10. In combination with a series of independent storage-tanks in the hull of a vessel, pipes leading from a number of said tanks to a common radiating center, and an exhaust and force pump at such center adapted for connection with any two of the pipes.

11. In combination with the hull of a ship, a series of independent cylindrical tanks, a frame-work supporting said tanks in horizontal position, fixed chocks on the frame-work bearing against the tanks, and a movable chock interposed between the fixed chocks.

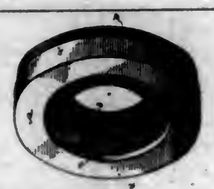
12. In combination with the hull of a ship, a series of tanks therein, a frame-work by which the tanks are held out of contact with each other, a pipe connecting to each tank, and an offset elbow in each pipe, (to give slight flexibility to said pipe,) substantially as described.

326,345. NUT-LOCK. FRANKLIN TAYLOR, Wilmington, Del., assignor to the Vulcanized Fiber Company, same place. Filed Oct. 22, 1884. (No model.)

Claim.—1. A washer consisting of a stiff non-elastic metal cap with a compressible ring or body of greater thickness than the flange or rim of said cap seated therein and united thereto by pressure, substantially as described.

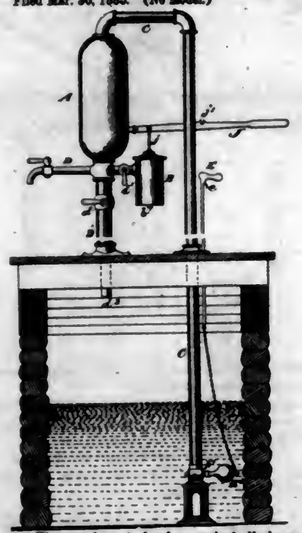
2. A washer consisting of a stiff-metal cap having a compressible ring or body seated therein, said cap having a bolt-hole or opening materially larger than the bolt-hole or opening in the compressible ring or body, substantially as described, whereby the pressure of the nut upon

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the metal ring compresses the outer portion of the compressible ring or body and substantially exempts the inner edge surrounding the bolt-hole of said ring or body from such pressure.

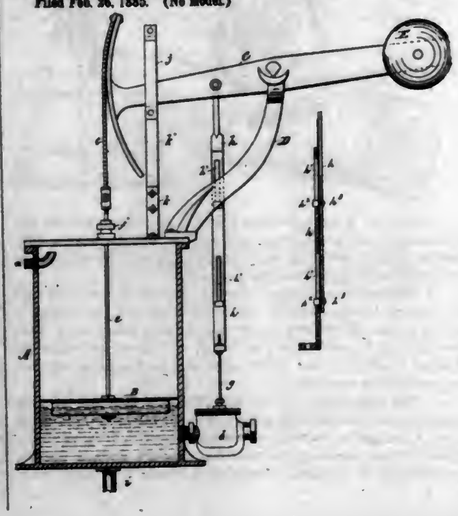
326,346. HYDRAULIC AIR-PUMP. WILLIAM S. TAYLOR, Huntingdon, Pa. Filed Mar. 30, 1885. (No model.)



Claim.—1. The receiver A, having cocked discharge-pipe D, the air-pump B, connected with the lower end thereof by a pipe having cock *d'*, and the bottom valved pipe, C, extending into well, but connecting with the upper end of receiver, the whole adapted only to fill the receiver A and then cease further supply, as described.

2. The combination, with the parts A B C, of the lever J, notched at *j'*, carrying piston-rod *j*, and pivoted to part A, and the rod E, having latch *e*, and connected by a chain with a weighted valve, F, whereby the air-pump may be conveniently worked, its outlet closed, and the water-valve held open, as described.

326,347. STEAM-TRAP. WILLIAM W. TAYLOR, New Orleans, La. Filed Feb. 26, 1885. (No model.)



Claim.—1. In a steam-trap, the combination, with the lever, the float connected to the lever, and the valve arranged below the low-water level of the two-part extensible connection between the valve and lever, whereby the float is permitted to rise and open the valve below the low-water level, the valve opening until full way open, and to discharge the water, the valve closing also below the low-water level, substantially as and for the purpose set forth.

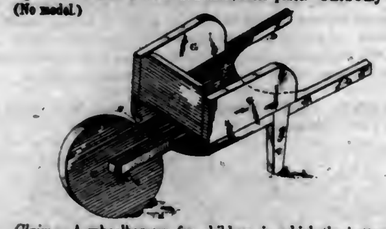
2. In a steam-trap, the combination, with the tank, the float, the lever connected to said float, and the valve, of the bars or rods, one bar or rod connected at one end to the valve-stem, and having slots, one near each end, and the other bar or rod having shouldered squared blocks which fit in slots of the aforesaid bar or rod, substantially as and for the purpose set forth.

326,348. METHOD OF MAKING PLUSH ARTICLES OF CLOTHING. CHARLES TREMBERT and SIMON CHRISTIANSEN, New York, N. Y. Filed Apr. 11, 1885. (No model.)



Claim.—In the art of making plush articles of clothing, the herein-described method, which consists in cutting the plush on the back by means of a knife diagonally to the warps and wefts, abutting the edges of the pieces, and uniting them by the glove or cross stitch, substantially as herein shown and described.

326,349. WHEELBARROW. DAVID B. TIFFANY, Xenia, Ohio, assignor of one-half to John G. Fearis, same place. Filed July 13, 1885. (No model.)



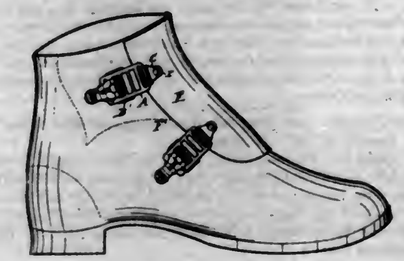
Claim.—A wheelbarrow for children, in which the bottom A, the arms B, and the handles D are all formed from a single piece of board or other suitable material, as shown and described.

326,350. BUCKLE ATTACHMENT. WILLIAM P. TIDBLEY, Dallasburg, Ky. Filed July 2, 1885. (No model.)



Claim.—As an improved article of manufacture, an attaching-buckle consisting of a buckle proper and a plate or rod having a shorter end encircling the tongue-bar of the buckle, and a longer end bent upon itself to form a loop and extended along the body of the plate, its extremity resting on the extremity of the shorter end beneath the rear bar of the buckle-frame, substantially as specified.

326,351. CLASP. JACOB J. UNDERHILL, Syracuse, N. Y. Filed Mar 2, 1885. (No model.)



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Claim.—1. In a clasp of the class described, the pivoted tongue T, provided below its pivot with a throw-off piece having lateral extensions engaging the under side of the plate interlocked with the tongue.

2. In combination with the slotted plate and the base-plate arranged opposite said slotted plate, a lug projecting vertically from the plane of the base-plate, the tongue hinged on said lug and provided with a throw-off piece below its pivot, and the guide-flanges projecting from the under side of the tongue for guiding the interlocked slotted plate to the aforesaid throw-off piece, as set forth and shown.

3. In combination with the slotted plate A, the plate B, provided with the raised lug or eye *e*, the tongue T, formed with the throw-off piece *b* and with the projections *c c*, and guide-flanges *d d*, substantially as described and shown, for the purpose set forth.

4. In combination with the tongue T, the base-plate B, provided with a lug on which the tongue is hinged, and shoulders on said lug for arresting the movement of the tongue to its open position, as set forth.

5. The combination, with the tongue T, formed with the arms *f f*, and with the pintle *a* between said arms, of the base-plate B, formed with the raised eye *e*, embracing the pintle, and provided with the shoulders *t t* on the ends of the eye, substantially as described and shown, for the purpose set forth.

6. In combination with the slotted plate A, base-plate B, and tongue T, hinged on said base-plate, forward extensions of the base-plate to support the same in front of the hinge of the tongue, and raised bearings for the slotted plate back of the aforesaid extensions of the base-plate, as and for the purpose set forth.

7. In combination with the slotted plate A, the base-plate B, provided with the raised lug or eye *e*, and with the extensions *n n* in front of said lug, and the tongue T, hinged on the lug or eye, and provided with the projections *c c*, substantially as described and shown, for the purpose set forth.

8. In combination with the attaching-plate of a clasp, the clip C, composed of a strip of metal folded back upon itself and loosely embracing the end cross-bar of the aforesaid plate, and provided in its doubled end portions with the eye *r*, for the reception of the rivet by which it is pivoted on the shoe, whereby the said plate is allowed to swing parallel to as well as at right angles to the plane thereof, substantially as described.

326,352. SPRING-CLASP. JACOB J. UNDERHILL, Syracuse, N. Y. Filed Mar. 21, 1885. (No model.)



Claim.—1. A spring-clasp consisting of two plates connected together, one over the other, and formed with bearings between them at both ends, and normally deflected from each other intermediately between the two ends, and the tongue pivoted on the combined plates and provided with an elongated sleeve arranged to compress the deflected portions of said plates as it is turned on its bearings, as set forth.

2. In combination with the tongue provided with an angular or transversely-elongated sleeve, the two plates connected together, one over the other, and bearing upon each other at the ends, and normally deflected from each other intermediately between the two ends, and pintles on the deflected portions of the two plates held within the sleeve of the tongue, substantially as and for the purpose set forth and shown.

3. In combination with the tongue provided with an angular or elongated sleeve, *s*, the plates B and C, connected together at one end, held in contact with each other at the opposite end, and deflected from each other intermediate the ends, and each provided at the deflected portion of the plate with a cross-bar, *a*, held within the sleeve of the tongue, substantially as described and shown.

4. The combination, with the tongue-carrying plate and tongue hinged thereon, of positive stops on the edges of the hinged portion of the tongue arranged to collide with the plate, and thereby arrest the movement of the tongue when swinging it to its open position, substantially as set forth.

5. The combination of the tongue provided with the projections *c c*, and the tongue-carrying plates B C, each provided with the pintle *a* for the attachment of the tongue, and with the extensions *d d* in front of the pintles, and prolonged slot *e* back of the pintles, substantially as described and shown, for the purpose set forth.

6. A clasp having two plates with a tongue hinged to both, and said plates attached to each other by an eyelet passing through the two plates and beaded or clinched on opposite sides of the combined plates, substantially as described and shown.

7. A clasp having two plates with a tongue hinged to both, and said plates attached to each other and to the strap of the shoe by an

eyelet passing through the two plates, and headed or clinched on opposite sides of the combined plates, the strap passing through a slot in the forward portion of the said plates and doubled back, and a rivet passing through the twofold portion of the strap and through the eyelet, substantially as described and shown.

326,353. SPRING-CLASP. JACOB J. UNDERHILL, Syracuse, N. Y. Filed Apr. 24, 1885. (No model.)



Claim.—1. The combination of the plate A, formed of a uniform plane from end to end, and provided with the pintle *a* and the plate B, of a corresponding uniform plane from end to end, and lying contiguous to the plate A and provided with the extensions *b b*, the tongue T, having the sleeve *s*, embracing the pintle, and portions of the ends of the sleeve cut away to allow the superincumbent plate to lie closely upon the other plate, from end to end thereof, when the clasp is closed, substantially as set forth.

2. The combination of the plates A and B, of the same uniform planes, connected together at one end, and the pintle *a* on one of said plates, the tongue T, having the sleeve *s*, embracing the pintle, and formed with the stops *t t* on the ends of the sleeve to limit the movement of the tongue toward its open position, substantially as and for the purpose set forth.

3. The combination of the plate A, provided with the pintle *a* and extensions *l l*, and formed of uniform plane throughout, the plate B, provided with the extensions *b b*, and formed of a corresponding uniform plane, and the tongue T, having the sleeve *s*, embracing the pintle, and provided with stops *t t*, arranged to collide with the extensions *l l* and arrest the movement of the tongue when in its open position, substantially in the manner described and shown.

4. The combination of the plate A, provided at its forward end with the pintle *a*, and formed of a uniform plane throughout, the plate B, of a corresponding uniform plane, attached to the opposite end of the plate A, and provided with the forward extensions *b b*, having the space between their longitudinal edges narrower than the length of the pintle, and the tongue T, having the sleeve *s*, embracing the pintle, a portion of said sleeve extending the length of the pintle and the remainder of the sleeve and adjacent portions of the tongue being narrowed to correspond to the space between the extensions *b b*, whereby the tongue is sustained laterally in its movements and the two plates are allowed to lie closely one upon the other when the clasp is closed, substantially as described and shown.

5. In combination with the clasp, the slotted plate C, re-enforced by gradual increase of the width of the said bars *n n* from the ends to the center thereof, substantially as described and shown.

326,354. SPRING-CLASP. JACOB J. UNDERHILL, Syracuse, N. Y. Filed May 26, 1885. (No model.)



Claim.—1. In a clasp, the tongue connected to its supporting-plate by a pintle re-enforced substantially as described, whereby an increased thickness is secured, as set forth.

2. In combination with the tongue and its angular or flattened pivot, two plates connected together at one end and provided with forward extensions, *a a*, at the opposite end, and having in the adjacent sides of said extensions recesses or depressions *b b*, for the reception of the pivot, extending only part way across the extensions, to bring the side portions of the two plates to lie normally contiguous to each other, substantially as described and shown.

3. In combination with the tongue and its pintle, two plates connected together at one end, and having forward extensions provided in their adjacent sides with depressions *b b*, for the reception of the pintle extending only part way across the extensions, substantially as described and shown.

4. The combination of the tongue provided with the twofold pivot *c c*, and the plates B B, connected together at one end and provided with the forward extensions, *a a*, at the opposite end, and each having in the adjacent sides of said extensions recesses of a depth equal to the thickness of one-half of the twofold pivot, and extending only part way across the extensions, substantially as described and shown.

5. In combination with the tongue and pintle connected therewith and flattened or angular in cross-section, the plates B B, provided with extensions *a a*, and with recesses *b b* in said extensions, and one of said plates provided with the lip *n* across the end of the other plate, substantially as described and shown, for the purpose set forth.

326,355. CLASP-PLATE. JACOB J. UNDERHILL, Syracuse, N. Y. Filed May 26, 1885. (No model.)



Claim.—1. As an improved article of manufacture, a clasp or buckle plate formed or struck up of thin metal curved lengthwise to conform to the contour of the article to which it is to be applied, and rounded up transversely on its longitudinal edges, substantially as and for the purpose set forth.

2. The within-described clasp or buckle plate, consisting of a plate curved longitudinally from a horizontal plane, provided with transverse slots, and longitudinal side flanges bent up from the under side of the plate and extending uninterruptedly from end to end thereof, substantially as herein specified and shown.

3. The within-described transversely-slotted plate curved longitudinally from a horizontal plane and having transverse bars corrugated lengthwise, said bars and side flanges rounded up from the under side of the plate, substantially as and for the purpose specified.

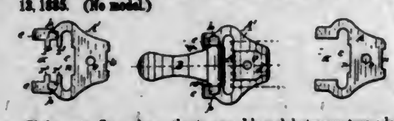
326,356. CLASP. JACOB J. UNDERHILL, Syracuse, N. Y. Filed July 13, 1885. (No model.)



Claim.—1. The within-described spring-clasp, consisting of the slotted plate A, supporting-plate B, having recessed extensions *b b* folded over the pintle *d*, and projecting forward of the pintle, and the tongue C, slotted part way lengthwise, and having side projections, *c'*, all combined and arranged substantially as and for the purpose set forth.

2. In a spring-clasp, the combination of the supporting-plate having recessed forward extensions *b b*, the tongue C, having recesses or depressions *c c*, one of said parts having the lengthwise slot *c''*, and curved side projections, *c'*, and connected together by the pintle *d*, seated in the depressions, substantially as and for the purpose specified.

326,357. CLASP. JACOB J. UNDERHILL, Syracuse, N. Y. Filed July 13, 1885. (No model.)



Claim.—1. In a clasp, the tongue hinged between two plates, and guards across the edges of the said plates in front and rear of the hinge-pin of the tongue, substantially as and for the purpose set forth.

2. The combination, with two plates superimposed one upon the other, and flexible from each other, and a tongue hinged between said plates, of guards across the side edges of the flexible portions of said plates to prevent lateral displacement of the plates in relation to each other, as set forth.

3. The tongue and its cam-shaped hinge-pin, in combination with two plates superimposed one upon the other, connected together at one end, and provided at their free ends with bearings for the hinge-pin, and with an opening between said bearings for the reception of the tongue, and guard-lips projecting from the edges of one of the plates across those of the other plate at the side adjacent to the aforesaid opening and in front and rear of the hinge-pin, substantially as described and shown.

4. In a clasp, a flexible tongue-support consisting of two plates superimposed one upon the other and connected together by a metallic band embracing the said plates at one end thereof, as set forth.

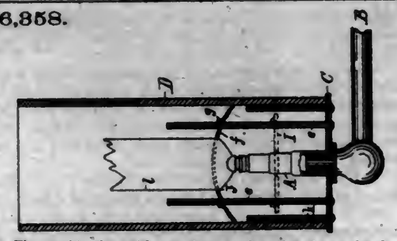
5. In a clasp, a flexible tongue-support consisting of two plates provided with corresponding slots, and a metallic band passing through the said slots and embracing the rear end portions of the plates to tie the same together, substantially as described and shown.

6. In combination with the tongue and its pintle, the plates A and A', superimposed one upon the other, and provided at their forward portions with the opening *a*, bearings *b b*, and slots *c*, and at the rear portions with notches *n n*, and the metallic band *d*, embracing the rear portions of the plates and countersunk in the said notches, substantially as described and shown.

326,358. GAS-BURNER. AARON VERMILYE, Cedar Grove, N. J. Filed Jan. 3, 1885. (No model.)

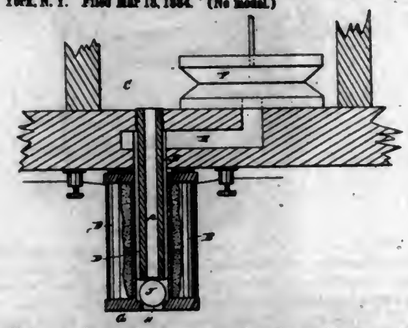
Claim.—1. The combination, with a gas-burner adapted to form a flat flame, of a vertical chimney, a base partly closing the bottom of the same, pillars extending from the base within the chimney and above the burner, and a diaphragm movably supported upon the pillars and provided with the aperture J for the passage of the flame, as and for the purpose set forth.

326,358.



2. The combination, with a gas-burner adapted to form a flat flame, of a vertical chimney, a base partly closing the bottom of the same, pillars extending from the base within the chimney and above the burner, and diaphragm constructed with holes, and bent tongues *g* to press the pillars elastically, and provided with the aperture J for the passage of the flame, as and for the purpose set forth.

326,359. ELECTRIC ORGAN-ACTION. GEORGE G. WACKER, New York, N. Y. Filed Mar 13, 1884. (No model.)

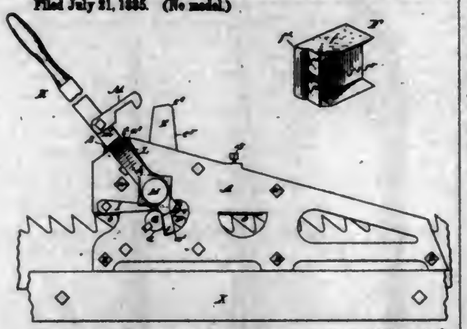


Claim.—1. In an electric organ-action, the combination, with a pneumatic lever, of an electro-magnet, a tubular core in the same, and a ball-valve or armature held between the lower end of the core and the bottom plate or disk of the magnet and within the said magnet, substantially as herein shown and described.

2. In an electric organ-action, the combination, with a pneumatic lever, of an electro-magnet, a core having two separate air-channels, and ball-valve for closing one of the said channels, substantially as herein shown and described.

3. In an electric organ-action, the combination, with a pneumatic lever, of an electro-magnet having two separate air-channels, of which one is connected with the pneumatic lever and the other with the wind-chest, and of a ball-valve held below the core, substantially as herein shown and described.

326,360. SAW-SWAGING MACHINE. PHILIP R. WARD, Quincy, Ill. Filed July 21, 1885. (No model.)



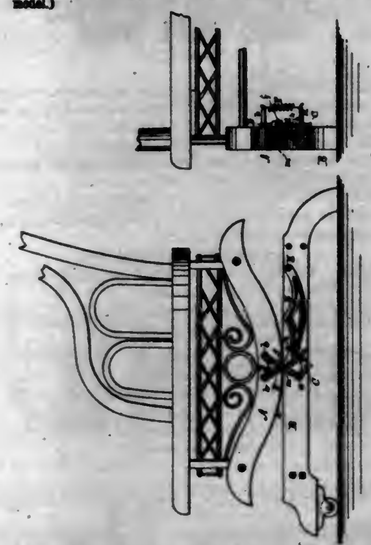
Claim.—1. The combination, in a saw-swaging machine, of the frame having the mandrel, the die-lever having the die, the operating-lever having the cam, the clamps operated by the cam for grasping the saw while swaging the teeth, and the spring for moving one of the clamps when released by the cam, substantially as described.

2. The combination, in a saw-swaging machine, of the frame having the mandrel, the die-lever having the die, the operating-lever having the latch to engage with the die-lever and move the same and release it when the saw-tooth is swaged, and the clamps operated by the operating-lever for grasping the saw while swaging the teeth, substantially as described.

3. The combination, in a saw-swaging machine, of the frame, the mandrel, the die-lever having the die, and the operating-lever having the latch for engaging with the die-lever to move the same and release the die-lever when the saw-tooth is swaged, substantially as described.

4. The combination, in a saw-swaging machine, of the frame, the operating-lever, and the pivotal bolt therefor, the clamps on said bolt, the cam for applying the clamps to the saw to hold the latter while being swaged, and the spring to release the clamps when the operating-lever is reversed, substantially as described.

326,361. BASE ROCKING-CHAIR. GARDNER A. WATKINS, Gardner, Mass., assignor to Henry Heywood, George Heywood, Alvin M. Green, wood, and Amos Merrill, all of same place. Filed June 7, 1884. (No model.)



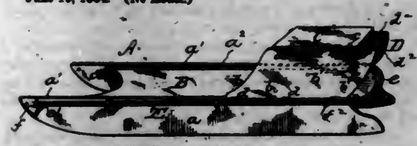
Claim.—1. In a base rocking-chair, the combination of the rockers A and base B with brackets C and D, provided with projections *a* and *b*, springs F, and segments E, pivoted to the base B and to the brackets D, and provided with projections *h*, fitting into slots *k* in the face of the base, all constructed and arranged for the purpose and in the manner hereinbefore described.

2. In a base rocking-chair having the rockers A and base B, the combination, with said rockers, of brackets D, and the segments E, pivoted to the base and to the brackets D at or near the axis of oscillation *m* of the rockers on the base, substantially as described.

3. In a base rocking-chair having the rockers A and base B, brackets C and D, each of said brackets having two projections, *a a* and *b b*, respectively, combined with a single coil-spring, F, for each pair of said brackets, removably attached to the projections, whereby said spring may be adjusted on different pairs of said projections, for the purpose set forth.

4. In a base rocking-chair having the rockers A and base B, combined with segments E, pivoted to said base and to brackets D on the rocker, the said segments having projections *h* to engage slots *k* in the base, substantially as and for the purpose set forth.

326,362. SLED. CHAS. H. WHEELWRIGHT, Jr., Philadelphia, Pa. Filed June 19, 1884. (No model.)



Claim.—1. A sled having a fixed seat or floor, B, a movable seat, C, and hinged side flaps, D, substantially as and for the purpose set forth.

2. A sled having a movable guard-rail, E, substantially as and for the purpose set forth.

3. In combination with a sled, the movable guard-rail E and means for locking it in position for use as a push-rod, substantially as shown and described.

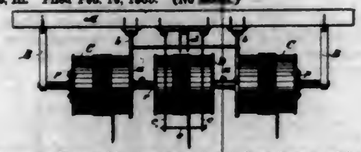
4. A sled having guard-rail E, braces G, and catches H, substantially as shown and described.

6. A sled having guard-rail E and fixed and swiveled supports *f f'*, substantially as and for the purpose set forth.

6. A guard-rail, E, for a sled, and having eyes or supports *f f' f²* and bend *e*, substantially as shown and described.

7. In combination with a sled, the hinged flaps D, having openings *d'*, and the movable seat C, having dowels *c*, substantially as shown and described.

326,363. ELECTRIC-LAMP HANGER. WILLIAM S. WESTON, Chicago, Ill. Filed Feb. 16, 1885. (No model.)



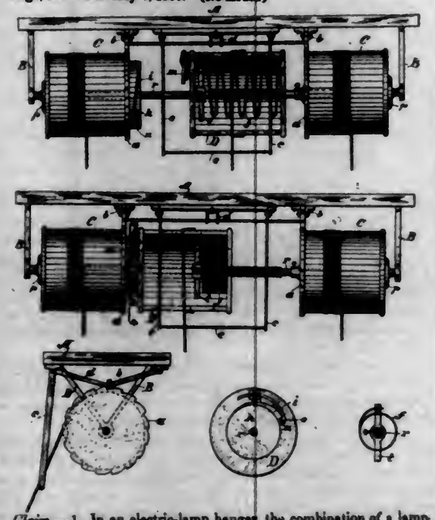
Claim.—1. The combination, in an electric-lamp hanger, of the cylinders C C with the cylinder D, for the purpose substantially as set forth.

2. In an electric-lamp hanger, the combination of the spring *f* with the cylinder D and the shaft *r*, substantially as described.

3. In an electric-lamp hanger, the combination of the bar *g* with the cylinder D and the shaft *r*, substantially as set forth.

4. In an electric-lamp hanger, the combination of the bar *g* and the lugs *n n* with the spring-backed ratchets *k k* and the ratchet-wheel *i*, all for the purpose substantially as specified.

326,364. ELECTRIC-LAMP HANGER. WILLIAM S. WESTON, Chicago, Ill. Filed May 7, 1885. (No model.)



Claim.—1. In an electric-lamp hanger, the combination of a lamp-supporting revolving cylinder with an independently-revoluble hand-rope cylinder, a hand-rope, a clutch for connecting said hand-rope cylinder with said lamp-supporting cylinder, and a supporting-frame or hanger upon which said cylinders are mounted, substantially as specified.

2. The combination, in an electric-lamp hanger, with a shaft, of a lamp-supporting cylinder fixed upon said shaft, a hand-rope, a hand-rope cylinder mounted loosely on said shaft and having a spring-connection therewith, and a clutch for positively connecting said hand-rope cylinder with said shaft to raise and lower the lamp, substantially as specified.

3. In an electric-lamp hanger, the combination, with a shaft, of a cylinder fixed thereon, and a loose cylinder, said loose cylinder and shaft being provided with screw-threads, whereby said loose cylinder may by its revolution on said shaft be brought into positive or fixed engagement with said fixed cylinder, substantially as specified.

4. In an electric-lamp hanger, the combination, with a shaft, of a cylinder fixed thereon carrying the lamp-supporting wires, a hand-rope for raising and lowering the lamp, a loose cylinder on said shaft carrying said hand-rope, said loose cylinder and shaft being provided with screw-threads, whereby said loose cylinder may by its revolution on said shaft be brought into fixed engagement with said fixed cylinder, and a spring for winding up the hand-rope, substantially as specified.

5. In an electric-lamp hanger, the combination, with the supporting-frame, of a shaft having cylinders C C fixed thereon, cylinder D, movably mounted on said shaft, the arm *m*, and its tongue or hook *o*, one of the said cylinders C being provided with a wheel, *a*, and having a cylindrical projection, *h*, provided with the thread *i* and the offset *n*, whereby cylinder D can be brought into positive or fixed connection with the cylinders C C, substantially as set forth.

6. In an electric-lamp hanger, the combination, with a supporting-frame, of the screw-threaded shaft *r*, having cylinders C C fixed thereon, cylinder D, provided with screw-threads, the hand-rope wound on cylinder D, and the spring *f*, having one end attached to cylinder D and the other to said shaft, whereby cylinder D can be shifted in its position on said shaft, substantially as described.

7. In an electric-lamp hanger, the combination, with a supporting-frame, of a screw-threaded shaft having cylinders C C fixed thereon, cylinder D, movably mounted on and fitted to the thread of said shaft, a rope on cylinder D, a spring, *f*, an arm, *m*, and its tongue or hook *o*, a cylindrical projection, *h*, provided with a thread, *i*, and offset *n*, whereby cylinder D can be connected or disconnected with cylinders C C, substantially as set forth.

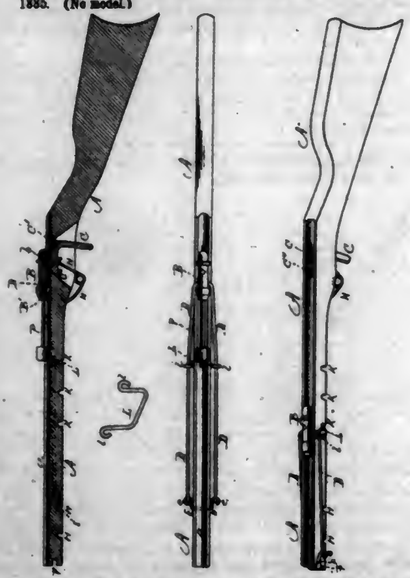
326,365. HAND SEWING-MACHINE. RUEL W. WHITNEY, Cleveland, Ohio, assignor to the White Sewing Machine Company, same place. Filed Oct. 30, 1884. (No model.)



Claim.—1. In a hand sewing-machine, the combination, with a shaft for operating the needle-bar and a drive-wheel journaled on said shaft, of a pulley connected to the drive-wheel and devices for imparting motion from the pulley to the shaft, substantially as set forth.

2. In a hand sewing-machine, the combination, with a shaft for operating the needle-bar and a drive-wheel journaled thereon, of a pulley, a belt connecting the pulley and drive-wheel, and a pitman for imparting motion from the pulley to the shaft, substantially as set forth.

326,366. TOY SPRING-GUN. DANIEL L. WILCOX, Pawtucket, R. I., assignor to the D. L. Wilcox Manufacturing Company. Filed July 9, 1885. (No model.)



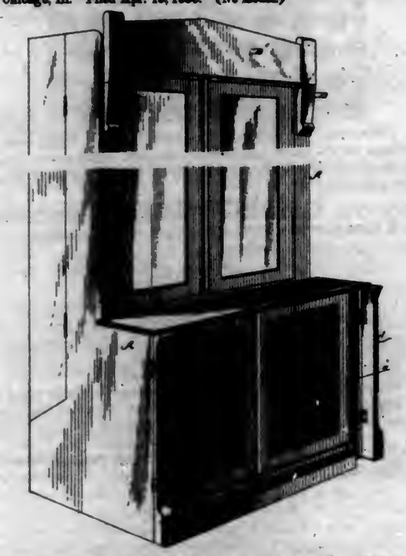
Claim.—1. In a toy spring-gun provided with a longitudinal groove, a projector adapted to travel therein, and an elastic cord or contractile spring for propelling said projector, a stock the barrel portion of which is provided with two or more transverse grooves upon its under side for the purpose of enabling said cord or spring and projector to be placed at different distances from the trigger, substantially as and for the purpose described.

2. In a toy spring-gun, the stock A, provided with the muzzle-groove F, the set of transverse grooves H in the forward portion of the under side of said stock, and the set of grooves K in the under side of said stock, at the rear of said grooves H, in combination with the projector B, the elastic cord D, the forward yoke, E, and rear yoke, L, lying in one of the forward and one of the rear grooves, respectively, substantially as and for the purpose set forth.

3. In a toy spring-gun, the combination, with the stock provided with two or more grooves, K, and a projector adapted to be propelled by an elastic cord or contractile spring, of the oscillatory yoke L, lying in one of said grooves K, and catching or hooking over said cord or spring, substantially as and for the purpose described.

4. The hereinbefore-described improved toy spring-gun, consisting, essentially, of the stock A, provided with the longitudinal groove *a* in the upper side of the stock, the muzzle-groove F, and the forward grooves, H, and rear grooves, K, in the under side of said stock, the trigger C, provided with the catch C", the projector B, provided with the catch *b* and chamber B', the elastic cord D, and yokes E L, substantially as and for the purpose set forth.

326,367. FOLDING BED. HORACE WILLIAMS and EDWARD WILLIAMS, Chicago, Ill. Filed Apr. 15, 1885. (No model.)

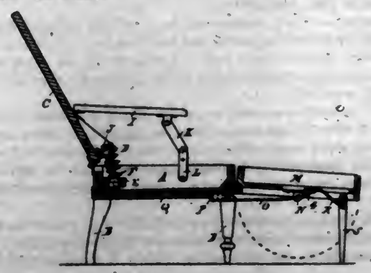


Claim.—1. In a folding bed, the combination, with a supporting-frame provided with suitable standards, of a bed-frame hinged upon said standards and completely surrounding and concealing the entire supporting devices, substantially as and for the purpose set forth.

2. The combination, with a supporting-frame having standards projecting therefrom, of a bed-frame pivoted upon and inclosing said standards, vertical openings in the bed-frame to permit the passage of the standards as the bed is operated, and hinged flaps for covering these openings when the device is folded, substantially as shown and described.

3. The frame B and its standards *b*, in combination with the bed-frame A, pivoted thereon and surrounding the standards, the slots *c*, and the hinged flaps C, adapted, when the bed is folded, to cover the slots and rest upon the frame B to lock the bed closed, substantially as and for the purpose set forth.

326,368. CHAIR. GEORGE WILSON, Jr., Chicago, Ill. Filed June 20, 1884. (No model.)



Claim.—1. The combination of the seat-frame A of the chair, the leg-rest frame M, provided with the leg-frame S, and devices, substantially as described, for automatically folding and opening such legs as the leg-rest frame is adjusted, substantially in the manner and for the purposes described.

2. In combination, the seat-frame A and leg-rest frame M, with the rock-shaft N, bars O, slides P, guide-rods Q, link R, and leg-frame S, when constructed, arranged, and operating substantially in the manner and for the purposes described.

3. In a chair, the combination of the seat-frame A, back-frame C, brackets D E, springs F, locking-bar G, arm-rests I, ratchet J, arm-posts K, reversible leg-rest M, rock-shaft N, bars O, slides P, guide-rods Q, and check-frame S, when constructed, arranged, and operating substantially as and for the purposes described.

326,369. ADJUSTABLE CHAIR. GEORGE WILSON, Jr., Chicago, Ill. Filed Mar. 18, 1885. (No model.)

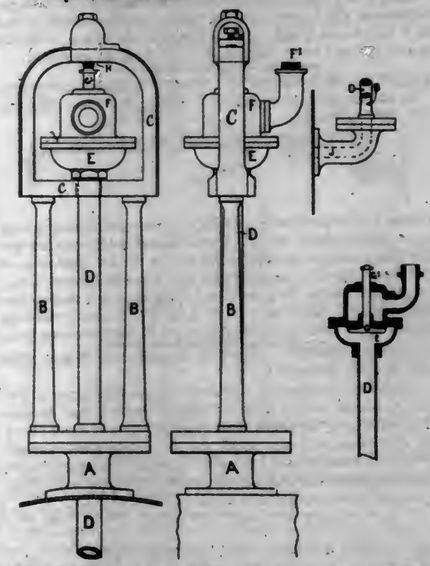


Claim.—1. In a chair, the combination of the seat-frame A, back-frame C, brackets D E, and springs F with the locking-lever G and ratchet-bars J, substantially as described.

2. In a chair, the combination of the seat-frame A, back-frame C, brackets D E, springs F, locking-lever G, ratchet-bars J, and operating-lever H, connecting with said locking-lever, substantially as set forth.

3. In a chair, the combination of the seat-frame A, back-frame C, brackets D E, and springs F with the ratchet-bars J J, arranged with their teeth in opposite directions, the locking-lever G, pivoted near its center to the seat-bottom, the operating-lever H, pivoted to the seat-frame, and the rod *b*, connecting the levers G and H, as and for the purpose specified.

326,370. LOW-WATER ALARM. HUDSON WILSON, Bradford, County of York, England. Filed June 3, 1885. (No model.) Patented in England Apr. 9, 1885, No. 4,895.

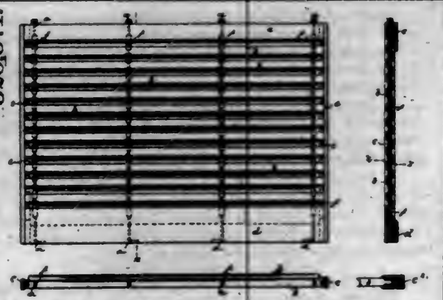


Claim.—The combination of the bridge C, carrying a stop, H, with an expansion-tube, D, carrying a valve, G, whose stem is adapted to come into contact with the said stop to move the valve from its seat on the expansion of the tube, as set forth.

326,371. BLIND. JAMES G. WILSON, New York, N. Y., assignor to Francis Forbes, same place. Filed Jan. 24, 1885. (No model.)

Claim.—1. A blind composed of slats, distance-pieces, suitable

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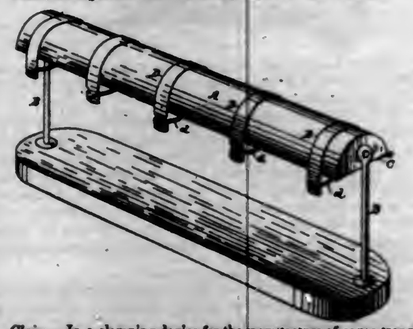


means for binding the said slats and distance-pieces together, and end pieces, substantially as described.

2. A blind constructed by passing diamond-shaped slats alternately with distance-pieces over wire or other suitable supports, and supporting the ends of such slats at right angles to their length by end pieces, substantially as shown and described.

3. The combination, in a blind, of slats *b*, distance-pieces *f*, wires *a*, and end pieces, *c*, substantially as described.

326,372. CLAMP FOR SOLDERING EAVES-TROUGHS. SAMUEL YATES, Muscogee, Ind. Ter. Filed July 20, 1885. (No model.)



Claim.—In a clamping device for the manufacture of eaves-troughs, in combination with a semi-cylindrical bar, A, laterally-movable hinged bands D and pivoted spring-rods *d*, adjustable to the right or to the left to connect with said bands, substantially as set forth and described.

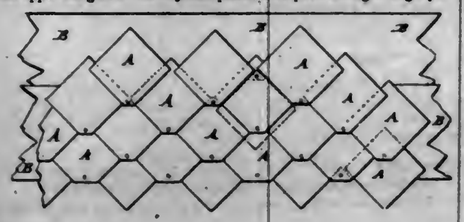
326,373. SHUTTER-BOWER. GEORGE F. S. ZIMMERMAN, Frederick, Md., assignor of one-half to Beverly R. Walling, same place. Filed Feb. 27, 1885. (No model.)



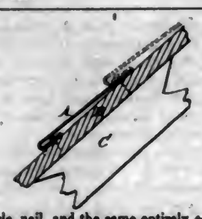
Claim.—A shutter-bower consisting of a brace-piece having its ends turned at right angles to the main portion thereof and the rear end tenoned to form a shoulder, in combination with a bracket constructed of two independent sections, each provided with a mortise adapted to register and form a seat for the tenoned end of the brace, and washers constructed to fit upon said tenoned end of the brace above and below the seat portion of the bracket, substantially as and for the purpose set forth.

326,374. ROOFING. BENJAMIN B. ADAMS, Roswell, N. Mex. Filed Oct. 31, 1884. (No model.)

Claim.—A roof-covering consisting of rectangular plates applied diagonally upon the roof by fitting the angle or corner of each between the diagonal sides of the two adjacent plates of the next course above, nailing said corner, and then folding the body of the plate symmetrically over said corner, whereby the lower margins of said plates overlie the upper margins of said adjacent plates, each plate having a single per-

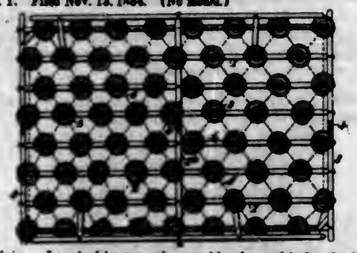


326,374.



foration and a single nail, and the same entirely covered and protected, as set forth.

326,375. FOLDING BED-BOTTOM. JAMES ADELER, Jr., Brooklyn, N. Y. Filed Nov. 13, 1884. (No model.)



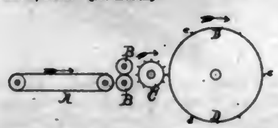
Claim.—In a bed-bottom, the combination, with longitudinal slats 1, of cross-strips 3 and 3ª, each made in two parts united by a butt-hinge, the ends of said strips being lapped upon the back of the hinge, substantially as described.

326,376. PAPER MOLD FOR CASTING STEREOTYPE-PLATES. L. H. ALLEN, New York, N. Y. Filed June 23, 1884. (No model.)



Claim.—A paper mold, D, for casting stereotype-plates, made substantially as herein shown and described, with square shoulders E, to adapt it to produce stereotype-plates with finished sides, as set forth.

326,377. HAT-FORMING MACHINE. DAVID ALBERS, Newark, N. J. Filed Mar. 2, 1885. (No model.)



Claim.—1. The combination, with a rotary drum for carrying the torn fur from the fur picker-roll, of projecting ridges upon the periphery of the drum, arranged and operated substantially as herein shown and described.

2. The combination, with a carrier-drum operating to carry the fur, substantially as described, of metallic strips secured longitudinally upon the periphery of the drum, as and for the purpose set forth.

3. The combination, with a sheet-metal carrier-drum operating to carry the fur, substantially as described, of metallic strips soldered upon the drum, as described, and inclined to the radial line of the drum, substantially as and for the purpose set forth.

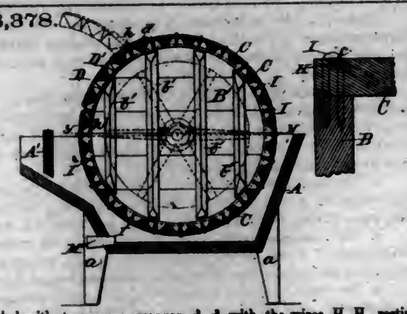
326,378. WASHING-MACHINE. MICHAEL BAER, Brillion, Wis. Filed Mar. 18, 1884. (No model.)

Claim.—1. In a washing-machine, a cylinder having solid heads connected by slats or ribs, and the said heads bearing on their inner sides the beveled straight strips *b b* and *b' b'*, respectively, the strips on one head being arranged at right angles to the strips on the other head, substantially as set forth.

2. In a washing-machine, a cylinder having solid heads connected by slats or ribs with square outer ends, but triangular in central section, and having sharp central ridges radial to the center of the cylinder, and beveled, as shown at c^2 c^2, forming a zigzag line when the slats are in place at each end of the triangular part of the said slats, substantially as set forth.

3. In a washing-machine, the combination of a cylinder consisting of two solid wooden heads, B B', connected by the slats or ribs C, rigidly secured thereto, the outer surface of the ends of the said ribs being

326,378.



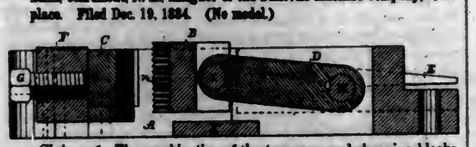
provided with transverse grooves c^3 c^3, with the wires H H, resting within the said grooves, and the staple I I, driven into the peripheries of the cylinder-heads around the wires and between the slats, substantially as set forth.

326,379. VEHICLE-POLE TIP. ALBERT W. BAGG, Detroit, Mich. Filed Jan. 27, 1885. (No model.)



Claim.—A safety appliance for vehicle-shafts, &c., consisting of a latch pivotally engaged therein, and an elastic packing bearing against said latch at one end thereof, substantially as described.

326,380. SAFETY-JACK FOR HOLDING DRILL-RODS. ALBERT BALL, Claremont, N. H., assignor to the Sullivan Machine Company, same place. Filed Dec. 19, 1884. (No model.)



Claim.—1. The combination of the two concaved clamping-blocks, one having a movement back and forth in a horizontal plane and the other an upward diagonal movement, substantially as described.

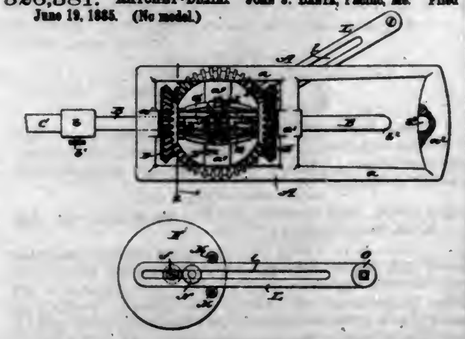
2. The combination of the concaved block B, shaft H, and the intermediate link, D, connected to the former at one end and connected to the latter at the other end by a spline, substantially as described.

3. The combination of the concaved block B, the link D, the shaft H, splined to said link, and the foot-lever E, mounted at its center upon one end of said shaft, substantially as and for the purpose set forth.

4. The combination with the grooved frame A A, of the concaved block C, and the nut-block F, with shoulders L L, substantially as and for the purpose set forth.

5. The combination of the frame A A, concaved block C, nut-block F, and screw G, substantially as described.

326,381. RATCHET-DRILL. JOHN J. BANTA, Pacific, Mo. Filed June 19, 1885. (No model.)



Claim.—1. A boring-machine comprising a frame, A, a tool-holding spindle, B, journaled therein, bevel-pinions D E, loose on the spindle, and provided, respectively, with the ratchets *d e*, a block, G, fixed to the spindle to revolve therewith, spring-pressed pawls H' H^2 I' I^2, fitted in the block, and adapted to engage and slip over the ratchet-teeth, a semicircular button, K, pivoted to the block and adapted to hold the pawls away from the ratchets, and a drive gear-wheel, F, meshing with the pinions D E, substantially as herein set forth.

2. A boring-machine comprising a frame, A, made with side bars, *a a*, cross-bars *a' a^2 a^3*, and said bar a^2 having a thrust-cavity, b^2, the spindle B, journaled in cross-bars *a' a^3*, bevel gear-wheels D E, loose on the spindle, and provided, respectively, with the ratchets *d e*, a block, G, fixed to the spindle by a set-screw or equivalent device, allowing longitudinal adjustment of the spindle, spring-pressed pawls H' H^2 I' I^2, fitted to block G, and adapted to the ratchets, and a drive gear-wheel, F, substantially as herein set forth.

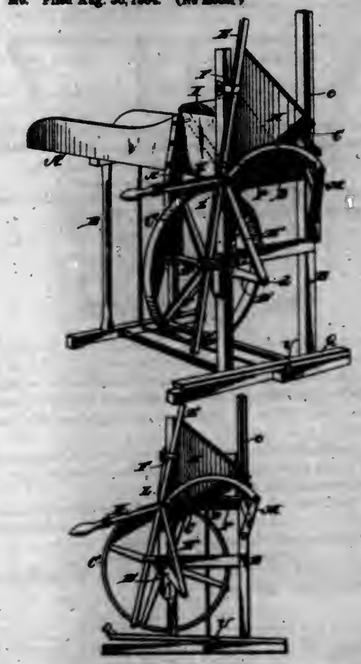
3. In a boring-machine, the combination, with the frame A, tool-holding spindle B, and ratchet-pinions D *d* E *e*, of the block G, fitted with spring-pressed pawls H' H^2 I' I^2, adapted to engage and slip over the ratchet-teeth, and means, substantially as described, for holding the pawls H' I' H^2 I^2 alternately away from the ratchets *d e*, substantially as herein set forth.

4. In a boring-machine, the combination, with the frame A, tool-holding spindle B, and ratchet-pinions D *d* E *e*, of the block G, provided with spring-pressed pawls H' H^2 I' I^2, adapted to engage and slip over the ratchet-teeth, and the button K, substantially as herein set forth.

5. The combination, with the frame A, the drive-wheel F, provided with studs M M, and the spindle-operating gearing, substantially as described, of the crank-handle L, slotted at *l*, and the set-screw N, substantially as herein set forth.

6. The combination, with a spindle, as B, journaled in a suitable frame, of two pinions, as D E, provided with ratchet-teeth, and loosely mounted on the spindle, a block, as G, secured on the spindle between the pinions, spring-pressed pawls on the block engaging the ratchets on the pinions, a button on the block for throwing the pawls out of engagement, and an operating-wheel engaging the pinions, substantially as shown and described, for operation as set forth.

326,382. HAY AND STRAW CUTTER. WILLIAM BARRETT, Sedalia, Mo. Filed Aug. 30, 1884. (No model.)



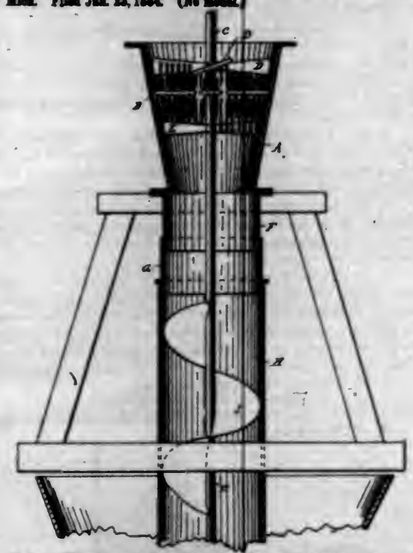
Claim.—1. In a hay or straw cutter, the combination, with the reciprocating knife carried by a knife-bar, of a handle pivoted to the latter while its end is connected with a toggle-link upon the frame, a shaft journaled below said knife and carrying a band-pulley, a crank-arm upon the end of said shaft, and a pitman connecting said crank with the knife-bar, whereby the cutter may be operated by hand or by power, substantially as described.

2. In a hay-cutter, the combination, with the reciprocating knife, the knife-bar having a projecting lower end, a shaft journaled below said knife and carrying a band-pulley, a crank-arm upon the end of said shaft, a pitman connecting said crank-arm and knife-bar, and a spring-plate beneath the end of the knife-bar to take up the shock caused by a reversal of movement and the upward reciprocation of the knife, substantially as described.

3. The combination, with the stationary knife D and reciprocating cutter C, of the actuating-handle K, toggle-link M, and clearing-plate *m*, substantially as described.

4. The combination, with the knife D, reciprocating cutter C, and actuating-handle K, pivoted upon a toggle-link, M, of a clearing-plate, *m*, mounted rigidly upon said toggle-link, and a bar, P, between which and the knife D the plate reciprocates, substantially as described.

326,383. PROCESS OF HOPPING WORT. JOHN C. BAUER, Detroit Mich. Filed Jan. 23, 1884. (No model.)



Claim.—The process of breaking up and conveying hops to a point at or near the bottom of a kettle filled with liquor, and there discharging them by mechanical means, substantially as herein specified.

326,384. STUFFING-BOX FOR STEAM-ENGINES. SELBY C. BERRY, Williamstown, W. Va. Filed June 24, 1885. (No model.)

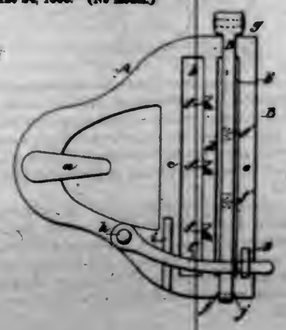


Claim.—1. The combination, with the cylinder-head, of a flanged adjustable stuffing-box which has a sliding movement upon the cylinder-head, so as to adapt itself to the movements of the piston-rod, substantially as shown.

2. The combination of a perforated cylinder-head, the flanged stuffing-box, and a ring which secures the stuffing-box in position upon the cylinder-head, substantially as described.

3. The combination of the perforated cylinder-head, the movable stuffing-box, the ring which holds the stuffing-box in position, the clamping-screws, and the glands, substantially as specified.

326,385. HOOK-BUCKLE. VENUS BERTHELOT, Cannes Store, La. Filed June 24, 1885. (No model.)



Claim.—1. The buckle-frame A, in combination with the bar B, hinged at one end to the side of the frame, and a locking device on the frame for engaging the free end of the lever when swung down, substantially as set forth.

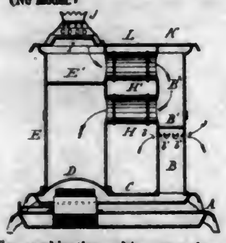
2. The buckle-frame A, having the notch-forming stops *j j'* on one side, in combination with the bar B, hinged to the opposite side of the frame and provided with a leg, *j''*, constructed to enter said notch, and a locking device on the frame adapted to engage said hinged bar and hold it closed, substantially as set forth.

3. The combination, with the buckle-frame A, having the slots *b b'* and toothed bar *d f*, of the hinged bar B, having teeth *f''* on its under side, and a locking device for said hinged bar, substantially as set forth.

4. The combination, with the buckle-frame having the bridge-piece *i* and keeper D, of the hinged bar B and the pivoted locking-lever C, bearing on the bridge *i* between its ends, substantially as set forth.

5. The frame A, formed with slots *b b'* and toothed holding-bar *d*, in combination with the hinged bar B, pivoted lever C, and hook or keeper D, all arranged to operate substantially as and for the purposes described.

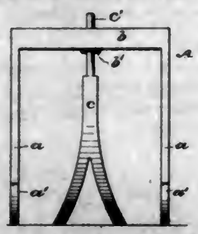
326,386. STOVE. LEWIS F. BEITS, New York, N. Y., assignor to John H. Irwin, Morton, Pa., and Robert E. Dietz, New York, N. Y. Filed Apr. 15, 1884. (No model.)



Claim.—1. The combination, with a stove-base of the character herein specified, of a radiator or heater provided with a combustion-chamber, a fresh-air conduit in which the air is deflected downward, a passage connecting said conduit with the combustion-chamber, a vertical conduit opposite to the combustion-chamber and communicating therewith through a tube, and a chamber above the combustion-chamber communicating with said vertical conduit through a tube, and provided with an exit, substantially as described.

2. A radiator or heater consisting of a base, A, fresh-air conduit B, the walls thereof being provided with perforations *b*, over which are located inwardly-projecting tongues *b'*, air-chamber C, combustion-chamber E, tubes H and H', conduit *B²*, chamber E', and outlet I for products of combustion, the whole combined and arranged to operate substantially as shown and described.

326,387. ADJUSTABLE PLAQUE-STAND. EMILE BLABSIUS, New York, N. Y. Filed Jan. 28, 1885. (No model.)



Claim.—The stand A, having the curved and hooked legs *a a*, made in one piece with the cross-piece *b*, in combination with the vertically-adjustable rear leg, *c*, held in an opening made in the cross-piece *b*, substantially as described.

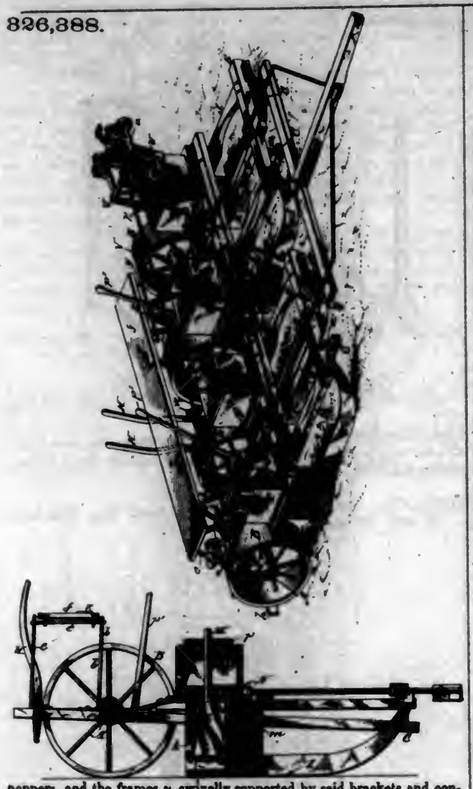
326,388. CORN-PLANTER. JAS. M. BOLTON, Mapleton, Iowa. Filed May 28, 1885. (No model.)

Claim.—1. In a check-row planter, two separate independent frames, each carrying feed-hoppers and feed-regulating devices yieldingly connected together, a laterally-moving seat connected to said frames, in combination with a fluted cylinder stepped in the spout of the feed-hopper, a perforated feed-plate carried by the shaft of the cylinder, and means for rotating the shaft, substantially as and for the purpose set forth.

2. The combination, with the hoppers and the brackets attached thereto, of the frames *u*, swivelly supported in said brackets, and a telescopic shaft connecting said frames, as and for the purpose specified.

3. The combination, with the two frames yieldingly connected together, of the hoppers supported thereby, the brackets attached to said

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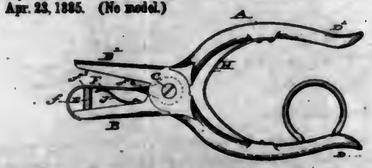
hoppers, and the frames *u*, swivelly supported by said brackets and connected together by a telescopic shaft, as and for the purpose described.

4. The combination, with the feed-hoppers and spouts and fluted cylinders, of a sprocket-wheel secured to the shaft of each cylinder, an endless cord passing around said wheels, a gear-wheel on the projecting end of said shafts, and means, substantially as described, for rotating said shaft, substantially as and for the purpose described.

5. The combination, with the two frames D D, yieldingly connected together, as shown, of a single tongue yieldingly connected with said frames and adapted to serve conjointly therewith, whereby said frames will pass over uneven ground without disturbing the feed mechanism, as set forth.

6. In a check-row planter, the combination, with the two separate independent frames D D and the bars L, attached one to each of said frames and overlapping the same at their adjacent sides, of the plate R, secured to one of said bars and provided with rollers *s s*, and the plate T, attached to the other bar and terminating in a rectangular frame, the upright *t* of which passes loosely between said rollers, substantially as and for the purpose specified.

326,389. TICKET-PUNCH. WM. H. BONNELL, St. Louis, Mo. Filed Apr. 23, 1885. (No model.)



Claim.—1. The combination, in a ticket-punch, of the throw-plate F, the jaws B B', the spring J, and the pivot C, said throw-plate being pivoted on said pivot C, substantially as described.

2. The combination of the jaws B B', the throw-plate F, the pivot C, the handles D D', the punch E, and the springs H J, said throw-plate being pivoted on the pivot C, substantially as described.

326,390. CLINOMETER. JOHN F. BORNHARDT, Pierce City, Mo. Filed Apr. 13, 1885. (No model.)

Claim.—1. In a clinometer, the combination of the straight-edge or body having a socket provided with a central boss, a plate secured

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upon the said boss and having an overhanging flange, and a revolving indicator wheel or disk having a weight adapted to fit and move between the said flange and the bottom of the socket, substantially as and for the purpose herein set forth.

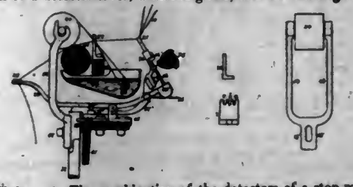
2. In a clinometer, the combination of a straight-edge or body having a socket provided with a central boss, a plate secured upon the said boss and having an overhanging flange, a rim or collar having an interior annular graduated flange or gage, a cover for the same, and a revolving disk or wheel having a weight arranged and adapted to move between the bottom of the socket and the flanged boss of the same, substantially as and for the purpose set forth.

3. In a clinometer, the combination, with a suitably-socketed straight-edge or body, of a wheel or disk mounted upon a suitable pin or screw, and an arm mounted upon the same pin or screw and having a screw extending through a segmental slot in the rim of the said wheel or disk and carrying a weight, substantially as herein described, for the purpose set forth.

4. In a clinometer, the combination of a straight-edge or body having a socket, a flanged boss on the said socket, the flange of which has a recess or indentation, a pivoting pin or screw, a wheel or disk having suitable hands or pointers and provided with a segmental slot near its lower edge and with a central transverse bail on its front side, and an adjustable arm mounted upon the pivoting pin or screw under the bail and having a weight mounted upon a screw extending through the lower end of the said arm and through the slot in the wheel or disk, with which the said weight is thus adjustably connected, substantially as and for the purpose set forth.

326,391. STOP-MOTION MECHANISM FOR WINDING AND TWISTING MACHINES, &c. JOHN BOYD, Glasgow, County of Lanark, Scotland. Filed Dec. 4, 1884. (No model.) Patented in England Nov. 18, 1884, No. 15,171.

Brief.—A lever having a thread-guide in one end and acting upon a special detector in the detector-holder is so connected with the stop-rod and its extension carrying the detectors as to have the threefold function of a detector-lever, a thread-guide, and the starting-lever.

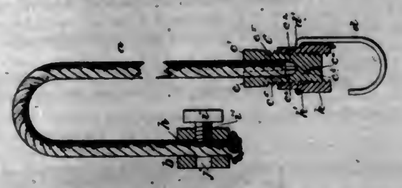


Claim.—1. The combination of the detectors of a stop-motion and a stopping-rod, 37, with a lever, 29, forming at one end a thread-guide and acting on the said detectors and also on the rod 37, whereby the said lever 29 performs the threefold function of a thread-guide, detector-lever, and starting-lever.

2. The combination of the frame carrying a catch-plate, 40, with a stopping-rod, 37, carrying a catch to engage therewith, and carrying also the detector-holder and detector with a cam to act on the detector, a pivoted lever, 29, having at one end a thread-guide and at the other end supporting a detector and adapted to act on the said rod 37, all substantially as described.

3. The combination of the stopping-rod 37, carrying the detector-holder 36 and detectors 46 of a stop-motion, with the pivoted lever 29, supporting at one end one of said detectors and carrying at the other a thread-guide, substantially as described.

326,392. WEIGHT-CORD AND ATTACHMENT FOR WINDOWS. E. T. BRADBURY, Mahanoy City, Pa. Filed May 20, 1885. (Model.)



Claim.—1. The screw-threaded sections *c c'*, in combination with the screw-threaded sleeve *k* and hook *d*, the sections *c c'* being formed with shoulder *k'* and the hook with ring *d'*, substantially as described.

2. The externally-screw-threaded sections c c', recessed, as shown at c^2, and formed, respectively, with the recess c^2 and enlargement c^3, in combination with the screw-threaded nut or sleeve k, substantially as and for the purposes set forth.

326,393. FISH-PLATE FOR RAILROAD-RAILS. ROBERT R. BRIDGES, Jr., Wall, and WILLIAM R. GOOD, Greensburg, Pa. Filed Dec. 4, 1884. (No model.)

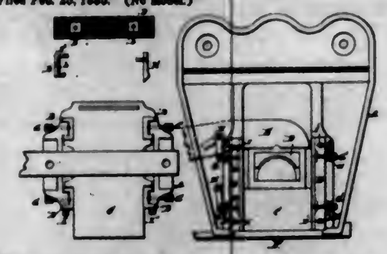


Claim.—1. In a fish plate or splice for railway-rails, a central supporting-edge which underlies and supports the heads of the adjacent rails for a limited distance upon each side of the joint, said fish-plates being bolted to the webs of the rails, and having a plate extending outward from the base thereof and resting upon the sleepers to receive bolts or spikes, whereby the fish-plates are fastened to the sleepers, substantially as described.

2. The combination, with the rails of a railway, of a fish plate or splice having a central supporting portion, 6, which underlies the heads of the adjacent rails, and bolts passing through said plates and the webs of the rails, said fish-plate being provided with a plate extending outward from the base thereof and resting upon the sleepers, bolts, or spikes fastening said plates to the sleepers, substantially as described.

3. The combination, with the rails of a railway, of a fish plate or splice consisting of the part 2, having a central supporting portion, 6, and the base 3, the plate 2 receiving bolts which pass through the webs of the rails, substantially as described.

326,394. CAR-PEDESTAL. BARNAD PROUT and GEORGE W. MCHALE, Detroit, Mich., assignors of one-third to William R. Leonard, same place. Filed Feb. 25, 1885. (No model.)



Claim.—1. In a pedestal for car-axle boxes, a wearing-plate constructed of channel-bar iron having perforated bosses formed in its channeled portion, substantially as described.

2. In a pedestal for car-axle boxes, a wearing-plate constructed of channel-bar iron having perforated bosses formed in its channeled portion equidistant from its ends, substantially as described.

3. In a pedestal for car-axle boxes, the combination of the adjustable wearing-plates B, made of channel-bar iron, and having perforated bosses formed in their channeled portions, and the screws G G' entering said bosses, with the vertical arms of the pedestal, and the axle-box held between the adjustable wearing-plates, substantially as described.

4. In a pedestal for car-axle boxes, the combination of the adjustable wearing-plates B, made of channel-bar iron, and provided with perforated bosses in their channel end portions and perforations in one of their flanges, and the screws G G' and I I', fitted, respectively, into said perforated bosses and flanges, with the vertical arms of the pedestal and the axle-box, substantially as described.

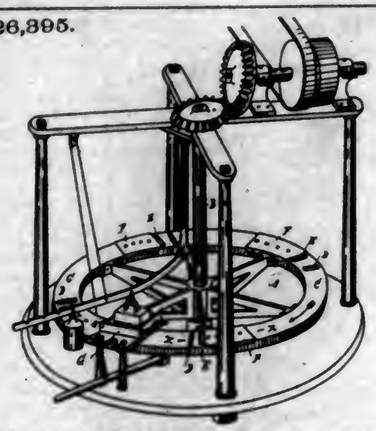
326,395. EXCELSIOR-MACHINE. GEORGE BROOKS, Detroit, Mich., assignor of two-thirds to H. N. Brevoort and Robt. J. Marsh, same place. Filed Feb. 18, 1885. (No model.)

Claim.—1. In a machine substantially as described, the revolving annular bed C, having sections F, the faces of which are adjusted upon the same plane with the cutting-edges of the planer-knives, substantially as and for the purposes described.

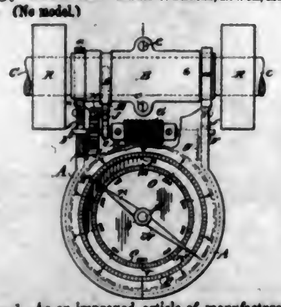
2. In a machine substantially as described, the revolving annular bed C, having plates F, forming sections of the annular bed, and provided with suitable adjusting devices for adjusting them to the same plane with the cutting-edges of the planer-knives, substantially as and for the purpose described.



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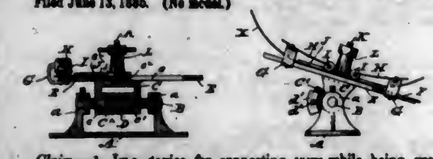
326,396. ODOMETER. HENRY O. BROOKS, Lowell, Mass. Filed Nov. 28, 1884. (No model.)



Claim.—1. As an improved article of manufacture, an odometer consisting, essentially, of the sleeve B, having a cam, D, the case A, provided with hangers a, loosely suspended from the sleeve, the horizontal shaft F, journaled in the upper end of the casing and provided with the ratchet-wheel I and the worm G, the upward-extending lever journaled loosely upon shaft F, and provided with a pawl, H, engaging the ratchet-wheel, as described, the differentially-toothed wheels L M, journaled in the case and engaging the worm-wheel, the pointer N, secured to the hub of the wheel L, and the dials O P on the wheel M and case A, respectively, substantially as set forth.

2. In an odometer, the casing A, having elongated bearing-slots F, the worm-shaft F, mounted therein and having the worm G, and the spring g, connected to the shaft and to the case below the shaft, in combination with the wheels L M, all constructed and arranged substantially as set forth.

326,397. DEVICE FOR SUPPORTING SAWS WHILE BEING GROUND. HENRY F. CAMPBELL and GEORGE H. MILLS, Concord, N. H. Filed June 13, 1885. (No model.)



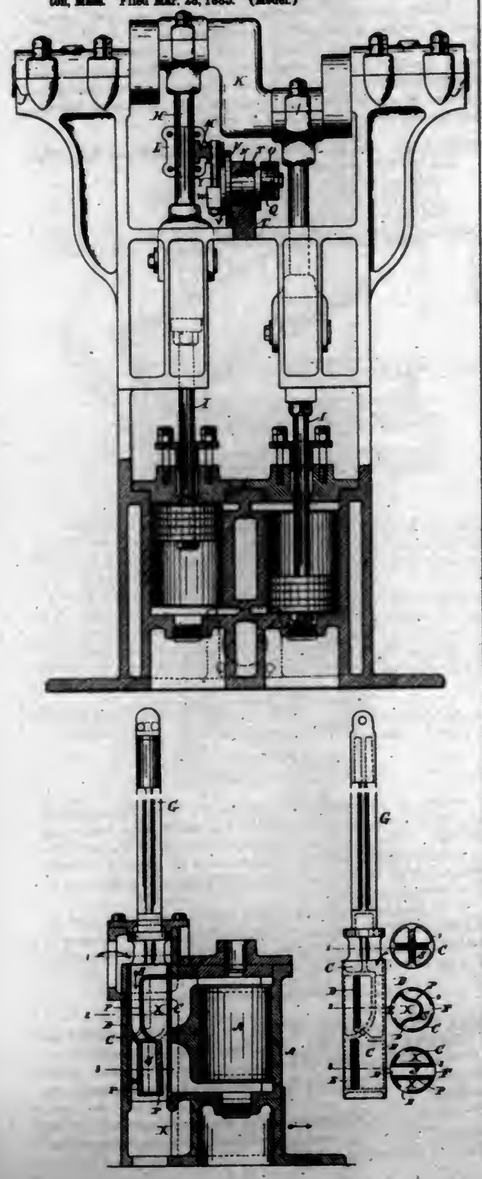
Claim.—1. In a device for supporting saws while being ground upon an emery-wheel, the combination of a saw-rest, E, and back-rest J, provided, respectively, with slots e j, with a suitable carriage for supporting the same, an oblong tongue, e^3, projecting from the top thereof and entering the slots e j of the rests E J, a screw-stud, K, projecting vertically from said tongue e^3, provided with a thumb-nut, L, and a suitable bed upon which said carriage may be mounted, for the purpose set forth.

2. The combination of a saw-rest, E, and back-rest J, provided, respectively, with slots e j, with a sliding carriage, C, an oblong tongue, e^3, projecting from the top thereof and entering the slots e j of the rests E J, a screw-stud, K, projecting vertically from said tongue e^3, provided with a thumb-nut, L, a suitable bed upon which said carriage may be mounted, and means, substantially as shown, whereby said carriage may be retained firmly in either a canted or level position, as and for the purpose set forth.

3. The combination of a bed-plate, A, a rod, B, supported thereon, a carriage, C, and sleeve D, mounted upon said rod, the latter being splined thereto, and means whereby said carriage may be held canted or in a level position and still be capable of a reciprocal movement upon said rod, an adjustable saw-rest, E, having the arms G, spring-levers H, and friction-rolls I secured thereto, an adjustable back-rest, J, a screw-stud, K, and thumb-nut L, by which the rests E J are secured to the carriage C, all constructed and operating substantially as and for the purpose specified.

4. In a machine constructed substantially in the manner described, the combination, with an adjustable saw-rest, of suitable friction-rolls adapted to bear on a saw being ground and mounted upon spring-levers adjustably secured upon suitable arms attached to said saw-rest, all constructed and operating as and for the purpose specified.

326,398. VALVE FOR STEAM-ENGINES. CARL A. CARLSON, Boston, Mass. Filed Mar. 28, 1885. (Model.)



Claim.—1. The oscillating steam-valve C, having the longitudinal partition P and steam-passages S X, and provided with the ports D E, substantially as set forth.

2. The oscillating valve C, having steam-passages S X and ports D E, and provided with the prolonged stem G, in combination with the connecting-rod H and means for oscillating the valve and its stem therefrom, substantially as set forth.

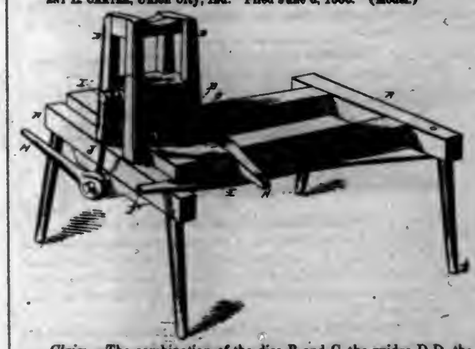
3. The combination of two steam-cylinders having reciprocating pistons therein with a single oscillating valve, C, through which all the steam passes longitudinally, said valve having the lengthwise partition P, and at each end the ports D E, adapted to supply steam to both said cylinders simultaneously, substantially as set forth.

4. The cylinders A A and cylindrical valve-chamber B, cast integral with each other, in combination with the oscillating valve C, herein described, actuated from the connecting-rod to supply steam to both cylinders, substantially as set forth.

5. The oscillating valve C, cast hollow, with the partition P, separating its channels for live steam and exhaust-steam, as described, the live-steam channel having two ports in its upper portion and one only in its lower part, and the exhaust-passage having one port only in its upper part and two in its lower, substantially as and for the purpose set forth.

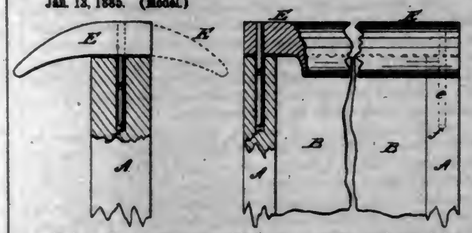
6. The combination of a steam-cylinder with a steam-valve actuated from the connecting-rod of the engine under an arrangement such as described, whereby from the middle of said rod a shaft is rotated to actuate said valve, substantially as set forth.

326,399. MACHINE FOR SHAPING POST-AUGER BLADES. CLEMENT L. CARTER, Union City, Ind. Filed June 3, 1885. (Model.)



Claim.—The combination of the dies B and C, the guides D D, the levers H and F, the connecting-rods J, the attachment T, and the shafts I and O, all as and for the purposes set forth.

326,400. WASH-BOARD. HENRY C. CARTER, Montclair, N. J. Filed Jan. 13, 1885. (Model.)



Claim.—The combination, with the frame of the wash-board, having sockets or holes f, of the removable and reversible protector E, constructed to also form the upper cross-beam or guard of the board, and provided with pins or tenons e, adapted to fit said sockets or holes, essentially as shown and described.

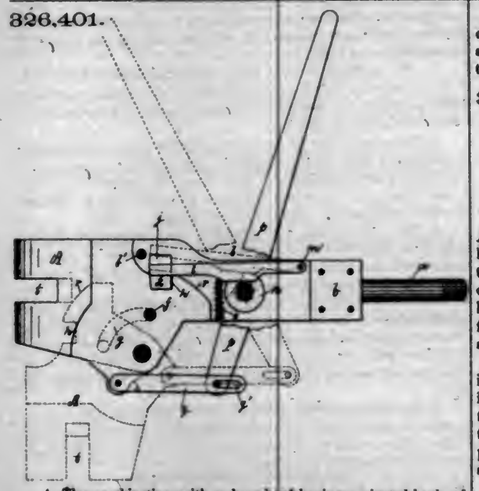
326,401. CAR-COUPLING. FREDERICK A. CASEY, Saco, Me. Filed Mar. 13, 1885. (No model.)

Claim.—1. A draw-head having the hook pivoted to the plates below the line of draw, and keyed to said plates above said pivot, whereby as the key is removed from contact with the hook the hook swings down out of contact with the hook of the adjoining car, substantially as shown and described.

2. The combination, with the plates c c and hook A, of the key k and its lever l, and the cam-roll n, actuated as described, for the purposes set forth.

3. The combination, with the hook A and plates c c, of the slotted link q and lever p, pivoted to said plates, substantially as shown and described.

326,401.



4. The combination, with a draw-head having a pivoted hook, of the link *g*, attached thereto, and the bent levers *p* and *w*, whereby the coupler may be operated from the platform of a car, substantially as shown and described.

326,402. COMBINED ANVIL, DRILL, AND VISE. HIRAM CHILDERS, El Dorado, Kans. Filed July 23, 1885. (No model.)



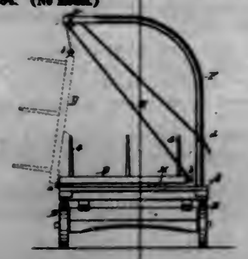
Claim.—1. The combination, with an anvil having an opening, *a'*, formed longitudinally above the base of the same, a connecting portion, A', and upright portion A'', carrying a hollow screw-threaded bar which embraces a rotary rod having attached thereto a head with a socket which is adapted to receive implements, substantially as shown, and for the purpose set forth.

2. The combination, with an anvil having an extended base, an upwardly-projecting portion, A'', rack-bar, and guide-flanges on the upper portion of said base, the parts being formed integral with each other, said anvil having an opening, *a'*, and a body portion of increased thickness adjacent to said opening, substantially as shown, and for the purpose set forth.

3. In combination with an anvil having an extended base, an upwardly-projecting portion formed on said base opposite the anvil, a jaw having a pawl, G, recesses *f'*, and means for attaching the same to a bar which passes through a hollow screw-threaded rod, said rod operating in the upper end of the projecting portion formed on the base of the anvil, so that said jaw will be adjustable, the parts being organized substantially as shown, and for the purpose set forth.

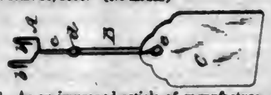
4. The combination, with an anvil having an extended base on which is formed a ratchet-bar and side-extending flanges, of an upright formed integral therewith, having a screw-threaded bearing near its upper end, the hollow screw-threaded shaft provided on one end with a hand-wheel, a rod which passes through said shaft, said rod having attached thereto a tool-holding head, and on the other end a crank-arm, the anvil being provided with an opening, *a'*, which is located on a line with said screw-shaft, and fastening-screws which extend through the sides of said anvil into the opening, the parts being combined and organized substantially as shown, and for the purpose set forth.

326,403. CORN-SHOCKER. EDWARD W. COBBETT, Edenville, Md. Filed Apr. 5, 1884. (No model.)



Claim.—The combination, with the body A, mounted on wheels, of the leaf D, hinged at one edge to the body, the davit F, mounted on said body, the pulley thereon, and the rope over said pulley and attached to the leaf, as and for the purpose specified.

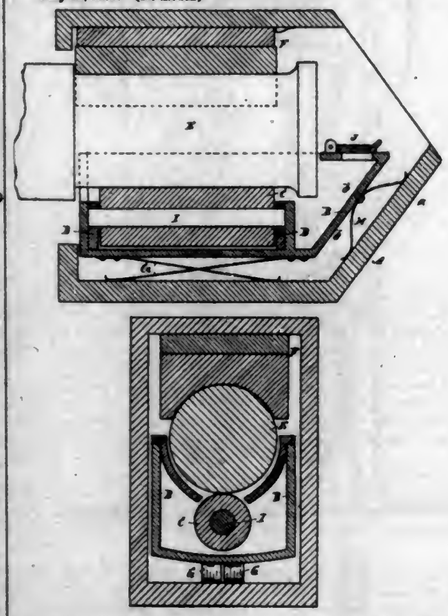
326,404. TAG AND TAG-FASTENER. OVID W. COMMER, Wabash, Ind. Filed Mar. 28, 1885. (No model.)



Claim.—1. As an improved article of manufacture, a tag-fastener, A, formed of wire bent between its ends and provided at the point of bending with an eye, *d*, and having its arms twisted together, whereby to provide a stiff shank, *c*, and having said arms deflected laterally in opposite directions and thence carried forward in approximately parallel lines, the extremities of said arms being bent back upon themselves, forming hooks having their points projected toward the eye *d*, all arranged and adapted for use substantially as set forth.

2. The combination of the fastener formed of wire bent between its ends, provided at the point of bending with an eye, *d*, and having its arms twisted together, forming a shank, *c*, and deflected laterally and thence carried forward in approximately parallel lines, with their extremities bent back upon themselves, forming hooks having their points projected toward the eye *d*, the tag proper, and a connection between such tag and fastener, substantially as set forth.

326,405. CAR-AXLE BOX. WILLIAM D. COOPER, Wayne, Mich. Filed July 23, 1885. (No model.)



Claim.—1. The combination, with the axle-box A, having inclined side *a*, of the removable oil-receptacle B *b*, of similar form, and having an oil-filling orifice, as shown, the springs G, supporting the receptacle in a vertical direction, spring H, acting between the sides *a b*, and solid lubricating-roller C, all adapted to serve with the journal E as and for the purposes set forth.

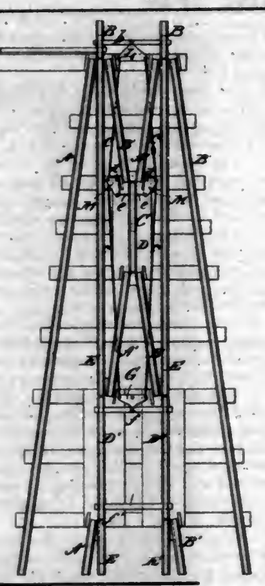
2. In an axle-box, the combination, with the box A, springs G H, and journal E, of the receptacle B, with its bottom formed concave in cross-section, and the solid friction-roller C, journaled in the receptacle and lying in the trough formed by said bottom, as set forth.

326,406. RAILWAY-SWITCH. WILLIAM J. DAVIES and WILLIAM PRESLAAR, Stonyville, Mich. Filed June 23, 1884. (No model.)

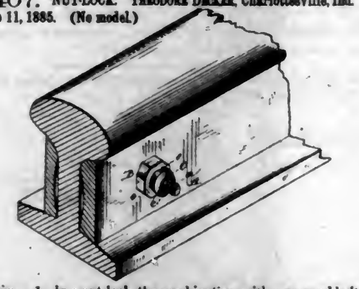
Brief.—Two pivoted rail-sections are placed between fixed tracks and operated by a system of rods and bell-crank levers connected to the throw-bar.

Claim.—The combination of the pivot track-sections D D' D'', levers G L M, rods *c c'*, swinging switch-rails B B, and track-rails A', B', and E, substantially as specified.

326,406.



326,407. NUT-LOCK. THEODORE DECKER, Charlottesville, Ind. Filed June 11, 1885. (No model.)



Claim.—1. In a nut-lock, the combination, with a grooved bolt, and a nut provided with internal grooves and an annular external flange, of a pin adapted to be inserted in said grooves, and by a single bend upon the nut to engage with the flange, for the purpose set forth.

2. In a nut-lock, a bolt provided with a longitudinal groove extending the entire length of its threaded portion, and nut provided with one or more interior grooves and an outwardly-projecting annular flange, *d*, in combination with the fastening-bar C, having a barbed end which is adapted by a single bend upon the nut to engage with the flange of the nut, substantially as shown, and for the purpose set forth.

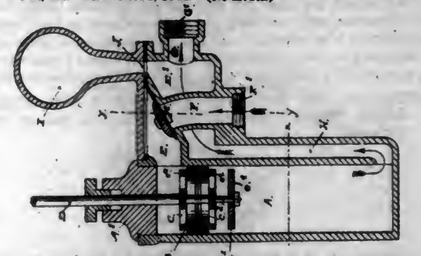
326,408. STEAM-INJECTOR. JOHN DESMOND, Cleveland, Ohio, assignor to Simon & O'Neill, same place. Filed June 1, 1885. (Model.)



Claim.—1. The combination, with the chambers A and F, the tubes J, H, and *b*, and the overflow-pipe G, of the valve *d* and the steam-duct I, the latter located on the outside of the outer wall of the injector, substantially as shown and described.

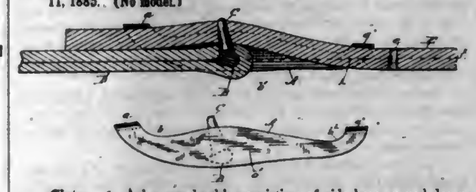
2. In a steam-injector, the steam-duct located on the outside of the injector and opening into chambers A and F, in combination with the valve *d* and the overflow-pipe G, the whole arranged to permit the simultaneous lifting and forcing of a supply of water, substantially as shown and described.

326,409. SINGLE-ACTING PUMP. WILLIAM H. DE VALIN, San Rafael, Cal. Filed Feb. 1, 1884. (No model.)



Claim.—A single-acting pump consisting of the piston chamber or cylinder A, having the water-passage H, connected with the base thereof and formed integral therewith and extending up and connected with the eduction-port E', the induction-port E, connected with the top of the cylinder A, and the passage F, connecting the induction-port E with the exterior or a suitable pipe, said passage F lying in the eduction-port, an inclined partition, as described, dividing the induction and eduction ports provided with the opening *e* over the mouth of passage F, and the valve described fitting over said opening, and the open piston and upwardly-acting valve under it, all constructed and combined to operate as set forth.

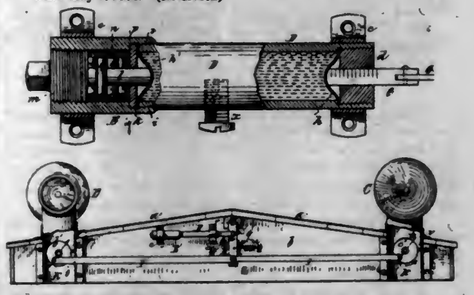
326,410. BUCKLE. ROBERT M. DILLARD, Geneva, Nebr. Filed Feb. 11, 1885. (No model.)



Claim.—1. A harness-buckle consisting of side bars curved downwardly and rearwardly at their front ends, and at their extreme rear ends abruptly upward, said bars being connected by cross-bars, the rear one of which is on a plane below its fellow, and a middle transverse bar provided with a rigid stud or tongue and located between the cross-bars on a plane below the rear cross-bar, in combination with a hame-tug and a trace, the former surrounding the middle bar, and the latter secured to the tongue thereof, whereby draft upon the trace is in direct line through the hame-tug, all arranged as and for the purpose set forth.

2. A harness-buckle consisting of curved side bars connected at their ends by cross-bars, the rear one of which is on a plane below or out of a line with the front bar, and a middle bar having an inclined stud and located below the rear cross-bar, all of said parts constituting a single casting, whereby the strain upon the straps is brought in a direct line through their longitudinal axes, substantially as described.

326,411. CAR-VENTILATOR. WILLIAM E. EASTMAN, Boston, Mass. Filed May 7, 1884. (No model.)



Claim.—1. The auxiliary cylinder E and receptacle D, connected with each other and with a space intervening between them, in combination with a flanged piston, *l*, and spiral spring *n*, both located within said space, a piston, *e*, and diaphragms *h h'*, for the mercury or spirits to act on in pressing the pistons outwardly, for the purpose set forth.

2. The diaphragms *h h'*, located in and near the ends of the receptacle D, in combination with the pistons *e l*, the liquid interposed between them for actuating the pistons outwardly, and the spring *n*, for pressing the piston *l* inwardly, said piston *e* being connected with and operating the damper-actuating mechanism, as specified.

3. The screw *x*, in combination with the receptacle D, for increasing and reducing the capacity of the same, and by which, through suitable connections with a ventilator-damper, the action of the liquid within the receptacle is so controlled and regulated as to commence to open and to commence to close a ventilator-passage at the desired predetermined temperatures to be maintained within the car, for the purpose specified.

326,412. KEY-BOARD ATTACHMENT FOR MUSICAL INSTRUMENTS. WILLIAM R. EDDINGTON, Woodbury, Ill. Filed Mar. 14, 1884. (No model.)



Claim.—1. In a key-board attachment, the combination of the housing to seat over the key-board, rollers C and C', pivoted therein, means for turning the rollers, levers M, depending from the housing and having points or ends M^2, to project into the apron-openings, and inclined front faces, hammers N, hinged to the front wall of the housing and bearing on the faces of the levers, and springs to bear on the hammers.

2. In a key-board attachment, the combination of the housing to seat over the key-board, rollers C and C', piece M^3, extending inward from the front wall of the housing, arms M', extending inward from the piece, levers M, having ends M^2 and pivoted to the arms, hammers N, hinged to the front wall and bearing on the faces of the levers, and springs for depressing the hammers.

3. In a key-board attachment, the combination of the housing, depending levers M, pivoted to the housing, hammers hinged to the front wall of the housing and bearing on the levers, bar U, extending beneath the front ends of the hammers, rod U', supporting the bar, and wedge U^3, supported by the housing for elevating the bar to raise the hammers and disengage the levers from the apron.

4. In an attachment for organs, &c., the combination of the hammers N, levers M, apron H, and rollers C C', the roller C being held in place by a spring-arm at one end, so that it can be raised, for the purpose set forth.

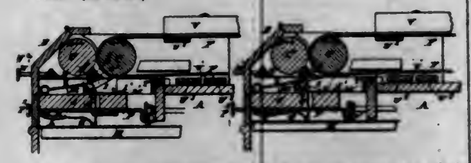
5. In an attachment for organs, &c., in combination with the apron H and rollers, the strips J, having projections J^3, for the purpose set forth.

6. In an attachment for organs, in combination with the apron H and operating-rollers, the adjustable strips J, for the purpose set forth.

7. In a key-board attachment, the combination of the housing, levers M, pivoted to and depending from the housing, and the rods T, for throwing the upper ends of the levers out of engagement with the apron.

8. In a key-board attachment, the combination of the housing, the piece M^3, extending inward from the front wall of the housing, levers M, pivoted to and depending from the piece, and the rods T, extending through the piece to engage the levers.

326,413. MECHANICAL KEY-BOARD ATTACHMENT FOR PIANOS AND ORGANS. WILLIAM R. EDDINGTON, Woodbury, Ill. Filed Mar. 14, 1885. (No model.)



Claim.—1. In an attachment for organs, &c., the springs formed of wire bent in the form shown, having their outer ends secured beneath the bottom board of the housing and their inner ends bent upward and passed through the bottom board, in combination with the levers to which the upper ends of the springs are secured, and by which the latter are connected with the operating devices, substantially as set forth.

2. In an attachment for organs, &c., the combination, with the springs herein shown and described for operating the keys, of the auxiliary springs by which the tension of the key-springs is regulated, substantially as set forth.

3. In an attachment for organs, &c., the combination of the rollers, means for turning the rollers, perforated apron, levers pivoted to cross-strips, bottom board, and springs connected to the bottom board and to the levers, all arranged and operating substantially as shown and described, for the purpose set forth.

4. In an attachment for organs, &c., the perforated apron having wires secured across part of the perforations, substantially as shown and described, for the purpose set forth.

5. In an attachment for organs, &c., the combination of the rollers, apron, and block O, with a concave face, for the purpose set forth.

6. In an attachment for organs, &c., the combination of the rollers, apron, levers, springs connected to the levers and adapted to operate the keys of the organ, and sliding bent rods M, substantially as and for the purpose set forth.

7. In an attachment for organs, &c., the combination of the rollers, apron, levers, springs connected to the levers and adapted to operate the keys of the organ, and sliding plate N, having rod N', substantially as shown and described, for the purpose set forth.

8. In an attachment for organs, &c., the combination of the apron, rollers, hinged arms located behind the gudgeons of one of the rollers, springs D, and adjusting-rods D^2, arranged and operating substantially as shown and described, for the purpose set forth.

9. In an attachment for organs, &c., the combination of the apron, rollers, hinged arms located behind the gudgeons of one of the rollers, springs D, adjusting-rods D^2, and rods D^3, screwing through the arms and provided with collars on their lower ends, substantially as shown and described, for the purpose set forth.

10. In an attachment for organs, &c., the strip T, having numbers representing the tunes of the music-sheets marked upon it, in combination with the adjustable guide U, adapted to receive the music sheet or apron, substantially as and for the purpose set forth.

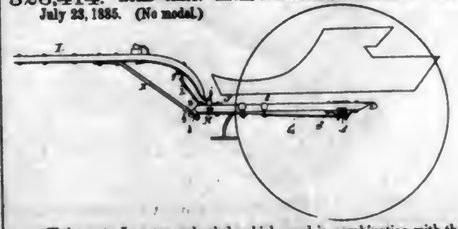
11. In an attachment for organs, &c., the adjustable apron-guide U, provided with buttons U^3, for fitting between the strips I' of the attachment, substantially as and for the purpose set forth.

12. In an attachment for organs, &c., the apron-guide consisting of end pieces and top and bottom strips, the bottom strip having notches and provided with numbers indicating the width of the music sheet or apron, in combination with button U^3, substantially as and for the purpose set forth.

13. In an attachment for organs, &c., the apron-guide consisting of end pieces and top and bottom strips, in combination with the hooks W', for engaging over the bottom strip of the guide, for the purpose set forth.

14. In an attachment for organs, &c., the pull-rods P, having hooks P', for engaging the stops of the organ, constructed substantially as shown and described, for the purpose set forth.

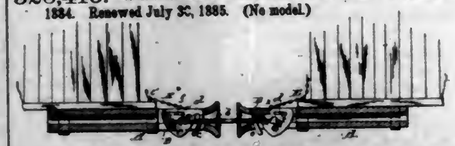
326,414. ROAD-CART. ALVAN P. FERGUSON, Dexter, Mich. Filed July 23, 1885. (No model.)



Claim.—1. In a two-wheeled vehicle, and in combination with the axle and body thereof, a spring-platform consisting of two side springs, two end springs supported pendent from the ends of such side springs, and two supplemental end springs clipped to and supported by such end springs, and supporting the body, the parts being constructed and operating substantially as and for the purposes described.

2. In a two-wheeled vehicle, and in combination with the axle and body thereof, a spring-platform consisting of the two side springs, C C, two end springs, D D, supported pendent from the ends of such side springs, the two supplemental end springs, E E, clipped to and supported by the springs D, and the metallic strips F, pivotally secured to the ends of the springs E, and adapted to be secured to and support the body, as set forth.

326,415. CAR-COUPLING. JOHN FISH, Wabash, Ind. Filed Sept. 18, 1884. Renewed July 30, 1885. (No model.)

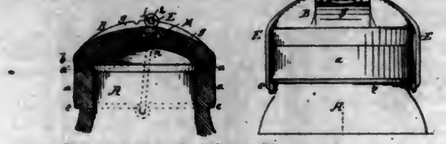


Claim.—In a car-coupler, the draw-head provided with a vertical opening, B, curved at its front portion, a coupling-plate, C, provided at its upper rear portion with a slot, *d*, through which passes a pin for securing the same to the draw-head, a weighted portion, *c'*, and curved coupling-pin *c*, formed integral therewith, and flexible operating means E, the parts being combined and organized substantially as shown, and for the purpose set forth.

326,416. FRUIT-JAR FASTENING. CHARLES F. FISLER, Clayton, N. J. Filed July 14, 1885. (No model.)

Claim.—1. A fruit-jar cap having a vent-hole, a valve, M, having a plug, *m*, fitting over the vent-hole and provided with openings *l l*, substantially as set forth.

326,416.



2. The combination of a fruit-jar with a cap and a pivoted bail, having a central spring-section, *f*, as set forth.

3. The combination of a fruit-jar and a pivoted bail having a central spring-section, with a cap having a groove, *g*, as set forth.

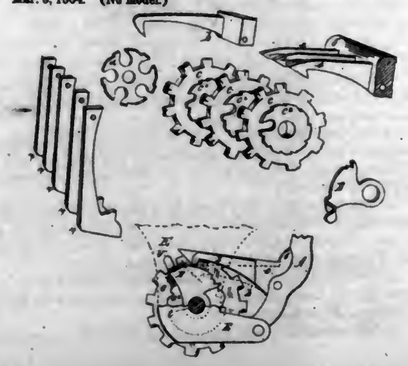
4. The combination of a fruit-jar and a cap having a vent-hole and a valve to close the same with a pivoted bail adapted to bear on the valve, substantially as described.

326,417. HORSE HAY-RAKE. PETER F. FLEMING, Huntsville, Mo. Filed Sept. 4, 1884. (No model.)

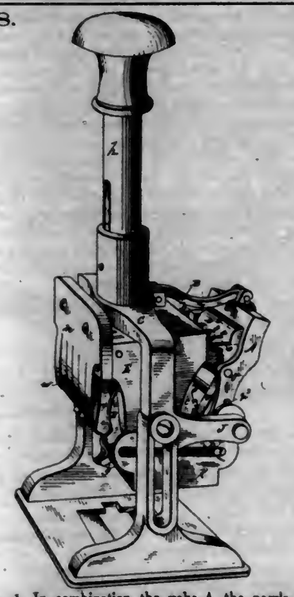


Claim.—A riding attachment for horse hay-rakes, consisting of a frame provided with a suitable driver's seat and trail-wheel, means, substantially as described, for detachably connecting it to the rake, a lever for raising and lowering the same having a cam-shaped bearing portion, and arms pivoted to the frame and extending forward over the rake at each side thereof, said arms provided with means for coupling them to the rear end of the rake, and at their forward ends provided with cords connected thereto and extending back within reach of the driver, substantially as and for the purpose set forth.

326,418. HAND-STAMP. WILLIAM A. FORCE, Brooklyn, N. Y. Filed Mar. 5, 1884. (No model.)



326,418.



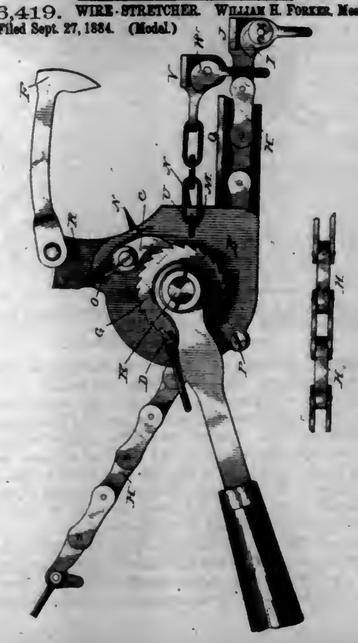
Claim.—1. In combination, the yoke A, the pawls *e*, pivoted in said yoke, one of said pawls provided with boss *z*, the series of numbering-wheels, and the cam-lever D, said wheels and cam-lever mounted on a single shaft, substantially as set forth.

2. In combination, the frame E, the frame C, the yoke A, movably pivoted at *n*, the pawls *e*, and the numbering-wheels, the bar B, and the inking-pad case slotted to receive pivots *n*, substantially as described.

3. In combination, yoke A, block *o*, pivoted in said yoke, a series of numbering-wheels provided with ratchets, pawls *e*, engaging said ratchets, spring *v*, lever *b*, idler-wheel *d*, and the button *i*, substantially as set forth.

4. In combination, in a hand-stamp, a series of number-wheels provided with ratchet-wheels, as described, a notched idler-wheel on same shaft with number-wheels, a series of pawls to engage said ratchet-wheels and a pawl to engage said idler, a button by which said pawls may be connected or disconnected, as described, and mechanism by which the pawls are reciprocated, substantially as described.

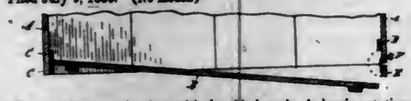
326,419. WIRE-STRETCHER. WILLIAM H. FORKER, Meadville, Pa. Filed Sept. 27, 1884. (Model.)



Claim.—1. In a wire-stretcher, the combination of the shell or case, a sprocket-wheel within the case mounted on a shaft, a ratchet-wheel fixed to the said shaft without the case, a pawl mechanism adapted to operate upon the ratchet-wheel to turn the sprocket-wheel, a chain having a clamping device upon its end, and a supplemental holding device consisting of a section of chain secured to the plate at one end and having a clamping device upon the other, substantially as described, and for the purposes set forth.

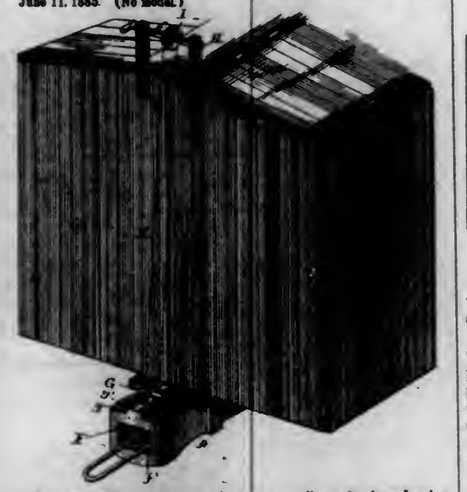
2. In a wire-stretcher, the combination of the shell or case, a sprocket-wheel within the case mounted on a shaft, a ratchet-wheel fixed to the said shaft without the case, a pawl mechanism adapted to operate upon the ratchet-wheel to turn the sprocket-wheel, a chain having a clamping device upon its end for connection with the wire, the said chain engaging with the teeth of the sprocket-wheel and being moved thereby to stretch the wire, and gripping devices consisting of the pivoted lever F and spurs N N, substantially as described.

326,420. WAGON END-GATE. CLARENCE A. GALE, Big Rapids, Mich. Filed July 9, 1885. (No model.)



Claim.—The combination, with the side boards, A, having stationary cleats C C D, of the hinged cleat E, and the thumb-screw F, seated in the side board, and adapted to engage the hinged cleat when the latter is folded inward, the whole constructed and adapted to serve with an end-gate, B, as set forth.

326,421. CAR-COUPLING. JAS. G. GAMMON, Wayne City, Ill. Filed June 11, 1885. (No model.)



Claim.—1. The combination, in a car-coupling, of a draw-head, a spring-seated sliding latch, B, located therein, and having a lower recess, *d*, and a link-guide consisting of parallel vertical members playing through said draw-head, and connected together with a horizontal portion, *f''*, which rests transversely in the link-recess, and devices connected to said vertical members to operate the same, substantially as set forth.

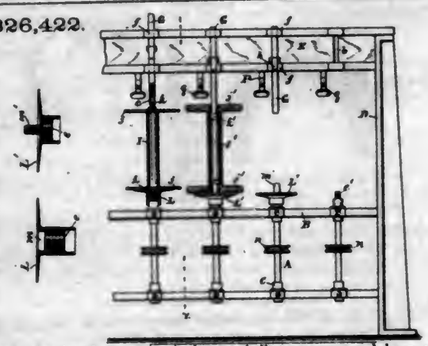
2. In combination with the draw-head A, a sliding latch, B, and coupling-pin, the link-guide F, attached to the pivoted arms G, flexible connections K K', secured to the coupling-pin and link-gnide, and to a drum, I, attached to a shaft, the parts being constructed and organized substantially as set forth.

326,422. SPOOLER. E. STANLEY GARY, Baltimore, and HARRIS T. HEATH, Elysville, Md. Filed Jan. 31, 1884. (No model.)

Brief.—The interchangeable spool-seats for the wooden and metal spools are mounted upon revolving spindles journaled in the lower part of the supporting-frame. Vertical non-rotating spindles having a free up-and-down movement in bearings in a cross-bar supported near the top of the frame, and of a size to enter the bore of the wooden spools, have a small socket in the lower ends to receive the journal of the metal spools, whereby either a wooden or metal spool may be used on the same spindle by simply changing the lower spool-seats.

Claim.—1. The combination, substantially as set forth, of a spool-seat for the end of a spool to rest on, a rotatable spindle supporting said seat, and a non-rotating upper vertical spindle having in its lower end a socket for the journal of the spool, and mounted directly above the seat,

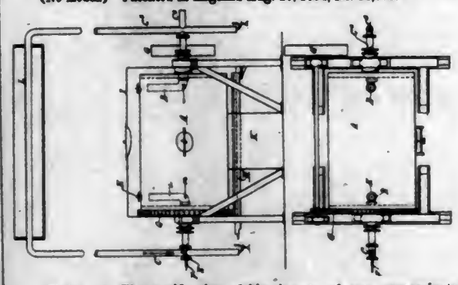
326,422.



and a bearing that permits the latter spindle to move up and down, substantially as described.

2. The combination, substantially as set forth, of a rotatable spindle-shaft, A, a spool-seat having means for ready connection and disconnection with the said spindle-shaft, a non-rotating upper vertical spindle, G, directly above said shaft, and having a free up-and-down movement and a suitable bearing to support the non-rotating spindle, substantially as shown and described.

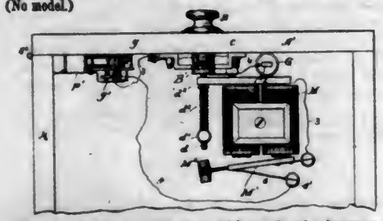
326,423. PROCESS OF PURIFYING AMMONIA SODA. HOLBROOK GASKELL, Jr., Widnes, County of Lancaster, England. Filed July 11, 1885. (No model.) Patented in England Aug. 29, 1884, No. 11,775.



Claim.—1. The purification of bicarbonate of soda contaminated with ammonia by volatilizing the ammonia in an atmosphere of carbonic acid, substantially as hereinbefore described.

2. The improvement in purifying bicarbonate of soda contaminated with ammonia, consisting in agitating and heating the same in an atmosphere of carbonic acid, so as to volatilize the ammonia without decomposing the bicarbonate, withdrawing the gases, condensing therefrom the ammonia, and returning the carbonic acid to the vessel containing the bicarbonate under treatment, substantially as described.

326,424. SAFE. OSCAR GASSETT, Boston, Mass. Filed Jan. 8, 1885. (No model.)



Claim.—1. The combination, with a safe, of a hammer, electro-magnet for vibrating the same, and battery and circuit for said magnet, substantially as and for the purpose set forth.

2. The combination, with a safe, of a hammer, electro-magnet for vibrating it, and a battery and circuit for the said magnet and circuit-controlling devices, governed by the movement of the safe-door, substantially as described.

3. The combination, with a safe, of a hammer, an electro-magnet for actuating it, a time-movement governing the circuit of the said magnet, and a detent for the said time-movement, operated by the movement of the safe-door, substantially as described.

4. The combination of the spindle of a lock with a hammer or vibrator and with means to actuate the same to vibrate and jar the spindle, substantially as described.

5. The combination, with the spindle of a lock, of a hammer or vibrator, an armature, and magnet to effect the movement of the hammer or vibrator, substantially as described.

6. The spindle of a lock, its frictionally-held arm and contact-points in circuit with a magnet, combined with a magnet and vibrator provided with a hammer, whereby the hammer will be operated to vibrate the spindle while the latter is being rotated, substantially as described.

7. A safe or vault having a hinged door and a lock thereon provided with a spindle, the inner end of which is exposed or prolonged, combined with a circuit-closing spring located in the safe, the said spring being placed in position to be acted upon by the inner end of the spindle of the lock when the door is closed, substantially as and for the purpose described.

8. The combination of the knob-spindle of a safe or vault lock with a circuit-controlling device connected with the said spindle, by which the condition of an electric circuit is changed while the said spindle is being turned, substantially as described.

326,425. CONNECTION FOR LEAD AND OTHER LIKE PIPES. F. GEORGE, Regent's Park, County of Middlesex, England. Filed Nov. 13, 1884. (No model.) Patented in England Feb. 3, 1884, No. 2,964, and Oct. 7, 1884, No. 13,284.



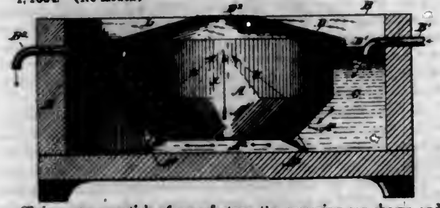
Claim.—1. The herein-described sleeve-piece for pipe-joints, said sleeve-piece having its interior diameter tapering outward in both directions from a central point, and adapted to receive the end of a soft-metal pipe, substantially as set forth.

2. The herein-described sleeve-piece for pipe-joints, said sleeve-piece having its interior diameter tapering outward in both directions from a central point, and having recesses in said interior surface into which the end of a soft-metal pipe can be expanded, substantially as described.

3. A pipe-joint consisting of two pipe ends, each having a sleeve-piece thereon, with an interior surface tapered outward in both directions, and a coupling-collar for the adjoining pipe ends, substantially as specified.

4. The combination of lengths of soft-metal pipe with sleeve-pieces thereon, having interior surfaces tapered outward in both directions, and one of said sleeve-pieces having a widened-out end, into which its pipe is upset, and the other sleeve-piece having a conical end adapted to such upset end of the pipe, substantially as described.

326,426. CREAMING-CAN. HENRY HAAK, Prescott, Pa. Filed Nov. 1, 1884. (No model.)



Claim.—As an article of manufacture, the creaming-can shown and described, comprising the cover D, having the flange D' and central strainer, D^2, the vertical body portion A, substantially the lower half of which is inclined, as at A', and the bottom A^2, having feet A^3, parts being proportioned as specified, substantially as and for the purposes set forth.

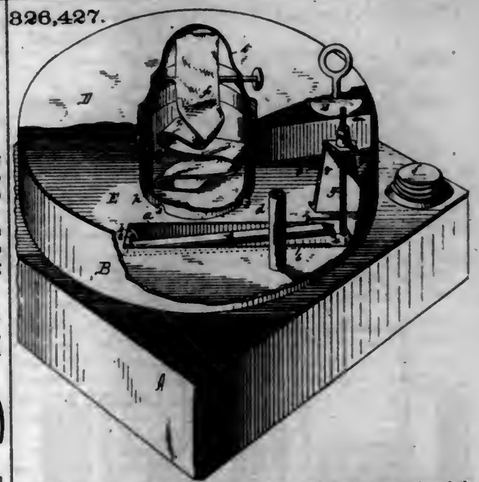
326,427. OVERFLOW DEVICE FOR PUMP-LAMPS. THOMAS W. HAMILTON, Springfield, Mass. Filed July 13, 1885. (No model.)

Claim.—1. The herein-described lamp, having an upper and a lower reservoir, the pump *s*, the trough *a* in the bottom of the upper reservoir, the overflow-pipe *e*, having a hollow pivotal connection with the side of said trough, the lifting-rod *y*, connected with the free end of said pipe, and the lifting-rod support *v*, combined and operating substantially as set forth.

2. The herein-described lamp, having an upper and a lower reservoir, the pump *s*, the trough *a* in the bottom of the upper reservoir, the barrel *b*, fixed in the side of said trough, the hollow plug *c*, fitting said barrel, the overflow-pipe *e*, connected to said plug, the lifting-rod *y*, having the arms *z* engaging with the free end of said pipe, and the lifting-rod support *v*, having the bearing *n* thereon, combined and operating substantially as set forth.



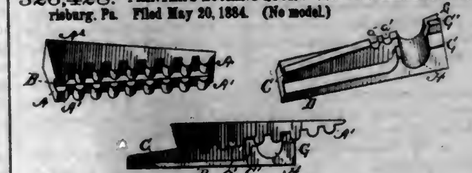
326,427.



3. The combination, with the upper and lower reservoirs of the lamp and vibratory overflow-pipe *e*, of the lifting-rod support *v*, having the bearing *n* thereon, the lifting-rod *y*, connected with the free end of said pipe and passing through said bearing, and the pipe-adjusting gage consisting of the plunger 10, having the spring 12 thereon, provided with the pin 13, and the tube 14, fitting on said plunger and having a series of perforations in its sides, substantially as set forth.

4. In a pump-lamp, the combination, with the vibratory overflow-pipe *e*, the lifting-rod *y*, and the support *v*, having the frictional bearing *n* thereon, of the pipe-adjusting gage consisting of the perforated tube 14, and the plunger 10, having the spring 12 thereon provided with the pin 13 to engage in the perforations in said pipe.

326,428. PRINTER'S LOCKING-QUOIN. JOHN N. O. HANKINSON, Harrisburg, Pa. Filed May 20, 1884. (No model.)



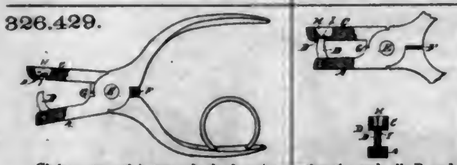
Claim.—1. The combination of the major quoin A^2, provided on its incline with the racks or two sets of teeth, A A', with way B between them, of the same depth, with the minor quoin D, of full base or part to set against the furniture, and of diminished body oppositely, having thereon centrally the wedge-form tenon C, of equal incline on its edge with that of major quoin and notched at *a a'*, that when inserted in said way and driven home on the furniture a pin, *d*, inserted in one of said notches and between the teeth of said racks, secures the quoins locked, substantially as and for the purposes set forth.

2. The combination of the two quoins A^2 D, provided on their meeting surfaces with the similarly-inclined way B, and tenon or traveler C, respectively, the latter guided by the teeth A A' to keep in said way, and guiding-surfaces G G, parallel with and in range with the crowns of said teeth on the opposite quoin, that said quoins may sustain each other parallel in the furniture, substantially as set forth.

326,429. TICKET-PUNCH. JOHN F. HANSCOM, Boston, Mass. Filed July 13, 1885. (No model.)

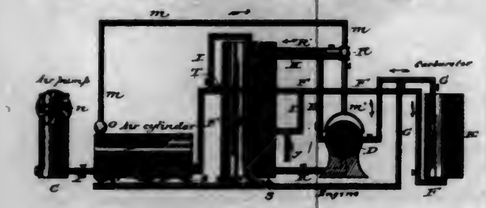


326,429.



Claim.—In a ticket-punch, the jaw A, carrying the male die B, and the jaw C, carrying the female die D, in combination with the blade H, having a continuous cutting-edge extending across the female die, and with the shallow chamber I between said blade and the most advanced position of the male die, substantially as and for the purpose set forth.

326,430. APPARATUS FOR MANUFACTURING, USING, AND FURNISHING MOTIVE POWER BY AID OF AIR AND HYDROCARBON OILS. IRA JAMES, Matteson, Ill. Filed June 4, 1885. (No model.)



Claim.—1. In combination with an air-pump, air-reservoir, carburetor, gas-engine, and water-tank, pipe M, with one or more radiating arms, m', supplied with valves or cocks, and as means for conducting a current of air in contact with cylinder of gas-engine, substantially as described, and for the purpose set forth.

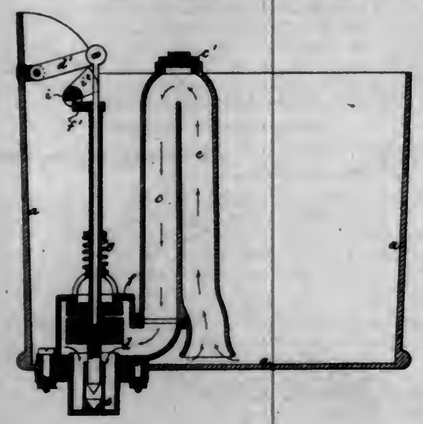
2. In combination with an air-pump, air-reservoir, carburetor, gas-engine, and water-tank, pipe M, with intersecting pipe R, incasing pipe H, and being supplied with valves or cocks as a means for conducting a current of air into water-tank to cause agitation, substantially as described, and for the purpose set forth.

3. In combination with an air-pump, an air-reservoir, carburetor, gas-engine, and water-tank, pipe F, having intersecting it the bent pipe I, with the drip-pipe J, being supplied with valves or cocks to aid in heating the air in its passage to carburetor by utilizing the heat of water in the tank, substantially as described, and for the purpose set forth.

4. Combined with an air-pump, air-reservoir, carburetor, gas-engine, and water-tank, the pipes F, I, M, m', R, and J, all provided with suitable valves or stop-cocks, and all bent and connected as described, substantially as shown, and for the purpose set forth.

5. The combination, with an air-pump, of air-reservoir and carburetor, gas-engine and water-tank, and the pipes I, M, m', R', and J, all provided with valves and stop-cocks, and all connected as described, substantially as shown, and for the purpose set forth.

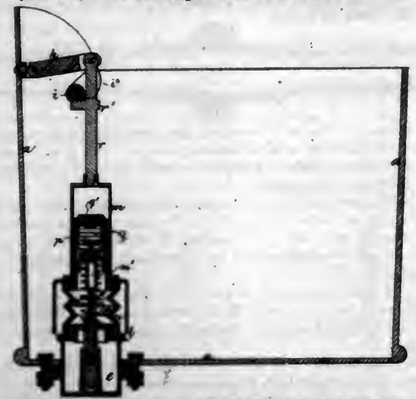
326,431. APPLIANCES AND ARRANGEMENTS FOR CONTROLLING, REGULATING, AND ARRESTING THE SUPPLY OF WATER FOR SANITARY PURPOSES. GEORGE H. JENNINGS and SIDNEY JENNINGS, Palace Road, Lambeth, County of Surrey, and JOHN MORLEY, Bethnal Green Road, County of Middlesex, England. Filed Sept. 30, 1884. (No model.) Patented in England June 23, 1884, No. 9,552.



Claim.—1. The combination of the cistern divided by a partition into two compartments, the outlet for each compartment, the valve for each outlet, the ball-cock supplying one of the compartments, the delivery-siphon in the same compartment, a passage fitted with a valve by which water passes from one compartment to the other, and the axis and lever by connections with which the said valves are controlled, substantially as and for the purpose set forth.

2. The combination of the cistern divided by a partition into two compartments, the separate outlets and their controlling-valves for the respective compartments, the passage fitted with a valve by which water passes from one compartment of the cistern to the other, and the axis and lever by connections with which the said valves are controlled, substantially as and for the purpose set forth.

326,432. APPLIANCES AND ARRANGEMENTS FOR CONTROLLING, REGULATING, AND ARRESTING THE SUPPLY OF WATER FOR SANITARY PURPOSES, &c. GEORGE H. JENNINGS and SIDNEY JENNINGS, Palace Road, Lambeth, County of Surrey, and JOHN MORLEY, Bethnal Green Road, County of Middlesex, England. Filed Sept. 30, 1884. (No model.) Patented in England June 23, 1884, No. 11,315.



Claim.—1. The combination of the divided cistern having the communicating passage between its compartments, the valve in said passage, the delivery-valve by which water is discharged from one of said compartments, the automatic delivery-valve apparatus by which, when collapsed, water is discharged from the other compartment after the flow from the first compartment has been arrested, and the valve actuating and controlling axis by connections with which the valve of the communicating passage and the delivery-valve are actuated, and the automatic delivery-valve apparatus compressed to insure the after flow preparatory to the automatic expansion of this apparatus to stop said flow, substantially as and for the purpose set forth.

2. The combination of the cistern, the partition dividing it into two compartments and having the passage and valve, the ball-valve regulating the supply of water to the cistern, the delivery-valve and the automatic delivery-valve apparatus for the respective compartments of the cistern, and the valve actuating and controlling apparatus, subsequent to the operation of which the automatic-valve apparatus acts by expansion to cut off the after flow, substantially as and for the purpose set forth.

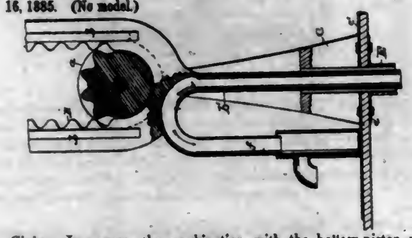
326,433. CAR-WHEEL. ROBERT W. JESS, Riverton, Ill. Filed July 9, 1885. (No model.)



Claim.—1. The car-wheel A, provided within its hub *a* with an oil-chamber, *a'*, which surrounds the exterior and outer end of the axle-bearing a^2, the radial braces a^3, extending between the outer end of said axle-bearing and said hub, the oil-openings a^7, formed in said axle-bearing, and the deflecting-flanges a^8, that project radially into said chamber, substantially as and for the purpose specified.

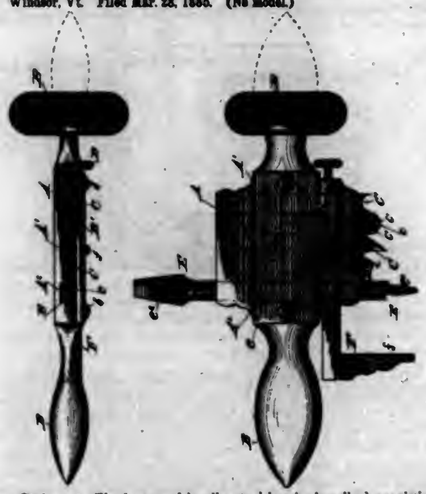
2. The car-wheel A, provided within the hub *a* with the chamber *a'*, axle-bearing portion a^2, braces a^3, collar-recess a^4, key and oil openings a^6 and a^6, respectively, and flanges a^8, in combination with the axle B, having the axle-arm *b*, collar *b'*, and key-opening b^2, and with the key C, substantially as and for the purpose set forth.

326,434. PUMP. LAWRENCE A. KELLY, Dayton, Wash. Filed Feb. 16, 1885. (No model.)



Claim.—In a pump, the combination, with the hollow piston-rod having at its lower end a valved piston, of the cylinder with a valved inlet-pipe, and the stand-pipe having a spout, and with the discharging end of said hollow piston-rod telescoping and working in said stand-pipe substantially as and for the purpose set forth.

326,435. BEADING-TOOL. ELIJAH P. KENDALL and AMBROSE S. VOSE, Windsor, Vt. Filed Mar. 23, 1885. (No model.)



Claim.—1. The improved beading-tool herein described, consisting of the holder-block A, recessed as shown, to receive the cutters, and having the recess E to receive the centering-bit, the plate or bar B', adapted to secure the cutters and bit in their respective seats, and the set-screw D, passing through the threaded aperture in the holder-block to bind the cutters together, substantially as specified.

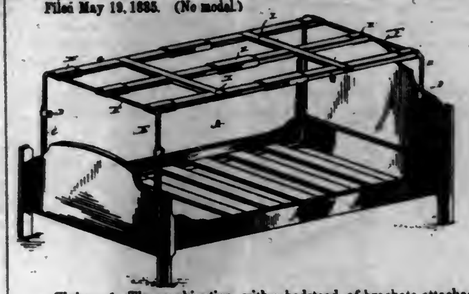
2. In a beading-tool, the combination, with the holder-block having the transverse recess to seat the cutters, of the plate B', adapted to secure the cutters therein, and provided with a recess to receive a gage-square, the gage-square F, arranged at right angles to the cutters in the said recess, and the screw *f*, for adjustably securing the same therein, substantially as set forth.

326,436. HORSE-COLLAR FASTENER. JONATHAN D. LANE, Onondaga, Mich. Filed June 4, 1885. (No model.)



Claim.—In combination, an open-ended collar, A, having recess *f'*, and provided with an articulated metallic strap, C, the free end of which is provided with a plate, D, in which are formed a series of openings, *a*, and a link, E, with a cam-locking lever, F, pivoted at *f* in the mouth of the recess *f'*, when constructed, arranged, and operating substantially in the manner and for the purposes set forth.

326,437. BED SCREEN-FRAME. GEORGE D. MARSH, Joplin, Mo. Filed May 19, 1885. (No model.)

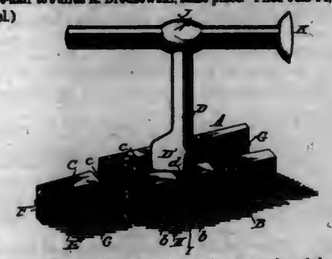


Claim.—1. The combination, with a bedstead, of brackets attached to the inner sides of the ends at the four corners of the same, the tubular sockets hinged to the said brackets and having set-screws at their upper ends, the supporting frames or bails mounted adjustably in the said sockets, the arms hinged to the top or cross pieces of the said bails or frames, and sliding sleeves adapted to connect the inner ends of the said arms, substantially as and for the purpose set forth.

2. The combination, with the vertically-adjustable supporting-frames, of the hinged arms having umbrella-latches at their inner ends and the sliding connecting-sleeves having slots adapted to engage the said latches, substantially as and for the purpose set forth.

3. The combination of a bedstead, the brackets secured at the corners of the same and having laterally-extending arms, the tubular sockets hinged to the said brackets, the vertically-adjustable bails or frames, the arms hinged to the latter and having suitable spring-latches, and the slotted connecting-sleeves, all arranged and operating substantially as and for the purpose herein set forth.

326,438. PRINTER'S QUOIN. JOHN MCCONNELL, Erie, Pa., assignor of one-half to Julius R. Dredzewski, same place. Filed Jan. 14, 1885. (No model.)



Claim.—1. The combination, in a printer's quoin, of the three sections, substantially as shown, connected together by a loose rivet, the central of which sections rests and moves longitudinally upon slides or guides on the outside sections, so that in its longitudinal movement it is held up off of and does not touch the imposing-stone, substantially as and for the purpose set forth.

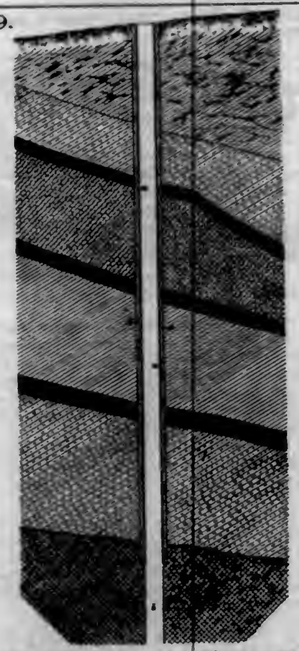
2. The combination, in a printer's quoin, of two outside sections provided with countersunk rivet-holes and having their inner faces longitudinally inclined and provided with longitudinal grooves, substantially as shown, with a central wedge-shaped section having a longitudinal slot therein and longitudinal fins on either side thereof above said slot, and having the lower edge thereof cut away, substantially as shown, and a loose rivet passing through the countersunk rivet-holes in the outside sections and through the slot in the central section, substantially as and for the purpose set forth.

3. The combination, in a printer's quoin, of an outside section, A, provided with the countersunk rivet-hole I and having the inner face thereof longitudinally inclined and provided with the groove G, substantially as shown, and an outside section, B, provided with notches *b b* in the upper edge thereof and the countersunk rivet-hole I, and having the inner face thereof longitudinally inclined and provided with the groove G, substantially as shown, with the loose rivet H and the central wedge-shaped section, C, provided with notches *c* in the upper edge thereof and having the longitudinal slot E therein and the fins F F above said slot and the lower edge thereof cut away at *c'*, substantially as shown and set forth.

326,439. PROTECTING WELLS. SAMUEL MCEACHEN, Scranton, Pa. Filed Aug. 11, 1885. (No model.)

Claim.—1. The mode herein described of preventing the access of sulphur-water to bores passing through strata containing such water, said mode consisting in providing the bore with a pipe or casing less in diameter than the bore, and filling the space between said pipe or casing and the bore with cement impermeable to sulphur-water, as set forth.

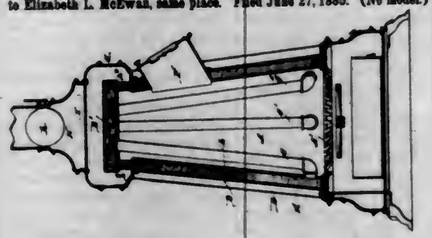
326,439.



2. The mode herein described of preventing the contamination of wells passing through coal measures or other strata containing sulphur-water, said mode consisting in providing that portion of the bore which is within said sulphur-water strata with a pipe or casing less in diameter than the bore, and filling the space between said pipe or casing and the bore with cement impermeable to sulphur-water, all substantially as specified.

3. The mode herein described of preventing the contamination of wells passing through coal measures or other strata containing sulphur-water, said mode consisting in enlarging the bore of that portion of the well passing through said strata, inserting a pipe forming a continuation of the main bore, and filling the space between said pipe and the enlarged bore with cement impermeable to sulphur-water, as specified.

326,440. STEAM-BOILER. JAMES MCEWAN, Detroit, Mich., assignor to Elizabeth L. McEwan, same place. Filed June 27, 1885. (No model.)

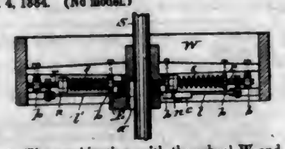


Claim.—1. The combination of the combustion-chamber A, the water-jacket B, surrounding the same, the separate chamber B′ over the combustion-chamber, the tubes b^3, connecting the separate chamber B′ with said water-jacket, the outside casing, D, the drum G, made separate from said casing D and inclosing chamber B′, and communicating with the combustion-chamber, and the water-tubes connecting the lower portion of the water-jacket with chamber B′, substantially as and for the purposes described.

2. The combination of combustion-chamber A, water-jacket B, surrounding the same, the inner wall of said jacket being corrugated, the chamber B′ over the combustion-chamber, and the tubes C, lying in the corrugations of the jacket and connecting the lower portion of the jacket with chamber B′, substantially as and for the purposes described.

3. The combination of combustion-chamber A, water-jacket B, surrounding the same, chamber B′ over the combustion-chamber, and communicating with said jacket, tubes C, connecting the water-jacket and chamber B′, drum G, inclosing chamber B′ and communicating with the combustion-chamber, and screen I in said drum above chamber B′, substantially as and for the purposes described.

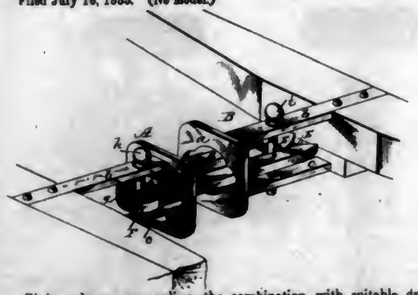
326,441. STEAM-GOVERNOR. JOHN D. MCRAE, Baldwinsville, N. Y. Filed Dec. 4, 1884. (No model.)



Claim.—1. The combination, with the wheel W and the eccentric E, the latter provided with the elongated opening *a*, of the rods *r r*, connected with and extended radially from the eccentric at points diametrically opposite each other, guides *b b* for said rods, nuts *n n* on the rods, springs *s s* interposed between said guides and nuts, and the weighted levers *l l′*, connected with the rods *r r*, substantially as described and shown.

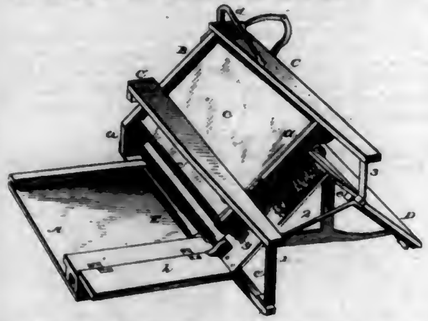
2. The combination with the shaft S and wheel W, of the eccentric E, provided with the transversely-elongated opening *a*, the guides *b b*, arranged in a diametrical line at opposite sides of the shaft, the rods *r r*, sliding in said guides and connected with the eccentric, the nuts *n n* on said rods, springs *s s*, interposed between the nuts and inner guide, *b*, and the two levers *l* and *l′*, pivoted on the wheel at the one and the same side of the diametrical line thereof, and having their free ends lying at opposite sides of said diametrical line, and each having an arm connected with one of the rods *r*, all constructed and combined substantially as described and shown.

326,442. CAR-COUPLING. CARLOS D. MINER, Au Sable Forks, N. Y. Filed July 16, 1885. (No model.)



Claim.—In a car-coupling, the combination, with suitable draw-heads and coupling-pins, of a coupling-link composed of two sections pivoted together, one end of the sections having eye-plates and shouldered guides, and a spring connected to the link at one end only and its free end extending around the eye-plates and abutting against a shoulder, and the opposite ends of the link-sections having hooks, and shoulders to act as stops for said hooks when overlapping each other, substantially as and for the purpose set forth.

326,443. GRAIN HARVESTER AND BINDER. GEORGE F. MESSINGER, Stockertown, Pa. Filed Nov. 17, 1884. (No model.)

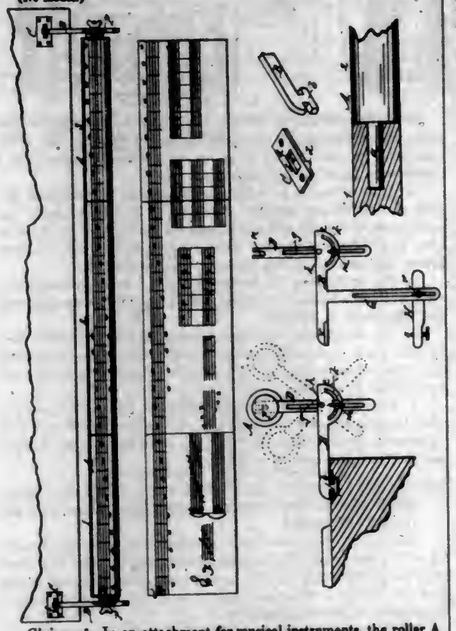


Claim.—1. The combination of the frame-pieces *a a′*, the extensions *e e′*, stripe C C′, braces 1 2 3, rollers E, and shelves or ledges *g* and A, substantially as set forth.

2. In a harvester-elevator, the combination, with the roller-bearing frame-pieces *a* and *a′* and the extensions *e e′*, of the stripe C C′ and their connecting strengthening-braces 1 2 3, as described.

3. The combination of the frame-pieces *a a′*, extensions *e e′*, stripe C C′, braces 1 2 3, rollers E, shelves or ledges *g* A, with the platform D, substantially as described.

326,444. KEY-BOARD ATTACHMENT FOR MUSICAL INSTRUMENTS. CHARLES F. METZENG, Rochester, N. Y. Filed Sept. 15, 1884. (No model.)

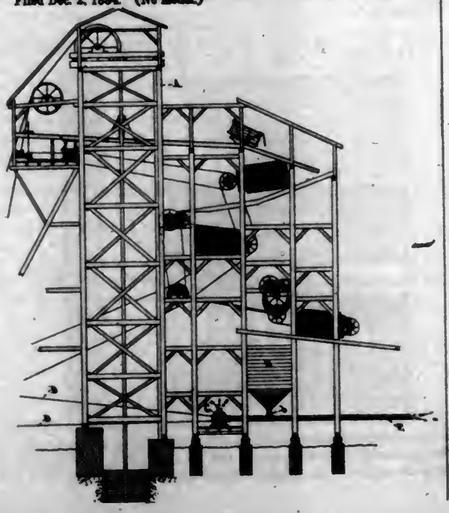


Claim.—1. In an attachment for musical instruments, the roller A, made in three sections connected together end to end, and its surface printed or otherwise marked with the musical characters and other matter necessary for instruction in practice, as herein shown and described.

2. In an attachment for musical instruments, the combination of a roller made in three sections having the musical characters marked on its surface, and provided at its ends with the disks *p p*, and the fixtures for connecting the roller with the piano, consisting of the bar B and slotted supporting-arm D, the bar provided at one end with the shouldered catch *b*, that fits in a plate, C, of the piano, and at the other end with a segment, *c*, to which the supporting-arm is attached by the two screws *k m*, as herein shown and described, and for the purpose specified.

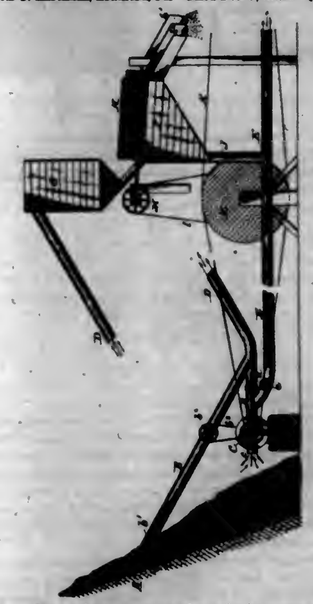
3. In an attachment for musical instruments, the fixture consisting of the bar B, the vertical supporting-standard D, the stiff depending arm G, and the clamping-arm H, as shown and described, and for the purpose specified.

326,445. CULM-CONVEYOR. RAMSON Y. MITCHELL, Bradford, Pa. Filed Dec. 2, 1884. (No model.)



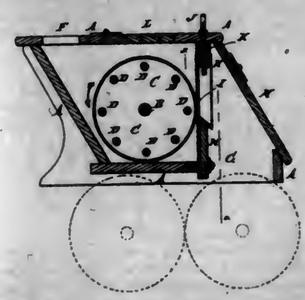
Claim.—The combination, with a coal-breaker, of a culm or dirt receiver or bin and a pressure-blower so arranged that a blast from the pressure-blower will receive and transport the culm and waste from the bin through suitable pipes in any desired direction, substantially as shown and described.

326,446. METHOD OF TRANSPORTING AND SORTING CULM. RAMSON Y. MITCHELL, Bradford, Pa. Filed Dec. 3, 1884. (No model.)



Claim.—The method of transporting culm by a current of air having the feed in front of the blower, at the same time drying it by such air, so as to render the culm more susceptible of being sorted into various sizes, substantially as shown and described.

326,447. FEEDER FOR ROLLER-MILLS. LOUIS NOLDEN and ALFRED E. MAY, Beardstown, Ill. Filed Feb. 18, 1885. (No model.)



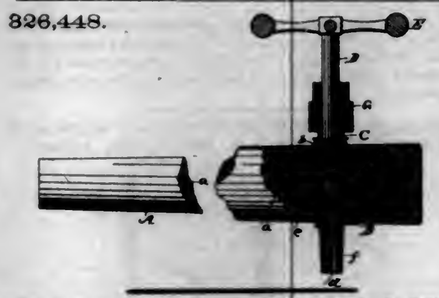
Claim.—1. The feeder for roller-mills, comprising the case having the inclined rear side, a skeleton rotary cylinder, and the adjustable spring-pressed feed-plate having a feed-opening, substantially as and for the purpose set forth.

2. In a feeder for roller-mills, the combination, with the case A and the rotary skeleton feed-cylinder B C D, of the feed-plate H, having feed-opening I, the hand-screws J, and the spring K, substantially as herein shown and described, whereby the quantity of material fed to the rollers can be readily regulated, as set forth.

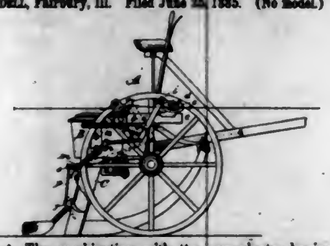
326,448. SPIGOT AND FAUCET. JAMES H. O'CONNOR, Rome, N. Y. Filed Jan. 29, 1885. (No model.)

Claim.—The combination, in a faucet, with the externally and internally screw-threaded bushing extending through the same, provided with an aperture adapted to register with the eduction-passage in the body of the spigot, of the screw-threaded valve-stem having a conical point and a packing box or ring secured thereto, as set forth.

326,448.



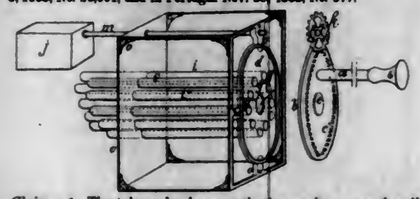
326,449. CHECK-ROWER ATTACHMENT FOR CORN-PLANTERS. LEVI J. ODELL, Fairbury, Ill. Filed June 25, 1885. (No model.)



Claim.—1. The combination, with the corn-planter having seed-tubes, of the valves in the tubes, the rock-shaft connected to the valves and having the bent arms, the bracket-arms secured to the planter and having the heads, the fulcrumed levers and guiding-sheaves secured to the heads, the springs bearing on the levers, and said levers being connected to the arms of the rock-shaft, and the knotted cord or wire passing through the sheaves for operating the levers and opening the valves, substantially as described.

2. The combination, with a corn-planter having seed-tubes and pivoted valves *r* in said tubes, of the rock-shaft *m*, having arms *n* and *o*, rods *p*, connecting arms *o* with the valves, bracket-arms *a*, secured to the planter and having the heads *b*, guiding-sheaves on said heads, levers *h*, fulcrumed to the heads and having bifurcated fingers *i*, the lower arms of the levers being connected to the arms *n*, springs *k*, connected to the levers, and a knotted cord or wire passing through the sheaves for operating one of the levers, substantially as described.

326,450. SPEAKING-TUBE. PEDRO PEREIRA Y ALBERI, Madrid, Spain. Filed Sept. 17, 1884. (No model.) Patented in France Aug. 2, 1883, No. 156,841; in Belgium Aug. 2, 1883, No. 62,201; in Italy Aug. 2, 1883, No. 15,737; in England Aug. 2, 1883, No. 3,785; in Germany Aug. 3, 1883, No. 26,661, and in Portugal Nov. 28, 1883, No. 377.



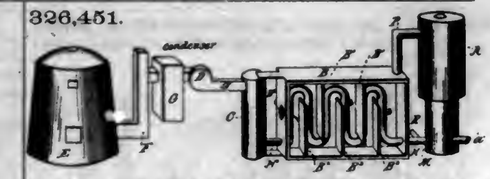
Claim.—1. The tube *a*, having mouth-piece *s*, its supporting-disk having teeth, and the clock-work, shaft, and pinion to rotate said disk, combined with a series of stationary tubes, as *i i'*, &c., arranged to register successively with the tube *a* as the disk is rotated, as and for the purposes set forth.

2. The combination, with the frame *o*, having stationary tubes *i i'*, &c., arranged in a circle, with one end of each tube opening through a disk, *d*, as seen at *g g'*, of a rotating disk or wheel, *b*, having a pivot, *c*, adapted to center at *c* upon said disk *d*, and having teeth *c'*, the pinion *k*, engaging said teeth, and means for rotating it, and the tube *a*, having mouth-piece *s*, secured to the rotating disk and adapted to register successively with the stationary tubes, as set forth.

326,451. APPARATUS FOR UTILIZING WOOD-GASES. HENRY M. PIERCE, Nashville, Tenn. Filed Nov. 3, 1884. (No model.)

Claim.—1. In an apparatus for utilizing wood-gases for metallurgical purposes, the combination of a charcoal-kiln, pipes leading therefrom, a heating-chamber through which said pipes pass, a blast-furnace to which said pipes lead, and a second pipe leading from the blast-furnace to the heating-chamber, whereby the spent gases from the furnace are utilized to heat the heating-chamber and wood-gases, as set forth.

326,451.



2. In an apparatus for utilizing wood-gases for metallurgical purposes, the combination of a charcoal-kiln, heating-chamber, conducting-pipes, a fan or other forcing apparatus, an equalizing-chamber, and a blast-furnace, as and for the purposes set forth.

3. In an apparatus for utilizing wood-gases for metallurgical purposes, the combination, with the charcoal-oven, of a blast-furnace, and intermediate devices by which the gases are drawn from the charcoal-oven, then heated in a chamber which receives its heat from the blast-furnace, and then mixed with atmospheric air, as described.

4. The combination of a forcing apparatus, a heating-chamber provided with baffle-plates, an equalizer, and a gas-conduit passing between said baffle-plates, as set forth.

5. The combination of the blast-furnace, the heating-chamber having baffle-plates, a gas-conduit leading through it and between said plates, and a pipe for conducting the waste products of combustion to the heating-chamber, as set forth.

6. In an apparatus for utilizing wood-gases for metallurgical purposes, the combination of a charcoal-kiln, pipes leading therefrom, a heating-chamber through which said pipes pass, and a blast-furnace to which said pipes lead, substantially as described.

326,452. PROCESS OF UTILIZING WOOD-GASES FOR METALLURGICAL PURPOSES. HENRY M. PIERCE, Nashville, Tenn. Filed Mar. 11, 1885. (No model.)

Claim.—1. The process herein described for the heating and smelting of ores and metals, which consists in subjecting the same to the heat produced by combining air with heated non-condensable gases derived from the distillation or carbonization of wood, substantially as and for the purpose set forth and described.

2. The process herein described for the reduction of ores and metals, which consists in subjecting the ore, flux, and a percentage of solid fuel sufficient to supplement the gaseous fuel to the heat produced by combining air with heated non-condensable gases derived from the distillation or carbonization of wood, substantially as and for the purpose set forth and described.

3. In a blast-furnace, the process herein described of utilizing the gases evolved in the destructive distillation of wood as fuel, which consists in first conducting the wood-gases to a condenser and reducing to liquid their condensable constituents, then forcing the uncondensable gases into a heating-chamber which is heated by the waste gases from the said blast-furnace, then mixing a suitable quantity of atmospheric air with said wood-gases, and then injecting the whole into a blast-furnace.

4. The process herein described of utilizing the gases evolved from the destructive distillation of wood, which consists in conducting the said gases into a condenser, then forcing the non-condensed gases under pressure into an equalizing-chamber, then through a heating-chamber, which latter is heated by the waste gases from the blast-furnace, and finally mixed with atmospheric air and forced into the blast-furnace, as described

326,453. SECTIONAL CHALK-RACK. JOSEPH G. PLOWMAN, White Pigeon, Mich. Filed Mar. 16, 1885. (No model.)



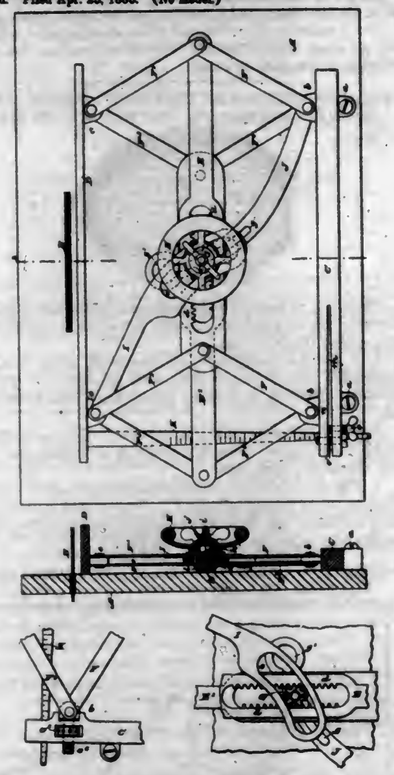
Claim.—1. The combination, with the removable chalk-trough for blackboards, of the flexible guard-strip S, attached to the upper edge of the inner wall of the said trough, and projecting from said edge to engage the surface of the blackboard, substantially as specified.

2. The sectional chalk-trough for blackboards, having a bracing-clasp adapted to connect the sections, substantially as specified.

3. A chalk-rack for blackboards, consisting of sections having angular joint ends and connected by bracing-clasps, substantially as specified.

4. A chalk-rack for blackboards, consisting of one or more trough-shaped sections having vertical grooves in their side walls, and an interstitial false bottom having its edges bent downwardly into the said grooves, substantially as specified.

326,454. SAW-TABLE GAGE. HENRY T. RAWLINGS, New Albany, Ind. Filed Apr. 25, 1885. (No model.)



Claim.—1. A saw-gage comprising a bed-piece and a guide coupled to two rack-bars by links arranged in pairs, substantially as described, the said links and rack-bars, an operating-pinion constructed to engage and operate said rack-bars, two braces, substantially as described, constructed to brace and steady said pinion, and means, substantially as described, for operating said pinion and clamping the parts when the adjustment is effected, whereby the guide is made to move in a plane parallel with the saw arbor or mandrel, substantially as set forth.

2. In a saw-gage comprising a bed-piece, a guide, and means, substantially as described, for effecting the parallel movement of the guide toward and from the bed-piece, the mechanism, substantially as described, for adjusting the guide to a position exactly parallel with the plane of the saw, which mechanism comprises a movable part on the bed-piece, to which the links are coupled at that end, and a screw for effecting the setting of this piece with respect to the bed-piece, whereby this latter adjustment may be effected without dismounting and resetting the bed-piece, as set forth.

3. In a saw-gage, the combination, with the bed-piece, the guide arranged parallel thereto, the superimposed and slotted neck-bars arranged between the guide and bed-piece and parallel thereto, the eight links of equal length arranged in the form of two parallelograms and coupled to the guide, bed-piece, and rack-bars, as set forth, the pinion mounted in the slotted rack-bars and its opposite sides meshing, respectively, with the racks on the same, the diagonally-arranged slotted braces I and J, their slotted ends embracing the pinion-axis, and their other ends coupled, respectively, to the guide and bed-piece at diagonally-opposite points, the clamping-nut mounted on the screw-threaded stud on the pinion, whereby the racks and braces are clamped fast together, and the graduated bar K, fixed at one end to the guide and extending back and crossing the bed-piece, substantially as set forth.

4. In a saw-gage, the combination, with the guide, the bed-piece, the superimposed and slotted rack-bars arranged between the bed-piece and guide and parallel thereto, the eight links of equal length arranged in the form of two parallelograms and coupled to the guide, bed-piece, and racks to form a parallel motion, as set forth, the pinion G, mounted in the slots in the rack-bars and engaging at its opposite sides the racks on said bars, and provided with a button, *l*, on its lower end, a neck, *k*, to receive the lower brace, a square, *h*, to receive the hand-wheel, and a screw-threaded stud, *i*, to receive the clamping-nut, the said hand-wheel and clamping-nut, and the diagonally-arranged slotted braces I and J, their slotted ends embracing the pinion-axis, and their other ends coupled, respectively, to the guide and bed-piece, substantially as set forth.

5. In a saw-gage wherein the guide is constructed to be moved to and from the fixed bed-piece by a parallel motion composed of links, the said bed-piece provided with a tongue, *n*, which may be moved independently of the bed-piece, and to which the links are coupled at one end of said bed-piece, and screws *o o'*, mounted in said bed-piece and tongue, as described, whereby the tongue may be moved toward and from the bed-piece and fixed in position, substantially as and for the purposes set forth.

6. In a saw-gage, the combination of the bed-piece constructed to be attached to the saw-table and provided with a slit, *m*, the screws *o* and *o'*, and lugs at *b b*, for coupling the links to said bed-piece, the guide, the slotted and superimposed rack-bars provided with racks *d*, arranged oppositely, as described, the eight links, the slotted braces, the pinion, its operating-wheel, and the clamp-nut, all constructed and arranged to operate substantially as set forth.

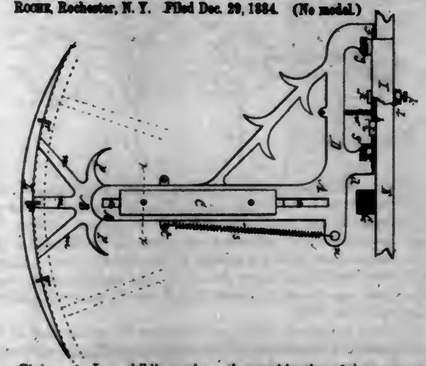
7. In a saw-gage, the combination of the guide, the mechanism, substantially as described, for moving the guide toward and from the saw, and for clamping it in position, the bed-piece provided with means, substantially as described, for adjusting the guide into a position exactly parallel to the saw, and the graduated bar K, fixed to the guide and constructed to pass under said bed-piece at or near the point *b*, where the adjusting mechanism is placed, substantially as and for the purposes set forth.

326,455. IRONING-TABLE. IDA C. REED, Oakland City, Ind. Filed Jan. 21, 1885. (No model.)



Claim.—The combination, in an ironing-table of the described class, of the folding legs or supports having notches E, projections F, and yielding rollers G, the straps C, and movable top or table D, having the large recesses I and smaller recesses *d* within the same, adapted to fit and interlock with the rollers G, substantially as and for the purpose shown and set forth.

326,456. RUNNER ATTACHMENT FOR CARRIAGES. DANIEL E. ROCHE, Rochester, N. Y. Filed Dec. 29, 1884. (No model.)



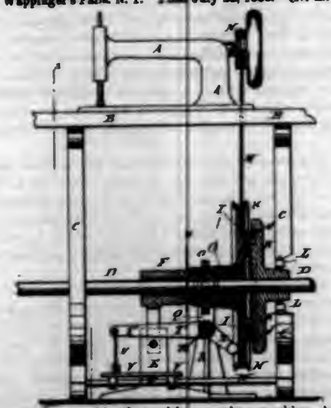
Claim.—1. In a child's carriage, the combination of the upper arm, A, provided with a cross-head, D, the lower arm, B, provided with a runner, L, and movable up and down on the arm A, and the box I, clamped to the sill or bar of the carriage, the cross-head being pivoted to the box so as to swing laterally, as shown and described, and for the purpose specified.

2. In a child's carriage, the combination of the upper arm, A, provided with a cross-head, D, the lower arm, B, provided with a runner L, and sliding up and down on the upper arm, the box I, to which the

cross-head is pivoted, the spring *s*, connecting the upper and lower arms for drawing up the lower arm, and the spring *w*, connecting the cross-head with an arm, *v*, of the box I, for the purpose of drawing the attachment back from the wheel, as herein shown and described.

3. In a child's carriage, the combination of the open-ended hooks *f f* on the cross-head D, and the box I, provided with depressed open-ended sockets *g g*, which fit the hooks, whereby the box can be entered edgewise under the hooks, as herein shown and described.

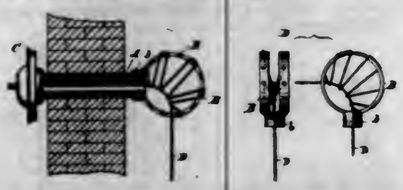
326,457. MECHANISM FOR CONTROLLING STEAM-DRIVEN SEWING-MACHINES. JAMES H. ROGER, Newburg, N. Y., assignor to himself, James Orr, same place, Clinton W. Sweet, New York, and Clayton E. Sweet, Wappinger's Falls, N. Y. Filed July 22, 1885. (No model.)



Claim.—1. The combination, with a sewing-machine, A, having pulley N and the driving-shaft D, of the friction-wheel K, having annular groove J, the pulley H, connected with the pulley N by a belt, M, and having an annular flange, I, upon its side to engage with the grooved friction-wheel K, and an annular flange, O, upon its hub to engage with slotted pins P, and the rock-shaft R, provided with arms Q, carrying the slotted pins P, and provided with an arm, T, connected with the treadle V by a rod, U, substantially as herein shown and described, whereby the said pulley and sewing-machine can be started and stopped, and the speed can be controlled by operating the said treadle, as set forth.

2. The combination, with the drive-pulley H and the rock-shaft R, connected with the said pulley by the arms and pins Q P, and with the treadle V by the arm and rod T U, of the brake-arm X, substantially as herein shown and described, whereby the said pulley will be instantly stopped when thrown out of gear with its friction-wheel, as set forth.

326,458. MECHANICAL TELEPHONE. HENRY SELIGMAN, Irvington, N. Y. Filed Aug. 31, 1884. (No model.)



Claim.—1. In an acoustic or mechanical telephone, a pipe or tube adapted for use as a conduit for the line-wire, in combination with an angle-hanger attached to said pipe, as and for the purpose set forth.

2. In an acoustic or mechanical telephone, the combination of the pipe or tube adapted to form a conduit for the line-wire, and provided with a screw-threaded portion at the end, and the angle-hanger screwed onto the said pipe in such a manner that it may be centered relatively to the wall, as set forth.

3. In an acoustic or mechanical telephone, the combination of the pipe or conduit for the wire, and the centering device F, screwed thereto, as and for the purpose set forth.

4. In an acoustic or mechanical telephone, the combination of the pipe forming a conduit for the wire, the angle-hanger attached to one end of the pipe, and the centering device at the other end, as shown and described.

5. In an acoustic or mechanical telephone, the combination of the conduit for the wire, and the angle-hanger attached to said conduit, consisting of radial arms, substantially as described, and a cord looped between said arms for retaining the wire, as set forth.

6. In an acoustic or mechanical telephone, the combination of the conduit having at one end an angle-hanger provided with an equalizing-cord, and the centering device at the other end, substantially as shown and described.

7. In a mechanical or acoustic telephone, the combination of the conduit A, the angle-hanger, the line-wire D, and the telephone-instrument C, as shown and described.

8. In an acoustic or mechanical telephone, the combination of the conduit A, the line-wire D, the angle-hanger, the cord E, and the hooks H, as set forth.

9. The combination of the telephone C, the angle-hanger, the conduit A, the centering device F, and the line-wire, as set forth.

10. A centering device for line-wires, consisting of a perforated shell, and a cord looped alternately over said line-wire and through the perforations of the shell, as set forth.

326,459. BULB-CASE FOR INCANDESCENT ELECTRIC LAMPS. S. HOWARD SPRAGUE, Pittsburg, Pa. Filed Feb. 4, 1885. (No model.)



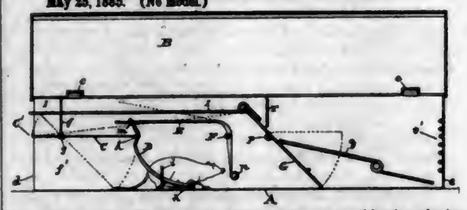
Claim.—1. A sectional casing translucent substantially throughout its entire surface, and adapted to inclose the bulb of an incandescent electric lamp, substantially as set forth.

2. A sectional casing translucent throughout, having a series of light-diffusing faces or projections upon its periphery, and adapted to inclose the bulb of an incandescent electric lamp, substantially as set forth.

3. A sectional casing translucent throughout, having an ornamented periphery and adapted to inclose the bulb of an incandescent electric lamp, substantially as set forth.

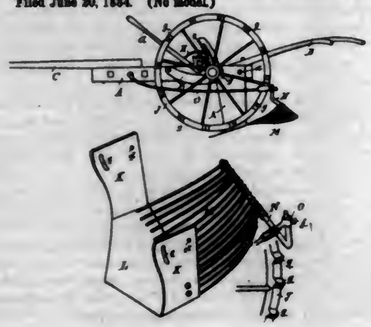
4. The combination of an incandescent electric lamp, a removable casing translucent throughout, formed in two or more sections and inclosing the bulb of said lamp, and a clamp or fastening connecting the sections of the casing, substantially as set forth.

326,460. ANIMAL-TRAP. ROBERT M. TATE, Somerset, Ky. Filed May 25, 1885. (No model.)



Claim.—A self-setting animal-trap having, in combination, the box A, provided with a pivoted tilting drop-door, C, the upper end, C', of which extends beyond the pivoting-point, a catch-wire having a bend, *k*, and an eye, *m*, a pivoted bait-trigger, E, one end of which passes through the eye of the catch-wire, a pivoted drop-door, G, leading to a closed compartment of the box, and a rod, I, rigidly attached to the last-named drop-door and extending back to and bearing upon the upper end, C', of the tilting drop-door, as shown and described.

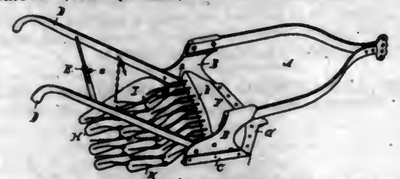
326,461. POTATO-DIGGER. CHARLES S. TORREY, Dimondale, Mich. Filed June 20, 1884. (No model.)



Claim.—1. In combination with the excavator L, the riddle M, composed of a series of spring-rods the front ends of which are secured to said excavator and their rear ends to a tie-bar, N, the arm O, connecting said tie-bar with the main frame, and the wheel J, having corrugations adapted in the rotation of said wheel to strike said arm O and vibrate said riddle, substantially as and for the purpose specified.

2. In combination with the excavator L of a root-digger, adjustably secured to the carrying-frame, the riddle M, composed of the tie-bar N, and a series of spring-rods the front ends of which are secured to the rear end of said excavator and their rear ends to the tie-bar N, said bar having an upturned end, and the arm O, one end adjustably sleeved on said upturned end and the other end pivotally secured to the frame, substantially as described.

326,462. ROOT-DIGGER. CHARLES S. TORREY, Dimondale, Mich. Filed Feb. 7, 1885. (No model.)



Claim.—1. In a root-digging, a frame carrying standards, in combination with handles which are secured together by an adjustable spreader-bar, whereby a longer or shorter mold-board may be secured between said standards, substantially as and for the purposes described.

2. In a root-digger, a double mold-board having at its rear edge a downwardly-projecting flange which is perforated, in combination with the hooks or loops *c*, extending rearwardly as a means of attaching a dirt-separator to said mold-board and forming itself a stationary grate, substantially as specified.

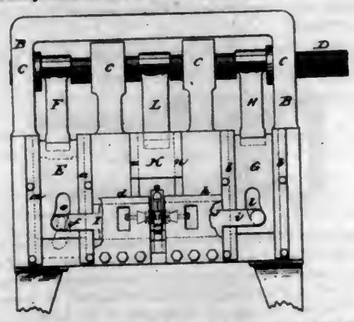
3. In a root-digging device, a dirt-separator or flexible apron composed of interwoven and reversible links H, secured to the rear edge of the mold-board, substantially as and for the purposes set forth.

4. In a root-digger, the sweep I, pivotally secured to the frame thereof, and means, substantially as described, for adjusting said sweep, as and for the purposes specified.

5. In a root-digging device, constructed substantially as described, the combination of the sweep and flexible apron or dirt-separator, substantially as and for the purposes specified.

6. A root-digging device consisting of the frame A, carrying the standards B, with shoes C attached thereto, handles D, connected by an adjustable spreader-bar, E, mold-board F, having point G, sweep I, and a flexible and reversible apron or dirt-separator attached to said mold-board, the parts being constructed, combined, and operating substantially as and for the purposes set forth.

326,463. MACHINE FOR MAKING TOE-CALKS. FRANK W. TUCKER, Waterbury, Conn. Filed Sept. 15, 1884. (No model.)



Claim.—1. The combination of the two horizontal slides I J, carrying in their adjacent faces, respectively, the dies *m n*, the cavity in the said dies corresponding to the finished calk, one of said cavities constructed with a projection, *r*, toward the other die, the inner end of the dies inclined to the line of the cavity corresponding to the inclination required for the end of the calk, a slide, K, having a reciprocating movement at right angles to the path of movement of the slides carrying the said dies *m n*, and the die M on said slide K, constructed with a cavity, *v*, in its face, substantially as described.

2. The combination of the reciprocating horizontal slides I J, the dies *m n*, respectively, in said slides I J, the reciprocating slide K at right angles to the path of movement of said slides I J, the dies *m n* forming a cavity between them corresponding to the finished calk, and the die M on the slide K, constructed with a cavity, *v*, in its face and with a cutting-edge, *w*, above it, substantially as and for the purpose described.

3. The combination of the like vertically-reciprocating slides E G, constructed, respectively, with a slot, *e l*, one portion of said slots inclined to the path of movement of the slides, and the other portion parallel therewith, the slides I J, connected, respectively, with the slides E G through their respective slots *e l*, the dies *m n*, arranged, respectively, in the slides I J, and having a cavity between them corresponding to the shape of the finished calk, the reciprocating slide K, and die M on said slide K, constructed with the cavity *v*, substantially as and for the purpose described.

4. The combination of the like vertically-reciprocating slides E G, constructed, respectively, with a slot, *e l*, one portion of said slots inclined to the path of movement of the slides, and the other portion parallel therewith, the slides I J, connected, respectively, with the slides E G through their respective slots *e l*, the dies *m n*, arranged, respectively, in the slides I J, and having a cavity between them corresponding to the shape of the finished calk, the reciprocating slide K, die M on said slide K, constructed with the cavity *v*, and with the cutting-edge *w* above said cavity *v*, substantially as described.

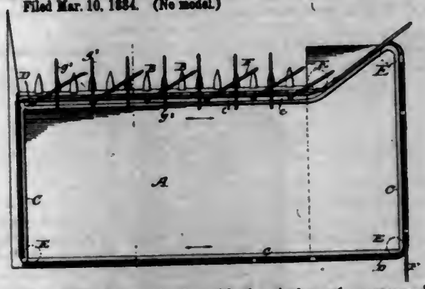
5. The combination of the two horizontal slides I J, carrying in their adjacent faces, respectively, the dies *m n*, the cavity between the said dies corresponding to the finished calk, one of said cavities constructed with a projection, *r*, toward the other die, the inner ends of the dies inclined to the line of the cavity corresponding to the inclination required for the end of the calk, a slide, K, having a reciprocating movement at right angles to the path of movement of the slides carrying the said dies *m n*, the die M on said slide K, constructed with a cavity, *v*, in its face, and the cutter *t*, arranged in connection with one of said dies *m n*, and reciprocating therewith, substantially as described.

6. The combination of the reciprocating horizontal slides I J, the dies *m n*, respectively, in said slides I J, the reciprocating slide K at right angles to the path of movement of said slides I J, the dies *m n* forming a cavity between them corresponding to the finished calk, the die M on the slide K, constructed with a cavity, *v*, in its face, and with a cutting-edge, *w*, above it, the cutter *t*, arranged in connection with one of said dies *m n* and reciprocating therewith, substantially as described.

7. The combination of the like vertically-reciprocating slides E G, constructed, respectively, with a slot, *e l*, one portion of said slots inclined to the path of movement of the slides, and the other portion parallel therewith, the slides I J, connected, respectively, with the slides E G through their respective slots *e l*, the dies *m n*, arranged, respectively, in the slides I J, and having a cavity between them corresponding to the shape of the finished calk, the reciprocating slide K, die M on said slide K, constructed with the cavity *v*, and the cutter *t*, arranged in connection with one of said dies *m n* and reciprocating therewith, substantially as described.

8. The combination of the like vertically-reciprocating slides E G, constructed, respectively, with a slot, *e l*, one portion of said slots inclined to the path of movement of the slides, and the other portion parallel therewith, the slides I J, connected, respectively, with the slides E G through their respective slots *e l*, the dies *m n*, arranged, respectively, in the slides I J, and having a cavity between them corresponding to the shape of the finished calk, the reciprocating slide K, die M on said slide K, constructed with the cavity *v*, the cutting-edge *w* above said cavity *v*, and the cutter *t*, arranged in connection with one of said dies *m n* and reciprocating therewith, substantially as described.

326,464. GRAIN-ADJUSTER. HOSMER TUTTLE, Cedar Rapids, Iowa. Filed Mar. 10, 1884. (No model.)



Claim.—1. In combination with the platform of a reaper or harvester and with the cutting apparatus thereof, a series of diagonally-presented grain-adjuster fingers, and means for moving the same along and above said cutting apparatus, substantially as specified.

2. In combination with the cutting apparatus of a reaper or harvester, an endless chain provided with diagonally-disposed grain-adjuster fingers, and means for moving said chain along over and in line with said cutting apparatus, substantially as specified.

3. A grain-adjuster comprising a standard adapted to be connected with an endless chain, and provided with oppositely-disposed projecting arms, the lower one of which is provided with a depending lug, with or without an anti-friction roller, substantially as specified.

4. The combination, with the cutting apparatus of a reaper or a harvester, of a series of grain-adjuster fingers, an endless chain carrying the same, and a series of guards arranged to co-operate with the adjuster-fingers, substantially as specified.

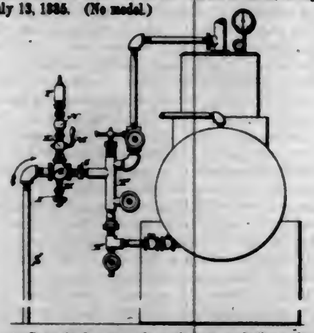
5. The combination of a platform of a reaper or harvester, a rib extending about the same, a second rib arranged parallel with the cutting apparatus to form a groove, an endless chain, guiding-pulleys, and grain-adjuster fingers mounted on the chain, and having an arm provided with a depending lug adapted to ride in the groove, substantially as specified.

6. A guard for a grain-adjuster comprising a standard and a horizontal arm, joined to each other and mounted upon the cutting apparatus, substantially as specified.

7. A guard, G, having the horizontal arm g^2, the arm g' parallel thereto, and the standard g, substantially as shown and described.

8. The grain-adjuster consisting of the post f, having the front and rear arms, f' f^2, at its top, the rear arm, f^3, at or near its bottom, provided with an anti-friction roller, f^4, and the base f^5, substantially as shown and described.

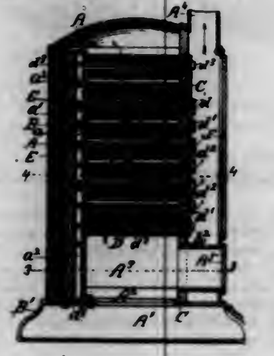
326,465. FEED-WATER ALARM. ADAM P. URET, Sandy Lake, Pa. Filed July 13, 1885. (No model.)



Claim.—1. In a feed-water alarm for steam-boilers, the combination of a suitable casing having laterally-extending openings, whereby it may be mounted upon the suction-pipe closely adjoining the injector, a diagonal partition separating the said openings, and having a valve-seat, an upwardly-opening check-valve mounted in the latter, a casing connected to the upper end of the said main casing and having a one-way cock, a casing connected to the upper end of the latter casing and having an upwardly-opening air-valve, and a steam-whistle connected to the upper end of the said valve-casing, all constructed and operating substantially as and for the purpose herein set forth.

2. In a feed-water alarm for steam-boilers, the herein-described casing having laterally-extending openings separated by a diagonal partition having a seat for an upwardly-opening check-valve, in combination with a screw-threaded stem working in the lower end of the said casing, and adapted to raise the said check-valve from its seat, a one-way cock arranged above the said casing, an upwardly-opening air-valve, and an alarm-whistle, all arranged and operating substantially as and for the purpose herein shown and specified.

326,466. STEAM-GENERATOR. HENRY H. WARD, Batavia, Ill. Filed Apr. 3, 1885. (No model.)



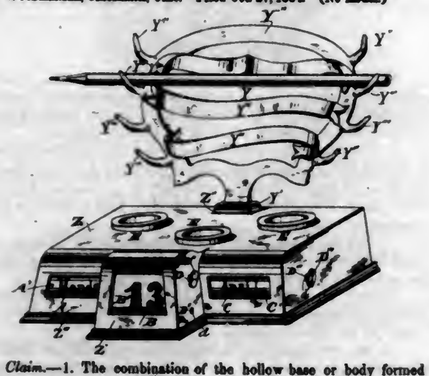
Claim.—1. In a steam-generating apparatus of the character hereinbefore described, the combination, with an inclosing-jacket provided with inwardly-projecting lugs, of a perforated front plate, a double hollow perforated back plate, and a supporting-base, substantially as set forth.

2. In a steam-generating apparatus, the combination, with a double back plate, as described, of a front plate, the water-tubes loosely inserted between said plates, the flues inclosed by said tubes and having threaded projecting ends, one end of said flues being adapted to screw into the outside back plate and the opposite ends to receive a screw-threaded clamping-nut, whereby the parts are drawn together to form a tight joint, substantially as set forth.

326,467. DRYING-OIL. CHARLES A. WITTMACK, New York, N. Y., assignor of two-thirds to W. Newton Collins and Pierre De P. Ricketts, both of same place. Filed June 18, 1885. (Specimens.)

Claim.—An oil for paints and varnishes, consisting of a mixture of petroleum, rosin or rosin-oil, linseed-oil, cotton-seed oil, and manganese binoxide, substantially in the proportions specified.

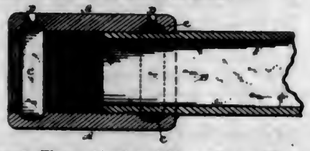
326,468. COMBINED INKSTAND AND CALENDAR. FRANK A. WOODMANSEE, Cincinnati, Ohio. Filed Oct. 27, 1884. (No model.)



Claim.—1. The combination of the hollow base or body formed with ink-well openings at top, day-number, day-name, and month-name openings in front of said ink-well openings, and hangers at the rear of the center opening, rollers or shafts journaled in the front projection, rollers or shafts journaled at their outer ends in the ends of said base or body and at their inner ends in their respective hangers, substantially as set forth.

2. The combination of the hollow base or body formed with day-number, day-name, and month-name openings in front, and hangers at the rear of the center opening, rollers or shafts journaled in the projection, rollers or shafts journaled at their outer ends in the ends of said base or body and at their inner ends in their respective hangers, substantially as set forth.

326,469. PERMANENT PIPE-COUPLING. FRED E. YOUNGS, Allegheny, Pa. Filed Feb. 12, 1885. (No model.)



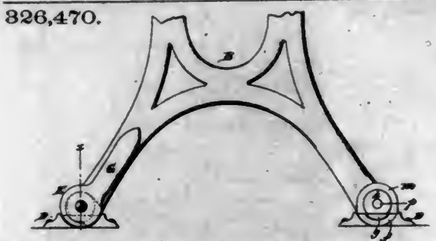
Claim.—1. The combination of the coupling and the pipe connected thereto, the thread of one or both of the parts being covered with a solder that fuses at a low temperature, and the threaded surfaces solidly joined by means of the interposed metal, substantially as shown.

2. In a pipe-coupling, the combination of the coupling and pipe, one or both of which have their screw-threads covered with a solder that fuses at a low temperature, so that the two opposing screw-threaded surfaces are solidly joined together by the fusible metal that is interposed between the threads, the coupling being provided with a recess, C, which is filled with solder, lead, or other suitable composition, substantially as set forth.

326,470. DEVICE FOR DETACHABLY SECURING DESKS, SEATS, &c., TO FLOORS. WALTER F. YOUNG, Merrill, Wis., assignor of one-half to Charles M. Strobridge, same place. Filed June 25, 1885. (No model.)

Claim.—1. The combination, with the leg of a desk, chair, or other article of furniture having a foot provided with segmental projections and a recessed foothold fixed to the floor, and also having segmental projections, of a pair of recessed cam-disks pivoted in said foot and adapted

326,470.

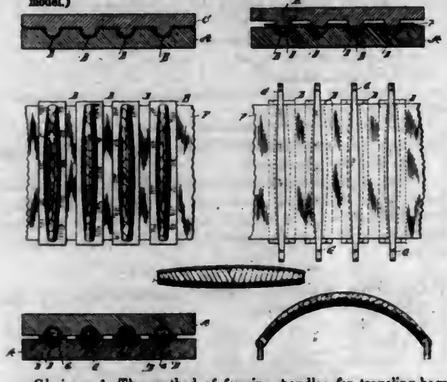


to secure the article of furniture in position by drawing its feet into firm contact with their footholds, substantially as described.

2. The combination, with an article of furniture having a leg, as B, provided with segmental projections k k, of cam-disks E E, journaled in said projections and having cam-flanges t t and openings v v, and the foothold D, having grooves f f and segmental projections g g, substantially as described.

3. The combination, with the leg of a desk, chair, or other article of furniture having a foot provided near the floor and on its outer vertical side with a transverse recess, b, of a foothold, C, secured to the floor and provided with a counterrunk recess, c, and a flange, d, located immediately above said recess, substantially as described.

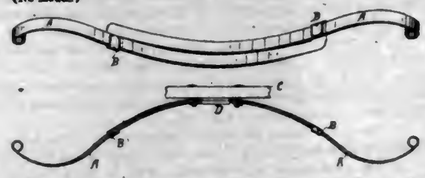
326,471. MANUFACTURING HANDLES FOR TRAVELING-BAGS. FREDERICK ARMBRUSTER, New York, N. Y. Filed Apr. 18, 1885. (No model.)



Claim.—1. The method of forming handles for traveling-bags, satchels, &c., which consists in stamping the half-covers into shape by means of male and female dies or molds, then filling the blanks so formed with rope or hemp and paper suitably twisted and shaped, securing the metallic fastening-clips between them, removing the pressed halves and centering them, and finally stitching the halves together, as set forth and shown.

2. The method of forming handles for traveling-bags, satchels, &c., which consists in stamping the half-covers into shape by means of male and female dies, then inserting the filling in these blanks and applying pressure a second time by means of the dies, and finally in folding the halves together back to back and stitching them at the edges, as set forth.

326,472. VEHICLE-SPRING. ALBERT ARMSTRONG, Cincinnati, Ohio, assignor of one-half to Herman Wenda, same place. Filed July 22, 1885. (No model.)

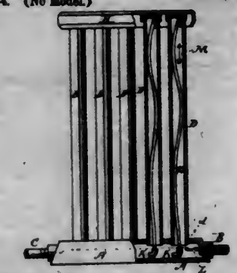


Claim.—1. A vehicle-spring consisting of the two similar members A A, arranged side by side, as shown, the inner end of each member overlapping the opposite member, and the two members being coupled by a loop.

2. The combination, substantially as described, in a vehicle-spring, of the two members A A, arranged together side by side, the inner end of the main leaf of each member being turned into a loop, B, to overlap and couple both members together, substantially as described.

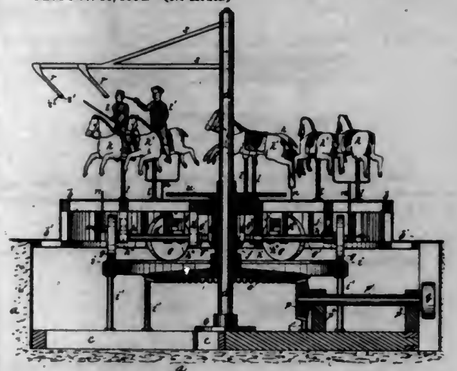
3. In a vehicle-spring, the combination, substantially as specified, of the two similar members A A, each having a loop, B, to couple the two members together upon opposite sides of the center, the sill C, and the clip D, to couple the spring centrally to the sill C, substantially as shown and described.

326,473. RADIATOR. CHARLES E. ASHCROFT, Lynn, Mass. Filed June 23, 1884. (No model.)



Claim.—In a radiator, the combination of the base A, having an inlet-pipe, B, and outlet-pipe C, and the radiating-pipes D, with the circulating-pipes E, located within the radiating pipes D, each circulating-pipe E having a curved lower end, K, whereby its delivery is parallel with the general flow through the base A, all operating together substantially as described, and for the purpose set forth.

326,474. ROUNDABOUT. GOTTFRIED BUNGART, Brooklyn, N. Y. Filed Nov. 18, 1884. (No model.)



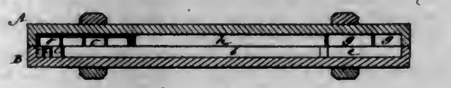
Claim.—1. In a roundabout, the combination, with a rotating platform carrying objects or imitation animals, &c., and a fixed vertical guide-shaft on which the platform rotates, of ring-tilting attachments secured to an arm projecting from the fixed guide-shaft and located above the objects carried by the platform, substantially as set forth.

2. In a roundabout, in combination, the platform b, the supporting-wheels g g, provided with crank-axles m m, the bifurcated connecting-rods n n, and the imitation animals k k', pivoted on the standards l l, projecting from the platform b, substantially as set forth.

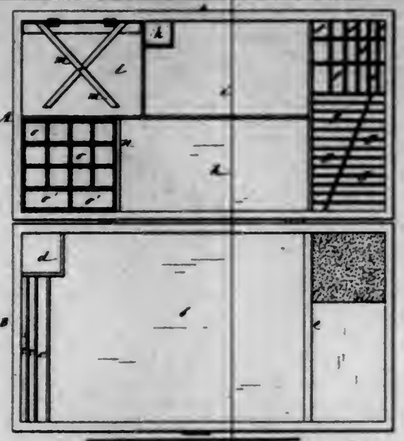
3. In a roundabout, in combination, the platform b, the supporting-wheels g g, provided with crank-axles m m, the bifurcated connecting-rods n n, the imitation animals k k', pivoted on the standards l l, projecting from the platform b, the fixed guide-shaft d, projecting arms s, and ring-tilting attachments r r, substantially as set forth.

326,475. JOB-PRINTER'S CASE. GEORGE W. BUTLER, Chicago, Ill. Filed May 6, 1884. (No model.)

Claim.—In job-printers' cases, the case A, having arranged within it a series of compartments, f, for containing leads, diagonally-divided compartments g g, for holding slugs and leads of different lengths, a compartment, h, for holding head and display lines or like work, a compartment, i, for shears, nippers, and other tools or manipulating articles, a compartment, l, fitted with a cover, for the reception of copy, time-tickets, and proof, or any of them, and a compartment, n, holding a tray of removable figure and space boxes, essentially as described.



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326,476. BOOT OR SHOE SOLE AND HEEL. GEORGE F. BUTTERFIELD, Stoneham, Mass. Filed Jan. 30, 1885. (No model.)



Claim.—A sole or heel for boots or shoes, having a rubber body and a non-conducting layer of asbestus upon its inner surface, substantially as set forth.

326,477. CATCH FOR JEWELRY-PINS, &c. CLARENCE E. CARPENTER, Horseheads, N. Y. Filed Jan. 27, 1885. (No model.)



Claim.—The combination, with the plate provided with a small upright or projection and the pin, of the outer barrel, which is rigidly attached to the base, and having a longitudinal slot in the upper surface thereof for passage of the point of the pin, and the inner barrel having a lug or projection sliding in the slot of said outer barrel, substantially as shown and described.

326,478. VAPOR-GENERATOR. MILTON CHASE, Haverhill, assignor of one-half to Horace Chase, Boston, Mass. Filed May 3, 1884. (No model.)

Claim.—1. An apparatus for generating vapor or gas for the development of power, consisting of an inner smaller boiler for containing a volatile liquid and inclosed within a larger boiler containing a chemical solution, each boiler being connected to separate condensers and provided with suitable connections, substantially as set forth.

2. The boiler B, provided with a series of longitudinal tubes, *b*, through which circulate the contents of the boiler A, in combination with and inclosed within boiler A, provided with longitudinal tubes at its central portion, through which pass the products of combustion from the furnace, substantially as set forth.

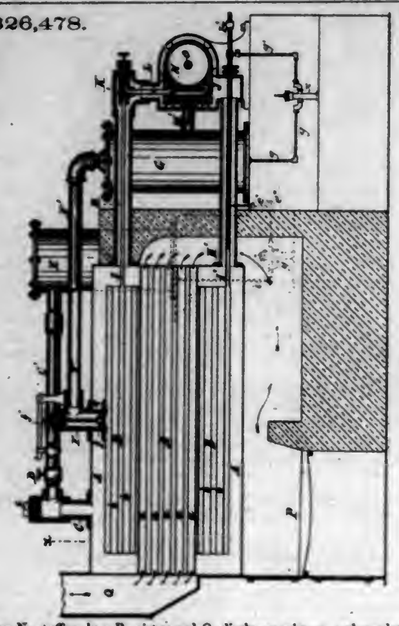
3. The combination, with the interior boiler, B, of the exterior boiler, A, provided with tube C, the pipe C', having a valve, D, and the condenser E, as set forth.

4. The combination, with the boiler B, of the pipes H H', the pipes I I', provided each with a valve, the pipe L, valve-chest M, cylinder N, and jacket J, substantially as set forth.

5. In a vapor-generator, the cage or ring S, constructed with a groove in its periphery, and passages S, leading from the groove to the center of the ring, in combination with the cylinder N, stuffing-box R, piston-rod O, lubricant-supply pipe T, the condenser G, and pipe u, substantially as and for the purpose specified.

6. In a vapor-generator, the cage or ring S', constructed with a peripheral groove and radial passages *s*, in combination with the cylinder N, stuffing box R, piston-rod O, discharge-pipe u, and condenser G, as and for the purpose set forth.

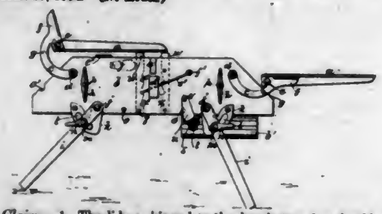
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326,479. DISINFECTANT. FRANK Y. CROMWELL, Erie, Pa. Filed Nov. 22, 1884. (Specimens.)

Claim.—The herein-described composition of matter for disinfecting purposes, consisting of caustic soda, water, commercial sulphate of iron, gum-camphor, oil of tar, and pulverized charcoal, in the proportions substantially as specified, molded into solid cakes, substantially as set forth.

326,480. WASH-TUB. GEORGE W. CROUSE, Lexington, N. C. Filed Mar. 28, 1884. (No model.)



Claim.—1. The lids *a*, hinged to the brackets *c f*, and said brackets hinged to the sides of the tub, and having stops *g*, and the tub provided with stop-rests *c'*, in combination, substantially as described.

2. The combination, with the tub *b*, of legs *i*, hinged to the tub at *j*, and connected by clamp-bolts *m* and nuts *n* with the slotted stay-brackets *k*, substantially as described.

3. The combination of the tub, the valve *q*, fitted on the lever *s*, having a fulcrum, *t*, and extending from under the tub to the operator's position, and a button, *u*, on the side of the tub, adapted to hold the valve closed and stop the waste-passage, substantially as described.

4. The washer-holding bars *w*, arranged in pairs, one pair having a series of notches, *x*, and the other pair having steps *x'* for the washer, one bar of each pair being fitted on a pivot, *y*, to open for the adjustment of said washer, in combination with the wash-tub *b*, having a fastening-button, *z*, substantially as described.

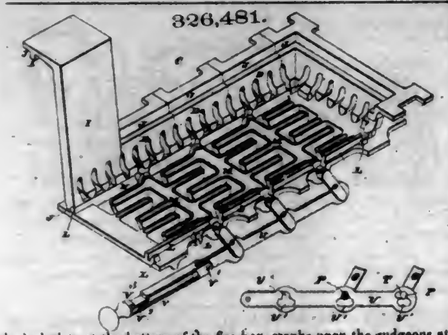
5. The combination of the valve *d'* and adjustable spring-holder *e'* with the tub *b*, having a slot, *a'*, in the side, substantially as described.

6. The combination, with the wash-tub *b*, of lids *a*, pivoted to brackets *c*, which are jointed to the tub, the said joints comprising the flanged thimbles *g'* and pivot-bolts, substantially as described.

326,481. GRATE. LUCIUS L. CULVER, St. Louis, Mo. Filed May 12, 1884. (No model.)

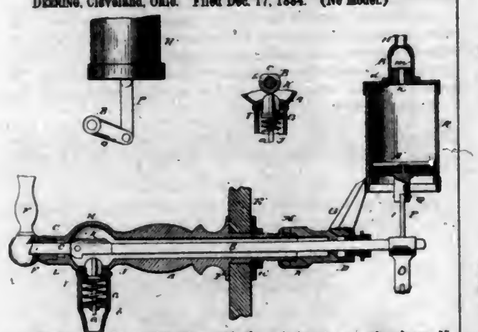
Claim.—1. In a range or stove, a grate consisting of two or more sections made with interlocking arms and gudgeons that rest in notches in the bed-plate at the bottom of the fire-box, cranks upon the gudgeons at one side of the box, a bar connecting the cranks, and a handle connected to the bar and extending out through an opening in the wall of the range or stove, and having notches on its lower and upper edges that engage with the wall, the lower one to prevent the grate being accidentally dumped and the upper one to limit the shaking of the grate, as set forth.

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2. In a range or stove, a grate consisting of two or more sections provided with interlocking fingers or arms and having gudgeons resting on the bed-plate at the bottom of the fire-box, cranks upon the gudgeons at one side of the box, projections with buttons or heads on the lower ends of the cranks, a bar having opening to receive the buttons or heads, and projections to connect the cranks, and a handle connected to the bar and extending out through an opening in the wall of the range or stove and adapted to be pulled out to dump the grate, to be shaken with a limited movement, and to hold the grate from being accidentally dumped, substantially as set forth.

326,482. BEER-FAUCET AND AIR-PUMP COMBINED. MARK L. DEERING, Cleveland, Ohio. Filed Dec. 17, 1884. (No model.)

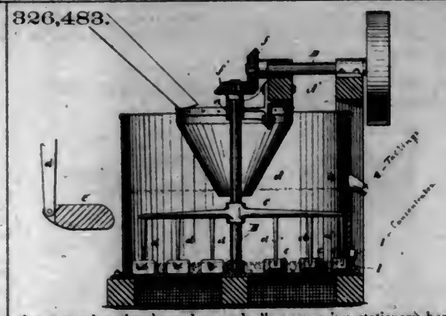


Claim.—1. In combination with the tubular stem A, the sleeve N, forming a continuation thereof, and provided with a stuffing-box and a projecting bracket, G, the air-pump supported on said bracket, the shaft passing through and projecting from said sleeve, and connections between the air-pump and shaft, as set forth.

2. In a faucet having arranged longitudinally throughout the bore thereof, a shaft carrying a cam adjusted thereon, a spring-valve in the nozzle adapted to close the opening in the nozzle of the faucet at the opposite end, a sleeve provided with an opening for a pipe or hose, and an opening for and having the end of the shaft B projecting from the said sleeve connected to an air-pump for forcing air into the barrel to which the pump is connected, substantially in the manner as herein set forth.

3. In combination, the tubular stem of a faucet, a spindle or shaft extending entirely through and projecting from each end thereof, a valve, a cam or eccentric mounted on said shaft within the tubular stem for operating said valve, a handle secured on one of the projecting ends of the shaft, a crank secured on the other projecting end, and an air-pump operated by said crank, as set forth.

326,483. AMALGAMATOR. FRANKLIN L. DOWNEND, Idaho Springs, Colo. Filed Feb. 11, 1885. (No model.)

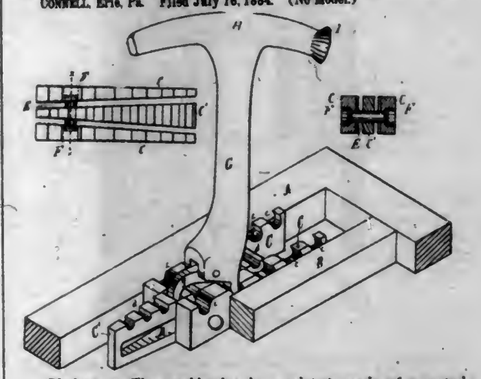


Claim.—1. The combination, with the amalgamating-pan having a stationary funnel or hopper supported in the top thereof, and a revolving shaft passing through said hopper and carrying an agitator below said hopper adapted to drag the bottom of said pan, of a concentrator opening above the amalgam in said pan, and a discharge-opening above said concentrator opening and opposite to or slightly above the bottom of said funnel.

2. The combination, with the amalgamating-pan having the discharge-opening therein, and a gradually-converging stationary hopper or funnel supported in the top of said pan, of a vertical revolving shaft passing through said funnel and provided below said funnel with a cross-bar having depending arms and a series of dragging shoes hinged to the lower extremities of said arms and adapted to drag the bottom of said pan, substantially as set forth.

3. The combination, with the open amalgamating-pan provided with a discharge-opening in the side thereof, a gradually converging or tapered hopper supported in the top of said pan and adapted to be adjusted vertically to change its position relative to the discharge-opening, of a vertical revolving shaft passing through said funnel and provided below said funnel with a cross-bar having a series of hinged shoes attached thereto, adapted to drag the bottom of said pan, and a horizontal shaft supported at the top of the pan and provided with a bevel-gear adapted to engage a bevel-gear on the top of said vertical shaft.

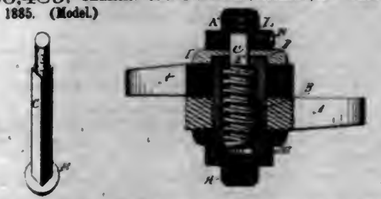
326,484. PRINTER'S QUOIN. JULIUS R. DRODZEWSKI and JOHN MCCONNELL, Erie, Pa. Filed July 16, 1884. (No model.)



Claim.—1. The combination, in a printer's quoin, of a central wedge-shaped section having a longitudinal slot therein, with two side sections, the inner faces whereof are inclined to fit the wedge-shaped central section, and having countersunk rivet-holes therein, substantially as shown, and a loose rivet passing through said countersunk holes and said slot, substantially as and for the purpose set forth.

2. The combination, in a printer's quoin, of the central wedge-shaped section, C', provided with the longitudinal slot D, and notches *d*, and the side sections, C C, provided with countersunk rivet-holes F F, and notches *c*, with the loose rivet E, substantially as and for the purpose set forth.

326,485. SHEARS. JOHN L. DUFRANE, Rockford, Ill. Filed Feb. 17, 1885. (Model.)

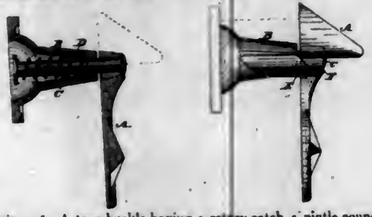


Claim.—1. The combination, with the shear-blades, of the tubular journal, a spring-actuated bolt arranged within the journal, and a countersunk washer held by a nut, substantially as set forth.

2. The combination, with the shear-blades, of a tubular journal threaded at one end to receive a cap, a spring-actuated bolt arranged

within said tubular journal and projecting through an opening in the head thereof, a countersunk washer, and a securing-nut and set-screw for said bolt, substantially as set forth.

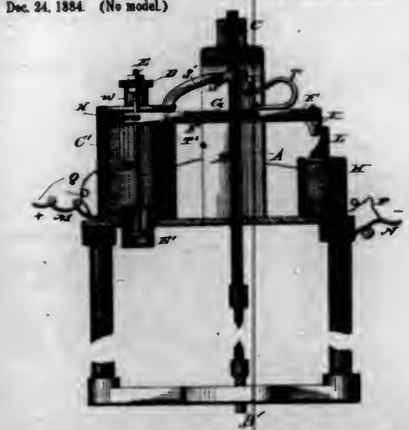
326,486. SHUTTER-FASTENER. JOSEPH S. DURHAM, Salem, N. J. Filed Jan. 31, 1885. (Model.)



Claim.—1. A turn-buckle having a rotary catch, a pintle connected with said catch, a spring inwardly pressing said catch, a support for said pintle, and a piece with an inclined face, whereby when the catch is rotated it rides on the said inclined face in both directions of rotation and receives longitudinal motions, substantially as and for the purpose set forth.

2. In a turn-buckle, the combination of a rotary weighted catch having an inclined lip and a support having on its front an inclined lug, the said lip riding on the said lug when the catch is rotated, substantially as and for the purpose set forth.

326,487. ELECTRIC LAMP. JAS. DURHAM, South Bend, Ind. Filed Dec. 24, 1884. (No model.)



Claim.—1. In an electric lamp, the clutch-ring surrounding the upper carbon, supported on one side by a curved spring, to which it is united by a hinge joint or pivot, and having an arm on the side opposite the spring adapted to strike against a proper point of the lamp as the clutch-ring, arm, and spring descend with the carbon, thus tending to release the clutch, substantially as specified.

2. In an electric-arc lamp, the combination, with a lever actuated by the main coil and the shunt-coil, and fulcrumed at one side of the carbon rod, of the spring located on the opposite side of said rod and supporting the clutch at one end, while the other end rests upon the lever, whereby the movement of the carbon is controlled, substantially as specified.

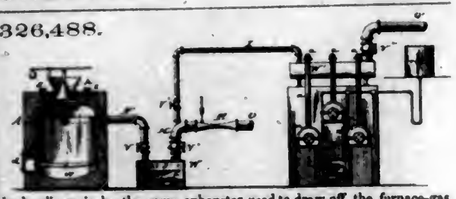
3. The combination, in an electric lamp, of the ring S, provided with the arm S', adapted to strike against a proper point as the clutch descends, and the spring T, united by a hinge-joint to the ring of the clutch, substantially as specified.

4. The combination, with the carbon rods, the lamp-frame, and the lever F, pivoted at G, and actuated by the coils C' and K, of the spring T and the clutch-ring S, provided with the arm S', substantially as specified.

326,488. APPARATUS FOR THE MANUFACTURE OF ILLUMINATING-GAS. FREDERIC EGNER, St. Louis, Mo. Filed May 23, 1885. (No model.)

Brief.—Gas is generated in a furnace by the combustion of a mixture of bituminous coal (about two-thirds) and coke, (about one-third,) caused by the admission of air and by the decomposition of steam, as much steam being admitted as is consistent with combustion of the fuel, and the resulting gases are drawn off by an exhauster, which also serves to draw air into the fuel-chamber. At the same time a rich gas is generated in a bench of retorts from coal or oil, and is drawn off through the

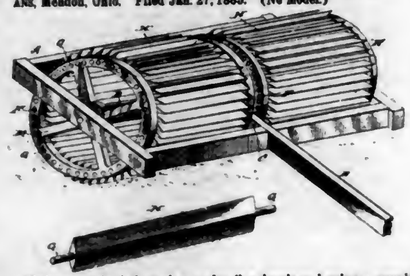
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hydraulic main by the same exhauster used to draw off the furnace-gas, whereby the hydrogen and carbonic oxide from the furnace and the carbureted hydrogen from the retorts are intimately mixed together.

Claim.—The combination, substantially as before set forth, of the generator, bench of retorts, hydraulic seals, valves, pipes, and exhauster, connected as herein described, and operated as a whole together.

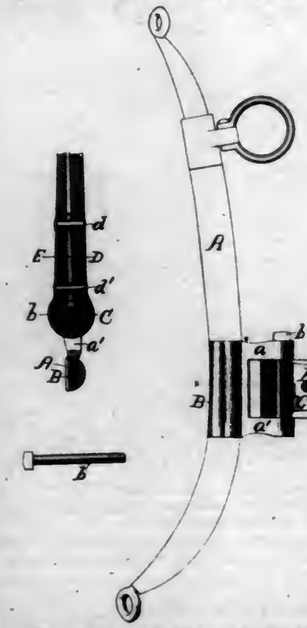
326,489. CLOD CRUSHER AND PULVERIZER. THEODORE F. EVANS, Meadon, Ohio. Filed Jan. 27, 1885. (No model.)



Claim.—1. A clod-crusher and soil-pulverizer having a number of double-edged cutters or slats rhombic in cross-section, pivoted with spaces between them and rocking freely without revolving, so as to form the periphery of a roller, as and for the purpose shown and set forth.

2. The combination of the wheels or heads, having the transverse perforations near the edges, with the cutters or cross-slats having their inner and outer edges sharpened, forming the figure of a rhomb in cross-section, and pivoted with their reduced ends in the perforations in the heads, with spaces between them, so as to rock freely without revolving, as and for the purpose shown and set forth.

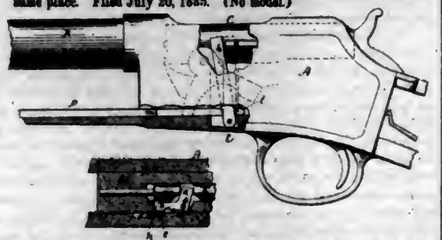
326,490. HAME. CHARLES H. FIELDS, Chicago, Ill., assignor of one-half to Edward S. Turner, same place. Filed July 22, 1884. (No model.)



Claim.—In a hame-tug, the combination of the following elements, consisting of the hame-bar A, the clip B, provided with the projecting arms *a a'*, the removable screw-threaded bolt *b*, the friction-sleeve C,

provided with the flap E, the draft-strap D, and means for securing said flap and draft-strap together, substantially as and for the purpose set forth.

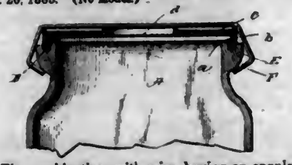
326,491. MAGAZINE FIRE-ARM. WILLIAM B. FRANKLIN, Hartford, Conn., assignor to the Colts Patent Fire Arms Manufacturing Company, same place. Filed July 20, 1885. (No model.)



Claim.—1. In a breech-loading fire-arm in which the breech-piece is arranged to move longitudinally toward and from the barrel in closing and opening, the combination therewith of a firing-pin extending longitudinally through the breech-piece, a lever hung in the breech-piece in a horizontal plane, one arm of said lever adapted to engage the firing-pin, the other arm extending at substantially right angles to the first, and adapted to enter a recess in the side of the receiver provided for it when the breech-piece is in its closed position, substantially as described, and so that the first part of the rear movement of the breech-piece will take the said arm out of said recess, thereby turning the lever to retract the firing-pin.

2. In a fire-arm having a longitudinally-movable breech-piece, a connecting-bar beneath the breech-piece extending forward beneath the barrel, the said bar in connection with the breech-piece, and so that longitudinal movement of the said connecting-bar will impart corresponding longitudinal movement to the breech-piece, the combination therewith of an L-shaped lever hung in the breech-piece, and so as to swing in a horizontal plane, one arm of said lever in connection with the firing-pin, the other arm adapted to enter a recess formed for it in the side of the receiver, a vertical lever hung in the receiver, and adapted to work back and forth in said firing-pin-lever recess, the connecting-bar constructed with shoulders, one in rear and the other in front of said vertical lever, substantially as described, and whereby in the extreme rear movement of the said connecting-bar the said vertical lever will be thrown into the firing-pin-lever recess to prevent the entrance of the firing-pin lever into said recess, and in the extreme forward movement of said connecting-bar the said vertical lever will be thrown from said recess to permit the firing-pin lever to enter therein.

326,492. CAP FOR FRUIT-JARS. CHARLES H. FRY, Jr., Wheeling, W. Va., assignor of one-half to Charles M. Rhodes, Bridgeport, Ohio. Filed Jan. 26, 1885. (No model.)



Claim.—The combination, with a jar having an annular groove at the mouth, of the cap provided with a downturned edge, and a gasket extending down and around the same and packed in the groove on each side of the edge when the gasket is in place, substantially as specified.

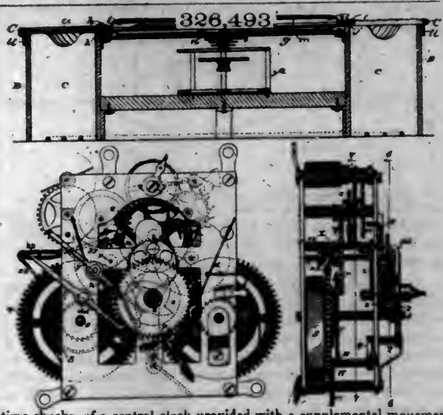
326,493. APPARATUS FOR CONTROLLING THE ISSUE OF TIME-CHECKS. JOHN S. GOLDSMITH, New York, N. Y. Filed Dec. 8, 1884. (No model.)

Claim.—1. An apparatus for controlling the issue of time-checks, having a check-holder with check-compartments corresponding in number with uniform divisions of time, and guarded by a rotary mask having an aperture affording access to one of said compartments at a time, and automatically actuated to open successive compartments at the beginning of the corresponding time periods, substantially as herein specified.

2. The combination, in an apparatus for controlling the issue of time-checks, of a central clock, an annular check-holder having radial check-compartments corresponding in number and distribution with given divisions of the clock-dial, and a rotary mask having an aperture affording access to one of said compartments at a time, and shifted periodically to open successive compartments, the shifting of said mask, being controlled as to time by the movement of said clock, substantially as herein specified.

3. The combination, in an apparatus for controlling the issue of

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time-checks, of a central clock provided with a supplemental movement driven independently and liberated periodically by the main movement, an annular check-holder having check-compartments corresponding in number with said time periods, and a rotary mask having an aperture affording access to one of said compartments at a time, and instantaneously shifted at the beginning of each of said time periods by said supplemental movement, substantially as herein specified.

4. The combination, substantially as herein specified, of an annular mask having an aperture to afford access to a series of check-compartments, one at a time, in periodical succession, spring-driven clock-work liberated by a time-movement at given periods, and having an escapement which suitably limits its motion at each liberation thereof, an arbor central to said mask, driven by said clock-work, and a collar applied to said arbor, connected by radial arms with said mask for supporting and rotating the latter in the manner set forth.

5. The combination, with a rotary mask serving to guard time-check compartments, of clock-work connected with the arbor of said mask by a pawl and ratchet-wheel, and liberated periodically by a time-movement, said pawl being carried by an arm of a rock-shaft having a retracting-spring applied thereto, and which also carries a bell-striking hammer for giving audible notice of the shifting of said mask in each act of retracting the propelling-pawl, as herein specified.

6. The combination, with a rotary mask serving to guard time-check compartments, of clock-work connected with the arbor of said mask by a pawl and ratchet-wheel, and liberated periodically by a time-movement, and a locking-piece connected with the escapement of said clock-work, and thereby interlocked with said ratchet-wheel at the end of each shifting of said mask, substantially as herein specified, to prevent turning the mask by hand.

7. In an apparatus for controlling the issue of time-checks, a mask for guarding the check-compartments, having an aperture to afford access to the latter, one at a time, and composed of wire-gauze stretched upon an annular frame of wire, with frame-wire bordering said aperture, substantially as herein specified.

8. In an apparatus for controlling the issue of time-checks, having a central clock surrounded by a check-holder open at top, substantially as herein specified, a rotary annular mask to guard the check-compartments, united with the outer hinge-frame of the clock-face glass, in combination with radial arms for carrying and attaching said mask projecting from a collar which embraces a sleeve-arbor behind the hour-hand, interlocked at their outer ends with said hinge-frame, and fastened together with said clock-face glass by a lock or seal, substantially as shown.

326,494. APPARATUS FOR RECEIVING TIME-CHECKS. JOHN S. GOLDSMITH, New York, N. Y. Filed Dec. 8, 1884. (No model.)

Claim.—1. An apparatus for receiving time-checks, having a series of check-compartments corresponding with successive uniform time-periods, an annular series of chutes communicating therewith, and a rotary



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mask which guards the upper ends of said chutes, having a radial slot to admit time-checks into one of said chutes at a time, and automatically shifted to give access to the next of the series at the beginning of said time-periods successively, substantially as herein specified.

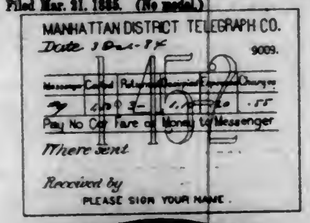
2. In an apparatus for receiving time-checks, the combination of a horizontal mask revolving step by step and having a radial inlet-slot therein, a radial series of check-compartments with which said slots communicate at top successively, and a ring-slide forming the outer walls of said compartments, and having a hand-hole, which is adapted to be aligned with the open outer end of either of said compartments at will, and is fitted with a door having a lock or seal fastening, substantially as herein specified.

3. In an apparatus for receiving time-checks, the combination of a central clock surrounded by any annular series of check-chutes, and a rotary mask guarding the upper ends of the latter and actuated periodically by the movement of said clock at the top of the apparatus, with a relatively large base occupied by radial check-compartments communicating at top with said chutes, substantially as herein specified.

4. In combination with a rotary mask having an aperture for the passage of time-checks, a clock-movement having a supplemental spur-wheel carried by its main arbor, a pinion in mesh therewith carrying a spindle, a one-toothed pinion carried by said spindle, and a spur-wheel having a sleeve-arbor loosely embracing that of the hour-wheel, substantially as herein specified, for revolving said mask step by step in the manner herein set forth.

5. In combination with a rotary mask having an aperture for the passage of time-checks, a clock-movement having a supplemental spur-wheel carried by its main arbor, a pinion in mesh therewith carrying a spindle, a one-toothed pinion carried by said spindle, a spur-wheel having a sleeve-arbor loosely embracing that of the hour-wheel, and a locking-lever having a lug to lock the wheel last named after each actuation thereof, and provided with a rigid arm engaged by said one-toothed pinion to unlock this wheel at the beginning of each actuation thereof, substantially as herein specified.

326,495. TIME-CHECK SYSTEM. JOHN S. GOLDSMITH, New York, N. Y. Filed Mar. 21, 1885. (No model.)

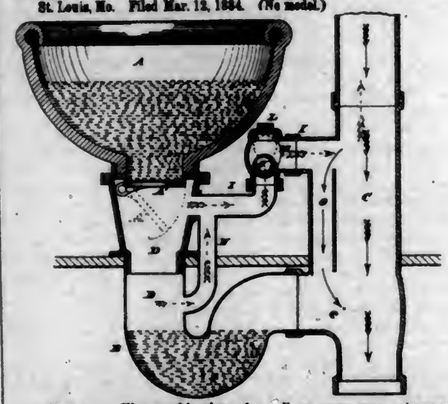




Claim.—1. In a time-check system, the within-described method of determining duration, consisting in limiting the issue of tickets or checks to given short-time periods by permanent time-control characters on each indicating the beginning of the longer time-periods which are to be controlled, and providing for the reception of returned tickets or checks, a receiving apparatus having a series of check-compartments, each representing a given ending-time period, and opened and closed in proper succession under the control of time mechanism, substantially as and for the purposes herein set forth.

2. The within-described time-check system or method, consisting in providing a series of tickets or checks with permanent time-control characters to indicate the beginning of the longer time-periods which are to be controlled, controlling the issue of such tickets or checks by an apparatus having a corresponding series of check-compartments supplied with tickets or checks appropriate to the respective short-time periods which they represent, and opened and closed in proper succession under the control of time mechanism, and providing for the reception of returned tickets or checks, a receiving apparatus having a series of check-compartments, each representing a given ending-time period, and opened and closed in proper succession under the control of time mechanism, for insuring promptness and correct charges in messenger service, for example, and preventing the concealment of pilfering, in the manner herein set forth.

326,496. WATER-CLOSET ATTACHMENT. WILLIAM H. GRAHAM, St. Louis, Mo. Filed Mar. 12, 1884. (No model.)

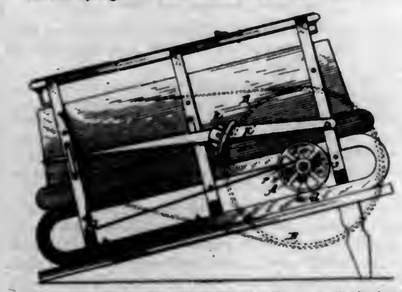


Claim.—1. The combination of a soil or waste pipe, a hopper, a chamber beneath the hopper, a trap between the chamber and waste-pipe, a valve between the hopper and chamber, a pipe connecting the chamber with the waste-pipe, and an automatic valve in the pipe adapted to be opened by the gases forced from the chamber by the water-pressure when the hopper-valve is opened and preventing gases from the waste-pipe entering the chamber.

2. The combination of a waste-pipe, a hopper, valve to the hopper, chamber beneath the hopper, trap connecting the chamber with the waste-pipe, ventilating-pipe extending from the upper part of the chamber to the waste-pipe, a branch pipe extending from the lower part of the chamber to the ventilating-pipe.

3. In combination with the bowl, trap, and waste-pipe of a water-closet, the air passage or port O, to prevent a siphon being created between the trap and waste-pipe, substantially as shown and described.

326,497. GOVERNOR. LEONIDAS GRAY and ALBERT Y. GRAY, Middletown Springs, Vt. Filed June 29, 1885. (No model.)

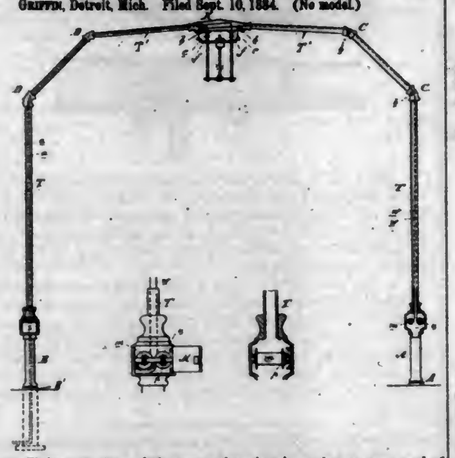


Claim.—1. In combination with the loose wheel, the bar fixed to the shaft, and the weighted levers carrying brake-shoes and connected by a link pivoted directly to the bar, substantially as described.

2. In combination with the weighted levers pivoted on the fixed bar C, and in the described relation to the wheel A, the connecting-bar *e*, connected directly to the levers, and the brake-shoes pivoted upon the weighted levers, substantially as described.

3. In combination with the levers and the wheel having the lateral extending rim, the reversible brake-shoe adapted to the fixed bar, as and for the purpose set forth.

326,498. ARCH FOR SUPPORTING ELECTRIC LAMPS. P. HENRY GRIFFIN, Detroit, Mich. Filed Sept. 10, 1884. (No model.)



Claim.—1. An arch for supporting electric-arc lamps, composed of hollow pipes suitably connected, and having secured to its highest point and insulated therefrom contact-points connected with circuit-wires, in combination with contact-points on the lamp, and means, substantially as described, for making and breaking the circuit as the lamp is raised and lowered, and means for raising and lowering the lamp independently of the circuit-wires, substantially as set forth.

2. In an electric-arc-lamp support, the combination, with the two limbs thereof, of the casting K, having sockets to receive the adjacent ends of said limbs, and provided with electric contact-points in connection with the poles of an electrical generator, substantially as and for the purposes set forth.

3. A support for lamps, consisting of a series of straight pipes connected by couplings, each coupling carrying a pulley, and a rope connecting with said lamps passing over the pulleys, substantially as described.

4. An arch-support for electric lamps, one limb of which is provided with electric conductors for the lamp and the other with a cable for lowering the same, substantially as described.

5. In an arch for supporting electric-arc lamps, electric wires supported by one limb of the arch and terminating in points, in combination with mechanical means carried by the other limb to automatically make and break the circuit between the said points, substantially as and for the purpose described.

6. In an arch for supporting electric lamps, pulleys within the couplings which connect the parts together, in combination with the cables passing over said pulleys and through the couplings, and mechanism for operating such cables for elevating and lowering the lamp, substantially as described.

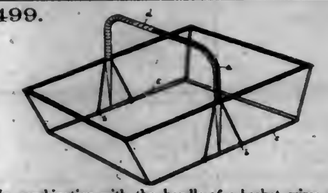
7. An arch for supporting electric-arc lamps, composed of a series of straight pipes, a suitable base for the same, hollow couplings joining said pipes and provided with pulleys, and a central casting carrying electric contact-points and also provided with pulleys, in combination with cables passing over said pulleys, and mechanism within the said base for operating such cables for elevating and lowering the lamp, substantially as described.

8. In an electric-arc-lamp support, the points *e e*, fixedly connected thereto, and the contacts *f f*, connected to the lamp, in combination with the cables *w w*, connected with the contacts *f*, and the pulley-drums *m n*, each carrying one of the cables, the parts being constructed and arranged to move the contacts *f f* to and from the points *e e* in parallel planes, as and for the purposes specified.

326,499. BASKET. HENRY P. GROSS, Baltimore, Md., assignor to Priscilla L. Gross, same place. Filed May 26, 1885. (Model.)

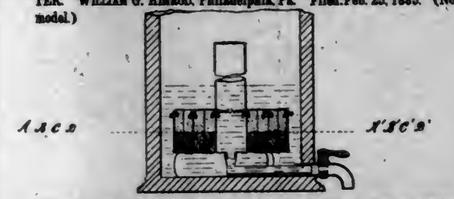
Claim.—1. In combination with the handle of a basket, wires secured to the handle and passing from it in diverging lines along the sides of the basket and secured to the bottom rails, substantially as and for the purpose set forth.

326,499.



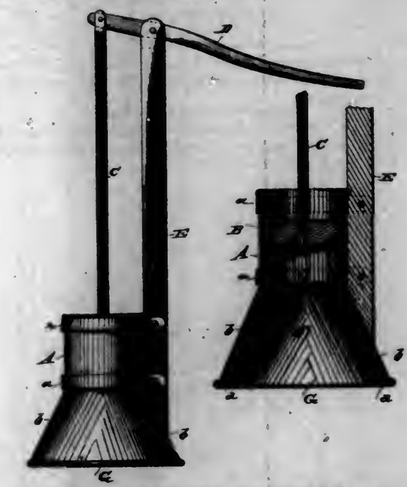
2. In combination with the handle of a basket, wires twisted together for a part of their length and secured to the handle, and passing from it along the sides of the basket and secured to the bottom rails, substantially as and for the purpose set forth.

326,500. SUBMERGED WATER-FILTER FOR PURIFYING WATER. WILLIAM G. HERROD, Philadelphia, Pa. Filed Feb. 25, 1885. (No model.)



Claim.—In a water-filter, the combination of the two sections, Figs. 2 and 3, the former having depending partitions and the latter a standing or upright partition, the partitions in one section being of a different diameter from that in the other section, whereby when said sections are fitted together the partitions will alternate, as shown, and form chambers for the reception of filtering materials, and said partitions having, respectively, openings at their bottoms and their top edges, whereby the water in traveling from the outside to the central compartment will be compelled to take a tortuous course, substantially as shown and set forth.

326,501. WASHING-MACHINE. ALFRED A. HINDS, Lexington, Ind. Filed Jan. 15, 1885. (No model.)



Claim.—1. In a clothes-washer, the combination of the double-wall funnel, the plunger-cylinder, and the two perforated diaphragms *c d*, all constructed and adapted to operate substantially in the manner and for the purposes described.

2. The herein-described washing-machine, consisting of the cylinder A, the plunger B, the plunger-rod C, the vertical support E, having the cylinder strapped to its lower end, the hand-lever D, pivoted to the upper ends of the support E and plunger-rod and adapted to reciprocate the latter, the double funnel G, secured to the lower end of the cylinder and consisting of the outer wall, *b*, and inner wall, *b'*, the perforated diaphragm *c*, covering the lower end of the cylinder, and the perforated diaphragm *d*, covering the space between the lower ends of the walls *b* and *b'*, all substantially as described.

326,502. PENCIL. JOSEPH HOFFMAN, New York, N. Y., assignor to Gustavus A. Goldsmith, same place. Filed Apr. 7, 1885. (No model.)

Claim.—1. The herein-described pencil, having a square recess

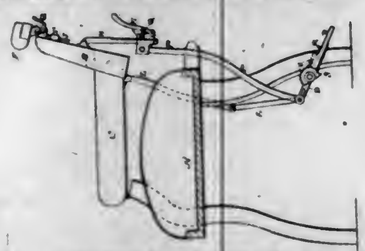
326,502.



formed in the stick thereof for the reception of the rubber, the corners of which recess are rounded inwardly, substantially as and for the purposes set forth.

2. The herein-described pencil, having a square recess formed in the stick thereof, the corners whereof are rounded inwardly and a square rubber inserted therein, whereby the corners of the square rubber are compressed by the inwardly-rounded corners of the recess in the stick, substantially as and for the purposes set forth.

326,503. BARBER'S CHAIR. FERDINAND HOFFMANN and CHARLES FEIST, Louisville, Ky. Filed June 10, 1885. (No model.)

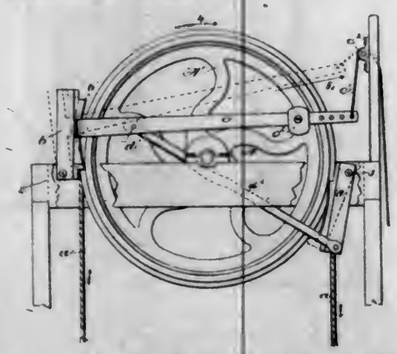


Claim.—1. The combination of the chair, the arms, which are hinged thereto at their front ends, the back, which is pivoted between the rear ends of the arms, and the two supporting-rods, which are connected to the arms and the back at their upper ends and to the same operating-lever at their lower ends, whereby both the back and arms can be adjusted at the same time.

The combination of the chair, the arms, which are hinged thereto at their front ends, the back, which is pivoted between the free ends of the arms, the two supporting-rods L P, the pedal D, the pawl R, and the ratchet S, substantially as described.

3. The combination of the chair having the arms C, which are supported at their rear ends by the rod L, and the back B, with the rods N P, and the spring-actuated lever E, provided with a dog, Q, the rods L P being connected at their lower ends to the same pedal, substantially as set forth.

326,504. BRAKE MECHANISM FOR ELEVATORS. JAS. A. HURLEY, Boston, Mass., assignor of one-half to Edwin A. White, same place. Filed July 25, 1885. (No model.)



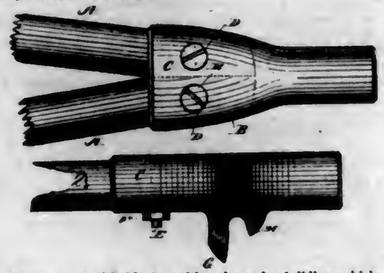
Claim.—1. The power-wheel A', combined with a brake-shoe, *b*, pivoted eccentrically to the axis of the shaft of the said wheel to automatically check the rotation of the power-wheel in one direction, substantially as described.

2. The power-wheel A' and the eccentrically pivoted brake-shoe, combined with a lever connected with the said brake-shoe, substantially as described.

3. The power-wheel A', the brake-shoe *b*, and its lever, combined with an auxiliary brake-shoe, and connecting means whereby both brake-shoes are moved simultaneously, substantially as described.

4. The main brake-shoe pivoted to engage the wheel A', combined with an auxiliary brake-shoe pivoted to engage the opposite side of the wheel A', and connecting means whereby both brakes are moved simultaneously, substantially as described.

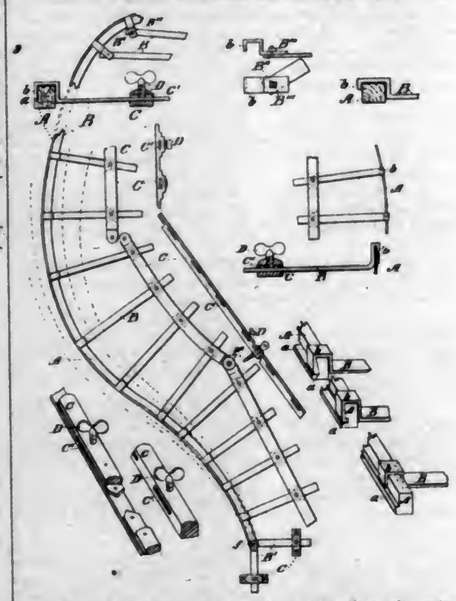
326,505. VEHICLE-SHAFTS. JOHN A. JOHNSON, Madison, Wis. Filed July 6, 1885. (No model.)



Claim.—1. A thimble for uniting the ends of sliding vehicle-shafts, having its rear end wide and flat for the reception of the ends of the shafts, and having registering vertical perforations for fastening-bolts, and having a pair of downwardly-projecting lugs upon the under side of its contracted forward end for confining the yoke-ring, as and for the purpose shown and set forth.

2. The combination of a pair of sliding shafts having vertical perforations near their outer ends, a thimble having its rear end wide and flat for the reception of the shafts, and having vertical perforations in that end registering with the perforations of the shafts, and having downwardly-projecting lugs upon the under side of its contracted forward end for confining the yoke-ring, and nutted bolts passing through the perforations in the thimble and shafts, as and for the purpose shown and set forth.

326,506. APPARATUS FOR MOLDING THE FRAMES OF SHIPS AND TRANSFERRING CURVES. THOMAS JOHNSON and JOHN MCDONNELL, Wilmington, Del. Filed Dec. 16, 1884. (No model.)



Claim.—1. The combination, with a molding-floor, of a series of keepers which are secured to the floor, a flexible batten, and a series of flexible bars which at one end are adjustably connected to the keepers, and at the opposite end are connected to the batten, and are slidable along the same.

2. The combination, with a molding-floor, of a series of keepers which are secured to the floor, a flexible batten, and flexible two-part bars which are adjustably connected to the keepers, and which are connected to the batten, and are slidable along the same.

326,507. LOCK. ARCHIBALD KELLY, Newark, N. J., assignor to the Hopkins & Dickinson Manufacturing Company, same place. Filed May 2, 1885. (Model.)

Claim.—1. In a lock or latch operating device, in combination, a barrel or cylinder, a lever pivoted to said barrel, a bridge-plate in engagement with one end of said lever and adapted, when depressed, to lower one end and raise the other end of said lever, and a stop or detent with which said lever engages when not depressed by the bridge-plate, for the purposes set forth.

326,507.



2. In a latch or bolt operating device, in combination, a barrel or cylinder, a lever pivoted thereto, a bridge-plate having a projection in permanent engagement with one end of said lever, and one or more tumblers having notches at different points therein, adapted, when brought in a line to co-operate with the said bridge-plate, to lower one end and raise the other end of said lever, for the purpose set forth.

3. In a lock or latch, the combination, with a barrel or cylinder, a lever pivoted thereto and projecting therefrom, a bridge-plate having a projection in permanent engagement with one end of said lever, and one or more tumblers having notches at different points therein, adapted, when brought in a line to co-operate with the said bridge-plate, to lower one end and raise the other end of said lever, of a holding or detaining device, substantially as described, adapted to engage with the free end of said lever when said free end is lowered, for the purposes set forth.

4. In a lock or latch, the combination, with a barrel or cylinder, a lever pivoted thereto and projecting therefrom, a bridge-plate having a projection in permanent engagement with one end of said lever, and one or more tumblers having notches at different points therein, adapted, when brought in a line to co-operate with the said bridge-plate, to lower one end and raise the other end of said lever, of a collar within which the said barrel rests and rotates, having a cut in the periphery, with which the free end of the lever engages, substantially as and for the purposes set forth.

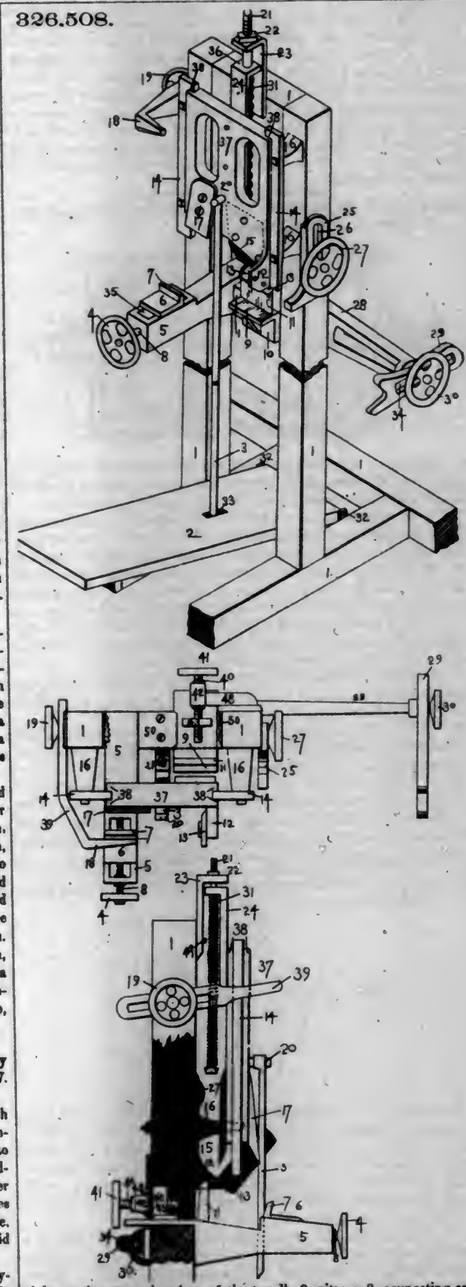
5. In a lock, in combination, a latch having an arm thereon, a rotating barrel having a lever pivoted thereto, a bridge-plate having projections b^2 b^2 thereon, with a notch, b', therebetween, one or more tumblers provided with notches at different points therein, adapted, when brought in a line with the notch b' in the bridge-plate to co-operate therewith, to lower one end and raise the other end of said lever, and a collar within which said barrel or cylinder rests and rotates, having a cut, f^2, in the periphery, with which the free end of the lever engages when lowered, substantially as and for the purposes set forth.

6. In a latch or bolt operating device, in combination, a recessed barrel having a key-slot therein, a lever pivoted thereto, a tumbler or bridge-plate having projections b^2 b^2 thereon, with a notch therebetween, one or more tumblers provided with notches at different points therein, adapted, when brought in a line with the notch in the bridge-plate to co-operate therewith, to lower one end and raise the other end of said lever, springs arranged and operating to hold the said tumblers and bridge-plate up within the barrel, and a key adapted to depress the tumblers and bridge-plate, substantially as and for the purposes set forth.

7. In a lock, in combination, a barrel, *p*, having a key-hole therein, and a groove, p^2, and the lock-casing to which such barrel is secured, a collar sliding on and around said barrel, provided with a set-screw engaging with said groove, and a screw, *s*, also engaging with said groove, substantially as and for the purpose set forth.

326,508. SPOKE-TENONING MACHINE. GEORGE R. KIDDER, Imlay City, Mich., assignor of two-thirds to James S. Ferguson and William W. Black, same place. Filed June 6, 1885. (No model.)

326,508.



Claim.—1. In a spoke-tenoning machine, the combination, with the frame, of a vertically-moving gate running on guides, a treadle connected with the gate to depress it, and a spring connected with it to raise it, two inclined knives secured to the lower portion of said gate adjacent to and at right angles to each other, one adapted to cut a shoulder and the other to size a tenon, a rest in the line of travel of said knives to support one end of a spoke and provided with an adjustable guide, and a support to one side of said rest to sustain the other end of said spoke, substantially as shown and described.

2. In a spoke-tenoning machine, the combination, with a vertically-moving gate and means for operating the same, of an arm projecting in front of said gate to support one end of a spoke, an adjustable arm above said first arm to support the other end of the spoke at the desired angle, and an inclined knife secured to the said gate to cut a bevel on the lower end of the spoke in the descent of the gate, substantially as described.

3. In a spoke-tenoning machine, the combination, with the vertically-moving gate 37, carrying at its lower portion the knife 17, and the described means of operating said gate, of the arm 5, projecting in front of said gate and carrying the adjustable gage 6 7, and the adjustable arm 39 18, secured to the machine-frame and extending forward of said gate and over said arm 5, substantially as and for the purposes described.

4. The combination, with the vertically-moving gate 37, carrying at its lower portion knife 17, and also knives 13 and 15, adjacent and at right angles to each other, of the treadle 2, pitman 3, connecting said treadle and gate, bent arm 24, extending from the upper end of said gate, bent arm 23, secured to the frame of the machine and projecting upward therefrom, headed bolt 21, passing through said arms 24 and 23 and provided with nut 22 above arm 23, and the spiral spring 31, bearing against the head of said bolt and the bent end of arm 24, substantially as and for the purposes described.

5. In a spoke-tenoning machine, the combination, with knives for cutting a tenon, of a rest, 9, for one end of a spoke, an arm, 26, projecting from the side of the machine and carrying an adjustable support, 29, for sustaining one end of the spoke opposite to rest 9, and an adjustable gage, 25, secured to the side of the machine and adapted to bear on the spoke to hold it in place, substantially as described.

6. In a spoke-tenoning machine, the combination, with the frame of the machine, of the vertically-moving gate 37, having grooves 38 in its edges, guides 14, secured to brackets 16, bolted to the frame and fitting in grooves 38, treadle 2, pivoted at 32 to the base of the frame, pitman 3, pivoted to the treadle and secured to the gate, knife 13, bolted to the projection 12 of the gate and projecting toward the frame, knife 15, bolted to the gate and with its lower end projecting from the gate toward the frame of the machine, and rest 9, adapted to support the end of a spoke in the line of travel of knives 13 and 15, substantially as shown and described.

326,509. CENTRIFUGAL REEL. BRIDO KNIFFLER, Cleveland, Ohio. Filed June 25, 1885. (No model.)



Claim.—1. In combination with the hollow hub c of the reel, the spout-box G, communicating therewith, and adjusting devices, as the slot *m* and bolts *n*, for adjusting it radially, substantially as described.

2. In combination with the hollow hub c of the reel, journaled in the box *d*, the spout-box G, communicating with said hollow hub and adjustably secured to said box, substantially as and for the purposes specified.

3. In a flour-dresser, the combination, with the hollow hub c and the force-screw H, revolving therein, of the wire screen I, secured across the discharge end of said hollow hub, as and for the purposes specified.

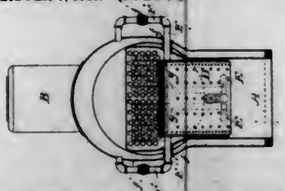
4. In a flour-dresser, the combination of the pockets S, for the discharge of the tailings, the scoops T, and devices for adjusting them from or toward the cloth, substantially as described.

5. In a flour-dresser, the combination of the head formed with radial slots, the pockets S, and the adjustable scoops T, all arranged substantially as described.

6. In a flour-dresser, the combination of the head formed with radial slots, the pockets S, the scoops T, the threaded bolts, thumb-nuts, and indicator-scale, all arranged substantially as described.

7. In a flour-dresser, the combination of the head D, having hollow hub *c*, the head E, having discharge-pockets S and scoops T, the stay-bolts *h*, the clamps *i*, and hoops *j*, the loose straining-ring *k*, straining-screws *l*, and the bolting-cloth secured to the heads D E and straining-ring *k*, all arranged and constructed substantially as specified.

326,510. STEAM-GENERATOR. WILLIAM H. LEWIS, Grand Crossing, Ill. Filed June 8, 1885. (No model.)



Claim.—1. The combination, substantially as hereinbefore set forth, in a steam-generator, of an inclined water-diaphragm suspended within the fire-box by means of pipes at bottom and top, thimbles or flues permanently formed in the side walls of said box, through which the pipes pass, and induction and eduction passages, respectively, from the water-space at the bottom of the boiler-barrel and above the crown-sheet of the fire-box for said pipes.

2. The combination, substantially as hereinbefore set forth, in a steam-generator, of an inclined water bridge or diaphragm suspended within the fire-box, pipes coupled to the bottom and the top of the diaphragm to lead to and from the water-space therein, thimbles or flues permanently formed in the side walls of the fire-box, through which the pipes pass, and exterior pipes connecting with the water-spaces, respectively, at the bottom of the boiler-barrel and at the top of the crown-sheet, to which said primary pipes are coupled, whereby the bridge or diaphragm may be removed by uncoupling the first or primary pipes.

3. The combination, substantially as hereinbefore set forth, in a steam-generator, of a water bridge or diaphragm suspended therein at about the inclination mentioned, so as to leave a space between its top and the crown-sheet for the incandescent gases to be drawn through, induction-pipes coupled to said diaphragm at the bottom, eduction-pipes coupled to said diaphragm at the top, thimbles permanently connecting the fire-box sheets with the shell of the boiler, through which said pipes pass, secondary pipes leading, respectively, from the bottom of the boiler-barrel to the pipes at the bottom of the diaphragm and from the pipes at the top of the diaphragm to the water-space above the crown-sheet, and stop-cocks set in said secondary pipes.

4. The combination, substantially as hereinbefore set forth, with an inclined water-diaphragm in the fire-box, of induction-pipes leading from the bottom of the boiler to the foot of the diaphragm, and eduction-pipes leading from the top of the diaphragm to a discharge-point near the crown-sheet and over the water-space in the leg of said boiler, whereby sediment will be drawn from the barrel and deposited in the leg.

5. The combination, substantially as hereinbefore set forth, in a steam-generator, of the inclined water bridge or diaphragm in the fire-box, the thimbles connecting the front sheet of the fire-box or fine-sheet with the connection-sheet of the boiler, induction-pipes passing through said thimbles, entering the bottom of the diaphragm, and fed from the bottom of the boiler-barrel, eduction-pipes passing horizontally from each side of the diaphragm at its top through thimbles connecting the side sheets of the fire-box with the side shell of the boiler, vertical pipes to which said eduction-pipes are coupled, and induction-passages from said vertical pipes into the water-space immediately above the crown-sheet.

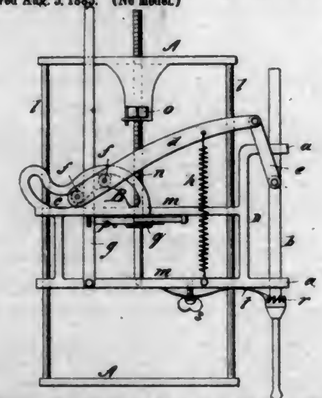
6. The combination, substantially as hereinbefore set forth, with a water-diaphragm set in the fire-box, of flues or passages therethrough connecting with the external air at the bottom of the fire-box, whereby the circulation of water through the diaphragm is promoted.

7. The combination, substantially as hereinbefore set forth, with a water-diaphragm set in the fire-box, of flues or passages passing therethrough from bottom to top, at the bottom opening into the external air, and at the top opening into the fire-box beneath the crown-sheet, whereby the incandescent gases drawn between the top of the diaphragm and the crown-sheet are given a fresh supply of oxygen without reducing their temperature.

8. The combination, substantially as hereinbefore set forth, in a steam-generator, of a water-diaphragm suspended within the fire-box and inclining upwardly and rearwardly from the front wall thereof, thimbles connecting the inner sheet of the front wall with the outer sheet or connection-sheet of the boiler-barrel, and air-flues extending from bottom to top of said diaphragm and passing into or through said thimbles to receive the external air.

9. The combination, substantially as hereinbefore set forth, in a steam-generator, of a water bridge or diaphragm suspended therein and inclined upwardly from front to rear, induction-pipes leading from the bottom of the boiler-barrel to the bottom of the diaphragm and having removable sections, eduction-pipes leading from the top of the diaphragm to the water-space above the crown-sheet, and also having removable sections, and air-flues passing through the diaphragm from bottom to top and into or through thimbles in the front wall of the box to receive external air, whereby said diaphragm may be detached by uncoupling the removable section in its induction and eduction pipes.

236,511. ROCK-DRILL. ANDREW MCCONNELL, Pittsburg, Pa., assignor of one-half to Edward W. Swentzel, same place. Filed Oct. 23, 1884. Renewed Aug. 5, 1885. (No model.)



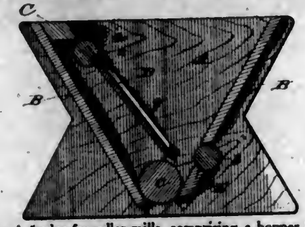
Claim.—1. The combination of the screw having a ratchet with the frame carrying the drill-rod, the spring-actuated arm connected to the drill-rod and engaging with a cam-block secured to said drill-rod-carrying frame, and the lever acting upon said arm and having a pawl engaging with the ratchet of said screw, substantially as and for the purpose set forth.

2. The combination of the block supported upon the drill-frame and formed or provided with a cam-slot, the bar or rod carrying rollers bearing in said cam-slot, said rod being connected by a link to the drill-rod and acted upon by a spring, and the lever passed between the said rollers, substantially as and for the purpose set forth.

3. The block supported upon the drill-rod-carrying frame, and having a reversely-curved cam-slot, the bifurcated bar or rod carrying between its prongs or arms rollers bearing in said cam-slot, said bar or rod being jointed to the drill-rod and connected by a spring to said drill-rod-carrying frame, and the lever bearing against independent rollers of the said arm, substantially as and for the purpose set forth.

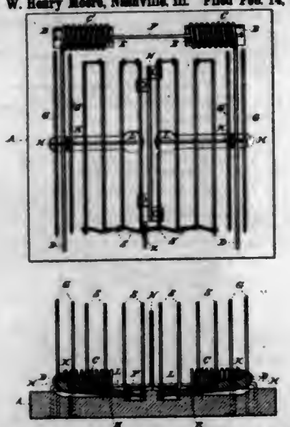
4. The combination of the screw having a nut and ratchet, and the cam-block having a reversely-curved slot with the spring-actuated arm jointed to the drill-carrying rod and having rollers bearing in said slot of cam, the lever disposed between said rollers and having a pawl engaging said ratchet, and the drill-tool having a ratchet engaged by a spring-pawl connected to the frame carrying the drill-rod, substantially as and for the purpose set forth.

326,512. FEEDER FOR ROLLER-MILLS. JOHN MOONEY, East Saginaw, Mich. Filed May 9, 1885. (No model.)



Claim.—A feeder for roller-mills, comprising a hopper having end walls, A, and side walls, B B', a feed-roll, C, located in the discharge-opening, a valve, E, extending downward from a shaft, *b*, journaled in the ends A, and forming a continuation of the side B' in a line tangential to the feed-roll *c*, an arm, *w'*, projecting upward from the shaft *b*, a rod, *w*, an arm projecting downward from the shaft *a*, and connected by the said rod *w* to the arm *w'*, the shaft *a*, provided with a downward-extending swinging board, D, and an arm, *e*, on said shaft carrying adjustably a weight, F, the parts being arranged and combined as and for the purpose set forth.

326,513. ANIMAL-TRAP. WILLIAM T. MOORE, Richview, assignor of one-half to W. Henry Moore, Nashville, Ill. Filed Feb. 14, 1885. (No model.)



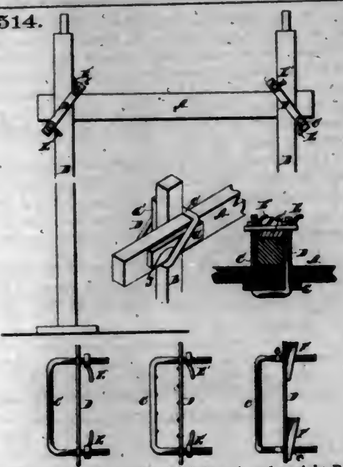
Claim.—The double trap having the parallel bows or arches secured to the base near each end, the spiral springs and their catch-arms extending between the bow-wires, the central partition-plate, and the trigger, respectively pivoted under a bow and having its inner end extended to hold the bait, and its outer end secured over the pivotal point to form a hook adapted to engage the spring catch-arm, substantially as specified.

326,514. SCAFFOLD-BINDER. JOSEPH A. MORGAN, Detroit, Mich. Filed Oct. 29, 1884. (No model.)

Brief.—A ledger and upright are embraced by a yoke having its ends bent to form end arms, which are connected together by a cross-bar and held firmly, and adjusted by binding devices and grooved shoes fitted between said yoke and cross-bar and ledger.

Claim.—1. A scaffold-binder consisting of a yoke having its ends bent to form end arms, a cross-bar constructed to receive and connect said end arms, binding devices engaged upon said end arms to hold and adjust said cross-bar upon said arms, and a shoe grooved to receive the cross-bar to fit inside the same, substantially as described.

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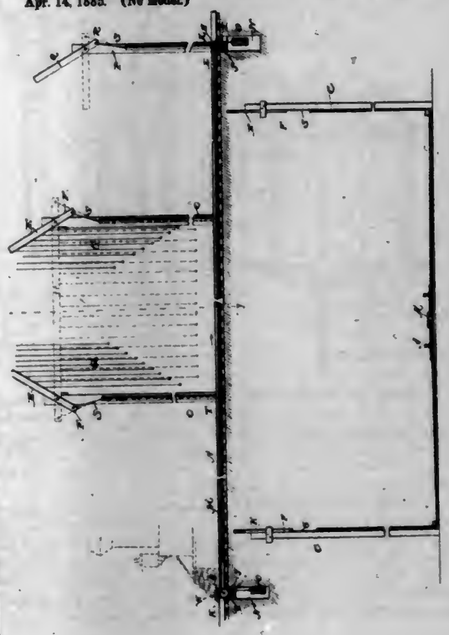


2. The combination, with the ledger A and upright B, of a yoke having its ends bent to form end arms, a cross-bar constructed to receive and connect said end arms, and a binding device engaged upon each of said end arms to hold and adjust said bar upon said arms, the construction being such that the ledger and the upright may be embraced by said yoke and cross-bar and held firmly together by the adjustment of the bar upon said arms by said binding devices, substantially as described.

3. A scaffold-binder consisting of a yoke having its ends bent to form end arms, a cross-bar constructed to receive and connect said arms, a binding device engaged upon each of said arms to adjust and hold the cross-bar thereon, a shoe, G', grooved to receive the cross-bar, and a toothed or serrated shoe, G, constructed and arranged substantially as described.

4. The combination, with a ledger, A, and an upright, B, of a yoke having its ends bent to form end arms, a cross-bar constructed to receive and connect said arms, binding devices engaged upon said end arms to hold and adjust said cross-bar thereon, and one or more shoes, the construction and arrangement being such that the ledger and the upright may be embraced by said yoke and cross-bar with intervening shoe and be held firmly together by the adjustment of said binding devices upon the end arms, substantially as described.

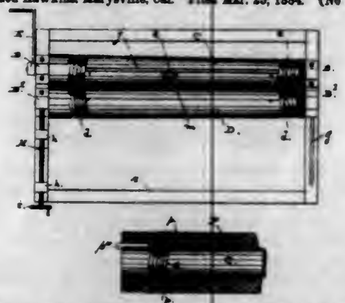
326,515. RAILROAD-GATE. GEORGE F. OBERL, Spears, Pa. Filed Apr. 14, 1885. (No model.)



Claim.—1. In a gate for railroad-crossings, the combination of the gate-posts, the levers pivoted thereto, the signal-posts, the levers pivoted to the latter, the transverse shafts arranged near the signal-posts, the drums and sper-wheels mounted upon the latter, the longitudinal operating-ropes wound in opposite directions upon the said drums and having weights attached to the ends, and ropes connecting the main rope with the short arms of the gate, and signal-levers, substantially as and for the purpose set forth.

2. In a gate for railroad-crossings, constructed substantially as herein described, the herein-described operating-shafts provided with spur-wheels, and having vertically-sliding bearings mounted upon springs, as described, and adapted to be operated by a rack-bar on the under side of the locomotive, substantially as and for the purpose set forth.

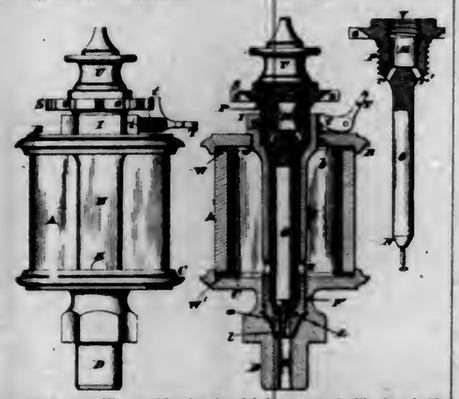
326,516. MACHINE FOR FORMING AND THREADING SHEET-METAL PIPES. Mortimer K. Pierce, Perryvale, assignor of one-half to Philemon Hawkins, Marysville, Cal. Filed Mar. 25, 1884. (No model.)



Claim.—1. In a machine for forming and threading sheet-metal pipe, the combination of a hollow roll having a threaded portion and a smooth or unthreaded part with a roll of smaller diameter having a threaded portion and a smooth or unthreaded part over which the hollow roll is placed and upon which it is secured, and with an adjustable roll, substantially as and for the purpose set forth.

2. In a machine of the character hereinbefore described, the combination of two rolls having threaded portions at the ends and the smooth or unthreaded parts, one of said rollers having a longitudinal groove, with a clamping-bar and screw, and the other roll being mounted in sliding bearings, whereby the distance between the rolls can be varied, and the slip rolls or cylinders with threaded portions at the ends, and means for securing said cylinders upon the principal rolls.

326,517. LUBRICATOR. James Powell, Cincinnati, Ohio. Filed Apr. 6, 1885. (No model.)

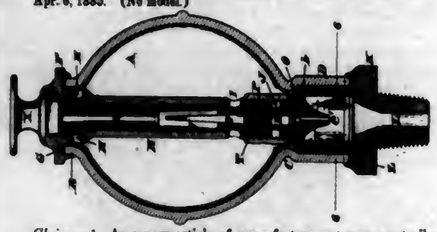


Claim.—1. The combination, in a lubricator, of a bodily-detachable tube that is screwed into the lower head and has a bearing upon the upper head of the oil cup or reservoir, said tube being provided near its lower end with one or more inlets, a discharge-channel and a seat for the valve that regulates the flow of oil, which valve is carried by a rod or stem traversing said tube, substantially as herein described.

2. The bodily-detachable tube H, having a thread, G, to engage with the lower head, C, a bearing, I, to rest upon the upper head, B, one or more inlets, K, a discharge-channel, *l*, and a valve-seat, L, in combination with the stem O, traversing said detachable tube, this stem being provided with a valve, N, closing against said seat and being screwed into the upper end of said tube so as to be adjusted for the purpose of regulating the flow of lubricant, as herein described.

3. In combination with a lubricator whose upper and lower heads are clamped together by a bodily-detachable tube provided with an inlet, an outlet, and a seat for a valve carried by a stem traversing said tube, in the manner described, the lateral projection S, having a series of detents, *s*, for the engagement of a locking device wherewith said valve-stem is retained at any specific adjustment, for the purpose specified.

326,518. LUBRICATOR. James Powell, Cincinnati, Ohio. Filed Apr. 6, 1885. (No model.)



Claim.—1. As a new article of manufacture, a transparent oil-reservoir consisting of a vessel, A, open at top and bottom, and joined by a contraction or annular bearing C to the sight-chamber D, said members A, C, and D being composed of a single piece of material, and the contraction C being of less diameter than said vessel A and sight-chamber D, as herein described.

2. The combination, in an oil-cup or lubricator, of the tube E, into which is screwed the valve-stem R, provided with a tongue, U, that enters the expansible fork V of pull-plug W, which latter traverses said tube and carries at its upper end a cap or stopper, X, for the purpose specified.

3. In combination with a bodily-detachable tube screwed into the lower head of the lubricator, bearing upon the upper head of the same and inclosing the valve-stem, as herein described, the filtering medium P, applied externally to the inlets of said tube, for the purpose described.

4. The combination, in an oiler or lubricator, of the fount A, waist C, sight-chamber D, and gasket Q, said gasket being retained in place by the tube E, screwed into the lower section, K, which latter is located within said chamber D, substantially as herein described.

5. The pull-plug W, having an expansible fork, V, at its lower end, and a cap or stopper, X, at its upper end, in combination with a valve-stem, R, provided with a projection, U, that enters said fork, the plug W being wholly detachable from the inclosing-tube E, for the purpose of filling the fount, as herein described.

326,519. LUBRICATOR. James Powell, Cincinnati, Ohio. Filed Apr. 6, 1885. (No model.)



Claim.—1. The combination, in a lubricator, of the collared tube C c, perforated head B b', and swinging spring-scutcheon D, said scutcheon having a stump or projection, *d'*, and an eye, *d*, which eye surrounds the collar *c*, for the purpose described.

2. In combination with a lubricator having a reservoir, A, and sight-chamber I, the lower head, K, provided with an integral cage, M, located within said chamber and coupled to the head that divides said chamber from said reservoir, substantially as herein described.

3. The combination of reservoir A, screw-threaded head J *j*, sight-chamber I, and lower head, K P, said head being provided with an integral screw-threaded cage, M, located within said chamber and engaged with the head J *j*, substantially as herein described.

326,520. LUBRICATOR. James Powell, Cincinnati, Ohio. Filed Apr. 23, 1885. (No model.)



Claim.—1. The combination, in a grease-cup, of a spring-actuated piston for ejecting the lubricant and a cut-off for regulating the escape of the same, said cut-off being located within the tubular rod that carries said piston, substantially as described.

2. The combination, in a grease-cup, of a spring-actuated piston for expelling the lubricant, a tube projecting from the cap of the reservoir, and a cut-off traversing said tube, the latter being threaded externally to receive a nut, wherewith pressure is brought to bear against the hollow rod that carries said piston, substantially as described.

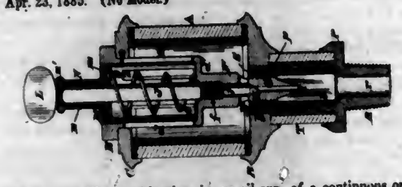
3. The combination, in a grease-cup, of a spring-actuated piston for expelling the lubricant, a tube projecting from the cap of the reservoir, and a cut-off traversing said tube, the latter being threaded externally to receive a clutch-nut, which is adapted to engage with a clutch-nut applied to the hollow or divided rod that carries said piston, substantially as herein described.

4. The combination, in a grease-cup, of the cut-off S, closing against a contracted outlet, P, in the bottom of said cup, which outlet communicates with a discharge-channel, R, of relatively greater capacity, said cut-off being operated by a rod or stem traversing the piston that ejects the grease, substantially as herein described.

5. In combination with a grease-cup having a piston, K, and hollow rod J J', traversed by a tube, D, which latter projects from the cap of the reservoir in the manner described, the expansible packing N, follower L, and clamping device M, said packing and follower being pierced, respectively, at *n* and *l*, to permit the passage of said tube, as herein explained.

6. An improved lubricator or grease-cup consisting of the reservoir A, having the screw-thread *a*, contracted outlet P, and enlarged discharge-channel R, the cap C, having slots V V', the tube D, screw-threaded internally at *d* and externally at E, the clutch-nut F, having undercut flanges G G', separated by intervals *g g'*, the clutch-nut I, having hooks H H', the tubular segments J J', carrying the ejecting-piston M, the spring O, interposed between said piston and cap C, and the cut-off S T, located within the tube D and provided with a screw, *t*, engaging with the screw *d* of said tube, for the purpose specified.

326,521. LUBRICATOR. James Powell, Cincinnati, Ohio. Filed Apr. 23, 1885. (No model.)



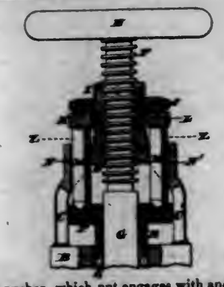
Claim.—1. The combination, in an oil-cup, of a continuous or uninterrupted rod or stem for controlling the discharge of lubricant with a spring-actuated stopper adapted to reciprocate along the upper portion of said stem and uncover one or more inlets, the lower portion of said rod-stem being screwed into a suitable bearing, and its upper end being passed completely through said stopper, thereby serving as a rigid guide for the latter, and permitting the stem to be removed without detaching the stopper, substantially as described.

2. The combination, in an oil-cup, of a continuous or uninterrupted rod or stem for controlling the discharge of lubricant with a spring-actuated stopper adapted to reciprocate along the upper portion of said stem and uncover one or more inlets, and an inclosing cage or cylinder, the lower portion of said stem being screwed into a suitable bearing, and its upper end being passed completely through said stopper, thereby serving as a rigid guide for the latter, and permitting the stem to be removed without detaching the stopper, substantially as described.

3. The combination, with an oil-cup having a rod or stem controlling the discharge of lubricant, of a spring-actuated stopper adapted to reciprocate along said rod and within a cage or cylinder and uncovers one or more inlets of said cage when properly shifted, said cage being provided with the valve-seat and outlet and serving as a tie that clamps the heads to said cup, substantially as herein described.

4. An improved lubricator consisting of the oil-cup A, having a head, B, screw-threaded at *b*, and a head, C, having an orifice, *c*, the cage D, having one or more passages, *d*, head *d'*, and spindle F, which latter is provided with interior thread, *f*, inlet H, discharge-channel I, and a seat for the valve K of stem J, said stem being furnished with a screw, *j*, that is adapted to engage with the thread *f* of the spindle, and having a suitable stop, as L, for the reciprocating stopper M, which stopper is bored at *n* to admit the stem J, a spring, O, being interposed between said stopper and the head *d'* of the cage, for the purpose specified.

326,522. GLAND-ADJUSTER FOR STUFFING-BOXES. James Powell, Cincinnati, Ohio. Filed Apr. 6, 1885. (No model.)



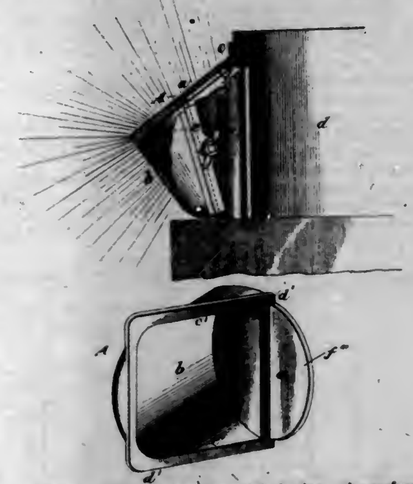
Claim.—1. The combination of a stem or rod, a pusher bearing against a gland surrounding said rod, and a nut that imparts the desired pressure to said pusher, which nut engages with and travels along a neck that guides said rod or stem, substantially as herein described.

2. The combination of a stem or rod, an adjustable collar having push-pieces bearing against a gland surrounding said rod, and a nut which imparts the desired pressure against the packing contained in the stuffing-box within which said gland is fitted, said push-pieces being adapted to travel within suitable guides, N N', of the yoke or other device that carries said collar and nut, substantially as described.

3. The combination of a stem or rod, an adjustable collar having push-pieces bearing against a gland surrounding said rod, and a nut which imparts the desired pressure against the packing contained in the stuffing-box within which said gland is fitted, said push-pieces being adapted to travel within suitable guides, N N', of the yoke or other device that carries said collar and nut, and having their unconnected ends seated in said gland, substantially as described.

4. The combination of stem or rod G, threaded neck D I, adjustable collar K L, push-pieces M M', guides N N', gland P R, and stuffing-box S, substantially as herein described.

326,523. SIGNAL FOR LOCOMOTIVE HEAD-LIGHTS. Walter W. Richards, Philadelphia, Pa. Filed Dec. 7, 1883. (No model.)



Claim.—1. In a locomotive head-light having a rim perforated to allow light from the lamp to pass through said rim, the signal-glass A, having the faces *a* and *b* and flanges *d'*, and the angular frame *c*, having the curve *k*, flange *k'*, circular cut *f'*, and recess *f''*, combined with fastening devices, substantially as set forth.

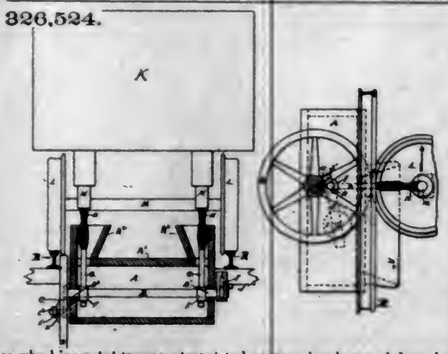
2. As an improved article of manufacture, the angular hollow colored transparent or translucent signal-glass A, having the faces *a* and *b* and flanges *d'*, all homogeneous, substantially as and for the purpose set forth.

326,524. CAR-AXLE LUBRICATOR. Daniel Ross, Cow Bay, Nova Scotia, Canada, assignor to Charles Archibald, same place. Filed Apr. 28, 1885. (No model.)

Claim.—1. In a tram-axle lubricator, in combination with the lubricant-containing tank or receptacle between the rails of the track, the rock-shaft and the arms thereon, carrying brushes adapted, as the shaft is rotated, to take lubricant from the tank and apply it to the axle-bearing of a car passing over the track, substantially as described.

2. As an improvement in tram-axle lubricators, a tank for the lubricant, a rock-shaft, one or more arms thereon, each carrying a brush adapted to dip into the lubricant, a crank-arm on the shaft, and a roller

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or wheel journaled thereto adapted to be engaged and pressed down by a wheel of a car passing on the track, so as to rotate the shaft and swing the brush arm or arms thereon upward, substantially as and for the purpose described.

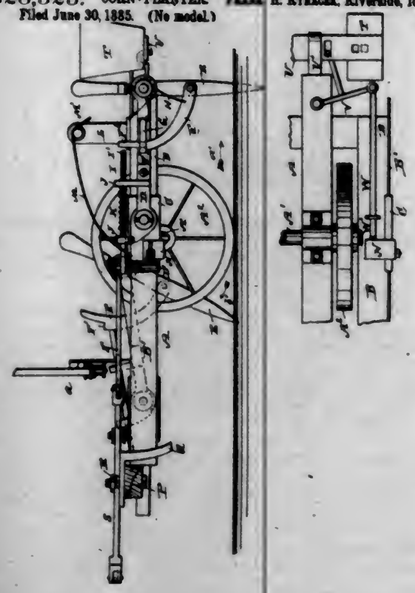
3. As an improvement in tram-axle lubricators, in combination with a tank or receptacle for lubricant and a rock-shaft, one or more arms thereon carrying brushes, means, substantially as described, adapted to keep the shaft normally turned so that the brush or brushes shall be in the lubricant, a crank on the rock-shaft, and a roller journaled thereto adapted to be engaged and pressed down by one of the wheels of the passing car, substantially as described.

4. In combination with the lubricant-containing tank between the rails of the track, the rock-shaft, the brush-carrying arms on the shaft, an arm on the shaft carrying a weight adapted to turn the shaft to dip the brushes in the lubricant, a crank-arm on the shaft, and a roller or wheel journaled on a pin on the crank and adapted to be engaged and pressed down by a wheel of a car passing over the track, substantially as and for the purpose described.

5. As an improvement in tram-axle lubricators, a tank located between the rails of a track, in combination with a rock-shaft, the arms thereon provided with means for taking up some of the lubricant from the tank, the crank on one end of the shaft carrying the roller or wheel D, and the counterbalance-weight on the other end of the shaft, substantially as described.

6. As an improvement in tram-axle lubricators, a tank located between the rails of the track, having a rock-shaft, B, provided with arms G and brushes H, and provided with a crank and roller-wheel D on one end, and a counterbalance-weight, I, on its other end, substantially as shown and described, whereby the wheel of the tram-car, by contact with the roller-wheel D, shall move the brushes from the tank into contact with an axle of the car, and the counterbalance-weight I shall cause them to return to the tank.

326,525. CORN-PLANTER. FRANK H. RYBACEK, Riverside, Iowa. Filed June 30, 1885. (No model.)



Claim.—1. A corn-planter provided with sliding pivoted levers for operating the seed-dropper, and having daggers pivoted to said levers, substantially as herein shown and described.

2. The combination, in a planter, of sliding clips on the sides, levers pivoted to the clips, daggers pivoted to the levers, and sliding rods operated by the clips and connected with the seed-dropper, substantially as herein shown and described.

3. The combination, in a planter, of sliding clips, levers pivoted to the clips, daggers pivoted to the levers, a seed-dropper operated from the sliding clips, and pivoted curved track-plates up which the pivots of the daggers can slide, substantially as herein shown and described.

4. In a corn-planter, the combination, with the frame, of sliding clips on the same, levers pivoted to the clips, daggers pivoted to the levers, locking-arms on the daggers, and devices for automatically releasing the locking-arms of the daggers, and a seed-dropper operated by the clips, substantially as herein shown and described.

5. In a corn-planter, the combination, with the frame, of sliding clips on the same, levers pivoted to the clips, a dagger pivoted to each lever, the locking-arms F, pivoted to the daggers, the sliding rods I, and the adjustable pieces Q on the frame, substantially as herein shown and described.

6. In a corn-planter, the combination, with the frame, of sliding clips on the same, levers pivoted to the clips, daggers pivoted to the levers, arms F, pivoted to the daggers, the sliding rods I, and the slotted angular pieces Q, held by bolts on the frame, substantially as herein shown and described.

7. In a corn-planter, the combination, with the frame, of sliding clips on the same, levers pivoted to the clips, daggers pivoted to the levers, the arms F, pivoted on the daggers, and having the shoulders F' and lugs F², the springs H, the guards G, the sliding rod S', and a seed-dropper operated by the clips, substantially as herein shown and described.

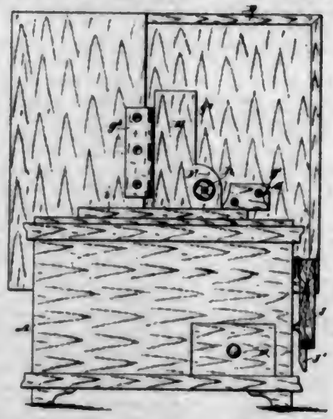
8. In a corn-planter, the combination, with a frame, of the clips, levers pivoted to the clips, daggers pivoted to the levers, a lever pivoted on the frame-rods connecting the opposite ends of the lever with the clips, and a seed-dropper operated by the clips, substantially as herein shown and described.

9. In a corn-planter, the combination, with a frame, of the sliding clips C on the same, the levers D, pivoted to the clips, the daggers E, pivoted to the levers, the lever S, the rods S', connecting the ends of the lever S with the sliding clips, the tracks M, the standards L, on which they are pivoted, and a seed-dropper operated from the sliding clips, substantially as herein shown and described.

10. In a corn-planter, the combination, with a frame, of the seed-dropper bar U, the levers V, the sliding rods W, connected with the same, sliding clips on the frame, and levers provided with daggers pivoted to the sliding clips, substantially as herein shown and described.

11. A corn-planter connected with a seed-dropper, sliding clips for operating the same, and levers for operating the sliding clips direct from the ground and independent of the wheels, substantially as herein shown and described.

326,526. COMBINED TABLE AND CULINARY RECEPTACLE. ALBERT W. STEERS, Strawn, Ill. Filed Oct. 7, 1884. (No model.)



Claim.—1. In a combined table and culinary receptacle, the combination of the chest having apartments, a removable bottom, a drawer, a shelf, and the pivotally-secured lid, constructed and arranged substantially as shown and described.

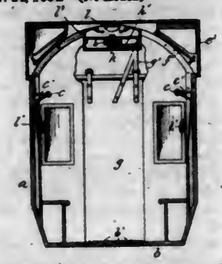
2. The lid D, composed of hinged sections pivotally connected to arm E, having hinging bar *i*, secured to chest A, substantially as shown and described.

3. The bottom *b*, removably secured by means of lever C, having arms *d*, substantially as shown, and for the purpose described.

4. In a combined table and culinary receptacle, the combination, with the chest and the pivotally-secured lid secured to said chest, as specified, of the removable bottom having guides, and the lever having arms, and a thumb-piece, substantially as shown and described.

5. The lid D, composed of sections *g* and *g'*, said latter section having a stud, G, having a curved portion, in combination with the chest A, having extension-shelf J, substantially as shown and described.

326,527. STREET-RAILWAY CAR. TIMOTHY B. STEWART, Hartford, Conn. Filed Nov. 24, 1884. (No model.)

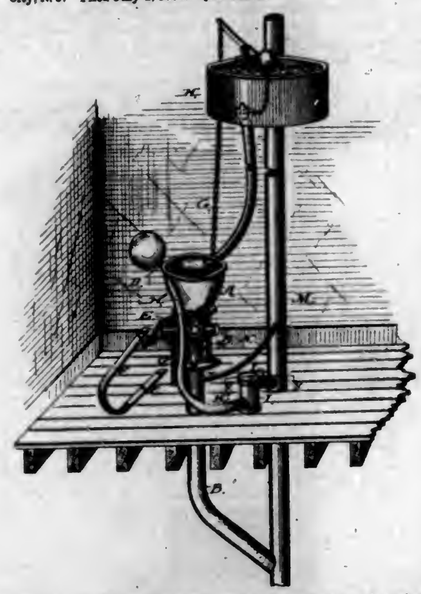


Claim.—1. The street-railway car *a*, having a floor, *b*, formed of planks with integral longitudinal corrugations *b'*, the bounding surfaces of which are formed in curved planes in cross-section, all substantially as described.

2. The improved street-railway car *a*, having a floor formed of planks *b*, with integral corrugations *b'*, holding-bars *c*, bracketed to the sides of the car, and a roof, *d*, having the raised central projection, *e*, provided with ventilators *e²*, all substantially as described.

3. A street-railway car, *a*, having the holding-bars *c*, bracketed to the sides of the car on a level below the head of the average passenger and projecting from the side of the car no farther than the front edge of the car-seat, all substantially as described.

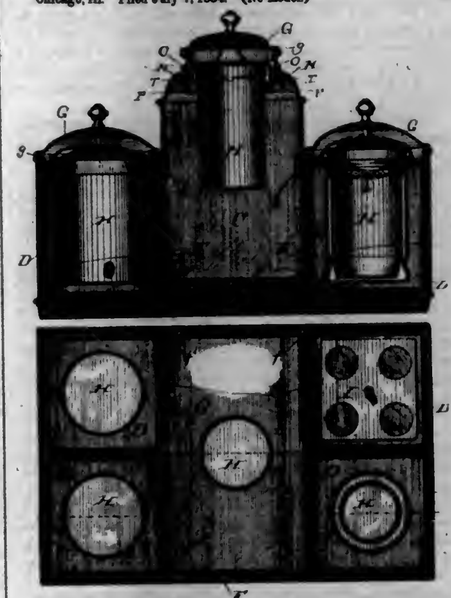
326,528. WATER-CLOSET VALVE. EARNEST A. STRAAT, Jersey City, N. J. Filed July 2, 1885. (No model.)



Claim.—1. The combination, with the bowl, the tank, and the valve, of the arm E, having a bearing or fulcrum, *a*, and a lever, D, pivoted to the end of the arm and bearing against the fulcrum *a*, said lever extending upwardly and forward, whereby the valve in the tank and the cut-off valve are automatically and simultaneously opened by depressing said lever, substantially as herein described.

2. The bowl, the vertical passage, the cut-off valve, and the arm E, in combination with an upwardly-extending lever, D, pivoted to the arm, and bearing against the fulcrum *a* on the same, a stop, O, a packing on the stop, a chain, G, connected to the short arm of the lever and to the valve in the tank, whereby when the lever is depressed the valve in the tank is opened and the cut-off valve rotated until its opening comes in line with the passage B, and a spring engaging the arm and closing both valves simultaneously, substantially as herein described.

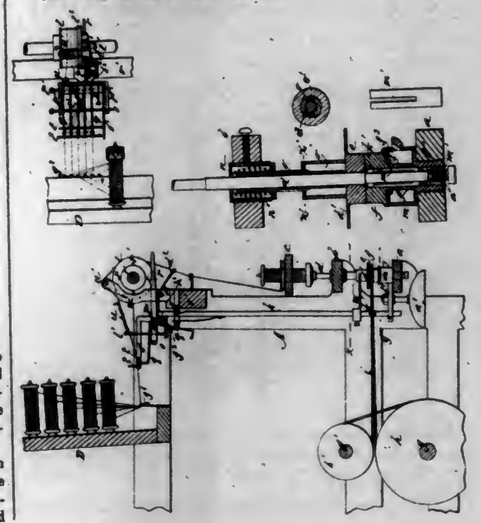
326,529. WATER-URN FOR COOKING PURPOSES. JOHN F. TROUT, Chicago, Ill. Filed July 7, 1884. (No model.)



Claim.—1. The combination, with the urn B, of the central water-supply tank, C, provided with bottom openings, *f f*, and top openings, *h h*, and separated from the bottom of the urn by an intervening space and the series of adjacent tanks D D, the several tanks being separated from each other by spaces or passages communicating with each other and with the space beneath the main tank, substantially as shown and described.

2. The combination, with the urn B and vessel H, of the water-brake M, within which such vessel is detachably secured, the urn being provided with a depending pocket, T, within which the brake M fits closely, substantially as shown and described.

326,530. MACHINE FOR DOUBLING AND TWISTING SILK AND OTHER THREADS. JOSEPH E. TYNAN, Paterson, N. J. Filed Oct. 12, 1882. Renewed Oct. 27, 1884. (No model.)



Claim.—1. The combination, with the fallers *q*, the support therefor, and the lever *r*, having the rear extending arm, *p''*, of the cross-pin *s*, substantially as and for the purpose specified.

2. The combination, with the stop-motion rod *k*, the lever *r*, the feed-roller *l*, provided with pins *r'*, the shaft *l'*, the collars *l''*, and the spring *l'''*, of the standard m^2, having a projection, k^2, as shown and described

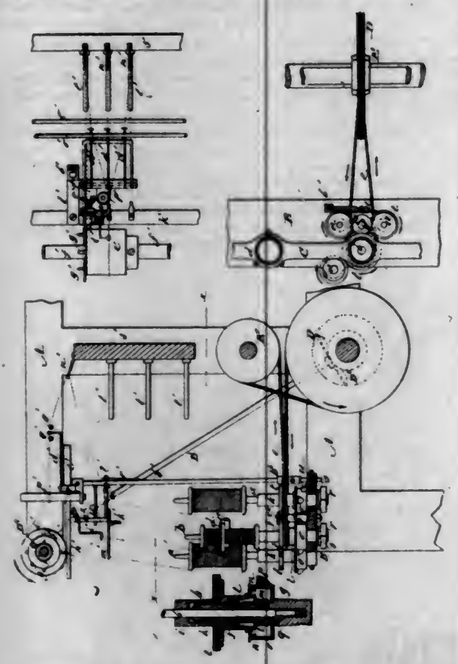
3. The rod *k* and mechanism, substantially as described, for releasing the same when a thread breaks, in combination with the bell a^2, situated beneath said rod, the spring-arm *w*, secured to said rod, and a stop for spring *w*, substantially as described, whereby said rod when released will fall directly upon the bell and then be lifted therefrom, as specified.

4. The combination, with the rail *b*, box *n*, spindle *d*, the bushing *o*, provided with the vertical oil-grooves, and the spring *n'*, of the pulley *e*, having an oil-cup, *o'*, into which the bushing extends, as shown and described.

5. The combination, with the spindle *d* and oil-receptacle *m*, of the loose pulley *f*, having the downwardly-extended sleeve *f''*, and at its upper end the inwardly-projecting flange, as shown and described, and for the purpose specified.

326,531. MACHINE FOR THROWING SILK. JOSEPH E. TYNAN, Paterson, N. J. Filed Aug. 24, 1882. Renewed Oct. 27, 1884. (No model.)

Brief.—The main spindle is stepped within its bolster, and has upon it, above the bolster, a collar or flange made with a depending barrel, the lower end of which is enlarged to form a fast pulley. The upper edge of the enlargement is diametrically extended, forming a flange to which a friction-pulley is secured. Below the fast pulley, upon the spindle, is a loose pulley, which is fitted for turning freely on the bolster. The first-time or back spindles and their bolsters are similar to the main spindle and its bolster, except that the fast and loose pulley are dispensed with. These spindles are driven from the main spindle by friction. The main spindle is driven by a belt passing around the main driving-pulley. The loose pulley being upon the bolster of the main spindle, when the driving-belt is moved to said loose pulley all the spindles stop. When a thread breaks, its pivoted lever falls, and by its effect on connected levers causes the stop-motion rod, which is suspended in an elevated position, to be released, and, being fitted with pins above and below the driving-belt, will in its downward movement carry the belt on the loose pulley of the main spindle, and the revolution of all the spindles will be stopped.



Claim.—1. The combination of the spindle *b*, provided with the flange or collar *i*, the barrel *k*, and the fast pulley *f* with the recessed loose pulley *l* and the bolster *g*, formed with the oil-cup *o*, substantially as shown and described.

2. The combination, with the front spindle, *b*, provided with pulley *t*, of the rear spindles, *a a*, provided with friction-pulleys *t*, substantially as shown and described.

3. The combination, with the spindles *b* and *a*, provided with the friction-pulleys *t* and the bolsters *g*, of the rail B, formed with tapering or enlarged holes for the reception of the bolsters of the rear spindles, *a*, the nuts *r*, spring-washers *s*, and means, substantially as specified, for keeping the friction-pulleys of spindles *a* in contact with the friction-pulley of spindle *b*, as described.

4. The combination of the stop-motion rod *b'*, the frame A, the piece *l'*, the lever *c'*, with its lug *h'*, the fallers *d'*, the feed-roller *e'*, provided with pins *g'*, and means for operating said roller, the spindle *b*, provided with a tight pulley, *f*, and loose pulley *l*, the band *e*, the spindles *a*, and means for communicating motion to them from spindles *b*, as described.

5. The combination of the faller *i'*, lever *c'*, feed-roller *e'*, provided with pins *g*, and means for revolving said roller, with the frame A, piece *l'*, stop-motion rod *b'*, the band *e*, the spindle *b*, having tight pulley *f* and loose pulley *l*, and the spindles *a* and *b*, having friction-pulleys, as set forth, all as shown and described.

6. The stop-motion rod *b'*, the doubling-roller *p'*, the lever *c'*, and the fallers *d'*, combined with the feed-roller *e'*, provided with pins *g*, and means for operating said roller, the spindles *a* and *b*, with their friction-pulleys, as described, the said spindle *b* having the fast pulley *f* and loose pulley *l*, as set forth, the band *e*, frame A, and the piece *l'*, as shown and described.

7. The frame A, piece *l'*, and standard a^2, in combination with lever *c'*, stop-motion rod *b'*, feed-roller *e'*, provided with pins *g'*, and means for operating said roller, the fallers *i' d'*, the spindles *a* and *b*, provided with friction-pulleys *t*, the tight and loose pulleys on spindles *b*, and the band *e*, as shown and described.

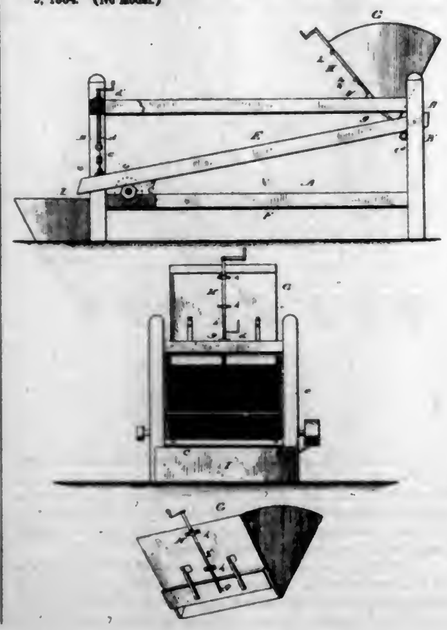
8. The post b^2, provided with cap c^2, combined with spindles *a* and *b*, having the pulleys *t*, substantially as and for the purpose specified.

9. The ring-spindle *b*, the rear spindles, *a*, the ring-rail, the feed-roller *e'*, and means for operating the spindles and rollers, in combination with devices, substantially as described, for stopping the spindles and feed-roller when a thread breaks, as described.

10. The combination, with spindle-bolster, of the loose pulley consisting of the sleeve or hub portion *m*, which fits closely on said bolster, and the band part *l*, which is rigidly connected with said sleeve and recessed and provided with holes *n*, as shown and described, and for the purpose specified.

11. The loose pulley consisting of the upper enlarged portion, *l*, having the hub or sleeve *m*, which is rigidly connected therewith, said part *l* being recessed or made hollow, as shown and described, and for the purpose specified.

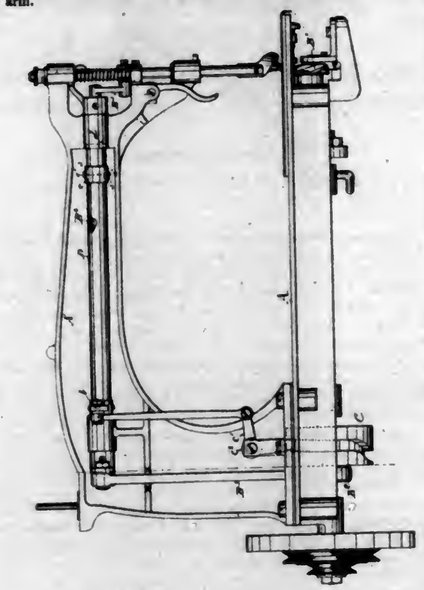
326,532. RICE-CLEANING MACHINE. WM. I. VARDELL, Charleston, S. C., assignor of one-half to John Von Oven, same place. Filed Dec. 9, 1884. (No model.)

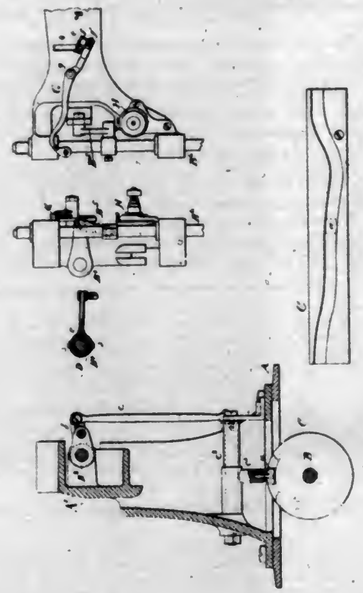


Claim.—In a rice-cleaner, substantially as described, the combination, with the shafts B and B' and the adjusting-screw D, all having bearings in the main frame, of the cam-wheels C and C', rigid upon the shafts B and B', respectively, the cam-wheels C being much larger than the wheels C', and the inclined shoe E, having its lower end loosely connected with the said rod or screw D and held adjustably suspended over the larger cams, as and for the purposes set forth.

326,533. TAKE-UP MECHANISM FOR SEWING-MACHINES. JOHN E. WHEEN, Stoneham, assignor of two-thirds to George W. Brown and Daniel H. Burt, both of Boston, Mass. Filed Sept. 1, 1884. (No model.)

Brief.—A tubular or sleeve-like rock-shaft, having as its fulcrum the needle-bar-actuating rock-shaft of a sewing-machine, operates by a suitable arm to give vibratory motion to a take-up located at the front or head of the machine. Upon the short reduced and round arm of the take-up lever is a swivel-block secured thereon by a screw in the end of the arm.



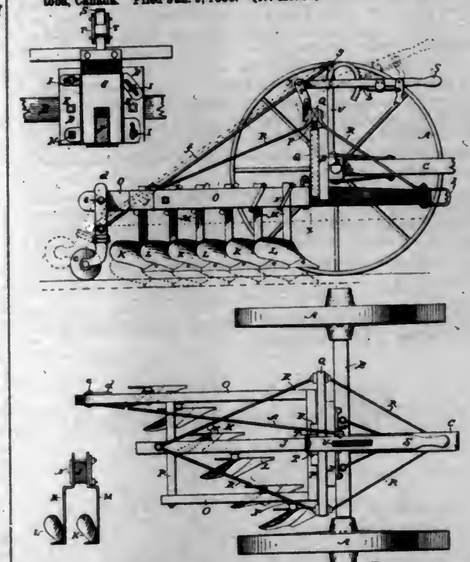


Claim.—1. The needle-bar, its operating rock-shaft, and means to actuate it, combined with the sleeve D, surrounding the needle-bar-operating rock-shaft, and with the take-up lever actuated by the said sleeve, substantially as described.

2. The rocking sleeve and its attached arm *e*, combined with the take-up lever fulcrumed on the head of the machine, and having the swivel-block mounted thereon loosely and engaged by the said arm *e*, substantially as described.

3. The stitch-forming mechanism containing as an element a rocking shaft to actuate the needle-bar, and the tension device H, located at the head of the overhanging arm of the machine, and the take-up lever fulcrumed on the head of the machine, combined with the rocking sleeve D and its arm *e*, and with means to rock the said sleeve, substantially as described.

326,534. GANG-PLOW. HENRY W. WYNNE, Dominion City, Manitoba, Canada. Filed Jan. 9, 1885. (No model.)

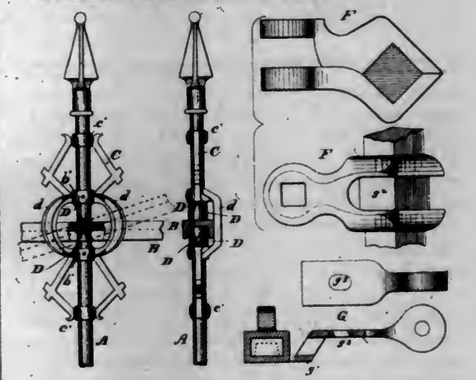


Claim.—1. The combination of a plank, D, provided with bolt-holes E, the guideway G, securable thereto, the post F, fitted to slide vertically in the guideway, the beam J, secured to the post F, and plows secured to the plow-beam, substantially as shown and described.

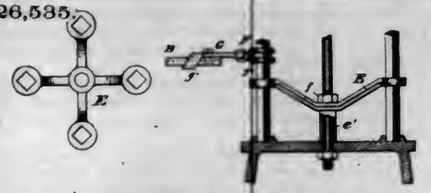
2. The combination of the plank D, the guideway G, the post F, the beam J and plows secured thereto, the cross-beam Q, and the braces R, substantially as shown and described.

3. The combination of the plank D, the guideway G, the post F, the gang-plow secured thereto, the caster-wheel *c*, the post *d*, pivoted to the rear end of the gang-plow frame, the hand-lever S, pivoted to a fixture of the plank D, the link T, and the connecting-rod *f*, substantially as shown and described.

326,535. METALLIC FENCE. LEVI T. BROOKHART and WILLIAM H. BROOKHART, Lima, Ohio; said William H. Brookhart assignor to said Levi T. Brookhart. Filed Dec. 15, 1884. (No model.)



326,535.

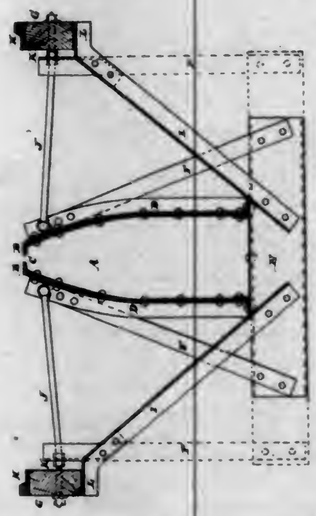


Claim.—1. The ornament C for metallic fences, provided with arms *d*, extending around the channel-rail to hold the rail and picket in place, the said ornament being provided with downwardly and upwardly extending V-shaped prongs, bearing upon the upper and lower side of the channel-rail at two sides of the picket A and in a line with the center of said picket, said prongs forming an axial bearing for and allowing the channel-rail to be adjusted to different angles with relation to the picket to adapt the fence to different grades, substantially as described.

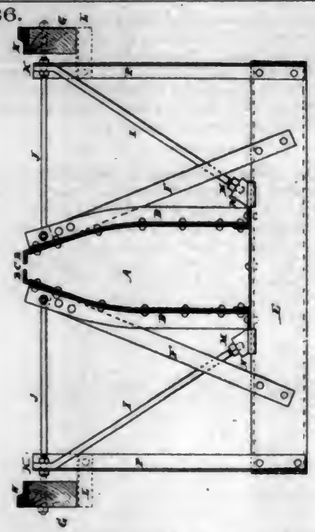
2. A post for metallic fences, the standards of which are seated in the cap of the base, as shown and described, the said post being provided with a central stay-rod extending from the cap of said post down through the cap of the base to which it is bolted, and a brace engaging the standards of the post and encircling the stay-rod, said brace being held in place by means of a nut upon the central stay-rod, substantially as and for the purpose described.

3. The brace E for metallic fence-posts, having arms provided with openings corresponding to the cross-sectional shape of the standards and engaging the said standards, said brace being provided with the depending sleeve *e'*, having a central opening, through which the central stay-rod of the post may extend, substantially as and for the purpose set forth

326,536. CABLE RAILWAY. ADOLPHUS BONZANO, Phœnixville, Pa. Filed Mar. 18, 1885. (No model.)



326,536.



Claim.—1. The combination of a sheet-metal conduit with the lower transverse beams, vertical ties or braces secured thereto, and oblique or inclined struts extending from the lower part of the conduit or the transverse beams thereof and secured at their top to the vertical ties or braces, and horizontal ties connecting the upper edges of the conduit with the upper ends of the struts, and vertical ties to prevent the closing of the slot, substantially as and for the purpose specified.

2. The combination of a sheet-metal conduit with the lower transverse beams, vertical ties or braces secured thereto, oblique or inclined struts extending from the lower part of the conduit or the transverse beams thereof and secured at their top to the said vertical ties or struts, and horizontal adjustable ties connecting the upper edges of the conduit with the upper ends of the struts or vertical ties, or both, to prevent the closing of the slot, substantially as and for the purpose specified.

3. The combination of a sheet-metal conduit with the lower transverse beams, vertical ties or beams secured thereto, oblique or inclined struts extending from the lower part of the conduit or the transverse beams thereof and secured at their top to the vertical ties, and horizontal ties connecting the upper edges of the conduit with the upper ends of the struts or vertical ties to prevent the closing of the slot, the said ties and struts both being adjustable, substantially as and for the purpose specified.

4. The combination of a sheet-metal conduit with the oblique struts extending from the lower part of the conduit or the transverse beams thereof, horizontal ties connecting the top of said oblique struts with the conduit near its top, and rails loosely supported upon the upper ends of said struts, but so arranged that they cannot approach the conduit through the intervention of the extended ends of said struts, substantially as and for the purpose specified.

5. The conduit A, having angle-irons B B, forming slot C, and reenforcing ribs D, stringers G, rails H, struts I, and ties J, arranged substantially as and for the purpose specified.

6. The conduit A, having angle-irons B B, forming slot C, and reenforcing ribs D, stringers G, rails H, ties P, transverse beams E, struts I, and ties J, arranged substantially as and for the purpose specified.

PHOTO-LITH. NORRIS PETERS WASHINGTON D.C.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF UNITED STATES COURTS IN PATENT CASES.

DECISIONS OF THE U. S. COURTS.

U. S. Circuit Court---Northern District of New York.

THE ALDEN EVAPORATING FRUIT COMPANY *v.* BOWEN *et al.*

Decided August 25, 1885.

Claim 1 of Reissued Letters Patent No. 5,648, to Charles Alden, for a process for preserving animal and vegetable substances, is void for want of novelty. Claim 2, which is for an apparatus for carrying out the process, is not infringed.

Mr. W. J. A. Fuller for the plaintiff.

Messrs. Cogswell, Bentley & Cogswell for the defendants.

BLATCHFORD, *J.*:

The controversy in this suit is reduced to the question of the infringement of claim 1 of Reissued Letters Patent No 5,648, granted to Charles Alden, November 11, 1873, for an improvement in processes and apparatus for preserving animal and vegetable substances, the original patent, No. 121,569, having been granted to him December 5, 1871. Claim 1 reads thus:

1. The within-described process of maturing and preserving animal and vegetable substances, in part through evaporation and in part through chemical binding of their organic moisture, by exposing the same to a current of heated and humid air, increasing in humidity and decreasing in heat as the evaporation proceeds, said current of air moving in the same direction with the articles to be treated substantially as herein set forth.

All there is of this process is whatever may result from the current of heated and humid air, increasing in humidity and decreasing in heat as the evaporation proceeds, the current of air moving in the same direction with the articles to be heated and acting on the substances divided into extended surfaces and exposed on screens, which are moved away from the source of heat while still exposed to heat. The substance on the screen nearest the source of heat is exposed to it for a proper time, and the screen is then passed onward, and a fresh screen is introduced into the place thus vacated. The specification says:

The current of air in passing through these screens covered with fresh material now carries with it an increased burden of moisture, derived from said material, as it strikes upon the screens that have gone on before. With every forward movement of the carrying apparatus fresh screens are introduced, and the moisture of the current of air is increased thereby.

It also says that the process—

is generally carried on in an apparatus which consists, essentially, of an elongated chamber or shaft, square or oblong, or of any other form, in cross-section, and set vertically, as shown in the drawing, or in any other position found advantageous for particular purposes.

The specification states the rationale of the process thus:

By introducing the green articles in the bottom part of the tower and moving them in the same direction in which the air moves the scorching or burning of such articles is effectually avoided, since an article in its moist state when exposed to a high heat gives up its moisture; and as the heat is absorbed or rendered latent by such moisture the article is prevented from being overheated, and as it moves from the high to the low temperature it becomes gradually deprived of all its free moisture, as previously stated.

The evidence shows that the process set forth and claimed existed before Alden's invention in the apparatus used by the Shakers from 1860, as testified to by Anstatt, and in the dry-houses, testified to by Ledyard, Rogers, and Ryder, where the fruit was first placed on the lower tray, nearest the fire, and that tray was moved upward in the dry-house as the operation progressed. The apparatus described by Alden may carry out the process more perfectly, but the process as set forth in the claim is the same. All that Alden had a right to claim was an apparatus or arrangement of mechanism. This he did in claim 2; but that claim is not infringed.

The bill is dismissed, with costs.

U. S. Circuit Court---Northern District of New York.

J. A. FAY & CO. *v.* ALLEN.

Decided August 26, 1885.

1. The first three claims of the Doan and Bisbee patent are infringed by the patent to Allen. The fact that Allen accepted a rejection by the Patent Office on the Doan and Bisbee patent, without asking an interference, is of weight to show that he did not then claim priority to them. Injunction and accounting allowed.
2. Bill for injunction dismissed as to the Locke patent, which, construed strictly in view of the state of the art and of the claims rejected by the Patent Office, is not infringed by the defendant.

Messrs. Parkinson & Parkinson for the plaintiffs.

Messrs. Duell & Hey for the defendant.

BLATCHFORD, *J.*:

The claim of the Locke patent is a claim to a combination of mechanism, and is as follows:

The combination of the sliding frame B, provided with the curved guides *b'*, the pivoted frames D, the springs H', the shafts E, and the cutter-heads and cutters F G, with each other, and with the uprights C, and the main frame A, substantially as herein shown and described.

In view of the state of the art and of the claims made by Locke in his application and rejected, this claim to a combination must be construed strictly, and every element in it must be found in the defendant's structure to constitute infringement. The spring H' and the sliding frame B, provided with the curved guides *b'*, are not found in the defendant's machine, nor is any one of them, or any substantial equivalent for it found there. As to the Doane and Bizbee patent, it is admitted that the first three claims of it are infringed, if they are valid. The attempt of Locke to make a structure embodying these three claims was a mere experiment, and was abandoned and not resumed. It did not contemplate the use of the spoke as a guiding element. The machine of Doane and Bizbee was

completed and practically and successfully worked prior to February 24, 1879. The two machines on which Allen worked before July, 1879, were neither of them put to any practical work, and each of them was destroyed as useless. He did not commence till April, 1879, the construction of the successful machine which he completed. The fact that when Allen applied for his patent his claims were rejected as anticipated in the Doane and Bizbee patent, and he did not apply for an interference, is of weight to show that he did not then claim priority to Doane and Bizbee, because he accepted a patent without the rejected claims.

There must be a decree dismissing the bill as to the Locke patent, and awarding an injunction and an account of profits and damages as to the first three claims of the Doane and Bizbee patent, without costs to either party to and including the hearing. The question of subsequent costs is reserved.

U. S. Circuit Court—District of New Jersey.

WILLIMANTIC LINEN COMPANY *et al. v.* CLARK THREAD COMPANY *et al.*

Decided August 19, 1885.

LACHES—DECREE.

Application to open an interlocutory decree for the purpose of setting up a new defense because, as alleged, the defendants were misled in preparing their defense by a false allegation in the bill of complaint, refused on the ground of laches, as more than twelve years had elapsed since the bill of complaint was filed and the error committed.

Mr. Benj. F. Thurston, Mr. W. C. Witter, and *Mr. W. H. Kenyon* for the complainants.

Mr. Edmund Wetmore and *Mr. Livingston Gifford* for the defendants.

NIXON, *J.*:

This is an application to open the interlocutory decree entered in the case to give the defendants an opportunity of setting up an alleged new defense to the suit. The ground on which the application is made, as revealed in the moving papers, is that the defendants have been misled in preparing their defense by a false allegation in the bill of complaint. The suit was commenced February 13, 1872, by filing the bill, in which the erroneous allegation is made that the inventor Conant filed his application in the Patent Office for his patent before the date of the sealing of the English letters patent to one William Weild—to wit, July 22, 1858. It is not claimed that the complainants made a willful misstatement. It is admitted that they were led into the error by the officers of the Patent Office, who had indorsed the application as if filed January 5, 1858, when in fact it was not filed until January 5, 1859. The late George Gifford, Esq., appeared for the defendants, and put in their answer May 6, 1872, in which he denied infringement, and also that Conant made his invention before the sealing of the English Weild patent. The replication was filed June 1, 1872. The testimony, running through several years, seems to have been largely directed to the question of infringement. None was taken on the issue of the priority of the respective inventions of Conant and Weild. The proofs were published and the case went to final hearing, and an interlocutory decree was entered in favor of the complainants May 3, 1879. Proceedings began before the master for an account, and were substantially closed before the death of Mr. Gifford, which occurred in the summer of 1883. The present counsel of the defendants, Mr. Livingston Gifford and Mr. Wetmore, have succeeded Mr. George Gifford, and it is alleged in the moving affidavits that their attention was first called to the error in the bill of complaint in regard to the date of the Conant application in the month of December, 1884, and that the time which has since elapsed has been necessarily devoted to obtaining proof of the said error.

The decree being interlocutory and not final, the court has power to open the same and allow a new defense on motion and without the formality of a bill of review. But the application is in fact and substance for a rehearing on the ground of newly-discovered evidence, and it must be supported by the same sort of proof as the court requires in order to give a party relief upon a bill of review, or a supplemental bill in the nature of a bill of review, after a final decree.

More than twelve years have elapsed since the bill of complaint was filed and the acknowledged error in date committed. I have examined the affidavits and the briefs of counsel submitted in the case with great care, and have been met at the threshold with the objection that the motion ought not to succeed, owing to the laches of the defendants in making their application. It is a well-settled and a safe and salutary principle of law that courts will not open a decree and admit new defenses and newly-discovered evidence unless it appear that the defendants could not with reasonable diligence have discovered the facts which are sought to be introduced when the pleadings were drawn and the testimony taken.

Some embarrassment is caused by the death of Mr. Gifford, who was for a period of more than twelve years previous to his decease the counsel of the defendants. He was a gentleman of such exceptionally high character that all men knowing him would be inclined to accept as true his simple statement respecting any transaction as he understood the truth to be. He cannot, however, be interrogated; but it is quite clear from the evidence that both he and Mr. Clark, who represents the defendant corporation in these proceedings, had the means of ascertaining, and with ordinary diligence could have ascertained as early as the spring of 1873, the true date of Mr. Conant's application for the patent.

Without expressing any opinion upon the other questions involved in the motion, and which have been so elaborately and ably argued by the respective counsel, it is quite clear that upon the ground of laches alone the application to open the case ought to be refused, and it is accordingly so ordered.

U. S. Circuit Court—Northern District of New York.

NEW YORK GRAPE SUGAR COMPANY *v.* BUFFALO GRAPE SUGAR COMPANY *et al.* SAME *v.* AMERICAN GRAPE SUGAR COMPANY *et al.*

Decided July 23, 1885.

1. LACHES OF PATENTEE—RIGHT OF VENDEE TO SECURE DAMAGES.

The patentee's previous laches and indifference in regard to the use of his patents by defendant corporation *Held* sufficient to prevent the enforcement by a court of equity of the pecuniary claims of his vender against it for infringements before the purchase of the patent.

2. INFRINGEMENT BY CORPORATION—PURCHASE BY FORMER DIRECTORS—RIGHT OF ASSIGNEE TO DAMAGES.

When the executive officers and managers of a corporation that has been infringing a patent, having sold their stock, purchase the patent, their assignee will not be allowed in equity to make the corporation pay the profits created by their own acts of infringement.

Messrs. Dickerson & Dickerson for the plaintiffs.

Mr. John R. Bennett and *Mr. Sherman S. Rogers* for the defendants.

SHIPMAN, *J.*:

This is a motion to amend the interlocutory decrees in the entitled causes, so as to provide for an accounting of the profits and an assessment of the damages which accrued upon Patents Nos. 65,664, 81,883, and 137,911, prior to the plaintiffs' purchase thereof.

The facts in the cases are stated at length in the published opinions in 18 Federal Reporter, 633, and 20 Federal Reporter, 505. Upon these facts two questions arise:

First. Are the claims against the Buffalo Grape Sugar Company, which Joseph J. Gilbert assigned through Messrs. Phillip and Morgan to the Messrs. Jebb, for the profits and damages which had accrued upon the infringement of his Patents Nos. 65,664 and 81,883, such as should be enforced by a court of equity in this suit commenced in 1881? The position of the defendants is that if Mr. Gilbert had brought against the Buffalo Company a bill for an injunction and an account, instead of making the assignment, he would have been successfully met, so far as the accounting of profits and damages before the commencement of the suit was concerned, by the principle that "laches and neglect are always discountenanced" by a court of equity. It is urged by the plaintiff that, assuming it to be true, as found by the court, that the entire patented process was not used until 1878–'9, there was but a brief period during which Gilbert could have been chargeable with laches. If this was the entire case, the defendant's position would be exceedingly weak. The facts are that in 1868 Fox & Williams were using the machinery described in the Gilbert patent of 1867, and his process up to and including the deposit upon the tables. Farmenich & Williams were also using the same part of the process. Each of these firms was sued by J. J. Gilbert for infringement. Probably just before the institution of the suit against Fox & Williams they were offered by Colgate Gilbert a license to use the patents then in existence for $10,000, which was refused. The suits were subsequently voluntarily discontinued. One of the reasons for the discontinuance which was given by Colgate Gilbert to one of the witnesses, and the one which was found by me to be the reason for the subsequent inaction of J. J. Gilbert, was because Fox & Williams were sirup-manufacturers, and were not substantially interfering with the business of the Gilberts. From that time Fox & Williams and its successor—the Buffalo Company—continued to use the Gilbert machinery, and commencing in 1878–'9 it used the entire process. The American Company, which was formed in 1877, also used the same machinery and process during the management of the Jebbs, and before the sale of their stock in May, 1879. No subsequent objection was ever made by J. J. Gilbert to any acts of either of said companies or to any act of any other manufacturer, although there were various other infringers between 1868 and his death. His whole conduct showed an indifference as to the infringement, and led the infringers to believe that his patents were not valid or important. The great bulk of the business, in which the entire process was used, was undoubtedly the manufacture of glucose—a business which, during the time of the infringement, was immense, and which the patentee did not wish to stop. It is true that he did not know that either company was using the entire process, and he did not care to know. He had an "easy indifference" on the subject. But it is said that he did not know that either company was using his process in the laundry-starch business, and that, if he had known, he would have been aggressive and positive in his efforts to suppress infringement. He must have known that each company was making laundry-starch, and he knew that the Buffalo Company had used his machinery and a part of his process in the manufacture of glucose, and that its predecessor had refused to take a license. If he had cared to investigate and see whether this competitor was now infringing upon his rights, it would not have been difficult for him to ascertain. On the contrary, he was content to use his patented process in his own mill, and was apparently indifferent whether the Buffalo Company used it or not, though with very good reasons to believe that it was an infringer.

I am thoroughly of opinion that, as against the Buffalo Company, J. J. Gilbert would have had no standing in an attempt to obtain the aid of a court of equity to recover these old claims. As against the American Company, he would have been in a better position, for while he knew that it, like the other company, was making glucose to a very large extent, there is no positive evidence that his attention was ever particularly called to its machinery, or that he knew that it had ever used his inventions in whole or in part. If, however, he had in 1881 asked for an injunction against the Buffalo Company's further use of his patents, it would have seemed to me unjust that he should also be permitted to obtain an account of the profits and an assessment of the damages which were the result of the very extensive business which he did not wish to stop, and which grew out of the use of patents to which he apparently has had no objection since the discontinuance of the suits commenced in 1868.

There are no decisions which relate to a similar state of facts. In *McLean* v. *Fleming* (26 U. S., 245) there was a knowledge of the plaintiff's predecessors of the defendant's use of their trade-mark for perhaps twenty years. In *Merriam* v. *Smith* (11 Fed. Rep., 588) the infringers, who were both manufacturers, were wholly unaware of the existence of the patent which they infringed, and which was intended for the manufacture of welts for carriage-trimmings. The patentees were equally ignorant of the infringing machine. In that case, while Judge Lowell left the purchasers of the claims for past damages to their action at law, the question of laches on the part of the patentees did not apparently arise.

I therefore plan the decision of this branch of the case upon the general principle that the patentees previous laches and indifference in regard to the use of his patents by the Buffalo Company will prevent the enforcement by a court of equity of his pecuniary claims against that company for infringements before the purchase of the patents by the present owner and plaintiff.

Second. Are the claims against the American Grape

Sugar Company for the infringement of the J. J. Gilbert patents, and also of No. 137,911, which were assigned to the plaintiff by the Messrs. Jebb, such as a court of equity will enforce? The works of this company were erected under the personal management and direction of the Messrs. Jebb, both of whom were directors, and one was vice president and the other was treasurer of the company, and both were afterward actively engaged as its officers and managers in this infringement. Subsequently, having sold their stock in the company for $80,000, they bought these patents, and now are seeking, through their assignee, to make the company pay the profits which were created by their own acts of infringement. As the active transfer of the company, they committed or authorized the infringement, and having obtained title to the patents which they infringed, brought a suit to compel the company to pay for their own unlawful acts. That suit was subsequently converted into the present one by stipulation. An enforcement of such a claim does not seem to me to be the province of a court of equity.

It is not claimed that an accounting shall be had for the time during which the patents were owned by the Messrs. Jebb.

The defendants presented affidavits upon which they asked that, in case the motion was granted, it should be upon condition that the case should be opened so as to permit them to present newly-discovered evidence that the invention described in the patent of 1867 was in public use with the consent of the patentee in the year 1861. The affidavits state the declaration of a third person in regard to what he had ascertained could be proved by other persons, and also his declarations as to the effect of these discoveries upon the suit against the Duryeas. I think that the truth of the declarations of the third person is not sufficiently manifest to justify me in opening a case so carefully prepared as these were.

The plaintiffs' motion is denied, except as to an accounting of the profits and an assessment of damages for the use of No. 137,911, by the Buffalo Grape Sugar Company before its purchase by the Messrs. Jebb.

THE OFFICIAL GAZETTE OF THE United States Patent Office.

[BY AUTHORITY OF CONGRESS.]

VOL. 32—No. 12. TUESDAY, SEPTEMBER 22, 1885. PRICE—$5 per year.

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The Official Gazette.

The OFFICIAL GAZETTE is published every Tuesday, simultaneously with the weekly issue of patents. From January 1, 1872, (the commencement of its publication,) to June 30, 1883, it was published and bound in semi-annual volumes; since July 1, 1883, in quarterly volumes. All subscriptions must commence with the beginning of a volume; none taken for less than three months. Terms: To all subscribers within the United States and Canada, $5 per annum; to foreign subscribers, $7; single copies, 10 cents; bound semi-annual volumes, (prior to June 30, 1883,) full sheep, $4 per volume; bound quarterly volumes, (subsequent to July 1, 1883,) full sheep, $2.75 per volume. No club rates. *Payment in advance.* All orders should be addressed to "The Commissioner of Patents, Washington, D. C."

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The following indexes to foreign patents have been translated, compiled, and published under the authority of the Commissioner of Patents, and may be obtained as a Patent Office publication at the prices given below.

INDEX TO FRENCH PATENTS, 1791 to 1876, inclusive, (subject-matter,) one volume, 935 pp., bound in cloth.....$10 00

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Appendix No. 2 to the index to patents relating to electricity, covering the period of time from July 1, 1882, to June 30, 1883, has been issued, and is now for sale. These indexes, arranged alphabetically, numerically, and by classes, are completed to June 30, 1883, and comprise the following volumes:

Vol. 1. Index to patents relating to electricity granted by the United States prior to June 30, 1881, with an appendix, July 1, 1881, to June 30, 1882. One volume, 250 pages. In paper covers, $3; bound, $5.

Vol. 2. Appendix No. 2, July 1, 1882, to June 30, 1883. One volume, 50 pages. In paper covers, $1.50.

Vol. 3. Appendix No. 3, July 1, 1883, to June 30, 1884. One volume, 60 pages. In paper covers, $1.50.

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Issue of September 22, 1885.

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Designs	36—No. 16,255 to No. 16,290,	inclusive.
Trade-Marks	18—No. 12,584 to No. 12,601,	inclusive.
Labels	9—No. 4,574 to No. 4,582,	inclusive.
Reissues	2—No. 10,645 to No. 10,646,	inclusive.
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States.	Patents and Designs.	Trade-Marks and Labels.	States.	Patents and Designs.	Trade-Marks and Labels.
Alabama	3	.....	Nebraska	3	.....
Arizona Territory	.....	.....	Nevada	.....	.....
Arkansas	4	.....	New Hampshire	1	.....
California	14	.....	New Jersey	20	.....
Colorado	.....	.....	New Mexico Territ'y	.....	.....
Connecticut	13	.....	New York	90	6
Dakota Territory	1	.....	North Carolina	1	.....
Delaware	.....	.....	Ohio	24	1
District of Columbia	3	.....	Oregon	1	.....
Florida	.....	.....	Pennsylvania	37	3
Georgia	4	.....	Rhode Island	7	.....
Idaho Territory	.....	.....	South Carolina	.....	.....
Illinois	17	7	Tennessee	2	.....
Indiana	13	1	Texas	9	.....
Indian Territory	.....	.....	Utah Territory	.....	.....
Iowa	9	.....	Vermont	.....	.....
Kansas	8	.....	Virginia	.....	.....
Kentucky	3	.....	Washington Territ'y	.....	.....
Louisiana	4	.....	West Virginia	3	.....
Maine	5	.....	Wisconsin	9	.....
Maryland	2	.....	Wyoming Territory	.....	.....
Massachusetts	42	3	United States Army	.....	.....
Michigan	22	1	United States Navy	.....	.....
Minnesota	8	.....			
Mississippi	4	.....	Total to citizens of the United States	404	22
Missouri	12	.....			
Montana Territory	.....	.....			

TO CITIZENS OF FOREIGN COUNTRIES.

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Argentine Republic	.....	.....	Germany	3	1
Austria-Hungary	1	.....	Holland	.....	.....
Barbadoes	.....	.....	Italy	1	.....
Belgium	1	.....	Malta	.....	1
Bermuda	.....	.....	Netherlands	1	.....
British Columbia	.....	.....	Scotland	1	.....
Canada	5	.....	Spain	.....	.....
Chili	.....	.....	Sweden	.....	.....
Colombia, U. S. of	.....	.....	Switzerland	1	.....
Cuba	.....	.....	West Indies	.....	.....
Denmark	.....	.....			
Ecuador	.....	.....	Total to citizens of foreign countries	27	5
England	12	3			
France	1	.....			

DESIGNS.

16,255.—CARPET.—*Morton F. Beal*, Boston, assignor to *The Lowell Manufacturing Company*, Lowell, Mass. Application filed July 1, 1885. Term of patent 3½ years.

16,256.—ORNAMENTATION OF PAPER.—*William Demuth*, New York, N. Y. Application filed May 26, 1885. Term of patent 7 years.

16,257.—BAS-RELIEF OF GENERAL GRANT.—*Emil Fox*, New York, N. Y. Application filed July 24, 1885. Term of patent 3½ years.

16,258 to 16,265, inclusive.—CARPET.—*Edwin Fisher*, Boston, assignor to *The Lowell Manufacturing Company*, Lowell, Mass. Applications filed July 1, 1885. Term of patents 3½ years.

16,266 and 16,267.—CARPET.—*Edwin Fisher*, Boston, assignor to *The Lowell Manufacturing Company*, Lowell, Mass. Applications filed June 13, 1885. Term of patents 3½ years.

16,268 to 16,270, inclusive.—OIL-CLOTH.—*Charles T. Meyer* and *Victor E. Meyer*, Bergen, N. J., assignors to *Edward C. Sampson*, New York, N. Y. Applications filed July 17, 1885. Term of patents 3½ years.

16,271.—CARPET.—*Edward Poole*, Boston, assignor to *The Lowell Manufacturing Company*, Lowell, Mass. Application filed June 13, 1885. Term of patent 3½ years.

16,272 to 16,274, inclusive.—CARPET.—*Emil G. Sauer*, New York, N. Y., assignor to *The Lowell Manufacturing Company*, Lowell, Mass. Applications filed June 13, 1885. Term of patents 3½ years.

16,275 to 16,286, inclusive.—CARPET.—*Charles W. Swapp*, New York, N. Y., assignor to *The Lowell Manufacturing Company*, Lowell, Mass. Applications filed July 1, 1885. Term of patents 3½ years.

16,287.—CARPET.—*Charles W. Swapp*, New York, N. Y., assignor to *The Lowell Manufacturing Company*, Lowell, Mass. Application filed June 13, 1885. Term of patent 3½ years.

16,288.—VASE.—*Frederick Kaiser*, New York, N. Y., assignor to *J. W. Fiske*, same place. Application filed June 2, 1885. Term of patent 14 years.

16,289 and 16,290.—SURFACE ORNAMENTATION OF WALLS, &C.—*Frederick Mankey*, Williamsport, Pa. Applications filed July 18, 1885. Term of patents 7 years.

TRADE-MARKS.

[Certificate of registration of Trade-Marks numbered 8,191 and upward are registered under the act of March 3, 1881.]

12,584.—NEEDLES FOR HAND-SEWING.—*William Bartleet & Sons*, Redditch, county of Worcester, England. Application filed June 4, 1884.

"The representation of an eclipse of the sun."

12,585.—NEEDLES, TOILET-PINS, BODKINS, AND CROCHET-HOOKS.—*William Bartleet & Sons*, Redditch, county of Worcester, England. Application filed June 4, 1884.

"The representation of the bust of an archer with plumed hat and gauntlets in the act of discharging an arrow from a bow."

12,586.—CANNED GOODS FOR FOOD.—*John W. Brown*, Philadelphia, Pa. Application filed August 18, 1885.

"The arbitrarily-selected phrase 'DEW DROP.'"

12,587.—SHEETINGS, SHIRTINGS, DRILLS, AND JEANS.—*Fearon, Low & Co.*, New York, N. Y. Application filed August 15, 1885.

"The picture of a Chinese prince representing a man having a rectangular turban with wings or streamers extending outward from each side, and with a large amount of clothing hung about him."

12,588.—LAUNDRY-SOAP.—*James S. Kirk & Co.*, Chicago, Ill. Application filed September 15, 1884.

"The word 'WASHBOARD.'"

12,589.—LAUNDRY-SOAP.—*James S. Kirk & Co.*, Chicago, Ill. Application filed August 10, 1885.

"The word 'PLANET.'"

12,590.—LAUNDRY-SOAP.—*James S. Kirk & Co.*, Chicago, Ill. Application filed August 12, 1885.

"The word 'CONGRESS.'"

12,591.—REMEDY FOR SKIN DISEASES.—*Frank Levy*, New York, N. Y. Application filed March 16, 1885.

"A representation of the Bartholdi Statue of Liberty."

12,592.—FLOUR.—*Lyon & Co.*, New York, N. Y. Application filed August 20, 1885.

"The words 'DIAMOND MILLS.'"

12,593.—GUINNESS'S EXTRA STOUT.—*Thomas McMullen & Co.*, New York, N. Y. Application filed July 24, 1885.

"A device composed of a circle surmounted by a crown, having the figure of a unicorn on the right and the figure of a lion on the left, and below the circle and figures a scroll containing the words 'DIEU ET MON DROIT.' Above the circle are the words 'GUINNESS'S FOREIGN STOUT, EXTRA,' and below the scroll the words 'JAMES'S GATE DUBLIN.' Within the circle are the words 'IMPORTED BY T. MCMULLEN & CO., 44 BEAVER ST., N. Y.,' and across said device is the fac-simile of signature of 'THOMAS MCMULLEN & CO.'"

12,594.—STEEL TABLE-WARE AND CUTLERY AND GERMAN-SILVER FORKS AND SPOONS.—*Pairpoint Manufacturing Company*, New Bedford, Mass. Application filed August 12, 1885.

"The figures '1880.'"

12,595.—LAUNDRY-STARCH.—*John M. Porter*, Boston, Mass. Application filed August 17, 1885.

"The figure of a boy in the act of running."

12,596.—BOOTS AND SHOES.—*Josiah W. Rodgers*, Beverly, Mass. Application filed August 20, 1885.

"The word 'EAGLE' and a pictorial illustration of an eagle."

12,597.—HOSIERY.—*Heinrich Schopper*, Zeulenroda, Reuss, Germany. Application filed August 4, 1885.

"The words 'FORTITER ET CONSTANTER' in connection with the representation of a sectional view of a cotton-frame."

12,598.—VELOCIPEDES AND THEIR PARTS AND MATERIALS.—*George Singer*, Coventry, county of Warwick, England. Application filed August 17, 1885.

"The word 'CHALLENGE.'"

12,599.—NATURAL MINERAL WATER.—*The St. Clair Mineral Springs Company, (Limited,)* St. Clair, Mich. Application filed August 17, 1885.

"The word 'SALUTARIS.'"

12,600.—CIGARETTES.—*James Turnbull* and *Thomas Somerville*, Valetta, Malta. Application filed July 16, 1885.

"The words 'KAISAR-I-HIND.'"

12,601.—DRESSING FOR CARRIAGE-TOPS.—*Lucius M. West*, Rockford, Ill. Application filed August 11, 1885.

"The symbol of a carriage-top."

LABELS.

4,574.—Title: "DR. DAVIS' LIVER PILLS."—*John H. Collins & Co.*, Philadelphia, Pa. Application filed September 2, 1885.

4,575.—Title: "THE PROFITABLE HOG & CHICKEN CHOLERA CURE."—*Emil Heun*, Cincinnati, Ohio. Application filed August 29, 1885.

4,576.—Title: "LEHIGH LAUNDRY SOAP."—*James S. Kirk & Co.*, Chicago, Ill. Application filed August 29, 1885. (Trade-Mark Registered.)

4,577.—Title: "IMPERIAL OLIVE," (FOR LAUNDRY SOAP.)—*James S. Kirk & Co.*, Chicago, Ill. Application filed August 29, 1885. (Trade-Mark Registered.)

4,578.—Title: "BULLION," (FOR LAUNDRY SOAP.")—*James S. Kirk & Co.*, Chicago, Ill. Application filed August 29, 1885. (Trade-Mark Registered.)

4,579.—Title: "DIRECTIONS FOR USING I. A. POTTER & CO'S NEW AMERICAN STRENGTHENING PLASTER."—*I. A. Potter & Co.*, Watertown, N. Y. Application filed August 31, 1885.

4,580.—Title: "SMITH'S VEGETABLE TONIC."—*E. G. Smith & Son*, Kentland, Ind. Application filed August 27, 1885.

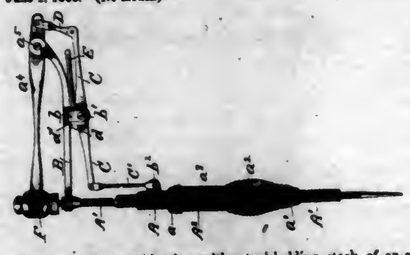
4,581.—Title: "THE RELIABLE" (FOR UMBRELLAS AND PARASOLS.) *Uriah G. Steinmetz*, Philadelphia, Pa. Application filed August 31, 1885.

4,582.—Title: "SPARKLING BANANA LIQUEUR."—*W. H. Ussher*, New York, N. Y. Application filed August 29, 1885.

PATENTS

GRANTED SEPT. 22, 1885.

326,537. DENTAL PLUGGER. ROBERT H. AMES, Geneseo, Ill. Filed June 1, 1885. (No model.)



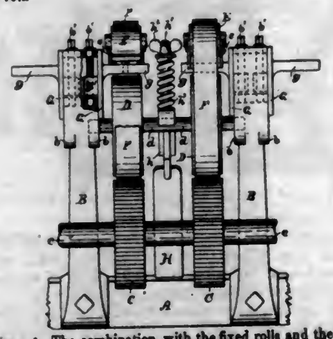
Claim.—1. The combination, with a tool-holding stock, of an arm extending at right angles thereto, and having the outer end curved upward, as described, and a mallet or hammer, the handle whereof is pivoted to the curved end of said arm, substantially as and for the purpose set forth.

2. In a dental instrument, the combination, with the stock or shaft, of a sliding sleeve provided with a laterally-projecting lug, a connecting-rod, an oscillating lever, an arm secured to the upper end of said stock and provided with a downwardly-projecting lug, a mallet or hammer, and the means for connecting the outer end of said lever and mallet-handle, whereby a downward movement of the sleeve on the stock causes the hammer to descend and strike a blow, substantially as described.

3. In a dental instrument, the combination, with a supporting-arm, of an oscillating lever, a mallet, and the means described for automatically returning said mallet to a normal position when the pressure is relaxed on the point of the instrument, substantially as set forth.

326,538. DRAWING MECHANISM FOR SPINNING AND TWISTING MACHINES, &c. ELIJAH E. BAKER, Providence, R. I., assignor of one-half to Mark Sharp, same place. Filed Apr. 18, 1884. (No model.)

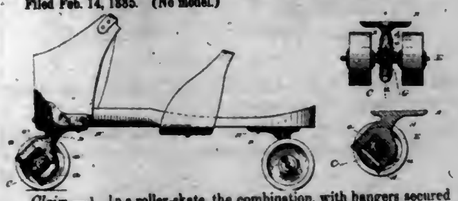
Brief.—A belt of leather or other material passes around the top roll and over a tension-roll carried in adjustable supports, whereby the permanent mean tension of the belt is produced. The variable tension is produced by the action of a coiled tension-spring on the shaft of the top roll.



Claim.—1. The combination, with the fixed rolls and the standards B, of movable supports mounted in said standards, connections for operating said supports, tension-rolls E, mounted upon said supports, a movable shaft, the top rolls thereon, the belts connecting rolls E with the top rolls, and attachments for adjusting the movable shaft carrying the top rolls, substantially as and for the purposes described.

2. The combination, with the standards B, having the elongated sockets and the bearings *b*, the bottom rolls and their shaft, of the shaft *d*, the rolls D thereon, the supports G and rolls E thereon, the adjusting-screws *b'*, the belts F, the frame A, carrying arm H, the stem *h'*, having the nut h^3 and spring h^2, and the link *h*, having the hooked end, substantially as set forth.

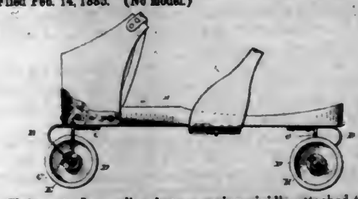
326,539. ROLLER-SKATE. GEORGE W. BAKER, Cleveland, Ohio. Filed Feb. 14, 1885. (No model.)



Claim.—1. In a roller-skate, the combination, with hangers secured to the foot-rest, and supporting-blocks pivoted to said hangers, of roller-axles secured in the supporting-blocks above the pivotal connection of the latter with the hangers, and spring-arms engaging the blocks at points above the roller-axles, substantially as set forth.

2. In a roller-skate, the combination, with hangers secured to the foot-rest, and blocks pivoted in said hangers, of roller-axles secured to the blocks above the pivotal connection of the latter with the hangers, and the bent springs engaging said blocks, all of the above parts combined substantially as shown.

326,540. ROLLER-SKATE. GEORGE W. BAKER, Cleveland, Ohio. Filed Feb. 14, 1885. (No model.)



Claim.—1. In a roller-skate, a spring rigidly attached to the foot-rest and to the roller-axle, a plate rigidly connected with the foot-rest and loosely connected with the spring and arranged to limit the movements of the spring in all directions, substantially as set forth.

2. In a roller-skate, a bifurcated spring rigidly attached to the foot-rest and to the roller-axle, a plate rigidly connected with the foot-rest and extending through the slot of the spring, with shoulders on either side of the spring, and arranged to limit the movement of the spring in all directions, substantially as set forth.

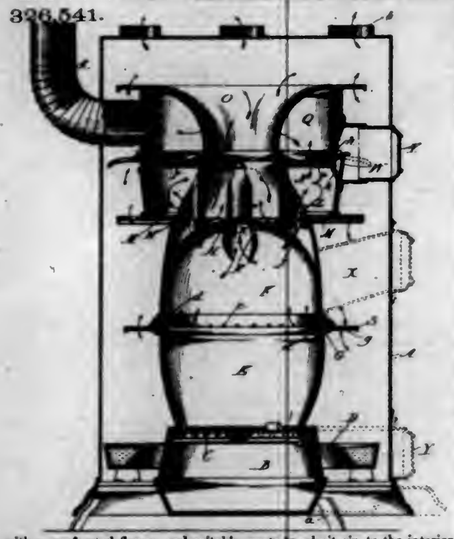
3. In a roller-skate, a bifurcated spring rigidly secured to the foot-rest, and the free end thereof bent around and rigidly secured to the roller-axle, a plate overlapping and secured by the same fastening as the spring, a narrow part of the plate extending through the slot of the spring, with shoulders on either side of the spring to limit the movement of the latter, substantially as set forth.

4. In a roller-skate, the combination, with the springs B and plates C, arranged as described, of the sloping shoulders *c'* and the shoulder c^3, arranged, respectively, in pairs on opposite sides of the respective springs, substantially as set forth.

326,541. HOT-AIR FURNACE. JOHN R. BARKER, Chicago, Ill. Filed Nov. 19, 1884. (No model.)

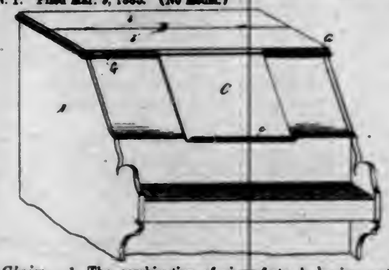
Claim.—In a hot-air furnace, the combination, with the walls of fire-space E and dome F, of the interposed ring G, such ring provided

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with a perforated flange, and suitable ports to admit air to the interior of the combustion-chamber, as set forth.

326,542. MUSIC-DESK FOR PIANOS. J. BURNS BROWN, New York, N. Y. Filed Mar. 9, 1885. (No model.)

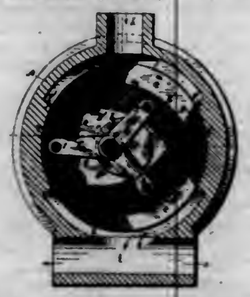


Claim.—1. The combination of piano-forte A, having sectional top plate, *b b'*, with rails D D', desk C, having studs E, and with head or stop G, substantially as specified.

2. The combination of piano-forte A, having sectional top plate, *b b'*, with rails D D', desk C, having studs E, and with slotted partition J, all being so constructed that when desk C is pushed back the cover *b b'* is locked down, substantially as specified.

3. The combination of piano-forte A, having sectional top plate, *b b'*, with rails D D', desk C, having studs E, and molding *c*, and with molding G and partition J, substantially as shown and described.

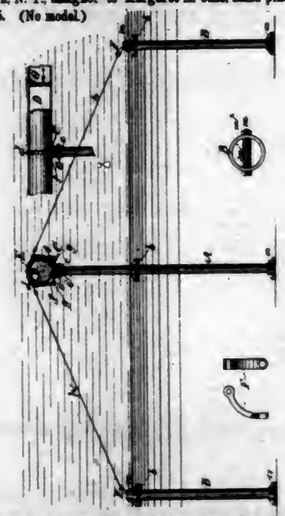
326,543. ROTARY ENGINE OR PUMP. CHARLES H. CARY, Bristol, R. I., assignor of three-fourths to Russell D. Bullock, William T. G. Wardwell, Samuel P. Colt, Patrick Hammill, and Elphalet Horton, all of same place. Filed Dec. 26, 1884. (No model.)



Claim.—1. In a rotary engine or pump, the combination of the concave abutments with the rotary chambered head and the reciprocating pistons carved on their outer faces, substantially as and for the purpose specified.

2. In a rotary engine or pump, the combination of the rotary chambered head, the pistons carved on their outer faces, the fixed eccentric wrist-pin, the connecting-rods, and the concave abutments, substantially as described.

326,544. STRUCTURE FOR SUBMARINE SEWERS. HENRY CASE, Brooklyn, N. Y., assignor to Margaret A. Case, same place. Filed Apr. 30, 1885. (No model.)



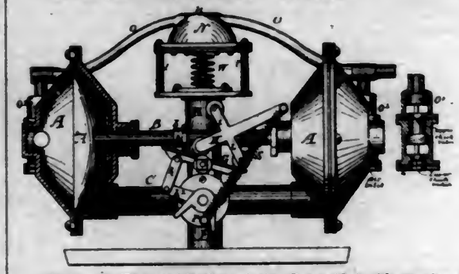
Claim.—1. A supporting structure for submarine sewers, constructed in sections, substantially as herein shown and described, each section containing one or more supporting-piles, A, two or more brace-piles, B, all provided with suitable shoes, a pile-bearer, chain E, links F, attached to the brace-piles, strap *d*, and brace-rods *h*, connecting the links and chain, all arranged and operating substantially as set forth.

2. In a structure for submarine pipes, the combination, with supporting-piles A, brace-piles B, bearers, chain E, links F, bolts *m*, straps *d*, and brace-rods *h*, of the pipes D, all arranged substantially as herein shown and described.

3. In a structure for supporting submarine pipes, as a means for holding the pipes to the supporting-piles, the combination, with bearers secured to the said piles, of straps, as *d*, all arranged substantially as herein shown and described.

4. In a structure for supporting submarine pipes, the combination, with the pipe-supporting piles, of concave bearers for receiving the pipes, substantially as herein shown and described.

326,545. RECIPROCATING MOTOR. WILLIAM F. CLASS and ALBERT J. WEATHERHEAD, Cleveland, Ohio, assignors of one-third to George Collins, same place. Filed Apr. 21, 1884. (No model.)



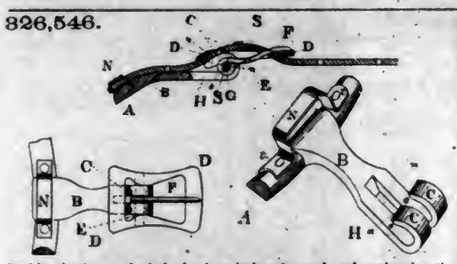
Claim.—1. The combination of pipe C, provided with chamber *d* and ports, the valve D, having web d^3, crank-lever *h'*, link *h*, balance-lever G, tilting-lever H, the rock-shaft *j*, having levers *l l*, the piston-rod having stops *b b*, and a spring, S, substantially as set forth.

2. The regulating-valve mechanism consisting of the chamber K, provided with the slotted plug *k*, the half-spherical chamber N, having the flexible bottom bearing on the head of plug *k*, and cushioned by the spring W, in combination with inlet-pipe E and the air-pipe O, as and for the purpose specified.

326,546. BRACE AND HAME CONNECTION. OLIVER P. COSS, Aurora, Ind. Filed May 10, 1884. (No model.)

Claim.—1. The combination of the hame and the hook and trace

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buckle, the free end of the hook pointing forward and embracing the trace-buckle pin, the plane of the hook being substantially at right angles to the longitudinal axis of the hame, substantially as and for the purposes specified.

2. The combination of the hame provided with bar B, rigidly secured thereto and terminating in a hook, and the trace-buckle directly secured to the said hook, substantially as and for the purposes specified.

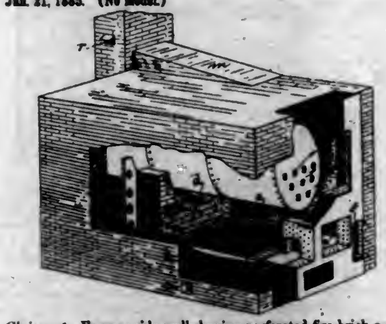
3. The combination of the hame provided with bar B, and having the hook or hooks C, and buckle having frame D and tongue, and pin E, embraced by the hook, substantially as and for the purposes specified.

4. The hame having the bar B, provided with slot H, hook C, and opening *e*, in combination with buckle provided with cross-pins E, arranged to interlock with said hook, substantially as and for the purposes specified.

5. The hame having bar B, provided with slot H, hook or hooks C, and openings *e*, in combination with buckle provided with pin E, having narrow sides S and wide sides *n*, substantially as and for the purposes specified.

6. The hame having bar B, provided with slot H, hooks C, and openings *e*, in combination with buckle provided with pin E, having narrow sides S and wide sides *n*, and loop N, and trace, substantially as and for the purposes specified.

326,547. BOILER-FURNACE. JOHN COLLIS, Des Moines, Iowa. Filed Jan. 21, 1885. (No model.)



Claim.—1. Furnace side walls having perforated fire-brick *a a'*, extending on their insides the entire length of the grate and above and below the grate, and air-passages *b* and *c*, a bridge-wall having corresponding fire-brick, *a a'*, and their chambers connected with the passages *b c*, substantially as set forth, for the purposes stated.

2. A furnace having its parallel side walls and its transverse bridge-wall faced with perforated fire-brick having chambers in their inner edges to produce continuous air-passages extending from one side of a hollow metal front to the other side of the same front, air-passages *b* and *c* and *f*, a hollow metal front having perforations in its inside wall, a grate, and a boiler, arranged and combined substantially as shown and described, to operate as and for the purposes stated.

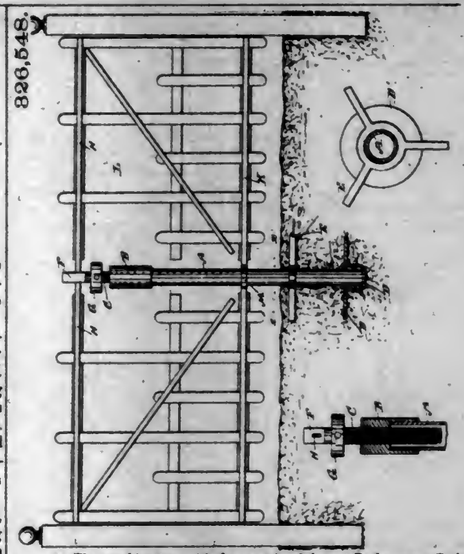
3. A perforated adjustable and detachable auxiliary bridge-wall and superheater, in combination with a fixed bridge-wall and a horizontal boiler in a furnace, to operate in the manner set forth, for the purposes stated.

326,548. GATE-HANGER. ISAACHAR CROWFOOT, Hartford, Wis. Filed July 19, 1884. (No model.)

Claim.—1. The combination, with a tubular post, of a screw held in the top of the post, a head adapted to turn on the top of the screw, and a gate connected with the head and adapted to turn with the same, substantially as herein shown and described.

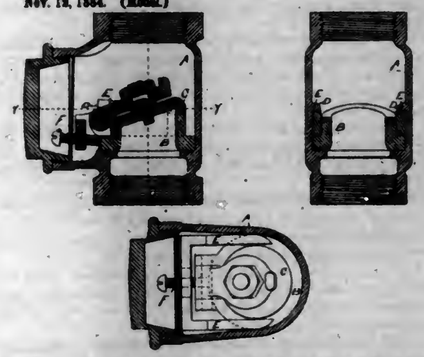
2. The combination, with a tubular post, of a screw in the same, a head adapted to turn on the top of the screw, a bar in the head, which bar is connected with the top of the gate, and a bar connected with the bottom of the gate and provided with an eye through which the post passes freely, substantially as herein shown and described.

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3. The combination, with the post A, of the nut B, the screw C, the head G, the head F, provided with a pivot, the gate L, the top bar, H, and the bottom bar, K, having an eye, M, substantially as herein shown and described.

326,549. CHECK-VALVE. JULIAN D'ESTE, Medford, Mass. Filed Nov. 12, 1884. (Model.)



Claim.—1. A loose check-valve and seat hinged upon each other, formed separately from the pipe, and provided with a wedge, E, for holding said valve and seat in the pipe to make a steam-tight joint, and a screw, F, for removing said wedge, as herein described and shown.

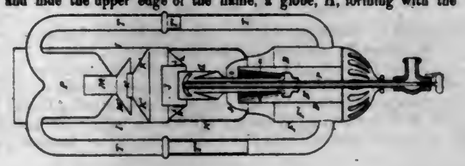
2. The two-armed wedge E, provided with the screw F, threaded through the same, and a fixed bearing for said screw, as herein described, and for the purposes specified.

326,550. GAS OR VAPOR BURNER. MICHAEL B. DYOTT and CHARLES G. DYOTT, Philadelphia, Pa. Filed Oct. 2, 1884. (No model.)

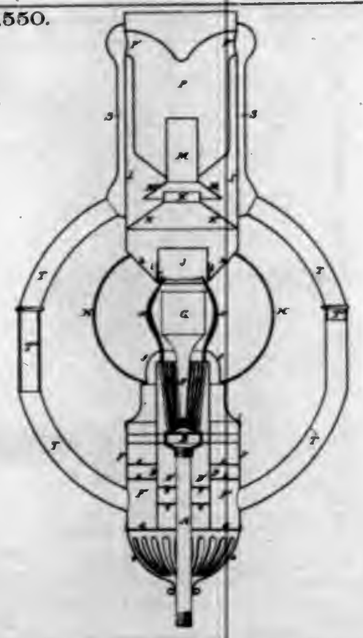
Claim.—1. The combination of the burner-body, the deflecting-block G, and the adjustable upper tube, J, as set forth.

2. The combination of the burner-body, the chamber around the same, a collecting-chamber, the casing of which is constructed to receive, and hide the upper edge of the flame, and a passage from said collecting-chamber to the chamber around the burner-body, as set forth.

3. The combination of the burner-body, the chamber around the same, a collecting-chamber, the casing of which is constructed to receive and hide the upper edge of the flame, a globe, H, forming with the



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upper and lower casings a closed flame-chamber, and a passage between the upper collecting-chamber and the chamber around the burner-body, as set forth.

4. The combination of the burner-body, the deflector G, the chamber around the burner-body, a collecting-chamber, the casing of which is constructed to receive and hide the upper edge of the flame, and a passage between said collecting-chamber and the chamber around the burner-body, as specified.

5. The combination of the burner-body, the chamber around the same, a collecting-chamber above the burner, a passage between the two chambers, and an inlet for air to the chamber around the burner-body, as set forth.

6. The combination of the burner-body, the chamber F' around the same, an air-chamber between said chamber F' and the burner-body, a collecting-chamber above the burner, and a passage between said collecting-chamber and the chamber F', as set forth.

7. The combination of the burner-body, the chambers D' and F', surrounding the same, the collecting-chamber above the burner, a passage between said chamber and the chamber F', and an air-inlet to both of the chambers D' F', as specified.

8. The combination of the burner-body, the chamber F' around the same, the upper chamber, P, communicating with said chamber F', and a pipe for collecting the products of combustion and directing them into the chamber P, the discharge end of said pipe being of less area than the chamber, as set forth.

9. The combination of the burner-body, the chamber F' around the same, the collecting-chamber above the burner, tubes K and M within the collecting-chamber, and a passage between said chamber and the chamber F', as set forth.

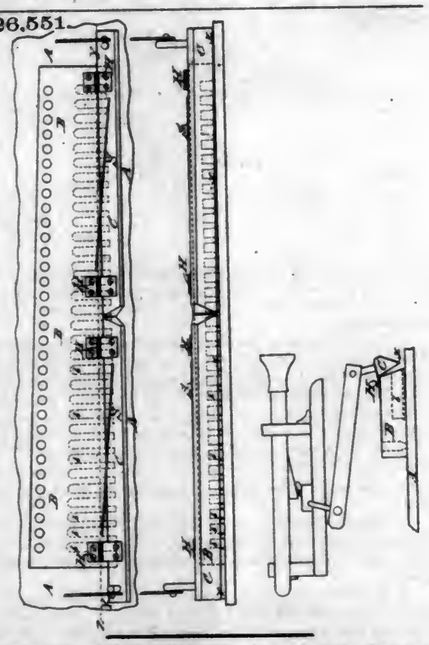
10. The combination of the burner-body, the upper and lower casings, I and F, the globe H, interposed between the two, and the tubes T, each made in two parts, connected by a slip-joint, so as to permit the separation of the same for the removal of the globe, as set forth.

11. The combination of the burner-body, the upper and lower casings, I and F, communicating with each other, the hollow deflecting-retort G, and pipes or passages for supplying oil to said deflecting-retort and for conveying the vapor or gas therefrom to the burner-body, as set forth.

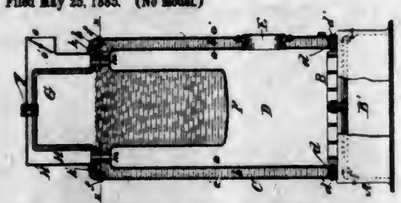
326,551. REED-ORGAN MUTE. JOHN G. EARHUFF and RINALDO ALDEN, Chicago, Ill. Filed Apr. 21, 1884. (No model.)

Claim.—In a reed-organ, the mute C, hinged to the reed-board B along the deflecting-line *z z*, whereby, for an angular movement of the mute, the aperture between the edge *z z* thereof and the sounding-board A will be of continuously-increasing width from the treble to the bass end of the mute, substantially as shown, and for the purposes described.

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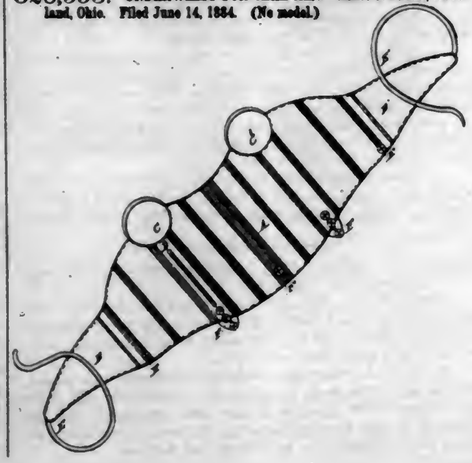


326,552. STEAM-GENERATOR. SAMUEL PERKS, New York, N. Y. Filed May 25, 1885. (No model.)



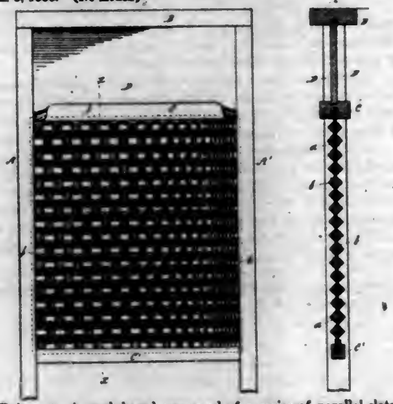
Claim.—The combination, with the outer shell, *a'*, and shell H', as shown, of the inner shell, *a*, arranged in relation to the outer shell to form water-leg *b*, and having a central depending water-space projecting in the center of the combustion-chamber, the flanged drum C, forming a superheating-chamber, and arranged in relation to the shell H' to form a heating-chamber, which receives the arising products of combustion and surrounds the drum G on all sides and the top, and the short tubes *m*, connecting the chambers D H, and projecting through the water-space, all arranged and operating as and for the purpose specified.

326,553. UNDERWAIST FOR CHILDREN. MARY J. FLYNN, Cleveland, Ohio. Filed June 14, 1884. (No model.)



Claim.—As a new article of manufacture, a waist or under-garment for children, composed of the parts A, B, and B', in the form here given, with tapes E E', armholes C C', and slot D, substantially as and for the purpose shown and described.

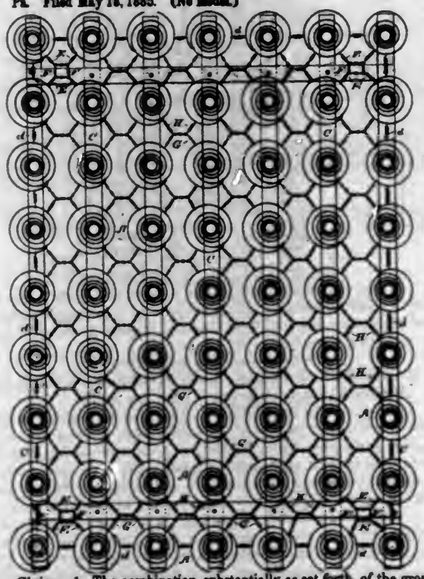
326,554. WASH-BOARD. P. TENNEY GATES, New York, N. Y. Filed Jan. 5, 1885. (No model.)



Claim.—1. A wash-board composed of a series of parallel slats, *a a*, and a number of series of wires, *b b*, pressed alternately over and under said slats at right angles thereto, as shown and described.

2. In a wash-board, a rubbing-surface composed of a series of parallel slats, *a a*, and a number of series of wires, *b b*, said series passed alternately over and under the slats at right angles thereto and at varying distances apart, as and for the purpose set forth.

326,555. SPRING BED-BOTTOM. JEREMIAH M. M. GERHERD, Muncy Pa. Filed May 16, 1885. (No model.)



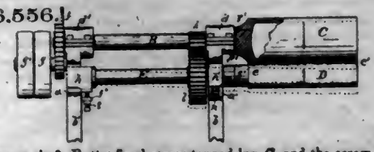
Claim.—1. The combination, substantially as set forth, of the group of springs, the connecting-springs, each of which is attached at one of its ends to a supporting-spring of the group, and the connecting-chain, to which the opposite ends of the connecting-springs are attached, for the purpose described.

2. The combination, substantially as set forth, of a row of supporting-springs, connecting-chains attached at their ends to respectively adjacent supporting-springs of the row, an adjacent row of supporting-springs, and the connecting-springs by which they are flexibly united with said connecting-chains, for the purpose described.

326,556. IRONING-MACHINE. ARTHUR T. HAGEN, Rochester, N. Y. Filed May 22, 1884. (No model.)

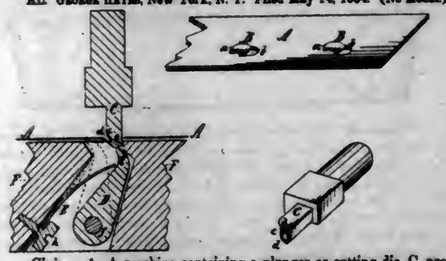
Claim.—In an ironing-machine, the ironing-rolls C D, in combination with their shafts B E and gears *k l*, the movable bearings *h h'* of

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the lower shaft, E, the fixed screw-tapped lug *f''*, and the screw-threaded adjusting-rod *i*, which has a ball-and-socket connection with bearing *h* and engages with said lug, substantially as and for the purpose set forth.

326,557. MACHINE FOR FORMING CLAMPS IN SHEETS OF METAL. GEORGE HAYES, New York, N. Y. Filed May 14, 1884. (No model.)

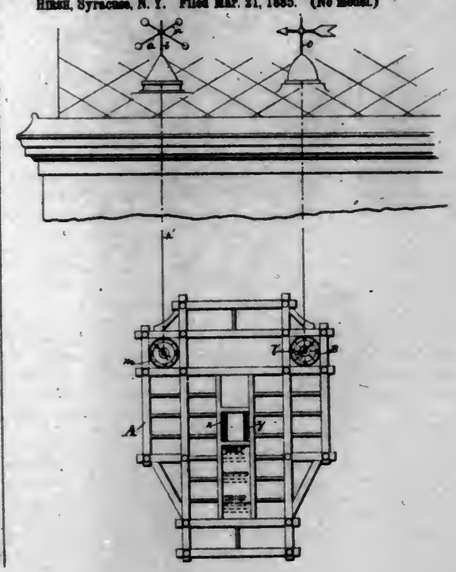


Claim.—1. A machine containing a plunger or cutting-die, C, provided with rounded or curved face *c*, having cutting-edges *d*, adapted to cut through two or more sheets of metal to form the tongue *a*, the face *c*, to press the tongue *a* outwardly, (the plunger operated by any suitable mechanism which will give it reciprocating motion,) and in combination therewith a folder or bender, D, pivoted in a block or bed-plate, F, as at *f*, its upper end having a rounded face, *g*, and adapted to be set in motion and forced backward by the plunger as it presses downward, and by its coaction with the plunger to turn over and force backward and upward the tongue and form it into the clamp B, substantially as set forth.

2. The plunger or cutting-die C, provided with a curved face, *c*, and the cutting-edges *d*, the curve of the face being convex, and its heel *e* higher than the toe and without a cutting-edge, the form being such that as the plunger is forced down upon one or more sheets of metal the sharp angles will cut from toe to heel a tongue, *a*, in the metal, and at the same time the curved face will force outward the tongue with a bend at the heel of the die, substantially as shown and described.

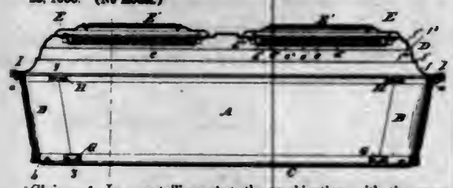
3. In combination with plunger C, having a convex curved face, *c*, adapted to form the tongue *a* in sheet metal, the folder D, operated by the downward pressure of the plunger C to curl or turn back the tongue *a*, formed by the plunger, and coacting therewith to form the clamp B, substantially as set forth.

326,558. APPARATUS FOR WEATHER-SIGNAL STATIONS. R. HIRSH, Syracuse, N. Y. Filed Mar. 21, 1885. (No model.)



Claim.—The herein-described weather-signal, comprising an anemometer and an anemoscope, a separate cylinder carrying a dial and hand for each, an intermediate mechanism for the anemometer, consisting, essentially, of a worm-gear, a train of gear-wheels, a rack-bar, and a chain or wire connecting said rack and dial cylinders, as described, the connecting mechanism for the anemoscope and its dial, comprising a shaft having an endless screw, a worm-gear, a train of gear-wheels, a drum, and cord or chain connecting said drum and dial carrying cylinder, as described, and for the purposes set forth.

326,559. COFFIN. DANIEL B. HEISER, Springfield, Ohio. Filed Mar. 23, 1885. (No model.)



Claim.—1. In a metallic casket, the combination, with the cover D, the face of which is depressed step-like, as shown, to provide a frame for the face-glass at a point below the plane of the top or face of the cover, of the glass *e*, the metallic frame *e'*, secured to the cover D on a line with the face of said cover, and the rubber or flexible gaskets interposed between the rim and glass and between the glass and depressed portion of the cover D, said depressed portion having a face-glass opening, substantially as described.

2. In a casket, the combination, with the cover D, having the depressed face, said depression being open at its center, and so shaped as to form shoulders d^3 d^3, the one d^3 supporting a face-glass, and the one d^3 having a frame, *e'*, bolted thereto to hold the glass in place, said glass and frame being below the level of the face of the cover D, of the face-glass-protecting cap E, open at its center, and provided with a cover, E', secured thereto, all substantially as shown and described.

3. In a metallic casket, the body constructed in four sections—*i. e.*, two sides, A, and two ends, B—flanged internally and externally at their upper ends, flanged internally at their lower end, and secured together at their seam by the angle-plates H G, having bolts extending through the internally-projecting flanges of the sides and ends, and constructed as shown, in combination with the cover D, having shouldered face-glass openings, and the face-glass frame *e'*, with its glass secured therein, said cover being adjustably secured to the body by the clips I, pivoted to the outwardly-projecting flange of the body, and having jaws to grasp the cover to hold it in place, all arranged and constructed substantially as shown and described.

326,560. PLANTER, COTTON CHOPPER, AND SCRAPER. WILLIAM I. HOLT, Harrison, Ark. Filed July 16, 1885. (No model.)



Claim.—1. The combination of the axle, the cotton-chopper and cotton-scraper hung thereon, and extending in opposite directions, and the lever for raising them simultaneously to clear an obstruction, substantially as described.

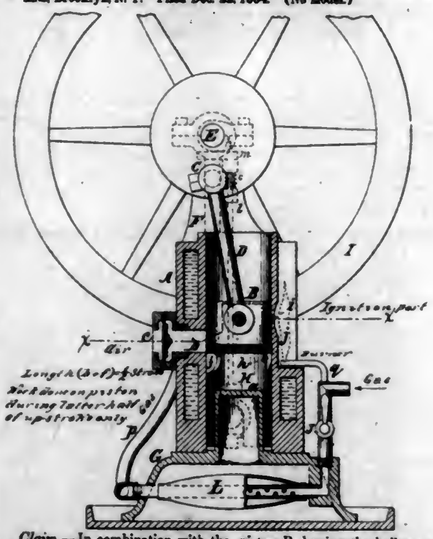
2. The combination of the main shaft or axle with the brackets V, having the sleeves *a* and the grooved standards *b*, and the standard W, secured in the grooved standards *b*, substantially as described.

3. The combination of the cotton-scrapers, the beams D, the curved guides or guards G, running in advance of the scrapers and pivoted at their rear ends to the beams, and the set-screws I, to adjust said guides or guards vertically, substantially as described.

4. The combination of the axle, the sleeve C, journaled thereon, and having the parallel beams, the cotton-scrapers having the standards secured to the beams, and the curved guides or guards running in advance of the scrapers, and secured to the beams, substantially as described.

5. The combination of the axle having the driving and supporting wheels, and the gear-wheel K, the frame L, the shaft journaled in said frame, and having the chopping-hoes, and the pinion meshing with wheel K, the frame B, carrying the cotton-scrapers, brackets V, standard W, secured thereto, the brackets and frames B and L being hung on the axle, and adapted to turn thereon, the tongue, and the lever for raising the frames B and L, substantially as described.

326,561. GAS-ENGINE. GEORGE M. HOPKINS and I. NEWTON HOPKINS, Brooklyn, N. Y. Filed Dec. 22, 1884. (No model.)

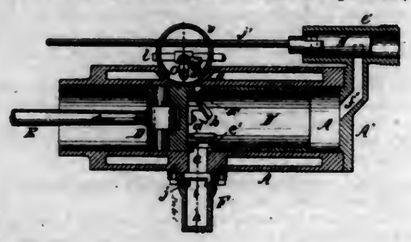


Claim.—In combination with the piston B, having the hollow cylindrical prolongation H, with exhaust-opening *r*, the tappet-valve *k*, and mechanism, substantially as described, actuated by the main shaft for controlling the valve.

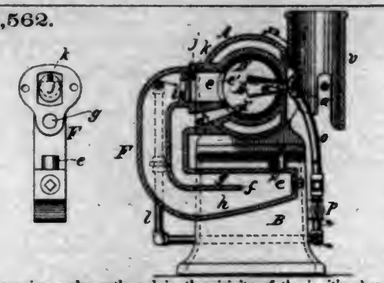
326,562. GAS-ENGINE. GEORGE M. HOPKINS and I. NEWTON HOPKINS, Brooklyn, N. Y. Filed July 2, 1885. (No model.)

Claim.—1. The combination, in a gas-engine, of a cylinder having ignition and air and gas inlet ports, and the piston provided with a cylindrical prolongation having formed in it ports corresponding with the ports in the cylinder, and a deflector placed within the ignition-aperture of the piston and arranged to deflect the ignition-flame toward the open end of the cylindrical prolongation, substantially as herein specified.

2. The combination, in a gas-engine, of a cylinder, A, having the ignition-port *a*, gas and air inlet port *c*, air-inlet port *d*, and the piston provided with a cylindrical prolongation, D', and provided with an ignition-aperture, *a'*, and ports *c' d'*, a tube, F, communicating with the port



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c, and opening underneath and in the vicinity of the ignition-burner, substantially as and for the purpose herein specified.

3. The combination, with the air and gas induction pipe F, of a valve-seat, *i*, and a normally-open valve, *j*, and a gas-supply pipe, *l*, entering the induction-tube F outside of the valve *j*, as herein specified.

4. The combination, in a gas-engine, of a cylinder, A, having in one side thereof an ignition-port, *a*, and in the opposite side ports *c d*, for the admission of gas and air, a tube, F, divided longitudinally by a partition, *f*, forming a passage *g*, for the admission of air through the port *d*, and a passage, *h*, for the admission of air and for the continuous reception of gas, substantially as herein described.

5. The combination, with the igniting-burner *o*, of an auxiliary burner having a tip, *r*, a platinum spiral, *s*, concentric with the tip, and a protecting-chimney, *u*, of wire-gauze, for relighting the burner *o* when extinguished, and for lighting the gas issuing from the mouth of the induction-pipe F, as herein specified.

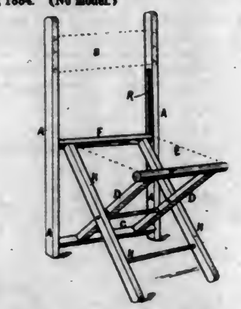
326,563. TIE FOR BALES AND PACKAGES. I. NEWTON HOPKINS, Brooklyn, N. Y. Filed July 2, 1885. (No model.)



Claim.—1. As an improved article of manufacture, a tie-fastener formed of a wire bent twice at right angles and having pointed hooks formed upon the extremities thereof, substantially as herein specified.

2. The combination, with a fastener formed of a wire bent twice at right angles and having pointed hooks formed on the extremities thereof, of a tape or band, B, received on the parallel arms of the fastener, substantially as herein described.

326,564. FOLDING CHAIR. SYLVANUS C. HOPKINS, Boston, Mass. Filed Apr. 19, 1884. (No model.)

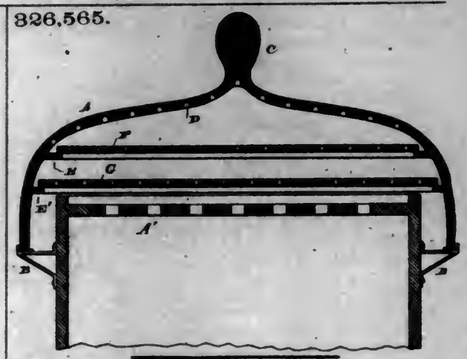


Claim.—In a folding chair, the combination of the legs H and braces D, pivoted together, the sliding rear seat-support, F, connected to the said legs, the front seat-support, P, connected to the said braces, the cross-rung C, connected to the braces D, and the vertical legs A, provided with grooves and connected with the said seat-support F by sliding connections, and, extending above the same, are provided with a back-support, B, as shown and described.

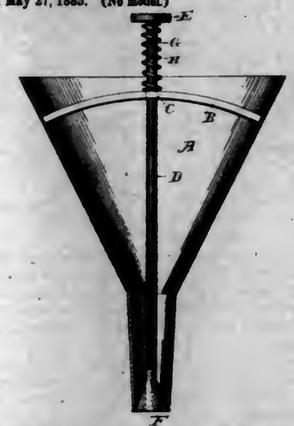
326,565. ABSORBENT COWL FOR THE CHIMNEYS OF HYDRO-CARBON-BURNERS. REBECCA J. JACOBUS, Oakland, Cal. Filed May 26, 1884. (No model.)

Claim.—An absorbent cowl for hydrocarbon-burners, consisting of a hood formed of absorbent material and having indentations on its inner face, said hood being provided with one or more internal perforated absorbent plates, substantially as described.

326,565.

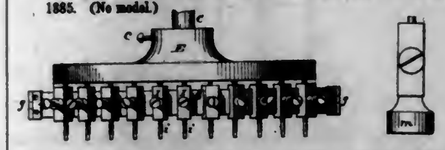


326,566. SELF-CLOSING FUNNEL. JOHN JOCHUM, Brooklyn, N. Y. Filed May 27, 1885. (No model.)



Claim.—In a funnel, the combination of the hollow valve-stem D, provided at its lower end with conical self-guiding valve F and at its upper end with collar E, with the bridge C and the spiral spring H, substantially as and for the purposes set forth.

326,567. BUTTON-LOCATING MACHINE. THOMAS E. KEAVY, Kent, Ohio, assignor of one-half to William I. Caris, same place. Filed July 6, 1885. (No model.)

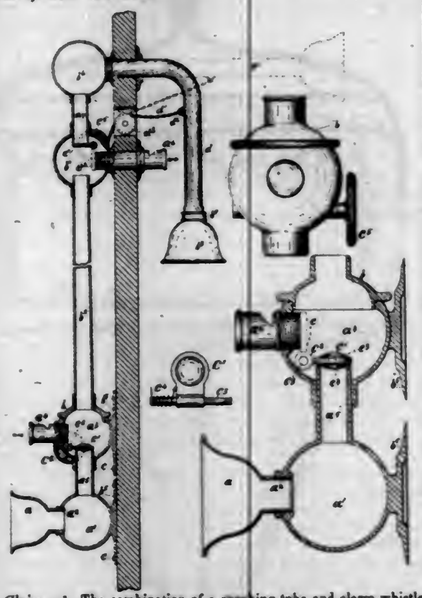


Claim.—1. A button-locating machine consisting of a press having a table, a longitudinally-reciprocating shaft which is adapted to move to and from said table, and a head attached to the end of said shaft nearest said table, said head having attached to the face nearest said table a spring hinged to it at each end, having mounted thereon a series of adjustable bits with marking-points, and a screw connected with said bits and arranged to bend said spring parallel to said head, all constructed and arranged substantially as shown, and for the purpose specified.

2. In a button-locating machine, the combination of a head having a plain face, a spring opposite said plain face and connected at each end to said head and free to bend between its ends parallel thereto, a series of adjustable bits mounted on said spring and resting against said face, their other ends terminating in marking-points, and a screw meshing in a nut connected with said head and resting against said spring, substantially as shown, and for the purpose specified.

3. In a machine for cutting scalloped edges of and button-holes in shoe-quarters, the combination, with a head having a plain face, a spring connected at each end to said head opposite said face, and a screw mounted in a nut connected with said head, and arranged to bend said spring parallel to said face, of a series of bits mounted on said spring, each having a curved knife-edge and a button-hole-cutting edge inside of said curved edge, substantially as and for the purpose hereinbefore set forth.

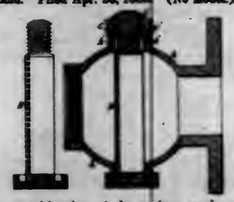
326,568. SPEAKING-TUBE. JOHN A. KNOX, Buffalo, N. Y. Filed Jan. 22, 1885. (No model.)



Claim.—1. The combination of a speaking-tube and alarm-whistle connected to the inside of a carriage, substantially as specified, with a connecting-tube leading to the outside of the vehicle, and an alarm-whistle provided with a valve, and a mouth-piece connected to a flexible tube having a chain or cord, d', connected with the valve, as and for the purposes described.

2. The combination of a bulb, a', having a mouth-piece, a, with a connecting-tube, and a bulb, a^2, provided with a whistle, a spring-valve, a wheel or crank for operating it, and a removable cap, b, substantially as described.

326,569. APPLIANCE FOR PREVENTING DIRT FROM PASSING INTO PIPES. JOHN KIRKALDY, 40 West India Dock Road, County of Middlesex, England. Filed Apr. 28, 1885. (No model.)



Claim.—1. The combination of the casing or chamber having the inlet and outlet openings and the dirt-discharging opening, and the perforated partition secured to and crossing the interior of the casing and removable by way of the dirt-discharging opening, substantially as and for the purpose set forth.

2. The combination of the shell A, perforated partition B, screw-stem B', plate B^2, and cap-nut C, substantially as described.

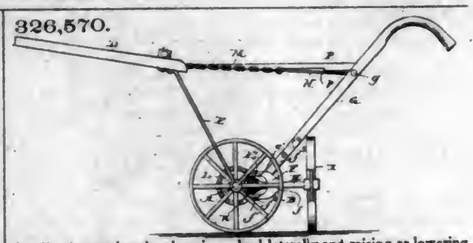
3. The combination of the shell A, perforated partition B, screw-stem B', plate B^2, cap-nut C, and cone-surface C', substantially as described.

4. The combination of the shell A, perforated partition B, screw-stem B', plate B^2, nut C, and chamber D, or chambers D and E, substantially as described.

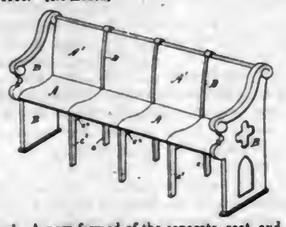
326,570. COTTON-CHOPPER. JAMES S. LAMAR, Augusta, Ga. Filed July 24, 1885. (No model.)

Claim.—1. The combination, in a cotton-chopper, of the rotating axle, the gear-wheel fixed thereto, the bearing E' on the axle, the bearing F, pivoted thereto, and the shaft H in the bearing F, having the chopping-wheel, and the spherical pinion meshing with the gear-wheel, substantially as described.

2. The combination, in a cotton-chopper, of the rotating axle, the gear-wheel fixed thereto, the bearing E', loose on the axle, the bearing F, pivoted thereto, the shaft H in the bearing F, having the chopping-wheel and the spherical pinion meshing with the gear-wheel, and the handles for moving the chopping-wheel laterally and raising or lowering the same, for the purposes set forth, substantially as described.



326,571. CHURCH-PEW. ISRAEL LANCASTER, Chicago, Ill. Filed Apr. 13, 1885. (No model.)



Claim.—1. A pew formed of the separate seat and back sections provided at their joints with braces whereon the abutting edges of both the seat and back sections rest, and whereby the joints are covered on one side, substantially as described.

2. A pew formed of separate seat and back sections provided with braces at the back of and beneath their joints, and with cover-stripe at the front of the back-section joints, substantially as described.

3. A pew formed of separate seat and back sections provided with braces at their joints and with rail-sections at their tops, and with suitable blocks to cover the joints of the rail-sections, substantially as described.

4. A pew formed of the separate seat and back sections, the braces at the back of and beneath their joints and extending to the floor, the rail-sections, and the cover-blocks bored out to receive said rail-sections, substantially as described.

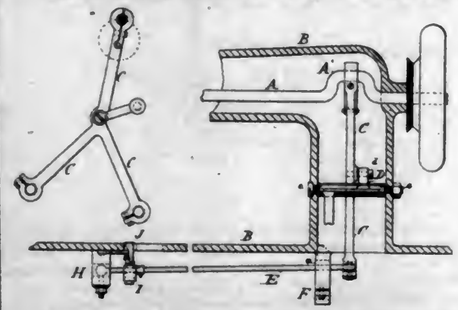
326,572. IMITATION STAINED GLASS. FREDERICK O. LYON, Waltham, Mass. Filed Feb. 11, 1885. (Specimens.)

Claim.—1. A method of using rubber on imitation stained glass in place of the leads.

2. The coloring of the intermediate spaces, as described in the specification.

3. Plain glass, partitioned on one or both sides with rubber, and the coloring of the intermediate spaces, as above described.

326,578. MECHANICAL MOVEMENT. THOMAS A. MACAULAY, New York, N. Y. Filed May 27, 1884. Renewed Aug. 17, 1885. (No model.)



Claim.—1. A mechanical movement comprising a rotary crank-shaft, a primary connecting device having a vertical and vibratory movement operatively connected with a secondary device, to which it imparts a vertical and lateral movement, and with devices in combination with said primary connecting device and crank shaft, which causes a rotation in said secondary device, as and for the purpose specified.

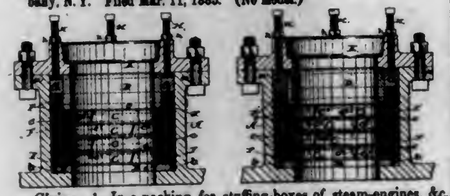
2. A mechanical movement comprising a rotary crank-shaft, a primary connecting device having a vertical and vibratory movement directly connected with a secondary device having a rotary movement, and a slotted disk, as F, operatively connected thereto, and which rotates with said secondary device, as and for the purpose specified.

3. A mechanical movement comprising a rotary operating crank-shaft, a primary connecting device having a vertical and vibratory motion, and adapted to be connected to more than one secondary device, to which it imparts rotary motion, as and for the purpose specified.

4. A mechanical movement comprising a rotary operating crank-shaft, a primary connecting device having a vertical and vibratory movement operatively connected with a secondary device, and intermediate devices adapted to impart two or more rotations to said secondary device to one rotation of said operating crank-shaft, as and for the purpose specified.

5. In combination, the crank-shaft A A', connecting device C C, radius-bar D, or equivalent, a bar, E, or equivalent, directly connected with the connection C C, and a slotted disk, as F, or equivalent, as and for the purpose specified.

326,574. PACKING FOR STUFFING-BOXES. JOHN H. MARS, Albany, N. Y. Filed Mar. 11, 1885. (No model.)

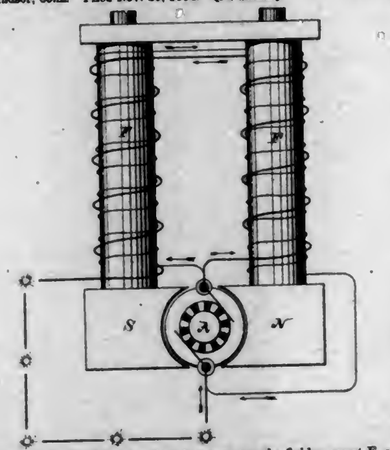


Claim.—1. In a packing for stuffing-boxes of steam-engines, &c., the combination, with metallic packing-rings C, composed of segmental sections, as described, the ring D, and gland E, having the set-bolts H, as set forth, of the compressible elastic packing F and follower G, upon which the set-bolts H bear, as explained, all being arranged to operate as herein specified.

2. A composite packing for the stuffing-boxes of steam-engines, pumps, &c., consisting of metallic packing-rings composed of segmental sections fitted to bear against the circumferential surface of a rod or plunger working through it, and compressible elastic packing interposed between the outer surface of the metallic packing-rings and the cylindrical wall of the stuffing-box, and mechanism which is independent of the means for holding down the metallic packing-rings, substantially as described, for compressing said elastic packing endwise in a direction corresponding to the line of movement of the rod or plunger, as and for the purpose herein specified.

3. The annulus B, fitted into the bottom of the stuffing-box A, and provided with tapped holes b, as and for the purpose herein specified.

326,575. DYNAMO-ELECTRIC MACHINE. RICHARD H. MATHER, Windsor, Conn. Filed Nov. 20, 1884. (No model.)



Claim.—1. In a dynamo-electric generator, the field-magnet F, consisting of a magnetic core wound as a differential electro-magnet with two coils or helices which have a constant length or resistance and constantly-closed circuit-connections, one of said coils being placed in the main or working circuit of such generator, and the other of said coils being placed in a derived circuit about the work, substantially in the manner and for the purpose specified.

2. In combination with a number of electric-arc lamps, or other translating devices, arranged in series in the working-circuit of a dynamo-electric generator, a field-magnet of such generator having two coils or helices which are wound in opposite directions and to a constant resistance, and are placed in constantly-closed circuits, one of said coils in series and the other in parallel with the work, substantially in the manner and for the purpose specified.

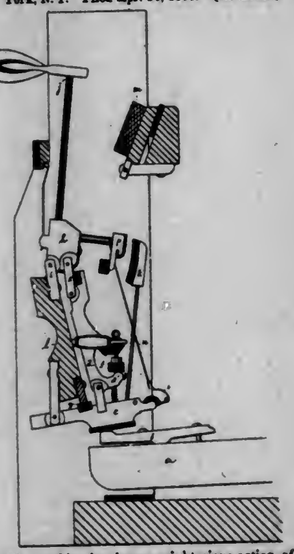
3. A number of electric-arc lamps, or other translating devices, in combination with a dynamo-electric machine whose field-magnet is energized by a continuous current induced by such machine and circulating about said magnet in contrary directions through two coils or helices which are of constant length or resistance, and are energized one in series and the other in parallel with said lamps or other translating devices, substantially in the manner and for the purpose specified.

4. In a dynamo-electric generator, a field-magnet consisting of a magnetic core wound as a differential electro-magnet with two coils or helices having constantly-closed circuit-connections, one of said coils being placed in the main or working circuit of such generator, and the other of said coils being wound to a constant resistance and placed in a shunt-circuit about the work, substantially in the manner and for the purpose specified.

5. In a dynamo-electric generator, a field-magnet consisting of a magnetic core wound as a differential electro-magnet with two coils or helices, one of said coils being placed in the main circuit of such generator, and the other of said coils being wound to a constant resistance and placed in a constantly-closed circuit about the work, substantially in the manner and for the purpose specified.

6. In a dynamo-electric generator, a field-magnet consisting of a magnetic core wound as a differential electro-magnet with two coils or helices of constant length, one of said coils being placed in the main circuit of such generator, and the other of said coils being placed in a constantly-closed circuit about the work, substantially in the manner and for the purpose specified.

326,576. REPEATING-ACTION FOR UPRIGHT PIANOS. PHILIPP MEYER, New York, N. Y. Filed Apr. 30, 1885. (No model.)



Claim.—1. The combination, in an upright-piano action, of a jointed jack, butt check, and lever with an elastic connection between the butt-check and lever, substantially as and for the purpose specified.

2. The combination, in an upright-piano action, of lever c, jointed jack d e, and butt-check p with string n and spring o, substantially as specified.

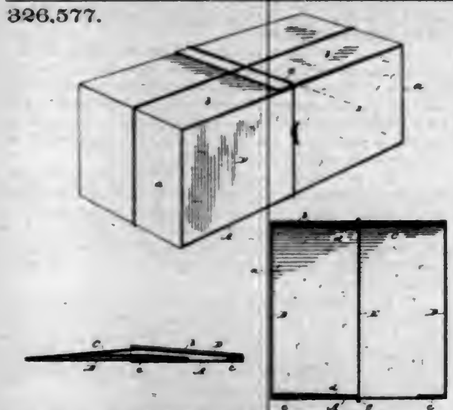
3. The combination of key a, lever c, jointed jack d e, stop f, regulating-screw g, hammer-butt h, hammer j, and butt-check p with string n and spring o, the string connecting the end of lever c with the butt-check p, substantially as specified.

4. The combination of key a, lever c, jointed jack d e, hammer-butt h, regulating-screw g, hammer j, and action-rail l with the cushioned stop q, projecting beneath the lower edge of action-rail and bearing upon lever c, substantially as specified.

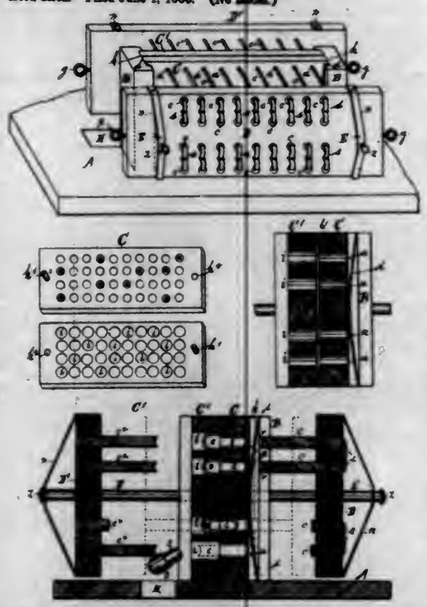
326,577. FOLDING BOX. RUFUS S. MERRILL, Boston, Mass., assignor to the Acme Paper Box Company, same place. Filed Feb. 6, 1885. (No model.)

Claim.—A compound folding box having a body composed of the strip A, having hinged end flaps, a b, and the creased strip B C D, in combination with the hinged partition E, substantially as and for the purposes hereinbefore set forth.

326,577.



326,578. CAPSULE-JOINING MACHINE. THEODORE C. MERZ, Detroit, Mich. Filed June 1, 1885. (No model.)



Claim.—1. In a device for joining the parts of gelatine capsules, the combination of the plates C C', each plate having a series of holes for receiving the parts of capsules, and means for locking said plates together face to face, whereby the open ends of the caps O are brought against the face of the plate C, containing the capsule-bodies *a*, as specified, and a series of pins or plungers attached to the sides D D' and adapted to enter the holes of the plates to join and discharge said capsules, substantially as specified.

2. In a device for joining the parts of gelatine capsules, the combination of the base provided with uprights having springs *d*, adapted to press together the plates C C', the rods anchored to said uprights, said rods supporting the sides D D', the side D' supporting a series of pins, *c*², adapted to enter the holes *i* of plate C', the side D having a series of pins, *c*, adapted to enter the holes *a* of plate C, and the series of springs *s*, engaging with the ends of the pins *c*, said sides adapted to be advanced toward and from each other, as and for the purposes specified.

326,579. BALING-PRESS. JACOB R. MILLER, Sligo, Pa. Filed July 3, 1885. (No model.)

Claim.—1. In a baling-press, a baling-chamber, a follower provided with pins *r*, and a stop near the outer end of said chamber for engaging said pins, combined with a vertically-operating releasing device for disengaging said pins and stop, as set forth.

2. In a baling-press, a slatted bale-chamber having pins *s* upon either side thereof, and a follower-partition having pins *r* upon each side to engage said pins *s*, combined with a vertically-operating releasing device arranged to disengage the pins upon each side simultaneously, as set forth.

3. In a baling-press, the combination, with the baling-chamber provided with pins *s*, of a follower-partition having pins *r*, as and for the purpose specified.

4. In a baling-press, the combination, with the bale-chamber having pins *s*, and a follower-partition provided with pins *r*, of a releasing device, substantially as described.

5. In a baling-press, the combination, with a bale-chamber having pins *s*, of the follower-partition provided with pins *r*, engaging the pins *s*, and means for moving said follower-partition vertically to release the same, as set forth.

6. In a baling-press, the combination, with the bale-chamber having pins *s*, and the follower-partition having pins *r*, of a pin or pins arranged beneath said follower-partition, and means, substantially as described, for moving said pins vertically to release said follower-partition, as set forth.

7. The combination, with the bale-chamber provided with pins *s*, and the follower-partition having pins *r*, of the pins 1 1, working through slots in the bottom of said chamber, and a lever and intermediate connections for moving said pins 1 1 vertically to disengage the pins *s* and *r*, substantially as and for the purpose specified.

8. The combination, with the slatted bale-chamber D, pins *s*, and the follower-partition U, having pins *r*, of the rocking bar 2, carrying pins 1 1, working through slots in the bottom of said chamber, the pivoted lever 3, moving in contact with said rocking bar, the lever 6, and connecting-rod, substantially as described.

9. The combination, with the plunger and feeder, of the lever Q, rod T, connecting the same with the plunger, the wheel H, pitman I, pivotally connected with said wheel and plunger, and the means for operating said wheel, as and for the purposes specified.

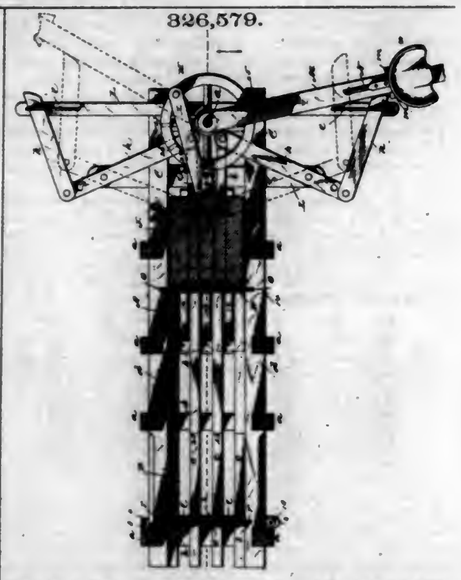
10. In a baling-press, the combination, with the operating-arm, of the wheel H, provided on its periphery with holes 26 and 27, and removable pins 24 and 25, substantially as and for the purposes specified.

11. In a baling-press, the combination, with the operating-arm having ledge *m*, and the wheel H, having on its periphery pins 24 and 25, of the lever *k* and intermediate connections with the plunger, substantially as described.

12. In a baling-press, the combination, with the operating-arm having a ledge, *m*, upon either side, and the wheel H, having pins 24 and 25, of the levers *k k*, levers *h h*, and links *i i*, connecting the same with the plunger, as set forth.

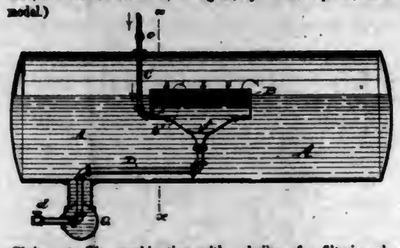
13. The combination, with the plunger and feeder, of the standard O, shaft P therein, lever Q, pivoted in said shaft and carrying said feeder, the rod T, pivotally connected at one end to the lever and its other end hinged to the plunger, the wheel H, journaled on a vertical shaft, the pitman I, pivotally connected with said plunger and wheel, the operating-arm M, and intermediate connections for operating said wheel, as and for the purposes specified.

14. The combination, with the wheel H and operating-arm M, both



journaled in the vertical shaft G, of the plunger J, having recesses *e f*, as described, the pitman I, pivoted at one end in the recess *e* and its other end pivotally connected to the wheel H, the links *i i*, pivoted in the recess *f*, the levers *h h* and *k k*, all arranged and operating as set forth.

326,580. FEED-WATER HEATER. GEORGE G. MINOR, Cincinnati, Ohio, and JOHN D. SULLIVAN, Covington, Ky. Filed Sept. 22, 1884. (No model.)



Claim.—1. The combination, with a boiler, of a filtering-chamber located within and partly submerged in the water of the boiler, and a feed-water pipe entering said filtering-chamber at or near the bottom, whereby the entering feed-water is heated to the boiling-point before it is discharged into the boiler, and whereby it is compelled to pass through the filtering material before it enters the boiler.

2. The combination, with a boiler, of a filtering-chamber located within the boiler, a feed-water pipe entering said filtering-chamber at or near the bottom, and a blow-off pipe leading from said chamber, whereby the entering feed-water is heated to the boiling-point before it is discharged into the boiler, and whereby it is compelled to pass through the filtering material before it enters the boiler, and whereby the collected sediments or deposits may be blown off at pleasure to remove the same, and at the same time cleanse the filtering material.

3. A combined heating and filtering chamber located within a boiler, having a lower submerged compartment into which the feed-water flows, and an upper filtering-chamber, partly submerged, through which the feed-water must pass before it can enter the boiler, in combination with the feed-pipe C and blow-off pipe D, substantially as described.

4. In combination with the feed-pipe C and heating and filtering chamber B, arranged as shown, the blow-off pipe D, located below and communicating with the lower compartment of the filtering-chamber, whereby said blow-off pipe becomes a reservoir for the collected sediment before the same is blown off, substantially as described.

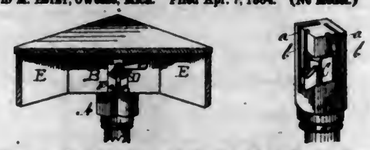
326,581. ASH-LEACH. JOHN H. MORAN, Licking, Mo. Filed Oct. 26, 1883. (No model.)



Claim.—1. An ash hopper or leach consisting of a cast-metal bottom, A, formed with a spout and with flanges, in combination with a sheet-metal body, B, provided with a cover, and constructed with air-vents *b b*, that are adapted to serve the additional function of hand-grips, and also with an outlet, E, of the form substantially as described.

2. An ash-leach consisting of a body and bottom of greater length than width, the bottom being provided with a spout, substantially as and for the purpose specified.

326,582. DETACHABLE TABLE-LEG. WALTER A. OSBORN and DAVID M. ESTEY, Owosso, Mich. Filed Apr. 7, 1884. (No model.)

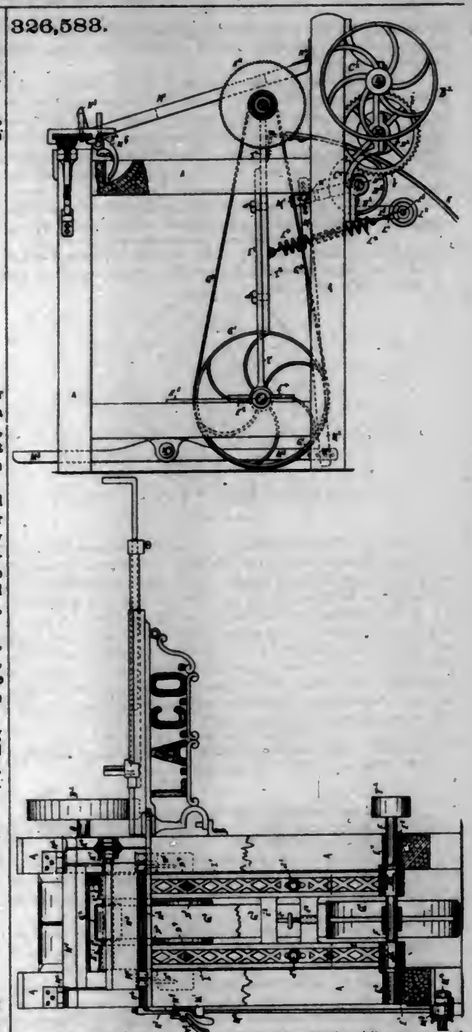


Claim.—In a knockdown table, the detachable leg A, provided with the hook C, in combination with the slotted corner-brace B, to which is secured the slotted plate F, provided with the rotating curved wedge D, having a lever or handle, *c*, all substantially as described, and for the purposes set forth.

326,583 CIRCULAR SAWING MACHINE. JOHN H. PALM, Minneapolis, Minn. Filed Jan. 6, 1885. (No model.)

Claim.—1. In a sawing-machine, a saw-table, a traveling saw-carrying frame beneath said table, and a circular saw mounted on said frame and adapted to said table, in combination with a feed-plate attached at

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one end to said saw-frame, a constantly-rotating friction-roller, an eccentric shaft, an idle-roller mounted on said shaft, said rollers being located on opposite sides of said feed-plate, a lever-arm secured at one end to said eccentric shaft, a pivoted foot-treadle, and a rod connecting said foot-treadle with the free end of said lever-arm, substantially as and for the purpose herein set forth.

2. In a sawing-machine, a swinging saw-carrying frame, a saw-mandrel mounted thereon, a saw and a small pulley, G^3, on said mandrel, and a feed-plate and retracting-spring attached to said saw-frame, in combination with a power-shaft, B, a small pinion, *a*, and a large pulley, B', on said shaft, a second shaft, D', mounted beneath said power-shaft, a friction-roller, D^2, on said shaft D', a large pinion, *b*, on said shaft D', which meshes with the pinion *a*, an eccentric shaft, D^4, mounted beneath said shaft D', a loose friction-roller, D^3, on said shaft D^4, said rollers D^2 D^3 being adapted to said feed-plate, a shaft, F, mounted in the bearings of the swinging saw-frame, small pulley F' and large pulley G' on said shaft F, which transmit rotary motion from the pulley B' on the power-shaft to the saw-mandrel by suitable belting, substantially as set forth.

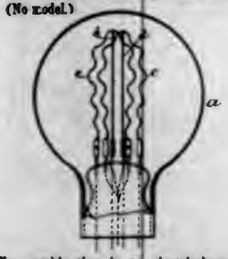
3. A swinging frame carrying a circular saw, in combination with a curved feed-plate concentric with the axis of said frame and rigidly attached thereto, and mechanism which acts on said plate and thus moves said frame, substantially as set forth.

4. A traveling saw-frame and mechanism which is adapted to move said frame in one direction, in combination with a tension-roller, a set-screw which, when set, prevents the rotation of said roller, a spring secured at one end to said saw-frame and adapted to move said frame

in a direction opposite to the aforesaid moving mechanism, and a cord which connects the opposite end of said spring with said tension-roller, substantially as set forth.

3. The combination of the power-shaft F', the pulley G', carried thereby, the swinging saw-carrying frame, the saw-mandrel K', mounted on said frame, the pulley G^2, carried by said mandrel, the belt G^2, connecting said pulleys G' G^2, said saw-carrying frame being vertically divided into two overlapping sections, I' I^2, said sections being provided with vertically-extending slots, bolts d^2 d^2, passing through said slots and connecting said sections, cross-bars i^2 i^2, located on the sections I' I^2, respectively, and a screw, i', tapped through one of said sections and adapted to bear against the other section, substantially as set forth.

326,584. INCANDESCENT LAMP. CHARLES G. PERKINS, New York, N. Y., assignor to the Imperial Electric Light Company, same place. Filed Sept. 7, 1883. (No model.)



Claim.—1. The combination, in an electric incandescent lamp, of four looped filaments arranged in two pairs, the filaments of each pair being in planes substantially parallel to each other, and substantially at right angles to the planes of the other pair, substantially as described.

2. The combination, in an electric incandescent lamp, of a group of flat looped filaments, every one of which is arranged to have its flat face substantially parallel with one or more of the others, and substantially at right angles to two or more of the others, whereby two or more broad light-giving surfaces will be presented on every side of the lamp, and the carbons during incandescence will seem to give out light from a solid center, substantially as described.

326,585. BOW FOR VEHICLE-TOPS. JOHN M. PERKINS, South Bend, Ind. Filed Dec. 1, 1884. (No model.)



Claim.—1. In a bow for vehicle-tops, the solid core composed entirely of thin layers of wood cemented together, with the grain of the layers running in the same direction with the bow, substantially as described.

2. In combination with the top-bow and core, the upper metal ferrule slightly tapering both ways from the center for the reception at its opposite ends of the core and top-bow, substantially as described.

3. In a slat for vehicle-bows, the double tapering ferrule or socket E, provided with the extensions F and G, whereby the top-prop and the top-bow are securely connected to the slat, substantially as described.

4. In a slat for carriage-bows, the combination of the built-up core, the slat-iron, a metallic socket at its upper end, and a covering of veneer and paper or textile fabric wound thereon, substantially as described.

326,586. REPEATING-ACTION FOR SQUARE AND GRAND PIANOS. FERDINAND POLSTER, Baltimore, Md., assignor to Wm. Knabe & Co., same place. Filed Apr. 24, 1885. (No model.)

Claim.—1. The combination, with an under lever and a main jack, of an auxiliary jack pivotally connected to the under lever, and provided with an adjustable bearing, which latter rests on the main jack.

2. The combination, with an under lever and a main jack, of an auxiliary jack pivoted to the under lever, a threaded pin secured to the auxiliary jack and resting within a slot in the square of the main jack, and a button adjustably secured on the threaded pin.

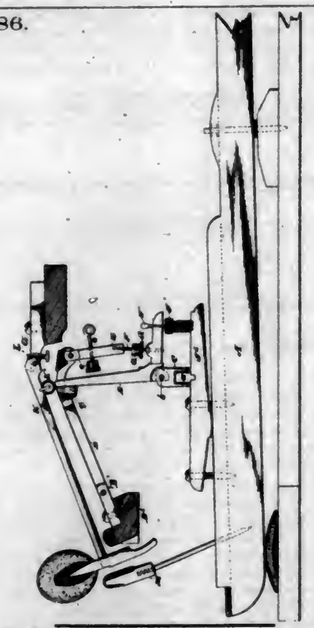
3. The combination, with an under lever having a slot therein, and a hammer resting immediately over said lever, of the main jack pivoted to the key, and an auxiliary jack connected with the under lever and provided with a pin passing loosely through the main jack.

4. The combination, with a key, hammer, and under lever, of the main jack, an auxiliary jack, and an adjustable stop secured to the auxiliary jack and forming a bearing for the main jack.

5. In a piano-action, the combination, with a key having a block, J, thereon, and a main jack pivoted to said block, of a spring resting on the block, and a button adjustably secured to the main jack and forming a bearing for the upper end of the spring.

6. In a piano-action, the combination, with a key, of a block, C, pivoted to the key, and a main jack pivoted to the block, substantially as described.

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326,587. TWO-WHEELED VEHICLE. HIRAM W. RAMSON, Cincinnati, Ohio, assignor to the Emerson & Fisher Company, same place. Filed June 26, 1883. (No model.)



Claim.—1. In a two-wheeled vehicle, the combination of the body supported on longitudinal springs and a supporting-platform, the springs being connected at one or both ends to the shackles D, the latter being in turn rigidly secured to the equalizing-rods C C', and the said equalizing-rods attached to the platform, substantially as and for the purpose specified.

2. The body A, resting on transverse bars F F', attached directly to the longitudinal springs E, in combination with the shafts B and cross-bars B' and equalizing-rods C, connected to said cross-bars by appropriate clasps, the ends of the springs E being connected to said equalizing-rods, substantially as and for the purposes specified.

326,588. FORGE. HIRAM W. RAMSON, Cincinnati, Ohio, assignor of one-half to the Emerson & Fisher Company, same place. Filed Oct. 4, 1884. (No model.)



Claim.—1. In a forge, the combination of the forge-plate A and fire-chamber A' and the lining a^3, substantially as and for the purposes specified.

2. In a forge, the combination of a forge-plate, A, and the fire-chamber A', made in one piece, and the lining a^3 in the fire-chamber, substantially as and for the purposes specified.

3. In a forge, the combination of the tuyere B and the forge-plate A and fire-chamber A' and the lining a^3, substantially as and for the purposes specified.

4. In a forge, the forge-plate A and fire-chamber A', having sides a^2, and the lining a^3, having ribs a^4, substantially as and for the purposes specified.

5. The combination of the tuyere B, tuyere-plate B', consisting of ledge b' and raised portion b^2, and the forge-plate A and fire-box A', substantially as and for the purposes specified.

6. The combination of the lining a^3 and tuyere-plate B', consisting of ledge b' and raised portion b^2, substantially as and for the purposes specified.

7. The combination of the plate A and fire-box A' and lining-a^3 and tuyere B and bar or knocker D, with handle D^2, and door D', with handle E, and pipe F and legs a, substantially as and for the purposes specified.

8. The tuyere B, having wings b', which are bolted to the portion b^2 of the fire-chamber, substantially as and for the purposes specified.

9. The tuyere B, whose plate B' consists of the ledge b' and raised portion b^2, substantially as and for the purposes specified.

10. The tuyere B, located at the lower portion of the fire-chamber, and provided with raised portion b^2 and ledge b', in combination with a lining, a^3, resting on said ledge, substantially as and for the purposes specified.

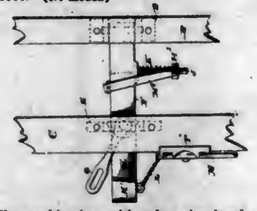
11. The tuyere B, located at the lower portion of the fire-chamber, and provided with raised portion b^2 and ledge b', in combination with a lining, a^3, provided with ribs a^4, substantially as and for the purposes specified.

12. The tuyere B, located at the lower portion of the fire-chamber, and provided with raised portion b^2 and ledge b', in combination with a lining, a^3, provided with ribs a^4 and interspaces, substantially as and for the purposes specified.

326,589. MEDICINE FOR DIPHTHERIA. JOHN A. REAH, Barnes, Kans. Filed Jan. 31, 1885. (No specimens.)

Claim.—The herein-described composition of matter to be used for the treatment of diphtheria, consisting of alcohol, gum-guaiacum, gum-myrrh, oil of hemlock, and gold-thread, substantially as specified.

326,590. CAR-COUPLING. ALBERT S. REEVES, Millville, N. J., assignor of one-half to Daniel Silvers and William T. Corson, same place. Filed May 13, 1885. (No model.)

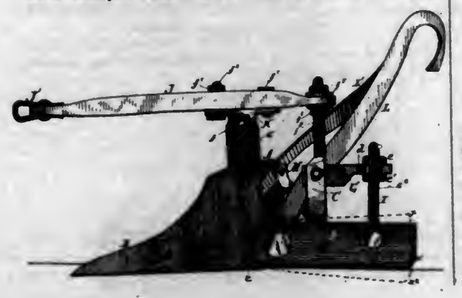


Claim.—1. The combination, with a draw-head and a link pivoted at a point between its ends to said draw-head, of the yoke secured to the rear end of the link and a spring located between the yoke and the draw-head, substantially as set forth.

2. In a car-coupling, the combination, with a draw-head pivoted to the car-frame, of a link pivoted to the draw-head, a yoke secured to the rear end of the link, a spring adapted to impinge against the draw-head and the yoke, and a lever and connecting devices whereby the link is locked out of coupling adjustment, substantially as set forth.

3. As a new article of manufacture, a car-coupler consisting, essentially, of the draw-head having two recesses therein, a laterally-movable link or hook-coupler, and the link o, the said hook-coupler and link being secured at one end within their respective recesses, and a spring for holding the hook-coupler in position to engage a similar hook on the next car, substantially as set forth.

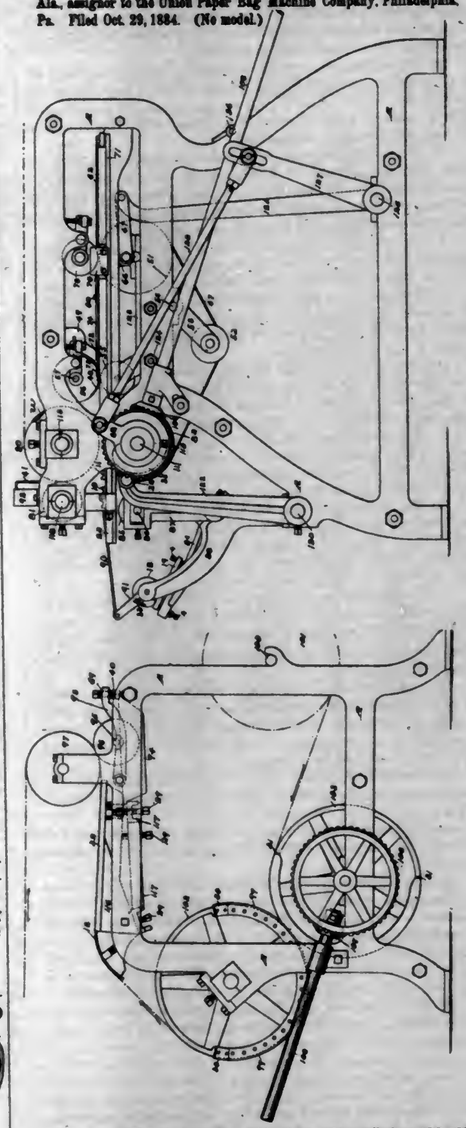
326,591. PLOW. JAMES D. ROBERSON, Sedalia, Mo., assignor of one-half to Christopher Paulus, same place. Filed Mar. 6, 1885. (No model.)



Claim.—1. The hinged rear landside-bar, H, provided with an adjusting screw-standard and nuts, and the inner landside-bar, E, provided with the adjusting-standard G, bracket G', and nuts, with the plow-beam J and standard C, hinged together at f, substantially as and for the purpose described.

2. The combination of the standard C, beam J, hinged to said standard, the adjusting-standard G, inner landside-bar, E, and the rear landside-bar, H, provided with suitable adjusting devices, substantially as described.

326,592. PAPER-BAG MACHINE. BENJAMIN F. SAWYER, Oxanna, Ala., assignor to the Union Paper Bag Machine Company, Philadelphia, Pa. Filed Oct. 29, 1884. (No model.)



Claim.—1. The combination, with the cutting-cylinders 102 103, provided with blades which are arranged to remove narrow sections from portions of the opposite sides of the web, of the folder 116, constructed and arranged to impart four longitudinal folds to the web, substantially as described.

2. The combination, with the cutting-cylinders 102 103, provided with blades which are arranged to remove narrow sections from the opposite sides of the web alternately, of the folder 116, constructed and arranged to impart four longitudinal folds to the web, substantially as described.

3. The combination, with the cutting-cylinders 102 103, provided with blades which are arranged to remove narrow sections from portions of the opposite sides of the web, of the folder 116, constructed and arranged to impart four longitudinal folds to the web, and a pasting mechanism arranged to apply lines of paste to the edges of the web, substantially as described.

4. The combination, with the folding-cylinders 80 82 and the feeding-roll 81, of the vibrating roll 85, and a folding-blade for folding the web into the bite of said cylinders, substantially as described.

5. The combination, with the cylinder 80, carrying the blade 45, of the companion cylinder 82 and the feeding-roll 81, and means for projecting said blade suddenly outward beyond the periphery of its cylinder, so as to sever the passing web at a point between the roll 81 and the cylinder 82, all substantially as described.

6. The combination, with the cylinder 80, carrying the blade 45, of the companion cylinder 82 and feeding-roll 81, a blade for folding the web into the bite of said cylinders, and means for projecting the blade 45 suddenly outward beyond the periphery of its cylinder to sever the web, all substantially as described.

7. The combination, with the cylinder 80, carrying the blade 45, of the companion cylinder 82, feeding-roll 81, and vibrating roll 85, a blade for folding the web into the bite of said cylinders, and means for projecting the blade 45 suddenly outward beyond the periphery of its cylinder to sever the web, all substantially as described.

8. The combination, with the folding-cylinders 80 82, of the feeding-roll 81, and the vibrating roll 85, the spring-controlled blade 39, and means for holding and releasing said blade, all substantially as described.

9. The combination with the reciprocating blade 39, connected to the rock-arm 91, of the disk 18, and spring or springs 33, and the rock-arm 84, by which said disk is held and released, substantially as described.

10. The combination, with the reciprocating blade 39, connected to the rock-arm 91, of the disk 18, and spring or springs 33, the rock-arm 84, by which said disk is held and released, and the reciprocating heads 11, by which said blade 39 is retracted, substantially as described.

11. The combination, with the folding-cylinders 80 82, of the laterally-vibrating guides 73, arranged to enter the bellows folds in the sides of the bag in the rear of said cylinders and then pass forward with the bag, substantially as described.

12. The combination, with the laterally-vibrating guides 73, arranged to enter the bellows folds at the sides of the bag and move forward with the bag, of the laterally-vibrating folders 72, arranged to co-operate therewith to fold inward one side of the bellows portion of each side of the bag, substantially as described.

13. The combination, with the apron 47 and the plate 48, between which the bag is advanced, of the laterally-vibrating guides 73 and co-operating folders 72, arranged to advance with the bag as they operate to fold inward one side of the bellows portion of each side of the bag, substantially as described.

14. The combination, with means for supporting and advancing the bag, of the laterally-vibrating guides 73 and co-operating folders 72, arranged to advance with the bag as they operate to fold inward one side of the bellows portion of each side of the bag, and the pressing-roll 76, substantially as described.

15. The combination, with the fly 129 and piling-table 130, of the screw-rod 135 and the pawl and ratchet 79 137, substantially as described.

16. The combination, with the fly 129 and piling-table 130, of the screw-rod 135, pawl and ratchet 79 137, and the pawl 78, substantially as described.

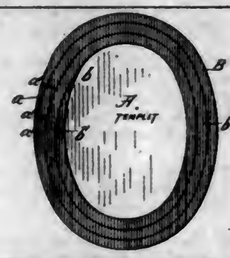
17. The combination, with the cutting mechanism arranged to remove the narrow portions from the opposite sides of the web, of folding mechanism arranged to impart four longitudinal folds to the web, pasting mechanism arranged to apply lines of paste to the edges of the folded web, folding mechanism arranged to fold the web transversely upon the line which forms the bag-bottom, and cutting mechanism arranged to sever the bag from the web, all substantially as described.

18. The combination, with the cutting mechanism arranged to remove the narrow portions from the opposite sides of the web, of folding mechanism arranged to impart four longitudinal folds to the web, pasting mechanism arranged to apply lines of paste to the edges of the folded web, folding mechanism arranged to fold the web transversely upon the line which forms the bag-bottom, cutting mechanism arranged to sever the bag from the web, and side-folding mechanism arranged to fold over onto the body one side of the bellows portion of each side of the bag, all substantially as described.

326,598. GASKET FOR HAN-HOLES. WILLIAM T. Y. SCHENCK, San Francisco, Cal. Filed June 13, 1885. (No model.)

Claim.—1. As an article of manufacture, a gasket formed from a narrow strip of sheet-rubber wound around a templet to give the size of the center opening, the strip wound circumferentially to increase its diameter to the required size, the several winds cemented on the edges of the strip of each wind, substantially as described.

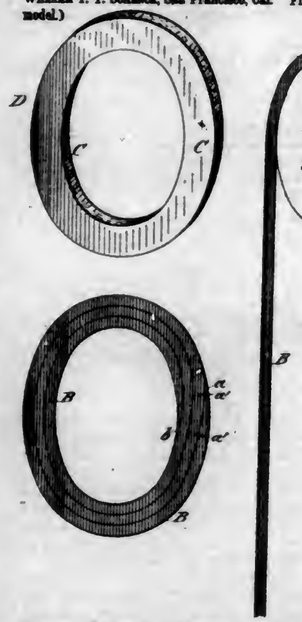
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2. As an article of manufacture, a gasket formed from a narrow strip of sheet-rubber wound around a templet to give the size of the center opening, the strip wound circumferentially to increase its diameter to the required size, the several winds held together by pins or pegs, and the faces of the gasket cemented, substantially as described.

3. As an article of manufacture, a gasket formed from a narrow strip of sheet-rubber wound around a templet to give the size of the center opening, the strip wound circumferentially to increase its diameter to the required size, the several winds held in place by cloth cemented upon each face of the gasket, substantially as described.

326,594. MANUFACTURE OF GASKETS FOR STEAM-BOILERS. WILLIAM T. Y. SCHENCK, San Francisco, Cal. Filed June 13, 1885. (No model.)



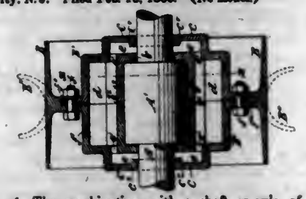
Claim.—The process of forming gaskets of any size or form by winding a scarfed strip of sheet-rubber around a templet of the proper size and form, and cementing the wound strips together on their edges as they are wound until the size of the gasket is obtained, and the outer scarfed end of the strip is secured to the body of the gasket by pins or cement, or both, then removed from the templet and cloth cemented to the faces, or cement alone applied to the faces, then put under pressure, substantially as described.

326,595. TWO-WHEELED VEHICLE. WILLIAM H. SCHMEDLEN, Coldwater, Mich., assignor to the Coldwater Road Cart Company, same place. Filed July 8, 1885. (No model.)



Claim.—The combination of the axle provided on its upper side with an indentation, a retaining-plate provided with a lug on its under side to engage the indentation in the axle, and having its ends bent upward at right angles to embrace the shaft, the shaft placed on the retaining-plate, the metal straps secured to the shaft on opposite sides of the same and depending below the axle, their lower ends being rounded and screw-threaded, the axle-brace provided with a flattened portion adapted to serve as a clamping-plate, and the clamping-nuts, substantially as described and shown.

326,596. LOOSE PULLEY, WHEEL, &c. MARTIN L. SENDERLING, Jersey City, N. J. Filed Feb. 18, 1885. (No model.)



Claim.—1. The combination, with a shaft or axle, of a wheel or pulley fitted thereto, and having in its hub an annular oil-chamber surrounding the bore and constructed with radial partitions dividing said chamber into sections, and with holes or apertures opposite said partitions in the metal forming the inner wall of the chamber and the bore of the wheel or pulley, whereby oil will be lifted by said partitions and delivered through said holes or apertures whether the wheel or pulley rotates in one direction or the other, substantially as and for the purpose herein described.

2. The combination, with a shaft or axle having upon it an enlarged portion, of a wheel or pulley fitted to turn upon said enlarged portion, and having in its hub an annular oil-chamber surrounding the bore and constructed with radial partitions dividing said chamber into sections, and with holes or apertures in the metal forming the inner wall of said chamber and the bore of the wheel or pulley, and through which oil will be delivered upon the enlarged portion of the shaft or axle, substantially as and for the purpose described.

3. The combination, with the shaft or axle and the sleeve secured thereon and constructed with an internal oil-chamber and holes leading from said chamber to its periphery, of a wheel or pulley fitted to turn upon said sleeve and having in its hub an annular oil-chamber surrounding the bore and constructed with radial partitions dividing said chamber into sections, and with holes or apertures leading from the several sections through the metal forming the inner wall of said chamber and the bore of the wheel or pulley, substantially as and for the purpose herein described.

4. The combination, with a shaft or axle, of a wheel or pulley fitted to turn thereon, and having in its hub an annular main oil-chamber and an end oil-chamber, which communicate with each other, as described, and constructed with holes or openings leading from the main chamber to the bore, and with conductors in the said main chamber for directing oil toward and into said holes or openings as the wheel or pulley rotates, substantially as and for the purpose herein described.

5. The combination, with a shaft or axle, of a wheel or pulley fitted to turn thereon, and having in its hub an annular main oil-chamber and an end oil-chamber and constructed with radial partitions dividing said main chamber into sections, and with holes or apertures leading from said sections through the metal forming the inner wall of the main chamber and the bore of the wheel or pulley, and with holes or apertures leading from the end oil-chamber to the several sections of the main chamber, substantially as and for the purpose herein described.

6. The combination, with a shaft or axle, of a wheel or pulley fitted to turn thereon, and having in its hub an annular main oil-chamber and an end oil-chamber of less diameter than said main chamber, and constructed with radial partitions dividing said main chamber into sections, and with holes or apertures leading from said sections through the metal forming the inner wall of the main chamber and the bore of the wheel or pulley, and with holes or apertures leading from the end oil-chamber to the several sections of the main chamber, substantially as and for the purpose herein described.

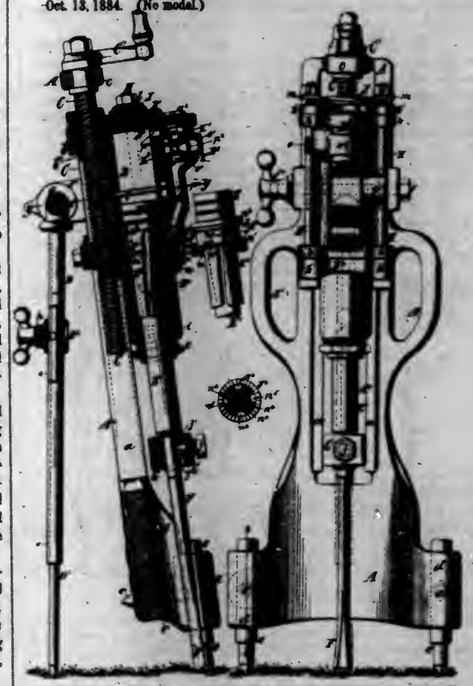
7. The combination, with a shaft or axle, of a wheel or pulley fitted to turn thereon, and having an end oil-chamber the outer wall of which is formed by an inwardly projecting flange receiving the shaft or axle through it, and having an inwardly-turned lip, c^6, by which oil is directed around the shaft and prevented from flowing lengthwise thereof beyond the wheel or pulley, substantially as and for the purpose herein described.

8. The combination, with a shaft or axle, of a wheel or pulley having in its hub a main annular oil-chamber divided by radial partitions, as described, and an end oil-chamber communicating with the main-chamber sections, and having a separable hub or thimble forming the bore, and constructed with holes or apertures leading from the several chamber-sections to the bore, substantially as and for the purpose herein described.

9. The combination, with a shaft or axle, of a wheel or pulley fitted to turn thereon, and constructed with an annular main oil-chamber, d, divided by partitions d', and with pairs of inwardly-extending flanges b and c, forming an end or overflow chamber, e, at each end of the hub, having holes or apertures b^3 leading from the main-chamber section d to the bore, and holes or passages d' leading from the end chambers, e, to the main-chamber sections d, substantially as and for the purpose herein described.

10. The combination, with a shaft or axle, of a wheel or pulley fitted to turn thereon, and having in its hub an annular main oil-chamber and an end oil-chamber, which communicate with each other as described, and constructed with holes or openings leading from the main chamber to the bore, substantially as herein described.

326,597. ROCK-DRILL. HENRY C. SERGEANT, New York, N. Y. Filed Oct. 13, 1884. (No model.)



Claim.—1. The combination, with the cylinder, piston, and cylinder-head of a rock-drill, of a spring for holding the head in place with a yielding pressure, consisting of a steel plate bent or deflected between its ends and having a bearing against the outer side of the head, substantially as herein described.

2. The combination, with the cylinder, piston, and cylinder-heads of a rock-drill, of bolts connecting the said heads, and a spring interposed between the upper head and the bolts, and consisting of a steel plate bent or deflected between its ends and bearing on the upper head, substantially as herein described.

3. The combination, with the cylinder and heads B B' B^2, and bolts H, connecting the heads and provided with nuts, of the spring I, consisting of a bent steel plate having a bearing on the head B', and having ears or lugs m, which receive said bolts, substantially as herein described.

4. The combination, with the cylinder of a rock-drill and a piston and spirally-grooved piston-extension, of two rings provided with ratchet-teeth on their adjacent faces and receiving the piston-extension through them, one of said rings being secured in the cylinder, and the other being engaged with the spiral grooves of the piston-extension, and a spring supporting the last-mentioned ring and holding it in engagement with the ring secured in the cylinder, substantially as herein described.

5. The combination, with the cylinder, piston, and spirally-grooved piston-extension of a rock-drill, of two rings receiving the piston-extension through them and provided with ratchet-teeth on their adjacent faces, one ring being secured in the cylinder and the other being engaged with the spiral grooves of the piston-extension, and a spring, n^4, consisting of a steel ring deflected at points in its circumference and holding the rings in engagement, substantially as herein described.

6. The combination, with the cylinder, piston, and spirally-grooved piston-extension of a rock-drill, of two rings receiving the piston-extension through them and provided with ratchet-teeth on their adjacent faces, one of said rings being held by friction against turning in the cylinder and the other being engaged with the spiral grooves of the piston-extension, and a spring for holding the last-mentioned ring in engagement with the other ring, substantially as herein described.

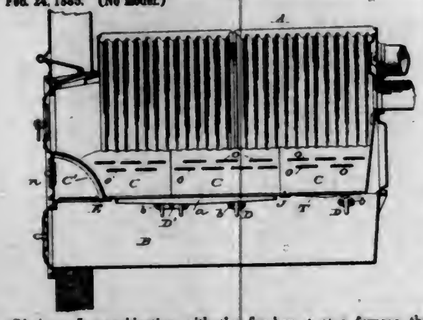
7. The combination, with the cylinder, piston, and spirally-grooved piston-extension, and the cylinder-heads of a rock-drill, of the rings J J°, provided with ratchet-teeth on their adjacent faces, the ring J being clamped between the lower head and a shoulder in the cylinder, a spring for supporting the ring J°, bolts connecting the heads, and a cushioning-spring serving to hold the heads in place and to clamp the ring J and hold it by friction against turning, substantially as herein described

8. The combination, with the cylinder B, having the shoulder n^3, the piston and piston-extension, and the lower head, B^2, with the projecting ring or bush n', of the ratchet-toothed rings J J°, the former having a flange, n^2, whereby it is clamped between the shoulder n^3 and the ring or bush n', all substantially as herein described.

9. The combination, with the cylinder and piston, the cylinder having an intermediate exhaust port or passage across which the piston travels, and a valve-casing provided at opposite ends with seats, and ports leading therefrom to the cylinder, of a valve consisting of a skeleton structure having heads or disks which are adapted to close against said seats, the heads or disks of the valve being larger in diameter than the seats, so that when seated a portion of the end of the valve around the seat will be exposed to pressure, and having in them holes or notches radially beyond the seats, substantially as herein described.

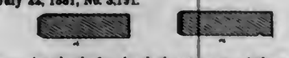
10. The combination, with the valve-casing K, provided with seats $p\ p'$, and ports leading therefrom, of the valve K^2, having heads or disks $r\ r'$, larger in diameter than said seats, and provided with notches or holes r^x, substantially as herein described.

326,598. HOT-AIR FURNACE. ISAAC D. SMEAD, Toledo, Ohio. Filed Feb. 24, 1885. (No model.)



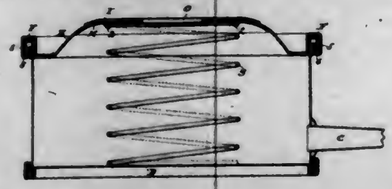
Claim.—In combination with the fire-box A of a furnace, the brackets D and the lining-plates C, provided with the horizontal slots o, said plates having their upper edges arranged to fit closely against the inner walls of the fire-box and their lower edges set some distance from the side walls, substantially as shown and described.

326,599. ELASTIC-FACED PRINTING-TYPE. R. HALE SMITH, Springfield, Mass. Filed Jan. 15, 1885. (No model.) Patented in England July 22, 1881, No. 3,191.



Claim.—An elastic-faced printing-type consisting of a hard-bodied printing-type whose printing-character is made integral with the body and having an elastic coating or cushion molded and vulcanized thereto, and whose said character projects or extends into said elastic coating or cushion to form an elastic-faced printing-character, and whereby the latter is supported and is secured firmly in place upon the type, substantially as described.

326,600. INSECT-POWDER GUN. DANIEL M. SOMERS, Brooklyn, N. Y. Filed Feb. 29, 1884. (No model.)



Claim.—1. The combination, with a spring-supporting plate, H, having a curved recess and a perforation communicating therewith, and provided with a central opening, of a second plate, I, provided with a central opening, both of which plates are adapted to be united at said openings, so that the end of the spring is embraced between them and securely held therein, substantially as described.

2. In a powder-gun, the combination of the spring S with the plate H, having curved recess 2, perforation 3, and central opening, and plate I, having central opening, and attaching-flange 4, substantially as described.

3. In a powder-gun, the combination, with the flexible diaphragm, of the plate H, having central opening, and the plate I, having central opening and attaching-flange, whereby the diaphragm is secured to its thumb-piece and the breech-loading opening is formed, substantially as described.

4. The combination of the plate H, having the curved recess 2, perforation 3, spring S, plate I, having central opening and attaching-flange 4, and the flexible diaphragm, substantially as described.

326,601. COMPOUND FOR LAUNDRY BLUING. PAYTON SPENCE, New York, N. Y. Filed July 28, 1884. (No specimens.)

Claim.—The within-described bluing compound, composed of soluble Prussian blue and soluble aniline blue-reddish, substantially as set forth.

326,602. MANUFACTURE OF CLOCK-WORKS. CHARLES STAHLBERG, Waterbury, Conn. Filed June 1, 1885. (No model.)



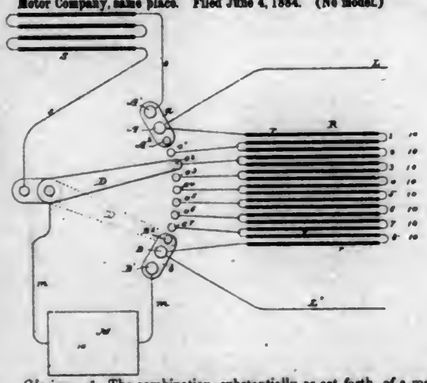
Claim.—1. A cast shaft or arbor for clock-works, having its pivots, composed of hard metal, embedded, with their acting surfaces exposed, in the body of the shaft or arbor, which is composed of softer metal possessing a lower melting-point, substantially as and for the purpose set forth.

2. A cast shaft or arbor for clock-works, having its pinion-leaves, composed of hard metal, embedded, with their acting surfaces exposed, in the body of the shaft or arbor, which is composed of softer metal possessing a lower melting-point, substantially as and for the purpose set forth.

3. A cast shaft or arbor for clock-works, having a wheel of hard metal, embedded, with its acting surfaces exposed, in the body of the shaft or arbor, which is composed of softer metal possessing a lower melting-point, substantially as and for the purpose set forth.

4. A cast part for clock-works, having such of its portions as come under frictional action composed of hard metal, embedded, with the acting surfaces exposed, in the body of the part, which is composed of softer metal possessing a lower melting-point, substantially as and for the purpose set forth.

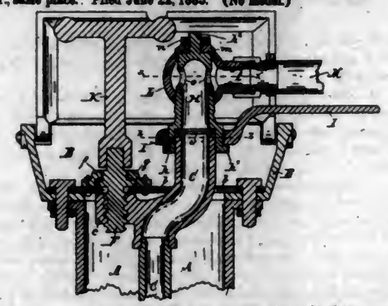
326,603. SWITCH FOR ELECTRIC-MOTOR AND OTHER CIRCUITS. LEVI W. STOCKWELL, Cleveland, Ohio, assignor to the Cleveland Electric Motor Company, same place. Filed June 4, 1884. (No model.)



Claim.—1. The combination, substantially as set forth, of a main line, a resistance, S, an electromotor or other instrument, devices, as described, for varying the resistance of the branches of the circuit, and the resistance R, which is connected up in sections, as described, the resistance of each of said sections and of the supplemental resistance S being equal to that of the motor or other instrument.

2. The combination of the main resistance R, the contacts c' to c^5, connected with the sections thereof, the lever which traverses them, the conducting-plates $a\ b$ on each side of said resistance, the binding-posts A A' and B B', and the contacts A^2 B^2 on said plates, the motor, the supplementary resistance, and circuits and connections, as set forth.

326,604. HOSE-COUPLING FOR STREET-WASHERS. WILLIAM STRONG, Indianapolis, Ind., assignor of one-half to Charles Aschbacher, Jr., same place. Filed June 22, 1885. (No model.)



Claim.—1. A hose-coupling for street-washers, having a conical hollow stem, H, closed at the top, and provided with openings $o\ o$ in its side walls, an enlarged socket, A, square or nut shaped on the outside and round and screw-threaded on the inside, a screw-bolt, A^2, projecting upward from the stem H, as described, a hollow ball, L, fitting snugly at top and bottom onto the stem H, and being provided with an outlet-pipe, *l*, and a washer, *m*, and nut *n*, forming means to keep the ball L in its proper position on the stem H, all constructed as described, and for the purpose specified.

2. The combination, with a hose-coupling for street-washers, having a conical hollow stem, H, closed at the top, and provided with openings $o\ o$ in its side walls, an enlarged socket, A, square or nut shaped on the outside and round and screw-threaded on the inside, a screw-bolt, A^2, projecting upward from the stem H, as described, a hollow ball, L, fitting snugly at top and bottom onto the stem H, and being provided with an outlet-pipe, *l*, and a washer, *m*, and nut *n*, forming means to keep the ball L in its proper position on the stem H. of a flange, A', extending out from the socket A, and a wrench, I, kept in place on the socket A by said flange A', and the ball L, all constructed as described, and for the purpose specified.

326,605. WINDOW. SAMUEL C. TAYLOR, Morton, near Bingley, County of York, England. Filed Mar. 29, 1883. Renewed Mar. 25, 1885. (No model.)

Brief.—A window-sash-operating device having a chambered pulley provided with teeth, a gear with studs and teeth, and sleeve with eccentric, pulley, shaft, chain, and cord; said chain attached to rail of lower and cord to top rail of upper sash; a flap in connection with upper sash and lower sash provided with studs operating in connection with a band and a pivoted bar; a main sill provided with sockets operating in connection with the lower sash removably hinged therein; also, an auxiliary sill similarly provided may similarly operate with said sash. Likewise the main sill may similarly operate in connection with the flanged upper sash.

Claim.—1. In a device for raising, lowering, and controlling the sash of a window, the pulley D, having the chamber K, provided with the teeth *m*, the gear L, provided with the studs *x* and teeth *a*, the sleeve P, provided with the eccentric N and pulley G, the clutch M, shaft E, chain R, cord O, and cord H, constructed, combined, and arranged to operate substantially as set forth.

2. In a window substantially such as described, the auxiliary sill T, provided with the sockets *j*, in combination with the sash C, having the hinges *r*, substantially as shown and described.

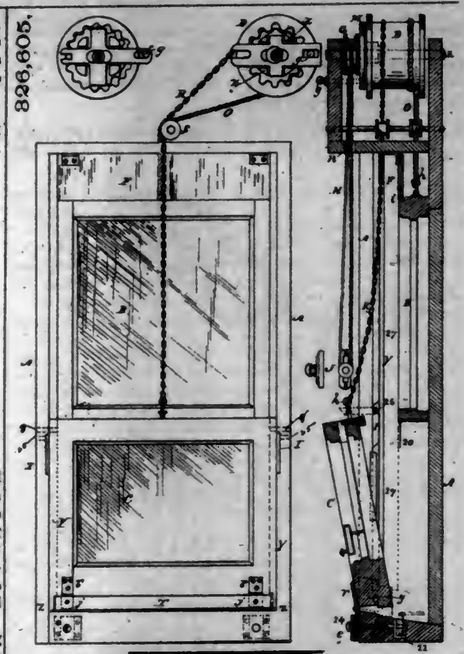
3. In a window substantially such as described, the sash C, provided with the studs *y q*, in combination with the band Y, provided with the bar I and space *z*, substantially as specified.

4. In a window substantially such as described, the door F, in combination with the sash B, substantially as and for the purpose set forth.

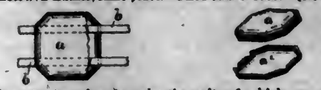
5. In a window substantially such as described, the sill U, provided with the sockets *e*, in combination with the sash C, having the hinges *r*, substantially as described.

6. In a window substantially such as described, the sill U, provided with the sockets 22, in combination with the sash B, having the flange 20, substantially as described.

7. In a window substantially such as described, the sash C, auxiliary sill T, sash B, and door F, in combination with means for raising and lowering the sash, substantially as set forth.



326,606. BRACELET. FRANK F. TINGLEY, Providence, R. I., assignor to Barstow & Luther, same place. Filed Jan. 2, 1885. (No model.)



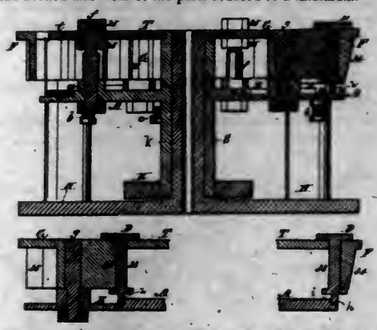
Claim.—1. A spring-bracelet the units of which are of square or approximately square form and each composed of two parts constituting the top and bottom of the unit, said units being strung upon the springs and provided with apertures for the passage of the springs, as described.

2. The unit composed of the parts $a\ a^2$, adapted to be secured together and provided with the notches for the passage of the springs, as set forth.

3. The combination, with the springs *b*, having the knobs *a'*, of the units composed each of the two parts and having the notches, as specified.

326,607. MACHINE FOR MAKING CORDAGE. JAMES P. TOLMAN, West Newton, Mass. Filed Dec. 1, 1884. (No model.)

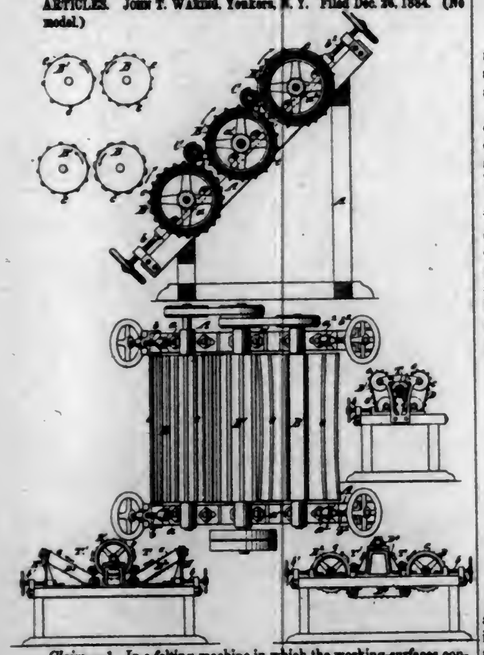
Brief.—The travelers each have an elongated neck and a single disk at each end thereof and the customary foot-piece. The guide-ring and carrier-gears also have bearings of suitable length to extend from one end to the other of such elongated necks. A supporting-plate placed within the guide-ring and parallel with the main table also acts as a bearing for the travelers, by which construction the travelers and the spool-frames attached thereto are at all times maintained in a vertical position and the friction and wear of the parts reduced to a minimum.



Claim.—The combination, with the main table or revolving platform A and means, substantially as described, for rotating the same, of travelers D, each having an elongated neck, and a single disk at each end

thereof, a guide-ring, F, and carrier-gears G, with bearings of suitable length to extend from one end to the other of such elongated necks, and a supporting-plate, T, placed within the guide-ring F, and parallel with the said main table, all constructed to operate together substantially in the manner and for the purpose set forth.

326,608. MACHINERY FOR FELTING HAT-BODIES AND OTHER ARTICLES. JOHN T. WARING, Yonkers, N. Y. Filed Dec. 26, 1884. (No model.)



Claim.—1. In a felting-machine in which the working-surfaces consist of rollers arranged to form an open trough or trough-like cavity, as T or T', the arrangement of the rollers one above another, substantially as and for the purpose herein described.

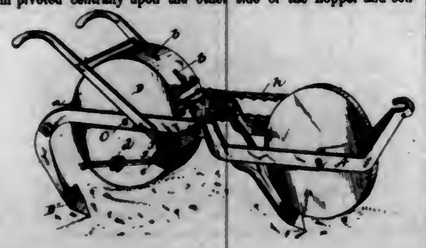
2. In a felting-machine, the working-surfaces of which are arranged and operated to constitute a trough or trough-like cavity, as T or T', one side of which moves in one direction and the other side in an opposite direction, the combination, with either of the said working-surfaces, of means of adjustment whereby the said trough or cavity may be widened or contracted, substantially as herein described.

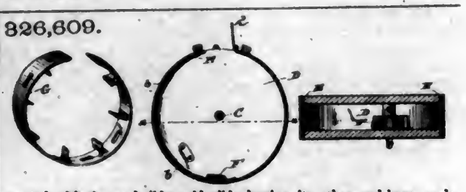
3. In a felting-machine, the combination of two moving bodies which are arranged and operated to constitute an open trough or trough-like cavity, as T or T', one of the said bodies having lugs or projections on its surface, whereby it is made to present a greater working-surface than the other, substantially as and for the purpose herein described.

4. In a felting-machine, the combination of two moving bodies which are arranged and operated to constitute an open trough or trough-like cavity, as T or T', the opposite sides of which move, one inward and the other outward, the said bodies both having lugs or projections on their faces, and that one which constitutes the inwardly-moving side of the trough or cavity having a greater lug-surface or surface projection than the other, substantially as and for the purpose herein described.

326,609. CORN AND COTTON PLANTER. WILLIAM F. WEAR, Buffalo Springs, Tex. Filed July 18, 1884. (No model.)

Claim.—1. The combination, with the hopper, of a seed-slide and an arm pivoted centrally upon the other side of the hopper and con-



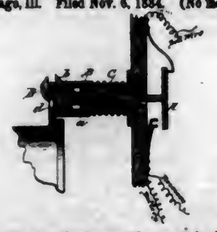


nected with the seed-slide, said slide having its other end bent, as described, and a spiral spring located between said end and the hopper, as set forth.

2. The combination, with a revolving hopper having a series of openings upon its peripheral face, of a removable strip having a series of openings and inwardly-extending wings, thumb-screws for holding said strip in position, and a hinged door for the hopper, and a seed-slide located within said hopper, substantially as set forth.

3. The combination, with a revolving hopper having a seed-opening, a bracket or guide located over said opening and provided with a seed perforation or opening, said lever also having a shaft extending outside of the hopper, of a lever pivoted in brackets and rigidly connected to said shaft, a pin projecting outwardly from the hopper and fitting an opening in said lever, a coil-spring mounted on said pin between the hopper and lever, said lever having its free end bent to form an L-shaped arm or extension, substantially as set forth.

326,610. TELEPHONE-SWITCH. CHARLES WHITLOCK and ALLEN C. KNAPP, Chicago, Ill. Filed Nov. 6, 1884. (No model.)



Claim.—1. The combination, with a switch-plate, the sliding jaw, and the sleeve thereof, of a pin connecting the sleeve and stem of the sliding jaw with a rigid jaw provided with elongated slots and passing through the sleeve of the sliding jaw, substantially as described.

2. The combination of the sliding jaw and the rigid jaw provided with opposing faces, one of said faces projecting at all times beyond the plane of the face of the other jaw, whereby open jaws are provided for receiving the telephone, substantially as described.

3. The sliding jaw and the rigid open jaws, one of which projects at all times beyond and is sleeved upon the other, in combination with a spring for actuating the sliding jaws, substantially as described.

326,611. ART OF MAKING PLUMBERS' TRAPS. JAMES A. WHITNEY, Dobbs Ferry, N. Y. Filed Dec. 2, 1882. (No model.)

Claim.—1. An apparatus (for compressing hollow articles of soft metal) comprising, in combination, the following elements, to wit: a die having a cavity substantially corresponding to that of the article, devices for closing the ends of the article, devices for injecting a fluid under pressure into the article, and means, substantially as described, for automatically operating the end-closing devices, and for injecting the fluid under pressure, all substantially as and for the purpose herein set forth.

2. The combination of the die for holding the hollow article, and the bars E, constructed and arranged to carry a closing device into the ends of the said article, substantially as and for the purpose herein set forth.

3. The combination of the bar E, having a packing-ring, F, with the die having a cavity for holding the hollow article, all substantially as and for the purpose herein set forth.

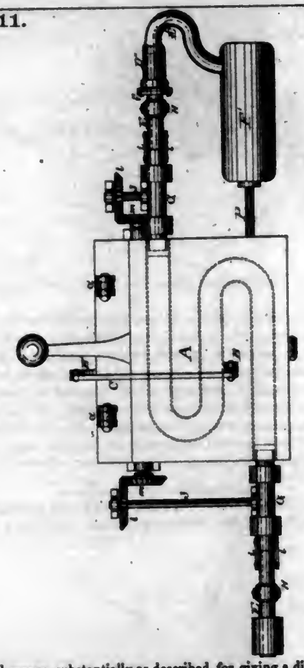
4. The bar E, constructed with a tubular passage, *f*, and a device for closing the end of the hollow article, in combination with the die having a cavity for holding the hollow article, all substantially as and for the purpose herein set forth.

5. The combination of the bars E, having radially-expanding rings F, the sleeves G, and the die having a cavity for holding the hollow article, substantially as and for the purpose herein set forth.

6. The combination of a bar, E, having a radially-expansible ring, F, a sleeve, G, and means, substantially as described, for giving a differing inward movement to the bar E and sleeve G, substantially as and for the purpose herein set forth.

7. The combination of the die for holding the hollow article, a tubular bar, E, having an expansible ring, F, a sleeve, G, means, substantially as described, for forcing fluid under pressure into the hollow

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article, and means, substantially as described, for giving a differing movement to the bar E and sleeve G, all substantially as herein set forth.

8. The combination of the die having a cavity for holding the hollow article, pump-barrel F', pipe E', and sleeve D', with the tubular bar E, provided with a means for closing the end of the hollow article, all substantially as and for the purpose herein set forth.

9. The combination of the die having a cavity for holding the hollow article, the bars E, having radially-expansible rings F, the sleeves G, sleeve D', pipe E', pump-barrel F', levers H and K, cams I and L, and means, substantially as described, for giving operation to the piston of the barrel F, all substantially as and for the purpose herein set forth.

10. The combination of the cam *d*, lever B', rods C, and toggle-joint B with the part A' of the die, all substantially as and for the purpose herein set forth.

326,612. PLUMBER'S TRAP. JAMES A. WHITNEY, Dobbs Ferry, N. Y. Filed Mar. 5, 1883. Renewed Feb. 11, 1885. (No model.)



Claim.—A plumber's trap composed of cast compressed soft metal, substantially as herein set forth.

326,613. BALL-VALVE. CHARLES WHITTAKER, Chicago, Ill. Filed Oct. 20, 1884. (No model.)

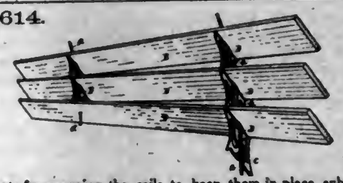


Claim.—A valve consisting of two parts, the inner part being composed of rubber or other elastic material provided with a lateral flange or rim, and the outer part being composed of vulcanized fiber, whereby both sidewise and endwise yielding or elasticity is secured, substantially as described, and for the purpose set forth.

326,614. WIND-WHEEL. MALCOLM B. WILLIAMS, Kalamazoo, Mich. Filed Jan. 27, 1885. (No model.)

Claim.—1. In a wind-wheel, alternating sails and rim-sections bound together, the latter being provided with the specified lugs or

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equivalents for engaging the sails to keep them in place, substantially as set forth.

2. In a wind-wheel, alternating sails and rim-sections bound together, the latter being provided with the interlocking corner lugs or equivalents adapted for both engaging the sails to keep them in place and connecting the sections, substantially as set forth.

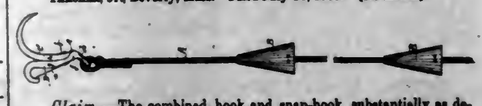
3. In a wind-wheel, alternating sails and rim-sections bound together by a binding-rod, the sections being provided with a loop-socket or equivalent forming a passage-way for receiving the binding-rod therethrough, said loop-socket being confined at the ends and unconfined between the ends on one side and unconfined at the ends and confined between the ends on the other side, substantially as set forth.

4. In a wind-wheel, the combination of a sail of the wheel and a section of the rim, said sail and section being adapted to catch one over the other, whereby both are held in proper position, substantially as set forth.

326,615. HOG-CHOLERA REMEDY. ROBT. A. WILSON, Blue Springs, Nebr. Filed Aug. 5, 1885. (No specimens.)

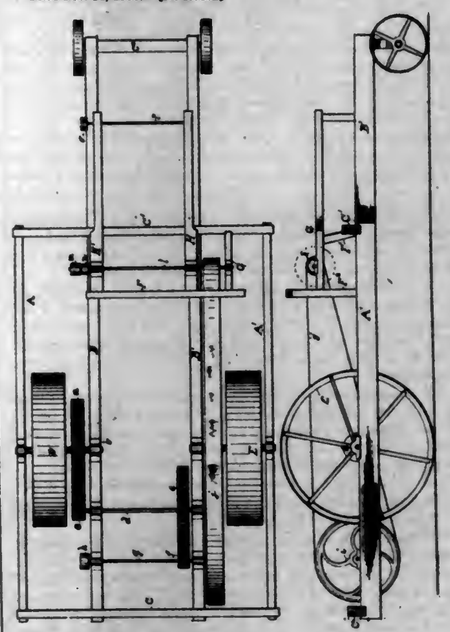
Claim.—The herein-described medical compound for the prevention of hog-cholera, consisting of the combination of tobacco, senna, worm-seed, and treacle, in about the proportions stated.

326,616. FIRE-ESCAPE. HEZEKIAH O. WOODBURY and SETH T. THACHER, Jr., Beverly, Mass. Filed July 13, 1885. (No model.)



Claim.—The combined hook and snap-hook, substantially as described, consisting of a rod bent in the form of an eye and two hooks and having to one of them a spring secured to both by a rivet going through it and their shanks where they cross each other, all being substantially as set forth, and for use with and application to a rope, having applied to it, as represented, a series of conic frusta, or such and a bag, as specified.

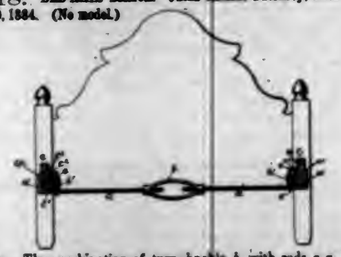
326,617. TRAVELING THRASHER. DAVID YOUNG, Stockton, Cal. Filed Feb. 11, 1885. (No model.)



Claim.—1. As an improvement in traveling thrashers, the combination, with a supporting-frame, of a drive-wheel, a large gear-wheel on the shaft thereof, a transverse shaft mounted in rear of the drive-wheel, and carrying at one end a pinion intermeshing with the said gear and at the other end a large gear-wheel, a shaft with a pinion intermeshing with the gear-wheel on the transverse shaft and carrying a band-pulley, the cylinder-shaft journaled in the forward end of the machine and carrying a pulley, and a connecting-belt, the whole operating substantially as and for the purpose specified.

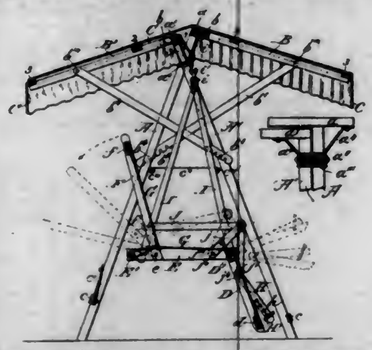
2. The combination of the frame, the drive-wheel D, gear-wheel *a* on its shaft, the shaft *d*, mounted forward of the drive-wheel and carrying pinion *c*, and gear-wheel *e*, the shaft *g*, with pinion *f*, and band-pulleys *h i*, and shaft *l*, cylinder mounted forward of the drive-wheel and provided with pulleys *k m n*, combined to operate substantially as and for the purpose specified.

326,618. BED-RAIL BRACE. JESSE ADAMS, Guernsey, Ark. Filed Aug. 9, 1884. (No model.)



Claim.—The combination of turn-buckle *b*, with rods *a a*, having threaded ends screwing into said turn-buckle *b*, and a turned-up L, *a'*, on their outer ends having a smooth face, a^2, fitting against the outer face of bed-rails *c*, with dog *e* working on said rods *a*, and embedding its tooth e^2 in the upper face of slat-rail *c'*, substantially as shown and described, and for the purposes set forth.

326,619. SWINGING CHAIR CONVERTIBLE INTO A SWINGING HAMMOCK. ELIZABETH M. BALDWIN, Sparta, Wis., administratrix of Rael S. Baldwin, deceased. Filed Apr. 25, 1885. (No model.)



Claim.—1. A swinging chair convertible into a swinging hammock having the suspending-arms I I attached thereto and loops i thereon, in combination with the hooks i', links i'', and plates *a a'* of the swing-supports A A', constructed to operate as described.

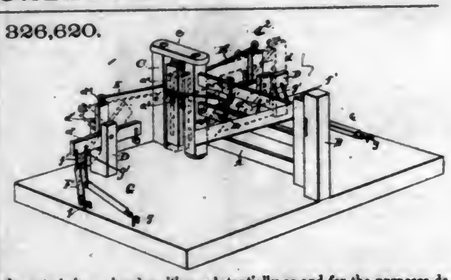
2. In a swinging chair convertible into a swinging hammock, the combination of the arms J, supports *j*, pivoted to the front ends of said arms, and supports *j'*, pivoted at their upper ends to the front ends of arms J and their lower ends to leg-pieces D, with the cross-pieces D', *e*, and E', and side pieces, E, and back pieces, F, pivoted to the arms, as described.

3. The combination of a swinging chair convertible into a swinging hammock, consisting of the pieces D, E, and F and D', *d*, and E', with the supports A A', having a two-part roof-frame hinged thereto, which are adjustable, one part independent of the other, by adjusting-braces *b' b''*, substantially as described.

326,620. SWINGING GATE. HUGH B. BOOKOUT, Long's Mills, Tenn. Filed July 17, 1884. (No model.)

Claim.—1. The combination, with a swinging gate, as a means for operating the same, of a pair of levers suitably mounted in standards, one on either side of the gate, intermediate connections between the gate and said levers, a pair of bars of unequal length connected with each operating-lever, the shorter bars being arranged to occupy an elevated or inclined position and the longer bars resting flat on the ground when

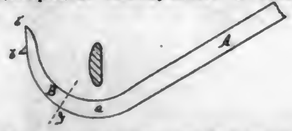
326,620.



the gate is in a closed position, substantially as and for the purposes described.

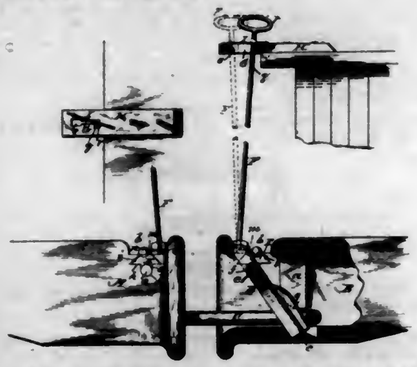
2. The combination, with a hinged gate provided with a latch, *a*, and a beam-extension, a^2, arranged in rear of the hinge of such gate, of a lever located at one side of the gate, a cord secured at one end to said lever and carried thence around extension a^2 and secured to its side farthest from the lever, the latch operated by said cord, a presser-bar, F, arranged approximately transversely of the roadway, and having its inner end bearing thereon and its outer end connected with the lever, and a second presser-bar, G, made longer than bar F, and arranged between such bar and the gate and having its outer end connected with the lever, substantially as set forth.

326,621. SHINGLE-BINDING TOOL. HIRAM E. BRACKETT and FRED. L. SAWYER, Hampden, Me. Filed July 14, 1885. (No model.)



Claim.—The herein-described shingle-binding tool consisting of the lever A B, curved upwardly toward its point, rounded or convexed upon the upper surface of its curve, and provided upon its under side and near its point with the spur *b*, formed integral with said tool, all as shown and described, and substantially as and for the purpose specified.

326,622. CAR-COUPLING. SIMON U. BRANDSTETTER, Vandalia, Mo. Filed Aug. 3, 1885. (No model.)

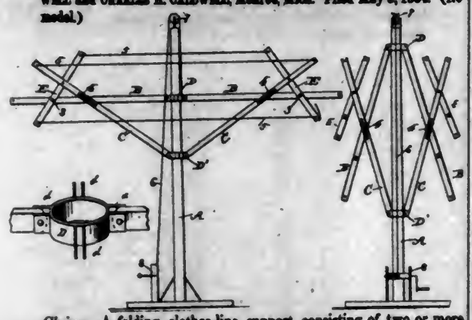


Claim.—1. The combination, with a draw-head having bevel guides upon its interior sides, of a coupling-pin formed with journals having circumferential shoulders, said journals having their bearings in the sides of the draw-head, and held therein by dovetail journal-boxes fitting in correspondingly-formed recesses and held in place by suitable keys, substantially as and for the purpose set forth.

2. In a car-coupling, the draw-heads thereof provided with dovetail journal-boxes secured by keys in correspondingly-formed recesses in the sides of the draw-heads, in combination with a coupling-pin formed with a flat wide body, journals extending therefrom having circumferential shoulders, and a weight upon the shank of the pin having its outer surface beveled, substantially as and for the purpose specified.

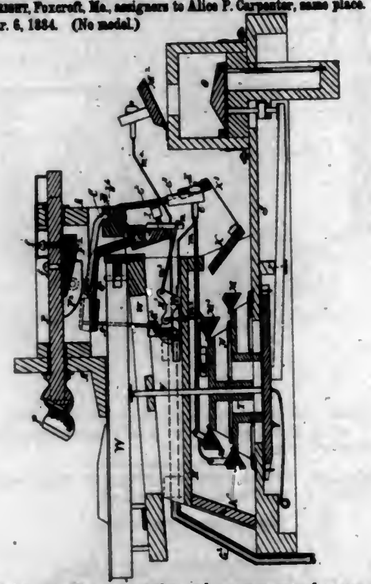
3. In a car-coupling, a draw-head provided with a pivoted and weighted coupling-pin, in combination with an operating-rod bent to form a crank at its lower end and adapted to bear against the pin, and a bracket secured to the roof of the car and formed with a lock-slot, and a spring to hold the rod in operative or inoperative position, said rod having a portion of its length formed with flat sides, substantially as and for the purpose described.

326,623. FOLDING CLOTHES-LINE SUPPORTER. WILLIAM C. CALDWELL and CHARLES H. CALDWELL, Monroe, Mich. Filed May 8, 1884. (No model.)



Claim.—A folding clothes-line support consisting of two or more sets of arms, as B C, pivoted together at the point of crossing, as shown and described, said arms pivoted to ring-bands D and D', respectively, a central supporting-pole, A, upon which the ring-bands have a vertical movement, and locking-bar E, pivoted to one of the arms and adjustably connected with the other by means of a set-screw, whereby said arms are firmly held in position when opened, and hoisting mechanism, substantially as described.

326,624. ORGAN-ACTION. EDWIN P. CARPENTER and MORRIS S. WEBBER, Foxcroft, Me., assignors to Alice P. Carpenter, same place. Filed Mar. 6, 1884. (No model.)



Claim.—1. The construction and arrangement of organ-action mechanism, as described, viz: with the brace-section A, the fulcrum-bar section B B', and the key-frame section w as separate detachable parts, with connecting devices, as hooks D, which permit of their ready removal one part from the other, substantially as and for the purpose set forth.

2. The combination, with the sounding devices and key-frame in an organ-action, of the detachable fulcrum-bar B, carrying the crank-levers and grand-expression roller, the detachable brace A, carrying the pull-bars, and the connecting-hooks D, pivoted to the fulcrum-bar ends, as at *b*, and adapted to engage studs *d d'*, respectively fixed on the ends of said brace and key-frame, for detachably retaining said parts in position, substantially as set forth.

3. The crank-lever C, provided with the wood end block c^2, fitted with conical recess *c'* and end slit, c^3, in combination with the mute-actuating wire *m*, screw-threaded at the end and provided with the wooden button E, screwed directly upon said wire and having the shank *e* extending through the recess c^3 of said lever end block, as set forth.

4. The combination of the fulcrum-bar B, the cranked levers C, expression-roller G, and the adjusting screw-buttons I, substantially as shown and described, for the purposes specified.

5. The combination of the pull P, provided with the depressing-piece F, the wire crank-lever C, supported in the grooved fulcrum-bar B, and having the offset top end, *c*, and dependent arm *c'*, with joint-block c^3, the mute-actuating wire *w*, and the expression-roller G, having adjustable studs I, substantially as and for the purpose set forth.

6. The combination, with the pull-bar P and wire crank-lever C, of the inclined actuating-leg F^2, connected to said pull in the manner shown, with the attaching-screw *f* and adjusting-screw *f'*, for the purpose set forth.

7. The combination, with the reed-board S, tube-block T, and swell-board H in a reed-organ action, of the centrally-pivoted swells K K', having their bearing-pivot *k* and closing-spring J, secured in a recess formed on the edge of the cheek-piece or end frame by the button A in the manner described, whereby ready detachment of the swell can be effected, substantially as and for the purpose set forth.

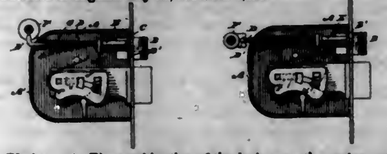
8. In a reed-organ action, the combination, with the expression mechanism and tube-board, of the auxiliary reeds N, their mute M', and the link devices w^2 m^2, angle-lever N', and arm *n*, connecting said mute with the expression-roller G for operation therewith, substantially as and for the purpose set forth.

326,625. FRUIT-JAR FASTENER. JACOB H. CASSIDY, Leavenworth, Kans., assignor of two-thirds to Chauncey L. Knapp and William G. Belmar, same place. Filed May 29, 1885. (No model.)



Claim.—In a fastening for the covers of fruit and other jars, a serrated or toothed wedge upon the cover, in combination with a bail pivoted to the neck of the jar and bent, as shown, to form loops upon each side of the wedge for convenience in inserting the bifurcated ends of a lever under them, substantially as and for the purpose specified.

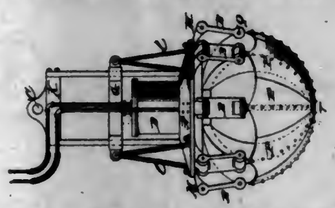
326,626. COMBINED LATCH AND LOCK. GEORGE H. CHUBB and HARRY W. CHUBB, London, England. Filed Oct. 1, 1884. (No model.) Patented in England May 12, 1884, No. 7,610.



Claim.—1. The combination of the lock-case, the spring-actuated turning-bolt, and the two fulcrums, one at each side of the bolt, about either of which the bolt may turn inward as it is retracted and forced away from the other, substantially as and for the purpose set forth.

2. The combination of the lock-case, the spring-actuated turning-bolt, two fulcrums, one at each side of the bolt, about either of which the bolt may be allowed to turn inward as it is retracted and forced away from the other, the spring-catch acting on the bolt, and the lock-spindle, by connection with which the spring-catch is operated, substantially as and for the purpose set forth.

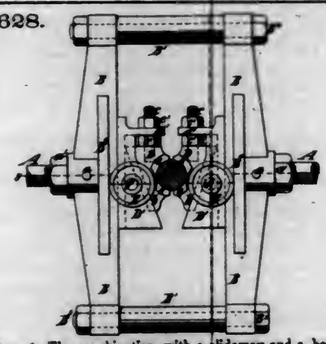
326,627. DREDGING AND GRAPPLING APPARATUS. HIRAM CLARK, New York, N. Y. Filed May 22, 1885. (No model.)



Claim.—The combination, in a power-dredging apparatus substantially as herein set forth, of the combining-ring connected to the power-piston, and by connecting-rods jointed to the outside of the grappling-tongs, the latter being centrally pivoted to the frame by which the power-cylinder is supported, with the flexible raising and lowering apparatus and flexible power-supplying pipes, all constructed and arranged to operate substantially as described.

326,628. SLIDING CONNECTION FOR MACHINERY. JAS CLAYTON, Brooklyn, N. Y. Filed June 22, 1885. (No model.)

326,628.



Claim.—1. The combination, with a slideway and a box or slide working therein, of wedge-blocks between the box or slide and the sides of the slideway, and adjustable relatively to the box or slide to compensate for wear, and rollers interposed between the wedge-blocks and the sides of the slideway, substantially as herein described.

2. The combination, with a slideway and a box or slide working therein, of wedge-blocks between the box or slide and the sides of the slideway, and adjustable relatively to the box or slide to compensate for wear, and rollers journaled upon the wedge-blocks and bearing on opposite sides of the slideway, substantially as herein described.

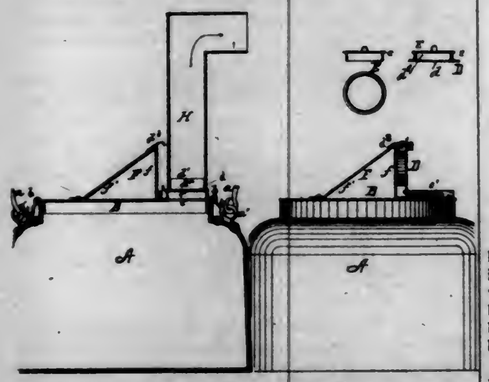
3. The combination, with a piston-rod and a yoke or slideway arranged transversely therein, of a divided box, D D, and wedge-blocks D′ D′, interposed between the box-sections and the sides of the yoke, and rollers interposed between the wedge-blocks and the yoke, and serving to sustain the pressure of the yoke upon the wedge-blocks as they move to and fro in the yoke, substantially as herein described.

4. The combination, with a piston-rod and a yoke or slideway arranged transversely therein, of a divided box, D D, and wedge-blocks D′, whereby the box-sections are supported, and rollers pivoted to the wedge-blocks and bearing upon the yoke, and movable with the wedge-blocks to and fro in the yoke, substantially as herein described.

5. The combination, with a piston-rod and a yoke arranged transversely therein, and provided on opposite sides with ribs or bearers slightly rearward of its face, of a divided box, D, and wedge-blocks D′, movable in the yoke and supported on opposite sides thereof, and rollers pivoted upon the wedge-blocks and running upon the bearers of the yoke, substantially as herein described.

6. The combination, with the side portions, B B, of a yoke constructed with ribs or bearers B*, of a divided box, D D, and wedge-blocks D′, fitted to the yoke, rollers E, and pins *f*, inserted in the wedge-blocks, and on which the rollers are journaled, and a crank-wrist, C², fitting the box D, and side portions or cheeks, C′, overlapping the rollers E, substantially as and for the purpose herein described.

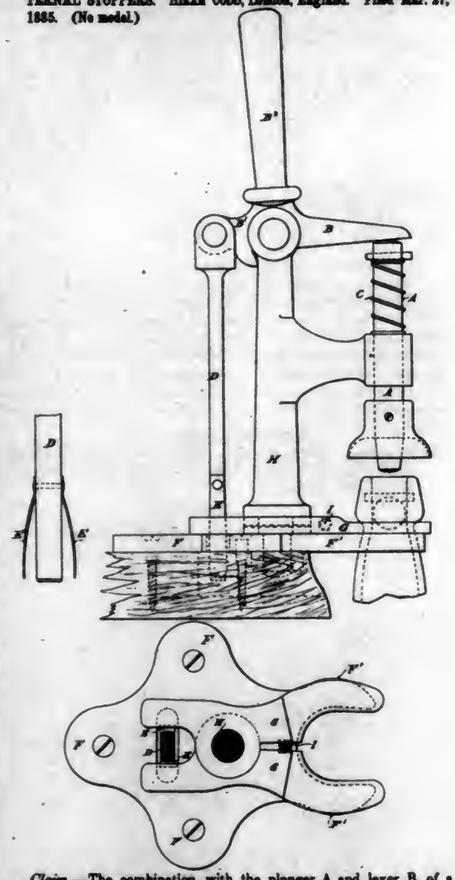
326,629. KETTLE-DRAINER AND STEAM VENTILATOR AND CONDUCTOR. JAMES A. CLOTHIER, Cumberland, Wis. Filed May 3, 1884. (No model.)



Claim.—1. The cover having the opening at one side provided with a strainer and lid, the latter having perforations, as set forth.

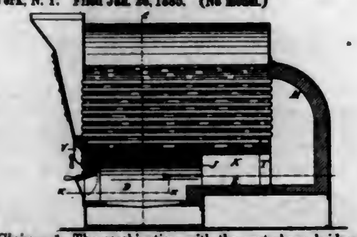
2. The cover having the opening at one side provided with a strainer and lid, the latter having perforations, and a ring around such perforations, in combination with a cap fitting within such ring, as set forth.

326,630. APPARATUS FOR OPENING BOTTLES USED FOR CONTAINING AERATED LIQUIDS, AND WHICH ARE FITTED WITH INTERNAL STOPPERS. HIRAM CODD, London, England. Filed Mar. 27, 1885. (No model.)



Claim.—The combination, with the plunger A and lever B, of a rod, D, springs E, and lever-arms G, to act substantially in the manner hereinbefore described.

326,631. FURNACE FOR STEAM-BOILERS. MYERS CORYELL, New York, N. Y. Filed Jan. 26, 1885. (No model.)

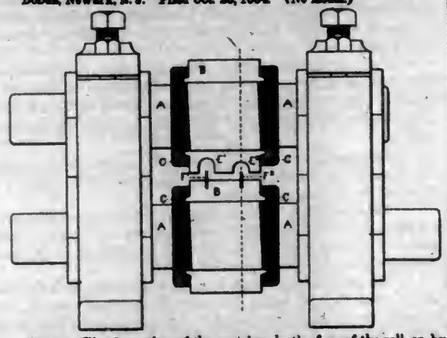


Claim.—1. The combination, with the grate-bars, bridge-wall, and boiler, of two continuous brick arches over the fire, said arches extending from the front wall to the bridge-wall, and forming a shield to prevent the direct action of the fire or products of combustion upon the boiler, the space between the arches and the boiler being open at the back end for the heated gases to pass in and forward from beyond the bridge-wall and act upon the boiler, substantially as set forth.

2. The combination, with the grate-bars and boiler, of a bridge-wall, brick side walls, and a continuous brick arch over the fire-chamber, extending from the front wall without openings to the bridge-wall, there being an open space between the arch and the boiler open at the rear to the flue beyond the bridge-wall, the wing-walls T near the back end of the boiler, and the arch M and return-flues, substantially as set forth.

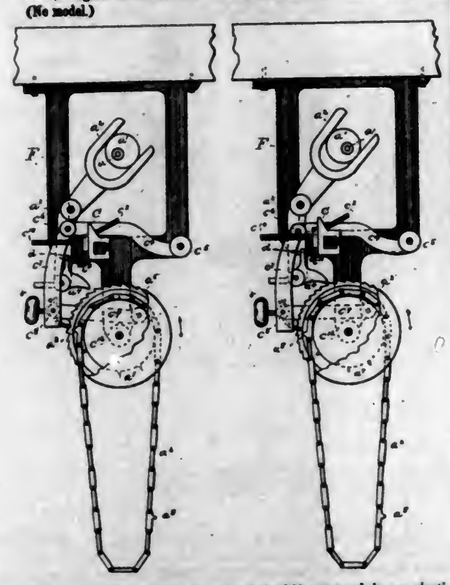
3 The combination, with the arches over the fire-chamber and the boiler, of the pipe and damper V, leading to the base of the smoke-stack, substantially as specified.

326,632. MACHINE FOR MAKING CLAW-ENDS OF HAMMERS. J. DOREN, Newark, N. J. Filed Oct. 25, 1884. (No model.)



Claim.—The formation of the matrices in the face of the roll, or, by preference, the dies thereon, for the purpose of forming the claw-ends of hammers, and the knives for splitting and dividing the same, substantially as described and shown.

326,633. AUTOMATIC BELT-SHIFTER. FRANK L. DOW, Camden, N. Y., assignor to Frisbie & Starnfield, same place. Filed Jan. 30, 1885. (No model.)

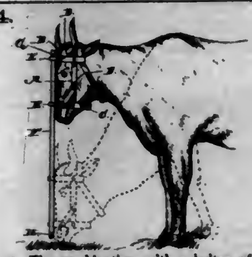


Claim.—1. The combination of a belt-shifter moved by an elastic connection, an endless link-belt moved on a sprocket-wheel, the belt constructed to disengage the belt-shifter, a lever working on and driven by an eccentric or cam on the shaft for moving the endless belt, and a dog pivoted to the lever and working on the ratchet-wheel for moving the link-belt, combined and arranged, substantially as described, for shifting of the belt and stopping the machine at stated intervals.

2. The combination of a movable belt-shifter, an endless link-belt moved on a ratchet and sprocket wheel, and a lever moved by a cam or eccentric carrying a dog working on the ratchet-wheel for moving the same, the endless link-belt constructed to disengage the belt-shifter at regular intervals for shifting the belt from the fast to the loose pulley, substantially as described.

3. The herein-described belt-shifter, having the following combination: a belt-shifter moved by elastic connection, an endless link-belt, a ratchet and sprocket wheel, and a pawl to move the sprocket-wheel driven by an eccentric or cam, constructed and arranged to operate the belt-shifter at fixed periods to stop the machine, arranged substantially as described.

326,634. COMBINED POKE AND MUZZLE. JAMES H. DOWNIE, Aberdeen, Miss. Filed June 13, 1885. (No model.)



Claim.—1. The combination, with a halter, of a vertically-sliding bar secured thereto, the upper end provided with a pin, and the lower end of said bar having a rounded head to permit the bar to work freely in the grass when the animal is grazing, substantially as described.

2. The combination, with a halter having the loops E, of a bar provided with a pin at one end and an enlarged head at the other end, suspended in the loops and adapted to slide vertically therein, substantially as described.

326,635. LUMBER-TRIMMER. MOSES DUTEMAU, Muskegon, Mich. Filed June 13, 1885. (No model.)

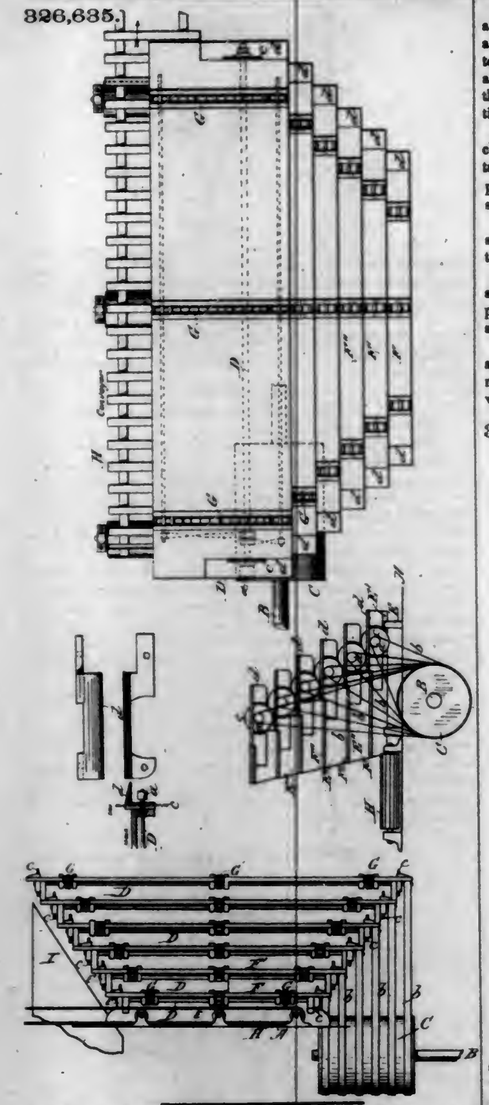
Claim.—1. The combination, in a lumber-trimmer, of a series of saw-tables of different lengths placed one above the other, the shortest table being the lowest and the upper the longest of the series, said tables being provided with a circular saw at each end, and carrying-chains arranged to carry the lumber to the saws and away from them, together with a single source of power for operating the entire series of saws and carrying-chains in the manner set forth.

2. The combination, in a lumber-trimmer, of the series of tables of different lengths placed one above the other, each table above the lower leaving a portion of the one below it uncovered to receive the lumber, said tables being further provided at each end with curved aprons *d*, which support the ends of the pieces of lumber while under the action of the saws and protect the driving-belts and pulleys from injury by said ends as they fall from the saws in the manner specified.

3. In a lumber-trimmer, the series of tables increasing in length as they ascend, and each table above the lowest leaving a portion of that beneath it uncovered to receive the lumber, circular saws at the end of each table, and carrying-chains, as set forth, in combination with the endless conveyer H, in the rear of the tables, for receiving the trimmed lumber as it falls from the carrying-chains, and inclines I at the ends of the machine to receive the debris, all arranged for joint operation in the manner described and shown.



326,635.



Claim.—1. A copying-desk provided with a case or body having a shallow receptacle and inclined top, a deeper receptacle at the rear with a transverse sight-opening directly above the rear edge of the inclined top, and with rollers *d d'*, arranged one above the other and supporting a band of paper containing the matter to be copied in position to expose the same directly above the upper edge of the inclined top, substantially as set forth.

2. The combination of the body of the case having a shallow receptacle and inclined cover therefor and a deep receptacle at the rear with a transverse strip, *f*, sight-opening *u*, and cover *c*, and rollers *d d'*, supporting a strip of paper, *z*, at the rear of said opening, substantially as set forth.

3. The combination, in a writing-desk, of a standard and an elastic strip supported by the standard adapted for attachment to the hand of the writer, for the purpose described.

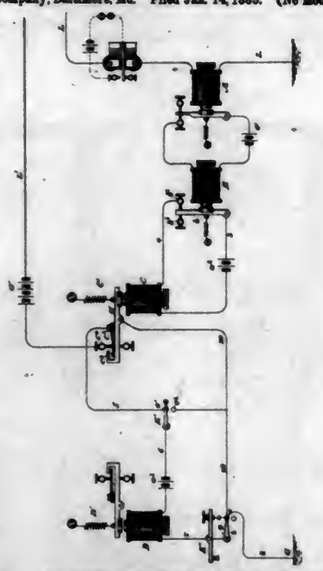
4. The combination, with a writing desk or table, of an elastic band, a support therefor whereby it is secured at one end forward of the position of the writer, and adapted for direct attachment to the hand, substantially as and for the purpose set forth.

5. The combination of a desk provided with a socket, *v*, and a standard, D, fitting the said socket detachably, and an elastic strip, *n*, connected to the standard and adapted for attachment to the hand of the writer, substantially as and for the purpose set forth.

326,636. WRITING-DESK. HENRY W. ELLSWORTH, Fredonia, N. Y. Filed Apr. 25, 1885. (No model.)



326,637. REPEATER FOR QUADRUPLEX TELEGRAPHS. GEORGE W. GARDANIER, New York, N. Y., assignor to the Baltimore & Ohio Telegraph Company, Baltimore, Md. Filed Jan. 14, 1885. (No model.)



Claim.—1. In a duplex or quadruplex telegraph, the combination, substantially as hereinbefore set forth, with one of the receiving-instruments of the same, of a branch line, a battery included therein, a contact-stop with which said line is connected, a contact-spring to which said stop is applied, means for causing said spring to be moved into and out of contact with said stop, a conductor constituting an earth-connection for said spring, a battery and an electro-magnet included in said conductor, a second contact-stop against which said contact-spring rests when not in contact with the first-named contact-stop, and a conductor connecting the second contact-stop with the earth.

2. The combination, substantially as hereinbefore set forth, with a receiving-instrument of a duplex or quadruplex telegraph system, of a branch line, a battery included therein, a contact-stop with which said branch line is connected, a contact-spring to which said contact is applied, means for causing said spring to be moved into and out of contact with said stop in unison with the movements of said receiving-instrument, and thereby connecting said branch line with the earth and disconnecting it therefrom, an electro-magnet through which the connections of said battery are thereby completed and interrupted, a second battery, and means, substantially such as described, for maintaining the connections of said second battery complete through said electro-magnet when the first-named battery-connections are being made and interrupted.

3. The combination, substantially as hereinbefore set forth, with one of the receiving-instruments of a duplex or quadruplex telegraph system, of an independent line, a transmitter for the same operated by the movements of said receiving-instrument, a battery, the connections of which with said independent line are normally controlled by said transmitter, and an independent key for controlling the connections of said battery, substantially as described, when said transmitter is at rest.

4. The combination, substantially as hereinbefore set forth, with one of the receiving-instruments of a duplex or quadruplex telegraph system, of an independent line, a transmitter for the same, a battery, the connections of which through said independent line are controlled by said transmitter, an electro-magnet included in the circuit of the same, a second battery, the connections of which are completed through said magnet irrespective of the connections of the first-named battery, and means, substantially such as described, for completing and interrupting the connections of said second battery at will.

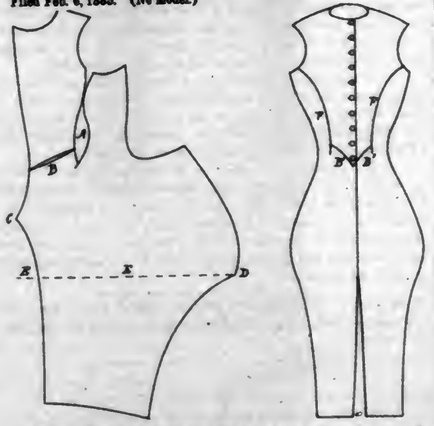
326,638. ORGAN-REED. HERBERT GALLY, New York, N. Y. Filed June 3, 1885. (No model.)



Claim.—1. A reed-block having a broad opening therethrough and a narrow slot leading from the broad one, combined with a single tongue corresponding in form throughout its vibrating part to the opening and slot in the plate.

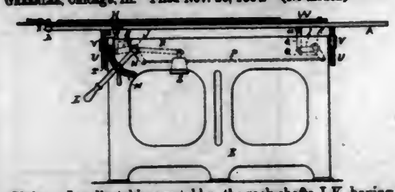
2. In combination with a reed-block having a circular aperture and a slot leading from said opening, a tongue in a single piece conforming in outline to the opening in the block, substantially as described.

326,639. UNDER-GARMENT. JENNIE D. GIDLEY, New York, N. Y. Filed Feb. 6, 1885. (No model.)



Claim.—The herein-described under-garment, the same consisting of a garment comprising the two complementary parts, each consisting of a single piece of fabric and each of said parts having darts F and B', whereby the lower front portion of the garment is drawn up and the lateral dimension of the waist portion reduced in size, as described.

326,640. MACHINE-TABLE. ROBERT L. GREENLEE and RALPH S. GREENLEE, Chicago, Ill. Filed Nov. 28, 1884. (No model.)



Claim.—In adjustable saw-tables, the rock-shafts J K, having bearings in the sides D E of the frame and near to the ends of the table A, the shaft J being provided with arm-levers G G near to the side edges of the table, and a central arm, N, and the shaft K being provided with like arms I I O, in combination with the connecting-rods Q Q Q Q, which are pivoted to the arms G G and I I and to the table A for elevating said table, and the arms N O, pivoted to the connecting-rod P for operating the shafts J K simultaneously, the table A, the weighted lever R S, for balancing the table, and the lever L, for elevating and depressing the table, and the nut-lever T and segment M, for holding the table adjusted, as specified.

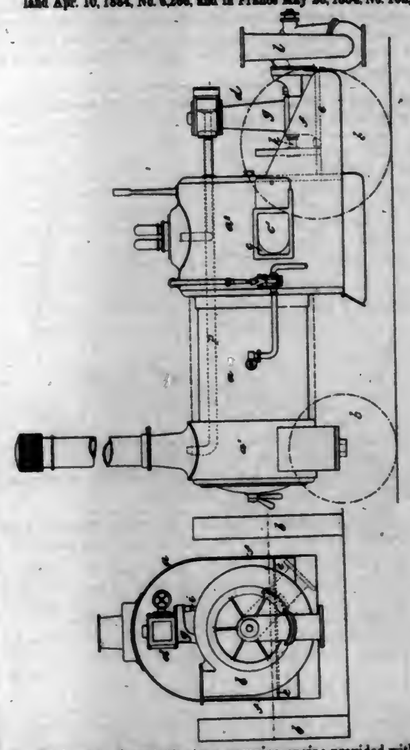
326,641. STOPPER FOR JARS, &c. WINSLOW W. GUPTILL, Boston, Mass., assignor to the Hartford Fruit Jar Company, Hartford, Conn. Filed July 10, 1885. (Model.)



Claim.—1. In a stopper for jars and the like articles, in combination, the cover with the beveled disk and grooved stem, the tightener-plate with the beveled flange, the elastic packing-ring located between the tightener and the cover, and the yoke-shaped lever with pivots bearing on the tightener-plate, and the cams engaging the cap, all substantially as described.

2. In a stopper for jars and the like, in combination with a cover, a tightener and an elastic packing-ring, combined and arranged substantially as described and shown, the removable yoke-shaped lever having on each end a pivot and a cam-surface, the former bearing on the tightener-plate and the latter on the cap of the cover in compressing the ring, all substantially as described.

326,642. PORTABLE STEAM PUMPING-ENGINE. JOHN GWYNNE, London, England. Filed Apr. 1, 1885. (No model.) Patented in England Apr. 10, 1884, No. 6,266, and in France May 26, 1884, No. 162,348.

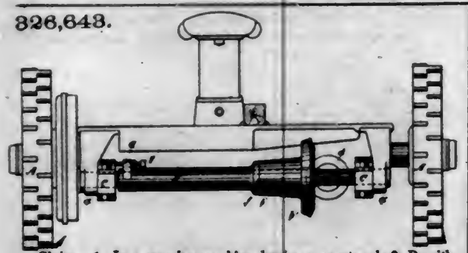


Claim.—1. A portable steam pumping-engine provided with a horizontal boiler of the locomotive tubular type and a fire-box and fire-door, in combination with a vertical engine and the platform on which said engine is supported, and a centrifugal pump centrally swiveled to a shaft and connected to said vertical engine by the driving mechanism, substantially as described.

2. A portable steam pumping-engine comprising a horizontal boiler, *a*, with fire-box *a*², and fire-door *c'* at the side, platform or equivalent support *e*, vertical engine *d* on said platform or equivalent support *e* at the rear of the fire-box, and centrifugal pump *l*, the case of which is capable of being swiveled, all substantially as described.

326,643. MOWER. WILLIAM S. HALSEY, Oakland, Cal., assignor to the Judson Manufacturing Company, same place. Filed Oct. 16, 1884. (No model.)

326,643.

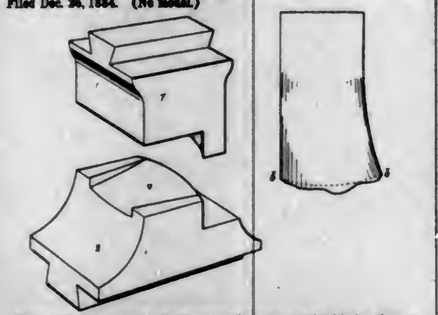


Claim.—1. In a mowing-machine having a counter-shaft, B, with gear *b*, a shaft, D, with pinion *d*, and a yoke, C, mounted on the counter-shaft and carrying shaft D, the loose sleeve F on the counter-shaft, against which the hub of gear *b* bears, and a connection between said sleeve and the yoke, whereby the thrust on gear *b* is transferred through sleeve F to the yoke to maintain the engagement of pinion *d* with said gear, substantially as herein described.

2. In a mowing-machine having a counter-shaft, B, with gear *b*, a shaft, D, with pinion *d*, and a yoke, C, mounted on the counter-shaft and carrying shaft D, the loose sleeve F on the counter-shaft connected with the yoke at one end and having a collar, *f*, on the other end, against which the hub of the gear *b* bears, substantially as and for the purpose herein described.

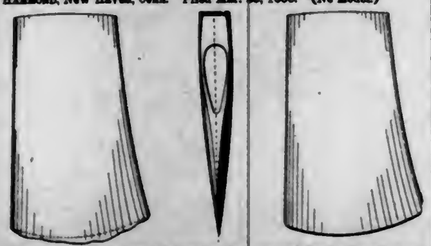
3. In a mowing-machine having a counter-shaft, B, with gear *b*, a shaft, D, with pinion *d*, and a yoke, C, mounted on the counter-shaft and carrying shaft D, the loose sleeve F on the counter-shaft having a collar, *f*, on one end, against which the hub of the gear *b* bears, and a set-screw, *g*, at its other end seated in the yoke C, substantially as and for the purpose herein described.

326,644. SHEARING-DIE. HENRY HAMMOND, New Haven, Conn. Filed Dec. 26, 1884. (No model.)



Claim.—A shearing-die for forming the edge of the blade of an ax, and one section of which has the recess 9 for the accurate reception of the blade being sheared, and each section of which has an edge for shearing off the blade on the line of its proposed edge.

326,645. PROCESS OF FORMING THE EDGES OF AXES. HENRY HAMMOND, New Haven, Conn. Filed Mar. 23, 1885. (No model.)

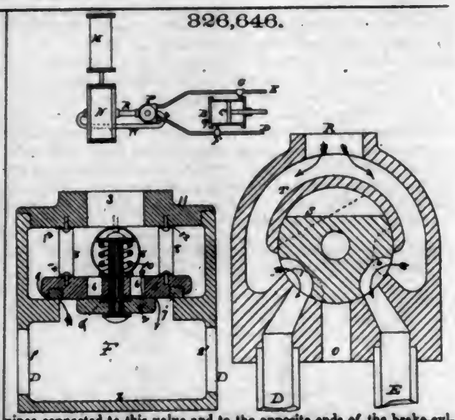


Claim.—The process of forming the edge of the blade of an ax preparatory to grinding by shearing off the blade on the line of the proposed edge, substantially as described.

326,646. AIR-BRAKE. WILLIAM W. HAMSOM, San Francisco, Cal. Filed Aug. 28, 1884. (No model.)

Claim.—1. Mechanism for operating air-brakes, constructed and arranged substantially as described, comprising a pump for compressing the air, a valve for distributing the air to the brake-cylinders, the valve being constructed so that the current of air may flow direct from the pump without the intervention of a reservoir or other obstruction into either or both ends of the brake-cylinder at the same time, two train-

326,646.



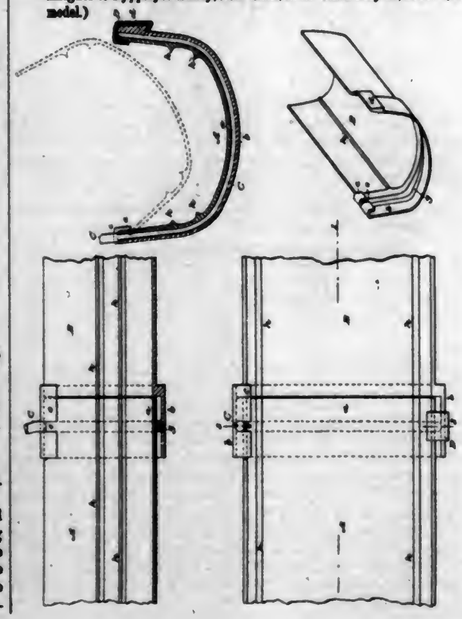
pipes connected to this valve and to the opposite ends of the brake-cylinder, both of these pipes permitting an unobstructed flow of air into the cylinder and an unobstructed flow from the cylinder through one of the pipes, the other pipe having a retaining-pressure valve preventing the outward flow of air from the other end of the cylinder below a fixed or regulated pressure.

2. The operating-valve P, having the admission-opening R, the divided channel or passage T, the two ports for the pipes D and E, the exhaust-opening O, and the valve S, having the ports 1 and 2, so constructed that when the valve S is in or near its mid-position there will be a direct communication from the admission-opening R through the ports 1 and 2 of the valve S into the openings or ports for the pipes D and E, substantially as shown, and for the purpose described.

3. In air-brake mechanism, an air-pump, brake-valve, two lines of pipe, and brake-cylinder with its piston, in combination with a valve which will allow free admission of air to one end of the brake-cylinder and will permit the outflow when the pressure in the cylinder is above a fixed amount, substantially such as shown and described.

4. The retaining-pressure valve having the chamber F, with the openings 1 and 2 for attaching pipes, the metal valve 5, having an elastic face, 7, and held to its position on the seat by the springs 8 8 8, this valve having openings 6 6 through it, which are closed by a valve, 4, which opens in an opposite direction from valve 5, the valve 4 being loaded so that it will only be opened with a fixed pressure, substantially as shown and described.

326,647. GUTTER AND SPOUT. LOUIS J. HARDY, Rouen, France, assignor to Hyppolyte Hardy, New York, N. Y. Filed July 27, 1885. (No model.)

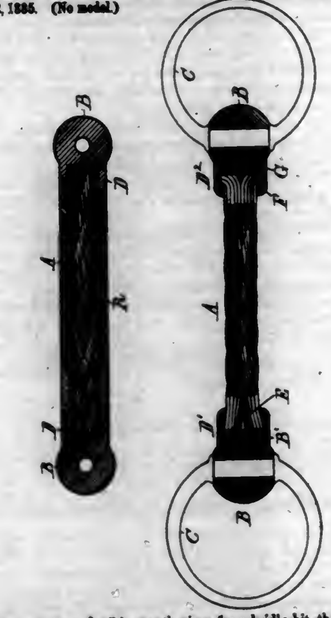


Claim.—1. The combination, with two sections of a trough or gutter, of a box provided with an interiorly-arranged keeper on one side and an exteriorly-arranged keeper on the other side, a packing-strip, and a clamp, all substantially as and for the purposes set forth.

2. The combination, with trough-sections A and B, made of paper, of a metal box, *b*, provided with an interiorly-arranged keeper, *c*, on one side and an exteriorly-arranged keeper, *d*, on the other side, a packing-strip, and a clamp, D, all arranged substantially as and for the purposes set forth.

3. A metal box, *b*, for joining together two sections of a gutter, provided with an interiorly-arranged keeper, *c*, with a recess, *e*, to hold the packing-strip, and an exteriorly-arranged undercut keeper, *d*, to receive the clamp, substantially as set forth.

326,648. BRIDLE-BIT. CHARLES E. HEISER, Newark, N. J. Filed Jan. 2, 1885. (No model.)

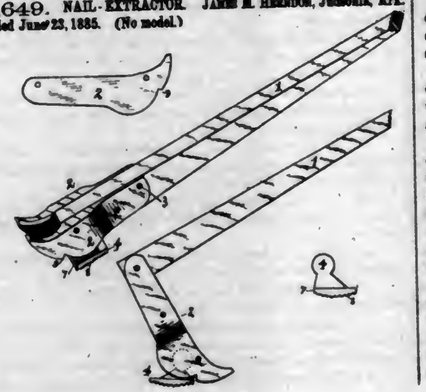


Claim.—1. In a flexible mouth-piece for a bridle-bit, the combination, with suitable end pieces or heads, of the intermediate bundle of fine flexible wires twisted into strands and united into a flexible rope and secured in the heads, substantially as herein described.

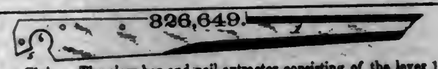
2. In a mouth-piece for a bridle-bit, the combination, with the heads B, of the removable sockets having the wire rope fastened therein, substantially as shown and described.

3. The combination, with the heads B, provided with the threaded plugs B', of the sockets provided with an external aperture to fit the wire rope and expanded internally, with the ends of the wire rope A expanded within them, and the sockets screwed to the plugs B', as and for the purpose set forth.

326,649. NAIL-EXTRACTOR. JAMES M. HERNDON, Judsonia, Ark. Filed June 23, 1885. (No model.)

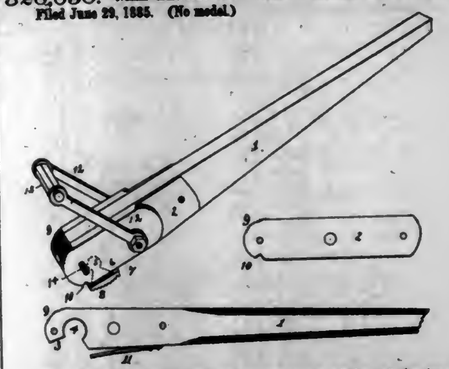


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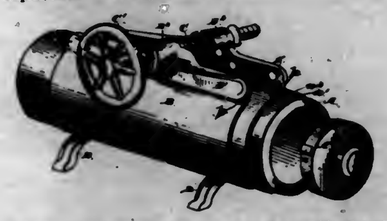
Claim.—The claw-bar and nail-extractor consisting of the lever 1, having in its lower face and at its fulcrum end the V-shaped opening 5 and the three-quarter opening 6, fulcrum 4, having a circular head fitting into the said circular opening 6, base 7, and teeth 8 on the lower face of the said base, side pieces, 2, their front ends terminating in claws and having on their lower face shoulders 9, all bolted together by means of bolts 3, substantially as shown and described.

326,650. NAIL-EXTRACTOR. JAMES M. HERNDON, Judsonia, Ark. Filed June 29, 1885. (No model.)



Claim.—A shackle-bar or nail-extractor consisting of the bar 1, having the teeth 9 on its front end, and in its lower face the V-shaped opening 3, terminating in a three-quarter circular opening, 4, the fulcrum 6, swinging in the said V-shaped opening 3, the sides 2, bolted to the said bar 1 and having teeth 9 on their front end, and shoulders 10, shackle-bars 12, pivoted in the rear of said fulcrum 6, with their front ends bolted together by the octagon bar 13, rod 14, passing through the bar 1 and jaws 2 and projecting from either side, and acting as a stop for the shackle-bars 12, and spring 11, secured to the lower face of the bar 1, its front end resting on the rear part and upper face of the base 7 of the fulcrum 6 and pressing it forward against the shoulder 10, substantially as shown and described.

326,651. PORTABLE COPYING-PRESS. HENRY M. HERSCELL, Grand Rapids, Mich. Filed May 2, 1885. (No model.)



Claim.—1. In a portable copying-press, the combination of a hollow cylinder and a pressure-shell inclosing said cylinder, substantially as described.

2. In a portable copying-press, the combination of a hollow cylinder, a pressure-shell inclosing said cylinder, substantially as described, and means for clamping said shell around the cylinder, for the purposes set forth.

3. In a portable copying-press, the combination of a hollow cylinder upon which copying materials may be placed, an elastic metal pressure-shell inclosing said cylinder, a screw-shaft for clamping the cylinder, and means for supporting the press, substantially as described.

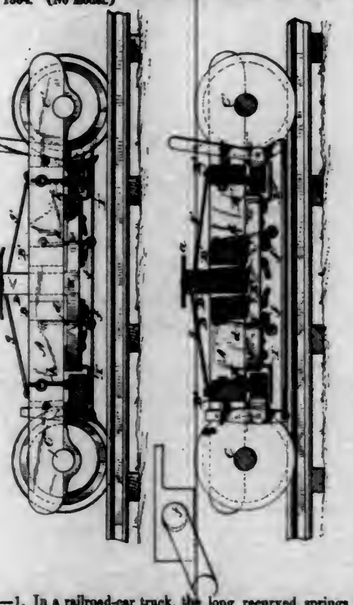
4. In a portable copying-press, the combination of a hollow cylinder upon which the copying materials may be placed, an elastic metal pressure-shell inclosing said cylinder, binding-strips on the upper flared ends of said shell, having journal-bearing collars therein, a partially screw-threaded shaft having a hand-wheel operating said journal-collars, a suitable clamping-nut and stationary collar engaging said shaft and seated in the socketed portions of the journal-collars, and means for supporting the press, substantially as described.

5. In a portable copying-press, the combination of a hollow cylinder having a water-proof sheet secured thereto upon which the copying materials may be placed, and having one end open and fitted with a cap, an elastic metal pressure-shell partially inclosing said cylinder, and having flared extensions at the upper end thereof, and binding-strips having socketed journal-collars therein, a transverse shaft-screw threaded at one

end passing through the journal-collars, a ball lock-nut keyed to one of the journal-collars, a clamping-collar integral with or secured to the plain surface of the shaft, and means for supporting the press, substantially as described, and for the purposes specified.

6. In a portable copying-press, the combination of the hollow cylinder A, having a blotter, a', and a water-proof covering, a^2, a cap, A', fitting one open end of the cylinder, an elastic metal pressure-shell, B, the binding-strips B', journal-bearing collars B^2, shaft C, having a hand-wheel, C', nut c, collar c^2, and the feet D D, for supporting the press, substantially as described.

326,652. CAR-TRUCK. MOSES G. HUBBARD, Norristown, Pa. Filed Sept. 5, 1884. (No model.)



Claim.—1. In a railroad-car truck, the long recurved springs and the short crank-arms, in combination with the pendent links connected with said crank-arms, substantially as described.

2. In a railroad-car truck, the long recurved springs and short crank-arms, in combination with the pendent links inclined outward toward their lower ends and secured at said ends to said crank-arms, substantially as described.

3. In a car-truck, the long recurved springs provided with short crank-arms, in combination with the pendent links supporting said crank-arms and springs, and with journal-boxes having slightly-elongated bearings for said springs to roll in, substantially as described.

4. In a car-truck, the long recurved springs, in combination with and secured to the bolster, and the interposed bars arranged transversely of the bolster, and adapted to limit the upward movement thereof, substantially as described.

5. In a car-truck, a swinging bolster located between contiguous cross-sills, by which its movement is limited, in combination with the pivoted links or anti-friction draft attachment adapted to permit such limited movement of the bolster, and the springs upon which said bolster is mounted, substantially as described.

6. In a car-truck, the bolster suspended by swinging links in such manner as to be free in every direction, except as controlled by and in combination with the springs, spring-bars, steadying-pieces, and draft-links, substantially as described.

7. A car-truck frame constructed as described, in combination with the bolster suspended therein by means of pendent links, and controlled in its position longitudinally of the truck by the anti-friction draft-links, substantially as specified.

8. The anti-friction draft-links interposed between the car and wheels, in combination with the springs upon which the car is mounted, substantially as and for the purposes specified.

9. The anti-friction draft-links, in combination with the laterally-vibrating bolster-links, for the purposes and substantially as described.

10. In a car-truck, the draft-links connecting the car-body with the truck or wheels, in combination with the springs interposed between said car-body and the truck, for the purposes described.

11. The combination, with the car-truck, of anti-friction draft-links arranged to draw said truck in either direction, substantially as described.

12. In a car-truck, the brakes and wheels attached to the truck-frame, in combination with and arranged to act upon the bolster only through the medium of the interposed springs and draft-links, substantially as described.

326,658. CAR-TRUCK. MOSES G. HUBBARD, Norristown, Pa. Filed Nov. 17, 1884. (No model.)



Claim.—1. A truck-frame composed of rigid side sills and the wide and thin transverse bars connecting said sills, whereby the desired vertical freedom of the wheels and greatly-increased diagonal stiffness of the frame are attained, substantially as described.

2. The combination, in a truck-frame, of the rigid side sills, the axle-boxes having a rigid connection therewith, and the wide and thin transverse bars connecting said side sills and located between the wheels for giving compactness, vertical flexibility, and diagonal stiffness to the truck-frame, substantially as described.

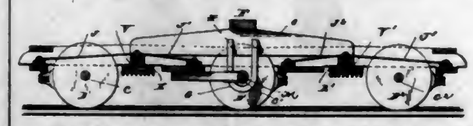
3. The combination, with the flexible truck-frame, of the short pedestals, the centrally-located springs, and the yielding bolster on which the car-body rests, substantially as described.

4. The combination, with the flexible truck-frame, of the centrally-located springs, the yielding bolster, and the anti-friction draft-links, substantially as described.

5. In a car-truck, the bolster supported on transversely-arranged circumferential springs suspended from the truck-frame by means of pivoted links located outside of the truck-frame, whereby greatly-increased length of spring is attained, substantially as described.

6. A car-truck bolster pivoted to the truck at its center by means of the draft-links, in combination with the pendent link supporting it, substantially as described.

326,654. CAR-TRUCK. MOSES G. HUBBARD, Norristown, Pa. Filed Dec. 22, 1884. (No model.)



Claim.—1. A six-wheeled car-truck composed of a four-wheeled flexible truck and a two-wheeled flexible truck the side sills of which are hinged together, substantially as and for the purpose described.

2. In a six-wheeled car-truck, the truck-frame hinged at or near its center, in combination with the check-loops G G', embracing its cente axle, for the purposes and substantially in the manner described.

3. A six-wheeled car-truck frame constructed in two parts, the side sills of which are hinged together in such manner as to be flexible both vertically and laterally, substantially as and for the purposes described.

4. In a flexible six-wheeled car-truck made in two parts, the combination of the frame-hinge and the draft-links, the latter connecting the bolster and the two parts of the truck-frame, substantially as and for the purposes described.

5. A car-truck-frame hinge constructed, substantially as described and shown, for the purposes set forth, for uniting the two parts of the jointed truck.

6. In a six-wheeled truck, the combination, with the jointed truck-frame, of the frame-hinge uniting the two parts thereof, and the safety-loops M M, embracing the center axle, substantially as and for the purposes described.

7. A platform-bolster composed of the upper bar or bolster proper, F, the lower transverse bars, K and K', and the connecting-bars O and O', substantially as and for the purposes described.

8. In a six-wheeled truck, the jointed truck-frame, in combination with the platform-bolster and the truck-springs secured thereto, substantially as set forth.

9. In a six-wheeled truck, the combination, with the jointed truck-frame, of the platform-bolster and the pendent links by which said bolster is sustained, substantially as described.

10. In a six-wheeled truck, the platform-bolster, in combination with the pendent links and the draft-links, substantially as and for the purposes set forth.

11. In a six-wheeled truck, a platform-bolster suspended upon links located and attached outside of the truck-frame wheels.

12. In a six-wheeled truck, a platform-bolster, in combination with the draft-links, substantially as described.

13. The U-shaped or recurved circumferential springs with the arms thereof inclined or made to converge toward each other from the loop or recurved portion, substantially as and for the purposes described.

14. The recurved springs provided with the expanded loop or extended curve at its recurved portion, substantially as and for the purposes described.

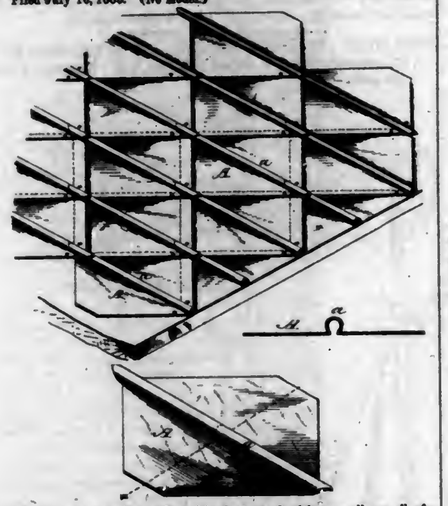
15. The pressure-springs P or their equivalent, in combination with the circumferential springs, for the purposes substantially as described.

16. The U-shaped or recurved springs provided with crank-arms arranged with reversed inclination or set facing in opposite directions on opposite sides of the truck, substantially as and for the purposes described.

17. In a six-wheeled car-truck, the combination of the two horizontally-flexible truck-frames having their side bars hinged together, the short pedestals, and independent brakes arranged for all of the wheels, substantially as described.

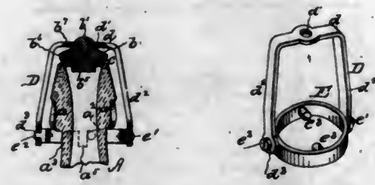
18. The car-truck bolster suspended upon swinging links and extended beyond the frame and wheels, in combination with the low truck-frame, substantially as and for the purposes described.

326,655. METALLIC SHINGLE. JOHN T. HYNDMAN, Cincinnati, Ohio, assignor to Wm. G. Hyndman and Robert J. Hyndman, same place. Filed July 16, 1885. (No model.)



Claim.—A metallic roofing-shingle formed with a scroll or coil of a size greater than a semicircle, whereby it will act as a spring-clamp upon the scroll or coil of the shingle below it to fasten itself thereto, substantially as and for the purpose set forth.

326,656. BOTTLE STOPPER AND FASTENER. CHARLES J. JORDAN, Woodbury, N. J. Filed July 3, 1884. (No model.)



Claim.—1. The combination, with bottle A, having slots a, locking-edges a^2, and stops a^3, of a stopper, B, swiveled to bail D, having a band, E, with internal pins, e^3, located at right angles to its pivotal pins, substantially as shown and described.

2. The combination, with bottle or vessel A, having slots a and locking-edges a^2, of band E, having internal pins, e^3, for engagement with said slots and edges, and external pivotal points or pins, e', for bail D, and a stopper, B, swiveled to said bail, substantially as shown and described.

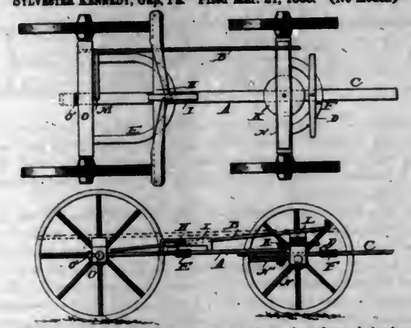
3. A bottle stopper and fastener composed of bail D, having at one end a swiveled stopper, B, and at the other a pivoted split band, E, having internal pins, e^3, located at right angles to the pivotal pins of the band, substantially as shown and described.

4. The combination of stopper B, having double shoulders b^2 and b^3, and pin b', bail D, and pivoted band E, split or divided through the line of its pivotal pins e', and each portion of said band having an internal pin, e^3, located at right angles to said pivotal pins, substantially as shown and described.

326,657. PROCESS OF MANUFACTURING PERMANGANATES. T. KEMPF, Berlin, Germany, assignor to the Chemische Fabrik auf Actien, same place. Filed June 10, 1884. (No specimens.) Patented in Germany Mar. 7, 1884, No. 23,782; in England May 26, 1884, No. 8,218; in Belgium May 26, 1884, No. 65,267; in France May 26, 1884, No. 162,357; in Luxemburg May 27, 1884, No. 407; in Italy June 17, 1884, XXXIII, 395, and in Austria-Hungary Nov. 26, 1884, No. 35,978 and No. 53,933.

Claim.—The process of commercially producing permanganic-acid salts and obtaining free metallic hydroxides by electrolytically treating the solutions of the manganic-acid salts, substantially as set forth.

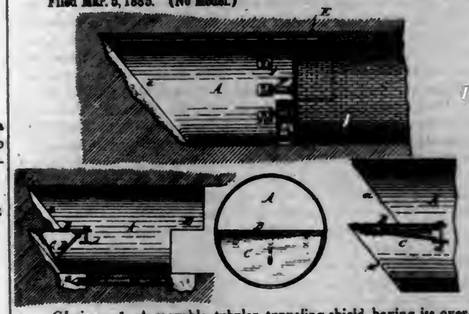
326,658. AUTOMATIC BRAKE FOR WAGONS AND CARRIAGES. SYLVESTER KENNEDY, Gap, Pa. Filed Mar. 21, 1885. (No model.)



Claim.—1. A sliding tongue and reach passing through both axles, or between axles and bolsters, and connected together by a bolt through clevis and tongue immediately behind the front axle, this clevis being of sufficient length to act as a slider, and at the same time to form a draft against the front axle, this reach being also enlarged behind the rear axle, so as to form a draft against the rear axle, having draft both against the front and rear axles.

2. A staple in the reach to force back the brakes against the wheels.

326,659. TUNNELING-SHIELD. ALBERT KRAUSE, Buffalo, N. Y. Filed Mar. 5, 1885. (No model.)



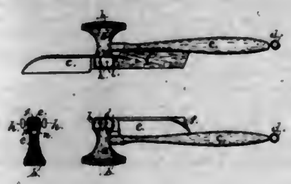
Claim.—1. A movable tubular tunneling-shield having its overhanging front end inclined substantially in accordance with the angle of repose of the material in which the shield is used, thereby preventing the material from entering the shield, and rendering its entire front edge accessible, substantially as set forth.

2. A tunneling-shield provided with inclined front edges, a a', one above the other, and a horizontal platform, B, substantially as set forth.

3. The combination, with the tunneling-shield, of a platform, B, secured in the shield, and a pivoted door, C, adapted to close the space below the platform, substantially as set forth.

4. The combination, with the tunneling-shield, of a platform, B, hinged door C, and brace D, substantially as set forth.

326,660. MEAT-TENDERER. CALLIX LACOSSE, Bay City, Mich. Filed May 18, 1885. (No model.)



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Claim.—In a meat-tenderer, the combination of the body *a*, having the handle *c*, and the teeth *b* on its pounding-face, and the extended portion *p*, provided with the slot *n*, with the saw-blade *f* and knife-blade *e*, pivoted in the said slot *n*, and held in an open or closed position by the set-screw *h*, substantially as and for the purpose specified.

326,661. EXPANDING DRILL-BIT FOR ARTESIAN-WELL BORING. CHARLES C. LANE, San Francisco, Cal. Filed Dec. 29, 1884. (No model.)



Claim.—1. In a well-boring expanding drill-bit, the divergent spring legs B, firmly secured at their tops to the head of the tool and having cutters C formed on their lower ends, in combination with the links H between said legs, by which their divergence is limited, substantially as herein described.

2. In a well-boring expanding drill-bit, the combination of the divergent spring legs B, the tops of which are firmly bound to the head of the tool and their lower ends formed into cutters C, said legs having on their outer edges, above the cutters, the knees D, as described, and the fixed or stationary fulcrum-block E between said legs, over which they are adapted to bend when their lower ends are forced together, whereby the distance between the cutters is made shorter than the distance between the knees, substantially as and for the purpose herein described.

3. In a well-boring expanding drill-bit, the combination of the divergent spring legs B, the tops of which are firmly bound to the head of the tool and the lower ends formed into cutters C, said legs having on their outer edges, above the cutters, the knees D, the anti-friction rollers G, mounted in said knees, and the fixed or stationary fulcrum-block between said legs, over which they are adapted to bend, substantially as and for the purpose herein described.

4. In a well-boring expanding drill-bit, the divergent spring legs B, the tops of which are firmly bound to the head of the tool and their lower ends formed into cutters C, in combination with a mechanism by which the legs are held rigidly separated when at work and relieved when passing down or up the pipe, consisting of a strut-brace adapted to find a seat between the legs and a system of pivoted extensible levers operated by contact with the pipe to withdraw the brace and adapted to seat it when free of the pipe, substantially as herein described.

5. In a well-boring expanding drill-bit, the divergent spring legs B, the tops of which are firmly bound to the head of the tool and their lower ends formed into cutters C, in combination with the strut-brace P, adapted to seat itself between the legs, the spindle O, carrying the brace, and the extensible system of pivoted levers L M N, pivoted below to a fixed point and to the head of the spindle O above, all operating substantially as and for the purpose herein described.

6. In a well-boring expanding drill-bit, the divergent spring legs B, having shoulders *b* and cutters C, and the fixed block E and tube J, suspended from the head of the tool between the legs, in combination with the strut-brace P, adapted to seat itself in the shoulders *b*, the spindle O, passing down through the tube and carrying the brace, and the extensible system of pivoted levers L M N, pivoted below to the tube J and above to the head of the spindle O, all operating and constructed substantially as and for the purpose herein described.

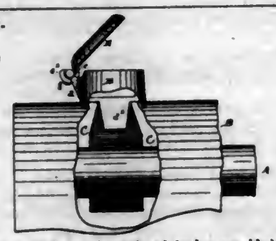
7. A well-boring expanding drill-bit consisting of the divergent spring legs B, the tops of which are firmly bound to the head of the tool and the lower ends formed into cutters C, said legs having on their outer edges, above the cutters, the knees D, the fixed fulcrum-block E between the legs, and the links G, limiting their divergence, and the means for holding them rigidly separated when working, consisting of the strut-brace P, adapted to find a seat between the legs, the spindle O, carrying the brace, and the system of extensible pivoted levers L M N, pivoted below to a fixed point and above to the head of the spindle, substantially as herein described.

326,662. OIL-CUP. PAUL W. LEUTLER, Grinnell, Iowa, assignor to Craver, Steele, & Austin, same place. Filed Aug. 5, 1885. (No model.)

Claim.—1. An oil-cup having upon the bottom thereof two dovetailed-shaped lugs so placed that their outer faces are parallel and adapted to be spread after insertion in the dovetailed hole in the journal-box by the use of a suitable tool so as to hold the cup securely in place, substantially as shown and described.

2. An oil-cup provided with a lid hinged to it by means of a staple, *d*, forming part of the cup, and consisting of a round portion, *d*, and two arms, by which it is attached to the cup, one of the said arms, d^2, being grooved to permit of the insertion of the hook of the lid and a hook, *e*, forming part of the lid E, its opening being of less diameter

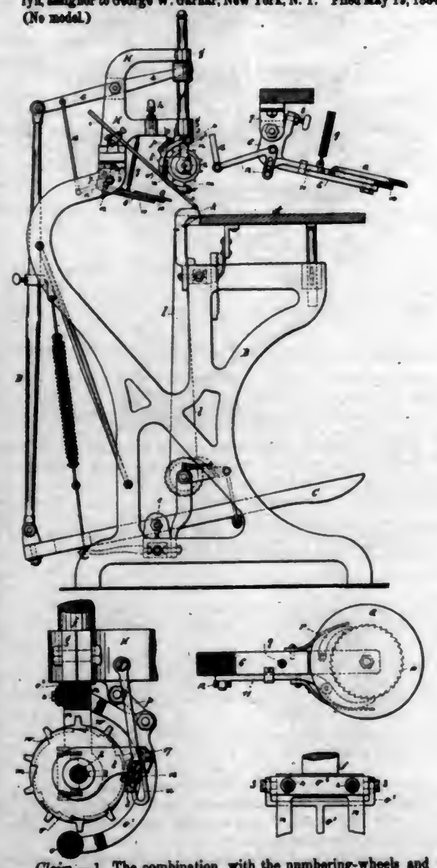
326,662.



than the diameter of the staple at *d*, and further provided with a lug, d^3, to prevent the removal of the lid after a notch, d^4, in the body of the cup has been closed, all substantially as shown and described.

3. An oil-cup having upon the bottom thereof two dovetailed-shaped lugs with parallel outer faces, in combination with a lid hinged to the cup by means of a hook upon the lid and a staple upon the cup, the lid being prevented from being thrown too far back or removed by means of a small lug, substantially as shown and described.

326,663. NUMBERING-MACHINE. JOHN W. MACLACHLAN, Brooklyn, assignor to George W. Garnar, New York, N. Y. Filed May 19, 1884. (No model.)



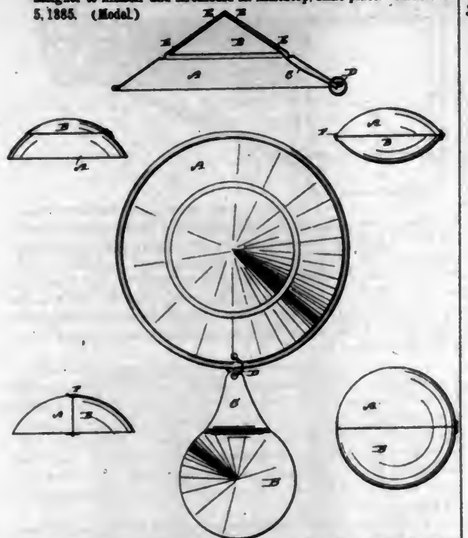
Claim.—1. The combination, with the numbering-wheels and the head *n*, that carries the same, of the inking-roller *o*, the bow o', forked at its upper end, the stock o^3, passing across the head *n*, to which the bow is pivoted at *s*, and the screws 4, passing through slots in the stock o^3 into the head *n*, so as to sustain and adjust the ink-roller in relation to the number-wheels, substantially as set forth.

2. The combination, with the number-wheels, the reciprocating head carrying the same, the inking-roller, and its swinging bow, of the inking-table having a central pivot, an arm, 6, supporting the same and pivoted to the standard 7, the adjusting-screw 8 and spring *q*, and the slide-pawl 11, bent lever 12, and link 13 to the lever *e*, substantially as set forth.

3. The combination, with the number-wheels and the two ratchet-

wheels *v w*, of a compound pawl and a screw or pin for holding the two ends of the compound pawl in the relative positions specified, for the purposes set forth.

326,664. FLYING TARGET. LOUIS H. MACOMBER, Montevideo, Minn., assignor to himself and Archibald M. Ellithorp, same place. Filed Feb. 5, 1885. (Model.)



Claim.—1. The combination, with a cup-shaped or conical target having an annular bead or projection on its inner surface, of a wing hinged on the said target and adapted to catch on the said bead or projection substantially as herein shown and described.

2. The combination, with a cup-shaped or conical target having an annular bead or projection on its inner surface, of a wing hinged on the target and provided with a notch or recess to give the wing spring-tension, substantially as herein shown and described.

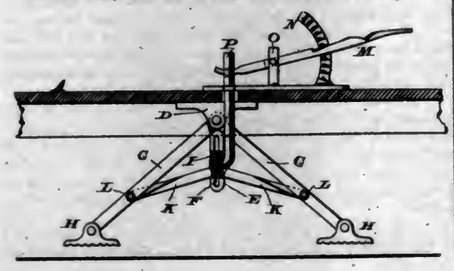
3. The combination, with the target A, of the wing B and the ring D, together with a cement for temporarily holding the wing at one edge to the target, substantially as and for the purposes set forth.

326,665. BAG. JOHN MADDOCK, Minneapolis, Minn., assignor of one-half to Frank E. Curtis, same place. Filed Oct. 6, 1884. (No model.)



Claim.—As an article of manufacture, a bag formed of material of loose texture having meeting edges each turned back upon itself, and a row of stitches passing through said folded edges from one fold through the other, said stitches being placed close to the turns, substantially as described, to lock the cross threads or fibers between the stitches and the turns in the longitudinal threads or fibers, and preclude movement of such cross-threads and the stitches, all substantially as described, and for the purposes set forth.

326,666. CAR-BRAKE. JANE MELAY, San Francisco, Cal., administratrix of Henry M. Teaffe, deceased. Filed May 4, 1885. (No model.)



Claim.—In a track-brake for railroad-cars, the combination, with the foot-lever M and vertical rod P, of the lever-arms G, having brake-shoes H, the toggle-levers K, and transverse bar I, all constructed, arranged, and operating substantially in the manner and for the purpose herein specified and set forth.

326,667. AUTOMATIC CAR-BRAKE. JANE MELAY, San Francisco, Cal., administratrix of Henry M. Teaffe, deceased. Filed May 4, 1885. (No model.)

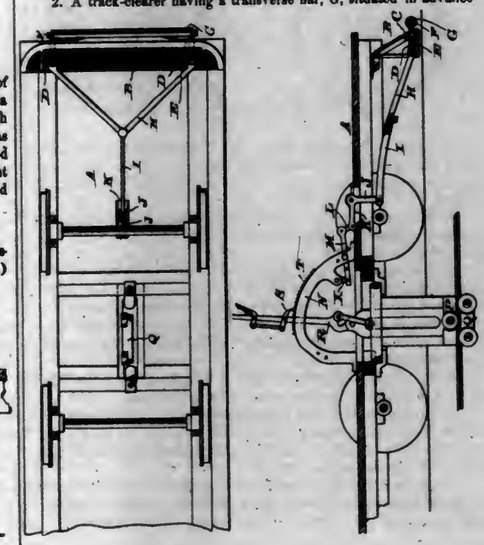


Claim.—In an automatic car-brake, the combination, with a bar or rail, J, placed transversely across the front of the car, and supported by arms L, of the forked rod M, bell-crank lever O, sliding sleeve V, having a slot engaging with a stud, X, upon the car-axle, and the chain Y, connecting with the brake-bar Z and shoes B', all combined, constructed, and arranged substantially as shown, for the purpose set forth.

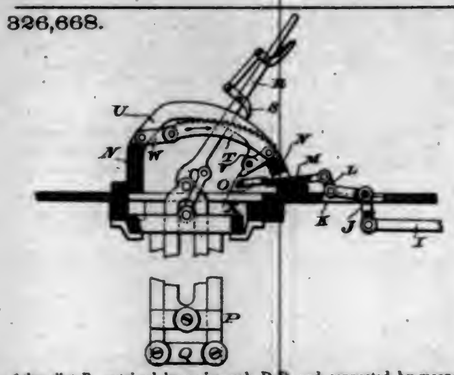
326,668. AUTOMATIC GUARD OR TRACK-CLEARER. JANE MELAY, San Francisco, Cal., administratrix of Henry M. Teaffe, deceased. Filed May 4, 1885. (No model.)

Claim.—1. A track-clearer having its pilot B provided with a forwardly-projecting transverse elastic or semi-elastic bar, G, strengthened by a central sustaining metal rod, F, held in position by spring-rods E E, and adapted to receive and transmit the impact of collision with an object upon the trackway to the grip mechanism.

2. A track-clearer having a transverse bar, G, situated in advance



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of the pilot B, sustained by spring-rods D D, and connected by means of arms or rods H I, bell-crank lever J, link L, and lever M, with the grip mechanism, substantially as shown, for the purpose set forth and specified.

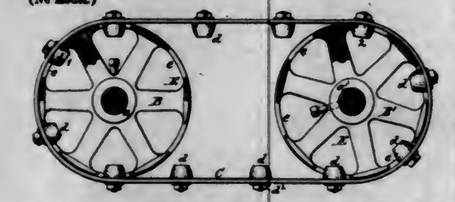
3. In a track-clearer, the cable-gripping device having a hinged ratchet bar, T, moving within a slot, U, in the grip-arc N, and operated by a toe or tang, X, engaging with a slot in the lever M, connected by links, bell-crank, and rods, with a transverse bar, G, located in advance of the pilot B, substantially as shown and set forth, for the purpose specified.

326,669. METALLIC BARREL. JOHN D. MORAN, New York, N. Y. Filed July 15, 1885. (No model.)



Claim.—As a new article of manufacture, a metallic barrel having an internal lining containing a fibrous heat-resisting material suitably secured or cemented to its inner surface, all substantially as and for the purpose herein set forth.

326,670. BELT-GEARING. ORVILLE M. MOSER, Jackson, Mich., assignor to the Knickerbocker Company, same place. Filed Jan. 17, 1885. (No model.)



Claim.—1. The combination, with a wheel which is positively geared with a belt, of belt-supporting wheels capable of independent rotative movement with reference to the geared wheel, substantially as set forth.

2. The combination of a sprocket-wheel and belt-supporting rings capable of differential rotative movement with reference to each other, substantially as set forth.

3. The combination of a sprocket-wheel and belt-supporting rings arranged side by side, with the face of the belt-supporting ring projecting beyond the face of the sprocket-wheel, substantially as set forth.

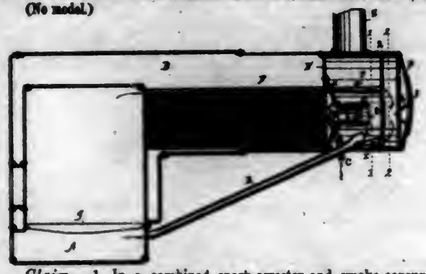
4. The combination, with a shaft, *a*, of a sprocket-wheel, E, secured to said shaft, and belt-supporting pulleys mounted loosely on said shaft, substantially as set forth.

5. The combination, with a belt, of metallic sprockets provided with sound-deadening washers, substantially as set forth.

6. The combination, with a sprocket-wheel, E, and belt-supporting rings F, capable of differential rotative movement, of an endless belt, C, provided with sprockets *d*, having approximately the form of truncated cones, substantially as set forth.

7. The combination, with a belt, of a sprocket, *d*, provided with a sleeve, d^3, fastening-bolt d', and sound-deadening washer d^4, substantially as set forth.

326,671. SPARK-ARRESTER AND SMOKE-CONSUMER. JOHN G NIEBEL and WILLIAM H. STEINBRENNER, Detroit, Mich. Filed June 6, 1885. (No model.)

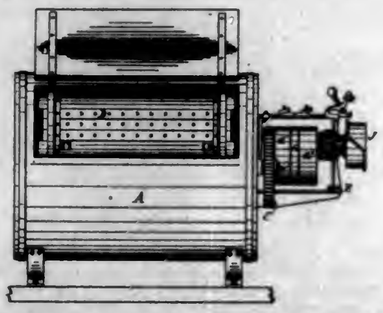


Claim.—1. In a combined spark-arrester and smoke-consumer, the combination, with a conical hood attached to the flue-head of a boiler said hood supporting a horizontally-projecting flue or tube over its central opening, said tube supporting a sliding tube, of a central head, R, located between the heads D' and *n*, said central head supporting flues *a a*, as set forth, and discharge-pipe Z, leading into the mouth of the conveying-pipe D, and an exhaust pipe or pipes leading from the cylinder of an engine into the conical hood having a horizontal discharge, as and for the purposes set forth.

2. In a combined spark-arrester and smoke-consumer, the combination, with a boiler and its flues and the conical hood, attached as specified, said hood having a central discharge with tubes E O mounted thereon, as set forth, of an exhaust-pipe leading from the cylinder of an engine into said hood, said exhaust-pipe having a horizontal discharge at right angles to and below the smoke-stack, a central head, its induct-port *t* and discharge-ports specified, and a V-shaped spreader located on a horizontal line with and in front of the port *t* of the central head, as and for the purposes specified.

3. The combination, with the boiler-head D' and the conical hood attached thereto, having a central opening, said hood supporting the discharge-tubes E O, as specified, of an exhaust-pipe leading from the cylinder of an engine into said hood, having the curved end portion *c'*, said hood and discharge-tubes located in the chamber T below the smoke-stack, substantially as specified.

326,672. REVERSING-GEARING FOR WASHING-MACHINES. J. M. OAKLEY, Brooklyn, assignor of one-half to John Keating, New York, N. Y. Filed July 28, 1885. (No model.)



Claim.—1. In a gearing adapted for reversing the motion of the cylinder in a washing-machine or agitator, the cam-wheel J, having a raised cam or bead, K, upon the periphery and bevel-wheel on one side, and running upon a stud or pin in the frame E, and receiving its motive power through an intermediate bevel-wheel and a worm-wheel running at right angles, and a worm on the pulley-shaft F and operated by the pulley G, substantially as shown and described.

2. In a reversing-gearing for washing-machines, the weighted lever P, having a hole near the bottom and a ball or weight on the top, and having two arms rising upward and outward, the said arms provided with a pin at the end of one arm and one or more frictionless pins at the end of the other arm, in combination with the moving bar N, provided with belt-shifters N' and N^3, substantially as described.

3. In reversing mechanism for washing-machines and for other purposes, the cam-wheel J, having bevel or miter wheel I', in combination with the weighted lever P, having two arms with pins at the ends, and the moving bar N, provided with eyes to receive the belt-shifters and weighted lever, and with a groove or channel at the end of the moving bar, constructed and arranged substantially as shown and described.

4. In reversing mechanism for washing-machines, the combination of the following parts, viz: the cam-wheel J, with bevel-wheel I', the

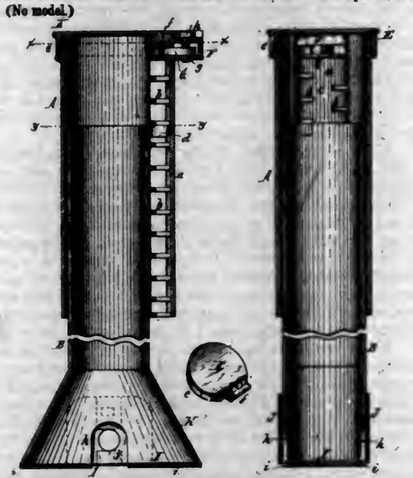
weighted lever P, with its starting and locking devices, the moving bar N, with its belt-shifters, the bevel-wheel I and worm-wheel H on right-angle shaft, the worm D', pulley-wheels G, G', and G^2, shaft F, with pinion D and frame E, gear-wheel C, and cylinders B and A, all constructed and arranged substantially as shown and described.

326,673. LOCK. ANTHONY PACIORKOWSKI, Troy, N. Y., assignor of two-thirds to Kazimiers Paciorkowski, 1st, and Kazimiers Paciorkowski, 2d, same place. Filed Dec. 8, 1884. (Model.)



Claim.—In a lock, the combination of a sliding bolt, B, provided with key-engaging shoulders *j j'*, a pawl, P, pivoted thereon, spring-controlled catch D, provided with a key-engaging arm, *a*, and pawl-controlling springs *d*, substantially as and for the purposes set forth.

326,674. STOP-COCK BOX FOR WATER AND GAS PIPES. LOUIS P. REICHERT and ANDREW FULLER, Buffalo, N. Y. Filed Apr. 17, 1884. (No model.)

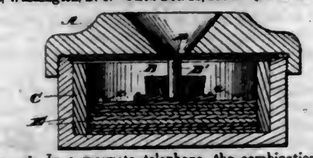


Claim.—1. The combination, with the inner tube, B, having a stud or projection, *d*, of the outer tube, A, provided with a vertical groove or depression, *a*, closed on the outer side of the tube, and having on its inner side ribs *b*, adapted to interlock with the stud *d*, and a clear space, *c*, for the passage of said stud, substantially as set forth.

2. The combination, with the inner tube, B, having a stud or projection, *d*, of the outer tube, A, having on its inner side a vertical groove or depression, *a*, provided with two rows of ribs, *b*, arranged to break joint, and an intermediate clear space, *c*, substantially as set forth.

3. In a stop-cock box, the combination, with the upper tube, A, provided with a hollow ear, F, closed at the top and open at its inner side, of a turn-button, C, pivoted in said ear, and a cover, E, provided with a tongue, *f*, adapted to be locked by the turn-button against the top of the hollow ear, substantially as set forth.

326,675. MAGNETO-TELEPHONE. JAMES H. ROGERS and J. WEBB ROGERS, Washington, D. C. Filed Dec. 12, 1884. (No model.)

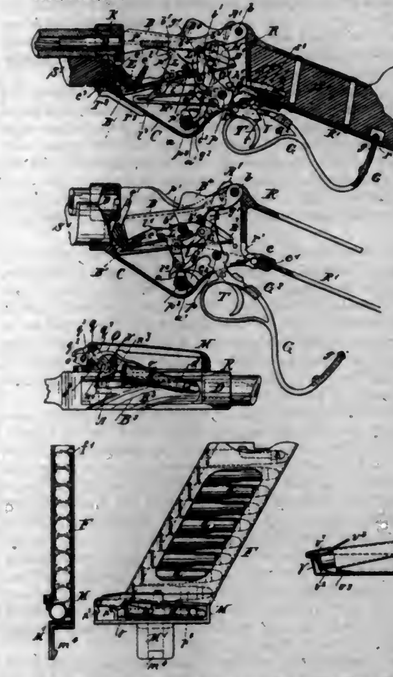


Claim.—1. In a magneto-telephone, the combination of a diaphragm, a pile of magnetized disks, a helix mounted in the center thereof, and a soft-iron ring encircling and touching the periphery of said pile, said helix and soft-iron ring carrying the polarities of the parts with which they engage within close proximity to the diaphragm, and the electrical connections, substantially as described.

2. In a magneto-telephone, the combination of a diaphragm, a magnetic pile, the helix fastened to the said pile, the soft-iron core secured to the diaphragm and having free movement in the hollow helix, the soft-iron ring encircling and touching the peripheries of said pile and extending within close proximity to the diaphragm, and the electrical connections, substantially as described.

3. In a magneto-telephone, the combination of the diaphragm D, casing A, magnetic disks E, forming a pile, a helix, B, engaging the centers of said disks, a soft-iron ring, C, encircling the peripheries of the disks and extending up within close proximity to the diaphragm D, and the electrical connections, substantially as described.

326,676. MAGAZINE FIRE-ARM. ARCHDUKE CARL SALVATOR and GEORG RITTER VON DORNUS, Vienna, Austria-Hungary; said von Dornus assignor to said Salvator. Filed Nov. 24, 1884. (No model.) Patented in Germany July 18, 1884, No. 1,953; in France July 19, 1884, No. 163,390; in Belgium July 19, 1884, No. 65,896; in England July 19, 1884, No. 10,365; in Italy Sept. 30, 1884, XVIII, 17,152; XXXIV, 101; in Austria-Hungary Oct. 1, 1884, No. 34,196, and No. 45,030, and in Spain Nov. 15, 1884, No. 6,367.



Claim.—1. In a breech-loading gun, the combination, substantially as described, of a vertically-swinging breech-block, a spring connected therewith and exerting its tension to draw said block downwardly, an angular shell-extractor arranged to be actuated by the breech-block when oscillated on its pivot, and a pivoted trigger-guard constructed to support the breech-block against the stress of its spring, whereby on the forward movement of the trigger-guard the breech-block is released and drawn downward by the spring to uncover the breech and actuate the extractor to extract the shell.

2. In a breech-loading gun, the combination, substantially as described, of a vertically-swinging breech-block having a groove, b^2, in its upper face, the rear end of which diverges laterally, and a horn, B^4, projecting from the inner edge of the groove near its diverging end, a spring connected with the breech-block and exerting its power to draw the same downwardly, an angular shell-extractor arranged to be actuated by the breech-block when oscillated on its pivot, and a pivoted trigger-guard constructed to support the breech-block against the stress of its spring, whereby on the forward movement of said trigger-guard the breech-block is released and drawn down by the spring, the shell-extractor actuated, and the shell propelled along the groove and deflected laterally by the horn.

3. In a breech-loading gun, the combination, substantially as described, with a breech-block pivoted at its rear end, a spring exerting its power to draw down the forward end of the block, and an angular shell-extractor pivoted in front of the block, with one of its arms extended into the path thereof, of a hammer provided with a shoulder, *h*, and a trigger-guard provided with an extension, G', both pivoted below said breech-block near its rear end, and supporting the same against the

stress of its spring when the gun is fired, and simultaneously moving from under the breech-block when the trigger-guard is moved forward, for the purposes set forth.

4. In a breech-loading gun, the combination, substantially as described, with a breech-block pivoted at its rear end, a hammer provided with a shoulder, A', and a trigger-guard provided with an extension, G', both pivoted below the block at said rear end and supporting the same in its elevated position, of an auxiliary support for said breech-block, consisting of a lever pivoted in front of and connected with and operated by the trigger-guard, whereby said breech-block is supported from three points when the gun is fired, and released by the simultaneous movement of the supports from under the block on the forward movement of the trigger-guard, for the purposes specified.

5. In a breech-loading gun, the combination, substantially as described, with a breech-block pivoted at its rear end, and an angular shell-extractor pivoted in front of the block, with one of its arms in the path thereof, of a hammer provided with a shoulder, A', and trigger-guard having an extension, G', both pivoted below the breech-block at its rear end, and an auxiliary support for the latter consisting of a lever pivoted in front of and operated by the trigger-guard, whereby said block is supported from three points when the gun is fired, and released to actuate the extractor by the simultaneous movements of its supports from under it on the forward movement of the trigger-guard.

6. The combination of the breech-block B, pivoted at its rear end and provided with a guide-groove, B^3, in its upper face, the rear end of which diverges laterally, and a horn, B^4, projecting from the inner edge of the groove at its point of divergence, with the cartridge-extractor pivoted in front of the breech-block with its arm extending into the path thereof, whereby the extractor is operated on the downward movement of the breech-block and the empty cartridge-shell carried along the groove thereof and deflected laterally by the horn, for the purposes specified.

7. In a breech-loading gun, the combination, substantially as described, with a vertically-swinging breech-block having a guide-groove, B^3, in its upper face, a hammer provided with an arm or nose, A^3, and a pivoted trigger-guard, both constructed to support the breech-block in position to close the breech and release the same on the forward movement of the trigger-guard, of the angular lever L', operating to support the breech-block when released, and through the medium of the nose A^3 of the hammer to raise the same, and bring its guide-groove on a line with the breech, for the purpose specified.

8. In a breech-loading gun, the combination, substantially as described, with the vertically-swinging breech-block having a guide-groove, B^3, in its upper face, and a horn, B^4, on one side thereof, of the spring B', connected with the block and exerting its power to draw the same downwardly, the shell-extractor E, pivoted in front of said breech-block, with its arm extended in the path thereof, the hammer H, provided with the noses h A^2 and shoulder A', the trigger-guard G, having extension G', both pivoted below the breech-block at its rear end, and the lever L, pivoted in front of the hammer and trigger-guard and connected with the latter, said lever, the hammer, and trigger-guard supporting the breech-block in position to close the breech, and co-operating therewith first to release it to actuate the extractor, then elevate it to bring its guide-groove on a line with the breech and bring the hammer to full-cock, for the purpose specified.

9. In a breech-loading gun, the combination, substantially as described, with the vertically-swinging breech-block, the hammer H, having nose h, projecting from its upper front face, a notch, h^4, in its rear face, with which engages the sear, and a shoulder, h', projecting laterally from said hammer into the path of the trigger-guard extension, and the trigger-guard G, having extension G', said hammer and trigger-guard being arranged to support the breech-block to close the breech, of the sear S, whereby on the forward movement of the trigger-guard the breech-block is released and the hammer moved backward into position of full-cock, for the purpose specified.

10. In a breech-loading gun, the combination, substantially as described, with a vertically-swinging breech-block provided with a guide-groove in its upper face, and a cartridge-conveyer arranged with its head to vibrate along said groove, of a pivoted trigger-guard provided with an extension, G', and a transmitting-lever operated by the said extension to vibrate the cartridge-conveyer when the breech-block is in proper position to carry a cartridge into the breech.

11. In a breech-loading gun, the combination, substantially as described, with a vertically-swinging breech-block provided with a guide-groove in its upper face, and a cartridge-conveyer arranged with its head to vibrate along said groove, of a pivoted trigger-guard provided with an extension, G', and a transmitting-lever, L, connected with the said extension by a link, l, and operated by the movement of the trigger-guard to vibrate the cartridge-conveyer to convey a cartridge into the breech.

12. In a breech-loading gun, the combination, substantially as described, with a breech-block pivoted at its rear end, and provided with a guide-groove in its upper face, an angular shell-extractor pivoted in front of the block, with its arm extending in the path thereof, a cartridge-conveyer arranged with its head to vibrate along said groove, and a sear, S, of a trigger-guard provided with an extension, G', a hammer provided with the shoulder A' and notch A^4, respectively, with which the rear face of the extension and the sear engage, an angular gravity-lever, and a transmitting-lever pivoted in front of and operated, respectively, by the hammer and trigger-guard when the latter is moved forward, and whereby the breech-block is moved down to uncover the breech and actuate the extractor, then elevated with its groove on a line with the breech through the gravity-lever, the cartridge-conveyer vibrated through the transmitting-lever, and the sear brought into engagement with the hammer, for the purposes specified.

13. In a breech-loading gun, the combination, substantially as described, with a breech-block pivoted at its rear end and having a guide-groove, B^3, in its upper face, a spring connected therewith and operating to draw said block down, an angular shell-extractor pivoted in front of the breech-block, with its arm in the path thereof, a cartridge-conveyer arranged with its head to vibrate along said groove, of the trigger-guard G, its extension G', the hammer H, having shoulder A' for engagement with said extension, both pivoted below at the rear end of the breech-block, the transmitting-lever L, pivoted in front of the hammer and trigger-guard and linked to the extension of the latter and assisting the same and the hammer to support the breech-block against the stress of its spring and to vibrate the cartridge-conveyer, said parts being operated through the trigger-guard, as and for the purposes set forth.

14. In a breech-loading gun, the combination, substantially as described, with the breech-block B, pivoted at its rear end, and provided in its upper face with a guide-groove, B^3, a cartridge-conveyer arranged with its head to vibrate along said groove, and the notched lug a on the conveyer-pivot, of the trigger-guard G, its extension G', the lever L, linked to and assisting the trigger-guard to support the breech-block, the spring-pawl l^3, pivoted to the foot of lever L, and arranged to engage the notch of the lug to vibrate the cartridge-conveyer when the trigger-guard is manipulated, for the purposes specified.

15. In a breech-loading gun, the combination, substantially as described, with the breech-block B, pivoted at its rear end, and provided with a groove in its upper face, the cartridge-conveyer A, one end of which is arranged to vibrate along said groove, and the lugs a a' on the pivot of said conveyer, of the trigger-guard G, its extension G', having an arm, g^3, arranged to engage the lug a', the lever L, linked to and assisting the trigger-guard extension to support the breech-block in position to close the breech, the pawl l^3, pivoted to the foot of lever L, and the horn c^3, projecting from the lock-case to guide the spring-pawl into engagement with the lug a, said parts being operated from and through the movements of the trigger-guard, for the purposes set forth.

16. In a breech-loading gun, the combination, substantially as described, of a vertically-swinging breech-block having a guide-groove in its upper face, a firing-pin arranged within the block, an angular cartridge-extractor pivoted in front of the block with one of its arms extended into the path thereof, and a cartridge-conveyer arranged to vibrate in the groove of the block, with a hammer and a trigger-guard pivoted below the breech-block at its rear end, said trigger-guard having an extension, G', a sear adapted to engage the hammer, and suitable mechanism operated from the hammer and trigger-guard, whereby on the rearward movement of the latter the breech-block is elevated with its groove on a line with the breech-chamber, the conveyer vibrated to carry a cartridge into the breech, and thereby return the extractor into its normal position, and the hammer brought into engagement with the sear, and the breech-block elevated to close the breech, for the purpose specified.

17. In a breech-loading gun, the combination, substantially as described, with a vertically-swinging breech-block, a firing-pin arranged therein, and a hammer having a shoulder, A', and a notch, A^4, of a trigger-guard having an extension, G', a sear adapted to engage the notch A^4 of the hammer, and a lug or projection on the trigger-guard to disengage said sear from the hammer-notch, whereby on the rearward movement of the trigger-guard it is made to automatically discharge the gun, for the purpose set forth.

18. The combination, substantially as herein described, with the hammer H, having a full-cock notch, h^4, and the sear S, provided with the depending arm s', of the trigger-guard G, the trigger T, pivoted thereto, and a locking device to lock the trigger in position to bring a projection thereof into engagement with the arm s' of the sear when the trigger-guard is moved to the limit of its rearward motion, for the purposes specified.

19. The combination, with the lock mechanism of a gun, of a pivoted sear provided with a semi-cylindrical recess and a locking-pin provided with a cut away portion having a flat surface opposite the said recess, whereby on rotating the pin the sear is locked against movement on its pivot by the engagement of the pin with the recess, as described, for the purposes specified.

20. In a breech-loading gun, the combination, substantially as described, with the receiver, a vertically-swinging breech-block, a cartridge-conveyer arranged to vibrate along the upper face of said block, a pivoted trigger-guard, and a transmitting-lever operated from said trigger-guard to vibrate the conveyer, of a magazine and cartridge-feeding devices connected to the receiver and controlled by the conveyer, for the purpose specified.

21. The combination, with the receiver R, of a separate closed casing, C C', detachably connected therewith, in which casing are arranged the breech and lock mechanism, substantially as described, for the purposes specified.

22. In a breech-loading gun, the combination, substantially as described, with the receiver, of a vertically-swinging breech-block, a trigger-guard, pivoted below the breech-block near its rear end, and a cartridge-conveyer constructed to vibrate along the upper surface of the breech-block, and secured to a pivot arranged in front of the trigger-guard, and mechanism operated from the trigger-guard to vibrate the cartridge-conveyer, for the purpose specified.

23. In a breech-loading gun, the combination, with the receiver, a vertically-swinging breech-block, a trigger-guard pivoted below the latter near its rear end, a cartridge-conveyer constructed to vibrate along the upper face of said block, and secured to a pivot arranged in front of the trigger-guard, and mechanism operated from the trigger-guard to vibrate the conveyer, of cartridge-feeding devices consisting of the lever N, actuated by the trigger-guard, the lever O, and gate N^2, actuated by the lever O, said parts being arranged on one side at the upper edge of the receiver, and operating substantially as described, for the purpose specified.

24. In a breech-loading gun, the combination, with a receiver, a vertically-swinging breech-block having a diverging groove, B^3, in its upper face, and a horn, B^4, projecting from the inner edge of said groove in its diverging end, and a cartridge-conveyer arranged to vibrate in said groove, of cartridge-feeding devices operated by the conveyer, consisting of the lever N, the lever O, and gate N^2, operated from said lever N, said parts being arranged on one side at the upper edge of the receiver, and operating substantially as described, for the purpose specified.

25. The combination, in a breech-loading gun, with the receiver, a vertically-swinging breech-block, and a cartridge-conveyer arranged to vibrate along the upper face of the block, of a cartridge-magazine attached to one side of the receiver and containing cartridge feeding and retaining devices consisting of the lever N, operated from the conveyer, the lever O, and gate N^2, operated from lever N, said parts constructed and arranged for operation substantially as described, for the purpose specified.

26. In a breech-loading gun, the combination, with the receiver, the vertically-swinging breech-block A, and a cartridge-conveyer arranged to vibrate along the upper face of the breech-block, of a cartridge-magazine, the casing M from which the magazine is supported, said casing being attached to one side of the receiver, and provided in its upper end with the opening m and spring-gate m' for closing said opening, and cartridge feeding and retaining devices arranged in said casing M and operated from the conveyer, whereby the magazine may be replenished through the opening m of casing M, said parts being arranged for co-operation substantially as and for the purpose specified.

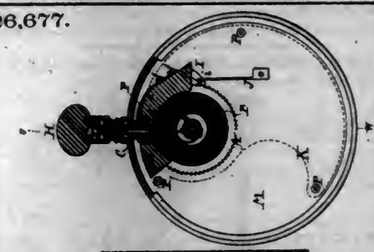
27. In a breech-loading gun, the combination, with the receiver R and the breech-block B, provided with a groove in its upper face, of a cartridge-magazine secured to one side of the receiver to feed the cartridges into the groove of the block by gravity, cartridge-feeding devices arranged in the head of the magazine, actuated by the lock mechanism to allow one cartridge at a time to pass into said groove, and consisting of the lever N, and the lever O, and latch N^2, operated from the lever N, said parts being arranged for co-operation substantially as and for the purpose specified.

28. In a breech-loading gun, the combination, with the receiver R and the breech-block B, provided with a groove, B^3, in its upper face, and a cartridge-magazine open at both ends, secured to one side of the receiver to feed the cartridges into the groove of the block by gravity, of a cartridge-case open at one end and provided with cartridge-retaining devices consisting of the cord n^3, secured at one end to the case and passing around the cartridges at the open end, thence through one of the walls of said case, whereby on the withdrawal of the cord the cartridges, when the case is inserted into the magazine, are free to move by gravity out of the feed end thereof, substantially as and for the purpose specified.

326,677. STEM-WINDING WATCH. AUGUSTE SANDOZ, Neuchatel, Switzerland. Filed May 16, 1885. (No model.)

Claim.—The combination, with the barrel B, its shaft and spring, of the wheel A, secured to said shaft and having inclined teeth, a spring-click to keep the wheel A and barrel from turning backward, the winding-stem D and crown, the click-pinion C, fitted to slide on a squared portion of said stem and having teeth inclined in the opposite direction to those of the wheel A, and the spring F, for keeping the pinion C in gear with the wheel A, whereby when the stem and pinion are turned in one direction the wheel A is revolved and the spring wound up, and when turned in the other direction the pinion rides over the teeth of A without turning said wheel A, substantially as and for the purposes set forth.

326,677.

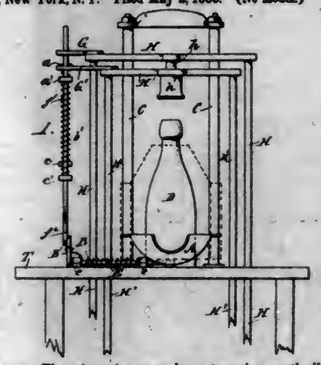


326,678. PLAYING-CARD. EDWARD SEDGHOUSE, Netherton, near Dudley, County of Worcester, England. Filed Aug. 14, 1884. (No model.) Patented in England Sept. 22, 1883, No. 4,535; in Belgium Mar. 20, 1884, No. 64,573; in France Mar. 20, 1884, No. 161,069; in Germany Mar. 21, 1884, No. 28,841; in Italy Mar. 31, 1884, XXXIII, 106, and in Austria Oct. 19, 1884, No. 11,415.



Claim.—As a new article of manufacture, a playing-card having a thickened central portion from which the remainder gradually tapers toward the edges, the reduction in thickness commencing at or near the center of the card, substantially as described.

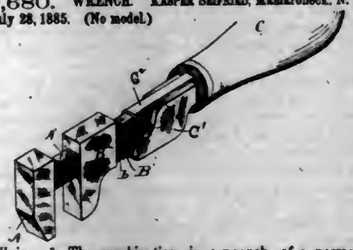
326,679. SCREEN ATTACHMENT FOR BOTTLING-MACHINES. F SEELY, New York, N. Y. Filed May 2, 1885. (No model.)



Claim.—1. The pivoted screen, hung to swing vertically, in combination with the connected rod supported pivotally in bearings, and having a fixed arm, and the upright divided or bifurcated frame with its lower end pivoted to said arm, and its bifurcated portion actuated by plates connected to the corking contrivance, substantially as and for the purpose set forth.

2. The screen A, attached to rod B, provided with arm B' and spring E, in combination with the divided frame F, springs b b', placed on the members of the frame, buttons a a' and c c', and the plates G G', attached to the frames H H', for operating the screen, substantially as described.

326,680. WRENCH. KASPER SHIFRIN, Mamaroneck, N. Y. Filed July 28, 1885. (No model.)

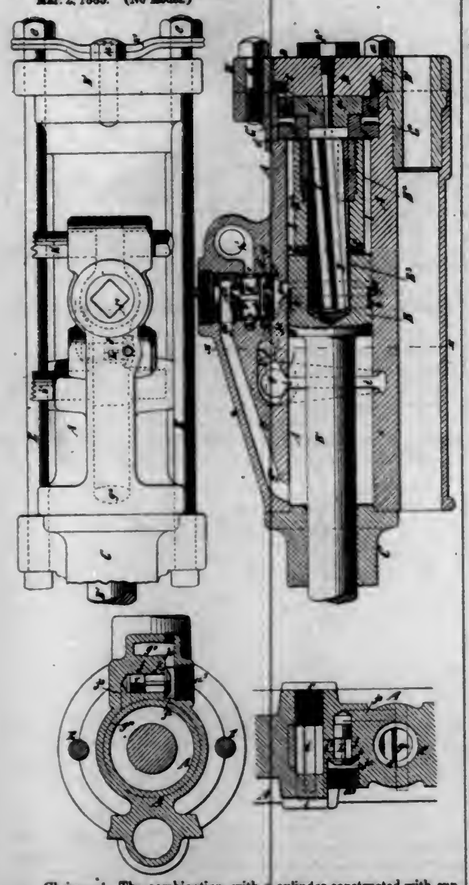


Claim.—1. The combination, in a wrench, of a permanent jaw having a shank, a sliding jaw mounted thereon and having a serrated shank arranged alongside the shank of the permanent jaw, a handle pivoted to the shank of the permanent jaw, and having a hollow portion surrounding both it and the shank of the sliding jaw, with serrations therein corresponding to the serrations on the shank of said sliding jaw.

2. The combination of the jaw A, having shank A', the sliding jaw B, having shank B', with serrations therein, the handle C, having

hollow and internally-serrated portion C', surrounding the shanks A' and B', and the spring C^3, substantially as and for the purposes set forth.

326,681. ROCK-DRILL. HENRY C. SERGEANT, New York, N. Y. Filed Mar. 2, 1885. (No model.)



Claim.—1. The combination, with a cylinder constructed with supply-passages for motive fluid, and the exhaust-passage intermediate between the supply-passages, of a reciprocating piston fitted to the cylinder and serving to close the exhaust-passage by its movement over the same, a fluid-actuated main valve which is operated automatically, substantially as herein described, to control the supply of motive fluid to the cylinder above and below the piston, and a supplementary exhaust-valve and ports, whereby the supply-passage leading to the lower end of the cylinder may be placed in communication with the main exhaust when the piston is on its downstroke to permit the exhaust of vapor from the lower end of the cylinder after the main exhaust-passage has been closed by the piston, substantially as and for the purpose herein described.

2. The combination, with the cylinder constructed with supply-passages g^6 g^{10}, and the main exhaust-passage *i*, and also having a cylindric bore, *j*, and passages j^3 j^4 i^3, of a piston, B, the valve-seats *g g'* and the valve K, and the supplementary exhaust-valve L, all arranged to operate substantially as and for the purpose herein described.

3. In a rock-drill, the combination, with a cylinder and piston and a spiral bar, of a ring having ratchet-shaped teeth upon its face, and locked to the head of the spiral bar, so as to slide lengthwise of the bar, and a spring forming a yielding support for said ring, substantially as herein described.

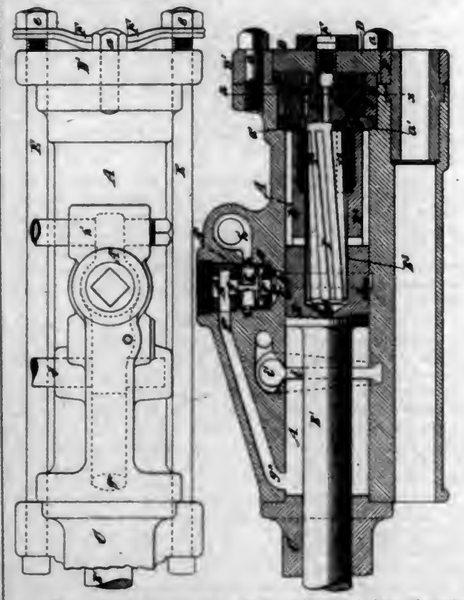
4. In a rock-drill, the combination, with a cylinder and piston, of a spiral bar fitting a nut in the piston, and two rings having ratchet-shaped teeth on their adjacent faces, one of said rings being supported by a spring and locked to turn with the spiral bar, and the other ring being clamped and held by friction in the cylinder, substantially as herein described.

5. The combination, with a cylinder and reciprocating piston, of the upper head held in place by spring-pressure, a spirally-grooved bar fitting a corresponding nut in the piston, and two rings having ratchet-shaped teeth upon their faces, one of said rings being clamped and held in place by spring-pressure between the upper head and the end of the cylinder, and the other ring being locked to said bar, substantially as herein described.

6. The combination, with a cylinder, A, and a piston and piston-extension, B B^2, of the ring J, fitting a rabbet in the cylinder, the spirally-grooved bar I, fitting a nut in the piston-extension, the rings G H, having ratchet-teeth upon their faces, and the former of which is locked to the head of said spiral bar, the spring G', supporting the ring G, and the head D, with the springs F, for exerting a pressure thereon and by which the ring H is clamped in place, substantially as herein described.

7. The combination, with a cylinder and its supply-belt g^{10}, of the piston B and piston-extension B^2, the spiral bar I, and ratchet-toothed rings for holding it, substantially as herein described, and the nut I^2, fitting said spiral bar, the piston-extension being provided with grooves and passages *l l'*, whereby motive fluid will be conducted to the upper end of the cylinder and to the chamber in the piston which receives the spiral bar, substantially as herein described.

326,682. ROCK-DRILL. HENRY C. SERGEANT, New York, N. Y. Filed June 15, 1885. (No model.)



Claim.—1. The combination, with the cylinder and piston of a rock-drill, of rotating devices comprising two members, one of which consists of a sleeve or ring held by friction within the cylinder and the other of which is locked to turn with the piston and arranged within the sleeve or ring, one member being provided with ratchet-shaped teeth and the other with pawls engaging therewith, substantially as herein described.

2. The combination, with the cylinder and piston of a rock-drill, of a sleeve or ring clamped by friction within the cylinder, constituting one member of the rotating devices, and provided upon its interior surface with ratchet-shaped teeth extending lengthwise of the cylinder, of a head or piece constituting the other member of the rotating devices arranged within the sleeve and locked to the piston, and pawls carried by the last-mentioned member of the rotating devices and engaging with the ratchet-teeth of said sleeve, substantially as herein described.

3. The combination, with the cylinder and piston of a rock-drill, of a spirally-grooved bar fitting a nut in the piston and having upon it a head, a sleeve encircling the head and clamped and held by friction within the cylinder, the sleeve and head constituting the two members of the rotating devices, and one being provided with ratchet-shaped teeth extending lengthwise of the cylinder, and the other carrying pawls engaging with said teeth, substantially as herein described.

4. The combination, with the cylinder and piston of a rock-drill, of a spirally-grooved bar fitting a nut in the piston and having a cylindric head carrying pawls, and a sleeve encircling said head clamped and held by friction in the cylinder, and provided upon its interior surface with ratchet-shaped teeth with which the pawls of the head engage, substantially as herein described.

5. The combination, with the cylinder and piston of a rock-drill, of rotating devices consisting of the sleeve or member G, clamped and held by friction within the cylinder and provided upon its interior surface with ratchet-shaped teeth *g*, and the member I', locked to the piston and provided with tangential slideways *h*, and sliding spring-actuated pawls H, fitting said slideways and engaging with the teeth of the sleeve or member G, substantially as herein described.

6. The combination, with the cylinder and piston of a rock-drill, of the sleeve G, clamped and held by friction within the cylinder and provided with ratchet-shaped teeth *g*, the spiral bar I, fitting a nut in the piston and having a head, I', in which are tangential slideways or pawl-seats *h*, and spring-actuated sliding pawls H, fitting said seats or slideways, substantially as herein described.

7. The combination, with the cylinder and piston of a rock-drill, of the sleeve G, provided with teeth *g* upon its inner surface and clamped and held by friction within the cylinder, the member I, constructed with tangential slideways or seats *h* and with sockets or holes i^3, extending inward therefrom, and the sliding pawls H, provided with inwardly-projecting stems or studs *h'*, and springs i^3, arranged in the sockets or holes i^3 and acting upon said pawls, substantially as herein described.

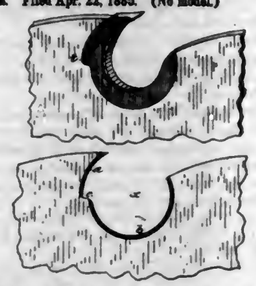
326,683. DEVICE FOR INSERTING AND WITHDRAWING REMOVABLE SAW-TEETH. GEORGE F. SIMONDS, Fitchburg, Mass. Filed Apr. 22, 1885. (No model.)



Claim.—1. In a tool for fixing and detaching the removable portions of saws, a vise or positive clamping device to seize the removable portion, in combination with a lever attached to the vise, to move it and the removable portion simultaneously, for the purpose set forth.

2. A tool for removing saw-teeth, consisting of the combination of lever E, jaws A B, provided with grooves *e e'*, screw C, provided with spline *d*, and hand-nut D, all constructed and arranged as set forth.

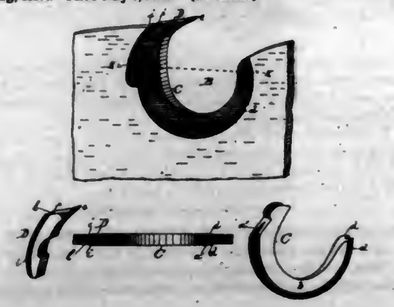
326,684. SAW WITH INSERTIBLE TEETH. GEORGE F. SIMONDS, Fitchburg, Mass. Filed Apr. 22, 1885. (No model.)



Claim.—1. The saw-plate provided with recess *x*, bounded by the arcs of two circles of different radii, and by an intermediate shoulder, in combination with the point D, resting on said shoulder, and also resting for less than ninety degrees against the larger circle, and an inserted gullet resting for more than ninety degrees against the smaller circle, the said point and gullet being provided with interlocking irregularities, substantially as set forth.

2. The removable spring fastening-gullet provided with lug *t* to abut against the circle having the longer radius for retaining said gullet in place while the tooth is removed, as described.

326,685. INSERTIBLE-TOOTH SAW. GEORGE F. SIMONDS, Fitchburg, Mass. Filed July 7, 1885. (No model.)



326,685.



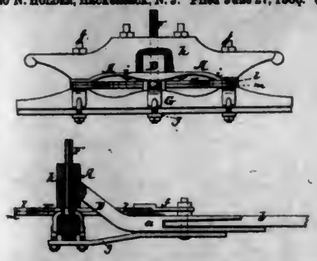
Claim.—1. The removable gullet C, having its body thicker than the saw-plate, in combination with a recessed saw plate and tooth, substantially as described.

2. The removable gullet C, having its body thicker than the saw-plate and its rear exterior edges beveled, as shown at *d d*, in combination with a recessed plate and a tooth, for the purpose set forth.

3. The removable tooth D, having its body thicker than the saw-plate, as specified, in combination with a holding device and a recessed plate, as described.

4. The removable tooth D, having its body thicker than the saw-plate and its rear exterior edges beveled, as shown at *i i*, in combination with a holding device and a recessed saw-plate, substantially as set forth.

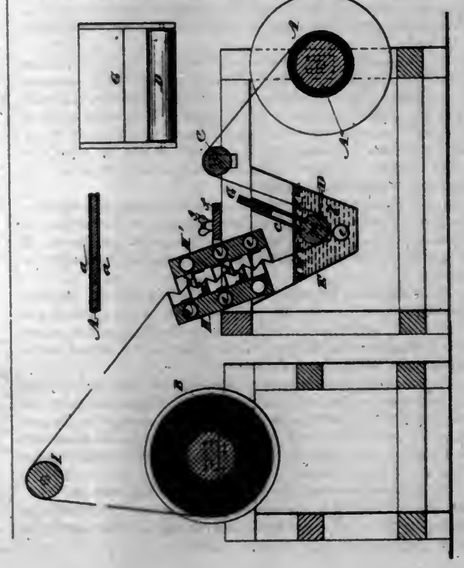
326,686. FIFTH-WHEEL FOR VEHICLES. LEONARD B. SWEDEN and HORATIO N. HOLDEN, Hackensack, N. J. Filed June 27, 1885. (No model.)



Claim.—1. The combination of the head-block A, consisting of an upper wooden portion, *h*, and a lower metallic portion, *i*, with the fixed fifth-wheel plate *l*, movable fifth-wheel plate *m*, axle G, king-bolt F, and metallic reach D, said reach being welded to the lower metallic portion, *i*, of the head-block A above the plane of the plate *l*, substantially as herein shown and described.

2. The combination of the head-block A, having lower metallic portion, *i*, with the fixed fifth-wheel plate *l*, movable fifth-wheel plate *m*, axle G, king-bolt F, and metallic reach D, that is welded to the metallic portion *i* of the head-block above the plane of the plate *l*, and which is curved, substantially as and for the purpose herein shown and described.

326,687. PREPARATION OF PARAFFINE OR WAX PAPER. EDWARD G. SPARER, New York, N. Y. Filed Dec. 13, 1884. (No model.)

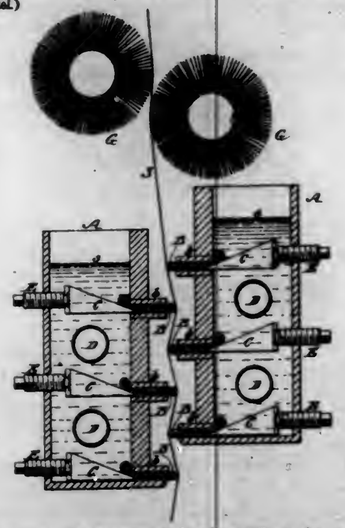


Claim.—1. The scraper-frames H H', constructed upon their inner faces with alternately-projecting blades d and with heating-pipes arranged behind the blades, substantially as shown and described.

2. The combination, substantially as described, of the scraper-frames H H', each frame having projecting scraper-blades and heating-pipes, whereby the blades will be heated and the waxed paper will be heated upon both sides simultaneously and be scraped upon both sides as it passes between the frames, as set forth.

3. In an apparatus for preparing waxed paper, the combination, as herein described, of the following instrumentalities, namely: a tank for containing the hot wax, a device within the tank for simultaneously conducting both sides of the paper into contact with the hot wax, and heated scraper-frames with hot blades arranged above the tank for simultaneously heating the waxed paper on both sides and also scraping the waxed paper on both sides during the passage between the scraper-frames, as set forth.

326,688. APPARATUS FOR MAKING WAX OR PARAFFINE PAPER. EDWARD G. SPARER, Brooklyn, N. Y. Filed Mar. 27, 1885. (No model.)



Claim.—1. An apparatus, made substantially as shown and described, for waxing paper, consisting of a wax-holding tank, through the side of which projects a wax-supplying brush, operated as set forth.

2. An apparatus for waxing paper, made substantially as shown and described, consisting of two or more wax-holding tanks having wax-supplying brushes projecting through their sides and adapted to cover with wax both sides of the paper web when drawn between the brushes, as set forth.

3. In apparatus for making wax or paraffine paper, the combination of two or more tanks for holding the melted wax or coating substance arranged side by side at a suitable distance apart and provided each with one or more slots or passages in its side opposite to the adjacent side of the opposite tank and below the level of the material in the tank for distributing the wax or coating material over both sides of the paper as it is drawn between the tanks, said slots or passages being out of line with each other, substantially as specified.

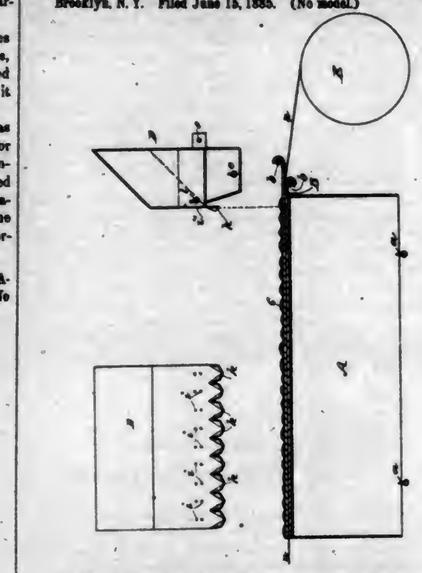
4. In apparatus for making wax or paraffine paper, the combination, with the tanks and their laterally-projecting waxing-brushes, of means, operating substantially as described, for regulating or shutting off the flow of the material in the tanks to said brushes, substantially as specified.

5. In apparatus for making wax or paraffine paper, the combination, with devices for laying the coating material on the paper, of one or more rotary polishing-brushes for glossing the waxed surface or surfaces of the paper after the wax or coating material has set and cooled thereon, essentially as described.

6. The combination of the oppositely-arranged tanks A A, having slots or passages in their adjacent sides, the laterally-projecting brushes B B, arranged to project beyond or outside of said passages for the passage of the paper to be waxed or coated on its opposite sides in between and in contact with them, and the adjustable wedges C C with their attached screws E, substantially as specified.

7. The combination of the polishing-brushes G G with the oppositely-arranged tanks A A, the laterally-projecting brushes B B, and the adjusting wedges C C, essentially as and for the purposes herein set forth.

326,689. PROCESS OF WAXING PAPER. EDWARD G. SPARER, Brooklyn, N. Y. Filed June 15, 1885. (No model.)



Claim.—1. The herein-described process of waxing paper, which consists in drawing the paper beneath a heated blanket which is charged with wax or paraffine, substantially as described.

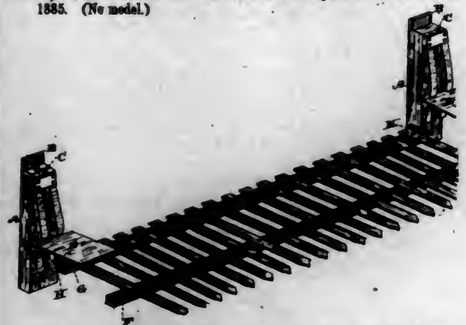
2. The herein-described process of waxing paper, which consists in first subjecting the paper to the action of a drip of heated wax or paraffine, and in then drawing the paper between heated blankets, substantially as described.

3. The herein-described process of waxing paper, which consists in first subjecting the paper to the action of a drip of heated wax or paraffine, and in then drawing the paper beneath a weighted blanket, substantially as described.

4. The herein-described process of waxing paper, which consists in drawing the paper between two heated blankets which are each charged with wax or paraffine, substantially as described.

5. The herein-described process of waxing paper, which consists in drawing the paper beneath a heated blanket subjected to a drip of wax or paraffine, substantially as described.

326,690. FLOOD-FENCE. ASA SPEAR, Napa, Cal. Filed Feb. 18, 1885. (No model.)



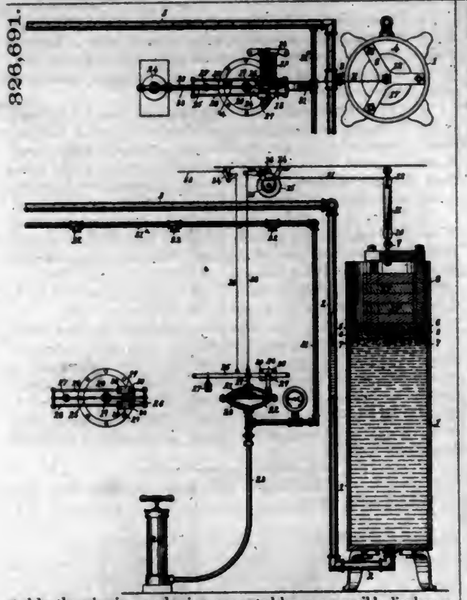
Claim.—1. The combination, with the posts and the vertically-movable latches arranged in grooves therein, of the gate-panel hinged to the posts at its lower corners, and the pivoted floats connected with the latches, substantially as described.

2. The combination, with the posts A A, having stops B B, of the hinged gate-panel, the upper bar of which rests on the tops of the posts, the vertically-movable latches C C, and the pivoted floats E E, connected with said latches, substantially as described.

326,691. AUTOMATIC FIRE-EXTINGUISHING APPARATUS. DANIEL C. STILLSON, Boston, Mass. Filed Sept. 24, 1884. (No model.)

Claim.—1. In an automatic fire-extinguishing apparatus, the combination, with the liquid-reservoir, of a suspended weighted plunger actuated by the releasing mechanism supported by an expansible diaphragm, substantially as described.

326,691.

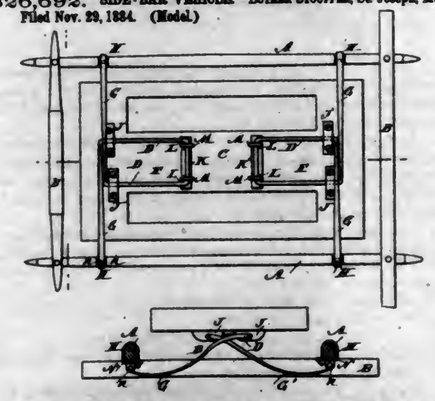


2. In an automatic fire-extinguishing apparatus, the combination, with a reservoir containing water or other extinguishing-fluid, of a weighted piston or plunger, a tackle by which it is suspended, a pawl holding the drum carrying the rope, a tripping-lever supported by an expansible diaphragm, and an auxiliary weight or weights balanced upon the fulcrum of said lever and carried by side arms attached thereto, substantially as described.

3. In an automatic fire-extinguishing apparatus, the combination, with a tripping-lever, of side arms attached thereto at the ends only and having traveling auxiliary weights mounted thereon, an actuating-weight, and an expansible diaphragm supporting said lever and actuated by the releasing mechanism, substantially as described.

4. In an automatic fire-extinguishing apparatus, the combination, with the reservoir, of the weighted plunger having a self-setting packing-ring, a rope and tackle supporting the same, a drum upon which the rope is wound, a pawl holding said drum, a tripping-lever, an air-chamber having an expansible diaphragm, and a pipe communicating with said chamber and having fusible plugs, substantially as described.

326,692. SIDE-BAR VEHICLE. LUTHER STOUFFER, St. Joseph, Mo. Filed Nov. 29, 1884. (Model.)

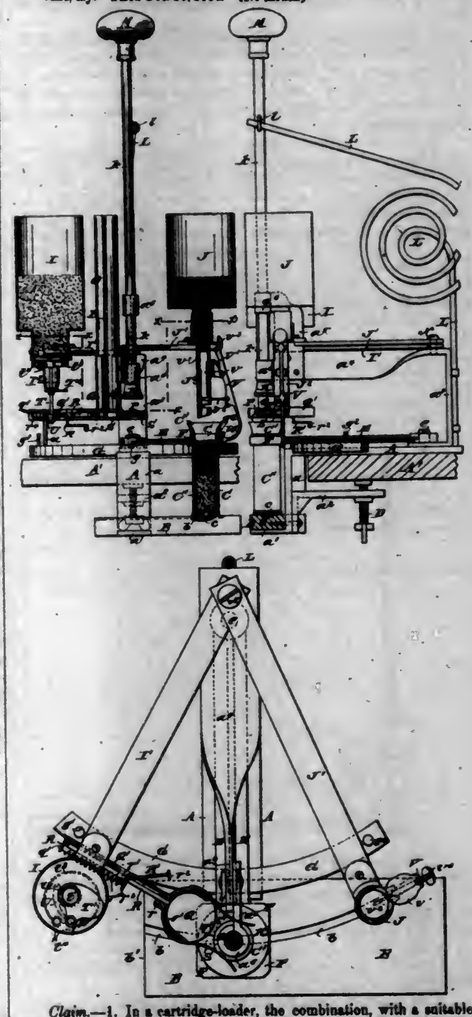


Claim.—1. In a vehicle, the combination, with the side bars and box, of a spring secured to the box and to the side bars, which spring is formed of a spring rod or bar bent to form an oblong or square figure, the outer ends of which extend from the side of the figure across the figure, and are extended beyond the sides of the figure to the side bars, substantially as herein shown and described.

2. In a vehicle, the combination, with the box and side bars, of the springs D G, shaped in the manner described, and of the clip-plates J, for holding the springs to the box at the inner ends of the laterally-projecting parts, substantially as herein shown and described.

3. In a vehicle, the combination, with the box and side bars, of the springs D G, shaped in the manner described, the clip-plates J, the plates or stripe K, and the hook-bolts M, substantially as herein shown and described.

326,693. CARTRIDGE-LOADER. CHARLES A. THOMPSON, Hopkinsville, Ky. Filed Dec. 16, 1884. (No model.)



Claim.—1. In a cartridge-loader, the combination, with a suitable support and powder and shot holders having valves provided with downwardly-projecting stems, of a pivoted shell-carrying arm having its free end projecting between the said holders, and adapted to act on the stems of the said holders on the free end of the arm, a rammer arranged between the shot and powder holders, a wad-holder arranged at one side of the rammer, and an ejector for forcing the wads out of the holder, substantially as herein shown and described.

2. In a cartridge-loader, the combination, with a suitable support and powder and shot holders having valves provided with downwardly-projecting stems, of a pivoted shell-carrying arm having its free end projecting between the powder and shot holders and adapted to engage the stems of their valves, a spring-actuated rammer between the powder and shot holders, a wad-holder at one side of the rammer, and a spring-retracted ejector for forcing the wads from the said holder, substantially as herein shown and described.

3. A cartridge-loader constructed with a pivoted arm, E, provided at its free end with an open-bottomed cartridge-shell holder, C', and with powder and shot holders I J, supported one at each side of the wad-ejector and rammer, substantially as specified, and a base-block, B, for

supporting the cartridge-shell under the rammer, said block B not extending beneath one of the ammunition-holders, to allow insertion and removal of the cartridge-shells, substantially as herein set forth.

4. The combination, in a cartridge-loader, of the pivoted arm E, having means for holding the cartridge-shell at its free end, a powder-holder, I, having valves T' T^2 on a stem, T, journaled in the base of the powder flask or holder, and the arm U on the end of the said stem, having a stem, *u*, adapted to be struck by the arm E, for automatically discharging powder into the cartridge-shells, substantially as herein set forth.

5. The combination, in a cartridge-loader, of the pivoted arm E, having means for holding the cartridge-shell at its free end, a shot-holder, J, having valves v' v^2, attached to a pivoted spring-pressed lever, V, and said lever having a stem, W, adapted to be struck by the arm E, for automatically discharging shot into the cartridge-shells, substantially as herein set forth.

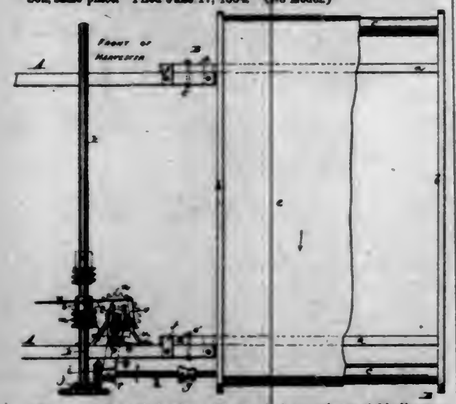
6. In a cartridge-loader, the wad-holder constructed with a removable tube, O, slotted at *o*, and a tubular base-support, Q, slotted at *q*, and provided with a shoulder, *o'*, on which the tube O rests, and said support Q having a side slot, *q'*, for exit of the wads, and springs S S, for holding the ejected wads, in combination with an ejector acting to push the lowermost wad from the holder, substantially as herein set forth.

7. In a cartridge-loader, the combination, with the rammer K, of a wad holder having a side slot next the bottom, springs S S, fixed at the sides of said slot, and an ejector, R, fitted with a retracting-spring, substantially as herein set forth.

8. In a cartridge-loader, the wad-ejector made with a plunger-rod, R, having an arm, R', and sliding in bearings *r r'* of the wad-holder support, and with a stop, r^3, and retracting-spring r^4, substantially as herein set forth.

326,694. BUNDLE-CARRIER FOR GRAIN-BINDING MACHINES.

JOSEPH VAN DE WATER, Whitewater, Wis., assignor to George Esterly & Son, same place. Filed June 17, 1884. (No model.)



Claim.—1. In combination with a grain harvesting and binding machine, an endless apron or carrier to receive the bound bundles, the driving-train having a movable pinion through which motion is communicated to the apron, the worm-gear connected with the harvester, and the cam actuated by said gear to throw the pinion into engagement.

2. The shaft *k* of a harvester and binder, the worm *m*, the cam-wheel *n*, driven therefrom, the endless carrier, its driving-shaft *p*, the driving-gears *i* and *j*, the arm *q*, and the spring *s*.

3. In combination with a grain harvesting and binding machine, an endless apron to receive the bound bundles and discharge them upon the ground, and supports for said aprons hinged to the harvester-frame, whereby the apron is permitted to fold upward, that the machine may be passed through gates and other restricted openings.

326,695. BELT-TIGHTENING DEVICE.

CLARSON S. WARDWELL, Stamford, Conn. Filed Aug. 1, 1885. (No model.)



Claim.—1. The combination of a pulley-supporting arm formed of two parts longitudinally movable relative to each other, and a clamping-plate, through a hole in which one of the parts of the arm passes, and which is clamped by impingement of the sides of the hole against the sides of the part of the arm which passes through the hole, when the plate and the arm are oblique to each other, and a fulcrum for the arm formed on or attached to the other part of the arm, substantially as and for the purposes set forth.

2. The combination of a pulley-supporting arm formed of two parts, A and B, longitudinally movable relative to each other, a clamping-plate, C, fulcrumed on the part A of the pulley-supporting arm, and a spring, E, which aids the clamping action of the plate C, substantially as and for the purposes set forth.

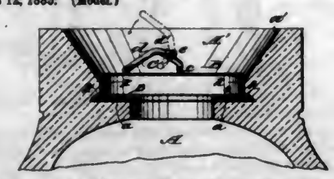
3. The combination of a pulley-supporting arm formed of two parts, A and B, longitudinally movable relative to each other, a clamping-plate, C, fulcrumed on the part A of the pulley-supporting arm, a spring, E, and set-sleeve F, whereby the tension of the spring E, and consequent clamping power of the plate C, may be increased or diminished at will, substantially as and for the purposes set forth.

4. The combination of an extendible pulley-supporting-arm formed of two parts longitudinally movable relative to each other, a clamping-plate, C, provided with pressure extension-piece *c* and spring-attaching piece *d*, said plate C being fulcrumed on the part A of the pulley-supporting arm, and a spring, E, whereby the clamping power of the plate C will be aided, substantially as and for the purposes set forth.

5. The combination of an extendible pulley-supporting arm formed of two parts longitudinally movable relative to each other, a clamping-plate, C, provided with pressure extension-piece c and spring-attaching piece *d*, said plate C being fulcrumed on the part A of the pulley-supporting arm, a spring, E, and set-sleeve F, adjustable on the part A, whereby the tension of the spring E, and consequent clamping power of the plate C, may be adjusted as desired, substantially as and for the purposes set forth.

326,696. JAR-FASTENER.

CHAS. WATTS, Crooksville, Ohio. Filed June 12, 1885. (Model.)

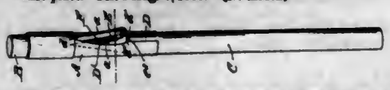


Claim.—1. A wire-fastener wherein the wire is bent upwardly, inwardly, and downwardly from a bearing portion to form manipulating-loops, and is also bent outwardly across the base of the loops a short distance above the bearing portion to form pivots, substantially as described.

2. The combination, with a jar formed with apertures, as *i*, and its cover B, of a fastener wherein the wire is bent upwardly, inwardly, and downwardly from the bearing portion to form manipulating-loops, and is also bent outwardly across the base of the loops a short distance above the bearing portion to form pivots that rest within the apertures *i i*, substantially as described.

326,697. PENCIL CASE AND SHARPENER.

GREENLEAF A. WILBUR, Skowhegan, Me., assignor to himself and Charles Henry Wilbur, same place. Filed Aug. 7, 1885. (No model.)



Claim.—1. A pencil case and sharpener comprising an elastic tubular case provided with a side slot at one end and a tapering tubular sharpener fitted with a knife or cutter and clamped in the case at the slot, substantially as herein set forth.

2. A pencil case and sharpener comprising an elastic tubular case, A, provided with a slot, D D', and a tapering tubular sharpener, E, provided with a rib, *e*, having a throat, *d'*, and a knife or cutter, F, set in said rib, and said sharpener held in place at the slot of the case A, substantially as herein set forth.

3. A pencil case and sharpener comprising an elastic tubular case, A, provided with a slot, D D', a tapering tubular sharpener, E, provided with a rib, *e*, having a throat, *d'*, and a projection, e^2, beyond the body of the sharpener, and said case A at the slot D D' having shoulders d' d', which lock under the body of the sharpener behind its projection e^2, substantially as herein set set forth.

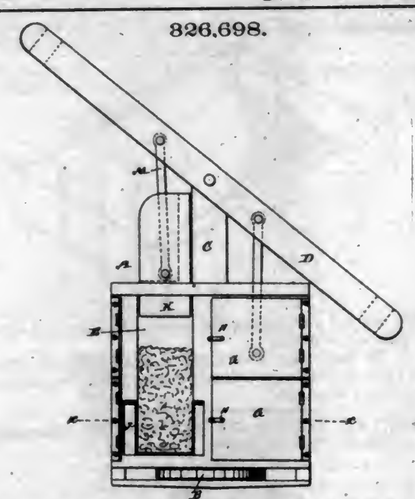
326,698. COTTON-PRESS.

SAMUEL I. WILKINSON, Yazoo City, Miss. Filed July 29, 1885. (No model.)

Claim.—1. The combination, with a box pivoted to swing in the horizontal plane, of plungers in the box connected with a fixed object, whereby the plungers will be reciprocated in the box when the latter is swung or rocked in the horizontal plane, substantially as herein shown and described.

2. The combination, with a box having a projecting beam or bar pivoted in such a manner that the box can swing or rock in the horizontal plane, of plungers in the box connected with the fixed object to which the beam of the rocking box is pivoted, and of a supporting-wheel on the rocking end of the box, substantially as herein shown and described.

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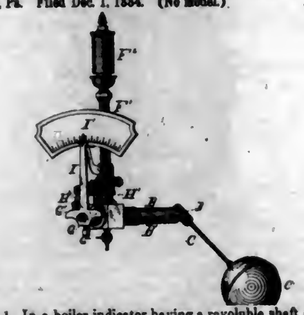


3. The combination, with a baling-box pivoted to rock or swing in the horizontal plane, of a supporting-wheel pivoted on the swinging end of the box, substantially as herein shown and described.

4. The combination, with the box A, divided into the two compartments E, of the beam C, the fixed beam or frame D, to which the beam C is pivoted, the plungers K in the compartments E, the rods M, connecting the plungers with the beam D, the doors G, and the wheel B on the rocking or swinging end of the box, substantially as herein shown and described.

326,699. BOILER INDICATOR AND ALARM.

JOHN M. WILLIAMS, Pittsburg, Pa. Filed Dec. 1, 1884. (No model.)

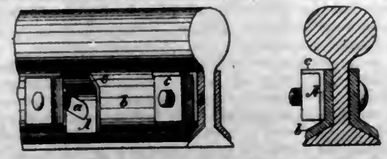


Claim.—1. In a boiler-indicator having a revoluble shaft connected with a float situate within the boiler, the combination of the shoulder A', a casing, B, having a seat against which the shoulder A' rests, the spring A^2, and a cam attached to the shaft so as to operate the bell-crank lever H and whistle-valve F' by the movement of the shaft on its axis in either direction, substantially as and for the purpose specified.

2. In a boiler-indicator having a revoluble shaft connected with a float within the boiler, a double cam-bar, G G', attached to the outer end of the shaft, and a bell-crank lever having the double arms H' H^2, engaging with the arms of the cam-bar, and the arm H, engaging with the projecting stem of a self-seating whistle-valve, substantially as and for the purpose specified.

326,700. NUT-LOCK.

SAMUEL J. WINDOM, Montgomery, Ala. Filed June 26, 1884. (Model.)

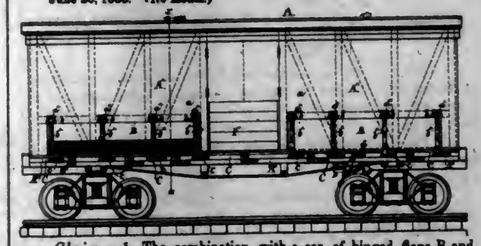


Claim.—1. The locking-washer consisting of the flat plate A, formed with a slot, *a*, extended upward and outward to one vertical edge thereof, the top edge of said washer being bent outward, as described.

2. The combination, with the flanged fish-plate and its fastening bolt and nut, of the flat locking-washer A, having the upward and outward inclined slot *a* in one vertical edge, and the outward-bent top edge, *c*, as shown, whereby when the washer is forced into place the upper edge of the slot bearing on the bolt will cause the said washer to rise until the bend at the top thereof is approximately even with the top of the nut, substantially as set forth.

326,701. FREIGHT-CAR.

AMBON WOLCOTT, Wolcott, Ind. Filed June 20, 1885. (No model.)



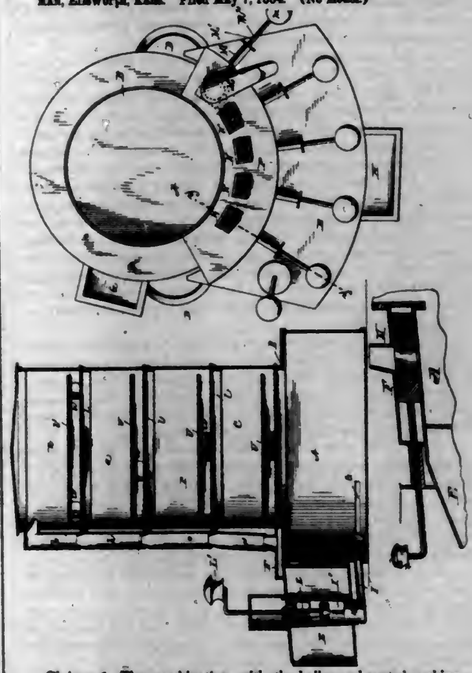
Claim.—1. The combination, with a car, of hinged flaps B and means for securing the flaps, consisting of metal bars, as *b'*, projecting from the free edges of the flaps, and a longitudinally-movable bar upon the car-body, provided with projecting parts constructed to engage said bars *b'*, substantially as described.

2. The combination, with a car, of hinged flaps, B, provided with metal bars, as *b'*, projecting from the free edges of the flaps, and a longitudinally-movable bar, C, provided with parts *c*, adapted to engage the end portions of the bars *b'*, and means for shifting said bar longitudinally, substantially as described.

3. The combination, with a car and hinged flaps B, of fastening devices comprising bars *b'*, projecting from the free edges of the flaps, a longitudinally-movable bar, C, provided with projecting parts constructed to engage the bars *b'*, and a locking device for securing said bar from longitudinal movement when the flaps are closed and fastened, whereby access to the car by unauthorized persons may be prevented, substantially as described.

326,702. STEAM-COOKER.

JOHN N. ANDERSON and JOHN M. SHERMAN, Ellsworth, Kans. Filed May 7, 1884. (No model.)

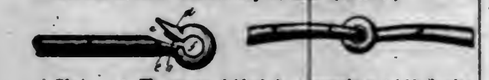


Claim.—1 The combination, with the boiler and nested cooking-vessels having independent steam-pipes communicating with the boiler and the cooking-vessels, of the valve-chamber, a pipe leading therefrom to the reservoir, and a valve for controlling the flow of steam through said pipe into the reservoir, substantially as described.

2. In a steam-cooker, the combination of the boiler, the valve-chamber F, having collars N, and valves that are located in the valve-chamber, substantially as described.

3. The combination, with the steam-boiler and the supply-reservoir, of the escape-pipe M, connecting the two and provided with a steam-valve, substantially as specified.

326,703. BRIDLE-BIT. ALEXANDER P. BALDWIN, Newark, N. J. Filed Feb. 12, 1884. Renewed July 27, 1885. (No model.)

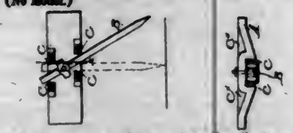


Claim.—1. The improved blank for a wrought-metal bit, having an eye portion, *f*, formed on one end thereof and curled backward, as shown, said eye portion being provided at its extremity with a laterally-extended lip, *d*.

2. The wrought-metal blank for a bit, provided at one end with a recess, *e*, and the eye portion *f*, the latter having at its extremity the lip *d* and stud *g*.

3. The improved bridle-bit, consisting of the part B, having the continuous eye *a*, and the part A, having the eye portion *f*, with the laterally-extended lip *d*, welded to the body.

326,704. HARROW. JAMES H. BARLEY, Sedalia, Mo. Filed Feb. 7, 1885. (No model.)



Claim.—1. In a harrow, the metal tooth-rail, A, constructed substantially in the manner specified, having the integral tooth-supporting stops C, formed on the side thereof, projecting horizontally from the edges of said rail, adapted to support and limit the angle at which the tooth shall stand, substantially as shown and described.

2. The metal harrow-tooth rail A, having the integral tooth-supporting shoulders or stops C, formed on the side thereof in the manner specified, with the edge portion or portions C' of said rail projecting horizontally from the side thereof a sufficient distance to admit the tooth passing between said projecting portion or portions C' and the side C² of said rail A, in combination with a harrow-tooth pivotally attached thereto, substantially as shown and described.

3. The metal harrow-tooth rail A, having the integral tooth-supporting shoulders or stops C formed thereon, with the two edge portions C' of said rail projecting horizontally from one side thereof, and the intervening central portion, C², of rail A projecting from the opposite side thereof, thereby forming an opening between said projecting portions in a vertical direction through said rail, in which opening the harrow-tooth is inserted and supported therein, substantially as shown and described.

4. In a harrow, the combination of the rail A, produced from an ordinary wrought-metal bar of iron or steel having the integral tooth-supporting shoulders or stops C, formed thereon or within a central line with said rail by rolling, punching, stamping, pressing, or bending, whereby said shoulders or stops C are formed at requisite distances apart longitudinally with said rail to allow the tooth to automatically adjust themselves and to stand either in a vertical or an inclined position, and a pivotal bolt or pin adapted to hold said teeth in place, substantially as shown and described.

5. The within-described metal tooth-rail A, constructed substantially in the manner specified, having the integral tooth-supporting stops C, formed on the edges thereof, projecting horizontally from the side of said rail, adapted to support and limit the movement of the angular adjustable tooth, in combination with a pivotal bolt or pin, which passes through perforations formed through both tooth and rail.

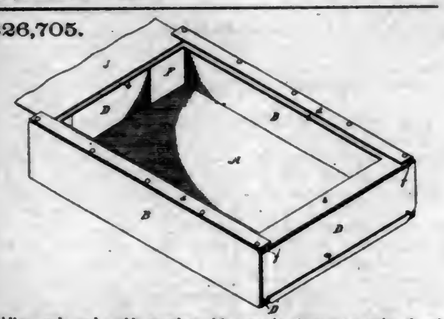
6. In combination with a harrow-tooth rail provided with means for supporting a swinging tooth thereon at different angles, the pivotal bolt D, provided with the elevated or arch portion D' and D², the tooth and rail having perforations through them in which the bolt D is passed, with the two arms D² D², which straddle over the tooth and rest against the side of the rail, allowing the tooth a free pivotal movement thereon, substantially as shown and described.

7. In a harrow, the within-described pivotal bolt D, having the arch portion provided with arms projecting therefrom and straddling over the harrow-tooth and resting on the side of the rail on opposite sides of said tooth, in combination with a perforated tooth and a harrow-rail having perforations and means for supporting an angular adjustable tooth on the side thereof, substantially as specified.

326,705. KNOCKDOWN PAPER BOX. JACOB C. RAUER, Philadelphia, Pa. Filed Mar. 23, 1885. (No model.)

Claim.—1. The combination of the sliding lid with a box having

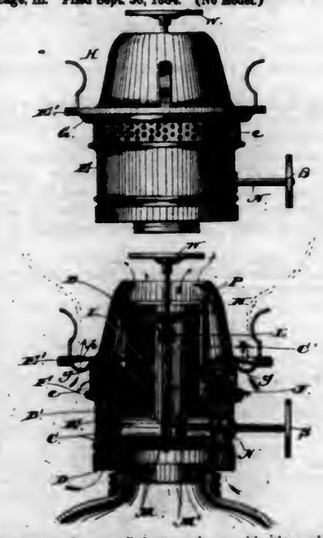
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folding ends and a side opening with opposite flanges *b b*, strips *d*, and filling-pieces *f*, as specified.

2. The combination of the sliding lid with a box having folding ends, a side opening, flanges *b b*, strips *d*, filling-pieces *f*, and strengthening-strips *g*, as set forth.

326,706. OIL-BURNER FOR LAMPS OR STOVES. ELIAS BEACH, Chicago, Ill. Filed Sept. 30, 1884. (No model.)



Claim.—1. In an oil-burner, the combination, with a vertical slotted tube having a horizontal tube in connection therewith, of a serrated wick-raising ring encircling said vertical tube and operating by a cross-bar sliding in its slots and a vertical shaft passing through the center of the tubes and wick-raising actuating cross-bar, substantially as described.

2. In an oil-burner, the combination, with the central vertical slotted tube having a horizontal open-ended tube in connection therewith, of a serrated wick-raising ring or tube having a cross-bar sliding in slots in said vertical tube, a vertical shaft stepped in the lower or horizontal tube and extending up through the central tube and engaging the cross-bar of the wick-raiser, vertical and horizontal pinions operating said shaft, and the perforated bottom plate holding the inner and outer casing-tubes, substantially as described.

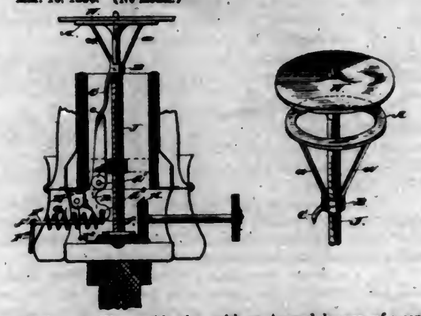
3. In an oil-burner, the combination of a vertical and horizontal tube integral with each other, a two-part tube or casing encircling the said vertical and horizontal tubes divided by a partition, the lowermost of said outer casing-tubes being perforated at its bottom portion and the uppermost just above the partition, and a gallery having a perforated semi-cylindrical extension over which the perforated flange of the cone rests, substantially as described.

4. In an oil-burner, the combination of vertical tube B, horizontal tube B', tube C, engaging with tube B' and having a removable top, C', perforated bottom plate D, casing E, partition F, gallery and extension G, cone H, with its perforated flange *h*, all combined and arranged to permit the free flow of air outside and inside of the flame, substantially as described.

5. In combination with the slotted tube B, the horizontal tube B', connected thereto, the spider P, the shaft J, mounted in the tube B and said spider and having the reduced portion extending beyond the spider,

the spreader W, the shaft N, pinions M M', the serrated wick-raiser, and cross-bar L, substantially as and for the purposes set forth.

326,707. LAMP-EXTINGUISHER. ELIAS BEACH, Chicago, Ill. Filed Mar. 16, 1885. (No model.)



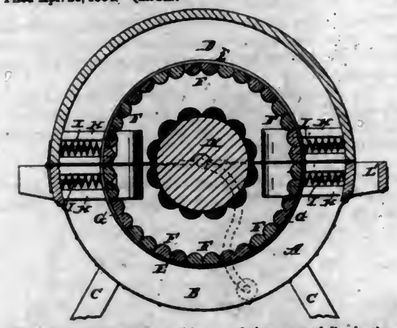
Claim.—1. The combination, with an Argand burner, of a central shaft supporting a spreader, an annular extinguishing-ring resting against said spreader with suitable supports for holding said ring on said shaft, and means for raising and lowering said ring, substantially as described.

2. The combination, with an Argand burner, of a central shaft supporting a spreader, an annular ring resting normally against said spreader, a sleeve encircling said shaft and attached to said ring by bracket-arms, and means for operating said sleeve to raise and lower the extinguishing-ring, substantially as described, and for the purposes set forth.

3. The combination, with an Argand burner, of a central shaft, a spreader, an extinguishing-ring resting normally against said spreader and movably secured to said shaft by means of a sleeve and bracket-arms, a flexible arm attached to said sleeve, a bell-crank lever hinged to said arm and to said burner, a draw-rod, a spiral spring mounted thereon, and a ring for operating said draw-rod, substantially as described.

4. The combination, with an Argand burner, of a central shaft, an annular ring, A, bracket-arms *a a*, sleeve B, flexible arm C, bell-crank lever D, hanger E, draw-rod F, spiral spring G, and a ring, F', arranged as described, and for the purposes set forth.

326,708. WASHING-MACHINE. FRANK BELSH, Hastings, Nebr. Filed Apr. 21, 1884. (Model.)



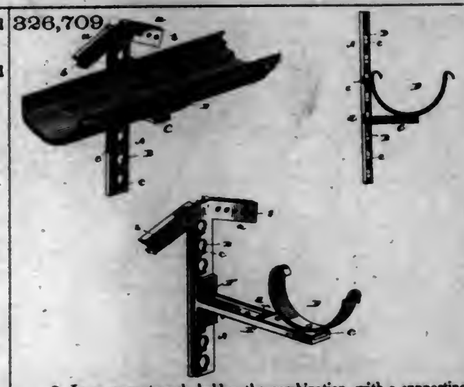
Claim.—1. A washing-machine consisting, essentially, in the semicircular tub and cover hinged together, the two separate semicircular boards E, composed of the ribbed strips F, and the semicircular elastic strips G, securing said strips F together, the upper semicircular board being in yielding connection at its corners with the end boards of the cover, and the lower semicircular board being yieldingly secured at its corners to the end boards of the tub, and a cylindrical ribbed rubber, K, journaled in bearings between adjacent edges of the end boards of the tub and cover, whereby when the cover is raised the upper board, E, will be raised and the rubber K may be removed or the clothes inserted or removed, substantially as set forth.

2. In a washing-machine, the casing consisting of the semicircular cover and tub, the ways H on the end boards thereof, the semicircular boards E, having the strips F, the end strips being extended to enter the guideways H, springs I within the guideways and bearing against said ends, and the rubber K, having external ribs, substantially as set forth.

326,709. EAVES-TROUGH HOLDER. MARTIN BINKMAN, Snow Shoe, Pa. Filed Aug. 6, 1885. (No model.)

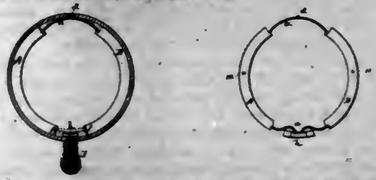
Claim.—1. In an eaves-trough holder, the combination, with a supporting-strip provided with securing means, of a vertically-adjustable plate carrying a bracket in which the trough is adapted to rest, substantially as set forth.

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2. In an eaves-trough holder, the combination, with a supporting-strip provided with a series of openings, having slots communicating therewith, of a plate and a bracket secured to the upper side of said plate, and headed pins projecting inwardly from the plate and bracket, substantially as set forth.

326,710. WATCH-CASE SPRING. GEO. W. BLAKESLEE, New York N. Y. Filed Mar. 23, 1885. (No model.)



Claim.—1. The herein-described improvement in watch-case springs, consisting of the segment-shaped body *a*, with an upwardly-projecting tongue, *d*, the said projection adapted to bear upon the cover of the case near its hinge, a segment, A, arranged in the body of the case and adapted to bear against one end of said spring, the other end of the said spring provided with a corresponding resistance, the said segment extending from one end of the spring toward the stem, and with a connection between said stem and said segment, substantially as described, and whereby, under the pressure of the stem, movement is imparted to said segment to compress the said spring.

2. The herein-described improvement in watch-case springs, consisting of a segment-shaped body, *a*, constructed with an upwardly-projecting tongue, *d*, the said projection adapted to bear upon the cover of the case near its hinge, a segment, A, arranged in the body of the case and adapted to bear against one end of the spring, the other end of the spring provided with a corresponding resistance, and said segment A adapted for circumferential movement within the case, the wedge *h*, constructed to form the catch *i*, and adapted to work against the end of the movable segment, under the influence of the spindle in the stem of the watch, substantially as described.

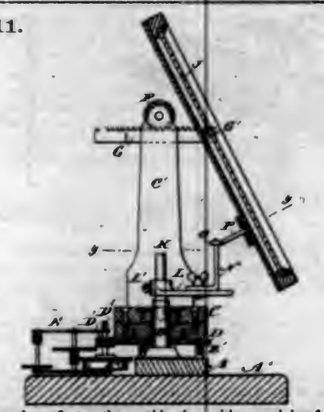
3. The combination of the spring *a*, constructed with the upwardly-projecting tongue *d*, the two segments A B, each adapted to be arranged in opposite sides of the body of the case, and one end of each segment constructed and arranged to bear against corresponding ends of said spring, and the wedge *h*, adapted to work between the opposite ends of said segments, under the action of the spindle, substantially as described, and whereby, through the said wedge, a circumferential movement is imparted to said segments, and the spring correspondingly compressed, substantially as described.

4. The combination of the spring consisting of the body *a*, constructed with a downwardly-projecting leg, *b*, at each end, and an upwardly-projecting tongue, *d*, the segments A B, one end of each segment adapted to support and bear against the nose of said spring, with a wedge, *h*, between the opposite ends of said segments, the said wedge constructed to form the catch *i*, substantially as and for the purpose described.

326,711. SELF-ACTING SOLAR REFLECTOR. HENRICH A. W. BRAUNE, Valparaiso, Ind. Filed Jan. 30, 1885. (No model.)

Claim.—1. In a solar reflector, the combination, with a revolving frame having uprights, of a mirror or reflector having pivots, and supports for the pivots held on the uprights of the revolving frame, said supports being adapted to be adjusted a greater or less distance from the longitudinal central plane of the revolving frame, substantially as herein shown and described.

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2. In a solar reflector, the combination, with a revolving frame having uprights, of a movable cross-piece held in each upright and provided with a hook, and a mirror or reflector having pivots resting in the hooks of the said movable pieces in the uprights, substantially as herein shown and described.

3. In a solar reflector, the combination, with a revolving frame having uprights, of racks in the uprights provided with hooks, pinions engaging with the racks, and a mirror having pivots resting in the hooks of the racks, substantially as herein shown and described.

4. In a solar reflector, the combination, with the base A' and the pivot B, of the rollers B', the cross-piece C, having uprights C', the clock-work E, the cog-wheel D, connected with the cross-piece C and operated from the clock-work, and a mirror pivoted in the uprights of the revolving frame, substantially as herein shown and described.

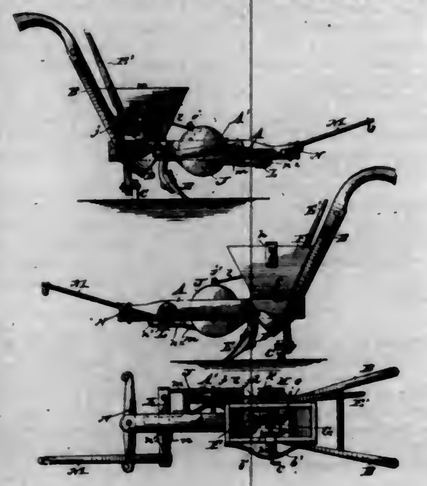
5. In a solar reflector, the combination, with a revolving frame having uprights, of a reflector pivoted in the uprights, and devices for adjusting the longitudinal horizontal axis of the mirror at an inclination to the longitudinal axis of the revolving frame, substantially as herein shown and described.

6. In a solar reflector, the combination, with a revolving frame, of a mirror or reflector pivoted in the said frame, a guide on the mirror, a fixed piece, and a roller or pulley pivoted in the fixed piece, against which pulley the guide on the mirror rests, substantially as herein shown and described.

7. In a solar reflector, the combination, with a pivot, B, of a revolving frame, of a mirror pivoted in the frame, the arm L, projecting from a pin or standard on the pivot B, the upright piece N, held adjustably on the arm L, the roller O on the upper end of the piece N, and the curved guide on the back of the mirror, substantially as herein shown and described.

326,712. SEED-PLANTER. JAMES L. BRUCE and THOMAS E. CAKER, Chauncey, Ga. Filed Dec. 4, 1884. (No model.)

Claim.—1. The combination, in a planter, of a rigid bar adapted to be secured to the harness of a draft-animal, said bar being pivoted to



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the single-tree and to a lever which is connected to an oscillating disk, and the belt attachment of the disk with a pulley on the shaft of the distributer, substantially as described.

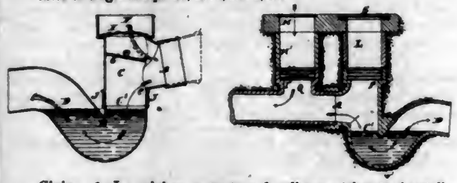
2. The combination of the draft-bar, the single-tree, the lever to which this bar is connected, the oscillating disk and its pitman connection to said lever, the belt applied to the disk and to the pinion on the shaft of the distributer, and means for adjusting the latter vertically, substantially as described.

3. The combination, with the hopper of a seed-distributer, of a vertically and laterally adjustable seed-distributer actuated by the movement of the animal, as described, and a tension device for the belt of the oscillating disk and pulley, substantially as specified.

4. In a seed-planter, the oscillating disk and draft device, in combination with a tension device applied to the periphery of said disk, and a driving-band adapted for regulating the oscillations of the seed-distributer, substantially as described.

5. The combination, in a seed-planter, of the following elements, to wit: a beam provided with handles, a hopper, a seed-guide, a shovel, and a coverer, with a single-tree having pivoted to it a draft-bar, a cross-lever pivoted to said bar and connected to an oscillating disk, and a seed-distributer which is driven by means of a belt connected to said disk and provided with a tension device, all constructed and adapted to operate substantially in the manner and for the purposes described.

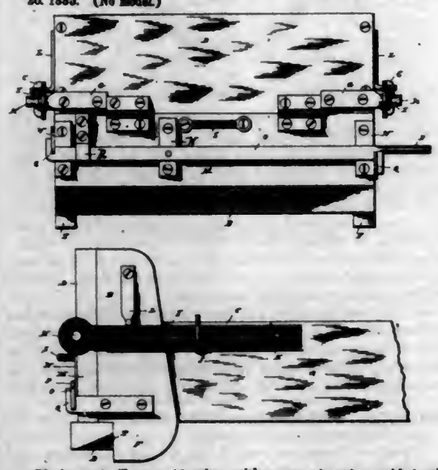
326,713. SIPHON WATER-TRAP. WILLIAM P. BUCHAN, Glasgow, County of Lanark, Scotland. Filed Dec. 18, 1883. (No model.) Patented in England Apr. 23, 1875, No. 1,499.



Claim.—1. In a siphon water-trap for disconnecting horizontally-arranged sewers, drains, soil, waste-water, and rain pipes, the vertical or "square" drop e for the liquid or soil, substantially as and for the purposes described.

2. In a siphon water-trap for ventilating and disconnecting horizontally-arranged sewers, drains, soil, waste-water, and rain pipes, the combination of the vertical or square drop e and the ventilating-branch F, substantially as described.

326,714. COMBINED END-GATE AND SCOOP-BOARD. RILEY CASE, JAMES MCARTHUR, and WILLIAM H. ADKINS, Harlan, Iowa. Filed July 20, 1885. (No model.)



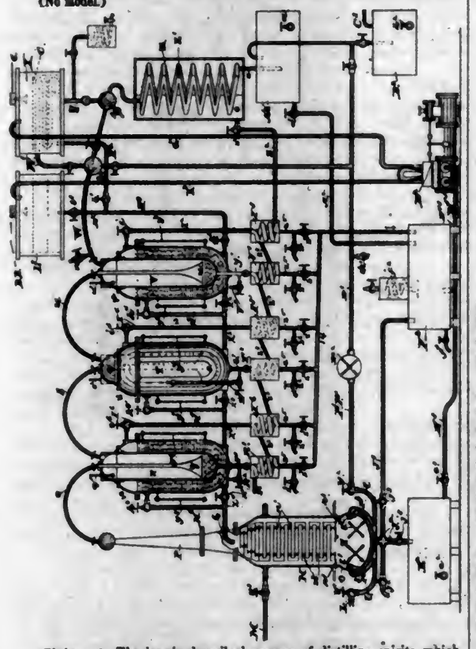
Claim.—1. The combination, with a scoop-board provided with locking-arms and hooked plates, of the end-gate hinged thereto, and having a locking-bar adapted to engage said plates.

2. The combination, with a scoop-board having side pieces, clips, locking-arms having notches and studs, and brackets and hooked plates, of the end-gate hinged to the said board and having wear-irons and a pivoted locking-bar adapted to engage said plates and lock the gate.

3. The combination, with a wagon-body having an extended tail-beam with beveled corners, and provided with slotted brackets at its sides, of the scoop-board having locking-arms, and adapted to be fitted to the wagon and let down and held in a locked position by engagement of said arms with said brackets and by said beam, and an end-gate hinged to said board and provided with devices to lock the same.

4. The combination, with a wagon-body having an extended tail-beam with beveled corners, and provided with slotted brackets at its sides, of the scoop-board having side pieces, clips, and notched locking-arms having studs, and brackets and hooked plates, and the end-gate hinged to said board and having wear-irons, and a pivoted locking-bar adapted to engage said plates and lock the gate.

326,715. PROCESS OF MANUFACTURING AND DISTILLING ALCOHOL AND HYDROCARBONS AND OF RECTIFYING AND AGING LIQUORS. DONALD D. CATTANACH, Providence, R. I. Filed Mar. 27, 1885. (No model.)



Claim.—1. The herein-described process of distilling spirits, which consists in subjecting the material to be distilled to a current of hot air in a nearly-closed vessel in a finely-divided state, and then condensing the vapors generated, substantially as described.

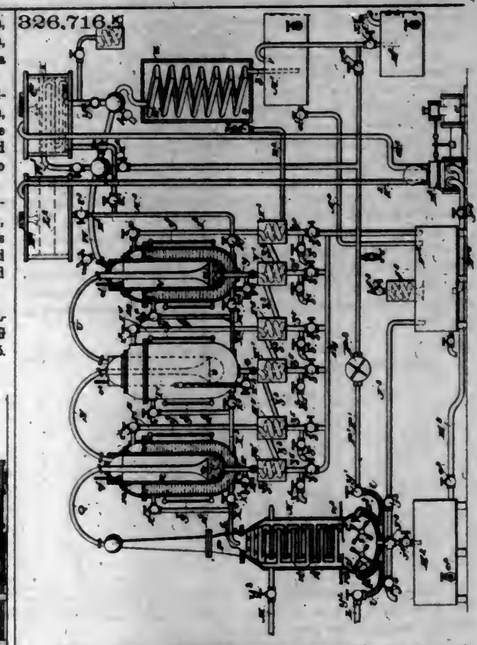
2. The herein-described process of distilling alcoholic and other spirits, which consists in passing the material to be distilled through a series of closed chambers, into which a current of hot air is conveyed separate and apart from the material to be distilled, then subjecting said material, in a finely-divided state, to a current of hot air in a closed vessel, and finally condensing the vapors generated by passing the same through condensers, substantially as described.

3. The herein-described process of distilling alcoholic and other spirits, which consists in passing the material to be distilled through a series of chambers heated to the desired degree by a current of hot air introduced into vessels inclosed in each of said chambers, and finally subjecting said material, in a finely-divided state, to a current of hot air in a nearly-closed vessel, and then condensing the vapor, substantially as described.

4. The herein-described process of rectifying and aging alcoholic and other spirits, which consists in passing the same through a series of chambers, into which a current of hot air is conveyed separate and apart from said spirits, then subjecting the same to a current of hot air in a nearly-closed vessel in a finely-divided state, and finally condensing the vapor by passing the same through condensers, substantially as described.

326,716. APPARATUS FOR THE MANUFACTURE AND DISTILLATION OF ALCOHOL, HYDROCARBONS, AND ACETIC ACID, AND FOR AGING AND REFINING LIQUORS. DONALD D. CATTANACH, Providence, R. I. Filed June 5, 1885. (No model.)

326,716.



Claim.—1. In a distilling apparatus, the combination of an air-purifying cylinder, a heating-chamber connected therewith, furnace for heating said chamber, and a fan for sucking the air from the heating-chamber and forcing it in a divided current into the upper and lower portions of a rectifier, substantially as described.

2. In a distilling apparatus, the combination of a purifying-cylinder containing pumice-stone saturated with sulphuric acid, a heating-chamber connected with said cylinder containing a coil of pipe, the furnace for heating said chamber separate and apart therefrom, a fan to cause the air to circulate through the heating-chambers and the furnace, suitable connections for these several parts, and a fan for sucking the heated air from said heating-chamber, and means, as described, for forcing it in a divided current into the upper and lower portions of a rectifier, substantially as described.

3. In a distilling apparatus, the combination, with an air-purifying cylinder and a furnace having a suitable fan, of a heating-chamber having a coil of pipe therein, alternate vertical partitions extending partially across the chamber and supporting the pipe composing the coil, and horizontal layers of gauze lying between the pipes, whereby the air can be thoroughly heated, substantially as described.

4. In a distilling apparatus, the combination, with an air-purifying cylinder and heating-furnace, of a heating-chamber containing a coil of pipe and connected to the heating-furnace, a pipe leading from the said heating-chamber and connecting with a cold-air pipe regulated by a suitable valve, and a fan for sucking and forcing the ameliorated air in a divided current into the upper and lower portions of a rectifier, substantially as described.

5. In a distilling apparatus, the combination, with an air-purifying cylinder, a heating-chamber, and a furnace, of a rectifier suitably connected to said heating-chamber, curved deflectors in the bottom thereof, and a series of fret-work shelves surrounded by a suitable casing or jacket, substantially as described.

6. In a distilling apparatus, the combination of a rectifier, a series of chambers containing inner chambers, supplementary condensers connected with said inner and outer chambers, a main condenser, pipes, and valves connecting said parts, and feeding-vats and receiving-tanks arranged substantially as described, and for the purposes specified.

7. In a distilling apparatus, the combination of a series of cylindrical chambers having inner fractional distilling-chambers distinct from said outer chambers, a rectifier connected with said inner and outer chambers, and suitable air heating and pressure mechanism connected with the rectifier, whereby the air under pressure is forced through the rectifier and the inner chambers, substantially as described, and for the purposes specified.

8. In a distilling apparatus, the combination, with a series of inner and outer chambers, of the supplementary condensing-chambers connected to said inner and outer chambers, as set forth, having suitable cocks and valves, a main condenser having a condensing-flue therein, and suitable connecting pipes and valves attached to said parts, whereby

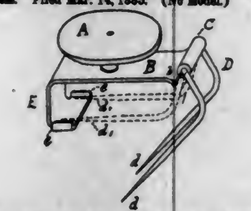
the condensed vapors in each condenser are collected separately, substantially as described.

9. In a distilling apparatus, the combination, with a series of distilling-chambers provided with level-gages and thermometers, of inflow-pipes connected to the bottom of said chambers and outflow-pipes connected to the upper portion thereof, pipes connecting the inner chambers with the rectifier and main condensing-chamber, the supplementary condensers attached to said chambers, and the receiving-tanks which collect the condensed vapors, substantially as described.

10. The combination of the vat X, the distilling-chambers, the rectifier *m*, the receiving-tanks, and means, as set forth, by which the liquor is returned to the vat X for further rectification.

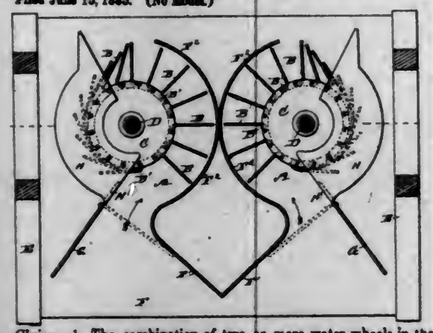
11. The combination of the pipes whereby oxygen is admitted into the apparatus and conducted to the rectifier, agitating devices in the rectifier, means whereby the descending fluid is exposed in a finely-divided state to the action of the oxidizing agent, and means, as described, whereby the temperature of the fluid is regulated, all substantially as described.

326,717. COMBINED BUTTON AND PIN. EUGENE M. CHAPMAN, Holyoke, Mass. Filed Mar. 14, 1885. (No model.)



Claim.—In a combined pin and button for clothing, the combination of the button A, plate B, bearing C, pin D, ears *b*, and lips *e e*, substantially as and for the purpose set forth.

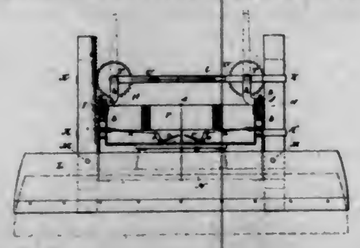
326,718. WATER-WHEEL. JOSEPH R. COLLINS, Grand Rapids, Mich. Filed June 15, 1885. (No model.)

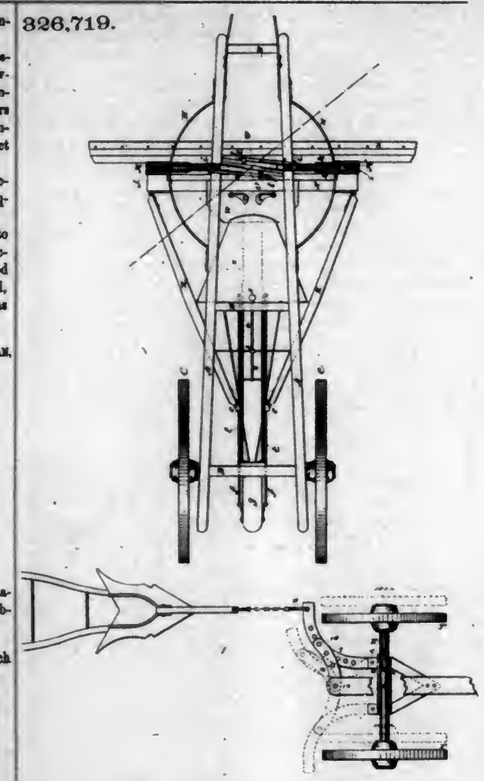


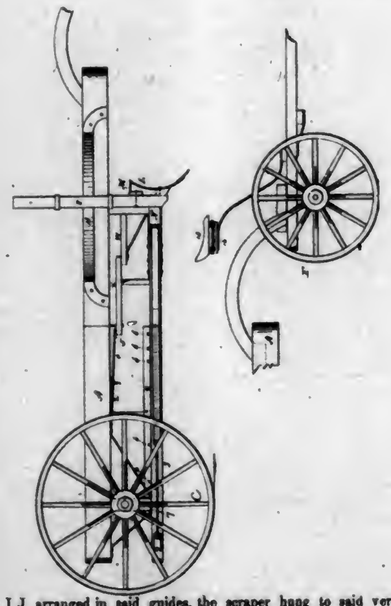
Claim.—1. The combination of two or more water-wheels in the same sluiceway, the annular partition F', the rim F², the gates G, the casing H, and the partition H', all arranged substantially as shown and described.

2. The combination of two or more water-wheels, each provided with the hinged buckets B, having the stops B', the hub C, having annular groove C', and the shaft D, in combination with the sluiceway F, the angular partition F', the encircling rims F², the gates G, the casings H, and the partitions H', substantially as shown and described.

326,719. ROAD-SCRAPER. MARCUS E. COOK, Wallingford, Conn. Filed June 25, 1885. (No model.)







Claim.—1. In a road-scraping apparatus, the frame-work A A, supported upon wheels and constructed with segment-shaped tracks H H, combined with the saddles *a a*, carrying guides K K, the vertical slides I J, arranged in said guides, the scraper hung to said vertical slides, and levers adapted to raise or lower the said slides and thereby adjust the elevation of the scraper, substantially as described.

2. In a road-scraper, the frame-work A, supported on wheels and provided with the segment-shaped tracks H, saddles *a*, arranged to travel upon said tracks, carrying guides diametrically opposite each other, vertical slides I J, arranged in said guides, the scraper L, pivoted to said slides, the said slides each constructed with a toothed rack, toothed wheels T, corresponding to said racks and hung upon said saddles, with levers adapted to engage said toothed wheels for the vertical adjustment of the scraper, substantially as described.

3. In a road-scraper, the frame-work A, supported on wheels and provided with the segment-shaped tracks H, saddles *a*, arranged to travel upon said tracks, carrying guides diametrically opposite each other, vertical slides I J, arranged in said guides, the scraper L, pivoted to said slides, the said slides each constructed with a toothed rack, bolts *m*, adapted to engage the teeth of the respective racks, and foot-levers in connection with said bolts, whereby the said bolts may be drawn from their engagement with the racks, substantially as described.

4. A frame-work supported upon wheels constructed with segment-shaped tracks H, saddles *a a*, arranged diametrically opposite each other on said segments, said saddles carrying anti-friction rolls *b* to travel upon said tracks, the said saddles also carrying guides K, vertical slides I J, arranged in said guides, scraper L, pivoted to said slides, and levers adapted to vertically adjust the said slides and scraper, substantially as described.

5. In a road-scraper, the combination of the frame-work arranged upon wheels, a transverse support carrying a scraper hung upon a pivot so as to rotate in a horizontal plane, braces R R, hung to said support and extending rearward, their rear end hung in sockets *e*, the said sockets arranged to slide on horizontal guides, substantially as described.

6. In a road-scraper, the combination of the frame-work arranged upon wheels, a transverse support carrying a scraper hung upon a pivot so as to rotate in a horizontal plane, braces R R, hung to said support and extending rearward, their rear end hung in sockets *e*, the said sockets arranged to slide on horizontal guides, with a locking-bar, *t*, adapted to engage the said socket at different positions, substantially as described.

7. In a road-scraper, the combination of the frame-work arranged upon wheels, the transverse support carrying a scraper hung upon a pivot so as to rotate in a horizontal plane, platform W, attached to said support and so as to rotate therewith, with the fixed platform X in rear of said platform W, substantially as described.

8. In a road-scraper, the frame-work hung upon a pair of wheels at the rear and a corresponding pair at the front, a scraper hung to the frame-work between the front and rear wheels and adapted for vertical adjustment and also for rotation in a horizontal plane so as to be set at varying angles to the path of movement of the wheels, the forward axle made adjustable longitudinally, whereby the path of the said wheels may be changed with relation to the path of the rear wheels and to the scraper, substantially as and for the purpose described.

9. In a road-scraper consisting of a frame-work hung upon two wheels at the rear and two wheels at the front, with the adjustable scraper between, the adjustable arm 9 and brace 12, attached to the forward axle, and the plow hung to said arm, substantially as and for the purpose described.

326,720. FARE REGISTER AND RECORDER. JOSEPH CORBETT, New York, assignor to the Railway Register Manufacturing Company, Buffalo, N. Y. Filed Sept. 1, 1883. (Model.)

Brief.—An improvement on the type of registers shown by Benton, Reissue No. 9,312; Ransom, Nos. 226,626 and 265,145, and Harris, No. 206,565. The recording-band serves as a second zero-indicator.

Claim.—1. The combination, with the inclosing-casing, of a hinged bottom provided with a locking-bolt, an upwardly-projecting rib near its rear edge fitted inside the back plate of the casing, and with interlocking connections with a hinged door of said casing at the front of the machine when said door is closed, substantially as described.

2. The combination, with the inclosing-casing, of a hinged bottom, a locking-bolt carried by said bottom, a hinged door, and a connection of said door to operate said locking-bolt when said door is closed, whereby the hinged bottom is locked by the closing movement of said door, substantially as described.

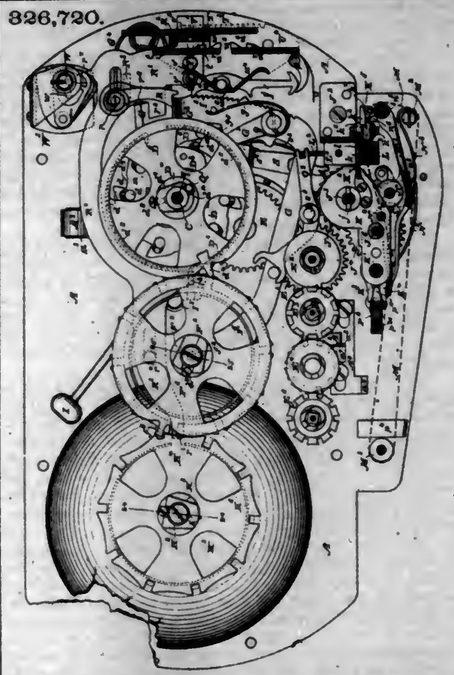
3. The hinged door of the casing provided with a spring-lock, and with a catch to retain the bolt of said lock when retracted, and said casing with a releasing projection by which the bolt of said lock is released on the closing of the door, so as to lock said door, substantially as described.

4. The combination, with the inclosed mechanism of a fare-register, of the register-casing having a hinged bottom and a hinged door, each of which is provided with an independent locking-bolt, so as to be independently locked to the casing, and an interlocking connection between the edges of said hinged portions when closed, substantially as described.

5. The combination of the casing provided with a hinged door and a hinged bottom, a bolt of said bottom, a spring-lock of said door, a catch to retain the bolt of said lock when retracted, and a releasing projection of said casing, whereby, on closing said door, the bolt of the hinged bottom is thrown into its locking position and the bolt of the lock of said door is released, so as to lock said door,

6. The combination, with the register-casing, of the hinged door, the lock of said door on the interior thereof, the hinged seal-cover carried by said door on its outer side to inclose a destructible seal which

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covers the key-hole of said lock, and said seal-cover being locked to the door by the same mechanism that locks said hinged door to said casing, substantially as described.

7. The combination of the casing having a hinged door permitting access thereto, the spring-lock of said door, a catch to retain the bolt of said lock when retracted, the releasing projection of said casing to release the bolt of said lock on the closing of the door, so as to lock said door, the seal-cover carried by said door to inclose a seal covering the key-hole of said spring-lock, and a locking portion of said seal-cover engaged by said bolt when in its locking position, substantially as described, whereby the closing of the door automatically locks it and the seal-cover carried by it.

8. The combination, with the open or slotted back plate of the register-casing and the suspension and locking hooks, of a slide-bolt engaging said locking-hook to lock the register in its stationary position, and a pivoted lever to operate said bolt, substantially as described.

9. The combination, with an open or slotted back plate of a register-casing, of a supporting and locking connection or connections, a locking device inclosed within said casing and engaging said locking connection to lock the register in position, and a door of said casing by which access is permitted to said locking device, engaging said locking device, on the closing of the door, to move said device to its locking position, substantially as described.

10. The register-casing provided with two or more skeleton frames in the front plate thereof, each of said frames being open at one edge for the insertion and removal of the panes of glass covering the openings in said casing, in combination with a detachable fastening-plate fitted in said casing between said frames and opposing the open edges thereof, whereby said panes are securely fastened in place to prevent unauthorized access to the casing by means of a single fastening-plate, while they may be readily removed and replaced on obtaining access to the interior of the casing, substantially as described.

11. The combination, with a non-rotating post projecting from the base-plate of the casing, of the main actuating-lever fitted at its inner end to turn about said post as an axis, a rigid detachable non-rotating sleeve fitted upon said post in front of said lever and acting thereon to keep said lever in position, and a detachable fastening between the front end of said sleeve and said post, substantially as described.

12. The combination, with a fixed post projecting from the base-plate of the register, of the main actuating-lever fitted at its inner end to turn about said post as an axis, a sleeve fitted upon said post in front of said lever, and detachable interlocking fastenings for said sleeve, whereby it is locked to said post, both as against endwise and turning movements.

13. The combination of a post projecting from the base-plate of the register, a detachable non-rotating bearing-sleeve fitted upon said post,

and a detachable fastening for said sleeve, whereby it may be readily removed, while securely locked in place on the post in use without rotation or endwise movement, substantially as described.

14. The combination, with a post projecting from the back plate of the register-casing, of a non-rotating detachable bearing-sleeve mounted on said post, fastening-connections between said post and sleeve, and a second sleeve carrying a register-wheel or disk mounted on said non-rotating bearing-sleeve so as to turn thereon in the counting operation of the register, substantially as described, whereby there is interposed between the post and the rotating wheel or disk a non-rotating bearing-sleeve which may be readily removed and replaced, while the wheel or disk mounted thereon is insured against being interfered with or moved by other parts of the machine mounted on said post.

15. The combination, with a post projecting from the back plate of the register-casing, of a detachable sleeve mounted thereon so as to be incapable of turning or endwise movements, and provided at its inner or lower end with an enlarged or tapered surface, and a second sleeve mounted upon said detachable sleeve so as turn around it, and provided at its inner or lower end with an enlarged or tapered mouth to fit said enlarged or tapered surface of the detachable sleeve, substantially as described.

16. The combination, with a post projecting from the back plate of the register-casing, of a non-rotating detachable bearing-sleeve mounted on said post, a locking-connection between said sleeve and said post which prevents turning or endwise movement of said sleeve in the operation of the machine, a rotatable sleeve carrying a register wheel or disk mounted so as to turn on said non-rotating sleeve in the counting process, and a locking-connection between said rotating and non-rotating sleeves which permits the one to turn on the other without endwise movement, substantially as described.

17. The combination, with a post projecting from the base-plate of the casing, of a bell mounted upon said post so as to rest against the shoulder of said post on one side, a non-rotating detachable bearing-sleeve also mounted on said post in front of said bell and bearing thereon to retain it against said shoulder, and a rotatable sleeve carrying a register wheel or disk mounted on said non-rotating sleeve as an axis, substantially as described, whereby space is economized, the bell firmly retained in position, and a fixed axis furnished to a rotating register-wheel, without danger of interference between said wheel and said bell.

18. The combination of a post projecting from the base-plate of the register, a perforated bell mounted on said post so as to rest against the shoulder thereof and be capable of turning on the post, and an adjustable interlocking connection between said post and said bell, substantially as described.

19. The combination of a post with a bell mounted thereon by an opening which permits the passage of the end of the post, said bell being provided with a series of holes concentric with said post to receive a pin projecting therefrom, whereby the bell is locked upon the post as against turning movement, while it may be readily disengaged from the locking-pin of the post to adjust it relatively to the bell-hammer.

20. The combination of a post, a bell mounted on said post having a series of holes, one of which is engaged by a pin or projection on said post so as to lock the bell and post together as against turning movements, and a detachable sleeve also mounted on said post to keep the bell in place while in operation, substantially as described.

21. The combination of a sleeve fitted to turn about a post or axis with a register disk or dial, by means of a sliding detachable interlocking connection between said sleeve and said disk or dial, substantially as described.

22. The combination of a sleeve fitted to turn about a post or axis having a tapered or beveled and undercut or dovetailed front end, with a register disk or dial having a correspondingly-shaped slot therein, whereby the dial is fitted upon the tapered end of the sleeve and locked thereon, so as to be readily removable by engaging the side walls of the slot in the disk with said undercut end of the sleeve, substantially as described.

23. The combination of a sleeve fitted to turn about a post or axis having a tapered or beveled and undercut or dovetailed front end, a register disk or dial having a correspondingly-shaped slot therein, whereby the dial is fitted upon the end of the sleeve and interlocked by a sliding movement with said undercut end of said sleeve, and a fastening to secure the disk and sleeve together in the interlocking contact, substantially as described.

24. In a registering apparatus, the combination of a disk or dial having the numerals or figures thereon arranged to lie at an angle to the radius of the disk, with another disk or dial having the numerals or figures thereof arranged radially thereon substantially as described, whereby large disks and large numerals or figures may be employed in small space, while the particular numerals or figures of the disks which are to show the count or tally may be brought close together vertically, so as to be plainly viewed through a comparatively small window in front of said disks.

25. The combination of two disks having numerals or figures thereon arranged to lie at an angle to a line drawn radially from the center of the disks with and overlapping a central disk, the figures of which are radial to the axis of the disk, whereby the numbers of the disks which are to show the count or tally may be brought close together and be inspected through a comparatively small window in front of said disks, substantially as described.

26. The combination of an actuating-wheel and a sleeve, both fitted to turn about a shaft or post, with a rocking driving connection or coupling between the two, whereby the wheel and sleeve may be connected together, so that the operation of the actuating-wheel operates or drives the sleeve or may be disconnected to permit the independent operation of said sleeve.

27. The combination of an actuating-wheel and a sleeve, both fitted to turn about a shaft or post, a rocking driving connection or coupling between the two by which they may be coupled together or disconnected, and a spring acting upon said rocking connection to normally couple said wheel and sleeve together, substantially as described.

28. The combination of an actuating-wheel and a sleeve carrying a register wheel or disk, both said actuating-wheel and said sleeve being fitted to turn about a shaft or post as an axis, and said post having a recessed front end, a rocking driving connection or coupling between said sleeve and actuating-wheel, a rod through which said driving-connection is operated, and a key having an end to fit the recess in the end of the shaft, and a bit to engage said rod by which the rocking connection is operated, substantially as described.

29. The combination of an actuating-wheel and a sleeve carrying a register-disk, both said actuating-wheel and said sleeve being mounted to turn about a shaft or post as an axis, with a rocking driving-connection between said wheel and sleeve and a key to operate said connection, said key being provided with a bit through which said connection is operated, and with a shoulder to engage said sleeve to lock the key and sleeve together.

30. The combination of a resetting-key provided with a locking or shouldered bit, with a sleeve which carries the trip-disk having a recess in which the shoulder of said bit fits to afford a firm connection between the key and sleeve, substantially as described.

31. The combination of the trip-register, the general register, the main actuating-lever, the driving-pawl of said lever engaging with the teeth of the main actuating-wheel to operate both said trip and said general registers step by step in the process of counting, the gearing between said actuating-wheel and said general register, a rocking lever-connection between said main actuating-wheel and said trip-register, and a key to operate said lever-connection, whereby, in the process of counting, the trip and general registers register concurrently, while the trip-register may be disconnected from the general register, so as to be turned or reset independently thereof.

32. The combination, with a feed-roller and an actuating ratchet-wheel to give motion to said feed-roller, of an actuating-lever to operate said feed-roller step by step by acting on said ratchet-wheel, and having the capacity of rocking and of moving endwise slightly on its pivot or fulcrum, substantially as described.

33. The combination, with a ratchet-wheel and a pivoted lever having a point or tooth engaging with said ratchet-wheel to operate it step by step, of a main actuating-lever operating said pivoted lever and connected therewith by rollers or surfaces on said main actuating-lever, between which said pivoted lever lies so as to be capable of movement between them, substantially as described.

34. The combination, with a trip-register, of a recording strip or band feeding mechanism, a punch relatively to which said strip or band is fed, an actuating-lever and pivotal connections between said lever and said register, and feeding mechanism and punch to operate the same at one stroke of the lever, so that for each actuation of said lever a count or tally is made on the register, the recording strip or device is fed to present a new surface to be punched, and said punch is operated to punch said strip or device, substantially as described.

35. The combination of a trip-register, a general register, an endwise-movable strip or band feeding mechanism, and a punch relatively to which said band-feeding mechanism moves, with operating-connections for operating said registers, feeding mechanism, and punch concurrently, substantially as described, whereby the general register shows in the aggregate all the fares registered, the trip-register registers the fares for each trip only, while a band or strip fed by said band-feeding mechanism also shows by a series of holes or perforations the fares registered, and constitutes a permanent record thereof.

36. The combination, with a punch, of a band or strip feeding mechanism having a concurrently-operated feed-roller and a feed-screw geared together and operated through the medium of a ratchet-wheel, whereby the screw feeds the band-feeding mechanism endwise, while the feed-roller imparts endwise movement to the recording band or strip carried by said band-feeding mechanism.

37. The combination, with a turning shaft provided with a ratchet-wheel through which the shaft is turned and with a lever to operate said ratchet-wheel, of a feed-roller mounted on said shaft so as to turn therewith while capable of endwise movement thereon, substantially as described.

38. The combination, with a turning-shaft, of a feed-roller mounted on said shaft so as to turn therewith while capable of endwise movement thereon, a frame in which said feed-roller is carried, a screw geared with said turning shaft, and threads on said frame meshing with said screw, so that the rotation of the screw feeds said frame endwise while the rotation of the feed-roller imparts endwise movement to the recording band or strip carried by said frame.

39. A band or strip feeding mechanism having a pivoted threaded jaw or jaws meshing with a feed-screw, whereby, when said jaws are closed upon the screw and the screw is turned, the band-feeding mechanism will be moved endwise, while when said jaws are open or released said endwise movement will cease.

40. The combination of an endwise-movable band or strip feeding mechanism with a feed-screw by means of pivoted spring-jaws having threads adapted to mesh with the threads of said screw when said jaws are closed against the force of their spring or springs, substantially as described.

41. The combination, with an endwise-movable band or strip feeding mechanism having pivoted jaws to mesh with a feed-screw, of a tongue or wedge to engage said jaws to close them upon the feed-screw, substantially as described.

42. The combination, with an endwise-movable band or strip feeding mechanism having pivoted jaws to mesh with the feed-screw, of a hinged door of a casing inclosing said mechanism, provided with a tongue to engage said jaws when the door is closed to close them upon said screw.

43. The combination, with an endwise-movable band or strip feeding mechanism having pivoted jaws to mesh with a feed-screw, of a hinged door of a casing inclosing said mechanism, provided with a jointed or pivoted tongue adapted to engage said jaws to close them upon the screw.

44. The combination, with an endwise-movable band or strip feeding mechanism having pivoted jaws to mesh with a feed-screw, of a tongue to engage said jaws to close them upon the feed-screw, said tongue having a recess by which said jaws are released from said screw, substantially as described.

45. The combination, with an endwise-movable band or strip feeding mechanism having pivoted jaws to mesh with the feed-screw, of a hinged door of the casing inclosing said mechanism, provided with a pivoted and spring-actuated tongue to engage said jaws to close them upon said feed-screw, substantially as described.

46. The combination, substantially as hereinbefore set forth, of an endwise-movable band or strip feeding mechanism, a rotatable feed-screw operating said mechanism, an operating-connection between said mechanism and said feed-screw, and a device which releases said mechanism from endwise movement when the limit of said movement is reached in the operation of the machine.

47. A band or strip feeding mechanism movable endwise transversely, or crosswise of the line of motion of the strip or band thereof, and having a guide or carrier through which the band or strip is fed lengthwise, in combination with a recording band or strip, and with a guide or guides for said feeding mechanism, and mechanism to move said feeding mechanism endwise transversely, or crosswise of the line of motion of the band or strip through its guide or carrier, substantially as described.

48. A band or strip feeding mechanism movable endwise transversely, or crosswise of the line of motion of the strip or band, and having a guide or carrier through which the band or strip is fed lengthwise, in combination with a recording band or strip, and with a guide or guides for said feeding mechanism, and mechanism operated concurrently with said feeding mechanism and by the same prime mover to move said feeding mechanism gradually crosswise of the line of motion of the strip or band, substantially as described.

49. The combination, with an endless recording band and guides or rollers around which it is stretched and fed, of a feeding mechanism for said band having a guide or carrier through which said band travels, said guide or carrier being fitted to move in guides crosswise or transversely to the line of the feeding motion of the said band in said carrier, and means for moving said guide or carrier transversely, substantially as described, whereby the band is fed continuously, and also moved edgewise or transversely, for the purpose described.

50. The combination, with a recording band or strip and guides or rollers therefor around which it is fed, and with feeding mechanism for said band or strip, having a guide or carrier through which the band or strip travels, and said guide or carrier being fitted to move crosswise or transversely to the line of the lengthwise feeding motion of said band or strip, and with means for moving said guide or carrier transversely, of a punch relatively to which said band or strip is fed both longitudinally and laterally, substantially as described.

51. The combination, with a recording strip or band and guides or rollers therefor around which it is fed, and with feeding mechanism for said band or strip, having a guide or carrier through which the band or strip travels, and said guide or carrier being fitted to move crosswise or transversely to the line of the lengthwise feeding motion of said band or strip, and with means for moving said guide or carrier transversely, of a punch relatively to which said strip is fed longitudinally and laterally, registering mechanism, an actuator or prime mover, and operating-connections between said actuator and said feeding mechanism, punch, and register, substantially as described, whereby the counting operations of the register are recorded on said strip or band by the action of the punch to constitute a record independent of that of said register of said counting operations.

52. In a strip or band feeding mechanism, a band guide or carrier having a spring jaw or member with a headed or shouldered end, by the movement of which the edge of the guide or carrier may be opened or closed to permit the insertion in or removal from said guide or carrier of a strip or band when open, and retain said strip or band in place when closed, substantially as described.

53. The endwise movable band or strip feeding mechanism having a band guide or carrier adapted to be opened and closed, substantially as described.

54. A band or strip feeding mechanism having a band guide or carrier to be opened and closed, with a hinged gate or frame connected with a member of said guide or carrier to positively open said carrier by the movement of said gate or frame, substantially as described.

55. A band or strip feeding mechanism having a band guide or carrier to be opened and closed, with a hinged gate or frame connected with a member of said guide to positively open it, and a locking device to lock said gate or frame with the band-guide open, substantially as described.

56. The combination, with a band or strip feeding mechanism having a band guide or carrier adapted to open and close and two feed-rollers, one of which is adjustable toward and from the other, so as to make or break feeding-contact with a band or strip, of locking mechanism acting to lock said rollers in feeding-contact in the operation of the machine and to lock or hold them apart when separated from said feeding-contact, and also to lock the band guide or carrier in its open position when the band or strip is to be removed or replaced and said feed-rollers consequently separated, substantially as described.

57. In a band or strip feeding mechanism, the combination of an endwise but not laterally movable roller with a secondary roller movable both endwise and laterally, substantially as described.

58. In a band or strip feeding mechanism, the combination of an endwise but not laterally movable roller carried by an endwise-movable frame with a secondary feed-roller mounted in a pivoted gate or frame so as to be moved endwise therein in unison with the main feed-roller when the two are in feeding-contact, substantially as described, whereby, on closing said gate or frame, the secondary roller will be brought into feeding-contact with the main feed-roller and be also carried within the endwise-movable frame of said roller, so as to be moved therewith, while, when said gate or frame of the secondary roller is opened, the rollers will be separated to permit of the insertion or withdrawal of a recording band or strip.

59. In a band or strip feeding mechanism, the combination of two feed-rollers movable endwise in feeding-contact with a band or strip between them, with mechanism for imparting a revolving and endwise movement to said rollers, substantially as described.

60. The combination, with feeding mechanism having two feed-rollers and an actuator or prime mover to operate said rollers intermittingly step by step, of an endless recording-band fed by and between said rollers, and guides independent of said feed-rollers over which said band is stretched and around which it travels continuously by the feeding action of said rollers, substantially as described.

61. The combination, with feeding mechanism having two feed-rollers, of an endless recording-band fed by and between said rollers, guides independent of said feed-rollers over which said band is stretched and around which it travels continuously by the feeding action of said rollers, and a punch relatively to which one side of said band is fed to be successively punched, substantially as described.

62. The combination, with endwise-movable band or strip feeding mechanism having a band guide or carrier capable of being opened, of mechanism which prevents the opening of said guide or carrier and the removal of the band or strip prior to the return of the said feeding mechanism to its starting-point, substantially as described.

63. The combination, with an endwise-movable band or strip feeding mechanism, of the hinged gate or frame which must be opened to permit of the insertion or removal of a recording band or strip, with connection between said feeding mechanism and said gate or frame which necessitates the adjustment of the feeding mechanism to its starting position prior to the opening of said frame, substantially as described, whereby the starting of the feed mechanism from the proper point, when a fresh band or strip has been inserted therein, is insured.

64. The combination, with a band or strip feeding mechanism having two feed-rollers between which the band or strip is fed, and a ratchet-wheel to operate said rollers, of two independent devices for operating said ratchet-wheel, substantially as described.

65. The combination, with a strip or band feeding mechanism, of two independent devices for operating said feeding mechanism, a trip-register, an actuator to actuate said trip-register in the counting process, and a resetting mechanism to reset said trip-register to zero or the starting-point, said actuator operating the feed mechanism through one of

said independent devices, and the resetting mechanism of the trip-register operating said feeding mechanism through the other of said devices, substantially as described.

66. The combination, with a band or strip feeding mechanism, of a spacing slide or device to actuate said mechanism and mechanism to operate said spacing-slide, substantially as described.

67. The combination of a trip-register, a band or strip feeding mechanism, a punch, an actuator for operating said trip-register, feeding mechanism, and punch, and an independent device or spacing-slide operated to move said feeding mechanism independently of said actuator and punch, substantially as described.

68. The endwise and laterally movable spacing-slide and mechanism to operate it, in combination with a band or strip feeding mechanism, substantially as described.

69. The combination of the endwise and laterally movable spacing-slide, the trip-register, and the band or strip feeding mechanism, whereby when said trip-register is reset, said spacing-slide is operated to move said feeding mechanism to form a division-space between the recording perforations in the band or strip, while successive rotations, prior to reaching the zero or starting point, do not affect said slide, which is operated but once to form a blank space on the band for each resetting movement of the trip-register.

70. The combination, with a band or strip feeding mechanism, of a trip-register, an actuating-lever for said trip-register and said feeding mechanism, a resetting mechanism to reset said trip-register to the zero or starting point, and the spacing-slide operated by said resetting mechanism when the trip-register is being reset so as to move said feeding mechanism, and retracted by said actuating-lever after the resetting operation has been completed by the first counting actuation of said actuating-lever, substantially as described.

71. The combination, with a trip-register adapted to be set to the zero or starting point independently of the main actuator thereof, of a zero-stop mechanism to stop said trip-register at zero when being reset, a pawl which prevents said register being reset save in one direction, and a connection between said zero-stop and said pawl, whereby the retraction of said zero-stop to permit of the counting operation of the machine also releases the said pawl to permit the trip-register to be turned in a forward or counting direction, substantially as described.

72. A progressive zero-stop, substantially as described, whereby the disks or wheels of the trip-register are successively locked with their zero-points opposite their window or windows.

73. In combination with two or more wheels or disks of a trip-register provided with notched or recessed carrying devices, a progressive zero-stop which successively locks said wheels or disks by engaging said notches or recesses with their zero-points opposite their window or windows, substantially as described.

74. In combination with a trip disk or wheel and resetting mechanism therefor, a sliding zero-stop to stop said disk or wheel at zero when being reset.

75. The combination, with the notched or recessed wheels or disks of the trip-register, of the sliding zero-stop having locking portions or lugs which successively enter the notches in the several disk-carrying devices, substantially as described.

76. In combination with a trip-register, a zero-stop having a lug or projection thereon, and mechanism to act on said projection to retract said zero-stop from engagement with said register, substantially as described.

77. In combination with a trip-register, a zero-stop having a lug or projection thereon by which to retract it from engagement with said register, and another lug or projection by which said zero-stop may be partially retracted independently of the first-mentioned lug, substantially as described.

78. In combination, a trip-register with a retractible zero-stop and a main actuator-locking mechanism connected so as to be movable together, substantially as described, whereby, when said zero-stop is released to act upon the register when being reset, the main actuator by which said trip-register is operated in the counting process is locked from a counting movement, while when said zero-stop is retracted said main actuator is released.

79. In combination with a trip-register, a sliding zero-stop connected with a main actuator-locking mechanism, substantially as described, whereby, when said sliding zero-stop is retracted, the main actuator is released and may be operated in the counting process.

80. In combination with a trip-register and its main actuator which operates it in the counting process, a main actuator-locking mechanism having a lug or projection, and a rotary portion of a lock acting on said projection to retract said locking mechanism, substantially as described.

81. The combination, with a trip-register adapted to be reset by a key, of a direction-indicator having a key-hole for the passage of the key to said register.

82. The combination, with a trip-register adapted to be reset by a key passing through the casing of said register, of a movable direction-indicator having a key-hole therein for the passage of the resetting-key to the trip-register, whereby the trip-register cannot be reset until said key-hole of the direction-indicator is in line with that in the casing, substantially as described.

83. A rectilinearly-sliding direction-indicator having a rack thereon, in combination with a pinion meshing with said rack to shift the indicator, substantially as described.

84. A movable direction-indicator in combination with and controlling the operations of the zero-stop, substantially as described.

85. The combination of a trip-register, a zero-stop therefor, a device limiting the resetting movement of the trip-register to one direction, and a direction-indicator controlling the movements of said zero-stop and said device, substantially as described.

86. A direction-indicator provided with inclined or cam faces, in combination with a zero-stop having a projection or lug acted on by said inclined or cam faces of the indicator, substantially as described.

87. The combination, with the main actuator of the machine, of a locking device or bolt for said actuator, a direction-indicator, and a connection between said locking-bolt and said indicator by which the locking device is controlled—that is, thrown both into and out of locking connection relatively to said actuator by the movement of said indicator—substantially as described.

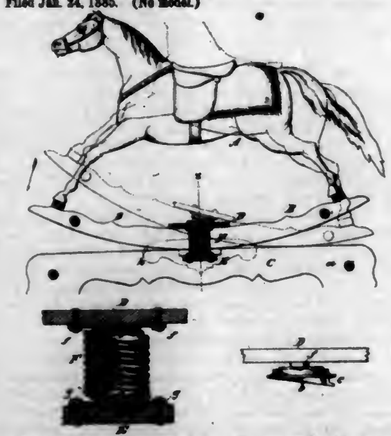
88. The combination of a direction-indicator and a locking mechanism for the main actuating-lever of the machine, controlled by said indicator, with a lock adapted to retract said locking mechanism when only partially released by the indicator, substantially as described.

89. The combination, with a direction-indicator having a notched or toothed flange, of a locking device of the main actuator, having a tooth to engage said notched flange when said locking device is partially released by a partial movement of said indicator, and a lock a rotary portion of which acts upon said locking device to retract it and permit the indicator to be moved back to the position it previously occupied, substantially as described.

90. The combination of a trip-register, the direction-indicator, an actuator of the trip-register, the zero-stop slide, a locking device of the main actuator, the connections between said indicator and said zero-stop slide and said actuator-locking device, and a lock also capable of acting on said zero-stop slide and said locking device when only a partial movement of the indicator is effected, substantially as described.

91. The combination, with the casing having a window through which inspection may be had, of a trip-register, a direction-indicator opposite said window, said indicator and said casing having holes therein for the passage of a resetting-key to said trip-register, a device for shifting said indicator a portion only of its movement to bring said key-holes in line to permit of a resetting operation by said resetting-key, a zero-stop controlled by the movements of said indicator so that it will act upon the trip-register when in condition for a resetting operation, and a device, also controlled by said indicator, for limiting the resetting movement of the trip-register to a backward direction, substantially as described.

326,721. ROCKING-HORSE. WILLIAM E. CRANDALL, New York, N. Y. Filed Jan. 24, 1885. (No model.)



Claim.—The combination of the coiled spring F with the spirally-threaded circular plate *b*, plate *f*, spirally-threaded circular plate *d*, plate *g*, and cross-bars D E, substantially as herein shown and described.

326,722. FIELD FENCE-MAKING MACHINE. SAMUEL B. CROSS, Wellington, Kans. Filed July 7, 1884. (No model.)

Claim.—1. In a fence-making apparatus, a movable carriage, parts of a fence-making apparatus mounted thereon, and a spacing-lever pivoted upon the movable carriage, and operating, when forced against a picket, to cause the movable carriage to travel the distance required for the insertion of a picket, combined and adapted to serve with supporting posts or reels and with wires stretched between, as set forth.

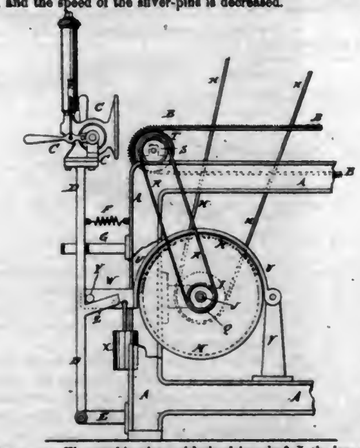
2. The combination, with wires 1 2 and their sustaining posts or reels, of a movable carriage, A, the frame-work B, the shuttle-spindles D D′ and their actuating-gears mounted on said carriage, and the spacing-lever pivoted on the carriage, and operated when forced against a picket to cause the carriage to move the distance designated for the insertion of a picket, substantially as set forth.

326,722.



326,723. FEED-REGULATOR FOR HEMP DRAWING AND SPINNING MACHINES. GEORGE DAVIS, Elizabeth, N. J. Filed Dec. 3, 1884. (No model.)

Brief.—The condenser-standard is provided with an inclined arm, whereon rests a pin projecting from the end of the pivoted brake-strap which bears on the shell of a differential wheel. When the standard is forced over by the thickened sliver, the brake-strap is lifted, the shell revolves, and the speed of the sliver-pins is decreased.

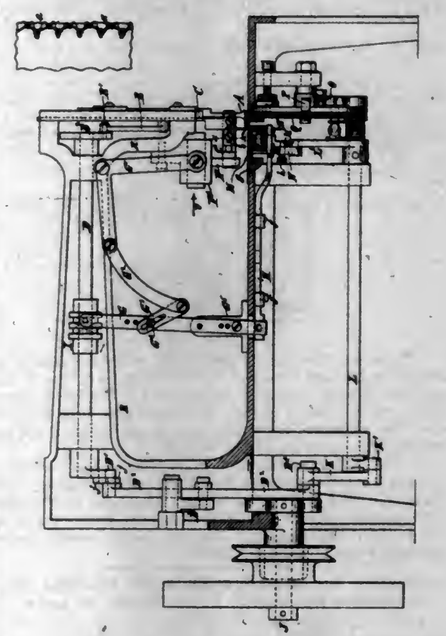


Claim.—1. The combination, with the drive-shaft J, the loose brake-shell N, the gear-wheel K, fixed to the drive-shaft, the loose gear L, the pulley Q, connected therewith, and the gears G P, connecting said gears K L, of the condenser-standard, the inclined arm Z thereon, and the pivoted brake-strap U, having a pin, Y, resting on the said inclined arm, substantially as set forth.

2. The combination, with the condenser-standard D and the inclined arm W thereon, of a brake-wheel, a drive-shaft therefor, a pivoted brake-strap, and a pin on the brake-strap resting on the said inclined arm, substantially as set forth.

3. The combination, with the condenser-standard D and the inclined arm Z thereon, of the drive-shaft J, the brake-wheel M, the brake-strap U, having a horizontally-projecting arm, W, provided with a series of apertures, and a pin, Y, and the weight X, substantially as set forth.

326,724. SEWING-MACHINE. CHARLES M. DEWEY, Jersey City, N. J. Filed Dec. 27, 1884. (No model.)



Claim.—1. In a sewing-machine, the combination of a needle-bar having reciprocating motions vertically and horizontally, a shuttle-carrier having a reciprocating motion corresponding to the horizontal reciprocating motion of the needle-bar, a lever for imparting the horizontal reciprocating motion to the needle-bar, a frame for imparting the horizontal reciprocating motion to the shuttle-carrier, and a lever with which said frame and the first-mentioned lever for imparting the horizontal motion to the needle-bar are connected to receive motion therefrom, substantially as specified.

2. In a sewing-machine, the combination of the needle-bar composed of two sections, C C′, the slide F′, having a horizontal motion only, the arm F, forming a connection between the slide F′ and the section C′, the lever G, a connection between the lever and the slide F′, a shaft, D, and a connection between the shaft and the section C of the needle-bar, substantially as specified.

3. In a sewing-machine, the combination of the needle-bar composed of two sections, C C′, the slide F′, the standard G^4, upon which a lever, G, is fulcrumed, said lever being vertically adjustable relatively to said fulcrum, a shuttle-race, the frame H, connected to the lever G and the shuttle-race, a shaft, D, and a connection between the shaft and the section C of the needle-bar, substantially as specified.

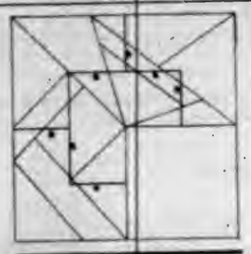
4. In a sewing-machine, the combination of the needle-bar composed of two sections, C C′, the slide F′, the lever G, the lever G′, the link G^3, the arm G^2, having an adjustable connection with the lever G, the shaft D, and a connection between the shaft and the section C of the needle-bar, substantially as specified.

5. In a sewing-machine, the combination of the needle-bar composed of two sections, C C′, the slide F′, the lever G, a connection between the lever and the slide, a shaft, D, and a connection between the shaft and the section C of the needle bar, a shuttle-race, and the frame H, connected to the lever G and the shuttle-race.

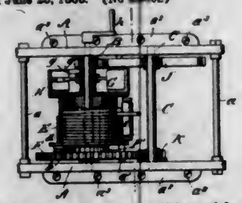
326,725. PUZZLE. CHARLES M. DEWEY, Jersey City, N. J. Filed Feb. 27, 1885. (No model.)

Claim.—A puzzle consisting of a square piece and a number of pieces, which may be put together to form a large L-shaped portion, and are so marked with lines that when properly put together four small L-shaped diagrams will be delineated on them, substantially as specified.

326,725.



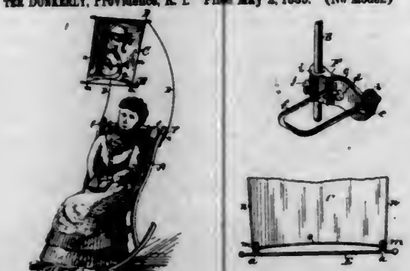
326,726. FIRE-ESCAPE. JOHN DITTRICK, Smith's Falls, Ontario, Canada. Filed June 25, 1885. (No model.)



Claim.—1. The drum D, provided with pawl *b*, and attached to shaft B, the fan G and gear-wheel F, placed loosely on the shaft B, the gear-wheel F being provided with the ratchet F', the fan with gear-wheel *g'*, in combination with the shaft C and gear-wheels K J, secured thereon, meshing, respectively, with the gear-wheels F and *g'*, substantially as and for the purposes set forth.

2. The combination, with the supporting-frame A and the drum D, journaled therein, and adapted to have the rope E wound thereon, of the frame L, pivoted to the frame and having a forked upper end, the roller *i*, journaled in the forks of the said frame, and the spring *j*, having its ends attached to the supporting-frame and to the roller-carrying frame, substantially as herein shown and described.

326,727. FAN ATTACHMENT FOR ROCKING FURNITURE. WALTER DUNKERLY, Providence, R. I. Filed May 2, 1885. (No model.)



Claim.—1. The combination, with a rocking article of furniture, of the flexible automatic fan secured to the said article of furniture and having its upper end outspread, while at its lower end the corners of the fan are brought nearer together and a bar-weight secured to the corners of the loose lower edge of the fan, substantially as described.

2. The combination of the weighted flexible fan C, the standards B B, attaching plates *c*, provided with the slots *d* and *e*, and the perforated enlargement *i*, adapted to hold the standard B, and the screw-strap *f*, adapted to enter the slots of the plate *c*, substantially as described.

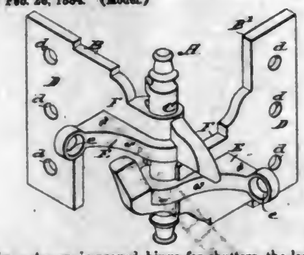
326,728. CUSHION FOR THE FEET. JOHN J. GEORGES, Washington, D. C. Filed June 17, 1885. (No model.)



Claim.—1. The combination, with a shoe, of a cushion or pad having a suitable filling of soft material, and a tongue or extension formed integral therewith, whereby the said cushion may be attached to a shoe by suitable means, substantially as described.

2. As an article of manufacture, the herein-described cushion or pad, constructed with a raised portion at its center, having a filling of suitable soft material and gradually tapering off at its ends, and a divided securing-strap of suitable material holding the ends of said cushions in place, whereby the same is adapted to be applied to any part of the foot, to strengthen and overcome deformities in the same, substantially as described.

326,729. BLIND-HINGE. RICHARD GIESELIN, Webster Groves, Mo. Filed Feb. 26, 1884. (Model.)



Claim.—As an improved hinge for shutters, the leaves B and B', provided with the outer perforated ends, D D, and also provided with the inclined ribs E E, having perforations *e*, the horizontal faces a^3 of which extend at right angles to the portions D D and form braces and re-enforcements therefor, in combination with the pintle C, substantially as set forth.

326,730. FURNITURE. HENRY L. GOODWIN, New York, N. Y. Filed July 22, 1885. (No model.)



Claim.—1. The combination, with the frame of a piece of furniture, of plugs or blocks attached thereto and adapted to receive pins for securing pillow-shams, tidies, &c., in their usual positions to said frame, substantially as herein set forth.

2. The combination, with the back-frame of a piece of furniture—such as a bedstead, sofa, or chair—of plugs or blocks made of softer material than the back-frame, and attached to the frame and adapted to receive pins for securing pillow-shams or tidies to the furniture, substantially as herein set forth.

3. The combination, with the back and arm frames of a piece of furniture—such as a sofa or chair—of plugs or blocks made of softer material than the back and arm frames, and attached thereto and adapted to receive pins for securing tidies to said back and arm frames, substantially as herein set forth.

326,731. LOCOMOTIVE ASH-PAN. JAMES GRAHAM, Detroit, Mich. Filed June 25, 1885. (No model.)



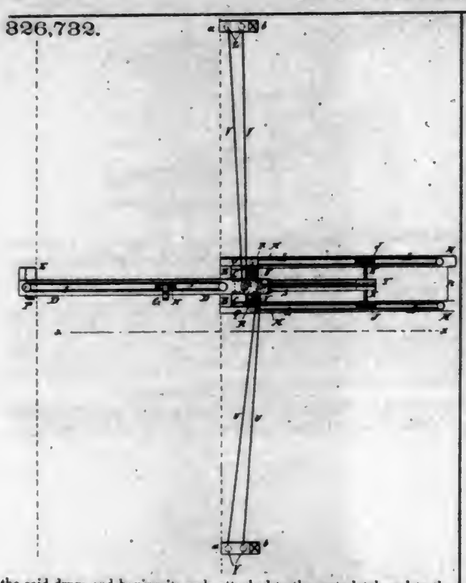
Claim.—1. A locomotive ash-pan constructed with oblique longitudinal sides and rectangular vertical ends having slideways for the bottom, in combination with a sliding bottom longitudinally divided into two parts and the working device for sliding the same, all substantially as described, and for the purpose specified.

2. A locomotive ash-pan constructed with oblique longitudinal sides, reducing the bottom about one-half or less in width than the top, in combination with a sliding bottom longitudinally divided into two parts along the center and the working device for sliding the same, all substantially as described, and for the purposes set forth.

326,732. GATE. SAMUEL C. GRIDLEY, Nordhoff, Cal. Filed Mar. 27, 1885. (No model.)

Claim.—1. In a gate, the gate-posts B B E, the posts *b b*, arranged at the side of the roadway, the short post N, in rear of the posts B, the horizontal bars D M, extending between the posts B E and B N, respectively, and having tracks I L, the gate A, provided with the upright post F, attached to the forward end of the same and carrying the roller G in its upper end, the shaft K, journaled in the rear part of the gate and carrying the rollers J, the drum R S, journaled in supports projecting from the posts B, the cord T, passed around the central portion of

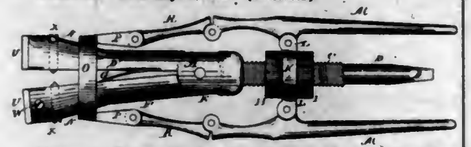
326,732.



the said drum and having its ends attached to the gate-latch and to the rear portion of the gate, and the cords U V, secured to the end portions of the drum and passed over pulleys W X in the bar D and the pulleys Y Z in the posts *b*, substantially as described.

2. The combination, with the gate A, provided with the roller H at its forward end and the rollers J at its rear end, the gate-posts B E, the side posts, *b*, the short post N, and the tracks I L, connecting the posts E N with the posts B, of the drum R S, journaled in supports attached to the posts B, the pulleys W X on a support projecting from the posts B, the pulleys Y Z on the posts *b*, and the cords U U V V, secured to the said drum and passing over the said pulleys, two cords being attached to the drum on each side of the gate, substantially as herein shown and described.

326,733. SCREW-THREAD-CUTTING TOOL. JOHN GUEDEL, Canal Dover, Ohio. Filed May 21, 1885. (No model.)



Claim.—1. The combination of a rigid jaw and a pivoted jaw having the dovetailed mortises in their enlarged heads with the thread-cutting dies U, inserted in the mortises, the set-screws for clamping the dies in the mortises, the set-screws X, for regulating the movement of the jaws, and means for clamping the jaws together, substantially as described.

2. The combination of the spindle having the rigid jaw and the pivoted jaw, the thread-cutting dies secured in the heads of the jaws, said jaws being provided with the incline N, the levers M, fulcrumed to the spindle, the collar O, working on the inclines N, and the levers R, connecting the collar O with the levers M, substantially as described.

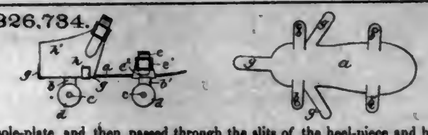
3. The combination of the threaded spindle C, having the rigid head or jaw and the pivoted jaw, said jaws being provided with the inclines N, the thread-cutting dies adapted to be secured in the heads of the jaws, the thumb-nuts H and I on the threaded spindle, the sliding collar K on the spindle between the nuts H and I, the levers M, fulcrumed to the collar K, the collar O, working on the inclines N, and the levers R, connecting the collar O with the levers M, substantially as described.

4. The combination, with the pivoted jaw and the rigid jaw having the dovetailed grooves S, provided with recesses T, of the thread-cutting dies U, having the ribs V engaging with recesses T, and set-screws for clamping the dies in place, substantially as described.

326,734. ROLLER-SKATE. DANIEL A. HARRIS, Boston, Mass. Filed Mar. 23, 1885. (No model.)

Claim.—1. In a skate, the combination of a sole-plate provided with projections at its heel portion with a heel-piece having slits, the said projections being bent upward substantially at right angles to the

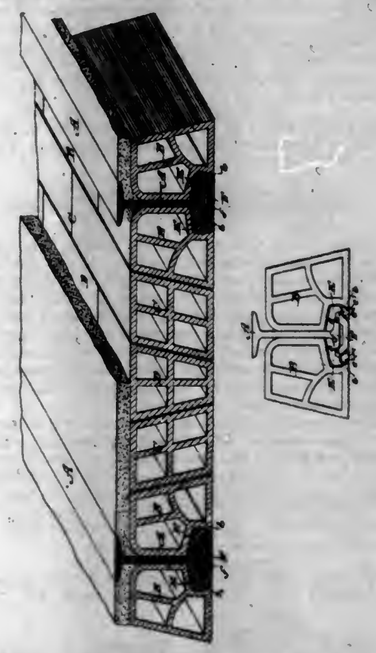
326,734.



sole-plate, and then passed through the slits of the heel-piece and bent downward, and thus fastening the said heel-piece to the sole-plate, substantially as described.

2. A roller-skate composed of a metal blank provided with projections a portion of which are bent downward and a portion bent upward, combined with roller-axles connected with the downwardly-bent projections, a toe-strap provided with slits engaged by the downward projections at the toe portion of the skate, and a heel-piece provided with slits engaged and fastened to the sole-plate by the upwardly-bent projections, which are passed through the said slits, and then bent downward upon the material of the heel-piece below the slits, substantially as described.

326,735. FIRE-PROOF FLOOR. WILLIAM W. HASLETT, Toronto, Ohio. Filed June 13, 1885. (No model.)



Claim.—1. A protection for the lower parts of the iron beams of fire-proof floors, comprising opposite tiles E E, having upper parts, *e*, over the beam-flanges, and pendent side portions, *e'*, and the tiles F, supported below the beam by the parts *e' e'* of opposite tiles E E, substantially as herein set forth.

2. A protection for the lower parts of the iron beams of fire-proof floors, comprising opposite tiles E E, having upper parts, *e*, over the beam-flanges, and pendent side portions, *e'*, and the tiles F, supported below the beam by the parts *e' e'* of opposite tiles E E, and said tiles F having concavities in their upper faces forming an air-space, as at *f*, between them and the beam, substantially as herein set forth.

3. In fire-proof floors, the combination, with beams having lower flanges and tile arches set between the beams, of a beam-protection comprising flange-cover tiles E E, formed with upper parts, *e e*, pendent side parts, *e' e'*, and tiles F, supported below the beams by parts *e' e'* of tiles E, substantially as herein set forth.

4. In fire-proof floors, the combination, with beams having lower flanges and tile arches set between the beams, of a beam-protection comprising flange-cover tiles E, formed with upper parts, *e*, pendent side parts, *e'*, and tiles F, supported below the beams by parts *e'*, of tiles E, and said tiles F having concaved upper faces forming an air-space, as at *f*, below the beams, substantially as herein set forth.

5. In fire-proof floors, the combination, with beams A A, having flanges *a a*, and the tile arch B C D, of the protection-tiles E E F and said arch-tiles B B, having lips *b* under the flange-cover tiles E E, substantially as herein set forth.

326,736. PENCIL OR CRAYON HOLDER. JOSEPH HOFFMAN, New York, N. Y., assignor to Gustavus A. Goldsmith, same place. Filed Mar. 12, 1885. (No model.)



Claim.—1. The combination, in a lead or crayon holder, of the clamping case or sheath, the expanding jaws longitudinally movable relatively to the case or sheath, and tapered or provided with inclines acted on by the case or sheath to produce the closing of the jaws, a lead-containing tube or receiver placed within the case or sheath, supplemental jaws placed in line with the lead-receiving tube, and adapted to receive and hold the lead or crayon against the action of gravity and capable of limited longitudinal movement when unconfined by the expanding jaws, a bolt or hammer adapted to move freely within the lead-containing tube, and a spring adapted to automatically move the case or sheath relatively to the expanding jaws longitudinally, substantially as and for the purposes set forth.

2. The combination, in a lead or crayon holder provided with clamping devices for holding the lead against pressure upon its point, and an internal lead-containing space, of a bolt or hammer placed in line with a lead-containing tube, said bolt or hammer adapted to move freely in the lead-containing tube longitudinally, whereby the lead may be driven between the jaws which hold it against the action of gravity, and clamping mechanism, which holds the lead against pressure upon its point, substantially as and for the purposes set forth.

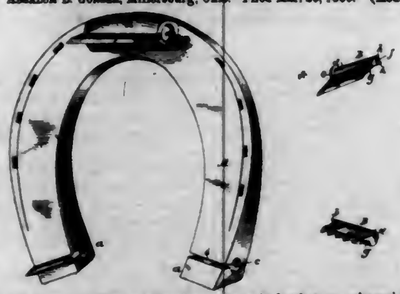
326,737. PENCIL OR CRAYON HOLDER. JOSEPH HOFFMAN, New York, N. Y., assignor to Gustavus A. Goldsmith, same place. Filed Mar. 12, 1885. (No model.)



Claim.—1. The combination, in a lead or crayon holder, of a case or sheath, expanding jaws tapered or provided with projections acted on by the case or sheath to produce the closing of the jaws, and provided with an extension beyond the end of the case opposite the jaws, whereby the jaws may be pressed outwardly from the case, a spring which automatically moves the jaws relative to the case longitudinally, and a lead-holding device provided with a stop or stops to limit its movement inwardly and outwardly, placed between the jaws and retained in place by them both in its extended and retracted position, substantially as and for the purposes set forth.

2. The combination, in a lead or crayon holder, of a case or sheath, expanding jaws acted on by the case or sheath to produce the closing of the jaws and provided with an extension beyond the end of the case opposite the jaws, whereby the jaws may be pressed outwardly from the case, a spring which automatically moves the jaws relative to the case longitudinally, and a lead-holding device placed between the jaws and retained in place by them, both in its extended and retracted position, substantially as and for the purposes set forth.

326,738. HORSESHOE. JACOB HOLLINGER, DAVID A. WOLGAMOT, and ABSALOM E. GOSSER, Millersburg, Ohio. Filed Mar. 25, 1885. (Model.)



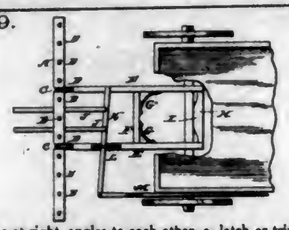
Claim.—1. The combination of the calk having an enlarged base headed on one end and notched on the opposite end and the shoe having a transverse calk-socket, substantially as set forth.

2. The combination of the calk having a straight blade and an enlarged base headed on one end and notched on the opposite end, and a shoe having a socket in which the base of the calk is seated, and a slot extending from the socket to the under side of the shoe in which a portion of the calk-blade is seated, substantially as set forth.

326,739. STALK-RAKE. WILSON HOLLINGSWORTH and NEWTON HOLLINGSWORTH, Hemlock, Ind. Filed Sept. 12, 1884. (No model.)

Claim.—1. In a revolving stalk-rake, the combination of a frame composed of suitably-connected side beams, the rake-head journaled in stirrups at the rear end of the same, and provided with the transverse teeth

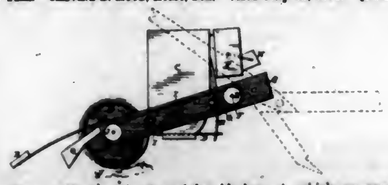
326,739.



and trip-arms at right angles to each other, a latch or trip mechanism, and a cross-beam connecting the front ends of the frame-beams, and having a central convex or rounded portion upon its rear side, substantially as and for the purpose set forth.

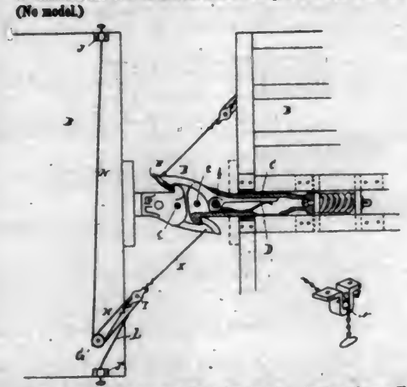
2. The combination of the frame, the revolving rake-head having the teeth and trip-arms, as described, the cross-beam having a convex rounded rear portion, and the trip-lever pivoted to one of the side beams of the frame, and having a pivoted handle, a staple, and a spring, substantially as and for the purpose set forth.

326,740. COMBINED SEED-PLANTER AND GUANO-DISTRIBUTER. CALVINE B. HOOD, Kouse, Tex. Filed July 13, 1885. (No model.)



Claim.—The combination of the side bars, A, which are secured to a plow or cultivator, the operating-wheel B, the seed-box C, the belt or chain I, the cam G, and the spring-actuated slide, with the cranks, the connecting-rod N, and the guano-box P, substantially as shown and described.

326,741. CAR-COUPLING. EDWARD HOWE, Detroit, Mich., assignor of three-fourths to Martin Scholl, Jr., same place. Filed June 25, 1885. (No model.)



Claim.—1. In a car-coupling, the head A, having flange F, and the coupler-bar B, provided with the hook E, combined with the pulley G, sheave I, and cables H K L, and stirrups J J', all arranged and operating substantially in the manner and for the purposes specified.

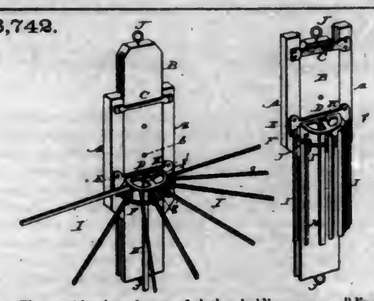
2. In a car-coupler, the combination of the head A, coupler-bar B, provided with the hook E, spring D, flange F, pulley G, sheave I, cables H, K, and L, and stirrups J J', provided with the gravity-dogs N, all combined and operating substantially in the manner and for the purposes specified.

326,742. CLOTHES-DRIER. ANTHONY ISEE, Lancaster, Pa., assignor to Frank A. Diffenderffer and John J. Cochran, same place. Filed Oct. 24, 1884. (No model.)

Claim.—1. The combination of a vertically-sliding frame with a set of clothes-holding arms carried thereby, a stationary body or support, and a detachable lever for raising, lowering, and supporting said frame, substantially as set forth.

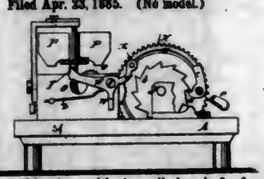
2. The combination of a sliding frame and clothes-holding arms carried thereby with a lever for raising and lowering said frame and arms provided with a tooth and a body or support provided with a vertical series of recesses adapted to receive said tooth, substantially as set forth.

326,742.



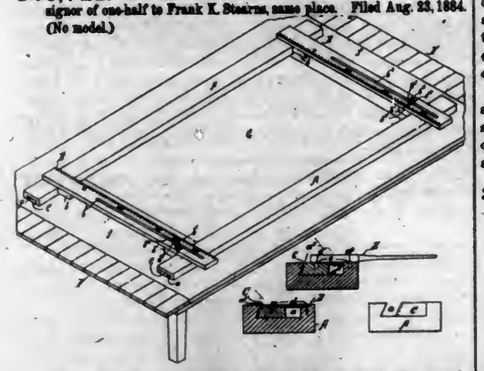
3. The combination of a set of clothes-holding arms, a sliding frame which carries them, and a slotted piece attached to said frame with a lever having a hook on its end adapted to engage with the slot of said attachment to raise and lower said frame, or to be removed therefrom at will, substantially as set forth.

326,743. SAFETY-CHECK FOR MUSIC-BOXES. C. HENRY JACOT, Hoboken, N. J. Filed Apr. 23, 1885. (No model.)



Claim.—The combination, with the cylinder-shaft of a music box, of a ratchet-wheel, *b*, and a double pawl, *c d*, having a weighted arm, substantially as herein shown and described, whereby the said shaft will be stopped and held should its speed be unduly increased, as set forth.

326,744. IRONING-TABLE. FRANK A. JOHNSON, Lowell, Mass., assignor of one-half to Frank K. Stearns, same place. Filed Aug. 23, 1884. (No model.)



Claim.—1. The combination of the side rail provided with a longitudinal groove, the clamping-bar placed within said groove, and the links each pivoted at one end to said rail and at the other end to said bar, as and for the purpose specified.

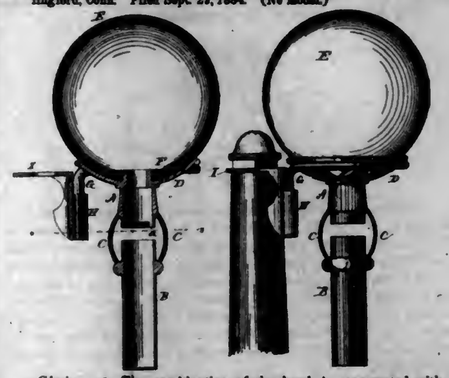
2. The combination of the side rail provided with a longitudinal groove, the clamping-bar placed within said groove, and the links each pivoted at one end within a notch formed in said side rail and at the other end in a notch formed in said clamping-bar, said notches each having a side at right angles to the piece in which they are formed adapted to be struck by and to stop the link placed within it when the clamp formed by said side rail, links, and clamping-bar is closed, as and for the purpose specified.

3. The combination of the side rails and clamping-bars, and means, substantially as described, for securing the margin and side edges of a curtain between said rails and bars, and the stretchers adapted to rest upon said side rails, and each provided with a graduated scale having numbered divisions, and with gage-blocks the outer face of one of which is fixed to said stretcher at a distance from and above the zero-point of said scale as great as the combined width of the margins of said curtain covered by said side rails and clamping-bars, and the other of which gage-blocks is adjustable along said scale, means, substantially as described, for holding the outer face of said adjustable block against a division of said scale, said blocks being adapted to be placed against the inner edges of said rails and to hold said rails apart, as and for the purpose specified.

4. The combination of a side rail provided with a longitudinal groove of uniform depth, a clamping-bar placed within said groove, and parallel links of equal length, each pivoted at one end to said rail, and at the other end to said bar, said rail and bar each having a hole so arranged that a line connecting said holes will be parallel to said links and as far apart as the pivots of one of said links, and a wrench provided with pins adapted to enter said holes, as and for the purpose specified.

5. The combination of the clamping-bar and the side rail having a longitudinal groove with an inclined side, and having recesses in said inclined side extending from top to bottom of the same and adapted to receive the side edge of a curtain, and an awl or pin, as and for the purpose specified.

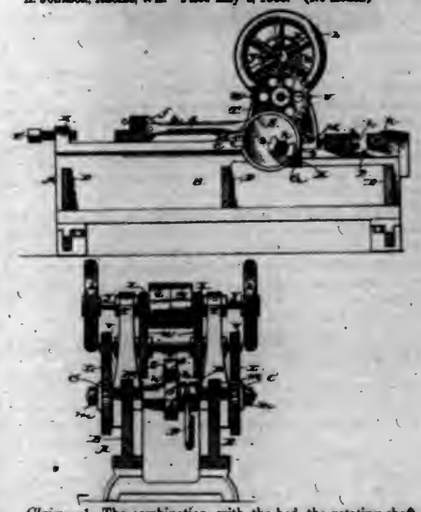
326,745. BICYCLE ALARM-WHISTLE. FREDERICK L. JOHNSON, Wallingford, Conn. Filed Sept. 29, 1884. (No model.)



Claim.—1. The combination of the head A, constructed with a circular slit at its lower end, and with a seat, D, also constructed for attachment to the bicycle, the tube B having one end closed and the other open, the said tube attached to the head, with the open end adjacent to and concentric with the slit in the head, the attachment between the tube and the head being from points outside the tube and below its open end to corresponding points outside the head and above the slit, with an elastic air-chamber, E, opening into said head, substantially as described.

2. The combination of the seat D, a whistle attached thereto, said seat constructed with a shank, G, the elastic air-chamber E, attached to said seat and opening into the whistle, and socket H, constructed to receive said shank G, and fitted for attachment to a bicycle, substantially as described.

326,746. COMBINED GANG-PUNCH AND BENDING-MACHINE. W. H. JOHNSON, Racine, Wis. Filed May 4, 1885. (No model.)

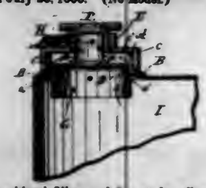


Claim.—1. The combination, with the bed, the rotating shaft, and the eccentric, of the head *c*, having the rod *d*, for connecting it with the eccentric, said rod being pivoted to the center of the head, and the brace-rods *h*, which are pivoted to the ends of the head, and are connected to the rod *d*, substantially as described.

2. The combination of the bed A, having the guides or ways C, shaft K, the grooved collar splined to said shaft, the lever for moving the collar, the eccentric loose on the shaft K, the sliding head *c*, connected to said eccentric, sliding head *i*, and connecting-arms *m*, secured eccentrically to the shaft K, substantially as described.

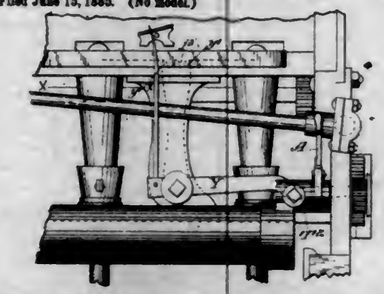
3. The combination of the bed A, having the guides or ways C, with the shaft K, journaled in blocks H, the sliding collar N, the eccentric S, loose on the shaft, the lever for operating the collar, the head *c*, connected to the eccentric S, the head *i*, arms *m*, connected eccentrically to the ends of the shaft K, spurred wheels L, fixed to the shaft K, standards T, shafts U, having pinions V, and spurred wheels W, and shaft Y, having the driving-pulley, and the pinions X, substantially as described.

326,747. COMBINED FILLER AND FAUCET. EDWD. KELLS, Cleveland, Ohio. Filed July 23, 1885. (No model.)



Claim.—In a combined filler and faucet for oil-cans, &c., the combination of the collar A, provided with a flange and an interior annular shoulder, a chambered cap adapted to said collar and having a tubular neck with a spout projecting therefrom, the said neck being provided with a female screw, into which is threaded a hollow stem to the lower end of which is secured a valve adapted to fit down upon said annular shoulder of the collar, and provided with openings *a* and *c*, forming a passage-way from the interior of the can to the spout when the said valve is open, substantially in the manner as described, and for the purpose specified.

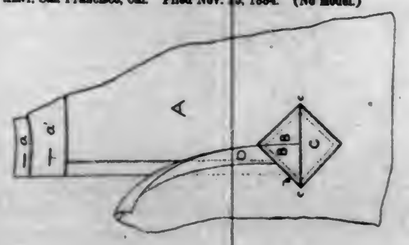
326,748. GRAIN-DRILL. JOHN F. KELLER, Shepherdstown, W. Va. Filed June 15, 1885. (No model.)

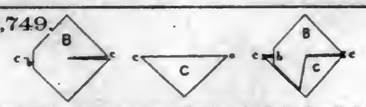


Claim.—1. The combination, with a fertilizer-distributing hopper, of a regulating-slide for controlling the discharge-openings, an elbow-lever which engages with the regulating-slide, an adjusting-screw which engages with the elbow-lever to adjust the slide, and a lever which engages the elbow-lever and operates independently of the slide-adjusting mechanism either to increase the area of the discharge-openings or to restore them to the dimensions to which they had originally been adjusted.

2. In a grain-drill and fertilizer distributer, the combination, with a discharging mechanism under the ordinary operation of which the outflow is continuous and uniform, of a means, substantially as described, whereby the outflow may be instantly increased in volume and then with equal facility and celerity may be restored to its former regulated rate of discharge.

326,749. METHOD OF STRENGTHENING GARMENTS. THOMAS E. KENT, San Francisco, Cal. Filed Nov. 15, 1884. (No model.)





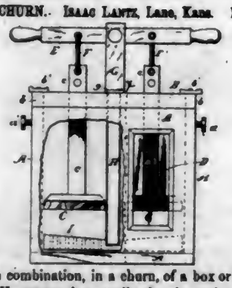
Claim.—The method of strengthening the fork of a slit in a garment, the same consisting in, first, providing a patch of cloth with a slit extending from the edge to the center thereof; second, folding one of the parts of the patch adjacent to and forming the side of the slit on a line perpendicular thereto; third, refolding the said folded part of the patch on a line parallel with the before-mentioned slit; fourth, sewing a straight-edged piece of cloth to the folded patch on the line *c c* parallel with the slit, and, fifth, securing the patch thus formed to the fork of a slit in a garment by sewing one of the sides forming the said fork to the folded portion of the patch and the remainder of the latter to the body of the garment, as set forth.

326,750. PORTFOLIO. SIMEON D. KING, Rolling Prairie, Ind. Filed July 11, 1885. (No model.)



Claim.—In a portable writing-desk, the combination of a rectangular board, a frame secured around the edges of the board and projecting at both sides of the board, elastic straps passing from two side pieces of the frame across both sides of the board near the ends, a rectangular piece of flexible material secured at its middle to one side of the frame, forming flaps covering the sides of the board, and having perforated straps at their free edges for buttoning on buttons upon the side of the frame, and a handle secured to one side of the frame, as and for the purpose shown and set forth.

326,751. CHURN. ISAAC LANTZ, Lane, Kans. Filed Dec. 4, 1883. (No model.)



Claim.—The combination, in a churn, of a box or receptacle, a perforated partition, H, arranged centrally therein, and perforated bottom piece, I, located as described, a removable top and lever, E, centrally pivoted thereon, hooks F, depending from said lever, a dasher, C, arranged at each side of said partition, and provided with a rod or extension passing through the top, and having a series of perforations for the engagement of one of said hooks, the said hooks affording a positive connection with the lever and rods, but adapted to swing to permit the free relative movements of the lever with said rods, substantially as set forth.

326,752. VELOCIPEDE. EMMIT G. LATTA, Friendship, N. Y., assignor of one-half to Adrian C. Latta, same place. Filed Mar. 5, 1885. (No model.)



326,752.



Claim.—1. The combination, with a handle-bar lug provided with an opening through which the handle-bar is inserted laterally, of a removable cap closing said opening, and fastenings whereby the lug and cap are secured together, substantially as set forth.

2. The combination, with a handle-bar lug and removable cap, both constructed with tapering screw-threaded ends, of tapering screw-nuts applied to said ends, substantially as set forth.

3. The combination, with the handle-bar lug and handle-bar, of a projection and a series of openings formed in the contiguous portions of said parts for rigidly securing the handle-bar in one of a number of different positions, at desire, substantially as set forth.

4. The combination, with the handle-bar lug, of a removable cap provided with an opening, *c'*, and a handle bar provided with a projection, *c*, substantially as set forth.

5. In a handle-bar, the combination of a solid central portion, *e*, and tubular portions *e²*, secured to the outer ends of the central portion, *e*, substantially as set forth.

6. A handle-bar composed of a solid portion, *e*, solid end portions, *e'*, provided with threaded tangs *j*, and intermediate tubular portions, *e²*, substantially as set forth.

7. The combination, with the handle-bar and brake-lever, of a flexible sheet-metal clamp embracing the handle-bar and brake-lever, and constructed with two jaws which can be passed over the handle-bar, and a screw or bolt whereby the clamp is tightened on the handle-bar, and which forms a pivotal support for the brake-lever, substantially as set forth.

8. The combination, with the handle-bar and brake-lever, of a flexible sheet-metal clamp which embraces the handle-bar and brake-lever, and forms a retaining-spring for the brake-lever and a pivotal support for the same, substantially as set forth.

9. The combination, with the brake-lever and its pivotal support, of springs bearing against the brake-lever on opposite sides of its pivot and tending to return the lever to its position of rest, substantially as set forth.

10. The combination, with the brake-lever and its pivot *f*, of a supporting-bracket, F, constructed with springs *g g'*, overlapping, respectively, the front and rear edges of the brake-lever, substantially as set forth.

11. The combination, with the handle-bar and brake lever, of the clamp F, bolt *f*, and a stay-piece, H, arranged between the jaws of the clamp, substantially as set forth.

12. The combination, with the handle-bar and brake-lever, of the clamp F, bolt *f*, and stay-piece H, composed of jaws *h*, and a back plate, *h'*, provided with ribs or ledges h^2, substantially as set forth.

13. The combination, with the handle-bar and brake-lever, of the clamp F, bolt *f*, stay-piece H, and nut I, provided with the tubular extension *i'*, substantially as set forth.

14. The combination, with the handle and handle-bar, of a screw-threaded tang, *j*, and a tube, J, inclosing the tang and forming a smooth bearing or support for the handle, substantially as set forth.

15. The combination, with the internally-threaded handle and the handle-bar, of a screw-threaded tang, *j*, a tube, J, inclosing the tang and provided with a head at its outer end, and a screw-threaded sleeve, *l*, substantially as set forth.

16. The combination, with the internally-threaded handle and the handle-bar, of a screw-threaded tang, *j*, a tube, J, inclosing the tang and provided with a conical head, *k*, at its outer end, and a screw-threaded split sleeve, *l*, substantially as set forth.

326,753. TANNING COMPOSITION. GEORGE H. LEONARD, Landisburg, Pa. Filed Apr. 3, 1885. (No specimens.)

Claim.—1. The hereinbefore-described composition for tanning, consisting, essentially, of about ten parts *Comptonia asplenifolia*, one part *Cuphea viscosissima*, and a sufficient quantity of water, combined for use substantially as described.

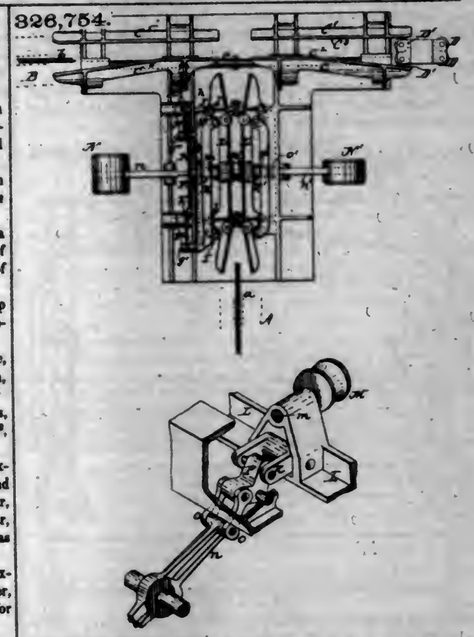
2. The tanning compound described, consisting of water, *Comptonia asplenifolia*, and *Cuphea viscosissima*, in about the proportions specified, with the addition of catechu, substantially as hereinbefore set forth.

326,754. CABLE RAILWAY. WILLIAM M. LEVERING, Philadelphia, Pa. Filed Feb. 3, 1885. (No model.)

Claim.—1. At the crossing of cable roads, or the junction of a branch to the main line, the vibrating frame C C^4, situated parallel or nearly parallel to the line of motion of the grip on the car of the crossing or joining road, and operated by the said grip, or attachment thereto, in combination with suitable mechanism for the purpose of raising or depressing a pulley in the line of the tube of the crossed road and acting upon the rope or cable traveling therein.

2. At the crossing of cable roads, two or more frames, C C^4, vibrating simultaneously on both sides of the road to be crossed, as and for the purpose set forth.

326,754.



3. In the operating mechanism of cable roads, the combination, with the vibrating frame C and a grip-shank or car attachment on said road, of the stationary frame C', substantially as and for the purpose set forth.

4. At the crossing or junction of cable roads, the depression-roller M, placed normally over the cable of the road to be crossed, in combination with the vibrating frame C, operated by a grip or grip-shank moving in the tube of the crossing or joining road, and suitable connecting mechanism and counter-weights in gear with said frame, whereby the said roller M is adapted to be depressed upon the cable of the road to be crossed on the approach of a grip in the tubeway of the crossing or joining road, and returned to its normal position after the passage of said grip.

5. The depression-pulley M, in combination with the frame G, rock-levers F F' pins *f*, *g*, *f'*, and *g'*, connecting-bars E and H, with their pins, rock-frame C, and suitable supporting frame-work, so arranged as to be operated by a grip or grip-shank, or attachment thereto, substantially as described.

6. The depression-pulley M, in combination with the frame G, rock-levers F F', pins *f*, *g*, *f'*, and *g'*, connecting-bars E and H, with their frame C, counter-weight N, and suitable connecting mechanism and supporting frame-work, so arranged as to be operated by a grip or grip-shank, or attachment thereto, and returned to their normal position, substantially as described.

7. In a cable road, the bars L L', in combination with depression-pulleys M, and mechanism, substantially as shown and described, and adapted to be actuated by a grip-shank or car attachment to impart to said bars a simultaneous and nearly parallel movement at right angles, or nearly so, to the line of motion of said grip-shank, substantially as set forth.

8. The bars L and L', having a simultaneous and nearly parallel movement at right angles, or nearly so, to the line of motion of the grip-shank of the car of a cable road, the depression-pulley M, mounted upon the bar L, the counter-weights N and N', and suitable connecting mechanism and supporting frame-work, in combination with the grip, grip-shank, or attachment thereto, of a car of said cable road for the purpose of moving the depression-pulley of a cable road out of the way of the passage of such grip-shank and returning the same to its normal position after the passage of the grip-shank.

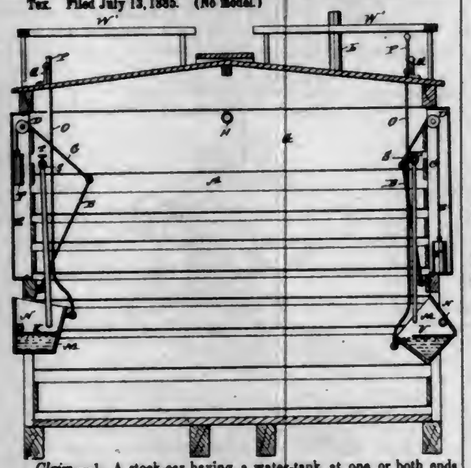
9. The combination, with the depression-rollers M and their actuating mechanism, as described, of the rollers S, shaped substantially as shown and described, and for the purpose set forth.

10. In a cable-motor railway, the movable frame or frames C C^4, located in one road-conduit, in combination with the movable bar L, located in a crossing conduit and having depression-roller M, and actuating mechanism between said frame and bars, substantially as shown and described.

11. A cable road having movable frame C C', in gear with bars L L', located in a crossing or lateral branch cable road, depression-roller M, and mechanism for automatically returning said frames and bars to their normal position, substantially as set forth.

12. The combination, with the movable frame of a cable road, of a depression-roller, M, located in a crossing or branch road and in gear with said frame, substantially as shown and described.

326,755. STOCK-CAR. DANIEL LYNN and CHARLES T. LONG, Milano, Tex. Filed July 13, 1885. (No model.)



Claim.—1. A stock-car having a water-tank at one or both ends and tubes extending from one or both tanks the length of the car, and of flexible tubes for connecting the tanks of several cars, substantially as herein shown and described.

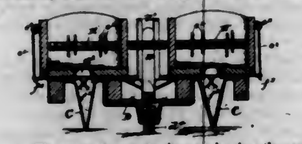
2. A car having hay-racks hinged at their bottom edges to the inner surface of the sides of the car, and of weights, chains, and pulleys for automatically swinging the racks against the sides of the car, substantially as herein shown and described.

3. The combination, with a stock-car, of hay-racks hinged to the inner surface of the cars at their bottom edges, and of devices for automatically swinging the racks against the sides of the car, substantially as herein shown and described.

4. The combination, with a car, of the hay-racks B, hinged to the sides, the chains C, secured to the tops of the rack, the pulleys D, the weights F, secured to the chains C, and the boxes E, in which the weights can move up and down, substantially as herein shown and described.

5. The combination, with the troughs M, of the removable perforated boards U, floating in the same, substantially as herein shown and described, and for the purpose of preventing splashing of the water, as set forth.

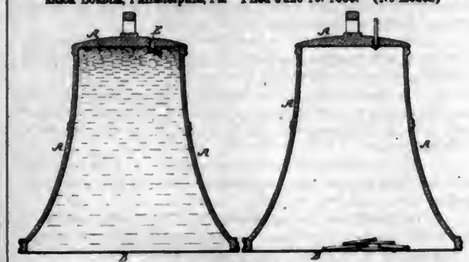
326,756. COMBINED COTTON AND CORN PLANTER. JOHN E. LOAPMAN, Liberty Hill, Tex. Filed Aug. 5, 1884. (No model.)



Claim.—1. The main frame, the hopper having the openings d^3 d^4, and the stirrer-shaft located within the hopper and arranged to force the seed down into the openings d^3, in combination with the slides f^3, working between the hopper and the frame, and having their inner ends curved downward and coming in contact with each other beneath the openings d^3, the outer ends of the slides being extended beyond the frame, rods d^5, fitted in the extended ends of the slides f^3, and having springs d^6 formed on the rods, a shaft, F', mounted on the frame in rear of the hopper, disks f^4, mounted on the shaft and carrying a series of picker-arms, f^5, and the carrying-wheels connecting with the shaft F' to actuate the same, arranged and operating whereby the contact of the picker-arms with the slides f^3 cause the latter to work laterally to drop the seed received from the hopper through the openings d^3, the spring-rods d^6 serving to return the slides to their former positions until again acted upon, for the purpose set forth.

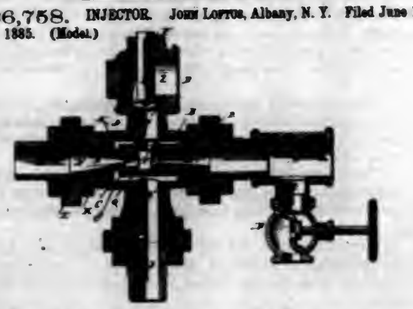
2. The main frame, hopper, and openings d^3 d^4 provided in the latter, in combination with the seed-slides f^3, working in guides between the frame and the bottom of the hopper, the inner ends of the slides being curved or bent so as to come in contact with each other, springs for returning the slides to their former positions, a shaft carrying disks, and picker-arms located on the disks to work through the openings d^4 and force the seed in the openings d^3 through the seed-slides, the latter being actuated in a lateral line to allow the seed to be dropped, as set forth.

326,757. COMBINED JELLY-GLASS AND MONEY-BOX. J. FREDERICK LOEBLE, Philadelphia, Pa. Filed June 16, 1885. (No model.)



Claim.—As a new article, the herein-described receptacle having a notch or recess, E, formed therein, with a closed bottom adapted to be punched out to convert the vessel into a toy money-bank, as set forth.

326,758. INJECTOR. JOHN LOFTUS, Albany, N. Y. Filed June 17, 1885. (Model.)



Claim.—In an injector, the combination of the injector-body having the four diametrically-opposite branches, the overflow-chamber fitting upon the upper branch, the overflow-valve playing upon the upper end of the upper branch, within the overflow-chamber, the suction-pipe fitting upon the lower branch, the steam-plug fitting in one horizontal branch, having a flange at its outer end bearing against the outer end of the said branch, and having a tapering steam-nozzle at its inner end, a feed-pipe entering the boiler and secured to the other horizontal branch, and provided with a T branch having a cock or globe-valve, a discharge-plug fitting in the discharge branch, and having a flange bearing against the end of the said branch, a reduced portion formed with an upwardly-pointing overflow suction-nozzle, and a discharge-tube opening in the interior of the said reduced portion, and a combining tube or plug fitting in the end of the reduced portion of the discharge-plug, and having a nozzle pointing into the said portion, as and for the purpose shown and set forth.

326,759. PLOW-EXTENSION. ALONZO R. MALLORY, Madison, Ga. Filed June 5, 1885. (No model.)



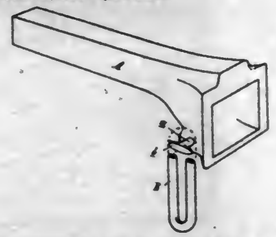
Claim.—1. The plow-extension herein described, consisting of a plate, E, having the elongated slots G and H, and having its lower end of beveled or curved shape, and a plate, F, having in its upper end a slot, I, and at its lower end a downwardly-extending prong or staple having a curved or beveled point, substantially as and for the purpose set forth.

2. The combination, with a plow-standard and a shovel, of a rear plate, E, extending below the bottom edge of the shovel and having a slot in its lower end, and a front plate, F, having at its lower end a link or staple, N, and the bolt J to permit of the adjustment or lengthening of a plow-point, substantially as set forth.

326,760. PROCESS OF EXTRACTING COPPER FROM ITS ORES. EUGENIO MARCHESE, Genoa, Italy. Filed Nov. 18, 1884. (No specimens.) Patented in Germany Sept. 13, 1884; in England Sept. 23, 1884, No. 12,725, and in Italy Oct. 13, 1884, XXIV, 309.

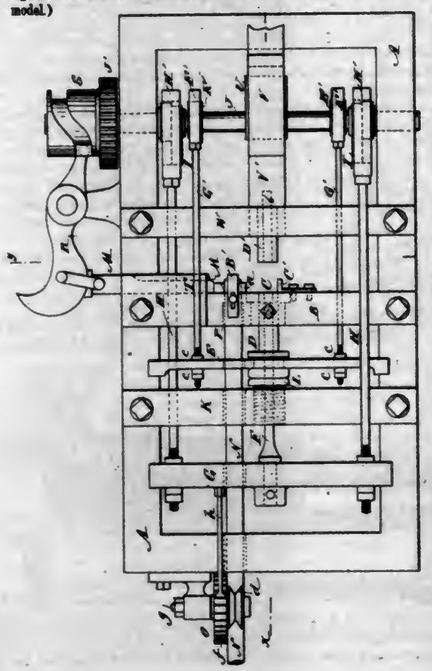
Claim.—The herein-described process for the electrolytical extraction of copper from ores or regulus containing iron, which consists in smelting a portion of the ore or regulus and casting it into plates and roasting and lixiviating the other portion, and subjecting the plates to the action of the solution of sulphate of iron and sulphate of copper and an electric current, as described, the solution being made to circulate continuously between the electrolytic vessel and the solution-tank containing roasted ore for the purpose of maintaining sufficient sulphate of copper in the electrolysis, substantially as set forth.

326,761. DRAW-HEAD ATTACHMENT. CHARLES E. MARX, Flint, Mich., assignor to the Marks Automatic Car Coupler Company, Cleveland, Ohio. Filed June 25, 1885. (No model.)



Claim.—In combination with a draw-head of a railway-car draw-bar, a T-shaped device projecting from the side of such draw-head, substantially as and for the purposes described.

326,762. NUT-MACHINE. ALFRED MARLAND, Pittsburg, Pa., assignor of one-half to Thomas Neely, same place. Filed May 28, 1884. (No model.)



Claim.—1. In a nut-machine, the combination, with forming and compressing dies, of a knife for cutting a blank and carrying it in line with the forming-die, substantially as herein shown and described.

2. In a nut-machine, the combination, with forming and compressing dies, of a cutting-die at one side of the forming-die, a blank cutting and carrying knife, and means for operating said knife substantially as herein shown and described, whereby provision is made for cutting the blanks and feeding them to the dies, as set forth.

3. In a nut-machine, the combination, with the forming-die C and the compressing-dies D D', of the stationary cutting-die Q, and the reciprocating knife M, formed with the fingers *a*, substantially as herein shown and described, whereby provision is made for cutting the blanks and carrying them in line with the forming-die, as set forth.

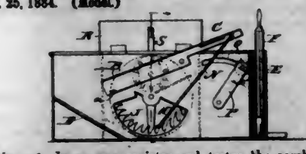
4. In a nut-machine, the combination, with the forming-die C and the compressing-dies D D', of the stationary cutting-die Q, the reciprocating knife M, provided with the fingers *a*, and the stop C', substantially as herein shown and described, whereby provision is made for cutting the blanks, carrying them in line with the forming-die, and partially compressing them, as set forth.

5. In a nut-machine, the combination, with the stationary cutting-die Q and the reciprocating knife M, of the forming-die C, the hollow compressing-dies D D', and means for operating said dies, substantially as herein shown and described.

6. In a nut-machine, the combination, with the frame A, the cross-bar K, the compressing-die D, the cross-head E, and means for operating said cross-head, of the head L, adjustably secured in the said cross-bar, substantially as herein shown and described, and for the purpose set forth.

7. The reciprocating knife M, formed with the fingers *a a*, feed mechanism O, and cutting-die Q, in combination with the forming-die C, hollow compressing-dies D D', and reciprocating punch F, the die D being adapted to be drawn forward for expelling the nut from the forming-die, substantially as and for the purposes set forth.

326,768. EGG-TESTER. CASPER MAHT, Minneapolis, Minn. Filed Nov. 25, 1884. (Model.)



Claim.—1. In an egg register and tester, the combination, with a pivoted platform provided with one or more apertures for receiving and holding eggs, of an inclined mirror below one end of the platform, and a registering device operated from the said platform, substantially as herein shown and described.

2. In an egg register and tester, the combination, with a pivoted platform provided with one or more apertures for receiving eggs, of a device for holding a light at the apertured end of the platform, an inclined mirror below the opposite end of the platform, and a registering device operated by the platform, substantially as herein shown and described.

3. In an egg register and tester, the combination, with a pivoted platform having one or more apertures at one end, of an inclined mirror below the opposite end, substantially as herein shown and described.

4. In an egg register and tester, the combination, with the box A, of the pivoted egg-holding platform B, the mirror D, the registering device, the pawl-rod N, pivoted on the platform B and serving to operate the registering device, the pivoted piece P on one side of the box, and the knob O, connected with the said piece, and having a pin passing through a slot, Q, in the side of the box, substantially as herein shown and described.

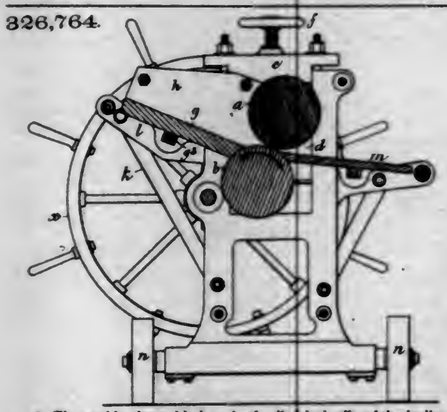
5. In an egg register and tester, the combination, with the box A, of the pivoted egg-holding platform B and the mirror D, the box G, containing a registering device, the pawl-rod N, connected with the platform B and adapted to operate the registering device, and the hooks T, for holding the box A on an egg-case, substantially as herein shown and described.

326,764. MACHINERY FOR ROLLING GLASS. FREDERICK MASON, Ryhope Road, near Sunderland, and JOHN CONQUEROR, Hendon, Sunderland, assignors to William Edward Chance, Birmingham, England. Filed May 11, 1885. (No model.) Patented in England Oct. 2, 1884, No. 13,119.

Claim.—1. The combination of the pair of cylindrical rolls, the inclined plate in front of said rolls, and the laterally-adjustable guides located in front of the rolls and over the inclined plate, substantially as and for the purpose described.

2. The combination, with the inclined feeding-plate, of the pair of rolls located back of said plate, with the top roll in advance of the bottom roll, to bring the plane in which the axes of the two rolls are situated at a substantially right angle to the inclined plate, substantially as and for the purpose described.

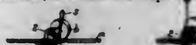
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3. The combination, with the pair of cylindrical rolls, of the inclined feeding-plate in front of said rolls, and the guides located in front of the rolls over said plate, the edges of said plate and guides being curved, as set forth, to correspond with the curves of the rolls back of the same, substantially as described.

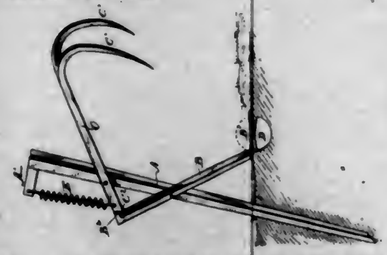
326,765. METHOD OF ATTACHING BUTTONS. JOSEPH MATHESON, Lynn, assignor to the Standard Button Fastening Company, Boston, Mass. Filed Oct. 21, 1884. (No model.)

Brief.—A loop of thread is drawn up through the material to which the button is to be attached and through the eye of the button-shank, and then down through the material, where it is interlocked with a portion of the thread that goes to form a second loop, that is proceeded with in like manner, a portion of its thread being passed through said loop below the material, and then the loops tightened.



Claim.—The improved method of attaching buttons consisting of drawing a loop of thread through the material and through the eye of the button, then drawing said loop down through the material outside the eye, then locking said loop under the material with the thread from which it is formed, then drawing a second loop through the eye of the button, and finally drawing the second loop down through the material outside the eye of the button, and locking said loop with the thread from which it is formed, as set forth.

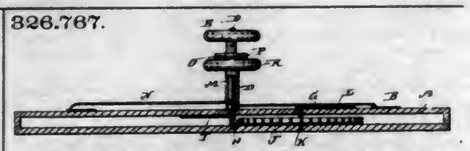
326,766. MOLE-TRAP. JOHN F. MAXSON, Hartford, Conn. Filed June 13, 1885. (No model.)



Claim.—1. The combination of the stationary support or leg, the pivoted releasing-lever formed in a single piece, having at its lower end a plate formed integral therewith and provided with the projection at its upper end, and the pivoted arm formed at its forward end with the tines or teeth, and having the projection at its rear end, all constructed, combined, and arranged to operate in the manner and for the purpose shown and set forth.

2. The combination of the stationary support or leg, having the short arm at its upper end, the pivoted releasing-lever formed in a single piece, having at its lower end the plate formed integral therewith, and provided with the projection at its upper end, the pivoted operative arm formed at its forward end with the tines or teeth, and having the projection at its rear end, and the spiral spring arranged as described, all constructed, combined, and arranged to operate in the manner and for the purpose shown and set forth.

326,767. ADDING-MACHINE. JOHN L. MCCALEB, Boston, Tex. Filed Apr. 17, 1885. (No model.)

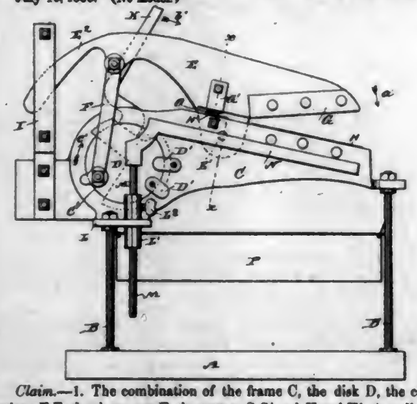


Claim.—1. In an adding-machine, the combination, with the box A, having the graduated circle B, of the spindle D, the sleeve M, the hand G on the spindle, the hand N on the sleeve M, and ratchet device O P for operating the spindle from the sleeve, substantially as herein shown and described.

2. In an adding-machine, the combination, with the box A, having the graduated circle B, of the spindle D, the sleeve M surrounding it, the hand G on the spindle, the hand N on the sleeve, a ratchet device, O P, for operating the spindle from the sleeve, the tooth H on the spindle D, the cog-wheel J, the arbor K, and the hand L on the same, substantially as herein shown and described.

3. In an adding-machine, the combination, with the box A, having the graduated circle B, of the spindle D, the sleeve M surrounding it, the hand G on the spindle D, the hand N on the sleeve, the head or button E on the spindle, the ratchet-disk P on the spindle, the head or button R on the sleeve, and the ratchet-ring O on the same, substantially as herein shown and described.

326,768. SHEARS. BENJ. F. MCCARTY, Rolling Prairie, Ind. Filed July 10, 1885. (No model.)



Claim.—1. The combination of the frame C, the disk D, the connections F F, the shear-arm E, the cutters G G' and H and H', the adjustable bar M, provided with the arm N, and the lever K, substantially as shown and described.

2. The frame C, the cutters H and H', the adjustable bar M, provided with arm N, in combination with the disk D, provided with the offset J, the arm J', the lever K, the connections F F, the pivoted shear-arm E, and the cutters G and G', substantially as shown and described.

3. The frame C, having an aperture, C', the disk D, the lugs D', the offset J, the arm J', and the lever K, in combination with the connections F F and the shear-arm E, substantially as shown and described.

4. The frame C, having an aperture, C', the disk D, the lugs D', the offset J, the arm J', the lever K, and the guide I, in combination with the connections F and the shear-arm E, provided with the extension E', substantially as shown and described.

326,769. MACHINE FOR ARRANGING CRACKERS FOR PACKING. JAMES MCCLURG, Allegheny, Pa. Filed July 11, 1885. (No model.)



Claim.—1. In a machine for arranging crackers and like articles for packing, the combination, with a casing provided with one or more channel-ways, of one or more spirally-coiled conveyers, the coils of which

are closely wound, located in said way or ways, suitable mechanism for actuating said conveyer or conveyers, and one or more receptacles in communication with the way or ways, substantially as described.

2. The combination, with a casing provided with one or more channel-ways, of one or more spirally-coiled conveyers, the coils of which are closely wound, located in said way or ways, suitable mechanism for actuating said conveyer or conveyers, one or more hoppers located above the upper end of the way or ways, and one or more receptacles in communication with the way or ways, substantially as described.

3. The combination, with a casing provided with one or more channel-ways, a covering-strip secured over the top of the outer end of the casing for steadying the outer end of the conveyer or conveyers, a lid for covering the channel way or ways from the covering-strip to the base of the hopper or hoppers, and a bearing-plate attached to the front of the casing, of one or more closely-wound spiral conveyers located in the channel way or ways, one or more shafts, as E, provided with a bevel gear or gears, as G, for operating the conveyer or conveyers, a shaft, as H', provided with bevel gear or gears, as H, for giving motion to shaft or shafts E, a hopper or hoppers, as I, for containing the articles to be fed to the conveyer or conveyers, and a graduated receptacle or receptacles to receive the articles as they are carried forward by the conveyer or conveyers, all substantially as described.

326,770. GLOVE AND GLOVE-FASTENING. JAMES I. MCMARTIN, Johnstown, N. Y., assignor of one-half to Abraham Levering, Lafayette, Ind. Filed May 7, 1885. (No model.)



Claim.—1. The combination, with a glove having the gore in the side, of the cords secured to the inside of the glove on one side of the gore and passing through the gore from the outer side thereof and through the glove from the under side thereof on the opposite side of the gore, said cord being looped and adapted to engage a button or stud, *f*, located adjacent to the point at which the cord is secured, substantially as set forth.

2. The combination, with a glove having a gore, *a*, of a looped cord having its ends located on the inner side of the glove on one side of the gore, and a flap on the inner side of the glove for covering said ends of the cord, the said cord passing through openings in the gore and through openings in the glove adjacent thereto, substantially as set forth.

3. The combination, with a glove, of the looped cord secured to the inside of the glove, passing through openings *c*, then back within the glove and out through openings, a button or stud, *f*, adjacent to the secured ends of the cord, and an interior flap for covering the secured ends of the cord, substantially as set forth.

326,771. COTTON-SEED PLANTER. THOMAS MEIKLE, Louisville, Ky., assignor to Thomas Meikle & Company, corporation, same place. Filed Nov. 1, 1884. (No model.)

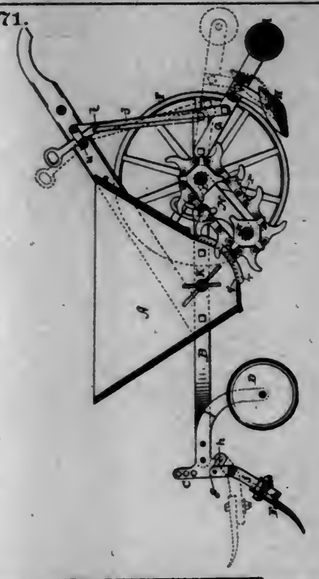
Claim.—1. In a cotton-seed planter, the combination of a furrow-opener, a seed-hopper having a slot in its bottom extending up its side, and a chain carried on sprocket-wheels and armed with forwardly-inclined projecting teeth or fingers, which successively strike through the upper end of said slot into said hopper with a downward direction and out again, each finger carrying with it a portion of the cotton-seed and dropping said seed into the furrow.

2. A cotton-seed planter provided with a furrow-opener in front, a seed-hopper having a slot in its bottom and side, combined with a chain carried on sprocket-wheels and armed with forwardly-inclined fingers, which successively strike through said slot into said hopper and out again to discharge the seed forcibly, one of said sprockets being adjustable, so that the penetration and consequent feed of said fingers may be regulated at will.

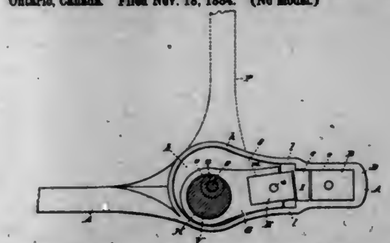
3. The seed-hopper A, provided with the slot *q*, and adjustable side plates *r r*, to regulate the effective width of the slot *q*, combined with chain P armed with fingers R, the sprocket-wheels L M, and adjustable side plates N, in which the bearings for the sprocket M are carried, whereby the feed may be regulated as desired.

4. In a cotton-seed planter, the bull-tongue furrow-opener E, mounted on an arm, which at its upper end is hinged to the front end of the frame, so that said furrow-opener may be turned up above the ground, and provided with a stop to limit its downward movement and penetration into the ground, substantially as described.

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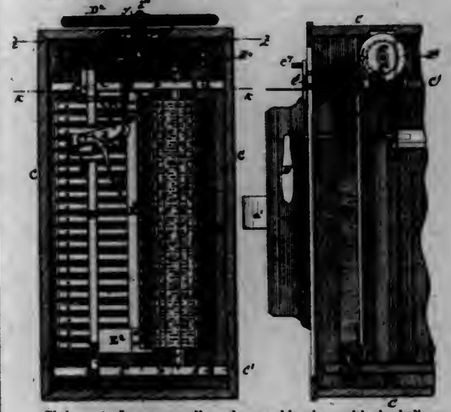


326,772. ROD AND BOLT CUTTER. DAVID R. NICHOLS, Brockville, Ontario, Canada. Filed Nov. 18, 1884. (No model.)



Claim.—The improved bolt-cutter, consisting of the two branches A and F, the branch A having the fixed cutter B and provided with the bit-hollow having diverging guide-walls, a guide-slot, *d*, the pivot-aperture and the opposite branch, F, with the eccentric V, the pivot-bar Z, and the movable bit-holder G, arranged in the said hollow, and provided with the circular aperture to be engaged by the eccentric, substantially as specified.

326,773. MECHANICAL ACCORDION. CARL OETTEL, Gohlis, near Leipsic, Saxony, Germany. Filed Nov. 6, 1883. (No model.) Patented in Germany Feb. 23, 1883, No. 24,405, and in Austria-Hungary June 14, 1883, No. 1,161 and No. 1,123.



Claim.—1. In an accordion, the combination, with the bellows, of an inclosing-box at one end of the same, having reeds and valve-levers.

and provided with an exterior handle or thumb-strap, a cylinder-barrel located within the box and having a number of pins and staples for actuating the valve-levers, an exterior oscillating lever-handle arranged adjacent to said handle or thumb-strap, and intermediate mechanism by which a continuous rotary motion is imparted to the cylinder-barrel by the oscillations of the lever-handle, substantially as and for the purpose set forth.

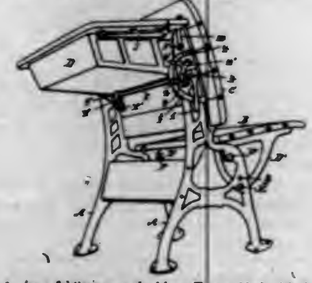
2. In an accordion, the combination of the bellows, an inclosing-box, a cylinder-barrel located within the box, bearings for supporting the shaft of the same, a vertically-guided shifting-frame engaging the barrel, and means arranged at the exterior of the box and connected to the shifting-frame, so as to set the latter and the cylinder-barrel, substantially as set forth.

3. In an accordion, the combination of a bellows, A, a box, C, having interior walls, C', a rotating cylinder-barrel, E, supported in bearings of the walls C', a vertically-guided shifting-frame, E', engaging the barrel, an exterior slide-plate, e^3, connected to the shifting-frame and having side recesses, e^4, and a fulcrumed lever, G, that is set into one of the recesses e^4 of the slide-plate, so as to lock the cylinder-barrel into proper position, substantially as set forth.

4. The combination, in an accordion, of a bellows, A, a box, C, having reeds and valve-levers, a rotating cylinder-barrel, E, a pivoted and spring-actuated frame, F', valve-levers F, fulcrumed to frame F', and a fulcrumed lever-handle, G, extending from the pivoted frame F' to the outside of the box, so that the valve-levers may be moved clear of the cylinder-barrel, substantially as set forth.

5. The combination, in an accordion, of a bellows, A, a box, C C, at one end of the same, said box having reeds and valve-levers, a pivoted and spring-pressed frame, F', valve-levers F, fulcrumed to the frame F', a rotating cylinder, E, a vertically-guided shifting-frame, E', engaging the barrel, an exterior slide-plate, e^3, having a handle, e^7, and side recesses, e^4, and a fulcrumed locking-lever, G, that extends from the frame of the valve-levers to the outside, and is adapted to be set into one of the recesses of the slide-plate e^4, so as to lock the cylinder-barrel in position, substantially as and for the purpose set forth.

326,774. SCHOOL SEAT AND DESK. SEYMOUR W. PERSHBINE, Minneapolis, Minn. Filed Jan. 14, 1885. (No model.)



Claim.—1. In a folding seat, the hinge E, provided with the flanged taper bushing *a*, of soft composition metal, which forms the pivot of the hinge, and the bolt *c*, provided with nut and washer to tighten the hinge and secure it to the standard, substantially as described.

2. In a folding seat, the buffer F, consisting of the rubber ring *e*, of the bushings *d*, having compression-flanges for the rubber ring and interlocking meeting-faces, and of the bolt *f* and its nut, all combined substantially as described.

3. In a school desk and seat, the devices for securing the slats of the seat and back, consisting of the pins G, secured to the frame and provided with partial screw-threads formed by undercutting their heads, and of the round compressing-nuts, also provided with partial screw-threads and adapted to be slipped over the head of the pin and secured thereupon by a quarter-turn, all arranged substantially as described.

4. In a school desk and seat, a seat-fastening device consisting of a round pin, G, provided with interrupted single screw-threads upon its head formed by cutting away the body of the pin, of a round nut provided with similar interrupted single screw-threads and adapted to be slipped over the head of the pin and secured thereupon by a quarter-turn, and of the boss *i* and notch *j* for locking the nut in position, all arranged substantially as described.

5. In a school-desk, a lid-hinge with its pivotal point located in the central plane of the lid and the joint between the ink-well board and lid concentric thereto, said lid-hinge consisting of the straps I J, turned upwardly at their inner ends and provided with bosses *l* upon their eyes, which admit of securing the stationary part of the hinge inside of the desk-frame and the movable part outside, said bosses forming a cup-joint secured together by a rivet, all constructed substantially as described.

6. In an adjustable school-desk, adjusting devices for changing the height and inclination of the desk, the same consisting of guide slots or grooves of relative different inclines in the standards and guide-pins upon the sides of the desk engaging into these slots or grooves, or vice versa, in combination with devices for holding the desk in its adjusted position, substantially as set forth.

7. In an adjustable school-desk, and in combination with the guide-slots and guide-pins of the desk, a mechanically-operating device for adjusting the desk, consisting of the rock-shaft *r*, grooved cams *o*, pins *w*, handle *s*, and notched quadrant or semicircle *t*, or other equivalent device.

8. In an adjustable school-desk, and in combination with the guide-slots *m n* and guide-pins *o p* and the mechanically-operating adjusting device, the spring-handle *s*, arranged upon the side of one standard within reach of the scholar from his seat, and the notched semicircle or quadrant *t*, substantially as described.

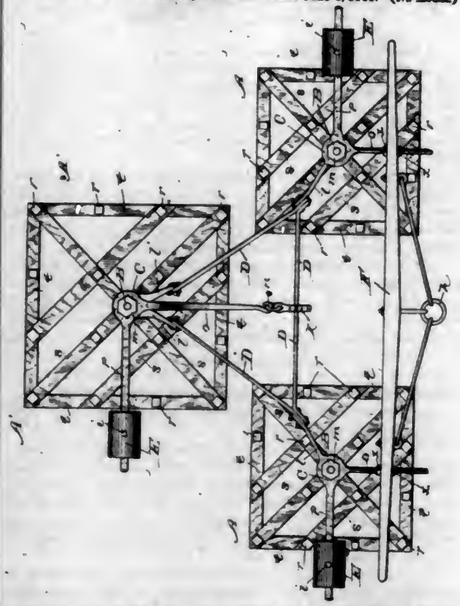
9. In an adjustable school-desk, and in combination with the guide-pins *o p* upon the side of the desk engaging into the guide slots or grooves in the standards, the slots *n*, provided with the exit-slots *n'*, and the slots *m*, open at the top, substantially as and for the purposes described.

10. In an adjustable school-desk, in combination with the guide-pins *o p* upon the side of the desk, the slots *n*, provided with exit-slots *n'*, the slots *m*, open at the top, and the open cam-grooves *v'*, into which the adjusting-pins *w* engage, substantially as and for the purposes described.

11. In an adjustable school-desk, the combination of the guide-pins *o p*, adjusting-pins *w*, guide-slots *m*, open at top, guide-slots *n*, having exit *n'*, and open cam-grooves *v'*, with the notch *u'*, of the adjusting device so arranged as to fix the point of exit for the simultaneous withdrawal of the pins *p* and *w*, substantially as described.

12. In an adjustable school-desk, the combination of the guide-pins *o p*, upon the sides of the desk, of the guide-slots *m n* in the standards, and of rubber cushions arranged in the ends of the guide-slots and formed by rubber plates fitted into half-circular enlargements in the ends of the slots, substantially as described.

326,775. ROTARY HARROW. LOUIS N. PETERSEN, MARTIN L. HARKSEN, and HENRY HAGGE, Bryant, Iowa. Filed June 1, 1885. (No model.)



Claim.—1. A rotary harrow comprising, in combination, two forward sections, A, provided with vertical arbors B, brackets C, supported on the arbors B and provided with arms *p* for carrying adjustable weights, and with arms *o*, screw-threaded toward their extremities to pass through the draft-beam F, adjustable thereon by means substantially as described, a section, A', provided with a vertical arbor, B, a bracket, C, supported upon the said arbor B, and provided with an arm, *p*, for carrying an adjustable weight, and with an arm, *o*, and means, substantially as described, connecting the bracket C on the section A' with the brackets C on the forward sections, A, whereby the rear section is maintained centrally behind the forward sections, the whole being constructed and arranged to operate as and for the purpose set forth.

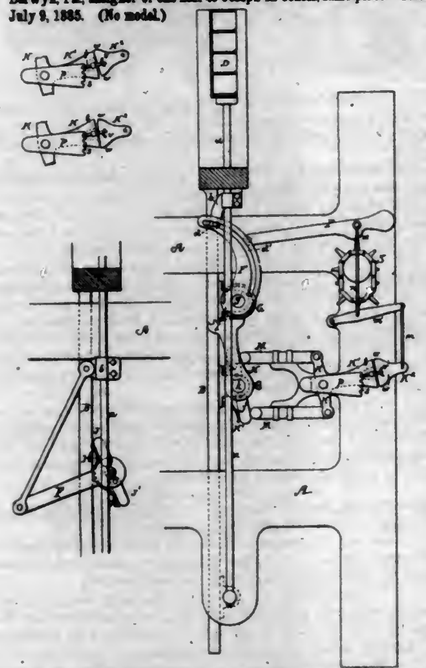
2. A rotary harrow comprising, in combination, two forward sections, A, provided with vertical arbors B, brackets C, supported on the arbors B and provided with arms *p*, carrying adjustable weights E, and with arms *o*, screw-threaded toward their extremities, a draft-beam, F, adjustable on the screw-threaded portions of the said arms *o* by means of nuts *x*, a section, A', provided with a vertical arbor, B, a bracket, C, supported on the said arbor B and provided with an arm, *p*, carrying an adjustable weight, E, and with a hooked arm, *o*, and a frame, D, connecting the brackets C on the forward sections, A, with the bracket C on the rear sections, A', the whole being constructed and arranged to operate substantially as described.

3. A rotary harrow comprising, in combination, two forward square sections, A, provided with vertical arbors B, brackets C, supported on the arbors B and provided with arms *p* and *l*, weights E, detachable from and adjustable on the said arms *p*, arms *o* on the said brackets C, screw-threaded toward their extremities, a draft-beam, F, adjustable on the screw-threaded portions of the said arms *o* by means of nuts *x*, a square section, A', larger than a section, A, and provided with a vertical arbor, B, a bracket, C, supported on the said arbor B, and provided with arms *p* and *l'*, a weight, E, detachable from and adjustable on the said arm *p*, a hooked arm, *o*, extending from the said bracket, and a triangular frame, D, connecting together the arms *l* and *l'* of the brackets on the sections A and A', and carrying an adjustable link, *k*, to engage with the hooked end of the arm *o* of the bracket on the rear section, A', the whole being constructed and arranged to operate substantially as described.

326,776. FIRE AND WATER PROOF PAINT. CHARLES H. PHILLIPS, JAMES TRODEN, and JOHN GOLLINS, Alpena, Mich. Filed June 23, 1885. (No specimens.)

Claim.—A paint compound consisting of tar, red mineral, keystone granite, lime, asbestos, potash, and alum, combined substantially in the proportions set forth.

326,777. DEVICE FOR CONVERTING MOTION. JOSEPH C. POTTS, Berwyn, Pa., assignor of one-half to Joseph H. Coates, same place. Filed July 9, 1885. (No model.)



Claim.—1. The combination of a vibrating or reciprocating frame, a rod guided thereon, but free to move in a direction different from that of the movement of the frame, a lever hung to the frame, means whereby the movement of the lever is transmitted to the rod, and adjustable bolts acting upon the opposite arms of the said lever as the frame vibrates or reciprocates, as specified.

2. The combination of a vibrating or reciprocating frame, a rod guided thereon, but free to move in a direction different from that of the movement of the frame, a lever hung to the frame, means whereby the movement of the lever is transmitted to the rod, adjustable bolts acting on the opposite arms of the lever as the frame vibrates or reciprocates, and a pin-chain or pattern device for adjusting said bolts, as set forth.

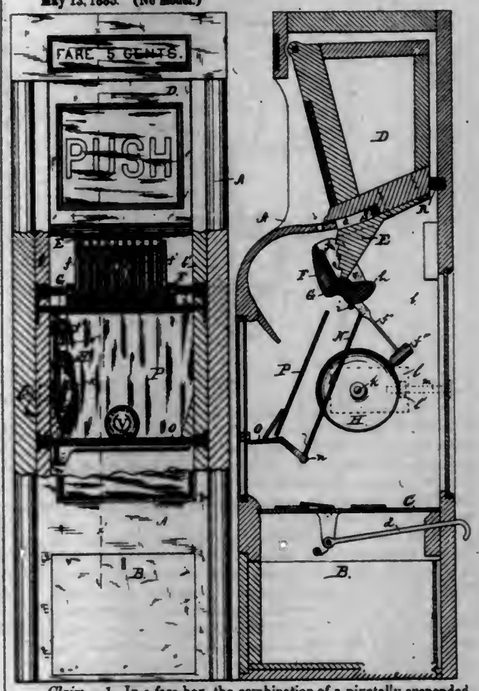
3. The combination of a vibrating or reciprocating frame, a rod guided thereon, but free to move in a direction different from that of the movement of the frame, an operating-lever therefor having spring-arms J J', bolts for acting on said arms, and a pattern-chain for adjusting the bolts, as specified.

4. The combination of the vibrating or reciprocating frame, a device to be moved thereby, an operating-lever therefor, having arms J J', bolts for acting on said arms, a pattern-chain for adjusting the bolts, and a locking device for retaining the bolts in the position to which they are adjusted, all subtantially as specified.

5. The combination of the vibrating or reciprocating frame, a device to be moved thereby, an operating-lever therefor having arms J J', a spring-retainer for holding the device in position in the intervals between its movements, and adjustable bolts for acting on the arms J J', to cause the movement of the device, as specified.

6. The combination of the bolts M with the lever N, having a pivoted arm N^2, with stops *w* and double cam *v*, the notched segment *s*, the bolt *t*, an arm, P, connected to the arm N^2, and having a recess, *x*, and a pin-chain for acting on said arm P, as set forth.

326,778. FARE-BOX. WILLIAM G. PREE, New Orleans, La. Filed May 13, 1885. (No model.)



Claim.—1. In a fare-box, the combination of a pivotally-suspended push-block having a comb provided with notched teeth connected with the under side thereof, and a recess between said parts, whereby it is adapted to operate over the receiving-aperture of the box, as described, with a counterbalanced pivoted toothed plate or comb, and a rod or stop for limiting the movement of the latter, and thereby adapt same to receive and hold the fares until tilted and relieved of said fares by the dropping of the push-block and comb attachment to their normal positions, substantially as and for the purpose set forth.

2. In a fare-box, the combination, with a pivotally-suspended push-block having a toothed plate or comb connected with its under surface, as described, of a pivoted comb provided with side or end plates, the teeth of the combs adapted to operate between each other, substantially as and for the purpose specified.

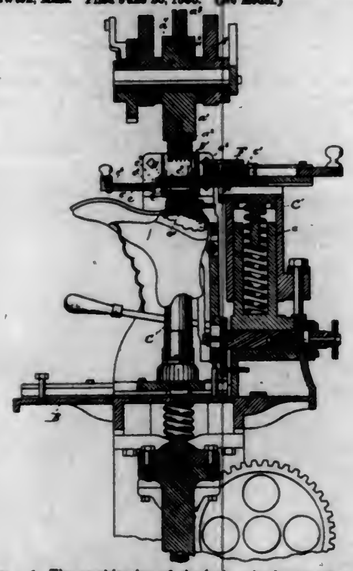
3. In a fare-box, the combination of a pivoted counterbalanced toothed plate or comb adapted to be tilted by the forward movement of a pivotally-suspended push-block, and a comb attachment having notched teeth adapted to operate between the teeth of the pivoted comb, as described, with a rod or stop for limiting the movement of the latter, and a striker and gong for sounding an alarm as the fares are discharged from the comb-receiver, substantially as set forth.

4. In a fare-box, the combination, with a pivoted comb adapted to be held in position to receive the fares, as described, and a pivotally-suspended push-block provided with a comb attachment, the teeth of which are adapted to operate between those of the former comb and to discharge the fares therefrom, as set forth, with a pivoted platform or trap, a rod connecting same with the tilting comb, whereby it is operated, and a glass slide for conducting the fares to the said platform for inspection

before being dumped and mixed with other fares, substantially as specified.

5. In a fare-box, the combination, with a temporary receiver having a striker connected therewith, of a gong secured to a sliding plate provided with a screw-threaded socket and an adjusting-screw, whereby its relative position to the striker may be altered to increase or diminish the volume of sound, substantially as described.

326,779. HEEL-ATTACHING MACHINE. FREEBORN F. RAYMOND, 2d, Newton, Mass. Filed June 20, 1885. (No model.)



Claim.—1. The combination of the jack, a heel support or last, a templet having the two sets of holes D and D', and a reciprocating head carrying one or more gangs or groups of awls and two gangs or groups of drivers, one of which is adapted to be used with the holes D of the templet, and the other with the holes D', and mechanism, substantially as described, for operating said awls, drivers, and templet, as and for the purposes described.

2. In a heel-nailing machine, the combination of the jack carrying the heel-support or last, the templet having two sets of holes, D and D', and the nail-carrier F, having two sets of holes, *f* and *f'*, and the nail-driving devices, all substantially as and for the purposes described.

3. In a heel-nailing machine, the combination of the templet c^3, having two sets of holes, D and D', with the plate E, having the section or part e^3, provided with holes e^4, and section or part *e*, having the top-lift-holding devices and the holes e^2, as and for the purposes described.

4. The combination of the templet c^3, having the two sets of holes D and D', and the plate E, having the section e^3, provided with the holes e^4, the section *e*, having the holes e^2, and the top-lift-holding devices, and the section e^5, all substantially as described.

5. The combination of the templet c^3, having the two sets or series of holes D and D', and the plate E, having the section e^3, provided with two sets of holes corresponding or registering with the holes D and D', and the section e^5.

6. The combination, in a heel-nailing machine, of the work-support, the templet having the two sets of holes D and D', the reciprocating head carrying two gangs or groups of awls and two gangs or groups of drivers, and a spanker-arm, all substantially as described.

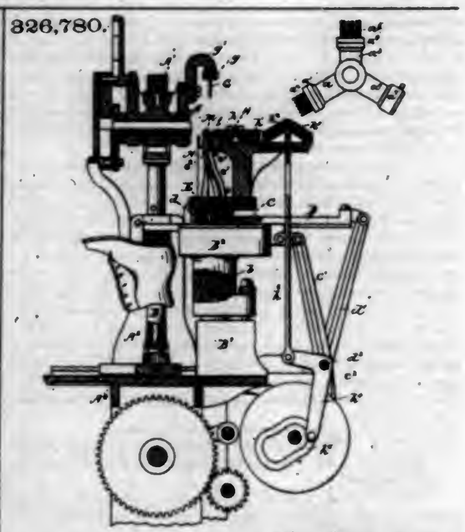
7. The combination, in a heel-nailing machine, of the work-support, the templet having two sets of holes, D D', and a reciprocating cross-head carrying two separate gangs or groups of drivers, and mechanism, substantially as described, for operating said templet and drivers.

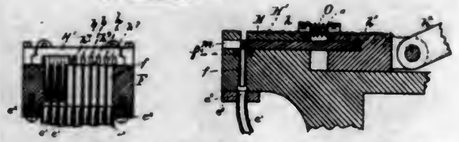
326,780. NAILING-MACHINE. FREEBORN F. RAYMOND, 2d, Newton, Mass. Filed June 27, 1885. (No model.)

Claim.—1. In a nail-driving machine, a support for a comb-strip provided with passages for conveying the nails formed therefrom to a nail receiver or holder, and a reciprocating gang or group of punches or cutters for simultaneously severing or cutting from the comb-strip a gang or group of individual fastenings, all substantially as and for the purposes described.

2. In combination with the nail-driving devices, the bed F, having the throat or holes *f*, and the abutment or bed M, having the recesses or passages *m*, and the gang H of reciprocating cutters, the nail-holder, and the nail-carrier, all substantially as and for the purposes described.

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3. The combination of the nail-driving devices, the bed F, having the holes *f*, the vertically-reciprocating punches or plungers G, and horizontally-moving cutters H, all substantially as and for the purposes described.

4. The combination of the bed F, having the holes *f*, for receiving the shanks of a comb-strip of fastenings, and intermediate supports holding the connecting margin of said strip while it is being divided into separate fastenings, with passages connecting with the holes in the nail-holder E, all substantially as and for the purposes described.

5. The combination of the abutment M, the cutters H, bed F, and the presser-block H', all substantially as and for the purposes described.

6. The combination of the nail-driving devices, the bed F, having the holes *f*, connected with the nail-holder E, the holding-block A', the toggle A^2 A^3, cam A^5, and connecting devices, all substantially as described.

7. The combination of the bed F, having the holes *f*, the passages *m*, the reciprocating cutters H, and the escape-chute N, all substantially as and for the purposes described.

8. In a nailing-machine, in combination with nail-driving devices, a reciprocating gang of plungers or cutters for automatically separating a comb-strip of fastenings into separate or disconnected fastenings, and devices for automatically transferring said fastenings to a position to be driven by the driving devices, all substantially as described.

326,781. NAILING-MACHINE. FREEBORN F. RAYMOND, 2d, Newton, Mass. Filed June 29, 1885. (No model.)

Claim.—1. The templet A, having the holes *a*, and the independent nail-carrier blocks C, for feeding or transferring nails to the templet-holes, all substantially as and for the purposes described.

2. The combination of the templet-block having holes *a*, the independent nail-carrier blocks having holes C', and means for moving them into and out of operative position with the holes *a* of the templet, all substantially as and for the purposes described.

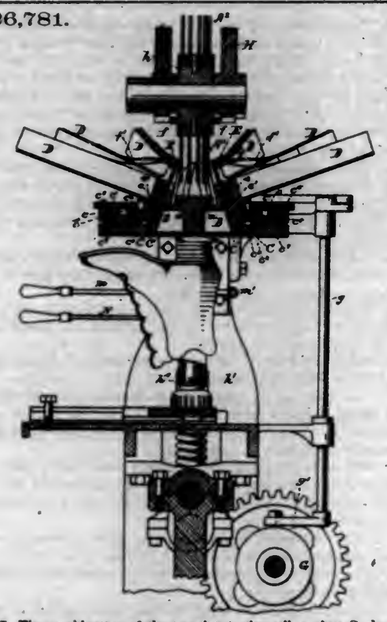
3. The combination of the templet having the holes *a*, the passages B, the movable independent nail-carrier blocks C, and means for moving the same in said passages, all substantially as and for the purposes described.

4. The combination of the templet A, the independent nail-carrier blocks C, and devices for automatically feeding nails to the nail-receiving holes of said blocks, all substantially as and for the purposes described.

5. The combination of the templet A, having holes *a*, the nail-carrier blocks C, the chutes D, and devices for feeding nails from the chutes in successive order to the nail-carriers, all substantially as and for the purposes described.

6. The combination of the templet A, having the holes *a*, the nail-carriers C, having the holes C', the chutes D, having the dischargers E, and the reciprocating gang of awls A', having the arms *f*, for operating the dischargers, all substantially as and for the purposes described.

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7. The combination of the templet A, the nail-carriers C, the cam-ring *c'*, having the eccentric cam-slots c^4, each of which is connected with a nail-carrier block, and means for reciprocating the cam-disk, all substantially as and for the purposes described.

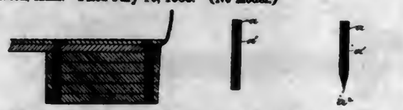
8. The combination, in a heel-nailing machine, of a templet and independent nail-transferring devices for automatically feeding nails laterally through holes or recesses therein to a position to be driven by the drivers, all substantially as and for the purposes described.

9. The combination of the templet A, having the holes *a*, with the horizontally-movable carriers C and stops for limiting the extent of their movements, all substantially as and for the purposes described.

10. The combination of the templet A, having the holes *a*, and the carriers C, and means for varying their inclination for the purpose of changing the inclination of the nail-receiving holes therein, all substantially as and for the purposes described.

11. The combination of the templet A, having the holes *a*, a series of converging chutes for holding the nails and automatically delivering them to the templet-holes, supported by said templet, and means for moving the templet and said devices vertically, all substantially as and for the purposes described.

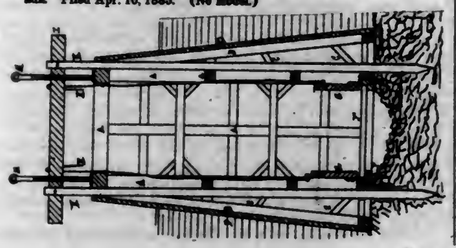
326,782. NAIL FOR BOOTS OR SHOES. FREEBORN F. RAYMOND, 2d, Newton, Mass. Filed July 16, 1885. (No model.)



Claim.—1. An unheaded nail having a stiff or rigid metallic central section, and a comparatively soft and ductile metallic exterior section inclosing the central section, as and for the purposes described.

2. A nail having the stiff or rigid interior section and point formed of comparatively hard metal, and a comparatively soft, ductile, metallic exterior, all substantially as and for the purposes described.

326,783. COFFER-DAM. ELI F. REAUME, Amherstburg, Ontario, Canada. Filed Apr. 10, 1885. (No model.)

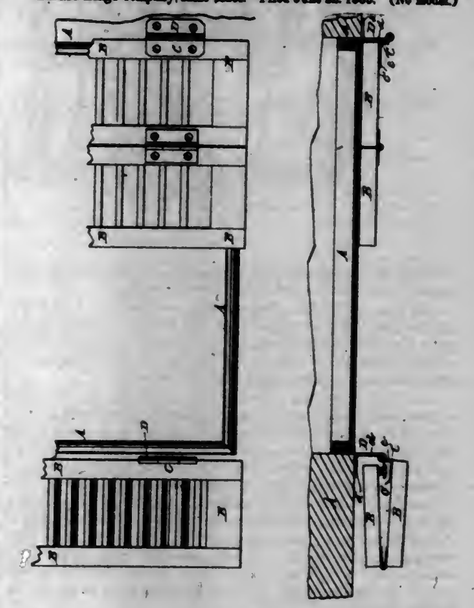


Claim.—1. A coffer-dam having a rectangular base, with inwardly-tumbling or inclined sides secured to a frame of corresponding shape, in combination with an inner frame and stays between the two frames, substantially as and for the purposes described.

2. A coffer-dam having a rectangular bottom with openings therein, having inwardly-opening gates or doors adapted to be opened by means of cords leading to the top of the dam, in combination with a projecting flange from such bottom surrounding the door-openings, substantially as and for the purposes specified.

3. A coffer-dam having two frames, and piles arranged to be driven between said frames, in combination with jack-screws arranged and operating substantially as and for the purposes described.

326,784. HINGE. JOHN A. REECH, Jersey City, N. J., assignor to the Eureka Hinge Company, same place. Filed June 22, 1885. (No model.)



Claim.—As an improved article of manufacture, a hinge for inside blinds, consisting of the inner plate, C, having the straight portion *c* and the angular apertured portion *c'*, and the plate D, having the straight portion *d* and the apertured angular portion *d'*, the portion *d* of the plate D being so much wider than the portion *c* of plate C that the distance between the angles of the said plates will be equal to the frame of the blinds, as set forth.

326,785. PAPER-FOLDING MACHINE. GEORGE REESOR, Mercer, Pa. Filed Sept 18 1884 (No model.)

Claim.—1. In a paper-folding machine, a knife-operating mechanism consisting of a lever-arm attached to a folding-knife and also to an L-lever operating a knife at right angles to the other, two knives operating to fold at the same time, substantially as and for the purpose specified.

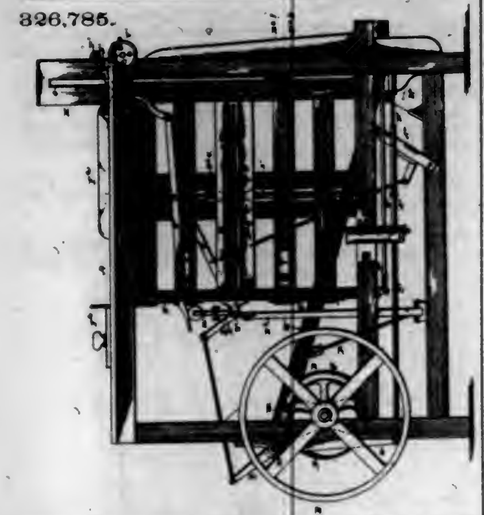
2. In a paper-folding machine, a knife-operating mechanism consisting of a rock-shaft carrying oppositely-projecting arms, one connected to a lever which operates one of the knives, and the other connected to and operating a rock-shaft on which is an arm giving a reciprocating motion to another knife, the two knives operating coincidently.

3. In a paper-folding machine, a knife-operating mechanism consisting of a rock-shaft, from which is an arm operating one of the knives, said arm being also connected to and operating a fly so as to receive the folded papers as they fall from the knife.

4. The combination, with the adjustable stops or gages on the table, of a feeding mechanism consisting of a wheel given a rotative movement by connection with the motive power of the machine, and a pulley made to engage with said wheel at proper intervals by a spring-actuated lever, and to disengage therefrom by an arm on a rock-shaft acting also at proper intervals on the said lever, substantially as and for the purpose specified.

5. A feeding mechanism consisting of a wheel on a shaft given a rotative movement by the motive power of the machine, and a pulley at the end of an arm on a rock-shaft, which is operated through a double lever by means of a spring-actuated lever, and an adjustable arm on a

326,785.

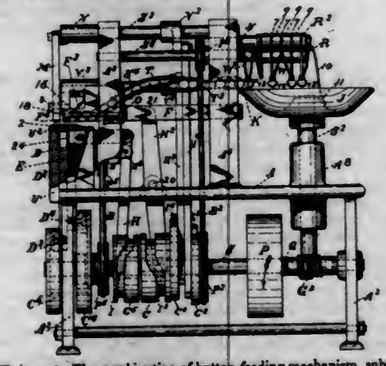


rock-shaft, said arm engaging with one end of the said lever, the whole operated substantially as and for the purpose specified.

6. The combination, with the driving mechanism, of a rock-shaft operated thereby and provided with an arm that is connected to and operates one of the folding-knives, said shaft also being provided with an arm with a pulley at the end for operating the feed mechanism, and operating as a guide-rod for another of the folding-knives.

7. A folding-machine consisting of a suitable frame, a drive-shaft carrying cams which project in opposite directions, a lever-arm operated by one of the cams, and having connection at its end to one of the knives, also being connected to an L-lever that connects to a knife that travels at right angles to the first, a double lever-arm operating a lever that connects with one of the knives, and also operates a rock-shaft on which is an arm connected to one of the knives, and also to a receiving-fly, said shaft having an adjustable arm with a pulley attached, and a feeder consisting of a wheel driven by the motive power of the machine, and a rock-shaft carrying a pulley at the end of an arm, said shaft being operated by a spring-actuated lever, which is also operated by the adjustable pulley-arm, all the parts arranged and operating substantially as and for the purpose specified.

326,786. BUTTON-SETTING MACHINE. FRANCIS H. RICHARDS, Springfield, Mass., assignor to the American Button Fastener Company, New Britain, Conn. Filed Jan. 30, 1885. (No model.)



Claim.—1. The combination of button-feeding mechanism, substantially as described, with button-fastener-setting mechanism and with mechanism, substantially as described, for making button-fasteners and presenting them to said setting mechanism, all arranged to operate substantially as shown and described.

2. The combination of button-feeding mechanism, substantially as described, with button-fastener-setting mechanism and with mechanism, substantially as described, for cutting off a piece of button-fastener stock and bending said piece into a button-fastener, ready to be set by said setting mechanism, all arranged to operate substantially as shown and described.

3. The combination of a table on which to place the fabric or material to which buttons are to be attached, said table having a driver-channel through which a button-fastener may be driven into said material, a laterally-movable setting-die, substantially as described, above said table, having its normal position directly over said driver-channel and having a lateral motion away from its said normal position, and a button-fastener driver, all arranged to operate substantially as described, and for the purpose specified.

4. The combination of a movable part having a button-fastener-setting die at one end and a button-channel leading to said die, a button-detent for holding a button in said channel at said die, and a button-feeding pawl for pushing along the button in said channel under said detent, substantially as described.

5. The combination, in a button-setting machine having a suitable frame-work, of slide F, having channel F^2, detent F^3, and pawl O, substantially as and for the purpose set forth.

6. The combination of a suitable frame-work, slide F, having a button-channel, F^2, receiver K, and tube T, leading from said receiver to said channel, substantially as described.

7. In a button-setting machine, the button-receiver K, having guides 13 and 14, substantially as described.

8. In a button-setting machine, the combination of a button-feeding spiral having alternate spiral and circular parts, substantially as described, and a set of grooved rollers for holding and rotating said spiral, substantially as set forth.

9. The combination of a button-hopper, a button-feeding spiral, substantially as described, and means, substantially as described, for holding and operating said spiral to take buttons out of said hopper, substantially as set forth.

10. The combination of a button-feeding spiral, substantially as described, means, substantially as described, for holding and operating said spiral, and a button-receiver arranged to receive buttons from said spiral, substantially as described.

11. The combination of a button-feeding spiral having an elastic termination, W^2, means, substantially as described, for holding and operating said spiral, and a button-receiver arranged to receive buttons from said spiral, substantially as described.

12. The combination, in a button-setting machine, of fastener-making mechanism for bending up a piece of stock into a button-fastener, a laterally-movable setting-die, substantially as described, for bending over into hooks the prongs of button-fasteners, mechanism for taking the fasteners from the fastener-making mechanism and driving their prongs through a fabric against said die, and button-feeding mechanism adapted to hold a button at said die so that the prong or prongs of the fastener will be driven through the shank thereof, and to then release the button, all arranged to operate substantially as described.

13. The combination, in a button-setting machine, of the fastener-making mechanism for bending up a piece of stock into a button-fastener, feeding devices for supplying the stock to said mechanism, fastener-driving mechanism, the fastener-prong-clinching device, the button-feeding mechanism, and the fabric-feeding mechanism, substantially as described.

326,787. TOOL FOR TRIMMING STRAWBERRY-VINES. MERITT RICHARDSON, Owosso, Mich. Filed Aug. 18, 1885. (No model.)



Claim.—1. The combination of the stationary supporting-rod provided at its lower end with the adjustable legs, a revoluble sleeve mounted longitudinally upon the said rod, having at its lower end a curved bracket provided with a suitable cutting device arranged at right angles thereto, and means for rotating the said sleeve on the stationary rod and reciprocating the cutter-blade.

2. The combination, with the stationary supporting-rod provided at its lower screw-threaded end with the adjustable legs formed in a single piece with a central body portion, and the gear-wheel arranged above the said legs, as shown, of the revoluble sleeve mounted longitudinally upon the said rod and provided at its lower end with the curved arm or bracket, the fork mounted upon the lower end of the said arm or bracket at right angles thereto and formed with the diverging and curved prongs, the guard-plate secured upon the inner side of the said fork, the pivoted knife-blade arranged as described and adapted to operate with a "shear" or draw cut, the pinion secured upon the inner side of the said arm or bracket and provided with a wrist-pin, the pitman connecting the rear end of the pivoted knife to the said wrist-pin, and means for rotating the revoluble sleeve, all constructed and arranged to operate in the manner and for the purpose herein shown and set forth.

3. The combination, with the stationary supporting-rod provided at its lower screw-threaded end with the adjustable legs formed in a single piece with a central body portion, and the gear-wheel arranged above the said legs, as shown, and having at its upper end the arm carrying the revoluble gear-wheel provided with an operating-handle, of the revoluble sleeve mounted longitudinally upon the said rod, having secured rigidly to its upper end the gear-wheel arranged concentrically with the sleeve and provided at its lower end with the curved arm or bracket, the fork mounted upon the lower end of the said arm or bracket at right angles thereto and formed with the diverging and curved prongs, the guard-plate secured upon the inner side of the said fork, the pivoted knife-blade arranged as described and adapted to operate with a shear or draw cut, the pinion secured upon the inner side of the said bracket and provided with a wrist-pin, and the pitman connecting the rear end of the pivoted knife to the said wrist-pin, all constructed and arranged to operate in the manner and for the purpose herein shown and described.

4. The combination of the fork having the diverging prongs formed on their inner sides with the outwardly-beveled recesses, the guard-plate having the projections cut away on their outer sides, as shown, and the pivoted knife arranged as described and shown, being beveled and sharpened on each side, and means for operating the said knife in the manner described.

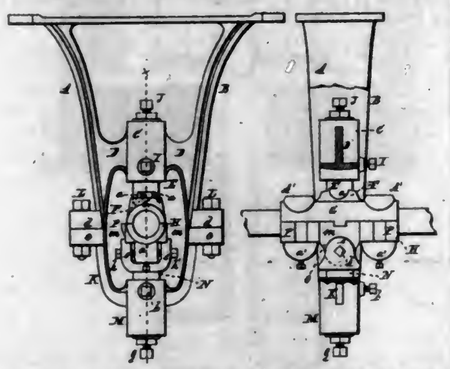
326,788. INDIA-RUBBER BALL. JOHN P. RIDER, Fishkill, N. Y. Filed Apr. 17, 1885. (No model.)



Claim.—1. As a new article of manufacture, a hollow elastic ball made of india-rubber, with re-enforcing elastic strips on its inner surface, substantially as described.

2. A hollow lawn-tennis ball composed of an elastic material, the inner surface of which is re-enforced by elastic strips, substantially as described.

326,789. SHAFT-HANGER. WEBSTER ROBERTS, Cleveland, Ohio. Filed May 4, 1885. (No model.)



Claim.—1. In a shafting-hanger, the socket C, having movably fitted therein a core, E, provided with a curved lower end, adjusting-screw J, and set-screw, in combination with a journal-box from the cap of which projects upward a block, the edge thereof being adapted to fit to and vibrate in the curve in the end of the core between the ears thereof, and transversely free to move between said ears, substantially as described, and for the purpose set forth.

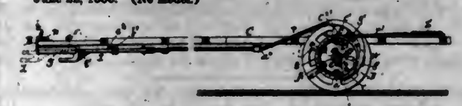
2. In a shafting-hanger, the lower section, K, thereof provided with a socket, M, set-screws *b*, and adjusting-screw Q, and having movably fitted therein a core from the upper end of which projects a pair of arms *e e*, having curved ends adapted to fit the arc of a circle in the bosses *m m* of the lower section of the journal-box, and upon which arms the box is supported and vibrates, and adapted to move laterally upon the said arms, operated for that purpose by adjusting-screws *h h'*, and by which the box is secured, substantially as described, and for the purpose specified.

3. In a shafting-hanger, the lower section, H, of the journal having its axis of vibration at *h h'*, below the axial line of the journal-bearing, in combination with the upper section of the box, having the arc of its vibration described from the axial center *h h'*, and coinciding with the arc of the arms *e e*, substantially as set forth, and for the purpose described.

4. In combination with the shafting-hanger, a journal-box having the lower section thereof provided with oil-receptacles *a' a'*, supplied with oil through the ways P P, plate or cover *c' c'*, having therein oil-ways *b' b'*, and said oil-ways P P, substantially as set forth, and for the purpose specified.

5. A hanger for shafting consisting of the suspending-arms A B, socket C, having therein a movable core, the outer end of which is the arc of circle adapted to fit the curve of the block F of the upper section of the journal-box, in combination with the lower section of the journal-box provided with bosses *m m*, having therein formed the arc of a circle coinciding with the curve of the arms *e e* of the core N, and on which arms the journal is supported, vibrates, and is laterally adjustable, adjusting-screws *h h'* and Q, in connection with set-screw *b*, constructed and arranged substantially as described, and for the purpose set forth.

326,790. CAR-STARTER. FRANK ROUSSEAU, Detroit, Mich. Filed June 22, 1885. (No model.)

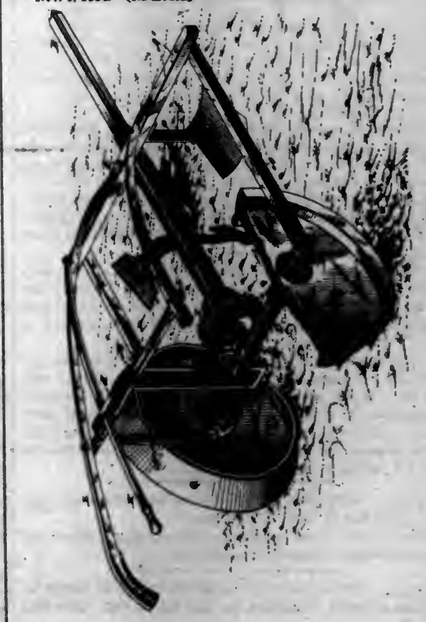


Claim.—1. In a device for the purpose set forth, the combination of the car-wheel and axle, the internally-toothed ring attached to said wheel, a double-circled sector, D, journaled on said axle, the dog pivoted to said sector and adapted to engage with a toothed ring, a cable, *r'*, attached at *s* to the sector and to the coiled spring mounted on the car, and the cable *r*, attached to the sector and to a sliding draw-bar, as and for the purposes specified.

2. In a car-starter and in combination, the axle and wheel, the internally-toothed ring bolted to said wheel, the double half-circled pulley or sector D, journaled on the axle and carrying pivotally the dog *g*, the cable *r'*, attached to the small circle of the sector and to the spring S, the cable *r*, attached to the large circle of the sector, passing between the two sets of pulleys a^4 a^4 and engaging with the rear end of the sliding draw-bar, the spring-bar E, its free end adapted to engage with the draw-bar, the draw-head having channels a^5 a^5, with front B, formed integral therewith, and stud *n* for depressing the spring-bar E, as and for the purposes specified.

3. The combination of the sliding draw-bar working in the draw-head as set forth, the spring-bar E, its free end engaging with the draw-bar, the plate D^3, mounted on the car-floor, the stud *n*, working in said plate, having the arm a^2 and stop thereon, the locking-pin c^3, adapted to engage with the plate D^3, and hinged cap *i*, substantially as specified.

326,791. COTTON-CHOPPER. CALEB SANDEL, Campti, La. Filed Nov. 6, 1884. (No model.)

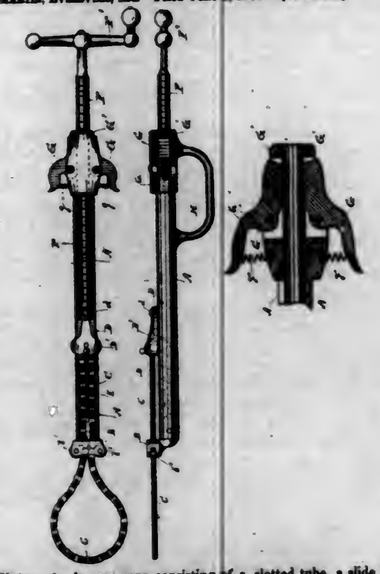


Claim.—1. The combination of the beveled wheels, the frame hinged to the axle and carrying the scrapers at its forward end, the sleeve carrying the choppers, and provided with the gear-wheel and supported between the axle and scrapers, the support for said sleeve next to the axle being connected to the axle by a loose collar, E, the bevel-gear feathered to the axle, and the clutch and lever for moving said gear into and out of mesh with the gear on the chopper-sleeve, substantially as and for the purpose described.

2. The combination of the pole, the axle and its wheels, the collar connecting the pole and axle and provided with the extending arm, the hinged frame carrying the scrapers, the handles secured to the frame and connected together by the cross-bar, and the standard connected to said cross-bar and resting on the arm of the collar surrounding the axle, substantially as and for the purpose described.

3. The combination of the axle and its wheels, the frame hinged to the axle and carrying the scrapers at its forward end, the pole having a hinged connection with the axle and connected to the said frame, the sleeve provided with the choppers and beveled gear and supported by a pole between the axle and scrapers, the bevel-gears feathered to the axle, the handles connected to the frame, and the lever connected with a clutch for moving the feathered gear into and out of mesh with the chopper-sleeve gear, substantially as and for the purpose described.

326,792. **ECRASEUR.** DAVID H. SCHEUTER, New Castle, and CHARLES F. MARTIN, Evansville, Ind. Filed June 3, 1885. (No model.)



Claim.—1. An ecraseur consisting of a slotted tube, a slide fitted to the slot of said tube, a flat-linked chain attached to said slide, the bight of which is adapted to be drawn through a slot at one end of and at right angles to the axis of said slotted tube, a spiral spring within said slotted tube, and a screw-rod attached to said slide, having crank-handle, in combination with pivoted pawls threaded at one end, so as to engage with said screw-rod, and having at the other end thumb and finger pieces and spiral springs, for the purpose herein set forth.

2. In an ecraseur, the slide D, adapted to hold the ends of chain C, the end pieces, B, having slot *b* and friction-rollers *b'*, the slotted tube A, and spiral spring E, in combination with screw-rod F, pivoted pawl G, spiral springs *g'*, and head G', as described, and for the purposes set forth.

3. In an ecraseur, the combination, with a slotted tube having a transverse slot near one end for the passage of the chain, and the slide fitted to move in said tube, and having a flat-linked chain detachably connected thereto, of a rod having a reverse screw-thread and carrying a handle, and the pivoted pawls having threads corresponding to that on the rod, whereby the connection between the pawls is positive in one direction and yielding in the other.

326,793. **EXTRACT OF MEAT.** JULIUS SCHWEITZER, New York, N.Y. Filed May 14, 1885. (No specimens.)

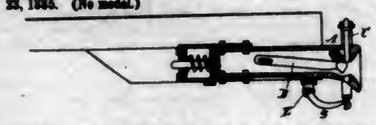
Claim.—A meat extract consisting of ordinary extract of meat and digested egg-albumen, substantially as set forth.

326,794. **DEVICE FOR HOLDING ARTIFICIAL FLIES, HOOKS, &c.** MALCOLM A. SIMPLOT, Philadelphia, Pa. Filed May 14, 1885. (No model.)



Claim.—The base A and spring-tongue C, made integral, and provided with means, substantially as described, for securing the same to the leaf of the book, as and for the purpose set forth.

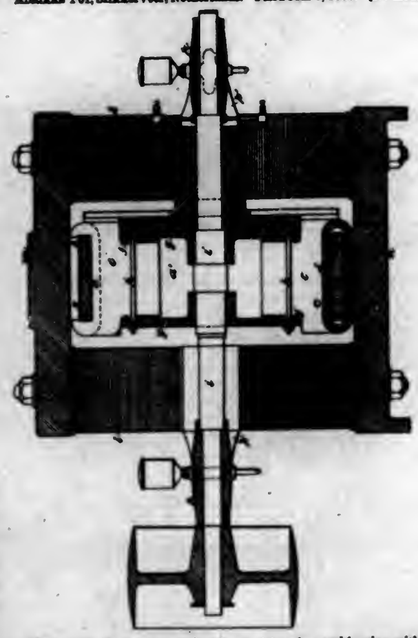
326,795. **CAR-COUPLING.** JOHN SKINNER, Flint, Mich., assignor of two-thirds to Alexander McColl and Oren Stone, same place. Filed July 23, 1885. (No model.)



Claim.—1. In combination with the head of a car-coupler provided with an automatically-operating bar or rest for retaining the coupling-pin in an elevated position, a yoke embracing the draw-head and engaging with the head of the pin, and an actuating rock-shaft provided with the arm *a*, pivotally secured to the bottom of said yoke and arranged to raise the pin, substantially in the manner and for the purposes set forth.

2. In a car-coupler, the combination of the draw-head A, provided with the gravity-bar B and pin C, with the yoke D, rock-shaft E, brackets F, and stop G, when constructed, arranged, and operating substantially in the manner and for the purposes described.

326,796. **DYNAMO-ELECTRIC MACHINE.** WILLEM B. SIET and ADRIAAN POT, Slikkerveer, Netherlands. Filed Jan. 9, 1885. (No model.)



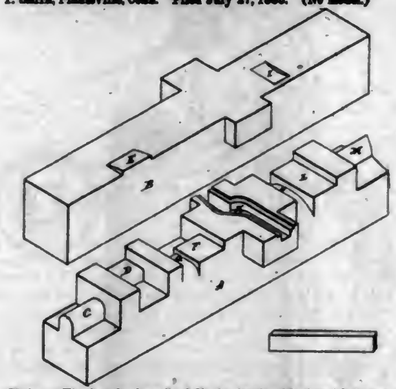
Claim.—1. In a dynamo-electric machine, in combination with the armature-core, one or more boxes forming a channel for said core and the spokes for supporting the core, the outer ends of which are connected by said boxes, substantially as described.

2. In a dynamo-electric machine, a ring-armature having arms or spokes *c*, in combination with the boxes *e*, the armature-core wound within said boxes upon said spokes, and armature-coils *d*, wound upon said boxes between said spokes, substantially as described.

3. In a dynamo-electric machine having a ring-armature, radial arms or spokes *c*, arranged in pairs, the upper portions of each pair being bent away from each other, substantially as shown, whereby the upper portions of opposites spokes in adjacent pairs are substantially parallel, and each spoke being formed with a recess, *b*, in its outer end, in combination with an armature-core, *a*, of iron wire wound upon said spokes within said recesses *b*, and armature-coils *d*, wound upon the core *a* between the parallel portions of adjacent spokes, substantially as set forth.

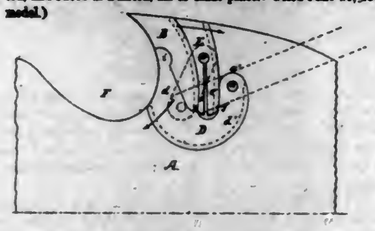
4. In a dynamo-electric machine, a ring-armature having arms or spokes *c*, with recesses *f* in their sides and recesses *b* in their outer ends, in combination with the boxes *e*, the armature-core wound upon said spokes within the boxes *e*, and armature-coils *d*, wound upon said boxes, covering said core between said spokes, the whole being clamped together, substantially as described.

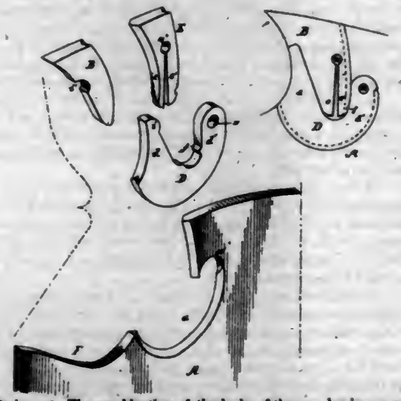
326,797. **DIE FOR FORGING BLACKSMITHS' TONGS.** FREDERICK T. SMITH, Plantsville, Conn. Filed July 27, 1885. (No model.)



Claim.—The herein-described die for forging blacksmiths' tongs, consisting of the breakdown rib C, the shoulder D, the recessed flat surfaces F G, the cavity H, and the finishing-cavity K, combined with the second part of the die having the inclined projection E and the cavity I on its working-face corresponding, respectively, to the portions D and H of the other die, substantially as described.

326,798. **SAW WITH INSERTIBLE TEETH.** JOHN SMITH, Philadelphia, Pa., assignor to Hamilton Disston, Horace C. Disston, William Disston, and Jacob S. Disston, all of same place. Filed June 19, 1885. (No model.)





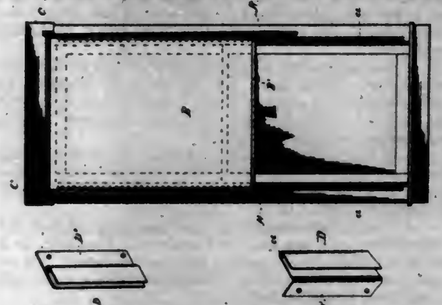
Claim.—1. The combination of the body of the saw having a segmental recess at the rear of the gullet, the tooth B, and the locking-plate fitted to said segmental recess, and having two arms, *d d'*, between which the lower portion of the tooth is contained, as set forth.

2. The combination of the body of the saw having a recess at the rear of the gullet, a locking-plate fitted to said recess, a tooth, B, the lower portion of which projects into a recess in the locking-plate, and a wedge, E, at the rear of the tooth, whereby said tooth is retained in the recess of the locking-plate, as specified.

3. The combination of the body of a saw, the tooth, the wedge at the rear of the latter, and the locking-plate adapted to a segmental recess in the body of the saw, said plate extending upward in the rear of the wedge and having a projection, *f*, adapted to a recess therein, as specified.

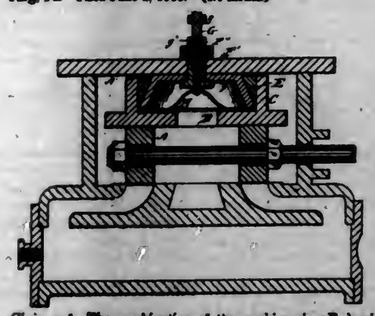
4. The combination of the body of a saw having a segmental recess in the rear of the gullet, a tooth, B, having a recess, *i*, in its front edge, and a locking-plate adapted to the segmental recess in the saw, said plate extending upward in the rear of the tooth and having in front a projection, *i*, adapted to the recess *i'* of said tooth, as specified.

326,799. **GUIDE FOR WINDOW-CURTAINS.** FRANKLIN B. SNOOK and DANIEL DEATH, Franklin, Ohio. Filed Mar. 13, 1885. (No model.)



Claim.—A guide for the edges of window-curtains to be secured upon the wooden frame, consisting of a piece of sheet metal bent to form the longitudinal groove for the reception of the edge of the curtain and bent or turned over again to present a rounded and smooth surface to the outer side or face of the curtain, as set forth.

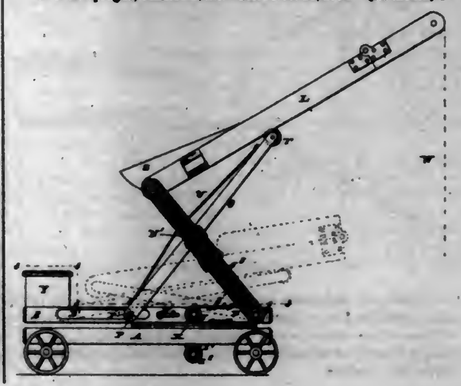
326,800. **BALANCE SLIDE-VALVE.** GEORGE T. SNOWDEN, Pittsburg, Pa. Filed June 2, 1885. (No model.)



Claim.—1. The combination of the packing-ring E, having its inner surface beveled, with the plate B, having the cylinder C, and with the box or boss F, having its outer flanged portion flaring or tapered to correspond with the bevel of the packing-ring, substantially as described.

2. The box or boss F, having tapered flange *f'*, and made separate and distinct from the valve-chest cover, in combination with the internally-beveled packing-ring E, the plate B, having cylinder C, the bolt F, bored centrally and carrying the set-screw G, and the spring or springs H, substantially as described.

326,801. **STRAW-STACKER.** PEARLEY J. SPRAGUE, Higbee, assignor to D. D. Sprague, California, Mo. Filed Nov. 26, 1884. (No model.)



Claim.—1. In a straw-stacker, the combination of the base or truck, turn-table, elevator-frame, arms or bars connecting the elevator-frame to the turn-table, levers or bars pivoted to the arms, and upon the outer ends of which the elevator-frame rests, and a windlass for operating the levers, substantially as and for the purpose set forth.

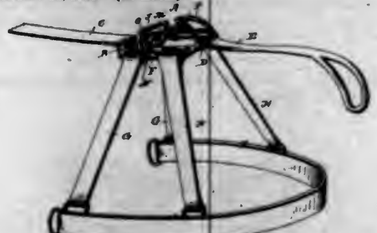
2. In a straw-stacker, the combination of the base or truck, turn-table, elevator-frame, arms or bars connecting the elevator-frame to the turn-table, levers or bars which are pivoted to the arms and upon which the stacker rests, a fastening-rod for said levers or bars, fitting in slots in the turn-table, and a windlass for operating the levers, substantially as set forth.

3. In a straw-stacker, the combination of the base or truck, turn-table pivoted to the said base or truck, elevator-frame connected to the table, and ballast-box or counter-balance located upon the inner part of the table, whereby the pivot is relieved of strain, substantially as shown and described, for the purpose set forth.

4. In combination with the base, turn-table, and elevator, the supports connecting the turn-table and elevator-frame, and being arranged in two flexible pairs in the shape of the letter X, substantially as and for the purpose set forth.

5. The combination of the base, the lifting-levers resting at their lower ends upon said base and pivoted together at an intermediate point, the elevator-frame pivoted to one of said levers and resting upon the other, and means for drawing said lifting-levers together, substantially as and for the purpose set forth.

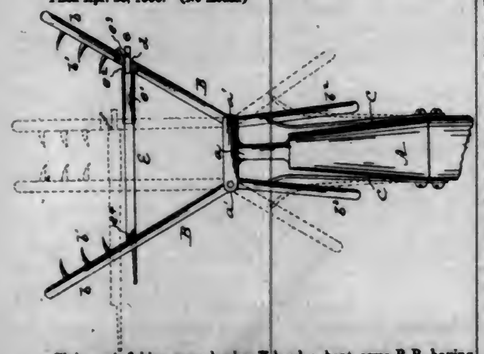
326,802. TRACE-CARRIER. BARNARD F. STEVENS, Scotia, Nebr. Filed July 11, 1885. (No model.)



Claim.—1. A trace-carrier having snap-hooks secured near its middle portion, said hooks consisting of the portion I, curved upward at its middle, and having the upward bent ends K, and the intermediate portion bent so as to clasp the frame A, and the snap M, the ends of which are slightly curved and secured intermediately to the bent portion of the part I, substantially as and for the purpose set forth.

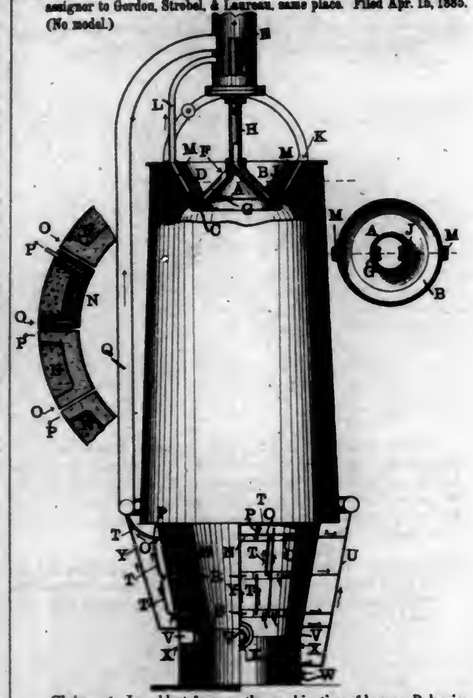
2. The combination of the carrier-frame having the bail at its rear end for the crupper-strap, the bail at its forward end for the back-strap, and the bails or loops at its sides for the hip-straps and spreader-straps, the snap-hooks secured with their inner ends together, and having their outer portions secured to the sides of the carrier-frame, a wide guard-bail secured with its ends to the sides of the carrier-frame forward of the snap-hooks, and projecting slightly above the upper sides of the same, and the converging and united forwardly and upwardly curved guard-stripe secured to the rear end of the carrier-frame, as and for the purpose shown and set forth.

326,803. FISHING-GIG. ROBERT N. STOCKTON, Philadelphia, Pa. Filed Apr. 22, 1885. (No model.)



Claim.—A fishing-spear having T-head *a*, bent arms B B, having ends *b*, with fixed inside claws, *b'*, and ends *b²*, springs C, and opening *d* in one of the arms B, and a trigger, E, having spring *e²*, and end *e*, passing through arm-opening *d*, and a recessed end, *e'*, substantially as shown and described.

326,804. BLAST-FURNACE. VICTOR O. STROBEL, Philadelphia, Pa., assignor to Gordon, Strobel, & Laureau, same place. Filed Apr. 15, 1885. (No model.)



Claim.—1. In a blast-furnace, the combination of hopper B, having integrally formed therewith the conduit D in its extreme lower edge and passages M within the wall of the hopper and leading from said conduit to the rim of the hopper, the chimney E, and the pipe L, connecting one of said passages M with the chimney, substantially as and for the purpose set forth.

2. In a blast-furnace, the combination of the bell A, having integrally formed with it the conduit C in its lower edge, and the passage G, formed within the wall of the bell and leading from said conduit upward to an outlet near the apex of the bell, and the passage J, formed within the wall of the bell and leading from said conduit to the apex of the bell, and the pipe H, secured to the apex of the bell in communication with the passage J, substantially as and for the purpose set forth.

3. In a blast-furnace, the combination of the bell A with its conduit and passages, the chimney E, surmounting the furnace, and the central pipe, H, secured to the bell in communication with the passage J and fitted to slide vertically within the chimney, substantially as and for the purpose set forth.

4. In a blast-furnace, the combination of a circular series of flat segmental plates disposed horizontally within the brick-work of the furnace-bosh and provided with cavities having each two openings for the passage of air, and a pipe leading from one of said openings in each cavity to a device adapted to produce a circulation of air, substantially as and for the purpose set forth.

5. In a blast-furnace, the combination of several series of flat segmental plates disposed horizontally within the brick-work of the bosh and provided with cavities, each cavity having two openings for the passage of air, pipes connecting a plate of one ring with plates of the other rings, and a pipe connecting one of such connected plates with a device for producing a circulation of air through the plates and connected pipes, substantially as and for the purpose set forth.

6. In a blast-furnace, the combination of a pipe, Q, several circular series of flat segmental plates disposed horizontally within the brick walls of the bosh, and pipes connecting the several circular series of bosh-plates with the pipe Q, substantially as and for the purpose set forth.

326,805. GRAIN-CLEANER FOR THRASHING-MACHINES. DAVID L. STROUD, Richford, Minn. Filed Mar. 5, 1885. (No model.)

Claim.—1. The combination of the shoe *a*, having rear extension, *d*, the sieve *c*, the adjustable supports *m*, the rockers having fingers, and the auxiliary chute *q*, adjustable in the shoe to follow the adjustment of the supports *m*, substantially as set forth.

2. The combination of the shoe *a*, having rear extension, *d*, pro-

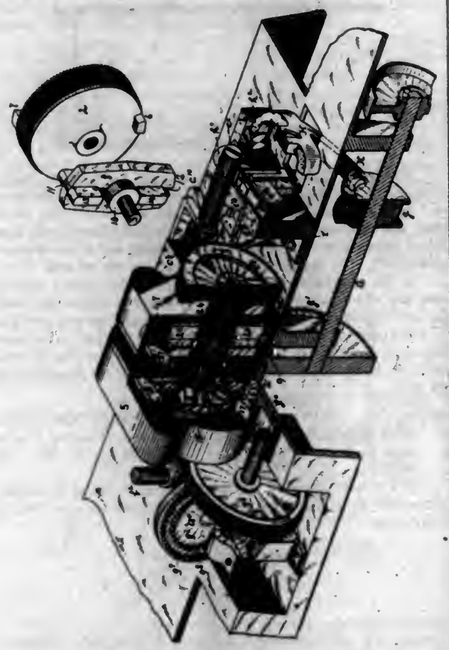
326,805.



vided with a series of curved slots, *p*, and apertures *o*, the sieve *c*, the supports *m*, pivoted at *x* to the outside of the shoe, the rockers extending through the curved slots into the supports *m*, fingers *f* on the rockers, crank-arms *i*, rocking lever *j*, connecting-bar *k*, and the rod *n*, for engaging the holes *o* to adjust the supports *m*, substantially as set forth.

326,806. BARB-WIRE MACHINE. JOHN STUDER, Pittsburg, assignor to Thomas B. Kerr, Allegheny City, Pa. Filed June 3, 1885. (No model.)

Brief.—The main and barb wire feed-rolls are both operated at the same time, while the coiler is at rest. The hollow stem of the coiler rotates on a fixed tube provided with guides, through which the main wires are fed. The barb-wire is fed into the coiler between the main wires. Both main and barb wire feed-rolls then stop and the coiler begins to rotate. The barb is severed when the coiler has made a small part of one revolution. The two ends of the barb are made to coil spirally about the main wires by two fixed guides.



Claim.—1. The combination, in a barb-wire machine, of a hollow rotatory wrapper for wrapping the barbs on a cable whose strands are arranged longitudinally within the wrapper, mechanism for feeding the strands through the wrapper, barb-feeding mechanism for feeding the barb-wire into the wrapper and between the strands, and the flexed barb-guide pieces h^3 h^4, substantially as and for the purposes described.

2. The combination of the rotatory wrapper of a barb-wire machine, having slots for the entrance and exit of the barb-blank, knives for severing said blank after it has been fed into the wrapper, the moving knife arranged to operate transversely to the course of the barb-strand and longitudinally with said wrapper for the purpose of cutting, moving, and holding said barb, substantially as and for the purposes described.

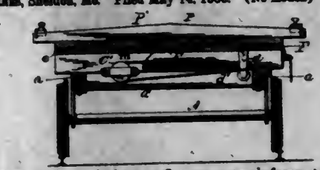
3. The combination, with feed-rollers for feeding the barb-wire toward the cable-strands, a knife for severing the same, and a wrapper for securing the barb-wire to the cable-strands, of a guide-block, i^3, movable, so as to change its inclination to the horizontal, for the purpose of directing the barb-strand relatively to the wrapper and regulating the length of the point cut thereon, substantially as described.

4. The combination, with the feed-rollers of a wire-barbing machine and a shaft for driving the same, of a crown-wheel mounted on said shaft and a pinion movable from one series of teeth on said wheel to another, substantially as and for the purposes described.

5. A rotatory wrapping-tube for barb-wire machine, having a hollow tube for passage of the strand-wires, and axial slots c^4 and elongated transverse slots c^5, in combination with feeding mechanism for causing barb-wire to be fed thereinto, substantially as and for the purposes described.

6. The combination, in a barb-wire machine, of two revolving shafts, 3 and 4, each provided with lever-arms having lugs or blocks capable of motion toward or from the axis of revolution, with an interposed driving-disk, 2, having driving-studs on each side and cams for throwing the lugs or blocks into and out of the path of revolution of the studs, whereby an intermittent rotation is imparted to the shafts, mechanism for feeding the cable-strands, and mechanism for feeding the barb-strand, both of said mechanisms being connected with and actuated by one of said revolving shafts, and mechanism for wrapping the barb actuated by the other of said shafts, whereby a regularly-intermittent rotation is imparted to each of these parts, substantially as and for the purposes described.

326,807. DUMPING-CAR. JAMES H. R. TALLEY and CHARLES P. BARNES, Sheldon, Mo. Filed May 14, 1885. (No model.)



Claim.—1. In a platform or flat car, a truck-frame having rollers and a lateral projecting bar or arm rigidly secured thereto, a lateral sliding platform with depending arms adapted to engage with a projecting bar, and hooks *e*, for engagement with the longitudinal bar in the platform to form a hinged connection between the parts when the platform is inclined to one side, substantially as shown, and for the purpose set forth.

2. In a platform-car, the truck-frame having rollers attached to the transverse beams thereof, a projecting arm, B, extending parallel therewith, and a roller, C', secured to the central beam, in combination with the platform having bars which rest upon the rollers, depending arms *d*, which embrace the arm or bar B, and cords *m n*, the parts being organized substantially as shown, and for the purpose set forth.

3. In a platform-car, the truck-frame provided with a series of inclined rollers, in combination with a platform having a corresponding series of inclined bars which contact with said rollers and depending arms or bail adapted to engage with a projecting arm secured to the truck-frame, substantially as shown, and for the purpose set forth.

4. In a platform-car, for the purpose set forth, the transverse end beams, P', which are inclined from their centers toward their ends and provided near their ends with rollers *p*, substantially as shown, and for the purpose set forth.

326,808. ORE-CONCENTRATOR. HORACE P. TOMEY, Wareham, and GEORGE B. THAYER, Boston, Mass., assignors to the Golden Gate Concentrator Company, Boston, Mass. Filed Feb. 23, 1884. (No model.)

Claim.—1. In an ore-concentrator, an ore bed or tray consisting of an independent settling-compartment, free or nearly free from water-current, and an inclined washing-compartment continuous therewith, a vessel to supply water to the washing-compartment, and mechanism, substantially as described, to shake the said compartments to effect the stratification of the ore and its travel in the said compartments, combined with means, substantially as described, for removing the gangue and water at or near the junction of its settling and washing compartments, as and for the purpose set forth.

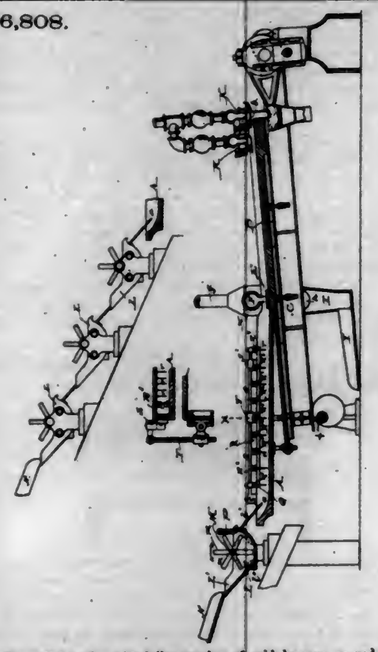
2. In an ore-concentrator, an ore bed or tray consisting of a settling-compartment, free or nearly free from water-current, and a connected inclined washing-compartment, a vessel to supply water to the washing-compartment, and a shaking mechanism, substantially as described, to effect the stratification and travel of the ore on the said ore bed or tray, in combination with a protecting-plate, exhaust-tube F, and connected system of pipes, to operate substantially as described.

3. In an ore-concentrator, an ore bed or tray and protecting-plate therein parallel to said ore bed or tray, combined with a tube, F, and with means, substantially as described, to rarefy the air in the said tube, as and for the purpose set forth.

4. The concentrating bed or tray composed of the communicating, settling, and washing compartments, combined with the protecting-plate set at the junction of the said compartments, to operate substantially as described.

5. In an ore-concentrator, the ore bed or tray and the hollow open ore-distributing vessel or hopper having its delivery-edge arranged transversely with relation to said ore bed or tray and parallel to and lower than its receiving-edge, combined with a stirrer or agitator ar-

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ranged parallel to the said delivery-edge of said hopper, as and for the purpose set forth.

6. In an ore-concentrator, the ore bed or tray and the hollow open ore-distributing vessel or hopper having its delivery-edge arranged transversely with relation to said ore bed or tray and parallel to and lower than its receiving-edge, combined with a stirrer or agitator arranged parallel to the said delivery-edge of said hopper, said vessel or hopper having an opening, *f'*, in its bottom for the removal of waste mercury and amalgam, substantially as described.

7. In an ore-concentrator, an ore bed or tray and the ore-distributing vessel or hopper arranged transversely with relation to the said bed or tray, and the stirrer or agitator therein, having its axis arranged transversely to the said ore bed or tray, combined with the curtain arranged at the delivery-edge of the said vessel, and having its lower edge extended below the said delivery-edge and into the vessel, as and for the purpose set forth.

8. The settling-compartment A and the compartment B in communication therewith, combined with means, substantially as described, located within said settling-compartment at or near its junction with the compartment B, to remove the superfluous gangue and water from the said compartments, substantially as set forth.

9. In an ore-concentrator, a reciprocating ore bed or tray provided with a depressed portion, *b'*, and a vessel to discharge water thereon, combined with a projecting-apron, *c*, interposed between the outlets of the said vessel and the bottom of the said depressed portion of the ore bed or tray, to operate substantially as described.

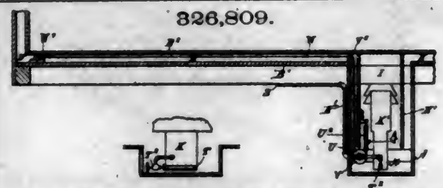
10. The reciprocating ore bed or tray of an ore-concentrator and the frame carrying the series of stirring-pins attached to and partaking of the longitudinal motion of said ore bed or tray, combined with means, substantially as described, for causing said frame carrying the pins to reciprocate in a direction transverse to that of the movement of said ore bed or tray, as and for the purpose set forth.

326,809. SYSTEM FOR HEATING FREIGHT-CARS. ARCHIBALD B VANDEMARK, New York, N. Y. Filed Nov. 2, 1883. (No model.)



Claim.—1. The combination, with a lined freight-car having a system of flues in its bottom, of a trunk suspended from said bottom and communicating with said flues and the spaces between the lining and outer walls of the car, a heat-generator contained in said trunk, air-inlets to said trunk, and an automatic heat-regulating device for controlling the action of the heat-generator, substantially as described.

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2. A freight-car having a raised false floor and the space beneath the same divided longitudinally of the car into outside and center flues, combined with a trunk suspended from the bottom of the car with which the flues communicate, the outside flues leading out from the top of the trunk and returning through the center flues to the bottom of said trunk, and a heat-generator and air-inlets to said trunk, substantially as set forth.

3. A car-heating apparatus having a liquid-fuel supply-tank, P, provided with the vent-pipe Q, opening out from the said tank at one end and extending the length of said tank and crossing it to a diagonally-opposite corner or end and having its end at such corner or end opening within a cap surmounting said tank, substantially as described.

326,810. SELF-OPENING LID FOR CABINETS, &c. PETER VANDERNOTH, New York, N. Y. Filed July 29, 1885. (No model.)

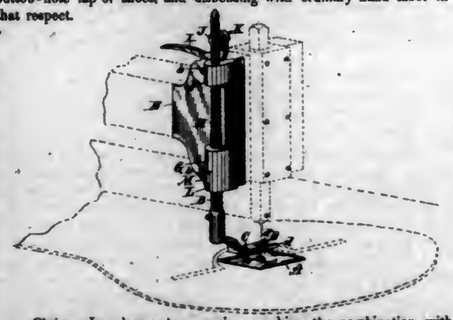


Claim.—1. The combination, with a hinged lid, B, of an inclosed stand or case, and with an arm or lateral plate, C, projecting therefrom, of a weight, F, and cord E, attached to the outer end of said arm or plate and led over a pulley, D, rotating on a stud secured to the inner side of the stand or case, and a catch, G, engaging said lid when closed, substantially in the manner and for the purpose herein set forth.

2. The combination, with the hinged lid of an inclosed stand or case, and with an arm or lateral plate, C, projecting therefrom, a cord, E, attached to its outer end, led over a pulley, D, and carrying a weight, F, and a catch, G, engaging the lid, of a spring, H, fixed on the inner side of the stand or case to be compressed by the arm or plate C when the lid is closed, substantially in the manner and for the purpose herein set forth.

326,811. BRACING OR STAYING ATTACHMENT FOR BUTTON-HOLE SEWING-MACHINES. FRANK D. WALDEN, Milwaukee, Wis., assignor to Bradley & Metcalf, same place. Filed Jan. 27, 1885. (No model.)

Brief.—The device is intended for staying or bracing the slit and button-hole lap of shoes, and dispensing with ordinary hand labor in that respect.

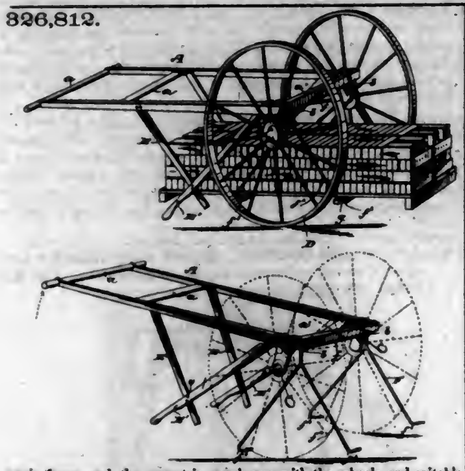


Claim.—In a button-hole sewing-machine, the combination, with the presser-foot affixed to the head of the machine, and with the bed of the machine having an elevation or upward-projecting flange around the needle passage or opening, of a stationary leveling-plate having a central opening for the reception of said elevation or flange, said plate serving to form a stationary level surface flush with the top of said flange or elevation upon which the work is rigidly held in a stationary position by said presser-foot while being stitched or stayed, substantially as and for the purpose set forth.

326,812. PORTABLE BRICK-HACK. MALCOM WALKER and EPHRAIM HOWE, Yankton, Dak. Filed June 16, 1885. (No model.)

Claim.—1. In a brick-carrying machine, the combination of the

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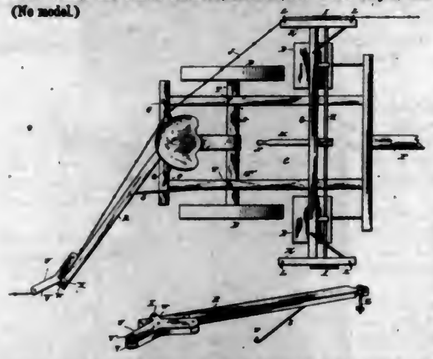
main frame and the eccentric crank-arm with the wheels and suitable supports and supporting-frame for the hack, as set forth.

2. In a brick-carrying machine, the combination of the main frame, the wheels, and crank-arms with the hooks *b b* at the front end of the frame, and frame F, having the hooked ends, as set forth.

3. In a brick-carrying machine, the frame, the cross-bars *a* and *a'*, the hooks *b b* on the latter forward of the axle-supports or eccentric arms, and the hooked rods F F, with the arms *f'*, as set forth.

4. In a brick-carrying machine, the main frame having side braces or supports, E E', the latter serving the double purpose of a brace and a supplemental handle, the crank-axles C, the hooks *b b*, and the hooked rods F F, all combined in the manner and for the purpose set forth.

326,813. ATTACHMENT FOR CHECK-ROW CORN-PLANTERS. ANDREW WALLY and HENRY BRINKMAN, Montrose, Mo. Filed July 8, 1885. (No model.)



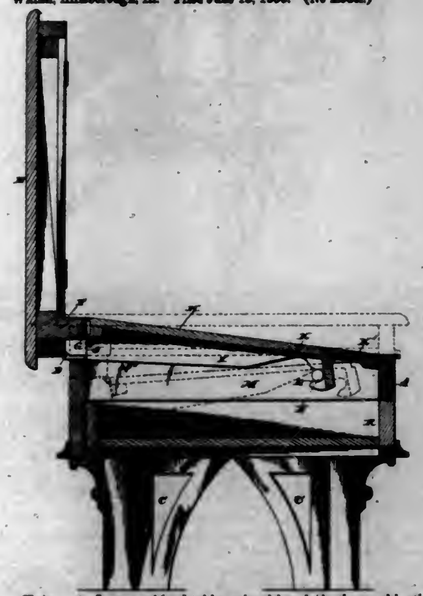
Claim.—1. As an improvement in check-row corn-planters, the combination, with the main frame of the planter, of the arm or lever swiveled to the rear cross-bar of the same, the swinging bracket pivotally secured upon the outer end of the said arm and provided with a series of pulleys, between which the tappet-wire passes, and means for securing the said swiveled arm in its adjusted operative position, as set forth.

2. As an improvement in check-row corn-planters, the combination, with the main frame of the planter, of the arm or lever swiveled to the rear cross-bar of the same, having the pivoted brace terminating at its free end in a hook adapted to engage with suitable staples upon the side bars of the frame, and thereby secure the said swiveled arm or lever in its adjusted position, and provided at its outer end with the pivoted swinging bracket having a series of pulleys, between which the tappet-wire passes, all constructed and arranged in the manner and for the purpose shown and set forth.

3. As an improvement in check-row corn-planters, the combination, with the arm or lever swiveled to the rear cross-bar of the main frame of the planter, of the herein-described curved bracket, consisting of the cheeks connected at their outer or front edges, and having the arms at their inner edges, whereby they are pivotally secured to the outer end of the said arm or lever, and a series of three pulleys journaled between the said cheeks, substantially as described, for the purpose set forth.

4. As an improvement in check-row corn-planters, the combination of the cross-bar mounted transversely upon the seed-boxes, the rock-shaft journaled to the same and having the forked tappet-wheels, the longitudinal arms or brackets at the ends of said cross-bar, provided with guides or eye-hooks at their ends, the cross-bar mounted upon the rear seat-support and provided at its ends with friction-rollers or other suitable anti-friction guiding devices, and the reversible arm or lever swiveled to the rear cross-bar of the frame of the planter, having the pivoted brace terminating at its free end in a hook adapted to engage with suitable staples upon the side bars of the main frame, and thereby secure the said swiveled arm in its adjusted position, and provided at its outer end with the pivoted swinging bracket having a series of pulleys, between which the tappet-wire passes, all constructed and arranged to operate in the manner and for the purpose herein shown and set forth.

326,814. COMBINED TABLE AND WRITING-DESK. MATTHEW M. WALSH, Hillsborough, Ill. Filed June 13, 1885. (No model.)



Claim.—1. In a combined table and writing-desk, the combination, with a box table-bed and a cover hinged thereto, of a writing board or table hinged to the front of the box-cover, and a pivoted section adapted to engage the table and hold the cover in elevated adjustment, substantially as set forth.

2. In a combined table and writing-desk, the combination, with a box table-bed and a cover hinged thereto, of a board or table hinged to the front of the cover, and a pivoted or hinged section secured to the front of the table-bed, and adapted to engage and hold the cover in elevated adjustment, substantially as set forth.

3. In a combined table and writing-desk, the combination, with a box table-bed and a cover hinged thereto, of a table provided with wedged-shaped side bars having recesses therein hinged to the cover and lugs secured to the bed and adapted to engage the recesses, substantially as set forth.

4. In a combined table and writing-desk, the combination, with a box table-bed and a cover hinged thereto, of a table hinged or pivoted to the cover and provided with wedge-shaped and recessed side bars, lugs adapted to engage the recesses in the side bars, and a pivoted section adapted to engage the table, whereby the cover is held against movement, substantially as set forth.

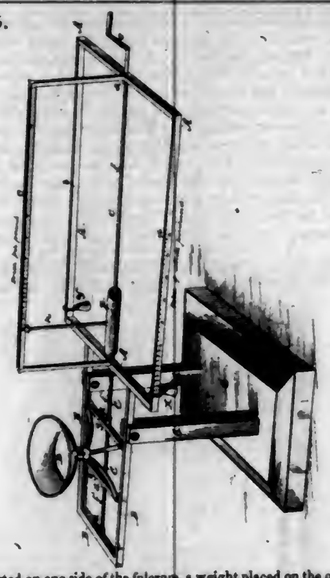
5. In a combined table and writing-desk, the combination, with a box table-bed and a cover hinged thereto, of a table provided with side bars, said bars being adapted to engage the rear frame of the box-bed and hold the cover against backward displacement, substantially as set forth.

6. In a combined table and writing-desk, the combination, with a box table-bed and a cover hinged thereto, of a table provided with wedged-shaped side bars, the latter having hook-shaped ends, the said hook-shaped ends being adapted to engage lugs, and the rear ends of the side bars adapted to engage the rear portion of the box-bed, whereby the cover is held against backward displacement.

326,815. WEIGHING-SCALE. WILLIAM WATKINS, Moss Point, Miss. Filed Apr. 30, 1885. (No model.)

Claim.—1. The combination, with a frame fulcrumed as specified,

326,815.



of a pan supported on one side of the fulcrum, a weight placed on the other, and a threaded rotatable rod for adjusting said pan and weight, for the purpose specified.

2. The combination of the fulcrumed frame, the rotatable screw-threaded rod, the adjustable pan, and the weight Z, provided with the arrow-rod, and the graduated bar *c*, having a guide-slot for said arrow-rod, all as shown and described, to operate as specified.

3. The combination, with the fulcrumed frame and a pan and weight arranged on opposite sides of the fulcrum to balance each other, of a differentially-threaded rotatable rod for adjusting them, a beam, *a*, graduated as specified and a weight placed thereon, a graduated and slotted bar, *c*, and a guide-rod attached to the weight on the screw-rod, all co-operating as shown and described.

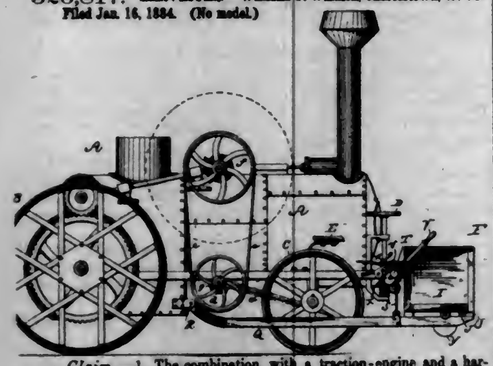
326,816. FISH-HOOK. JARED G. WEATHERLY, Tecumseh, Ala. Filed July 16, 1885. (No model.)



Claim.—1. A fish-hook having two barbed arms, one supported by means of a flattened integral spring portion, and adapted to be actuated by the angler's line, substantially as described.

2. A fish-hook of this construction, to wit: a single metallic piece with barbed ends twisted to form an eye, *c*, for the line, and to provide two arms, A and B, one of which shall be flattened near its top to give it resiliency, while the other has an eye, *b*, and carries the bait, in combination with the fishing-line, substantially as and in the manner set forth

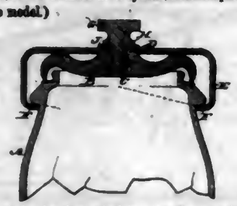
326,817. HARVESTER. WILLIAM F. WHERRY, Charlestown, W. Va. Filed Jan. 16, 1884. (No model.)



Claim.—1. The combination, with a traction-engine and a harvester ahead thereof, of a pair of arms secured at their forward ends to the harvester, thence passing backward outside of the forward supporting-wheels of the engine and pivoted at their rear ends to the engine-frame, and vertically-adjustable supports connecting the said arms at points near their forward ends with the forward end of the engine, substantially as described, whereby the harvester may be carried directly in front of the engine and be raised or lowered without interfering with the running-gear thereof.

2. The combination, with a traction-engine and a harvester attached thereto and carried in front thereof, and an automatic rake and binder, of a bundle carrier and dropper hung to the harvester upon a rock-shaft having a crank-arm and a segmental plate attached thereto, and a latch having a treadle, as described, whereby the driver of the engine may permit the said dropper to tip and drop the bound sheaves at will, as set forth.

326,818. JAR-FASTENING. GEORGE W. WEYMAN, Clayton, N. J., assignor of one-half to Charles T. Weyman, Philadelphia, Pa. Filed June 3, 1885. (No model.)

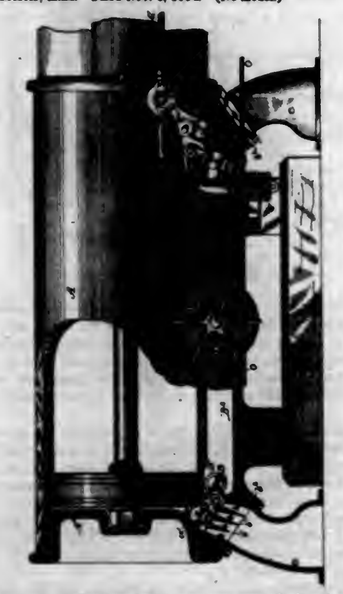


Claim.—1. A jar having spiral lugs on the exterior thereof, in combination with a lid having a threaded bent opening, a clamp having lips engaging with said spiral lugs, and a screw arranged to work in said threaded opening and with a gasket or packing adapted to retain the said clamp on said lid, substantially as and for the purpose set forth.

2. The jar A, having spiral lugs, in combination with the lid B, having threaded opening C in the center thereof, the clamp E, journaled on a boss of said lid, and having lips F, and screw G, having shoulder H, substantially as and for the purpose set forth.

3. A jar having spiral lugs and a clamp having lips on its end and an opening in its center, in combination with a lid having a boss having an internally-threaded vent-opening, and a screw engaging with said vent-opening, and having its shoulder or head above the wall of the central opening of the clamp, substantially as and for the purpose set forth.

326,819. VALVE-GEAR FOR STEAM-ENGINES. JEROME WHEELOCK, Worcester, Mass. Filed Nov. 3, 1884. (No model.)



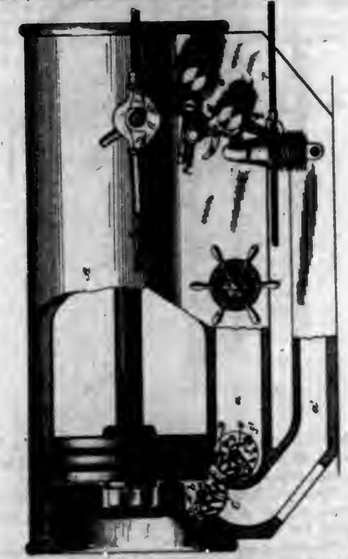
Claim.—1. At each end of a steam-engine cylinder, the combination, substantially as hereinbefore described, of an eccentric-rod, a semi-rotating steam-valve, and a sliding exhaust-valve co-operating therewith for controlling one cylinder-port.

2. At each end of a steam-engine cylinder, the combination, substantially as hereinbefore described, of a semi-rotating steam-valve and a gridiron-valve loosely coupled to an eccentric-rod, whereby during a portion of the longitudinal movement of said rod said exhaust-valve will remain at rest.

3. At each end of a steam-engine cylinder, the combination, substantially as hereinbefore described, of a semi-rotating steam-valve and a gridiron sliding exhaust-valve, which is coupled to a rock-shaft, and an eccentric-rod which is coupled to all of said valves.

4. In a steam-engine, the combination, substantially as hereinbefore described, of a semi-rotating steam-valve a gridiron-slide exhaust-valve, and a rock-shaft coupled to said exhaust-valve by means of disks or arms and links, whereby said two valves may be operatively coupled to one eccentric-rod and the exhaust-valve permitted to rest in a closed position during a portion of the longitudinal movement of said rod.

326,820. VALVE FOR STEAM-ENGINES. JEROME WHEELOCK, Worcester, Mass. Filed June 12, 1885. (No model.)



Claim.—1. The combination, substantially as hereinbefore described, of a steam slide-valve, a rock-shaft having a crank thereon, a link coupling said crank centrally to the valve, an arm on said rock-shaft, and a dash-pot weight coupled to said arm, whereby said valve may be closed by said weight before the latter enters its checking-space, and may also be permitted to rest during the cushioned fall of said weight.

2. The combination, substantially as hereinbefore described, of a slide exhaust-valve, and a slide steam-valve co-operating with one cylinder-port, a rock-shaft for each valve, coupled thereto by a crank and a link, and an eccentric-rod, and external connections by which both valves are operated.

3. The combination, substantially as hereinbefore described, of a steam-engine cylinder and a tapered cylindrical skeletonized plug containing a valve-seat and a valve, and having heads which afford bearings for a rock-shaft by which the valve is operated.

4. The combination, with a steam-engine cylinder and a skeletonized tapered cylindrical plug containing a flat-valve seat, a slide-valve, a rock-shaft mounted in bearings in said plug, a crank on said rock-shaft, and a link for coupling said crank to the valve, substantially as described.

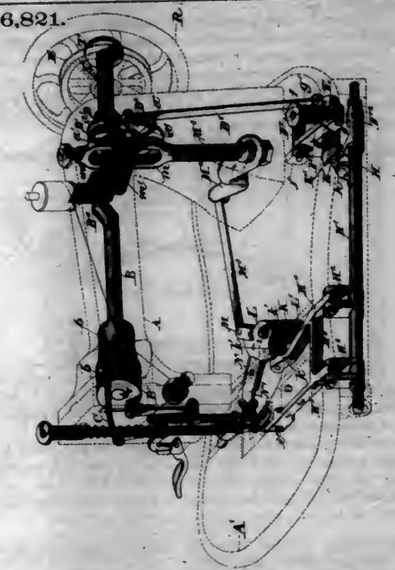
5. The combination, with the skeletonized plug having rock-shaft mounted therein, and containing a valve-seat and a slide-valve coupled by a link and crank to said shaft, of a spring at the back of said valve, substantially as described, whereby regardless of the rotative adjustment of said plug in its housing said valve will be properly held to its seat.

326,821. SEWING-MACHINE. ROBERT WHITEHILL, Milwaukee, Wis. Filed July 1, 1884. (No model.)

Brief.—An oscillating shuttle-carrier is provided with a cam-slot external to its bearing for imparting the vertical movements to the feed-bar. A bell-crank lever is capable of adjustment by a nut on the bed-plate, so that a lever pivoted at its lower extremity may impart greater or less movement to the oscillating shaft carrying the feed-bar.

Claim.—1. In a sewing-machine, the combination, with a driving-shaft having a crank or elbow, of a vertical oscillating shaft or post provided with arms embracing said crank or elbow, and having an inclosed opening through which said driving-shaft passes, pivots for said vertical shaft or post arranged centrally in the vertical plane of the driving-shaft, a shuttle-carrier, and connections between the latter and the said oscillating shaft or post, substantially as set forth.

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2. In a sewing-machine, the combination, with a driving-shaft having a crank or elbow, of a vertical oscillating shaft or post provided with arms embracing said crank or elbow, and an arm at its lower end, and having an inclosed slot or opening through which said driving-shaft passes, pivot-pins for said vertical shaft or post arranged centrally in the vertical plane of the driving-shaft, a second oscillating shaft or post, a shuttle-carrier connected therewith, and a link serving as a connection between the arms of the said oscillating shaft or post, substantially as set forth.

3. The swing-post K and its cam-flanges, mechanism connecting it with the driving-shaft, and the feed-bar having a member, one end of which engages between the cam-flanges of swing-post K, in combination with a rock-shaft, H', the driving-shaft, and connecting mechanism.

4. The combination of oscillating shaft or post M^3 and its arms, the elbowed driving-shaft, lever M^2, link M', swing-post K, the shuttle-carrier, cam-flanges, feed-bar, and mechanism, substantially as described, for reciprocating the feed-bar, all timed to operate substantially as described.

5. The combination of the driving-shaft, its rear cam, lever D^2, connection D^3, rock-shaft E', having flanges *h h*, with the swinging and adjustable hanger, rock-shaft H', and the feed-bar, as and for the purpose set forth.

6. The connecting rock-shaft E', its swinging bearing, and mechanism for adjusting said bearing, in combination with the rock-shaft H' and feed-bar, whereby the stroke of the feed-point is regulated, as set forth.

7. The driving-shaft and its cam D', in combination with the lever D^2, pivoted at one side thereof to the frame of the machine, and having arms embracing said cam, a link jointed to the other side of said lever, and a feeding mechanism connected with said link, substantially as set forth.

8. The driving-shaft and its cam D', in combination with the slotted or split lever D^4, pivoted at one side to the frame of the machine, and provided with arms embracing said cam, a link jointed to the side of said lever opposite its fulcrum or pivotal point, a set screw or bolt for drawing said arms toward each other, and a feeding mechanism connected with said link, substantially as set forth.

9. In a sewing-machine, the combination with a feed-bar and a shuttle-carrier, of an oscillating shaft or post having an arm to which said carrier is connected, and also provided with a cam for imparting positive vertical movements to said feed-bar, substantially as set forth.

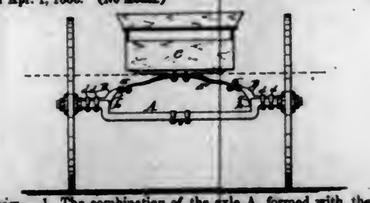
326,822. SEWING-MACHINE. ROBERT WHITEHILL, Milwaukee, Wis. Filed Apr. 20, 1885. (No model.)

Brief.—The construction enables a short needle to be used, the point of the shuttle catching within the loop, which is so held in the undercut recess as to facilitate its being readily drawn down and around the shuttle by the latter passing therethrough.



Claim.—In a sewing-machine, the combination, with a shuttle-race having a well or recess for the needle near its center, and an inclined undercut or half-dovetail recess, the upper edge of which communicates with the said needle-recess about midway vertically of the shuttle-race, or in the path of the point of the shuttle, of a shuttle having a cavity in its nose on its upper side, and a shuttle-carrier having a horn fitting loosely in said cavity, substantially as set forth.

326,823. SPRING-VEHICLE. JOHN W. WHITTIC, Syracuse, N. Y. Filed Apr. 1, 1885. (No model.)



Claim.—1. The combination of the axle A, formed with the depressed central portion, and the spring-supporting arms B B, mounted on the end portions of the axle and projecting over the depressed portion of the same, substantially as described and shown.

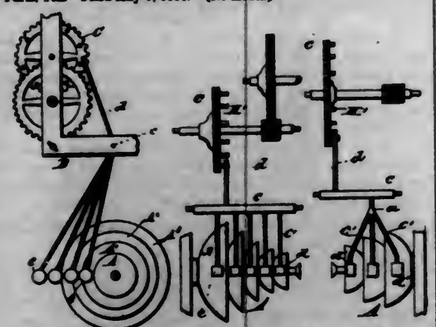
2. The combination of the axle A, formed with a depressed central portion terminating with abrupt offsets *b b*, the arms B B, mounted on top of and clipped on the axles outside of the offsets *b b* and provided with the shoulder *c*, links *a a* on said arms, and the cross-spring S, hung at its ends on said links, substantially as described and shown.

326,824. ADDING-MACHINE. REUBEN F. WILCOX, Augusta, Kans. Filed Apr. 18, 1885. (No model.)



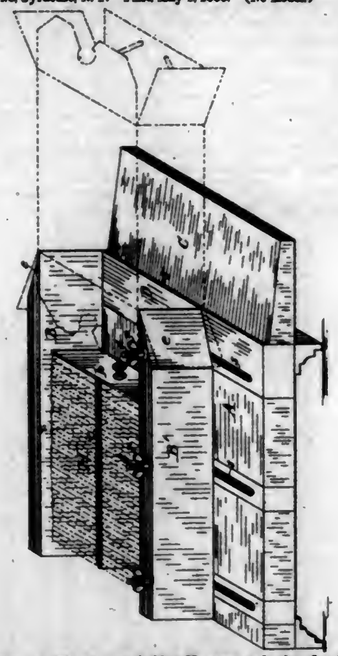
Claim.—The calculator described, consisting of the base-plate A, having the raised rim, as shown, provided with numerals from 1 to 100, and the central pivot-stud, P, the top plate, F, arranged on the said pivot, having the peripheral points, each provided with a hole, and the opening B', and the catch T between the said opening and the pivot-aperture, and the register C, pivotally arranged between the base-plate and the revolving top plate, and provided with the peripheral pins T', the whole adapted to operate substantially as specified.

326,825. CLOCK-STRIKING MECHANISM. FRANK WITHERSPOON, Paris, Tex. Filed May 9, 1885. (No model.)



Claim.—The combination, with the chime of bells in the clock-case, of the wheel C, having the lateral pins, the rock-shaft, a lever extending from the rock-shaft and engaging the said pins, and the hammer-arms respectively connected with the rock-shaft by the short arm *a*, substantially as shown and described.

326,826. APPARATUS FOR FILLING PACKAGES. CHARLES W. YOUNG, Syracuse, N. Y. Filed May 1, 1885. (No model.)



Claim.—1. The tray or holder H, composed of a flat bottom, *a*, and vertical end plate, *b*, and open at the opposite end and on its longitudinal sides, substantially as and for the purpose set forth.

2. The tray or holder H, consisting of the flat bottom *a*, vertical end plate, *b*, and one or more longitudinal partitions, *c c*, substantially as described and shown.

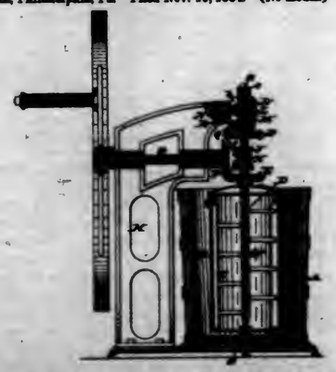
3. The packing apparatus consisting of a trough adapted to receive on its open end the mouth of the package to be filled and a tray sliding in said trough and adapted to contain in their requisite order the substances to be packed, substantially as set forth and shown.

4. The packing apparatus consisting of the bed A, walls B B', having beveled ends *s s*, and the tray H, sliding between said walls, substantially as described and shown.

5. In a packing apparatus, the tray H, in combination with the bed A, walls B B', and extension C, and the plate D, having a recess, *r*, underneath it, substantially as and for the purpose set forth.

6. The tray H, in combination with the bed A, provided with slots *s s*, the extension C, plate D, having the recess *r* underneath it, the fixed wall B, movable wall B', set-screws *d d*, and nuts *n n*, substantially as described and shown.

326,827. ICE-CREAM FREEZER. JOHN P. ANDERSON and JACOB C. KELLER, Philadelphia, Pa. Filed Nov. 19, 1884. (No model.)



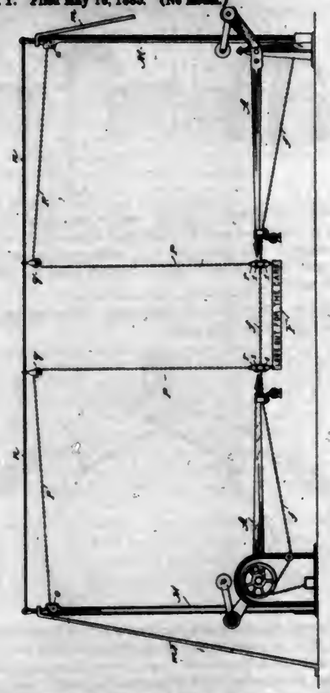
Claim.—1. A can, a beater, and a divided beater-shaft, in combination with the boss M, formed with a recess, *b*, a rising and falling sleeve, a rising and falling gear-wheel, the rising and falling section of said beater-shaft, a feathered coupling for the divided shaft, and gearing for the can, said sleeve having a lug which enters the recess *b*, substantially as and for the purpose set forth.

2. A can, a beater, gearing for the can, a divided beater-shaft, a sleeve, a boss, and a gear-wheel, in combination with the pins Q R, substantially as and for the purpose set forth.

3. A can, in combination with a divided beater-shaft, gearing connecting said can and beater-shaft, a frame, a boss attached to said frame, an adjustable sleeve working within said boss and secured to the upper portion of said beater-shaft, and a pin or lug attached to said frame and adapted to be inserted in a wheel secured to the said upper portion of the beater-shaft, substantially as and for the purpose set forth.

4. A can, in combination with a beater, a divided beater-shaft, a feather-coupling for said shaft having bolts adapted to bear against the sections of said shaft, a sleeve forming the bearings for the upper section of the divided shaft, and a gear-wheel connected with said section, substantially as and for the purpose set forth.

326,828. RAILWAY-GATE. WILLIAM C. BAIRD, New York, N. Y., assignor to the Copeland Manufacturing Company, same place, and Syracuse, N. Y. Filed May 16, 1885. (No model.)



Claim.—1. In combination with the bars pivoted to move in vertical plane, and the rope or chain connecting the free ends of the bars and adapted to draw said bars down and to form a part of the gate when the bars are down, the chain or rope *p*, having suitable supporting-pulley and counter-weight and connected with the rope or chain first specified at a point between the free ends of the bars, whereby the rope or chain first specified is supported, substantially as described.

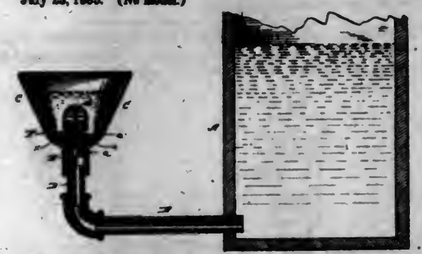
2. In combination with the bars pivoted to move in vertical plane, and the rope or chain connecting the free ends of the bars and adapted to draw said bars down and to form a part of the gate when the bars are down, a pair of chains or ropes, *p*, connected with the rope or chain first specified at a point between the free ends of the bars, and a counter-weight on the chain *p*, substantially as described.

3. In combination with the bars pivoted to move in vertical plane, and the rope or chain connecting the free ends of the bars and adapted to draw said bars down and to form part of the gate when the bars are down, the chain or rope *p*, having suitable supporting-pulley and counter-weight, and connected with the rope or chain first specified at a point between the free ends of the bars, and the sign attached to the chain or rope between the free ends of the bars, substantially as described.

4. In combination with the pivoted bars A and connecting-chain *f*, a pair of posts, M, and connecting-wire *n*, and a chain, *p*, with its counter-weight, the supporting-pulleys, and connections with the chain *f*, substantially as described.

5. A pair of hollow posts, M, the connecting-wire *n*, and the chains *p p*, connected to the wire *f*, and counter-weights within the posts, all combined with the pivoted bars substantially as described.

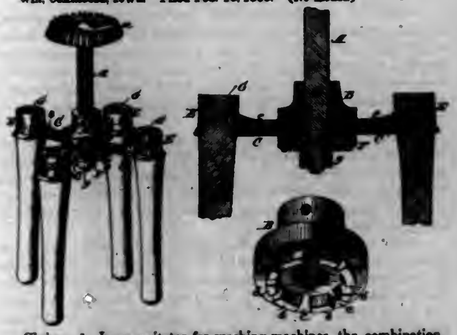
326,829. STOCK-WATERER. ANDREW J. BALCH, Halstead, Kans., assignor of two-thirds to L. P. Lester and G. W. Getrost, same place. Filed July 23, 1885. (No model.)



Claim.—1. The pipe F within the bowl or fountain, said pipe being flanged and provided at its lower end with a valve-seat, the perforated cap *d*, the stem *a'*, and the hollow valve *a*, in combination with a conducting-pipe and a water-reservoir, substantially as and for the purpose set forth.

2. A hollow valve and perforated cap connected together by a suitable stem, in combination with the pipe F and the bowl C, substantially as and for the purpose set forth.

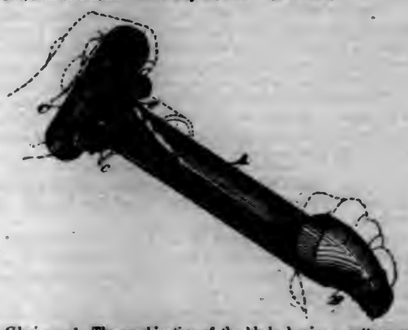
326,830. AGITATOR FOR WASHING-MACHINES. RAMSOM G. BALDWIN, Oskaloosa, Iowa. Filed Feb. 10, 1885. (No model.)



Claim.—1. In an agitator for washing-machines, the combination, with a clamping-head having upon its under side a series of lugs arranged on a circle, of sockets carrying the agitator-pegs, and cast with arms having ribs to fit in between the lugs and shoulders upon each side thereof, to bear against the inner face of the lugs, and a clamping-disk to hold the ends of the arms in engagement with the lugs, substantially as and for the purpose set forth.

2. In an agitator for washing-machines, a clamping-disk and a clamping-head, the latter having upon its under side a series of lugs beveled upon their ends to form dovetail spaces between them, in combination with arms carrying wooden pegs and having dovetailed ribs and shoulders, as set forth.

326,831. TOOL FOR TRIMMING HORSES' HOOFS. JEAN BERRA DAU, New Iberia, La. Filed May 11, 1885. (No model.)

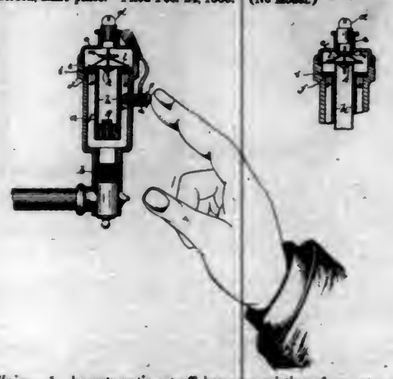


Claim.—1. The combination of the blade having a cutting-edge formed on each side, and provided at one end with the stationary handle,

and the cylindrical handle centrally pivoted to the opposite end of the said blade, in the manner and for the purpose shown and set forth.

2. The combination, with the blade having the cutting-edge formed on each side, and provided at one end with the stationary handle, of the cylindrical handle having the projections formed integral therewith, and centrally pivoted to the opposite end of the said blade, in the manner and for the purpose shown and set forth.

326,832. AUTOMATIC CUT-OFF FOR GAS-BURNERS. JOHN E. BURCH, Winnipeg, Manitoba, Canada, assignor of one-half to Donald Henderson, same place. Filed Feb. 24, 1885. (No model.)



Claim.—1. An automatic cut-off burner consisting of an outer gas-chamber provided with a tip, an expansible air-chamber located therein, and formed of two parts sealed with mercury, one of said parts being provided with a flange, and the other with a set of holes to constitute with said flange a valve which is opened and closed by the expansion and contraction of the air within the air-chamber, substantially as described.

2. In an automatic cut-off burner, the combination, with a gas-burner, of a valve provided with an expansible air-chamber, and a supplemental jet in close proximity to the burner and air-chamber, whereby the lighting of said supplemental jet will produce the initial expansion of air and start a flow of gas through the burner and ignite the illuminating-jet, substantially as described.

3. In an automatic cut-off burner, the combination, with a gas-burner, of a gas-valve connected to the movable part of an expansible air-chamber, an escape-valve located in the movable part of the expansible air-chamber, and having an operating-arm extending to a point near the gas-burner, whereby it will be operated by an undue expansion of the air in said chamber by contact with the burner, as set forth.

4. The combination of the outer case, *a*, the flanged and suspended air-cell *f*, containing mercury in its bottom, and having gas-holes *o* in its flange, and the rising and falling cylinder *h*, having a close top and flange-valve overhanging the gas-holes *o*, and having its lower end sealed in the mercury, as shown and described.

5. The combination of case *a*, having an enlarged screw-threaded upper section, *e*, the screw-threaded cap *c*, with tip-socket, and tip *d*, the flanged air-cell *f*, having perforated retaining-flange *i*, the rising and falling air-cylinder *h*, having flange-valve at the top, and the mercury-seal at the bottom, substantially as shown and described.

6. The combination, with the inclosing-shell *a c* and the air-cell *f*, of the rising and falling air-cylinder *h*, having a gas-valve attached thereto, and the valve *k*, and valve-stem provided with spring *l*, and nut or holding-bar *m*, as and for the purpose described.

7. The combination, with case *a*, having an enlarged shoulder-section, *e*, of the air-cell *f*, having flange *i*, with gas-holes *o*, and the regulator or adjusting-ring *j*, having similar holes laid between the flange of the air-cell and the shoulder of the case, and made axially adjustable to increase or diminish the flow of gas at will, substantially as described.

8. The combination, with the gas-burner having a pneumatic cut-off, of the nipple *n*, the stem having valve *r* at one end and push-button *s* at the other, and the coil-spring surrounding said stem, substantially as and for the purpose described.

326,833. STEAM-BOILER. JOSEPH R. SHEDDELL, LEVI H. BRATT, and WILLIAM F. WETMORE, South Bend, Ind. Filed Mar. 19, 1885. (No model.)

Claim.—1. The combination of the shells A C, diaphragm F, steam-space D', and coupled tubes G and G', with the fire-box E, provided with the grate E', situated at a level above that of the lower ends of the tubes G, substantially as specified.

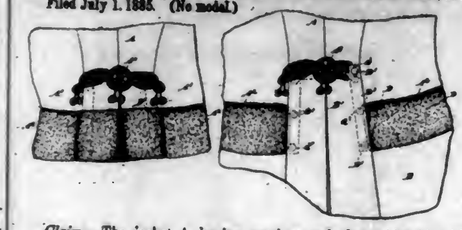
2. In a pyramidal boiler, the combination, with the inner shell, C, and diaphragm F, fire-box E, provided with the grate E' and steam-space D', of the outer shell, A, provided with the bulges *a a*, which,

326,833.



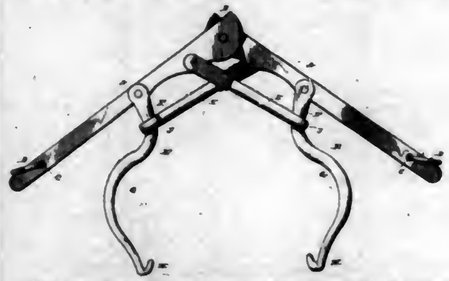
when the said outer shell is in place, form the eddy-chambers B B, provided at their ends with man-holes H, substantially as and for the purpose specified.

326,834. SEPARABLE GARMENT. MAX EICHHOFF, New York, N.Y. Filed July 1, 1885. (No model.)



Claim.—The jacket A, having notch *a*, and short skirt A', with trimming A^2, combined with the main skirt B, removably secured at D to the jacket, and with a filling-piece, C, constructed to match the short skirt A', and adapted to serve with the jacket when the main skirt is not in use, as set forth.

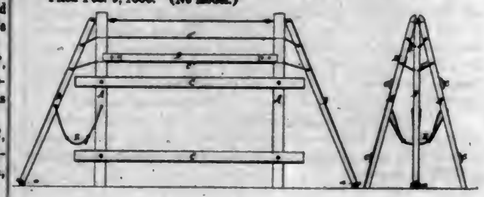
326,835. POT-HOOK OR TRAMMEL. ADAM BITTNER, Berry, Ill. Filed Aug. 1, 1885. (No model.)



Claim.—1. In a pot-hook, the combination of two handles united by means of a rule-joint, two legs having hooks at their lower ends and hinged upon the handles near the inner ends of the same, and two arms hinged upon the handles and having their eyed ends sliding upon the upper portions of the legs of the opposite handles, as and for the purpose shown and set forth.

2. In a pot-hook, the combination of two handles united by means of a rule-joint and having rings inserted in perforations in their outer ends, two legs having straight upper portions and curved lower portions provided at their lower ends with T-shaped hooks formed with upwardly-facing shoulders upon the inner sides, the said legs being hinged to the handles near the inner ends of the same, and two arms hinged to the handles between the joint and the hinges of the legs and having their eyed ends fitting around and sliding upon the straight portions of the legs upon the opposite handles, as and for the purpose shown and set forth.

326,836. CLOTHES-DRIER. ALANSON BLANCHARD, Arlington, Mass. Filed Feb. 9, 1885. (No model.)



Claim.—1. The combination of the two pairs of legs having those of each pair hinged together at their upper ends with the two braces hinged to said pairs, and with the series of ropes going through the legs and braces, all being substantially as set forth.

2. The combination of the hanger E, extending between one of the braces and the next contiguous pair of legs and depending therefrom, with the two braces and the two pairs of legs, connected substantially as set forth.

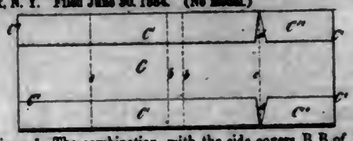
3. The combination of the clothes-retainer D, furcated at its ends and applied to the legs and rope extending between them, as set forth, with the clothes-drier consisting of the two pairs of legs, the inclined braces, and the ropes or bars arranged with and applied to such legs, as set forth.

326,837. WRENCH. DERRIS S. BLUE, Fremont, Ohio, assignor of one-half to William F. Jobbins, New York, N. Y. Filed Aug. 29, 1884. (No model.)



Claim.—In a wrench, the combination, with a bar having a rigid jaw and provided on one face with notches, of a sliding jaw embracing the bar, a loop formed independently of the movable jaw, a gib or key for locking the loop to the movable jaw, and a screw-threaded cylinder constructed as described and journaled at one end in the movable jaw and at its opposite end in the loop, substantially as set forth.

326,838. BOOK COVER OR PROTECTOR. CAROLINE BOTCH, New York, N. Y. Filed June 30, 1884. (No model.)



Claim.—1. The combination, with the side covers B B of a book, of the cover or protector C, herein described, having the folded portions C' at top and bottom and folded inward on the lines *c c*, the portions of the protector outward of the lines *c c* being parallel with the portions inward of said lines and forming open-ended pockets C^*, within which the side covers B B are inserted and which cover the inner surfaces of the said covers, while the portions inward of said lines *c c* extend over and protect the outer surfaces of said side covers, substantially as herein described.

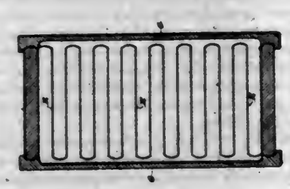
2. The paper book protector or cover herein described, consisting of a blank, C, having the folded portions C' at top and bottom thereof creased or folded on the lines *c c* to form open ended pockets C^*, and having the folded portions C' slit or cut coincident with the line *c*, as at *d*, substantially as herein set forth.

326,839. APPARATUS FOR TRANSFERRING HEAT FROM ONE CURRENT OF AIR TO ANOTHER. CHARLES L. BRAITHWAITE, Jr., and ISAAC BRAITHWAITE, Kendal, County of Westmoreland, England. Filed Mar. 31, 1885. (No model.) Patented in England Oct. 10, 1884, No. 13,441.

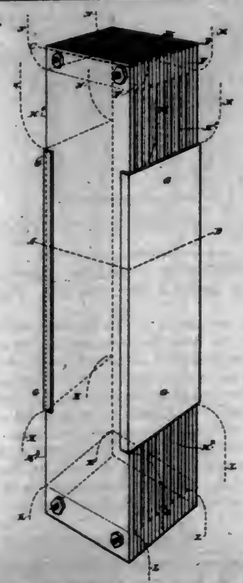
Claim.—1. In combination with the angular box closed at its ends and open on two opposite faces at each end, the flat metallic plate bent to form parallel passages open alternately at opposite edges.

2. In combination with the angular body or box constructed substantially as herein described and shown, and provided with suitable inlets and outlets, the metallic-foil plate E, extending from top to bottom, and bent to form a series of parallel passages open alternately at opposite edges.

3. The combination, with a box or body constructed substantially as shown, of the metallic-foil plate E, bent to form a series of parallel passages open alternately at opposite edges, blocks F, between the folds of the plate at opposite ends, and bolts passing through the plate and block, as shown.

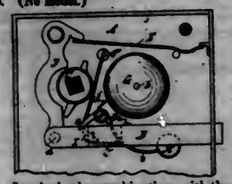


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4. A heater composed of a box or body closed at its ends and open on opposite faces at each end, and a flat metallic plate, E, dividing said box into a series of parallel passages open alternately at opposite sides and closed at their ends.

326,840. ALARM-LOCK. GIACOMO BREDEX, New York, N. Y. Filed Apr. 16, 1885. (No model.)



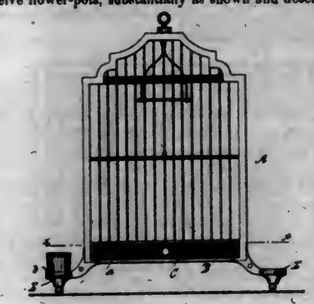
Claim.—1. In a lock, the combination, with the bolt, of the spring-pressed latch-cam I, pivoted to the bolt, the bent lever F, one arm of which is engaged by the latch-cam, the hammer attached to the other arm, the spring K, acting on said lever, and the gong G, substantially as shown and described.

2. In a lock, the combination, with the bolt, of the spring-pressed latch-cam I, pivoted to the bolt, the bent lever F, one arm of which is engaged by the latch-cam, the hammer attached to the other arm, the stop *h*, the spring K, acting on said lever, and the gong, substantially as shown and described.

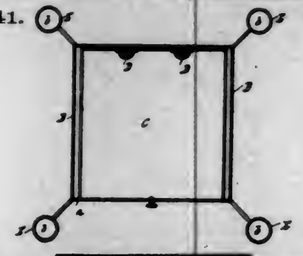
326,841. BIRD-CAGE. GIACOMO BREDEX, New York, N. Y. Filed Apr. 16, 1885. (No model.)

Claim.—1. A bird-cage having supporting-legs projecting outwardly from its base and provided in their outer ends with sockets *b*, for receiving flower-pots, substantially as described.

2. As a new article of manufacture, a bird-cage having a sliding drawer, feed-cups secured in said drawer, and legs provided with sockets to receive flower-pots, substantially as shown and described.



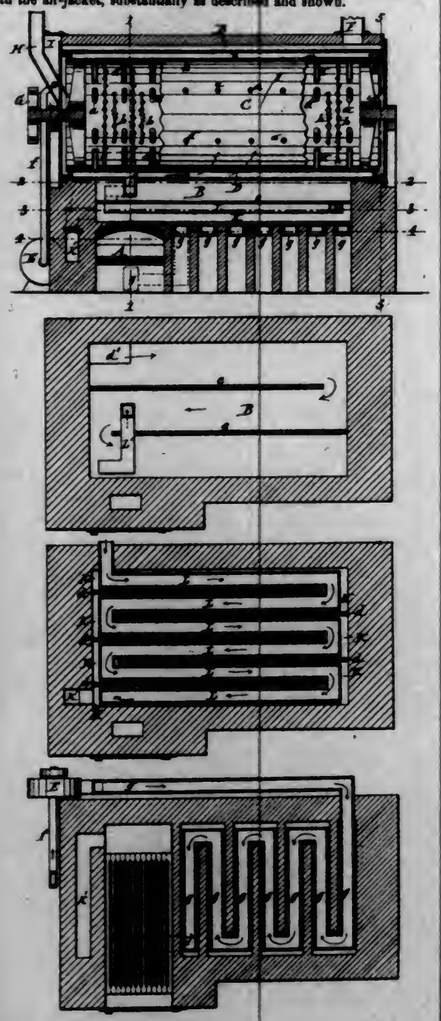
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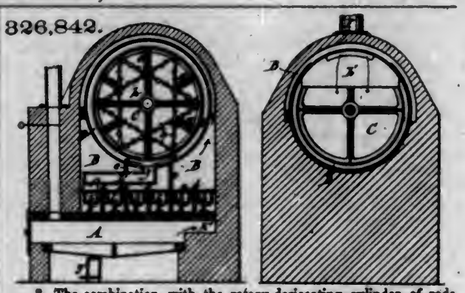
326,842. DESICCATING APPARATUS. HENRY BREER, De Witt, N. Y., assignor to Caroline H. Breer, same place. Filed Nov. 7, 1884. (No model.)

Claim.—1. In combination with the fire-box, combustion-chamber, desiccating-cylinder, and the air-jacket surrounding said cylinder, a horizontal partition in the combustion-chamber below the air-jacket, a sinuous flue underneath the horizontal partition and communicating with the fire-box, and with the combustion-chamber above said partition, and air-ducts extended through the aforesaid sinuous flues and communicating with the air-jacket, substantially as set forth and shown.

2. In combination with the combustion-chamber B, desiccating-cylinder C, and air-jacket D, surrounding said cylinder, the tubular studs *a a*, closed at their inner ends and communicating at their outer ends with the air-jacket, substantially as described and shown.

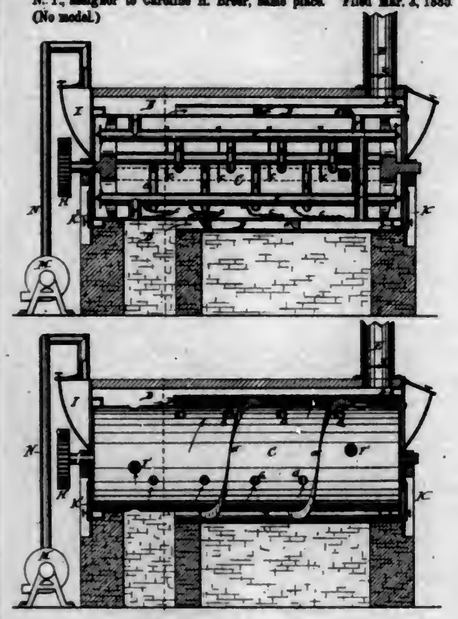


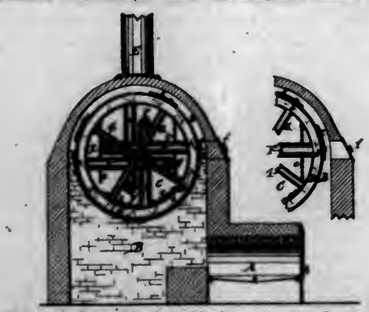
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3. The combination, with the rotary desiccating-cylinder, of rods extended across the interior of the said cylinder and barbs projecting from said bars, to cut up the substance under treatment, substantially as specified.

326,843. DESICCATING APPARATUS. HENRY BREER, De Witt, N. Y., assignor to Caroline H. Breer, same place. Filed Mar. 3, 1885. (No model.)





Claim.—1. In combination with the combustion-chamber and the horizontal rotary desiccating-cylinder, pipes arranged longitudinally in said cylinder, and branch pipes extending from the longitudinal pipes through the side of the cylinder, as and for the purpose set forth.

2. In combination with the combustion-chamber and the horizontal rotary desiccating-cylinder, pipes arranged longitudinally in said cylinder, branch pipes extending from the longitudinal pipes through the side of the cylinder, and a smoke-jacket surrounding the cylinder, substantially as set forth and shown.

3. In combination with the furnace, desiccating-cylinder, and the combustion-chamber inclosing said cylinder, two passages for products of combustion between the desiccating-cylinder and combustion-chamber,

and extending lengthwise the same, one of said passages surrounding the desiccating-cylinder and communicating with the interior thereof at one end, and the other passage being arranged over the exterior of the first passage and communicating with the chimney, substantially as set forth.

4. The combination, with the horizontal rotary desiccating-cylinder, of a smoke-jacket communicating at one end with the furnace, and at the opposite end with the interior of the desiccating-cylinder, and a spiral partition in the smoke-jacket, substantially as described and shown.

5. The combination, with a horizontal rotary desiccating-cylinder, of a smoke-jacket surrounding said cylinder, pipes arranged longitudinally in said cylinder, and branch pipes extending from the longitudinal pipes to the combustion-chamber and smoke-jacket, substantially as described and shown.

6. The combination, with the horizontal rotary desiccating-cylinder, of a smoke-jacket surrounding said cylinder, a tortuous smoke-passage in said jacket, pipes arranged longitudinally in the desiccating-cylinder, and branch pipes extending from the longitudinal pipes to the combustion-chamber and smoke-jacket, substantially as described and shown.

7. The combination, with the horizontal rotary desiccating cylinder, of a smoke-jacket communicating at one end with the furnace and at the opposite end with the interior of the desiccating-cylinder, spiral partitions in the smoke-jacket, pipes arranged longitudinally in the cylinder, and branch pipes extending from the longitudinal pipes to the combustion-chamber and smoke-jacket, all combined substantially as described and shown.

8. The combination, with a rotary desiccating-cylinder, of a spiral smoke-passage formed on the exterior of the said cylinder, and arranged to rotate therewith.

9. The combination, with a rotary desiccating-cylioder, of a smoke-jacket surrounding said cylinder and arranged to rotate therewith, and pipes extended diametrically across the cylinder and communicating at opposite ends with the smoke-jacket, substantially as described and shown.

10. The combination, with a horizontally-elongated combustion-chamber, of a furnace connected with one end thereof, a chimney at the opposite end of the combustion-chamber, a horizontal rotary desiccating-cylinder arranged lengthwise in the combustion-chamber, a smoke-jacket surrounding the desiccating-cylinder and arranged to rotate with the same, and communicating at one end with the combustion-chamber and furnace and at the opposite end with the interior of the desiccating-cylinder, and a damper in the aforesaid chimney, whereby the products of combustion can be made to pass either from the furnace over the exterior of the smoke-jacket to the chimney, or through the smoke-jacket and desiccating-cylinder, substantially as described and shown.

11. In combination to the rotary desiccating-cylinder and pipes extending transversely through it, a smoke-jacket surrounding said cylinder, ports in said jacket for cleaning the aforesaid pipes, and removable covers over said ports, substantially as described and shown.

326,844. TIP AND STUD FOR BOOTS OR SHOES. GEORGE CHAMBERS, Peckham, County of Surrey, England. Filed Oct. 24, 1884. (No model.) Patented in England Jan. 7, 1884, No. 888; in France Oct. 8, 1884, No. 164,684; in Belgium Oct. 9, 1884, No. 66,546, and in Germany Oct. 17, 1884, No. 31,544.



Claim.—1. The combination of the tip, its stud or studs, and the sharp bar or bars connecting the tip and the stud or studs, and extending laterally beyond the stud or studs, substantially as described.

2. The tip provided with the sharp bar or ridge projecting above and extending at its ends laterally beyond it, substantially as described.

326,845. STORE-SERVICE APPARATUS. ELWOOD CHAPMAN, Emporia, Kans. Filed Aug. 5, 1885. (No model.)

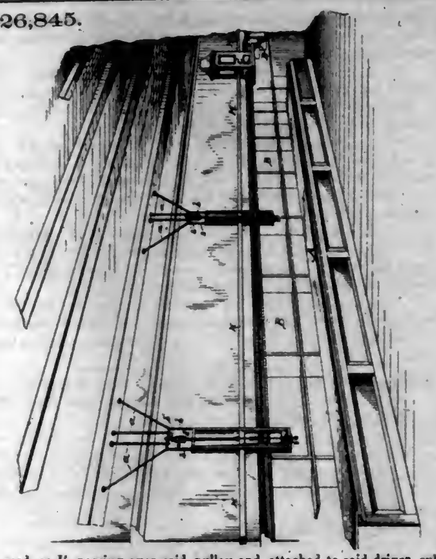
Claim.—1. In a device for the purpose described, the combination, with a sectional track, of an elevator provided with interchangeable track-sections, substantially as and for the purposes specified.

2. The combination, with the elevator-frame, the elevator, and the cord by which the latter is operated, of a catch secured to said frame and adapted to retain said cord when desired, as set forth.

3. In a device for the purposes described, an elevator provided with upper and lower track-sections, and a driver sliding on guides on said lower section, as set forth.

4. The combination, with the elevator-frame, the elevator, and a driver carried thereby, of a pulley, as I, journaled in said elevator, and

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a cord, as I', passing over said pulley and attached to said driver, substantially as and for the purpose specified.

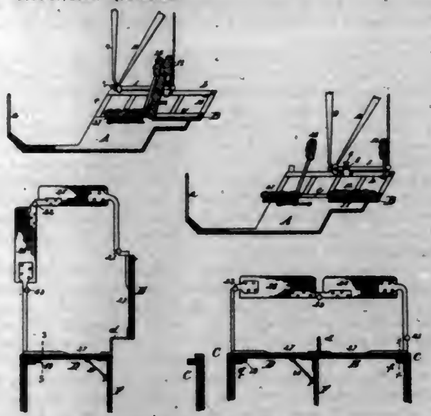
5. The combination, with the elevator-frame, the elevator, and a driver carried thereby, of a pulley, as I, journaled in said elevator, a cord, as I', passing over said pulley and attached to said driver, and the cord J, attached to the free end of the cord, and its other end attached to the elevator-frame, as set forth.

6. In a device for the purposes described, a carrier formed of a single piece and provided with wheels and cash-receptacle, as set forth.

7. In a device for the purposes described, a carrier formed of a single piece of wood, recessed on its under side to receive the wheels, and the portion between said recesses hollowed out to form a cash-receptacle, and a removable cap or cover for said receptacle, substantially as described.

8. In a device for the purpose described, a carrier provided with metal bands, as M, embracing the ends of said carrier and bulging beyond the sides thereof, substantially as and for the purposes specified.

326,846. CARRIAGE. SAMUEL M. CHESTER, Cincinnati, Ohio. Filed June 19, 1885. (No model.)



Claim.—1. In combination with the rail *b*, the top mounted upon and secured to the sliding rail 1, with detachable connections supported on rail *b*, whereby the top may be set forward and backward for converting the carriage from one to two seats, substantially as specified.

2. In combination with the body-rail *b* and top rail, 1, the brackets 2 and 5 for supporting and holding the rail, substantially as specified.

3. In combination with the buggy-top mounted on the adjustable rail 1 and sliding on the top rail, *b*, the hinged locking-arms 15 and the detachable seat-back 14, substantially as specified.

4. The front seat of the carriage constructed in two sections hinged together, the seat-back composed of two sections centrally connected by

a knuckle-hinge, and arms supporting the back and connected by knuckle-hinges, the one to the end of the seat and the other to the seat-back, substantially as described.

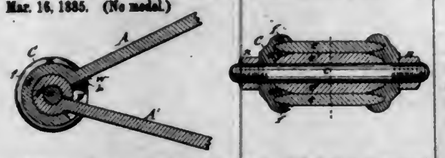
5. An adjustable seat composed of the two hinged sections D E, a hinged central support, F, supporting-cleats *f g*, eyebolts or staples *r* and *s*, connected to the seat and the cleat, respectively, and a rod passing through said staples, substantially as described.

6. A carriage consisting, substantially, of a stationary seat supported on the bed, a hinged front sliding seat adapted to be moved forward and backward on a plane with the back seat, in combination with the adjustable top mounted on the rail 1 and adjusted on rail *b*, substantially as specified.

7. The combination, with a carriage having a handle, 3, and provided with a rail-socket, 2, integral with said handle, of a rail, 1, sliding in said socket, a top supported by said rail, and a set-screw, 7, for binding the latter in position, substantially as described.

8. In combination with the top rail, 1, to which the bows of the carriage are affixed, the supporting-bracket 5 and socket 2, attached to the top rail and forming ways in which it moves, substantially as specified.

326,847. ELLIPTIC SPRING. EDWARD CLIFF, Oswego, N. Y., assignor to the Cliff & Righter Company, (Limited,) same place. Filed Mar. 16, 1885. (No model.)



Claim.—1. The caps C C, formed with the bolt-hole *c'*, segmental marginal flange *a*, and segmental rib *a'*, the latter being arranged between the bolt-hole and flange *a*, and terminating with outward extensions, *b b*, substantially as described and shown.

2. In combination with the eyes *e e'*, the caps C, formed with the bolt-hole *c'*, segmental marginal flange *a*, and segmental rib *a'*, midway between the hole *c'* and flange *a*, substantially as shown.

3. In combination with the eyes *e'*, the caps C, formed with the bolt-hole *c'*, segmental marginal flange *a*, beveled on its inner side, and the segmental rib *a'*, midway between the hole *c* and flange *a*, and beveled on both sides, substantially as described and shown.

4. The caps C, formed with the bolt-hole *c'*, marginal flange *a*, and the rib *a'* between the bolt-hole *c'* and flange *a'*, and beveled on its inner side, in combination with the eye *e'*, encompassing the coupling-bolt and beveled on its outer side, the eye *e*, encompassing the eye *e'*, and the coupling-bolt *c*, and nuts *n*, clamping the caps onto the ends of said eyes, substantially as described and shown.

5. In combination with the eye *e*, beveled on its edges, the caps C C, having the flanges *a*, embracing the beveled portions of said eye and terminating at the beginning of the bevels thereof, substantially as described and shown.

6. In combination with the eye *e*, beveled on its edges, and the caps C C, having the flanges *a a*, embracing the beveled portions of said eye and terminating at the beginning of the bevels, and formed with a bead, *f*, on their exterior, substantially as described and shown.

7. The improved spring-coupling, consisting of the small eye *e'*, formed on the end of one of the leaves, and of uniform thickness of metal, and embracing the coupling-bolt, the eye *e* on the other leaf, also of uniform thickness of metal, embracing the eye *e'*, the caps C C, having marginal flanges *a a*, embracing the ends of the eye *e*, and the coupling-bolt *c*, passing through the caps and through the eye *e'*, all constructed and combined to form concentric joints between the two eyes and caps, substantially as described and shown.

8. The combination of the eyes *e e'*, formed on the ends of the spring, and beveled on their edges, and one embracing the other, the caps C C, having flanges *a a*, beveled on their inner side, embracing the beveled edges of the outer eye, *e*, and the coupling-bolt *c*, for drawing the caps onto the eyes, whereby the eyes become wedged in the caps, and thus rattling is prevented, substantially as described and shown

9. The combination of the spring-leaves A A', formed with beveled edges and, respectively, with eyes *e e'*, of the same cross-sectional form throughout as the body of leaves, one of said eyes embracing the other, the caps C C, provided with marginal flanges *a*, embracing the ends of the outer eye, *e*, and beveled correspondingly, the coupling-bolt *c*, passing through the caps and through the eye *e'*, and the clamping-nuts *n* on the ends of said bolt, for drawing the caps against the eyes and wedging the latter within the beveled flanges of the cap, substantially as described and shown.

326,848. SASH-FASTENER. CARY O. COLE, Letts, Iowa, assignor of two-thirds to D. W. Shisk, same place, and E. G. Grojean, Mount Eaton, Ohio. Filed Mar. 12, 1885. (Model.)

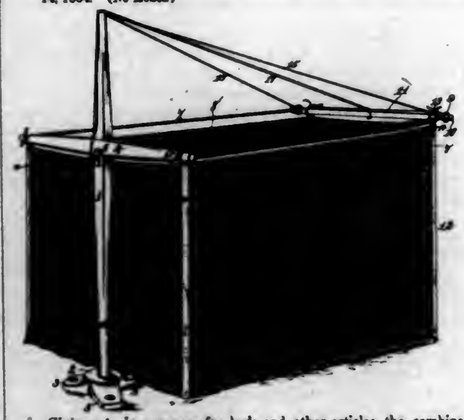
Claim.—1. The combination of the upper sash, the recessed cast-



ing secured thereto, the catch which is provided with a T-shaped projection, *a*, for catching in the recess in the casting, the rod which extends downward in front of the upper sash, and the spring which forces the catch upward, substantially as shown.

2. The combination of the rod G, which hangs down in front of the upper sash, the catch J, placed upon the top of the lower sash, a connecting-rod or chain, P, the catch Q, pivoted upon the lower sash, and the hand-hold, substantially as described.

326,849. CANOPY. WM. M. A. COLE, Baltimore, Md. Filed Aug. 14, 1884. (No model.)



Claim.—1. In a canopy for beds and other articles, the combination, with an upright standard, of a cross-piece mortised upon the same, a turn-button engaging therewith, and side rods having hooked ends, which engage with screw-eyes upon the ends of the cross-piece, substantially as described.

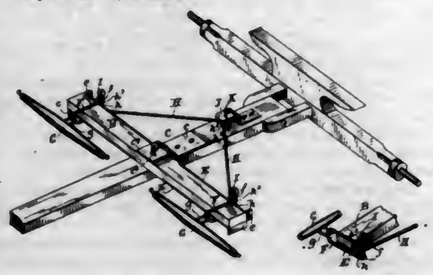
2. In a canopy for beds and other articles, the combination, with a vertical standard having a detachable cross-piece, of telescoping side rods carrying a foot-piece, and a canopy supported by the cross-piece and foot-piece, substantially as described.

3. In a canopy for beds and other articles, the combination, with a vertical standard having a cross-piece, of telescoping side rods, a foot-piece carried thereby, a canopy supported by said foot-piece, and furling-cords attached to and carried through rings upon said canopy and fastened around the ends of the foot-piece, whereby the dimensions of the canopy and of the canopy-frame may be contracted, substantially as described

4. In a canopy for beds and other articles, the combination, with the standard 1, of the cross-piece 4, mortised thereon, the button 5, and the side rods having eyes 9, which receive the reduced ends of the foot-piece 11, the latter being supported by cords 15, substantially as described.

5. In a canopy for beds and other articles, the combination, with a vertical standard carrying a fixed cross-piece, 4, of telescoping side rods composed of a tubular section, 19, and a sliding rod, 21, a set-screw, 24, being tapped through the former, substantially as described.

326,850. DOUBLE-TREE. EDWD. COLWELL, Milwaukee, Wis. Filed July 13, 1885. (No model.)



Claim.—1. As an improvement in double-trees, the combination of the tongue or pole, the double-tree pivotally connected therewith, links adapted to slide upon the ends of the double-tree and carrying the single-trees, and the convergent rods pivotally connected with the sliding links, and pivoted at their rear ends to the tongue or pole, substantially as set forth.

2. As an improvement in double-trees, the combination of the tongue or pole, the double-tree pivotally connected to the tongue and provided with plates at each side the latter, the links sliding upon said plates and carrying the single-trees, and the rods pivoted at their rear ends to the tongue and having T-heads pivotally secured between the rear ends of the links, substantially as and for the purpose set forth.

3. As an improvement in double-trees, the combination of the tongue or pole, a double-tree pivoted thereto and provided upon its under and rear sides with plates having end flanges, U-shaped sliding links carrying the single-trees and embracing the ends of the double-tree, rearwardly-convergent rods pivoted to the tongue and having T-heads provided with longitudinal eyes, and pivot-pins passed through eyes in the rear ends of the links and through the T-heads, substantially as and for the purpose set forth.

4. In a double-tree, the combination, with sliding links adapted to slide upon the double-tree and carrying the single-trees, of the rearwardly-convergent pivoted rods pivotally secured to the rear ends of the links, substantially as and for the purpose set forth.

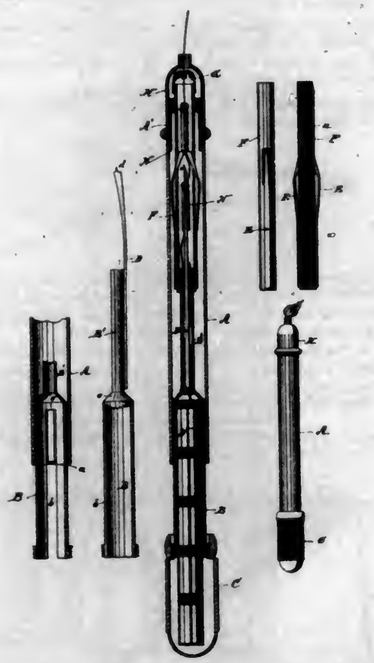
326,851. MATCH. ROBERT F. COOKE, Brooklyn, N. Y., assignor to Horace Holden, East Orange, N. J. Filed Dec. 29, 1884. (Specimens.)



Claim.—1. The herein-described match, consisting of a usual wax match, A, inclosed in a casing, B, and attached to a string, C, substantially in the manner described.

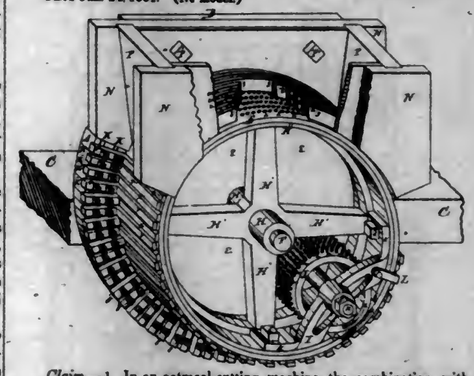
2. In a wax match, A, surrounded by a case, B, and string C, placed between the match and case, one or more indentations, *a*, in the manner and for the purpose described.

326,852. LIGHTING DEVICE. ROBERT F. COOKE, Brooklyn, N. Y., assignor to Horace Holden, East Orange, N. J. Filed Dec. 29, 1884. (No model.)



Claim.—In combination with a suitable case, A, the sliding tubes B B', with spring-rod D, the tube F, with spring-rods E E, and the sharp-pointed projections G, the whole being arranged to operate in combination with matches attached to each other by a string, in the manner and for the purpose substantially as described.

326,853. OATMEAL-MACHINE. GEORGE H. CORMACK, Rockford, Ill. Filed Jan. 24, 1881. (No model.)



Claim.—1. In an oatmeal-cutting machine, the combination, with a cylindrical rotating rim-carrier provided with perforations adapted to receive the grains endwise, of a non-revolving cylindrical rim-fender operating to prevent the passage of the grains through the perforated rim, substantially as and for the purpose hereinbefore set forth.

2. The combination, with a perforated rotating rim-carrier and a non-rotating fender, substantially as herein described, of cutters located in working contact with the carrying-rim, substantially as and for the purpose hereinbefore set forth.

3. The combination, substantially as herein described, of a perforated rotating rim-carrier, a fixed disk provided with concentric grooves, independent cutters, and independent guards independently fixed to the disk in the relative position to each other and to the rotating perforated carrier, substantially as and for the purpose hereinbefore set forth.

4. The combination, with a disk having cutters thereto attached, of a perforated rotating rim-carrier and a non-rotating rim-fender, the perforated rim-carrier rotating between the cutters and fender, substantially as and for the purpose hereinbefore set forth.

5. The combination, with a disk having cutters and guards thereto attached and a rim-fender connected therewith, of a perforated rotating rim-carrier and a pin-wheel located to engage the perforated carrier, substantially as and for the purpose hereinbefore set forth.

6. The combination, with the hopper and perforated rotating rim-carrier, of a curved cutter-blade located between the carrying-rim and hopper, substantially as and for the purpose hereinbefore set forth.

326,854. KNITTING-MACHINE. ALBERT T. L. DAVIS, Lake Village, N. H., assignor of one-half to William H. Pepper, same place. Filed Mar. 17, 1883. (Model.)

Claim.—1. The combination of two parallel needle-bars, A A, two reciprocating cam-bars, D E, arranged, respectively, by the side of the said needle-bars, two intermediate needle-bars, B C, sets of latch-needles in the said needle-bars, and intermediate mechanism for actuating the needles of the said intermediate needle-bars by the said cam-bars, substantially as and for the purpose herein specified.

2. The combination of two parallel needle-bars, A A, two intermediate needle-bars, B C, one being movable, the needles, two cam-bars, D E, jacks L L, and blanks M M, connecting the cam-bars and the needles of the movable needle-bar, and a narrowing mechanism, substantially as and for the purpose herein specified.

3. The combination of the movable needle-bar B, sliding frame K, reciprocating frame U, jacks L L, and mechanism for operating the said jacks, substantially as and for the purpose herein set forth.

4. The combination of the movable needle-bar B, needles *j j*, sliding frame K, reciprocating frame U, jacks L L, blank-bars M M, cam-bars D E, and mechanism for operating the said cam-bars, substantially as and for the purpose herein set forth.

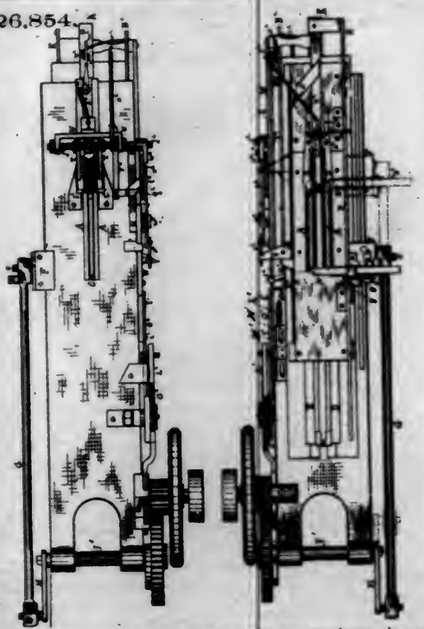
5. The combination of the thread-guide N, sliding carriage O, traveling cam-block F, coupling-bar Q, and means for vibrating the said coupling-bar, substantially as and for the purpose herein specified.

6. The combination of the sliding thread-guide carriage O, coupling-bar Q, means for vibrating the said coupling-bar, and cam-block F, provided with stops *s u* and cams *t v*, substantially as and for the purpose herein set forth.

7. The combination of the sliding thread-guide carriage O, coupling-bar Q, and means for vibrating the said coupling-bar, cam-block F, stops *s u* and cams *t v* on the said cam-block, cam *y*, the cam-bar R, and sliding frame K, substantially as and for the purpose herein specified.

8. The combination of the thread-guide N, the sliding thread-guide carriage O, vibrating lever S, and cam-block F, provided with cams *b' c'*, substantially as and for the purpose herein specified.

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9. Narrowing-needles *a a*, provided with downward extensions and additional butts *i' i'* thereon, in combination with a special needle-lifting device, T T, and mechanism for actuating the said needle-lifting device, substantially as and for the purpose herein set forth.

10. The combination of the oscillating arms T T, reciprocating frame U, provided with fingers *l' l'*, and the narrowing-needles *a a*, provided with butts *i' i'*, substantially as and for the purpose herein set forth.

11. The reciprocating frame U, the needle-lifting arms T T, in combination with the sliding frame K, the movable needle-bar B, and mechanism for communicating an intermittent forward movement to the said sliding frame, substantially as herein set forth.

12. The combination of a vertically-movable bar, W, provided with levers and cams *p' l' u' p³* A', and vibrating cam-lever Z, substantially as described, means for raising the said bar to bring the said parts into action, a tappet-arm, V, and reciprocating cam-bar E, which carries the said tappet-arm, substantially as and for the purpose herein set forth.

13. The combination of the frame U, provided with the detent *m'*, sliding frame K, provided with the notches *n' n'*, reciprocating and intermediate mechanism *p' q' r'*, tappet-arm V, and reciprocating cam-bar E, substantially as and for the purpose herein specified.

14. The combination of the oscillating arms T T, rock-shaft *j'*, reciprocating tappet-arm V, lever *l'*, and spring *x'*, substantially as and for the purpose herein specified.

15. Loop-carriers X X, mechanism for actuating the same, and the sliding frame K, mechanism for communicating an intermittent forward movement to the said frame, in combination with the narrowing-needles *a a*, mechanism for operating the said needles, and the parallel needle-bars A A, substantially as and for the purpose herein specified.

16. The combination of the loop-carriers X X, the frame K, mechanism for communicating an intermittent forward movement to the said frame, the narrowing-needles *a a*, mechanism for operating the said needles, movable bar B, and mechanism for actuating the loop-carriers, substantially as and for the purpose herein specified.

17. The combination of the laterally-reciprocating loop-carriers X X, cam Y, cam-lever Z, connecting rod and lever between the said cam and cam-lever, the bar W, and the reciprocating cam-bar E, and tappet-arm V, substantially as and for the purpose herein specified.

18. The combination of the sliding frame K, lever A', reciprocating cam-bar E, tappet-arm V, pawl *l³*, and main frame having fixed ratchet-teeth *m³*, substantially as and for the purpose herein set forth.

19. The combination of the reciprocating frame U, having a detent *m'*, sliding frame K, having holding-notches *n' n'*, sliding bar B', provided with an arm, *l³*, as described, and reciprocating cam-bar E, and tappet-arm V, substantially as and for the purpose herein specified.

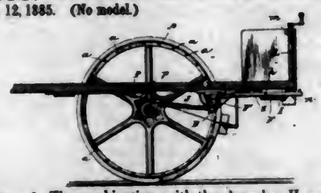
20. The combination of the reciprocating cam-bar E, tappet-arm V, vertically-movable bar W, provided with engaging-levers and cams *p' l' n' p³* A' Z, and spring *c³*, as described, and pattern mechanism for raising the said bar with its said parts in action, substantially as and for the purpose herein set forth.

21. The combination of the reciprocating cam-bar E, tappet-arm V, vertically-movable bar W, provided with engaging-levers and cams *p' l' u' p³* A' Z, and spring *c³*, pattern-chain C', and connecting mechanism D' E', for raising the said bar and its said parts into action, and means L' M' N' for permitting the lowering of the bar and its parts out of action, substantially as and for the purpose herein specified.

22. The combination of the reciprocating cam-bar E, tappet-arm V, vertically-movable bar W, provided with engaging-levers and cams *p' l' u' p³* A' Z, and spring *c³*, pattern-chain C', support D', cam E', pawl L', sliding bar M', and pivoted arm N', substantially as and for the purpose herein specified.

23. The combination of the pattern-chain C', ratchet-wheel G', pawl L', sliding frame M', pivoted arm N', reciprocating cam-bar E, and tappet-arm V, substantially as and for the purpose herein specified.

326,855. CAR-STARTER. CHAS. DICKINSON, Portland, Oreg. Filed Aug. 12, 1885. (No model.)



Claim.—1. The combination, with the draw-bar H, provided with shaft h and chain F, of the shaft D, provided with cranks C and E, pawl B, and the wheel A, having a series of teeth, *a*, as and for the purpose set forth.

2. The combination, with the wheel A, having an annular series of teeth, *a*, and the chain F, shaft D, and cranks C and E, of the pawl B, having chain K and lever L, as set forth.

3. The combination, with the draw-head I and the draw-bar H, having cross-bar h, of the shaft D, chain F, cranks C and E, the pawl B, provided with spring, and the wheel A, having teeth *a*, as and for the purpose set forth.

4. The combination, with the draw-bar H, having stud *u*, of the draw-head I, having hook N, as and for the purpose set forth.

5. The combination, with the lever L, having rod *o*, and the draw-head I, having hook N, of the draw-bar H, having stud *u*, as and for the purpose set forth.

6. The combination, with the draw-head I, having hook N, and the draw-bar H, having stud *u*, of the lever L, having rod *o* and chains *k*, the shaft D, cranks C and E, pawl B, and the wheel A, having teeth *a*, as and for the purpose set forth.

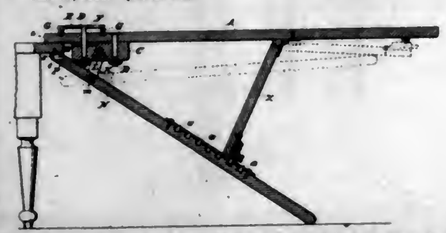
326,856. SPECULUM. JOSEPH G. ELLER, Oak Ridge, La. Filed Apr. 6, 1885. (No model.)



Claim.—1. The combination, with the tubular body of the speculum having the slot *b*, of the valve *f*, which is hinged at the inner end of said slot, and adapted to assume an inclined position within the speculum, and thus serve as a reflector, as shown and described.

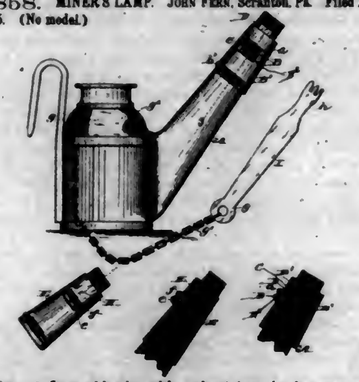
2. The combination, with the slotted tubular body A, having a lip or flange, as specified, and a valve or plate having a rear extension, of a movable catch which is attached to the latter, and adapted to engage with said flange for locking the plate in place, all as shown and described.

326,857. IRONING-TABLE. JOHN M. ELLISON, Pittsburg, Pa. Filed Jan. 15, 1885. (No model.)



Claim.—The combination, with the main board, its transverse cleat, and the block or bearing C, of the bolt D, connecting said board and bearing, the transverse bolt L, links K K, lever-support pivoted to said links, and the brace Z, substantially as specified.

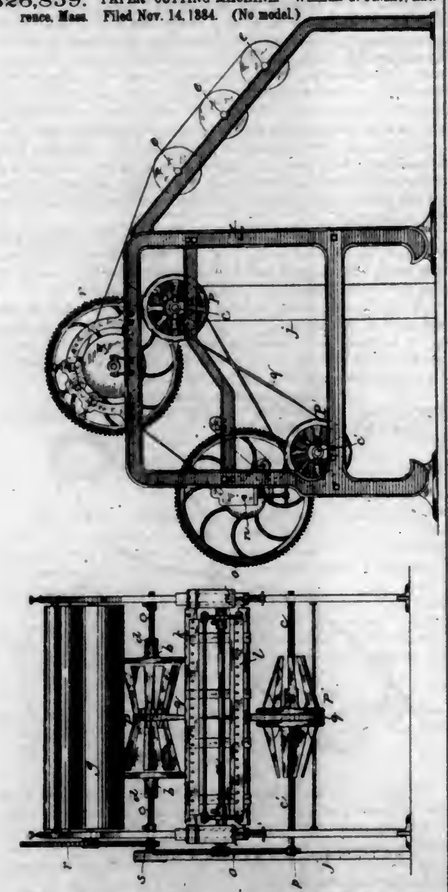
326,858. MINER'S LAMP. JOHN FERN, Scranton, Pa. Filed Apr. 9, 1885. (No model.)



Claim.—1. In combination with a miner's lamp having an apertured spout, A, the ferrule B, having slot C and slide D, for admitting the lamp-wick to be raised or adjusted and preventing ignition and escape of the oil, substantially as shown, and for the purpose described.

2. The combination of the miner's lamp having an apertured spout, A, provided with a peripheral ridge, and the ferrule B', having annular concave recess *b'*, slot C, and slide D, substantially as shown, and for the purpose described.

326,859. PAPER-CUTTING MACHINE. WILLIAM G. FINLAY, Lawrence, Mass. Filed Nov. 14, 1884. (No model.)



Claim.—In a paper-cutting machine, the feed-roll and revolving knife having gears affixed to their arbors, combined with the shafts *c c'*, geared, respectively, to the feed-roll and to the rotary knife and provided with expanding-pulleys connected by a belt, as set forth.

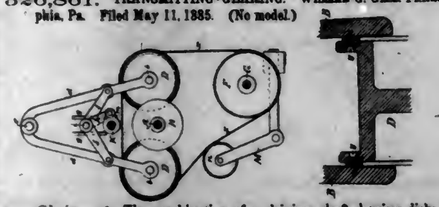
326,860. CLOTHES-WASHER. JAMES D. GARDNER and JAMES N. BRUMBELOW, Morgan, Tex. Filed Sept. 27, 1884. (No model.)



Claim.—1. A clothes-washer consisting of the cylinder 1, having the perforated diaphragm 3 and flare 2 at its lower end and a detachable perforated cap, 6, at its upper end, the piston-rod 9, carrying the piston 10 and having its lower end provided with the central opening, 13ª, having the air-hole 14, for connecting the central opening with the cylinder at a point above the piston, and a rising and falling valve carried by the piston, for opening and closing the central opening in the piston-rod, substantially as described.

2. A clothes-washer consisting of the cylinder 1, having the perforated diaphragm 3 and flare 2 at its lower end and a detachable perforated cap, 6, at its upper end, the piston-rod 9, carrying the piston 10 and having its lower end provided with the central opening, 13ª, having the air-hole 14, for connecting said central opening with the cylinder at a point above the piston, the pins 16, rigidly secured to and depending from the piston, and the disk-valve 15, sliding vertically on the pins to open and close the central opening in the piston-rod, substantially as described.

326,861. TRANSMITTING-GEARING. WILLIAM G. GAMS, Philadelphia, Pa. Filed May 11, 1885. (No model.)



Claim.—1. The combination of a driving-shaft, having disks B, with two or more independent shafts or spindles, each having a wheel or disk clamped between and driven by frictional contact with the faces of the disks on the driving-shaft, as set forth.

2. The combination of a driving-shaft, having disks B, with two or more shafts or spindles, each having a wheel or disk clamped between and driven by frictional contact with the faces of the disks B, and adjustable from and toward the driving-shaft, as set forth.

3. The combination of a driving-shaft having disks B, a shaft, G, to be driven, and two or more wheels or disks geared to or having a driving connection with the shaft G, and clamped between and driven by frictional contact with the faces of the disks B, as set forth.

4. The combination of a driving-shaft having disks B, a shaft, G, to be driven, two or more wheels or disks, D, geared to or having a driving connection with the shaft G, and clamped between and driven by frictional contact with the faces of the disks B, and mechanism for simultaneously adjusting the said wheels or disks D from and toward the shaft A, as set forth.

5. The combination of a driving-shaft having disks B, a driven shaft, G, also having disks B, two or more wheels or disks, D, clamped between and in frictional contact with the faces of the disks B of the driving-shaft, two or more similar wheels or disks, D', occupying a like relation to the disks B of the driven shaft and geared to or having a driving connection with the wheels or disks D, and mechanism for simultaneously adjusting the wheels D in one direction and the wheels D' in the opposite direction, as set forth.

6. The combination of the shaft A, the disk B, movable thereon, the spring *t*, the ring *v*, bearing thereon, and the collar *y*, secured to the shaft and having set-screws acting upon the ring *v*, as specified.

7. The disks D, having detachable rings or flanges *a*, as specified.

326,862. TREADLE. THOMAS P. GOOCH, Oakland, Miss. Filed Aug. 3, 1885. (No model.)



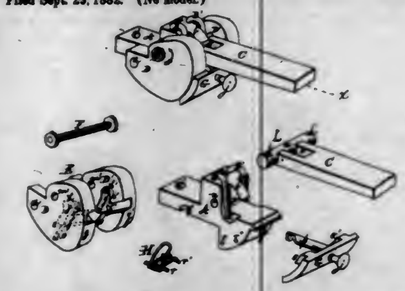
Claim.—1. The treadle-lever herein described, having its lower end formed with two arms, one of said arms being provided at its extremity with a hook and the other with a foot-piece, substantially as set forth.

2. A treadle-lever, substantially as herein described, consisting of the lower section formed at one end with arms, having one a hook and the other a foot-piece, and at its other end with a segmental slot, the handle-section pivoted to the lower section below the segmental slot, and a set-bolt extending through said bolt and connecting the said sections, substantially as set forth.

3. A treadle attachment consisting of the armed base-piece and the clamp-bar, each being provided with coincident slots and bolt-holes near their opposite ends, the lever having its lower end provided with a hook inserted through said slots, and the fastening-bolt inserted through the foot-piece, the base, and the clamp-bar, substantially as set forth.

4. The combination, in a treadle, with the shaft and foot-rest, of the clamp-bar arranged under the shaft, the base-piece placed on the shaft above the clamp-bar, and having arms lapped on the foot-rest on opposite sides of the shaft, and a lever, substantially as set forth.

326,863. THILL-COUPLING. NELSON T. HALE, Cummington, Mass. Filed Sept. 29, 1882. (No model.)



Claim.—1. In a thill-coupling, a thill-iron having a bearing for its axial part, composed partly of a bearing in a projection of the axle-clip and partly of a bearing in a side piece, which has a partial rotation on a pivot located in a part rigidly attached to the axle-clip, and having a stop located in position to prevent the sidewise motion of said axial part out of either of said bearings, which side piece has a groove opening into the bearing in it, which groove and bearings are constructed and arranged relatively to each other and to said axial part in said bearings, in the manner described, by which the bearing in the projection of the axle-clip holds said axial part from rotation with the side piece in its rotation required to rotate the bearing in such side piece away from the portion of the axial part in it, passing said groove over said part until another groove or opening in said side piece reaches it, brought by said rotation into position to allow the withdrawal through it of said axial part from the side piece, in which position an opening in the bearing in the projection of the axle-clip allows the simultaneous withdrawal of said axial part from that bearing.

2. In a thill-coupling, a thill-iron having a bearing for its axial part, composed partly of a bearing in a side piece which has a partial rotation on a pivot in a draw-iron rigidly attached to the axle-clip, and partly of a bearing in said draw-iron, and having a stop located in position to prevent sidewise motion of said axial part out of either of said bearings, which bearing in the side piece has a groove opening into it, which is rotated over said axial part in a given direction of the rotation of the side piece to separate said bearing from said part, and which bearing in the draw-iron is constructed and arranged in the manner described relatively to said side piece in its rotation and to said axial part when in the two bearings, to prevent said part from impinging against its bearing in the side piece in a direction tending to rotate said side piece in said given direction.

3. In a thill-coupling, a thill-iron having a bearing for its axial part, composed partly of a bearing in a side piece having a partial rotation on a pivot in a draw-iron rigidly attached to the axle-clip, and partly of a bearing in said draw-iron, and having a stop located in position to prevent sidewise motion of said axial part out of either of said bearings, which bearing in the side piece has a groove opening into it, which is rotated over said axial part by rotation of the side piece in a given direction in the process of withdrawing said axial part from said side piece, as described, which groove has an inclined face, arranged as described, to present to said axial part, in various positions of such rotation, its inclined surface in the position in which the impact of said axial part on said surface in the forward motion of the thill-iron required for draft of the vehicle to which it is attached tends to rotate said side piece in a direction the reverse of that of said rotation, the bearing in the draw-iron being constructed as described, to hold said axial part from impinging on said inclined face in any direction except that required to produce such reverse rotation.

4. The anti-rattling spring B, bearing against the axial part of the thill-iron when said part is in its bearing in the draw-iron, in a direction tending to force the portion of said axial part operating in its bearing in the side piece D when therein against said bearing, and to create thereby a friction resisting the rotation of said side piece on its pivot in the draw-iron, and tending, also, when said side piece is rotated in the direction required to pass said bearing away from said portion of the axial part, and the inclined face *i* is brought by such rotation into position to receive its impact, to drive said portion of the axial part against said face in the direction required to exert a force tending to counteract such rotation, all said parts being arranged and constructed as described.

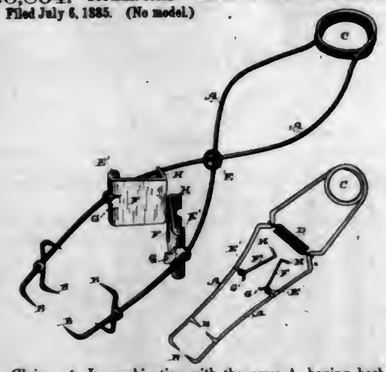
5. In a thill-coupling, a thill-iron having a bearing for its axial part, formed partly of a bearing in a draw-iron rigidly attached to the axle-clip, and partly of another bearing in a side piece having a partial rotation on a pivot in a part rigidly attached to the axle-clip, a stop being located in position to prevent the sidewise motion of said axial part out of either of said bearings, which axial part is withdrawn from the bearing in the side piece by the rotation of said side piece in a given direction, passing a groove therein over the portion of the axial part operating in the side piece, the axial part being held from rotation by its bearing in the draw-iron till an opening in the side piece is rotated into position to allow such withdrawal, an opening in the bearing of the draw-iron permitting said withdrawal and a withdrawal of said axial part from it, all said parts being combined with a key adjusted to enter an opening in the draw-iron and an opening in the side piece when both said parts are in the position relatively to each required for the operation of the axial part in both said bearings, thereby blocking, as described, said rotation, which key is held in place by a spring or its equivalent.

6. The combination, in a thill-coupling, first, of the thill-iron C, having an axial part, L, including the portions *a* and *k*; second, of the draw-iron A, having a bearing, *t*, for said portion *a*; third, of a side piece, D, pivoted to the draw-iron, having a partial rotation on its pivot, having a bearing, *h*, for said portion *k*, and having the groove *g*, opening into said bearing, and the groove or opening *f*, entering said groove *g*; fourth, a side piece, D′, located in position to prevent the sidewise motion of said axial part from either of its said bearings, as described, and attached to the draw-iron; fifth, of a key held in place in the coupling by a spring or its equivalent, and having projections arranged relatively to an opening in the draw-iron and an opening in the side piece D in the position of the rotation of said side piece described, in which said axial part L is in said bearings, to enter said openings and block thereby said side piece D from rotation, all said parts being arranged and operating as described.

7. In a thill-coupling, the draw-iron A, the part E, having a partial rotation, as described, on the axial pin F, located in a bearing in the draw-iron A, and the key G, held in place by the spring H, all said parts being constructed, and arranged, and operating as described.

8. The part E, having a partial rotation in one direction on the axial pin F in the draw-iron A, for the purpose of rotating the bearings *h h′*, as described, into position for the operation therein of the axial parts *k k′* of the thill-iron C, and weighted, as described, in the portion of it moving downward in its said rotation in said direction.

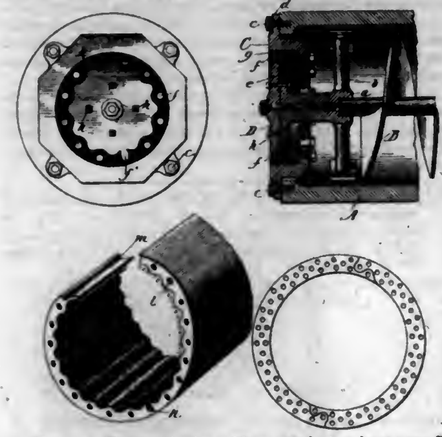
326,864. GOPHER-TRAP. ANDREW S. HALLIDIE, San Francisco, Cal. Filed July 6, 1885. (No model.)



Claim.—1. In combination with the arms A, having barbs at the outer ends, and a spring by which they may be closed together forcibly, the plates or leaves having their outer ends hinged to the respective arms, and their inner ends turned at right angles, forming extensions which meet and rest against each other, so as to hold the arms apart, substantially as herein described.

2. The elastic arms having their outer ends barbed or provided with teeth, in combination with plates hinged to the arms opposite each other, and the adjusting and holding lugs G, substantially as herein described.

326,865. MANUFACTURE OF COVERINGS FOR STEAM-PIPES, &c. RICHARD HAMMILL, Chicago, Ill. Filed Oct. 14, 1884. (No model.)



Claim.—1. The combination, with receptacle A and conveyer B, of ring C, disk D, and knife *k*, as set forth.

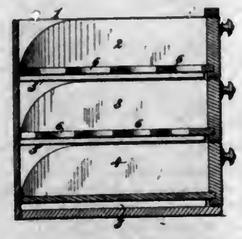
2. The combination, with receptacle A and conveyer B, of ring C, disk D, knife *k*, and bolts *f*, as set forth.

3. The combination, with receptacle A and conveyer B, of ring C, disk D, knife *k*, and bolts *f* and *f″*, as set forth.

4. The combination, with a receptacle and a conveyer for forcing the material from one end thereof, of a bent ring, and a disk situated at the discharge end of the receptacle, and a knife adapted to cut the material longitudinally, situated within the discharge-orifice formed by said ring and disk, as set forth.

5. The combination, with a receptacle and a conveyer for forcing the material from one end thereof, of a bent ring, and a disk situated at the discharge end of the receptacle, and bolts and a knife adapted to cut the material longitudinally, situated in the discharge-orifice formed by said ring and disk, as set forth.

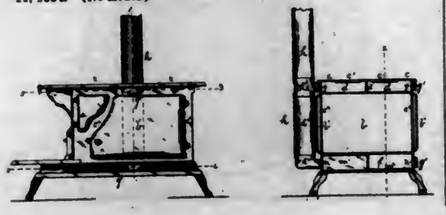
326,866. COIN-SORTER. GUY M. HARCOURT, Galveston, Tex. Filed May 28, 1885. (No model.)



Claim.—1. In a coin-sorter, the combination of a cabinet, a close-bottomed drawer arranged in the lower part of said cabinet, and a series of drawers with perforated bottoms graded to assort coins of different denominations, and arranged one above another within said cabinet, substantially as described.

2. In a coin-sorter, the combination of a cabinet having a top opening, and provided with horizontal ledges 5, a close-bottomed drawer placed in the lower part of said cabinet, and a series of drawers provided with graded openings 6, and arranged successively above the lower close-bottomed drawer, substantially as described.

326,867. COOKING-STOVE. JOHN H. HARPER and DANIEL V. BROOKS, Allegheny City, Pa.; said Brooks assignor to said Harper. Filed Apr. 11, 1884. (No model.)



Claim.—1. A side-draft cooking-stove or range having smoke-escapes in each side wall thereof communicating with the top flue, and provided with pipe-collars, in combination with a smoke-pipe adapted to be secured to the pipe-collar around either smoke-escape, hinged dampers extending from each side half-way across the upper flue, and a cap closing the smoke-escape not in use, substantially as and for the purposes set forth.

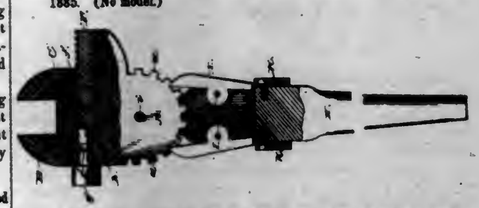
2. A side-draft cooking stove or range having an oven, *b*, upper flue, *d*, back flue, *e*, and lower flue, *f*, said lower flue having a smoke-escape in the side wall thereof, in combination with a smoke-pipe adapted to be secured to said smoke-escape, and means in said lower flue for deflecting the current to the front of the flue and thence to the smoke-escape, substantially as and for the purposes set forth.

3. A side-draft cooking stove or range having the lower flue provided with a smoke-escape on each side thereof, in combination with a smoke-pipe adapted to be secured to either of the said smoke-escapes, a cap or plate for closing the other smoke-escape, and a damper or dampers for reversing the draft in said lower flue, substantially as and for the purposes set forth.

4. A side-draft cooking stove or range having an upper flue, *d*, provided with smoke-escapes *g* at each side thereof, and a lower flue, *f*, provided with the smoke-escapes *k* at each side thereof, in combination with a smoke-pipe communicating on one side with said smoke-escapes *g* and *k*, and a damper, *h′*, closing communication between said smoke-escape *g* and said pipe, substantially as and for the purposes set forth.

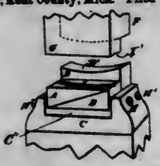
5. A side-draft cooking stove or range having a lower flue, *f*, provided with smoke-escapes *k* on each side thereof, and a central plate, *f″*, in combination with the smoke-pipe *h*, communicating with one of said smoke-escapes, and the damper *m*, substantially as and for the purposes set forth.

326,868. WRENCH. ENOCH HARRIS, Quincy, Ill. Filed Mar. 25, 1885. (No model.)



Claim.—In a wrench, the handle bifurcated or slotted at its forward end, in combination with the toothed plate A, carrying the jaws and pivoted in the slotted portion of the handle, pawls also pivoted in the slotted end of the handle at an intermediate point of their length, springs acting against the pawls, and eccentrically-pivoted buttons K, attached to the outside of the handle on a line with the pawls, so that said buttons may be turned or swung around to bear upon the inner ends of the pawls, and throw their outer ends out of engagement with the teeth of the plate, and allow of the swinging of the latter on its pivot, as set forth.

326,869. APPARATUS FOR WELDING WHEEL-TIRES. WILLIAM HARRISON, Walker, Kent County, Mich. Filed May 26, 1884. (No model.)



Claim.—1. In a welding-machine, a die constructed in two sections, each having in longitudinal section the form of a right-angled triangle, and the subtense of one section being laid upon that of the other, in combination with set-screws bearing against the end of each part, substantially as described.

2. In a welding-machine, the combination, with the angular die-section A, of the section B, having a similar form, the two being united by a tongue and groove, *a* and *b*, and means, substantially as described, for adjusting one section relatively to the other, substantially as described.

3. In a welding-machine, the combination, with rear and front lower dies, one acting upon the perimeter of a tire and the other upon its edge, of corresponding upper dies, the tire being submitted to the action of the rear and front dies alternately, substantially as described.

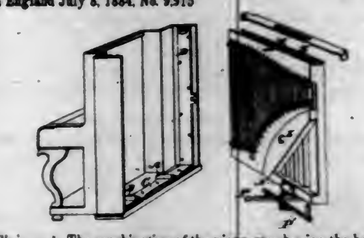
4. In a welding-machine, the combination, with the lower dies, A and D, the former having a groove, I, and the latter a concave face, K, of the upper dies, G and F, the former having a groove, I′, and the latter a convex face, F′, substantially as described.

326,870. GATE. JAMES HARTMAN, Grant, Ind. Filed May 15, 1885. (No model.)



Claim.—The combination, with the hinge-post provided with the lower hinge-bearing, C, and the eyebolts H I, of the gate G, provided with the eyebolts in its rear batten, and the pin-holes and pin in its front batten, the rod K, the lever L, and the hook-rod connecting the lever and gate, substantially as specified.

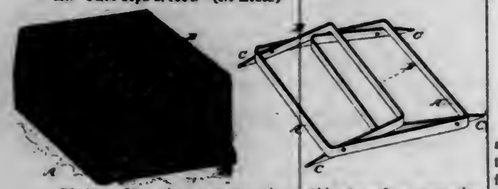
326,871. TRANSPOSING-PIANO. WILLIAM L. HAYS, Greenwich, County of Kent, England. Filed Mar. 24, 1885. (No model.) Patented in England July 8, 1884, No. 9,915



Claim.—1. The combination of the piano-case having the horizontal lever F, provided with forked inner end and outer handle, H; and the curved rack-plate J, with the adjustable string-frame and sounding-board having a projection, I, for making a detachable connection with the lever F, substantially as herein set forth.

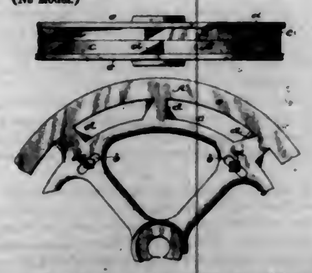
2. The combination of the adjustable string-frame and sounding-board provided with the rack N, with the case having the locking-treadle P, and means, substantially as shown, for moving said string-frame and its attached parts to the right or left, substantially as herein set forth.

326,872. PLANT-PROTECTOR. WILLIAM JOHNSTON, Damariscotta, Me. Filed Sept. 2, 1884. (No model.)



Claim.—In a plant-protector, the combination of a rectangular frame, outwardly-extensible bows or arches pivoted at or near the ends of the same, and a netting bag having its edge attached to the said frame, and adapted to cover the bows when extended, substantially as and for the purpose set forth.

326,873. BAND-PULLEY. REUBEN JONES, Atlanta, Ga. Filed Aug. 5, 1885. (No model.)

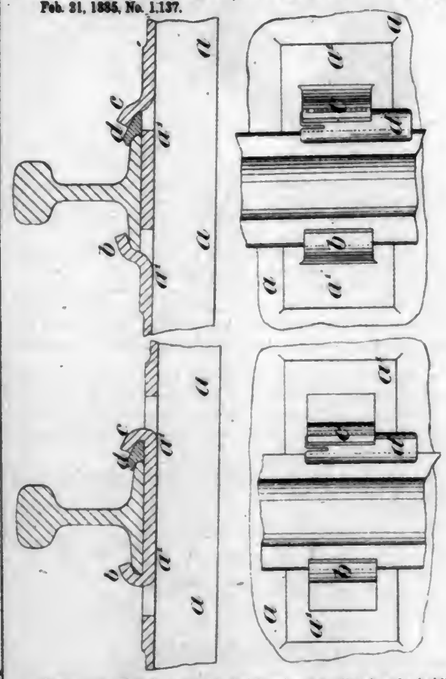


Claim.—1. A band-pulley consisting of two parallel sections having a series of triangular teeth at their edges, with the adjacent faces of the teeth on the opposite sections arranged parallel to each other and diagonally to the plane of the pulley, whereby both sections may be cast in the same mold, and a sharp edge or acute angle of one set of teeth is presented to the rope in moving in either direction, as described.

2. A band-pulley made in two flat sections, each with a peripheral rim, having triangular teeth extending across the rim at their bottoms, and flat peripheral rings or flanges at the apices of said teeth, the said sections being bolted together, as described.

3. A band-pulley made in two flat sections having peripheral rim with teeth, as described, the said sections being provided with elongated holes and bolts to permit an axial adjustment of one section over the other to adapt the pulley to different sizes of rope, substantially as shown and described.

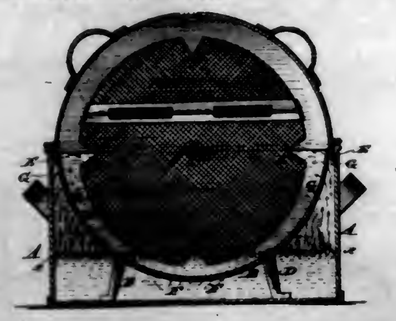
326,874. SLEEPER FOR PERMANENT WAYS. PETER KIRK, Workington, County of Cumberland, England. Filed Feb. 26, 1885. (No model.) Patented in England Jan. 20, 1885, No. 785; in France Jan. 31, 1885, No. 154,190; in Belgium Feb. 2, 1885, No. 67,722, and in Spain Feb. 21, 1885, No. 1,137.



Claim.—1. The sleeper with holding jaws or clips *b c*, for holding a rail formed out of the metal of the sleeper, the sleeper being made thicker at the places where the jaws or clips are to be formed, as and for the purposes set forth and indicated.

2. A steel or iron sleeper for permanent ways made thicker in two places in its length and having parts of these thicker portions punched or cut so as to be partly separated and raised or pressed out so as to form jaws or clips to answer as chairs to hold a rail, substantially as set forth and indicated.

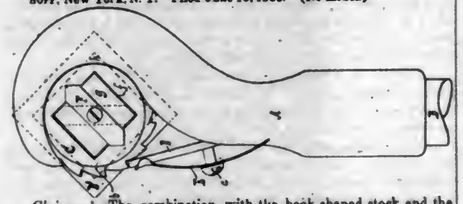
326,875. STEAM WASHING-MACHINE. GEROW KOONS, St. Louis, Mo. Filed Oct. 11, 1884. (No model.)



Claim.—1. The combination, in a steam washing-machine, with the rectangular boiler A, provided along its upper front and rear edges with the deflecting-flanges E E, and the foraminous cylinder H, made in two parts hinged together, provided with the inward projections I, and journaled in the sides of the boiler, of the semi-cylindrical false bottom B, supported in the boiler concentric with the wheel H, provided at its lower part with the openings F, and having its edges beveled and separated sufficiently from the deflecting-flanges E to allow the steam to be driven between the two into the lower part of the wheel H, substantially as specified.

2. In a washing-machine, the combination with the boiler A, provided with the deflectors E, and the cylinder H, journaled in the boiler, of the false bottom B, concentric with the said wheel, having its edge beveled to correspond to the deflecting-surfaces of the flanges E, and provided with the openings F and G, the latter of which are adapted to have ascending steam forced through them by the contraction of the space between the false bottom and boiler, substantially as described.

326,876. RATCHET-WRENCH. LUDWIG KRAMER and AUGUST ECKHOFF, New York, N. Y. Filed June 18, 1885. (No model.)



Claim.—1. The combination, with the hook-shaped stock and the semicircular groove in the hook-shaped portion of the stock, of a ratchet-wheel fitting in the stock and engaging the semicircular groove and a spring-pawl removably secured to the stock and serving to retain the ratchet in the semicircular groove and to impart to the said ratchet a rotary motion, substantially as described.

2. The combination, with the hook-shaped stock and the semicircular groove in the hook-shaped portion of the stock, of a ratchet-wheel, a toothed rim formed on said ratchet-wheel to engage with the semicircular groove in the stock, a spring-pawl secured to the stock and serving to retain the ratchet in the semicircular groove and to impart a rotary motion to the ratchet, a removable socket fitted into the ratchet, and means for retaining the socket in position, substantially as described.

326,877. STEAM-BOILER FURNACE. FREDERICK LEADBEATER, Detroit, Mich. Filed June 23, 1885. (No model.)

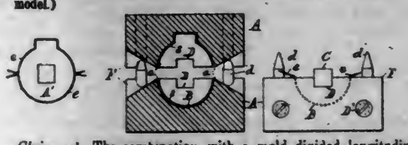


Claim.—1. The combination of the boiler, the fire-chamber and ash-pit separated by a finely-perforated grate capable of holding charges of coal-dust, and both fire-chamber and ash-pit capable of being closed hermetically, the chamber E opening through pipes into the side of the ash-pit, receiving air only from the escape-flue and capable of being hermetically closed, and the pipe from the steam-dome of the boiler running into the chamber E and arranged to drive jets of steam into the ash-pit, whereby the air is drawn from the escape-flue mixed with smoke particles, substantially as specified.

2. The combination, with a steam-generator, of an air-chamber opening into the furnace beneath the grate through a series of short horizontal pipes, F, and receiving heated air through a pipe, G, from the escape-flue of the furnace, and a jet-director, J, composed of a main pipe, *j*, and a series of horizontal pipes, *j'*, provided with perforations or jet-apertures directly opposite the ends of pipes F, and a steam-pipe, H, provided with a valve conveying steam from the boiler to the director J, substantially as and for the purposes described.

3. The combination, with a steam-boiler furnace provided with a perforated grate and hermetically-closing doors, and an air-chamber also provided with a hermetically-closing door and opening into the furnace beneath the grate through a series of pipes, F, secured in the wall or partition in the wall of the furnace, of a pipe, G, conveying heated air and products to the air-chamber, a steam-pipe, H, provided with a valve conveying steam from the boiler to a jet-director, J, in the air-chamber, and a pipe, I, provided with a gage, all adapted to operate substantially as and for the purpose specified.

326,878. MOLD FOR CORED OBJECTS OF PLASTIC MATERIAL. THEODORE F. LEMARSENA, Newark, N. J. Filed Sept. 15, 1884. (No model.)

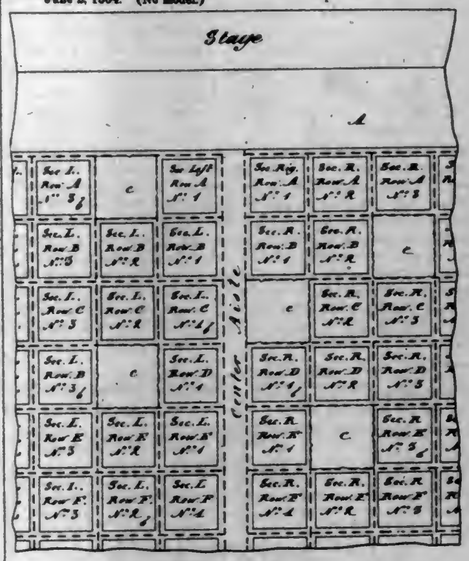


Claim.—1. The combination, with a mold divided longitudinally, of a metallic core supported in guides attached to one part of the divided mold.

2. The combination, with a divided mold, of the beveled edges, the open space outside of the same, and the separate stops for sustaining the closing pressure.

3. The combination, with the cavity of a mold, of a removable shell adapted for applying a secondary pressure to the blank, substantially as shown and described.

326,879. TICKET-CHART. HENRY E. LOMAS, Cresco, Iowa. Filed June 2, 1884. (No model.)



Claim.—The ticket-chart or diagram of a public hall, printed or marked to indicate the seats and each seat portion or check inclosed by a series of perforations to allow the ready removal of the latter, said chart or diagram having a backing or support, substantially as and for the purpose set forth.

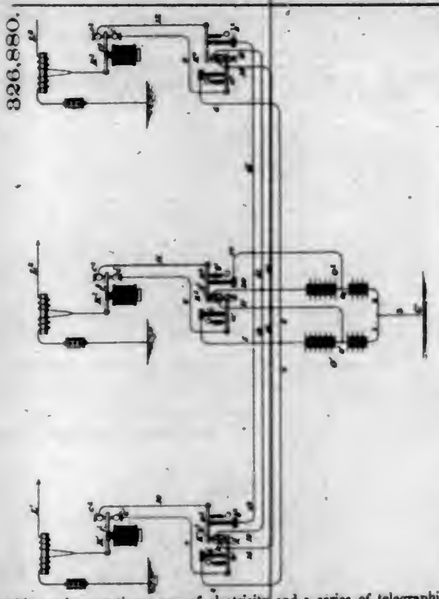
326,880. TELEGRAPHY. WM. MAYER, Jr., Jersey City, N. J. Filed May 14, 1885. (No model.)

Claim.—1. The combination, substantially as hereinbefore set forth, with a positive and a negative source of electricity, of a series of lines, transmitting devices, substantially such as described, conductors leading therefrom, whereby any or all of said lines may be connected with either of said sources, circuit-changing keys, and circuit-connections, substantially such as described, whereby the connections of any of said lines with one or the other of said sources may be changed from a point of a given potential to a point of different potential.

2. The combination, substantially as hereinbefore set forth, with a positive and a negative source of electricity, of a series of telegraphic main lines, a transmitter for each of said lines, conductors leading from each transmitter to points of different potentials in each source, whereby the connections of the corresponding line may be changed from a point of highest to a point of lower potential, a second transmitter for each of said lines, and conductors leading therefrom, whereby the connections of the corresponding line may be changed from either source to the other.

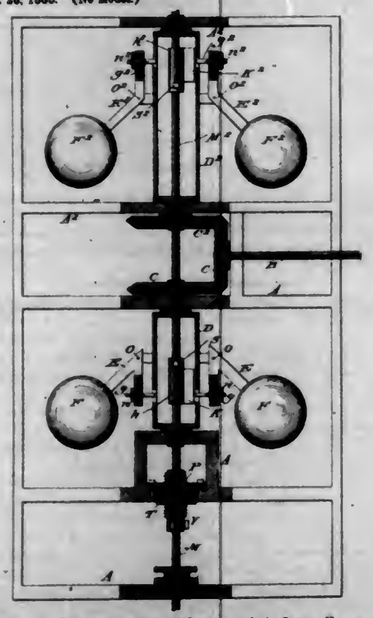
3. The combination, substantially as hereinbefore set forth, with a

326,880.



positive and a negative source of electricity and a series of telegraphic main lines, of a series of transmitting-keys, one for each of said lines, each of which keys consists of a key-lever, two insulated points carried thereon, two contact-levers applied thereto, respectively, and two contact-stops applied to said contact-levers, respectively, conductors leading from one of said sources to a contact-stop of each key, conductors leading from the other source to one of the insulated points of each key conductors leading from a point of lower potential in one source to the remaining insulated point of each key, conductors leading from a point of lower potential in the other source to one of the contact-stops of each key, a pole-changing key applied to each of said main lines, and conductors leading from the respective contact-levers of each of the first-named keys to the corresponding pole-changing key.

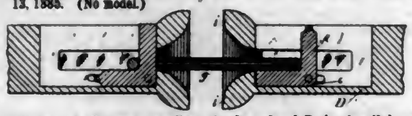
326,881. SPEED-GOVERNOR. ROBERT MCKENNA, White, Tenn. Filed Jan. 26, 1885. (No model.)



Claim.—1. The combination of flanged hub A, flange K, set-screw S, studs *g*, jam-nuts *n*, hub *p*, nut T, and set-screw V, with frame A, driving-shaft B, miter-gears C, main shaft D, arms E, arm-pins O, balls F, and valve-stem M, substantially as set forth.

2. The combination of part 2, consisting of frame A^2, miter-gear C^2, main shaft D^2, arms E^2, arm-pins O^2, balls F^2, studs g^2, jam-nuts n^2, valve-stem M, flanged hub A^2, flange K^2, and set-screw S^2, with part 1, consisting of frame A, driving-shaft B, miter-gear C, main shaft D, arms E, arm-pins O, balls F, studs *g*, jam-nuts *n*, valve-stem M, flanged hub A, flange K, set-screw S, threaded hub P, set-screw V, and nut T, when constructed, arranged, and combined substantially as set forth.

326,882. CAR-COUPLING. OLIVER J. MICHAELS, Pittsburg, Pa., assignor of one-third to Charles Wright Provost, same place. Filed July 13, 1885. (No model.)

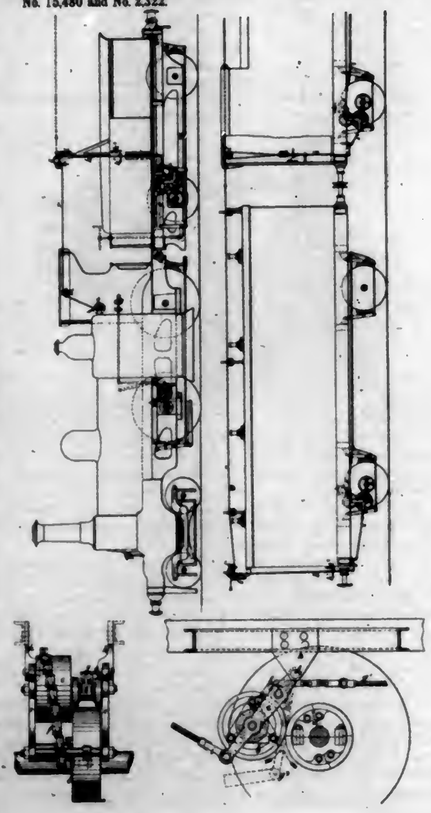


Claim.—1. In a car-coupling, the draw-head D, having link-opening *e* and groove *f*, vertical pin-slot *h*, and abutments *i i*, in combination with the right-angle pin A, located in said slot *h* and adapted to stand with either its front or rear portion vertical, and having lateral pivots *b* at its angle, substantially as described.

2. In a car-coupling, the draw-head D, having link-opening *e*, groove *f*, vertical pin-slot *h*, abutments *i i*, and horizontal pivot-slots *k*, in combination with the right-angle pin A, having lateral pivots *b*, substantially as described.

3. In a car-coupling, the combination of the draw-head D, having link-opening *e*, groove *f*, pin-slot *h*, and abutments *i i*, with the right-angled pin A, having pivots *b*, and a chain, *m*, extending to the top, side, or other desired part of the car, substantially as described.

326,883. CAR-BRAKE. JAMES L. NORRIS, Washington, D. C., (administrator of Wilhelm Bandel, deceased,) assignor to the Heberlein Self-Acting Railway Brake Company, (Limited,) London, England. Filed July 15, 1885. (No model.) Patented in England Aug. 14, 1879, No. 3,282, and Apr. 12, 1881, No. 1,601; in Germany Sept. 21, 1879, No. 10,418, and Apr. 13, 1881, No. 17,890; in France Feb. 9, 1880, No. 134,966; in Italy Mar. 31, 1880, XIV, 11,637, and in Austria-Hungary Aug. 6, 1880, No. 15,480 and No. 2,322.



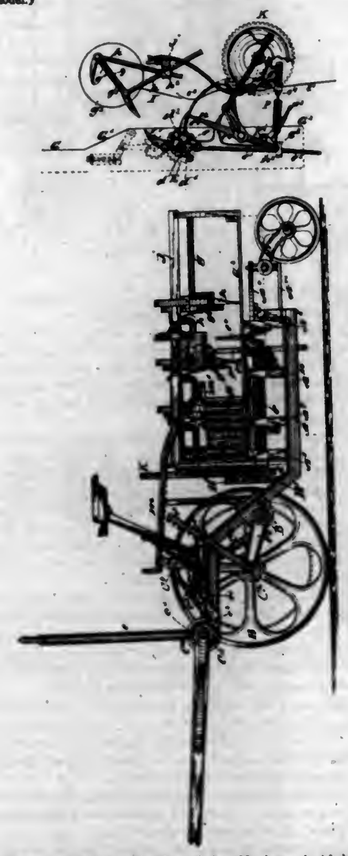
Claim.—1. In Heberlein-brake gear, the combination of the double-flanged axle-drum *a* and friction-drum *b*, and the barrel of the latter with the double-branched chain *f*, each branch having its links set step by step toward one side, the guide-roller *c*, and the swing-frame *e e*, substantially as described.

2. In Heberlein-brake gear, the combination of the axle-drum *a*, swing-frame levers *e e*, the friction-drum *b*, chain *f*, with links set step by step toward one side, pulley *c*, and its barrel and chain *g*, substantially as described.

3. In continuous Heberlein-brake apparatus, worked by a cord, the combination of the cord *r*, the two pulleys *l l'*, the lever *s*, and rod *k*, with its handle *k'* and hook and drop-ring k^3, substantially as described.

4. In continuous Heberlein-brake apparatus, worked by a cord, the combination of the cord *r*, pulleys *p* and *q*, forked socket Q, with hook *m*, the rod *k* and its handle *k'*, with hook and drop-ring k^3, substantially as described.

326,884. SELF-BINDING HARVESTER. WILLIAM F. OLIN, Chicago, Ill., assignor to William Deering, same place. Filed Dec. 16, 1882. (No model.)



Claim.—1. The combination of the side bars, A A', bent upward in front, the relatively-vibrating wheel-frame pivoted thereunder, the transverse bars tying said side bars together, the yoke A^4, the bar A^{11}, and the caster-wheel pivoted to said yoke and bar, substantially as described.

2. The combination of the harvester-frame, the wheel-frame relatively vibrating thereunder, the windlass and rope mechanism adapted to effect the vibration of the wheel-frame relatively to the main frame, and the tongue pivoted to said windlass-shaft, all combined and arranged substantially as and for the purpose set forth.

3. In a self-binding harvester, the combination of the shaft *g*, formed with one or more pairs of cranks, the disks located on said shaft adjacent to the cranks, and the packers carried on said cranks, substantially as and for the purpose set forth.

4. In a self-binding harvester, the combination of the shaft *g*, formed with one or more pairs of cranks, the disks located on said shaft adjacent to said cranks, and the packers carried on said cranks and provided with the extension *h*, supported by the guides h^2, substantially as and for the purpose set forth.

5. The binding-receptacle, the upper and lower packers, the breast-plate, the grain-reservoir formed between the upper packers and the breast-plate, and the yielding elastic arm I, all combined and arranged to operate substantially as described.

6. The packer-shaft *g*, the bar *j*, the bar *j'*, supported on said shaft and said bar *j*, and the spring-arm I, carried by said bar *j'*, substantially as and for the purpose described.

7. The packer-arms *c'*, provided with the teeth c^4, in combination with the grain-reservoir opposite said teeth and the elastic yielding arm I, substantially as and for the purpose described.

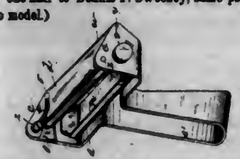
8. The combination of the rock-shaft provided with the compressor-arm and crank-arm, the clutching mechanism, and the detent-lever pivoted near its center to the frame and connected at one end to the crank-arm on the compressor-shaft and its other end adapted to engage with the clutching mechanism, substantially as and for the purpose described.

9. The combination of the clutching mechanism, the detent-lever, the compressor-arm, the cam-wheel, the connecting-rod *p*, the supplemental rod o^3 and spring *o'*, substantially as and for the purpose described.

10. The combination of the lever *o*, provided with the spring-casing, the spring *o'*, seated in said casing, the bolt o^3, passing through said case and spring and provided with the adjusting-nut o^3, the connecting-rod, and the tripping compressor-arm, substantially as and for the purpose described.

11. The combination of the cam-wheel K, the lever *o*, the elastically-extensible link *p*, the supplemental rod o^3, the spring *o'*, the compressor-arm p^3, the detent-lever *n*, and the clutch mechanism, substantially as and for the purpose described.

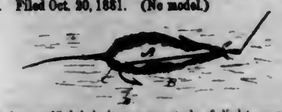
326,885. SAFETY-RAZOR. ANDREW PARTRIDGE, Springfield, Mass., assignor of one-half to Dennis F. Sweeney, same place. Filed July 13, 1885. (No model.)



Claim.—1. In a safety-razor, the frame *a*, having the looped spring-handle *a'*, and the grooved cheek-pieces *c*, combined with the blade *d*, engaging with the grooves in the latter, the guard *w*, and the screw-rod *v*, for clamping the cheek-pieces against the ends of the blade, substantially as set forth.

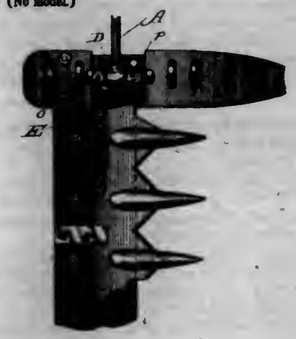
2. The frame *a*, having the looped spring-handle *a'*, the cheek-pieces *c*, having the grooves *o* therein, and the springs *e* secured thereto, combined with the blade *d*, engaging with the grooves in the cheek-pieces, the screw-rod *v*, for clamping the latter, the cup *u*, and the guard *w*, substantially as set forth.

326,886. ARTIFICIAL BAIT. FREDERIC C. P. ROBINSON, New York, assignor, by direct and mesne assignments, to Thomas J. Conroy, Brooklyn, N. Y. Filed Oct. 20, 1881. (No model.)



Claim.—An artificial bait constructed of light material—such as cork—suitably covered to imitate a mouse, and weighted so as to maintain its proper position in the water, in combination with the shank of a hook, substantially as and for the purpose described.

326,887. PITMAN. CASPER F. SEARCH, Winona, Minn. Filed July 21, 1885. (No model.)



Claim.—1. In a pitman-connection, the combination, with the rod, of a countersunk eye on the end of the rod, and cone-pointed screw-centers supported in bearings in line with the countersunk eye, substantially as described

2. In a pitman-connection, substantially as described, the hollow cone-pointed screw-center F, constructed and arranged to operate as and for the purpose set forth.

3. The pitman-connection having the countersunk eye on the pitman, hollow cone-pointed screw-center F, forming an oil-cup, and cone-pointed screw-center F', both screw-centers being supported in bearings in line with the countersunk eye on the pitman, substantially as described.

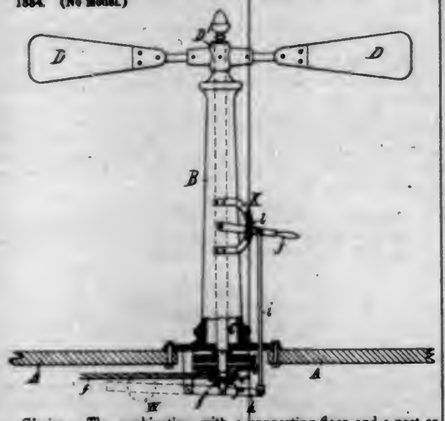
4. The pitman-connection having the countersunk eye on the pitman, hollow cone-pointed screw-center F, provided with a stopper, *p*, and forming an oil-cup, and cone-pointed screw-center F', both screw-centers being adjustable and supported in bearings in line with the countersunk eye on the pitman, substantially as described.

5. The connection for the pitman and cutting mechanism of a harvesting-machine, comprising, in combination, the plate E, for carrying the cutting mechanism, and provided with slides or guide-flanges *q* at the front and back of the knife, and a perforated split lug, *p*, having a set-screw, *p'*, and a perforated lug, *o*, cone-pointed screw-centers adjustable within the lugs *p* and *o*, and a pitman, A, provided at one extremity with a head, D, containing an eye, D', countersunk upon opposite sides to receive the points of the screw-centers, substantially as described.

6. The combination, with the ball-box on the pitman-rod and nuts *t*, of a washer, C, provided with lugs *r*, abutting against the nuts to prevent their turning, substantially as described.

7. The pitman A, provided at one extremity with a ball-box, B, having its parts secured together by means of nuts *t*, a washer, C, provided with lugs *r*, in contact with the nuts *t*, to prevent their turning, and a head, D, at the opposite extremity of the pitman, containing an eye, D', countersunk on opposite sides, in combination with the plate E, for carrying the cutting mechanism, provided with adjustable cone-pointed screw-centers F and F', to engage with the eye D' in the head D, substantially as and for the purpose set forth.

326,888. **FAN.** JAMES M. SEYMOUR, Newark, N. J. Filed June 20 1884. (No model.)



Claim.—The combination, with a supporting-floor and a post or column secured in an upright position thereto in an apartment above the floor, of a vertical shaft supported in bearings upon said column, a rotary fan applied to its upper end, a clutching mechanism applied to its lower end, means located in an apartment below the floor for rotating the driving part of the clutch continuously, a lever beneath the floor for operating the clutch, and a rod extended from the lever through the floor for operating the lever, substantially as herein shown and described.

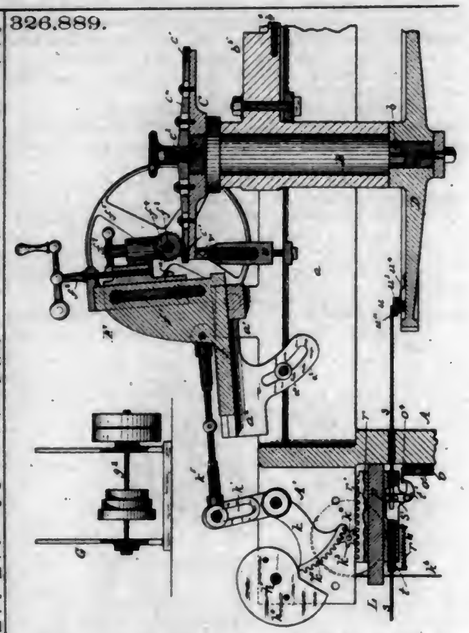
326,889. **GEAR-CUTTER.** DWIGHT SLATE, Hartford, assignor to the E. Horton & Son Company, Windsor Locks, Conn. Filed Nov. 13, 1883. (No model.)

Claim.—1. In a gear-cutter, in combination, a disk-shaped chuck arranged in a horizontal plane and having a central supporting-shaft, and a vertically-adjustable supporting-rest arranged beneath the rim of the chuck, substantially as described.

2. In a gear-cutter, in combination, the index mechanism E, the chuck C, fast to the top of the vertical shaft *b*, the adjustable rest *v v'*, the rocking bed *a''*, and connected cutter mechanism, with means for rotating the cutter, all substantially as described.

3. In a gear-cutter, in combination, the index mechanism E, the

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feed mechanism H, the cutting mechanism F, and the adjustable connecting-rods k^3 and k^2, all substantially as described.

4. In a gear-cutter, the rotary shaft *h*, having the worm h^2, the worm-gear h'', bearing the adjustable arm h^3, with face-cam h^7, the rotary cam h^4, turning with the arm and worm-gear, and the bent lever *k*, held in contact with the cam by the pinion k^3, and counterpoise-weight k^7, in combination with the connected gear-cutting and index mechanism, all substantially as described.

5. In a gear-cutter, the bent lever *k*, having an arm bearing a segmental gear, *k''*, the rotary cam k^4, and pinion k^3, in combination with the connected feed and stop mechanism, all substantially as described.

6. In a gear-cutter, rocking pulley-frame G, with its shafts and pulleys, the rod *g*, the cutter-shaft f^5, bearing cutter f^6, the adjustable frame *f''*, the vertical head *f'* and foot-piece *f* of the rocking bed *a''*, the rod k^2, and the lever *k*, in combination with the feed mechanism H and index mechanism E, with a vertical shaft bearing the main index-wheel and the chuck, all substantially as described.

7. In a gear-cutter, an index mechanism, the reciprocating rod k^9, the main index-wheel D, the frame *b'*, supported from the bed-frame, holding the vertical shaft *e*, bearing the pinion *e'* and index-wheel *e''*, the feed-lever e^4, pivoted to shaft *e* and rod k^9, and bearing the pawl e^5, finger-rest e^6, and finger *l*, in combination with plate *m* and spring-bolt *l''*, having the projecting stud, all substantially as described.

8. In the index mechanism of a gear-cutter, in combination, the frame *b'*, supporting-shaft *s*, the index-wheel *e''*, the lever e^4, pivoted on shaft *e* with the arms e^5, e^6, and e^7, bearing the finger *l* and pawl e^5, and the adjustable index-plate *m*, with arm *m'* placed between the index-wheel and the pawl, all substantially as described.

9. In the index mechanism of a gear-cutter, the adjustable index-plate *m*, bearing an arm, *m'*, interposed between the index-wheel and the operating-pawl, all substantially as described.

10. In a gear-cutter, the main index-wheel D, bearing the stop device *u*, in combination with the reciprocating feeler-rod fast to the sleeve in the carrier bearing the trip-lever, the trip-lever, and the spring-latch of the belt-shifter device, all substantially as described.

11. In combination, the rotary chuck C, the adjustable rocking bed *a''*, the reciprocating foot-piece *f*, formed with a vertical head, *f'*, the vertically-adjustable frame *f''*, carrying the rotary cutter f^6, and means for rotating the cutter, substantially as described.

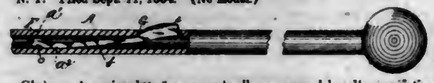
12. In combination, the bent lever *k* and means, substantially as described, for imparting a vibratory movement thereto, the adjustable connecting-rod k^2, the foot-piece *f f'*, formed with a vertically-adjustable frame, *f''*, and the rotary cutter f^6, mounted on bearings on the frame *f''*, and provided with a pulley, f^5, substantially as described and for the purpose stated.

13. In combination with the vertically-adjustable rotary cutter f^6 and the chuck-wheel C, the vertically-adjustable rest *v v'*, arranged beneath the rim of the said chuck and directly under the cutter, substantially as described.

14. In combination with the frame-bed *a*, provided with a clamping-bolt, a^4, and the index-pointer a^5, the bed *a''*, mounted on bearings *a'* on the frame, and having the downwardly-projected arm provided with a curved slot to receive the clamping-bolt a^4, and a graduated arc, a^6, substantially as described, and for the purpose stated.

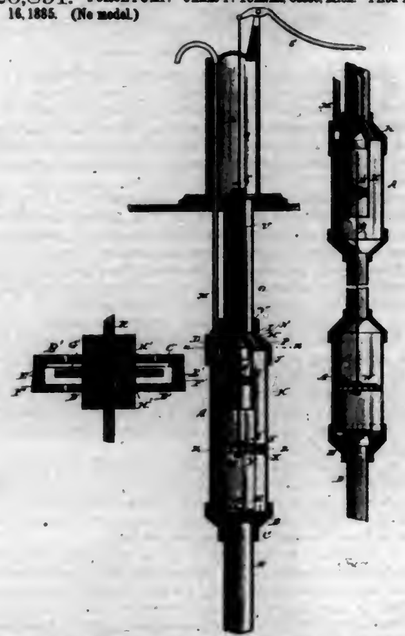
15. In combination with a rocking bed formed with guideways and mounted on bearings on the frame and adjustable in a vertical plane on its bearings, and a reciprocating head-piece adapted to move within the guides on said rocking bed, a rotary cutter mounted on bearings in said head-piece and vertically adjustable therein, substantially as described, and for the purpose stated.

326,890. **UMBRELLA AND PARASOL.** JAMES T. SMITH, New York, N. Y. Filed Sept. 11, 1884. (No model.)



Claim.—A spring-bar for an umbrella or parasol handle, consisting of a single piece of metal, A, with a curved end, *c*, secured at that end to the tubular portion of the handle by a rivet, so as to turn thereon, and curved at the point a^2 to bear against the wall of the tube as a fulcrum, and having the straight central portion, *b*, and the curved opposite end *e*, substantially as and for the purpose set forth.

326,891. **FORCE-PUMP.** JAMES P. TURNER, Osseo, Mich. Filed May 16, 1885. (No model.)



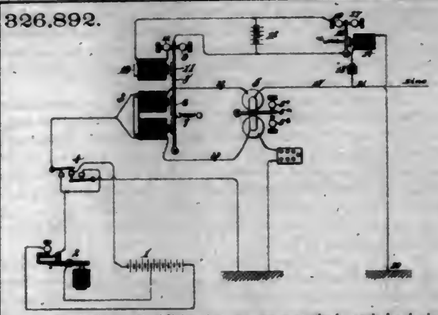
Claim.—In a force-pump, the combination, with an outer and an inner cylinder below and an air-chamber and discharge-pipe above a suitable apertured connecting-cap, said cylinders, pipes, and cap being connected, as described and shown, of a common piston-rod provided with a lifting-piston secured to the end of said rod and a force-piston in the said inner cylinder, consisting of a flanged perforated disk and a flat perforated disk, an annular flanged packing secured between said disks, and a flexible disk secured between two washers between said flanged and flat disks, substantially as and for the purpose set forth.

326,892. **MEANS FOR PREVENTING FALSE SIGNALS ON REVERSALS IN QUADRUPLEX TELEGRAPHS.** FRANÇOIS VAN RYSSELBERGHE, Schaarbeek, Belgium. Filed May 16, 1885. (No model.)

Claim.—1. In a multiplex telegraph for preventing false signals on reversals, the combination, with the main line and ordinary neutral relay located therein, of an additional electro-magnet, an armature-lever common to both the additional electro-magnet and ordinary neutral relay, a local battery, and an additional relay connected with the main line, and adapted to control the circuit-connections of the local battery and additional electro-magnet, substantially as herein set forth.

2. In a multiplex telegraph for preventing false signals on reversals, the combination, with the main line, of an additional relay, a condenser separating said main line and additional relay, a local battery, the ordinary neutral relay, and additional electro-magnet, the latter being included in the circuit of the local battery, the additional relay serving to control the circuit-connections of said local battery and the additional electro-magnet, substantially as shown and described.

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326,893. **FLOUR-DRESSING MACHINE.** WALTER H. WILLIAMS, Wauseon, Ohio. Filed Mar. 24, 1885. (No model.)

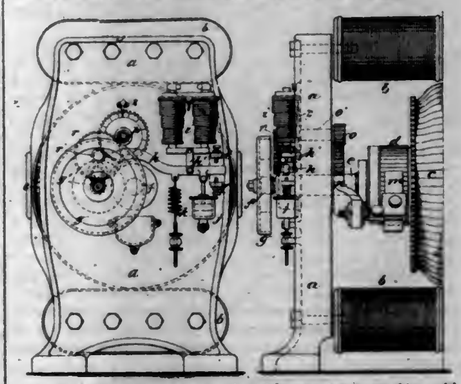


Claim.—1. In a flour-bolt, the combination of a reel-frame and bolting-cloth, a central core or drum having a diameter a little less than the diameter of the bolting-reel, and a series of longitudinal radial partitions projected from its periphery, whereby a series of shallow bolting-compartments is formed between the said drum and the bolting-cloth, substantially as set forth.

2. The combination, in a flour-bolt, of the bolting-reel, the inner core or drum, the front end plate, B, having a feed-opening and extended radially beyond the core or drum, and the cylinder E, extended between the front end of the core and the plate B, and the partitions F, extended longitudinally of the core, the cylinder E being provided with openings E' between each of the partitions F, substantially as set forth.

3. The combination, in a flour-bolt, of the bolting-reel, the core having end plates provided with bearings for the supporting-shaft, the front plate, B, having a feed-opening, the cylinder E, connecting the front end of the core and the plate B and provided with openings E', and the longitudinally-extended partitions F, dividing the bolting-chamber into compartments, substantially as set forth.

326,894. **CURRENT-REGULATOR FOR DYNAMO-ELECTRIC MACHINES.** JAMES J. WOOD, Brooklyn, assignor to the Fuller Electrical Company, New York, N. Y. Filed Mar. 6, 1884. (No model.)



Claim.—1. The combination, in a dynamo-electric machine, with adjustable commutator-brushes and mechanism arranged to shift the said brushes between their minimum and maximum positions, and with a power-driven device adapted to be clutched to said shifting mechanism in either of two directions, to revolve the brushes backward or forward, of an electro-magnet having its coils arranged directly in the working-

circuit of the machine with its armature operatively connected with the clutching device, and a retracting device opposing the said magnet, whereby variations in the working-circuit directly affect the attraction of the said magnet and cause a direct adjustment of the commutator-brushes, substantially as herein shown and described.

2. In a current-regulator for electric generators, the combination, with adjustable commutator-brushes, mechanism for shifting the same, and a power-driven device adapted to be clutched to said mechanism in either direction, to revolve the brushes forward or backward, of two magnets, both arranged in the working-circuit of the machine, one of the magnets and its retracting device controlling the clutching of the power-driven device to the shifting mechanism, while the other magnet controls a contact which varies or shunts the first magnet, substantially as and for the purpose set forth.

3. In a current-regulator for electric generators, the combination, with adjustable commutator-brushes, mechanism for shifting the same, and a power-driven device adapted to be clutched to said mechanism in either direction, to revolve the brushes forward or backward, of the magnet *i*, arranged in the working-circuit and controlling the clutching of the power device to the shifting mechanism, with the magnet *t*, also arranged in the working-circuit, a shunt, *v*, in the working-circuit around said magnet *i*, and a relaxing-contact, *u*, in said shunt controlled by the magnet *t*, substantially as and for the purpose set forth.

4. In an electric generator, in combination with adjustable commutator-brushes, the reversible clutch-wheel *g*, geared with the commutator-brushes and having two frictional surfaces at different radial distances on the side between center and circumference, with a rotary driving roller or rollers arranged in relation thereto, and an electric-motor device for throwing the roller or rollers into engagement with either side of the rim, substantially as and for the purpose set forth.

5. In an electric generator, the combination, with adjustable commutator-brushes, of the reversible clutch-wheel *g*, having a groove on the side between center and circumference, with a driving-roller, *f*, fitting loosely therein, and an electric-motor device for engaging either side of the groove with said roller, substantially as and for the purpose set forth.

6. In an electric generator, the combination, with the adjustable commutator-brushes, and with the revolving armature-shaft, of the driving-roller *f* on the end of said shaft, with the clutch-wheel *g*, geared to the brush-holder and having a grooved side to overlap and engage said roller *f*, and with an electro-magnet device arranged to clutch the said wheel and roller in opposite directions, and thereby shift the brushes to and fro, substantially as set forth.

7. In a current-regulator for electric generators of the class described, the combination, with the movable brush-holder, of a reversible clutch-wheel geared therewith having two frictional surfaces at different radial distances from the center of the wheel, with a rotary driving roller or rollers arranged to engage either face, and an electric-motor device for automatically causing said engagement by variations in the current and so arranged that the roller engages the inner rim of smaller diameter to shift the brushes back to reduce the current, but engages the outer rim of larger diameter to shift the brushes forward to increase the current, substantially as set forth.

8. In a current-regulator of the class shown, the combination of the movable brush-holder and a train of wheels geared therewith and adapted to receive power to revolve said train one way or the other, one of said wheels being graduated to represent successive positions of the brushes corresponding to successive numbers of lamps or their equivalent in circuit of an index-point arranged in relation with said graduations, substantially as herein set forth.

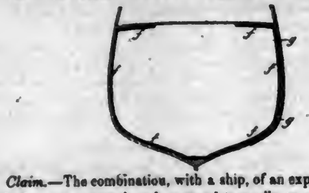
9. The combination, in an electric generator, with adjustable commutator brushes, of the movable clutch-wheel *g*, a train of gearing between the brush-holder and clutch-wheel, the initial pinion of which is movable tangentially or like a planet-wheel in the teeth of the succeeding wheel, with the clutching-lever *h* on which said wheel is hung, a power-driven roller arranged to engage the wheel in opposite directions, and an electro-magnet, *i*, and retracting-spring *k*, connected with said lever and arranged to shift it in one direction or the other, substantially as and for the purpose set forth.

10. The combination, in an electric generator, with adjustable commutator-brushes, shifting mechanism geared with the said brushes, a power-driven device for revolving said shifting mechanism, and means, substantially such as set forth, for clutching the power-driven device to the shifting mechanism to revolve it one way or the other, of an engaging-stop device on some part of the shifting mechanism, so arranged as to engage the clutching mechanism when the brushes are shifted toward the maximum, and thereby automatically unclutch the power-driven device from the shifting mechanism, substantially as and for the purpose set forth.

326,895. COMPOUND FOR PRESERVING EGGS. LEVI I. BOOSINGER, Kernersville, N. C. Filed July 31, 1885. (No specimens.)

Claim.—The herein-described compound for preserving eggs, consisting of water, lime, salt, saltpeter, decoction of oak-bark, and charcoal, in about the proportions stated.

326,896. MEANS FOR SAVING SHIPS FROM FOUNDERING, &c. THOMAS BRIDGE, Eastbourne, County of Sussex, England. Filed Mar. 31, 1884. (No model.) Patented in England Jan. 14, 1884, No. 489.



Claim.—The combination, with a ship, of an expansible lining composed of a rope net-work and prepared tarpaulin or canvas sheeting disposed in plaits or folds against the inside of the ship, in order to prevent the entrance of water in case of collision or stranding, substantially as described.

326,897. SEAL-PRESS. EDWARD J. BROOKS, East Orange, N. J., assignor to E. J. Brooks & Co., New York, N. Y. Filed Feb. 28, 1885. (No model.)



Claim.—1. In a seal-press, the combination, substantially as herein specified, of a rotary cam having a radial or substantially radial shoulder following its summit or each summit thereof, a pawl-and-ratchet device which limits the rotation of said cam to one direction, and a spring-retracted movable die advanced by said cam, and released for retraction by being passed by such shoulder and not otherwise, for the purpose set forth.

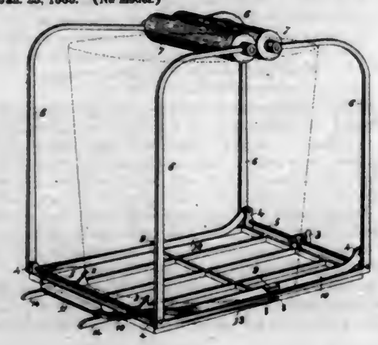
2. In a seal-press, the combination, substantially as herein specified, of a lever-handle free to receive long or short oscillations, a pawl-and-ratchet device transmitting rotary motion therefrom, a rotary cam so turned in one direction only, and having a radial or substantially radial shoulder following its summit or each summit thereof, and a movable die advanced by said cam and released for retraction by being passed by such shoulder and not otherwise, for the purpose set forth.

3. The combination, in a seal-press, of a lever-handle having a given full stroke, a pawl-and-ratchet device transmitting rotary motion therefrom, a rotary cam so turned in one direction only, and having a wiog for each part of a complete circle represented by said full stroke of said handle, with a radial or substantially radial shoulder following each summit thereof, and a movable die advanced by said cam and released for retraction by each of said shoulders, substantially as herein specified, for the purposes set forth.

4. The combination, in a seal-press, of a movable lever-handle, two distinct sets of pawl-and-ratchet devices transmitting rotary motion therefrom, a rotary cam having the respective ratchet-wheels rigidly united to its respective ends, and a movable die advanced by said cam, substantially as herein specified, for the purposes set forth.

5. A seal-press having a pair of dies normally open, and a pair of lever-handles substantially in line with said dies and normally closed together, and constructed with a body and head integral with one of said handles, the latter having a mouth to receive the seals in the pressing operations, and constructed with a hammer-face projection diametrically opposite said mouth, substantially as herein specified, for the purposes set forth.

326,898. MOP-WRINGER. ARTHUR M. BURNHAM, Gardiner, Me., assignor to Charles Gifford and John T. Richards, both of same place. Filed Jan. 23, 1885. (No model.)



Claim.—1. A mop-wringer constructed with a base-frame, paired bell-crank levers fulcrumed thereto, wringer-rolls carried by the said levers, and a foot-lever acting on the bell-crank levers to press the wringer-rolls together, substantially as set forth.

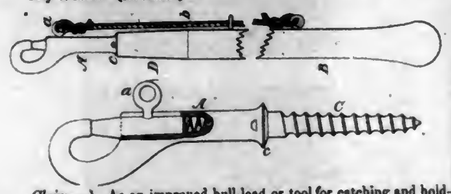
2. The combination of the base-frame, bell-crank levers fulcrumed thereon and carrying wringer-rolls, and a U-shaped foot-lever bearing on the bell-crank levers, substantially as and for the purposes set forth.

3. In a mop-wringer, the combination, with a base-frame and a treadle-lever projecting beyond said frame, of the arms 14, for the purpose explained.

4. In a mop-wringer, the combination of a base-frame, a pair of rock-shafts journaled therein, a pair of bell-crank levers secured to each of said rock-shafts, a roller carried by each pair of bell-crank levers, and a treadle-lever for operating said bell-crank levers, as explained.

5. In combination, the frame 1, the paired bell-crank levers 6 fulcrumed thereon and having the rollers 7, the treadle-lever 10, having steps 9 and pins 12, and a retracting device, all constructed and arranged substantially as set forth.

326,899. BULL-LEAD. JAMES C. COVERT, West Troy, N. Y. Filed May 8, 1884. (No model.)

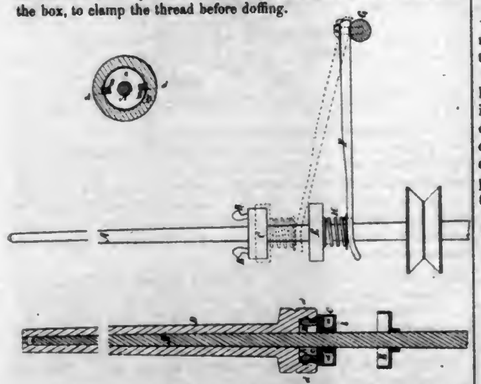


Claim.—1. As an improved bull-lead or tool for catching and holding animals, a device consisting of a snap-hook having a longitudinally-sliding spring-bolt with an outwardly-projecting ring or loop thereon, a pole or handle to the forward end of which said snap-hook is secured and a cord or chain one end of which is fastened to the ring on the bolt, and which is extended along the handle and retained thereon by rings placed at intervals upon the same, substantially as shown and described, for the objects herein set forth.

2. As an improved article of manufacture, for the purpose described, a snap-hook having, in combination with a shouldered screw-extended body, a ring or loop in attachment with and projecting from a longitudinally-sliding spring-bolt, substantially as specified.

326,900. SPINNING-MACHINE. JOHN CUTHBERTSON, Lowell, Mass. Filed Oct. 15, 1884. (No model.)

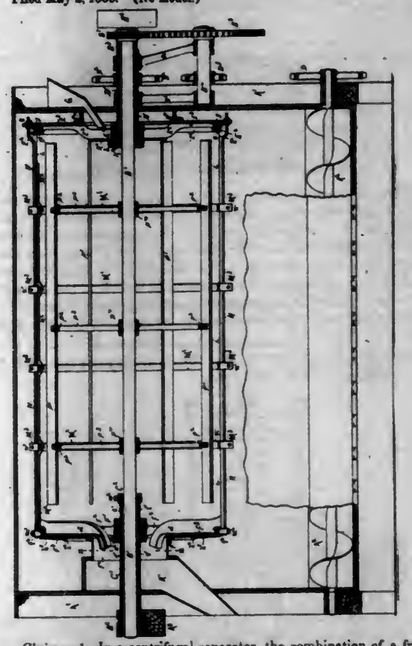
Brief.—Two lever-latches having obtuse-angled heads to enter notches chambered in the interior of the bobbin are pivoted within a cylindrical box fixed on the spindle, and are thrown outward to engage the bobbin by a spiral spring which bears against the lower arms of the latches. Below the box is a cup of slightly-greater diameter surrounding the spindle and resting, with a spring intervening, upon a lever attached to a shaft, by which means the cup may be pushed up against the box, to clamp the thread before doffing.



Claim.—1. The spindle provided with the box and the latches and their operative spring, as described, in combination with the yarn-clamping cup, (to slide on the spindle and co-operate, as described, with the box in clamping the yarn to the spindle prior to doffing the bobbin,) and with mechanism, substantially as described, for operating the said cup, such mechanism consisting of the spring H, the fork F and its pivotal shaft G, and the arm K thereof, all being arranged as represented.

2. The combination of the spindle, provided with the latches and their operative spring, with the bobbin chambered in its lower part, and having opening out of the chamber notches or recesses to receive the heads of the latches, in order to engage the bobbin with the spindle, all being substantially as set forth.

326,901. CENTRIFUGAL REEL. EMIL R. DRAVER, Stillwater, Minn. Filed May 2, 1885. (No model.)

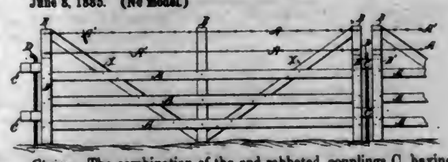


Claim.—1. In a centrifugal separator, the combination of a frame, A', a horizontal shaft, B', a beater-cylinder, tube D', surrounding said shaft B', a disk, E^2, tube C', having external screw-thread, f', disk F^2, having a corresponding screw-thread in its hub fitting over tube C', band E^3, attached to disk E^2, band F^4, clamped to disk F^2, bolting-cloth L, having bindings h' h^2 and cords h^3 h^4, hoops M', connecting-bar M^2 and clamping-bands M^3, and adjustable rods N, substantially as set forth.

2. In a centrifugal separator, the combination of a frame, A', a horizontal shaft, B', a beater-cylinder, tube D', surrounding said shaft B', disk E^2, tube C', having external screw-thread, f', disk F^2, having a corresponding screw-thread in its hub and fitting over said tube C', band E^3, attached to disk E^2, band F^4, clamped to disk F^2, bolting-cloth L, having bindings h' h^2 and cords h^3 h^4, hoops M', connecting-bar M^2, clamping-bands M^3, adjustable rods N, stop-plate H' at the feed end of said machine, and curved discharge-spouts d', attached to the disk F^2 at the tail end of said machine, substantially as set forth.

3. In a centrifugal separator, the combination of a frame-work, a horizontal shaft, a beater-cylinder, adapted to be rapidly revolved, a pinion, B^7, on said shaft, a bolting-cloth-covered reel surrounding said beater-cylinder, tubular shafts or sleeves C' D', by which it is journaled concentrically around said shaft and beater-cylinder, chain-pulley D^2, fast on sleeve D, counter-shaft B^4, gear-wheel B^5, engaging pinion B^7, chain-pinion D^3 on said counter-shaft, chain-wheel D^4, the conveyer-shaft, tightener D^6, and chain D^5, substantially as and for the purpose set forth.

326,902. FARM-FENCE. ALBERT EWER, Battle Creek, Mich. Filed June 8, 1885. (No model.)



Claim.—The combination of the end-rabbeted couplings C, having a hole in the middle, the drive-stakes D, the adjacent panels receiving the rabbeted ends of said couplings in the spaces between the end battens, B B, and the rails A, secured at intervals between said battens, as and for the purpose described.

326,903. WASHING-MACHINE. ELLA GOODWIN, Chicago, Ill. Filed Apr. 11, 1884. (No model.)

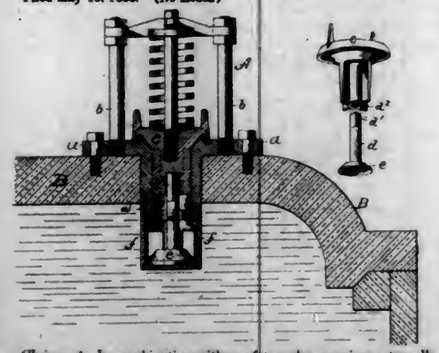
Claim.—In a washing-machine, the rubbers B C, having their co-

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incident faces composed of a continuous surface made highest in the center and gradually sloping therefrom to the circumference, such surface being laid off in sectors and provided with corrugations in each sector running parallel with one of its radii, said rubber B being fitted into the bottom of a tab or vessel, as A, and said rubber C being supported on a shaft, D, terminating in and connected to the upper side of said rubber, and supported in a bracket, as F, attached to the lid, and provided with gearing and a crank for operating the same, substantially as specified.

326,904. SAFETY-VALVE. WILLIAM E. GRANGER, Springfield, Mass. Filed May 18, 1885. (No model.)



Claim.—1. In combination with a safety-valve opening outwardly, and mechanism to permit the same to open automatically under pressure, an interior valve-seat and valve, the valve being loosely connected to the safety-valve and held off its seat by said safety-valve when closed, substantially as described.

2. The combination, with the boiler, valve-seat, and spring-pressed valve c, of the valve *c* in a cage in the boiler, said valve having a polygonal stem, *d'*, entering a corresponding aperture in the body of valve c, as set forth.

326,905. NECK-WEAR TIP. J. MURRAY GUILBERT, Philadelphia, Pa., assignor to William H. Hart, Jr., same place. Filed Dec. 6, 1884. (No model.)



Claim.—A neck-wear tip constructed of a bent piece of metal, forming flexible limbs having channels on their inner faces, whereby the neck-band or the lining thereof may be clinched by the walls of the channels, substantially as and for the purpose set forth.

326,906. WIRE-SPLICER. JOHN A. HELVIN, New York, N. Y., and HENRY VAN HOEVENBERGH, Elizabeth, N. J. Filed Feb. 11, 1885. (No model.)



Claim.—1. The combination, substantially as hereinbefore set forth, with two wires, of a coupling consisting of a metallic sleeve having two longitudinal apertures formed therethrough, through which apertures said conductors are inserted in opposite directions, the end of each conductor being wrapped about the other conductor, substantially as described.

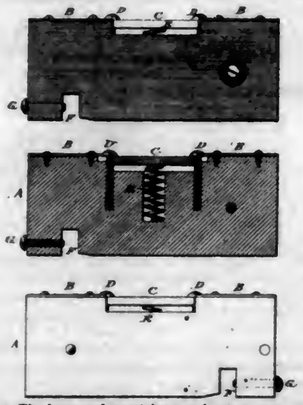
2. The combination, substantially as hereinbefore set forth, with two wires, of a coupling consisting of a metallic sleeve having two longitudinal apertures formed therethrough, through which said wires extend in opposite directions, and having recesses formed upon its opposite sides, substantially as described.

3. A metallic coupling for wires, consisting of a sleeve having apertures formed therethrough longitudinally, and having recesses formed in its opposite sides, substantially as described.

4. The coupling for wires, consisting of the thimble or sleeve A, having longitudinal apertures *a'* and *a²*, and the recesses *c'* and *c²*, the bottoms of which recesses are parallel with a plane passing through both of said apertures.

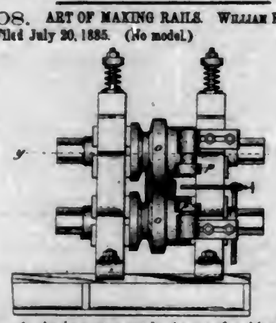
5. The combination, substantially as hereinbefore set forth, with two wires, of a coupling consisting of a metallic sleeve having two apertures formed therethrough, through which said conductors are inserted in opposite directions, the end of each conductor being wrapped about the other conductor, substantially as described, and being united therewith at the joint thus formed by being soldered.

326,907. SAW-TOOTH JOINTER AND GAGE. JOHN HUG. Ripley, assignor of one-half to F. J. Houghton, Chautauqua County, N. Y. Filed Apr. 26, 1884. (No model.)



Claim.—The improved saw-jointer and raker-gage, consisting of the body A, cut and notched, as shown, the plates B B and C, spring E, and screws D D and G, substantially as described.

326,908. ART OF MAKING RAILS. WILLIAM R. JONES, Braddock, Pa. Filed July 20, 1885. (No model.)



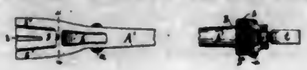
Claim.—1. An improvement in the art of making rails, which consists in heating the rail and then cooling the head more rapidly than the remaining parts thereof, substantially as and for the purpose described.

2. An improvement in the art of making rails, which consists in partially cooling the head of the heated rail as it comes from the finishing-rolls by contact with a cooling-liquid, substantially as and for the purpose described.

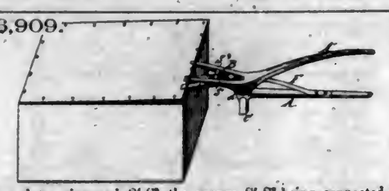
326,909. BOX-OPENER. ENGELBERT KRECKER, Essen, Prussia, Germany. Filed Aug. 11, 1884. (No model.) Patented in Germany Dec 12, 1883, No. 27,358; in England Dec. 17, 1883, No. 5,764; in France Dec. 17, 1883, No. 159,206; in Austria-Hungary Dec. 21, 1883, No. 47,459 and No. 50,567; in Belgium Jan. 3, 1884, No. 63,746; in Denmark Mar. 29, 1884, No. 524; in Sweden Apr. 9, 1884; in Norway Apr. 12, 1884, and in Spain May 31, 1884, No. 6,179.

Claim.—1. A box-opener consisting of two fulcrumed and spring-actuated handles, each handle having a pronged and tapering end, of which the end of one handle is fitted into the wider end of the other handle when in closed position, substantially as described.

2. The combination of a handle, A, having a pronged and tapering end, S, a handle, A', fulcrumed to the handle A, and having a pronged



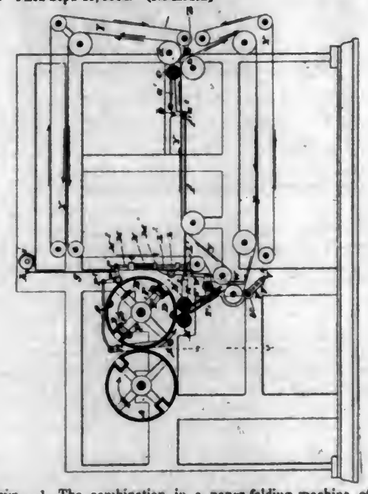
326,909.



wider and tapering end, S' S², the prongs S' S² being connected by a transverse bridge, B, that fits into a transverse recess of the end S, substantially as set forth.

3. The combination of the handle A, having a hammer-block, C, and a pronged tapering and recessed end, S, a handle, A', fulcrumed to the handle A, and having a wider pronged and tapering end, S' S², connected by a transverse bridge, B, and a band-spring, F, attached to one handle and bearing upon the other handle, substantially as set forth.

326,910. PAPER-FOLDING MACHINE. JOSEPH KURTEN, St. Louis, Mo. Filed Sept. 15, 1884. (No model.)



Claim.—1. The combination, in a paper-folding machine, of two rollers between which the paper passes, one of such rollers being movable to and from the other, a paper-carrying cylinder having retractile pins for the engagement of the paper, a movable cam constructed to hold the pins in their retracted position in one position of the cam, and mechanism, substantially as described, connecting the movable roller with the cam, for the purpose set forth.

2. The combination, in a paper-folding machine, of two rollers between which the paper passes, one of such rollers being supported in movable journal-bearings a spring connected with each said journal-bearings forcing the movable roller toward the other one, a lever moved by the outward movement of one of said journal-bearings to remove its toe from beneath the collar of a spring-rod, a paper-carrying cylinder having retractile pins to engage the paper, a movable cam which in one position holds the pins in their retracted position during a portion of the rotation of the cylinder, and a lever and rod connecting said spring-rod to the cam, for the purpose set forth.

3. The combination, in a paper-folding machine, of fixed and drop guides between which the paper passes, a paper-carrying cylinder having retractile pins for the engagement of the paper, a movable cam constructed to hold the pins in their retracted position in one position of the cam, and mechanism, substantially as described, connecting the falling or drop guides with the movable cam, for the purpose set forth.

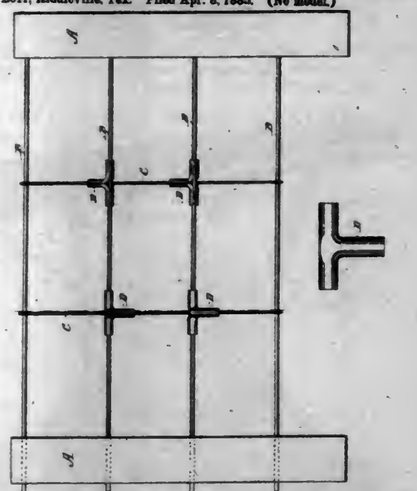
4. The combination, in a paper-folding machine, of falling or drop paper guides upon a shaft having an arm impinging against a lever as the guides descend, a trip-lever actuated by said lever to trip a spring-rod and allow its movement, a lever and rod connecting the spring-rod to the movable cam, and the said cam acting upon the pins of a paper-carrying cylinder to hold the same in their disengaging position during a part of the revolution of the cylinder, for the purpose set forth.

5. The combination, in a paper-folding machine, of a roller moved by the clogging of paper, and mechanism, substantially as described, connecting said roller with a movable cam acting to hold paper-pins of a paper-carrying cylinder in disengaging position, and an alarm connected to the mechanism, for the purpose set forth.

6. The combination, in a paper-folding machine, of a roller moved bodily by the clogging of the paper against it, a rod connecting the movable bearing of said rod with a trip-lever sustaining a spring-rod, a paper-carrying cylinder having paper-engaging pins, and a movable cam constructed to hold the pins or grippers in their disengaging position and connected to the spring-rod, substantially as and for the purpose set forth.

7. The combination, in a paper-folding machine, of two rollers, between which the paper is passed, a paper-feeding device, substantially as described, a stationary bearing for one of said rollers, a sliding bearing for the other roller, and devices, substantially as described, operated by the sliding bearing to arrest the action of said feeding-rollers.

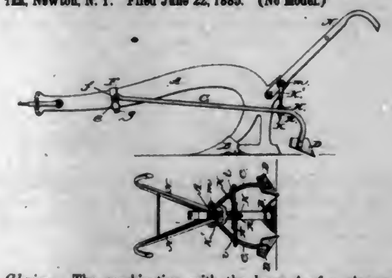
326,911. BRACE-WIRE FASTENING FOR WIRE FENCES. ARTHUR LOTT, Riddleville, Tex. Filed Apr. 8, 1885. (No model.)



Claim.—1. In a fence, the combination, with the panel-wires, of the braces and the tri-armed or T-shaped clasps embracing the wires and braces at their points of intersection, said clasps each being made in one piece, with its arms bent around a longitudinal or panel wire and a brace wire, substantially as and for the purpose set forth.

2. In a fence, the combination, with the panel-wires, of the braces with their ends hooked upon one and the same side of the upper and lower panel-wires, and said braces being stepped to receive and applied to the opposite side of the intermediate panel-wires, and the tri-armed or T-shaped clasps with their arms embracing the panel-wires and the braces at their points of intersection, substantially as and for the purpose set forth.

326,912. ATTACHMENT FOR SHOVEL-PLOWS. CORNELIUS W. LUYSTER, Newton, N. Y. Filed June 22, 1885. (No model.)

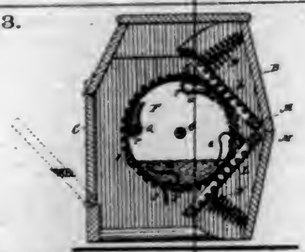


Claim.—The combination, with the beam A of a plow and its share B, of the detachable band F, fitted upon the forward end of said beam and provided with eyes *f f*, the detachable rods C C, hooking into the said eyes and fitted at their rear ends with detachable blades or shares D D, the transverse slotted bars H H, pivoted to said rods above the blades, to project thence inwardly and intersect beneath the rear end of the beam A, a bolt, K, depending from said beam through the intersecting slots, and a nut screwing upon the bolt to bind and secure the bars, all substantially in the manner and for the purpose herein set forth.

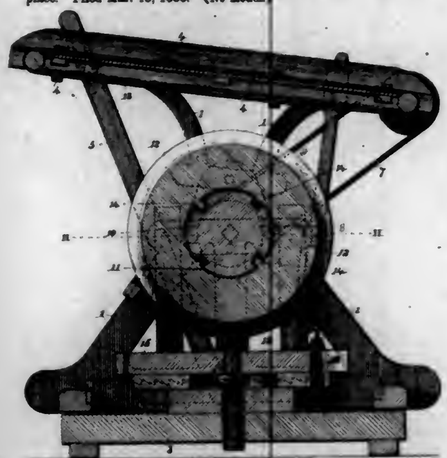
326,913. WASHING-MACHINE. ROBERT LYON, Sr., Pleasant Plain, Iowa. Filed Dec. 31, 1884. (No model.)

Claim.—The combination, with a rotary cylinder having longitudinal slits in its periphery, of buckets secured within the cylinder adjacent to and in front of the slits, and provided with backward-curved rear sides, and open at the forward side, substantially as shown and described.

326,913.



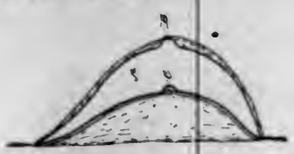
326,914. DEVICE FOR TRANSMITTING POWER. GEO. R. MITCHELL, Chillicothe, Ohio, assignor of one-third to William L. Miller, same place. Filed Mar. 18, 1885. (No model.)



Claim.—1. The combination of the annular pulley 12 and the spheroidal cam 10 on the shaft 9, said pulley being provided with inwardly-projecting pins 14 and the cam 10, with longitudinal grooves 11, enlarged at their ends, as and for the purposes shown and described.

2. The combination of the shaft 9, spheroidal cam 2, grooves 11, annular pulley 12, driving-pins 14, guiding-frame 15, and the slotted plate 17, by which said guiding-frame is held in any required position to determine the plane of rotation of the driving-pulley 12.

326,915. BREAST-PAD. CHARLES L. MORKHOUSE, Brooklyn, N. Y. Filed July 9, 1884. (No model.)



Claim.—As an improved article of manufacture, the hollow rubber breast-pad A, provided with the nipple B on its front and having its back portion concaved to fit upon a female breast, and provided with the imperforate recess C, to receive the nipple, as set forth.

326,916. PAPER-CUTTING MACHINE. LEONARD W. MORSE, Jr., Mystic River, Conn. Filed Aug. 28, 1884. (No model.)

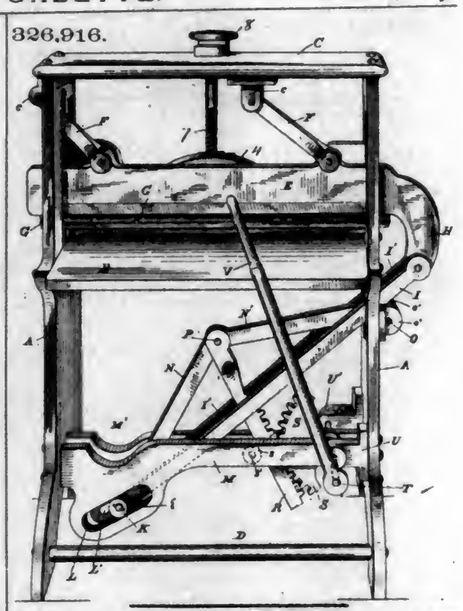
Claim.—1. The cutter-bar E, provided with the parallel bars I I', having their lower ends secured to the shaft K, working upon rollers in the slots L L', in combination with the toggle N N', rack-bar R, segmental gear S, and lever V, as and for the purpose set forth.

2. The cutter-bar E, having the arm H, bars I I', and braces M M', having inclined slots L L', in combination with the toggle N N', rack-bar R, segment S, and lever V, as and for the purpose set forth.

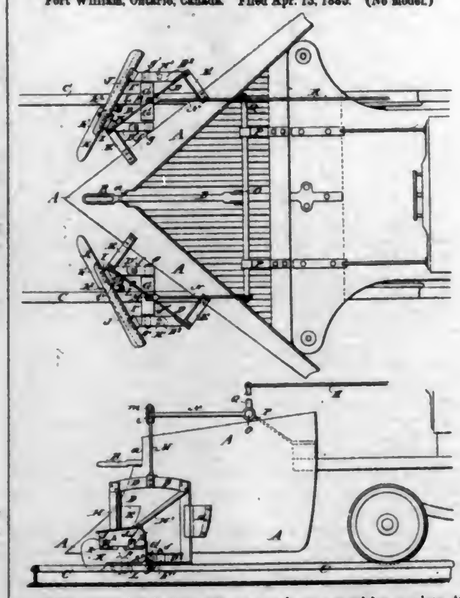
3. The combination, with the knife of a paper-cutting machine, of the parallel bars I I', toggle N N', rack-bar R, and roller *s* with the segmental gear S and lever V, as set forth.

4. In a paper-cutter, the presser-bar 4, having the hand-operated screw 7, in combination with the shaft 12 and levers 13 and 14, as and for the purpose set forth.

326,916.



326,917. RAIL-CLEARER FOR SNOW-PLOWS. AUGUSTUS F. PRIEST, Fort William, Ontario, Canada. Filed Apr. 13, 1885. (No model.)



Claim.—1. A rail-clearer for snow-plows, comprising a plate, K, supported above and across the rail C by a vertically-movable frame fitted to slide in ways fixed to the snow-plow, and said plate K fitted to the frame so as to have independent lateral play across the rail, and means for raising and lowering the frame and plate, substantially as herein set forth.

2. A rail-clearer for snow-plows, comprising a plate, K, the lower edge of which is formed at k^4 to stand across the head of the rail C, and at $k' k^3$ to stand inside and below the top of the rail, and said plate K being supported by a vertically-movable frame fitted to slide in ways fixed to the snow-plow, and said plate being supported so as to have independent lateral play across the rail, and means for raising and lowering the frame and plate, substantially as herein set forth.

3. A rail-clearer for snow-plows, comprising a plate, K, slotted at *k* and shaped at its lower edge at $k' k^3 k^4$ substantially as specified, a frame, D, fitted to slide in ways E E, fixed to the mold-board A, and the hangers *h h'*, held to frame D and passed through the slots *k* of plates K, in combination with a shaft, M, slotted vertically at *m*, arm N, shaft O, and means for rocking the shaft to lift the plate, substantially as herein set forth.

4. In a rail-clearer for snow-plows, the combination, with a plate, K, slotted at *k* and shaped at $k' k^3 k^4$ substantially as specified, of the frame D, fitted in ways E, fixed to the mold-board A, the bracket-hangers H H', fixed to frame D and entering the slots *k* of the plate K, the plate J, fixed to the hangers H H', above plate K, and means for raising and lowering the frame D and plates K J, substantially as herein set forth.

5. In a rail-clearer for snow-plows, the combination, with a plate, K, slotted at *k* and shaped at $k' k^3 k^4$ substantially as specified, of the frame D, fitted in ways E, fixed on mold-board A, the bracket-hangers H H', fixed to frame D and entering slots *k* of plate K, the plate J, fixed to hangers H H', above plate K, the shaft M, fixed to frame D and slotted at *m*, and the arm N, shaft O, and means for rocking shaft O, substantially as herein set forth.

6. In a rail-clearer for snow-plows, the combination, with a plate, K, slotted at *k* and shaped at $k' k^3 k^4$ substantially as specified, of the frame D, fitted in ways E, fixed on mold-board A, the bracket-hangers H H', fixed to frame D and entering slots *k* of plate K, the plate J, fixed to hangers H H', above plate K, the shaft M, fixed to frame D and slotted at *m*, the arm N, shaft Q, and reach-rod R, substantially as herein set forth.

7. In a rail-clearer for snow-plows, the combination, with the plate K, supported above and across the rail C by a vertically-movable frame fitted to slide in ways fixed to the snow-plow, and said plate K being held to move independently lengthwise in said frame, and being shaped at its lower edge as at $k' k^3 k^4$, substantially as specified, of a roller, L, journaled on plate K, and adapted to run against the edge of the head of the rail, substantially as herein set forth.

8. In a rail-clearer for snow-plows, the combination, with the plate K, supported above and across the rail C by a vertically-movable frame, D, fitted to slide in ways fixed to the snow-plow, and said plate K having independent lengthwise movement in said frame, of a carrier-roller, G, journaled in the frame D or brackets thereon and so as to ride on the rail C, substantially as herein set forth.

9. In a rail-clearer for snow-plows, the combination, with the plate K, supported above and across the rail C by a vertically-movable frame, D, fitted to slide in ways fixed to the snow-plow, and said plate K being shaped at the lower edge as at $k' k^3 k^4$, and fitted to move lengthwise, substantially as specified, of a roller, G, journaled in the frame D or brackets thereof so as to ride on the rail C, substantially as herein set forth.

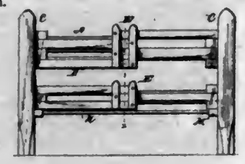
10. In a rail-clearer for snow-plows, the combination, with the plate K, supported above and across the rail C by a vertically-movable frame fitted to slide in ways fixed to the snow-plow, and said plate K being shaped at $k' k^3 k^4$ and fitted to move independently lengthwise substantially as specified, of a roller, G, journaled in frame D or brackets thereon so as to ride on top of rail C, and a roller, L, journaled on plate K so as to ride against the edge of the head of the rail, substantially as herein set forth.

11. In a rail-clearer for snow-plows, the combination, with the plate K, supported above and across the rail C by a vertically-movable frame fitted to slide in ways fixed to the snow-plow, and said plate K being shaped at $k' k^3 k^4$ and fitted to move independently lengthwise substantially as specified, of the plate J, fixed to the frame above plate K, and the interposed thrust-blocks I I', and said block I' being extended downward, as at *i'*, to stand behind the plate K, substantially as herein set forth.

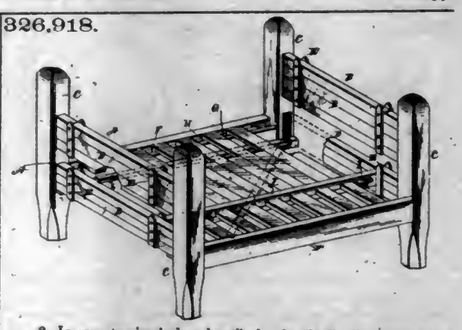
12. In a rail-clearer for snow-plows, the combination, with the mold-boards A A, of ways E E, fixed thereto, the frames D D, fitted to slide vertically in said ways, the plates K K, supported by frames D D and so as to move independently lengthwise, and formed at their lower edges as at $k' k^3 k^4$, rollers L L, fitted to plates K K, rollers G G, journaled in frames D D, the plates J J, fixed to said frames, the shafts M M, fixed to frames D D and slotted at *m m*, the arms N N, shaft O, arm Q, and reach-rod R, all substantially as herein set forth.

326,918. EXTENSION-BED. HATTIE B. PRITCHARD, Arnoldsburg, W. Va. Filed Apr. 25, 1885. (No model.)

Claim.—1. In an extension-bed as described, a suitable pair of braces pivotally secured at the diagonally-opposite posts, a support for each brace secured to each of the side rails, substantially as and for the purpose set forth.

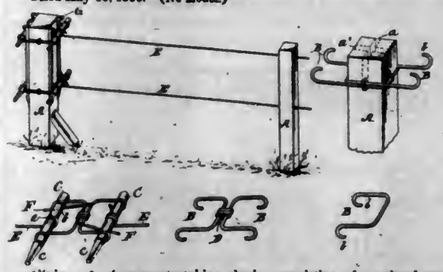


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2. In an extension-bed as described, a longitudinally-slotted guide-rail secured to the ends of the slats of one side, and sliding in slots in the foot and head board as the bed is opened and closed, substantially as and for the purpose set forth.

326,919. WIRE-STRETCHER. CHARLES N. PULSE, Dodsonville, Ohio. Filed May 19, 1885. (No model.)

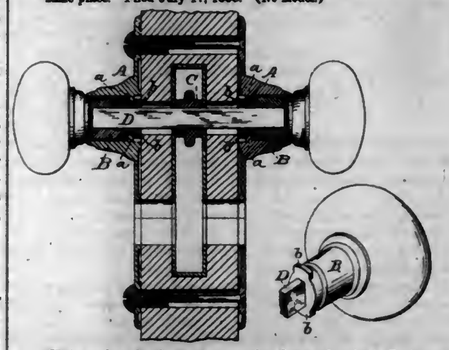


Claim.—1. A wire-stretching device consisting of a pair of arms extending in opposite directions having their ends bent to form hooks, windlasses journaled in the hooks of said arms, and a keeper to prevent the retrograde movement of the windlasses, the parts being combined, arranged, and operating substantially as described.

2. A wire-stretching device consisting of the combination of two rods bent on themselves to form stirrups and terminating in hooked bearing-supports and centrally united, windlasses journaled in said hooks, and a keeper, to prevent the retrograde movement of said windlasses.

3. A wire-stretching device made in matching sections, each having a pair of supporting-arms branching in the same direction from a transverse bar, and a connecting-link for uniting the sections, in combination with windlasses journaled to said arms, and a keeper to prevent the backward movement of said windlasses, substantially as described.

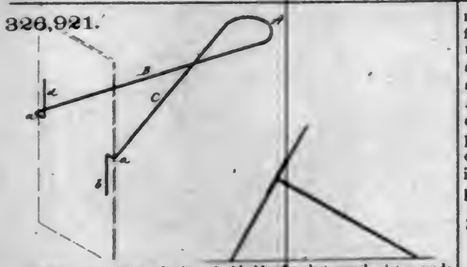
326,920. KNOB ATTACHMENT. HENRY E. RUSSELL, Jr., New Britain, Conn., assignor to the Russell & Erwin Manufacturing Company, same place. Filed July 17, 1885. (No model.)



Claim.—In a knob attachment, the flattened spindle D, in combination with the latch-hub having a hole of corresponding form, the rose having segmental flanges upon two sides of its orifice, and the knob-shank having lugs *b b* and a flattened axial hole to receive said flattened spindle, substantially as described, and for the purpose specified.

326,921. PHOTOGRAPHIC-PLATE HOLDER. STERNE RUSSELL, Waterbury, Conn., assignor to the Scovill Manufacturing Company, same place. Filed Apr. 20, 1885. (No model.)

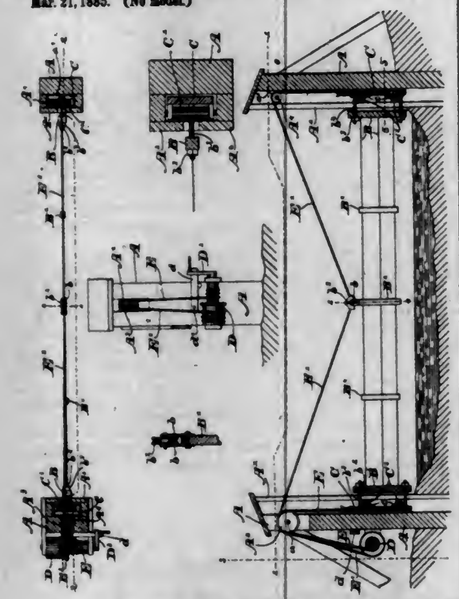
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Claim.—1. The herein-described holder for photograph-plates, made from wire bent to form the bow A, the legs extending therefrom and crossing each other, the legs near their ends turned inward to form a grasping-angle, *a*, and the extreme ends turned into a position parallel to each other, and in a plane at substantially right angles to the plane of the legs, substantially as described.

2. The herein-described holder for photograph-plates, made from wire bent to form the bow A, the legs extending therefrom and crossing each other, the legs near their ends turned inward to form a grasping-angle, *a*, and the extreme end *b* of one leg turned into a plane at right angles to the plane of the two legs in one direction, the end *d* of the other leg turned into a plane parallel with the leg *b* but in the opposite direction, substantially as described.

326,922. FLOOD-GATE. MATTHEW E. SCHERER, Arcadia, Ind. Filed Mar. 21, 1885. (No model.)

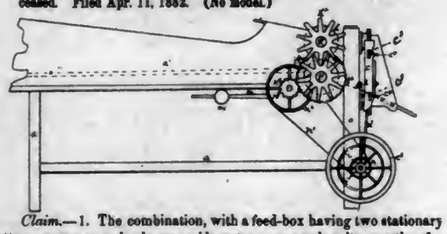


Claim.—1. The combination, in a flood-gate, of hollow end posts having slots in their front sides, a gate mounted between them, sliding pieces mounted in said hollow posts and secured to the ends of said gate by bolts passing out through said slots, a differential spool mounted on the rear side of one of said posts, and cords attached to said spool, passing over sheaves at the top of the posts and at the middle of the gate, and attached to said sliding pieces, substantially as described, and for the purposes specified.

2. The combination, in a flood-gate, of end posts, a gate mounted between them, a differential spool mounted on one of said posts, a cord attached to the small part of said spool and passing up over a sheave in the top of the post and attached to the nearest end of the gate, and another cord attached to the large part of said spool and passing up over a sheave in the top of the post, then along under a sheave on the top of the middle portion of the gate, and from there up over a sheave in the top of the other post, then down and attached to the end of the gate farthest from said spool, substantially as described, and for the purposes specified.

3. In a flood-gate, the combination of the hollow posts A, having slots in their front sides, the gate B, having end pieces, and a midway stay-piece, B', having a sheave attached thereto, the sliding pieces C, mounted in the posts and provided with anti-friction rollers C' on their front faces, said sliding pieces and the ends of said gate being secured together by the bolts b^2, the differential spool D, mounted on the rear side of one of said posts, and provided with a crank, the cord E, attached at one end to the small part of said spool and passing up over the sheave A^3 in the top of the post and attached to the sliding piece C at the other end, the cord E', attached at one end to the large part of said spool, passing up over the sheave A^2 along under the sheave b' on the gate, over the sheave A^4 in the top of the other post, and attached to the sliding piece C in said post, and the detent *d*, for holding the mechanism in position, all substantially as set forth.

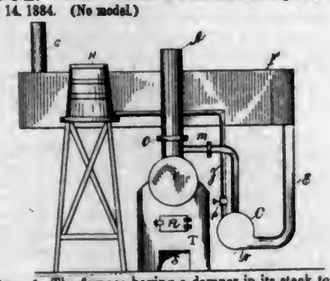
326,928. STRAW-CUTTER. FRANK L. STROBRIDGE, New Brighton, Pa.; Turner Strobridge administrator of said Frank L. Strobridge, deceased. Filed Apr. 11, 1882. (No model.)



Claim.—1. The combination, with a feed-box having two stationary cutters, an upper and a lower, said cutters arranged at its mouth, of a double-edged reciprocating cutter provided with a stiffening-bar, and a set-screw for preventing the spring of the reciprocating cutter, substantially as and for the purpose specified.

2. The combination, with the feed-box having two stationary cutters arranged at its mouth and provided with guide-strips *b*, of the reciprocating double-edged cutter, and the reciprocating cutter-frame having the two side pieces, *c'*, each provided with adjustable spurs c^3, substantially as and for the purposes specified.

326,924. DRIER. TIMOTHY J. SULLIVAN, Bowling Green, Ky. Filed July 14, 1884. (No model.)



Claim.—1. The furnace having a damper in its stack to deflect all the products of combustion, for the purpose specified, in combination with the dry-house and the pipes connecting them, substantially as shown, whereby said products are utilized in the evaporation of moisture from substances in the dry-house.

2. The tank H, in combination with the pipe B, blower-frame N, valved pipe J, dry-house F, and pipes B E L, whereby the tendency of the hot gases to impair said passages in transit is neutralized.

3. The pipes L in house F, in combination with the furnace T, whose stack has a damper, O, to deflect all the smoke, for the purpose set forth, and pipes M E, connecting the same.

4. The furnace T, whose stack is provided with a damper, O, for the purpose set forth, blower C, communicating with a water-supply and connections, in combination with the dry-house F, the pipe system L, the feed-pipe E, and exhaust-stack G.

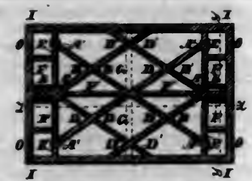
5. The furnace T, having a damper, O, in the stack, the blower C and the tank H, connected together, for the purpose set forth, in combination with the feed and exhaust pipes E G, the pipes or flues L, and house F, the whole co-operating in the manner and relation, and for the purpose shown and described.

326,925. SURFACE-PLATE. PER OSCAR SUNDIN, Providence, R. I. Filed Nov. 7, 1884. (No model.)

Claim.—1. A surface-plate having top and bottom plates, K L, side plates, I I, end plates, O O, longitudinal rib F', parallel to the side plates, diagonal ribs D D, in a line extending from corner to corner of the plate, and the ribs D' D', extending from the rib F' parallel with the ribs D D, substantially as described.

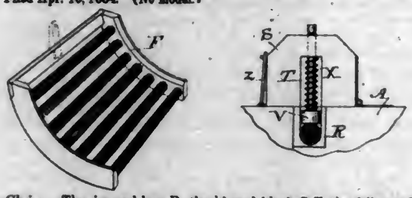
2. A surface-plate having top and bottom plates, K L, side plates, I I, end plates, O O, ribs E E, parallel to the end plates, O O, ribs F F, which connect the ribs E E with the end plates, rib F', parallel to the

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side plates, diagonal ribs D D, in a line extending from corner to corner of the plate, and the ribs D' D', extending from the rib F' parallel with the ribs D D, substantially as described.

326,926. WASHING-MACHINE. JOHN P. WRIGHT, Des Moines, Iowa. Filed Apr. 10, 1884. (No model.)



Claim.—The journal-box R, the hinged block S T, the follower V the spring X, and hooks Z, in combination with a wash-tub and a rubber having journals on its ends adapted to slide in and out of the journal-boxes, substantially as shown and described, for the purposes specified.

326,927. NUT-LOCK. HERSCHEL V. WYSONG, Winchester, Ind. Filed July 18, 1885. (No model.)



Claim.—1. In a nut-lock, the combination, with a bolt having a longitudinal groove or recess extending throughout the entire threaded portion and a portion of the shank of said bolt, and the bottom of which is provided with a shoulder near its inner end, of a spring having a beveled outer side, said spring being secured at the inner end of said groove or recess and resting upon the said shoulder, which serves to force the outer end of the said spring outwardly, substantially as and for the purpose herein set forth.

2. In a nut-lock, the combination of the bolt having a longitudinal groove or recess, a spring secured at the inner end of said recess and having a forwardly-extending lug or projection, and a cap swiveled or pivoted upon the outer end of the bolt and having an elliptical or cam-shaped recess adapted to receive and engage the lug or extension of the lock-spring, which may thereby be forced back into its recess, substantially as and for the purpose herein set forth.

3. In a nut-lock, the combination, with a bolt having a longitudinal groove or recess, of the lock-spring seated in the said recess and having a forwardly-extending lug or projection, a washer arranged upon the end of the bolt and having a slot or notch adapted to accommodate the end of the lock-spring, and the swiveled or pivoted cap, the under side of which is provided with an elliptical or cam-shaped recess adapted to receive the lug or projection at the end of the lock-spring, substantially as and for the purpose herein set forth.

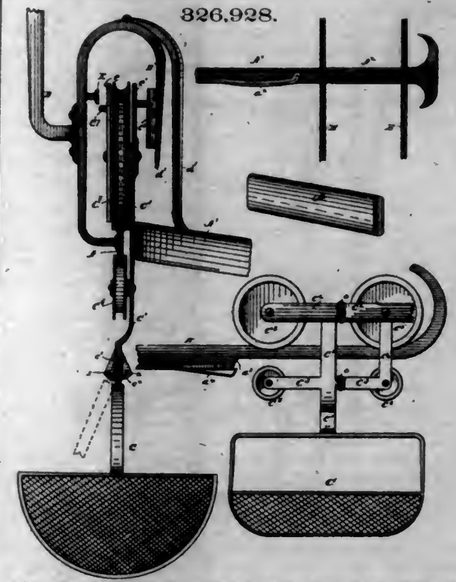
4. As an improvement in nut-locks, the combination of a bolt having a longitudinal groove or recess, the lock-spring secured at the inner end of said recess and having a lug or extension, the cap swiveled or pivoted upon the end of the bolt and having an elliptical or cam-shaped recess adapted to receive the lug at the end of the lock-spring, and a nut having an interior series of longitudinal beveled or ratchet grooves adapted to engage the lock-spring, all constructed and arranged substantially as and for the purpose herein shown and specified.

326,928. CONVEYER APPARATUS. HERVEY SMITH, Erie, Pa., assignor to George C. Blickensderfer, same place. Filed Dec. 16, 1884. Renewed Sept. 1, 1885. (No model.)

Claim.—1. In a conveyer apparatus of the class herein named, the combination of a main-bar track, A, with upper and lower faces, switch-tracks A', arranged with relation to said main track, as shown, a notch, *a*, in the face of said track opposite the switch point, as set forth, a car having main wheels C^9 C^9, which tread on the upper face of said track, and means, substantially as described, for engaging the lower face of said track to prevent the car being derailed.

2. In a conveyer apparatus of the class herein named, the combination of a main track formed of a bar with upper and lower faces, switch-tracks A', arranged with relation to said main track, as shown, notches *a a* in the upper and lower faces of said main track, arranged

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with relation to said switches, as shown, and a car having flanged wheels which engage both said faces, as described.

3. In a conveyer apparatus of the class herein named, the combination, substantially as set forth, of a main track formed of a single bar with upper and lower faces, branch or switch tracks arranged with relation to said main track, as shown, diagonal notches in both faces of said main track opposite the points of the branch or switch tracks, as shown, guiding devices arranged by the side of the main track opposite the said notches, a car with flanged wheels which engage both said faces, and guiding devices on said car-frame which operate in conjunction with the guiding devices at the side of the track and divert the flanges of the wheels opposite the switch-points into the said notches, and thus divert the car from the main line onto the branch or switch line.

4. In a conveyer apparatus of the class herein named, the combination, substantially as set forth, of the bar-track A, having upper and lower faces, switch-tracks A', arranged with relation to the main track, as shown, notches *a a* in the upper and lower faces of the main track opposite the switches, and a car having flanged wheels C^9 C^9 C^9 C^9, journaled in framed pieces C^3 C^3, which are jointed at *c c*, one above and the other below the said track, the said jointed parts C^3 C^3 being connected by the bar C^4 and provided with the upright C^7, in which are adjusted the guiding devices on the car.

5. In a conveyer apparatus of the class herein named, the combination, with the car-frame, of the upright C^7, with means for adjusting the guides *c* or *c'*, and a scale thereon for indicating proper points of adjustment of said guides.

6. In a conveyer apparatus of the class herein named, the combination, with a car having two sets of flanged wheels, one above the other, of a bar-track which is embraced on both its upper and lower edges by said car-wheels, and at its terminus is cut away, as at a^3, to facilitate the placement of cars, as described.

7. In a conveyer apparatus of the class herein named, the combination, with the track A, cut away at a^3, and turned up to form a stop, of the check or stop spring a^4, and the car having wheels C^9 and C^9, as shown.

8. In a conveyer apparatus of the class herein named, the combination, with the switch-track A', of the check-spring a^4, arranged within the bar forming said track, as described.

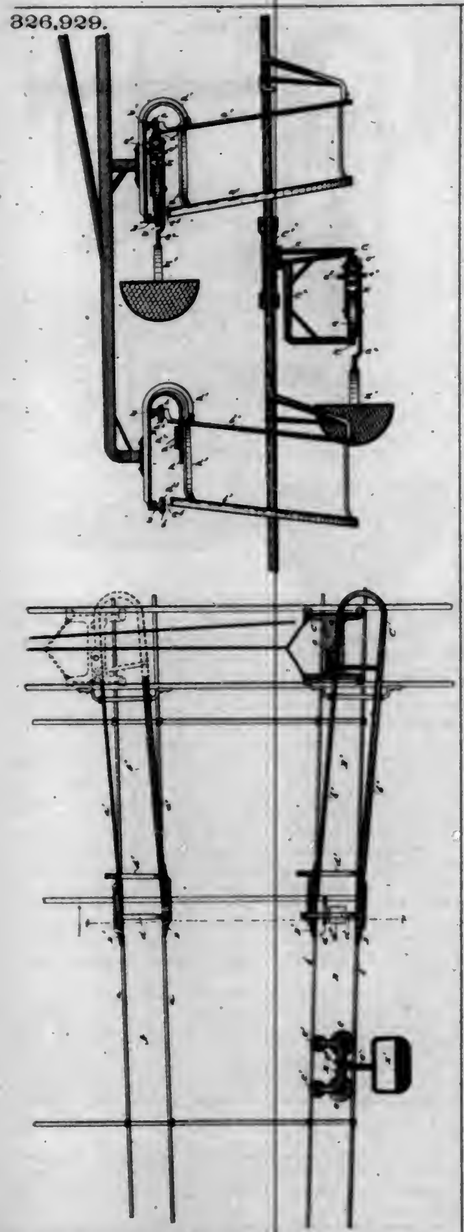
9. In a conveyer apparatus of the class herein named, a bar-track having upper and lower faces, the upper face being wider than the lower face, substantially as shown.

326,929. AUTOMATIC CONVEYER APPARATUS. HERVEY SMITH, Erie, Pa., assignor to George C. Blickensderfer, same place. Filed Dec. 5, 1884. Renewed Sept. 1, 1885. (No model.)

Claim.—1. In a conveyer apparatus of the class herein named, the combination, substantially as set forth, of a track having two bearing-faces, one above the other, and a car which has a pendant, c^2, extending below the track, and is provided with flanged wheels which are arranged, substantially as shown, so as to embrace both said faces.

2. In a conveyer apparatus of the class herein named, the combination, substantially as set forth, of a track having two bearing-faces,

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one above the other, with similarly-constructed branch or switch tracks, switch-frogs arranged in both said faces, and a car with flanged wheels which embrace both of said faces.

3. In a conveyer apparatus of the class herein named, the combination, substantially as set forth, of a track having two bearing-faces, one above the other, with similarly-constructed branch or switch tracks, switch-frogs arranged in both said faces, a space, e^6, between the inner end or point of the branch or switch and the frog in the main line, and a car having a pendant, e^3, and flanged wheels which embrace both the said track-faces.

4. In a conveyer apparatus of the class herein named, the combination, substantially as set forth, of a track having two faces, one above the other, with similarly-constructed switch or branch tracks, and a car having forward and rear wheels which are flanged and embrace both said faces, and a jointed frame connecting said wheels.

5. In a conveyer apparatus of the class herein named, the combination, substantially as set forth, of a main track having two bearing-faces, one above the other, switch-tracks having a like construction, an elevator for receiving cars from the said switches, having a section of similarly-constructed track, and a car having flanged wheels for embracing both of said track-faces.

6. In a conveyer apparatus of the class herein named, the combination, substantially as set forth, of a track having two bearing-faces, one above the other, and a car having two sets of flanged wheels, one above the other, so that one set of wheels runs on one face and the other on the other face of the track.

7. In a conveyer apparatus of the class herein named, the combination, substantially as set forth, of a track having two bearing-faces, one above the other, with branch or switch tracks similarly constructed, and switch-frogs in both said faces, and a car having two sets of flanged wheels, one above the other, so that one set of wheels runs on one face and the other on the other face of the track.

8. In a conveyer apparatus of the class herein named, the combination, substantially as herein set forth, of a track having two bearing-faces, one above the other, with switch-frogs in both said faces, branch or switch tracks of similar construction to the main track, with spaces e^6 between their points or inner ends, and a car having two sets of flanged wheels, one above the other, so that one set of wheels runs on one face and the other set on the other face of the track, and a pendant, e^3, for supporting the article to be carried.

9. In a conveyer apparatus of the class herein named, the combination, substantially as herein set forth, of a track consisting of two parallel wires or bars forming two bearing-faces, one above the other, and a car having flanged wheels arranged substantially as shown, so as to embrace both of said bearing-faces.

10. In a conveyer apparatus of the class herein named, the combination, substantially as set forth, of a track consisting of two parallel bars or wires arranged one above the other, switch-frogs arranged on both said bars or wires, and switch or branch tracks, also formed of two parallel bars or wires arranged one above the other.

11. In a conveyer apparatus of the class herein named, the combination, substantially as set forth, of a track consisting of two parallel bars or wires, one above the other, switch or branch tracks, also made of two parallel bars or wires arranged as in the main track, switch-frogs arranged in both the upper and lower parts of the track, a car having a running-gear consisting of two sets of flanged wheels, one above the other, which are mounted on a jointed frame, so that the forward wheels can turn out of line with the rear wheels, a pendant, e^3, extending from the running-gear of the car down on one side of the track, to support the article to be carried below the track, and an opening, e^6, between the point of the lower part of the switch-track and the main track to allow the pendant e^3 to pass.

12. In a conveyer apparatus of the class herein named, the combination, substantially as herein set forth, of a main track and a switch or branch track, the point of which is separated from the main track by the space e^6, a switch-frog on the main track, a car having a frame on which are guiding projections, and a pendant which extends below the track to support the article to be carried, and a standard or arch located in advance of the switch-point, on which are guide-raves which act upon the guiding projections on the car-frame to either keep the car on the main line or divert it onto the switch.

13. In a conveyer apparatus of the class herein named, the combination, substantially as set forth, of a main track and a switch or branch track, the point of which is separated from the main line by the space e^6, a switch-frog placed in the main line, a supporting-arch, d'', supporting said switch-track from the main track, a standard or arch, d, in advance of the switch-point, to which are attached guide-raves d^2 d^3, and a car having a frame on which are guide-pins e^4 and e^5, which operate upon said guide-raves, and a pendant, e^3, extending below the track, for supporting the article to be carried.

14. In a conveyer apparatus of the class herein named, the combination, substantially as set forth, of a main and a switch or branch track, which are formed with two bearing-faces, one above the other, a supporting-arch, d', supporting said switch-track from the main track, a standard or arch, d, in advance of the switch-point, to which are attached guide-raves d^2 and d^3, a car having a running-gear, the flanged wheels of which engage both the upper and lower faces of said tracks, and guiding-pins e^4 and e^5 on said running-gear which operate upon the guide-raves, substantially as and for the purposes mentioned.

15. In a conveyer apparatus of the class herein named, the combination, substantially as set forth, of a main track, branch or switch tracks opening from said main track, two guide-raves or fenders at said switch-points, one for keeping certain cars on the main track and the other for guiding certain cars onto the switch-track, and cars having two guiding devices, one for acting to keep the car on the main line at certain switches and the other to guide the car off of the main line at a particular switch, said guiding devices acting in conjunction with the guiding devices at the switch-point.

16. In a conveyer apparatus, substantially as shown, a car having a running-gear with front and rear wheels mounted on a frame which is jointed between said wheels, in combination with guiding devices on the said car and at the switch-points for guiding said car.

17. In a conveyer apparatus of the class herein named, the combination, substantially as set forth, of a track formed of two parallel bars or wires, one above the other, a car which traverses said track with its wheels engaging with both said parallel bars, and an opening in the upper part of said track at its terminus, for the removal or placement of said car, as described.

18. The combination, with the track B, of the guide-plate b^5, as and for the purposes set forth.

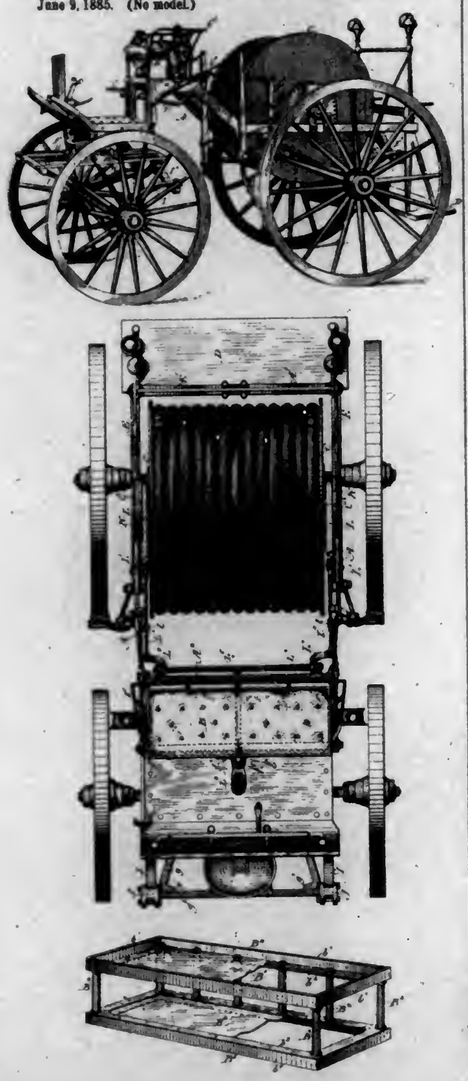
19. The combination, with the track B, of the guide-plate b^4 and guides b^4 b^4 and b^5, as and for the purposes set forth.

20. The combination, with the track A, of the turned-up end a^3 and deflected end a^3, as and for the purposes set forth.

21. In the car-frame E, the combination, with the joint e^3, of the limiting-stops e^4 e^4 on each side of said joint.

22. In a conveyer apparatus of the class herein named, the combination, substantially as set forth, of a track having curves or switches, and a car having forward and rear wheels, and a pendant for supporting the article to be carried, and a frame supporting said wheels and pendant, which is jointed between the forward and rear wheels.

326,930. HOSE-CARRIAGE. ERNST F. STRUK, Chicago, Ill. Filed June 9, 1885. (No model.)



Claim.—1. A hose-carriage provided with a driver's seat supported above the body-frame by posts, combined with a bottom situated within the space which is bounded by the posts and in a plane below the seat-bottom, so as to provide below the seat an open coat-receptacle, substantially as described.

2. The driver's seat constructed with a horizontally-arranged rectangular frame of angle-iron, having a bottom plate forming the seat-bottom, in combination with a similar frame and plate supported by the body-frame and a series of posts intermediate of the two angle-iron frames, substantially as and for the purpose described.

3. The hose-reel having a spindle provided with hubs, in combination with the friction-brake straps passing around said hubs and connected with vibratory levers, a foot-lever within reach of the driver and rigid with a transversely-arranged rock-shaft, arms rising from the rock-shaft, and connections between said arms and the levers to which the friction-brake straps are attached, substantially as described.

4. In combination with a brake mechanism for controlling the reel, a rack-plate secured to bars connecting the beams B^6 with the floor B^6 in front of the driver's seat, and a foot-piece applied to a foot-lever of the brake mechanism and adapted to engage the said rack-plate, substantially as and for the purpose described.

5. The combination, with the hose-carriage body, spring supported upon the rear axle, and a gear-frame spring supported upon the front axle and provided with a horizontal pivot as a support for the fifth-wheel, of the fifth-wheel provided with a spider, f, which is rigid with its upper circle, and a plate, f^4, which is rigid with its lower circle, said plate and spider being each provided with a centrally-arranged half-hub for the king-bolt, and the plate being provided with depending eyes for the horizontal pivot carried by the gear-frame, substantially as described.

6. The combination, with the hose-carriage body and the fifth-wheel, having its upper circle attached to the hose-carriage body, and its lower circle hinged upon a horizontal pivot, H, of the metal spring-supported gear-frame G, provided with bearings for said pivot, and constructed with an outer portion composed of side bars, g g, upset at their ends, with front and rear transversely-arranged bars secured to the front and rear bent or upset ends of the side bars, and a middle portion which is secured within the said outer portion and composed of a bar bent to form the two longitudinal portions g^3 and a rear transverse portion, g^4, said members being organized to provide a structure substantially as and for the purpose described.

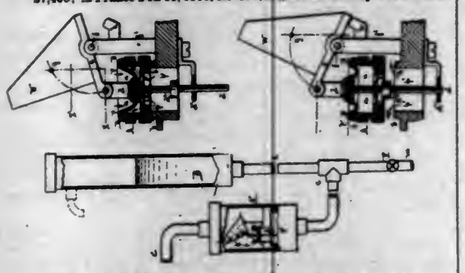
326,931. FLOOD-FENCE. JONATHAN D. WHITTENBURG, Marshfield, Mo. Filed June 26, 1885. (No model.)



Claim.—In a safety flood-fence, the combination, with the fence-panels having the fastening-piece b, of the spokes c c' c^2, secured in the ground, the notched props D, secured at one end between the spikes, their other ends abutting against the central uprights and under the lower edge of the second rail from the top of the panels, the break wires or cords e e', secured to the spikes c, central uprights, and notched props, and the wire i, connected to the end uprights of the two panels and to the spike c^4 by means of a staple, d, as shown and described.

REISSUES.

10,645. DIFFERENTIAL-PRESSURE VALVE. ALEXANDER KAISER, Freiburg, Switzerland. Filed June 19, 1885. Original No. 313,080, dated Mar. 3, 1885. Patented in England Sept. 27, 1883, No. 4,599; in Belgium Sept. 29, 1883, No. 62,618; in Sweden Nov. 16, 1883; in Austria-Hungary Dec. 10, 1883, No. 36,269 and No. 53,441; in Germany Dec. 21, 1883, No. 27,405; in France Dec. 18, 1883, No. 157,494, and in Norway Dec. 21, 1883



Claim.—1. A differential-pressure valve consisting of a valve-seat a valve-body having a bottom opening, a flexible diaphragm, and provided with a collar or lug for engaging the valve-body, attached to the valve-body, a valve-spindle attached to the diaphragm, and a fulcrumed and weighted balance-lever connected to the upper end of the valve-spindle, whereby the same is free to move through a fixed distance before the valve is raised from its seat by the difference of pressure above and below the same, substantially as set forth.

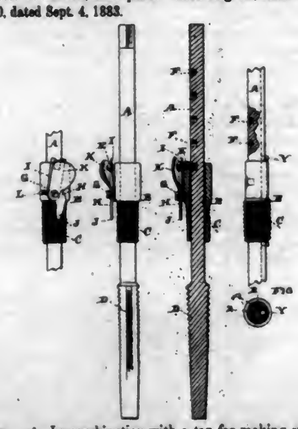
2. A differential-pressure valve composed of a valve-seat, *b*, a valve-body, *a*, provided with an opening in its bottom, a flexible diaphragm, D, connected to the valve-body, a valve-spindle, *d*, connected to the diaphragm and provided with a collar, d^2, a fulcrumed lever, *c*, pivoted to the valve-spindle and provided with the balance-weight above its fulcrum, and a stop, A, for the balance-lever *c*, substantially as set forth.

3. The combination of a differential-pressure valve consisting of a valve-seat, a valve-body having a bottom opening, a flexible diaphragm attached to said valve-body, a valve-spindle attached to the diaphragm and provided with a collar or lug for engaging the valve-body, and a fulcrumed weighted balance-lever connected to the upper end of the valve-spindle, a vessel inclosing said differential valve, a receiver or storage-chamber, and pipes connecting said vessel and storage-chamber, substantially as set forth.

4. The combination of a differential-pressure valve, a vessel inclosing said valve, a storage-chamber provided with a plunger, pipes connecting the ends of said storage-chamber with the ends of said inclosing-vessel, and valved conduit-pipes communicating with said connecting-pipes, substantially as described.

5. The combination, with a valve having a flexible diaphragm attached to a movable part thereof, of an oscillatory weighted lever having a movement or stroke in which its center of gravity passes alternately to opposite sides of its fulcrum, said pivoted lever being connected on one side of its fulcrum with said valve, and a stop on the opposite side of the fulcrum of said lever, which stop engages said lever after its center of gravity has passed its fulcrum on the stop side, substantially as described

10,646. SCREW-TAP. JOSEPH C. STEBER, San Francisco, Cal., assignor to Charles V. Manner, same place. Filed Aug. 27, 1885. Original No. 284,510, dated Sept. 4, 1883.



Claim.—1. In combination with a tap for making stay-bolt holes in steam-boilers and for other like purposes, an adjustable sleeve secured upon the stem of such screw-tap, and provided with a screw-thread of like diameter to that made by the tap, and having an automatic tripping device, whereby the sleeve may be released from positive contact with the tap-stem and permit of the free revolution of said stem within the sleeve, substantially in the manner as herein set forth and specified.

2. The combination, with the tap and tap-stem A, having a series of perforations, F F, of the sleeeve B, having a male thread, C, and a pivoted lever-arm, H, movable pin or bolt E, and spring I, constructed, arranged, and operating substantially in the manner and for the purpose herein set forth and specified.

3. A tap provided with a thread-cutting portion, a blank portion, and a guiding portion, substantially as herein described.

4. In combination with a tap for making stay-bolt holes in steam-boilers and for other like purposes, a sleeve secured upon the stem of such screw-tap, and provided with a screw-thread of like diameter to that made by the tap, substantially as and for the purpose herein described.

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DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

DECISIONS OF THE U. S. COURTS.

U. S. Circuit Court—District of Massachusetts.

MCDONALD *v.* WHITNEY *et al.*

Decided August 4, 1885.

1. NOVELTY—PATENTS NOS. 200,078 AND 210,797—INFRINGEMENT.
Patent No. 200,078, dated February 5, 1878, and Patent No. 210,797, dated December 10, 1878, issued to James W. McDonald for machines for unhairing and scouring hides and skins, *Held* valid, and infringed by defendants.

2. SAME—USE OF INFRINGING MACHINE BY SUPERINTENDENT—PARTNERSHIP.
When an infringing machine is used by a father and son, and it is not shown that they were partners, but it appears that the son was a superintendent in the shop where the machine was used, no action for infringement will lie against the son.

Mr. T. W. Clarke and *Mr. B. S. Parker* for the complainant.

Mr. J. H. Millett for the defendants.

COLT, *J.:*

This bill in equity is brought upon two patents issued to the complainant, James W. McDonald, for unhairing and scouring hides and skins. The first patent is dated February 5, 1878, and numbered 200,078. The second patent is dated December 10, 1878, and numbered 210,797. The defendants are charged with infringing the first and second claims of the last patent, which are as follows:

1. In a machine for unhairing and scouring hides or skins, the combination, with feed-rolls and a supporting-roll, of a lever and intermediate mechanism, whereby, by a single movement of the lever, the feed-rolls are separated and the supporting-roll is adjusted with reference to the scouring-roll, all substantially as set forth.

2. In machines for unhairing, working, and scouring skins and hides, the combination of the feed-rolls D D′, one of which can be separated and held apart from the other, and a scouring-roll and a supporting-roll, G, which can be moved and held from said scouring-roll, all arranged to operate substantially as and for the purposes described.

It can readily be seen that in machines for unhairing hides, owing to the inequalities of thickness in the hide, some means of adjusting the roll are necessary. In McDonald's second patent, by means of one motion of a treadle, the operator applies a system of leverage whereby the feed-rolls are separated and the supporting-roll is adjusted with reference to the scouring-roll. The feed-rolls are pressed toward each other by spring-pressure, and the supporting-roll is pressed toward the scouring-roll by spring-pressure. By a single movement of the lever, and against the spring-pressure, the separation of the feed-rolls and the adjustment of the supporting-roll with reference to the scouring-roll takes place. The first of the above claims covers the combination of feed-rolls, supporting-roll, and intermediate mechanism by means of which this adjustment takes place. The second is simply for the combination of the feed-rolls, one of which can be separated, and a scouring-roll, and a supporting-roll, which can be moved from the scouring-roll. Owing to the distance between the feed-rolls and the supporting and scouring rolls, we find a bed, H, (which serves to support the hide during its progress from the feed-rolls to the scouring-roll,) set out in the specification and forming part of the fourth claim. As the bed H is necessary to the practical operation of the machine, it is urged that we must consider it as constituting one of the elements described in claims 1 and 2. We do not find the bed H included in those claims by any proper construction of language; nor do we think the claims should be held to be void because the machine, as a whole, may not be practically operative without the bridge, or that the claims become a mere aggregation of old devices because the bridge is excluded from the combination. The gist of McDonald's invention, as described in claims 1 and 2, is the separation and adjustment of the rolls, held together by spring-pressure, by means of a treadle and levers. It is further urged as a ground of defense, that, owing to the prior state of the art, McDonald cannot claim, broadly, the combination, with feed-rolls and a supporting-roll, of a lever and intermediate mechanism whereby, by a single movement of the lever, the feed-rolls are separated and the supporting-roll is adjusted with reference to the scouring roll, because this is old. We cannot consider the Townsend patent, dated April 23, 1872, No. 126,105, for improvement in leather boarding and graining machines, as anticipating the McDonald device. The machine is for a different object, and it has no cylinder of knives; nor are the rolls spring-pressed toward each other; and there are other differences in construction and mechanism. The adjustment of the rolls in the Townsend machine, by means of a treadle and lever, for the purposes described, is quite different, as it seems to us, from the adjustment of the rolls in a machine for unhairing hides with a knife-cylinder revolving twelve hundred to fourteen hundred times a minute. It is clear, also, that the Larabee patent, dated July 24, 1877, and the Sheldon patent, of October 22, 1878, both for unhairing hides, do not describe a device where, by one motion of the

treadle, the feed-rolls are separated and the supporting-roll adjusted with reference to the scouring or work roll. The movement of the pressure roll toward or from the knife-cylinder in the Larabee machine, and the lifting of the feed-roll from the pressure-roll in the Sheldon machine, by one movement of the treadle, do not, in our opinion, cover the McDonald device. There is also testimony going to show that, from all that appears, the McDonald invention was prior in time to Sheldon's. It is further contended that McDonald was not the inventor of the lever mechanism for operating two sets of rolls, but that Benjamin B. Bradford, assisted by one David H. Pratt, as early as 1877 or 1878, altered over a Roberts machine, so that by means of levers the two sets of rolls were simultaneously adjusted upon pressure being applied to the foot-treadle connected with the levers. Without entering into a review of the testimony, it is sufficient to say that, after a very careful examination, we are satisfied that the defendants have not clearly established that Bradford, assisted by Pratt, made the improvements claimed prior to the invention of McDonald. The patent carries with it a presumption of novelty, and the burden of rebutting that presumption is upon the defendants. The evidence to establish prior knowledge or use must be clear and satisfactory and beyond a reasonable doubt. In view of the conflict of evidence which the record presents, we cannot say that the defendants have made out this defense. (*Hawes v. Antisdel*, 2 Ban. & A., 10; *Wood v. Mill Company*, 4 Fish., 550, 560; *Parham v. American Buttonhole Company*, Id., 468, 482.)

Upon the question of infringement we entertain no doubt. In the "Tidd" machine, so called, upon which work was done by the defendants, there are but three rolls, the pressure-roll taking the place of the under feed-roll and of the pressure-roll in the McDonald machine. By one movement of the treadle, however, the feed-roll is separated from the pressure-roll and the pressure-roll is adjusted to the scouring or work roll. The feed-roll is spring-pressed toward the pressure-roll, and the pressure-roll spring-pressed toward the scouring-roll. The only difference is that on moving the treadle the movement of the pressure-roll is lateral with respect to the scouring-roll, instead of vertical, as in the McDonald machine. We find the substance of the McDonald invention in the Tidd machine.

This suit is brought against Joel Whitney and Arthur E. Whitney, doing business under the style and name of Joel Whitney, and also under the style and name of Arthur E. Whitney. The father, Joel Whitney, swears that he employs his son as superintendent in his shop at three dollars a day, and the son states that he has been employed by his father for eighteen years. We find no proof of partnership. The fact that the work on the Tidd machine was done at Whitney's shop under the direction of Arthur E. Whitney, acting as superintendent, would not make him liable. It is not shown that Arthur E. Whitney has any interest in the business, but he is only employed by his father. Under these circumstances no action will lie against him. (*United Nickel Company v. Worthington*, 13 Fed. Rep., 392.)

A decree may be entered against the defendant Joel Whitney, and the bill dismissed as to the defendant Arthur E. Whitney.

U. S. Circuit Court—Southern District of New York.

WALKER GLASS COMPANY *v.* SOUWEINE *et al.*

Decided July 25, 1885.

POCKET-COMB CASES—PATENT NO. 184,310—NOVELTY.

Patent No. 184,310, granted to Charles W. Walker, November 14, 1870, for an improvement in pocket-comb cases, *Held* not void for want of novelty.

Mr. M. B. Andrus for the complainant.

Mr. Henry F. Goken for the defendants.

WALLACE, *J.*:

The invention specified in the complainant's patent (No. 184,310, granted to Charles W. Walker, November 14, 1876, for improvement in pocket-comb cases) is shown by the proofs to have been perfected by the patentee in the spring of 1875, although the application for the patent was not filed until October, 1876. No reason is shown for the delay that intervened between the time when a patent might have been applied for and the time when the application was made. In the absence of any explanatory facts, evidence offered to carry back the date of the invention to a period considerably anterior to the application for a patent, in order to save the patent from being defeated for want of novelty, should be critically examined. Here, however, a disinterested and intelligent witness was produced whose testimony was clear and decisive to the point, and no attempt was made to controvert or impair the accuracy and truthfulness of his narrative. The only defense interposed is want of novelty, predicated upon the public use and sale in this country of the comb-cases manufactured by Probst, in Nuremburg, Germany. It is entirely clear that the Probst comb-cases were imported by dealers in this country and sold here in 1876, and it is not doubted that such comb-cases were substantially the comb-case of the patent; but there is not evidence showing the public use or sale of similar articles prior to 1876, of sufficient cogency and conclusiveness to overthrow the presumption of novelty arising from the grant of the patent. When record or written evidence such as the invoices from the files of the custom-house is produced, the importations of the article are not shown to antedate 1876. The case of the defendants is left to rest upon the unaided recollection of several witnesses, some of whom are evidently mistaken as to dates, and none of whom are able to fortify by any corroborative circumstances their statement of the general fact that such articles were in the market here prior to 1876.

A decree is ordered for complainant.

U. S. Circuit Court—District of New Jersey.

THE BATE REFRIGERATING COMPANY *v.* GILETT *et al.*

Decided August 19, 1885.

Motion for attachment for contempt of court in violating an injunction must be refused when the affidavits fail to show a personal service of the motion, or a substituted service by order of the court on the defendants.

Messrs. Dickerson & Dickerson for the complainants.

Mr. George De Forest Lord and *Mr. John R. Bennett* for the defendants.

NIXON, *J.*:

On November 14, 1881, an injunction was issued by this court against the defendants in the above-stated suit, commanding them and each of them to desist from making, using, selling, or in anywise counterfeiting or imitating the invention or improvement described in and secured by the Letters Patent No. 197,314, for improvement in processes for preserving meats during transportation and storage, issued to John J. Bates November 20, 1877, and by the patentee assigned to the complainant corporation. Application is now made to the court for an attachment against Vernon H. Brown, individually, and Vernon H. Brown, Albert H. Brown, Vernon C. Brown, and George F. Wilde, members of the firm of Vernon H Brown & Co., the general agents in the United States for the Cunard Steamship Company, and each of them, for contempt of court in violating the said injunction. It does not appear by the affidavits filed that either of said persons named, except Vernon H. Brown, has had a personal notice served upon him of the motion in this case. Instances have doubtless arisen, and will again arise, where a substituted service has been and will be accepted by the court in the place of a personal service; but the proper practice in all such cases is to apply to the court, assign satisfactory reasons, and thus obtain its order in advance for the substituted service. No step of the kind was taken in the present case. Evidence has been offered to show that the Cunard Steamship Company has violated the injunction by shipping on board two of its steamers—to wit, the "Cephalonia" and "Catalonia", plying between the port of Boston, in the United States, and the port of Liverpool, in England—meats placed in refrigerators embodying the process of the complainant patent; but the proof is clear and undisputed that Vernon H. Brown, who was personally served with notice to appear and show cause, has no control over the cargoes of the said steamer, and was not responsible for the acts complained of.

The motion for an attachment must be refused.

U. S. Circuit Court—Western District of Michigan, Southern Division.

SMITH *et al. v.* SANDS *et al.*

Decided April 11, 1885.

MANUFACTURE AND SALE OF ONE MACHINE—USE BY PURCHASER—REMEDY OF PATENTEE.

Peters manufactured a single machine protected by complainants' patent, and Sands bought the machine and continued to use it in his saw-mill for disposing of the sawdust and refuse of the mill, the purpose for which it was intended. It appeared that the right of action against Peters was barred by the statute of limitations. *Held*, that the extent of the injury to complainant was the royalty or proper license for the use of the machine; that he had an adequate remedy by action at law, and that the bill for an injunction and accounting should be dismissed.

Messrs. Keating & Dickerman for the complainants, *Mr. Edward Taggart* of counsel.

Mr. A. V. McAlvy for the defendants.

WITHEY, *J.*:

The demurrer filed to the bill of complaint is for the misjoinder of the defendants. At the time of the argument the defendants' counsel was permitted to present, *ore tenus*, the additional ground that the bill fails to state a case for equity jurisdiction. Inasmuch as this last ground of demurrer is believed to be well taken, the question as to a misjoinder will not be considered. In substance the bill of complaint states that complainants are owners of certain letters patent for machines and devices for burning the sawdust and refuse of saw-mills; that they have put the machines into practical use, and that the public has long acquiesced in their exclusive right to the same. The defendants, without license or permit, have unlawfully made, or caused to be made, sold, and used infringing machines; particularly that defendant Peters erected one infringing machine about July 15, 1881, and sold the same to defendant Sands, who has ever since used such infringing machine, and that said defendants still continue so to do in defiance of your orators' said rights, whatever that may mean. The bill states that the complainants have been damaged and suffered large loss of profits—to wit, to the amount of $10,000; that the defendants have been requested to refrain from such infringement, but they still continue the infringement and wrongful acts aforesaid. The prayer is for an accounting as to profits and damages, and for an injunction. So far as the matters stated in the bill are well pleaded, the demurrer admits them to be true. Accordingly, it appears that the defendant Peters, by making and selling the infringing machine for use, infringed the exclusive patented rights of the complainant, and so did the defendant Sands by using the infringing machine, and both are undoubtedly liable for the injury in an action at law; but the defendant Peters manufactured but the one machine, which was in July, 1881, more than three years before the bill of complaint was filed, in September, 1884, and there is no claim that he threatens or gives out that he shall repeat the wrongful act by making another. As to him, therefore, no ground exists either for asking or granting an injunction, and the bill of complaint states no ground for entertaining jurisdiction by a court of equity, if there is no cause for an injunction, so far as regards the defendant Peters. How is it as to the defendant Sands? He bought, and has continued to use, the one infringing machine. It is used only in his saw-mill for disposing of the sawdust and refuse of the mill; it is not employed in the manufacture of any article or thing for market or for sale, and it is for the interest of complainants that all saw-mills use their patented machines, provided they are paid the price of a license. The extent of their injury for using a single machine infringing their patents is the royalty or a suitable license fee. When once they have been paid the price or value of a license, they have received the full measure of the "actual damage" they suffer for any particular infringing machine used by another, and it is the full remedy they are entitled to, except a court may treble the actual damages, if the circumstances justify it. Such damages once recovered would be a bar to a subsequent suit for further damages, no matter how long the infringing machine is used by Sands subsequent to such recovery, because the injury for the particular wrongful act of using the one machine is complete and has by such recovery been fully compensated. The infringement is not one where there is a damaging and constantly-increasing competition and loss of profits, and hence there is no irreparable injury to the complainants, and no occasion to exercise the power of an injunction to restrain or prevent a multiplicity of suits. As has been said, complainants by an action at law against the respective defendants can recover full com-

pensation for the infringements. The only wrong done is the non-payment of suitable license money, and the indefinite use by Sands of this same infringing machine will give no right to demand more. It is conceded that courts of equity have assumed jurisdiction in similar cases as the one presented by this bill of complaint. (*Howe* v. *Newton*, 2 Fish., 534; *Morris* v. *Lowell Manufacturing Co.*, 3 Fish., 68-70, and *Blake* v. *Greenwood Cemetery*, 3 Bann. & A., 112, are among them.) But Justice Grier, at the circuit, refused an injunction, and intimated very clearly that a court of equity does not have jurisdiction in cases like this one; that the remedy is at law. (*Sanders* v. *Logan*, 2 Fish., 167.) The bill in that case was dismissed on another ground. Since *Root* v. *Railway Company* (105 U. S., 189) was decided, in which Mr. Justice Matthews reviews the patent laws and the decisions under them, showing when the remedy is in equity and when the sole remedy is in a court of law, for the infringement of letters patent, no court of equity, it is believed, would assume jurisdiction in a case like this, or in either of the cases cited above.

The demurrer is sustained for the reason stated, that there is no case for equitable jurisdiction under the statements of the bill of complaint.

U. S. Circuit Court—Southern District of New York.

UNITED STATES *v.* GUNNING *et al.*

Decided May 8, 1885.

1. FORMER DECISION AFFIRMED.

Decision of United States Circuit Court, Southern District of New York, December 26, 1884, declaring Letters Patent No. 265,061, granted September 26, 1882, to John Gunning, void, affirmed.

2. PATENTABILITY.

Making letters or figures of enamel baked on copper or other metal out of old materials in an old way, not a patentable invention.

Mr. Andrew J. Todd for defendant Ingersoll.
Mr. G. E. P. Howard for the plaintiff.

WHEELER, *J.*:

This cause has now been heard upon the motion of the defendant Ingersoll, made since the hearing in chief, (22 Fed. Rep., 653,) to reopen the case for further proof. The testimony sought to be had is that of the defendant Gunning as to making the invention, and that of one Barnes in corroboration. The patent is No. 265,061, dated September 26, 1882, and is for letters and figures of enamel baked on copper or other metal for signs on windows and in other places. The testimony proposed is in substance that, seeing enameled articles, he conceived the idea of making letters and figures of the same material in the same way before any one else, and suggested it to others, who acted upon the suggestion and made such letters, but not that he ever made any such letters or figures. The principal testimony is his own, and there is none shown to be had that he did not know of nor that the defendant Ingersoll is shown not to have been aware of before the hearing. Her principal ground for the motion is that she was not able to take his testimony after the plaintiff's testimony was closed. He and Barnes were both witnesses for the plaintiff, but not to the making of the invention. It does not appear that he was so far distant that she could not easily take his testimony if she had known where he was nor that she made any arrangement with him or undertook to, when she was in communication with him, for taking his testimony or for keeping informed of his whereabouts. Affidavits are made that she diligently endeavored to find him when she got ready to take testimony, but what efforts she made are not set out. On the whole, it appears that she lost this testimony rather from her own lack of diligence than from any other cause. She shows no right to have the case opened according to the usual practice in such cases, and her motion can be granted only by the exercise of large discretion in her favor. As this is a bill to repeal the patent for fraud in its procurement, the existence of the fraud and not the validity of the patent otherwise is the main thing in controversy; but upon the question whether discretion should be exercised to give unusual relief, it is proper to look into the nature of the patented invention far enough to ascertain whether any useful result is likely to follow from its exercise. Gunning does not pretend that he invented enameling on metal, and of course not that he invented signs or letters for signs. The materials and mode of manufacture were all old. The most that he did, according to his own story as now told, was to conceive the idea of making letters out of old materials in an old way. There was nothing new but the purpose. This would not appear to be any patentable invention. (*Pennsylvania Railroad Company* v. *Locomotive Safety Truck Company*, 110 U. S., 490.) It does not appear that the patent could be saved from this suit for any good purpose, even if the proposed testimony would save it. Gunning might prefer that the patent should fail from other grounds than his fraud; but he is not asking for anything in this behalf. No costs were allowed against the defendant Ingersoll, and none would be taxable in her favor against the Government if she should prevail in this case, and no fraud is proved against her. Therefore it can make no difference to her whether the patent fails here or not, unless she wishes to hold it for some improper purpose, which is not to be presumed. Besides this, there is the fact—which appears in the case and which the proposed testimony does not meet—that the patented letters made by others were sold by Gunning more than two years prior to his application, which would invalidate the patent, although his affidavit that the invention had not been in public use or on sale for two years prior to the application, which accompanied the application, may not have been made with such fraudulent intent as to warrant a decree setting aside the patent.

Motion denied.

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[*BY AUTHORITY OF CONGRESS.*]

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Bound half-turkey	2 50
Bound in cloth	1 25
Paper covers	1 00

Indexes to Patents on Electricity.

Appendix No. 2 to the index to patents relating to electricity, covering the period of time from July 1, 1882, to June 30, 1883, has been issued, and is now for sale. These indexes, arranged alphabetically, numerically, and by classes, are completed to June 30, 1883, and comprise the following volumes:

Vol. 1. Index to patents relating to electricity granted by the United States prior to June 30, 1881, with an appendix, July 1, 1881, to June 30, 1882. One volume, 250 pages. In paper covers, $3; bound, $5.

Vol. 2. Appendix No. 2, July 1, 1882, to June 30, 1883. One volume, 50 pages. In paper covers, $1.50.

Vol. 3. Appendix No. 3, July 1, 1883, to June 30, 1884. One volume, 60 pages. In paper covers, $1.50.

Issue of September 29, 1885.

Patents	577	No. 326,932 to No. 327,508, inclusive.
Designs	18	No. 16,291 to No. 16,308, inclusive.
Trade-Marks	12	No. 12,602 to No. 12,613, inclusive.
Labels	6	No. 4,583 to No. 4,588, inclusive.
Reissues of patents	2	No. 10,647 to No. 10,648, inclusive.
Total issue	615	

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks and Labels.	States.	Patents and Designs.	Trade-Marks and Labels.
Alabama	4	.....	Nebraska	2	.....
Arizona Territory	.....	.....	Nevada	1	.....
Arkansas	.....	.....	New Hampshire	6	.....
California	16	.....	New Jersey	30	1
Colorado	5	.....	New Mexico Territ'y	.....	.....
Connecticut	18	.....	New York	87	6
Dakota Territory	.....	.....	North Carolina	3	.....
Delaware	.....	.....	Ohio	43	.....
District of Columbia	8	.....	Oregon	4	.....
Florida	.....	.....	Pennsylvania	63	3
Georgia	2	.....	Rhode Island	6	.....
Illinois	48	1	South Carolina	2	.....
Indian Territory	.....	.....	Tennessee	5	.....
Indiana	15	.....	Texas	7	.....
Iowa	8	.....	Utah Territory	1	.....
Kansas	5	.....	Vermont	3	.....
Kentucky	5	.....	Virginia	2	1
Louisiana	1	.....	Washington Territ'y	3	.....
Maine	3	.....	West Virginia	1	.....
Maryland	2	.....	Wisconsin	5	.....
Massachusetts	93	1	Wyoming Territory	.....	.....
Michigan	28	.....	United States Army	.....	.....
Minnesota	7	.....	United States Navy	1	.....
Mississippi	2	.....			
Missouri	14	.....	Total to citizens of the United States	560	15
Montana Territory	1	.....			

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Labels.	Countries.	Patents and Designs.	Trade-Marks and Labels.
Austria-Hungary	.....	.....	Germany	6	1
Barbadoes	.....	.....	Holland	1	.....
Belgium	.....	.....	Ireland	1	.....
Bermuda	.....	.....	Mexico	.....	.....
Brazil	.....	.....	Russia	.....	.....
Canada	8	.....	Scotland	.....	.....
Cape of Good Hope	.....	.....	Spain	.....	.....
Colombia, U. S. of	.....	.....	Sweden	1	.....
Cuba	.....	.....	Switzerland	.....	.....
Denmark	.....	.....	Victoria	1	.....
Egypt	.....	.....			
England	15	2	Total to citizens of foreign countries	35	3
France	2	.....			

DESIGNS.

16,291.—ORNAMENTATION OF PAPER.—*Bowie Dash*, New York, N. Y. Application filed July 11, 1885. Term of patent 14 years.

16,292.—QUILTING-PATTERN FOR SKIRTS.—*Louis Dryfoos*, New York, N. Y. Application filed April 28, 1885. Term of patent 14 years.

16,293.—BURIAL-CASKET.—*John Einsfield*, Oneida, N. Y. Application filed June 30, 1885. Term of patent 14 years.

16,294.—TYPE.—*Herman Ihlenburg*, Philadelphia, Pa., assignor to *The MacKellar, Smiths & Jordan Company*, same place. Application filed March 16, 1885. Term of patent 14 years.

16,295 and 16,296.—ORNAMENTATION OF WHEEL-HUBS.—*Jared Maris*, Columbus, Ohio. Applications filed June 23, 1885. Term of patents 3½ years.

16,297.—PANEL.—*Frederick Mankey*, Williamsport, Pa. Application filed August 13, 1885. Term of patent 7 years.

16,298 to 16,305, inclusive.—CARPET.—*Oscar Righter*, Philadelphia, Pa., assignor to *Dornan Bros. & Co.*, same place. Applications filed August 14, 1885. Term of patents 3½ years.

16,306.—HITCHING-POST.—*Julius Francis Rogers*, St. Joseph, Mo. Application filed July 24, 1885. Term of patent 14 years.

16,307.—JEWELRY-CHAIN.—*Jerome W. Simpson*, Newark, N. J., assignor to *Wheeler, Parsons & Hayes*, same place. Application filed April 27, 1885. Term of patent 7 years.

16,308.—FRINGE.—*John Zebley*, Philadelphia, Pa. Application filed May 9, 1885. Term of patent 3½ years.

TRADE-MARKS.

[Certificates of registration of Trade-Marks numbered 8,191 and upward are registered under the act of March 3, 1881.]

12,602.—BITUMINOUS AND SEMI-BITUMINOUS COAL.—*Castner & Co., (Limited,)* Philadelphia, Pa. Application filed August 25, 1885.

"The word 'POCAHONTAS.'"

12,603.—CIGARETTES.—*Lewis Ginter*, Richmond, Va. Application filed August 26, 1885.

"The word 'PET.'"

12,604.—LAUNDRY-SOAP.—*James S. Kirk & Co.*, Chicago, Ill. Application filed December 26, 1883.

"The word 'CAMBRIA.'"

12,605.—NATURAL SPRING-WATER.—*James W. Miller*, Newark, N. J. Application filed August 29, 1885.

"The word 'DIAMOND,' or a representation of one or more diamonds, or the word 'DIAMOND' in combination with a representation of one or more diamonds."

12,606.—LEUCORRHŒA PILLS.—*Francis G. Morris*, New York, N. Y. Application filed August 25, 1885.

"The representation of an angel."

12,607.—BONE-BLACK, IVORY-BLACK, &c.—*Christian Ott & Co.*, Ingelheim, Germany. Application filed August 26, 1885.

"The monogram 'C. O. & Co.'"

12,608.—FLUX FOR METALS.—*B. F. Ruth & Co.*, Reading, Pa. Application filed August 14, 1885.

"The compound word 'VIVI-FLUX.'"

12,609.—DUST-PAN.—*The Steel-Edge Dust-Pan Company*, Boston, Mass. Application filed July 31, 1885.

"A stripe or section along the upper surface of the pan at its forward edge, presenting the color of the metal of which said edge is made, or a close approximation thereto, and contrasting in color with the color of the main portion or body of the pan."

12,610.—REMEDY FOR MALARIAL DISEASES.—*Sure Cure Medicine Company*, Rochester, N. Y. Application filed August 14, 1885.

"The pictorial representation of a padlock."

12,611.—VELVETEENS.—*Tootal Broadhurst, Lee & Co.*, Manchester, county of Lancaster, England. Application filed August 28, 1885.

"The representation of a crown or of the word-symbol 'CROWN.'"

12,612.—YEAST.—*Hulbert H. Warner*, Rochester, N. Y. Application filed August 17, 1885.

"The representation of an iron safe bearing on its front the words 'WARNER'S SAFE,' and within a circle the representation of the sun rising on the ocean, with the words 'UP WITH THE SUN' in a curve on the rays, and the word 'YEAST.'"

12,613.—BAKING-POWDER.—*Hulbert H. Warner*, Rochester, N. Y. Application filed August 17, 1885.

"The representation of an iron safe bearing on its front the words 'WARNER'S SAFE,' and within a circle the device of a sailing vessel entering harbor, below which are the words 'BAKING' and 'POWDER.'"

LABELS.

4,583.—Title: "COOPER'S SHEEP DIPPING POWDER."—*William Cooper & Nephews*, Berkhamsted, England. Application filed June 29, 1885.

4,584.—Title: "DR. PARIS' NERVOUS RESTORATIVE LOZENGES."—*Louis Lewis*, Philadelphia, Pa. Application filed September 5, 1885.

4,585.—Title: "TWENTY FIVE CENTS" (FOR CHANGE ENVELOPES.) *Samuel Raynor & Co.*, New York, N. Y. Application filed September 4, 1885.

4,586.—Title: "FIFTY CENTS" (FOR CHANGE ENVELOPES.)—*Samuel Raynor & Co.*, New York, N. Y. Application filed September 4, 1885.

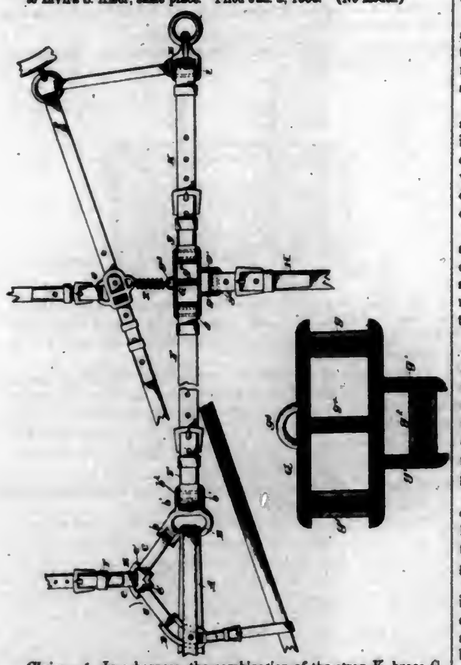
4,587.—Title: "ONE DOLLAR" (FOR CHANGE ENVELOPES.)—*Samuel Raynor & Co.*, New York, N. Y. Application filed September 4, 1885.

4,588.—Title: "DR. J. B. HENION'S SURE CURE FOR MALARIA."—*Sure Cure Medicine Company*, Rochester, N. Y. Application filed August 17, 1885.

PATENTS

GRANTED SEPT 29, 1885.

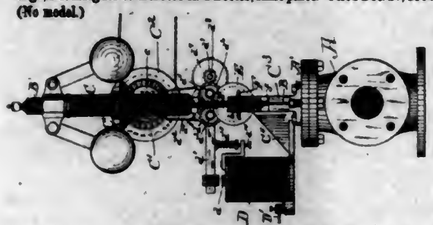
326,932. HARNESS. MAURICE W. AMER, Glens Falls, N. Y., assignor to Elvira S. Amer, same place. Filed Jan. 3, 1885. (No model.)



Claim.—1. In a harness, the combination of the strap K, brace G, the girth secured to said brace, the saddle-band, a spring connecting the saddle-band to the brace, and the strap F, connected to the rear end of the brace, substantially as set forth.

2. In a harness, the combination, with the breeching and the strap F, of the loop B, connecting the strap F and breeching, the loop D, the strap C, connecting the loops D and B, and the brace E, connecting said straps C, substantially as set forth.

326,933. ELECTRIC STEAM-GOVERNOR. EDWARD H. AMET, Chicago, Ill., assignor to Herbert A. Strozier, same place. Filed Dec. 27, 1884. (No model.)



Claim.—1. The combination, with a valve-stem, of a centrifugal governor having a loose connection with said valve-stem, so that it may be moved independent thereof, mechanism for operating the valve-stem having a yielding or spring connection therewith, and an electro-magnet actuated by the current produced for putting said mechanism in operation, substantially as specified.

2. The combination, with the valve-stem, of a centrifugal governor, and a secondary-governor mechanism put in operation by an electro-motive device actuated by the current produced, said secondary-governor mechanism having a yielding or spring connection with said valve-stem, substantially as specified.

3. The combination, with a centrifugal governor, of a valve-stem actuated in one direction thereby, but not in the other, a spring for moving the valve-stem in the opposite direction, and a secondary governor controlled by an electro-motive device in the current produced, connected with the valve-stem through said spring for moving the valve in one direction, and rigidly with the valve-stem for moving it in the opposite direction, substantially as specified.

4. The combination, in a motor, of its speed or power regulating-stem, with a centrifugal governor, and a secondary governor actuated or set in operation by an electro-motive device in the current produced, said secondary governor having a yielding or spring connection with said regulating-stem to move it in one direction, and a fixed connection in the opposite direction, substantially as specified.

5. The combination of a valve-stem with a centrifugal governor, a non-rotary externally-threaded sleeve fitting loosely on said stem, stops or collars secured to said valve-stem to limit the movement of said sleeve thereon, a spring between one of said stops and said sleeve, an internally-threaded hollow gear working on said sleeve journaled in a stationary bearing, a pivoted armature-lever provided with oppositely-driven gears on each side of its pivot, and gears or mechanism for communicating the motion of one or the other of said oppositely-driven gears to said internally-threaded hollow gear, substantially as specified.

6. The combination, with valve-stem B, provided with shoulders or collars b' b^2, of externally-threaded sleeve b, spring b^2, internally-threaded hollow gear F, an electro-motive device, and mechanism put in operation by said electro-motive device for revolving said internally-threaded gear in opposite directions, substantially as specified.

7. The combination, with a centrifugal governor, and a reciprocating valve-stem fitting loosely in the movable socket-piece of said governor, of an externally-threaded sleeve fitting loosely on said valve-stem, a spring-connection with said valve-stem above and a fixed connection below said sleeve, and means for imparting motion in opposite directions to said threaded sleeve from an electro-motive device, substantially as specified.

8. The combination, with the valve-stem, of a friction-wheel adapted to revolve in either direction, mechanism for communicating motion from said friction-wheel to said valve-stem, a pivoted lever provided with a pair of oppositely-revolving friction-wheels on opposite sides of its pivot, mechanism for driving said friction-wheels, an electro-magnet for tilting said lever in one direction, and a spring or its equivalent for tilting it in the opposite direction, one of said oppositely-revolving friction-wheels engaging said valve-stem operating-wheel when said lever is raised, and the other when depressed, but neither engaging the same when said lever remains in its normal position, substantially as specified.

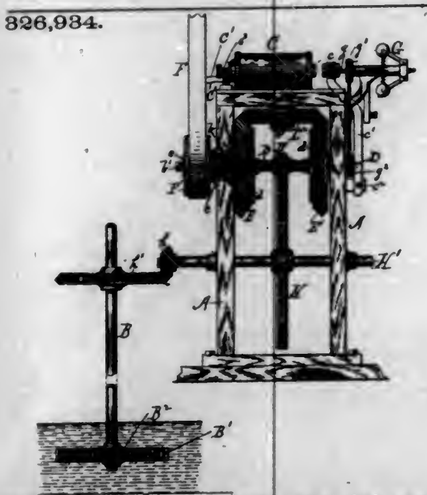
9. The combination, with a centrifugal governor, of a valve-stem, a sleeve fitting loosely on said valve-stem, a yielding connection or spring to prevent or limit its longitudinal movement on said stem, and an electro-magnet connected with said sleeve, substantially as specified.

10. The combination of a centrifugal governor with a valve-stem provided with stops or shoulders b' b^2, spring b^2, sleeve b, having a limited screw-threaded portion and threaded gear F, and a secondary-governor mechanism controlled by an electro-magnet for operating said threaded sleeve and gear, substantially as specified.

326,934. ELECTRIC WATER-WHEEL GOVERNOR. EDWARD H. AMET, Chicago, Ill., assignor to Herbert A. Strozier, same place. Filed Jan. 27, 1885. (No model.)

Claim.—1. The electric water-wheel governor consisting in the combination, with the gate-shaft or devices for operating the gate, of a

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sliding shaft provided with friction-wheels, a pair of wheels constantly revolving in opposite directions, and an electro-magnet energized by the current generated by the dynamo driven from the water-wheel for sliding said shaft so that its friction-wheels will engage one or the other of said constantly-revolving wheels according as it may be required to increase or diminish the power, substantially as specified.

2. The electric governor consisting in the combination of electro-magnet C, its armature-lever *c'*, sliding shaft D, provided with frictions *d d*, oppositely-revolving wheels E E', spring *b*, gate-shaft B, and intermediate gearing or mechanism connecting said gate-shaft with said sliding shaft D, substantially as specified.

3. The combination of electro-magnet C, armature-lever *c'*, sliding shaft D, provided with bevel friction-wheels *d d*, bevel-gears E E' E², spring *b*, gears D, H, *h*, and *h'*, gate-shaft B, rack B', and pinion B², substantially as specified.

4. The combination, with the speed or power controlling device of a motor, of a sliding shaft provided with a wheel, a pair of wheels constantly revolving in opposite directions, and an electro-magnet energized by the current generated by the dynamo driven from said motor for sliding said shaft so that its wheel will engage one or the other of said constantly-revolving wheels according as it may be required to increase or diminish the speed or power of the motor, substantially as specified.

5. The combination, with a pair of oppositely-revolving wheels, of a sliding shaft provided with a friction-wheel engaging one or the other of said oppositely-revolving wheels according as said shaft is reciprocated one way or the other, and an electro-magnet for sliding said shaft, and a centrifugal governor for sliding said shaft in case of a failure of the electro-magnet to act, substantially as specified.

6. The electric water-wheel governor consisting in the combination, with the gate-shaft or devices for operating the gate, of a sliding shaft provided with friction-wheels, a pair of wheels constantly revolving in opposite directions, and an electro-magnet energized by the current generated by the dynamo driven from the water-wheel for sliding said shaft so that its friction-wheels will engage one or the other of said constantly-revolving wheels according as it may be required to increase or diminish the power, and a centrifugal governor for reciprocating said shaft in case of a failure of the electro-magnet to act, substantially as specified.

7. The combination of an electro-magnet with its armature-lever, constantly-revolving gears E E' E², and a sliding shaft, D, provided with bevel friction-wheels *d d*, a spring, *b*, and adjusting-screw *b'*, substantially as specified.

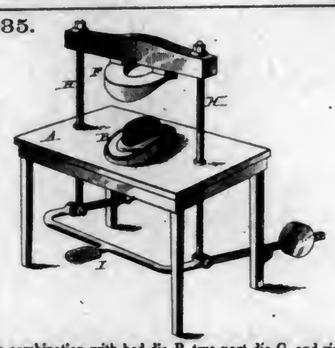
8. The combination of bevel-gear E, provided with hollow hub or shaft *e*, bevel-gear *e²*, and bevel-gear E', provided with hollow hub or shaft *e*, sliding shaft D, provided with bevel-frictions *d d*, coil-spring *b*, lever *c*, and electro-magnet C, substantially as specified.

326,935. MACHINE FOR CURLING HAT-BRIMS. ALONZO C. ARNOLD and WILLIAM THOMPSON, Norwalk, Conn.; said Arnold assignor to said Thompson. Filed Dec. 27, 1884. (No model.)

Claim.—1. The herein-described apparatus for bending and curling hat-brims, consisting of bed or table A, bed or die B, carved to the required form of the brim, two-part die C, ring D, top plate or ring, F, cross-head G, and treadle I, connected with the cross-head, substantially as shown and described.

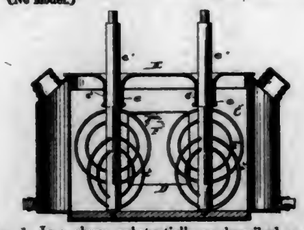
2. In combination with die B, carved to the form of the required brim, two-part die C of a corresponding curvature, and ring E, adapted to enter the space between parts *a b* of said two-part die, and to maintain said parts in proper position.

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3. In combination with bed-die B, two-part die C, and ring E, top die or plate, F, carved to correspond with dies B C, substantially as and for the purpose set forth.

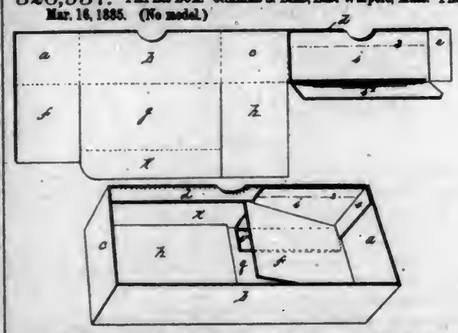
326,936. CHURN. JAMES P. BEARD, Gadsden, Ala. Filed Feb. 29, 1884. (No model.)



Claim.—1. In a churn, substantially as described, a churn-dasher consisting of a shaft, *c'*, and bent loops c^3 c^4, the loops c^3 being larger than the loops c^4, and the latter interlocking with the former, as and for the purpose set forth.

2. In a churn, as described, the combination, with the receptacle D, having seats for two dashers, the cover E, having depending dasher-sockets *e*, with caps e^4, and the dashers having looped arms c^3 and c^4, interlocking with each other, and the former of greater dimensions than the latter, and adapted to excite an eddy, as described, the whole arranged as and for the purposes set forth.

326,937. PAPER BOX. CHARLES S. BIRD, East Walpole, Mass. Filed Mar. 16, 1885. (No model.)



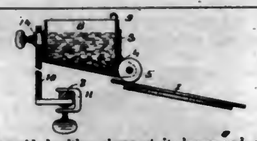
Claim.—1. The within-described paper box, consisting of the bottom *g*, having the flap K on one edge thereof, the side *d*, and the lining *i* thereof, open at their lower edges to receive the flap K therebetween, the section i^2, overlying the bottom *g*, the lining-sections *f* and *h*, overlying said section i^2, the side *b*, the ends *c* and *a*, and the flap *e*, cemented to the latter, substantially as set forth.

2. The within-described blank for a paper box, consisting of the bottom section, *g*, having the tock-flap K on one edge thereof, the end sections, *a* and *c*, the side sections, *b* and *d*, and the flap *e*, arranged in a line and connected with the bottom *g* only at one edge of the side *b*, the lining-sections *f* and *h*, each attached to one edge of the said ends *a* and *c*, and the severed section *i*, cemented partially to the side *d*, and having thereon the section i^2, substantially as set forth.

326,938. INK-FOUNTAIN FOR PRINTING-MACHINES. THOMAS E. BOMAR, McKinney, Tex. Filed July 15, 1884. (No model.)

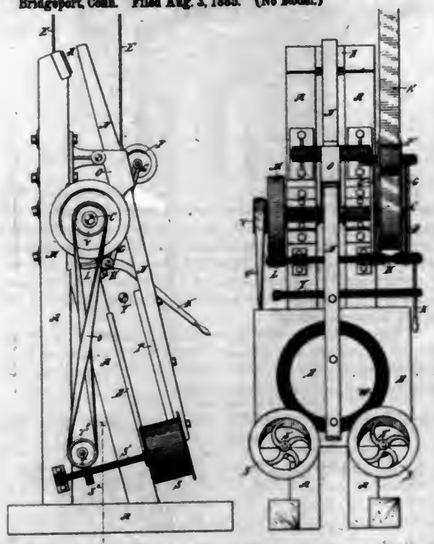
Claim.—The combination of the shell-shaped frame having an inclined bottom, a hole in the lower part of the front end wall, and a socket provided with a thumb-screw, a vertical arm passing through the

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said socket and provided with a clamp at its lower end, a roller for distributing ink, journaled at the front of the shell and vertically adjustable therewith, and the removable reservoir having a gate, an inclined bottom, and an opening corresponding with the hole in the shell, substantially as shown and described, and for the purpose set forth.

326,939. MACHINE FOR CLEANING WIRE. HUGO BORCHARDT, Bridgeport, Conn. Filed Aug. 3, 1885. (No model.)



Claim.—1. A machine for cleaning wire, consisting, essentially, of a bed lying at an angle greater than forty-five degrees, but not exceeding ninety degrees, to the plane of the machine, against which the coil of wire leans, and rollers which support the coil and at the same time impart rotation thereto, in combination with a beater-helve the face of which strikes the face of the coil as it is being rotated.

2. In a wire-cleaning machine, a bed against which the coil rests and which lies at an angle greater than forty-five degrees, but not exceeding ninety degrees, to the plane of the machine, and flanged rollers at the base of the bed, which support the coil and impart rotation thereto, in combination with a beater-helve whose face acts upon the face of the coil as it lies against the bed.

3. Bed B and rollers S, in combination with an oscillating beater-helve, a holder therefor, and cams which engage the holder to actuate the helve.

4. Bed B and rollers S, in combination with an oscillating beater-helve, a holder therefor having a boss, O', cams which engage the boss, and a cushion, R, against which the upper end of the helve strikes.

5. The combination, with the bed, rollers, and beater-helve, of a shaft having cams to actuate the beater-helve, and a belt-pulley, a belt passing over said pulley, and a binder-pulley pivoted to arms G, and operated by a hand-lever, whereby the belt is tightened and motion is imparted to the machine.

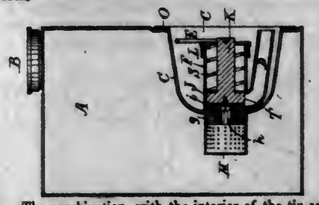
6. The combination, with the bed, rollers, beater-helve, and shaft having cams, belt-pulley, and fly-wheel, as described, of a rock-shaft having arms by which a binder-pulley is carried, a brake adapted to act on the fly-wheel, and a hand-lever by which the machine is stopped and started.

7. The combination, with the bed, the beater-helve, shaft C, having pulley V, and shaft T, having worms T' and pulley T², of the flanged supporting-rollers whose shafts are provided with worm-wheels driven by worms T'.

8. In a wire-cleaning machine, the bed secured to the frame-work at an angle greater than forty-five degrees, but not exceeding ninety degrees, to the plane of the machine, and the beater-helve adapted to oscillate in a plane at right angles to the bed, in combination with friction-rollers provided with wood faces, and removable flanges which support the coil of wire and impart rotation thereto.

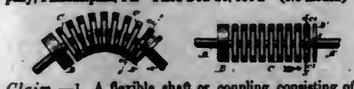
9. The bed lying at an angle greater than forty-five degrees, but not exceeding ninety degrees, to the plane of the machine, friction-rollers below the bed, which support and rotate the coil of wire, and a beater-helve adapted to oscillate in a plane at right angles to the bed, in combination with pipe Y, from which water is thrown upon the coil as it is rotated under the beater-helve.

326,940. SHIPPING-CAN. JOHN F. BROWN, Providence, R. I., assignor of one-half to Fitz-Gerald & Co., Newark, N. J. Filed Dec. 8, 1884. (No model.)



Claim.—The combination, with the interior of the tin socket C, of the valve-chamber F, provided with the opening T and spout D, and having the seat *g* and inlet h at its inner end, the plunger J, fitted within the chamber outside of the seat, the cap L, secured upon the outer end of the chamber, the shank K, projected through the cap, the spring S under the cap, for pressing the valve toward the seat, and the ring E, fitted loosely to the shank for opening the valve, substantially as and for the purpose set forth.

326,941. FLEXIBLE SHAFT AND COUPLING. ARTHUR W. BROWNE, Westfield, N. Y., assignor to the S. S. White Dental Manufacturing Company, Philadelphia, Pa. Filed Dec. 20, 1884. (No model.)



Claim.—1. A flexible shaft or coupling consisting of a series of substantially-parallel spring-plates rigidly connected together, substantially as described.

2. A flexible shaft consisting of stiff sections connected together by a coupling consisting of substantially-parallel spring-plates rigidly connected together at opposite points, and these points alternating so as to be at right angles or substantially at right angles to each other throughout the series of plates, substantially as described.

3. In combination with a flexible shaft, a flexible sheath or cover consisting of a tube of spirally-wound wire, the spirals or members of which are separated, so that the tube may be bent without affecting its length, and of a covering of elastic material crimped between the coils of the wire, substantially as described.

4. The combination of the stiff shaft-sections connected together by a flexible coupling, collars having tapered or coned peripheral surfaces fitted to receive said stiff shaft-sections and form bearings therefor at each side of said coupling, and a sheath or cover for said coupling, consisting of a wire tube connecting said collars, and of a flexible covering surrounding said wire tube and attached to said collars at the tapering surfaces, substantially as described.

326,942. DENTAL-ENGINE HAND-PIECE COUPLING. ARTHUR W. BROWNE, Westfield, N. Y., assignor to the S. S. White Dental Manufacturing Company, Philadelphia, Pa. Filed Jan. 8, 1885. (No model.)



Claim.—1. The combination of the driving-shaft with the chuck or tool-holder by means of a slip-joint or telescoping driving-connection consisting of rigid tapered or beveled-end driving ribs or fingers, substantially as described.

2. The combination of the driving-shaft with the chuck or tool-holder by means of a slip-joint or telescoping driving-connection consisting of rigid driving ribs or fingers projecting from the chuck or tool-holder and the driving-shaft, respectively, and the central socket-and-pin guiding and steadying connection, substantially as described.

3. The combination of a hand-piece casing with a supporting-sleeve by means of a telescoping or slip-joint connection and a sectional screw-rib locking-connection, substantially as described.

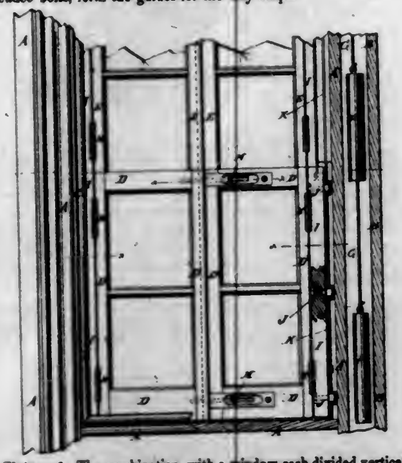
4. The combination, with the driving-shaft and its enveloping-sleeve, of a hand-piece casing and its chuck or tool-holder carried thereby by means of detachable telescoping or slip-joint connections, substantially as described.

5. The combination, with the driving-shaft and its enveloping-sleeve, of a hand-piece casing and its chuck or tool-holder carried there-

by by means of telescoping or slip-joint connections, and a fastening or securing device between said casing and said shaft-enveloping sleeve, substantially as described.

326,943. WINDOW. MARION SCHLEY BUCKNER, Savannah, Ga. Filed Dec. 11, 1884. (No model.)

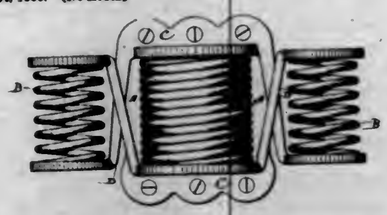
Brief.—The window-sash is hinged to separate guide-strips, so as to be capable of vertical and horizontal motion. The parting and stop beads are provided with metal strips, which, in combination with the flat-headed bolts, form the guides for the way-strips.



Claim.—1. The combination, with a window-sash divided vertically into two parts, and a window-frame having vertical guide-grooves, of vertical pieces I, to the outer faces of which the two-part sash is hinged, and the headed bolts J, passing through the said pieces i and provided with the fastening-nuts flush with the outer faces of said pieces, whereby the nuts will not interfere with the hinging movement of the sash, substantially as set forth.

2. The combination, with a window-sash made in two parts, and a window-casing, of the hinges H, the hinging-pieces I, the flat-headed bolts J, and the guide-plates K, substantially as herein shown and described, whereby the said sash can be raised and lowered like an ordinary sash, and opened and closed like a door, and will be securely connected with the casing, as set forth.

326,944. SPRING. WILLIAM I. BOOKER, Chicago, Ill. Filed June 24, 1885. (No model.)

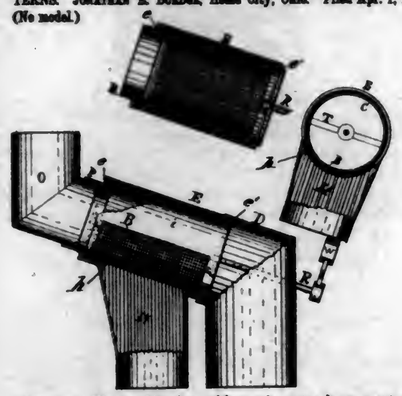


Claim.—1. As a new article of manufacture, a compound compression and extension spring comprising a main spring, an auxiliary spring or springs, and attaching-brackets, the main spring and the auxiliary spring or springs having different longitudinal axes, and being, respectively, extension and compression springs, substantially as and for the purpose set forth.

2. As a new article of manufacture, a compound compression and extension spring comprising a main spring, an auxiliary spring or springs, and two attaching-brackets, the bracket at the top of the main spring having a downwardly-projecting arm or arms, and the bracket at the bottom of the main spring having an upwardly-projecting arm or arms, and the main spring and the auxiliary spring or springs having different longitudinal axes, substantially as and for the purpose set forth.

3. As a new article of manufacture, a spring attachment for buggies, carriages, &c., comprising a main spring, one or more auxiliary springs, and two attaching-brackets, the bracket at the top of the main spring having a downwardly-projecting arm or arms, and the bracket at the bottom of the main spring having an upwardly-projecting arm or arms, such arms terminating in circular castings to receive the ends of the springs, substantially as and for the purpose set forth.

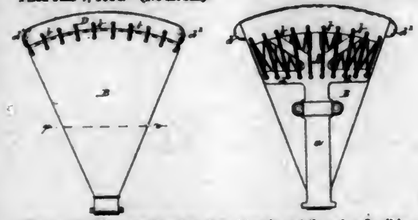
326,945. FILTERING CUT-OFF RAIN-WATER SPOUT FOR CISTERNS. JONATHAN E. BURDER, Mona City, Ohio. Filed Apr. 1, 1885. (No model.)



Claim.—1. The combination, with a rain-water down-spout, O, of a cut-off tube, *l*, which is open throughout its length and provided with a gauze-covered opening, B F, intermediate its ends, whereby the water is turned into or from a cistern and the debris or filtered deposit automatically carried out of the waste-outlet without obstruction, thereby maintaining a clear passage-way for the discharge of the water through the gauze in a filtered condition into the cistern when turned to run therein, substantially as herein specified.

2. The combination, with down-spout O, of a filtering cut-off cylinder, *i* B F, provided with a handle, R W, the bearing-thimble P, inwardly-flanged sleeve E *o c'*, cistern-spout H, and the waste-spout D, substantially as and for the purpose specified.

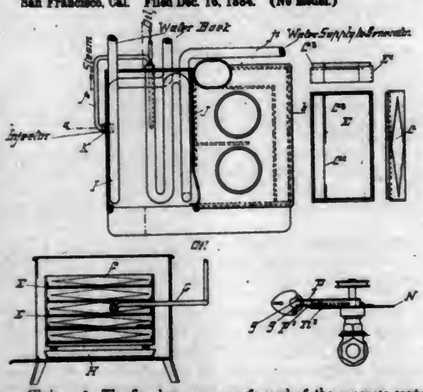
326,946. BICYCLE-SADDLE. FRANKLIN G. BURLEY, Boston, Mass. Filed Jan. 7, 1884. (No model.)



Claim.—1. The combination, in a bicycle-saddle, of a flexible seat and the frame with a lacing-cord for attaching the seat to the frame, substantially as and for the purposes set forth.

2. A bicycle-saddle having a straight-sided main bar, in combination with a staple-shaped strap, a plate through which the ends of the strap pass, and nuts for adjusting the plate, substantially as set forth.

326,947. APPARATUS FOR BURNING FUEL. ROBERT E. BURNS, San Francisco, Cal. Filed Dec. 16, 1884. (No model.)

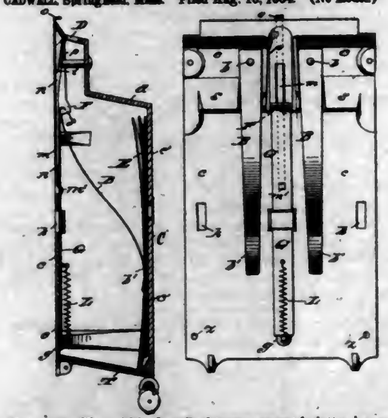


Claim.—1. The fire box or space formed of the separate trays or pans with rims or ledges adapted to be placed upon one another, with spaces C' for the oil to descend and the heat and flame to ascend, substantially as and for the purpose set forth.

2. In a stove for burning oils, the combination, with the oil-feeding pipe, of the regulating-valve provided with an outwardly-extending arm, *n*, a fixed plate, N, provided with a series of holes, n^2, and pins n^3, for inserting in the holes n^2 and holding the rod *n* between them at any position, as set forth.

3. In a stove for burning oils, the combination, with the oil-feeding pipe and valve having the outward-extending arm *n*, of the fixed plate N, having the holes n^2 and pins n^3 for inserting therein to hold the arm *n* in any position, the locking-plate P, hinged to plate N, as described, and the ears for receiving the lock, substantially as set forth.

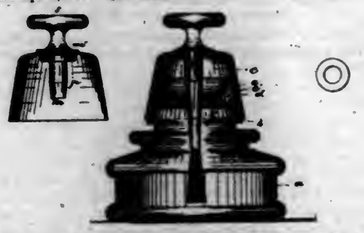
326,948. LETTER-BOX. NELSON A. CADWELL and JONATHAN W. CADWELL, Springfield, Mass. Filed Aug. 18, 1884. (No model.)



Claim.—1. The within-described improvement in letter-boxes, consisting of a case adapted to hold a number of letters and having a slit, D, in its top near its rear wall, springs B B, attached to the wall beneath slit D and adapted, substantially as shown and described, to have their free ends bear against the front wall of the case, and a hook-bearing slide, G, provided with an operating-handle, as *o*, and adapted to be reciprocated between said springs to have its hook catch over and bear a letter to a position between the springs and wall *c'*, as and for the purpose set forth.

2. In a letter-box, a letter-holding case having a slit, D, in its top near its rear wall, springs B B, attached to the wall beneath slit D and having their free ends bear against the front wall of the case, a hook-bearing slide, G, provided with an operating-handle, as *o*, and adapted to reciprocate between said springs, to catch over a letter and bear it to a position between them and wall *c'*, as shown and described, and a spring, L, operatively connected to slide G, to return it, with its hook, when released by the hand, all combined and operating as and for the purpose set forth.

326,949. MUCILAGE-BOTTLE. EDWIN R. CAHOON, Newark, N. J. Filed Apr. 4, 1885. (No model.)



Claim.—1. In combination, a bottle having the annular bearing portion *b*, convergent portion *a*, wiper *f*, and annular flaring portion *e*, a brush and a cover adapted to inclose said flaring portion and engage the bearing to seal the bottle, substantially as set forth.

2. The combination, with a perforated cover or cap, *c*, of a mucilage-bottle, a brush the shank of which is held rigidly in the perforation, and a washer cemented to said shank and cover, substantially as set forth.

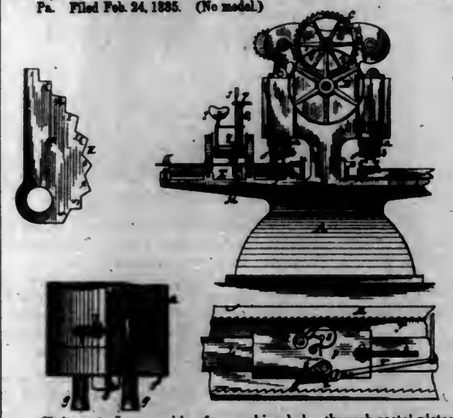
3. In combination with the cover of a mucilage-bottle, a handled brush the shank of which is provided with a flange, *m'*, and a leather washer cemented to said shank and the under side of said cover to hold the parts together.

4. In combination, the perforated sheet-metal cap or cover, and a handled brush held in said perforation by flanges formed on or secured to the handle on opposite sides of the cap, substantially as set forth.

5. In combination, the perforated cap for a mucilage-bottle, a handle, and a brush the shank of which is suitably provided with laterally-projecting portions which engage the upper and lower sides of the said cap and prevent longitudinal movement of the said cap on the said shank in either direction, substantially as set forth.

6. In combination, a bottle having a bearing for a cap, and an annular guarding portion extending up into but free of said cap to guard the bearing from drippings, &c., in wiping the brush, a cap extending over the guarding portion of the bottle and engaging the bearing, and a brush depending from the cap and extending into the mouth of the bottle, all said parts being arranged and adapted to operate substantially as set forth.

326,950. PUNCHING-MACHINE. CYRUS M. CARNAHAN, Pittsburg, Pa. Filed Feb. 24, 1885. (No model.)

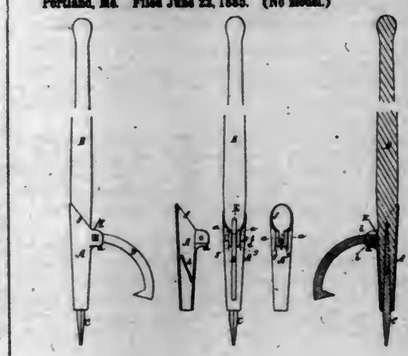


Claim.—1. In a machine for punching holes through metal plates, a vertically-moving head having attached thereto a die-box containing a punch-stock capable of rotation and adjustment on its axis, two punches affixed therein, each occupying a position opposite the other on a straight line drawn through the diameter of the stock, and an equal distance from its central point, a female die or counterpart of said punches affixed in a box and attached to the bench or bed-plate of the machine, so as to be adjustable with respect to the punches, and whereby a single or double row of holes may be punched through a plate of metal in the manner substantially as hereinbefore stated.

2. In a machine for punching holes through metal plates, the combination of the adjustable punch-stock, two punches therein, a female die or counterpart of said punches to operate conjointly therewith, a table or skeleton frame for supporting a plate of metal, a series of rollers therein arranged obliquely to and across the face of the table, a feeding mechanism consisting of a double ratchet with pawls operating therein, a system of levers and connecting-links for moving said pawls, and the carriage with its seat, hand, and foot mechanism, whereby the plate may be forced along in the manner and for the purposes hereinbefore stated.

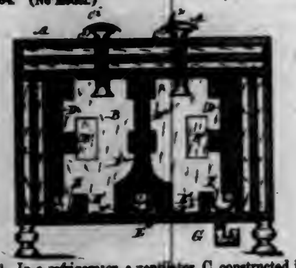
3. In a machine of the character described, the combination of the mechanism for feeding a plate along, a carriage and hand-lever for operating said feed, a notched and adjustable gage-plate for determining the extent of such feed movement, and a track or means for supporting a carriage along and upon the feed-table or skeleton frame thereof, as shown and described.

326,951. CANT-HOOK. THOMAS W. CASSIDY, Bangor, assignor, by mesne assignments, to himself, Clinton R. Jones, and Walter B. Sawyer, Portland, Me. Filed June 22, 1885. (No model.)



Claim.—The combination of the coat-hook having its handle and hook-supporting socket-piece provided with two ears, *a a*, projecting from it, and at their lower parts turned inward each other, as set forth, with the vibratory bent lever and guard E, arranged between the ears, and extended both above and under and around the rear part of the hook D, and provided with the guiding and steadying lip *k*, projecting from it (the said guard) between the turned-in parts of the lips, all being substantially as set forth.

326,952. REFRIGERATOR. JAS. CAMPELL, Blue Rapids, Kans. Filed Dec. 26, 1884. (No model.)

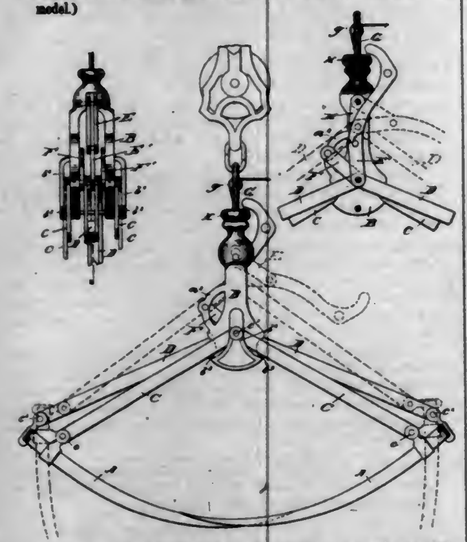


Claim.—1. In a refrigerator, a ventilator, C, constructed in sections and provided with a fine sieve or foraminated plate, C', and a cap, C², substantially as shown, and for the purpose described.

2. The combination of the ice-receptacle frame D², supported on cleats or strips D'', provided with shoulder *d'*, and ice-receptacles D, having section D', substantially as shown, and for the purpose described.

3. In a refrigerator, the drain-pipe G, composed of two sections and having slot *e*, and pin *f*, substantially as shown and described.

326,953. GRAPPLING-FORK. MARCUS W. CHAMBERLAIN, Branchville, N. J., assignor of three-fourths to E. A. Ely and F. S. Ely, both of same place, and P. A. Ely, Madison, N. Y. Filed June 19, 1885. (No model.)



Claim.—1. In a grappling-fork, the combination, with two forks coupled by pivoted links to a head-piece, of spreader-bars pivoted at one end to the forks and at the other end to each other and to a toggle-lever pivoted within the head-piece, to operate the pivoted forks, substantially as and for the purpose set forth.

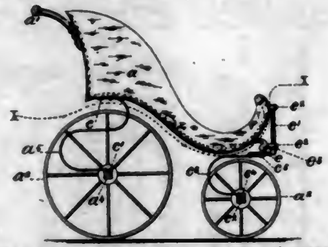
2. In a grappling-fork, the combination of two forks connected by pivoted coupling-bars with a head-piece, and each provided with a spreader-bar, of a toggle-lever pivoted by one end to the head-piece and by the other to the spreader-bars, and adapted to throw the pivotal pin between the spreader-bars into and out of the pivotal line of the coupling-bars.

3. In a grappling-fork, the combination, with two forks linked to a head-piece by pivoted coupling-bars, and provided with pivoted spreader-bars operated by a toggle-lever pivoted within the head-piece, of a guide-link pivoted at one end to the head-piece and at the other to the toggle-lever, and the spreader-bars at their pivotal joint, to govern the movement of said pivotal joint, substantially as and for the purpose set forth.

4. In a grappling-fork, the combination of the two forks A, U-shaped head-piece B, coupling-bars C, spreader-bars D, toggle-lever E E', guide-link F, and swivel-link G, substantially as and for the purpose set forth.

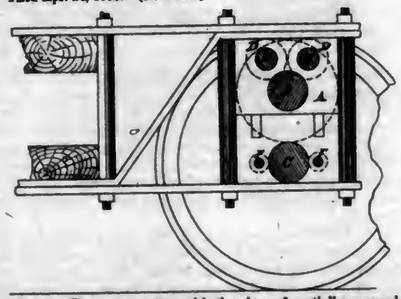
5. In a grappling-fork, the combination, with the U-shaped head-piece and the toggle-levers pivoted therein, of the swivel-link G, provided with pulley *g*, mounted thereon, and the sliding tripping-disk H, substantially as and for the purpose set forth.

326,954. BABY-CARRIAGE. JAMES F. COLBY, Buffalo, N. Y. Filed July 13, 1885. (No model.)



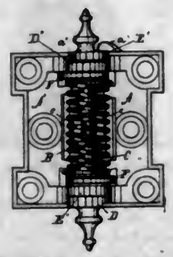
Claim.—A baby-carriage having one of the axles supported upon springs e^3, connected to the vertically-pivoted rod *c'*, located in advance of the axle, in combination with the running-gear and pushing-bars of a baby-carriage, whereby the carriage may be easily guided in either direction by the pushing-bar, substantially as described.

326,955. CAR-AXLE BEARING. PETER COOL, Manhattan, Kans. Filed Apr. 24, 1885. (No model.)



Claim.—The combination, with the circumferentially-grooved axle or shaft, of the large anti-friction wheel located above and forming the bearing of the axle or shaft, and fitting or working in the groove thereof, to prevent lateral shifting, the two small rollers located at each side of the axle or shaft and mounted in the boxing above the journals of the large wheel and forming the bearings for said journals, and the small anti-friction wheels located on opposite sides of the axle or shaft and in contact therewith, substantially as described.

326,956. SPRING-HINGE. LEVI M. DEVORE, Freeport, Ill., assignor to the Freeport Spring Hinge Company, same place. Filed Mar. 25, 1885. (Model.)



Claim.—1. A spring-hinge, each leaf of which has an ear upon opposite ends thereof and a pintle and socket integral with said ears upon each leaf at opposite ends thereof, one leaf having a lug upon one end slightly overhanging the ear upon said end, and the other leaf having the adjacent ear slotted, substantially as and for the purpose set forth.

2. In a spring-hinge, an arbor about which the spring is coiled provided with longitudinal ribs near its center, substantially as and for the purpose set forth.

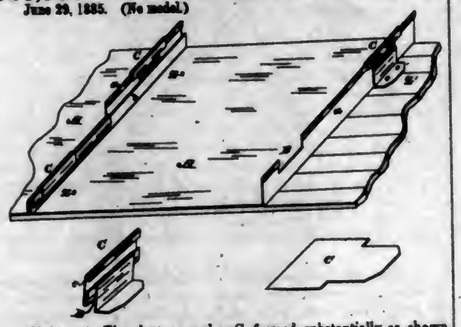
326,957. ELECTRICAL ATTACHMENT FOR DENTAL CHAIRS. CHARLES A. EBENHART, York, Pa. Filed Nov. 11, 1884. (No model.)



Claim.—1. The portable apparatus herein described, for use in dental operations, in connection with a chair, consisting of the hand-pieces or electrodes *a*, having straps *b* and *c*, whereby they are adapted to be attached to any chair, and provided with binding-posts or eyes *e*, for receiving the conductors of an electric generator, substantially as shown.

2. The combination, with a chair having arms, of the portable apparatus for use in dental operations, consisting of the hand-pieces or electrodes *a*, having straps *b* and *c*, whereby they are attached to said arms, and means for connecting said plates with the wires of an apparatus for generating a current of electricity, substantially as shown, and for the purpose described.

326,958. METAL ROOFING. JAMES H. ELLER, Canton, Ohio. Filed June 29, 1885. (No model.)



Claim.—1. The cleat or anchor C, formed substantially as shown and described, and for the purpose specified.

2. The sheet A, having the tongued-up portion *a*, and provided with the cut-away portions B, in combination with the cleats or anchors C, substantially as and for the purpose specified.

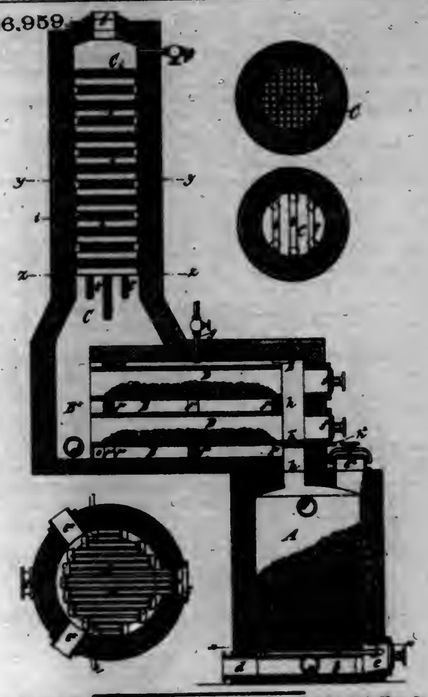
326,959. APPARATUS FOR MAKING GAS. WALTER P. ELLIOTT, New Brunswick, N. J. Filed Sept. 5, 1884. (No model.)

Claim.—1. The combination, with a generating-furnace and a combustion-chamber extending from the top of the furnace, of open-ended retorts for bituminous coal arranged in said chamber, whereby they are heated externally, and retort-mouths in the wall of the combustion-chamber at the ends of the retorts which are over the generating-furnace, whereby provision is afforded for drawing the coke from the retorts and depositing it in the furnace, substantially as herein described.

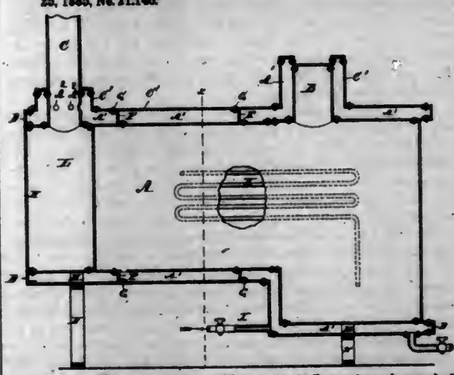
2. The combination, with an approximately-horizontal chamber, of a generating-furnace arranged below said chamber and communicating with one end thereof, a superheater extending upward from the other end of said chamber, and open-ended retorts for bituminous coal arranged in said chamber, the space in said chamber around the retorts forming a combustion-chamber whereby the retorts are heated externally, and valves or stoppers whereby communication between the furnace and superheater is afforded either through or around the retorts, and a pipe for delivering liquid hydrocarbon into said chamber around the retorts to be there vaporized, substantially as herein described.

3. The combination, with a chamber containing open-ended retorts for bituminous coal, of a generating-furnace communicating with one end of said chamber, a superheater communicating with the other end of said chamber, and which is heated by escaping products of combustion, a pipe for delivering steam into the superheater, and valves or stoppers whereby the products of combustion are caused to pass through the chamber around the retorts when blowing up, and whereby the steam is caused to pass downward to and through the retorts and over the bituminous coal in process of distillation, and a pipe for delivering liquid hydrocarbon into the retort-chamber where it is vaporized and from which the vapor passes to mingle with the products of decomposition as they leave the open-ended retorts, substantially as herein described

326,959.

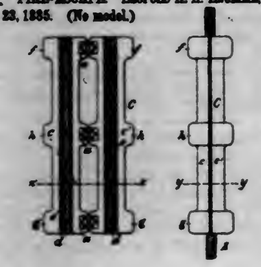


326,960. STEAM-BOILER. ELISHA E. ELLS, Canning P. O., Nova Scotia, Canada. Filed Apr. 15, 1885. (No model.) Patented in Canada Feb. 25, 1885, No. 21,140.



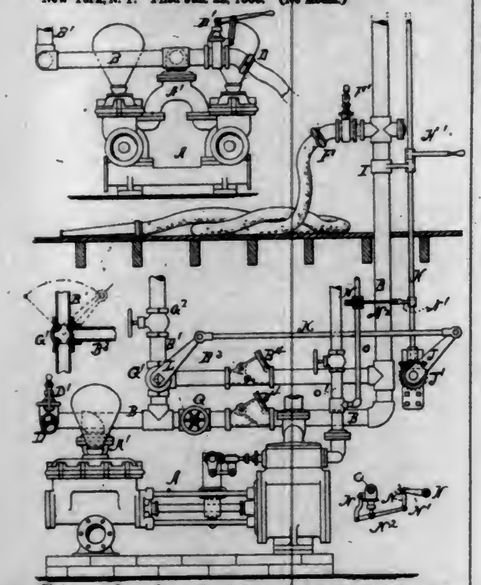
Claim.—The combination, with a steam-boiler and smoke-stack C, having perforations A^3, of the upper and lower jacket-sections, bolted together and to knees F, the lower section provided with steam-inlet I and water-outlet J, whereby steam admitted to the space A' circulates under pressure around the boiler and passes into the smoke-stack, as set forth.

326,961. FIRE-ESCAPE. LEOPOLD A. H. ENGELKE, Philadelphia, Pa. Filed May 23, 1885. (No model.)



Claim.—In a portable fire-escape, the combination of the hinged hand-gripping device C, having collars or flanges *f h g* thereon, with interior lining or bushing, *e*, for the reception of, and frictional resistance to, the rope or cable, substantially as and for the purposes described.

326,962. **FIRE-EXTINGUISHING APPARATUS.** THOMAS EVANS, New York, N. Y. Filed Jan. 22, 1885. (No model.)



Claim.—1. In a fire-extinguishing apparatus for buildings, the combination, with a steam-pump, of the main water-pipe B, having a series of hose-couplings, F, provided with valves F', the supplemental water-pipe B', having the three-way valve G', the branch B^2, extending from the three-way valve to the main water-pipe, and a revolving vertically-operating spindle, H, provided with the bevel-pinion J', substantially such as herein described, for adjusting said three-way valve from either floor of the building.

2. In a fire-extinguishing apparatus for buildings, the combination, with a steam-pump, of the auxiliary steam-pipe O', having the valve N, the main water-pipe B, having a series of hose-couplings, F, provided with valves F', the supplemental water-pipe B', having the three-way-valve G', the branch B^2, extending from the three-way valve to the main water-pipe, and a revolving vertically-operating spindle, H, provided with the bevel-pinion J', substantially such as herein described, for adjusting both said three-way valve and the valve of the auxiliary steam-pipe from either floor of the building.

3. In a fire-extinguishing apparatus for buildings, the combination, with a steam-pump, of the main water-pipe B, having a series of hose-couplings, F, provided with valves F', and having the valve G, the supplemental water-pipe B', having the valve G' and the three-way valve G', and a revolving vertically-operating spindle, H, provided with the bevel-pinion J', substantially such as herein described, for adjusting said three-way valve from either floor of the building.

4. In a fire-extinguishing apparatus for buildings, the combination, with a steam-pump, of the main water-pipe B, having a series of hose-couplings, F, the supplemental water-pipe B', having the three-way valve G', the levers J L, one mounted on the stem of the three-way valve, the connecting-rod K, and the spindle H, geared with the lever J, for the purpose set forth.

5. In a fire-extinguishing apparatus for buildings, the combination, with a steam-pump, of the auxiliary steam-pipe O', having the valve N, the main water-pipe having a series of hose-couplings, F, the supplemental water-pipe B', having the three-way valve G', the levers J L, one mounted on the stem of the three-way valve, the connecting-rod K, and the spindle H, geared with the lever J, and connected to said valve of the auxiliary steam-pipe.

326,963. **CLIP FOR VEHICLE-SPRINGS.** WILLIAM EVANS, Philadelphia, Pa. Filed Aug. 16, 1884. (No model.)

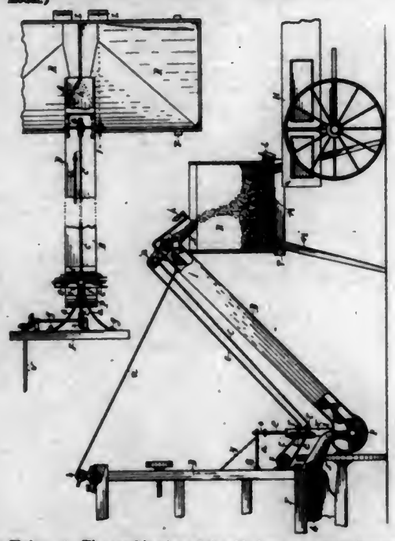
Claim.—1. The clip C, cut from a rolled bar, having the angles *b* and parallel sides *d*, substantially as shown and described.

2. The clip C, as shown, cut from a rolled bar or skelp in such a manner that the punching-die cuts one side of the angular end and one parallel side of the clip at each stroke alternately from the opposite parallel sides of the skelp, substantially in the manner described, and for the purpose set forth.

326,968.



326,964. **THRASHING-MACHINE ELEVATOR.** DARWIN B. FISK, Kalamazoo, Mich. Filed Apr. 29, 1884. Renewed Aug. 10, 1885. (No model.)

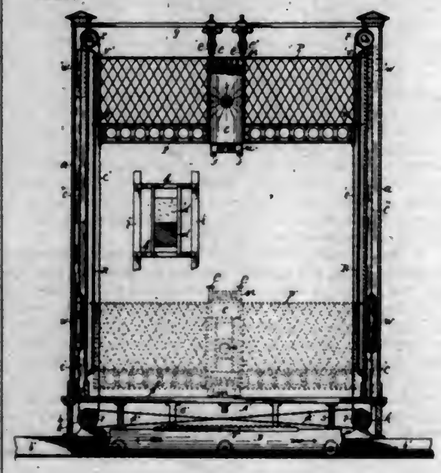


Claim.—1. The combination of the side bars, *v v*, pivotally attached to elevator B, provided with vertical rollers *t t* and horizontal rollers *r r* for guiding belt *c c*, the bail *e*, and swiveled bolt *s*, pivotally suspending elevator to braces *a a*, attached to separator, as described and shown.

2. The combination of the auxiliary spout *f* with the elevator B, the side bars, *v v*, bail *e*, and swiveled bolt *s*, for the purpose of holding the lower end of elevator steady when operated vertically or horizontally, as described and shown.

3. In combination with elevator B, side bars, *v v*, bail *e*, swiveled bolt *s*, the spout A at the discharging end of elevator, provided with an adjustable partition, *c'*, for the purpose of directing the flow of grain to either compartment of grain-box R R, as shown and described.

326,965. **SIGNAL-GATE FOR DRAW-BRIDGES.** DARWIN B. FISK, Kalamazoo, Mich. Filed June 13, 1884. Renewed Aug. 10, 1885. (No model.)

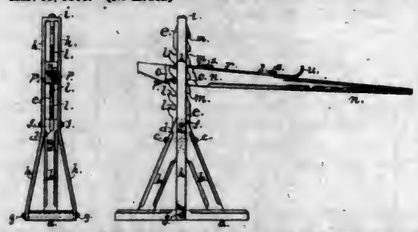


Claim.—1. In combination with a draw-bridge, the suspended counterbalanced gate P, the signal-case attached thereto for inclosing and protecting signals, the frame carrying signals, and means for operating the same, as shown and described.

2. The combination, with an automatically-operating gate and signals, chains *c' c''*, counterbalance-weights, pulleys *r r*, hollow columns inclosing the weights, pulleys *k k'*, pulleys *z z'*, crossed chain *a'*, and pinions *t t*, of a swing-bridge having a rack, *v*, substantially as described.

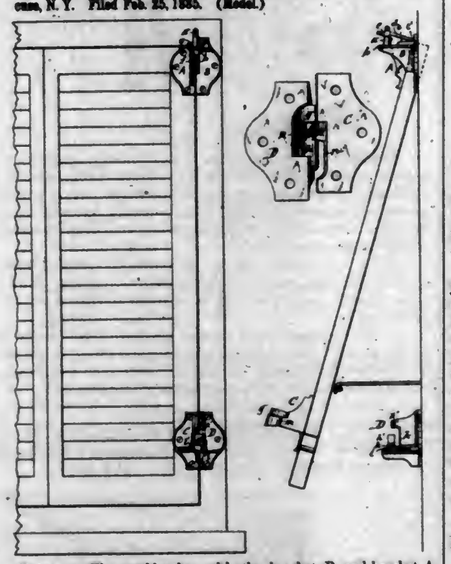
3. The automatically-operating gate and signals, the chain or belt *c''*, attached to the gate and passing over pulleys *r r*, and attached to upper end of counterbalancing-weights inclosed in said columns, the hollow columns for inclosing weights and supporting gate, the chain or belt *c'*, attached to lower end of said weight and passing under pulleys *k k'*, thence upward and attached to the gate, the crossed chain or belt *a'*, for operating pulleys *z* and *z'* in opposite directions, and the pinions *t t*, rotated by rack *v*, attached to bridge, all in combination, as specified and shown.

326,966. **LIFTING-JACK.** LEMUEL FURMAN, Bay City, Mich. Filed Mar. 13, 1885. (No model.)



Claim.—In a lifting-jack, the bed-piece *a*, the diagonal braces *b*, having their lower ends secured to the bed-piece and their upper ends secured together, and provided with the slot *d*, and the vertical standard *e*, with its lower end resting within the said slot *d*, and having on one edge the steps *l* and on its opposite edge the notches *m*, in combination with the side braces, *h*, on opposite sides of the said standard *e*, and with their upper ends joined together and to the said standard *e* by the part *i*, the bolt *f*, securing the central portion of the side braces, *h*, to the diagonal braces *d* and the standard *e*, and the bolt *g*, securing the lower ends of the side braces, *h*, to the bed-piece *a*, substantially as and for the purpose set forth.

326,967. **HINGE FOR AWNING-BLINDS.** CHARLES GARLICK, Syracuse, N. Y. Filed Feb. 25, 1885. (Model.)



Claim.—1. The combination, with the bracket B, and bracket A pivoted thereon to swing in a vertical plane, of an elongated secondary bearing on the bracket B, back of the pivot and curved upward, and a fulcrum on the bracket A, riding on said secondary bearing, whereby the top of the blind is carried outward from the jamb when swinging the blind in a vertical plane, substantially as set forth.

2. The combination of the bracket B, formed with the upwardly-projecting rib *c*, and the bracket A, formed with the cap *d* over the rib *c*, substantially as and for the purpose set forth.

3. The combination, with the bracket B, provided with the pintle *a*, and the bracket A, provided with the eye *e*, of the guide-flange *f*, for facilitating the coupling of the hinge, substantially as set forth.

4. In combination with the bracket C, provided with the cap *g*, the bracket D, provided with the pintle *h* and re-enforced by the bar *k*, projecting from the attaching-plate of the bracket above the base of the pintle, substantially as described and shown.

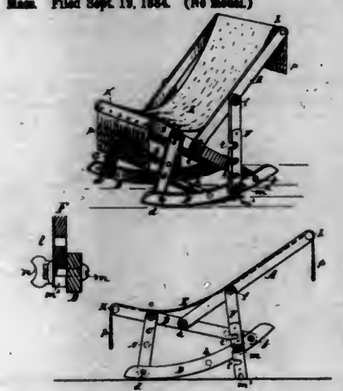
5. The combination of the bracket D, provided with the pintle *h*, and with the vertical bar *k* back of said pintle, and the bracket C, having the cap *g*, provided with the locking-shoulder *l* on the bottom of the cap and the secondary locking shoulder *l'* on the side of the said cap to engage the bar *k*, substantially as and for the purpose specified.

6. In combination with the bracket C, having the cap *g*, provided with the passage *m*, and the bracket D, having the pintle *h* formed with a flattened portion, *h'*, adapted to pass through the said passage, the bar *k* on the bracket D, and abutting against the cap *g* to prevent lateral movement thereof and disengagement from the pintle *h* when the blind is in an open position, substantially as described and shown.

7. The combination, with the bracket B, provided with the pintle *a*, of a fulcrum on said bracket back of the pintle and formed with an upward curvature, and the bracket A, hung on said pintle and provided with a bearing on the upward curvature of the aforesaid fulcrum, whereby the top of the blind is carried outward from the jamb, substantially as set forth.

8. The combination, with the bracket B, provided with the pintle *a*, of the rib *c*, extending to the attaching-plate of said bracket and formed thereat with the upward curvature *c'*, and the bracket A, provided with the eye *e*, and with the cap *d*, by which latter it rides on the curved portion *c'* of the rib *c*, substantially as described and shown.

326,968. **ADJUSTABLE CHAIR.** ABRAM J. GIBSON, Shrewsbury Mass. Filed Sept. 19, 1884. (No model.)



Claim.—1. In a chair provided with a seat-supporting frame and rockers connected to each other at their rear ends, and having a swinging back, the adjusting-standards, as F, for supporting said back from the rockers, said standard being pivoted at one of its ends and adjustably connected at its other end, substantially as set forth.

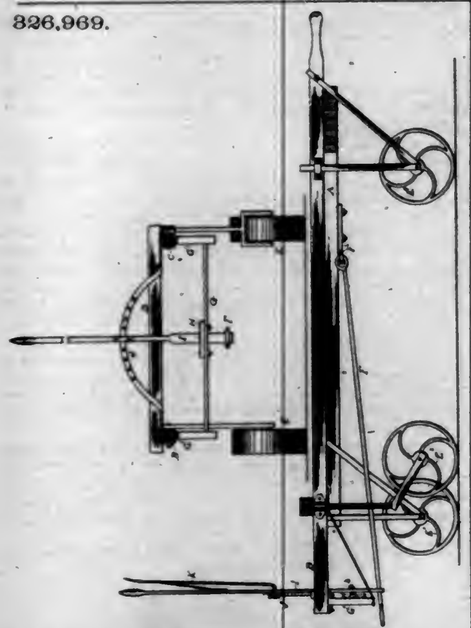
2. A chair having seat-bars B, fore standards, C, and rockers D, joined to each other in triangular frame, as shown, and provided with a swinging back, A, pivoted to said triangular frame at its lower end, and the rear supporting-standard pivoted at its upper end to said back A, while its lower end is adapted for adjustable connection with the rear portion of said rockers, as described, whereby said back may be sustained from the rockers or the rear part of the rockers and back may be sustained from the floor, substantially as set forth.

3. The combination, with the seat-braces B, rockers D, and fore standards, C, connected in triangular form, of the adjustable back-frame A, pivoted to said seat-braces at *a*, the rear standard, F, pivoted to said back and provided with a series of engagement-recesses, as *t*, and the studs *m* and retaining devices on the rockers, substantially as and for the purpose set forth.

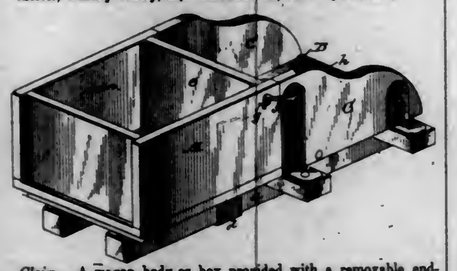
326,969. **GANG-PLOW.** JAMES R. GILL, Belletta, Cal. Filed Mar. 23, 1885. (No model.)

Claim.—A plow-frame composed of the main beam A, beams B and C, cross-beam D, draft-bar G, draft-irons G' G^2, wheels E, E', and E², in combination with a draft-regulating attachment consisting of the draft-rod F, its attaching-iron F', bolted to under side of rear of beam A, the iron H, attached to draft-bar G and lever I, the latter being provided with spring-detent K, and engaging with draft-bar F, attached at its foot, and with perforated yoke J, attached to ends of beams B and C, all substantially as shown and described.

326,969.



326,970. WAGON-BODY. AUSTIN D. GUDGEREK, near North Manchester, Whitley County, Ind. Filed Feb. 19, 1885. (No model.)



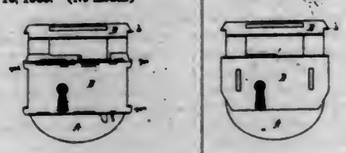
Claim.—A wagon body or box provided with a removable end-board, and having upon its under side suitable clips, in combination with an attachment consisting of a platform provided with side sections, and parallel supporting-bars extending beyond the platform a distance equal to the length of the box or body, and adapted to enter the clips thereof, the platform having at its outer edge a transverse cleat, substantially as and for the purpose set forth.

326,971. POCKET FOR WEARING-APPAREL. SARAH A. GOODALE, Watertown, N. Y. Filed Oct. 1, 1884. (No model.)



Claim.—A pocket for wearing-apparel, made in part of substantially rigid material, comprising a front wall, two side walls, a bottom, and a loop or clasp at either side of the pocket, in combination with a belt which is passed through the loops and constitutes the rear wall of the pocket, substantially in the manner and for the purpose set forth.

326,972. CABINET-LOCK. EMANUEL G. GORT, Cincinnati, Ohio, assignor to the Corbin Cabinet Lock Company, New Britain, Conn. Filed July 16, 1885. (No model.)

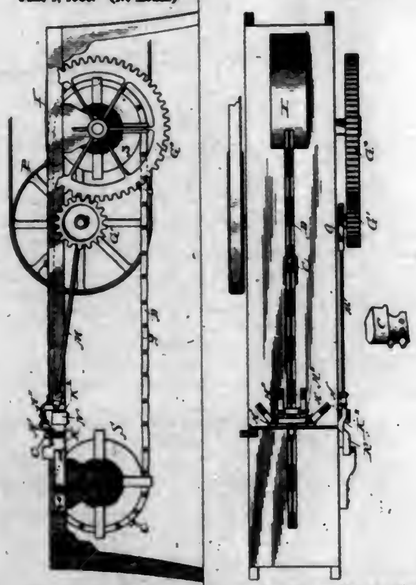


Claim.—1. A cabinet-lock having its top plate or selvage extending beyond the cap-plate, the ends of the top plate formed to flare outwardly from the front plate to points in a vertical plane with the projecting edges of the cap-plate, and from thence reduced to the inner edge of the top plate, substantially as set forth.

2. A lock-case consisting of a front plate, top plate or selvage, and cap-plate, the front plate being rounded at its bottom, the sides of the cap-plate projecting beyond the sides of the front plate, the lower corners of the projecting sides of the cap-plate being rounded, and the top plate or selvage constructed to extend over and beyond the cap-plate and having its ends formed to interlock with the side walls of the routed cavity, substantially as set forth.

3. A lock-case consisting of a front plate, a cap-plate projecting laterally beyond the side edges of the front plate, and the top plate or selvage projecting laterally beyond the side edges of the front plate and rearwardly over and beyond the cap-plate, substantially as set forth.

326,973. LINK-MACHINE. THOMAS A. GRIFFIN and CHARLES ALKINS, Chicago, Ill., assignors to the Ajax Forge Company, same place. Filed June 1, 1885. (No model.)

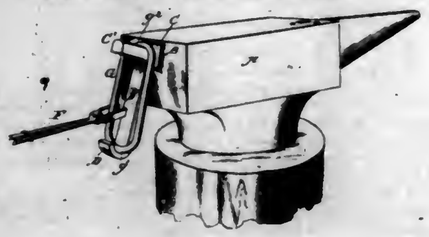


Claim.—1. The combination, with mechanism for operating the same, of an endless chain provided with carriers which take the rod-section through guiding or forming rollers, and two pairs of said rollers so relatively arranged as to form a funnel-mouth, producing a gradual bending of the rod-section, all constructed and arranged substantially as and for the purpose set forth.

2. The combination, with the mechanism for operating the same, of an endless chain, carriers or benders thereon, guiding or forming rollers, and the beveled plate or apron I, substantially as and for the purpose set forth.

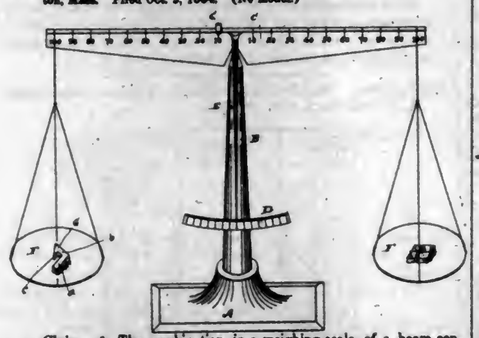
3. The combination, in a bending-machine, of the beveled knife K', the knife K', and mechanism for bending the rod-section, consisting of an endless chain carrying benders, and two pairs of rollers arranged to form a funnel-mouth, substantially as shown and described.

326,974. MANDREL FOR USE IN WELDING LINKS. THOMAS A. GRIFFIN and CHARLES ALKINS, Chicago, Ill., assignors to the Ajax Forge Company, same place. Filed June 1, 1885. (No model.)



Claim.—The mandrel C, having the horn D, constructed substantially as and for the purpose set forth.

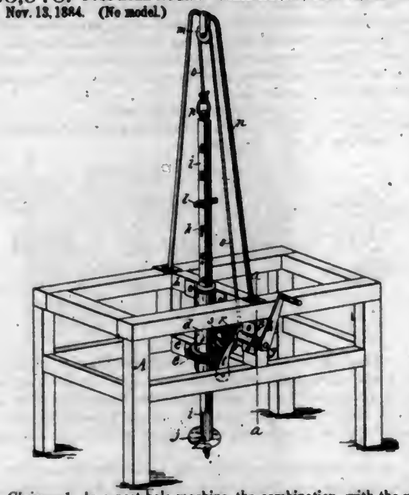
326,975. BALANCE WEIGHING-SCALE. WALTER B. GUILD, Boston, Mass. Filed Oct. 9, 1884. (No model.)



Claim.—1. The combination, in a weighing-scale, of a beam centrally pivoted, and a scale-pan suspended from near or at each end of the beam, a series of graduations being formed on said beam from the fulcrum toward each or either end of the same, and ceasing at a point immediately above the point of suspension of the adjacent scale-pan, and poises or weights adapted to be used as described, substantially as set forth.

2. The combination, in a weighing-scale, of a beam, a pan or receptacle suspended at or near the end of said beam, which is provided with a series of graduations extending to a point above that from which said scale-pan is suspended, and a depending index-arm, E, and arc D, substantially as set forth.

326,976. POST-HOLE AUGER. JAMES HAGANS, Maxwell, Ind. Filed Nov. 13, 1884. (No model.)



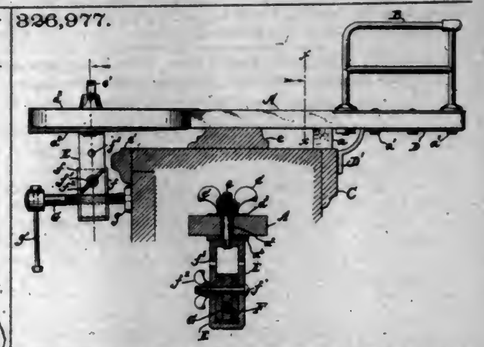
Claim.—1. In a post-hole machine, the combination, with the vertical shaft carrying an earth-auger, the frame *n*, the pulley *m*, and rope *o*, of the bearing B, pulley *r*, arranged to turn on said bearing, shaft *g*, bevel gear-wheel *f*, and a clutch mechanism connecting said pulley *r* and bevel gear-wheel *f*, all substantially as shown and described, and for the purpose specified.

2. In a machine for boring post-holes, the combination, with the supporting-frame, the hollow shaft mounted in said frame, and means, substantially as shown and described, for turning said shaft, of the earth-auger and its graduated shaft having a series of holes and a pin, all substantially as and for the purpose specified.

3. In a machine for boring post-holes, the combination, with the supporting-frame, the hollow shaft mounted in said frame, the bevel-wheels, the crank-shaft, the crank, the earth-auger and its shaft, of the frame *n*, pulley *m*, rope *o*, and pulley *r*, all arranged to co-operate substantially as and for the purpose specified.

326,977. WINDOW-PLATFORM. HENRY HAGEMANN, Chicago, Ill. Filed June 9, 1885. (No model.)

Claim.—1. An adjustable window-platform consisting of a suitable plank provided with crabs for engaging the outer portion of the window-sill, and a clamping device at or near the opposite end adjustably secured to a longitudinal slot within said plank, and provided with a movable block having a vertical adjustment therein, and a set-screw, whereby said platform may be firmly clamped to window-sills of varying width and construction, substantially as and for the purposes set forth.



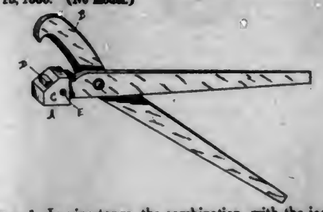
2. An adjustable window-platform provided with an inner wedge-shaped portion or end, as at a^4, and a suitable clamping device adjustably secured thereto by means of a bolt and thumb-nut, whereby a weight upon said platform may serve to tighten the fastening of said clamping device and prevent slipping, substantially as described.

3. The combination, in a window-platform, of the plank A, provided with crabs D' D', slot a^3, having part E adjustably secured therein, said part E being provided with the vertically-adjustable block F, and set-screw G, substantially as and for the purposes specified.

4. The combination, in a window-platform, of the plank A, provided with crabs D' D', slot a^3, wedge-shaped part a^4, said slot having part E adjustably secured therein, the latter being provided with the vertically-adjustable block F and set-screw G, substantially as and for the purposes specified.

5. The combination of the plank A, provided with crabs D' D', slot a^3, wedge-shaped portion a^4, fastening device E, provided with the adjustable block F and set-screw G, and cleats *a*, substantially as and for the purposes described.

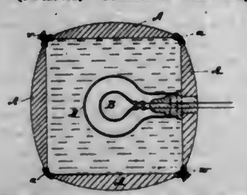
326,978. PIPE-WRENCH. WILLIAM HARRIS, Pittsburg, Pa. Filed July 13, 1885. (No model.)



Claim.—1. In pipe-tongs, the combination, with the jaw A, of the removable shield inclosing the end of said jaw, substantially as set forth.

2. The combination, with the biting-jaw of pipe-tongs, of the bit D, the shield C, and fastening-pin E, constructed substantially as and for the purpose set forth.

326,979. LANTERN FOR ELECTRIC LAMPS. SALOMON HERMAN, London, England, assignor to Frank L. Pommer, New York, N. Y. Filed Aug. 23, 1884. (No model.) Patented in France May 1, 1884, No. 149,449.

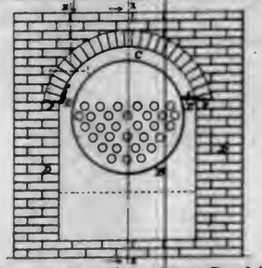


Claim.—1. The combination of a series of lenses, A, forming a transparent lantern-case, with an inner case or chamber, D, rigidly secured to the former, a frame, *a*, which holds lenses A in place, and the wires extending to the carbon or carbons in the interior of case or chamber D, the space between the two cases being filled with uncongealable liquid, substantially as and for the purpose set forth.

2. The combination of outer case, A, and inner case, D, with tubes *s* extending through said cases, stay-bolts *n*, connecting them to one an-

other, carbons B', within said inner case, and the wires extending through said tubes to said carbon, substantially as set forth.

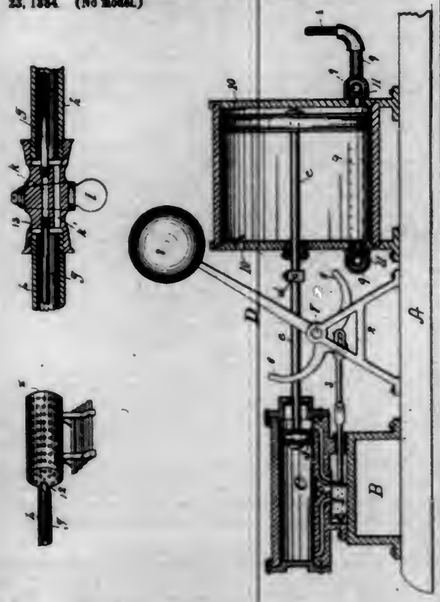
326,980. STEAM-BOILER FURNACE. MILTON P. HENDERSON and ANDREW BERGLAND, Stockton, Cal. Filed June 9, 1885. (No model.)



Claim.—1. In combination with the furnace D and boiler B, the arched hot-air chamber C, and the dampers, substantially as and for the purposes set forth.

2. In combination with the furnace D, having the fire-place A, boiler B, above fire-place A, and arched chamber C, above the boiler B, the dampers composed of the sheet-iron strips E, handle E', hinge-plates *e*, attached to sheet-iron strips E, and hinge-plates *f*, attached at one end to plates *e* and having the other ends embedded in brick-work of furnace D, as described and for the purposes specified.

326,981. APPARATUS FOR MIXING LIQUID FUEL AND AIR. JOHN W. HOARD and FREDERICK R. HOARD, Providence, R. I. Filed May 23, 1884. (No model.)



Claim.—1. In a carbureting apparatus, the combination of the air-pump, the oil can or tank, and their connecting-pipe with the piston-rod having at one end a piston which is operated by an engine, and at the other end a piston for operating the air-pump, said piston serving to continuously force the oil and air upward and outward from said tank to the burner or point of combustion, substantially as set forth.

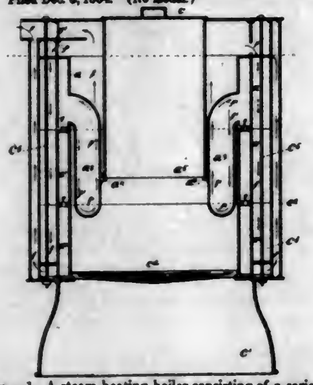
2. In combination with the oil-can, the oil-outlet pipe *g*, reaching nearly to its bottom, and the air-outlet pipe *h* at its top, the pipe *g*, from and beyond the upper part of the can being inside of or inclosed by the pipe *h*, and the two pipes terminating in proximity so as to form a burner, substantially as and for the purposes set forth.

3. In combination with the oil-can and the burner, the cock having two independent passages through it, the pipes *g* and *h*, one within the other, said cock and pipes permitting the control and delivery or cutting off the flow of different materials passing through these pipes, respectively, to the burner, substantially as set forth.

4. The described apparatus for supplying combined air and liquid fuel to burners for heating purposes, consisting of the combination of an engine or motor, the air-pump E, rocking lever D, piston-rod *e*, its clutch or projection *d*, slide-valve 1, pipe 9, oil-can F, and its outlet-pipes *g h*, one within the other, and terminating in proximity so as to form a burner, all substantially as set forth.

5. In combination with the oil can or vessel, and with its air-pipe *h* and oil-pipe *g* within said pipe *h*, the oil-pipe discharging at the outlet of the air-pipe *h*, and a box or cylinder into which such compound pipes discharge, substantially as and for the purpose set forth.

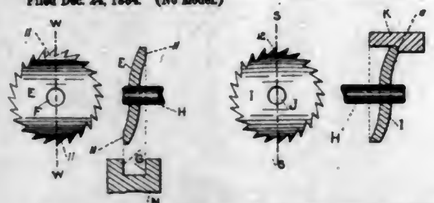
326,982. STEAM-HEATING BOILER. THOMAS P. HOGAN, Buffalo, N. Y. Filed Dec. 3, 1884. (No model.)



Claim.—1. A steam-heating boiler consisting of a series of annular water-sections, each section being provided with outwardly-projecting hollow portions c^3, having holes through which the bolts pass for securing the whole together, the upper section being provided with tubes formed in one piece with it, and which pass vertically downward between the water-sections and the magazine below the top of the lower water-section which forms the fire-box, as and for the purposes described.

2. A steam-heating boiler having the inner jacket composed of a series of doors, c', secured by hinges to the portion c^3 of the water-sections, in combination with the outer jacket, c^3, whereby all the flues may be readily got at, as described.

326,983. CUTTER-HEAD. FRANKLIN HOLLAND, Grand Rapids, Mich. Filed Dec. 24, 1884. (No model.)



Claim.—1. As a new article of manufacture, the cutter-head having the double curve in one cross-section so that the cutters at one end of the section move in a circle on one side of the central point of revolution and the teeth at the other end of the curved cross-section move in a parallel circle on the other side of the center of revolution, substantially as described.

2. The cutter-head curved on the line of cross-section, said curve being S-shaped, and straight on the cross-section at right angles to the curved cross-section, substantially as described.

3. The reversely-curved cutter-head E, provided with the teeth 11, having their one side filed perpendicularly to the axis of the cutter-head to cut perpendicular sides to a dado or widened groove, substantially as described.

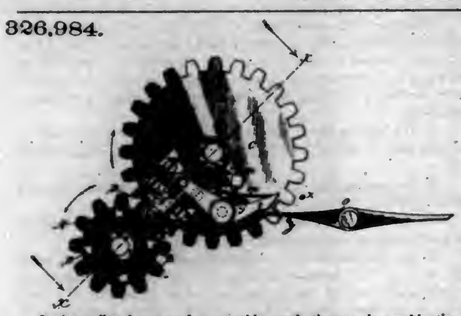
4. The reversely-curved cutter-head I, provided with teeth 12 for raising panels, said teeth being filed upon one side only, so as to make one side of the panel, substantially as shown and described.

326,984. DEVICE FOR STARTING THE DEAD-WHEEL IN MUTILATED GEARS. MARSENA M. HOOTON, Chicago, Ill. Filed Jan. 27, 1885. (No model.)

Claim.—1. A gear having at one point only of its periphery a mutilation of one or more of its teeth, in combination with a single movable tooth mounted thereon, substantially as described.

2. A gear having at one point only of its periphery a mutilation of one or more of its teeth, in combination with a single tooth mounted thereon and movable on a line radial to the axis of said gear, substantially as described.

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3. A mutilated gear and a movable tooth thereon, in combination with the spring actuating said tooth, substantially as described.

4. A mutilated gear and a movable tooth thereon, in combination with the spring actuating said tooth and a screw for adjusting the tension of said spring, substantially as described.

5. The mutilated gear and the sliding tooth, in combination with the lever pivoted on said gear and engaging the sliding tooth, substantially as described.

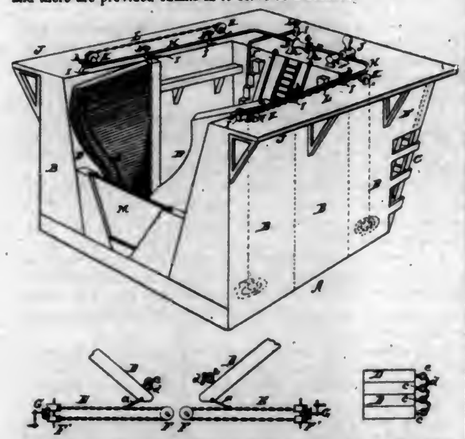
6. A gear having one or more of its teeth removed, in combination with a perfect gear and a movable tooth on the mutilated gear for engaging said perfect gear, substantially as described.

7. A perfect gear and one or more studs on the face thereof, in combination with the movable gear and a movable tooth thereon for engaging said studs, substantially as described.

8. The mutilated gear and the sliding tooth thereof, in combination with a connecting-lever, O, and a connection between said lever and tooth, substantially as described.

326,985. COFFER-DAM. D. WILLIS HOWES, Brooklyn, assignor to the New York Adjustable Stare Dock Company, New York, N. Y. Filed Nov. 12, 1884. (No model.)

Brief.—The body of the coffer-dam is prolonged to serve as a protection for an upright series of arms pivoted at one end and adapted to be swung horizontally. Staples in each of said arms and a connecting-chain fasten them loosely together, with an additional device consisting of the links *a*, chains E, and sheaves F'. Pipes from the interior of the dam and each one of the air-tight compartments connect with a pump, and there are provided chains K to serve as a balance.



Claim.—1. In a coffer-dam employing series of pivoted arms D, capable of being adapted to the sides of the vessel, as described, the prolongation of the body of the coffer-dam beyond the pivots of the said arms D, inclosing the entire outer side of each series of arms, substantially as and for the purpose herein specified.

2. In a coffer-dam provided with series of pivoted arms D, to adapt it to the sides of the vessel to which it is applied, the combination, with the said arms D, of connecting-rods *a*, secured to the lower arms of the series, chains connected with the connecting-rods *a*, and mechanism for operating the chains, substantially as herein described.

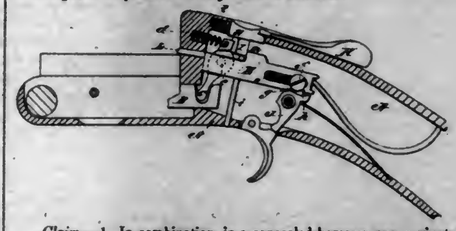
3. In a coffer dam provided with series of arms D, to adapt it to the sides of a vessel, as described, the combination, with the said arms D, of eyes *c*, and chains *d* connected therewith, to hold the arms D in proper relation to each other and to receive ropes by which the said arms are drawn against the sides of the vessel, as herein described.

4. The combination, with a coffer-dam having water-tight compartments B and B', of pipes H I I', and valves for controlling the removal of the water from said compartments, as herein specified.

5. The combination, with a coffer-dam having water-tight compartments B, as described, of sheaves K, and chains L running over the sheaves K, to trim the coffer-dam, as herein described.

326,986. FIRE-ARM. ANDREW HYDE, Hatfield, Mass. Filed Nov. 20, 1884. (No model.)

Brief.—The locking-bolt and the firing-pin are retracted by cam projections of different length upon the pivot-pin of the top lever—the former through the medium of a spring-pressed lever. The locking-bolt is fully retracted when the long cam is brought against the intermediate lever, at which time the short cam brings the firing-pin to half-cock position. The firing-pin is brought to full-cock position when the top lever is turned in the opposite direction, thus bringing the long cam against it and the short cam against the locking-bolt lever. Thus the firing-pin cannot be full-cocked when the locking-bolt is retracted. The parts are so arranged as to produce a safety-catch at half-cock.



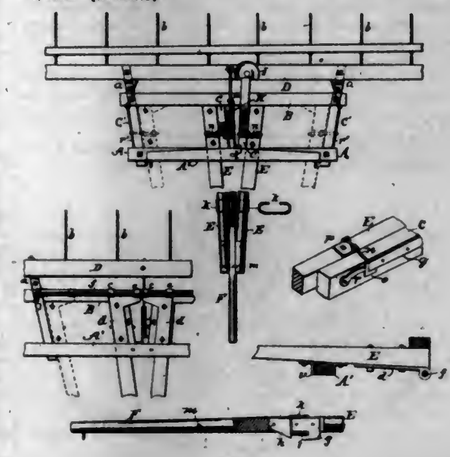
Claim.—1. In combination, in a concealed-hammer gun, a pivoted action-lever, cam projections connected thereto at opposite sides of the pivot and of unequal length, and the striker placed in line of movement of the cams, so that a movement of the lever in one direction may half-cock, and in the other direction full-cock, the piece, substantially as described.

2. The combination, with a pivoted bolt-operating lever and the striker of a concealed-hammer gun having a projection in rear of said lever, of a top-action lever having a double cam projection within the frame between said hammer projection and bolt-lever, positioned to engage with hammer and lever, substantially as described.

3. In a concealed-hammer gun, the combination of a sliding striker having a projection thereon, a pivoted bolt-actuating lever, and a spring bearing against the same, and a top lever having two cam projections of unequal purchase within the frame, extending between the bolt-lever and the projection on the striker, whereby the oscillation of the action-lever in one direction will move the striker to half-cock position without unlocking the bolt, while a movement in the other direction will cock the piece and unlock the bolt, as set forth.

4. In a concealed-hammer gun, the combination, with the striker having a projection therefrom, and a bolt-actuating lever positioned in front of said projection, of a top-action lever pivoted on a line between the striker and bolt-lever, having a double cam projection, which when turned lies in a straight line between the striker projection and the bolt-lever, as set forth.

326,987. POLE AND SHAFTS. JAMES MONDY JACOBSEN, Preston, Iowa, assignor of one-half to Richard M. Enseck, same place. Filed Aug. 2, 1884. (No model.)

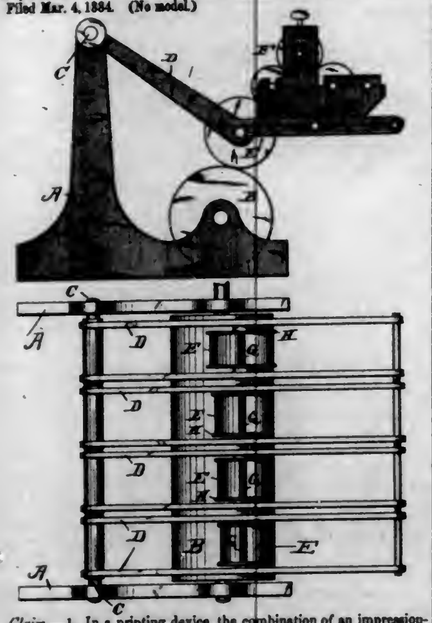


Claim.—1. The combination, with a frame constructed to carry laterally-adjustable poles and shafts, and provided with the end and central pieces, C C', as herein set forth, of the rod *f*, attached to the frame, the shaft E, provided with plates *d*, having eyes *c*, constructed to receive and slide loosely on the rod, and the lock-rods *n*, attached to the shafts and adapted to lock them in position to the pieces C C', substantially as and for the purposes described.

2. The combination, with the laterally-adjustable shafts E, of the removable tongue-piece F, the pivoted dog *i*, the catch *i*, and the band *k*, substantially as and for the purposes described.

3. The combination, with a frame adapted to carry laterally-adjustable poles and shafts, as herein set forth, of the adjustable shafts E, the plates *d*, attached to the shafts and having eyes *c*, the rod *f*, attached to the frame, the lock-rods *n*, the blocks *q*, and the pivoted dogs *r*, substantially as and for the purposes described.

326,988. PRINTING-MACHINE. ALONZO W. JEROME, Paxton, Ill. Filed Mar. 4, 1884. (No model.)

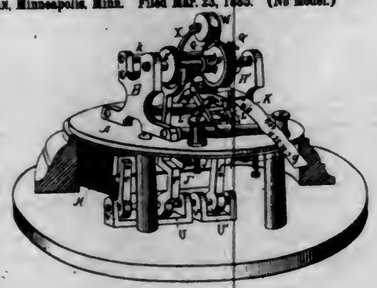


Claim.—1. In a printing device, the combination of an impression-cylinder and two or more type-cylinders having different diameters, arranged in series along said impression-cylinder, each of said type-cylinders being mounted independent of its fellow type cylinder or cylinders, whereby the several type-cylinders may rotate at different rates of speed, while their several peripheries revolve at the speed of the periphery of the impression-cylinder, substantially as set forth.

2. In a printing device, the combination of an impression-cylinder, independent type-cylinders arranged in series along said impression-cylinder, and an independent series of type-cylinder-supporting arm-frames pivoted upon an axis parallel with the impression-cylinder, substantially as and for the purpose set forth.

3. In a printing device, the combination of frame-work A, impression-cylinder B, rod C, arm-frames D, type-cylinders E, having side flanges, H, and inking apparatus F, substantially as and for the purpose set forth.

326,989. PRINTING-TELEGRAPH RECEIVER. CHARLES M. JORDAN, Minneapolis, Minn. Filed Mar. 23, 1885. (No model.)



Claim.—1. The combination, in a telegraph printing-instrument, of one electro-magnet acting upon two polarized armatures parallel to each other but reversed as to their poles, one actuating the type-wheel escapement by currents of one polarity, the other actuating the printing, paper-feeding, pad-shifting, and unison-stop mechanisms by reversing the current.

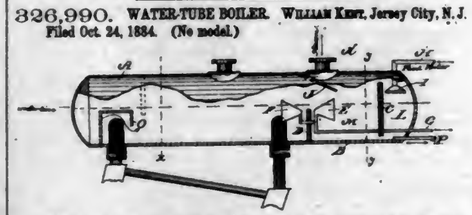
2. The combination of the lever I, pins K, T, M, and M', bars L, printing-plate G, shifting yoke N, and pad S, to form a printing mechanism.

3. The combination of the pin T, dog Z, dogs or clips *a' a*, and printing-plate G, to form a feed mechanism.

4. The combination of the lugs R and R', yoke N, arms Q and Q' on the type-wheel, to form a shifting mechanism.

5. The combination of the electro-magnet H, acting upon a polarized armature, J', screwed to a lever, I, whose bearings are centered screws at the base of the machine, a slot in upper end of lever I engaging the sleeve-piece on pin K, sliding in grooves in base-piece Y, said base-piece being fastened to bed-plate A, said pin K protruding sufficiently to pass the side bars, L, the rear side bars, L, being pivoted to the base-piece Y at its opposite end by pin M, the side bars, L, crossing each other and pivoted at their centers, the upper end of bars L pivoted on pin M and pin T, pin T sliding in grooves in printing-plate G, the printing-plate G, carrying the yoke N, pivoted at the back part of printing-plate and having a lateral motion, allowing the pad S to engage either letters or numerals on the type-wheel, said yoke N having on either side lugs R and R', by which said lateral motion is produced when lug R or R' engages arm Q or Q' on type-wheel and the printing-plate raised, the feed-dog Z, riveted to the pin T and partaking of its movements, carrying the paper along on the release of the armature J, and the fixed dogs A and A', riveted to the printing-plate G, the whole forming a printing, paper-feeding, pad-shifting, and unison stop mechanism in a telegraph printing-instrument, substantially as described.

326,990. WATER-TUBE BOILER. WILLIAM KENT, Jersey City, N. J. Filed Oct. 24, 1884. (No model.)



Claim.—1. In a water-tube boiler, the drum prolonged to the rear of the downtake, and having in said prolongation the feed-water inlet and vertical partitions, whereby the impurities are separated from the feed-water before the latter enters the downtake, substantially as shown and set forth.

2. In a steam-boiler, the partition D, situated in the rear of the downtake and dividing the boiler into two compartments, the rear one of which is used as a settling-tank for purifying the feed-water before the latter enters the other, substantially as set forth.

3. A prolongation of the drum of a water-tube steam-boiler in the rear of the downtake, having the partitions C D with the space M between them, forming a settling-tank for the purification of the feed-water, substantially as specified.

4. A water-tube steam-boiler having the water-drum prolonged to the rear of the downtake, and provided with one or more partitions in said prolongation, and having the feed-water-entrance pipe in the steam-space in one of the compartments formed by one of the partitions, substantially as set forth.

5. In a steam-boiler divided into two compartments by the partition D, the scum-catching pan E, with its blow-off pipe G, so placed as to intercept the scum which would otherwise flow from one compartment to the other, substantially as described.

6. In a water-tube boiler, the combination of the prolongation of the drum, the partitions C D, and the scum-catching pan E, substantially as described.

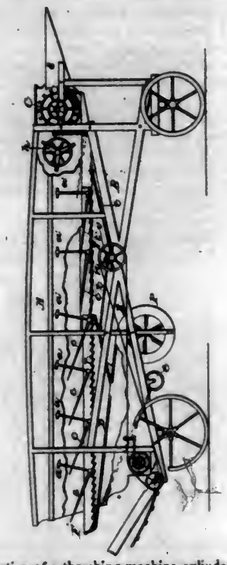
7. In a water-tube boiler provided with a longitudinal steam and water drum, a diaphragm in the steam-space of the drum in the rear of the uptake, dividing the steam-space into two portions and extending below the water-level, substantially as set forth.

326,991. THRASHING-MACHINE. JAMES E. KIDDLE, Vicksburg, Mich. Filed July 11, 1884. (No model.)

Claim.—1. A thrashing-machine frame composed of side beams at the top, vertical frame-beams connecting therewith, and inclined crossed truss-beams at the lower sides connecting with and supporting and bracing said vertical beams, substantially as set forth.

2. In a thrashing-machine frame, the combination of vertical frame-beams and inclined crossed truss-beams connecting with and supporting and bracing said frame-beams, substantially as set forth.

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3. The combination of a thrashing-machine cylinder having an extended axle end, the cylinder-bearings, and a band-wheel secured on said axle end, having a central portion abutting against a cylinder-bearing, substantially as set forth.

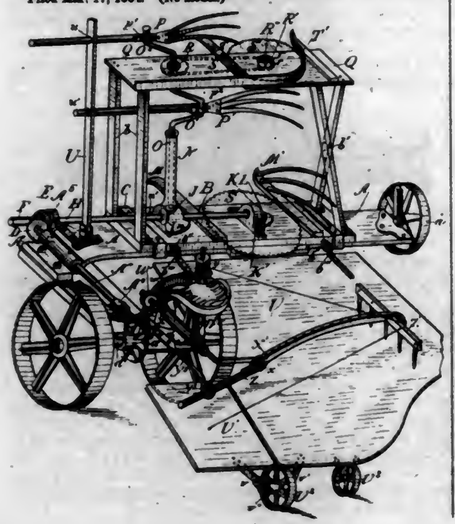
4. The combination of a thrashing-machine cylinder having the extended axle end, the cylinder-bearing, a band-wheel having a central portion abutting against the cylinder-bearing, and a set-screw securing the band-wheel to said axle end, substantially as set forth.

326,992. BUTTON. EDMOND KUHN, Brooklyn, N. Y. Filed May 29, 1885. (No model.)



Claim.—The hollow head E, post D, and pins *h*, combined with the spring-latch F, contained with said hollow head E, and with the hollow post A, that fits the central aperture of the lower plate, *l*, of said hollow head, said post A having bayonet-slots *a*, concealed by the tube *n*, and the shoe B and spring *d*, substantially as herein shown and described.

326,993. CORN-HARVESTER. GEORGE H. KUHLMAN, Shakopee, Minn. Filed Mar. 17, 1884. (No model.)



Claim.—1. The combination, with the main frame of the machine, of a vertically-adjustable bed or supporting-sill which is attached to the carriage, a base-plate or carrier which is longitudinally adjustable upon the bed or supporting-sill, and a cutting mechanism which is attached to the base-plate or carrier.

2. The combination, with the main frame of the machine, of a bed or supporting-sill which is loosely connected to the carriage, a base-plate or carrier which is longitudinally adjustable upon the bed or supporting-sill, vertical supports upon the base-plate or carrier, a table which rests upon the vertical supports, and a cutting mechanism which is attached to the table.

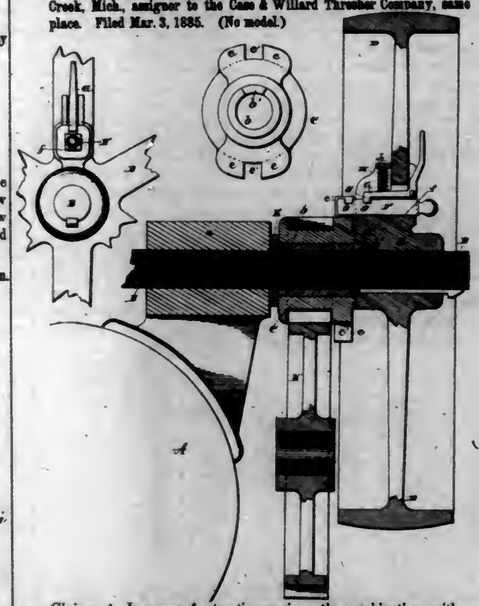
3. The combination, with the main frame of the machine, of a bed or supporting-sill which is loosely connected to the carriage, a sliding base-plate or carrier which is mounted upon the bed or supporting-sill, a hollow standard mounted upon the carrier, and a vertical crank-shaft supported within the hollow standard.

4. The combination, with the main frame of the machine, of a bed or supporting-sill which is attached to the carriage, a standard fixed upon the bed or supporting-sill, a base-plate or carrier which is horizontally adjustable upon the bed or supporting-sill, a lower cutting mechanism which is directly connected to the base-plate or carrier, and an upper cutting mechanism which is supported by standards which rest upon the base-plate or carrier.

5. The combination, with the main frame of the machine, of a bed or supporting-sill which is connected to the carriage, a base-plate or carrier which is supported upon the bed or supporting-sill, a lower cutter which is connected to the base-plate or carrier, standards which are supported upon the base-plate or carrier, a table which is supported upon the standards, an upper cutter which is connected to the table, and mechanism, substantially as described, whereby both cutters may be simultaneously operated.

6. The combination, with the main frame of the machine, of a laterally-projecting bed or supporting-sill, a longitudinally-adjustable base-plate or carrier which is supported upon the bed or supporting-sill, a horizontal shaft attached to the base-plate or carrier and extending along the same, a loose bevel-wheel fitted upon the outer end of the shaft, and a spline fitted to the shaft and to the loose bevel-wheel.

326,994. TRACTION-ENGINE GEAR. MINARD LAFEVER, Battle Creek, Mich., assignor to the Case & Willard Thresher Company, same place. Filed Mar. 3, 1885. (No model.)



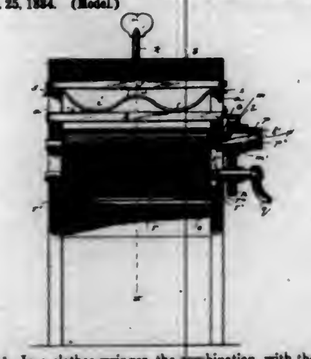
Claim.—1. In a gear for traction-engines, the combination, with a driving-shaft and a band or fly-wheel secured thereon, of a sleeve loosely mounted on the shaft between the fly-wheel and pillow-block and a non-sliding pinion loosely mounted on the sleeve for transmitting power to the drive-wheels, substantially as set forth.

2. In gear for traction-engines, the combination, with the driving-shaft projecting beyond the pillow-block and having a band or fly wheel secured on its outer end, of a sleeve loosely mounted on the shaft between the fly-wheel hub and pillow-block, and caused to rotate with the fly-wheel, a non-sliding pinion loosely mounted on the sleeve for actuating the drive-wheels, and means for locking the pinion to the fly-wheel and releasing it therefrom at pleasure, substantially as set forth.

3. In gear for traction-engines, the combination, with the drive-wheel actuating-pinion and the fly-wheel secured on the drive-shaft in close proximity to the pinion, of a sliding key located in the hub of the fly-wheel and adapted to engage a notch or recess in the pinion and a spring-actuated dog for holding the key in sliding adjustment, substantially as set forth.

4. In gear for traction-engines, the combination, with the drive-wheel actuating-pinion loosely mounted on a sleeve, the latter being loosely mounted on the drive-shaft and locked to the hub of the fly-wheel, of recessed projections formed on the pinion, a sliding key located in the hub of the fly-wheel and adapted to engage the recess in the pinion, and a spring-actuated dog for holding the key in the desired adjustment, substantially as set forth.

326,995. CLOTHES-WRINGER. ISAAC R. LAHR, Wadsworth, Ohio. Filed Mar. 25, 1884. (Model.)



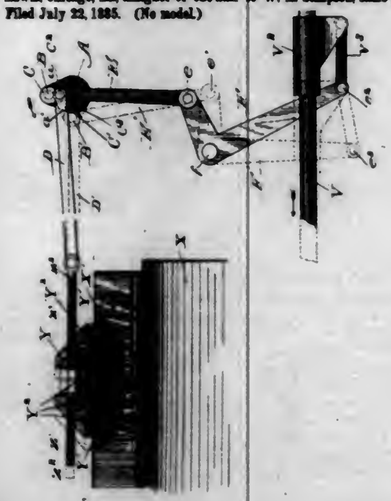
Claim.—1. In a clothes-wringer, the combination, with the rollers, the pressure-bar *h*, follower-block *j*, and tension-screw, of the spring *i*, shaped substantially as shown and described, and having the two bearing-points 1 2 on the pressure-bar, and the three bearing-points 3 4 5 on the follower-block, substantially as and for the purpose specified.

2. The upper roller of a clothes-wringer having the bearing-block *o*, provided with a cavity, *o'*, and the rounded cavities o^2, radiating therefrom, the pinion *l*, having the elongated tubular hub *l'*, provided with the cavity m^2 and radiating rounded cavities m^3, and the link *p*, having rounded ends *p'*, and radial projections p^2 at each end to engage such cavities, and the bearing box or cap *m*, inclosing and supporting said pinion and the lower roller and its pinion, all combined and arranged to operate substantially as and for the purpose described.

3. The concave imperforate drip-pan *r*, provided with pivots at each end, combined with the standards, and a spring-fingered yoke, substantially as set forth, to connect said pan with the lower roller-shaft, substantially as and for the purpose described.

4. The concave imperforate drip-pan *r*, provided with the lips or flanges r^2, the pivots at each end, and a spring-fingered yoke at one end, combined with the standards and lower roller, substantially as described.

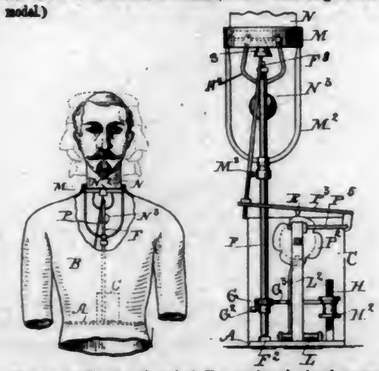
326,996. VALVE-GEAR FOR DUPLEX PUMPS. WALLACE JAMES LEWIS, Chicago, Ill., assignor of one-half to W. A. Sampson, same place. Filed July 22, 1885. (No model.)



Claim.—1. In a valve-gear for duplex pumps, a quarter-crank shaft having each crank provided with an auxiliary crank thereon, connected with the steam-valve of said pump, in combination with bell-cranks having rod-connection with the piston-rods of said pump and with said quarter-crank shaft, all substantially as described, and for the purpose specified.

2. In a valve-gear for duplex pumps, a quarter-crank shaft having each crank provided with an auxiliary crank thereon, adjustably attached thereto and connected with the steam-valve of said pump, in combination with bell-cranks having rod-connection with the piston-rods of said pump and with said quarter-crank shaft, all substantially as described, and for the purpose specified.

326,997. AUTOMATIC ADVERTISING DEVICE. ADAM D. LITTLETON and JOHN M. CLARK, Des Moines, Iowa. Filed Aug. 18, 1884. (No model.)



Claim.—1. The rotating shaft F, carrying the head or upper portion of an automaton, the pinion G, the vibrating arm and toothed segment G^2 G^4, having a slot, G^3, the cylinder J J^2 on a driving-shaft, J^3, and the pivoted rod L^2, arranged and combined in an automaton form to operate in the manner set forth, for the purposes stated.

2. A post or shaft, F, having a collar, M, at its top, a pivoted head or section, N, of an automaton having a balancing weight, N^3, attached, a prop, P, flexibly connected with the part N, a rotating cam-wheel, P^2, and a pivoted lever, P^3, having a fixed fulcrum, R, arranged and combined to operate in the manner set forth, for the purposes specified.

3. The automaton advertising device composed of the following elements, to wit: a vertical shaft having a fixed pinion at its lower portion, a pivoted arm carrying a toothed sector to engage the pinion, a head or section of a person or animal pivoted to the elevated fixed collar, a horizontal driving-shaft having a fixed cylinder that has a continuous cam-groove in its outside surface, a pivoted rod extending through the pivoted arm and toothed sector to terminate in the groove of the cylinder, a cam-wheel on the driving-shaft connected with the pivoted head or section by means of a lever and prop, a form and base adapted to inclose and support the operating mechanism, and a motor adapted to rotate the driving-shaft and to be concealed within the form of the automaton, substantially as and for the purposes stated.

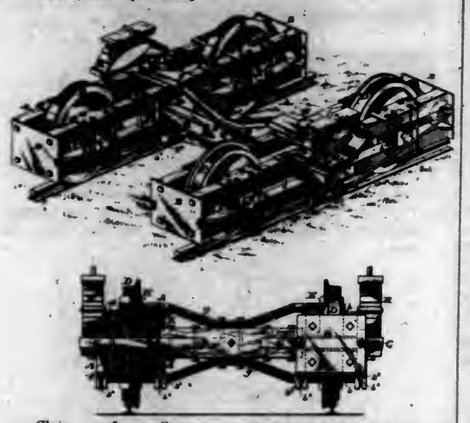
326,998. LUBRICATOR. JOHN M. W. LOSS, Hamilton, Ohio. Filed July 25, 1885. (No model.)



Claim.—1. In a lubricator, the combination of a cylindrically-bored cap, a piston fitted to reciprocate therein, a stem screwed through the piston and provided with an upwardly-facing shoulder and with a head by which it may be rotated, a cap serving to close the cap and to furnish a guide for the upper end of the stem, and a spring engaging the shoulder of the stem and abutting against the cap, substantially as and for the purpose set forth.

2. In a lubricator, the combination of the cylindrically-bored cap A, the cap B, screwed thereon and provided with an upwardly-projecting hollow boss, C, having an inner shoulder at its top, the piston D, fitting within the bore of the cap and having a threaded axial hole, the stem E, screwed through the piston and projecting through the top of said boss, the handle-like head F, secured to the top of the stem, the lock-nuts G upon the thread of the stem, and the helical spring H, surrounding the stem and engaging the lock-nuts and the inner shoulder of the boss, substantially as and for the purpose set forth.

326,999. CAR-TRUCK. EDWIN C. MANNING, Washington, D. C. Filed June 6, 1885. (No model.)



Claim.—1. In a railway-car truck, independent wheel-carrying frames composed of four longitudinal bars, the wheels being located between the inner and outer pairs of bars, while the axle-boxes are secured between the upper and lower bars of each pair at each side of the wheels, substantially as hereinbefore set forth.

2. In a railway-car truck, the combination of independent wheel-carrying frames composed of four longitudinal bars, the wheels being located between the inner and outer pairs of bars, and the axle-boxes between the upper and lower bars of each pair, with a transverse central bolster passing through said frames in the plane of the axle-boxes and pivoted thereto on a king-bolt located in the vertical plane of the wheels.

3. In a railway-car truck, the combination of independent wheel-carrying frames constructed substantially as described, a transverse central bolster passing through said frames in the plane of the axle-boxes, brace-bars extending from the bolster across the tops and bottoms of the upper and lower bars, respectively, of the wheel-frames, and king-bolts which pass through the bolster and its two brace-bars, pivoting them to the wheel-frames, substantially as hereinbefore set forth.

4. In a railway-car truck, the combination of independent wheel-carrying frames constructed substantially as described, a transverse central bolster passing through said frames in the plane of the axle-boxes, brace-bars extending from the bolster across the tops and bottoms of the upper and lower bars, respectively, of the wheel-frames, the lower one again united to and supporting the bolster outside of the wheel-frames, and king-bolts which pass through the bolster and its two brace-bars, pivoting them to the frames, substantially as hereinbefore set forth.

5. A railway-car truck consisting of the combination of two independent parallel wheel-carrying frames and a transverse bolster centrally pivoted to each frame and extending laterally therefrom to form the support for the load outside of the wheel-frames, substantially as hereinbefore set forth.

6. A railway-car truck consisting of the combination of two independent parallel wheel-carrying frames, a transverse bolster centrally pivoted to each frame and extending laterally therefrom, and a spring secured at each projecting end of the bolster and adapted to support the body of the car, substantially as described.

7. In a car-truck, the combination, with two parallel independently-pivoted wheel-frames, of a central connecting-bolster, and guards attached to the wheel-frames to limit the movements of the bolster and frames with respect to each other, as set forth.

327,000. EXHIBITOR FOR ARTICLES OF MERCHANDISE. JACKSON P. MARSHALL and ARTHUR R. HOWES, Winona, Minn. Filed Apr. 13, 1885. (No model.)

Claim.—1. In an exhibitor, the combination, with the body thereof having guide-strips, of the shafts and the endless carrier provided at intervals with strips having supporting and guiding rollers.

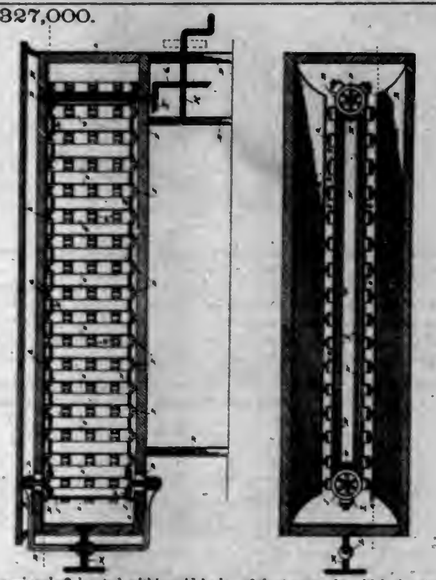
2. In an exhibitor, the combination, with the body thereof, of the shafts mounted therein and provided with wheels, mechanism to rotate one of said shafts, and the endless belts fitted to the said wheels and provided at intervals with strips having supporting and guiding rollers.

3. In an exhibitor, the combination, with the body thereof, of the shafts mounted therein and provided with wheels to rotate one of said shafts, the endless belts fitted over said wheels and provided with strips at intervals having supporting and guiding rollers, the guides with which the guiding-rollers engage, and the strips to prevent the belts from sagging inwardly.

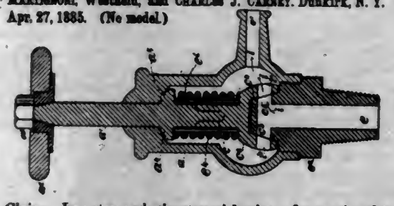
4. In an exhibitor, the combination, with the body thereof and a carrier-shaft located within said body, of the bracket in which the shaft is journaled, and the adjusting-screw engaging with the bracket and connected with the body of the exhibitor so as to rotate.

5. In an exhibitor, a carrier constructed of belts and strips secured thereto at intervals and provided with supporting and guiding rollers.

327,000.

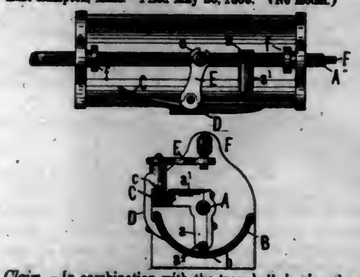


327,001. SELF-PACKING AND SELF-GRINDING COCK. BENJAMIN MARTINSONS, Westfield, and CHARLES J. CARNEY, Dunkirk, N. Y. Filed Apr. 27, 1885. (No model.)



Claim.—In a stop-cock, the stem *a'*, having a flange, a^4, and tongue *c*, in combination with the cap c^3, provided with an opening or depression, *c'*, a tube, c^4, and a spring, c^5, for keeping the cap and flange to their seats, substantially as and for the purposes specified.

327,002. VALVE-MOTION FOR STEAM-PUMPS. JOHN MATHER, East Hampton, Mass. Filed May 20, 1885. (No model.)

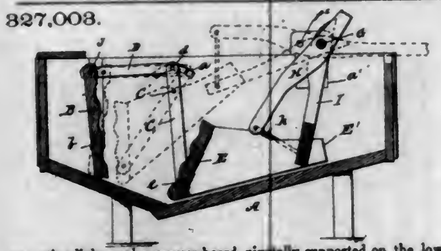


Claim.—In combination with the trough B, having the way-bar *b*, and the tappet-block *a*, having the recess a^2, the horizontal rocker-bar C, having the vertical shaft *c*, held in the socket-bearings of the vertical bracket D, the right-angled arm *c'* being adapted to act directly upon the rocker-bar at each movement of the piston, and the arm E and valve-rod F, having a capacity for adjustable connection, and both ends of the latter extending through the guide-pieces.

327,003. WASHING-MACHINE. SAMUEL P. MEDAY, Kilbourn, Ohio. Filed Apr. 3, 1885. (No model.)

Claim.—1. In a washing-machine, the combination of a pivoted resistance or back board, a hanger pivoted between its ends and connected at its upper end with the upper end of the resistance-board by

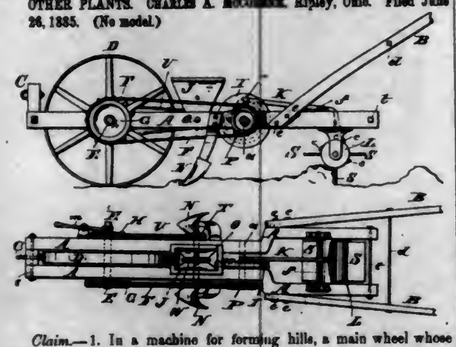
327,003.



connecting-links, and a presser-board pivotally supported on the lower end of the hanger, substantially as set forth.

2. In a washing-machine, the combination, with a swinging hanger and a presser-board pivotally supported thereon, of a guide and pusher bar pivoted at one end to the presser-board and at its other end to a suitable support, the pivoted lever, and a link or stirrup connecting the presser-board and the resisting end of said lever, substantially as set forth.

327,004. MACHINE FOR MAKING HILLS FOR TOBACCO AND OTHER PLANTS. CHARLES A. MCCORMICK, Ripley, Ohio. Filed June 26, 1885. (No model.)



Claim.—1. In a machine for forming hills, a main wheel whose axle carries also on one end a sprocket or other wheel capable of communicating motion through a chain or belt to a similar wheel actuating a cam, in combination with a reciprocating lever working in said cam, whereby the same releases or holds a drum containing wings or scrapers which revolve with said drum, substantially as shown and described, and for the purpose specified.

2. A drum arranged between hangers attached to the frame, and provided with an axle on which it rotates, and wings or scrapers for gathering up the soil, together with stops or projections which impinge against a reciprocating shaft, so as to hold the drum at rest or allow it to be turned when the shaft is not in connection with them, substantially as shown and described, and for the purpose specified.

3. The combination, in a machine designed for forming hills for tobacco and other plants, of a cam-wheel operating an arm or shaft to engage or disengage with teeth on the periphery of a drum provided with scrapers, said shaft or arm being provided with a slot which acts as a fulcrum and limits its forward and backward throw, substantially as shown and described.

327,005. EAVES-TROUGH. MARTHA MCCOY, McCoy, Ind. Filed Sept. 10, 1884. (No model.)



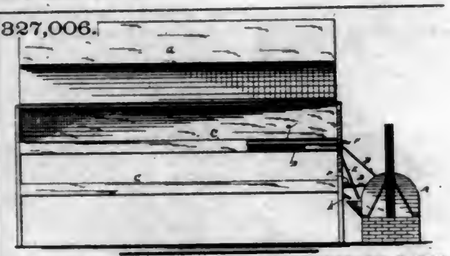
Claim.—1. The combination, with the trough A, of the strainer *a*, secured across its top and extending over its edges, whereby dirt is prevented from entering said trough, substantially as shown and specified.

2. The combination of the eaves-trough A, having roll-bend *a'*, and the strainer *a*, secured at one side by being bent around and under said bead, substantially as shown and specified.

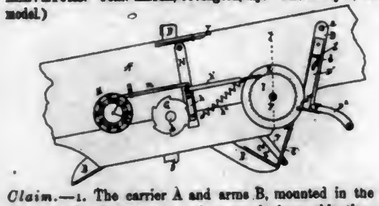
327,006. FRUIT-DRIER. JOHN GERLE MCNAUGHTON, Marion, N. C. Filed June 11, 1884. (No model.)

Claim.—The combination of a series of pans, C, each provided with two bottoms forming a steam-compartment between them, the steam-spreaders D, each consisting of an arched passage closed at its bottom and finely perforated throughout the whole area of its arched top, located within the steam-compartments and extending the length thereof, the steam-pipe B, and the discharge-pipe E, entering the space beneath the arch, substantially as shown and described.

327,006.



327,007. AUTOMATIC FEEDER AND REGISTER FOR BARREL-ELEVATORS. JOHN MEYER, Covington, Ky. Filed May 1, 1885. (No model.)



Claim.—1. The carrier A and arms B, mounted in the carrier-frame in the path of the kegs passing over it, in combination with the pivoted arm H, pawl *m*, the cam G, shaft *b*, and register actuated by the vibrating arm H and pawl *m*, substantially as described.

2. In a keg-carrier, the combination of the revolving arm B, the shaft *b*, upon which the arms are mounted in the path of the passing kegs, the cam G, secured upon shaft *b*, the swinging lever H A, the pawl *A'*, pivoted upon arm H, the ratchet I, and disk E, provided with a notch, *e*, with the stop C, and its arm D D', and engaging-pin, whereby the said stop is held out of the path of the revolving arms B by the said disk E until its notch *e* comes opposite the pin d^2, when it is brought into the path of the said arms for the purpose of stopping them and the further delivery of kegs when the predetermined number has passed the said arms.

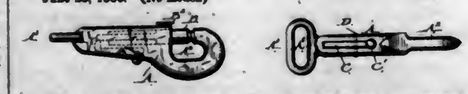
3. A registering mechanism for predetermining the number of kegs passing over an elevator-feeder, consisting of the shaft F, disk E, provided with notch *e*, ratchet I, hand J, secured upon said shaft, and stationary dial K, in combination with an actuating-pawl operated by the mechanism set in motion by the passing kegs, and a stop, as C, and its connections, to arrest the said mechanism and prevent the further passage of kegs when the hand J and notch in disk E reach the position shown.

4. The combination, substantially as described, of the keg-carrier and the register N with the levers P, which operate the register mechanism, said levers being arranged in the path of the kegs passing over the carrier to be pressed by them, springs *p'*, to return the levers in the path of the next keg, and pawls *p*, the notched disk E, and the register-shafts.

5. In an automatic feeder for barrel-elevators, the combination, substantially as hereinbefore set forth, of the shaft *b*, the automatic feed-arms B, secured upon said shaft, with register M, pawl *m*, pivoted arm H *h*, and cam G, secured upon said shaft *b*, whereby the register is operated and the number of kegs passing over the carrier registered.

6. In a barrel-carrier such as described, the combination of rotating arms arranged to be revolved by the kegs passing over the carrier, a registering device to predetermine the number of kegs fed over the carrier, and the stop C to arrest the arms when the predetermined number of kegs have passed, a general register, M, to register the entire number delivered, and individual registers N, having their actuating-levers in the path of the passing kegs to determine the number of kegs delivered to each driver, the parts being arranged and operating substantially as described.

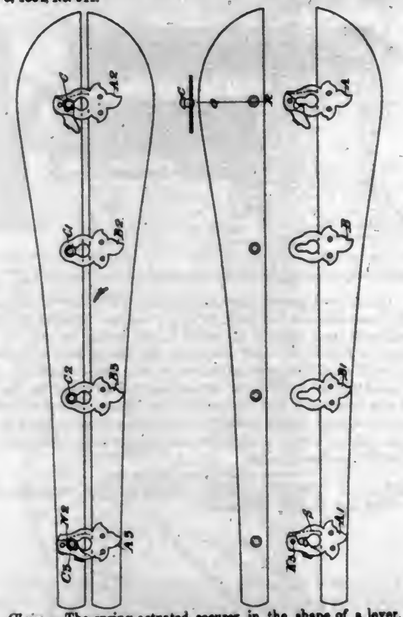
327,008. SNAP-HOOK. EDWARD J. MILLER, Farmersville, Pa. Filed June 23, 1885. (No model.)



Claim.—1. As an improved article of manufacture, a spring-bolt snap-hook having said bolt automatically locked upon contact between the front end of the bolt and the open end of the head A^2 by a sub-lock having a tail dropped within a recess in said bolt or in the rear of the bolt-stem, and provided with a spring at its front or head to retain the sub-lock in place, substantially as shown, and for the purpose set forth.

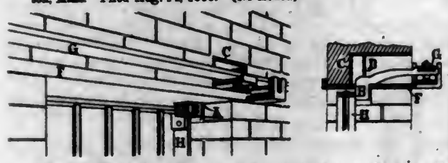
2. As an improvement in snap-hooks, the bolt B, having a reduced stem portion, B', forming a shouldered seat for a spiral spring, E, a guide-perforation, A^3, provided for said stem at the base of the bolt pocket or bore A', in combination with the bolt-head B^2, slot A^4, sub-lock C, and tail C^2, as described, and for the purpose set forth.

327,009. FASTENER. GUSTAVE WILHELM MORRSTADT, Birmingham, England. Filed June 23, 1884. (No model.) Patented in England Jan. 8, 1884, No. 911.



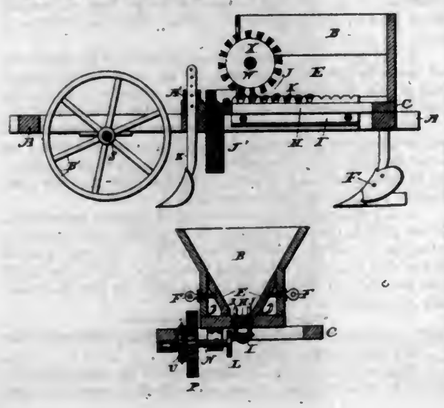
Claim.—The spring-actuated securer in the shape of a lever, the said lever being provided with a securing-bar and working on a pivot, in combination with a plate in which is a key-hole-shaped opening, and in combination with a stud, for the purpose of locking or fastening the said stud in the narrow end of key-hole-shaped opening.

327,010. BOLT-OPERATING DEVICE. LORENZO G. MOULTON, Boston, Mass. Filed Aug. 14, 1885. (No model.)

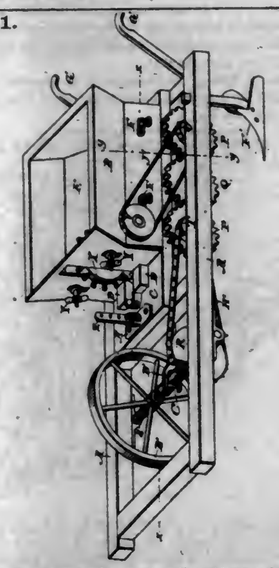


Claim.—The tintel provided with the slot A, the movable piece B, the box or cover C, provided with the rib D, in combination with the locking-bar G, substantially as described, and for the purpose set forth.

327,011. POTATO-PLANTER. JOSEPHUS NORTON, Sr., New Albany, Ind. Filed July 14, 1885. (No model.)

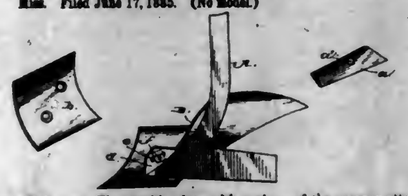


327,011.



Claim.—In a potato-planter, the adjustable trough-formed hopper B, having adjustable sides and bars D D, which form the throat of the hopper for adjusting the width of the opening, as above described, in combination with the center rib, H, adjusting-screws F F, toothed racks I I, and brush-wheel X, substantially as herein described, and for the purpose set forth.

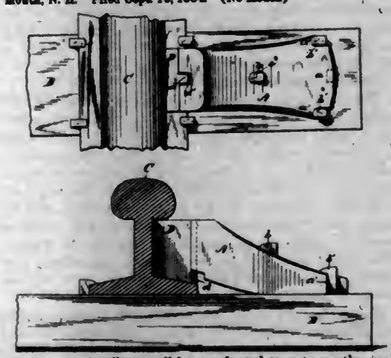
327,012. COTTON-SCRAPER. NICHOLAS CROMWELL ORREK, Canton, Miss. Filed June 17, 1885. (No model.)



Claim.—1. The combination, with a plow, of the scraper attached thereto, and the brace-plate having the diagonal slot, and the bolt passing through said slot for securing the brace-plate to the scraper, said bolt extending through the slot, and the brace-plate bearing against the land-side of the plow, substantially as described.

2. The combination, with a plow having the ledge B, of the seat *a*, the scraper *b*, said seat and scraper being secured to the plow, and the brace-plate *d*, adapted to be secured to the projecting side of the scraper and moved to bear against the landside of the plow, for the purpose set forth, substantially as described.

327,013. RAILWAY-RAIL BRACE. MICHAEL R. PERKINS, Portsmouth, N. H. Filed Sept. 16, 1884. (No model.)

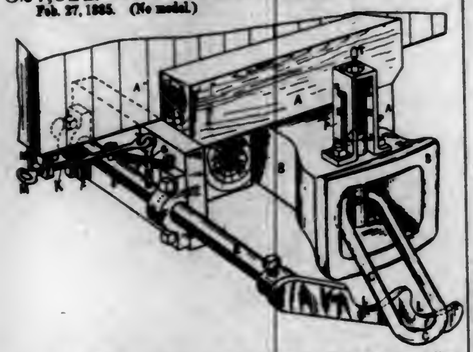


Claim.—1. A railway-rail brace adapted to rest upon the upper surface of a tie and be secured thereto by suitable spikes, and having that

portion of its bottom in contact with the tie plane from end to end, in combination with a cushion-block interposed between the rail and brace, substantially as shown and described.

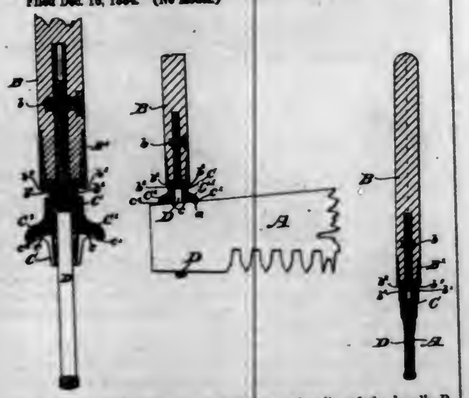
2. The brace A, having the shoulders *a'*, in combination with the spikes *b'* and block D, interposed between the rail and brace, substantially as shown and described.

327,014. CAR-COUPLING. JOSEPH PERLPS, Newton, Mass. Filed Feb. 27, 1885. (No model.)



Claim.—The combination, with the draw-bar B, having a coupling-link, C, and pin D, of the rocker-bar E, having an arm, H, provided with incline-faced notches L, adapted to engage with said coupling-link when actuated by means of the stud G, and operating-rod K, so as to raise said link, as set forth.

327,015. SAW-HANDLE. ROBERT M. POINDEXTER, Indianapolis, Ind. Filed Dec. 16, 1884. (No model.)

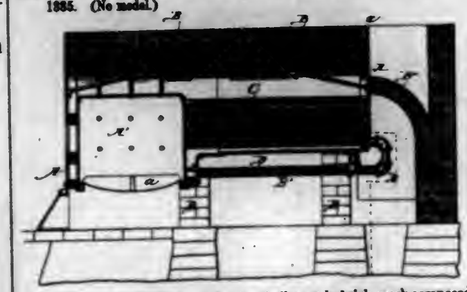


Claim.—1. The combination, in a saw-handle, of the handle B, ferrule B', having downwardly-projecting flange *b'*, the washer C, the top end of which is adapted to receive said flange, strap D, having the washer mounted thereon, arms C', extending out on each side of said washer and bearing on the edge of the saw, the lower end of said washer from said arms to its lower end being provided with a slot, which is practically a continuation of the groove in the under side of said arms, whereby said washer is adapted to extend down on each side of the saw and give lateral support to the handle, substantially as set forth.

2. The combination of the saw A, the handle B, ferrule B', having a downwardly-projecting annular flange, *b'*, and also having a concave shoulder, *b²*, formed between the upper end of said flange and the outside edge of said ferrule, washer C, the top edge of which is formed to fit into said shoulder *b²*, and the top of which is provided with an opening to receive the flange *b'*, and the lower end of which is provided with a slot to receive the edge of the saw, the arms C', extending out on each side of said washer, provided with bearing-points *c'* on their ends, one of which engages with a notch, *a*, in the back of the saw, and the strap D, on which said washer is mounted, one end of which engages with a not in the handle, and the other end of which surrounds the end of the saw, all substantially as described, and for the purposes specified.

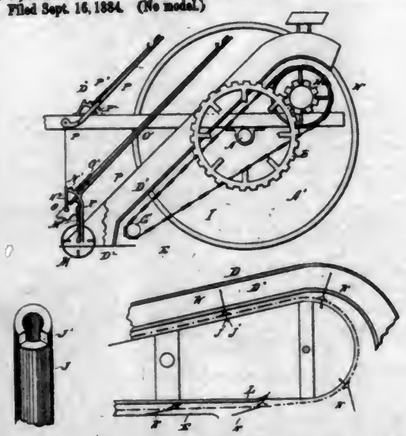
3. The combination, with a saw, of the handle B, having a ferrule, B', provided with a flange, *b'*, the washer C, the top end of which is adapted to receive said flange, and the lower end of which extends down on each side of the saw, arms C', extending out on each side of said washer and bearing on the edge of the saw, and the strap D, the top end of which is screw-threaded and operates in a nut in said handle, said strap being also bulged out where it enters the lower end of said washer, substantially as described, and for the purposes specified.

327,016. BOILER. LEON H. PRENTICE, Waukegan, Ill. Filed Mar. 6, 1885. (No model.)



Claim.—A locomotive or fire-box boiler set in brick-work composed of the usual side and end walls, forming a chamber inclosing the entire boiler, with open space B' all around it, and having an arch, B'', between the end of the boiler just above the central flues and a lower point on the end walls, such boiler having one or more circulating-pipes, D, connecting the water-space surrounding the bottom of the fire-box with the water-space near the bottom at the opposite end of the boiler, said pipe or pipes passing under the boiler in the space traversed by the products of combustion emitted from the central flues, substantially as and for the purpose specified.

327,017. POTATO-DIGGER. ALBERT L. PURDY, Allentown, N. Y. Filed Sept. 16, 1884. (No model.)



Claim.—1. In a potato-digger, an elevator having a base-plate or shovel and slats fixed thereupon and extending vertically upward for a short distance, and carried thence upward and back at an incline, the endless carrier, the forks, and devices whereby said forks are tilted and carried point forward along and over the base-plate, substantially as set forth.

2. The combination, with the plates D^2 and E, of the endless carrier having forks K and extensions *j*, and the trip L, said trip lying in front of plate E, and serving to receive the extension *j* and turn the forks K so as to cause them to enter plate E, as shown and described.

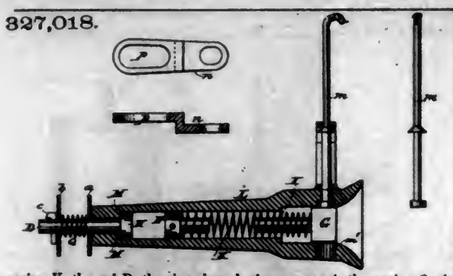
3. In an endless carrier for potato-diggers, the combination of the belt having link-blocks provided with bearings I^2, and with studs *i* projected thereunto, and the fork-shaft supported in said bearings and having its ends mortised at J' in proper position to receive the studs *i*, substantially as and for the purpose specified.

4. In a potato-digger, the combination of the slats, the base-plate D^2, the plate E, extended to the rear and upwardly from the plate D^2, the trip-bar L, and the endless carrier having its fork-shaft provided with an arm, *j*, arranged and adapted to engage the trip L, whereby the forks are tilted and carried point forward above the plate E, substantially as set forth.

327,018. CAR-COUPLING. DAVID V. PUTNAM, Nolensville, Tenn. Filed Aug. 11, 1884. (No model.)

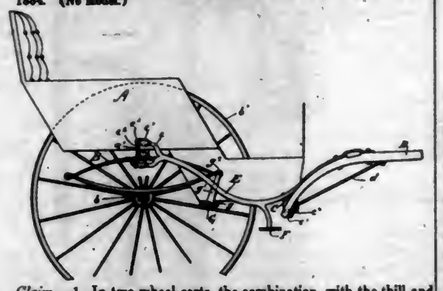
Claim.—In a car-coupler, the combination of the quadrangular slide G with its cylindrical stem, the stationary cylindrical piece F, the spiral

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spring K, the rod D, the ring-shaped pieces *a* and *b*, the spring Q, the pin *c*, the coupling rod or pin *m*, and the coupling-link *n*, all operating as specified, and substantially as described.

327,019. ROAD-CART. FREDERIK A. REHKOPF and CHARLES A. ROSS, Chicago, Ill.; said Ross assignor to said Rehkopf. Filed Aug. 13, 1884. (No model.)

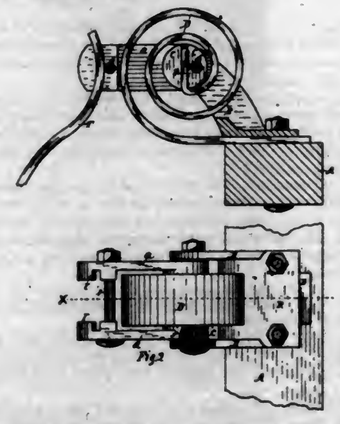


Claim.—1. In two-wheel carts, the combination, with the thill and with the wagon-body, of the intermediate torsion-spring draft-bar joined rigidly at its ends to said parts, respectively, and serving to elastically connect and sustain the thill about the wagon-body, substantially as described.

2. In two-wheel carts, the combination, with the thill and with the wagon-body, of the intermediate torsion-spring draft-bar joined rigidly at its ends to said parts, respectively, and the journal-bearing to retain the spring-bar in place, said bar serving to elastically connect and sustain the thill about the wagon-body, substantially as described.

3. In two-wheel carts, the combination, with the thill and with the wagon-body, of the intermediate torsion-spring draft-bar joined rigidly at its ends to said parts, respectively, and the guard extending from the thill and contacting with the wagon-body to co-operate with the spring-bar, said bar serving to elastically connect and sustain the thill about the wagon-body, substantially as described.

327,020. HARROW. BENJAMIN F. REX, Kalamazoo, Mich. Filed June 14, 1884. (No model.)



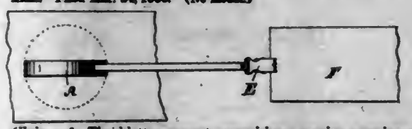
Claim.—The combination of a share, the circularly-coiled spring, the harrow-beam bracket, the spring-clamping bracket having the perforated bearing-lugs in the eyes of the beam-brackets, and the combined hinging and clamping bolt, substantially as set forth.

327,021. WHIP-SOCKET. GEORGE P. ROSE, Fenton, Mich. Filed Feb. 14, 1885. (No model.)



Claim.—The combination, with a whip-socket and its elongated back, of an outer clamp perforated at each end, a shouldered rivet or screw, G, having the under side of its head convex, and the clamp-screw S, substantially as specified.

327,022. AUTOMATIC BLOTTER-HOLDER. ALFRED ROSE, Wichita, Kans. Filed Mar. 24, 1885. (No model.)



Claim.—1. The blotter-support comprising a carrier, a spring and roller contained therein, a cord attached to such roller, and a double armed bracket having one arm pivoted to the carrier and its other arm pivoted to a suitable support, the said arms being arranged at approximately right angles, whereby the pivots will be form at such angles, substantially as set forth.

2. The blotter-support herein described, consisting of the carrier, the right-angled bracket having one arm pivoted to such carrier, a drum and spring located in said carrier, a cord attached at one end to the drum, and a spring-clasp on the other end of the cord, substantially as set forth.

327,023. PRESERVATIVE FOR MILK. SAMUEL SAMDORN, San Francisco, Cal. Filed May 27, 1885. (No specimens.)

Claim.—The preparation for keeping milk sweet, consisting of sugar, salt, nitrate of potash, carbonate of soda, hyposulphite of soda, and sulphite of lime, in the proportions substantially as herein described.

327,024. WASHING-MACHINE. AUGUST SCHWARZ, Jersey City, N. J. Filed June 17, 1884. (No model.)



Claim.—1. In a washing-machine, the combination of the flexible convex hollow rubber D with the supporting-frame F, which only supports said hollow rubber along its edges, and with the corrugated movable board E, substantially as shown and described.

2. The combination of the frame F, carrying the flanges *f*, with the convex hollow rubber D, which is placed over said flanges, the corrugated board E, straps C, and uprights B, substantially as herein shown and described.

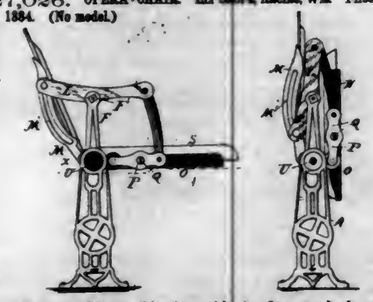
327,025. CHEMICAL FIRE-EXTINGUISHER. JOHN P. SCOTT, New York, N. Y. Filed July 7, 1885. (No model.)



Claim.—1. In a chemical fire-extinguisher, the general combination of the receptacle A, having a shoulder, *a*, the stopper B, the tube C, with vent *c*, bulbs c^2, and bend c', the metal D, the whole constructed and operated, substantially as for the purposes herein shown and set forth.

2. In a chemical fire-extinguisher, the fragile receptacle A, containing the material B, and having the ring E, springs *e*, and guys *d*, so connected as to insure the breakage of A, as herein shown and set forth.

327,026. OPERA-CHAIR. ELI SMITH, Racine, Wis. Filed May 31, 1884. (No model.)



Claim.—1. The combination, with the floor-standards, of the top standards pivoted thereto and the back and seat pivotally connected to said top standards.

2. The combination, with the standards, of the slotted back-support and seat-pieces pivoted to said standards, the arms pivoted to the top of said standards, a link connecting the front of the arm with the seat, and a pin from the arm extending into the slot in the back-support, substantially as described.

3. The combination, with the floor-standards A A, of the top standards, F F, pivoted thereto, the arms pivoted at the top of said top standard, and the seat and slotted back-supports pivoted at the bottom of said top standard, the link connecting the front of the arms to the seat, and the pins connecting the rear of the arms to the slotted back-supports, all substantially as described.

4. The combination, with the floor-standards A, of the pivoted top standards, F, the seat and slotted back-supports pivoted to said top standards, and the arms pivoted to the top of said standards F, and having pins extending into the slots in the back-supports, and links connecting said arms with the seat, all substantially as described.

5. The combination, with the floor-standards A, having grooved face-plates, of two top standards, each having a face-plate and rib across the face thereof, the rib being a little more than sufficient to fill the groove in the face-plate, and a pivoted bolt passing through both standards, so that the top standards may be placed at an angle to the floor-standards, substantially as described.

327,027. AIR-BRAKE FOR RAILROAD-CARS. LEANDER E. SLOAN, Milwaukee, Wis., assignor of one-half to Wallace G. Collins, same place. Filed Oct. 18, 1884. (No model.)

Claim.—1. In an automatic air-brake, a balance-lever fulcrumed inside of the auxiliary reservoir and provided with two valve-disks, in combination with the automatic and brake-cylinder pipes, whereby the said valve-disks are adapted to close or open as the tension in the automatic pipe is increased or decreased, substantially as set forth.

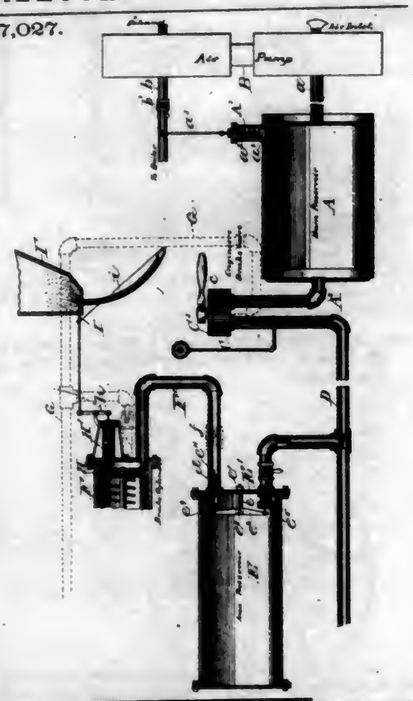
2. In an automatic air-brake, an operating-valve mounted inside of the auxiliary reservoir on a swinging or sliding bar that carries valve-disks of unequal size, the larger of which has its seat in the suitably-shaped inner end of the automatic pipe, while the other is located opposite the orifice of the brake-cylinder pipe, substantially as and for the purpose set forth.

3. In an automatic air-brake, in combination with a sliding or swinging valve mounted inside of the auxiliary reservoir and adapted to operate so as to let the air into the brake-cylinder, a skeleton valve located in the brake-cylinder pipe and connected to the swinging or sliding valve, the said brake-pipe having a port-hole, opposite which the said skeleton valve stands when the brakes are being applied, and which is left open when the same are being released, substantially as set forth.

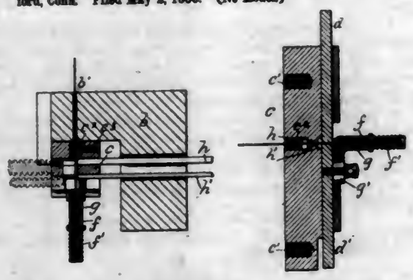
4. In a combined automatic and straight air-pipe service, in combination with the brake-cylinder pipe F', the skeleton valve *f*, adapted to close the said pipe when the straight or direct air-pipe is used to apply the brakes, substantially as and for the purpose set forth.

5. In an automatic brake-gear, in combination with the brake-cylinder F, the air-chamber H', inclosing the check-valve H, with springs h' h^2, and having the port-hole h^2, the stem of the said valve being connected through the link or rod h to the sliding valve I of the said box I', substantially as shown and described, and for the purpose set forth.

327,027.



327,028. DIE-HOLDER FOR PIN-MACHINES. EZRA SMART, Hartford, Conn. Filed May 2, 1885. (No model.)



Claim.—1. In a pin-making or like machine, the removable die-block bearing the adjustable holding-dies and the adjustable heading-die, and having the transverse socket for the cut-off in the body of the die-block, all substantially as described.

2. In a pin-making machine, the removable die-block bearing the adjustable holding-dies backed up by the mass of the block, and the adjustable heading-die secured to the block outside the holding-dies, and having the transverse cut-off socket, in combination with the cut-off, all substantially as described.

3. In combination with the feed and die operating mechanism of a pin-making machine, the removable die-block *c*, having the transverse openings for the passage of the pin-wire and cut-off *h*, and bearing the holding-dies *d* and *d'*, the latter bearing the adjustable arm *g*, which supports the longitudinally-reciprocating heading-die *f*, all substantially as described.

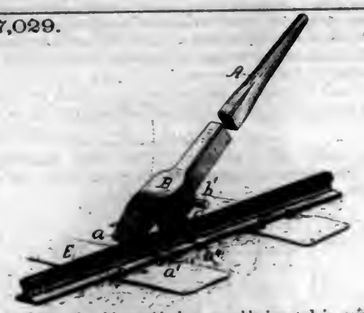
327,029. PINCH-BAR. FREDERICK J. SMITH, Chicago, Ill. Filed Mar. 3, 1885. (No model.)

Claim.—1. A pinch-bar consisting of a handle and an enlarged head forged in one piece, and provided with a recess starting in from the under side of said bar and stopping short therein, substantially as and for the purpose set forth.

2. A pinch-bar provided in the head end with a recess starting in from the under side and an aperture passing through said head from side to side and opening on one side into said recess, substantially as and for the purpose set forth.

3. The combination, with a pinch-bar provided with a recess starting in from the under side and an aperture extending clear through the

327,029.



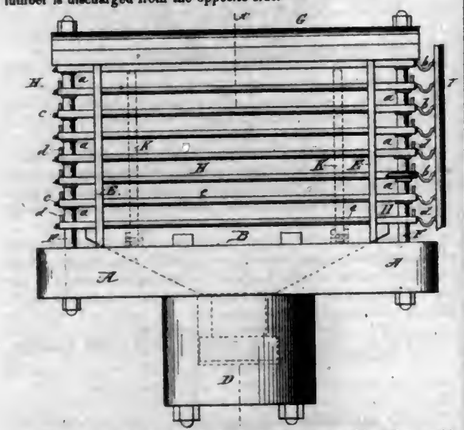
head of said bar, of a fulcrum-block removably inserted in said recess and a tapering pin having one side flattened and inserted in said aperture, whereby said fulcrum-block is locked in place, substantially as described.

4. The combination, with a pinch-bar provided with a recess and aperture, as described, of a fulcrum-block, and a guide-fork removably inserted in said recess, and a locking-pin inserted in said aperture and bearing on one side against the flat surface of said fulcrum-block, whereby the latter and the guide-fork are firmly secured in place, substantially as and for the purpose set forth.

5. The combination, with a pinch-bar provided with a recess in the heel, of a guide-fork having the flattened head end inserted in said recess, while the forked ends extend down on each side of the rail, and the means described for removably securing said guide-fork in relation to said bar, substantially as and for the purpose set forth.

327,030. LUMBER-DRIER. HERMAN S. SMITH, Brooklyn, N. Y. Filed June 18, 1884. (No model.)

Brief.—The lumber is pressed and dried between movable steam-heated platens. It is fed into the apparatus from a series of shelves at the side by levers pivoted to the base, and at the same time the dried lumber is discharged from the opposite side.



Claim.—1. In a lumber pressing and drying machine, the combination of the bed-plate A, standards E E, guide-post F F, having collars *a a*, the cap G, supported by said standards and guide-posts, the hollow press-plates H H, supported horizontally on the collars *a a*, and having exit-cocks *c* and stops *d d*, the movable platen B, carrying the lower press-plate, and the stand-pipe I, having flexible tubes *b b*, for connecting with each press-plate, substantially as described.

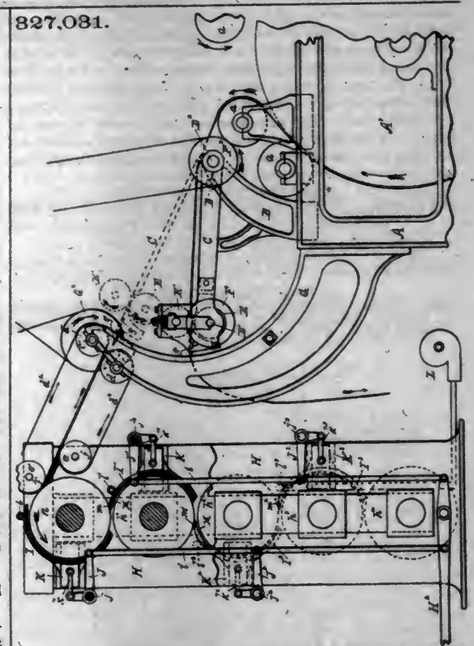
2. In a lumber pressing and drying machine, the combination, with the movable press-plates H H and the fixed tables *e e*, supported by the standards E E at one side of the machine, of the bell-crank levers K K, pivoted to lugs on the bed-plate, and adapted to be actuated by the lower press-plate in its descent, substantially as described.

327,031. PNEUMATIC DEVICE FOR LEADING PAPER THROUGH CALENDER-ROLLS. RICHARD SMITH, Sherbrooke, Quebec, Canada, assignor of one-half to the Fall Mountain Paper Company, Bellows Falls, Vt. Filed Dec. 26, 1884. (No model.)

Claim.—1. A series of revolving rolls, over and between which passes a continuously-traveling paper web, in combination with mechanism which applies a current of air or its equivalent to said web in the direction of the path of travel of the latter, substantially as set forth.

2. In a paper-machine, the combination, with the driers and calenders, of a pair of quick-running draft-rolls, so arranged that the normal tension shall be restored to the continuous traveling paper web prior to its introduction between said calenders, substantially as and for purposes herein described.

327,031.



3. In a paper-machine, the combination, with the quick-running draft-rolls, the swinging table, and the cutter or knife attached thereto, of the fixed cutter, whereby the continuously-traveling paper web may be severed without cessation of its movement, and thence conducted to the calendering-rolls, substantially as described.

4. The combination, with the driers and calender-rolls, of the swinging table, the quick-running draft-rolls, and the endless belts or tapes, by means of which the continuous traveling paper web is conducted to the calenders in paths of movement at right angles to their axis of rotation, substantially for purposes set forth.

5. The combination, with a series of revolving rolls, of a series of alternately oppositely-disposed adjustable curved plates partially inclosing the peripheries of said rolls, all arranged and operating substantially as described.

6. The combination, with a revolving roll, of a shield or cover, bent concentric therewith and partially inclosing and adjustable with respect to its periphery, substantially as stated.

7. The combination, with a pair of rolls provided with and partially inclosed by bent shields, of a spring-actuated bar resting upon and in contact with the surface of the upper roll, substantially as and for purposes set forth.

8. The combination, with a roll, *h*, and wind-shield I, mounted in suitable guides, of the levers H^3 J and the connecting-rod *k*, by which adjustment of the shield is effected with respect to the periphery of the roll, substantially as stated.

9. The combination, with the revolving rolls *h h'*, &c., wind-cases *i i'*, &c., of a guide or doctor, M, provided with the spring-actuated teeth *m m*, &c., substantially for the purposes set forth.

327,032. ROTARY TRAY, &c. AMASA W. STEVENS, East Brookfield, Mass. Filed Oct. 6, 1884. (No model.)



Claim.—1. An improved turn-table for rotary trays and other articles composed of flat horizontal disks, a vertical pivot with a pair of screws uniting said disk and supporting the top disk at its center, an annular hub adapted to revolve freely around said pivot, radial arms carried by said hub and provided with collars, and anti-friction wheels mounted between said collars on said arms for supporting said top disk at numerous points near its perimeter, substantially as herein specified.

2. The combination, in a turn-table for rotary trays, of a pair of flat sheet-metal disks having wired edges, and forming, respectively, the rotary top and the base of the tray, a vertical pivot with a pair of screws, uniting said disk and supporting the top disk at its center, an

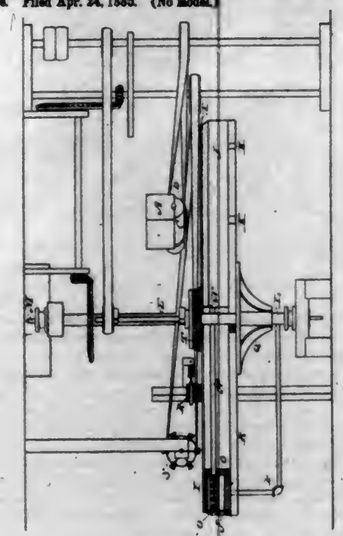
annular hub adapted to revolve freely around said pivot, radial arms carried by said hub and provided with collars, and anti-friction wheels mounted between said collars on said arms for supporting said top disk at numerous points near its perimeter, substantially as herein specified.

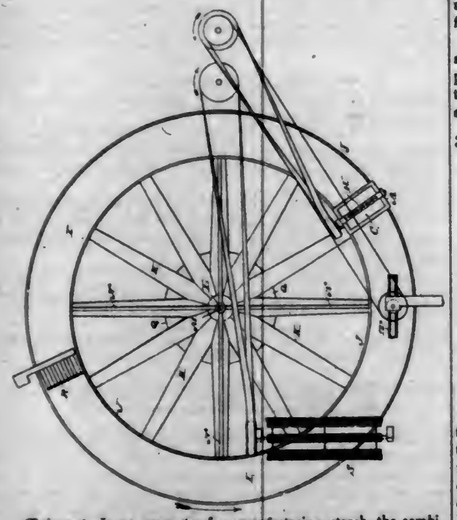
3. The combination, in a turn-table for rotary trays and other articles, substantially as herein specified, of a revolving hub constructed with radial grooves fitted to radial arms, vertical screws between successive pairs of said grooves, and washers for said screws, each adapted to overlay the inner ends of two of said arms for aligning, distributing, and rigidly uniting the said arms in the manner set forth.

327,033. METHOD OF CASTING HOLLOW METAL BODIES WITH A NON-OXIDIZABLE LINING. LEVI STEVENS, Washington, D.C. Filed Jan. 16, 1884. Renewed Mar. 20, 1885. (No specimens.)

Claim.—The use of prussiate of potassium in the casting of superheaters or other hollow vessels in the manner substantially as described.

327,034. APPARATUS FOR THE MANUFACTURE OF STARCH. FLAVIUS P. STIKER, Oswego, N. Y., assignor to Thomson Kingsford, same place. Filed Apr. 24, 1885. (No model.)



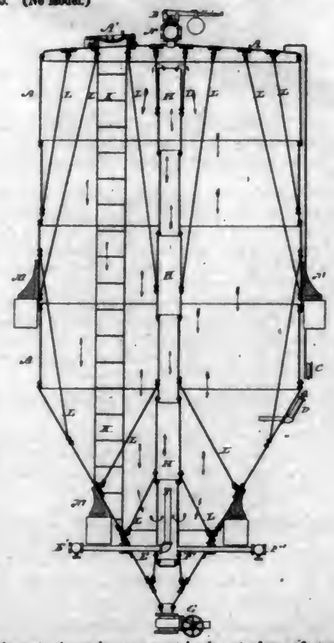


Claim.—1. In an apparatus for manufacturing starch, the combination of a liquid-starch dripping-tank, and an annular heated absorbent surface rotated beneath the tank, and provided with fingers and brushing apparatus, substantially as and for the purpose set forth.

2. The combination, with the bottom of a liquid-starch containing-tank, of drip-tubes D, inserted therein and projecting downward therefrom, and being open at their bottoms to permit the dripping of the liquid starch, and adjustable plugs or valves E, provided with springs F, tending to keep the valves down in the tubes, substantially as and for the purpose set forth.

3. In an apparatus for the manufacture of starch, an annular absorbent rotary disk or surface, I, substantially as and for the purpose set forth.

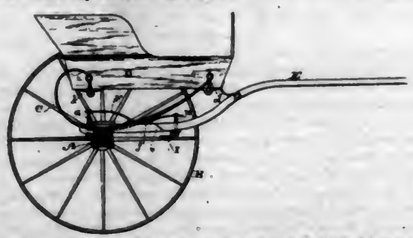
327,035. ART OF MANUFACTURING STARCH. FLAVIUS P. STIKER, Buffalo, assignor to Thomson Kingsford, Oswego, N. Y. Filed July 22, 1885. (No model.)



Claim.—1. As an improvement in the art of manufacturing starch the method of steeping grain herein described, which consists in confining it in a steeping-liquor within a closed tank and applying artificial pressure, so as to speedily soften but not disintegrate it, substantially as set forth.

2. The combination, with a closed tank, A, provided with appliances for admitting grain, steep-liquor, and fluids for exerting artificial pressure, of an internal tube, H, open at its top and perforated at its bottom and arranged so as to exclude grain and aid in the circulation of steeping-fluids, substantially as set forth.

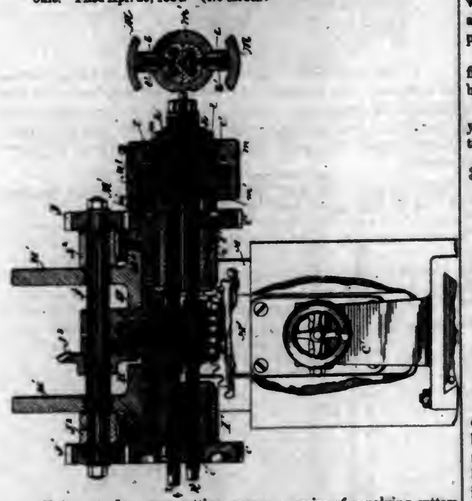
327,036. TWO-WHEELED VEHICLE. LEWIS ST. ORES, Guadaloupe, Cal. Filed May 25, 1885. (No model.)



Claim.—1. In a two-wheeled vehicle, the shaft E, divided into sections by a bevel or miter cut corresponding in inclination in each section, in combination with the curved spring F, bearing on top of the rear section, the eyebolt H, on the forward section, through which the elevated forward end of the spring passes, and the bolt G, through the elevated rear end of the spring, for regulating its tension, substantially as herein described.

2. In a two-wheeled vehicle, the shaft E, divided into sections by a bevel or miter cut corresponding in inclination in each section, in combination with a curved spring, F, bearing on top of the rear section, the eyebolt H, on the forward section, through which the elevated forward end of the spring passes, the bolt G, through the elevated rear end of the spring, for regulating its tension, the angled limiting-lug I, secured on the rear end of the bolt H, and adapted to bear under the forward end of the rear section, and the side guide-stripe, J, secured to the rear section and pivoted to the forward section, substantially as herein described.

327,037. GEAR-CUTTING MACHINE. AMBROSE SWASEY, Cleveland, Ohio. Filed Apr. 29, 1884. (No model.)



Claim.—1. In a gear-cutting engine, a series of revolving cutters provided with slides and actuating mechanism for moving the cutters endwise at substantially the same speed as the pitch-line of the revolving blank in which the teeth are to be cut and in the same direction, substantially as set forth.

2. In a gear-cutting engine, a series of revolving segmental cutters provided with slides and actuating mechanism for moving the cutters endwise at substantially the same speed as the pitch-line of the revolving blank in which the teeth are to be cut and in the same direction until disengaged therefrom, and then moving said cutters back in the opposite direction to the place of starting, as set forth.

3. In a gear-cutting engine, the combination of two series of segmental cutters arranged in two longitudinal sections and revolving on a common axis, each section provided with slides and actuating mechanism for independently reciprocating the several sections.

4. In a gear-cutting engine, the combination, with a series of cutters, of the rods k and k^2, as shown, adapted to fill the triple office of holding the cutters firmly in place, acting as slides for reciprocating the cutters, and also as drivers for revolving them, substantially as set forth.

5. In a gear-cutting engine, the combination, with a series of cutters mounted on sliding rods, of revolving spindles provided with holes that act as ways for the sliding rods, and provided with suitable gearing by means of which the spindles are made to revolve and act as a driver for the said rods and cutters, substantially as set forth.

6. In a gear-cutting engine, the combination of cutters, reciprocating rods, and the divided blocks mounted on the reciprocating rods, the parts being so arranged that each section of the blocks is attached to the rods that engage a section of the cutters, and each section of said block being provided with a stud and roller adapted to engage cams for reciprocating the cutters, substantially as set forth.

7. In a gear-cutting engine, the combination, with a series of cutters mounted on reciprocating rods and provided with suitable connecting mechanism, of cams adapted to reciprocate the cutters and provided with a screw-lead that moves the cutters in the direction of the revolving blank, said lead being substantially equal to the pitch of the teeth to be cut in the blank and exteeding so much of the way around the cam as is necessary to advance a section of the cutters during its engagement with the blank, the remaining portion of the distance around the cam having a shape suitable for moving the cutters in an opposite direction back to the place of starting, substantially as set forth.

327,038. DEVICE FOR ATTACHING MUSIC-SHEETS TO ROLLERS. HUGH THOMAS, New York, N. Y. Filed Apr. 17, 1884. (No model.)



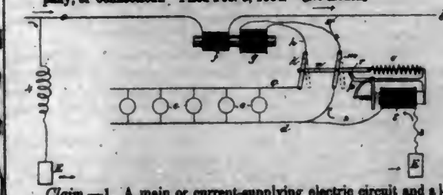
Claim.—1. The combination of a music-sheet and a roll therefor, one provided with a hook or analogous holding device, and the other provided with yielding arms or jaws adapted to engage with said hook or device and to be disengaged therefrom by a pull upon the sheet, substantially as herein described.

2. The combination, with a music-sheet having an attached loop or eye provided with yielding jaws or arms, of a roll for the sheet provided with a hook or analogous holding device, with which the said jaws or arms may be engaged and from which they may be disengaged by a pull upon the sheet, substantially as herein described.

3. The combination, with a take-up roll provided with an attached flap and a hook, a, of a music-sheet provided with an attached loop having elastic arms or jaws, substantially as herein described.

4. The combination, with a music-sheet, of a loop or eye having yielding arms or jaws and permanently attached to the sheet, substantially as herein described.

327,039. SAFETY DEVICE FOR ELECTRICAL CIRCUITS. ELIHU THOMSON, Lynn, Mass., assignor to the Thomson-Houston Electric Company, of Connecticut. Filed Feb. 8, 1884. (No model.)



Claim.—1. A main or current-supplying electric circuit and a local or supplied circuit deriving electrical energy therefrom, but intended to be electrically insulated or disconnected from said main circuit, and normally having a current of lower potential than said main circuit, combined with a safety cut-off operated by increase in potential of the current in the local or supplied circuit, whereby the latter is automatically disconnected from the main circuit upon the establishment of electrical connection between said main and supplied circuits, substantially as described.

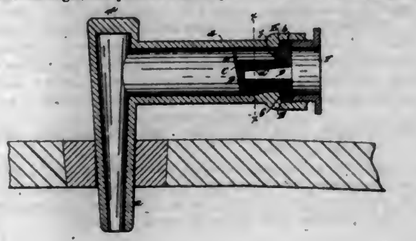
2. A main or current-supply electric circuit and a local or supplied circuit deriving electrical energy therefrom, but intended to be electrically insulated or disconnected from the said main circuit, and to normally have a current of lower potential than the said main circuit, combined with switches controlling the local circuit, and a controlling electromagnet for the said switches, and a branch circuit from the local circuit to the ground, including the said magnet, which, upon connection being made between the main and local circuits, and the consequent rise in potential in the latter, is energized and causes the switches to be operated and the local circuit thereby disconnected from the main circuit, substantially as described.

3. The main and local circuits and apparatus which supplies or imparts electricity to the latter from the former, combined with switches controlling the connection of the said local circuit with the transferring apparatus, the locking device for the said switches, and the electromagnet and its armature controlling the said locking device, the said magnet being energized upon the abnormal rise of potential in the supplied circuit, such as produced by an electrical connection between the supplied and main circuits, and thus operating the locking device and causing the switch to disconnect the supplied from the main circuit, substantially as described.

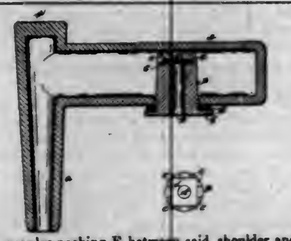
327,040. BEER-VENTILATOR. JOHN H. VEHR and JOHAN KIRST, Cincinnati, Ohio. Filed Apr. 19, 1884. (No model.)

Claim.—1. The ventilator having shoulder b', and vent-plug B, having flange b, and the annular packing E, compressed between said shoulder and flange, and screw-plug F, engaging a screw-thread in the ventilator and forcing the flange b and packing E toward shoulder b', the vent-plug having passage-way D d' and horizontal valve-seat, and valve C, the roof of the valve-chamber being formed by the side of the ventilator-shell, substantially as and for the purposes specified.

2. The combination of the portions, nozzle a and branch H, connected at an angle, the portion H having shoulder b', and vent-plug B,



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having flange *b*, annular packing E between said shoulder and the said flange, and screw-ring F, engaging a screw-thread in portion H and forcing the flange *b* toward shoulder *b'*, the vent-plug provided with passage D *d'*, and with horizontal valve-seat, and with valve-guards, as *c*, and valve C, and the roof of the valve-chamber being the inner surface of the ventilator-shell, substantially as and for the purposes specified.

3. The ventilator-shell having the flat seat G, and the vent-plug having the flattened portion *g*, and the valve-seat and valve, substantially as and for the purposes specified.

4. The ventilator-shell having the raised flat seat G, and the vent-plug having the flattened portion *g*, and valve-seat on the vent-plug in connection with the passage-way through the latter and valve, the roof of the valve-chamber being formed by the inner surface of the ventilator-shell, substantially as and for the purposes specified.

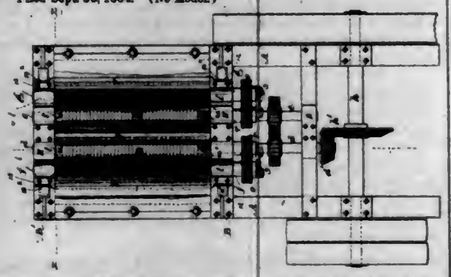
5. In combination, the shell of a ventilator, the separable vent-plug having the recessed valve-seat *d*, bounded at one end by the flange *e*, and at the other end by portion *f* of the plug, the vent-plug having the recess or chamber D, open at the outer end of the flange, and communicating with the valve-seat by orifices *d*, and the loose flexible valve-piece C, substantially as and for the purposes specified.

327,041. CAR-WHEEL. NATHAN WASHBURN, Boston, Mass. Filed Aug. 17, 1885. (No model.)



Claim.—A railway-car wheel having a body of cast-iron, a tire of steel welded to such body, and the body re-enforced near the rim by a series of bolts or rivets going through such body only, all being substantially as set forth.

327,042. CORN-HUSKING MACHINE. JOSIAH A. WEBBER, Brooklyn, assignor, by mesne assignments, to Charles F. Hawkins, Goshen, N. Y. Filed Sept. 30, 1884. (No model.)



Claim.—1. The combination, with the corn-husking rollers, of the stationary bearings for the shaft of one roller in each pair of rollers, and the sliding bearings for the journals of the other roller, and a base for each sliding bearing, and a bolt or pivot connecting such base to the cross-bar, whereby the bearing is allowed to turn upon the bolt as well as to slide endwise, substantially as set forth.

2. The combination, with the pair of husking-rollers, of bearings for the shafts of the rollers, one set of such bearings being adapted to slide, and a throat-plate having a V-notch in one side and occupying a position between the ends of the pair of rollers and the bearings, substantially as set forth.

3. The combination, in a corn-husking machine, of two pairs of rollers, one roller in each pair having perforated disks of leather upon a metal shaft and secured substantially as described, throat-plates, one to each pair, yielding bearings for the journals of one roller in each pair, and the gearing to rotate all the rollers, substantially as set forth.

327,043. TOY TOP. FRANK WEBER, Cincinnati, Ohio. Filed July 13, 1885. (No model.)

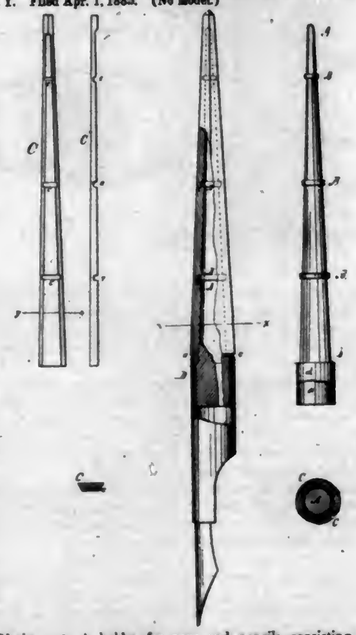
Claim.—1. The combination, in a top, of the truncated body having a recess at its lower end, the elastic plug located in said recess, and the plug proper, having a stem passing longitudinally through the elastic plug, substantially as and for the purpose specified.

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2. The combination, with the truncated top-body having recesses as described, of the shouldered plug fitting in the larger recess, the plug fitting in the smaller recess, and the plug proper, having a stem passing centrally and longitudinally through the larger elastic plug and adapted to abut against the smaller plug, substantially as and for the purposes specified.

327,044. PEN AND PENCIL HOLDER. EDWIN WILEY, Brooklyn, N. Y. Filed Apr. 1, 1885. (No model.)



Claim.—1. A holder for pens and pencils, consisting of a core tapering from butt to point, of cylindrical section, provided with ribs B, and covered with tapering and recessed sections of mother-of-pearl, as and for the purpose described.

2. A tapering pen-holder core of cylindrical section, provided with ribs B, head *a*, and shoulder *b*, combined with tapering and recessed sections of pearl C, with their lower ends abutting against the shoulder *b*, and constructed to be inclosed by the metal tube D of the holder, as and for the purpose described.

327,045. CORNER-IRON FOR VEHICLE-BODIES. CHARLES R. WILSON and GEORGE M. CHALFANT, Detroit, Mich., assignors to C. R. & J. C. Wilson, same place. Filed June 28, 1884. (No model.)



Claim.—The vehicle-body slotted vertically or provided with an open space at its corners, as shown, in combination with the molding fitting around and over the outer faces of the corners, the neck arranged within the slot or space, and the corner-block occupying the space between and bearing against the inner faces of the two meeting parts of the body at the corners, as set forth.

327,046. PERMUTATION-PADLOCK. EDGAR W. WILSON, Denver, Colo. Filed May 29, 1885. (Model.)

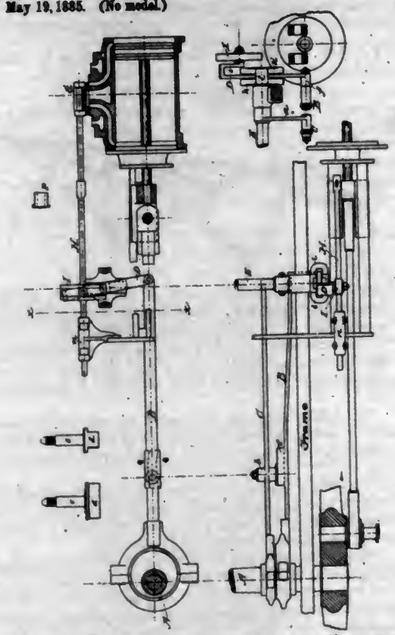


Claim.—1. The combination, with a tumbler-spindle and a series of tumblers sleeved thereon, of a locking-plate and an operating-spindle adapted to engage said tumbler-spindle and locking-plate, substantially as and for the purpose specified.

2. The combination, with a tumbler-spindle carrying a series of tumblers provided with pins, as shown, and a locking-plate having a slot to engage one of said pins, of an operating-spindle adapted to engage said tumbler-spindle and locking-plate and form a guide for the former, as set forth.

3. The combination, with a casing, a spindle carrying a series of locking-tumblers, a locking-plate, and a cap, of an operating-spindle passed loosely through said cap and having a lug engaging a slot in said locking-plate, and a staple having a long leg adapted to engage a recess in said cap, as and for the purposes set forth.

327,047. VALVE-GEAR. WILLIAM WILSON, Bloomington, Ill. Filed May 19, 1885. (No model.)



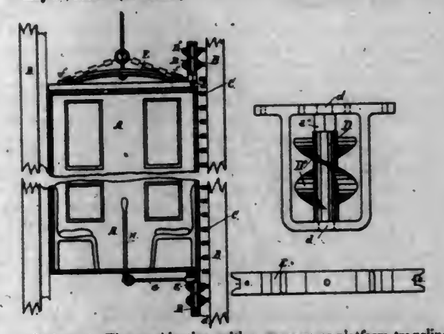
Claim.—1. The combination, in an engine, of an axle, an eccentric-lever, a radius-bar concentrically connected with the axle at one end and pivoted at its other end, and a fulcrum supported in said radius-bar, over which fulcrum the eccentric-lever moves, whereby the vertical movement of the axle will not affect the forward end of the eccentric-lever, but it will constantly travel in the same oval path, substantially as and for the purposes specified.

2. The combination of an eccentric or crank lever, a fulcrum for such lever, a tumbling-shaft provided with guides for the valve-lever, a valve-lever fulcrumed in a sliding block or blocks in the guide, a valve-rod provided with a slotted link, and a sliding block in such link, substantially as and for the purposes specified.

3. The combination of an axle, A, an eccentric or crank lever, B, a radius-bar, C, a fulcrum for the lever supported in the radius-bar, a tumbling-shaft provided with a guide or guides for the valve-lever, a valve-lever fulcrumed in such guide, and a valve-rod, substantially as and for the purposes specified.

4. A tumbling-shaft provided with a guide for the valve-lever, a guide block or blocks, *h*, located in grooves in the guide, a valve-lever fulcrumed in the guide block or blocks *h*, a valve-rod provided with a slotted link, and a sliding block in such link, substantially as and for the purposes specified.

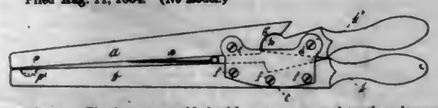
327,048. SAFETY ATTACHMENT FOR ELEVATORS AND INCLINED RAILWAYS. FREDERICK WITTRAM, San Francisco, Cal. Filed May 27, 1885. (No model.)



Claim.—1. The combination, with a car cage or platform traveling on a fixed track or way, of the fixed pins or pegs C C, the helix $D^{\times}$, mounted in bearings in the cage in position to engage with and be continuously rotated by the fixed pegs, and the longitudinally-sliding clutch-bar having the clutch, which is adapted to seize and lock the helix-shaft by movement in one direction, and to release the helix by a contrary movement, substantially as hereinbefore described.

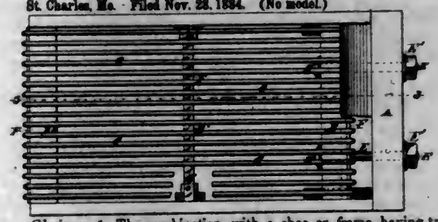
2. The combination, with the helix $D^{\times}$, mounted in bearings to rotate upon a moving cage or other analogous part in position to engage fixed projections, as *c*, along the run or way, of the spring-bars E, having clutch ends *e* and connected with the cage-rope, substantially as and for the purpose set forth.

327,049. CLOTHES-TONGS. DANIEL WORTHINGTON, Paterson, N. J. Filed Aug. 11, 1884. (No model.)



Claim.—The jaw *a*, provided with a recess, *g*, and tooth *p*, in combination with the jaw *b*, provided with recess *p'* and handle *k*, plate *c*, screws *f*, and pivot *e*, for securing said jaws together, spring *n*, for opening said jaws, and operating-handle *k'*, provided with node *h*, said handle being pivoted to plate *c* at *d*, substantially as shown and described.

327,050. GRAIN SCREEN OR SEPARATOR. FRIEDRIK WULFERT, St. Charles, Mo. Filed Nov. 22, 1884. (No model.)



Claim.—1. The combination, with a shoe or frame having two transverse bars, one of which is adjustable toward and from the other, of a series of removable wires or rods having rigid hooks at their ends for engaging with said transverse bars, whereby said wires or rods are secured in place, substantially as and for the purpose set forth.

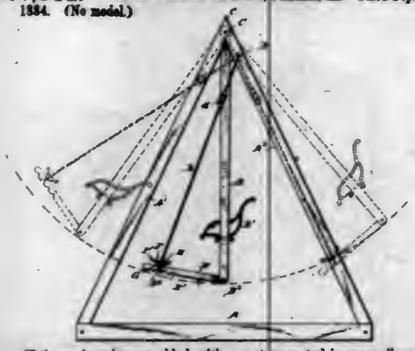
2. The combination, with a shoe or frame having two transverse bars, one of which is adjustable toward and from the other, of a series of removable rods or wires having rigid lateral projections at their respective ends engaging loosely with said transverse bars, and means for moving said transverse bars asunder, whereby the wires are secured, as explained.

3. The combination, with a shoe or frame, a series of movable wires or rods engaging at one end with a transverse bar of said shoe, and an adjustable bar placed transversely of the shoe, with which the other ends of said wires engage, of rubber packing interposed between the engaging portions of said wires and the transverse bars, substantially as and for the purpose set forth.

4. The combination, with a shoe and a series of wires stretched between the transverse bars of said shoe, of a vertically-adjustable transverse bar for supporting said wires at the intermediate point, substantially as set forth.

5. The combination, with a frame or shoe and a series of wires stretched between the transverse bars of said shoe, of a vertically-movable transverse bar placed beneath said wires, and having a rubber packing on its upper edge, as and for the purpose set forth.

327,051. SWING. OLOF M. ARLEBRG, Pullman, Ill. Filed Sept. 20, 1884. (No model.)



Claim.—A swing provided with a seat mounted in normally-vertical pendulum-arms pivoted to a frame, a platform having said arms pivoted to the rear thereof, rods pivotally secured to the forward end of the platform at their lower ends, and pivotally attached to the frame at a point in the rear of the top pivot of the pendulum-arms, said rods being adjustably attached to the platform and provided with a rocking foot-board, said foot-board being secured to the rods and adjustable on the platform, in the manner and for the purposes specified

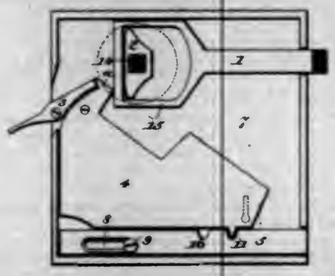
327,052. AGRICULTURAL FORK. JOHN F. ALLEN, Martinsdale, Mont. Filed June 24, 1885. (No model.)



Claim.—1. The herein-described agricultural fork, provided with the hollow sleeve or ferrule B, having slot *a*, and the handle C, provided with a corresponding slot, *d*, the metallic blocks *b*, and wedge D, substantially as and for the purpose specified.

2. In an agricultural fork, the hollow sleeve or ferrule B, provided with the slot *a*, in combination with the handle C, having metallic straps *c* and slot *d*, metallic blocks *b*, having projections *b'*, and wedge D, substantially as and for the purpose specified.

327,053. LOCK. JOSEPH R. AKIN, Clearfield County, Pa. Filed Apr. 16, 1885. (Model.)

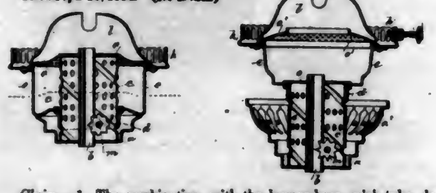


Claim.—1. The combination of the latch-bolt, the locking-bolt, a gravity-tumbler for actuating the latch-bolt, said tumbler interlocking with the latch and locking bolts when in a normal position, and means for holding said tumbler in its normal position, as and for the purposes set forth.

2. The combination, with the latch and locking bolts, of a gravity-tumbler for projecting the latch-bolt and interlocking with the latch and locking bolts when in a normal position, and a gravity dead-latch to engage and hold said tumbler in a normal position, as and for the purposes set forth.

3. The combination of the latch and locking bolts, a gravity-tumbler interlocking with said bolts when in a normal position, said tumbler serving to project the latch-bolt and close the key-opening to the locking-bolt, and a gravity-latch to engage the tumbler and hold it securely in place, as and for the purposes set forth.

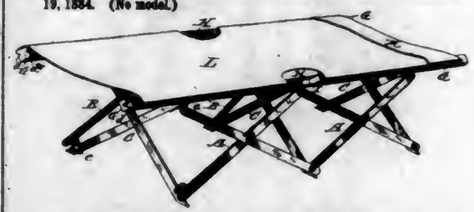
327,054. LAMP-BURNER. LEWIS J. ATWOOD, Waterbury, Conn. Filed Sept. 10, 1884. (No model.)



Claim.—1. The combination, with the burner-base, wick-tube, deflector, and chimney-holder, of the stationary cylindrical guide around and adjacent to the wick-tube, and having screw-threads or inclines, and a lifter around such guide acted upon by the inclines, arms connecting the lifter with the chimney-holder, and air-distributer connected at the upper end of the guide, substantially as specified.

2. The combination, with the burner-base, wick-tube, deflector, and chimney-holder, of the stationary cylindrical guide around and adjacent to the wick-tube, and having screw-threads or inclines, and a lifter around such guide acted upon by the inclines, arms connecting the lifter with the chimney-holder, an air-distributer connected at the upper end of the guide, and a foraminous casing, *a'*, extending up from the base *a*, and upon which the chimney-holder rests when in use, substantially as specified.

327,055. FOLDING COT. CALEB J. BAKER, Chicago, Ill. Filed Apr. 19, 1884. (No model.)



Claim.—1. The combination, with the side rails, of a folding support, and a sliding connection between said rails and support, and movable longitudinally on the rails, substantially as described.

2. The combination, in a cot, of a folding support and sectional side rails flexibly connected together, with a fixed connection between said rails and support at the center of length of the cot, substantially as described.

3. The folding support and the sectional side rails flexibly connected together, in combination with fixed connection centrally between said rails and support, and at the joint of the rail-sections, substantially as described.

4. The folding support, the sectional and flexibly-connected side rails, and the fixed connection between said rails and support, in combination with a sliding connection joining the extremities of the folding support with the side rails, substantially as described.

5. The combination, with the side rails provided with longitudinal grooves on one or both of their opposing faces, and extending substantially the length of said side rails, of a folding support, and angular plates on the support engaging with and guided in said grooves, substantially as described.

6. In a folding support, the combination, with the lazy-tongs and the cross-bar connection, of a T-bolt secured to the lazy-tongs, and a slotted plate secured to the cross-bar, and embracing and forming a bearing for said T-bolt, substantially as described.

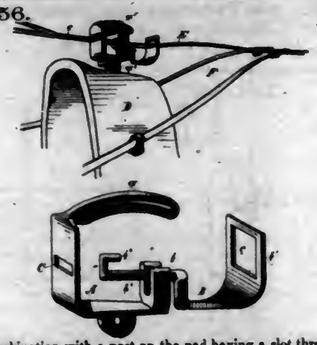
7. In a folding support, the combination therewith of the flexible connection, consisting of a slotted plate secured to one member and a T-bolt secured to the other member and bearing in said plate, substantially as described.

327,056. CHECK-REIN AND POST-HOOK. CEPHAS L. BARD, San Buenaventura, Cal. Filed June 22, 1885. (No model.)

Claim.—1. The slotted check-rein E, secured at its forward end to the head-gear and at its rear end to the driving-lines at a point behind the plane of the pad, in combination with a post on the pad having a slot through which the check-rein passes, and a swinging or pivoted hook-lever in said post adapted to engage with the slot in the check-rein, substantially as herein described.

2. The slotted check-rein E, secured at its forward end to the head-gear and at its rear end to the lines at a point behind the plane of the

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pad, in combination with a post on the pad having a slot through which the check-rein passes, and a swinging or pivoted hook-lever located within the post and in line with the slot, and adapted to engage the slot in the check-rein, and to be withdrawn therefrom by the action of the driving-lines in raising the rear portion of the check-rein, substantially as herein described.

3. The slotted check-rein E, attached at its forward end to the head-gear and at its rear end to the driving-lines at a point behind the plane of the pad, in combination with the frame A on the pad, provided with a slot, C, through which the check-rein passes, the hook-lever B, pivoted in the frame, and having a forward arm, b^2, with a hook, b^3, and engaging the slot in the check-rein, and a rear arm, b', having an aperture, *c*, through which the check-rein passes, substantially as herein described.

4. The slotted check-rein E, attached in front to the head-gear, and having a rear extension attached to the driving-lines at a point behind the plane of the pad, in combination with a frame, A, on the pad, having a slot, C, through which the check-rein passes, the lever B, pivoted in the frame, and having a forward arm, b^2, with hook b^3, adapted to engage the slot in the check-rein, and a rear arm, b', heavier than the forward arm, whereby said forward arm is normally held to its engagement, and an aperture, *c*, in said rear arm, through which the check-line passes, substantially as herein described.

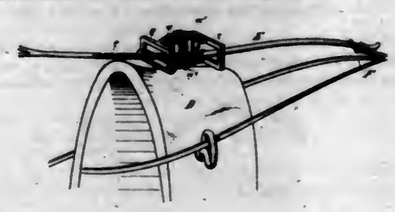
5. The slotted check-rein E, attached at its forward end to the head-gear, and having a rear extension controlled by the driver, in combination with a post on the pad having a slot through which the check-rein passes, and a hook on a pivoted arm or lever adapted to engage the slotted check-rein, whereby said rein is held in position and may be disengaged by lifting its extension, substantially as herein described.

6. An adjustable check-rein post, comprising a hook-frame having a slotted top, and a clamp adapted to be secured to the pad, said hook-frame being pivoted by its base in the clamp, and connected with its top by a thumb-screw through its slotted top, substantially as herein described.

7. The combination of a check-rein attached in front to the head-gear and at its rear end to the driving-lines at a point behind the plane of the pad, with a post-hook comprising a frame with which the check-rein engages and through which it passes, said frame having a slotted top and a clamp secured to the pad, and to which the frame is pivoted at its base and adjustably connected at its top by a thumb-screw through its slotted top, substantially as herein described.

8. The slotted check-rein E, attached in front to the head-gear and at its rear to the driving-lines at a point behind the plane of the pad, in combination with the post-hook comprising the frame A, having a slotted top arm, and a slot, C, in its front, through which the rein passes, the pivoted lever B, having a hooked forward arm engaging the slot of the rein, and a slotted rear arm through which the rein passes, and the clamp A', secured to the pad and having a bottom recess in which the frame A is pivoted, and top lips to which the slotted top arm of said frame is adjustably connected by a thumb-screw, substantially as herein described.

327,057. CHECK-REIN AND POST-HOOK. CEPHAS L. BARD, San Buenaventura, Cal. Filed June 22, 1885. (No model.)

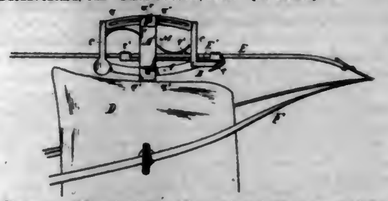


Claim.—1. The slotted check-rein attached in front to the head-gear and provided with a rear extension attached to the driving-lines at a point behind the plane of the pad, in combination with a post on the pad provided with suitable guides front and rear, through which the check-rein passes, and a fixed or stationary hook formed on the post and adapted to engage the slot of the check-rein, substantially as herein described.

2. The slotted check-rein E, attached in front to the head-gear and having a rear extension attached to the driving lines at a point behind the plane of the pad, in combination with the post on the pad of the harness, consisting of the frame A, having the slotted guides C *c* on its forward and rear ends, respectively, through which the check-rein passes, and the rearwardly-extending fixed hook B on the frame A, adapted to engage the slotted check-rein, substantially as herein described.

3. The slotted check-rein E, attached in front to the head-gear and having a rear extension attached to the driving-lines at a point behind the plane of the pad, in combination with the post-hook comprising the frame A, having a slotted top arm and slotted guides C *c*, through which the rein passes, and a fixed hook, B, for engaging its slot, and the clamp A', secured to the pad and having a bottom recess in which the frame A is pivoted, and top lips to which the slotted top arm of said frame is adjustably connected by a thumb-screw, substantially as herein described.

327,058. CHECK-REIN AND POST-HOOK. CEPHAS L. BARD, San Buenaventura, Cal. Filed June 22, 1885. (No model.)



Claim.—1. The check-rein E, attached in front to the head-gear and at its rear end to the driving-lines at a point behind the plane of the pad, and a longitudinally-adjustable hook on the rein, for regulating its length of check, in combination with a post on the pad, with which the hook is engaged and disengaged by the action of the driving-lines, substantially as herein described.

2. The check-rein E, attached in front to the head-gear and at its rear end to the driving-lines at a point behind the plane of the pad, and the plate E', secured to the rein and having hook *e*, in combination with a post on the pad, through which the rein passes, and with which its hook *e* is engaged and disengaged by the action of the driving-lines, substantially as herein described.

3. The check-rein E, attached in front to the head-gear and at its rear to the driving-lines at a point behind the plane of the pad, said rein having the holes *e'*, and the plate E', having the hook *e*, the tongue e^2, engaging the holes *e'*, and the loops e^3, embracing the rein, in combination with a post on the pad, through which the rein passes, and with which its hook *e* is engaged and disengaged by the action of the driving-lines, substantially as herein described.

4. The check-rein E, attached in front to the head-gear and at the rear to the driving-lines at a point behind the plane of the pad and having a hook, in combination with the frame A on the pad, having slotted guides, through which the rein passes, and a plate, B, for the engagement of the hook on said rein, substantially as herein described.

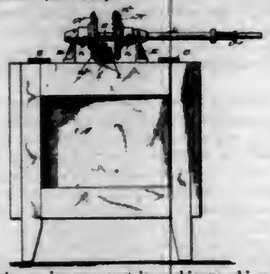
5. The check-rein E, attached in front to the head-gear and at its rear end to the driving-lines and having a hook, *e*, in combination with the frame A on the pad, having a slotted guide, *c*, on its rear end, through which the rein passes, and a rearwardly-projecting plate, B, for the engagement of the hook *e*, substantially as herein described.

6. The check-rein E, attached in front to the head-gear and at its rear end to the driving-lines and having a a hook, *e*, in combination with the frame A on the pad, having slotted guide, C, at its front and a slotted guide, *c*, at its rear, through which the rein passes, and a rearwardly-projecting plate, B, for the engagement of the hook *e*, substantially as herein described.

7. The check-rein E, attached in front to the head-gear and at its rear end to the driving-lines and having a hook, *e*, in combination with the post-hook comprising the frame A, having a slotted top arm and slotted guides through which the rein passes, and a rearwardly-extending plate, B, for the engagement of the hook *e*, and the clamp A', secured to the pad and having a bottom recess in which the frame A is pivoted, and top lips to which the slotted top arm of said frame is adjustably connected by a thumb-screw, substantially as herein described.

8. The check-rein E, attached in front to the head-gear and at its rear to the driving-lines and having a hook, *e*, in combination with the frame A on the pad, having guides through which the rein passes, a plate, B, engaging the hook *e*, and a spring, M, for holding the rein down, substantially as herein described.

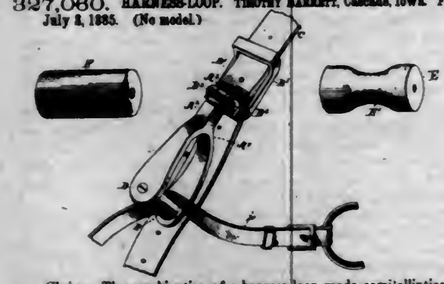
327,059. WASHING-MACHINE. ROBERT C. BARRARD, Charleston, Ill. Filed Apr. 3, 1884. (No model.)



Claim.—1. As an improvement in washing-machines, the combination, with the cover having the bearing-piece set therein, of the agitator-shaft passing through said bearing-piece and comprising the screw-threaded portion h', the shoulder and rectangular portion h^2, and the projecting screw-threaded end h^3, the operating-pinion, the main horizontal operating-shaft, vertical disks provided with a segmental series of teeth upon their inner faces, the set-screws for adjusting the disks, and the agitator comprising the head-plate having the head p set upon the portion h^3, and having the radial arm disposed to form the central space, R, and the grooved nut, substantially as set forth.

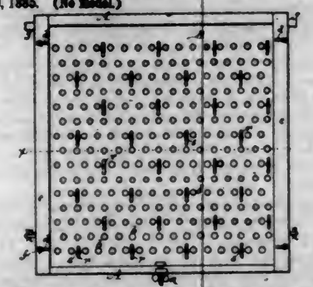
2. As an improvement in washing-machines, the combination of the bearing-piece, the agitator-shaft passing through the same and comprising the screw-threaded portion h', the shoulder and rectangular portion h^2, and the projecting screw-threaded end h^3, the operating-pinion, the retaining-nut set upon the portion h', the agitator comprising the head-plate having the head p set upon the portion h^3, and having the radial arms disposed to form the central space, R, between their adjoining ends, and the grooved nut set within this space upon the end h^3, substantially as and for the purpose set forth.

327,060. HARNESS-LOOP. TIMOTHY BARRETT, Cascade, Iowa. Filed July 3, 1885. (No model.)



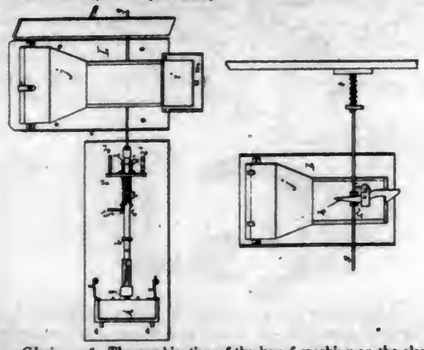
Claim.—The combination of a harness-loop made semi-elliptical in form and having a roller held between its side arms at its open end and having its closed end provided with an arm or shank which has a lug formed on one corner, and a buckle provided with two ears or lugs, whereby the buckle and the harness-loop are hinged together, substantially as described and shown.

327,061. GRAIN-SCREEN. SETH H. BELLS, Mount Morris, N. Y. Filed June 19, 1885. (No model.)



Claim.—The grain-screen herein described, consisting of the rigid frame A, the perforated plates B B, the lower one attached fast to the frame, the upper one movable longitudinally, the cleats c c at the sides adjustable laterally to fit different widths of shoes, the adjustable bearings g g at the top, and the springs m m at the bottom, the longitudinal stays Q Q on the under side of the screen, and the slots r r and screws s s for retaining the plates in contact, the whole arranged to operate in the manner and for the purpose specified.

327,062. TIME STOCK-FEEDER. TITUS L. RUSSELL, Charleston, S. C. Filed Dec. 12, 1884. (No model.)

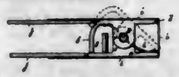


Claim.—1. The combination of the key f, working on the alarm-shaft of the clock A, rod c, having clutch c', oscillating through brackets b and b', spiral spring c^2, runners d d, and pin d^2, all substantially as shown and described.

2. In combination with the oscillating rod c, wire g, passing through the slot k', of trigger k, having nuts k^2 k^3, spiral spring k, all substantially as shown and described.

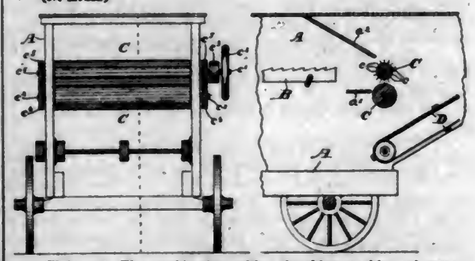
3. The combination of the alarm-clock A, oscillating rod c, spiral spring c^2, wire g, nuts k^2 k^3, and trigger k, working in bearing u, all substantially as shown and described.

327,063. TEMPORARY BINDER. OSCAR BLOCH, New York, N. Y. Filed Apr. 22, 1885. (No model.)



Claim.—The combination of plates a b, pivotally connected, with spring h, canvas i, and covers j j, all being so constructed that a flexible joint is formed in front of plates a b, between covers j and canvas i, substantially as specified.

327,064. STRAW-CUTTING ATTACHMENT FOR THRASHING-MACHINES. JAMES A. BUCHANAN, Hunts City, Ill. Filed May 13, 1884. (No model.)



Claim.—1. The combination, with a thrashing-machine, of cutters arranged at the rear of the straw-carrier floor or apron to receive the straw as it comes from said floor and cut it before finally leaving said machine, substantially as set forth.

2. The combination, in a thrashing-machine, of the straw-carrier floor B and the cutters C, the latter being arranged at the rear end of the former and adapted to receive the straw therefrom and reduce it into chop, substantially as set forth.

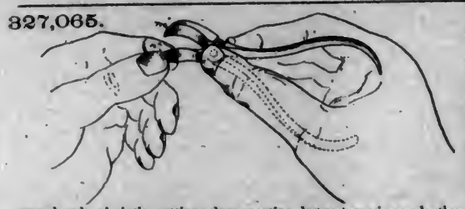
3. The combination, in a thrashing-machine, of the frame-work having wings a' a^2, straw-carrier floor B, the cutters C, mounted on shafts c' c^2, provided with pulleys and gear-wheels c^3 c^4 c^5, substantially as shown and specified.

327,065. APPARATUS FOR CLEANING AND TRIMMING FINGER-NAILS. GEORGE D. BURTON, Boston, Mass. Filed June 1, 1885. (No model.)

Claim.—1. The herein-described implement for trimming and cleaning finger-nails, it consisting of the pivoted hand-levers A B, having cutting-jaws m n', curved, as shown and described, and having laterally-



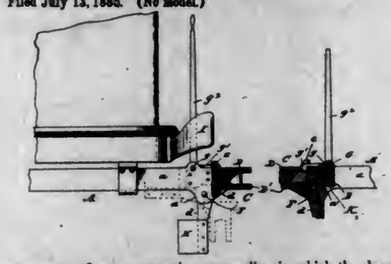
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curved ends m' n', the cutting-edges meeting, but not passing each other, substantially as described.

2. The herein-described implement for trimming and cleaning finger-nails, it consisting of the pivoted hand-levers A B, having cutting-jaws m n, curved, as shown and described, and having laterally-curved ends m' n', the cutting-edges meeting, but not passing each other, the rear sides of the jaws being made like a file, substantially as described.

327,066. CAR-COUPLING. FINLEY R. BUTTERFIELD, Concord, N. H. Filed July 13, 1885. (No model.)



Claim.—1. In an automatic car-coupling in which the draw-head is connected to the draw-bar by a hinge, the combination, with said draw-bar, of a draw-head composed of top and bottom wrought-iron plates, and an intervening casting secured by rivets, an arm extending below and formed upon said bottom plate, in which the hinge is made, and a suitable balance-weight secured to said arm below said hinge, all constructed and operating substantially as set forth.

2. In an automatic car-coupling, the combination, with a draw-bar, of a hinged draw-head, separable on a transverse line at the intersection of the jaw, and hinged to said bar underneath and slightly back of said dividing-line, and means, as described, whereby said draw-head is returned automatically after being uncoupled, and retained in a position to again couple with a car, substantially as set forth.

3. In an automatic car-coupling, the combination, with a draw-bar, of a hinged draw-head separable on a transverse line at the intersection of the jaw, and hinged to said bar slightly below the bottom thereof, and directly underneath said dividing-line, a right-angled lever fulcrumed to the top of said draw-bar, the horizontal part of said lever serving as a latch for locking the draw-head to the draw-bar and the vertical part as a handle, by which said latch is operated, and a suitable spring for retaining said lever in its normal position, substantially as and for the purpose before specified.

4. In an automatic car-coupling, the combination, with a draw-bar composed of wrought-iron side plates having ears projecting downward near the forward end thereof, and separated by castings and tubes, all secured together by rivets, of a draw-head having an arm projecting from the bottom thereof, fitting between said ears on the draw-bar, and hinged thereto, and mechanism, as described, whereby said draw-head is returned automatically after being uncoupled from a car, and retained in a position to again couple with a car, substantially as set forth.

327,067. MOLASSES-COOLER. WILLIAM CHRYSTLER, La Grange, Ind. Filed June 5, 1885. (No model.)

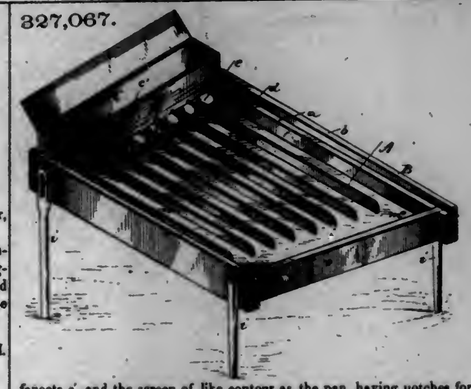
Claim.—1. The combination of an adjustably-inclined pan separated into channels or divisions, and an adjustable tank located at the upper end thereof, substantially as described.

2. The combination of an adjustably-inclined pan divided into divisions or channels, an adjustable tank located at the upper end thereof, and a screen fitting over the top of said pan corresponding to its contour, substantially as described.

3. The combination of an adjustably-inclined pan divided into channels by partitions of gradually-increasing length, and having suitable outlet, a casing surrounding the pan, having sides rabbeted or grooved on their upper edges, one of the same being slightly the longer and the two united by an end piece, and a tank adjustable in the grooves of the casing's sides, the same having faucets opening into the channels, substantially as described.

4. The combination of the adjustably-inclined pan A, divided by the partitions d, the casing B, constructed as described, the tank having

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faucets c', and the screen of like contour as the pan, having notches for the accommodation of the faucets, substantially as described.

5. The combination of the pan A and its casing adjustably inclined on legs and set-screws, and the tank adjustable between the sides of the casing, substantially as described.

327,068. BEE-HIVE. ROBERT H. COOSE, Taylor, Mo. Filed Jan. 28, 1885. (No model.)



Claim.—1. The honey-case composed of the separable frames p, the dividing-plates t, interposed between the frames and having the projecting shouldered ends t', the glass planes u, the rods x, threaded at their ends and extending along the sides of the case, plates connecting the rods, and nuts located on the threaded ends of the latter whereby the cases are secured together, the shouldered ends of the plates t resting on the rods, whereby the plates are prevented from dropping when the nuts are loosened, as set forth.

2. The combination of a bee-hive, frames which are adapted to be suspended therein, and having notches k on their upper sides, and the wires C, having the keepers i embedded in the notches of the frames, and intermediate portions, l, for separating the frames, as set forth.

327,069. STEAM-ACTUATED VALVE. EDWIN M. CORTELL, Brooklyn, N. Y. Filed Dec. 5, 1884. (No model.)

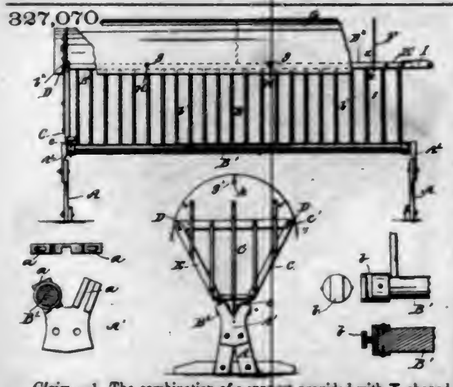
Claim.—1. The combination, with a supplemental piston, D, not itself the main valve of the engine, of auxiliary supplemental steam-pistons G G, having rods or stems projecting into a supplemental steam-cylinder, E, having no direct steam communication with the steam-chest, substantially as shown.

2. The combination of auxiliary supplemental steam-cylinders F F, ports I J K, and auxiliary supplemental steam-pistons G G, having rods or stems H H, with a supplemental steam-piston, D, not itself the main valve of the engine, whereby said supplemental steam-piston is moved a portion of its throw, substantially as set forth.

3. The combination, with steam-cylinder A and piston B, of supplemental steam-cylinder E, supplemental steam-piston D, and port J, whereby the supplemental steam-piston D is alternately balanced and made to complete its stroke, as hereinbefore set forth.

327,070. FEED-RACK. HAMILTON S. CRABTREE, Anna, Ill. Filed Apr. 7, 1885. (No model.)

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Claim.—1. The combination of a support provided with T-shaped grooves oppositely inclined relatively to each other with slat-frames correspondingly inclined, and having at their lower converging ends bars provided with T-shaped tenons fitted into the grooves of the support, and end frames uniting the diverging ends of said slat-frames, as and for the purposes set forth.

2. The combination of the support provided with oppositely-inclined T-shaped grooves, the slat-frames correspondingly inclined, having bars on their lower converging ends provided with T-shaped tenons fitted into said grooves, and the end frame uniting the upper ends of the slat-frames and provided with a depending pin to engage the support, substantially as and for the purposes specified.

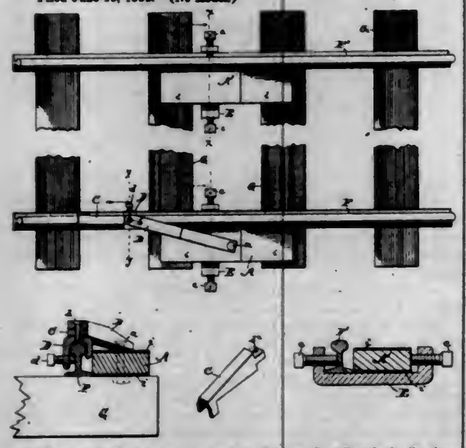
3. A feed-rack consisting of the following elements in combination: a support having oppositely-inclined T-shaped grooves, slat-frames correspondingly inclined, T-shaped tenons attached to the lower ends of the cross-bar of the slat-frames and fitted into the grooves of the support, an end frame uniting the ends of the upper cross-bar of the slat-frames and provided with a depending pin to engage the support, and bows joining the divergent sides of the slat-frames and adapted to form a support for a cover, substantially as shown and described.

327,071. BOTTLE-WASHER. THOMAS DAVIES, Poughkeepsie, N. Y. Filed Mar. 9, 1885. (Model.)



Claim.—A bottle washer and cleaner consisting of a continuous wire bent to form legs, the latter lapping or crossing each other and being curved at their lower portions and bent sharply inward at their extremities, and a slide or sleeve clasping the legs, as shown and described.

327,072. CAR-REPLACER. GUS M. DURDEN, Birmingham, Ala. Filed June 15, 1885. (No model.)

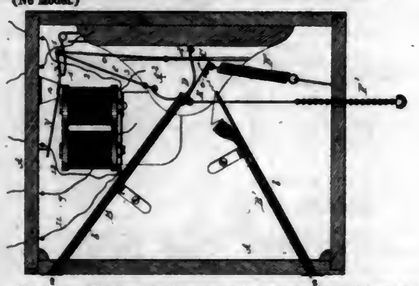


Claim.—1. In a car-replacer, the rail-piece C, obliquely inclined on its surface, and having at the end thereof two downwardly-depending lugs adapted to bridge over and embrace a track-rail and prevent lateral displacement, and at its opposite end a forwardly-projecting tongue apertured for reception of a pivot-bolt, in combination with the clamp D, provided with pivot-bolt *b*, substantially as described.

2. In a car-replacer, the adjustable rail-piece C, obliquely inclined on its upper surface, bifurcated at one end, and provided at its opposite end with an extending apertured tongue, and the supplemental rail B, cut away at one end to receive the tongue of the rail-piece C, in combination with rail-clamp D, having adjusting-screw *d* and pivot-bolt *b*, as and for the purpose intended, substantially as described.

3. In a car-replacer, the wheel-blocks A A', having pivoted thereto one end of supplementary rails B, in combination with rail-pieces C, adjusted to the rails B by means of pivots *b* of rail-clamp D, and block-clamps E, as and for the purpose intended, substantially as described.

327,073. TELEPHONE-TOLL SYSTEM. HENRY EDMUNDS, London, England, and CHARLES T. HOWARD, Providence, R. I. Filed May 13, 1885. (No model.)



Claim.—1. The combination, at a telephone-station, with the telephone or telephones located in a normally-disconnected branch, of a toll-collector comprising a closed box having a coin-opening, a switch or circuit-changer therein, and electrical connections, as specified, whereby the deposit of the proper coin or token in said opening operates said circuit-changer to connect said telephone or telephones to line, substantially as described.

2. The combination, with a telephone or telephones in a normally-disconnected branch, of a toll-collector comprising a switch or circuit-changer for putting said telephones into and out of circuit, a coin-passage leading to said switch or circuit-changer, and a stop arranged to arrest the coin at said switch or circuit-changer, substantially as described.

3. A toll-collector for telephone-stations, comprising a box or receptacle having an inlet-opening adapted for the admission of the proper coin or token, a switch operated to effect connection with the main line by the introduction of such coin or token, and an outlet and releasing mechanism whereby the coin or token may be withdrawn from said box, substantially as described.

4. In a toll-collector for telephone-lines, the combination of a closed box or receptacle having a coin-opening, an incline or track for the passage of said coin, a switch or circuit-changer controlled by the coin, a trap upon which said coin comes to rest, and means for operating said trap to conduct said coin to an outlet-opening, substantially as described.

5. A toll-collector for telephone-lines, having in a closed box or case two inclined coin passages or tracks communicating, respectively, with an inlet and an outlet, a trap normally in line with the inlet-passage, a switch or circuit-changer controlled by the coin when resting on said trap, and means for depressing said trap, so as to bring it in line with the outlet passage or track, substantially as described.

6. A toll-collector for telephone-lines, comprising a closed box having a coin-inlet, an inclined way leading therefrom to a switch or circuit-changer, and a stop to arrest the coin at said switch, said stop being connected with the armature of an electro-magnet in the main line, so that at the will of the central-office operator it can be removed and the coin allowed to fall into its receptacle, substantially as described.

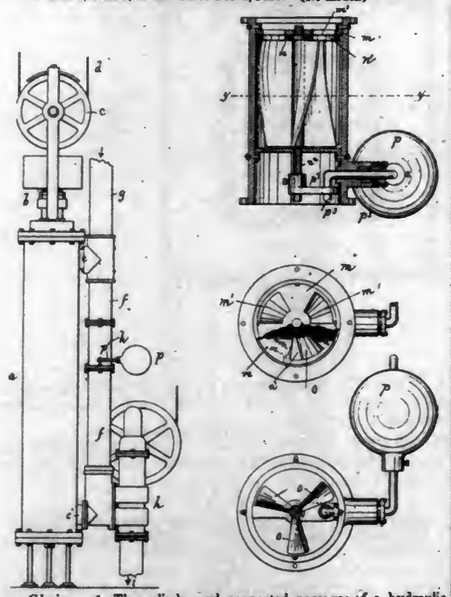
7. In a toll-collector for telephone-stations, the combination of a closed box having an inlet for a coin or token, a circuit-changer operated by the admission of said coin or token, means under the control of the central office for withdrawing the coin from said circuit-changer and causing it to drop into its receptacle, an outlet for the coin, and a releasing device, substantially as described.

8. The combination of the box or case having an inlet for a special coin or token, an inclined track, a switch or circuit-changer for connecting the telephone-instruments to line, a removable stop to arrest the coin in the position to operate said switch, whereby the stations can communicate with the central office so long as the coin or token is held by said stop, an electro-magnet in the main line, its armature, and connections for withdrawing said stop and dropping the coin, a trap upon which said coin comes to rest, and a releasing device under the control of the subscriber, whereby he may depress said trap to recover said coin or token, substantially as described.

9. The combination, at a subscriber's station, with the telephone, of a circuit-changer arranged to connect said telephone to line upon the admission of a proper coin or token, means, controlled by the armature of an electro-magnet in the line, for causing the coin to fall into its receptacle, a second magnet in the local circuit capable of holding said armature when brought within its reach by the action of the first-named magnet, and connections, as specified, whereby said armature, when depressed, operates said circuit-changer to keep the telephones in line, substantially as described.

10. The combination, with the switch, of the inclined track for conveying a coin thereto, said track being constructed to prevent the admission of objects larger than the proper coin or token, and being cut away below, so that smaller objects will fall through without reaching said switch, substantially as described.

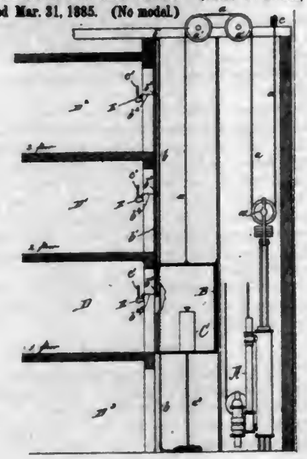
327,074. REGULATOR FOR HYDRAULIC ELEVATORS. QUIMBY N. EVANS, Boston, Mass. Filed Feb. 2, 1885. (No model.)



Claim.—1. The cylinder and connected passages of a hydraulic elevator combined with the valve or regulator, substantially as described, composed, essentially, of a case, a plate, *m*, provided with holes, and a movable plate and blades, the pressure of the water on the latter effecting the closing of the holes in the plate *m* in proportion as the pressure of the water increases, substantially as described.

2. The combination of the cylinder of a hydraulic elevator with a regulating device consisting of a valve and spiral actuating-blades therefor operated by the flow of water through the said valve, and a retracto opposing the movement of the said blades, substantially as described.

327,075. INDICATOR FOR ELEVATORS. QUIMBY N. EVANS, Boston, Mass. Filed Mar. 31, 1885. (No model.)

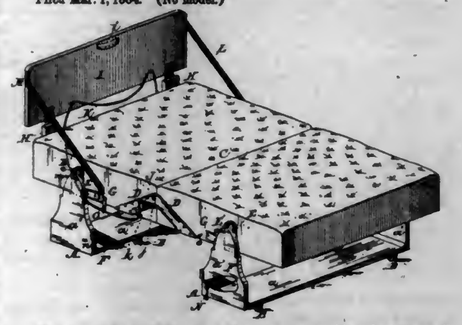


327,075.



Claim.—In an elevator-indicator, the combination, with an indicating device or apparatus and an attached air-pipe, of a tank containing fluid and adapted to be raised and lowered in the movement of the car, and a flexible tube connecting the fluid-tank with the air-pipe, whereby when the tank is raised or lowered in the movement of the car, as specified, the air in the air-pipe is caused to act upon and operate the indicator, substantially as described.

327,076. FOLDING BED. BENJAMIN F. FARRAR, San Francisco, Cal. Filed Mar. 1, 1884. (No model.)

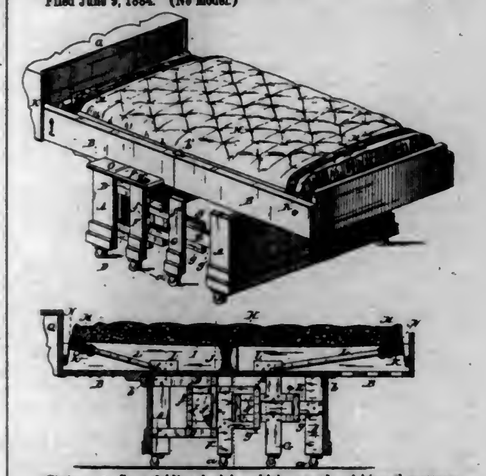


Claim.—1. In a folding bed, the two-part or hinged mattress C, the sections being hinged to supports at equal distances from the ends in combination with the movable frames A A, having ends *a'*, to which the sections of the mattress are pivoted, and the diagonal stop and brace-irons F, which act as stops for said sections when in an upright position and which extend between the base of frames A A and their ends *a'*, substantially as and for the purpose herein described.

2. In a folding bed, the two-part or hinged mattress or bed C and the head-board I, hinged to the end of one of the sections and carrying the hook M, in combination with the movable frames A A, to which the sections of said mattress are pivoted, substantially as herein described.

3. In a folding bed, the two-part hinged mattress C and the self-adjusting frames or legs A A, to which the sections of the mattress are pivoted, in combination with the pivoted latches J on the sides of one section, and the lugs *j*, with which said latches engage on the sides of the other section, and the cord K for releasing said latches, substantially as and for the purpose herein described.

327,077. FOLDING BED. BENJAMIN F. FARRAR, San Francisco, Cal. Filed June 9, 1884. (No model.)



Claim.—1. In a folding bed in which a sectional hinged mattress-frame is mounted upon carriers, the rolling leg frames or carriers A and the supplementary rolling legs F G, in combination with the horizontal guide-

stripe D E *f g*, secured to said leg-frames and legs and sliding upon and between one another, substantially as herein described.

2. In a folding bed, the rolling leg frames or carriers A, upon which the sections of the bed-frame are hinged, and the supplementary rolling legs F G, in combination with the horizontal guide-stripe D E *f g*, secured to said leg-frames and legs and sliding upon and between one another as described, and the series of stops by which the movements of the guide-stripe are limited and governed, consisting of the stops *f f*² on the guides *f*, the stops *g*' *g*² on the guides *g*, stop *d* on guides D, and stop *e* on guide E, all arranged and operated substantially as herein described.

3. The rolling leg-frame A, provided with the horizontal guide-stripe D and E, and the bed-frames B, to which the leg-frames are hinged, in combination with a bolt, P, on one of the leg-frames, adapted to engage with one of the bed-frames to prevent their folding, as herein described.

4. The combination, with the rolling leg-frame A and the rolling supplemental legs F and G, each provided with horizontal guide-stripe and forming, when closed, the base of the bed casing or cabinet, of the bed-frames B, the mattress H, and the arms L, cross-bars K, the blocks *l*, and the straps securing the cross-bars to the frames, all combined and arranged to operate as herein described.

5. In a folding bed, the hinged bed-frames B, in combination with the mattress H, the loosely-playing cross-bars K within said frame, and to which the ends of the mattress are secured, the arms L, secured by one end to the cross-bars and pivoted by the other to bed-frames, and the flexible straps N, secured to the cross-bars and to the bed-frames, whereby the upward movement of the cross-bars is limited, substantially as herein described.

6. In a folding bed, the hinged bed-frames B, in combination with the mattress H, the cross-bars K, the straps M, securing the mattress to the cross-bars, the straps N, securing the cross-bars to the frames, and the arms L, substantially as herein described

327,078. WATCH-CASE. WALTER H. FITZ GERALD, Chicago, Ill. Filed Jan. 7, 1884. (No model.)



Claim.—1. A watch-case provided with a movement-holding rim screwed into the center of the case, substantially as described.

2. A watch-case center having at or near one of its edges an internally-threaded portion adapted to receive a threaded portion of a movement-holding rim, substantially as described.

3. The combination, in a watch-case, of an internally screw-threaded center with an externally screw-threaded movement-holding rim adapted to be screwed in the said center, substantially as described.

4. A watch-case, in combination with a movement-holding ring screwed in and projecting beyond the center, substantially as and for the purpose described.

5. The combination, in a watch-case, of an internally screw-threaded center with an externally screw-threaded movement-holding rim screwed in the said center with a part of its screw-threaded perimeter extending beyond the center to receive a lid, substantially as described.

6. The combination, in a watch-case, of an internally screw-threaded rim fitting in the center and extending beyond the inner edge thereof, so as to expose a portion of its screw-threaded perimeter, and a lid screwed onto the exposed screw-threaded perimeter of the rim, substantially as described.

7. A watch-case center, in combination with a movement-holding rim provided with a screw-threaded portion adapted to be connected with the case-center and having a bearing against a seat on the said center, substantially as described.

8. A watch-case center, in combination with a movement-holding rim provided with a screw-threaded portion adapted to be connected at one end with the case-center and at its opposite end having a bearing on a seat on the watch-case center, substantially as described.

9. A movement-holding rim for a watch-case adapted to contain the movement and provided at one edge with a threaded portion adapted to be screwed into the center or body of the case and at the opposite edge adapted to bear on a seat formed in the case-center and to receive a detachable bezel or cover, substantially as described.

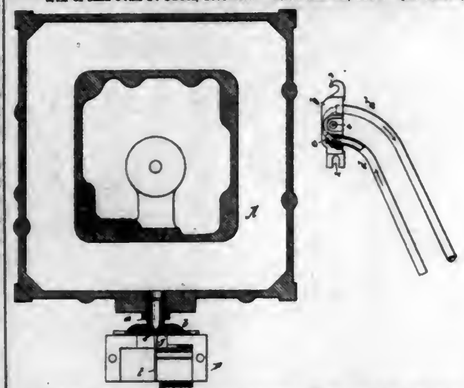
10. In a stem setting and winding watch-case, the case-center provided with a back having a screw or equivalent connection with the case-center, in combination with a movement-holding rim provided with a screw threaded portion adapted to be connected with the case-center and a detachable bezel, substantially as described.

11. A movement-holding rim for a watch-case provided at one edge with an externally-threaded portion adapted to be screwed into an internally-screw-threaded portion of the case-center and its opposite edge provided with a shoulder adapted to rest on a seat formed in the case-center, substantially as described.

12. A watch-case center having at one edge an internally-threaded portion adapted to receive a threaded portion on a movement-holding rim and an externally-threaded portion adapted to engage a threaded back or cover, said center being also provided with a seat adapted to receive a shoulder on the movement-holding rim, substantially as described.

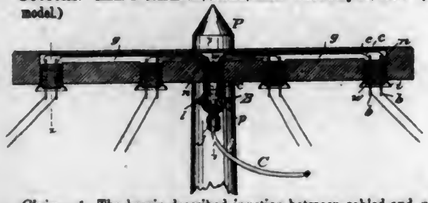
13. A watch-case center having at one edge an internally-threaded portion adapted to receive a threaded portion on a movement-holding rim and at its opposite edge provided with a seat on which the movement-holding rim seats when the said rim is in place within the case-center, substantially as described.

327,079. NIPPLE-PLATE FOR TYPE-CASTING MACHINES. JOHN F. GABEL and JOHN B. GUELPA, Chelsea, Mass; Johanna M. Gabel executrix of said John F. Gabel, deceased. Filed Jan. 12, 1885. (No model.)



Claim.—The nipple-plate for a type-casting machine having an attached cooling-chamber for the passage or flow of a cooling medium, substantially as described.

327,080. JUNCTION BETWEEN CABLED AND UNCABLED CONDUCTORS. EZRA T. GILLELAND, Boston, Mass. Filed July 13, 1885. (No model.)



Claim.—1. The herein-described junction between cabled and uncabled conductors, consisting of the combination of a support containing one or more insulated connections, to which the terminal or terminals of the pole-lines are connected, and a cable-box containing a series of wire terminals—as screw-posts—connected to the said insulated connections by conductors laid in a groove or passage in the said insulating-support, and also forming the terminals of the cabled conductors.

2. A cross-arm containing a series of insulators, in each of which is placed one or more metallic bolts to receive the terminals of overhead wires, a cable-box having a series of insulated terminals to receive the cabled conductors, and a groove or passage to receive a series of insulated conductors electrically connecting the said bolts and insulated cable terminals.

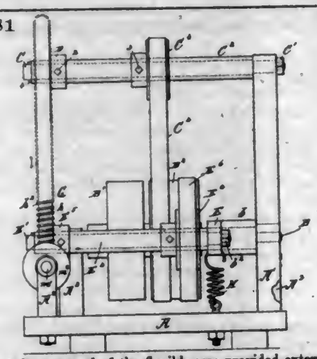
3. A cross-arm of wood containing a longitudinal passage and a series of perforations communicating therewith from the under side, in which are fixed one or more insulators, each composed of an iron shell having a core of insulating material, wherein are located a pair of metallic bolts to form the terminals of a divided pole-line conductor, a cable-box, composed of a metallic case containing a series of insulated screw-posts communicating with the said longitudinal passage by suitable perforations, and a series of insulated conductors located in the said longitudinal passage and connecting said box terminals and insulated bolts, substantially as described.

4. An insulator composed of an iron shell or casting containing a wooden core, in which are located one or more metallic bolts to receive and hold the conductor.

327,081. CHANNEL-FLAP-LAYING MACHINE. OTHNIEL GILMORE, North Raynham, Mass. Filed Feb. 9, 1885. (No model.)

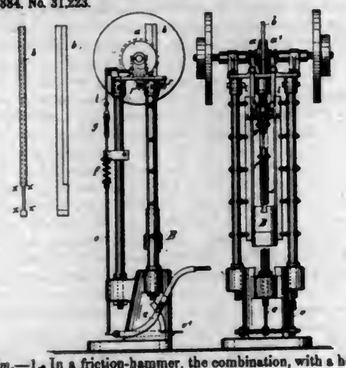
Claim.—1. In a channel-flap-laying machine, the belt composed of the flexible core provided externally with metal rings or projections, substantially as described.

327,081



2. The belt composed of the flexible core provided externally with the metal projections, combined with the pulleys to carry the said belt and with means, substantially as described, to rotate the pulleys.

327,082. DROP-HAMMER. WILHELM HASSEL, Hagen, Prussia, Germany. Filed June 30, 1885. (No model.) Patented in Germany Aug. 12, 1884, No. 31,223.



Claim.—1. In a friction-hammer, the combination, with a hammer-stem, of the adjustable friction-disks for operating the same, having parallel faces, with the stem of the hammer extending between said parallel faces, substantially as described.

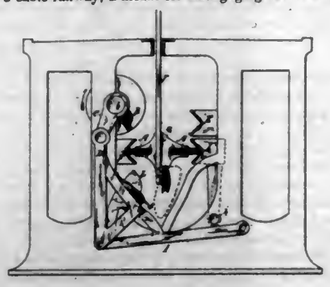
2. The combination, with the adjustable friction-disks, of a hammer-stem reduced in thickness toward the lower end for regulating the height of the stroke, and having the inner side of decreased thickness in order to limit the frictional contact to the outer circumference of the disks, substantially as described

3. The combination, with the hammer-rod and friction-disks, of steering-gear consisting of the levers *i*, spring *k*, and rod *e*, carrying the wedge *g*, and controlled by the spring *f*, and hand-lever or treadle, substantially as described.

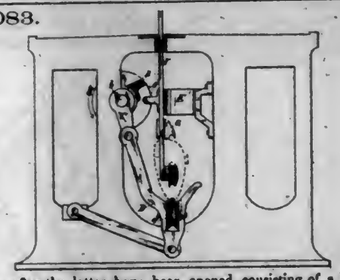
327,083. CABLE RAILWAY. ROBERT D. HAVEN, San Francisco, Cal. Filed Feb. 9, 1885. (No model.)

Claim.—1. In a cable railway, a means for removing the cable from the grip mechanism after the latter has been opened, consisting of a lever pivoted to a stationary portion of the tube or frame and connected with a crank or eccentric arm, in combination with a mechanism which is actuated by the passing grip so as to raise the lever and cause it to engage and lift the cable, substantially as herein described.

2. In a cable railway, a means for disengaging the cable from the



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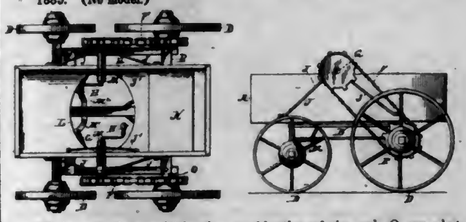
grip-jaws after the latter have been opened, consisting of a lever pivoted to the stationary part of the tube or frame and connected with a crank or eccentric, together with a spirally-grooved shaft, to which the crank is connected, and lugs or projections upon the grip which are adapted to enter the groove and to rotate the shaft as the grip passes, substantially as herein described.

3. In a cable railway, a means for removing the cable from the grip-jaws after the latter have been opened and to depress it below the grip, consisting of a lever having one end pivoted to a stationary portion of the frame or tube and connected with a crank or eccentric by which it is caused to move around its fulcrum, in combination with a connecting arm or lever having a groove or guide upon one side to engage with the cable after it is removed from the grip-jaws and carry it downward upon the completion of the rotation of the crank, substantially as herein described.

4. In a cable railway, a means for replacing the cable within the jaws of the horizontally-traveling gripping device, consisting of an arm or lever having one end hinged or pivoted to a stationary portion of the frame or tube, in combination with a secondary arm or lever connected with the first lever and a crank which is caused to make a complete rotation by the passage of the grip, said secondary lever having a guide or pulley which will engage the cable upon its upward movement to raise it with relation to the grip-jaws, substantially as herein described.

5. In a cable railway, horizontal guides placed opposite each other, a single fixed guide above one of them upon one side, and a horizontal spirally-grooved flange or cylinder placed opposite to this second guide, in combination with a horizontally-moving grip having lugs or pulleys fixed upon its opposite sides to engage with the primary guides when the grip is closed, and which will engage with the secondary guide and spiral when they are raised by the opening of the grip-jaws, substantially as herein described.

327,084. VELOCIPEDE. THOMAS F. HENNESY, South Kaukauna, Wis., assignor of one-half to Louis Gantter, same place. Filed July 10, 1885. (No model.)



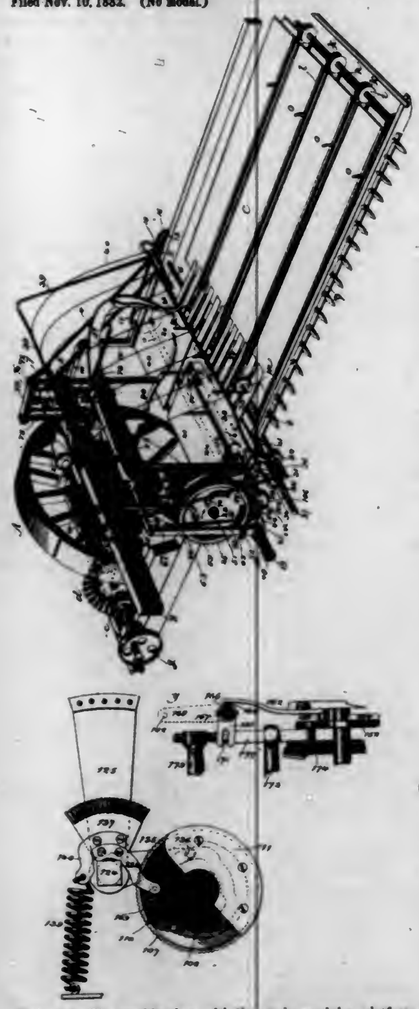
Claim.—1. In a vehicle, the combination of the axle O, sprocket gear-wheels E, keyed to each end thereof, sleeves I, supported by brace-rods J J', parallel with the axle O, drive-wheel axles G', supported within said sleeves, sprocket drive-wheels G, carried by said axles on their outer ends, cranks H, secured to their inner ends, and the sprocket-chains F, passing over the wheels G and E, substantially as and for the purposes specified.

2. The combination, with the running-gear and body of a vehicle, of a U-shaped bar having its legs attached to the front axle, one on either side of the point around which the axle turns, pins extending upward from that portion of the bar uniting the legs, yielding supports connecting the outer portion of the bar with the vehicle-body, the parts being constructed, arranged, and operating substantially as shown, and for the purposes specified.

327,085. WOOD-FILLER. ADOLF HOEXTER, Offenbach-on-the-Main, and GEORG SCHULTER, Lohr-on-the-Main, Germany. Filed Dec. 4, 1884. (Specimens.)

Claim.—The herein-described composition, consisting of cleaned shiver, (ground and cleaned blue slate,) English filling-up, (a pulverized mixture of silicate of aluminium, carbon, and manganese,) mixed with varnish and nigrosine or other suitable coloring-matter in the proportions specified, and for the purpose substantially described.

327,086. GRAIN-BINDER. MARSENA M. HOOTON, Chicago, Ill., assignor, by mesne assignments, to the Omega Binder Company, same place. Filed Nov. 10, 1882. (No model.)



Claim.—1. The combination, with the grain-receiving platform or table, of the binding-table and the intermediate gavel-table, all of said tables being arranged substantially in the same horizontal plane, substantially as and for the purpose described.

2. The combination, with the grain-receiving platform, the gavel-table, and a binder-arm, of the divider suspended above said platform and table, and mechanism operating said divider independently of the binder-arm, substantially as described.

3. The combination, with the grain-receiving platform, and with the binding-table, of the divider suspended above the table and the transfer-fingers, substantially as described.

4. The grain-platform and the fixed gavel-table, in combination with the divider between said platform and table, substantially as described.

5. The combination, with the binding-table and the perpendicular gavel-gage mounted thereon, of the vibrating transfer-fingers, substantially as described.

6. The combination, with the gavel-gage and the transfer-fingers, of the divider, substantially as described.

7. The combination, with the gavel-table, the stationary grain-receiving platform, and the carrier, of the divider and the vibrating gavel-gage mounted upon the gavel-table, all arranged substantially as described.

8. The combination, with the gavel-table, the stationary grain-receiving-platform, and the carrier, of the gavel-gage mounted on the gavel-table and vibrating transfer-fingers, all arranged substantially as described.

9. The combination, with the stationary grain-receiving platform and the carrier, of a gavel-gage, the grain-divider, and transfer-fingers, all arranged substantially as described.

10. The combination, with a grain-divider having its bearings in the stationary grain-receiving platform and provided with an elongated rib on its shaft, of a sliding binding-table, a cam-wheel, and a lever pivoted on the table, said lever being operated by the cam-wheel and engaged with an elongated rib on the divider shaft for actuating the divider, substantially as described.

11. The combination, with the shaft of the gavel-gage mounted on or below the binding-table, and with the operating mechanism of the grain-binder, of the arm 43, pivoted on the shaft of the gavel-gage and free at its opposite end, substantially as described.

12. The combination, with the gavel-gage, and with the operating mechanism of the grain-binder, of the arm 43, loosely seated upon the gavel-gage shaft, and the spring-connection between the shaft and arm, substantially as described.

13. The combination, with the transfer-fingers having the pinion on their shaft, a revolving cam, and a lever, one end of said lever engaging with the cams, and the other end being provided with a segment-rack and engaging with the pinion on the shaft of the transfer-fingers, substantially as described.

14. The combination, with the sliding gavel and binding-table and a revolving cam mounted thereon, of the transfer-fingers journaled in the grain-receiving platform, an actuating-pinion adapted to slide on the shaft of the transfer-fingers, and a lever pivoted on the sliding binding-table and engaging with said cam and pinion, substantially as described.

15. The combination of the transfer-fingers and the divider, of their respective actuating cams and levers, simultaneously engaging and operating said fingers and divider, substantially as described, whereby the divider sinks upon the grain-receiving platform and the fingers rise to transfer the gavel to the binding-table, as set forth.

16. The combination, with the transfer-fingers and the divider, of their respecting actuating cams and levers, simultaneously engaging and operating said fingers and divider, and a toothed grain-conveyer co-operating with said divider and transfer-fingers, substantially as described.

17. In a gavel-compressor, the combination, with the rigid frame provided with perforated end bars, of a reciprocating frame, the side bars of which are guided in said perforations, a spring-pressed cross-bar, a lever connected therewith, and mechanism actuating said lever to depress the spring-bar, and with it the reciprocating frame of the compressor, substantially as described.

18. The combination, with the shaft 19, the clutch-pinion, the gear 25, and the spring-actuated clutch-half, of the hinged lever 46, the lever 51, pivoted thereto, the foot-piece connecting said levers, the cam 55, and mechanism for operating said levers, substantially as described.

19. The combination, with the shaft 19, the clutch-pinion, the gear 25, and the spring-actuating clutch-half, of the hinged lever 46, the lever 51, pivoted thereto, the spring-actuating foot-piece connecting said levers, the cam 55, and the gavel-gage, substantially as described.

20. The combination, with the shaft 19, the clutch-pinion, the clutch-half revolved by the shaft and adapted to be engaged with the clutch-pinion, the gear 25, the cam 24, revolving with said gear, the grain-divider, and means, substantially as described, connecting the divider with the cam to actuate the divider, substantially as described.

21. The combination, with the shaft 19, the clutch-pinion, the clutch-half revolved by the shaft and adapted to be engaged with the pinion, the gear 25, the cam 24, revolving with said gear, the transfer-fingers, and means, substantially as described, connecting the fingers with the cam to actuate the fingers, substantially as described.

22. In a grain-binder, the combination, with a binding-arm, its actuating-shaft and segment-gear, of a compressing-arm sleeved upon the stud parallel to its actuating-shaft, and a segment-gear sleeved on said stud, and connected with said arm by a spring, and meshing with the gear of the binding-arm, substantially as described, whereby the stroke of the compressing-arm is adapted to yield to various sizes of gavels, as set forth.

23. The combination, with the binding-arm, and its segment-gear, and its opposing compressing-arm 58, of curve rod 58^a, actuating-spring 58^b, sleeved thereon, segment-gear $57\frac{1}{2}$, and arm 57^b, substantially as described.

24. The compressing-arm, the shaft, and the lever 60, in combination with the cam-faced gear, the cam of which has a bearing along the length and against the end of said lever, substantially as and for the purpose described.

25. The combination, with binding and compressing arms, their actuating-shaft, and the lever 60, of the cam-faced gear, the cam of which has a bearing along the length of the lever and against its end, substantially as described, whereby the power of the lever is gradually increased and the pressure of the binding-arm and compressing-arm is correspondingly increased as they descend upon the gavel.

26. The looper-shaft provided with intersecting slots receiving the twine, in combination with devices external thereto adapted to retain the twine in or permit it to be discharged from said slots, substantially as described.

27. In a knotter, the combination, with the slotted stem or shaft, of the slotted inclosing shell or tube and means for actuating said stem and shell, substantially as described.

28. The combination, with the stem or shaft provided with intersecting slots receiving the twine, of the device or devices external thereto adapted to retain the twine in and permit it to be discharged from said slots, and mechanism intermittently and simultaneously reciprocating and oscillating said stem or shaft and retaining devices, substantially as described.

29. The combination, with the inclosing shell or tube, the point of which is provided with transverse intersecting slots for receiving the twine, of a stem or shaft and mechanism intermittently and simultaneously reciprocating and rocking the said stem or shaft, substantially as described.

30. The combination, with the stem or shaft slotted at its point to receive the twine and mechanism for rocking and reciprocating said stem or shaft, of an inclosing shell or tube, the point of which is provided with slots adapted to receive the twine and co-operate with the slots of the stem or shaft in receiving the twine and forming and tying a knot, substantially as described.

31. The combination, with a stem or shaft slotted at its point to receive the twine, and mechanism for rocking and reciprocating said shaft, of the slotted and inclosing shell or tube and means for rocking said tube independently of the stem, substantially as described.

32. The combination, with the stem or shaft and the inclosing shell or tube, of the pivoted lever 114, sleeved and collared upon the shaft, and a revolving actuating-cam engaging with said lever to reciprocate the stem or shaft, substantially as described.

33. The combination, with the looper-shell provided with a pin, 113, of the slide 130, having its bearing on said shell and engaging with the pin 133, and means for reciprocating said slide to revolve the shell, substantially as described.

34. The combination, with the looper-shaft, the pin 133, and the slotted slide 130, of the cam-grooved sleeve 127, plate 129, connecting said sleeve and slide, and means for actuating the cam-sleeve, substantially as described.

35. The combination, with the looper-shaft, the slide, and the cam-grooved sleeve 127, of a lantern-gear mounted upon said sleeve, the vibrating studded plate 125, and means for actuating the studded plate, substantially as described.

36. The combination, with the cam-sleeve 127 and the studded plate 125, engaging the segment-gear on the sleeve, of the arm 135 and a cam engaging with said arm and actuating said studded plate, substantially as described.

37. An adjustable spring-studded reciprocating twine-holder provided with a stud projecting from and at a right angle to its operative face, in combination with a fixed plate or jaw recessed to correspond with and receive said holder and its stud, substantially as described.

38. The combination, with the looper stem or shaft and the inclosing shell or tube, of a lifting-finger, substantially as described.

39. The combination, with the stem or shaft and the inclosing shell or tube, of a lifting-finger and mechanism for intermittently reciprocating and oscillating said finger across the path of the looper, substantially as described.

40. The combination, with the lifting-finger and its arm 169, of the spring-actuated rocking and reciprocating shaft 167 and means for operating the same, substantially as described.

41. The combination, with the lifting-finger and its rocking and reciprocating shaft, of the downwardly-projecting arm 166, the levers 172 and 162, connected with said shaft, and means for actuating said levers, substantially as described.

42. The combination, with the reciprocating stem or shaft, of a plate, 88, provided with a perforation intermittently receiving the point of said stem, and with guides 86 and 87, for holding the twine in alignment with the receiving slot or eye of the stem, substantially as described.

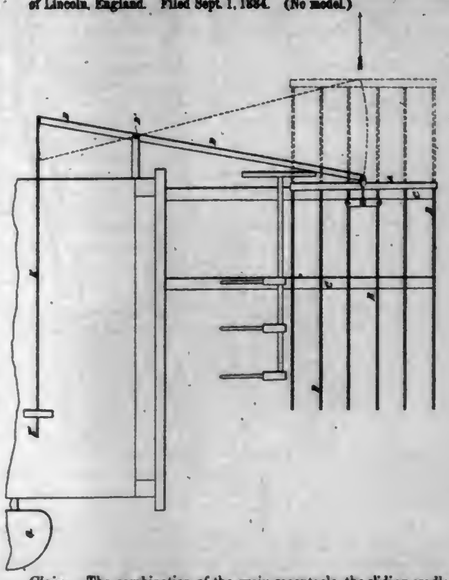
43. The combination, with the reciprocating stem or shaft, of a plate, 88, provided with a perforation intermittently receiving the point of the stem, and with guides 86 87 and stud 89, for holding the twine across the path of the looper, substantially as described.

44. The combination, with the reciprocating stem or shaft, of the twine-guides 86, 87, and 89, and the twine-holder bearing 90, intermediate between guides 87 and 88, substantially as described.

45. In a grain-binder, the grain-receiving platform, the binding-table, and the intermediate gavel-table, arranged in the same horizontal plane with each other, in combination with the gavel-gage operating at a point between the grain-receiving platform and binding-table, substantially as described.

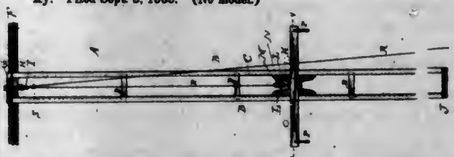
46. In a grain-binder, the grain-receiving platform, the gavel-table, and the binding-table, in combination with the gavel-gage arranged in front of the binding-table, whereby said gage operates as a cut-off between the inflowing grain and that being bound on the binding-table, substantially as described.

327,087. DROPPING-CRADLE FOR HARVESTING-MACHINES. JAS. HORNSBY, FREDERICK C. SOUTHWELL, and JOHN INNOCENT, Grantham, County of Lincoln, England. Filed Sept. 1, 1884. (No model.)



Claim.—The combination of the grain-receptacle, the sliding cradle formed with rods extending by the side of the grain-receptacle parallel, or nearly so, with the stalks of the grain therein, and upon which the bound sheaves are delivered from the grain-receptacle with the stalks of grain extending lengthwise of them, the support for the sliding cradle, and means for reciprocating the cradle in the direction of the length of the sheaves, substantially as and for the purpose set forth.

327,088. TOBACCO-ELEVATOR. SHREWSBURY D. HURST, Versailles, Ky. Filed Sept. 3, 1885. (No model.)



Claim.—1. A tobacco-elevator having vertical way-pieces adapted at their upper portion to be removably connected to the tier-rails, and having a pulley attached to said upper portion and grooves or guideways in their inner faces, a block or carriage adapted to slide between said guide-pieces and having a pulley on the upper portion thereof, and a carrying-bar connected to said sliding block and having hooks mounted thereon, substantially as and for the purpose set forth.

2. In a tobacco-elevator, a way having suitable vertical guideways to receive and guide the elevating device, a pulley at its upper end and a stop at its lower end, a block or carriage adapted to fit and slide within said guideways and having a pulley thereon, and a tobacco-carrying bar connected to said carriage, substantially as set forth.

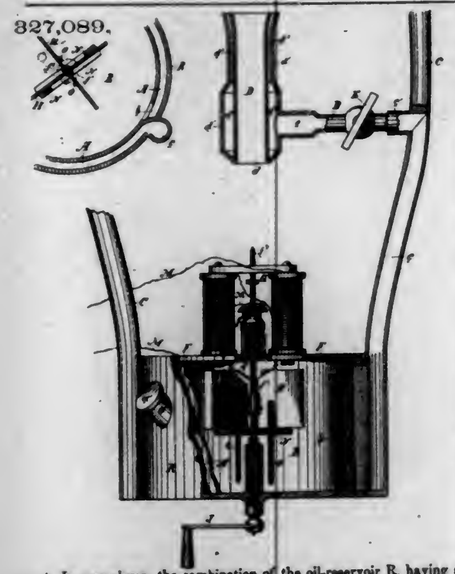
327,089. GAS-LAMP. LEOPOLD JULIS, San Francisco, Cal. Filed July 7, 1885. (No model.)

Claim.—1. In a gas-lamp, the combination of an oil chamber or reservoir, a burner communicating therewith, a rotating fan, suitable armatures on the fan, and an electro-magnet for operating the fan, substantially as and for the purpose described.

2. In a gas-lamp, the combination of the oil-reservoir R, having an outer chamber, A, and an inner chamber, B, with a communicating aperture, *b*, a burner, a pipe communicating with the burner and with the outer chamber, A, the latter communication or exit being as far as possible from the aperture or entrance between the two chambers, and a rotating fan in the inner chamber above the oil, substantially as herein described.

3. In a gas-lamp, the combination of the oil-reservoir R, having an outer chamber, A, with a supply-aperture, and an inner chamber, B, with an aperture communicating with chamber A, a burner communicating with the outer-chamber, a rotating fan in the inner chamber above the oil, and a valved port in the top of the reservoir through which the air is drawn by the rotating fan, substantially as described.

327,089.



4. In a gas-lamp, the combination of the oil-reservoir R, having a port, *f*, an inner chamber, B, with which the port communicates, and an outer chamber, A, communicating with chamber B, a burner communicating with the outer chamber, a vertically-moving valve controlling the port *f*, having stem *f*², the fan H on the stem, and the vertically-adjustable screw I through the bottom of the reservoir, in which the valve-stem is stepped, substantially as described.

5. In a gas-lamp, the combination of the oil-reservoir R, having an outer chamber, A, with a supply-aperture, and an inner chamber, B, having an aperture, *b*, communicating with chamber A, a burner communicating with the outer chamber, the fan H in the inner chamber, and the mechanism for rotating said fan, consisting of the electro-magnet L on the reservoir, an electric circuit including the magnet, and the armatures N on the fan, substantially as described.

6. In a gas-lamp, the combination of the oil-reservoir R, having an outer chamber, A, with a supply-aperture, and an inner chamber, B, having an aperture, *b*, communicating with chamber A, and a top port, *f*, a burner communicating with the outer chamber, the valve *f*², controlling the port and having stem *f*², the fan H on the stem, the adjusting-screw I, in which the stem is stepped, the electro-magnet L in a battery-circuit closed and opened by the valve, and the armatures N on the fan, all arranged and adapted to operate substantially as herein described.

7. In a gas-lamp, the combination of the oil-reservoir R, having concentric communicating chambers A and B, the supporting-bracket C, one arm, *c*, of which is tubular and communicates with chamber A, the burner D, supported from the bracket and communicating with the tubular arm *c*, and the rotating fan H in chamber B, above the oil, substantially as described.

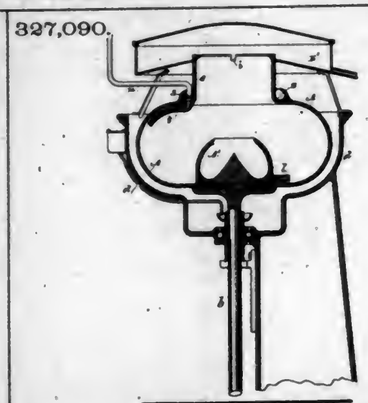
8. In a gas-lamp, the combination of the oil-reservoir R, the burner D, communicating therewith, the rotating fan in the reservoir above the oil, and adapted to draw in air and force it into the oil, and the agitator-arms O on the fan extending down into the oil, substantially as herein described.

9. A gas-lamp comprising the reservoir R, having concentric communicating chambers A B, the burner D, communicating by pipe *c* with the chamber A, the vertically-adjustable valve *f*², controlling an air-port in the top of chamber B, the rotating fan H on the valve-stem and above the oil in chamber B, the agitator-arms on said fan and extending into the oil, the electro-magnet L, and circuit-wires on the reservoir, and the armatures N on the fan, whereby it is rotated, substantially as described.

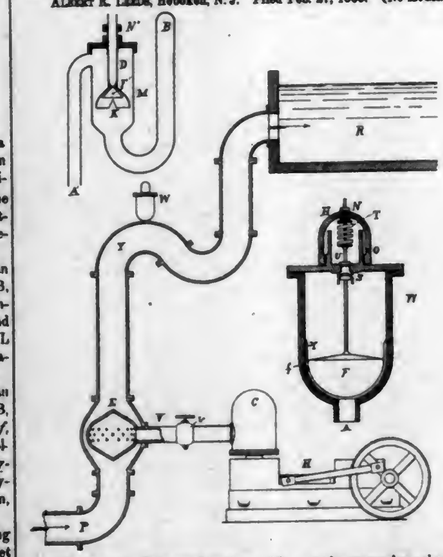
327,090. CENTRIFUGAL CREAMER. OSCAR LAMM, Jr., Stockholm, Sweden. Filed July 11, 1884. (No model.)

Claim.—The combination, with the revolving centrifugal separator having a discharge-opening for the cream or other light liquid or semi-liquid, of an annular receptacle for the same, the annular trough *s* around the contracted mouth of the separator, the pipe *t*, opening at one end into such annular trough and at the other end into the space for the heaviest liquid within the centrifugal vessel, and the stationary delivery-pipe having its open end within the annular trough, into which the liquid is projected, substantially as set forth.

327,090.



327,091. AUTOMATIC RELIEF-VALVE IN WATER-SUPPLY PIPES. ALBERT R. LEEDS, Hoboken, N. J. Filed Feb. 27, 1885. (No model.)



Claim.—1. The combination, with a main conveying-pipe and means for supplying air and water under pressure thereinto, of the valve-chamber W, having inlet and outlet apertures, a floating valve adapted to be raised by the pressure of water and to close the outlet-aperture, and an adjustable loaded valve arranged to permit the escape of air under pressure exceeding the normal pressure within the conveying-pipe, substantially as set forth.

2. The combination, with a water-pipe or the like having controlled connections, a water-supply under pressure, and an air-supply also under pressure, of a series of blow-offs adapted to allow the escape of gases only, and at a pressure exceeding that of the atmosphere, and an additional valve loaded to resist a certain pressure and adapted to allow the escape of water and connected with the interior of such pipes, whereby the water is retained within the pipes at the desired pressure, and the vitiated air and gases are automatically carried off, as set forth.

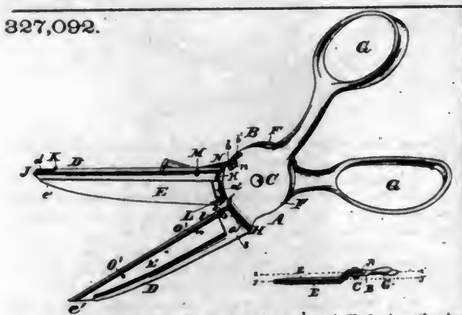
327,092. SHEARS. RICHARD G. LEWIS and SAMUEL E. MOSHER, Chillicothe, Ohio; said Mosher assignor to said Lewis. Filed Feb. 21, 1884. (Model.)

Claim.—1. The combination of a grooved jaw having an opening, *d*, a widened portion, *a*, formed with an orifice, *l*, and a keeper, K, and the blade E, formed with a spur, J, occupying the opening, and a stud, L, occupying the orifice, as set forth.

2. In shears, the pivot C above and to the right of the line of the cutting-edges, as and for the purposes set forth.

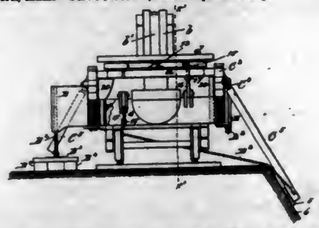
3. In shears, the combination, with jaws having a lug or stop to limit their opening, of the reversible stop N, pivoted to one of the jaws, and having a head, *n*, to occupy the hinge-opening, as set forth.

327,092.



4. A shear-blade formed of a thin plate of steel, E, for insertion in a grooved jaw, and formed with a point, *e'*, armed on its rear edge with a spur, J, to receive the end of a jaw, and a stud at its rear end, by which the blade is retained at the inner end of the jaw, as set forth.

327,093. RAILWAY-CAR. HARRISON LORING and LUTHER K. JEWETT, Boston, Mass. Filed Nov. 24, 1884. (No model.)



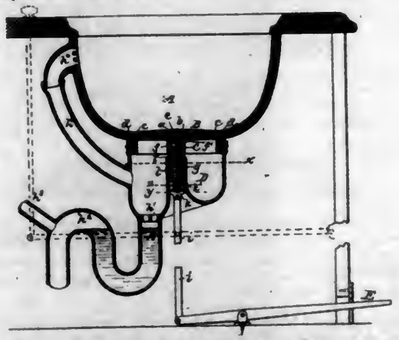
Claim.—1. The car-body and jack-screw C^3 C^5, combined with a chain to sustain one end of the jack-screw, the opposite end of the chain being fixed with relation to the car-body, the outer lower end of the said jack-screw taking a bearing substantially as described, being on a foot or plate outside the track, substantially as described.

2. The car-body and pivoted mast mounted thereon and provided with a turn-table, *d*, near its bottom, combined with the rope E^7, connected to said pivoted mast at its top, and with the anchor adapted to be secured to the track independent of and removed from the car, substantially as described.

3. The car-body and trunnion-plate, combined with the bolt 16, pivoted to the car-body and provided with the nuts 17 and 18, arranged to operate substantially as described.

4. The car-body and trunnion-plate, combined with the pivoted trunnion-plate stop connected with the car-body, substantially as described.

327,094. WASH-BOWL. HARVEY C. LOWRIE, Denver, Colo. Filed July 23, 1884. (No model.)



Claim.—1. The combination of an earthenware bowl or basin having an integral plug-seat at a large central opening therein, a waste-chamber below said opening, and a large earthenware plug serving as a removable bottom to said bowl, and detachably mounted upon a vertically-sliding spindle, substantially as described, whereby the bowl may be promptly emptied, a metal bushing or plug-seat obviated at the bottom of the bowl, a uniform interior finish afforded, and the waste-chamber rendered easily accessible, as set forth.

2. The combination, with a wash bowl or basin, of an annular waste-chamber containing a central tube extending upward from the bottom thereof, and a waste-plug mounted upon a vertically-sliding spindle within and guided by said tube, substantially as described.

3. The combination of the bowl, the annular waste-chamber, the central tube, the waste-plug mounted on a sliding spindle within said tube, and the sleeve mounted on said spindle and inclosing said tube, substantially as described.

4. The bowl having the integral inclined plug-seat, the earthenware plug, and the recess in the edge of said plug containing ring-packing, in combination with the annular waste-chamber containing the central tube, the plug-spindle within said tube, and a spring for forcing the plug to its seat, substantially as described.

5. The combination of the bowl, the waste-chamber, the central tube within said chamber, the waste-plug, its spindle within said tube, the treadle for moving the plug from its seat, and the spring for forcing said plug to its seat, substantially as described.

6. The combination of the earthenware plug, its central nut embedded in its under side, the plug-spindle, the tube for said spindle, and the sleeve-nut on said spindle, which incloses the upper end of the tube, and also serves as a set-nut for the plug, substantially as described.

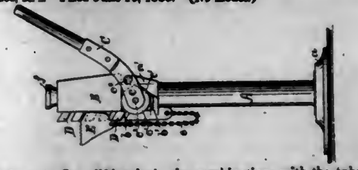
327,095. SWITCHING-WHEEL FOR STREET-CARS. HARVEY C. LOWRIE, Denver, Colo. Filed Sept. 15, 1884. (No model.)



Claim.—1. The combination, with a car-axle, of a switching-flange adjustable on the longitudinal line of the axle, substantially as described.

2. The combination of a car-wheel and a readily detachable and adjustable switching-flange adapted to be secured to either or both sides of the car-wheel, substantially as described.

327,096. CARRIAGE AND WAGON JACK. HENRY MIDWOOD, Providence, R. I. Filed June 10, 1885. (No model.)

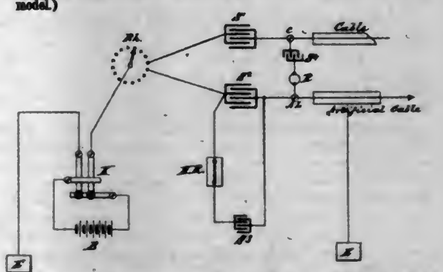


Claim.—1. In a lifting-jack, the combination, with the tubular column A, the head B, lever C, and dog E, of the independently-adjustable head *f*, substantially as described.

2. In a lifting-jack, the combination, with the tubular column A, the head B, constructed to slide on the column A and provided with the rack D, dog E, and lever C, of the independently-adjustable head *f*, supported on the head B by the stem F, provided with the studs *f'*, as described.

3. In a lifting-jack, the combination, with the hollow column A, having the foot *a* and shoulder *a'*, the hollow head B, having the shoulders *b b'*, opening b^2, rack D, and shoe E, of the lever C, having the arms *c*, provided with the rollers *c' c'*, the stem F, with the projections *f'* and head *f*, constructed substantially as described.

327,097. SUBMARINE DUPLEX TELEGRAPH. ALEXANDER MUIRHEAD, Norwood, County of Surrey, England. Filed Dec. 18, 1884. (No model.)



Claim.—1. The combination, substantially as hereinbefore set forth, in an electrical or telegraphic circuit, of an adjustable condenser in the circuit, an electrical circuit surrounding said condenser for modifying the capacity of the same, an artificial resistance in said modifying-circuit, and a supplementary condenser also in said modifying-circuit, for the purposes set forth.

2. The combination, substantially as hereinbefore set forth, in an electrical or telegraphic circuit, of the receiving-instrument, the adjust-

able rheostat, the separate condensers in the circuit, one connecting with the actual and the other with the artificial or compensating line, the adjustable supplementary condenser, and the adjustable resistance-coil in connection with one of said condensers with the key and battery and the condenser in the bridge or circuit between the actual and the artificial lines.

3. The combination, substantially as hereinbefore set forth, in an electrical or telegraphic circuit, of the receiving-instrument, the adjustable rheostat, the separate condensers in the circuit, one connecting with the actual and the other with the artificial or compensating line, the electrical circuits surrounding said condensers for modifying the capacity of the same, the adjustable supplementary condensers, and the adjustable resistance-coils in said modifying-circuits with the key and the battery and the condenser in the circuit between the actual and the artificial line.

327,098. MACHINE FOR STRAIGHTENING RAILROAD-RAILS.

MICHEL L. O'BRIEN, Joliet, Ill. Filed Oct. 13, 1884. (No model.)



Claim.—1. The machine for straightening railroad-rails described and shown, consisting of the combination, with the main frame A, of the two horizontal cylinders S' and S², arranged to face each other, and respectively provided with the pistons c' and c^2, and sliding heads c^1 and c^3, attached to said pistons, and having respectively on their outer ends the straightening-rolls n and n', vertical cylinders S and S², arranged to face each other, and respectively provided with the pistons c and c^2, and sliding heads c^1 and c^3, attached to said pistons, and having respectively on their outer ends the straightening-rolls m' and m, the said cylinders being set so as to face a common center, web-plate B, having guideways for said sliding heads, feed-rolls F F' F² F³, and the means described for operating said pistons and sliding heads independently of each other, consisting of the piston-regulators V V' V² V³ and their operating mechanism, to alternately bring said straightening-rolls to bear against either side of a railroad-rail, substantially as and for the purpose set forth.

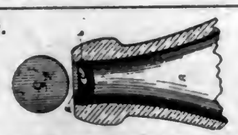
2. In the machine shown and described for straightening railroad-rails, the combination, with the platform H H', of the vertical shafts Z and Z', having sliding boxes near their upper end set to slide in said platform, wedge x, having an extended screw-threaded upper end provided with a pair of set-nuts, standard t, and feed-rolls F and F', located, respectively, on the upper end of said shafts, as and for the purpose set forth.

3. In the machine shown and described for straightening railroad-rails, the combination of the miter-wheels d, d', d^2, d^3, d^4, a, a', J, and J', shafts a^2, K, and R, sliding cone G, feathered on shaft R between miter-wheels d' d^3, and having an annular groove around its center, feed-rolls F F' F² F³, and forked lever G', forked over said cone in said annular groove, as and for the purpose set forth.

4. In the machine shown and described for straightening railroad-rails, the combination of the frame A, cylinders S, S', S², and S³, having the pistons c, c', c^2, and c^3, and sliding heads c^1, c', c^3, and c^2, attached to said pistons, and having the straightening-rolls m m' n n' on their outer ends, feed-rolls F, F', F², and F³, and piston-regulators V, V', V², and V³, and their operating mechanism, whereby said straightening-rolls may be independently brought to bear against either side of a railroad-rail at a variable and arbitrary pressure, as and for the purpose set forth.

327,099. BOTTLE-STOPPER.

WILLIAM PAINTER, Baltimore, Md., assignor of one-half to Lewis R. Keiser, same place. Filed June 5, 1885. (No model.)



Claim.—1. A bottle-stopper consisting of a disk of flexible material, cup-shaped, placed in the bottle-neck with its convex side inward and its concave side outward, and with its edge abutted against the bottle-neck, whereby internal pressure upon said stopper will be transmitted as lateral pressure against the bottle-neck, and resistance to displacement will increase with an increase of internal pressure, as set forth.

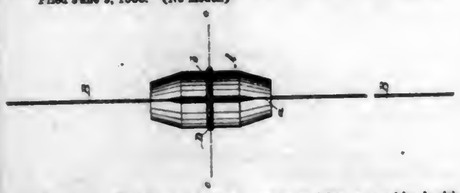
2. A bottle provided with a groove, recess, or cavity within its neck, combined with a stopper consisting of a flexible disk, cup-shaped, having its convex side inward and its concave side outward, and its edge seated in said groove, substantially as and for the purpose set forth.

3. The combination of a bottle provided with a neck-opening and a cup-shaped stopper of flexible material seated therein with its convex side inward and concave side outward, substantially as set forth.

4. A bottle-stopper consisting of a disk of flexible material capable when compressed circumferentially in arched form of resiliency toward a less arch, and adapted to be forced into the bottle-mouth with its convex side inward and its concave side outward, with its edge abutting against the bottle-neck, said disk being provided with a lug, whereby it may be extracted, substantially as set forth.

327,100. FLOAT FOR FISH-LINES.

CHAS. PALM, New York, N. Y. Filed June 9, 1885. (No model.)

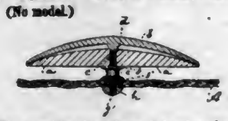


Claim.—1. The float A, having a cut or incision, a, combined with the collar D, which partly but not wholly embraces the said float, substantially as herein shown and described.

2. The combination of the line B with the longitudinally-slotted float A, having circumferential groove b, and with the collar D, which partly but not wholly embraces the said float, as specified.

327,101. BUTTON.

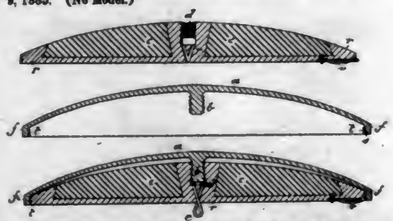
NOYES F. PALMER, Jamaica, N. Y. Filed June 29, 1885. (No model.)



Claim.—The combination of cap b, having shoulder d and threaded pin c, with the perforated tapped head a, and with the double-flanged shank e, and nut A, substantially as specified.

327,102. BUTTON.

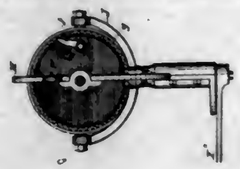
NOYES F. PALMER, Jamaica, N. Y. Filed July 9, 1885. (No model.)



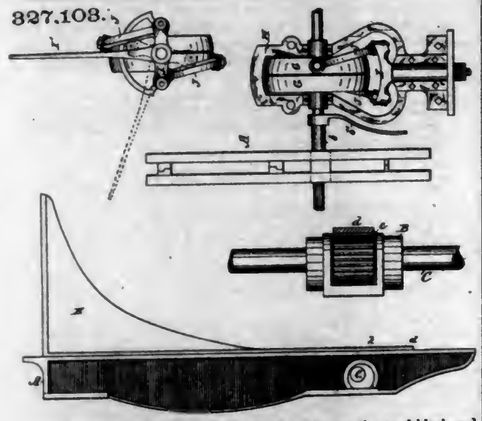
Claim.—A button having a screw-threaded periphery, a central cavity or bore, and a spring-catch on its inner face, in combination with a cap or cover having a central pin or stud, and an interiorly-screw-threaded annular flange, the latter provided with a recess to receive the spring-catch, substantially as described.

327,103. SAW-MILL HEAD-BLOCK.

GEORGE M. PELTON, Belmont, N. Y. Filed May 21, 1883. Renewed Sept. 2, 1885. (Model.)



327,103.



Claim.—1. In a saw-mill, the combination of the head-block and knee with the setting-shaft thereof, an oscillating yoke having its axis at right angles with said shaft, a pair of oscillating disks suitably connected with said yoke, and intermediate connections, substantially as described, between said oscillating disks and setting-shaft, as set forth.

2. In a saw-mill, the combination of the head-block with a knee having a rack-bar, a setting-shaft hung in movable eccentric boxes and carrying a pinion adapted to engage said rack-bar, and means for throwing said rack and pinion in or out of operation at will, substantially as set forth, for the purposes specified.

3. In a saw-mill head-block in which the knees are set toward the saw by gear-connections with a setting-shaft, the combination of said shaft, knees, and connections with duplex ratchet-disks G, the pawl-carriers F, spring-pawls f, mounted thereon, and yoke I, having its axis at right angles to the setting-shaft for driving the connections for forcing the said disks G in opposite directions simultaneously, as and for the purpose set forth.

4. In a saw-mill head-block, and in combination with the setting-shaft having rigid pawl-carriers F mounted thereon and carrying spring-pawls f, acted on by the ratchet-disks G, the yoke I, oscillating on a central pivot, the links J, pivoted to the yoke at opposite sides of said central pivot, and to the upper part of one disk and the lower part of the other, and means, substantially as described, for oscillating said yoke upon its pivot, as set forth.

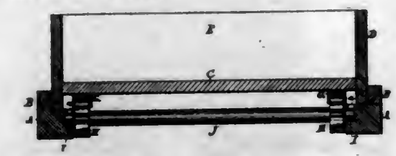
5. In a saw-mill head-block, the combination of the setting-shaft having pawl-carriers F mounted thereon and rigid therewith, the pawls f, pivoted on the carriers, springs f', acting on the pawls, ratchet-disks G, acting on the pawls, the oscillating yoke I, mounted on a shaft set at right angles to the setting-shaft and connected to the links J, and lever I', connected to said shaft, as and for the purpose specified.

6. In a head-block, and in combination with the knee-carriages having rack-bars d, the setting-shaft C, having a pinion, c, mounted thereon and journaled in a movable eccentric, B, turning in the frame A, and the lever b', connected with the eccentrics, as and for the purpose set forth.

7. The combination, with a knee-carriage having rack d, the shaft C, having pinion c mounted thereon, the eccentric journal-box B, mounted in frame A, and lever b', connected with the eccentric, the pawl-carriers F, mounted on the shaft C, pawls f, pivoted on said carriers, springs f', acting on the pawls, the ratchet-disks G, also acting on the pawls, yoke I, links J, connected thereto, and lever I', connected with the yoke, as set forth.

327,104. DRAWER.

REUBEN W. PERRY, Saundersville, Mass. Filed Jan. 24, 1885. (No model.)

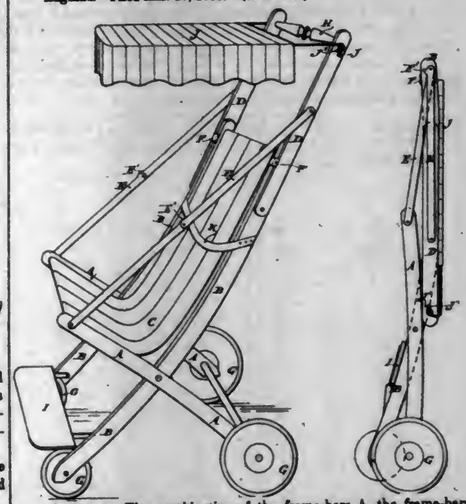


Claim.—1. A combined gear, journal, and socket-piece, M, consisting of the parts H I N, for use in operating drawers, substantially as described.

2. The combination, with the journals of a shaft provided with gears, one at each end, for operating the racks of a drawer, of slotted or open bearings a a, substantially as shown and described.

327,105. FOLDING CHAIR.

JOHN PIERCE, Herne Hill, County of Surrey, assignor to Edward John Vavasseur Earle, 119 Cheapside, London, England. Filed Mar. 27, 1885. (No model.)

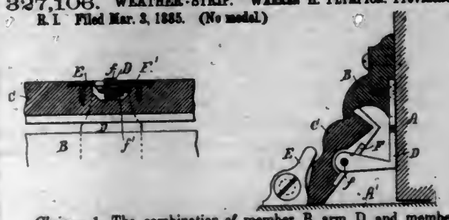


Claim.—1. The combination of the frame-bars A, the frame-bars B, jointed intermediate their ends to the bars A midway their length, the backwardly-folding bars D, jointed to the upper parts of the frame-bars B, the stops F, secured to these frame-bars for limiting forward movement of the bars D, and the knuckle-jointed stays E, extending from the bars D to the upper ends of the frame-bars A, and serving when the chair is open to hold the bars D in contact with their stops, substantially as set forth.

2. The combination of the jointed folding frame-bars A B, the backwardly-folding bars D, jointed to the upper parts of the frame-bars B, the stops F, secured to these frame-bars for limiting forward movement of the bars D, the knuckle-jointed stays E, extending from the bars D to the upper ends of the frame-bars A, the wheels G, the folding hood jointed to the arms D, and the jointed foot-board, substantially as and for the purpose as set forth.

327,106. WEATHER-STRIP.

WARREN H. PLIMPTON, Providence, R. I. Filed Mar. 3, 1885. (No model.)



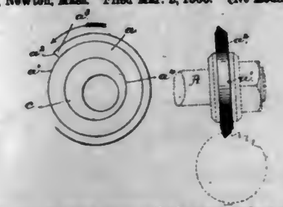
Claim.—1. The combination of member B, arm D, and member C, pivoted upon said arm so as to tilt automatically into open condition by gravity, as set forth.

2. The combination, with member C, having plate F, with its pin f, and plate F', with its lug f', of member B and arm D, substantially as and for the purposes stated.

3. The combination of member B, arm D, member C, with plate F, having pin f, and plate F', with lugs f', and the stop E, as described.

327,107. MILLING-CUTTER.

CHARLES H. POLEY and ALSON A. SMITH, Newton, Mass. Filed Mar. 2, 1885. (No model.)

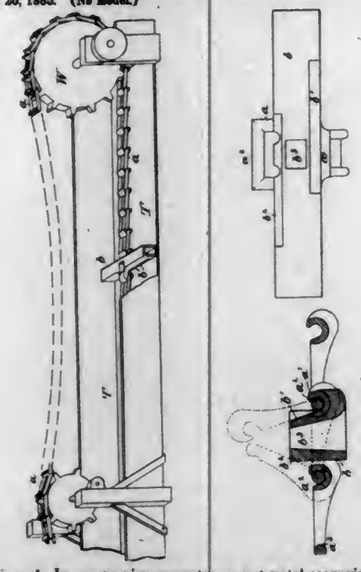


Claim.—1. A cutter composed of a concentric or circular disk having its periphery shaped in radial section in correspondence with the shape desired for the cut to be made, the said cutter having a portion of its periphery ground away or notched, thereby providing a cutting-face,

combined with an arbor and an eccentric, thereby providing clearance without grinding or removing the material of the cutter at the rear of the cutting-face, substantially as described.

2. The combination, with an arbor, of a cutter composed of a circular disk having its periphery of the shape in radial section desired for the cut, and having a portion of its periphery notched or cut away, the cutter also having a central opening of larger diameter than the arbor, and an eccentric entering the said opening and filling the space between the arbor and cutter, substantially as described.

327,108. CONVEYING APPARATUS. THOMAS E. PROCTOR, Boston, and ROBINSON WHITAKER and HERBERT P. REED, Peabody, Mass. Filed Apr. 20, 1885. (No model.)



Claim.—1. In a conveying apparatus, a cast-metal conveying device combined with a link of a drive-chain embedded in the said conveying device, substantially as described.

2. The combination of a detachable link of a drive-chain with a conveying device recessed to permit the adjacent links of the drive-chain to be engaged with the said link, substantially as described.

3. The combination of a link of a drive-chain with a conveying device provided with an opening to receive the teeth of an actuating sprocket-wheel, substantially as described.

327,109. AGITATING-SPOON. JOHN RIDER, Watertown, Mass., as signor, by mesne assignments, to himself and Arthur Litchfield, same place. Filed June 23, 1885. (No model.)



Claim.—The agitating spoon or device, substantially as described, consisting of the blade or bowl A, its tubular shank B, and its stud *b*, the tubular handle C, with its stud A and shoulder *i*, the rotator D, with its straight and spiral grooves *c* and *d*, the spiral spring *e*, and the impeller E, all arranged and adapted to operate as set forth.

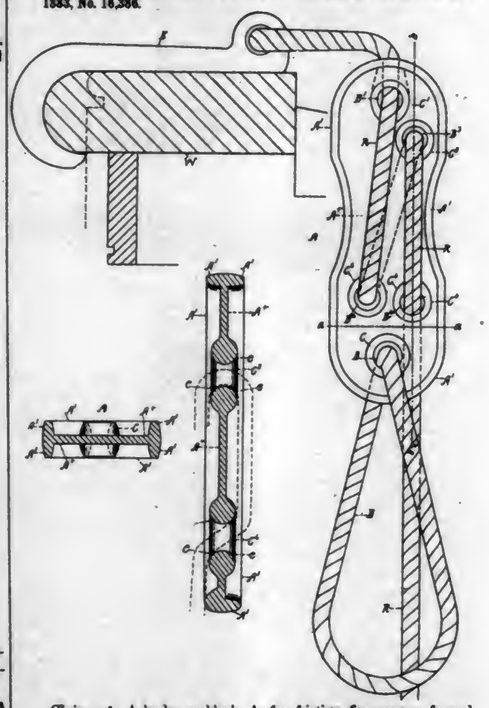
327,110. SAFETY STOCK-FEEDER. JOHN R. ROACH, Batesville, Ohio. Filed Aug. 27, 1884. (No model.)



Claim.—1. A portable safety-stall consisting of the floor C, the walls A A', the breast-board B, the catch-box D, the feed or water box H, the hay rack or receiver G, and having the openings I in front to introduce food and water without entering the stall, all constructed substantially as and for the purposes specified.

2. A portable safety-stall for horses and cattle, consisting of the receiver G, the catch-box D, having an open bottom formed by the slats *d*, the seed-receiver *c*, the feed or water box H, the feed-walk L, and having the openings I, for the introduction of food, all substantially as shown and described.

327,111. FIRE-ESCAPE. WILLIAM ROBINSON, London, Ontario, Canada. Filed Feb. 12, 1883. (No model.) Patented in Canada Feb 26, 1883, No. 16,286.

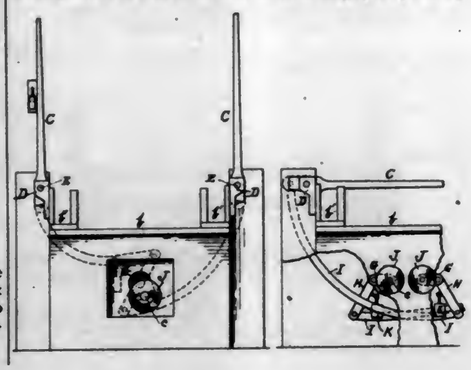


Claim.—1. A brake or block, A, for friction fire-escapes, formed integral with flat body $A^{\times}$, flange A', surrounding the flat body, holes B B' B^2 B^3 B^4, and cut-away flanges C *c*, C' *c*, C^2 *c*, C^3 *c*, C^4 *c*, surrounding the holes, the flanges around the body and holes preventing the rope from being too tightly pressed on the body, substantially as set forth.

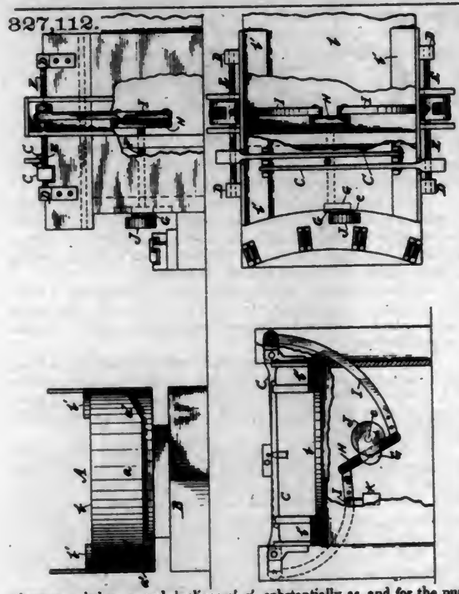
2. A brake, A, constructed with a flat body, $A^{\times}$, flange A', and holes B B' B^2 B^3 B^4, provided with ring-flanges C C' C^2 C^3 C^4, bridle-rope D, lowering-rope R, and hook E, constructed substantially as shown and described, and for the purpose specified.

327,112. BRIDGE GATE OR GUARD. PATRICK RYAN, Chicago, Ill. Filed Apr. 16, 1885. (No model.)

Claim.—1. The combination of the shaft F, having arms rigidly mounted thereon, the roller J, pivoted to one of the said arms, an arm, I, pivoted to another of the said arms, a vertically-swinging arm or guard, C, pivoted or jointed at one end to the arm I, and a swinging bridge having



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thereon a ledge, *a*, and inclines *a' a'*, substantially as and for the purposes specified.

2. The combination of the shaft F, having arms rigidly mounted thereon, the roller J, pivoted to one of the said arms, an arm, I, pivoted to another of the said arms, a vertically-swinging arm or guard, C, pivoted or jointed at one end to the arm I, a supplemental vertically-swinging arm or guard, C', linked to an arm on the shaft F, and a swinging bridge having thereon a ledge, *a*, and inclines *a' a'*, substantially as and for the purposes specified.

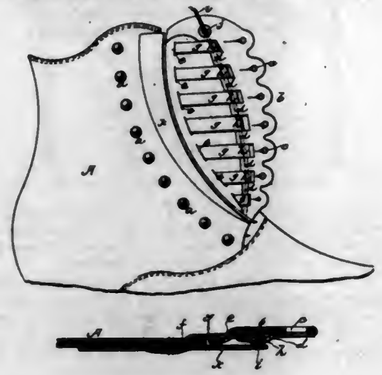
3. The combination of the shaft F, having arms rigidly mounted thereon, the roller J, pivoted to one of the said arms, an arm, I, pivoted to another of the said arms, a vertically-swinging arm or guard, C, pivoted or jointed at one end to the arm I, a counter-weight, and a swinging bridge having thereon a ledge, *a*, and inclines *a' a'*, substantially as and for the purposes specified.

327,113. WHIP-SOCKET FASTENER. ANSON SEARLS, Newark, N. J., assignor to the Searls Manufacturing Company, same place. Filed Jan. 2, 1883. (No model.)



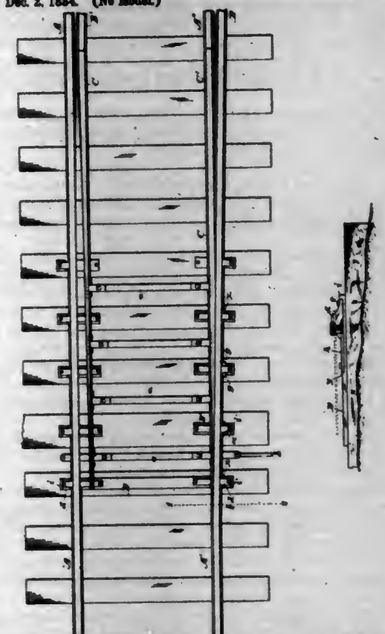
Claim.—The combination of jaw *a*, screw *c*, and jaw *b*, provided with arm *b'*, substantially as and for the purpose set forth.

327,114. SHOE-UPPER. WARREN G. SLATER, Fremont, Mich., assignor of three-fourths to James R. Odell, Salmon P. Odell, and Lorenzo V. Davis, same place. Filed Feb. 7, 1885. (No model.)



Claim.—The herein-described shoe-upper, adapted to be adjusted to the wearer's foot, consisting of the upper proper, the inside flap, the looped straps stiched at one end to the upper, and the inside facing provided with the loops, said strap-loops and facing-loops adapted to receive a cord, one end being secured to the upper and the other end left free, whereby the upper may be adjusted on the wearer's foot, as described and shown.

327,115. RAILWAY-SWITCH. FRED W. SNOW, Hilburn, N. Y. Filed Dec. 2, 1884. (No model.)



Claim.—1. The combination, with the main and switch rails, of a slide-plate extending below both the main rails and provided with terminal lips and side notches, and abutment-blocks bearing against the lips and against the sides of the main rails and secured to the slide-plate, substantially as specified.

2. The combination, with the slide-plates having shoulders *y*, of bearing-plates *h*, arranged between said shoulders and the main rails, for the purpose set forth.

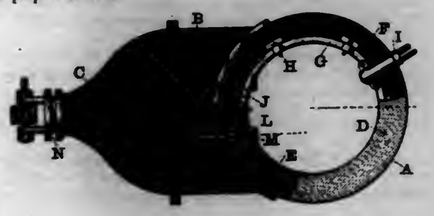
327,116. SLEEVE-BUTTON. JOS. STADLMEYR, Newark, N. J. Filed Mar. 5, 1885. (No model.)



Claim.—As an improved article of manufacture, a sleeve-button provided with a back consisting of a fixed portion, E, having an angular projection, *e*, thereon in the vertical line of the shank, and a portion, F, pivotally arranged in relation to said fixed portion, having a spring secured thereto, which engages with a recess in the shank and bears upon said projection *e*, substantially as and for the purposes set forth.

327,117. VALVE. VICTOR O. STROBEL, Allegheny, Pa. Filed Feb. 20, 1885. (No model.)

Claim.—1. In a gate-valve, the combination of a nose-cap and a stem-gland spherically seated in the end thereof, substantially as and for the purpose set forth.



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2. The combination of a metal pipe, a separate inserted ring permanently secured within the pipe, and a neck provided with a concave joint-flange fitting the cylindrical body of the pipe, and permanently secured to the outside of the pipe by rivets or the like engaging the neck, the metal of the pipe, and the ring, substantially as and for the purpose set forth.

3. The combination, with a valve-seat and a sliding gate-valve, of balls disposed below the valve and ball-tracks disposed below the balls, substantially as and for the purpose set forth.

4. The combination of a metal pipe pierced for the play of the valve, a neck secured at such piercing and provided with ball-tracks M, projecting into the pipe, a sliding gate-valve, and balls interposed between the valve and ball-tracks, substantially as and for the purpose set forth.

5. The combination of a sliding gate-valve, balls disposed below the valve, and ball-tracks disposed below the balls and terminating inwardly in upward slopes, substantially as and for the purpose set forth.

6. The combination of a sliding gate-valve, balls and ball-tracks disposed below the valve, and a flange, R, projecting from the rear and bottom of the valve, substantially as and for the purpose set forth.

7. The combination of a valve-seat-holding ring having a straight or curved taper bore and a valve-seat having a straight or curved taper exterior seating in such ring, and adapted for oblique adjustment, substantially as and for the purpose set forth.

8. The combination of a valve-seat having a taper periphery and a thin valve-seat-holding ring having a taper bore engaged by the valve-seat, substantially as and for the purpose set forth.

9. The combination of a valve-seat-holding ring having a taper bore and a valve-seat provided with a taper periphery engaging such ring, and having a cooling-passage for cooling the valve-seat and the taper joint, substantially as and for the purpose set forth.

10. The combination of a valve-seat-holding ring, a valve-seat fitting within the bore of such ring, and keys H, engaging the said ring, substantially as and for the purpose set forth.

11. The combination of the chimney-pipe, a valve-seat disposed therein and provided with a cooling-passage, a pipe leading from the atmosphere to such cooling-cavity, and apertures J through the metal of the valve-seat, substantially as and for the purpose set forth.

12. The combination of a pipe, a valve-seat connected therewith and provided with a cooling-passage having an inlet and an outlet aperture, a draft-chimney or other device for producing a circulation of air, and a conduit connecting such circulating device with one of the apertures of said cooling-cavity, substantially as and for the purpose set forth.

13. The combination of a hollow valve, an inlet through the stem from the atmosphere to the hollow of the valve, an aperture, Q, through one of the faces of the valve, and a partition, P, disposed within the valve between the points of stem attachment and the outlet Q, substantially as and for the purpose set forth.

327,118. QUILTING-FRAME FOR SEWING-MACHINES. ELISHA H. TALIAFERRO, Big Spring, Va., assignor of one-half to George W. Barnett, same place. Filed May 12, 1885. (No model.)



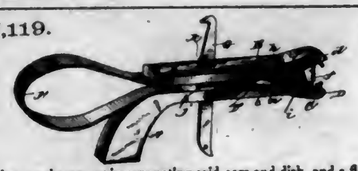
Claim.—1. In a quilting-frame, the combination of the two parts of the track, the clamps D, provided with a series of perforations, by means of which the inner ends of the track are connected to the sewing-machine and adjusted vertically, and the legs having slots in their upper ends, and suitable devices for adjusting the outer ends of the track, substantially as shown.

2. The combination of the quilting-frame with the two corrugated rollers I, which are secured to each end, with the track upon which the frame rests, substantially as described.

327,119. HOG-RINGER. STEPHEN R. TAYLOR, Remington, Ind. Filed Sept. 5, 1884. (No model.)

Claim.—1. The combination, with a handle formed at its end with a disk, of a lever having a similar disk at its end and formed with a lug projecting from said disk, a jaw consisting of two ears inclosing said disk

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and a lug, as shown, a pin connecting said ears and disk, and a flat spring interposed between the end of the handle and lever, as set forth.

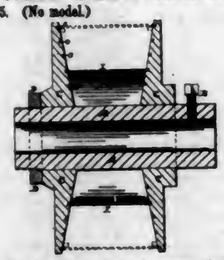
2. The combination, with the lever and handle, the former having a rigid lug at its forward end and the latter a movable lug, said lever and handle being pivotally connected, a flat spring interposed between the handle and lever, and a trigger pivoted to the handle and having teeth to engage the lever, substantially as set forth.

3. The combination, in a hog-ringer, with a handle and a lever, said lever having a fixed lug, of a movable jaw pivoted to said handle and lever, and a pawl for holding said pivoted jaw in position, substantially as set forth.

4. The combination, in a hog-ringer, with a handle and a lever, said lever having a rigid lug, of a movable jaw having a lug pivoted to said handle and lever, a pawl pivoted to said handle and adapted to engage a notch on said movable jaw, and a coil-spring connecting said jaw and pawl, as set forth.

5. The combination, in a hog-ringer, with a handle and a lever, said lever having a rigid lug, a spring interposed between said handle and lever, and a trigger, of a movable jaw pivoted to said handle and lever, a pawl pivoted to said handle and adapted to engage a notch on said movable jaw, and a coil-spring connecting said pawl and jaw, said lever being provided with a nib which bears against the pawl to release the same from engagement with the movable jaw when the trigger is pulled to disengage the handle and lever, as set forth.

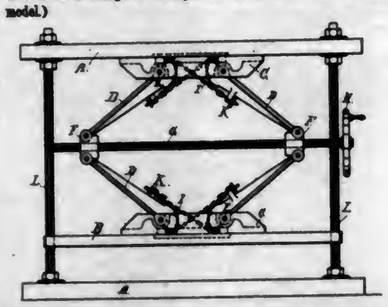
327,120. PULLEY. GEORGE W. THOMPSON, Shickshinny, Pa. Filed Aug. 24, 1885. (No model.)



Claim.—1. A pulley composed of separate heads and an expansible rim, substantially as shown.

2. The combination, of a sleeve, heads which are applied to these sleeves and provided with grooves, pins, or flanges, and an expansible rim which is clamped between the heads, and a clamping-nut for tightening the heads against the rim, substantially as specified.

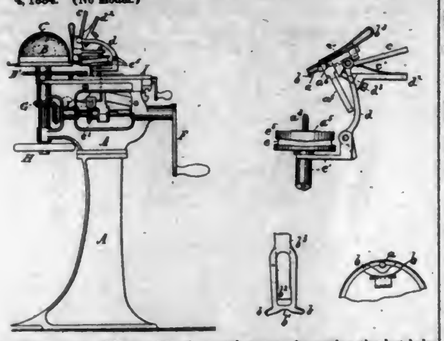
327,121. WINE-PRESS. JOHN B. TOPPER, Jr., Petaluma, Cal., assignor of one-half to George W. Young, same place. Filed June 30, 1885. (No model.)



Claim.—1. In combination with a wine-press having toggle-levers operating on pivotal points, providing the ends of the said toggle-levers with strengthening-chains, constructed, arranged, and operating substantially in the manner as herein set forth and specified.

2. The within-described improvement in wine-presses, comprising the channels or grooves in the ends of the toggle-levers, and the inner ends of the chains connected to the inner ends of the levers and operating in the channels or grooves and made adjustable by the set-screws at their outer ends, substantially in the manner as set forth and specified.

327,122. HAT-PARING MACHINE. EDMUND TWEEDY, Danbury, Conn., and GEORGE YULE, Newark, N. J., assignors, by direct and mesne assignments, to the Hat Curling Machine Company, Danbury, Conn. Filed Sept. 4, 1884. (No model.)



Claim.—1. The combination, with means for paring the hat-brim curl, of a brim-gage having a channel adapted to receive and guide the curl in relation to the paring-tool during the paring operation.

2. The combination, with means for paring the hat-brim curl, of a brim-gage having a channel adapted to receive, fit, and support the curl during the paring operation.

3. The combination, with means for paring the hat-brim curl, of a rotary brim-gage having a channel adapted to receive and support the hat-curl during the paring operation.

4. The combination, with means for paring the hat-brim curl, of a rotary brim-gage having a channel of variable depth adapted to receive and support the hat-curl during the paring operation.

5. The combination, with means for paring the hat-brim curl, of a rotary gage having a channel of variable depth to receive the curl and a shank connected with the paring-tool and resting upon such rotary gage during the paring operation.

6. The combination, with a rotating hat-clamp, of a paring-tool mounted upon a vibrating gage-holder with a rotating gage having a channel to receive and support the hat-curl during the paring operation.

7. The combination, with a rotating hat-clamp, of a gage-holder sustaining an outer gage, a paring-knife, and an inner gage, and means, as spring b^3, for pressing the two gages toward one another upon the opposite sides of the hat-curl.

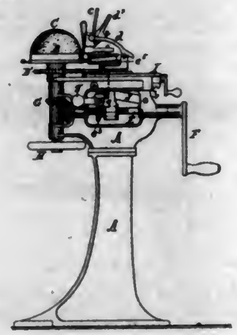
8. The combination, with a rotating hat-clamp, of a gage-holder sustaining an outer gage, a paring-knife, and an inner gage, and the hat-curl being clamped elastically between the two gages and operating to vibrate the gage-holder and knife in relation to the hat-clamp.

9. The combination, with a gage-holder vibrated in relation to the hat-clamp by gages pressed elastically together upon the inner and outer sides of the hat-curl, of a paring-knife and means for vibrating it in relation to the curl in contact with the gage.

10. The combination, with a rotating hat-clamp, of a paring-tool mounted upon a vibrating gage-holder, a rotating gage having a channel adapted to fit the hat-brim curl, and means for rotating such gage during the paring operation.

11. The combination, with a rotating hat-clamp, of a paring-tool mounted upon a pivoted arm and a gage attached to the arm and pressed upon the hat-brim to vibrate the arm and knife during the paring operation.

327,123. HAT-PARING MACHINE. EDMUND TWEEDY, Danbury, Conn., and GEORGE YULE, Newark, N. J., assignors, by direct and mesne assignments, to the Hat Curling Machine Company, Danbury, Conn. Filed Sept. 4, 1884. (No model.)



Claim.—1. The combination, with a rotating hat-clamp, of a carriage vibrated by positive mechanism connected with the hat-clamp, a tool-holder mounted upon said carriage and independently movable thereon, and a paring-tool mounted upon said holder with inner and outer gages fitted to the inner and outer sides of the curl, and operated thereby to guide the paring-tool in the required path about the hat, substantially as set forth.

2. The combination, with a rotating hat-clamp, of a carriage vibrated by positive mechanism connected with the hat-clamp, an arm pivoted upon the vibrating carriage with its free end adjacent to the hat-brim curl, and a paring-tool mounted upon the pivoted arm, with inner and outer gages arranged at the inner and outer sides of the tool, and constructed to clamp the hat-curl elastically and to vibrate the arm upon its pivot, substantially as and for the purpose set forth.

3. The combination, with the rotating hat-clamp B, of the carriage I and cam D', the vibrating gage holder *c*, pivoted on the carriage, the gage *c*, grooved to fit the hat-curl and operating to vibrate the holder by contact therewith, and the paring-knife hinged to a supporter, *d*, upon the holder *c*, and provided with an elastic knife-guard, *b*, fitted within the curl of the hat, substantially as herein set forth.

4. In combination with the rotating hat-clamp and a vibrating holder to support the tool-carrier, the means for inserting the knife-guard inside the curl, which consists in the tool-carrier having the knife *a* and hook-guard *b* at one end, and formed with a handle, *c*, at the other end, and hinged or pivoted upon the holder at a point above the paring-tool, so as to withdraw the guard from the hat-curl by a movement toward the hat-crown when actuated by the handle, and a spring, as *c'*, for pressing the guard into the curl when in operation, substantially as herein set forth.

5. The mechanism for inserting the knife-guard inside the curl, consisting in the combination, with a vibrating gage-holder, of a supporter hinged upon the gage-holder, as described, and the tool-carrier having the knife and hook-guard at one end, and formed with a handle at the other end, and hinged or pivoted upon the free end of the supporter, the whole arranged and operated for inserting the knife-guard inside the curl and removing the same therefrom, substantially as herein described.

6. The construction for vibrating the knife in relation to the curl, consisting in the rotary gage grooved to fit the hat-curl, the pivoted carrier sustaining the knife, a shank connected with the knife, and a spring or weight for pressing the shank against the rotary gage during the paring operation.

7. The combination, with the rotating hat-clamp, of the cam D', and the vibrating carriage I, the gage-holder *c'*, pivoted to the carriage I, the gage c^2, rotated by the shaft d^4 upon the gage-holder, the tool-holder a^2, mounted by a sleeve, a', in a socket in the lever *c*, pivoted upon the gage-holder, the tool-holder being provided with a slotted arm, c^3, and the crank-pin a^4, fitted to the slotted arm and attached to the rotating gage.

8. The combination, with a rotating hat-clamp, of the cam D', the carriage I, and the pivoted gage-holder *c'*, provided with inner and outer gages, and a paring-knife, and being vibrated by the hat-curl independently of the carriage, a weight or spring operated to press the carriage toward the hat-clamp, a catch for holding the carriage away from the hat-clamp, and stops, as *n*, combined with the carriage and gage-holder to prevent the tipping of the holder toward the hat when the carriage is retracted.

9. The combination, with a rotating hat-clamp, of the cam D', the carriage I, the adjuster K, held movably upon said carriage, and provided with the pivot *g*, and the gage-holder pivoted upon the said pivot, and provided with a paring-tool and inner and outer gages for clamping the brim of the hat, as and for the purpose set forth.

10. The combination, with the hat-clamp B, its spindle D, and the driving-shaft E, geared thereto at right angles, of the carriage I, the gage-holder *c'*, provided with the paring-tool and the tipping-gear c^3, and pivoted to the adjuster at the intersection of the tipping and sliding gears, and the gage rotated by connection with the tipping-gear, substantially as and for the purpose set forth.

11. The combination, with a pivoted gage-holder, of an outer gage, and a knife-carrier mounted upon the gage-holder so as to vibrate therewith, and a guard, *b*, elastically attached to the knife carrier or holder, and adapted to press inside the curl adjacent to the knife-point, and to protect the knife-point and to press the hat-curl against the outer gage, substantially as herein set forth.

12. The combination, with the paring-knife, of an elastic guard adapted to press inside the hat-curl, as described, and formed with a central aperture for the point of the knife, as and for the purpose set forth.

13. The combination, with a rotating hat-clamp, of a rotary gage having a channel of variable height to fit the hat-curl, a paring-knife provided with a stop fitted to rest on the upper edge of the gage, and a seat formed for the stop on the gage and adapted to adjust the knife automatically to the height of the curl.

14. The combination, with a rotating hat-clamp, of a vibrating gage-holder having a paring-tool mounted thereon, with a rotating gage having a channel formed in its edge of the same length as the semi-

circumference of the hat, and adapted to exactly fit one-half of the hat-brim, and means for rotating such gage twice for each rotation of the hat, as and for the purpose set forth.

327,124. CAR-COUPLING. BENJAMIN H. TYSON, Wilson, N. C. Filed Aug. 3, 1885. (No model.)



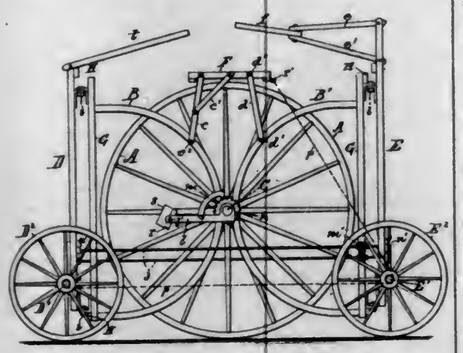
Claim.—1. In a car-coupling, the combination of the two draw-heads A, which are divided by partitions B into a number of chambers, as shown, with the coupling-link consisting of a flat block, D', having the link F connected thereto, and the coupling-hook H, substantially as shown.

2. The combination of the block D', provided with a hole, E, for the coupling-pin D to pass through, with the link F, which is loosely secured upon the top of its outer end, so that the link cannot drop down below a horizontal position, substantially as set forth.

3. The coupling-hook for car-couplings, composed of a flat block and a hook formed upon its outer end, in combination with a pivoted stop, which is loosely connected to the inner side of the hook, substantially as specified.

4. A draw-head having its inner end formed at an angle, whereby the head, by reversing it in position, may be raised or lowered, substantially as set forth.

327,125. VELOCIPEDE. AARON VREELAND, Cedar Grove, N. J. Filed Mar. 17, 1885. (No model.)



Claim.—1. In a velocipede, the combination, with the axle of a central driving-wheel, of the frames B and B', hinged to such axle and provided with wheels resting freely upon the ground, substantially as shown and described.

2. In a velocipede, the combination, with the axle of a central driving-wheel, of the frames B and B, hinged to such axle and provided with wheels resting freely upon the ground, the front wheels being sustained by a vertically-hinged frame provided with means for turning it to steer the machine, substantially as shown and described.

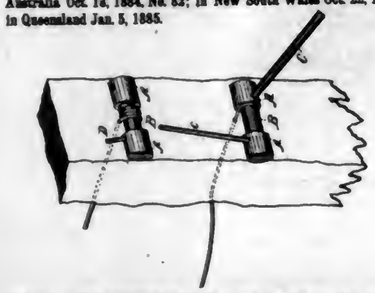
3. In a velocipede, the combination, with the wheel A, axle C, and frames B B', hinged thereto and provided with wheels resting freely upon the ground, of the seat F, rigidly attached to one of said frames, and secured to the other by a yielding connection, substantially as and for the purpose set forth.

4. In a velocipede having a central driving-wheel and front and rear axles with two wheels each, the construction for the jointed frame, consisting in the half-circle fellies B B', hinged to the driving-wheel axle as described, and attached to uprights G, the cross-pieces H, provided with the joint-bolts *i*, and the vertical front and rear frames, D E, carrying the axles D' E' and wheels D^2 E^2, the whole arranged and operated substantially as shown and described.

5. The combination, with the ratchet-wheel and pawl, of the lever-bars arranged at each side of the wheel and pawl and provided with the stirrup hinged at its outer end, as and for the purpose set forth.

6. The combination, with the frames B B', D, and E, and the seat F, and wheels A, D^2, and E^2, arranged as described, of the steering devices projected from the front and rear frames toward the seat, substantially as and for the purpose set forth.

327,126. WIRE-STRAINER. CHARLES O. R. WALKER, Coolart-Balnaring, assignor to Joseph Elam Pounds, Lockings House Kew, Victoria. Filed Sept. 17, 1884. (No model.) Patented in Victoria July 14, 1884. No. 3,775; in South Australia Aug. 2, 1884, No. 473; in Tasmania Aug. 4, 1884, No. 330; in New Zealand Aug. 8, 1884, No. 1,183; in England Sept. 8, 1884, No. 12,142; in Canada Oct. 16, 1884, No. 20,394; in West Australia Oct. 18, 1884, No. 83; in New South Wales Oct. 22, 1884, and in Queensland Jan. 5, 1885.

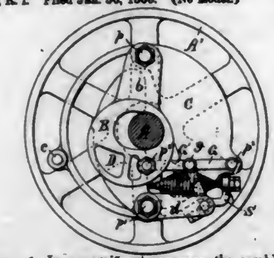


Claim.—The combination, with a post and fence-wire, of a roller whose length does not exceed the width of the post and whose opposite ends are of greater diameter than the intermediate portion, forming end flanges which bear against the posts, said flanges being perforated to receive the straining-levers and retaining-pin, as described.

327,127. METHOD OR PROCESS OF PREPARING FEATHER-VANES FOR UPHOLSTERING PURPOSES. EDWD. K. WARREN, Three Oaks, Mich., assignor to the Warren Feather Bone Company, same place. Filed Aug. 19, 1884. (No specimens.)

Claim.—The method or process of preparing feather-vanes for upholstering uses by rolling and rubbing until the fibers are permanently separated and intermingled, substantially as specified.

327,128. STEAM-ENGINE GOVERNOR. PARDON ARMINGTON, Providence, R. I. Filed Jan. 30, 1885. (No model.)

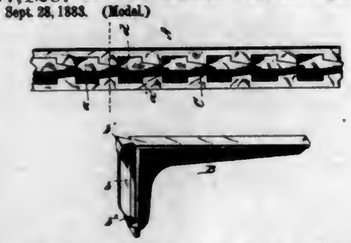


Claim.—1. In a centrifugal governor, the combination of the pivoted eccentric B, the pivoted weight D, having the arm *d*, the arm F, the toggle-link G G', connected at one end to the eccentric, and united at its joint to arm F, and the spring E, connected at one end to the weight D, substantially as described.

2. The combination, with the shaft A, carrying the disk C, of the eccentric B, pivoted to said disk by its arm *b*, the weight D, having the arm *d*, and pivoted to said disk, the spring E, secured to the weight and to the standard S, and the links F G G', as specified.

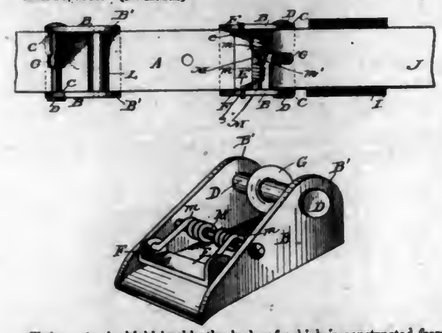
3. The combination, with the shaft A, the disk C, having the stop *c*, the eccentric B, having arm *b*, and pivoted at *p* to the disk, of the weight D, having the arm *d*, and pivoted at *p'* to said disk, the spring E, connected to the weight and to the standard S, the links G G', pivoted at p^2 p^3, and the link F, pivoted to the arm *d* and to the joint *g*, as shown and described.

327,129. SHELVING-BRACKET. JOHN BAIRD, Piqua, Ohio. Filed Sept. 28, 1883. (Model.)



Claim.—The standard A, having open face with apertures *a* to form shoulders *a'*, with recesses, as C, between, combined with bracket B, having flange *b*, double dovetailed head *b'*, and lodge b^2, as and for the purposes set forth.

327,130. HARNESS-BUCKLE. HENRY F. BOCK, Lansing, Ill. Filed Mar. 28, 1885. (No model.)

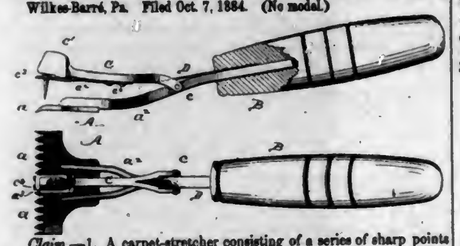


Claim.—1. A shield-buckle the body of which is constructed from a single piece of sheet metal, provided with flanges B' B' and cross-bar D, to which is loosely secured a tongue having, when in its normal position, its free end resting in a notch in the shield, and being at right angles to the strap through which it passes, and a movable plate or guard for holding the opposite end of said shield normally against the strap, substantially as and for the purposes set forth.

2. A shield-buckle having its body constructed from a single piece of sheet metal, provided with flanges B' B' and cross-bars D and M, to the former of which is secured a tongue, the normal position of which is at right angles to the strap through which it passes, and to the latter of which is attached a spring, *m*, loosely connected with a guard-plate, E, substantially as and for the purposes specified.

3. A shield-buckle consisting of the combination of a body having flanges B' B', cross-bars D and M, tongue G, arranged at right angles to the strap, and an adjustable guard, E, connected with the cross-bar M by means of a spring, to which it is pivotally connected, substantially as and for the purposes specified.

327,131. CARPET STRETCHER AND TACKER. GEORGE M. BRANDON, Harveyville, Pa., assignor to himself and Robert P. Robinson, Wilkes-Barré, Pa. Filed Oct. 7, 1884. (No model.)



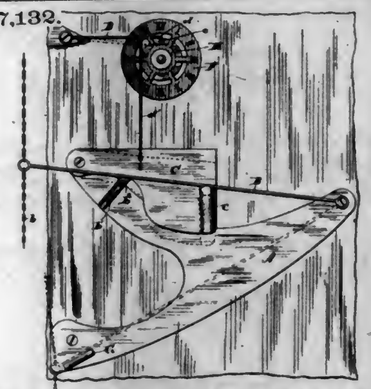
Claim.—1. A carpet-stretcher consisting of a series of sharp points divided by a central slot and carried by a bent fork the end of which is secured in a handle, in combination with a tacker pivoted to the said stretcher and provided with a projecting head and a spring for holding a tack over the said central slot, and with a spring projecting from the handle for holding the said tacker in position, substantially as described and shown, and for the purpose set forth.

2. In a carpet stretcher and tacker, the combination of the series of sharp points *a*, having central slot, a^3, and carried by the bent fork *a*, secured in the handle B, the tacker *c*, having projecting head *c'*, spring c^3, having forked end c^4, and the spring D, substantially as described and shown, and for the purpose set forth.

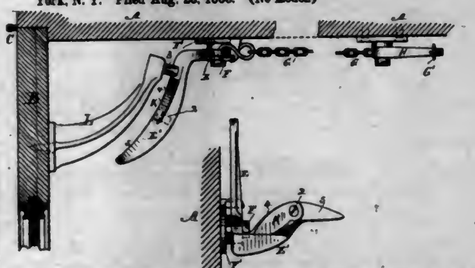
327,132. AUTOMATIC DAMPER-REGULATOR. JOHN BURGE, Westfield, Mass. Filed May 26, 1885. (No model.)

Claim.—1. In a damper-regulator, the plate A, having the projection b', provided with the downwardly-inclined upper face, b^2, in combination with the lever B, pivoted to the plate A, and the latch C, having the lever-supporting-hook *c*, all arranged and operating to the end that the lever will be released from the supporting-hook as it strikes the projection when the latch falls, substantially as shown and described.

2. In a damper-regulator, the plate A, having the projection b', provided with the downwardly-inclined upper face, b^2, and the lever B, pivoted to said plate A, in combination with the disk E, adapted to be rotated and having the notch *e* in its periphery, the lever-arm D, latch C, having the supporting-hook, *c*, for holding the lever B, and the connecting-rod *d'*, of sufficient length to permit the supporting-hook to fall below the plane of the incline face b^2, whereby the lever will be released from the supporting-hook as the latch falls and the lever strikes the projection, substantially as shown and described.

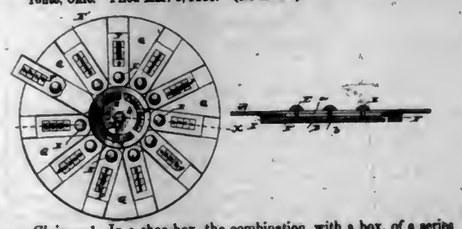


327,133. DOOR-CONNECTION FOR WATER-CLOSET CISTERNS. DANIEL BURROWS, Brooklyn, assignor to the J. L. Mott Iron Works, New York, N. Y. Filed Aug. 28, 1885. (No model.)



Claim.—The combination, with the arm L, having a finger, 3, at its end, of the lever E, a connection to the valve of the water-closet cistern, and the curved arm E', projecting from the lever E, and the cam-latch K, pivoted to said arm, substantially as set forth.

327,134. REGISTERING APPARATUS. WILLIAM M. BUSHFIELD, Toronto, Ohio. Filed Mar. 6, 1885. (No model.)



Claim.—1. In a shoe-box, the combination, with a box, of a series of slides having characters thereon denoting the different sizes contained in the box, and a revolable disk having marked thereon the quality of the shoes, as explained, and for the purpose set forth.

2. The combination, with a box having a series of elongated slots, of a series of slides having characters denoting the different sizes contained in the box, headed pins secured to said slides, openings for exposing the different characters, and a disk having a headed pin for turning the same, said box having a slot to expose the characters on said disk, substantially as set forth.

3. The combination, with the top A, having a series of radially-arranged slots, D, and a series of openings, *e*, arranged beyond the series of slots, a revolable disk, B, a series of radially-arranged slides carrying headed pins adapted to work in the slots D, and guides G, arranged between the slides, substantially as described.

327,135. SPINDLE-BOLSTER. WILLIAM T. CARROLL, Worcester, assignor to George Draper & Sons, Hopedale, Mass. Filed Apr. 27, 1885. (No model.)

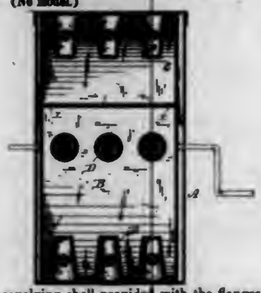
Brief.—A non-metallic bolster-holder is held at its lower end by a bub or base and holds the bolster within its upper end above the base, thus deadening vibration and avoiding the employment of a loose bolster.

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Claim.—A spindle-support composed of a hub or base, a bolster, and a non-metallic bolster-holder held by and extended above the said base, the said holder embracing and holding the bolster externally at a point above the top of the hub or base, to operate substantially as described.

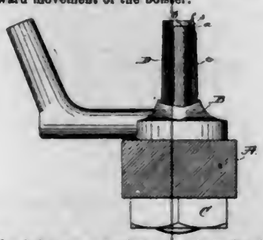
327,136. BOILER WASHING-MACHINE. NEWTON W. CHAIN, Columbia, Mo., assignor of one-half to Francis E. Norwood, same place. Filed July 30, 1884. (No model.)



Claim.—The revolving shell provided with the flanges I and a series of short pipes, D, which are perforated at their inner ends and sides, and which project toward the center of the shell, substantially as shown and described.

327,137. SPINDLE-BOLSTER. HORACE P. CHASE, New Bedford, assignor of three-fourths to George Draper & Sons, Hopedale, Mass. Filed Nov. 24, 1884. (No model.)

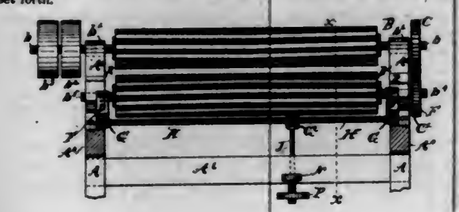
Brief.—The bolster is provided with a notch in line with a notch through the side wall of the bolster-case near its top. The upper bent end of a spring whose lower end is fast to the outside of the case passes through the notch in the case and enters that in the bolster, preventing rotation and upward movement of the bolster.



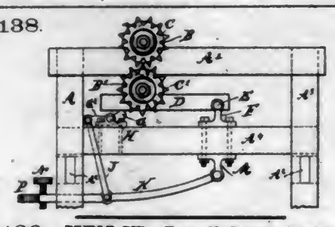
Claim.—The bolster-case having a notch in its side wall, and a notched bolster placed in the bolster-case, with its notch in line with the notch of the said bolster-case, combined with the bolster-holding spring *e*, attached to the bolster-case and engaging the notched part of both the bolster-case and bolster, the spring extended through the notch in both the bolster-case and bolster restraining the rotation of the bolster and also its vertical movement in the case, substantially as described.

327,138. MACHINE FOR SOFTENING SHEEP-SKINS. HENRY R CHURCHILL, Buffalo, N. Y. Filed Mar. 16, 1885. (No model.)

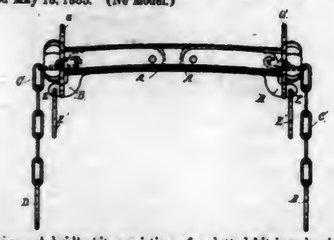
Claim.—In a machine for softening sheep-skins, the combination of the diagonally-grooved rollers B B', provided with gearing C C', the arms D D', levers G G' G², rod H, link J, and treadle K, all constructed substantially as specified, and arranged to operate as and for the purpose set forth.



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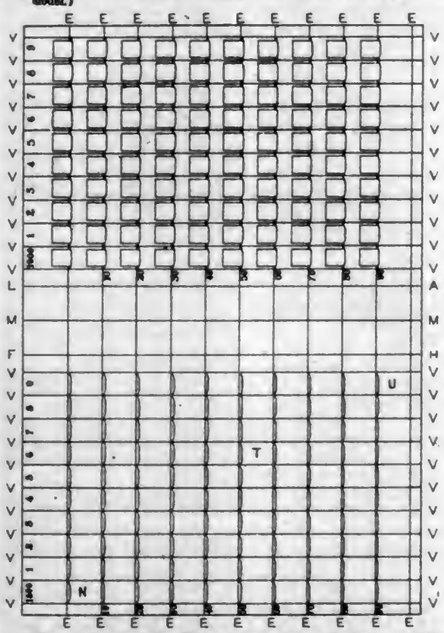


327,139. BRIDLE-BIT. HIRAM M. CLEMONS, Virginia City, Nev. Filed May 18, 1885. (No model.)



Claim.—A bridle-bit consisting of a slotted bit-iron having annular openings at the ends, to the center of which bit-iron are pivoted check-pieces B B, provided with angular arms E E, carrying rings E E', said check-pieces being adapted to operate in the slots of the bit-iron by being drawn from or shut within them by means of link or chain connections C, passing through the cylindrical openings in the ends of the bit, substantially in the manner and for the purpose herein set forth and specified.

327,140. PRESCRIPTION-FILE FOR PRESERVING PRESCRIPTIONS. BRANCH H. COLBY, Hillsdale, Mich. Filed Apr. 20, 1885. (No model.)

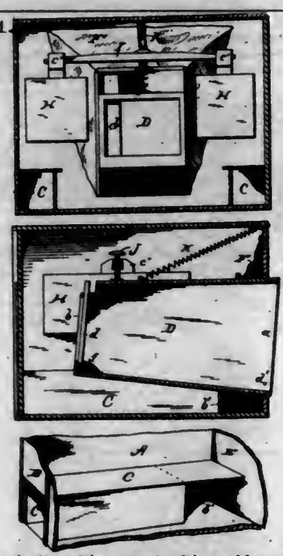


Claim.—A prescription-file made in book form, the leaves of which are made of cloth or cloth and paper, with exactly one hundred pockets upon each page, the pockets being arranged in ten horizontal and ten vertical rows, with numbers at the top and left-hand side of each page, the numbers forming an index to each pocket, the precise number of each pocket being determined by its relative position in reference to the aforesaid numbers, all as herein described.

327,141. AUTOMATIC WATER-DISTRIBUTER. JOSEPH CORNELL, Petersburg, Colo. Filed Mar. 25, 1885. (No model.)

Claim.—1. In a water-distributer, the combination, with the penstock A and the automatically-adjustable discharge-spout D, having its

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inlet end near the front of the penstock, of the sand-boxes C C, provided with the inlet-gates B B at the front, and the exit-openings *b' b'* within and near the rear of the penstock, substantially as and for the purposes described.

2. In a water-distributer, the combination of the penstock A, the sand-boxes C C, provided with the inlet-gates B B at the front, and the exit-openings *b' b'* within and near the rear of the penstock, the automatically-adjustable discharge-spout D, having its inlet end near the front of the penstock, and provided with a gage-gate, *d*, substantially as and for the purposes described.

3. In a water-distributer, the combination of the discharge-spout D, the flexible web F, the floats H H, adjustably attached to the spout, and the retarding-spring K, substantially as and for the purposes described.

4. The combination, with the penstock A, of the automatically-adjustable spout D, having its outlet end enlarged and its inlet end provided with an upper air-space, *c*, and a lower step, *f*, substantially as and for the purposes described.

327,142. EYELETING-MACHINE. HENRY H. CUMMINGS, Malden, assignor of one-half to John J. Sullivan, Ipswich, Mass. Filed May 29, 1882. Reissued Dec. 22, 1884. (No model.)

Claim.—1. In an eyeleting-machine, an index disk or ratchet 11, and an adjustable arm or tripper coacting therewith, in combination with the driving mechanism adapted and arranged to disconnect the same from the eyeleting devices when the number of eyelets are inserted for which said index and tripper are adjusted, substantially as specified.

2. The combination of a perforating-punch, 37, and an eyelet-setting punch, 48, with a die or set, 50, and spacing or gage cam 69, constructed and arranged with coacting devices whereby the material may be perforated and the eyelets inserted at automatically-governed distances from each other, as controlled by said cam, substantially as specified.

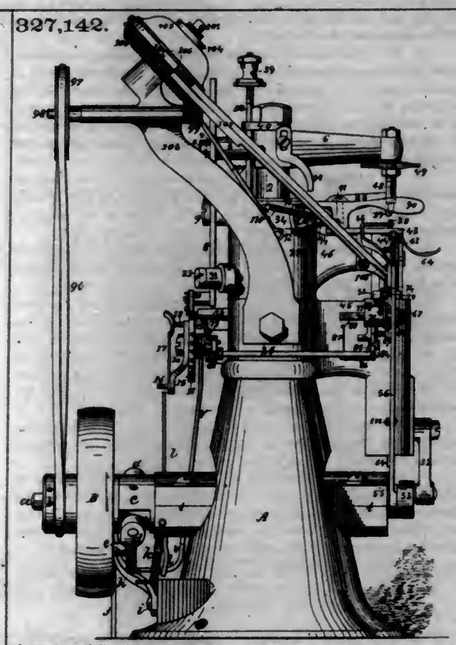
3. In an eyeleting-machine, the combination of eyelet-setting punch 48 and its coacting die or set 50, both arranged to reciprocate in a fixed path, and a perforating-punch, 37, and block or anvil 42, both mounted upon supports pivotally arranged and provided with actuating devices, whereby as punch 48 and die 50 separate, the perforating-punch 37 and its block 42 are swung into the reciprocating path thereof and at that point perforate the material to be eyeleted, substantially as specified.

4. In an eyeleting-machine, the combination of pivotal clutch *d*, mounted on rotary shaft *a*, cam-lever *h*, its connecting-rod *v*, and elevating-spring *k*, the tripping-lever *l*, the tripper 15, carried by and adjusted upon ratchet 11, to engage lever *l* and said ratchet, with actuating-pawls 10 14, arranged to be released from the ratchet by rod *v* when lever *l* is tripped, substantially as specified.

5. The combination of reciprocating arm or cross-head 5, cam-lever 8, adapted to be engaged by a trundle on said arm, pawl 10, pivoted to and actuated by said lever, the ratchet 11, and a relief-pawl supported by standard A, substantially as specified.

6. The combination of loose collar 27, provided with arm 46, supporting cutting-block 42, lever 35, pivotally mounted on said collar and provided with cutting-punch 37, and arranged to be actuated by rod 38, connected with arm 40, carried by plunger 2, and devices arranged to

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circumferentially vibrate said collar and bring punch 37 and its coacting block 42 into and out of the path of the eyelet-carrying needle 54, and the male and female eyelet-setting punches 48 50, substantially as specified.

7. The combination of rotary reciprocating collar 27, its arm 46, cutting-block 42, and punch-lever 35, vibrating cam-lever 8, and pitman 29, pivotally connected with said lever 8 and collar 27, and arranged to actuate the latter, substantially as specified.

8. In an eyeleting-machine, the combination of male punch 48, stop 55, plunger 51, its hollow punch 50, and eyelet-carrying rod 54, extending through both said plunger and hollow punch, and held in position therein by frictional contact, and arranged to be projected beyond punch 50 by impact with said stop, and to be depressed below the plunger by contact with punch 50, substantially as specified.

9. The pivotal thumb-rest 90, combined with a detachable locking device, 92, a reciprocating detacher, 93, and a returning-spring, 94, substantially as specified.

10. In combination with the rotative turret 103 and its non-rotative bottom 102, the vibrating chute 107, connected with said bottom, and coacting mechanism adapted to move said chute into position for the engagement of the eyelets by carrying-rod 54, and out of the path of punch 50, substantially as specified.

11. The combination of turret-bottom 102, chute 107, vibratory collar 27, connected with the turret-bottom by rod 109, and arranged to move the chute in one direction, and a reacting spring, 110, to return said chute, substantially as specified.

12. In combination with the work-supporting table 43, the vibrating arm 56, its pivotal arm 57, provided with the eyelet-entering spur 58, a depressing device for disengaging said spur from the eyelet, and a spring to elevate and engage the same, substantially as specified.

13. The combination of lever 62, arranged to be actuated by plunger 51, acting on stud 63, lever 60, arranged to be actuated by lever 62 and to depress pivotal arm 57 by engaging its stud 61, substantially as specified.

14. The combination of lever 56, its eyelet-engaging arm 57, spacing-cam 69, gage-arm 66, carried by said lever, ratchet 73, connected with said cam, and pawl 74, actuated by lever 56 and arranged to rotate said ratchet and cam, substantially as specified.

15. The combination of lever 56, its gage-arm 66, gage-cam 69, ratchet 73 secured to said cam, relief-pawl 81, and actuating-pawl 80, arranged to be operated by lever 56, and provided with a returning-spring, substantially as specified.

16. In combination with ratchet 73, pawl 74, mounted on vibrating-arm 75, and provided with returning-spring 77 and engaging-spring 78, and constructed and arranged to be actuated by stud 79 of lever 56, substantially as specified.

17. In combination with spacing-cam 69 and its actuating-ratchet 73, mounted on stud 70, and an actuating-pawl mechanism, the helical spring 86, with an arm, 87, united with and arranged to rotate stud 70,

carrying said cam and ratchet, and thereby return the same to first position, substantially as specified.

18. The combination of spacing-cam 69 and coacting mechanism, whereby the spaces between the eyelets are automatically controlled, as specified, ratchet 11, pivoted with an adjustable tripper-arm, 15, and connecting devices whereby clutch *d* is disengaged from driving-pulley B, as described, and rock-shaft 26, connected with said tripping devices by rod 24, and arranged at 84 to trip pawls 74 81, which engage said spacing-cam, substantially as specified.

19. The combination of pivotal lever 19, actuated by rod *v*, rod 24, connecting said lever and arm 25, rock-shaft 26, provided with arm 25, and an angle, 84, and pawl 81, arranged to be tripped by said angle, to disengage pawl 74 from its ratchet 73, substantially as specified.

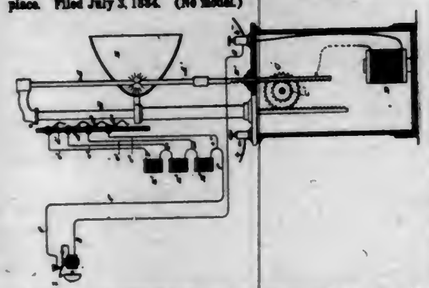
20. The combination of lever 56, its pivotal arm 57, and spur 58 thereon, spring 59, levers 60 62, actuated by plunger 50, and slotted work-support 43, substantially as specified.

21. The combination of toothed spacing-cam 69, a ratchet-and-pawl mechanism arranged to rotate the cam when actuated, lever 56, arranged to actuate the pawl-and-ratchet devices, arm 66, provided with stud 66, to engage said cam and arrest the movement of the lever by which such arm is carried, and pivotal arm 57, also carried by said lever, and provided with spur 58 to engage the inserted eyelet and feed forward the material being eyeleted, all substantially as specified.

22. The combination of work-supporting table 43, the vertically-moving eyelet-engaging spur 58, and the vibrating keeper 65, arranged to move horizontally with said spur, substantially as specified.

23. In an eyeleting-machine, the combination of turret 103, arranged to be continuously rotated, the reciprocating punches 37 48, and die or set 50, and ratchet 11, its adjustable tripper-arm 15, and the tripping devices whereby clutch *d* is disengaged from pulley B and the eyelet-setting devices rendered inoperative, substantially as specified.

327,143. ELECTRIC HEAD-LIGHT. ELISHA B. CUTTER, Pittsburg, Pa., assignor to the Electrical and Mechanical Developing Company, same place. Filed July 3, 1884. (No model.)



Claim.—1. The combination, with an electric-arc lamp, of an electrically-operated alarm, an electric circuit extending thence to the lamp, and a circuit-manipulating device operated by the carbon-holder of the lamp, whereby the alarm is automatically put in operation at a predetermined time before the consumption of the carbons, substantially as set forth.

2. The combination, with an electric-arc lamp, of a circuit-closer in connection therewith and adapted to be operated by the movement of the carbon-holding rod when the carbons are nearly consumed, an electric circuit in connection therewith, and a rheotomic alarm-bell in said circuit, substantially as set forth.

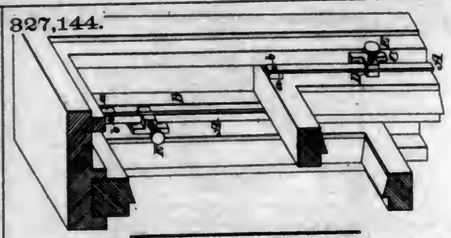
3. The combination, with an electric-arc light, of a partial circuit connecting with one of the terminals of the lamp and its other end terminating in a circuit-closing contact, and a conducting projection on the carbon-holding rod of the lamp adapted to touch said contact when the rod descends to a predetermined point, and thereby pass a derived current from the lamp through said circuit, and an electric magnetic alarm-bell in said partial circuit, substantially as set forth.

4. The combination, with an electric-arc lamp, of a derived circuit connecting at one end to one terminal of the lamp and its other end divided into several branches, each terminating in a contact, a conducting projection on the carbon-holding rod adapted to touch said contacts in succession as it descends, a series of resistances in said branches, greatest in that first touched and less in each successive branch, and a rheotomic alarm-bell in said derived circuit, substantially as set forth, whereby said bell is rung at intervals whenever the circuit is closed through any of said branches, and each time its alarm is louder and more urgent than before.

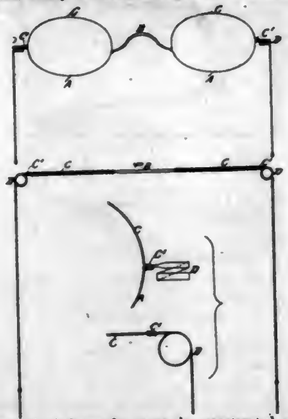
327,144. SASH-FASTENER. WM. H. DAGER, Canton, Ohio, assignor of two-thirds to James Leonard and Charles A. Leonard, same place. Filed Sept. 20, 1884. (No model.)

Claim.—The combination of the retaining-clamp C, provided with the thumb-screw E and the recess D, of the bars or rods A and the blocks *a*, substantially as described; and for the purpose set forth.

327,144.



327,145. SPECTACLE-FRAME. SEBASTIAN ZIANI DE FERRANTI, West Kensington, County of Middlesex, England. Filed Feb. 9, 1885. (No model.)



Claim.—1. A frame for spectacles, constructed of wire in three pieces, with one of these pieces continuous along the two glasses and the bridge and the other pieces completing the frame, substantially as set forth.

2. A frame for spectacles, constructed of wire, with one continuous length of wire forming the two side arms and passing along the two glasses and the bridge, substantially as set forth.

3. A frame for spectacles, constructed of wire, with the piece of which a side arm is composed continuous along the glass to the bridge, substantially as set forth.

4. A side arm for spectacles, constructed of one piece of wire and rendered flexible in the manner described, whereby a jointed connection is dispensed with, substantially as set forth.

5. A frame for spectacles, having a rim composed of two pieces of wire, one of which is formed with a coil and threaded onto the other, substantially as set forth.

6. A frame for spectacles, having the bridge formed of a metal tube with a wire passing through it, and also forming parts of the rims on either side of the bridge, substantially as set forth.

327,146. APPARATUS FOR MIXING AERIFORM FLUIDS. EDWARD B. DENNY and ARTHUR B. GRIFFEN, Newark, N. J., assignors to the Imperial Manufacturing Company, of New Jersey. Filed Mar. 31, 1883. (No model.)



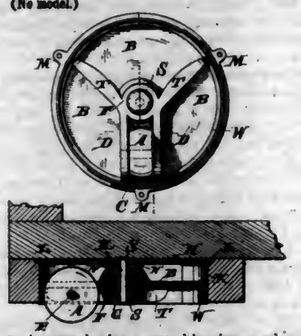
Claim.—1. The gas-qualifier consisting in the mixing-chamber provided with gas and air inlets, and an outlet for the mixed product, and containing two valves connected positively together by a lever having its fulcrum within the chamber, the valves being adapted to normally and automatically close the inlets, and being actuated only by the pressure of the fluid within the inlets, substantially as herein shown and described.

2. The gas-qualifier consisting in the mixing-chamber provided with gas and air inlets and an outlet for the mixed product, the two valves applied to the inlets within the chamber, a lever-connection between the two valves, substantially as described, a pivotal connection, *c*, adjustable between the valves to vary their proportional movement, and means, substantially as described, for adjusting such pivotal connection from the exterior of the casing, as and for the purpose set forth.

3. In a gas-qualifier, the combination, with the mixing-chamber, of the inclosed valves formed at opposite ends and sides of a flat pivoted plate, the inlets arranged to open within the chamber at opposite sides and ends of said plate, the outlet from said chamber, and means, substantially as described, for shifting the pivotal supports of the plate, and thereby varying the proportional movement of the valves, as and for the purpose set forth.

4. The gas-qualifier consisting in the mixing-chamber provided with gas and air inlets and an outlet for the mixed product, the two valves applied to the inlets within the chamber, a lever-connection between the two valves, substantially as described, a pivotal connection, *c*, adjustable between the valves to vary their proportional movement, and means, substantially as described, for adjusting such pivotal connection from the exterior of the casing, and a scale or index upon the exterior of the casing to indicate the position of the pivotal connection *c*, as and for the purpose set forth.

327,147. CASTER. NATHAN DRUCKER, Cincinnati, Ohio. Filed Dec. 29, 1884. (No model.)



Claim.—1. A caster having a central bearing or arbor and a hub, and a discal plate, B, rigidly connected to the hub at the mid-height of the latter, and caster-wheel whose pivots or supports are connected to the plate, substantially as and for the purposes specified.

2. In a caster, a discal plate connected to a hub concentric therewith, and provided with arms D D and radial ridges T T, substantially as and for the purposes specified.

3. In a caster, a fixed arbor, a discal plate connected to a hub concentric therewith, and arms D D, ridges T T, and annular flange W, the said arms, ridges, and flanges connected to the hub and caster-wheel, substantially as and for the purposes specified.

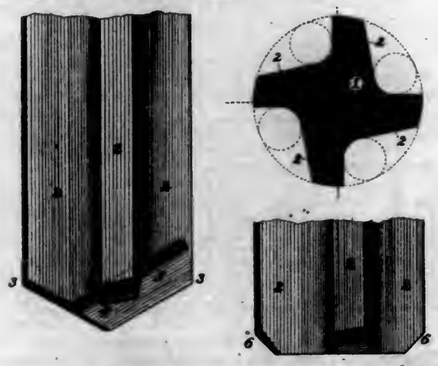
4. The combination of plate H, fixed bearing G, hub, discal plate, wheel, and bearing portion N, substantially as and for the purposes specified.

5. The combination of the caster-box, hub F, plate B, located at the mid-height of said hub, arms D D, and wheel A, substantially as and for the purposes specified.

6. The combination of the caster-box, hub, plate B, arms D D, wheel A, and flange W, substantially as and for the purposes specified.

7. The combination of the fixed arbor G, supporting stationary caster-frame, hub, plate B, fixed to said hub at its mid-height, and bolt R, provided with heads or ends S S, substantially as and for the purposes specified.

327,148. METAL-BORING BIT. LUTHER R. FAUGHT, Philadelphia, Pa. Filed Oct. 22, 1884. (No model.)



Claim.—1. A forged-steel cutter having four or more cutting wings or ribs formed in one piece with and projecting from a central bar or body, each of said wings having a cutting-edge upon one side of its outer face and the major portion of its thickness located upon the opposite side of a plane which is radial to the axis of the bar and substantially parallel to the front or leading side of the wing, substantially as set forth.

2. A forged-steel cutter having four cutting wings or ribs formed in one piece with and projecting from a central body, each having an outer cutting-edge and being disposed unequally on opposite sides of a plane radial to the axis of the body, said cutter having its end beveled to form two drilling-lips, each parallel to the other and to a segmental recess cut through one of the wings adjacent to its end, substantially as set forth.

327,149. DEVICE FOR HOLDING METAL-CUTTERS. LUTHER R. FAUGHT, Philadelphia, Pa. Filed Nov. 21, 1884. (No model.)



Claim.—1. The combination, substantially as set forth, of a chuck or socket having a conical or tapered central bore, a nut fitting a recess in the chuck concentric with the bore thereof, and a longitudinally-divided sleeve, having an external screw-thread engaging the thread of the nut, and also a conical or tapered bearing corresponding with the bore of the chuck on each side of said nut.

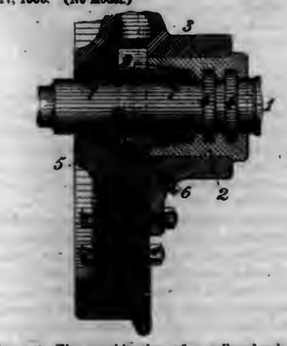
2. The combination, substantially as set forth, of a chuck or socket having a conical or tapered bore, a nut fitting a recess in the chuck concentric with its bore, a longitudinally-divided sleeve fitting the bore of the chuck and having an external screw-thread engaging the thread of the nut, a longitudinally-divided bushing fitting within said sleeve, and a continuous cutter having a series of wings or ribs integral with a central core or body and engaging bearing projections on the inner surface of the bushing.

3. The combination, substantially as set forth, of a conically-bored chuck, an internal nut, a longitudinally-divided threaded sleeve fitting the bore of the chuck and engaging the thread of the nut, and a key fitting in a keyway in the chuck and engaging a slot in the sleeve.

4. The combination, substantially as set forth, of a chuck or socket having a conical or tapered bore, a nut fitting a recess in the chuck concentric with its bore, a longitudinally-divided sleeve fitting the bore of the chuck and having an external screw-thread engaging the thread of the nut, and a longitudinally-divided bushing fitting within said sleeve.

5. The combination, substantially as set forth, of a continuous cutter having a series of wings or ribs integral with a central body, and a longitudinally-divided bushing having an externally-tapered surface adapted to fit within the clamping-sleeve of a chuck, a bore of diameter to fit around the wings of the cutter, and a series of internal projections acting as abutments for said wings.

327,150. CAR-WHEEL. LUTHER R. FAUGHT, Philadelphia, Pa. Filed June 17, 1885. (No model.)



Claim.—1. The combination of a railroad-axle, a wheel fitted loosely thereon, and a frictional coupling device interposed between the wheel and its seat or bearing on the axle, these members being combined for joint operation to admit of either the coincident or the independent rotation of the wheel and axle, substantially as set forth.

2. The combination of a railroad-axle, a wheel having a conic ily-

bored hub, a flexible and compressible tapered sleeve fitting around the axle and within the bore of the hub, and a spring or springs bearing against the sleeve and acting to force the same into close contact with the axle and hub, substantially as set forth.

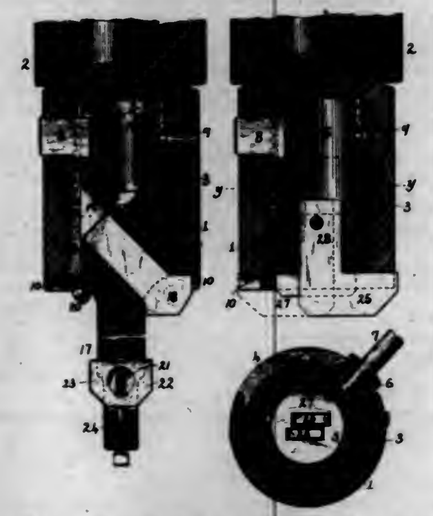
3. The combination of a railroad-axle, a wheel having a conically-bored hub, a flexible and compressible tapered sleeve fitting around the axle and within the bore of the hub, a spring or springs bearing against the sleeve and acting to force the same into close contact with the axle and hub, and a locking-key engaging recesses in the hub and in the sleeve, substantially as set forth.

4. The combination of a railroad-axle having one or more collars upon its wheel-seat, a longitudinally-divided bushing having annular recesses fitting said collars, a wheel fixed upon said bushing and having a conically-bored hub, two flexible and compressible tapered sleeves fitting around the axle, and fitting, respectively, within the conical bore of the hub and within a conical bore in the bushing, a series of springs bearing against the sleeves and acting to force the same into close contact with the axle and with the hub and bushing, and a locking-key engaging a recess in the hub and recesses in the sleeve, substantially as set forth.

5. The combination of a railroad-axle, a wheel having a conically-bored hub, two flexible and compressible tapered sleeves fitting around the axle and within the bore of the hub, a series of springs interposed between said sleeves and acting to force one thereof into close contact with the axle and hub, and a supplemental series of springs bearing against the other sleeve and acting similarly but independently thereon, substantially as set forth.

6. A flexible sleeve for effecting the connection of a wheel to an axle by frictional contact, said sleeve having a cylindrical bore fitting the axle, and a conical or tapered periphery provided with a series of longitudinal grooves or recesses, and being longitudinally split or divided, substantially as and for the purpose set forth.

327,151. DEVICE FOR HOLDING METAL-CUTTERS. LUTHER R. FAUGHT, Philadelphia, Pa. Filed June 23, 1885. (No model.)

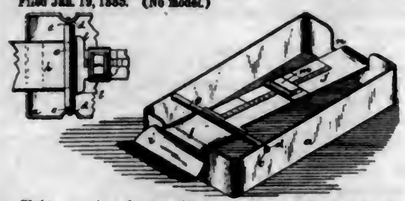


Claim.—1. The combination, substantially as set forth, of a chuck or socket having a conical or tapered central bore and one or more radial end slots extending from its bore to its periphery, a nut fitting a recess in the chuck concentric with the bore thereof, and a longitudinally-divided sleeve having an external screw-thread engaging the thread of the nut, and a conical or tapered bearing corresponding with the bore of the chuck on each side of said nut.

2. The combination, substantially as set forth, of a conically-bored chuck, a nut fitting a recess therein, a longitudinally-divided sleeve fitting the bore of the chuck, and having an external screw-thread engaging the thread of the nut, a boring bar or stock fitting within said sleeve, and a series of cutters secured removably in said boring-bar.

3. The combination, substantially as set forth, of a conically-bored chuck having radial slots in its end extending from its bore to its periphery, a nut fitting a recess in the chuck concentric with its bore, a longitudinally-divided sleeve fitting the bore of the chuck and having an external screw-thread engaging the thread of the nut, a cutter-socket fitting within said sleeve, and a pair of facing-cutters fixed in longitudinal slots in the cutter-socket, and fitting in the radial slots of the chuck.

327,152. PRESCRIPTION-SCALES. CALVIN H. FITCH, Middletown Springs, Vt., assignor of one-half to Byron S. Fitch, Richmond, Va. Filed Jan. 19, 1885. (No model.)



Claim.—1. A scale comprising a box having fixed sides provided with bearings, a scale-pan provided with a tube, *e*, and a bearing-pin secured therein, whereby the pan is permanently hung in the said bearings, a scale-beam connected with such pan, and a movable cover for the box to inclose the pan, bearings, and beam within the box, substantially as described.

2. A prescription-scale comprising a covered casing or box having fixed sides, a scale-pan permanently hung in the said fixed sides, and rotatable on its bearings, so as to be capable of being turned into and out of the box, and a scale-beam adapted to be connected with and disconnected from such pan, substantially as described.

3. A box, a scale-pan provided with a socket-piece, and a knife-edge fulcral pin secured in bearings in the sides of said box, and rotatable in said bearings to adapt it to be turned into and out from said box, and a detachable scale-beam provided with a tenon to engage the socket-piece of the pan, combined substantially as described.

4. A box provided with bearings, a fulcral pin rotatable in said bearings, and a scale-pan secured to said pin and adapted to be turned into or out from the box, combined with a detachable scale-beam, substantially as described.

5. A box provided with bearings, a fulcral pin having a knife-edge and rotatable in said bearings, and a scale-pan rigidly affixed to said pin and adapted to be turned out of or into said box to bring the knife-edge of the pin into operative and inoperative positions, respectively, with respect of its bearings, substantially as described.

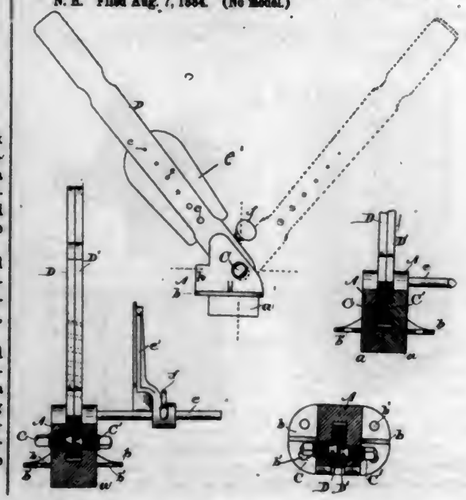
6. A box provided with side bearings, a fulcral pin having a knife-edge and rotable in said bearings, a scale-pan and a tube attached to the socket-piece extending from said pan through which the fulcral pin extends to its bearings on either side, substantially as described.

7. The scale-pan made V shape in cross-section combined with a fulcral pin having permanently-fixed bearings, and a scale-beam, whereby the article or substance to be weighed is compelled to a given center, and a true balance thus preserved, substantially as described.

8. The box *a*, provided with openings *n o* in its ends, side bearings, and a cover combined with the pan, its socket-piece, fulcral pin, and detachable tenoned scale-beam and weight thereon, substantially as described.

9. The combination, with the socketed scale-pan, of the tenoned scale-beam having stop-lugs *l* co-operating with the said socketed pan to insure the correct position of the beam in the socketed pan, substantially as described.

327,153. TOOL FOR CUTTING WIRE. WILLIAM H. FLINN, Nashua, N. H. Filed Aug. 7, 1884. (No model.)

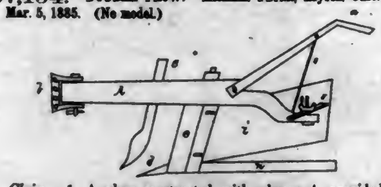


Claim.—1. An improved rod or wire cutter consisting, essentially, of a block or holder and a pair of levers eccentrically pivoted therein, each lever being provided with a series of holes, which register when the levers are in a given position with relation to the holder, and are thrown out of alignment when both levers are moved, substantially as described.

2. The block or holder and a pair of levers parallel with each other having faces in contact and eccentrically pivoted in the holder, each lever being provided with a series of holes, which register with each other when the levers are in a given position with relation to the holder, combined with an adjustable gage attached to the holder and adapted to arrest a wire when projected through one pair of the two series of holes substantially as set forth.

3. An improved rod or wire cutter consisting, essentially, of the block provided with the uprights, and screw-bolts having the bosses projecting toward each other and beyond the inner walls of said uprights, and the pair of levers parallel with each other having faces in contact and eccentrically pivoted on the bosses of the removable screw-bolts, each lever being provided with a series of holes of different diameter, the said series registering with each other when the levers are in a given position with relation to the block, and being thrown out of alignment when the levers are moved in unison on their pivots, substantially as described.

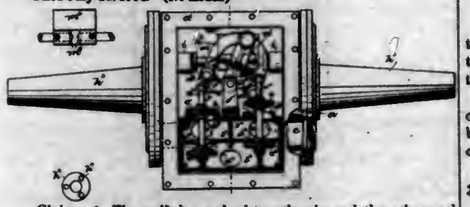
327,154. DOUBLE PLOW. MICHAEL FLYNN, Elyria, Ohio. Filed Mar. 5, 1885. (No model.)



Claim.—1. A plow constructed with a beam, A, provided with a recessed or grooved standard, *c*, rigidly attached thereto and presenting a sharp or acute angle to the earth, in combination with the straight adjustable wings *i i*, attached thereto, the low point *d*, and keel *n*, all as above set forth, and substantially as described.

2. The combination of the recessed standard *c*, low or flat point *d*, and sole-plate *n*, all rigidly joined together as above set forth, and substantially as described.

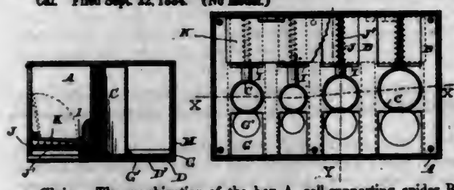
327,155. WATER-METER. GEORGE S. FOLLANSBEE, Boston, Mass. Filed July 21, 1884. (No model.)



Claim.—1. The cylinder and piston therein, and the valves and rocking lever connected therewith having cam-surfaces, combined with the rocking arm actuated by the piston near the end of its stroke, and the valve-actuating arms pivoted on said rocking arm and bearing on said cam-surfaces, substantially as described.

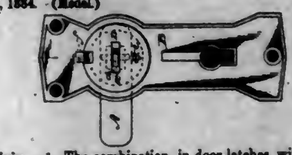
2. The cylinder and piston therein, and the valves and rocking lever connected therewith provided with cam-surfaces, combined with the slide-rods having projections within the cylinder near its ends, the rocking arm actuated thereby, and the valve-actuating arms pivoted on said rocking arm and bearing on the said cam-surfaces, substantially as described.

327,156. COIN-CHANGER'S BOX. DANIEL R. FORD, San Francisco, Cal. Filed Sept. 22, 1884. (No model.)



Claim.—The combination of the box A, coil-supporting spider B, coin-coils C C, base-plate D, having coin-openings D' D', the sliding plates G, having coin-openings G' G', and provided with push-plates H and perforated stops I, the pins or rods J, having spiral springs J', and the locking-plate K, substantially as shown and described.

327,157. LATCH. ORVELLAS H. GILBERT, Newark, N. J. Filed Dec. 20, 1884. (Model.)



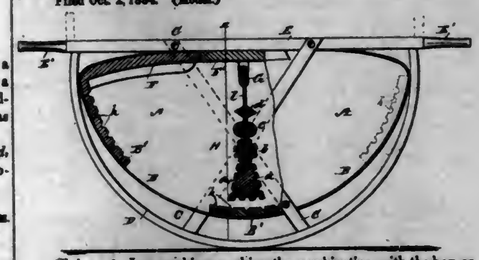
Claim.—1. The combination, in door-latches, with a lever adapted to actuate a latch, substantially as herein specified, said lever having journals arranged within a recessed plate or rose, through which said lever passes, of a recessed plate or rose and a removable plate arranged within said recessed plate, having lugs, between which the journals of the lever are pivoted, for the purposes set forth.

2. The combination, in door-latches, with a lever adapted to actuate a latch, substantially as herein specified, said lever having journals arranged within a recessed plate or rose, through which said lever passes, of a recessed plate or rose provided with a lug or projection, *f*, and a threaded post, *e*, and a removable plate having lugs, between which the journals of the lever are pivoted and held within said recessed plate, substantially as and for the purpose set forth.

327,158. COMPOUND FOR TREATING TOBACCO. ADOLPH GLOSER, West St. Paul, Minn. Filed Mar. 2, 1885. (No specimens.)

Claim.—A compound for treating cigars and smoking-tobacco, consisting of tincture of coca, fluid extract of tolu, fluid extract of hops, essence of lemon, and apple cider, in about the proportions given, and as set forth.

327,159. WASHING-MACHINE. MORGAN L. GROVER, Lavalle, Wis. Filed Oct. 2, 1884. (Model.)



Claim.—1. In a washing-machine, the combination, with the box or tub A, of the rockers D, the top bars, E, and the braces C, uniting the top bars and rockers, and to which braces the box A is secured, substantially as herein shown and described.

2. In a washing-machine, the combination, with the box or tub A, of the transverse grooved boards B', secured on the inner surface of the bottom, the swinging flexible beater H, and rockers secured to the tub or box, substantially as herein shown and described.

327,160. MACHINE FOR BORING GUN-BARRELS. HERMAN H HACKMAN and THEOPHIL P. WALTER, Vincennes, Ind. Filed Apr. 14, 1885 (No model.)

Claim. -1. A machine for boring gun-barrels, constructed with an expansible and hollow boring-tool, and a guide-bar clamped to the work-carriage and passing through the boring-tool, its bar, and the gun-barrel, to govern the diameter and shape of the bore of the barrel, substantially as herein set forth.

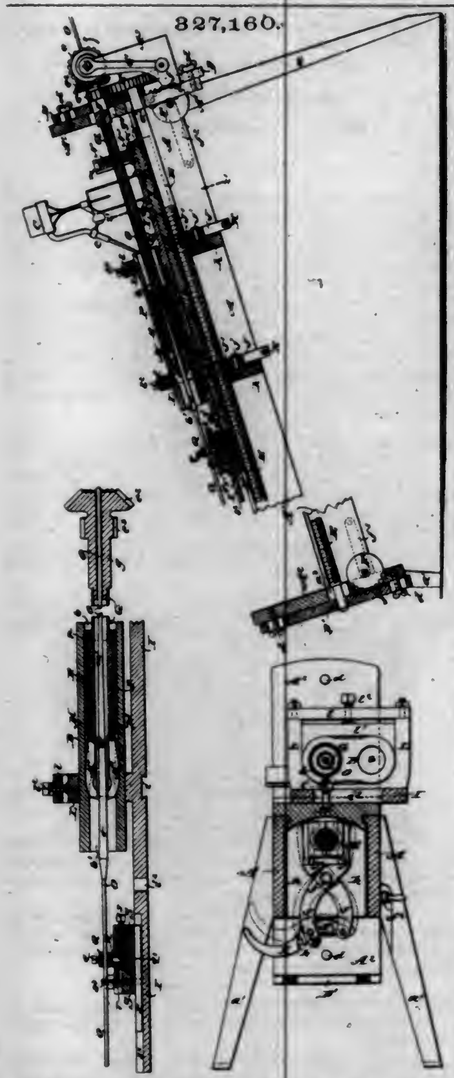
2. In a boring-machine, the combination, with the bed A, feed-screw E, and boring-bar G, of the end plates, D D', and means, substantially as specified, for moving and holding said plates, substantially as herein set forth.

3. In a boring-machine, the combination, with the bed A, feed-screw E, boring-bar G, and movable end plates, D D', of the clamp-jaws J, pivoted to the carriage and provided with shifting nut-blocks J', substantially as herein set forth.

4. In a boring-machine, the combination, with the bed A and the work-carriage comprising a base-plate, H, and laterally-movable plate I, of the clamp-heads L, to hold the gun-barrel, the vertically-movable boring-bar guide-block N, fitted in a base, N', adapted to slide laterally in the plate I, and the guide-bar O and its clamp-head, comprising a vertically-adjustable block, Q, fitted in a plate, R, made laterally adjustable in a base-block, S, held to the carriage, substantially as herein set forth.

5. In a boring-machine, the combination, with the bed A and the work-carriage, comprising a base-plate, H, and laterally-movable plate I, of clamp-heads L, boring-bar guide-block N, fitted in a base, N', adapted to slide laterally in plate I, and the guide-bar O and its clamp-head, comprising a vertically-adjustable block, Q, fitted in a plate, R, laterally adjustable in a base-block, S, held to the carriage, and said

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block S being adjustable lengthwise of the carriage, substantially as herein set forth.

6. In a gun-barrel-boring machine, the combination, with the boring-tool M and boring-bar G, of the guide-bar O, passing through said tool and bar, and said tool M provided with pivoted cutters M', bearing on the bar, substantially as herein set forth.

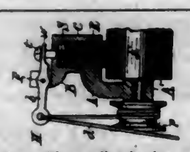
7. The boring-tool M, made hollow, and with cutters M', pivoted in slots of the tool, and with a sectional sleeve, P, confined at one end and free to expand at the other end, and provided with lengthwise grooves p^4, substantially as herein set forth.

8. In a gun-barrel-boring machine, the combination, with the work-carriage, the feed-screw E, the boring-tool guide-bar O, clamped adjustably to the carriage, and the hollow boring-tool M, having expansible cutters, of the hollow boring-bar G, the hollow shaft g, connected therewith and provided with the gearing e^3 e^3, and the gears E' e, substantially as herein set forth.

327,161. FRICTION SHADE-ROLLER. JAMES HARDMAN, Jr., Belleville, N. J. Filed Oct. 16, 1884. (No model.)

Claim.—1. The combination, with a roller-bracket, of a socket, C, containing a brake-block, R, and spring S, as described, and provided with a lever connected to the brake-block and adapted to receive the cord for actuating the roller, substantially as and for the purpose set forth.

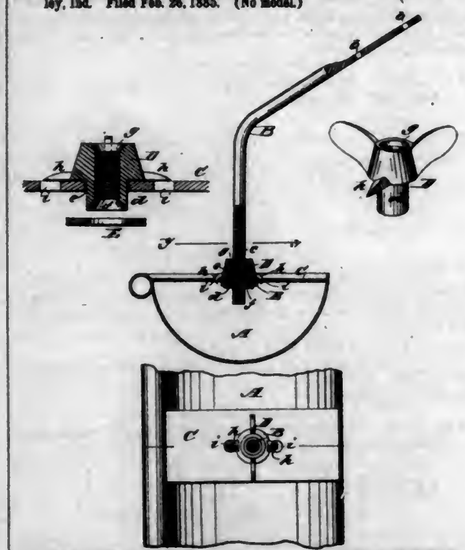
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4. The combination, with a roller having a fast pulley, p, at the end, as described, of a roller-bracket, B, a brake-block operated by a spring and applied to the upper side of the roller, and a lever pivoted upon the bracket, with its inner end connected to the brake-block, and its outer end provided with the pulley p', to receive the cord d from the pulley p, as and for the purpose set forth.

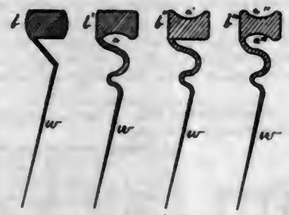
3. The combination, with the roller-bracket and the socket C, containing the brake-block R and spring S, as described, of the lever adapted to receive the cord for actuating the roller, and connected with the brake-block by the actuating-screw, as and for the purpose set forth.

327,162. EAVES-TROUGH FASTENING. OLIN HARLEY, South Whitley, Ind. Filed Feb. 26, 1885. (No model.)



Claim.—The combination, with the cross-bar C, of the trough having a central aperture, e, and any number of locking holes, i, in it, of the upper thumb-nut, D, constructed with a reduced lower neck, d, countersunk, as at f, and provided with any number of side locking lips or wings, h, the washer E, over which the lower countersunk end of the neck d is riveted to attach the nut to the cross-bar, and the bent screw-rod hanger B, essentially as shown and described, and for the purpose herein set forth.

327,163. SCYTHE. WILLIAM HARVEY, Augusta, Me. Filed Dec. 11, 1882. (No model.)

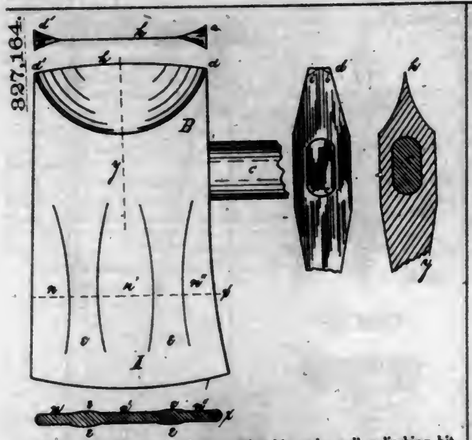


Claim.—1. A scythe having the back thereof concave on one or both sides, as indicated in Figs. 2, 3, and 4, as and for the purposes set forth.

2. A scythe having the back thereof concave on one or both sides and the web or blade corrugated from the junction of the web and back to a line near the cutting-edge of the web, and substantially parallel therewith.

327,164. AX. WILLIAM HARVEY, Readfield, Me. Filed Mar. 21, 1885. (No model.)

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Claim.—1. An ax having a cutting-bit and a poll or limbing bit, the latter sharp in the center and thick or blunt at the ends.

2. An ax having two or more chip-ridges upon each side of the cutting-bit, and a poll or limbing bit sharp in the center and thick or blunt at the ends.

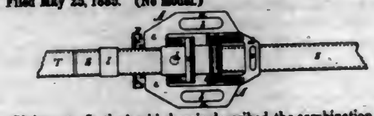
327,165. SADDLE-BAR. THOS. J. HASLAM, Dublin, Ireland. Filed Apr. 25, 1885. (No model.) Patented in England Sept. 30, 1884, No. 12,966.



Claim.—1. The combination, with a plate having hooks, one of which is beveled at b', of a runner having a cross-piece and a stem beveled on its under surface, substantially as herein shown and described.

2. A saddle-bar consisting of the plate A, provided with the hooks B B', the hook B' being beveled at b', and the runner C provided with the slot D, the cross-piece E having bevel c, as set forth.

327,166. TRACE-BUCKLE. JOHN HERRINGTON, Charles City, Iowa. Filed May 25, 1885. (No model.)



Claim.—1. In the buckle herein described, the combination, with the frame having the strap-eyed side bars, triple cross-bars, and the eccentrically-hinged tongue-plate provided with inwardly-projecting tongue, of the hame-tug coupling-link having curved side bars, tug-looping cross-bar, and buckle-linking cross-bar, and of the trace, the head of which is passed between the link-pressed tongue-plate and the evenly-level cross-bars beneath and through the hame-tug box-loop, all substantially as and for the purposes herein specified.

2. In the buckle herein described, the combination of the strap-eyed side bars, triple cross-bars, and the eccentrically-hinged and interlocking tongue-plate, having an inwardly-projecting tongue, substantially as and for the purposes herein specified.

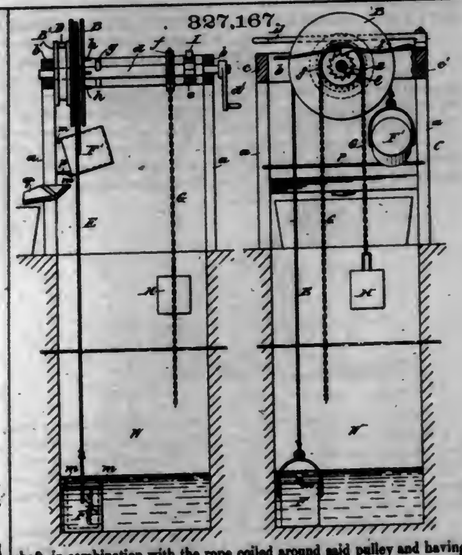
3. The combination, with the intercoupled and interlocking tongue-plate, as herein described, of the buckle coupling-link, having the curved side bars and rounded end bars, and of the hame-tug having the box-loop, substantially as and for the purposes herein specified.

327,167. WATER-ELEVATOR. BENJAMIN J. HEWITT, Manton, Mich., assignor to himself and JOHN BOWEN, same place. Filed May 15, 1885. (No model.)

Claim.—1. In a water-elevator, the shaft having the loosely-mounted shifting pulley, around which pulley is coiled a rope with buckets connected to its ends, one bucket being enough heavier than the other bucket to overbalance the latter bucket and its contents, substantially as and for the purpose set forth.

2. In a water-elevator, the shaft having transverse pins, and the loosely-mounted shifting pulley having pins to engage the pins of the

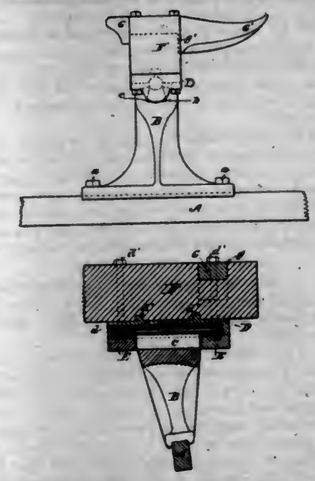
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shaft, in combination with the rope coiled around said pulley and having buckets connected to its ends, one bucket being enough heavier than the other bucket, including its contents, to overbalance the latter filled bucket, and the chain passed over a pulley on said shaft, and having a weight at one end to elevate the heavier filled bucket as the bucket-rope pulley is shifted into engagement with the shaft, substantially as and for the purpose set forth.

3. In a water-elevator, the shaft having the loosely-mounted shifting pulley, around which pulley is coiled a rope, to the ends of which rope are connected buckets, one bucket being enough heavier than the other bucket to overbalance the latter bucket filled, said buckets also having hooks to engage with a bail, substantially as and for the purpose set forth.

327,168. SLEIGH. PETER HILGER, Arlington, assignor of one-half to John Molitor, Minneapolis, Minn. Filed June 24, 1885. (No model.)



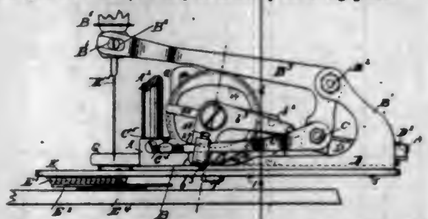
Claim.—1. The combination, with the knee B, having in its top the open dovetailed groove b, of the bearing C, having cylindrical ends and on its under side the dovetailed projection c, fitting the groove b, and the boxes D E, fitting said bearing, said boxes E projecting over the edges of the groove b and holding the projection c in the groove, and bolts d' d', all substantially as described.

2. The combination, with the knee B, having groove b, bearing C, having projection c, boxes D E, bench F, skidding attachment G, having shoulder g', and curved end G', and bolts d' d', all substantially as described.

327,169. BUTTON-HOLE ATTACHMENT FOR SEWING-MACHINES.

THOMAS S. HUNTINGTON, New York, N. Y., assignor to the New Home Sewing Machine Company, Orange, Mass. Filed Mar. 2, 1885. (No model.)

Brief.—The rotation of the ratchet-wheel raises and lowers an equalizer that projects under the longitudinally-reciprocating pawl-moving arm, thereby causing the latter to act against the short U-shaped arm of the pawl-carrier at a greater or less distance from its center of motion. The peripheral cam-disk acts directly upon the shifting-stud. When it is desired to simply stitch around the button-hole to be made prior to over-stitching it, the switch-pawl may be turned up out of engagement.



Claim.—1. In a button-hole attachment for sewing-machines, a bed, a bottom plate provided with a bracket, a lever pivoted thereon, a loosely-connected switch-pawl having two hooked projections, and the switch-block having a pin, and the head of the switch-block provided with two horns and cam projections, combined with the pivoted feed-bar to vibrate the latter, substantially as described.

2. In a button-hole attachment for sewing-machines, the combination, with a feeding mechanism and a switch-block, D^2, having an attached head, D^3, a horizontal adjusting-screw, 14, arranged in an ear of the head, and the attaching and connecting screw 13, substantially as described.

3. The feed-bar E, having the slots 10, and cross-head G, connected to said feed-bar by pin engaging the slot therein and extending thence into the bottom plate, the slotted bed in which the cross-head is guided, and the bottom plate, combined with the disk *a*, having a crank-pin, 23, engaging a slot in said cross-head, a shaft for said disk, and means to rotate it, substantially as described.

4. The bed, the bottom plate, the shaft a^2 and its attached cam-disk, and the feed-bar, combined with the shifting-stud engaging with and moved by the said cam-disk, substantially as described.

5. The bed, the bottom plate, the shaft a^2 and its attached cam-disk, and the feed-bar, combined with the shifting-stud engaging with and moved by the said cam-disk, and with the switch-block to vibrate the said feed-bar on the shifting-stud as a fulcrum, substantially as described.

6. The bed, the bottom plate, the shaft a^2 and its attached cam-disk, and the feed-bar, combined with the shifting-stud engaging with and moved by the said cam-disk, and with the switch-block to vibrate the said feed-bar on the shifting-stud as a fulcrum, and with the slotted cross-head disk and crank-pin to move the feed-bar longitudinally, substantially as described.

7. In a button-hole-stitching attachment, the feeding bar or device, the sliding cross-head connected therewith, the crank and crank-pin to move the cross-head, shaft a^2, a connected ratchet-wheel, a pawl to engage and rotate the said wheel, and a pawl-carrier and pawl-carrier actuating-arm provided with projections, combined with a cam and equalizer to vary the effective stroke of the pawl and the extent of rotation of the wheel *b* and equalize the feed-stroke, substantially as described.

327,170. STOP-MOTION MECHANISM FOR KNITTING-MACHINES.

WARREN D. HUSE, WILLIAM E. SHEEHAN, and GEORGE F. DAVIS, Laconia, N. H.; said Sheehan and Davis assignors to said Huse. Filed Feb. 7, 1885. (No model.)

Claim.—1. In combination with the bed, needle-cylinder, and needles of a knitting-machine, and its operating-gears, a shipper-lever, a spring for moving said lever in one direction, a bolt for locking said shipper-lever against the tension of said spring, a bar provided with hooks for engaging the knitted fabric, two suspension-pulleys arranged above the machine, a pivoted frame, provided at its pivoted end with a shoulder or stop to limit its upward movement, and located upon the rear of the bed, a third pulley mounted in said pivoted frame, a cord or chain connected at one end to said work-supporting bar, and passing over one of the upper pulleys, under the lower pulley, and then over the other one of the upper pulleys, and having a weight attached at the other end thereof, and a compound-lever connected at one end to the shipper-locking bolt, and its other end extended to a point beneath and in close proximity to said lower pulley and its pivoted frame, all constructed, arranged and adapted to operate to stop the machine when work becomes detached from the needles, substantially as described.

2. In combination with the needle cylinder, its needles, and operating-gears, the shipper-lever E, the spring *s*, the locking-bolt *l l'*, the



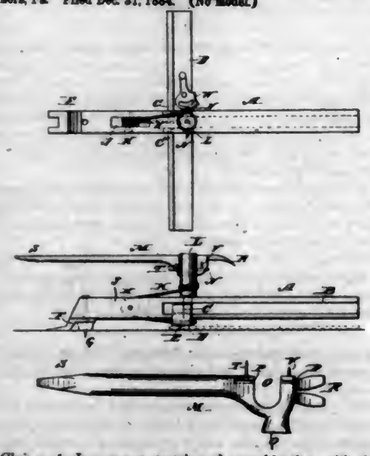
spring l^3, the levers P and P', the bar H, provided with hooks, the cord or chain J, the pulleys I, I', and I^3, and the adjustable projections or enlargements S upon said cord or chain, and the weight K, all arranged and adapted to operate substantially as and for the purposes described.

3. In combination with the needle-cylinder and needles of a knitting-machine, the bar H, the cord J, connected at one end to said bar, guiding-pulleys for said cord, and a weight attached to the other end of said cord, the pendent brake-shoe or dog M, having its lower end eccentric to its axis, and provided with the arm M', having its lower end constructed to rest against said cord below the first of said pulleys, as shown, whereby when the cord is taut the shoe or dog M is raised from contact with the cord, and when the cord becomes slack said shoe engages with said cord and clamps it between it and the pulley I, substantially as described.

4. In combination with the cord J, the sphere or cone S, made in two parts dovetailed together and clamped firmly to said cord in a fixed position, substantially as described.

327,171. CARPET-STRETCHER.

JOSEPH S. INGHAM, Academy Corners, Pa. Filed Dec. 31, 1884. (No model.)



Claim.—1. In a carpet-stretcher, the combination, with the bar A and the sliding cross-bar D, of the pulley H, the rope K, the winding-post L on the bar A, and the cross-piece N on the post L, substantially as herein shown and described.

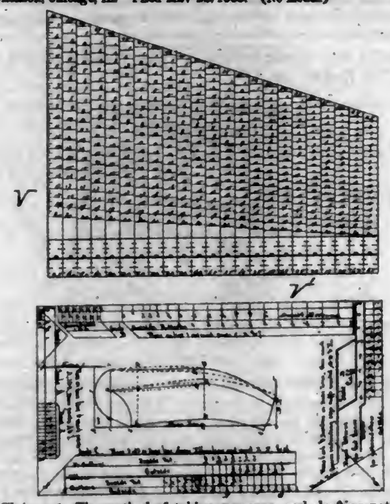
2. In a carpet-stretcher, the combination, with the bar A and the sliding cross-bar D, of the pulley H, the rope K, the winding-post L on the bar A, the cross-piece N, and the lever M, having a notch, O, and groove P, substantially as herein shown and described.

3. In a carpet-stretcher, the combination with the bar A and the sliding cross-bar D, of the pulley H, the rope K, the winding-post L on the bar A, the cross-piece N, and the lever M, having a notch, O, the groove P, the hammer-head Q, and the claw R, substantially as shown and described.

4. The lever M, having a notch, O, the grooves P, the hammer-head Q, the claw R, the pin T, the blade V, and having a screw-driver formed on one end, substantially as herein shown and described.

327,172. SYSTEM OF MEASURING FOR GARMENTS.

H. AYERS JACKSON, Chicago, Ill. Filed May 22, 1883. (No model.)



Claim.—1. The method of taking measures and drafting patterns for clothing, which consists in employing a rectangle one side of which is one-half the bust-measure and the other side is the distance between the apparent top bone of the spinal column and the level of the top of the hip-bone, substantially as shown and described.

2. The process of measuring and drafting clothing herein described, consisting in first taking the bust, waist, chest, width of back, length of back, under arm, shoulder, armseye, height of dart, and length of front measures, then making a rectangle one side of which is one-half the largest circumference of the body and the other side the distance between the top bone of the spinal column and the level of the hip-bone, then placing the measurements first taken in position inside of and over the rectangle, then laying off subsidiary lines, determined by means of a scale about one-fourth the bust-measure, and then determining the directions of the several lines by means of eccentric curves, which are placed at the noted measure-points, and using the same as a ruler to delineate the pattern-form desired, substantially as described and shown, and for the purpose set forth.

3. The process of measuring and drafting clothing herein described, consisting in first drawing lines downward and parallel with the perpendicular sides of the rectangle at each side of the patterns constituting the waist, then applying on each line so drawn the measured distance between the bottom waist-line and the point of the greatest hip enlargement, then from said point measuring at right angles outward the difference between the hip and waist measures, then drawing a line from the side of each pattern at the bottom of the waist to each enlargement-mark, substantially as shown and described, and for the purpose set forth.

327,173. STAVE-BENDING MACHINE.

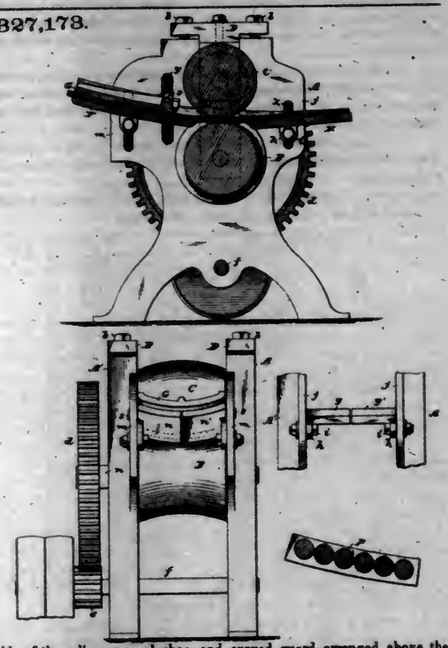
EDWARD M. JEWETT, Buffalo, N. Y., assignor to Edward W. Jewett, same place. Filed July 15, 1885. (No model.)

Claim.—1. The combination, in a stave-forming machine, of a pair of rolls, one concave and the other convex, a table at one side of the rolls, and a shoe at the opposite side, curved longitudinally and transversely upon its carrying and guiding face, and arranged to bend the staves upward as they pass from the rolls, substantially as set forth.

2. The combination, with the rolls of a stave-forming machine, one concave and the other convex, of an adjustable table at one side, and a shoe at the opposite side, consisting of two parts, each vertically adjustable, substantially as described.

3. The combination of the concave and convex rolls, a table at one

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side of the rolls, a curved shoe, and curved guard arranged above the shoe, substantially as set forth.

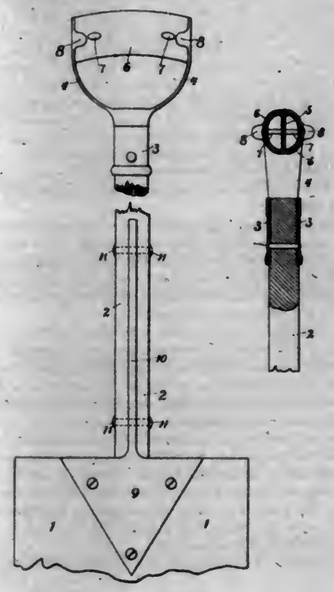
4. The combination of the concave and convex rolls, sectional feed-table, and shoe consisting of two sections curved longitudinally and transversely upon their carrying and guiding faces, substantially as described.

5. The combination of the side frames having slotted flanges, rolls carried by the frames, and table and shoe on opposite sides of the forming-rolls, each in two sections, each section being secured to one of the flanges by a bolt passing through the slot of the flange, substantially as described.

6. The combination of the concave and convex rolls and an adjustable shoe curved longitudinally and transversely upon its carrying and guiding face, substantially as described.

327,174. SHOVEL.

JOHN JOHNSON, Memphis, Tenn. Filed Aug. 1, 1885. (No model.)

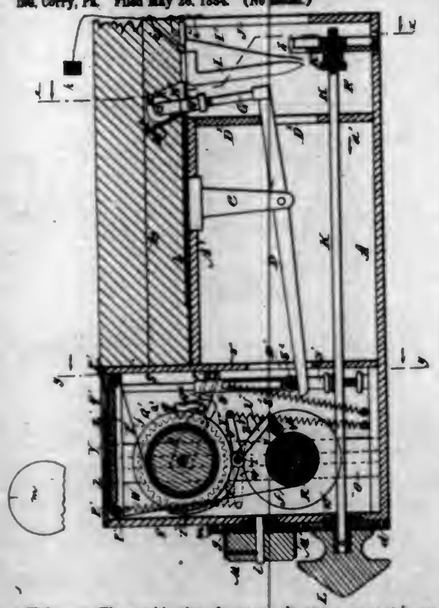


Claim.—1. In a shovel, a grasp-bar composed of a metallic web and with wooden sections applied to each side of such web, substantially as described.

2. The combination of the shank 2, socket 3, arms 4, with metallic web 5 connecting said arms, rounded sections 6 on each side of said web, and ears 8, for retaining said sections in position, substantially as described.

3. In combination with shank 2, the tongue 10, rigid with the flange and occupying a slit at the lower end of said shank, substantially as described.

327,175. MONEY DRAWER AND RECORDER. ALPHONSO S. KEATING, Corry, Pa. Filed May 26, 1884. (No model.)



Claim.—1. The combination of a money-drawer, a paper strip contained therein, a small portion of which is exposed to view, and a lever pivoted to said drawer and adapted to be operated by a stop on the counter to feed forward the paper strip, substantially as described.

2. The combination, with a drawer, of the rollers Q R, the top plate, P, a strip or paper secured on the rollers and passed over the top plate, a swinging arm provided with a pawl engaging with a ratchet-wheel on one of the rollers, a vertically-sliding frame connected with the said swinging arm, and means for operating the sliding frame when the drawer is pulled out, substantially as herein shown and described.

3. The combination, with a drawer, of the rollers Q R, the top plate, P, a strip of paper secured on the rollers and passed over the top plate, a swinging arm provided with a pawl, a ratchet-wheel on one of the rollers, a vertically-sliding frame connected with the said swinging arm, a lever pivoted in the drawer and acting on the said vertically-movable frame, and an arm on the inner end of the lever, which arm is pressed downward when the drawer is pulled out, substantially as herein shown and described.

4. The combination, with a drawer and a vertically-movable frame, of rollers and a sheet of paper held on the rollers, means for revolving the rollers by moving the frame upward, a lever pivoted in the drawer and adapted to move the frame upward, and an arm on the inner end of the lever, which arm is moved downward when the drawer is pulled out, substantially as herein shown and described.

5. In a drawer, the combination, with rollers, a strip of paper secured on the rollers, a vertically-movable frame, and intermediate means for revolving the rollers, of the lever D, adapted to act on the said frame and pivoted in the drawer, the arm G on the inner end of the lever D, and the roller H, held on the upper end of the said arm, substantially as herein shown and described.

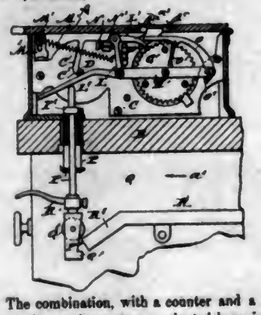
6. The combination, with a counter-top having an inclined slot, H', of a drawer containing rollers on which a strip of paper is secured, and means for revolving the rollers, a lever pivoted in the drawer and adapted to act on the means for revolving the rollers, an arm on the inner end of the lever, and a roller on the upper end of the said arm, which roller passes into the inclined slot when the drawer is closed, substantially as herein shown and described.

7. In a drawer, the combination, with a frame, of the top plate, P, the rollers Q R, and the swinging arm Q^2, the pawl q on the same, the uprights S', the vertically-sliding sleeves S, the cross-piece S^2, the springs S^3, the roller V', and the springs for pressing the said roller V' on the paper on the roller R, substantially as herein shown and described.

8. The combination, with a drawer, of a spindle extending through the same from front to rear, a disk provided with a notch and mounted on the inner end of the spindle, a handle-knob on the outer end of the spindle, and a prong projecting downward from the counter-top on which the drawer is held to slide, substantially as herein shown and described.

9. The combination, with a counter and its drawer, of a spindle passing through the same, a disk provided with a notch mounted on the inner end of the spindle, a prong projecting downward from the plate on which the drawer slides, a spring-strip projecting downward from the said plate and held a short distance behind the prong, and separate wires for connecting the prong and the strip with the opposite poles of a battery, substantially as herein shown and described.

327,176. CASH-RECORDER. ALPHONSO S. KEATING, Corry, Pa. Filed Feb. 27, 1885. (No model.)



Claim.—1. The combination, with a counter and a drawer in the same, of a cash-recorder on the counter, a pivoted lever in the register-box for operating the recording mechanism, a vertically-movable rod connected with the said lever, and a track on the drawer for operating the said vertically-movable rod, substantially as herein shown and described.

2. The combination, with a counter and a drawer, of a box on the counter, a recording device in the box, a rod projecting downward from the registering device and provided with a roller on its lower end, and a track on the drawer, substantially as herein shown and described.

3. The combination, with a counter and a drawer, of a box on the counter, a recording device in the box, a rod projecting downward from the box, a forked piece on the lower end of the rod, on one prong of which fork a lug is formed, a roller pivoted in the fork, and a track on the box and adapted to act on the above-mentioned roller, substantially as herein shown and described.

4. The combination, with a counter and a drawer, of a box on the counter, a recording mechanism in the box, a vertically-movable rod for operating the registering mechanism, a track on the drawer for acting on the said rod, and a finger-piece projecting from the rod to facilitate operating the rod by hand, substantially as herein shown and described.

5. In a cash-recorder, the combination, with the side pieces, C, of the shaft D, the roller G, the rubber rollers E' E^2, the boxes E^3, in which the ends of the lower roller, E^2, are journaled, the springs E^3, the casings E^4, containing the springs, the plates E^5 in the bottoms of the casings, and the adjusting-screws E^6, substantially as herein shown and described.

6. The combination, with a roller, G, having a longitudinal groove, J, in its outer surface, of the strip J', fitting in the groove, and the pins J^2, passed loosely through the roller at the ends, substantially as herein shown and described.

7. The combination, with the roller G, having a longitudinal groove, J, of the strip J', fitting in the groove, the end pins, J^2, projecting from the strip J' through apertures in the ends of the roller, and the spring K, secured in the inner surface of the hollow roller, and having its ends bent upward and resting against the under surface of the strip J' at the ends, substantially as herein shown and described.

8. The combination, with the roller G, having a longitudinal groove, J, of the strip J', fitting in the groove, a spring, K, for pressing the strip outward, and springs K^2, for locking the strip J' in place when pressed into the groove, substantially as herein shown and described.

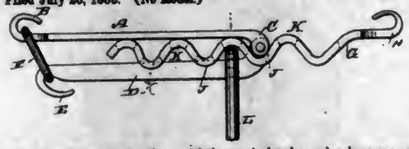
9 In a cash-recorder, the combination, with a drawer and a frame or side pieces, of a shaft on which the paper is wound, a drum or roller on which the paper is to be wound, a ratchet-wheel on one end of the drum, a locking dog or pawl engaging with the said ratchet-wheel, and a pivoted elbow-lever provided with a pawl for engagement with the ratchet-wheel, a vertically-movable rod for operating the elbow-lever, and a projection or track for operating the said vertically-movable rod, substantially as herein shown and described.

10. In a cash-recorder, the combination, with a drawer and a frame or side pieces, of a shaft on which the paper is wound, a drum or roller on which the paper is to be wound, a ratchet-wheel on the end of the drum, the pivoted dog O, the stop projection O^2 on the lower end of the same, the spring O', the elbow-lever L, the pawl L', the rod P', and a track on the drawer for acting on the rod P', substantially as herein shown and described.

11. In a cash-recorder, the combination, with a frame or side pieces, of a shaft journaled in the same, on which shaft the paper is wound, a drum or roller on which the paper is to be wound, a ratchet-wheel on the end of the said drum, an elbow-lever, L, provided with a pawl, L', adapted to engage with the said ratchet-wheel, the spring M, the stop M^2, the set-screw N, and the projection N', substantially as herein shown and described.

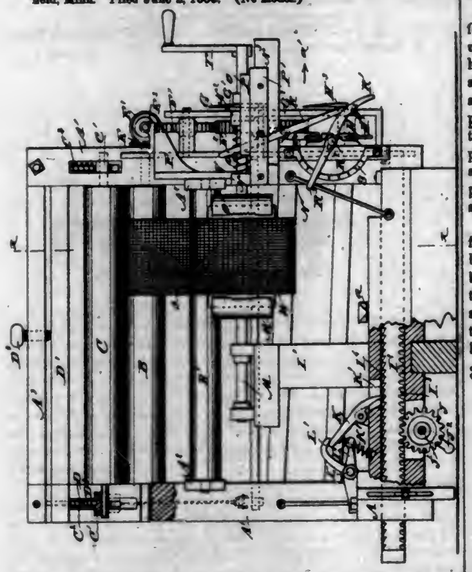
12. The combination, with a counter and a drawer in the same, of a cash-register on the counter above the drawer, a paper-shifting device in the cash-register, a lever for operating the shifting device, an electric bell, a battery having one terminal connected with the box of the cash-register, a contact-spring in the box, with which contact-spring the other terminal of the battery is connected, and a rod for pushing the lever upward to operate the paper-shifting device, and to act on the contact-spring, substantially as herein shown and described.

327,177. HAME-FASTENER. SAMUEL KELLEBREW, Brownsville, Tenn. Filed July 20, 1885. (No model.)



Claim.—The combination, with lever A, having a hook on one end, of the lever D, pivoted to the other end and provided with the hook E, the chain-link F, and the strap G, provided with a hook, H, and having corrugations J, and slots K in the corrugations, substantially as herein shown and described.

327,178. FABRIC-MEASURING MACHINE. JOHN W. KEUGER, Litchfield, Minn. Filed June 2, 1885. (No model.)



Claim.—1. In a fabric-measuring machine, the combination, with an upright frame, of a measuring-roller journaled in the same, a pressure-roller resting on the measuring-roller, levers below the pivots of the pressure-roller, and rods and levers for pressing down the ends of the said levers below the pivots of the pressure-roller for the purpose of raising the said pressure-roller to permit of passing the fabric between the said pressure-roller and the measuring-roller, substantially as herein shown and described.

2. In a fabric-measuring machine, the combination, with the uprights A', of the measuring-roller B, the pressure-roller C, springs for pressing the pressure-roller C upon the measuring-roller B, the levers g, below the pivots of the roller C, the rods f, the arms e, projecting from a shaft, b, and the crank d, for turning the said shaft, substantially as herein shown and described.

3. In a fabric-measuring machine, the combination, with two standards, of rods mounted to turn on the standards, and having forked ends, a sliding frame in which one of the rods is journaled, a lever pivoted below and extending through a groove in the sliding frame and operating it, and a cam-arm acting on the said lever, substantially as herein shown and described.

4. In a fabric-measuring machine, the combination, with two standards, of rods mounted to turn on their longitudinal axes in the standards and having their adjacent ends forked, a sliding piece in which one of the rods is journaled, a lever pivoted below and extending through a groove in the sliding frame and operating it, a shaft having a cam-arm acting on the lower end of the said lever, and a handle, spring, and curved rack for locking the said shaft in place, substantially as herein shown and described.

5. In a fabric-measuring machine, the combination, with two standards, of rods journaled in the same to revolve on their longitudinal axes and having the adjacent ends forked, a sliding frame in which one of the rods is journaled, a spring surrounding the rod and acting on the same, a lever pivoted below and extending through a groove in the sliding frame and operating it, a shaft provided with a cam-arm acting on the lower end of the pivoted lever, a handle-lever for turning the shaft, a semicircular rack, and a spring for pressing the handle-lever against the said rack, substantially as herein shown and described.

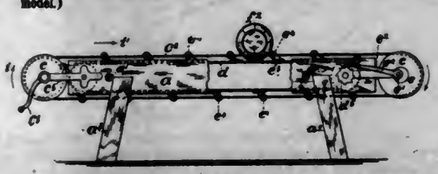
6. In a fabric-measuring machine, the combination, with a base-frame, of an upright frame carrying measuring-rollers, a movable frame in the base-frame, standards on the base-frame and on the movable frame, rods mounted on the standards and having their adjacent ends provided with forks for receiving the ends of the boards on which the fabric is wound, mechanism for shifting the movable frame, and a pointer projecting from the movable frame, substantially as herein shown and described.

7. In a fabric-measuring machine, the combination, with a base-frame, of an upright frame carrying measuring-rollers, a sliding frame in the base-frame, rods on the base-frame and on the movable frame for holding the boards on which the fabric is wound, pawls engaging with racks formed on the movable frame, and pinions or cog-wheels engaging with the racks on the movable frame, substantially as herein shown and described.

8. In a fabric-measuring machine, the combination, with a base-frame, of an upright frame carrying measuring-rollers, standards on the upright frame, a movable frame on the base-frame, which movable frame has racks formed on the top and bottom edges of the side bars, standards on the movable frame, rods in the standards on the base and movable frames for the purpose of holding boards on which fabric is wound, pawls pivoted on the base-frame and engaging with the top racks on the side bars of the movable frame, springs acting on the pawls, a shaft provided with curved arms above the upper ends of the pawls, and with a crank-handle for turning the shaft and pressing the cam-arms on the pawls, and of gearing on the movable frame, substantially as herein shown and described.

9. In a fabric-measuring machine, the combination, with a base-frame, of an upright frame carrying rollers, a movable frame on the base-frame, standards on the movable frame for holding one end of the boards on which the fabric is wound, racks formed on the side bars of the movable frame, the shaft J', the pinions or spur-wheels J on the same engaging with the racks on the side bars of the movable frame, the pawls K, the springs K^2, the shaft L, the arms L', and the crank-handle L^2, substantially as herein shown and described.

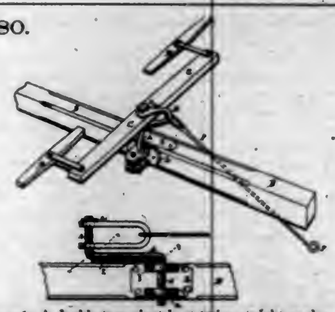
327,179. MACHINE FOR ROLLING BARRELS AFTER BEING PITCHED. FREDERICK X. KUHN, Buffalo, N. Y. Filed Mar. 27, 1885. (No model.)



Claim.—In a machine for rolling barrels after being pitched, the endless cables, substantially as specified, mounted on pulleys upon the frame a and having a crank for operating them, in combination with the endless belt d and rollers d^1, mounted on rollers set in bearings in the frame of the machine, the shaft d^2 being provided with a ratchet operated by a pawl and crank on the shaft a^2, whereby a rapid rotary movement is given to a barrel while it advances slowly along over the machine, substantially as described.

327,180. DOUBLE-TREE. PAUL W. LEFFLER, Grinnell, Iowa, assignor to Craver, Steele, & Austin, same place. Filed Aug. 17, 1885. (No model.)

327,180.

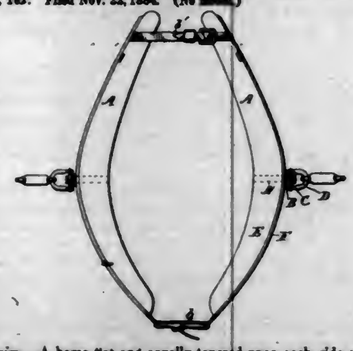


Claim.—1. A double-tree pivot bent twice at right angles, one end being adapted to carry a double-tree and a clevis for draft-rod, while the other end is supported by ears attached to the side of the pole, the said ears having two or more holes for the pivot to permit of adjustment for varying draft, all substantially as shown and described.

2. In a double-tree pivot, the combination of the pivot A, bent as shown, the supporting ears *l*, provided with one or more holes, *l' l'*, and secured to a tongue or pole, B, substantially as shown and described.

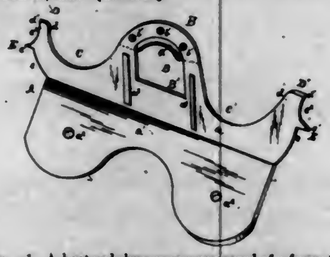
3. In a double-tree pivot, the combination of the pivot A, bent as shown, the supporting-ears *l l*, attached to the side of pole B, and the friction-plate I, all substantially as shown and described.

327,181. REVERSIBLE HARNESS-HAME. LEWIS LEWIS, Galveston, Tex. Filed Nov. 22, 1884. (No model.)



Claim.—A hame flat and equally tapered upon each side and provided with a swivel trace attachment, substantially as shown and described, whereby the hame is equally adapted for use upon the right or left side of a horse-collar, as set forth.

327,182. FOOT-SCRAPER. PHILIP M. LUTZ, North Springfield, Mo. Filed Feb. 28, 1885. (No model.)



Claim.—1. A boot and shoe scraper composed of a frame forming a base, *a'*, and a top, *a*, said top being composed of the scrapers B' G and C C' and the point E, substantially as shown and described.

2. The combination of a plate having a stirrup-shaped opening, B, having an edge, B', for cleaning the bottom of a shoe, a concave recess, C, for cleaning the instep and back part of the heel, and a projection, E, having a straight edge, *c*, concave edge *c'*, and a sharp point, *c'*, for cleaning the upper edge of the extending sole and the sides of the uppers, and an arch-shaped flexible piece, G, secured to an arch, B', for cleaning the top of the shoe, all substantially as shown and described, and for the purpose set forth.

327,188. UNDERSKIRT. JACOB MAYER, New York, N. Y. Filed June 16, 1885. (No model.)

327,188.



Claim.—1. As a new and improved article of manufacture, a lady's yoked underskirt formed with the body A and yoke B, both of the same breadth of material, the seams being curved at their yoke ends, and the front breadths formed with darts *n*, substantially as and for the purposes set forth.

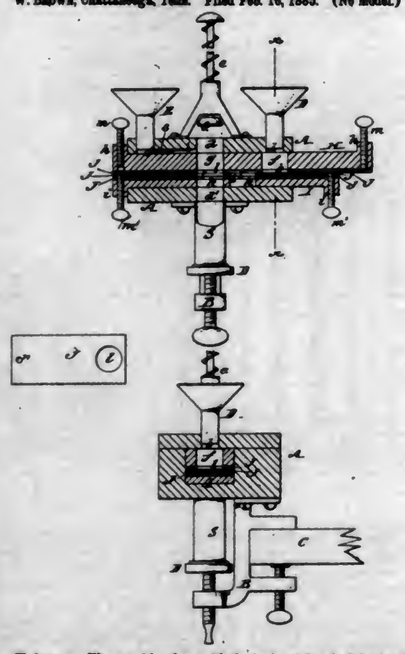
2. The skirt composed of the breadths C D E F, each cut with slanted edges, curved at their upper yoke ends to fashion the body A and form the yoke B, and to form the placket *l* with curved edges, the front breadths, C F, having the full folded and stitched darts *n* formed therein near the placket *l* to shape and strengthen the yoke and fill out and guard the figure in front, substantially as described.

327,184. WHIP-SOCKET LOCK. ROBERT MCDONALL, Auburn, Ind., assignor of one-half to William Sheffer, same place. Filed Jan. 21, 1885. (No model.)



Claim.—The combination, in a lock, of the bolt C, having one of its arms C' provided with a hollow or recess, C², and a shackle, F, pivoted at F', and having its point movable into the recess C² and provided with a series of teeth, F², whereby the said arm of the bolt is adapted to engage with the shackle, substantially as set forth.

327,185. CARTRIDGE-LOADER. JACOB D. MCKINNEY and THOMAS W. BROWN, Chattanooga, Tenn. Filed Feb. 16, 1885. (No model.)



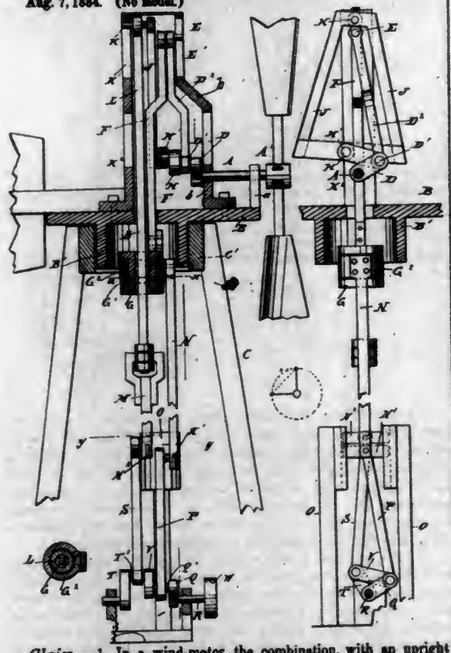
Claim.—1. The combination, with the body of the shell-loader having upper and lower central or intermediate apertures, *d d'*, and upper opposite side apertures, *b c*, of the powder-hopper D, shot-hopper E, the upper slide, H, with its duplicate apertures *f g*, arranged to be brought alternately under the central aperture, while the other is under one of

the side apertures of the body, and the lower slide, I, also having duplicate apertures *k k*, arranged to be alternately under the central aperture and having only half the motion of the upper slide, for operation together, substantially as specified.

2. The combination of the independent intermediate half-slides, J, having apertures *l* near their inner ends, the upper and lower sides, H I, having different lengths of motion, as described, and provided with duplicate differently-spaced apertures *f g* and *k k*, means, substantially as described, for attaching the intermediate slides to either the upper or lower slides, and the body A, having hopper-apertures *b c* and upper and lower intermediate apertures, *d d'*, essentially as and for the purposes herein set forth.

3. In a cartridge-loader, the combination, with the body A, provided with the apertures *b c d d'*, the hoppers D E, and the plunger G, of the slides H I, provided with the apertures *f g* and *k k*, arranged with relation to the apertures of the body, as described, the intermediate half-slides, J, having apertures *l* near their ends, and the screws *m m'*, for securing the said intermediate half-slides to the slides H I, substantially as herein shown and described.

327,186. WIND-MOTOR. FRANK S. MCKIBBEN, Tacoma, Wash. Filed Aug. 7, 1884. (No model.)

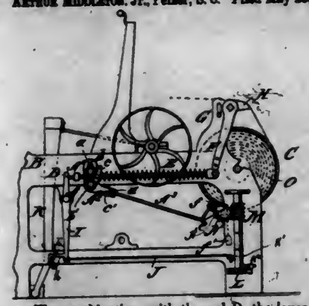


Claim.—1. In a wind-motor, the combination, with an upright structure, of a revolving platform on the same, a shaft journaled on the platform and provided with two cranks at right angles to each other, a wind-wheel on the shaft, connecting-rods connecting the two cranks with vertically-sliding pins, said pins being guided in slots of the upright structure above the wheel-shaft, connecting-rods connecting the said pins with vertically-sliding cross-heads, and connecting-rods for connecting the cross-heads with cranks on the receiving-shaft, substantially as herein shown and described.

2. In a wind-motor, the combination, with an upright structure, of a revolving platform on the same, a shaft journaled on the platform and provided with two cranks, D H, at right angles to each other, a wind-wheel on the shaft, the connecting-rod D², mounted on the crank-pin D' and provided at its upper end with a vertically-sliding pin, E, the connecting-rod F, extending from the pin E down to a collar, G, the rod N, secured to a ring surrounding the collar G and having its lower end connected by a connecting-rod, P, with a crank, Q, on the shaft R, the connecting rod or frame J, connecting the crank-pin H' with the vertically-sliding pin K, the connecting-rod L, extending from the pin K through the collar G, the connecting-rod M, connected by a swivel-joint with the rod L, the connecting-rod S, connecting the lower end of the rod M with the cranks V and Q on the shaft R, guideways E K', substantially as herein shown and described.

3. In a wind-motor, the combination, with the structure C, of the revolving platform B, the shaft A, the wind-wheel A', mounted on the same, the cranks D H on the shaft A, the connecting-rod D², the pin E, the connecting-rod F, the collar G, the connecting-rod N, the vertically-sliding cross-head N', the connecting-rod P, the crank Q on the shaft R, the connecting rod or frame J, connecting the crank-pin H' with the vertically-sliding pin K, the connecting-rod L, connected by a swivel-joint with the rod M and passing through the collar G, the sliding cross-head N², the connecting-rod S, and the cranks V and Q on the shaft R, guideways E K', substantially as herein shown and described.

327,187. TENSION-REGULATOR FOR THE LET-OFF MOTIONS OF LOOMS. ARTHUR MIDDLETON, Jr., Pelzer, S. C. Filed May 26, 1884. (No model.)

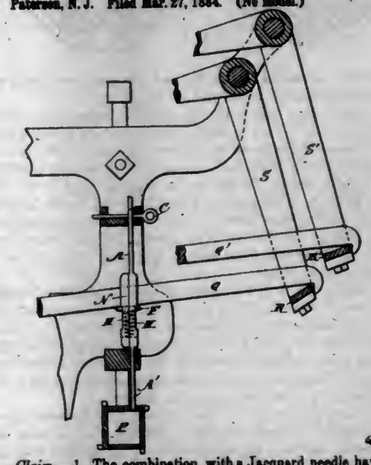


Claim.—1. The combination, with the rod D, the lever F, and the whip-roll, the warp-beam, and the tension-producing spring on said rod, of the tension-regulator having the arm provided with prongs resting against said spring and means, substantially as described, to hold the rear or free end of said regulator against the warp on said beam, substantially as and for the purpose set forth.

2. The combination, with the rod D, the lever F, the whip-roll, the warp-beam, and the tension-producing spring on said rod D, of the tension-regulator, comprising the part A', the pivoted part A², having the prongs *c*, and the rod or arm A², having the roller *f*, bearing upon the warp on said beam, substantially as and for the purpose set forth.

3. The combination, with the rod D, the lever F, the whip-roll, the warp-beam, and the tension-producing spring on said rod D, of the part A', having the plate *b* and gudgeon *b'*, the part A², the arm or rod A², the roll *f*, and the weight *f'*, connected to the arm or rod A² and holding the roll *f* against the warp on the beam, the part A² being pivoted upon the gudgeon *b'* and having the prongs *c*, substantially as and for the purpose set forth.

327,188. NEEDLE FOR JACQUARD LOOMS. ANDREAS MUTTER, Paterson, N. J. Filed Mar. 27, 1884. (No model.)



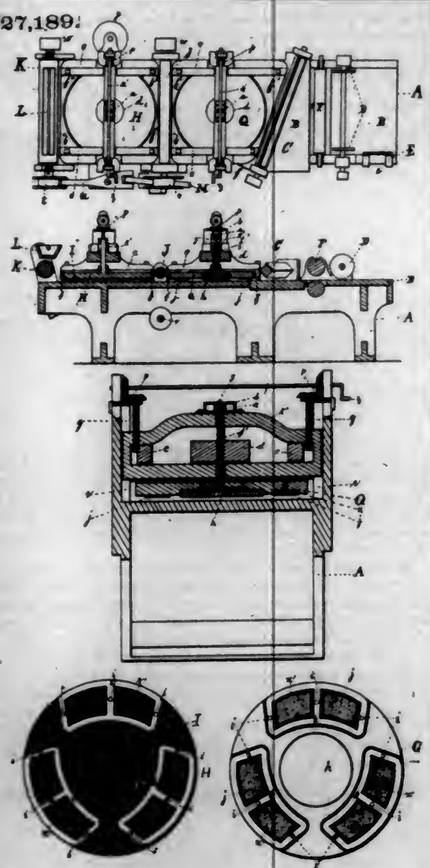
Claim.—1. The combination, with a Jacquard needle having a slot, D, and also having recesses H in the side edges, of the spring E, held in the slot, and the plate F resting on or against the same, and provided with end cross-pieces, G, substantially as herein shown and described.

2. A needle composed of a body having a longitudinal slot and a removable piece, N, secured to said body and formed with a longitudinal slot in alignment with that of the body, as shown, combined with a spring held in said slots, substantially as set forth.

327,189. MACHINE FOR PLANING AND POLISHING LUMBER. WILLIAM R. NORRIS, Fort Ann, N. Y. Filed June 23, 1879.

Claim.—1. The combination, with the bed of a planing-machine, of a rotating disk above and extending entirely across said bed, and

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buffing material secured in face of the said disk near the edge thereof, substantially as and for the purpose herein set forth.

2. In combination with a planing-machine cutter-head, feeding mechanism, and bed, of the horizontal sandpapering and surfacing disk G, extending substantially across the width of said bed, for the purpose specified, sandpapering-cylinder J, as and for the purpose specified, horizontal buffing-disk H, as and for the purpose specified, and the polishing-cylinder K, as arranged and described, and for the purpose specified, said feeding mechanism being for the purpose of propelling, forcing, or drawing the lumber to be planed, smooth-finished, and polished to the successive parts, which, when combined, produce a polished surface, as described.

3. In combination with the sandpapering-disk G, the adjustable central stationary pressure-disk, h, with the pressure-bar g therewith and adjusting pressure-nut thereon, and also the upper end of said bar, as shown, provided with a polygonal end thereto, or an equivalent therefor, for fitting into a polygonal recess for the purpose of holding said pressure-disk in a stationary position while said sandpapering-disk is revolving, substantially as and for the purpose described.

4. The sandpapering-disk G, provided with an adjustable frame, with pressure-bars f' f^2 connected thereto, said disk, frame, and bar extending across the bed of a planing-machine, in combination with the cutter-head C and feed-rolls F of said planing-machine, as and for the purpose set forth.

5. In combination with the sandpapering-disk G, the curved and sectional binders k, the outer and inner curves of which are formed or described by the same radius, as and for the purpose herein specified.

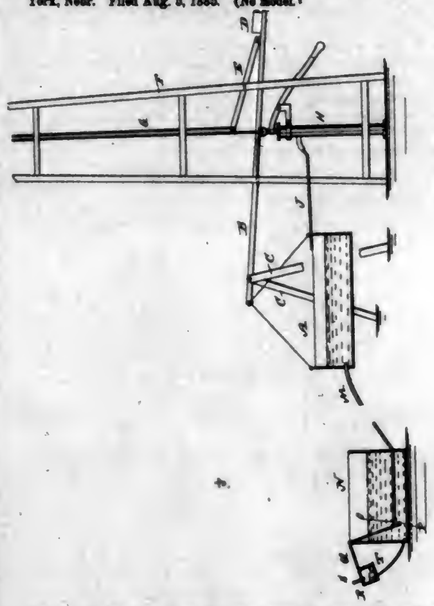
6. The combination, with the cutter-head, bed, and feed-rolls, of the adjustable horizontal disk G, extended substantially across the said bed, and the pressure-bars f' f^2, all substantially as and for the purpose herein set forth.

7. The combination, with the cutter-head, bed, and feed-rolls, of the adjustable horizontal disk G, extended substantially across the said bed, the pressure-bars f' f^2, and adjusting frames, all substantially as and for the purpose herein set forth.

8. In combination with the wabbling-pulley M, the flanged spool s, and vibrating bar u, for communicating simultaneously a reciprocating or endwise motion to the sandpapering-cylinder J and polishing-cylinder K.

9. In combination with a planing-machine cutter-head, feeding mechanism, and bed, a horizontal smoothing-disk extended substantially across the width of said bed, and a trimming-saw, all substantially as and for the purpose herein set forth.

327,190. WATER-REGULATOR FOR WINDMILLS. ANSON M. OTIS, York, Nebr. Filed Aug. 5, 1885. (No model.)

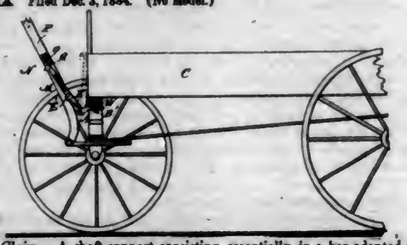


Claim.—1. The combination, with a pivoted lever, of a tank suspended from one end of the same, a weight on the other end, a rod on said lever for throwing the pumping mechanism (such, for example, as a windmill) out of gear, a tube for conducting water into the suspended tank, a stationary tank, a tube for conducting the water from the suspended tank into the stationary tank, and an automatically-operating valve for closing the end of the tube within the stationary tank when said tank is filled, substantially as herein shown and described.

2. The combination, with a pump and a pivoted lever having one end weighted, of a tank suspended from the other end of the lever mechanism, connected with the lever for throwing the pumping device out of gear, a stationary tank, a tube for conducting the water from the suspended tank into the stationary tank, which tube projects into the stationary tank, an angle-lever pivoted on the stationary tank, a valve on the end of said lever for closing the end of the tube in the stationary tank, a box or small tank on the upper end of the angle-lever, and a flexible tube connecting said box or small tank with the bottom of the stationary tank, substantially as herein shown and described.

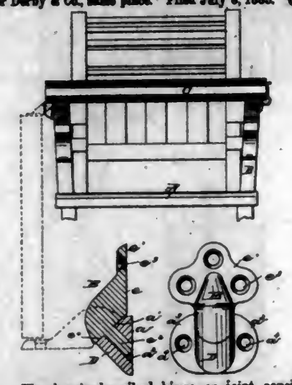
3. The combination, with the tank N, of an inlet-pipe, a valve for closing it, an angle-lever to which the valve is secured, a tank, R, on the outer end of the lever, and a flexible tube connecting the tanks N and R, substantially as herein shown and described.

327,191. VEHICLE-SHAFT SUPPORT. JAMES F. PAGE, Simsborough, La. Filed Dec. 3, 1884. (No model.)



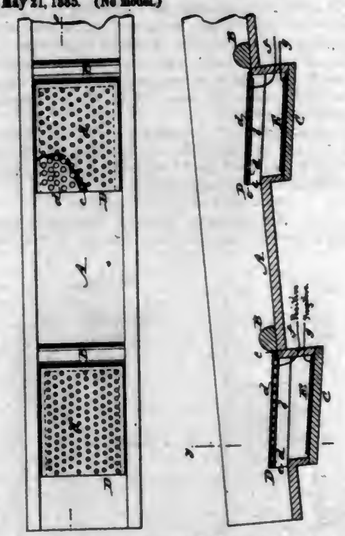
Claim.—A shaft-support consisting, essentially, in a bar adapted to be pivoted at one end to the front of a wagon, and formed on its free end with a forward-projecting hook, a spring for throwing the bar into a vertical position against the wagon-front, and a catch-plate constructed to be applied to the front, top, or rear face of the cross-piece of the shafts, whereby, when it is desired to release the hook from the catch-plate, it is simply necessary to raise the shafts slightly to relieve the hook of their weight, when the spring will automatically return the bar to its normal position, substantially as set forth.

327,192. HINGE. FRANK F. PARKER, Gardner, Mass., assignor to Philander Derby & Co., same place. Filed July 8, 1885. (No model.)



Claim.—The herein-described hinge or joint, consisting of the socket piece D, provided with the inclined face d', having a pintle-receiving opening, d^3, and the pintle-carrying block E, having a face, e^x, and a pintle, e^2, all constructed to operate substantially as described.

327,193. AMALGAMATOR. EDWARD PIKE, Salt Lake City, Utah. Filed May 21, 1885. (No model.)

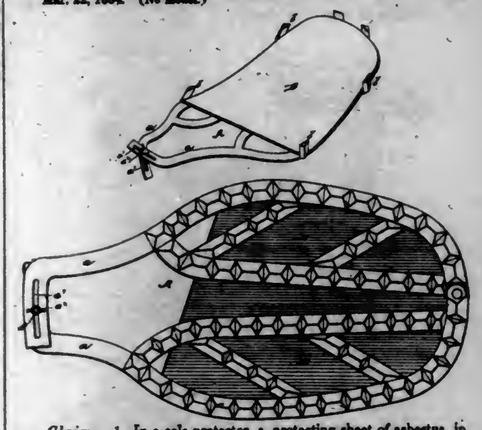


Claim.—1. The combination, with the flume or sluice-box A, having a series of openings at distances apart in its bottom, of the close fixed lower quicksilver-boxes, C, arranged to close said openings, and having a reverse inclination to the sluice-box, the bottom plates, E, within said lower boxes, of reverse inclination to the bottom of the sluice-box, and an upper perforated plate parallel, or thereabout, with the plate E, and arranged to form or leave an outlet, e, at its raised end in communication with the sluice-box, substantially as specified.

20. The combination of the rounded riffles B with the inclined sluice-box or flume A, having openings at distances apart in its bottom, the fixed quicksilver receptacles or boxes C, having their bottom inclined in a reverse direction to that of the sluice-box, the fixed lower solid plates, E, and the upper perforated plates, D, essentially as described.

3. The compound upper perforated plates, D, composed of upper and lower insulated plates, d d, the lower one of which is an electrical plate connected with the positive pole, the lower insulated electrical plate, E, connected with the negative pole, the fixed boxes C, and the sluice-box A, having openings closed by said boxes C, substantially as and for the purpose herein set forth.

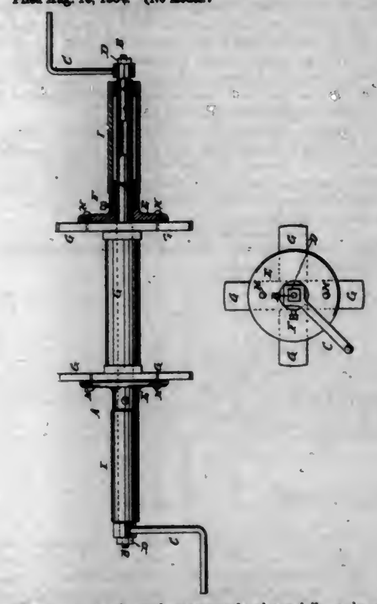
327,194. SOLE-PROTECTOR. JAMES F. PRATT, Chicago, Ill. Filed Mar. 22, 1884. (No model.)



Claim.—1. In a sole-protector, a protecting-sheet of asbestus, in combination with a removable and adjustable securing-plate, substantially as and for the purpose set forth.

2. A sole-protector composing the plate A, made in two parts, hinged together at the toe, and formed with lugs b b for clasping the sole, and having at their rear ends slotted arms or lugs projecting in opposite directions and overlying each other, and a set-screw, which is passed through the slots to secure the parts after adjustment, substantially as described and shown, and for the purpose set forth.

327,195. PORTABLE WIRE-REEL. DAVID A. ROBERTS, Creston, Ill. Filed Aug. 18, 1884. (No model.)



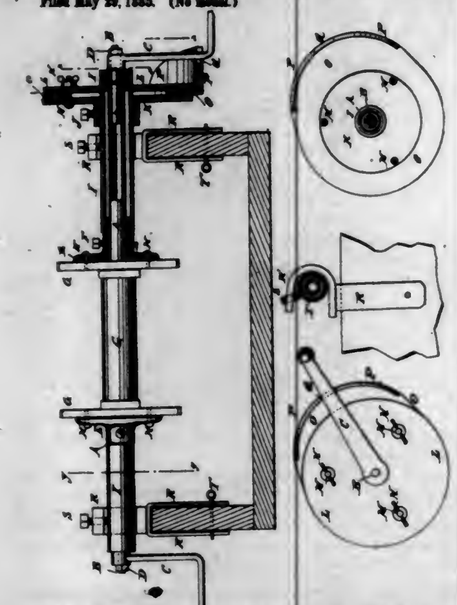
Claim.—1. A wire-reel constructed substantially as herein shown and described, and consisting of the shaft A, having a crank, C, at each end, and provided with flanged collars E and sleeves I, whereby the reel is adapted to receive and rotate a wire-spool, as set forth.

2. In a wire-reel, the combination, with the shaft A, provided with the cranks C on its ends, of the flanged collars E, one of which is adjustably secured on the said shaft, substantially as herein shown and described, whereby provision is made for adapting the reel to different-sized spools, as set forth.

3. In a wire-reel, the combination, with the shaft A, having end cranks, C, and flanged collars E, of the sleeves I, substantially as herein

shown and described, whereby the reel can be readily operated while being carried, and the clothes of the operators will be protected from injury, as set forth.

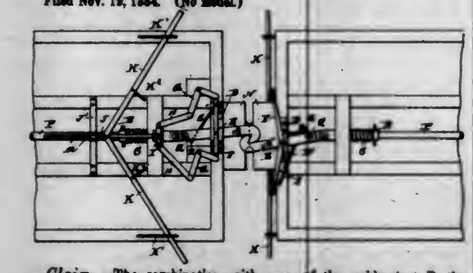
327,196. PORTABLE WIRE-REEL. DAVID A. ROBERTS, Creston, Ill. Filed May 29, 1885. (No model.)



Claim.—1. In a portable wire-reel, the combination, with the sleeves I, the shaft A, carrying the spool G, and the crank C, of the flanged collar K, the annular clamping-disk L, the bolts and nuts M N, and the rotating disk O, having recessed flange P, substantially as herein shown and described, whereby a frictional resistance can be opposed to the revolution of the spool-shaft and crank, to regulate the tautness of the wire as it is drawn off the said spool, as set forth.

2. In a portable wire-reel, the combination, with the sleeves I, placed upon the shaft A, carrying the spool G, of the hooks R, provided with set-screws S, for securing the said hooks to the said sleeves, and having forked shanks to receive the side-boards of a vehicle, substantially as herein shown and described, whereby the said wire-reel can be readily secured to a vehicle, as set forth.

327,197. CAR-COUPLING. WILLIAM R. SAMUEL, Fairfield, Nebr. Filed Nov. 19, 1884. (No model.)

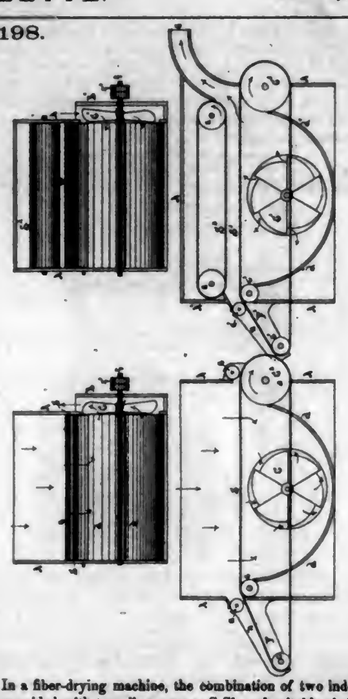


Claim.—The combination, with a car, of the guide-cleat D, the swinging coupling-hook A, the bar F, the angle-levers G, a sliding bar connected with the angle-levers, and levers extending from the sliding bar to the sides of the car, substantially as herein shown and described.

327,198. WOOL-DRIER. FREDERICK G. SARGENT and ALLAN C. SARGENT, Graniteville, Mass. Filed Nov. 25, 1882. (No model.)

Claim.—1. In a fiber-drying machine, the combination of two independent sections, each provided with an independent traveling screen-apron adapted to convey the fiber through the section upon it, one of said sections being provided with suitable air-draft mechanism for forcing currents of air in one direction through the fiber and apron, and the other being provided with suitable air-blast mechanism for forcing currents of air in the opposite direction through the fiber and other apron, substantially as described.

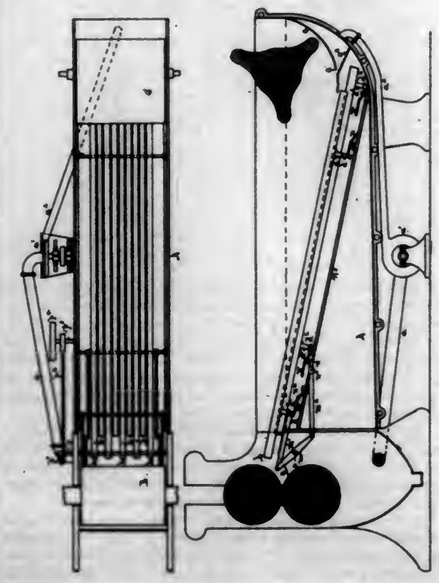
327,198.



2. In a fiber-drying machine, the combination of two independent sections provided with traveling screens S S', and suitable air blast and draft mechanisms adapted to force air through said screens in opposite directions, and having the said sections connected by a portion, F', of the screen S', extending in an approximately horizontal direction beneath the delivery end of the screen S in the form of a feeding-apron, substantially as described.

3. The combination of one section of the fiber-drier, containing the traveling screen S, with the other section, containing the traveling screen S', extending beyond the casing A', and receiving the fiber upon it from screen S, and the screen S', substantially as described.

327,199. WOOL-WASHING MACHINE. FREDERICK G. SARGENT and ALLAN C. SARGENT, Graniteville, Mass. Filed Jan. 17, 1884. (No model.)



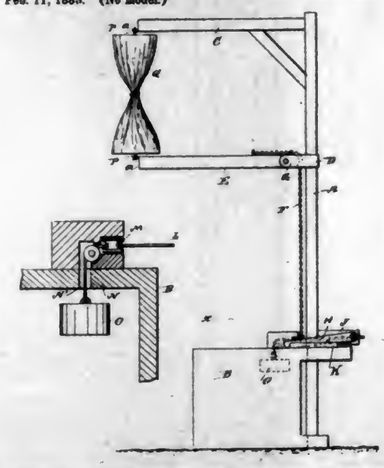
Claim.—1. The combination of the bars *b b*, their studs *d' d'*, and cross-bars *d d* with the bars *b' b'*, their studs d^3 d^3, and cross-bars d^3 d^3, and means for operating the same, substantially as described.

2. In combination with the bars *b b* and *b' b'*, the throat or spout c' c^3, formed to project a stream of liquid against and carry forward the fiber in the direction of the squeeze-rolls B B', substantially as described.

3. In combination with the set of bars *b b* and their connected cross-bars *d d*, the latches *n n*, tracks *n' n'*, and tracks n^3, substantially as described.

4. In combination with the bowl A, the pipe *a*, leading from the wool-delivery end of the machine, the pump *a'* and the pipe a^3, and throat or mouth piece c^3 c', adapted to create a suction ahead of the fiber, and to project a stream or sheet of liquid behind it over the bed on which it moves, substantially as described.

327,200. MAIL-CRANE. FRED W. SENSIBA, Talbot, Mich. Filed Feb. 11, 1885. (No model.)



Claim.—1. The combination, with a mail-crane having its upright pivoted to turn on its vertical axis, of a weight acting on the said upright, substantially as herein shown and described.

2. The combination, with a mail-crane having its upright pivoted to turn on its vertical axis, of a bar projecting from the upright, a rope or chain secured on the end of the bar, and a weight secured on the said rope or chain, substantially as herein shown and described.

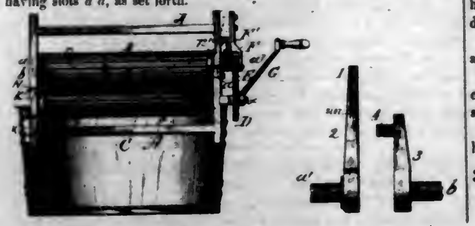
3. The combination, with a mail-crane having its upright pivoted to turn on its vertical axis, of a pivoted mail-pouch-holding arm, a chain secured to the said arm, a pivoted locking-lever secured to the lever end of the chain, and a weight for turning the upright on its axis, substantially as herein shown and described.

4. The combination, with the crane A, having its upright pivoted to turn on its vertical axis, of the pivoted arm E, the chain F, the bar J, the pivoted lever H, the rope L, the pulleys M, and weight O, substantially as herein shown and described.

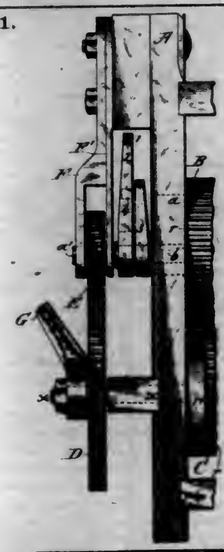
327,201. ROLLER WASHING-MACHINE. AUSTIN SLY and HENRY E. GILE, Lebanon, N. H. Filed Feb. 26, 1885. (No model.)

Claim.—1. The upper roll having a plain band on one end, and the flat-topped ribs with beveled edges, formed by narrow striations, combined with the lower roll, having a plain band on the opposite end and similar ribs, the frame, and the turning-gears, as set forth.

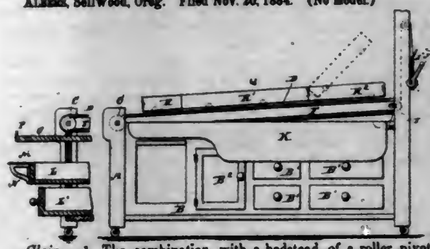
2. The roll C and its shaft *x*, combined with crank G and gear D, the gear E, of less diameter, having the slotted arm 1 2 on the end of its shaft *a'*, the crank-arm and pin 3 4 on the upper roll-shaft, 3, the upper roll, B, having more diameter than the lower, and the frame A, having slots *a a*, as set forth.



327,201.



327,202. BED AND BEDSTEAD. ANDREW SMITH and GEORGE H. ALBERS, Sellwood, Oreg. Filed Nov. 20, 1884. (No model.)



Claim.—1. The combination, with a bedstead, of a roller pivoted in the foot end, a roller supported by straps at the head end, and an endless belt passed over the said rollers, substantially as herein shown and described.

2. The combination, with the bedstead B, of the roller C, pivoted in the foot end, the bars F, held to swing on the roller C, the roller E, pivoted between the bars F at the head end of the bedstead, and the endless belt D, passed over the rollers C E, substantially as herein shown and described.

3. The combination, with a bedstead, of the rollers C E, the bars F, the brake-levers G, pivoted on the bars F, the straps H, secured to the levers G, and a shaft to which the straps H are secured, substantially as herein shown and described.

4. The combination, with a bedstead, of the rollers C E, the bars F, the brake-levers G, the straps H, the rollers H' in the head of the bedstead, the shaft J, the ratchet-wheel J', and the pawl I', substantially as herein shown and described.

5. The combination, with a bedstead, of the drawer L, arranged to slide out of the foot end, the leaf M, pivoted to the outer end of the said drawer, and supports for the leaf when the same is raised, substantially as herein shown and described.

6. The combination, with a bedstead, of the drawer L, arranged to slide out of the foot end of the bedstead, and the sliding boards O, above the drawer, substantially as herein shown and described.

7. The combination, with a bedstead, of the rollers C E, the endless belt D, the drawer L, in the foot end of the bedstead, the leaf M, hinged on the outer end of the drawer, and the boards O, above the said drawer, substantially as herein shown and described.

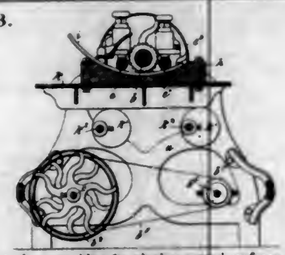
8. A mattress formed of a middle section, a sliding foot-section, and a hinged top or head section, substantially as herein shown and described.

9. A mattress formed of a middle section, having its lower end recessed U-shaped, a sliding foot-section, and a hinged top or head section, substantially as herein shown and described.

10. A mattress provided with rollers on its bottom, substantially as herein shown and described.

327,203. WOOD-DRESSING MACHINE. CALVIN D. SMITH, Templeton, assignor of one-half to Augustus, Henry C. and Alec E. Knowlton, West Gardner, Mass. Filed Oct. 27, 1884. (No model.)

327,203.

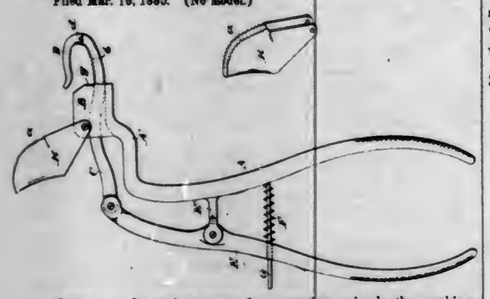


Claim.—1. In a machine for planing curved surfaces, a curved bed or support to sustain one side of the curved article and a cutter co-operating therewith, composed of a shaft or arbor, and a series of toothed circular disks secured to the said shaft in a diagonal position with relation to the axis thereof, the teeth of adjacent disks in contact with the wood being in the line of the axis of rotation of the shaft or arbor *b*, the teeth of each disk at each rotation thereof acting in succession on the wood at a different point, substantially as described.

2. In a machine for planing curved surfaces, a curved bed or support to sustain one side of the curved article, the table to support the said bed, and means, substantially as described, to adjust the said table and bed vertically, combined with a cutter composed of a shaft or arbor and a series of toothed circular disks secured to the said shaft in a diagonal position with relation to the axis thereof, the teeth of adjacent disks in contact with the wood being in the line of the axis of rotation of the shaft or arbor *b*, the teeth of each disk at each rotation thereof acting in succession on the wood at a different point, substantially as described.

3. In a machine for planing curved surfaces, a curved bed or support to sustain one side of the curved article and the vertically-adjustable rolls *e e'*, combined with a cutter composed of a shaft or arbor and a series of toothed circular disks secured to the said shaft in a diagonal position with relation to the axis thereof, the teeth of adjacent disks in contact with the wood being in the line of the axis of rotation of the shaft or arbor *b*, the teeth of each disk at each rotation thereof acting in succession on the wood at a different point, substantially as described.

327,204. SURGICAL INSTRUMENT. JAMES SOMERS, Moro, Oreg. Filed Mar. 16, 1885. (No model.)



Claim.—1. In an instrument for castrating animals, the combination, with a pair of pivoted handles, of a hook connected with one handle and a sliding box on the other handle, the adjacent faces of the hook and box being serrated, as at *d g*, substantially as set forth.

2. In an instrument for castrating animals, the combination, with a pair of pivoted handles of which one is provided with an apertured lug or box, of a clamping-plate pivoted to the box or lug, and a hook pivoted to the other handle, the stem of the hook passing through the box, substantially as herein shown and described.

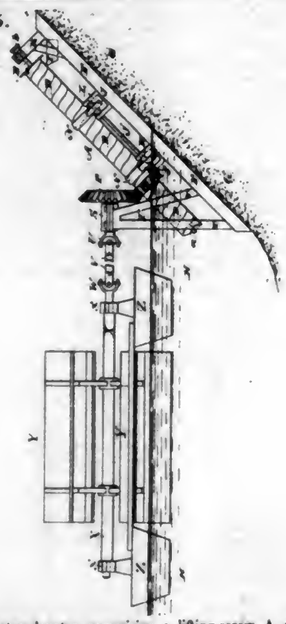
3. In an instrument for castrating animals, the combination, with the pivoted handle-levers A E, of the slotted or apertured lug or box B, formed on one end of the handle E, and having serrated cutting-edges *g*, the hook D, formed on a stem, C, passed through the box B and pivoted to the handle-lever E, the said hook being provided with serrated parts *b d*, and the clamp-plate H, pivoted to the box B, and having serrated edges *a*, substantially as herein shown and described.

327,205. WATER-ELEVATOR. JUDSON W. THORP, Dayton, Wash., assignor to himself and James E. Hensley, same place. Filed May 23, 1885. (No model.)

Claim.—1. A water-elevator, comprising a lifting-screw hung from its upper end and supported on anti-friction rollers, substantially as described, whereby a lower end bearing for the screw is dispensed with, as set forth.

2. A water-elevator, comprising a lifting-screw, A, provided with a head, *b*, on its shaft B, the frame E F, and anti-friction rollers journaled on the sill-frame, substantially as herein set forth.

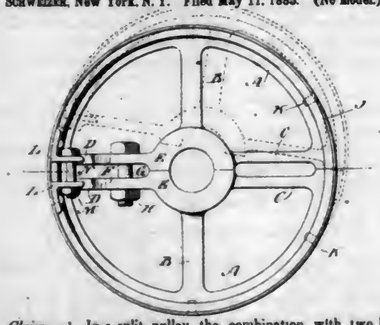
327,205.



3. A water-elevator, comprising a lifting-screw, A, provided with a head, *b*, on its shaft B, the frame E F, and anti-friction rollers, as at J J K K, arranged on shaft *j k*, journaled in the frame at opposite sides of the center of the screw, substantially as herein set forth.

4. The combination, in a water-elevator, of a lifting-screw, A, provided with a head, *b*, on its shaft B, the frame E F, anti-friction rollers supporting the screw, a drive-gear, O, on the screw, the drive-gear P, and shafts R V X, connected by universal joints U W, and a current-wheel, Y, on shaft X, and supported by floats Z in the water-course, substantially as herein set forth.

327,206. SPLIT PULLEY. HARRISON UNDERWOOD and CHARLES SCHWEIZER, New York, N. Y. Filed May 11, 1885. (No model.)



Claim.—1. In a split pulley, the combination, with two half-sections, of a split band surrounding them and secured to each section, substantially as herein shown and described.

2. In a split pulley, the combination, with two half-sections, of a split band surrounding the rims of the sections and secured to the same, angle-pieces on the ends of the band, and bolts passed through the said angle-pieces, substantially as herein shown and described.

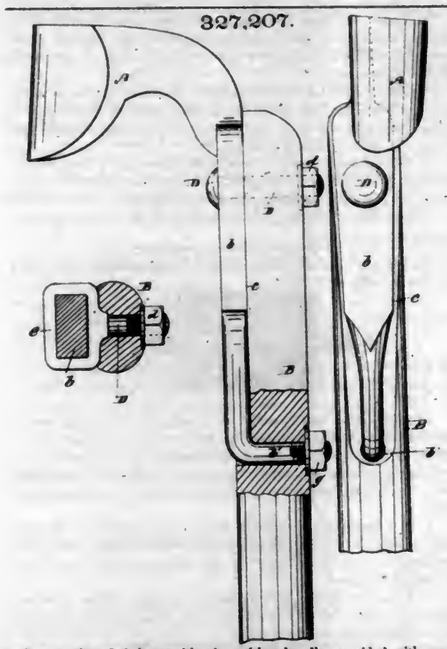
3. A split pulley formed of two pulley-sections secured to a split band serving as a hinge, which permits of swinging the sections from each other, substantially as herein shown and described.

4. In a split pulley, the combination, with two half-sections having lugs or wings on the spokes, of bolts passed through the said lugs, a split band surrounding the pulley-sections, angle-pieces secured on the ends of the band, and bolts passed through the angle-pieces, substantially as herein shown and described.

327,207. TURPENTINE-HACKER. WALTER WATSON, Fayetteville N. C. Filed July 3, 1884. (Model.)

Claim.—The hacking-blade A, provided with the shank *b*, having a flat configuration for a portion of its length, and its end *b'* rounded, bent,

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and screw-threaded, in combination with a handle provided with apertures and having a reduced flattened portion, *c*, corresponding to the flattened portion of the shank, to receive and firmly support the same throughout its length, the nut *g* on the end of the screw-threaded bent end, and the bolt and nut D *d*, substantially as herein shown and described.

327,208. WIRE FENCE. CHARLES W. WELD, Southbridge, Mass. Filed June 18, 1885. (No model.)



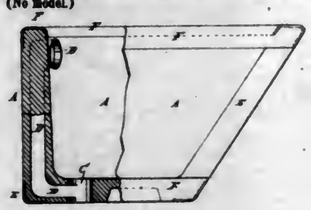
Claim.—1. In a wire fence, the combination of the following instrumentalities, to wit: a post provided with one or more transverse grooves in its side, a wire, and a clamp fitted to slide on said post and provided with an arc-shaped or laterally-curved jaw which corresponds approximately in its curvature with the curvature of the post, and is adapted to engage the wire and cramp or bend it when the wire is disposed in the groove and the jaw of the clamp is forced or driven over the wire, substantially as described.

2. In a wire fence, the post A, provided with the transverse groove *f*, and having the raised bearing-point *r* disposed in said groove, in combination with a clamp fitted to slide on said post and adapted to bend the wire inwardly at either side of said bearing-point, substantially as shown and described.

3. In a wire fence, the clamp B, in combination with the post A, said clamp being provided with the two arc-shaped or laterally-curved jaws *d z*, standing at different angles to the body of the clamp, substantially as and for the purpose specified.

4. In a wire fence, the post A, provided with the groove *f*, and bearing-point *r*, the clamp B, provided with the curved jaws *d z* and flange *t*, and the wire C, combined and arranged to operate substantially as described.

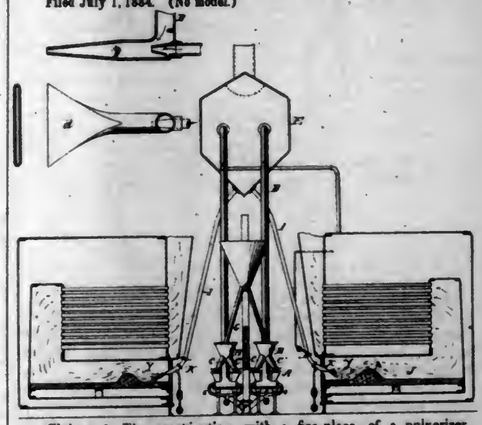
327,209. WASH-TUB, SINK, OR OTHER VESSEL MADE OF CEMENT, &c. CARL WESELY, West New York, N. J. Filed Aug. 12, 1884. (No model.)



Claim.—1. As a new article of manufacture, a wash-tub, sink, or other vessel, made substantially as herein described and shown, with its angles and corners and its upper edges faced with metal strips embedded in the cement or cement compound forming the said vessel, as set forth.

2. As a new article of manufacture, a wash-tub, sink, and other articles made substantially as herein described, the upper edges of the vessel of metal strips F, having flanges embedded in the outer and inner surfaces of the cement or cement compound, as and for the purpose set forth.

327,210. FEEDING FINE FUEL. WILLIAM WESTLAKE, Brooklyn, N. Y., assignor to the United States Combustion Company, of New York. Filed July 1, 1884. (No model.)



Claim.—1. The combination, with a fire-place, of a pulverizer constructed to reduce fuel to a finely-divided condition, and a pipe or conduit leading from the pulverizer to the fire-place, and means for directing a jet of steam or air, or both, with a stream of the divided fuel, into the fire-place, substantially as set forth.

2. The combination, with a fire-place, of a pulverizer constructed to reduce fuel to a finely-divided condition, a conduit leading from the pulverizer to the fire-place, means for forcing a jet of air or steam into said conduit, a hopper for supplying the pulverizer with the fuel to be divided, a receptacle into which the coarser particles of the divided fuel are received, and a conveyer between the said receptacle and the hopper, substantially as set forth.

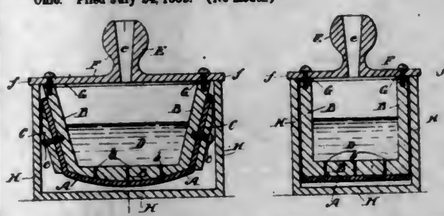
3. The combination, with the fire-place, receiver for fine fuel communicating with the fire-place, and pulverizer, of means, substantially as described, for conveying the finest particles only of fuel from the pulverizer to the receiver, for the purpose set forth.

4. The combination, with a fire-place, of a pulverizer, a receiver with which the pulverizer communicates, means for forcing a jet of air or steam to carry only the finer particles of fuel into the receiver, and an injector communicating with the fire-place and with the receiver, substantially as set forth.

5. The combination, with a pipe or channel communicating with a device for pulverizing solid fuel, of a nozzle extending into the fire-place, and steam and air pipes communicating with said nozzle, substantially as set forth.

6. The combination, in a fire-place, of a nozzle or conduit for supplying it with impalpable fuel, and a jet of air or steam, or both, and a bed provided with a projection against which the inflowing stream is directed, substantially as set forth.

327,211. STAMP-MOISTENER. THOMAS W. WHARMBY, Cleveland, Ohio. Filed July 24, 1885. (No model.)



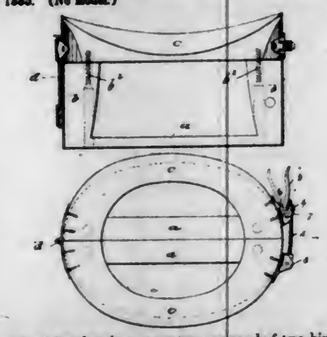
Claim.—1. A stamp-moistener consisting of a reservoir adapted to contain liquid and having its bottom perforated and an absorbent backing secured on said bottom over said perforations, substantially as set forth.

2. A stamp-moistener comprising a perforated liquid-reservoir, an

absorbent fabric secured thereto, and a cover to the reservoir having a marginal flange, substantially as herein set forth.

3. In stamp-moisteners, the moistener proper, comprising a liquid-reservoir, B, perforated, as at *b*, an absorbent fabric, A, secured thereto, and a cover, F, having a handle, E, apertured at *e* and secured to the top of the reservoir with or without an interposed packing, substantially as herein set forth.

327,212. HAT-FLANGING APPARATUS. LEMUEL G. WILLIAMS, Boston, Mass., assignor of one-half to Frank G. Lamson, same place. Filed Apr. 3, 1885. (No model.)



Claim.—1. A hat-flanging apparatus composed of two hinged portions, *a a'*, having attached flange-supporting portions *c c'*, shaped, as described, to embrace the crown or body of the hat and support its flange or brim, substantially as described.

2. A hat-flanging apparatus composed of two hinged portions, *a a'*, having attached flange-supporting portions *c c'*, shaped, as described, to embrace the crown or body of the hat and support its flange or brim, combined with a locking device, substantially as described.

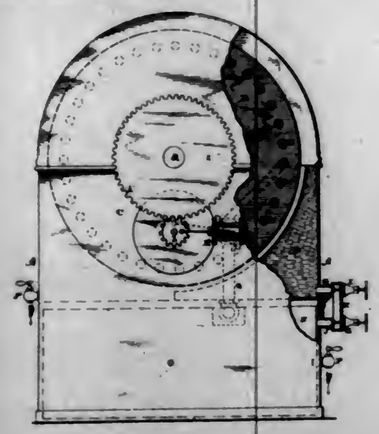
3. The hat-flanging apparatus comprising a separable supporting-frame and flange attached thereto, a hinge connecting the same, and a fastening composed of a pivoted lever, adjusting-nut thereon, and cam-lever engaging said adjusting-nut, all operating substantially as described.

327,213. NUT-LOCK. LEWIS J. WILLIAMSON, East Fairfield, Ohio. Filed May 16, 1885. (No model.)



Claim.—As an improved article of manufacture, a nut-lock consisting of the recessed nut A, the pivoted latch C, and the pivoted key E, provided at one end with the lug F, resting against the latch, and with the lugs G H, projecting beyond different sides of the nut, whereby the key may be operated upon placing a wrench on any two sides of the nut, substantially as set forth.

327,214. WASH-BOILER. HOMER T. WILSON, Dallas, Tex. Filed Mar. 10, 1885. (No model.)

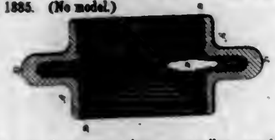


Claim.—1. The combination of the wash-boiler provided with a revolving cylinder or drum, a steam-generator, and a steam-motor mounted outside of the boiler and connected to the shaft of the drum, substantially as shown.

2. The combination of the wash-boiler, the revolving drum mounted therein, the tank for clear water, the chamber located between the tank and the generator, the valves, the generator, and a steam-motor for revolving the drum, substantially as set forth.

3. The combination of the wash-boiler, the revolving drum having a series of holes through its end, the tank, the chamber provided with valves, the generator, the steam-motor located outside of the boiler, and the exhaust-pipe for discharging the steam into the end of the drum substantially as specified.

327,215. PIPE-COUPLING. FRED. E. YOUNGS, Allegheny, Pa. Filed June 1, 1885. (No model.)



Claim.—1. A screw socket or coupling provided with screw-threaded ends and an internal annular groove, the walls of which have sufficient elasticity to accommodate the expansion and contraction of a single length of pipe, and sufficient strength to withstand the twisting strain of screwing the ends of the pipes inside of it, substantially as shown.

2. In a line of screw-threaded pipes, the combination, with each length of pipe, of an elastic screw-threaded socket or joint having sufficient elasticity to allow that length of pipe to contract and expand, substantially as described.

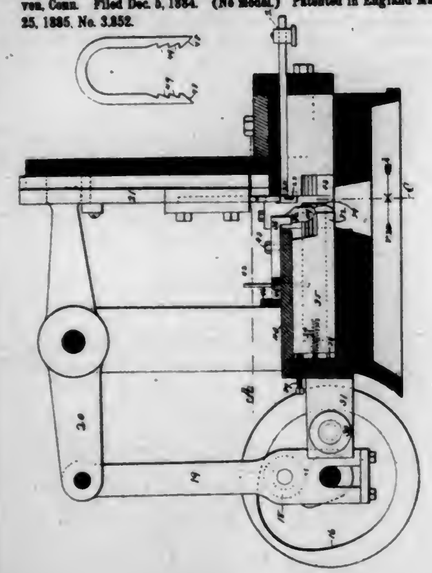
3. As a new article of manufacture, a single length of screw-threaded pipe provided with an elastic screw-threaded socket, substantially as and for the purpose specified.

327,216. CRAVAT-FASTENER. JOHN ADAMS, Montrose, Colo. Filed May 19, 1885. (No model.)



Claim.—In a cravat-fastener, the combination, with the shield B, having the aperture C and the opening *a*, of the piece D, formed with an aperture, E, radial slits F, and perforations G, and secured to the shield B, substantially as shown and described.

327,217. MACHINE FOR MAKING STAPLES. JOHN ADT, New Haven, Conn. Filed Dec. 5, 1884. (No model.) Patented in England Mar. 25, 1885. No. 3,352.

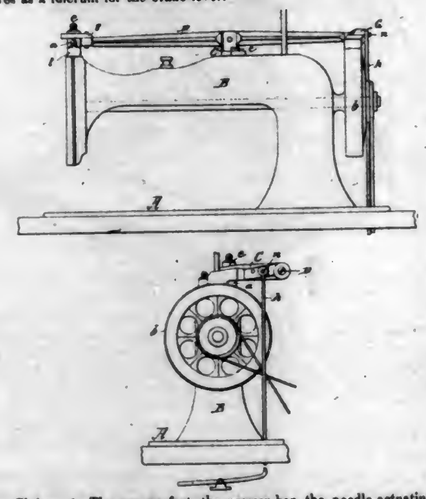


Claim.—1. In a staple-machine, the combination, with means for first cutting off the blank and bending it to the usual form, of the following elements: A cam and a carriage operated thereby, a male die, a stripper embracing the die, and two locking-blocks—one on either side of the die—the forward face of said locking-blocks being caused to travel in advance of the face of the die, in which relative position they are maintained by springs, all being mounted upon and caused to act by the reciprocating movement of the carriage in the following order: first, bringing the faces of the locking-blocks up to the female die on the outside of the prongs of the staple; second, compressing the springs of the locking-blocks; third, forcing the die through the staple; fourth, withdrawing the die; and, fifth, stripping off the finished staple, substantially as specified.

2. In a staple-machine, the combination, with means for first cutting the blank and forming it to the desired shape, of the carriage, the die, the locking-blocks, springs for maintaining the said blocks in proper relative position, and the stripper, all mounted upon a carriage, and means, substantially such as described, for operating the said carriage and parts comprised therewith, for the purpose set forth.

327,218. PRESSER-FOOT-LIFTING AND BRAKE MECHANISM FOR SEWING-MACHINES. DANIEL W. ALLEN, Abington, Mass., assignor of one-half to Charles C. Allen, same place. Filed Aug. 27, 1884. (No model.)

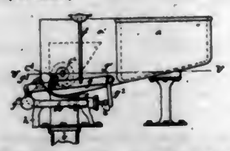
Brief.—The downward movement of the rod pivoted to the treadle applies the brake to the wheel on the driving-shaft, at the same time lifting the presser-foot by means of the long lever, one of whose ends serves as a fulcrum for the brake-lever.



Claim.—1. The presser-foot, the presser-bar, the needle-actuating shaft, its attached hand-wheel, and the pivoted presser-bar lifting-lever D, arranged lengthwise of the machine and having its front end in engagement with the said presser-bar, combined with the brake-lever mounted loosely upon the rear end of the said presser-bar lifting-lever, the combination being and operating substantially as described.

2. In a sewing-machine, the combination, with the presser-foot bar, hand-wheel, and bracket, as specified, of a lever pivoted upon the bracket and having its front end connected with the presser-foot bar and provided at its rear end with a brake-lever pivoted thereto, and having a shoe adapted to fit the peripheral surface of the hand-wheel, and means to operate the brake-lever, substantially as specified.

327,219. WATER-CLOSET. HARRY J. BAILEY, Pittsburg, Pa. Filed Dec. 31, 1884. (No model.)



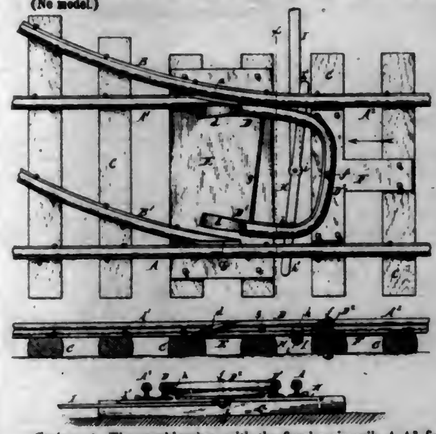
Claim.—1. In that class of water-closets wherein the discharge of the bowl is through an oscillating elbow valve or bucket, the combination, with the bowl and its soil-pipe, of an oscillating bucket-valve having a hollow axis and flaring body, the tipping side of which stands at less than a right angle to the horizon when the bucket is in a vertical plane, substantially as and for the purposes specified.

2. In a water-closet wherein the discharge of the bowl is through an oscillating elbow valve or bucket, the combination, with the bowl and its soil-pipe, of an intermediate air-tight bucket-chamber which communicates with the bowl below the "standing-water" line, and an oscillating bucket having a hollow journal and arranged in said bucket-chamber, substantially as and for the purposes specified.

3. In a water-closet wherein the discharge of the bowl is through an oscillating elbow valve or bucket, the combination, with the bowl and soil-pipe, of an intermediate bucket-chamber, an oscillating bucket having a hollow journal, through which it discharges, and a water-supply pipe which discharges into the valve-chamber at a point back of the oscillating bucket, substantially as and for the purposes specified.

4. In a water-closet, the combination, with a bowl and its soil-pipe, of an intermediate air-tight valve-chamber, which communicates with the bowl at or near the bottom thereof, an oscillating bucket having a hollow axis, through which it discharges, and a flaring body, said bucket arranged to vibrate within the valve-chamber and its flaring side being next the bowl port or opening, and a water-supply pipe which delivers into the valve-chamber at a point back of the oscillating bucket and distant from the bowl, substantially as and for the purposes specified.

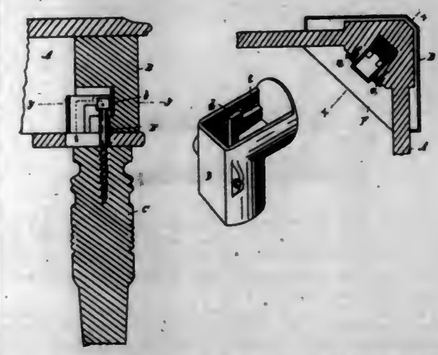
327,220. RAILWAY-SWITCH. JOHN B. BATT, Buffalo, N. Y., assignor of one-half to Charles Hager, same place. Filed May 16, 1885. (No model.)



Claim.—1. The combination, with the fixed main rails A A^2, fixed side rail, B, and fixed pointed rails A' B', of the movable guide-rails D D', connected to move simultaneously, and provided with beveled ends *d*, substantially as set forth.

2. The combination, with the fixed main rails A A^2, fixed side rail, B, and fixed pointed rails A' B', of the pivoted guide-rails D D', connecting-bar H, having its ends h' engaging under the main rails, and the shifting-bar I, attached to the bar H, substantially as set forth.

327,221. REMOVABLE TABLE-LEG. THADDEUS C. BEACH, Detroit, Mich., assignor to Hannah Beach, same place. Filed Feb. 18, 1885. (No model.)



Claim.—1. In a removable table-leg, the screw E, partly secured into the upper end of the leg and partly projecting therefrom, and provided with a rectangular head, *a*, a socket formed in the corner-post having an opening for introducing the projecting end of the screw, and a lateral offset connecting with said opening, and which is of correspond-

ing shape with the head of the screw to prevent it from turning, all arranged substantially as and for the purposes described.

2. In a removable table-leg, the screw E, partly entering the table-leg and partly projecting therefrom, and provided with an angular head, in combination with a metal socket secured in the corner-post of the table and provided with a suitable opening leading into a lateral offset into which the projecting end of the screw can be introduced, and which is of corresponding shape to the head of the screw to prevent it from turning, all arranged substantially as and for the purpose described.

3. In a removable table-leg, the screw E, partly entering the table-leg and partly projecting from it, in combination with a metal socket secured in the corner-post of the table and adapted to receive the projecting end of the screw, said metal socket having a lateral offset and a drop at the end of said lateral socket, which is of corresponding shape to the head of the screw to prevent it from turning, all arranged and operating substantially in the manner and for the purposes specified.

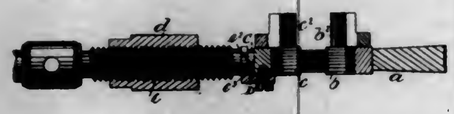
327,222. ROLLER-SKATE. CHARLES J. BELKNAP and FREDERICK W. WOOD, Bridgeport, Conn. Filed Apr. 9, 1885. (No model.)



Claim.—1. The method of making skates herein described, the same consisting in casting the foot-plate, heel-abutment, hangers, brace-rib, brace-rod, yokes, and slideways integral and in a single operation, substantially as described.

2. The method herein described, the same consisting in casting the hangers around the extremities of the brace-rod and securing the former to the foot-plate either in the process of casting, or afterward, by means of screws.

327,223. SCREW-STOCK. JOHN BENTLEY, Birmingham, County of Warwick, England. Filed Aug. 7, 1885. (No model.) Patented in England Dec. 27, 1884, No. 16,935.



Claim.—1. The combination, in a screw-stock having open dies, of segmental guides b^2 b^2 and c^2 c^2, carried by half-dies *b c*, one of which is movable, so as to preserve the perfect concentricity of the guide or the segments composing it, with respect to the screwing-orifice, substantially as described and set forth.

2. In screw-stocks having relatively-adjustable guides attached to half-dies or segments one of which is adjustable, the combination of the operating-screw with the guides and dies, and the connector *f*, substantially as described.

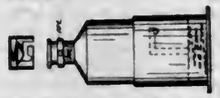
327,224. PAPER BOX. ROBERT W. BETTS, Montclair, N. J., assignor to Samuel Crump, same place. Filed Aug. 26, 1885. (Model.)



Claim.—1. A box formed on its opposite sides with flaps B F, lip A, and curbs B', the flaps B F being bent to fold on the lines M N and O P, respectively, and the curbs on the lines O Q, M Q, and M O and P Q, N Q, and N P, the whole being arranged to close substantially in the manner and for the purpose set forth.

2. A box formed on its opposite sides with the flaps B F and curbs B', the flaps B F being bent to fold on the lines M N and O P, and the curbs on the lines O Q, M Q, and M O and P Q, N Q, and N P, said flaps being formed on their ends with lips A E, which are bent to fold on the lines I J and K L, whereby the lip A will rest against the flap F and the latter rest on the upper face of the flap B, the curbs being bent inwardly between said flaps B and F, substantially as and for the purpose described.

327,225. STAND OR CASING FOR BOTTLES. CAMILLE S. BLETON and ADOLPHE MALEVILLE, Paris, France. Filed Sept. 24, 1884. (No model.) Patented in France Aug. 25, 1881, No. 144,537, and in England Mar. 18, 1882, No. 1,333.

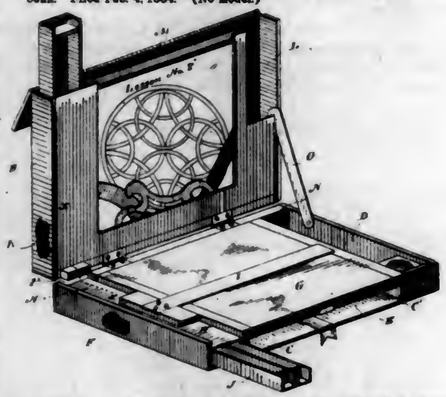


Claim.—1. The combination, with the bottle having longitudinal grooves in opposite sides, of the casing having inwardly-projecting studs or tenons and the cap having grooves engaging said studs or tenons, substantially as and for the purpose set forth.

2. A metal casing or stand provided with inwardly-projecting tenons, in combination with the bottle having longitudinal grooves in opposite sides, substantially as herein shown and described.

3. A stand or casing having inwardly-projecting tenons and provided at the bottom with a spring-cushion, in combination with the bottle having longitudinal grooves in opposite sides, substantially as herein shown and described.

327,226. STUDENT'S DRAFTING-CASE. W. R. BRIGGS, Bridgeport, Conn. Filed Feb. 4, 1884. (No model.)

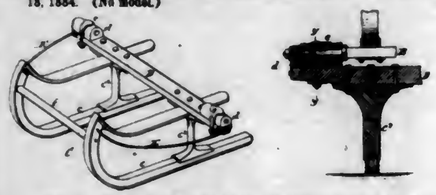


Claim.—1. A case having a drawing-board and a channel or space between the edge of the board and the adjacent side of the case and extending through the rear and front sides of the case, in combination with a lid hinged to the case, said lid being provided with a projection on its hinged edge of a length and thickness to correspond with the depth and width of the said channel, substantially as set forth.

2. A student's drafting-case having a drawing-board, and a groove between said board and the side of the case extending through the rear wall of the latter, as and for the purposes specified.

3. A case having a drawing-board and a channel or space between the edge of the board and the adjacent side of the case, and extending through the rear and front sides of the case, in combination with a lid hinged to the case, said lid being provided with a projection on its hinged edge of a length and thickness to correspond with the depth and width of the said channel, the recess Q in the rear of the lid, and a pivoted supporting-brace, O, substantially as shown and described.

327,227. BOB-SLEIGH. IRA BRONSON, Lockport, N. Y. Filed Mar. 18, 1884. (No model.)

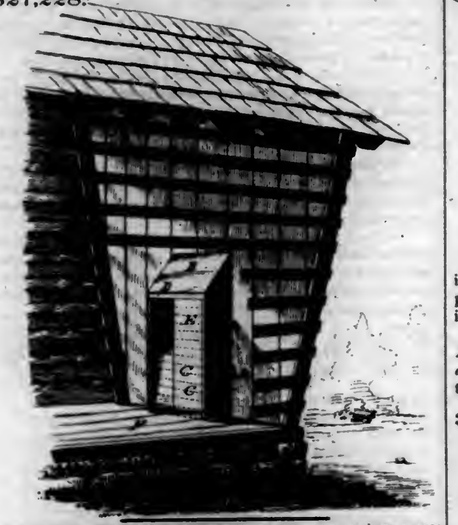


Claim.—In a removable sleigh-bob, the combination of the runners *c c*, standards c^3, fender E, cross-bar *f*, and bolster D, and boxes *d*, removably secured to the bolster D by clips *e*, substantially as set forth.

327,228. DOOR-SHIELD. MYRON CAMP, Sedgwick, Kans. Filed Mar. 16, 1885. (No model.)

Claim.—In combination with a crib or bin door, a portable shield consisting of solid sides and sloping or shedding top and detachable front sections, whereby the bin-door proper is protected against overflow from the contents within.

327,228.



327,229. MEDICINAL EMULSION. JOHN CARNRICK, New York, N. Y. Filed Mar. 1, 1884. (Specimens.)

Claim.—A nutritive and medicinal emulsion consisting of cod-liver oil, concentrated milk, a digestive ferment—as pancreatine dissolved in glycerine—and one or more of the hypophosphites, such as hypophosphite of lime or soda.

327,230. MEDICINAL EMULSION. JOHN CARNRICK, New York, N. Y. Filed Feb. 4, 1885. (No specimens.) Patented in England May 1, 1884, No. 7,110.

Claim.—A nutritive and medicinal composition, being an emulsion consisting of cod-liver oil, milk, a digestive ferment, and glycerine, substantially as herein set forth.

327,231. MEDICINAL EMULSION. JOHN CARNRICK, New York, N. Y. Filed Feb. 4, 1885. (No specimens.) Patented in England May 1, 1884, No. 7,110.

Claim.—As a new article of manufacture, a pancreatinized emulsion of cod-liver oil and milk, substantially as herein set forth.

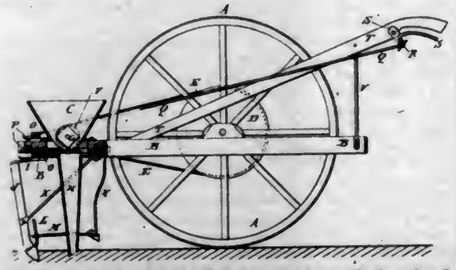
327,232. MEDICINAL EMULSION. JOHN CARNRICK, New York, N. Y. Filed Feb. 4, 1885. (No specimens.) Patented in England May 1, 1884, No. 7,110.

Claim.—As a new article of manufacture, a pepsinized emulsion of cod-liver oil and milk, substantially as herein set forth.

327,233. MEDICINAL EMULSION. JOHN CARNRICK, New York, N. Y. Filed Feb. 4, 1885. (No specimens.) Patented in England May 1, 1884, No. 7,110.

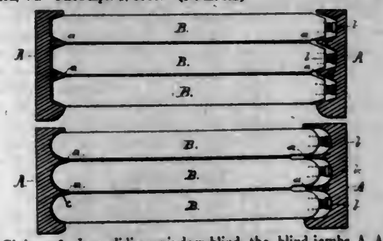
Claim.—In a nutritive and medicinal composition, an emulsion consisting of cod-liver oil, milk, a digestive ferment, and one or more medicinal hypophosphite salts, substantially as herein set forth.

327,234. HAND SEED-DRILL. FRANK H. CHESEBRO, South Haven, Mich. Filed Sept. 3, 1884. (No model.)



Claim.—In a hand seed-drill, the combination, with the colter J, the spout H, and the frame B, of the pin L, the gage and cover plate M, and the slotted supporting-bar N, substantially as herein shown and described, whereby the seed can be planted at any desired depth and covered, as set forth.

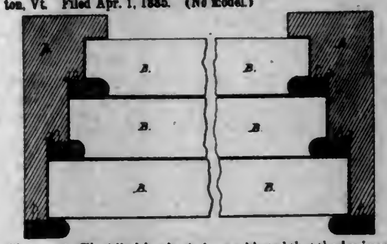
327,235. SLIDING WINDOW-BLIND. ROLLIN M. CLAPP, Burlington, Vt. Filed Apr. 1, 1885. (No model.)



Claim.—1. In a sliding window-blind, the blind-jambs A A, having blind-stops C C, so constructed that their outer edges, *a*, shall be pointed, in combination with the sliding blinds B, having suitable bearing-springs, *b*, substantially as described, and for the purpose set forth.

2. In combination with a window frame and sash, the blind-jambs A A, so recessed that the blind-stops C shall be brought to an edge at *a* for the purpose of enabling the adjoining faces of the sliding blinds B to be in close contact, substantially as described.

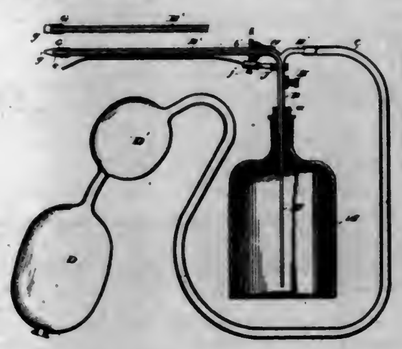
327,236. SLIDING WINDOW-BLIND. ROLLIN M. CLAPP, Burlington, Vt. Filed Apr. 1, 1885. (No model.)



Claim.—1. The blind-jambs A A, so rabbeted that the horizontal distance between their corresponding recesses shall decrease regularly from the interior face of the window-casing to the sash, each rabbet being provided with the removable stop-beads C C, in combination with the blinds B, having the exterior edges of their stiles suitably rabbeted to receive the stop-beads, substantially as described, and for the purpose set forth.

2. In a sliding window-blind, the blind-jambs A A, designed to be attached to the interior vertical faces of the window-casing, and so constructed as to receive the blinds B, whose width regularly decreases from the front to the rear edge of the jambs, each rabbet in the jambs having removable stop-beads C C, in combination with the sliding blinds B, having their outer side edges suitably rabbeted to receive the projecting edges of the stop-beads C, for the purpose of bringing the adjoining faces of the blinds B together, substantially as described.

327,237. ATOMIZER. FRANKLIN H. CLARK, Cleveland, Ohio. Filed Jan. 30, 1885. (No model.)

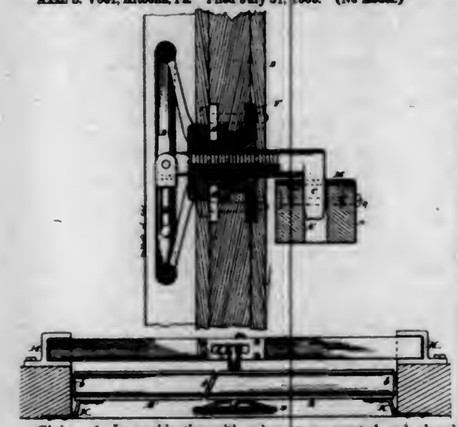


Claim.—1. In an atomizer provided with a liquid-tube inclosed in an air-tube, a joint in the latter and thumb-piece arranged to revolve the outer end of the air-tube to give the desired direction to the lateral discharge, substantially as set forth.

2. In an atomizer, the combination, with a liquid-tube and an air-tube surrounding the same, of the socket secured to the air-tube and a spatula removably secured to said socket, substantially as set forth.

327,238. DEVICE FOR SECURING DOORS.

JOHN W. CLOUD and AXEL S. VOGT, Altoona, Pa. Filed July 31, 1885. (No model.)



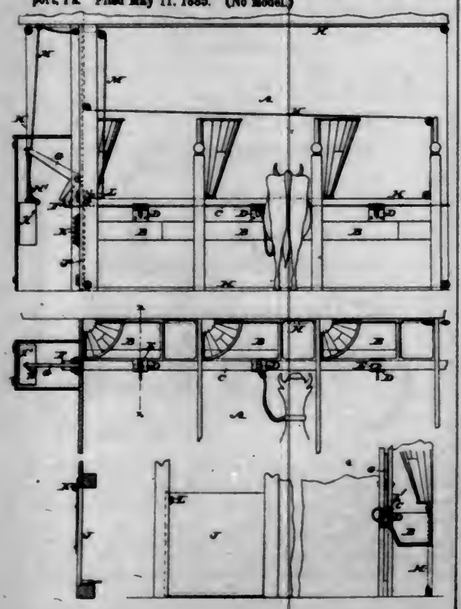
Claim.—1. In combination with a door so constructed and placed in its frame as to hermetically close it when pressure is applied, a threaded rod passing through the door and having a projection on its inner end for grappling a rigid brace, and a threaded nut fitting on the thread of the rod secured in the door and provided with a wheel or other handle for turning it, by means of which the door may be caused to press firmly against its frame, substantially as shown and described.

2. In combination with a door so constructed and placed in its frame as to hermetically close it when pressure is applied, a threaded rod passing through the door and having a projection on its inner end for grappling a rigid brace, and a handle on its outer end, whereby it may be turned to engage and disengage it, and a threaded nut fitting on the thread of the rod secured in the door, and provided with a wheel or other handle for turning it, by means of which the door may be caused to press firmly against its frame, substantially as shown and described.

3. In combination with a door so constructed and placed in its frame as to hermetically close it when pressure is applied, a threaded rod passing through the door and having a projection on its inner end for grappling a rigid brace, and a pivoted or hinged handle on its outer end, whereby it may be turned to engage and disengage it, and a threaded nut fitting on the thread of the rod secured in the door and provided with a wheel or other handle for turning it, by means of which the door may be caused to press firmly against its frame, substantially as shown and described.

327,239. ANIMAL-RELEASING DEVICE.

SAMUEL COATS, Bridgeport, Pa. Filed May 11, 1885. (No model.)



Claim.—1. A releasing device for stables, having a slide with catches, keepers for covering and uncovering said catches, a weighted lever for controlling said slide, and a cord or chain for holding said lever in elevated position, substantially as and for the purpose set forth.

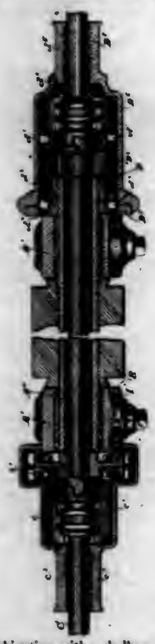
2. A releasing device consisting of a slide having catches, a lever controlling said slide, a weight attached to said lever, and a cord for holding said lever and weight in an elevated position, in combination with a chain attached to the said weight and connected to and operating a latch attached to a spring-actuated door, substantially as described.

3. The slide C, having lip F and catches E', in combination with keepers D, elbow-lever G, having a bifurcated limb, a weight attached to said lever G, cord H, and chain H', substantially as and for the purpose set forth.

4. In an animal-releasing device, a slide having catches, in combination with a lever controlling said slide, a weight attached to said lever, and a cord keeping said weight and lever in an elevated position, the said cord being saturated with an inflammable mixture, substantially as and for the purpose set forth.

327,240. GEARING AND RELIEF MECHANISM FOR DRIVING ROLLS.

WILLIAM F. COCHRANE, Cambridge City, Ind. Filed Aug. 21, 1885. (No model.)



Claim.—1. In combination with a hollow roll mounted in adjustable bearings, and a driving-shaft passing longitudinally through said roll and supported in fixed bearings, the improved universal gear or coupling consisting, essentially, of the two adjacent sleeves or hubs provided with toothed flanges at their opposite ends, and attached the one to the journal of the roll and the other to the driving-shaft, and the sleeve or coupling surrounding the first-mentioned sleeves or hubs, and provided with teeth at each end engaging the teeth on the flanges of said sleeves or hubs, substantially as described.

2. The improved universal coupling constructed substantially as described, and arranged for connection, two rotating shafts lying in parallel planes and adjustable laterally, the one with respect to the other, consisting of the two hubs or sleeves with toothed flanges upon their opposite ends, and the hollow coupling or sleeve having spherical bearings at each end upon one of said hubs, and provided with teeth engaging the flanges, substantially as described.

3. As a means for connecting and driving both of a pair or set of rolls, of which one roll is adjustable toward and from the other, the combination of the rolls supported in independent bearings, the driving-shaft passing through the enlarged longitudinal opening in the movable roll and supported in fixed bearings, the gears applied to the said shaft, and the roll supported in fixed bearings, and the universal coupling applied intermediate the shaft and movable roll for driving the latter, substantially as described.

4. In combination with a pair of rolls, one of which is adjustable toward and from the other, a driving-shaft mounted in bearings having a fixed relation to the journal of the non-adjustable roll and connected thereto by gears applied directly to the shaft and roll, and a universal coupling, such as described, connecting the adjustable roll and shaft, substantially as and for the purpose set forth.

5. The herein-described improved system of gearing for driving from a single line of shafting two or more pairs of rolls arranged in series, which consists in arranging in line two or more sets or pairs of rolls, each provided with a back roll mounted in fixed bearings, a hollow front roll mounted in adjustable bearings, a shaft mounted in fixed bearings and passing through the adjustable roll, said shaft being connected to the back roll by gears and to the adjustable roll by a universal coupling, uniting the proximate ends of the shafts of adjoining pairs of rolls by detachable couplings, and applying the power to drive the rolls to one of the said shafts, substantially as described, whereby all the rolls are driven from a single line-shaft, and any pair or set of rolls can be removed without disturbing the remaining pairs or sets in the series.

6. The combination, to form a series of two or more sets or pairs of rolls, substantially as described, each set provided with a separate frame or bed-plate, upon which are mounted the back roll in fixed bearings, the hollow front roll in movable bearings, and the shaft passing through the hollow roll and connected to the latter, said shaft being also supported in fixed bearings and connected to the shaft of the succeeding pair of rolls by a detachable coupling, substantially as and for the purpose set forth.

7. The combination of two or more sets or pairs of rolls, each arranged to be driven by a shaft mounted in bearings on the frame, and passing through the center of the adjustable roll, to which latter it is connected by a universal coupling, such as described, with detachable couplings applied to the proximate ends of the said shafts, thereby forming a sectional driving-shaft and permitting the removal of any set of rolls from the series, as and for the purpose set forth.

8. In combination with the bed-plate or frame provided with bearings for the back roll and movable bearings for the hollow adjustable roll, the driving-shaft passing through the adjustable roll, and connected to the latter at one end by a universal coupling and at the other end to the back roll by gearing, said shaft being supported in bearings attached to the bed-plate or frame, substantially as described.

9. The combination, with the rolls mounted in bearings upon the bed-plate or frame, the driving-shaft connected directly to one roll by a universal coupling and to the other roll by gearing, as described, of the inclosing-casings for the gears, and couplings secured to the bed-plate or frame and provided with bearings for the driving-shaft, substantially as and for the purpose set forth.

10. The combination, with a roll and its driving-gear, of a relief mechanism, substantially as indicated, connected to the bearings of a roll and actuating the clutching devices to effect the disengagement of the roll and its driving mechanism when the former is forced back, substantially as described.

11. In combination with a roll mounted in movable bearings and held to its work by an elastic or yielding pressure device, a driving-shaft with intermediate gearing connecting it to said roll, a clutch for connecting and disconnecting said gearing, and a relief mechanism, substantially such as indicated, connected to and actuated by the movable bearings of the roll to ship the clutch and stop or start the roll, substantially as and for the purpose set forth.

12. In combination with the main driving-shaft, the rolls, and the gearing intermediate the shaft and rolls, a relief mechanism of the character described connected to and actuated by the bearings of the movable roll, said relief mechanism being provided with shippers for disengaging the gearing from the driving-shaft and stopping the rolls, substantially as described.

13. In combination with the driving-gearing of a pair of rolls, one of which rolls is mounted in movable bearings, a relief mechanism connected to said movable bearings and provided with devices for unclutching or disengaging the driving-gearing, substantially as and for the purpose set forth.

14. In combination with the adjustable roll mounted in laterally-movable bearings, a shaft connected to and actuated by the said bearings when the latter are moved outward, and a clutch operating or disengaging mechanism connected to and operated by said shaft to uncouple the driving-shaft from the roll and stop the latter, substantially as described.

15. In combination with a roll supported at each end in laterally-movable and pivoted bearings, a relief mechanism, such as described, for actuating the clutch or disengaging devices, said relief mechanism being provided with independent attachments to each of the movable bearings, whereby the movement of either or both bearings will serve to set in motion the relief mechanism and stop the roll, substantially as described.

16. In combination with a roll supported in movable bearings, and elastic or yielding pressure devices applied to each of said bearings, a main driving-shaft, gearing connecting the main shaft and roll, a shipping or unclutching device intermediate the said shaft and the roll, and a relief mechanism, such as indicated, for actuating said shipping or unclutching devices, said mechanism having an independent connection with each bearing, substantially as and for the purpose specified.

17. The combination, with a pair of rolls supported respectively in fixed and movable bearings, the driving-shaft passing through the adjustable roll, gearing intermediate said shaft and the rolls, and clutches for controlling the application of the gearing to the shaft, of a pair of shippers connected with the clutches, and a rock-shaft actuating said shippers to simultaneously disengage both rolls from the driving-shaft, substantially as described.

18. In combination with a rock-shaft which actuates the disengaging mechanism, the toothed sleeve secured thereto, the sleeve connected to the bearing of the roll, and provided with the movable extension having teeth engaging the said toothed sleeve, substantially as described.

19. In combination with the shaft for actuating the clutch-shipping devices, the toothed sleeve applied thereto, the two sleeves each connected to one of the movable bearings, and the extensions connected to said sleeves by a movable coupling and provided with inclined teeth engaging the toothed sleeve fastened to the shaft, substantially as described.

20. In combination with the shaft connected to and actuated by the movable bearings of the roll, substantially as described, the reciprocating sleeve carrying the shippers for engaging the movable sections of the clutch, and provided with the inclined teeth or cam-surfaces, and the hub fixed to the shaft and provided with a corresponding series of teeth or inclined cams, substantially as described.

21. In combination with the movable bearings of the roll, the links or latches, the sleeves mounted upon the clutch-operating shaft, the toothed extensions rotating with but capable of longitudinal movement with respect to said sleeve, and the toothed collar fastened to the said shaft, and in position to engage the said toothed extensions, substantially as described.

22. In combination with the clutch-operating shaft and devices connected to the movable bearings for actuating said shaft, the ratchet secured to the shaft and engaging a pawl on the frame to prevent the accidental starting of the roll after its disengagement from the driving mechanism, substantially as described.

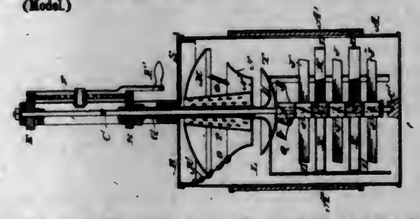
23. In combination with the roll, the driving-shaft, and the shipping mechanism, the compound interlocking and friction clutch, consisting, essentially, of the two sections provided with a series of interlocking projections with their ends beveled, substantially as described.

24. In combination with a hollow roll mounted in movable bearings, a driving-shaft passing through said roll and supported in fixed bearings, a universal coupling intermediate the shaft and roll, a clutch for connecting the said coupling to the shaft, a shipper engaging the movable section of the clutch, a sleeve carrying the shipper and provided with inclined teeth or cams, a shaft carrying a hub provided with a corresponding series of teeth or cams, and a spring for holding the said sleeve in engagement with the hub, substantially as described.

25. In combination with a pair of rolls, one of which is supported in movable bearings and held in operating position by an elastic pressure device, a driving-shaft detachably connected to said rolls through intermediate gearing or driving mechanism, shippers for uncoupling or detaching the gearing from the driving-shaft, and a shaft connected to and actuated by the bearings of the roll when the latter is forced back from the opposite roll, said shaft in turn being connected to and actuating the shippers in the manner and for the purpose set forth.

327,241. CHURN.

ALLEN COCKRELL, Lamar, Mo. Filed May 6, 1885. (Model.)



Claim.—1. The combination, with the vessel A, of the shaft D, the tubular shaft G, surrounding it, the blades J on the shaft D, the blades K, having their outer ends connected by bars L, secured to the tubular shaft G, the rings L', uniting the ends of the blades K, and of gearing for revolving the shafts D and G in opposite directions, substantially as herein shown and described.

2. The combination, with the vessel A, of shafts D and G, the blades J and K, connected with said shafts, the cup T, the propeller-wheel Q, and gearing for revolving the shafts D and G in opposite directions, substantially as herein shown and described.

3. The combination, in a churn, with the dasher and its shaft, of a stationary vessel suspended within the churn above the blades, a concave deflector above the said vessel and connected therewith, and the propeller Q on the dasher-shaft between its blades and the vessel, substantially as set forth.

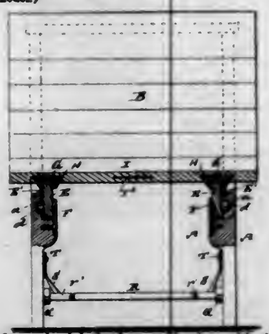
4. The combination, with the vessel A, of blades revolved by shafts,

a cup above the blades for the purpose of catching the batter, a deflector above the cup, and a perforated tapered tube uniting the cup and the deflector, substantially as herein shown and described.

5. The combination, with the vessel A, of blades revolved by shafts in opposite directions, a cup above the blades, a deflector above the cup, a perforated tapered tube uniting the deflector and cup, and of chains for suspending the deflector from the cover of the vessel A, substantially as herein shown and described.

6. The combination, with the vessel A, of the shafts D and G, the hubs J' on the shaft D, the blades J on the hubs J', the hubs K' between the hubs J', the blades K on the hubs K', and end bars connecting the blades K with each other and with the tubular shaft, substantially as herein shown and described.

327,242. SCHOOL-DESK. WILLIAM P. CONNER, Bloomsburg, Pa., assignor to the School Furnishing Company, same place. Filed Apr. 26, 1884. (No model.)



Claim.—1. In a school-desk, the combination, with the leg-frame, of a bracket-arm projecting from the same and provided in one side with a recess, a seat-bar provided at one end with a pintle passing into the recess in the above-mentioned bracket, and of a steel spring secured to the leg-frame beyond its pintle-recess to avoid weakening the bracket at that point and overlapping the end of said bar, substantially as herein shown and described.

2. A joint for school-desks, consisting, essentially, in a bracket-arm, D, having a pintle-recess, *a*, in one side, the seat-bar E, formed with a dovetail upper edge, and on one side with the pintle *d* and ridge E', and the retaining-plate F, secured to the bracket beyond its pintle-recess, substantially as set forth.

3. In a school-desk, the combination, with a seat or back frame having bars provided with dovetail edges, of the dovetail clips fitting on the dovetail edges of said bars, and the slats provided with the dovetail notches, substantially as set forth.

327,243. PRINTING-MACHINE. CALVERT B. COTTRELL, Stonington, Conn. Filed Apr. 17, 1884. (No model.)

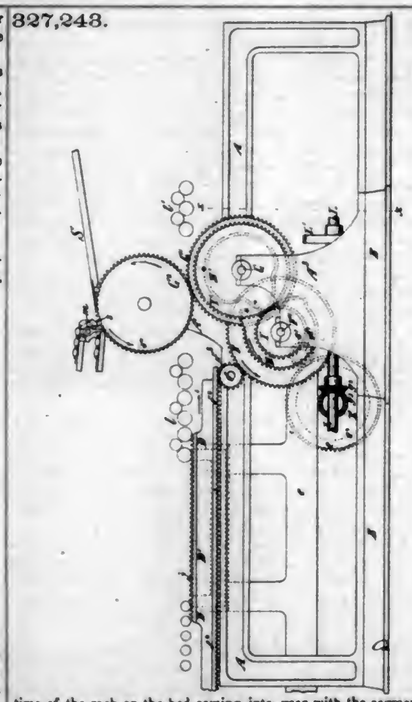
Claim.—1. In a stop-cylinder printing-press, the combination, with a bed, of a cylinder geared directly to the bed during printing, and gearing and intermediate mechanism connecting the bed and cylinder, substantially as described, whereby the cylinder is carried past the point of taking the sheet during the forward movement of the bed, in order to deliver the printed sheet at the front of the cylinder, and is then returned to the point of taking the sheet and there allowed to dwell until the next forward movement of the bed, substantially as and for the purpose herein described.

2. In a stop-cylinder printing-press, the combination, with a bed, of a cylinder which is geared directly with the bed during printing, and cam-shaped gear-wheels deriving motion from the bed and serving to start the cylinder gradually and accelerate its speed, so that it and the bed will have a uniform motion at the time of coming into gear, and also serving to bring the cylinder gradually to a stop, substantially as and for the purpose herein described.

3. In a stop-cylinder printing-press, the combination, with a bed, of a cylinder geared directly with the bed during printing, a shaft gearing with the bed and receiving a reciprocating rotary motion therefrom, an intermediate shaft geared with the cylinder, cam-shaped gear-wheels connecting said shafts, the wheel upon the intermediate shaft being loose, and a cam-actuated clutch-piece whereby said loose wheel may be locked to its shaft during the forward movement of the bed and left unlocked during the return movement of the bed, substantially as and for the purpose herein described.

4. In a stop-cylinder printing-press, the combination, with a bed, of a cylinder having a gear-segment and a rack on the bed whereby the cylinder is geared directly with the bed during printing, and cam-shaped gear-wheels serving to start the cylinder gradually and accelerate its speed, so that the bed and cylinder will have a uniform speed at the

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time of the rack on the bed coming into gear with the segment on the cylinder, and also serving to gradually stop the cylinder after the bed-rack has run out of gear with the cylinder-segment, substantially as and for the purpose herein described.

5. In a stop-cylinder printing-press, the combination, with a bed and a cylinder, of cam-shaped gear-wheels, whereby the cylinder is started gradually at the commencement of its movement and carried past a position to take the sheet and there stopped, other gear-wheels, whereby the cylinder is reversed and moved back to a position to take the sheet, and a cam-actuated clutch-piece, whereby said cylinder may be alternately connected with the cam-shaped gears and the reversing-gears, substantially as and for the purpose herein described.

6. The combination, with the bed D and cylinder C, provided with the rack and segment *j i*, for engagement during printing, of the shaft G, geared with the cylinder, the shaft F', geared with the bed and having a reciprocating rotary motion, the cam-shaped wheel H on shaft F', the cam-shaped wheel H' loose on the shaft G, the clutch-piece J, and the cam L' and connections, substantially such as described, for controlling the clutch-piece J, substantially as set forth.

7. The combination, with the bed D and cylinder C, provided with the rack and segment *j i*, for engagement during printing, of the shaft G, geared with the cylinder, and the wheels H' I', loose thereon, the shaft F', geared with the bed and having a reciprocating rotary motion, the wheels H I, fast on the shaft F', the clutch-piece J and the cam L', and connections, substantially such as described, for controlling said clutch-piece, substantially as set forth.

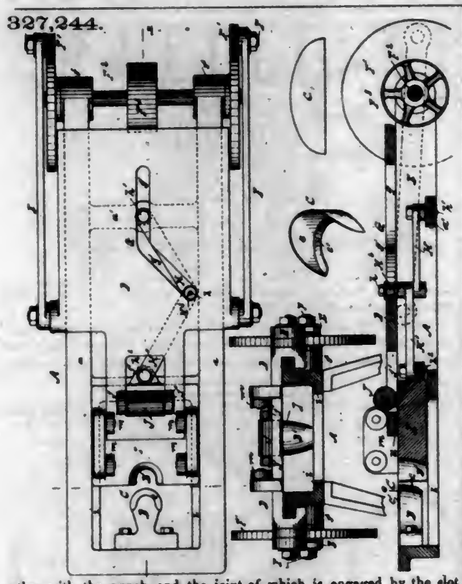
327,244. MACHINE FOR MAKING HEEL-STIFFENERS. CHRISTIAN DANCEL, New York, N. Y. Filed June 25, 1885. (No model.)

Claim.—1. In a machine for making stiffeners for boots and shoes, a crimping-roll, a sliding carriage upon which said roll is journaled, provided with a straight and an oblique slot communicating together, a movable punch upon which the sliding carriage moves, and a toggle-lever connected to the punch at one end and to the rigid frame of the machine at the other, the pivot of said lever being prolonged to engage with the slot in the sliding carriage, the whole being combined substantially as described.

2. In a machine for making stiffeners for boots and shoes, the combination, with a sliding carriage having its forward portion beveled off or inclined, of a crimping-roll journaled upon said carriage, a movable punch, and a die, and means, substantially as described, for reciprocating the carriage over the punch and die, as set forth.

3. In a machine for making stiffeners for boots and shoes, the combination of the stationary die, the sliding carriage, the crimping-roll and edge thereof, the curved slot in the carriage, and the toggle-levers H H', one of which is connected to the bed of the machine and the

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other with the punch, and the joint of which is engaged by the slot, whereby the punch is caused to impinge upon the blank and hold the same in advance of the crimping-roll, substantially as shown and described.

327,245. WATCH-CHARM. CORNELIUS H. DAVIS, Philipsburg, Pa. Filed Mar. 6, 1885. (No model.)



Claim.—1. As a new article of manufacture, a watch-charm consisting of a pendant and a spinning-top removably secured thereto, substantially as set forth.

2. The top B, formed with the headed stem *g*, in combination with the pendant A, provided with the spring-latch *d*, substantially as and for the purposes set forth.

3. The body of the top, provided with the spring *j*, numbered upon its outer surface and beveled at its edges, in combination with the sliding double-headed stem *g*, substantially as and for the purpose described.

327,246. FOLDING BEDSTEAD. GEO. W. DELANATER, New York, N. Y., assignor of one-third to John R. Potts, same place. Filed Apr. 14, 1885. (No model.)



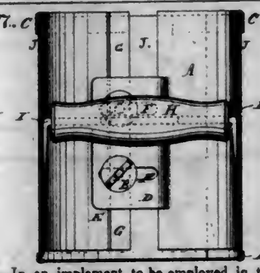
Claim.—1. The base A, having stationary weight and face-board *b*, combined with the hinges *c* on the inner side of said face-board, and with the bedstead proper, B, all arranged to allow said bedstead to be folded upon said base in line with said face-board, and to be wholly supported thereon, substantially as herein shown and described.

2. The combination of the weighted base A and its face-board *b*, having rabbets *m m* at its ends, with the hinged bedstead B, having legs *l*, all arranged to have the end boards, *h i*, of said hinged bedstead supported on the rabbets *m* when said bedstead is in the horizontal position, as specified.

3. The bedstead B, combined with the pivoted legs *l*, and pivoted face-plate *n*, above the bottom board *j*, as set forth.

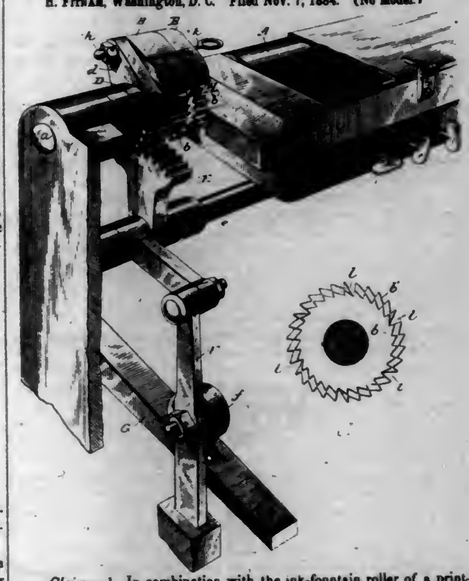
327,247. IMPLEMENT USED IN THE MANUFACTURE OF CANS, &c. HIRAM G. FILSON, New Cumberland, W. Va. Filed July 30, 1885. (Model.)

327,247.



Claim.—In an implement to be employed in the manufacture of cans, cups, and other similar articles, in combination with an expanding and contracting cylinder, the handle H, with adjustable bearings I, substantially as herein described.

327,248. INKING APPARATUS FOR PRINTING-MACHINES. T. H. PUTNAM, Washington, D. C. Filed Nov. 7, 1884. (No model.)



Claim.—1. In combination with the ink-fountain roller of a printing-press, and with its pawl and ratchet-wheel, a loosely-pivoted wheel adapted to hold the pawl out of engagement and to permit it to operate at intervals, substantially as described.

2. In combination with the ink-fountain roller of a printing-press and its ratchet-wheel and pawl, a loose wheel having teeth of greater and less depth and arranged to hold up the pawl during part of its reciprocation and to drop it at intervals, substantially as described.

3. In combination with a ratchet-wheel fixed to the shaft of the ink-fountain roller and its pawl carried upon an oscillating arm, a loose wheel having its periphery in part higher than the ratchet-wheel and in part on a line with the notches in said ratchet, and a device resting on the periphery of the wheel adapted to be connected with or disconnected from the pawl, substantially as described.

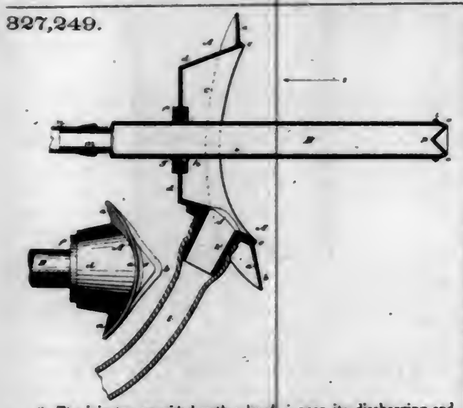
4. In combination with the shaft of an ink-fountain roller of a printing-press, the ratchet-wheel *b*, fixed to the shaft, the pawl B, carried upon the oscillating arm, the pawl B', and a loose ratchet-wheel, *b'*, provided with the notches *l* and means for connecting the pawl B' to the pawl B, substantially as described.

327,249. SYRINGE. JAMES H. FOOTE, New York, N. Y. Filed July 2, 1885. (No model.)

Claim.—1. A shield for a vaginal irrigator and urinal, provided with a continuous projecting flange, *a*, and a rearwardly or outwardly projecting extension, *d*, provided with an aperture in its outer wall for the passage of the injection-tube and an outlet at its bottom for the escape of the waste liquid, substantially as set forth.

2. A shield for a vaginal irrigator and urinal, having substantially the form set forth, and comprising the flange *a*, provided with a V-like projection, *b*, at its lower end, the rearward or outward extension, *d*, having a packed aperture for the injector and an outlet, *j*, at its lower part for the escape of the waste liquid, substantially as set forth.

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3. The injector provided with a bead, *i*, near its discharging end, in combination with the shield provided with an aperture for the passage of the body of the injector, substantially as set forth.

327,250. WHEAT-MEAL PRODUCT. THOMAS H. FOULDS, Cincinnati, Ohio. Filed July 6, 1885. (No specimens.)

Claim.—1. A meal product obtained from a coarse reduction of wheat, consisting of the germs mixed with the glutinous or harder portions of the grain, substantially as specified.

2. A meal product obtained from a coarse reduction of wheat, consisting of the germs mixed with the glutinous or harder portion of the grain and the richer portion of the bran, substantially as specified.

3. The process herein described of making meal, consisting, essentially, in a coarse reduction of the wheat and separating the germ and glutinous portions of the kernel in a coarse meal from the lighter and starchy portions of the grain, substantially as specified.

327,251. HANDLE FOR STEAM-VALVES. JOHN E. GAFFLEY, Troy, N. Y. Filed Dec. 31, 1884. (No model.)



Claim.—1. A handle or grasp for valve-stems or other devices, consisting of a coil of wire, shells or disks which receive its ends, and a bolt which passes through said shells in the major axis of the coil and engages with a shank or broadened part of the stem placed between the central coils of the handle, substantially as described.

2. The combination of a spiral coil of wire having its diameter increased from each end toward the center, shells or caps concaved on their adjacent faces, which engage the ends of the coil, a bolt passing through the shells and coil, and a stem having a broadened end placed between the coils and upon the bolt, substantially as described.

3. The combination, with the spiral coil 4, the shells 5, the bolt 6, headed at one end and having its other end secured in engagement with one of said shells by a nut or screw, and a stem, 1, having its end between the central coils of the spring 4, and receiving the bolt 6, substantially as described.

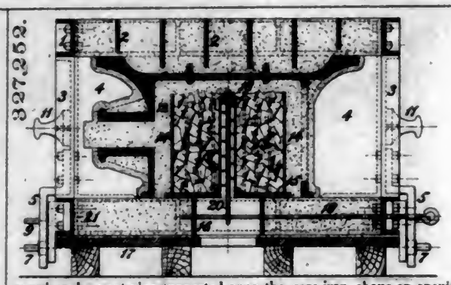
327,252. MOLDER'S FLASK. HENRY H. GARRETT, Pittsburg, Pa., assignor to the Westinghouse Machine Company, same place. Filed July 25, 1885. (No model.)

Claim.—1. The combination, in a molder's flask, of a nowel and a pair of cheeks connected thereto by lugs having elongated recesses fitting hinge-pins secured to the nowel, these members being combined for joint operation to admit of transverse movement of the cheeks upon the nowel, independently of their movement about the axes of the hinge-pins, substantially as set forth

2. The combination of a nowel, a pair of hinge-pins fixed thereto, a cheek, and a pair of lugs secured to said cheek, each having an elongated lower recess, the ends of which are adapted to fit partially around one of the hinge-pins, and the intermediate portion of which is convex or downwardly curved, substantially as set forth.

3. The combination of a nowel, a horizontal plate or core-iron carrying a series of core-supporting rods and resting upon a support in the

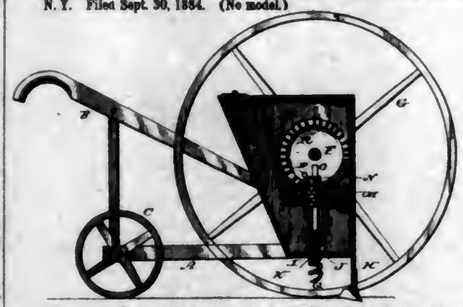
327,252.



nowel, and a vent-pipe supported upon the core-iron above an opening therein, substantially as set forth.

4. The combination of a nowel, a core-iron carrying a series of core-supporting bars, and a vent-pipe, and resting upon a support in the nowel, a holding-down bar fitting removably in the nowel, and a rod connecting said bar with the core-iron, substantially as set forth.

327,253. SEEDING-MACHINE. ROBERT GORMAN, Jr., Wading River, N. Y. Filed Sept. 30, 1884. (No model.)

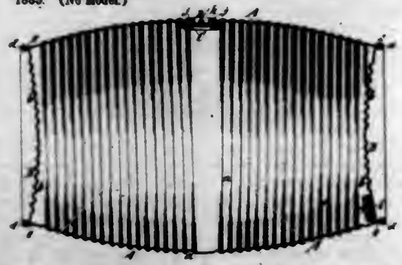


Claim.—1. In a seed-planter, a feed-spiral constructed of a strip of sheet metal wrapped to form a hollow spiral, as and for the purpose shown and set forth.

2. In a seed-planter, a feed-spiral consisting of a strip of sheet metal tapering from one end to the other, and wrapped to form a hollow spiral, having the spaces between its coils gradually increasing with the taper of the strip, as and for the purpose shown and set forth.

3. In a seeding-machine having a vertical screw-feed, the combination of the hopper having a vertical aperture at its bottom, a pinion journaled to revolve horizontally in a bearing in the hopper and receiving rotary motion, and a feed-spiral consisting of an upper portion secured vertically adjustable in the pinion, and of a lower portion constructed of a tapering strip of sheet metal wrapped to form a hollow spiral having the distance between the coils increasing with the taper of the strip and fitting in the aperture in the bottom of the hopper, as and for the purpose shown and set forth.

327,254. METAL BARREL OR CASK. JOHN GRAVES, Brooklyn, N. Y., assignor to Christopher Cunningham, same place. Filed Jan. 21, 1885. (No model.)



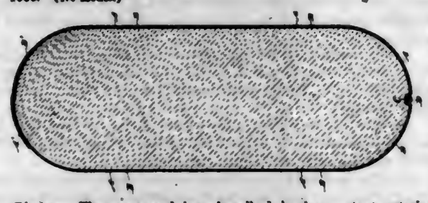
Claim.—1. A metal barrel having its body corrugated in spiral lines having reverse pitch from each end toward the center, substantially as and for the purpose herein described.

2. The combination, with a metal barrel-body and head united by a welded joint forming a rim which projects beyond the head, of a reenforcing band encircling the body, and over which said rim is turned or rolled outward, substantially as herein described.

3. The combination, with a metal barrel-body and a bung-hole therein, of a bung-bushing, C, having an annular seat, *h*, with a rounded bottom and inwardly-extending lip, *h'*, the barrel-body having an in-

wardly-projecting flange, *i'*, which is reverted and bears against the lip *h'*, substantially as described.

327,255. BAG. EDMUND W. HAAF, Brooklyn, N. Y. Filed June 4, 1885. (No model.)

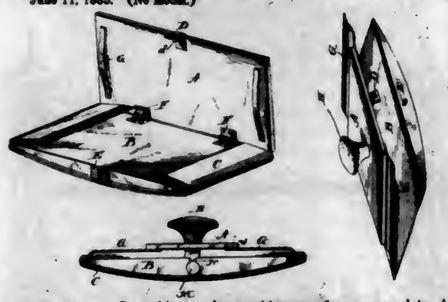


Claim.—The compound bag described, having a stout exterior fabric and a light impervious lining united along the edges by rows of stitches C D, the former passing once through each part, and the latter passing twice through each part, substantially as and for the purpose herein specified.

327,256. FERTILIZER. LEVI HAAS, Chester, Pa. Filed Nov. 8, 1884. (No specimens.)

Claim.—The herein-described composition of material to be used as an insect-preventive and fertilizer, consisting of furnace-slag, about seventy per cent.; salt, about ten per cent.; ashes, about ten per cent.; charcoal, about ten per cent., mixed with water to which has been added five per cent. of muriatic or sulphuric acid.

327,257. HAND-BLOTTER. AMOS HADLEY, Washington, D. C. Filed June 11, 1885. (No model.)



Claim.—1. In a blotter, the combination of an upper plate, A, lower plate, B, hinges F, for securing said plates together, compensating-springs G, and means for locking the upper and lower plates together, all operating substantially as described and set forth.

2. In a blotter, the combination of the upper and lower plates hinged together at the side, compensating-springs, and a device for locking the parts together, substantially as described.

3. In a blotter, the upper plate, A, provided at its ends with the broad sheets of spring metal G, arched as described, the lower plate, B, hinged to the said upper plate at one side, and spring-catch D, all combined and operating substantially as described.

4. The combination of an upper and a lower plate, hinged together at the side of the spring-catch, consisting of the bent spring-plate D and the rigid part E, both of said parts being provided on their opposing faces with series of oppositely-inclined serrations or teeth, substantially as described.

5. In a blotter, the combination of an upper and a lower plate, device for holding said plates together, and compensating-springs to allow for the varying thicknesses of paper to be secured between the plates, all operating substantially as described.

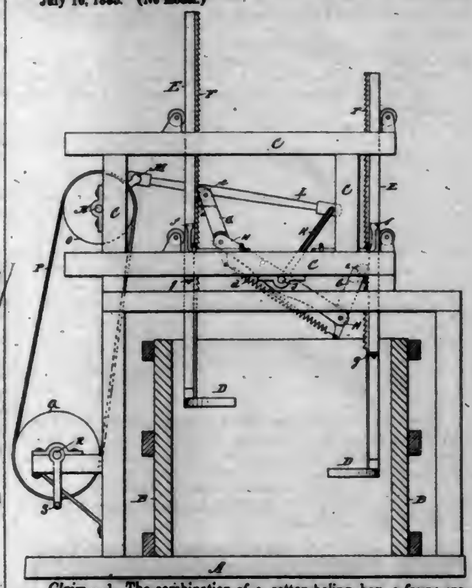
327,258. HAME-FASTENER. FRANCIS A. HAKE, Cuero, Tex. Filed July 27, 1885. (No model.)



Claim.—1. An adjustable hame-regulator consisting of the frame C, provided with threaded opening at the ends, and flanges H, in combination with the right and left screw-threaded bolts E, having the hooks F, the sleeve G, and the loop I, substantially as herein set forth.

2. The fastener consisting of the frame C, having the flanges H, the right and left screw-threaded bolts E, provided with hooks, sleeve G, and hanger I, in combination with the hames, substantially as and for the purposes herein shown.

327,259. COTTON-PACKER. ALFRED HART, San Marcos, Tex. Filed July 16, 1885. (No model.)



Claim.—1. The combination of a cotton-baling box, a frame supporting it, one or more tamps provided with rods fitted to slide down into the box from an upper portion of the frame, a toothed rack on each rod, a rock-shaft journaled in the frame over the center of the box, one or more arms secured to the rock-shaft over the box, a spring-pawl attached to the free end of each of the said arms, a roller in the end of each pawl, and a finger on the side of the latter adapted to engage the said toothed rack, substantially as shown and described.

2. The combination of a cotton-tamp having a rod and a toothed rack thereon, an arm mounted to reciprocate vertically, a pawl in the arm, a pulley in the free end of the pawl, and a finger projecting from one side of the pawl, the pulley and finger being located relatively to one another and to the pawl and its carrying-arm, substantially as shown and described, whereby the finger will engage a tooth of the said rack at the lower end of its arc of motion, and will be pried out of said engagement at the upper end of the same.

3. The combination of a cotton-tamp having a vertical rod smooth along its side and notched near the lower end of said smooth side, a detent pivoted to a fixed portion of the machine to drag its free end upon the said smooth portion of the rod and to engage the said notch, and means for intermittently raising the said rod, substantially as shown and described.

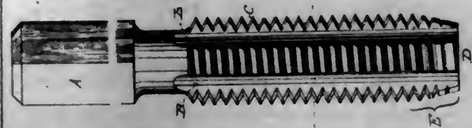
327,260. SERIES OF LABELS FOR TACKS, BRADS, OR NAILS. WILLIAM H. HART, New Britain, Conn. Filed Feb. 16, 1885. (No model.)



Claim.—1. A series of labels for tacks, brads, or nails having arbitrary symbols, combined with the figure or figures which indicate the size to denote packages of the various weights, substantially as described.

2. A series of labels for tacks, brads, or nails having, in connection with the figures which indicate the size, a line or lines to denote packages of the various weights, substantially as described.

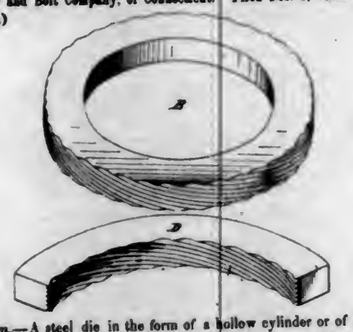
327,261. SCREW-TAP. HAYWARD A. HARVEY, Orange, N. J. Filed Oct. 28, 1884. (No model.)



Claim.—The process of manufacturing screw-taps herein described, which consists, first, in forming the thread upon the steel blank which

is to be made into a tap by rolling the blank between suitable dies, and then removing the metal from the body to form the grooves which intersect the convolutions of the thread, and, finally, in giving it a suitable temper.

327,262. STEEL DIE. HAYWARD A. HARVEY, Orange, N. J., and CHARLES S. CLARK, Providence, R. I.; said Clark assignor to the Harvey Screw and Bolt Company, of Connecticut. Filed Feb. 3, 1885. (No model.)



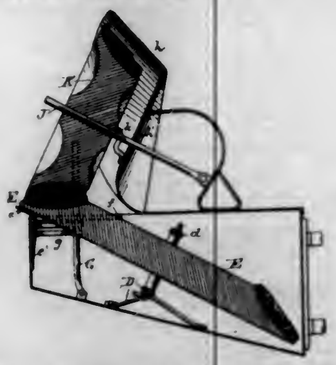
Claim.—A steel die in the form of a hollow cylinder or of a segment thereof, having its working-face formed upon one of its curved surfaces and hardened to a comparatively shallow depth only, substantially as herein set forth.

327,263. SCREW-TAP. HAYWARD A. HARVEY, Orange, N. J. Filed Mar. 23, 1885. (No model.)



Claim.—As a new article of manufacture, a suitably-tempered screw-tap, the cutting-teeth of which are composed of the convolutions of a spiral thread or threads rolled upon the cylindrical portion of the tap and intersected by grooves in the body of the tap and possessing the solidity and toughness of surface due to such rolling.

327,264. PAINTING-MACHINE. LLEWELLYN T. HATFIELD, Milan, Mo. Filed June 1, 1885. (No model.)



Claim.—1. The combination, in a fence-wire-painting machine, of the reservoir having handles connected thereto, straps *b b*, connected thereto, and traveler C, substantially as and for the purpose set forth.

2. The combination, in a fence-wire-painting machine, of the reservoir having handles connected thereto, straps *b b*, secured to the ends thereof, standard B, and wheel C.

3. The combination, in a fence-wire-painting machine, of the reservoir having handles connected thereto, traveler C, having the periphery of one or both of its flanges serrated, and means for journaling said traveler, substantially as and for the purpose set forth.

4. The combination, in a fence-wire-painting machine, with the reservoir and cover thereto, having a hood, as described, of the paint-brushes K and E, constructed and arranged as set forth.

5. The combination, with reservoir A, the spring-frames D and *d* therein, cover I, and arm J, of the brushes K and E.

6. The combination, with the reservoir, the spring-frames D and *d* the cover I, having hood A, and arm J, of the brushes K and E.

7. The combination, with the reservoir, frames D and *d* therein, cover I, having hood *h*, and arm J, fulcrumed back of said hood and passing through a vertical slot, *h'*, in the same, of the brushes K and E.

8. The combination, with the reservoir, frames D and *d* therein, cover I, having hood A, arm J, fulcrumed back of said hood and passing through a vertical slot, *h'*, in the same, and spring *k*, of the brushes K and E.

9. The combination, with the paint-brushes K and E, of the reservoir A, having means therein for journaling brush E, cover I, having a hood, *h*, and arm J, fulcrumed back of said hood and passing through a vertical slot in the same.

10. The combination, in a fence-wire-painting machine, with the paint-brushes K and E, of a brush arranged on the same plane and following said brushes K and E.

11. The combination, in a fence-wire-painting machine, with the paint-brushes K and E, of the brush H, consisting of an upper and lower brush the backs of which are connected by a central boss or spool and the bristles of which project in toward each other, and which is arranged on the same plane and follows said brushes K and E.

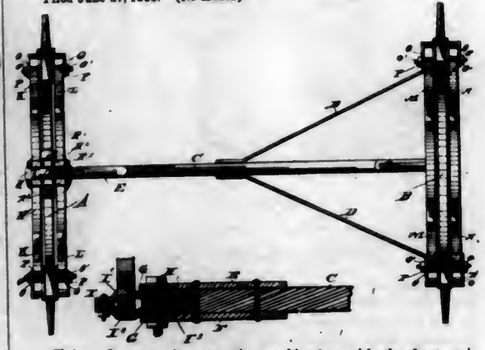
12. The combination, in a fence-wire-painting machine, with the paint-brushes K and E, of the brush H, spindle G, and frames *f f*.

13. In a fence-wire-painting machine, the combination, with the reservoir having frames D and *d*, and having an apron, *e*, of the brush E.

14. In a fence-wire-painting machine, the combination, with the reservoir and brush E, of the apron *e* and spring-arms *e' e'*, carrying said apron.

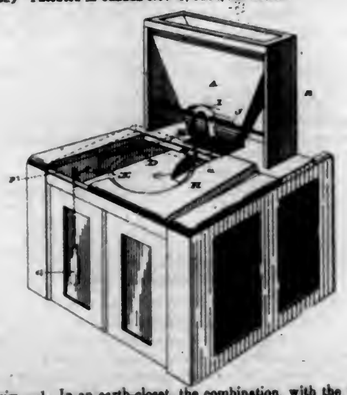
15. In a fence-wire-painting machine, a cover, I, having a hood, A, and having vertical walls *i i*, substantially as and for the purpose set forth.

327,265. WAGON-GEAR. EDWIN E. HATHEWAY, Oriskany Falls, N. Y. Filed June 27, 1885. (No model.)



Claim.—In a running-gear, the combination, with the front and rear axles, of the reach having the perforated extension, the irons E and F, the plates I and I, and bolts for connecting the same, substantially as specified.

327,266. APPARATUS FOR OPERATING DRY-EARTH CLOSETS. WILLIAM HEAP, Owen Sound, Ontario, Canada. Filed Jan. 23, 1885. (No model.) Patented in Canada Nov 8, 1884, No. 20,537.



Claim.—1. In an earth-closet, the combination, with the frame B, pivoted hopper A, and the seat H, of the rod J, the lever I, pivoted on said rod, the rod K, connecting one arm of said lever with the seat, weight G, and intermediate connections between said weight and hopper, substantially as described.

2. The herein-described earth-closet, consisting of the frame B, the pivoted hopper A, the rod J, the lever I, pivoted on said rod, the friction-roller *a*, carried by one arm of said lever, the rod K, connecting the other end of said lever with the seat, the bell-crank lever E, pivoted to the frame, the rod D, connecting one arm of said lever with the hopper, and the weight G, attached to the other arm of said bell-crank, all combined, arranged, and operating substantially as shown and described, and for the purpose specified.

327,267. COMPOSITION FOR SUPPOSITORIES. EDWIN A. HECKER and CHARLES F. MCKHANN, New Madison, Ohio. Filed May 15, 1885. (Specimens.)

Claim.—The composition of matter consisting of water, either of roses or pure, acacia, and alum, combined with sulphate hydrastia, (berberina,) into the administrable form and in the proportions substantially as and for the purposes herein specified.

327,268. BEE-HIVE. JAMES HEDDON, Dowagiac, Mich. Filed Mar. 3, 1885. (No model.)



Claim.—1. In a bee-hive, a case consisting of a frame one of the sides of which is provided with thumb-screws extending through said side, and the opposite side of which is provided at the corners with narrow cleats facing said thumb-screws, substantially as and for the purpose set forth.

2. The combination of the bee-hive, the bottom stand having end pieces of less height than the side pieces, and the detachable bottom board the ends of which are provided with downwardly-extending cleats resting upon the end pieces of the bottom stand, and the upper side and rear edges of which are provided with cleats adapted to support the lower case of the hive and afford admission-space for the bees, substantially as and for the purpose set forth.

3. In a honey-board for bee-hives, the combination, with a frame, of a number of slats secured to the bottom sides thereof at a bee-space distance apart, said frame being even with the bottoms of said slats, and projecting a bee-space above them, substantially as and for the purpose set forth.

4. In a bee-hive of the described class, the combination, with the brood-chamber of a hive the tops of the frames of which are a bee-space below the top edges of the hive, and a case for surplus honey the bottoms of the frames of which are even with the bottom of the case in which they are secured, said frames for surplus honey hanging parallel with and directly above the frames of the brood-chamber, of a honey-board consisting of slats secured to a frame, said frame being even with the bottoms of said slats and projecting a bee-space above them, said slats being so arranged that the spaces between them will be between the tops of the frames in the brood-chamber below and the bottoms of the frames in the case above, and the slats themselves will be parallel with the frames, and between the spaces between the said frames, substantially as and for the purpose set forth.

5. In a bee-hive, a brood-chamber consisting of a series of reversible and interchangeable cases, each of said cases being provided with thumb-screws extending through one side, and with cleats at the corners of the other side and facing said thumb-screws, and of a number of reversible frames rigidly secured therein between said thumb-screws and cleats, and a stand and cover, substantially as and for the purpose set forth.

327,269. APPARATUS FOR PURIFYING WATER AND OTHER FLUIDS. W. A. OGDEN HEDEMAN, New York, N. Y. Filed May 29, 1885. (No model.)

Claim.—1. In combination with a reservoir basin or cistern, an apparatus consisting of a pump or forcing or suction device, or suction or withdrawing device, an eduction-pipe, a suitable filter or cleansing apparatus, and an induction-pipe, substantially as set forth.

2. The circulatory apparatus, substantially as hereinbefore described, consisting of an eduction-pipe, *a*, a pump, B, a filter or cleansing apparatus, C, and a return pipe or conduit, *d*, connected and arranged as specified.

327,269.



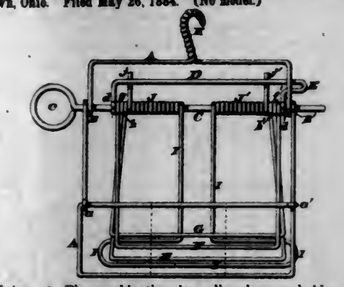
3. In combination with the pipe *a*, the pump B, the cleansing apparatus C, and the pipe *d*, suitably connected, the tank E, substantially as and for the purpose set forth.

4. In combination with the pipe *a*, the pump B, the cleansing apparatus C, the pipe *d*, and the tank E, the pipes *e f*, provided with suitable cocks, whereby the tank E may be cut out of circulation at pleasure, substantially as described.

5. In combination with a reservoir basin or cistern, the pipe *a*, the pump B, the cleansing apparatus C, the pipe *d*, and the tank E, suitably connected and arranged, for the purpose described.

6. The combination of an eduction-pipe, *a*, a pump, B, a filter or cleansing apparatus, C, a return pipe or conduit, *d*, and an aerating device, substantially as described.

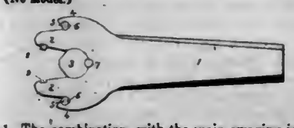
327,270. HOLDER FOR SMALL WARES. GEO. K. JENKINS, Jamestown, Ohio. Filed May 26, 1884. (No model.)



Claim.—1. The combination, in a clip, clasp, or holder, of a main frame within which is journaled a longitudinally-shiftable rock-shaft having a clamping-frame, and a series of independently-swinging frames or leaves suspended therefrom, said rock-shaft being provided with a detent or catch that engages with the main frame of the clip, for the purpose described.

2. The combination, in a clip, clasp, or holder, of a main frame, A B B', longitudinally-shiftable rock-shaft C *c*, tension device D *d d'* E, independently-swinging frames F *f f'* G *g g'* H *h h'*, and clamping-frame I J J', whose arms *j j'* bear against the tension-bar D, for the purpose described.

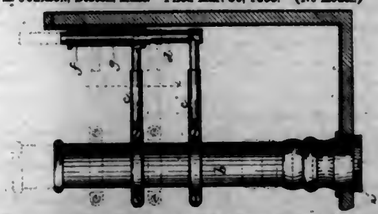
327,271. SAW-SWAGE. NELSON JOHNSON, Jasper, N. Y. Filed Aug. 4, 1884. (No model.)



Claim.—1. The combination, with the main swaging jaw and pin, of a supplemental swaging jaw and a pin of much smaller diameter than the main pin, said supplemental jaw and pin occupying the same positions relatively to each other as do the main jaw and pin, whereby the action of the main jaw and pin are supplemented, substantially as described.

2. In a saw-swage, the combination, with the jaw thereof, of a rest or support secured to the face thereof by a dovetail joint, as set forth.

327,272. STAND-PIPE ATTACHMENT FOR BATH-TUBS. WILLIAM A. JOHNSON, Boston, Mass. Filed Mar. 30, 1885. (No model.)

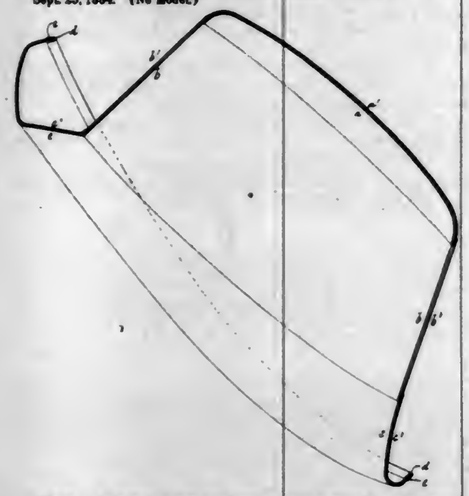


Claim.—1. As an improved article of manufacture, the attachment herein described for ordinary bath-tubs, the same consisting of a stand-pipe, an arm or arms connected thereto, and a holder for the other end of said arm or arms, having a vertical perforated bracket-plate for at-

tachment to the tub, the latter plate constituting a permanent connection for the attachment with the tub, whereby misplacement of the attachment is prevented, as set forth.

2. The combination, in an attachment for bath-tubs, of the stand-pipe, the arms *c c'*, rigidly affixed thereto and connected by the rod *d*, and the boss or socket having bearings for said rod, and a slot through which the arm *c* passes, said slot having an enlargement adapted to support the arm *c* and the stand-pipe in an elevated position, as set forth.

327,273. HAT FRAME AND BODY. JOHN L. KENDALL, Brooklyn N. Y., assignor to himself, and Richard H. Trusted, Greenville, N. J. Filed Sept. 25, 1884. (No model.)



Claim.—A pressed paper hat frame or body combining in its structure a paper tip, a paper crown, and a paper brim, said parts cemented together at their meeting edges, and the whole constituting a stiff structure on which the hat-trimmings may be built, as on a block, substantially as described.

327,274. TILE-LAYING MACHINE. GEORGE KEITH HARMON, Ill. Filed Apr. 26, 1884. Renewed Sept. 3, 1885. (No model.)

Brief.—A rotated ditching-wheel carries peripheral shovel-blades with exterior cutters, while levers pivoted in a ring on the wheel project through the rim beneath such blades, and have a spurred face to break up and throw out the material onto a pivoted platform (delivering behind the tile-chute) as the levers are automatically tilted.

Claim.—1. The combination, in a ditching-machine, of a wheel or annular band mounted upon a suitable shaft, devices for rotating the same, a series of blades arranged peripherally in said wheel or band, a series of pivoted levers extending at one end through the periphery beneath the said blades, and a device for automatically and intermittently contacting with the inner ends of said pivoted levers to move their outer ends beneath the peripheral cutters, substantially as set forth.

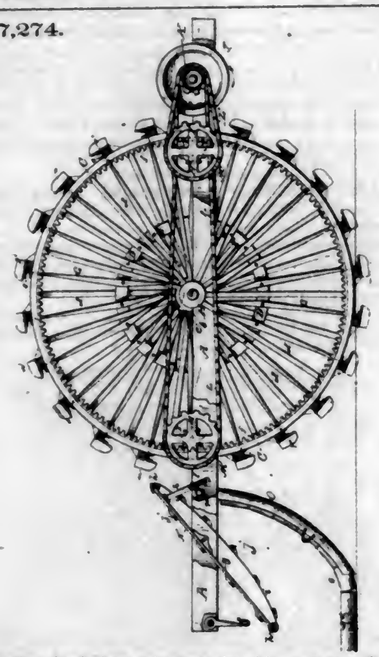
2. The combination, in a ditching-machine, of a wheel or annular band mounted upon a suitable shaft, devices for rotating the same, a series of blades arranged peripherally in said wheel or band, a series of pivoted levers extending at one end through the periphery beneath said blades, a discharge-platform, a device for automatically and intermittently contacting with the inner ends of said pivoted levers to move their outer ends as the said blades approach said platform, substantially as set forth.

3. The combination, in a ditching and tile-laying machine, of a wheel or annular band mounted upon a suitable shaft, devices for rotating the same, a series of blades arranged peripherally in said wheel or band, a series of pivoted levers extending at one end through the periphery beneath the said blades, a device for automatically and intermittently contacting with the inner ends of said pivoted levers, a depending chute adapted to lay the tile-sections in a ditch formed by the machine, and a discharge-platform, substantially as set forth.

4. The combination, in a ditching-machine constructed and operating substantially as described, of a series of peripheral blades, a spurred projection located beneath each blade, and devices for intermittently moving the same, as and for the purpose set forth.

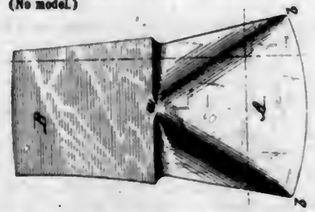
5. The combination, in a ditching-machine, of a wheel or annular band mounted on a suitable shaft, devices for rotating the same, a series of blades arranged peripherally in said band and having cutters *n*, a series of pivoted levers extending at one end through the periphery beneath the said blades, and a device for automatically and intermittently

327,274.



contacting with the inner ends of said pivoted levers to move their outer ends beneath the peripheral cutters, substantially as set forth.

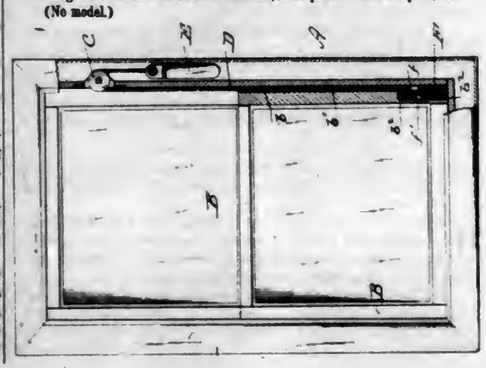
327,275. AX. WILLIAM C. KELLY, Louisville, Ky. Filed Apr. 3, 1885. (No model.)



Claim.—1. As a new article of manufacture, an ax having the blade of a practically uniform thickness for so much of its extent as would be ordinarily consumed by wear and grinding and tapered from a point at or near its center toward the edges, the lines of taper diverging from said point toward the heel and toe of the cutting-edge, substantially as and for the purposes hereinbefore set forth.

2. An ax having the back and front edges of its blade portion of practically uniform thickness from the points of juncture with the cutting-edge to the shank or butt, substantially as and for the purpose set forth.

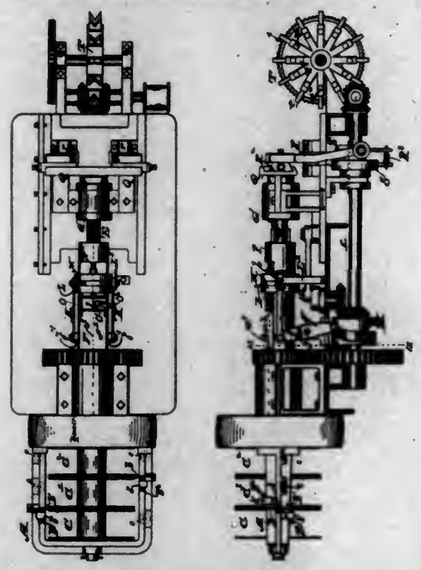
327,276. SASH-CORD FASTENER. SILAS LAND, Philadelphia, Pa., assignor of one-half to John H. Rathien, same place. Filed May 21, 1885. (No model.)



Claim.—An angular sash-cord fastener, substantially as described, adapted to rest at the bottom and lower side of a groove, extending along the side of the sash, whereby it may be removed without taking out the sash or stay-bead, as set forth.

327,277. BARB-WIRE MACHINE. GODFREY H. LARAR, St. Louis, Mo. Filed Dec. 18, 1883. (No model.)

Brief.—The main and barb wires are carried on spools in the flier, and pass thence through separate passages in the core and stock, respectively. The barb-wire is fed by a dog which is reciprocated by a lever worked by a cam. The slide which carries the reciprocating head carries also two compressors worked by cams, which are arranged to move with the slide. The compressors first hold the barb-wire so that it is wrapped about the main wires by the rotation of the head, then sever the barb, and finally compress the barb onto the main wires.



Claim.—1. The combination of the ring L, the standard L', the band M, and the stock F, and means for reciprocating the band M on the stock F, and with reciprocating means for gripping and releasing the wire, substantially as and for the purpose set forth.

2. The combination, in a barb-wire machine, of the flier A, the arms B B', the spools C C', and the set-screws B^3, substantially as described.

3. The combination, in a barb-wire machine, of the flier A, the spools C C', the sheaves c c^2, and the passages C^3 C^3, extending from the side of the flier to the stock at the center of the flier, substantially as shown and described.

4. The combination, in a barb-wire machine, of the flier A, the spools C C' C^2, the sheaves c c^2, and the passages C^3 C^3 C^4, said passages extending from the side of the flier inwardly to the stock at the center of the flier, as shown and described.

5. The combination, in a barb-wire machine, of the stock F, the flier A, the sheaves c^3 c^3, the barrel E, the core D, having the grooves d d, beveled at d' d', and the passages C^5 C^5, as described.

6. The combination of the core D, having the grooves d d, beveled at d' d', and the passages C^5 C^5, as described.

7. The combination, in a barb-wire machine, of the stock F, having the passage f, with the passage C^4, and the stock A, substantially as described.

8. The combination, in a barb-wire machine, of the driving-shaft I, the cam J, the rods K K, the ring L, the barb M, and the stock F, together with the means for feeding the barb-wire, substantially as described.

9. The combination, in a barb-wire machine, of the stock F, flattened at f, and the band M, having the projection m, as described, together with the means for feeding the barb-wire, substantially as described.

10. The combination, in a barb-wire machine, of the stock F, flattened at f', the band M, having the projection m, and the housing O, as described, together with the dog O', and the bolt N, having the shoulders, substantially as described.

11. The combination, in a barb-wire machine, of the stock F, the band M, the bolt N, nuts n n, the housing O, and the dog O'.

12. The combination of the core D, the slide Q, the shaft I, the cams S S', the levers R R', the blocks R^2 R^{2a}, the spring R^3, and the compressors R^4 R^5, as described.

13. The combination of the separate levers R R', journaled, respectively, at r r, the slide Q, the blocks R^2 R^{2a}, and the compressors R^4 R^5, as described.

327,278. HEATING ATTACHMENT FOR LAMPS. EDWIN E. LEACH, Cedar Rapids, Iowa. Filed Nov. 22, 1884. (No model.)

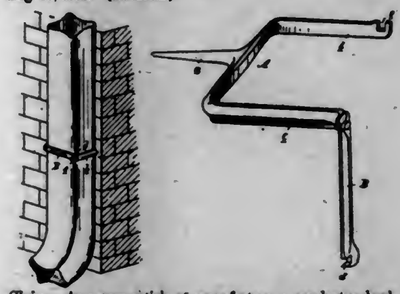


Claim.—1. In a heating attachment for a lamp, the combination of vessel A, tube B, and supporting-feet a a a, substantially as specified.

2. In a heating attachment for a lamp, the combination of vessel A, tube B, feet a a a, and springs b b, substantially as described.

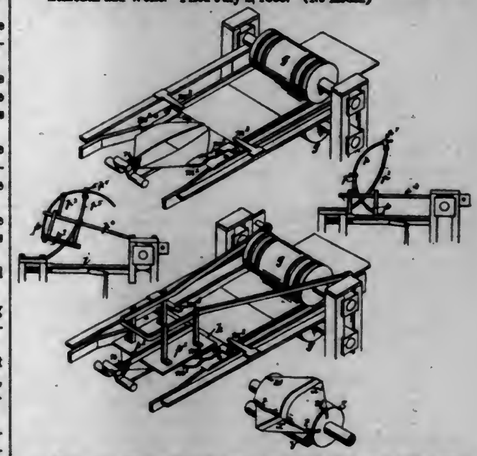
3. As a new article of manufacture, a heating attachment for a lamp, consisting in a vessel, A, having a downwardly extending tube, B, supporting-feet a a a, and centering-springs b b, and an independent supporting-base, D, substantially as described.

327,279. CONDUCTOR-HOOK. JOHN LEADLEY, Detroit, Mich. Filed Aug. 13, 1885. (No model.)



Claim.—As a new article of manufacture, a conductor-hook consisting of the part A, provided with the tang a, parallel arms b c, the former provided with hook e, and gate B, provided with hook d, all constructed, arranged, and operating substantially in the manner and for the purposes specified.

327,280. PAPER-BAG MACHINE. FELIX W. LEINBACH, CLARENCE A. WOLLE, and EDWARD H. BRUNNER, Bethlehem, Pa., assignors to said Leinbach and Wolle. Filed July 2, 1883. (No model.)



Claim.—1. The combination of a rotating drum or segment having a cutter, b, and slotted as described, with the pivoted ejector-lever b^3, as set forth.

2. The combination of the plate d with the presser-bar d^2, having recesses d^3, whereby pressure of the upper and inner folds of the tuck of the tube is prevented, as set forth.

3. The combination of mechanism, substantially as described, for forming a tube with tucked sides, with feed-rolls, recessed as described,

whereby the upper and inner folds of the tucks are relieved from pressure, as set forth.

4. The combination of feed-rolls, recessed as described, so as to feed the tucked tube without pressing the edges of the folds, with presser-plates *f'*, whereby the lower folds of the said tucks are flattened at the edges without affecting the upper folds, as set forth.

5. As a means of forming the primary or diamond fold on a tube with tucked sides, the combination of the transverse presser-plate with side tuck-folders, operating, as described, to fold back the upper ply of the tube, as set forth.

6. The combination of the presser-plate and side tuck-folders with the guide *n*, for the forward end of the diamond fold, as specified.

7. The combination of the presser *p'* with the rod *p*, actuated by and in advance of the said presser *p'*, as set forth.

8. The combination of a bag-blank carrier with laterally-operating edge-nippers *t*, for determining the line of fold of the flap *x*, and with a creasing-blade, as set forth.

9. The combination, in a paper-bag machine, of mechanism for forming the primary or diamond fold of the bag-bottom, with fold-completing mechanism comprising the following elements: a drum, S, edge-nippers *t* and *w* thereon, mechanism for operating said nippers, a deflector, V, located as described, so as to press the advance point of the diamond over the nippers *t* and onto the body, and a deflector, W, located as described, whereby it folds the portion of the bottom in advance of the nippers *w* back over the latter and on to the rear point of the diamond, as set forth.

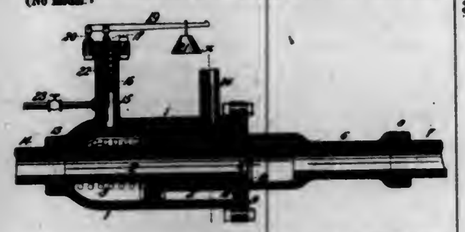
10. The combination of the bag-blank carrier, edge-nippers for determining the line of the fold of the final flap *x'*, a deflector, W, and a presser, X, as set forth.

11. The combination of the bag-blank carrier and its nippers with the deflector W and guard-plate W', as set forth.

12. The combination of the drum, edge-nippers *w*, and presser X, with the pivoted deflecting-plate W, as set forth.

13. The combination of the drum S with the nippers *t* and *w*, pivoted in slots in said drum, the cam-collars a^4, adapted to act upon pins on said nippers, and spring-plates w^3, acting on the nippers to complete the closing of the same.

327,281. EXPANSION-JOINT. JOHN LEFFERS, Allegheny, assignor to himself and Charles F. McKenna, Pittsburg, Pa. Filed Mar. 5, 1885. (No model.)



Claim.—1. In an expansion-joint, a shell having a passage therethrough for the conveyance of gas or other fluids, in combination with a piston fitting within said shell and provided with a hollow piston-rod, and a fluid-pressure column, substantially as described, for forcing said shell and piston in opposite directions, said shell and piston-rod being provided with suitable means for connection with adjacent ends of a pipe-line, as and for the purpose set forth.

2. In an expansion-joint, a shell having a concentric tube inclosed therein, in combination with a piston located in said shell and fitting around the tube, and having a hollow piston-rod and a fluid-pressure column, substantially as described, for forcing said shell and piston in opposite directions, said shell and piston being provided with suitable means for connection with the adjacent ends of a pipe-line, as and for the purpose set forth.

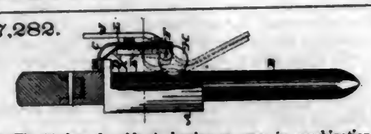
3. In an expansion-joint, a shell, in combination with a tube located in said shell, an annular piston and rod surrounding said tube, and a cylinder, a fluid-packing, and weighted piston connected to said shell, substantially as set forth.

4. In an expansion-joint, a shell, in combination with a tube located in said shell, an annular piston and rod, a cylinder connected to the shell at one end thereof, a fluid-packing, a weighted piston located in the cylinder, and a stand-pipe connected to the opposite end of the cylinder, substantially as set forth.

327,282. CARBON-HOLDER. HENRY H. LEVETT, Philadelphia, Pa. Filed May 18, 1885. (No model.)

Claim.—1. A carbon-holder consisting of a guide having an arm, D, a spring, C, secured to said arm, a metallic plate secured to said spring, and an eccentric journaled in said plate, substantially as and for the purpose set forth.

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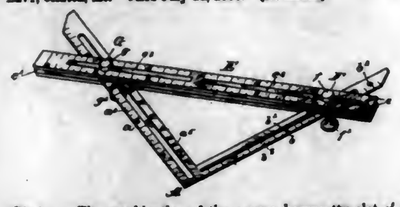


2. The V-shaped guide A, having an arm, in combination with a spring secured to said guide and carrying a plate in which is journaled an eccentric, substantially as and for the purpose set forth.

3. A carbon-holder having a guide, a clamp, and a supporting-spring for said clamp, and a packing of non-conducting material interposed between said spring and the bearing of said clamp, substantially as described.

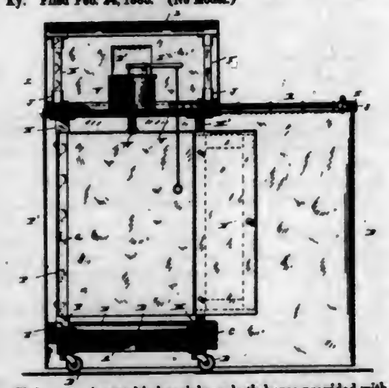
4. A carbon-holder having a clamping device and a strip of metal between the bearings of said device and the guide of the holder for diffusing heat, substantially as described.

327,283. ADJUSTABLE PITCH-BOARD FOR SQUARES. HENRY LEVY, Clinton, Mo. Filed July 11, 1885. (No model.)



Claim.—The combination of the square having the slot *a'* in its long arm, the slot *b'* in its short arm, the opening b^3 at the outer end of the short arm, the square having measuring-scales a^2 and b^2 on one face, and the scale a^3 drawn from the center of the opening b^3, and on its opposite face the scale of degrees a^3 on its inner side, and the pitch-scale a^4 on its outer side on opposite sides of the slot *a'*, said scales a^3 and a^4 being drawn from the center of the opening b^3, with the ruler having the slots, and the set-screws for securing the ruler to the square, substantially as described.

327,284. PORTABLE BATH-HOUSE. CHARLES L. LIDDEY, Danville, Ky. Filed Feb. 24, 1885. (No model.)

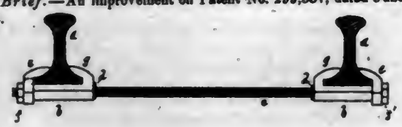


Claim.—1. A portable knockdown bath-house provided with double walls of removable sheeting, the sheeting of the inner wall covering a door therein, substantially as and for the purpose specified.

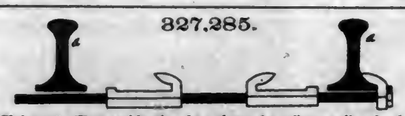
2. A portable knockdown bath-house having a base beveled toward a center, where is a waste-pipe, and having casters and sockets, a top with sockets, posts resting in said sockets, a door-frame, a removable sheeting attached to the posts and door, a frame surmounting the top, a reservoir with sprinkler and valve contained in the same, an extension bracket moving in recesses in the top, and a removable sheeting surrounding the entire device, the whole combined substantially as and for the purpose specified.

327,285. CLAMP FOR RAILWAY-RAILS. JESSE LOCKHART, Niantic, Ill. Filed May 18, 1885. (No model.)

Brief.—An improvement on Patent No. 299,557, dated June 3, 1884.



327,285.



Claim.—1. The combination, in a clamp for railway-rails, of rod *c*, provided with rigid head *f'* and nut *f*, clamp-bars *b*, provided with rigid jaws *g*, and sliding clamps *e* on clamp-bars *b*, as and for the purpose set forth.

2. The combination, in a clamp for railway-rails, of rod *c*, provided with rigid head *f'* and nut *f*, clamp-bars *b*, provided with shoulder *b'* and rigid jaws *g*, and sliding clamps *e* on clamp-bars *b*, as and for the purpose set forth.

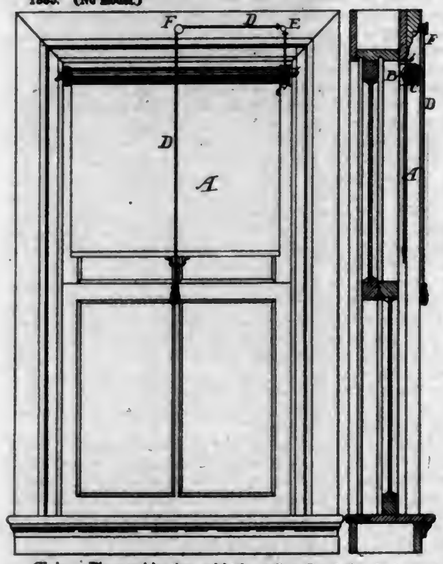
3. The combination, in a clamp for railway-rails, of rod *c*, provided with rigid head *f'* and nut *f*, clamp-bars *b*, provided with rigid jaws *g*, sliding clamps *e* on clamp-bars *b*, and a suitable device for preventing the clamp-bars from approaching each other on the rod, as and for the purpose set forth.

327,286. MANUFACTURE OF ORNAMENTAL WALL-COVERING, LEATHER-CLOTH, &c. SIGISMUND LOEWENTHAL, Acton, County of Middlesex, England. Filed July 6, 1885. (No specimens.) Patented in England June 14, 1884, No. 9,025.

Claim.—1. The hereinbefore-described process of ornamenting fabrics, consisting in applying to the surface thereof a compound composed of African flake, rubber, rubber substitute, ozocerite, infusoria, wood-pulp or ground cork, and sulphuric and muriatic acids in about the proportions specified, then printing upon the same patterns or designs, and finally drying the printed fabrics, substantially as set forth.

2. The process hereinbefore described of ornamenting fabrics, consisting in applying to the surface thereof a compound composed of African flake, rubber, rubber substitute, ozocerite, infusoria, wood pulp or ground cork, and sulphuric and muriatic acids in about the proportions specified, then printing patterns or designs thereon, then embossing the same by means of dies or rolls having thereon designs or patterns corresponding with the printed designs or patterns, and finally drying the fabric, substantially as set forth.

327,287. CURTAIN-FIXTURE. LEWIS A. MALLORY, Sullivan, assignor of one-half to Robert H. Baird, Wellington, Ohio. Filed May 8, 1885. (No model.)

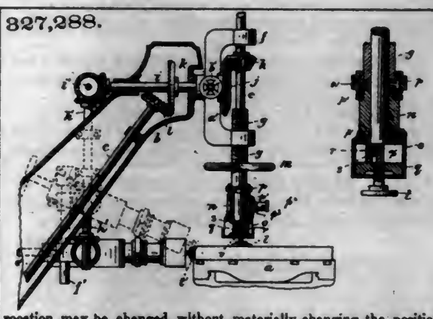


Claim.—The combination, with the roller, B, of the shade or curtain A, provided with the grooved wheel C, of the cord D, attached to said wheel and passing over pulley or ring E, and wound around button F, the friction whereof retains the curtain at any given height desired, as shown and described.

327,288. STONE-POLISHING MACHINE. JAMES W. MALOY, Boston, Mass., assignor, by mesne assignments, to the American Marble Cutting Company. Filed May 22, 1884. (No model.)

Claim.—1. In a stone-dressing machine, the combination, with a support, of a reciprocating rubbing-tool held centrally beneath said support, and an intervening swiveled joint whereby the direction of reciprocation may be changed without materially changing the position of the tool, substantially as set forth.

327,288.



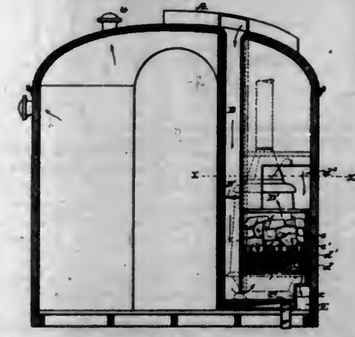
2. The combination of the overhanging arm, the swiveled arm *a'*, supported therein, the spindle journaled in said arm, and the reciprocating tool driven thereby, said tool supported on a swiveled collar from a bearing on said shaft.

3. In combination, with the supporting-arm *b*, the arm *a'*, swiveled thereto, the spindle *c*, journaled in said arm, the screw-bearing *g*, surrounding said spindle and supported by arm *a'*, the collar *n*, swiveled to piece *g*, and the reciprocating tool suspended from said collar, substantially as described.

4. The combination, with the spindle *c* and the screw-threaded bearing *g*, of the collar *n*, swiveled to said bearing, the spring interposed between said bearing and collar, and the reciprocating tool supported by the collar, as set forth.

5. The combination, with the single supporting-arm *b*, of the two reciprocating tools supported thereby and jointed thereto at different angles, and driving mechanism, substantially as described, whereby the tools may be reciprocated, as set forth.

327,289. CAR-VENTILATOR. WILLIAM D. MANN, New York, N. Y., assignor to Mann's Boudoir Car Company, same place. Filed Apr. 11, 1884. (No model.)



Claim.—1. In combination with the fresh-air conduit B, the filter *d*, and the ice-chest *e*, having an open bottom and located above said filter, whereby the filtering material is kept saturated with water, as explained.

2. In combination with the vertical fresh-air conduit B, through which the air descends, the dust-arresting tank *c*, placed at the bottom of said conduit, whereby the air is forcibly projected against the surface of the water, the filter *d*, located above said tank, and the ice-chest *e*, located above said filter, all adapted to operate substantially as set forth.

3. The combination of the fresh-air conduit B, the filter *d*, an ice-chest, *e*, located above said filter, and the closet D.

4. In combination with a fresh-air conduit, a dust-arresting tank into which said conduit discharges, having an inclined bottom, and a waste-pipe leading from an elevated portion of said bottom, as and for the purpose set forth.

5. The combination, with a fresh-air conduit, of a dust-arresting tank having an elevated overflow-orifice of small area and a waste-pipe of larger area with which said overflow-orifice communicates, as and for the purpose set forth.

6. In combination with a fresh-air conduit, a dust-arresting tank having an elevated discharge-opening of large area, a thin cap covering said opening, and a minute orifice in said cap for permitting the excess of water to escape, substantially as set forth.

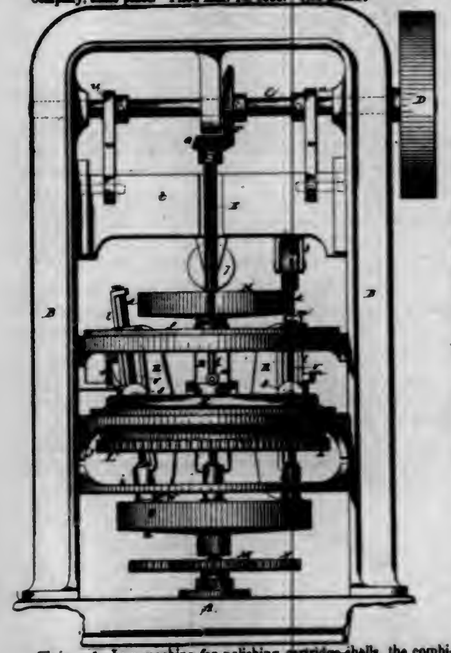
7. In a railway-car, a fresh-air conduit, a dust-arrester, a closet, and a flue running from the closet through the car and provided with registers, as described, in combination with a heater located within said

closet, and heating-pipes located within said flue, all constructed and arranged as and for the purposes set forth.

8. The combination, with a fresh-air conduit and a vertical air-passage, of a filter and a superposed ice-chest located in said air-passage and having open bottoms, substantially as set forth.

9. In combination with a fresh-air conduit, a dust-arresting tank, a filter located above said tank, and ice-chest located above said filter, said ice-chest and filter having open bottoms, as and for the purpose set forth.

327,290. **MACHINE FOR POLISHING CARTRIDGE-SHELLS.** WM. MASON, New Haven, Conn., assignor to the Winchester Repeating Arms Company, same place. Filed Mar. 14, 1885. (No model.)



Claim.—1. In a machine for polishing cartridge-shells, the combination of a revolving polishing-wheel, a shaft arranged substantially parallel with the axis of said polishing-wheel and adapted to revolve on its own axis, and also to revolve about the axis of the polishing-wheel, the said shaft constructed to receive and carry a cartridge-shell around said polishing-wheel, and also adapted to be moved toward and from said polishing-wheel, substantially as described.

2. In a machine for polishing cartridge-shells, the combination of a revolving polishing-wheel, a shaft arranged substantially parallel with the axis of said polishing-wheel, and adapted to revolve on its own axis, and also to revolve about the axis of the polishing-wheel, the said shaft constructed to receive and carry a cartridge-shell around said polishing-wheel, and also adapted to be moved toward and from said polishing-wheel, with a second polishing surface at right angles to the axis of the said polishing-wheel, and beneath which the heads of the shells will pass as they move around the polishing-wheel, substantially as described.

3. The combination of a revolving polishing-wheel, a ring concentric with said polishing-wheel, and arranged to revolve in a plane substantially parallel with the plane of said polishing-wheel, one or more hangers in said ring, a shaft in each of said hangers parallel with the axis of the polishing-wheel said shafts adapted to receive a rapid revolution, and extended to form studs adjacent to said polishing-wheel, the said studs adapted to receive, hold, and revolve a cartridge-shell, and a cam adapted to impart to said hanger and the shaft it carries a radial movement as the said hanger revolves about the said polishing-wheel, substantially as described.

4. The combination of a revolving polishing-wheel, a ring concentric with said polishing-wheel, and arranged to revolve in a plane substantially parallel with the plane of said polishing-wheel, one or more hangers in said ring, a shaft in each of said hangers parallel with the axis of the polishing-wheel, said shafts adapted to receive a rapid revolution, and extended to form studs adjacent to said polishing-wheel, the said studs adapted to receive, hold, and revolve a cartridge-shell, and a cam adapted to impart to said hanger and the shaft it carries a radial movement as the said hanger revolves about the said polishing-wheel, and with a polishing surface at right angles to the axis of the polishing-wheel, and beneath which the said stud carrying a cartridge-shell passes, substantially as described.

5. The combination of the shaft E, polishing-wheel H thereon, the ring I, arranged on bearings concentric with said shaft and adapted to revolve in a plane parallel with said polishing-wheel, one or more hangers, R, hung in said ring and so as to swing in a plane parallel with the axis of the polishing-wheel, a shaft, V, in each of said hangers extended to form studs *d* adjacent to the surface of the polishing-wheel, a wheel, *a*, fixed to the shaft E, and constructed with a flange, *b*, the shafts in the hanger each provided with a pulley, W, to work upon the surface of the said flange *b*, and a cam adapted to impart to said hangers a vibratory movement to take the said studs toward and from the polishing-wheel, substantially as described.

6. The combination of the shaft E, polishing-wheel H thereon, the ring I, arranged on bearings concentric with said shaft, and adapted to revolve in a plane parallel with said polishing-wheel, one or more hangers, R, hung in said ring, and so as to swing in a plane parallel with the axis of the polishing-wheel, a shaft, V, in each of said hangers, extended to form studs *d* adjacent to the surface of the polishing-wheel, a wheel, *a*, fixed to the shaft E, and constructed with a flange, *b*, the shafts in the hanger each provided with a pulley, W, to work upon the surface of the said flange *b*, and a cam adapted to impart to said hangers a vibratory movement to take the said studs toward and from the polishing-wheel, and a polishing-surface at right angles to the axis of the said polishing-wheel, and beneath which the said studs pass as they revolve around said polishing-wheel, substantially as described.

7. The combination of the shaft E, polishing-wheel H, fixed thereon, the ring I, concentric with said polishing-wheel and arranged to revolve in a plane parallel therewith, one or more hangers, R, hung in said ring, said hangers adapted to receive a vibratory movement in a plane parallel with the axis of said polishing-wheel, a shaft, V, in each of said hangers, extended to form a stud, *d*, adjacent to the surface of the polishing-wheel, each of said studs adapted to receive a cartridge-shell, a slide, *l*, arranged in each of said hangers and adapted to move in a plane parallel with the shaft V, the one end of said slide adapted to stand below the mouth of the shell on the stud, a fixed cam, *r*, in the path of the said slide as it revolves about the axis of the polishing-wheel, the said cam adapted to impart a movement to said slide parallel with the shaft V, and whereby the shell on the stud may be ejected therefrom, substantially as described.

8. The combination of the vertical shaft E, polishing-wheel H thereon, one or more shafts, V, arranged in supports substantially parallel with the said shaft E and adapted to receive a revolution on their own axis, and a support also adapted to receive a revolution around said shaft and concentric therewith, the said shaft extended to form a stud adjacent to the surface of the polishing-wheel, said stud adapted to receive a cartridge-shell, a reciprocating slide, *t*, with one or more polishing-wheels, 2, thereon, said polishing-wheels 2 having their axis at right angles to the axis of the polishing-wheel H and in the path of the head of the shell carried by said stud, substantially as described.

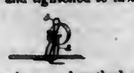
9. The combination of the shaft E, polishing-wheel H, flanged wheel *a b* thereon, the ring I, concentric with said shaft and arranged to revolve in a plane parallel with the plane of the polishing-wheel, hangers R, hung in said ring and so as to revolve therewith around said shaft, each hanger adapted to swing in a plane parallel with the axis of said shaft E, a shaft, V, in each of said hangers, carrying a pulley at its lower end adapted to engage the said flanged wheel, whereby revolution is imparted to said shafts V, each of said shafts extended to form a stud, *d*, adjacent to the periphery of said polishing-wheel, cams *f i*, arranged to impart said swinging movement to said hangers, a reciprocating slide, *t*, above said polishing-wheel and arranged to move in a path parallel with the axis of said polishing-wheel, one or more polishing-wheels, 2, hung upon said slide, their working-surface in a plane at right angles to said shaft E and in the path of the head of the shells carried by said studs, substantially as described.

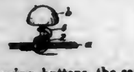
10. The combination of the shaft E, polishing-wheel H, flanged wheel *a b* thereon, the ring I, concentric with said shaft and arranged to revolve in a plane parallel with the plane of the polishing-wheel, hangers R, hung in said ring and so as to revolve therewith around said shaft, each hanger adapted to swing in a plane parallel with the axis of said shaft E, a shaft, V, in each of said hangers, carrying a pulley at its lower end adapted to engage the said flanged wheel, whereby revolution is imparted to said shaft V, each of said shafts extended to form a stud, *d*, adjacent to the periphery of said polishing-wheel, cams *f i*, arranged to impart said swinging movement to said hangers, a slide, *t*, in each of said hangers, adapted to move in a plane substantially parallel with the shaft V, the upper end of each of said slides constructed to embrace the projecting stud end of its shaft V, and also constructed with a lateral projection, *n*, with a fixed cam, *r*, in the path of said projections in their movement around the shaft E, substantially as described.

11. In a machine for polishing cartridge-shells, the combination of a revolving polishing-wheel, one or more shafts arranged substantially parallel with the axis of said polishing-wheel, each of said shafts adapted to revolve on its own axis, one end of each of said shafts standing adjacent to the surface of the said polishing-wheel and adapted to receive and hold a cartridge-shell, and said shafts arranged in supports to permit their said revolution on their own axis, and with mechanism, substantially such as described, to impart to said shafts a movement toward and from said polishing-wheel, substantially as described, and whereby the shells which the said shafts carry will be presented to the surface of the polishing-wheel.

327,291. **METHOD OF ATTACHING BUTTONS.** JOSEPH MATHEWS, Lynn, assignor to the Standard Button Fastening Company, Boston, Mass. Filed Oct. 21, 1884. (No model.)

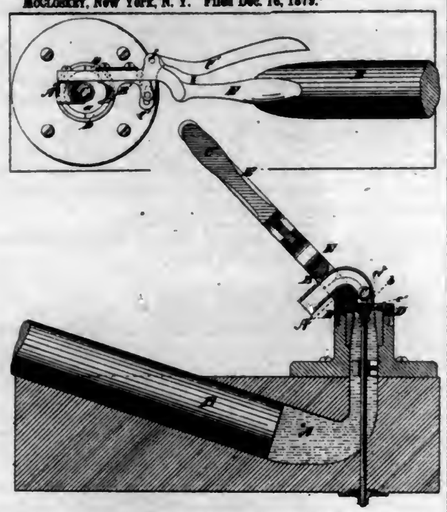
Brief.—The button is held over the material to which it is to be attached, and a loop of thread drawn through the material and up alongside and over the eye of the shank, whereupon a second loop is drawn up through the material, the eye, and the first-named loop, and cast over the button-head, and tightened to fasten.





Claim.—The improved method of securing buttons, the same consisting in drawing a loop of thread through the material and outside of the eye of the button to be attached, then drawing a second loop through the eye of the button and through the first loop, and, finally, passing the second loop over the head of the button and tightening both loops, as set forth.

327,292. **APPARATUS FOR MAKING PLUMBERS' TRAPS.** JOHN MCCLOSKEY, New York, N. Y. Filed Dec. 16, 1879.



Claim.—1. The combination of an annular die for soft metal, a bulb connected to the core thereof, a jaw or shoulder adjacent to said die provided with a rounded arc-shaped face, and a bending-lever provided with a jaw having a rounded arc-shaped face, substantially as described.

2. The combination of the bulb C, or its equivalent, with the annular die *a*, substantially as and for the purpose herein set forth.

3. The combination, with an annular die, *a*, of a gripping or bending device for bending the metal simultaneously with the operation of the die and a shoulder or support for giving definite curvature to the tubular metal as bent by the bending or gripping device, all substantially as and for the purpose herein set forth.

4. The combination of a movable shoulder, A', a gripping or bending device, B', and an annular die, *a*, whereby the operation of forming the different curves of an S or similar trap is caused to proceed simultaneously with the ejectment of the soft metal in tubular form from the die, all substantially as and for the purpose herein set forth.

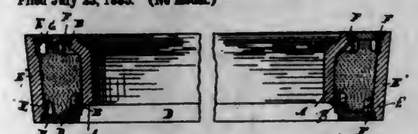
5. The combination of the annular die *a*, the rotatable collar D, having the shoulder A', and a gripping or bending device for bending the tubular material over said shoulder as it issues from said die, all substantially as and for the purpose herein set forth.

6. The combination of the lever E, carrying the sliding gripping-jaw B', the collar D, provided with the curved shoulder A', the annular die *a*, the chamber A, and a plunger, B, all substantially as and for the purpose herein set forth.

7. The combination of an annular die for soft metal, a bulb connected to the core thereof, a jaw or shoulder adjacent to said die provided with a rounded arc-shaped face, and a bending-lever provided with a movable jaw having a rounded arc-shaped face, substantially as described.

8. The combination of an annular die for soft metal, a bulb connected to the core thereof, a jaw or shoulder adjacent to said die provided with a rounded arc-shaped face, a bending-lever provided with a movable jaw having a rounded arc-shaped face, the shank of said movable jaw having an inclined slot, an elbow-lever pivoted to said bending-lever and provided with a pin which engages said slot, substantially as described.

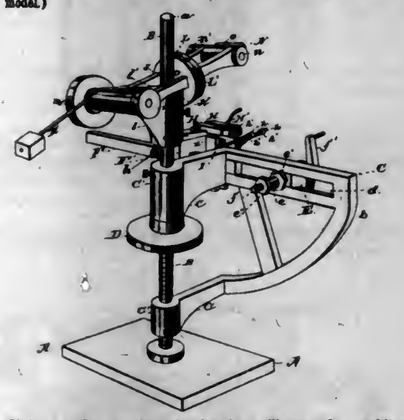
327,293. **CAR-WHEEL CHILL.** GEORGE J. MCCURLEY, Detroit, Mich. Filed July 23, 1885. (No model.)



Claim.—1. A car-wheel chill having an annular recess in rear of the chilling face, such recess being filled with non-conducting material, substantially as and for the purposes described.

2. A car-wheel chill consisting of a chilling face in the form of a ring, an outside rim-plate, top and bottom plate secured to such chill-face and outside rim, whereby an annular recess or chamber is formed, substantially as and for the purposes specified.

327,294. **MACHINE FOR DRESSING MILL-SAWS.** JOHN H. MCFADDEN and PETER HOOBER, Williamsport, Pa. Filed July 30, 1884. (No model.)



Claim.—1. In a machine for dressing mill-saws, the combination of an upright screw-threaded shaft and a swinging and vertically-adjustable crane, substantially as described.

2. In a machine for dressing mill-saws, the combination of an upright screw-threaded shaft, a swinging and vertically-adjustable crane and a horizontally-adjustable arbor for the saw, substantially as described.

3. In a machine for dressing mill-saws, the combination of an upright screw-threaded shaft, a swinging and vertically-adjustable crane, and a horizontally-adjustable side-dresser, substantially as described.

4. In a machine for dressing mill-saws, the combination of the upright screw-threaded shaft, the swinging and vertically-adjustable crane, and the horizontally-adjustable frame F', provided with the jaws and files adjustable toward or away from each other, substantially as described.

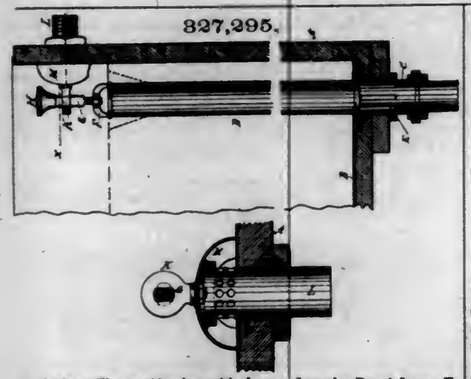
5. In a machine for dressing mill-saws, the combination, with the swinging and vertically-adjustable crane, of the horizontally-adjustable frame F', having the adjustable jaws and files, the bow-rods, and clamping-screws, and the adjustable dust-trough, substantially as described.

6. In the machine described, the combination of the shaft B, the crane C, having the slot *d*, and the journal-box E, carrying the saw-arbor, substantially as described.

7. In the machine described, the combination of the shaft B, the crane C, having the arm F, and the frame F', provided with the jaws H H, provided with files *h' h'*, the dust-trough I, the rods *k k*, and screws *k' k'*, substantially as described.

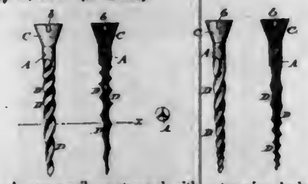
327,295. **OVERFLOW-PIPE FOR BATH-TUBS.** SAMUEL G. MCFARLAND, New York, N. Y., assignor to the Myers Sanitary Depot, same place. Filed June 9, 1885. (No model.)

327,295.



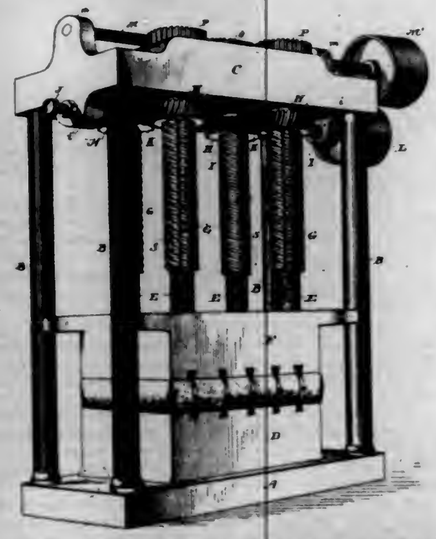
Claim.—The combination, with the overflow-pipe D and fingers E, of the bridge F and rod G at the upper end of the tube D, the bracket K, and the deflector M of a supply-pipe, L, to which deflector M and bracket K are connected, substantially as set forth.

327,296. SCREW-NAIL. WILLIAM T. MCGOUGH, New York, N. Y. Filed July 13, 1885. (No model.)



Claim.—A screw-nail constructed with a tapering body encircled by spiral threads produced thereon with a pitch varying constantly from one end thereof to the other, substantially in the manner and for the purpose herein set forth.

327,297. COTTON-PRESS. GEORGE MCGOVERN, Richmond, Va. Filed June 3, 1885. (No model.)

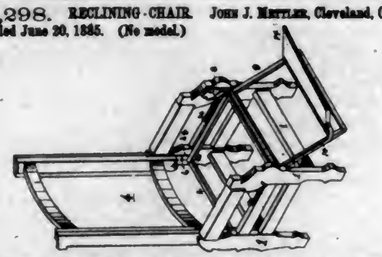


Claim.—1. A compress provided with two or more screws, G, provided with worm-nuts H, in combination with the shaft I and screws K, as and for the purpose set forth.

2. The combination, with the screws G, having worm-nuts H, and gears P, of the shaft M, having gear N, and the gears N' and O, as set forth.

3. The combination, with the screws K and G, provided with the worm-nuts H, of the shaft I, provided with screws K, as set forth.

327,298. RECLINING-CHAIR. JOHN J. METTLER, Cleveland, Ohio. Filed June 20, 1885. (No model.)



Claim.—1. In a reclining and rocking chair, as above described, the combination of the front legs provided with springs 21, having loops on their rear ends, the arm-rests provided with grooves and set-screws, and the back having bearing-pins 20, resting in the loops of said springs, substantially as set forth.

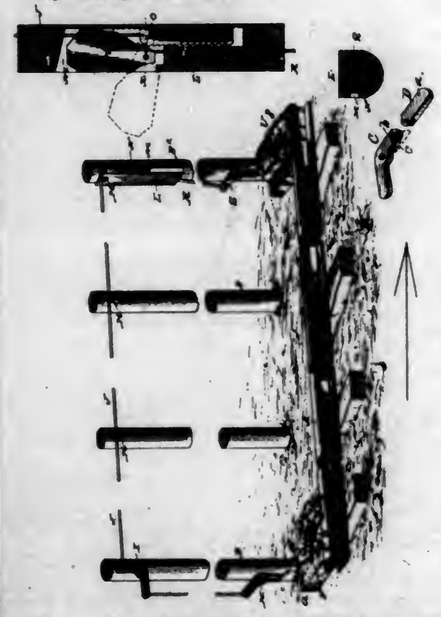
2. In a reclining and rocking chair, as above described, the combination of the front legs having swinging plates 8, provided with holes 13, the leg-rest 9, having curved ends and bars 10, the foot-rest 14, said bars 10 having spring end 11, curved and passing through said spring portion and terminating in a bevel-headed pin, 12, fitting into holes 13 of plates 8, as and for the purposes set forth.

3. In a reclining and rocking chair, as above described, the combination of the front legs having swinging plates 8, provided with notches 15, the side bars of said chair having pivoted levers 23, having sliding catches 16, registering in said notches, substantially as described.

4. In a reclining and rocking chair, as above described, the combination of the adjustable back 4, having side bars, 24, and pins 6, bearing-springs 21, the seat having notched bars 3, and pivoted to the swinging plate 8, and the front legs having the said swinging plates, substantially as shown and described.

5. In a reclining and rocking chair, as above described, the combination of the leg-rest bars 10 with pivoted swinging plate 8, pivoted to the front legs, and seat-bars 3, their front ends pivoted to the said swinging plate 8 and their rear ends resting on the bearing-pins 6 of bars 24, substantially as shown and described.

327,299. RAILWAY-SIGNAL. ALFRED A. MORRILL, Burnt Woods, Oreg. Filed Apr. 10, 1885. (No model.)

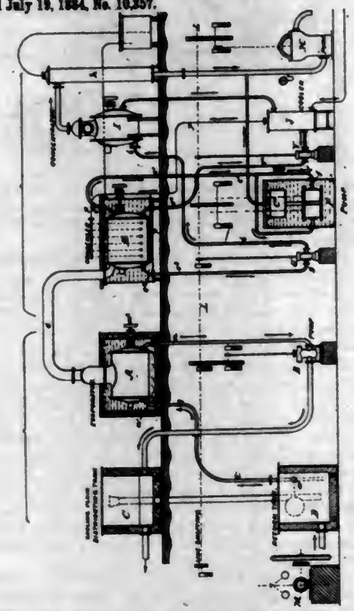


Claim.—1. In a railroad-signal, the combination of a pivoted signal-arm having a tooth in rear of its fulcrum, a weight having a series of ratchets adapted to engage the said tooth and tilt the signal-arm, and suitable operating mechanism, substantially as and for the purpose set forth.

2. In a railroad-signal, the combination of a series of posts, a casing attached to one of the same, a signal-arm pivoted in said casing and

having a tooth in rear of its fulcrum, a vertically-movable weight suspended from a cord and having a series of teeth or ratchets, connecting cords and levers, and guide-pulleys, and the actuating-levers pivoted near one of the track-rails and having arms extending over the same, and stops to limit the back motion of said actuating-levers, all arranged and operating substantially as and for the purpose set forth.

327,300. REFRIGERATING APPARATUS. ADAM NAZAROFF, Paris, France, assignor to Christian Wahl, Chicago, Ill. Filed Sept. 1, 1884. (No model.) Patented in France July 16, 1884, No. 163,329, and in England July 19, 1884, No. 10,357.



Claim.—1. The herein-described refrigerating apparatus, consisting of an evaporator through which the liquid to be cooled is passed, a condensing-vessel in which the refrigerating-fluid is condensed, a pump to circulate the refrigerating-fluid, and a vacuum-chamber connected therewith, substantially as set forth.

2. The refrigerating apparatus consisting of an evaporator for the fluid to be cooled and circulating-pipes therefor, a condenser for the refrigerating-fluid, vacuum-pump, concentrating-vessel I, wet condenser A, and air-pump, all substantially as set forth.

3. The combination of the evaporator, the condenser E, and circulating-pipes with a vacuum-pump, F, inclosed in a water-jacket of hygroscopic liquid, substantially as specified.

4. The condensing, evaporating, or concentrating vessel containing a series of partitions forming compartments communicating alternately above and below with a rotary shaft carrying disks or wheels having openings through them, substantially as set forth.

5. The condensing or concentrating vessel having a rotary shaft with a series of wheels or disks and coils of pipes passing through the vessel below the disks, as and for the purpose described.

327,301. CORN-PLANTER. NELSON NEWMAN, Springfield, Ill., assignor to Emeline Newman, Jasper N. Reece, Loren W. Shepherd, and George A. Sanders, all of same place. Filed Dec. 4, 1884. (No model.)

Claim.—1. In a corn-planter, the combination of three or more ground-wheels which are geared together to rotate in the same time with dropping mechanism that is actuated by said wheels, substantially as and for the purpose specified.

2. In a corn-planter in which are two axles that are geared together and caused to revolve in the same time, the combination therewith of three or more ground-wheels, which are connected with and adapted to rotate said axles, and seed-dropping mechanism that is actuated by the same, substantially as and for the purpose shown.

3. In a corn-planter in which the axles are driven by three or more ground-wheels, in combination therewith an endless chain that connects said axles together and causes them to revolve in the same time, and also actuates the seed-dropping mechanism, substantially as and for the purpose set forth.

4. In a corn-planter, the combination of two axles, which are connected together so as to rotate in the same time and are adapted to actuate the seed-dropping mechanism, with ground-wheels that are journaled

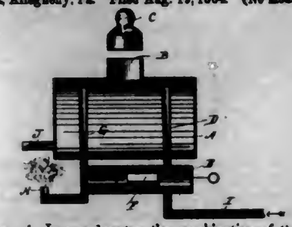
327,301.



upon said axles and may be connected with or disconnected from the same by shiftable clutches, substantially as and for the purpose shown and described.

5. In combination with the vertically-pivoted operating-lever adapted to be vibrated by the continuously-moving knotted chain, the bar R, provided with the spring central portion, *r*, and pivoted between said portion and each end, and having its ends connected with the seed-dropping slides, substantially as and for the purpose set forth.

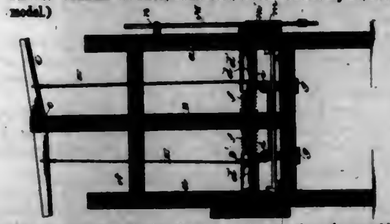
327,302. APPARATUS FOR CARBURETING GAS. WARNER F. H. O'KEEFE, Allegheny, Pa. Filed Aug. 19, 1884. (No model.)



Claim.—1. In a carbureter, the combination of the chamber A, having top opening, the inlet-tube entering said chamber at or near one end, and an exit-tube leading therefrom at or near the opposite end and terminating with a burner, a casing provided with a valve arranged between said tubes beneath the chamber, and a supply-pipe communicating with the casing, all substantially as described.

2. A carbureting-chamber provided near its bottom with a hollow arm or plate, in combination with a gas-supply pipe, an outlet-tube terminating with a burner below the hollow plate, and a casing provided with a valve connecting the supply-pipe with the outlet-tube, as and for the purpose set forth.

327,303. DEVICE FOR OPERATING VERTICAL RECIPROCATING SAWS. CHARLES W. PAGE, Cathlamet, Wash. Filed July 23, 1885. (No model.)

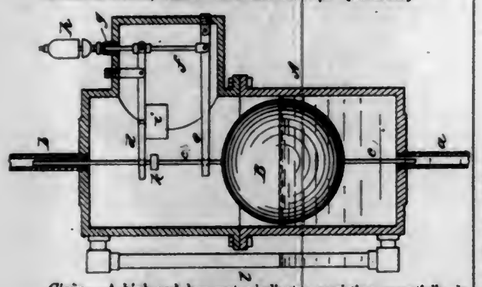


Claim.—1. In a device for converting motion, the combination, with a reciprocating lever, of a shaft having clutches with opposite-in-

clined ratchet-faces, sliding sleeves which are held against the stationary clutches by spiral springs, as shown, and an operating cord, the ends of which are attached to the reciprocating lever and passed around the sliding sleeves of the clutches and under guide-pulleys, substantially as shown, and for the purpose set forth.

2. In a device for converting motion, the pivoted lever C, having attached thereto a cord which passes over sliding clutches mounted on a horizontal shaft, said shaft having secured at its outer end a saw, whereby, when the lever is reciprocated, the shaft will be given a continuous rotary motion, substantially as shown and described.

327,304. HIGH AND LOW WATER INDICATOR. JOHN C. PALMER, Hamilton, Ontario, Canada. Filed Nov. 26, 1884. (No model.)



Claim.—A high and low water indicator consisting, essentially, in the vessel A, having boiler-connections *a b*, the float B, the guide-rod *c*, having a collar, *k*, the lower horizontal lever, *e*, pivoted at one end to the interior of the vessel and extended to the guide-rod *c* below the collar *k*, the upper lever, *d*, pivoted between its ends to the casing to form a long and a short arm, of which the long arm extends to the guide-rod above the collar *k*, an alarm, as at *h*, and the valve-rod *f*, pivoted to the lever *e* between its ends, and pivoted to the short arm of the lever *d*, substantially as set forth.

327,305. STOCK-CAR. JACOB A. PARKER, Terre Haute, Ind. Filed Apr. 25, 1885. (No model.)



Claim.—1. The combination, with a stock-car having longitudinal rod supported therein, of sleeves horizontally adjustable on said rods, and screens of wire cloth or netting depending from the sleeves, the same being adjustable vertically with respect thereto, substantially as described.

2. The combination, with a stock-car having longitudinal rods supported therein, of sleeves horizontally adjustable on said rods, and screens of wire cloth or netting depending from the sleeves between posts that are adjustable vertically on and with respect to said sleeves, substantially as described.

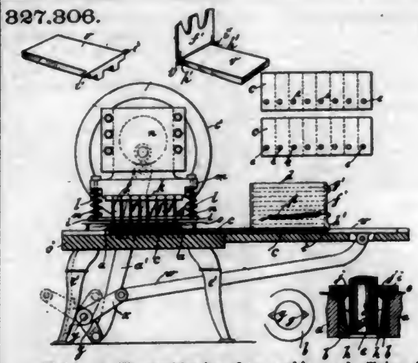
3. The combination, with a stock-car, of screens of wire cloth or netting constructed of a number of folding sections hinged together, and fastening devices therefor, whereby the same may be arranged alongside a single wall of the car in a zigzag manner, and secured at each alternate fold or joint, substantially as shown, and for the purpose set forth.

4. The combination, with a stock-car, of one or more screens of wire cloth or netting extending between the walls thereof, and hook and staples or equivalent fastening for said screens, substantially as described.

5. The combination, with a stock-car, of one or more screens for dividing the same into a number of compartments, said screens having diagonal strengthening rods or braces, and a hook-and-ring fastening, substantially as described.

6. The combination, with a stock-car, of the perforated rods *c*, perforated sleeves *d*, and posts *e*, and fastening-pins, and the screen B, of wire cloth or netting, secured between the posts, substantially as shown and described.

327,306. MACHINE FOR MAKING AND AFFIXING TIN TAGS TO PLUG-TOBACCO. ROBERT H. PEEK, Jersey City, assignor of one-half to Robert Morrell, Summit, N. J. Filed Apr. 17, 1884. (No model.)



Claim.—1. The combination of tag making and affixing devices, consisting of the combined tag-cutting, point-bending, and affixing punches and dies, feed-table, and feed-slide, substantially as herein shown and described.

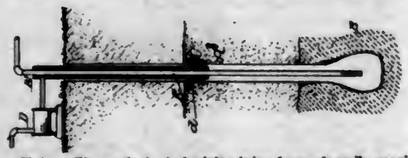
2. The combination of a die, *b*, having grooves *g*, converging from the top downward, point-punches *j*, adapted to punch and bend the points *h* downward in said grooves, and a punch, *f*, adapted to cut the disk portion of the tags and to force said tags down through the die to complete the bending of the points and affix the tags to the tobacco plugs, substantially as described.

3. The combination of the die-plate *a*, having a series of grooved dies, *b*, ways *s*, plate *i*, having a series of point-punches, *j*, and the reciprocating punch-slide *k*, having punches adapted to cut the tag-disks *a* subsequently to the cutting of the points *h*, and to force said tags down through the dies into the tobacco plugs, substantially as described.

4. The combination, with the feed-slide *v* and feeding-way *u*, of a feed-hopper, *d*, adapted to receive one or more piles of tobacco plugs over the feedway, and having a movable end fitted with springs to grip the plugs and hold them above the feedway by compression, and also arranged with relation to the feed-slide for being struck and shifted by it to release the plugs and drop them in advance of said feed-slide, substantially as described.

5. The plug-hopper *d*, having the hinged end *f'*, provided with lugs *h'*, and springs *p'*, for pressing said end against the tobacco plugs, in combination with the feed-slide *v*, having studs *i'*, for releasing the plugs from the pressure of end *f'*, substantially as described.

327,307. METHOD OF MAKING AND RAISING SALT-BRINE FROM DEEP VEINS. JOHN PETERS, Haverstraw, N. Y., assignor to the Hydraulic Salt Forcing Company. Filed June 12, 1883. (No model.)



Claim.—The method of obtaining brine from salt-wells, consisting in forcing water into the well under pressure, permitting it to absorb salt by contact with the salt deposit, and then expelling the same from the well by pressure, substantially as described.

327,308. APPARATUS FOR MAKING AND RAISING SALT-BRINE FROM DEEP SALT-VEINS. JOHN PETERS, Haverstraw, N. Y., assignor to the Hydraulic Salt Forcing Company. Filed Mar. 3, 1885. (No model.)

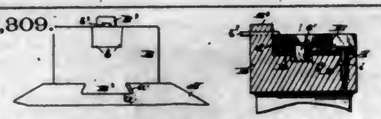


Claim.—1. The combination of the force-pump with the inflow and outflow pipes arranged within the well and with reference to a subterraneous deposit of salt, substantially as described.

2. A tube or casing, C, placed in the well and packed at *d*, in combination with an outflow-pipe, E, through which brine may be forced out of the well, substantially as described.

327,309. FORGING-DIES. HENRY P. PHIPPS, Cleveland, Ohio. Filed July 23, 1885. (No model.)

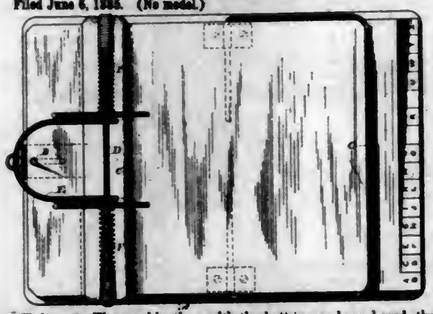
327,309.



Claim.—1. A nest or series of forging-dies arranged the one within another, substantially as set forth.

2. A nest or series of forging-dies consisting, essentially, of a base or foundation die and a series of smaller dies arranged within the foundation-die, substantially as set forth.

327,310. LETTER-FILE. FRANKLIN M. RAND, Turner's Falls, Mass. Filed June 6, 1885. (No model.)



Claim.—1. The combination, with the bottom or base board, the bent rod fixed thereon, clamp C, arranged to move vertically upon said rod, and clutch E, hung upon said rod as an axis, of the bail G, pivoted or hinged to the said base-board, as and for the purpose set forth.

2. The combination, with clamp C, arranged to slide upon the rod D, of clutch E, hinged upon said rod, and links, substantially as set forth, to connect the clutch and clamp, as and for the purpose specified.

327,311. COFFIN-STOOL. HENRY RANDLES, Clark's, Ohio. Filed July 11, 1885. (No model.)



Claim.—The combination, with the axially-bored body portion having the flanged ferrule at its upper end and the hinged kerfed folding legs, of the vertical slide-rod, the pivoted braces connecting the rod and legs, the chair K, the pivoted arms N N', and the pivoted bars R R R R, substantially as specified.

327,312. CHISEL-SHOE. WILLIAM REINHARD, Sr., and CHARLES KALANQUIN, Eau Claire, Wis. Filed June 18, 1885. (No model.)

Claim.—1. In a shoe for attachment to a chisel-blade, in combination with the sole-plate, the loop on the upper side thereof extending across the same, the plate extending through the loop, and means, substantially as described, for forcing and holding the plate down toward the sole-plate, substantially as and for the purpose described.



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2. In a shoe for attachment to a chisel-blade, in combination with the sole-plate inclined upward toward its ends, the ball or loop on its upper side, the plate situated within and passing through the loop, and means, substantially as described, for forcing and holding such plate down toward the sole-plate, substantially as and for the purpose described.

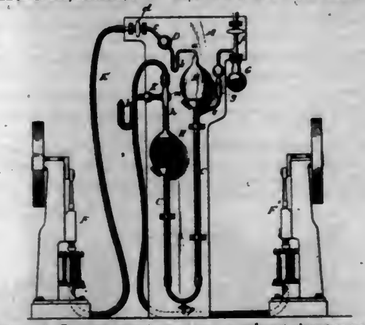
3. In a shoe for attachment to a chisel-blade, in combination with the sole-plate having the forward portion of its lower face inclined upward and forward, the loop on the upper side of the plate, through which a chisel-blade can be passed, the gage-plate situated in and passing through the loop, the gage-arm on the forward end of the plate, and means for forcing and holding the plate down toward the top of the sole-plate, substantially as and for the purpose described.

4. In combination with the sole-plate inclined upward toward each end of the plate, and provided with the loop extending across its upper side, through which a chisel-blade can be passed, the gage-plate situated in and passing through the loop adapted to engage the upper side of the chisel-blade, and provided at its forward end with a gage-arm having its lower side or edge so situated as to stand in front of and above the edge of the chisel-blade passed through the loop, substantially as and for the purpose described.

5. In combination with the sole-plate and the transverse loop on the upper side thereof, having the lower portions of its legs rabbeted on their inner sides to allow of the passage of a chisel-blade resting upon the sole-plate, the gage-plate extending through the upper portion of the loop, and provided with notches or recesses in its sides to engage the upper portions of the legs of the loop, the gage-arm on the gage-plate curved upward, forward, and downward from the forward end of the plate, the set-screw tapped through the forward portion of the plate, and the set-screw tapped through the top of the loop, substantially as and for the purpose described.

6. In combination with the sole-plate having the forward and rearwardly inclined surfaces on its lower side, and the transverse loop on its upper side, with its legs rabbeted on their inner sides at or near their lower ends, the chisel-blade passing through the lower portion of the loop and resting upon the top of the sole-plate with the bevel side of its edge upward, the gage-plate notched at its sides to engage the sides of the loop through which it passes, means, substantially as described, for forcing and holding such plate down upon the chisel-blade, and the gage-arm extending from the front end of the gage-plate upward, forward, and downward, provided at its forward end with an arm extending parallel with but above and in front of the edge of the blade, substantially as and for the purpose described.

327,313. MERCURIAL AIR-PUMP. ALBERT L. REINHANN and CHARLES G. OTT, Newark, N. J. Filed Nov. 9, 1883. (No model.)



Claim.—1. In a mercurial air-pump, an exhaust-chamber provided with means for the escape of air therefrom, in combination with a mercury-reservoir having its lower end connected to the lower end of the exhaust-chamber by a tube or pipe, and a mechanical exhaust device, the mercury-reservoir being provided at or near its upper end by valved

connections with the mechanical exhaust device and with the air, whereby the atmospheric pressure in the reservoir may be varied to effect the movement of the mercury to and from the exhaust-chamber, substantially as set forth.

2. In a mercurial air-pump, the exhaust-chamber suitably connected to the mechanical exhaust device, in combination with the mercury-reservoir having its lower end connected to the lower end of the exhaust-chamber, and the mechanical exhaust device, the mercurial reservoir being provided with valved connections with the mechanical exhaust device and with the air, whereby in the proper manipulation of the valve controlling such connections the atmospheric pressure in the reservoir may be varied to effect the movement of the mercury to and from the exhaust-chamber, substantially as set forth.

3. The combination, with the vacuum-chamber B and mercury-reservoir H, directly connected by a downwardly-bent tube, of the tube A, leading from the upper part of the reservoir to a mechanical exhaust-pump, the branch K, having its outer end open to the air, and the two-way cock arranged to connect the reservoir alternately with the mechanical exhaust-pump and the external air, substantially as and for the purpose set forth.

4. The combination, with the vacuum-chamber B, trap *b*, and tubes *a c*, of the reservoir H, tube C, tube A, branch K, mechanical means for exhausting connected with said tubes C and A, and suitable valves or cocks arranged in the several tubes, as described, for the purpose of opening and closing communication through the same.

327,314. DEVICE FOR TAPPING MAINS. GEORGE RICHARDSON, Bridgeport, Conn. Filed May 11, 1885. (No model.)



Claim.—1. In a device for tapping mains and the like under pressure, the hollow threading-tap, in combination with a drill-shank passing through said tap, and having a detachable cutter-point, as specified.

2. In a device for tapping mains and the like under pressure, the hollow threading-tap secured to a stop-cock, in combination with a drill-shank passed through said cock and tap, and having a detachable cutter-point.

3. In a device for tapping mains under pressure, the stop-cock having a threading-tap secured to one end and an extension to the other, said extension being provided with a packing-cap, in combination with the drill-shank and its detachable cutter-point, substantially as shown and specified.

327,315. DRILL. GEORGE RICHARDSON, Bridgeport, Conn. Filed May 11, 1885. (No model.)



Claim.—1. In a drill, the hollow shank having in the interior thereof a rod threaded at the lower end and provided with a wrench-head at the other, in combination with the cutter-point having a threaded opening and adapted to be held in position within a recess in the end of the shank by engagement with the rod, whereby a ready detachment of said point may be effected, substantially as set forth.

2. The hollow drill-shank made in two parts and containing a packing-ring, in combination with the cutter-point adapted to be held within the extremity of the shank by the threaded rod, whose upper end is provided with a wrench-head, as and for the purpose set forth.

327,316. WAGON. CHARLES ROBERTS, Wellsville, Mo. Filed June 16, 1885. (No model.)

Claim.—1. The combination, with the wagon-body, of the pivoted seat having adjusting-bars and a clutch, substantially as shown and described.

2. In a wagon, the combination, with the wagon-body and the pivoted seat having adjusting-bars and a clutch, of the tail-board, for forming, in conjunction with said seat, a feed-box, substantially as shown and described.

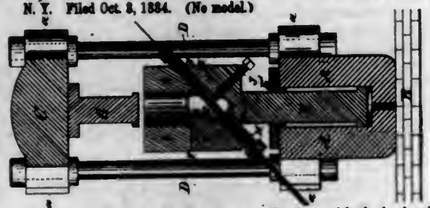




327,316.



327,317. HYDRAULIC LEAD-PRESS. JOHN ROBERTSON, Brooklyn, N. Y. Filed Oct. 3, 1884. (No model.)



Claim.—1. In a lead-press, the combination, with the lead-cylinder, of a tubular screw-threaded die and core-rod fitted to work in screw-threaded apertures made, respectively, diagonally through the body of said cylinder into its interior from opposite sides in line with each other and inclined at an angle to the axis of said cylinder, as and for the purpose described.

2. In a hydraulic lead-press, the combination, with the lead-cylinder, of the diagonally-arranged tubular screw-threaded die and core-rod fitted to work in corresponding screw-threaded apertures through the body of said cylinders, and the set-screw J, fitted to work in an aperture made through the body of the cylinder into its interior and to impinge against the side of the inner end of said core-bar, as and for the purpose described.

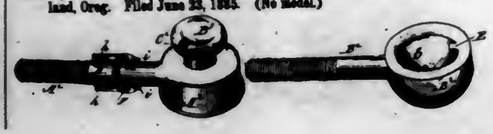
3. In a lead-press, the combination, with the lead-cylinder provided with the chamber *e*, having the form described, of a die and core-bar located in and passing diagonally through said cylinder from side to side, with the line of their axes crossing at other than right angles the axis of said cylinder, as and for the purpose described.

327,318. WINDOW-AWNING. CHARLES M. ROHR, Baltimore, Md. Filed June 3, 1885. (No model.)



Claim.—In combination with the frame formed of the bars *a*, *b*, and *c*, bent and pivoted, substantially as described, the cover A, attached to the said bars, as shown, and cords to elevate the said bars and admit of the upper section of the cover being opened or closed, substantially as specified.

327,319. BALL-AND-SOCKET HINGE. ALBERT G. ROCKFELLOW, Ashland, Oreg. Filed June 23, 1885. (No model.)

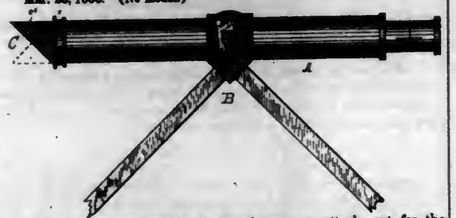


Claim.—1. In a screw-shank hinge, the combination, with the screw-shank and its flanges *i i*, of the sleeve D with its flanges F and A A, substantially as and for the purpose set forth.

2. In a screw-shank hinge with ball-and-socket joint, the combination, with the screw-shank and its flanges *i i* and the sleeve D with its flanges F and A A, of the ball B^3 with its groove C^3 and the socket S with its lip E, substantially as and for the purpose set forth.

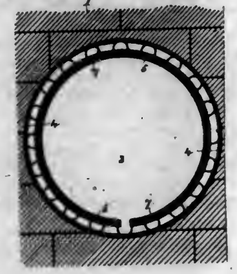
3. A ball-and-socket hinge consisting of a supporting part having a ball with an overhanging edge and notch C^3 and a supported section having a socket with a projecting lip, E, adapted to pass through the notch C^3 and pass beneath the overhanging edge of the ball to form a protected ball-and-socket lock-hinge, as described.

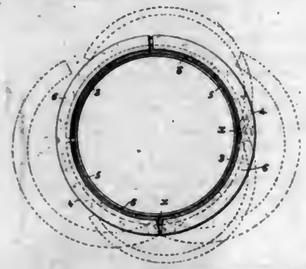
327,320. ATTACHMENT FOR ENGINEERS' TRANSITS FOR VERTICAL SIGHTING. GEORGE N. SABBUTLER, Washington, D. C. Filed Mar. 28, 1885. (No model.)



Claim.—As a new article of manufacture, an attachment for the object end of an engineer's transit, consisting of an annulus, a collar or stop, a box having an opening, and a reflecting medium, placed at an angle of forty-five degrees in said opening, substantially as described.

327,321. STOVE-PIPE THIMBLE OR SLEEVE. JOHN SCHEUERMANN, Cleveland, Ohio. Filed Dec. 10, 1884. (No model.)





Claim.—1. A stove-pipe thimble consisting of two coaxial rings and a corrugated plate bent to circular form and retained by suitable means between said rings, substantially as set forth.

2. In combination with two coaxial rings having upturned flanges, a bent corrugated plate occupying the annular chamber between said rings, substantially as set forth.

3. In combination with two coaxial rings having overlapping flanges at one end, a bent corrugated plate retained between said rings, substantially as set forth.

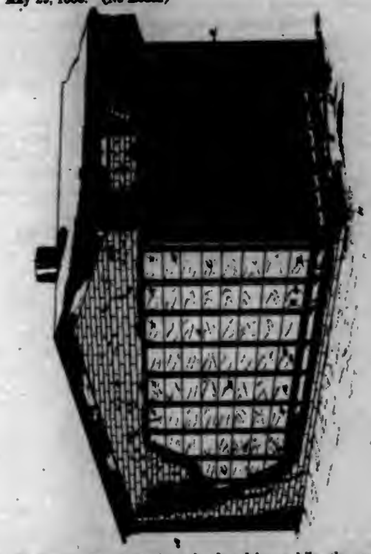
4. In combination with two coaxial rings, a corrugated bent plate retained between the same, said rings and plate being expansible, as described.

5. The combination of a stove-pipe, a bent corrugated plate surrounding the stove-pipe, and an expansible ring surrounding the plate, substantially as set forth.

6. The combination of a stove-pipe, a bent corrugated plate surrounding the stove-pipe, and a ring surrounding the plate and formed with a tapering flange, 9, to guide the thimble into the space surrounding the stove-pipe, substantially as set forth.

7. In combination with a stove-pipe, a corrugated plate bent to form a ring, as described, and a pair of coaxial rings, between which said corrugated ring is placed, having notched flanges, for the purpose set forth.

327,322. LUMBER-DRIER. AUGUST M. SCHILLING, Chicago, Ill. Filed May 29, 1885. (No model.)



Claim.—1. In a rack for a lumber drier or kiln, the combination of the upper and lower plates provided with corresponding series of holes and the uprights having their opposite ends inserted and held in the holes in the plates, substantially as and for the purpose described.

2. The lumber-holding rack for a drier or kiln, consisting of the upper and lower plates and the tubular uprights having their ends inserted and held in holes in the plates, substantially as and for the purpose described.

3. In combination with the corresponding upper and lower plates, each provided with a series of holes at a distance apart substantially equal to one thickness of lumber to be treated and with another series at a distance apart equal to that of another thickness of lumber, the round tubular uprights adapted to have their ends inserted and held in the holes of either of the opposite series of holes in the upper and lower plates, substantially as and for the purpose described.

4. In a lumber drier or kiln, in combination with the longitudinal supporting-timbers, the steam or other heating pipes between the same, the transverse plates supported upon these timbers, the transverse plates supported upon these plates and provided with longitudinal series of holes, the round tubular uprights having their lower ends inserted in the holes in such plates, and the upper transverse plates having longitudinal series of holes receiving and holding the upper ends of the tubular uprights, substantially as and for the purpose described.

5. In combination with the drying-room, the longitudinal parallel timbers upon the floor thereof, the steam-pipes extending longitudinally back and forth between them, the transverse iron plates supported upon and extending across these timbers, the transverse iron plates above these plates provided with two or more series of holes, in which the holes of different series are different distances apart to correspond with the different thicknesses of timber to be dried, the top transverse plates having series of holes corresponding with those in the lower plates, and the round iron tubes having their ends inserted and held in corresponding holes in the upper and lower plates, substantially as and for the purpose described.

327,323. REVOLVING BRUSH. JULIUS SOHMIDT, New York, N. Y. Filed Aug. 25, 1884. (No model.)



Claim.—1. A revolving brush provided with a slide operated by handles, said slide being connected by a train of gear-wheels within the

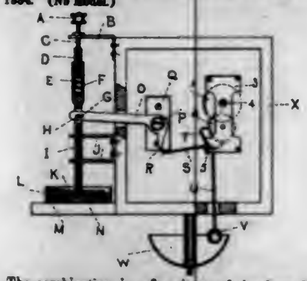
body of the brush to the said body of the said brush, whereby a continuous rotary motion is imparted to the brush by the operation of the slide, substantially as described.

2. A shaft carrying a revolving brush, provided with hand-rests, gearing within the revolving frame or cylinder of the brush, and a slide supported on said shaft operating said gearing and having finger-pieces, combined and operating substantially as and for the purpose set forth.

3. In a revolving brush, a shaft supporting the revolving frame or cylinder of the same, gearing, and operating-slide, in combination with hand-rests and finger-pieces connected, respectively, with said shaft and slide and located at the sides of the brush, substantially as and for the purpose set forth.

4. In a revolving brush, a supporting-shaft, gearing within the revolving frame of the brush mounted on said shaft, a slide supported on said shaft operating the gearing, and a gear-wheel engaging with said gearing and connected with said revolving frame, the shaft and slide having suitable handles for sustaining the brush and operating the same, all substantially as stated.

327,324. THERMOSTAT. WILLIAM H. SCHUH, Wayland, Mich. Filed Mar. 11, 1884. (No model.)



Claim.—The combination, in a fire-alarm, of the drum M, holding the elastic fluid N, the standard I, the spiral spring E in the socket F, the slide D, and the thumb-screw A C, with the lever O, the hammer S U V, and the bell W, substantially as shown and described.

327,325. COVER FOR MILK-CANS. JOEL A. SEAL, Philadelphia, Pa. Filed Oct. 22, 1884. (No model.)



Claim.—1. An imperforate milk-can cover provided with a pintle, A, in combination with a handle having the hand-guard *c*, formed to engage the pintle and rotate thereon independent of the rotation of the cam while the latter is being rolled on the ground, substantially as set forth.

2. The combination of a milk-can, an imperforate cover, to the top of which is rigidly secured a pedestal having a rigid pintle, and a handle adapted to rotate freely on the pintle independent of the rotation of the can as the latter is rolled along on the ground, substantially as set forth.

3. The combination of a milk-can with an imperforate cover, to the center of the top of which, in direct line with the center of the bottom of the can, is attached a pintle, and a revolving handle to turn on said pintle and rotate freely thereon independent of the rotation of the can while the latter is being rolled along the ground, substantially as set forth.

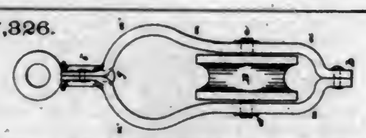
4. The combination of an imperforate cover and a pintle having a head or enlargement at its outer end and rigidly secured to the center of the top of said cover, with a handle swiveled on said pintle, and constructed to fit over and entirely conceal said pintle and head or enlargement, substantially as described, and for the purposes set forth.

5. A milk-can cover having attached thereto a pintle which is provided with a concave pedestal and a pivotal handle.

6. As an article of manufacture, a handle for cans, comprising a pintle, A, having an imperforate pedestal, C, adapted to be secured to a can-cover, and a pivotal hand-grasp, B, provided with a hand-guard between the portion to be grasped by the hand and the pedestal, as and for the purposes set forth.

7. As an article of manufacture, a pedestal, C, having a concave bottom, and a pivotal handle, B, provided with the enlargement *e* at its base, substantially as described.

327,326. CLOTHES-LINE PULLEY. SIMON SEE, Newark, N. J. Filed Mar. 5, 1885. (No model.)

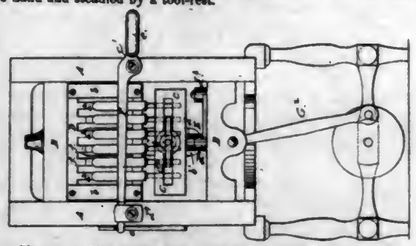


Claim.—1. In a pulley, the sections *a a*, provided with recess *b*, adapted to hold the shank of the spindle-eye, said sections being fastened together, substantially as and for the purposes set forth.

2. In combination, the sections *a a*, provided with bearings *b b'* at the top and bottom thereof, and intermediate bearings, *d'*, for the sheave, and having recesses *d*, adapted to hold the shank of the spindle-eye, said bearings *b'* being fastened together, and said spindle-eye and the sheave B loosely journaled in said bearings *d'*, substantially as set forth.

327,327. MACHINE FOR BURNISHING THE BLADES OF TABLE-KNIVES. EDWARD A. SEVERANCE, Turner's Falls, Mass. Filed Mar. 3, 1885. (No model.)

Brief.—The handles of the knives are held in a reversible and removable clamp carried in a reciprocating frame. The blades rest against cushions on the bars of the frame, and are burnished by a tool held by the hand and steadied by a tool-rest.



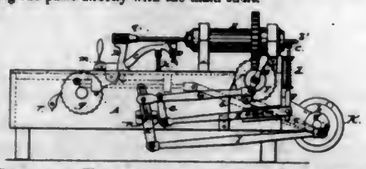
Claim.—1. The combination, with the clamping device C, composed of parts b^2 b^3, and having the bolt C' and thumb-pieces C^2 C^3, of the reciprocating frame and inclines *a a'*, as and for the purpose set forth.

2. The combination, with the movable frame B, formed with bars provided with cushion-bearings, of the clamping device C and the pivoted arm E, as and for the purpose specified.

3. The combination, with the stationary frame A and rest F, provided with a bearing-arm and a weighted arm, of the reciprocating frame B and devices, substantially as described, for clamping and holding the articles to be burnished, substantially as and for the purpose set forth.

327,328. MACHINE FOR BURNISHING THE HANDLES OF PLATED KNIVES. EDWARD A. SEVERANCE, Turner's Falls, Mass. Filed Apr. 15, 1885. (No model.)

Brief.—Cylinders are rotated by a worm turned by a ratchet and pawl operated from the main shaft by a system of levers. In these cylinders are clotched the blades of the knives, the ends of the handles being held by sockets on posts moved to position by pinions and racks. To burnish handles oval in cross-section, a model carried in the rear of one of the cylinders operates a lever which regulates the throw of the pawl by which the worm is turned, so that when the broad surface of the handle is being burnished the cylinders turn slowly, and turn rapidly when the narrow part is operated on. For round handles, the model and the system of levers is dispensed with and a pitman connects the bar carrying the pawl directly with the main shaft.



Claim.—1. The combination, with the cylinders provided with means, substantially as described, for holding the knives, of the sockets and posts supporting the handles, as and for the purpose set forth.

2. The combination, with the cylinders provided with means for holding the knives, and gearing by which they may be moved, substantially as described, of the ratchet mechanism, the arm G, rocking arm K, and pitman I, all arranged as and for the purpose specified.

3. The combination, with the knife-handle form *b'*, of the yielding bent arm P, the lever H, the pitman I, the rocking arm K, the link *e*, and short arm G, and the ratchet-bar N, for giving the desired change of motion, as and for the purpose set forth.

4. The combination of the cylinder, the carriage carrying the arm with the burnishing-tools, the posts and sockets for holding the knives,

and the devices for producing a change of motion, all constructed and operating substantially as described.

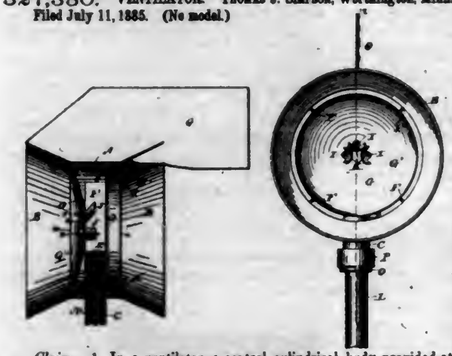
5. The combination, with the knife-holding cylinder and gearing composed of screw and gear-wheels with which it engages, the ratchet-wheel F, and pawl and detent spring, of the alternate pitman-connection X and the crank-wheel W, all arranged substantially as and for the purpose set forth.

327,329. SHIRT OR SHIRT-WAIST. JULIUS SIMON, New York, N. Y. Filed Mar. 19, 1884. (No model.)



Claim.—In a shirt or shirt-waist, the combination of the front portions, A A, provided with eyelet-holes *b*, the collar C, permanently attached to said front portions, lacing-cord D, separately passed over and over through the eyelet-holes in such front portions without connecting them, and devices, as hooks and eyes *c c'*, for connecting said front portions together, the lacing-cord being always visible at the front of the garment, whether the front portions are unattached or connected, substantially as herein described.

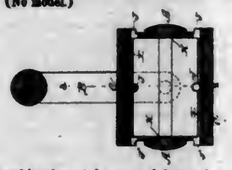
327,330. VENTILATOR. THOMAS J. SIMPSON, Worthington, Minn. Filed July 11, 1885. (No model.)



Claim.—1. In a ventilator, a central cylindrical body provided at its ends with flaring or funnel-shaped flanges and mounted upon a vertical pipe, the upper end of which extends into the said central body, in combination with the disks or heads, the edges of which are provided with outwardly-projecting annular or peripheral flanges, flaring or otherwise, substantially as and for the purpose herein set forth.

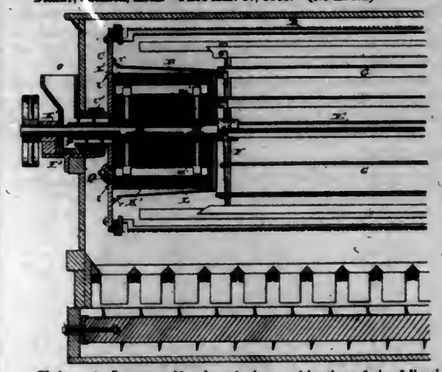
2. In a ventilator, the combination of the central cylindrical body provided at its ends with flaring or funnel-shaped flanges, the vertical supporting and connecting pipe extending upwardly into the said central body, a dishing or concave front disk or head having a flaring annular flange and provided near its center with perforations having inwardly-extending tubes and outwardly-extending flanges, an annularly-flanged rear disk or head, a suitable vane, and a vertical suitably-arranged pivoting-rod, all combined and operating substantially as and for the purpose herein shown and specified.

327,331. SAD-IRON. WILLIAM C. SMALSTIG, Springfield, Mo. Filed Nov. 28, 1884. (No model.)



Claim.—The combination of the central frame A, provided with the flanges or shoulders K, the removable faces applied to opposite sides of the frame, the handle, the lamp, and the pivoted lever E, substantially as described.

327,332. CENTRIFUGAL REEL. GEORGE T. SMITH and WILLIAM H. DICKEY, Jackson, Mich. Filed Mar. 17, 1883. (No model.)

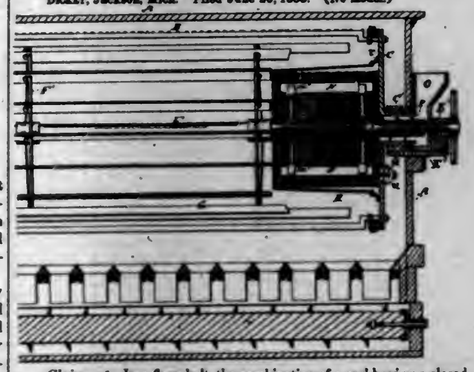


Claim.—1. In a centrifugal reel, the combination of the following elements, namely: a substantially-cylindrical bolting-cloth, a series of revolving beaters within the bolting-cloth, a reticulated cylinder attached to the reel-head and concentric to the reel, brushes revolving within the reticulated cylinder, and a funnel-shaped casing having its smaller end closed and its larger end connected with the reel-head and at a short distance therefrom, substantially as set forth.

2. In a centrifugal reel, the combination of the following elements, namely: a substantially-cylindrical bolting-cloth, a series of beaters arranged to rotate within the bolting-cloth, a reticulated cylinder attached to the reel-head concentric to the bolting-cloth and constructed with meshes of different degrees of fineness, and a brush arranged to rotate within the reticulated cylinder, and in contact with its inner surface, substantially as set forth.

3. In a centrifugal reel, the combination of the following elements, namely: a substantially-cylindrical bolting-cloth, a disintegrator arranged within the reel and concentric thereto, and a casing surrounding the disintegrator and adapted to deliver material in close proximity to the reel-head, substantially as set forth.

327,333. CENTRIFUGAL REEL. GEORGE T. SMITH and WILLIAM H. DICKEY, Jackson, Mich. Filed June 20, 1883. (No model.)



Claim.—1. In a flour-bolt, the combination of a reel having a closed head provided with an opening to receive the material, a feeding device communicating with said opening in the reel-head, a sifter into which the material is discharged through the opening in the reel-head, and a shell interposed between the reel and the sifter, and adapted to collect material which passes through the sifter and deliver the same to the bolting-cloth in close proximity to the reel-head, which is provided with the feed-opening, substantially as set forth.

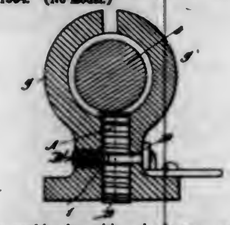
2. In a flour-bolt, the combination of a reel having a closed head provided with an opening to receive the material, a feeding device communicating with said opening in the reel-head, a sifter into which the material is discharged through the opening in the reel-head, and a funnel-shaped shell interposed between the reel and the sifter, and having its larger end toward the reel-head, which is provided with the feed-opening, substantially as set forth.

3. In a flour-bolt, the combination, with the reel-head at the receiving end of the bolt, of a reticulated sifter adapted to receive the material to be bolted, a shell of greater diameter than the sifter and arranged concentric thereto, and a head closing the inner end of the sifter, and also of the concentric shell, substantially as set forth.

4. In a flour-bolt, the combination, with the reel-head, of a reticulated sifter adapted to receive the material to be bolted, a shell of greater diameter than the sifter and concentric thereto, and a series of brackets connecting the inner edge of the shell with the reel-head, the said edge of the shell being arranged at a short distance from the reel-head, substantially as set forth.

5. In a flour-bolt, the combination, with the reel-head at the receiving end of the bolt, of a reticulated sifter adapted to receive the material to be bolted, and a shell surrounding the cylinder, and connected at one end to the reel-head and at its opposite end to the sifter, substantially as set forth.

327,334. SCREW-CUTTING LATHE. JOHN C. SMITH, Cleveland, Ohio. Filed Nov. 22, 1884. (No model.)

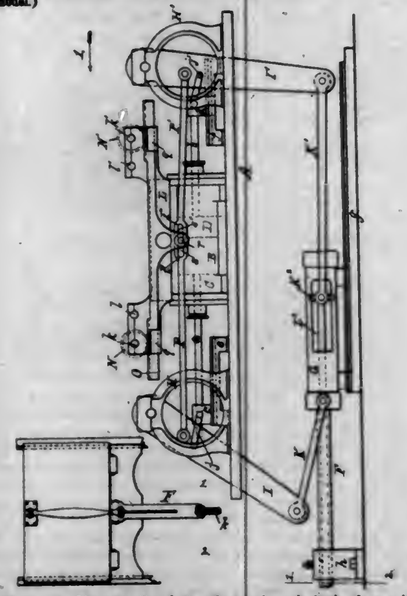


Claim.—1. In combination with a lead-screw and a lock-nut, as *g g'*, a worm-wheel housed and journaled within the lock-nut and the means for allowing the engagement of the lock-nut and lead-screw only at different designated predetermined and variable points, as set forth.

2. In a screw-cutting lathe, the combination, with a lead-screw and a lock-nut, as *g g'*, of the worm-wheel having different grades of recesses, substantially as described, and an engaging-pin or other device operated from one half-nut to engage the worm-wheel only when said pin registers with the proper recess, as set forth.

3. In a screw-cutting lathe, the combination, with the lead-screw and lock-nut *g g'*, of the worm-wheel A, journaled in the half-nut *g* and having recesses 1 2 3, as described, and the pin D, operated from the half-nut *g'*, as and for the purposes set forth.

327,335. STEAM-ENGINE FOR RECIPROCATING PROPELLERS. RICHARD SMITH, Sherbrooke, Quebec, Canada, and GEORGE H. COLLINS, Boston, Mass.; said Collins assignor to said Smith. Filed Dec. 6, 1884. (No model.)



Claim.—1. The propeller-shaft and secondary shaft, the former being connected to the hinge of a folding blade or blades, and the secondary shaft being connected to the outer part of said blade or blades, for opening and closing the same, in combination with a steam-cylinder, two pistons moving therein, and devices whereby the rods of said pistons are respectively connected to said propeller-shaft and to said secondary shaft, substantially as and for the purpose set forth.

2. The combination of a steam-cylinder, two pistons reciprocating within the same, the propeller-shaft *F*, and the secondary shaft *k*, operated, respectively, by said pistons, and valves and their actuating mechanism for controlling the admission and exit of steam, whereby steam is first admitted between the two pistons and retained there to keep the two pistons apart, and while it is thus retained additional steam is admitted behind both pistons to drive them bodily along together, and toward the end of this stroke the steam is exhausted from between the two pistons to allow them to close together before the return-stroke, substantially as set forth.

3. The combination of a main piston and a secondary piston, operating as described, with a cylinder which contains them, and is provided with ports, arranged as described, valves for admitting steam through said ports and allowing its exit, a semi-rotary shaft carrying two sets of cams for operating on these valves, and levers, pinions, and a rack for actuating said shaft, said rack being capable of a thrust or spring due to the movement of the pistons, and one set of cams being used when the vessel is to be driven ahead and the other when it is to be backed, substantially as set forth.

4. In combination with two pistons and the cylinder in which they work, devices for admitting steam between said pistons to move one of them before said pistons make their active stroke together, substantially as set forth.

5. In combination with two pistons and a cylinder in which they both travel, valves and ports whereby, on completion of the active stroke, live steam is admitted between the head of the cylinder and the adjacent piston, and the two pistons are driven back thereby in close proximity to one another, making the return-stroke, substantially as set forth.

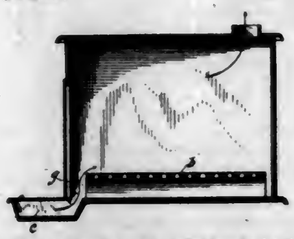
6. The combination of a steam-cylinder and two pistons operating therein, with a sliding tubular cross-head, a yoke operating in said cross-head, connecting devices between the pistons and said cross-head and yoke, respectively, and the propeller-shaft and secondary shaft operating substantially as set forth.

7. The combination of the cams and levers for operating the valves, substantially as stated, with the main steam-cylinder, having ports arranged as described, the pistons reciprocating in said cylinder, the tubular cross-head, the sliding yoke and connecting devices, and the rods F *k*, substantially as set forth.

8. Two pistons and a single cylinder within which they co-operate, in combination with exhaust and supply valves governing the corresponding ports of said cylinder, a series of cams mounted on a semi-rotary shaft, a series of levers mounted on a similar shaft, a rack and pinions whereby said shafts are oscillated, and connecting devices whereby said rack receives the necessary shrugs or thrusts from said pistons, substantially as set forth.

9. A steam-cylinder having the live-steam ports a^3, a^3, a^4, and a^5, and the exhaust-ports b^3 b^3, in combination with two pistons operating in said cylinder, said ports being arranged with respect to said piston substantially as set forth.

327,336. STOVE. WILLIAM C. SMITH, Warsaw, Mo. Filed Dec. 27, 1884. (No model.)

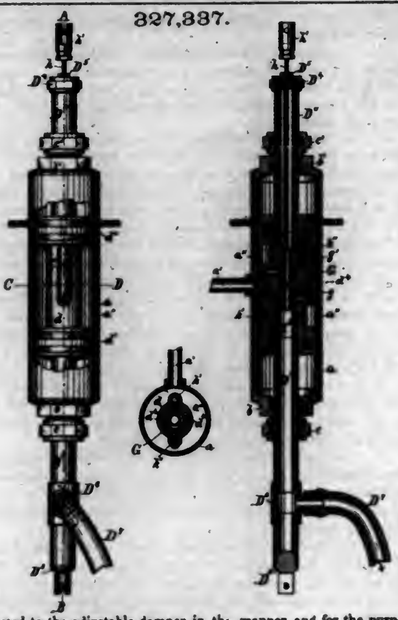


Claim.—The combination, with a wood-burning heating-stove having a hearth situated lower than its bottom provided with a draft-opening immediately in the rear of and beneath the front wall of the fire-chamber, of a perforated ash-sifting plate located in the bottom thereof, the same being of a length less than that of the stove, whereby the space *g* is formed, and also having supporting legs or feet whereby a space is formed between the plate and the bottom of the stove, substantially as described.

327,337. AUTOMATIC DAMPER-REGULATOR. JOHN E. SPENCER, Salem, Mass., assignor of one-half to Smith & Smart, same place. Filed July 25, 1885. (No model.)

Claim.—1. In an automatic damper-regulator, a pressure device and an adjustable damper, combined with an intermediate cylinder arranged between them and having its valve connected to the pressure device and its piston to the damper or its connections, as and for the purpose set forth.

2. In an automatic damper-regulator, the stationary cylinder *a*, having hollow piston *d* and piston-heads *d' d''*, the balanced valve G *g g'*, the ports *k' k''*, the hollow piston-rod D'', and hollow piston-rod D',



connected to the adjustable damper in the manner and for the purpose as herein set forth and described.

327,338. SCREW-COLLAR FOR GLASS VESSELS. JAMES SPRUCE and JAMES TOMER, Waterbury, Conn., assignors to the Scovill Manufacturing Company, same place. Filed July 1, 1885. (No model.)



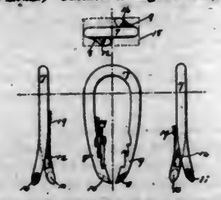
Claim.—1. A screw-collar for glass vessels, consisting of the metal ring screw-threaded upon its outside, and constructed with non-elastic inwardly-projecting lugs *e* upon its edge, adapted to enter corresponding cavities in the neck of the vessel, substantially as described.

2. A screw-collar for glass vessels, consisting of a divided ring screw-threaded upon its outer surface, and constructed with inwardly-projecting lugs *e*, adapted to engage corresponding cavities in the neck of the vessel, substantially as described.

3. A screw-collar for glass vessels, consisting of a divided ring screw-threaded upon its outside, the two ends constructed, the one with a recess and the other with a corresponding projection, to interlock the one with the other, and also constructed with inwardly-projecting lugs *e*, adapted to engage corresponding recesses in the neck of the vessel, substantially as described.

4. The herein-described lubricator, consisting of a vessel adapted to receive and contain oil, and constructed with a neck having cavities *f* in its outer surface, combined with an externally-screw-threaded collar constructed with inelastic inwardly-projecting lugs set over said neck, and the said lugs fitting into the said cavities, and a correspondingly screw-threaded socket D, adapted to support said vessel, and the spindle E, extending from said vessel through said socket, substantially as described.

327,339. STAPLE. ROLLIN M. SQUIRE, New York, N. Y. Filed Nov. 15, 1884. (No model.) Patented in England Mar. 25, 1885, No. 3,852.



Claim.—1. As a new article of manufacture, a staple having the outside of the extension of each prong beveled to an edge or point, the direction of the said bevel being downward and inward and also at an angle to the center line, D, of the prongs, in combination with spaces or barbs formed in the main portions of the prongs, substantially as specified.

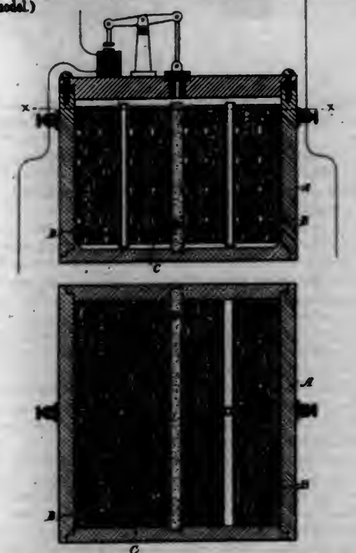
2. As a new article of manufacture, a staple having the outside of the extension of each prong beveled to an edge or point, the direction of the said bevel being downward and inward and also at an angle to the center line, D, of the prongs, in combination with spaces or barbs formed in the main portions of the prongs when the bottom of the said spaces are formed to the arc of a circle, substantially as specified.

327,340. SPRING HARROW-TOOTH. LAFAYETTE J. STANTON, Sand Lake, assignor to Nehemiah Chase, Frederick A. Tayler, Frank J. Henry, and Marshall B. Shaw, Kalamazoo, Mich. Filed Dec. 10, 1884. (No model.)



Claim.—The combination, in a spring-tooth for harrows, of the holding-bail A, bolt B, tooth C, coiled around said bolt at its upper end, and spring E, attached to the front side of the bail by a bolt, F, and having its downwardly-projecting end bent to form the flange G below the point of attachment of the spring, substantially as and for the purpose shown and set forth.

327,341. SECONDARY BATTERY. ELI T. STARR and E. EUGENIE STARR, Philadelphia, Pa., assignors, by direct and mesne assignments, to the Starr Electric Storage Company, Camden, N. J. Filed Jan. 20, 1883. (No model.)



Claim.—1. An active compound for use in electric batteries, consisting of active matter, and a binding agent therefor, mixed to a pasty or plastic condition with a conducting-liquid, substantially as described.

2. The combination, with a battery electrode, plate, or support, of an active compound consisting of active matter, and a binding agent therefor, mixed to a pasty or plastic condition with a conducting-liquid—such as sulphuric acid—substantially as described.

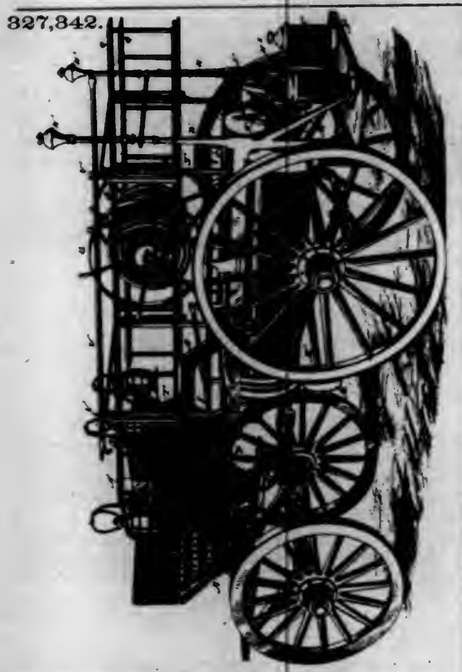
3. An active compound for use in the manufacture of secondary batteries, consisting of finely-divided lead or lead compound, and a binding agent, mixed to a pasty or plastic condition with a suitable liquid, substantially as described.

327,342. CHEMICAL FIRE-EXTINGUISHER. ERNST F. STERN, Chicago, Ill. Filed May 9, 1884. (No model.)

Claim.—1. In a chemical fire-extinguishing apparatus, one or more horizontally-arranged mixing-cylinders constructed to discharge at one end, in combination with a pivotal bearing for the same, whereby said cylinder or cylinders are susceptible of an axial rotation to admit of inversion and mixture of the chemicals, substantially as described.

2. In a chemical fire-extinguishing apparatus, one or more horizontal rotary mixing-cylinders constructed to discharge at one end, and pro-

327,342.



vided with a side port or opening through which an acid-vessel can be introduced within the cylinder, substantially as and for the purpose described.

3. In a chemical fire-extinguishing apparatus, a horizontally rotary mixing-cylinder constructed to discharge at one end, and at a point near its opposite end provided with an opening through which an acid-vessel can be introduced, substantially as described.

4. In a chemical fire-extinguishing apparatus, a horizontal rotary mixing-cylinder constructed to discharge at one end, and provided with a side opening for the introduction and removal of an acid-vessel, in combination with a seating adapted to support an acid-vessel within the cylinder at right angles to the axis of the latter, substantially as described.

5. In a chemical fire-extinguishing apparatus, a horizontal rotary mixing-cylinder adapted to discharge at one end, in combination with an acid-vessel confined within the cylinder in position at right angles to the axis of the latter, substantially as described.

6. In a chemical fire-extinguishing apparatus, one or more horizontal rotary mixing-cylinders journaled at their ends, in combination with a locking device whereby the cylinders can be temporarily held against rotation, substantially as described.

7. In a chemical fire-extinguishing apparatus, the carriage provided with a step at the rear, in combination with one or more horizontally-arranged mixing-cylinders journaled at their ends in the body-frame of the carriage, each cylinder being connected at one end with some suitable pipe-connection, and at a point near one end being constructed to receive an acid-vessel, substantially as and for the purpose described.

8. In a fire extinguishing apparatus, one or more horizontal rotary cylinders journaled at their ends upon a carriage, and having the journals at one end made hollow, in combination with pipes connecting and passing through the said hollow journals and connecting the cylinders with a hose-pipe, substantially as described.

9. In a chemical fire-extinguishing apparatus, the rotary mixing-cylinder B, provided at one end with a hollow journal, in combination with a pipe passing through the hollow journal into the cylinder, and a hand-cap fitted to turn upon the pipe and screwed upon the journal, so as to turn with the latter, and at the same time serve as a packing at the joint between the pipe and the journal, substantially as described.

10. In a chemical fire-extinguishing apparatus, the horizontal rotary mixing-cylinder provided at one end with a hollow journal, in combination with two pipes communicating with each other within the journal, one of said pipes being rigid with the frame of the apparatus and the other being connected with the cylinder and extended back within the latter, substantially as described.

11. In a chemical fire-extinguishing apparatus, the horizontal rotary mixing cylinder mounted upon a frame or carriage, in combination with the pipe-connection I, leading from an end of the cylinder and connected with the hollow axle of a hose-reel mounted above the cylinders, substantially as described.

12. In a chemical fire-extinguisher, the horizontal rotary mixing-cylinders, in combination with pipe I, provided with cocks I^2, and connected at its ends with ends of the cylinders, and a pipe, L, through which said pipe is connected at a point between its cocks with the hose, substantially as described.

13. In a chemical fire-extinguisher, the horizontal rotary mixing-cylinders, in combination with a pipe-connection between an end of each cylinder and the hollow axle of a hose-reel supported above the cylinder, said pipe-connection being provided with cocks, arranged substantially as described, whereby either cylinder can be placed in communication with the reel-axle or communication closed between the reel-axle and the cylinders, and a discharge effected directly from the pipe-connection at a point between the two cylinders, substantially as described.

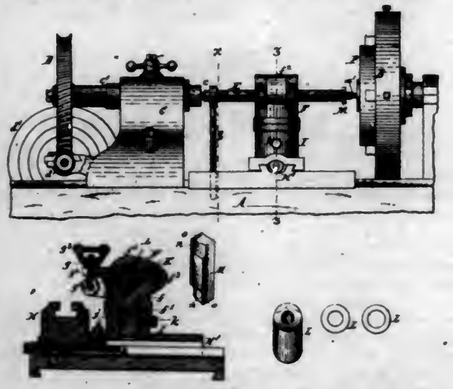
14. In a chemical fire-extinguisher, the horizontal rotary mixing-cylinders, in combination with a pipe-connection, substantially as described, between one end of each cylinder and a hollow member of a hose-reel mounted over the cylinders, said pipe-connection being provided with cocks I^3, I^4, and L', and with a nozzle, I^4, to which a hose can be connected, when desired, substantially as described.

15. In a chemical fire-extinguishing apparatus, one or more horizontal rotary mixing-cylinders provided upon their rear end with journals, with hand-wheels located at the rear of a carriage upon which the cylinders are mounted, substantially as described.

16. In a chemical fire-extinguishing apparatus, the horizontal rotary mixing-cylinder having at one end a pipe-connection, in combination with a perforated seating, D', secured in an opening near one end of the cylinder and extending within the latter, and a cap for closing said opening, substantially as described.

17. In a chemical fire-extinguishing apparatus, the horizontal rotary mixing-cylinder, in combination with the locking-arm E, pivoted to the frame of a carriage supporting the cylinder, and a locking-pin by which said arm can be connected with some part of the cylinder, substantially as described.

327,343. BORING-LATHE. HENRY B. STEVENS, Buffalo, N. Y., assignor to George L. Squier, same place. Filed Apr. 1, 1884. (No model.)



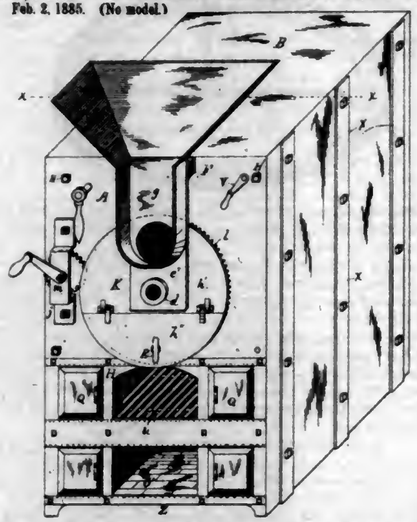
Claim.—1. In a lathe, the combination, with a face-plate, B, and a head-stock, C, having a longitudinally-moving mandrel, c, of a boring-rod, E, supported at one end on the mandrel *c*, and provided near its opposite and free end with a boring-tool, M, and a lathe-rest, F, in which the boring-rod is supported and guided while boring as it is moved lengthwise in the rest toward the face-plate by the movement of the mandrel, substantially as set forth.

2. The combination, with the face-plate B and a head-stock, C, having a longitudinally-moving mandrel, *c*, of a boring-rod, E, supported at one end on the mandrel *c*, and provided near its opposite and free end with a boring-tool, M, and a lathe-rest, F, in which the boring-rod is guided in its longitudinal movements, and which is provided with a hinged cap, f^3, and clamp *g*, substantially as set forth.

3. In a lathe, the combination, with the adjustable tool-holder H, of the auxiliary tool-holder I, secured thereto and provided with a socket, *j*, and a rest, F, having a pivot, *f'*, seated in the socket *j*, substantially as set forth.

4. The combination, with the face-plate B and a head-stock, C, having a longitudinally-moving mandrel, *c*, of a boring-rod, E, supported at one end on the mandrel *c* and provided near its opposite and free end with a boring-tool, M, a lathe-rest, F, in which the rod E is guided in its longitudinal movements, and gear-wheels D *d*, whereby the mandrel *c* is moved longitudinally, substantially as set forth.

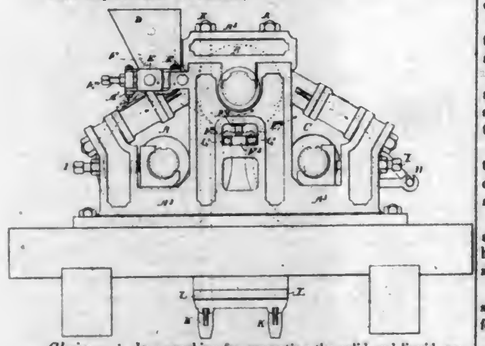
327,344. COFFEE-ROASTER. SAML. STEWART, Newark, N. J. Filed Feb. 2, 1885. (No model.)



Claim.—1. The combination of the outer grooved head of the coffee-roasting cylinder with the toothed skeleton inner head thereof, which fits into the groove of said outer head, and a gear-wheel which engages with the teeth of said inner head to rotate the same without applying any strain to the outer head, substantially as set forth.

2. The protection-plate i or shield, in combination with the furnace H, revolving cylinder C, the crank N'', pulleys *f f f*, and chains *a g*, substantially as and for the purpose set forth.

327,345. APPARATUS FOR SEPARATING THE SOLID AND LIQUID PORTIONS OF STARCH REFUSE FROM EACH OTHER. FLAVIUS P. STIKER, Oswego, N. Y., assignor to Thomson Kingsford, same place. Filed May 29, 1885. (No model.)



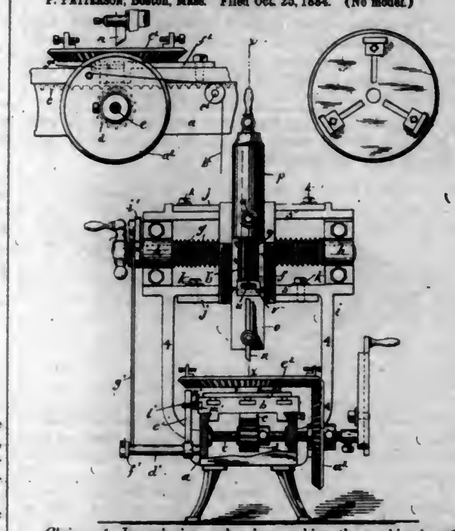
Claim.—1. In a machine for separating the solid and liquid portions of starch refuse, the combination, with a main frame, of the hopper and feeding-rollers, the three squeezing-rollers A B C, the two lower ones being perforated, the roller A being located directly under the hopper, all the rollers being graded together, so as to rotate as indicated, and the scrapers for cleaning the rollers, and the aprons for preventing the escape of the refuse, substantially as set forth.

2. In a machine for separating the solid and liquid portions of starch refuse, the combination, with a main frame, of the hopper and feeding-rollers, one of which is adjustable, the squeezing-rollers A B C, the rollers A and C being adjustable and perforated, the roller A being located directly under the hopper, all the rollers being geared together, so as to rotate as indicated, and having the scrapers and aprons, substantially as set forth.

3. In a machine for separating the solid and liquid portions of starch refuse, the combination of the three squeezing-rollers A B C, the roller A being located directly under the hopper, the rollers A and C being perforated and adjustable, and provided with scrapers and aprons, as described, and geared together, and adapted to receive, squeeze, and deliver the solid portions and separate the liquid portions, substantially as set forth.

4. In a machine for separating the solid and liquid portions of starch refuse, the combination, with a main frame, of the hopper and feeding-rollers, the three squeezing-rollers A B C, the roller A being located directly under the hopper, the two lower ones being perforated and adjustable, and the bearings of the upper roller being made yielding by means of rubber cushions or springs, substantially as set forth.

327,346. PLANING-MACHINE. HENRY B. STILLMAN and WILLIAM F. PATTERSON, Boston, Mass. Filed Oct. 25, 1884. (No model.)



Claim.—1. In a planing or dressing machine, the combination of a tool-carriage and a screw, constituting at once a main support and an adjusting device for said carriage, as set forth.

2. The combination of a tool-carriage, a screw constituting a support and adjusting device for said carriage, and adjustable gibs bearing against the carriage, whereby wear of both carriage and screw may be compensated for, as set forth.

3. The adjustable tool-carriage composed of two sections, 2 and 3, the latter having the tool-holder and being connected to the section 2 by a single screw, as set forth.

4. The combination of the socketed section 2, the section 3, having a boss projecting into the socket of the section 2, and the single attaching-screw passing from the back of the section 2 through the boss and into the section 3, as set forth.

5. The tool-carriage having the tubular socket *p*, combined with the cylindrical tool-holding spindle *q*, inserted in said socket, and a screw constituting the main support and lateral adjustment of the tool-carriage, as set forth.

6. The tool-carriage having the tubular socket *p*, the adjusting-screw *w*, and the binding-screw *a'*, combined with the cylindrical tool-holding spindle entering said socket and receiving the adjusting-screw, as set forth.

7. The combination, with the movable platen, of the fixed drill-supporting bracket or frame, and mechanism substantially as described, for rotating the drill, as set forth.

8. The combination, with the movable platen, of the fixed drill-supporting bracket or frame, with mechanism for rotating the drill, the arbor *e*, having the pinion *d*, engaged with a rack on the platen, the wheel a^2 on said arbor, and a treadle-connection with said wheel, substantially as described.

9. The combination, with the platen, of the support c^2, having mechanism whereby it may be fixed or rotated, and the plate or holder f^2, in which said support is journaled, as set forth.

10. The combination, with the platen, of the rotary plate or support c^2, formed as a bevel-gear, having mechanism whereby it may be fixed or rotated, means, substantially as described, for detachably securing it to the platen, and the bevel-gear a^2 on the arbor *e*, meshing with the periphery of the rotary support, as set forth.

327,347. BARBED-WIRE SPOOL. DANIEL C. STOVER, Freeport, Ill. Filed Feb. 24, 1885. (No model.)

Claim.—1. A barbed-wire spool consisting of a board of suitable length and width, and staples fastened to the board transversely and crossing its central line, substantially as shown and described, and for the purpose set forth.

2. The combination of the board A and the staples B B, substantially as shown and described, and for the purpose set forth.

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3. The combination, with the board A, having the staples B, of the auxiliary frame composed of the end pieces, C C', and side pieces, D D, connected substantially as shown and described, said end pieces being provided with means for holding in place the ends of the board A, substantially as shown and described, and for the purpose set forth.

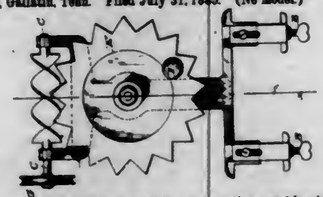
327,348. GLASS ORNAMENTATION FOR IMITATION OF FINE POLISHED STONE. THOMAS E. STRICKLAND, New York, N. Y. Filed Mar. 14, 1885. (No specimens.)



Claim.—1. The method herein described of producing imitations of polished stones by applying to the surface of a sheet of glass a spatter-work of transparent water-color and overlaying the same with a coat of oil-paint.

2. An imitation of polished stone produced, as described, by coating a sheet of glass with a layer of water-color and an outer coating of oil-color, in manner substantially as set forth.

327,349. HAND-MOTOR FOR SEWING-MACHINES. CHARLES W. TAYLOR, Gallatin, Tenn. Filed July 31, 1885. (No model.)



Claim.—1. In a sewing-machine motor, the combination of the standard A, provided with clamping devices for attachment to the table, the wheel E and its operating-crank, the spirally-threaded shaft C, and the pulley G thereon.

2. The standard A, having its end provided with clamping-screws and its upper end forked, as described, in combination with the wheel E and its operating-crank attached to the standard, and the shaft C, having the spirally-threaded portion mounted between the arms of the standard, and the pulley G, applied to its end outside of said arms.

327,350. CONVERTIBLE SKATE. FRANK A. TERRERY, Kansas City, Mo. Filed Aug. 29, 1884. (Model.)



Claim.—1. A skate-plate having metal straps N affixed to its under side, in combination with a runner carrying lugs *a*, which engage correlative spaces or sockets between the straps and the plate, substantially as described.

2. A skate-plate having metal straps N affixed to its under side, in combination with roller-hangers provided with an aperture, O', which engages a lug, O, depending from said straps, substantially as described.

327,351. AZIMUTH ATTACHMENT TO COMPASSES. WILLIAM S. THAYER, Oakland, Cal. Filed May 23, 1885. (No model.)

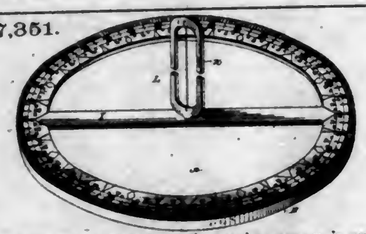
Claim.—1. In an attachment for compasses, a flanged azimuth circle or card having the degrees of a circle and the points of the compass marked on its face, said points of the compass, except the north and south points, being marked opposite to the regular compass, in combination with suitable means for taking the course of the ship, substantially as and for the purpose set forth.

2. In an attachment for compasses, a flanged azimuth circle or card having four concentric circles upon its face, one of which circles is marked to indicate the degrees of a circle, two of the other circles are numbered from zero to 180°, in one of said two circles the numbers run east and west from north to south, and in the other one they run from south to north, and the fourth circle is provided with the points of the compass, said points of the compass, except the north and south points, being marked opposite to a regular compass, in combination with suitable means for taking the course of the ship, substantially as and for the purpose set forth.

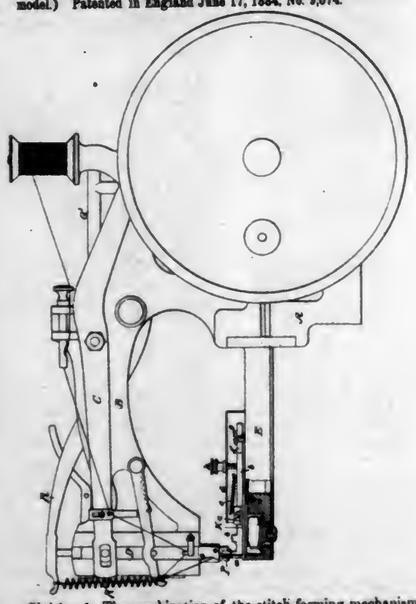
3. In an attachment for compasses, the combination of a flanged azimuth circle or card having four concentric circles upon its face, said circles being provided with degrees, numbers, and points of the compass, arranged as above described, and provided with a transverse bar across its center, said bar being provided with a bearing at its center, and a detachable shadow-vein secured in said bearing, substantially as and for the purpose set forth.

4. The combination, with the above-described azimuth circle or card and shadow-vein, of a pointer secured to the forward bearing of the compass, said pointer coming above and over the degree-line of said circle or card and indicating the ship's head, substantially as and for the purpose set forth.

327,351.



327,352. SEWING-MACHINE. JOHN THOMAS, Bristol, England, assignor to Lewis Fairburn Marsh, same place. Filed Feb. 3, 1885. (No model.) Patented in England June 17, 1884, No. 9,074.



Claim.—1. The combination of the stitch-forming mechanism of a sewing-machine, a plate having a throat, *x*, for the entrance of the needle, and a raised work-plate at one side of said needle-throat, the top of said raised work-plate forming a bearing for the work, as set forth.

2. The combination of the plate having a needle-throat, *x*, the raised work-plate having an open needle-slot concentric with said throat, and stitch-forming mechanism having a feed movement transversely across the slotted face of the said raised work-plate, as specified.

3. The combination of the stitch-forming mechanism of a sewing-machine, having a top feed, with a raised work-plate which is located at the side of the needle, but does not surround the same, and serves as a support for that portion of the work upon which the feed is acting, as set forth.

4. The combination of the stitch-forming mechanism, the raised work-plate, the top feed, and the spring-presser bar at the side of the work-plate, as set forth.

5. The combination of the stitch-forming mechanism of a sewing-machine, with a raised work-plate having an open needle-slot in one side, and a spring-presser bar having a bearing upon the slotted side of the work-plate, as set forth.

6. The combination of the contracted and projecting arm E of the machine, stitch-forming mechanism, the needle of which is arranged transversely to the axis of the arm, and a work-plate projecting from the arm at or near the end of the same, as described, whereby the crown of a hat can pass beneath the arm while the brim is supported by the raised work-plate, as set forth.

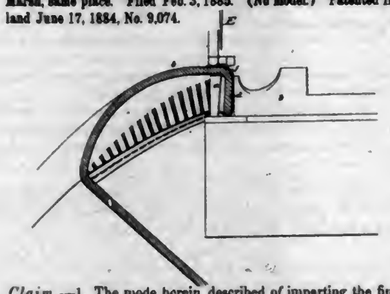
7. The combination of the stitch-forming mechanism of a sewing machine, with a raised work-plate having an open needle-slot, and a side presser-bar adjustable from and toward the slotted face of the work-plate, and also having an open needle-slot, as set forth.

8. The combination of the stitch-forming mechanism of a sewing-machine, with a raised work-plate and an adjustable side presser-bar, the latter having a recess for the reception of the turned edge of a hat-brim, as specified.

9. The combination of the stitch-forming mechanism, the raised work-plate, the pivoted shuttle-cover, and the bar *b*, guided upon said cover and free to move laterally therewith, as described.

10. The combination of the stitch-forming mechanism of the machine, the plate having a needle-throat, and the raised work-plate *a* at the side of the needle-throat, said plate *a* having a lateral recess, a^2, in the side adjacent to the needle, as set forth.

327,353. ART OF FINISHING OR BINDING THE EDGES OF HAT-BRIMS. JOHN THOMAS, Bristol, England, assignor to Lewis Fairburn Marsh, same place. Filed Feb. 3, 1885. (No model.) Patented in England June 17, 1884, No. 9,074.

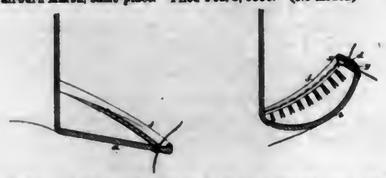


Claim.—1. The mode herein described of imparting the finish to the edge of a hat-brim, the said mode consisting in first curling the edge of the brim and then securing the binding material upon said edge by means of a row of connected stitches, substantially as specified.

2. The mode herein described of imparting the finish to the edge of a hat-brim, said mode consisting in first curling the edge of the brim, then applying thereto an endless strip of binding, and finally securing the binding by a row of connected stitches, substantially as set forth.

3. The mode herein described of sewing the binding material upon the curled brim of a hat, said mode consisting in supporting the brim, feeding it forward to a reciprocating needle, and laterally tilting the brim as it is being thus fed forward, as set forth.

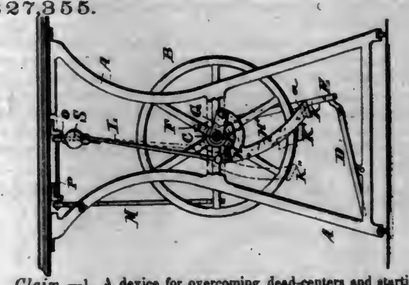
327,354. HAT. JOHN THOMAS, Bristol, England, assignor to Lewis Fairburn Marsh, same place. Filed Feb. 3, 1885. (No model.)



Claim.—A hat having a curled brim with binding-braid secured thereon by stitches passing directly through the brim and edges of the braid at front and rear of the hat, but gradually changing in length and direction at each side of the hat, so as to pass transversely from edge to edge of the braid, beneath the curl, and through the upper portion of the roll of the brim, as set forth.

327,355. DEVICE FOR OVERCOMING DEAD-CENTERS AND STARTING FLY-WHEELS. ORRIN B. THOMPSON, Jersey, Ohio. Filed Jan. 29, 1885. (No model.)

327,355.



Claim.—1. A device for overcoming dead-centers and starting a fly-wheel, consisting of a bell-crank wiper, one arm of which is attached to an arm loosely pivoted at the axis of the fly-wheel so as to rotate in the same direction as the fly-wheel, but eccentric to it, and having on its other arm a stirrup or toe adapted to press against the periphery of the wheel, substantially as described.

2. The bell-crank wiper H, arranged to move in the same direction with and eccentric to the wheel B, and having the stirrup K, in combination with the lever M, connected to the operating-rod of the crank and located within reach of the knee of the operator of the pedal, substantially as and for the purpose described.

3. In combination with a bell-crank wiper for starting a pedal-driven wheel, the lever M, connected with said device for putting it in operation, and arranged, as described, so as to be within reach of the knee of the operator, substantially as and for the purpose specified.

4. In combination with the bell-crank wiper, the padded stirrup K, for moving the fly-wheel, substantially as described.

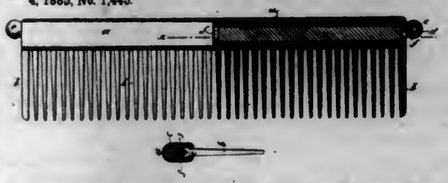
5. A bell-crank wiper pivoted eccentric to the fly-wheel B and carrying the stirrup K, in combination with the jointed arm L, rotating shaft P, and lever M, as and for the purpose specified.

6. The bell-crank wiper H, pivoted to the crank G and eccentric to the wheel B, in combination with the operating-arm L and the balance-weight S, substantially as and for the purpose described.

7. In a device for overcoming dead-centers and starting fly-wheels, an elastic pad arranged in combination with an arm or stirrup to act upon the periphery of the fly-wheel in such a manner as to act as a brake on the wheel revolving in one direction, and susceptible of imparting motion to the wheel in the other direction, substantially as described.

8. In a device for starting fly-wheels, the adjustable counter-balance O, in combination with the bell-crank wiper H, as and for the purpose specified.

327,356. COMB. FRANZ THORMANN and LEONHARD VON BONHORST, Wiesbaden, Germany. Filed Aug. 23, 1884. (No model.) Patented in Belgium Aug. 12, 1884, No. 66,008; in France Aug. 12, 1884, No. 163,730; in England Aug. 12, 1884, No. 11,206; in Germany Aug. 13, 1884, No. 30,805; in Sweden Sept. 23, 1884; in Austria-Hungary Oct. 19, 1884, No. 30,577 and No. 46,739; in Italy Oct. 31, 1884, No. 17,246/183; in Spain Nov. 20, 1884, No. 6,384; in Norway Dec. 2, 1884, and in Denmark May 4, 1885, No. 1,445.



Claim.—1. In a comb, the combination, with the grooved back and teeth having tangs adapted to be inserted in said groove, said tangs being provided with transverse openings, of guide-strips passing through said openings, heads on the outer ends of said guide-strips, and a spring for drawing said guide-strips into position to clamp said teeth in place, substantially as described.

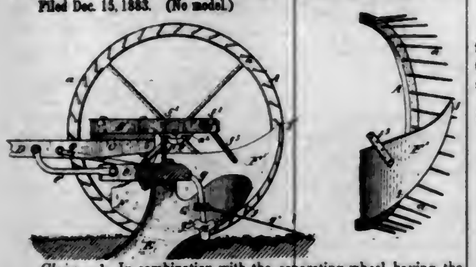
2. In a comb, the combination, with the grooved back and teeth having tangs adapted to be inserted in said groove, said tangs being provided with transverse openings, of guide-strips passing through said openings and having screw-threaded outer ends, nuts forming heads on the outer ends of said guide-strips, and a spring for drawing said guide-strips into position to clamp said teeth in place, substantially as described.

3. In a comb, the combination, with the grooved back and teeth having tangs adapted to be inserted in said groove, said tangs being provided with transverse openings, of guide-strips passing through said openings and having longitudinal side grooves, heads on the outer ends of said guide-strips, and rubber bands placed in said side grooves for

drawing said guide-strips into position to clamp said teeth in place, substantially as described.

4. In a comb, the combination, with the grooved back and teeth having tangs adapted to be inserted in said groove, said tangs being provided with transverse openings, of guide-strips passing through said openings and having longitudinal side grooves, the outer ends of said guide-strips being screw-threaded, nuts forming heads on the outer ends of said guide-strips, and rubber bands placed in said side grooves for drawing said guide-strips into position to clamp said teeth in place, substantially as described.

327,357. POTATO-DIGGER. FRANK M. THORN, Orchard Park, N. Y. Filed Dec. 15, 1883. (No model.)



Claim.—1. In combination with the separating-wheel having the rods *a*, the combined shield and carrier F F', constructed substantially as described, and adapted to prevent the potato-tops from falling into the wheel-spokes and to remove the potatoes, soil, and other loose material from the wheel rim or rods at any desired height from the ground, as specified.

2. The combination of the separating-wheels having rods *a*, the combined shield and carrier arranged as specified, and the double plow having its mold-boards curved spirally, substantially as shown and described, whereby the soil and potatoes elevated by the plow are not only turned laterally into the wheel-rim but also inverted, so that the center of the row which contains most of the potatoes is thrown toward the outside of said wheel-rims and next to the shield and carrier, leaving most of the soil near the inner edge of the wheel-rims so that it will be first pushed off by the carrier, as specified.

327,358. CULTIVATOR. WILLIAM H. TRAPHAGEN, Rockford, Ill., assignor to Emerson, Talcott & Co., same place. Filed Dec. 17, 1884. (No model.)



Claim.—1. The combination, with a two-part standard having a hinged connection, of a spring-actuated trip-lever pivotally secured to the rigid portion of the standard, and formed with an arm which normally bears against the rigid portion of the standard and another arm connected by a stirrup with the lower section of the standard, which latter is recessed, substantially as set forth.

2. The combination, with the rigid portion of the standard, of a hinged extension whose front side is recessed to receive a stirrup or embracing-link, a spring-actuated trip-lever, and a stirrup connected to said lever, and adapted to have a limited sliding movement on the hinged extension of the standard, substantially as set forth.

327,359. WATCH-BARREL. LOUIS VAN BENNEL, Maestricht, Holland. Filed May 19, 1885. (No model.) Patented in Belgium Sept. 24, 1884, No. 66,412, and in England May 2, 1885, No. 5,438.

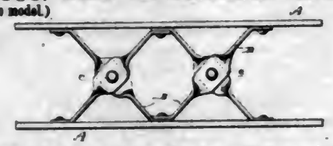


Claim.—1. The combination of the main barrel F, formed with notches G, the inner barrel, B, open at top and bottom and provided at its top with bridge C, extending beyond the sides of the main barrel and fitting in the notches of the latter, spindle K, passing through barrel F and bridge C, and the spring A, connected with spindle K and the inner barrel, substantially as described.

2. The combination of the main barrel F, formed with notches G, cylinder N, having a pin projecting therefrom, spindle K, inner barrel, B, formed with projections D fitting in notches G, spring A, connected at one end to the inner barrel and at the other end to said projecting pin, and cover I, fitting over barrel B, and having boss I', fitting to spindle K, substantially as described.

3. In combination with the cover I for securing the removable barrel B in position, the flap or handle L, serving both to screw on the cover and to wind up the watch.

327,360. GIRDER. JOHN VANES, Brazil, Ind. Filed July 18, 1885. (No model.)



Claim.—In a girder, the combination, with the outer bars, of the flat lattice-bars centrally twisted, as described, and arranged in pairs, the bars of each pair being secured to the outer bars and to each other, substantially as described.

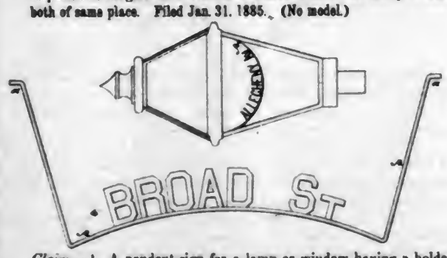
327,361. WATER-COOLER. JOHN H. WARD, Delphos, Ohio. Filed May 20, 1885. (No model.)



Claim.—1. The combination, with the incasement having packed double walls, of the lower compartment with a water-space in rear thereof, the ice-pan communicating with the water-space, and the grate-bars adjoining the water-pan, substantially as specified.

2. The combination, in a refrigerator, of an ice-chamber arranged between an upper and lower compartment, the upper compartment having a slatted bottom, and a wire screen arranged adjacent thereto, substantially as specified.

327,362. LAMP AND WINDOW SIGN. CHARLES S. WATSON, Philadelphia, Pa., assignor of two-thirds to Samuel D. Hall and Harry C. Cook, both of same place. Filed Jan. 31, 1885. (No model.)



Claim.—1. A pendent sign for a lamp or window having a holder for letters or characters formed of a piece of wire bent into bottom and side parts, the letters or characters being secured to the bottom part, the side parts being adapted to be sprung into the frame of the lamp or window, substantially as described.

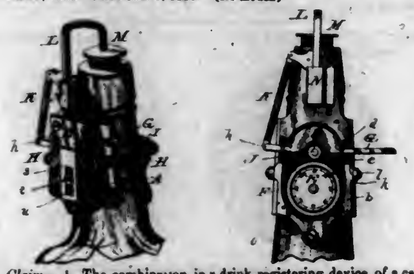
2. A holder for a lamp, window, or other sign, consisting of a piece of wire bent into a bottom and side parts, the upper end of the side parts having outwardly-projecting lips, substantially as and for the purpose set forth.

327,363. GARMENT-CLASP. CHESTER B. WEEKS, Jackson, Mich. Filed June 17, 1885. (No model.)



Claim.—A double wire clasp, each consisting of two sides having a grip-slot, *b*, between them, the two clasps inverted with respect to each other and each projecting in an opposite direction, and the two united by a laterally-extending connection, *g*, whereby each clasp has an entrance, *d*, both sides of which spread or gradually widen, as set forth.

327,364. DRINK-REGISTER FOR BOTTLES. GEORGE WETTEL, Toledo, Ohio. Filed Jan. 9, 1885. (No model.)



Claim.—1. The combination, in a drink-registering device, of a case containing registering mechanism and adapted to be secured to a bottle by a clamping device, substantially such as a yoke and a cam-lever, a stopper, and lever connected thereto and adapted when depressed to actuate the registering mechanism, substantially as set forth.

2. The combination, in a drink-registering device, of a case containing registering mechanism, means, substantially such as a yoke and cam-lever, for securing said case to a bottle, a stopper, a bar connected to said stopper, a bracket located on the upper portion of the case and serving as a guide for said bar, and a lever connected to said bar and adapted when depressed to actuate the registering mechanism, as set forth.

3. The combination, in a drink-registering device, of a case containing registering mechanism, means, substantially such as a yoke and cam-lever, for securing said case to a bottle, a stopper, a lever connected thereto and provided with a disk portion having two notches, and a spring secured to the case and adapted to engage either of said notches, to vary the normal position of the lever, and consequently that of the stopper, as set forth.

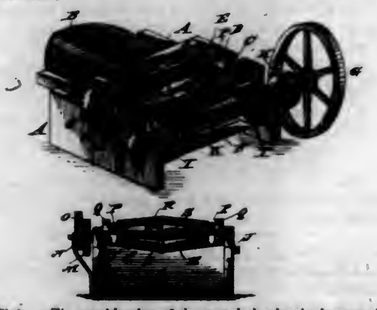
4. The combination, in a drink-registering device, of a case containing registering mechanism, a stopper, and a lever connected thereto and adapted when depressed to actuate the registering mechanism, and a yoke pivotally secured to the said case and carrying a pivoted cam-lever, as set forth.

5. The combination, in a drink-registering device, of a case composed of a rear portion, *a*, and a front flange, *b*, extension *c*, and a face-plate, B, forming a chamber slotted at each side, registering mechanism, and a pivoted lever located in said chamber, the end of the latter extending through the slots, a stopper connected to one end of said lever, and a device for securing said device to a bottle, as set forth.

6. The combination, in a drink-registering device, of a case containing a graduated gear-wheel, a lever pivoted in said case above said wheel, and provided centrally with a disk portion journaled loosely upon an axis, a ratchet-wheel rigidly secured on said axis, and a pawl on said disk for only engaging said ratchet-wheel when the disk is moved in one direction, a pinion rigidly mounted upon said axis and engaging said gear-wheel, a stopper connected to said lever, and a device for securing the case to a bottle, substantially as set forth.

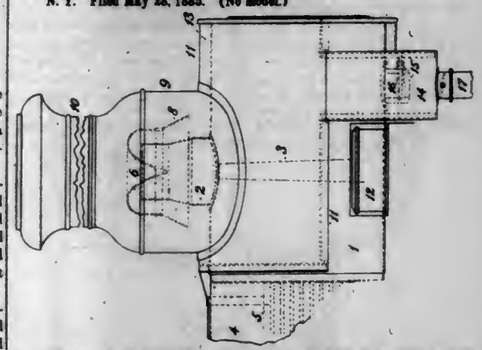
7. The combination, in a drink-registering device, of a case composed of a rear portion, *a*, flange *b*, extension *c*, and front B, registering mechanism located in said case, and the lever for actuating said registering mechanism, a stopper connected to said lever, a yoke pivoted to said case and having a cam-lever, and an ear perforated for the passage of a threaded screw, substantially as set forth.

327,365. STRAW-CUTTER. AMOS H. WELLINGTON, Lebanon, N. H., assignor to Worthington C. Smith, St. Albans, Vt. Filed Oct. 11, 1884. (No model.)



Claim.—The combination of the trough having its bottom slightly inclined from the sides toward the middle, a cutting-strip of a flat V shape secured at the forward edge of the trough, a shaft provided with cutter-blades arranged around it in the periphery of a cylinder extending straight across the end of the trough, and provided with a pinion at its end and means for revolving it, a frame hinged at its forward ends in the forward end of the trough upon the sides of the same, and having a roller tapering toward the ends and provided with a number of longitudinal strips journaled transversely in it, receiving motion from the cutter-shaft in the manner shown, and the roller tapering from the ends toward the middle and journaled behind the cutting-strip in the bottom of the trough, projecting slightly above the said bottom, as and for the purpose shown and set forth.

327,366. SPARK-ARRESTER. JOHN WESTINGHOUSE, Schenectady, N. Y. Filed May 22, 1885. (No model.)

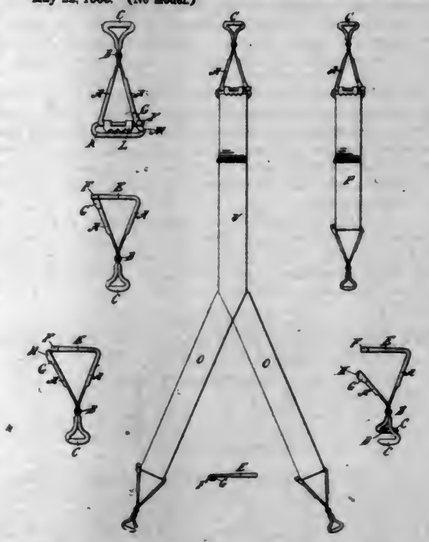


Claim.—1. The combination, with a locomotive-boiler smoke-box, of a spark-receptacle formed between the smoke-box and an external casing, forming an independent spark-chamber, which communicates at its top with the stack-base, and is provided with a bottom discharge-pipe located adjacent to the front of the smoke-box, substantially as set forth.

2. The combination of a locomotive-boiler smoke-box provided with a valved discharge-port adjacent to its forward end, a casing surrounding said smoke-box and forming an independent spark-chamber communicating with the stack-base, and a bottom discharge-pipe leading out of said chamber adjacent to the smoke-box discharge-port and governed by a door or valve, substantially as set forth.

3. The combination of a locomotive-boiler smoke-box, a discharge-flue leading out of the top of the smoke-box and opening into the stack-base, a deflecting-cone and casing located above said flue, and a spark-receiving chamber surrounding the smoke-box and communicating with the stack-base, substantially as set forth.

327,367. CLASP FOR GARMENT-SUPPORTERS. STILES H. WHITING, Bridgeport, Conn., assignor to Slayton & Whiting, same place. Filed May 22, 1885. (No model.)



Claim.—1. A clasp consisting of two shanks, A, pivoted together, which upon one side of the pivotal point are bent outward, then inward, to form parallel jaws C, and upon the other side are bent outward again,

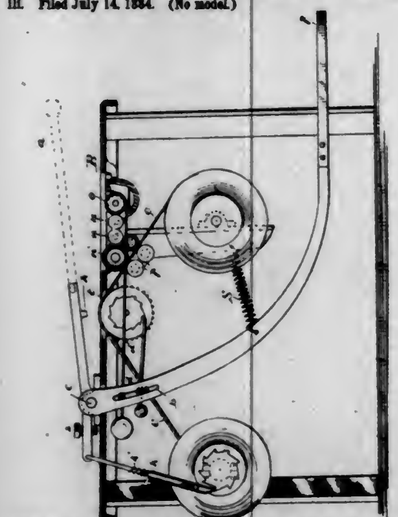
one of said shanks having an arm, E, with a loop, F, at its end extending toward the other shank, which is adapted to spring into said loop, whereby the jaws are locked together and the article between them is securely held.

2. In a clasp, two shanks pivoted together, both of which are provided at one end with jaws C, one of which is provided at the other end with an arm, E, having a loop or hook, F, at its end, the other shank having a notch, H, which receives the loop when in the engaged position so as to leave no projections to catch upon the clothing.

3. The pivoted shanks having jaws at one end and at the other end of one shank an arm with a loop at its end, in combination with the body K of a buckle, attached to the arm, and toothed piece L, adapted to turn on said arm and to engage the body of the buckle.

4. The combination, with a stocking-supporter consisting of parts N and O, of three clasps consisting of a pair of shanks pivoted together, both of said shanks having jaws C at one end and one shank being provided at its opposite end with an arm, E, and loop F, adapted to receive the other shank, whereby the stocking or corset is firmly grasped.

327,368. ADDRESSING-MACHINE. CHARLES I. WILMARTH, Chicago, Ill. Filed July 14, 1884. (No model.)



Claim.—1. In an addressing-machine, a main frame provided with reels and a printing-chain connecting them, in combination with an operating-lever having a reeling-pawl engaging one of said reels, said pawl being made in two parts connected by a spring, whereby the full stroke of the lever, when the reel is nearly filled, does not injure the chain or feed it too fast, substantially as and for the purpose set forth.

2. In an addressing-machine, a link or plate having its ends formed with under beveled flanges and one side formed with a hook and the other provided with a link or bail, in combination with a type-faced plate sprung into engagement with the end flanges and lying against the open side of the hook, whereby, when the plates or links are united in a chain, the type-plate locks them from disengagement, substantially as and for the purpose set forth.

3. In an addressing-machine, the combination, with a main frame, a pair of reels connected by a printing-chain, and an intermediate feeding and supporting drum over which this chain passes, an operating-lever having connected to it the feeding-pawl, reeling-pawl, inking-pawl, and stamping pressure-arm, substantially as and for the purpose set forth.

327,369. COMBINED MATCH-BOX AND CIGAR-CUTTER. EDWARD P. WILLIAMS, Jr., Brooklyn, N. Y. Filed July 1, 1885. (No model.)



Claim.—1. A combined match-box and cigar-cutter consisting of a box having the supplemental bottom F, an aperture, *e*, and an aperture, E, in the bottom D, combined with a cutter, H, adapted to have a horizontal movement between said bottoms, and provided with a lip, *d*, to close the aperture *e*, substantially as set forth.

2. A combined match-box and cigar-cutter consisting of a box having the supplemental bottom F, an aperture, *e*, an aperture, E, and recess J, in combination with the pivotally-secured cutter H, having a lip, *d*, and a cutting-edge on one side of its front end, substantially as and for the purposes described.

327,370. WIND-WHEEL. WILLIAM E. WILLIAMS, Independence, Iowa. Filed Apr. 5, 1884. (No model.)

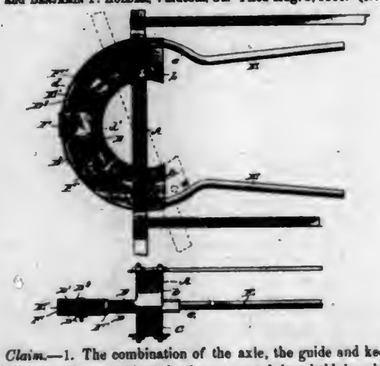


Claim.—1. A blade for wind-wheels, concavo-convex in section both longitudinally and transversely and tapering in outline.

2. The combination of the outer rim, the inner rim, and the blades, said blades being concavo-convex in section lengthwise and transversely and tapering in outline.

3. The combination of the outer rim, the inner rim, and the blades, said blades being concavo-convex in section both lengthwise and transversely and secured in position oblique both to the axis and to the radii of the wind-wheel.

327,371. RUNNING-GEAR FOR VEHICLES. ALEXANDER K. WILSON and BENJAMIN F. HOLDER, Valdosta, Ga. Filed Aug. 3, 1885. (No model.)



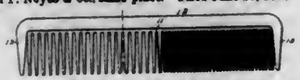
Claim.—1. The combination of the axle, the guide and keeper secured thereto, the head-block having a curved bar held in said guide, and the reach having a curved portion, also held in said guide, substantially as set forth.

2. The combination, with the axle and the guide or keeper having concentrically-curved ways in its front and rear edges, of the body-supporting frame having curved rods secured in said ways, substantially as set forth.

3. The combination of the axle, the head-block, the reach having a curved forward end, and the guide or keeper provided with a way for said reach, and having its rear edge shouldered, whereby to engage stop projections on the head-block, substantially as set forth.

4. The combination of the axle, the guide and keeper-plate secured thereto and provided with front and rear concentric ways, the body-supporting frame having a head-block and a double-armed reach, the said reach being extended in advance of the axle, with its front end curved in the arc of a circle, and having the portions of its arms immediately in rear of the axle curved concentrically with its forward portion, and the curved bar secured to the head-block and held in the guide or keeper, all arranged and operating substantially as and for the purposes specified.

327,372. COMB. THOMAS J. WINANS, Binghamton, N. Y., assignor to Joseph P. Noyes & Co., same place. Filed June 27, 1885. (No model.)

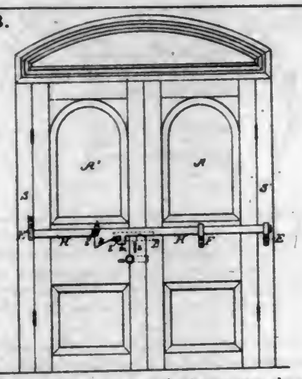


Claim.—The metal back 12, having the edges 9 of its ends beveled and brought together to form the guard-teeth 13, substantially as described.

327,373. DOOR AND SHUTTER FASTENER. JOHN T. YARNALL and NATHAN R. YARNALL, Phœnixville, Pa. Filed June 17, 1885. (No model.)

Claim.—1. The combination of a door or shutter, a frame therefor, and retaining-hooks carried by the frame, with a fastening-bar pivoted to the door or shutter and a separate lock to be operated by a key, the

327,373.

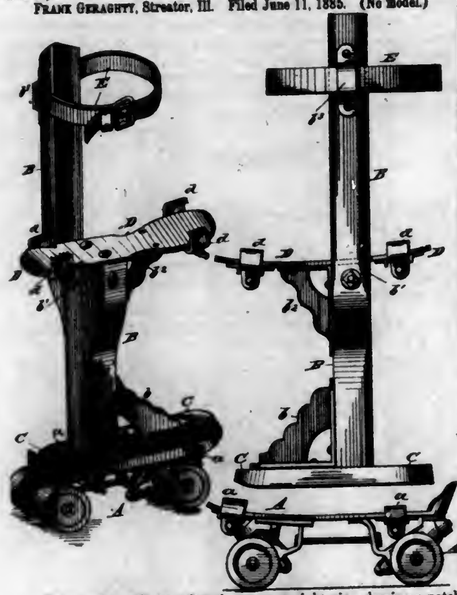


said lock having a portion to act upon the bar to turn the same on its pivot, substantially as set forth.

2. The combination of a door or shutter, a frame, and retaining-hooks thereon, with a fastening-bar pivoted to the door or shutter, a separate sliding locking-bolt controlling the movement of said bar, the latter and the bolt having a pin-and-cam connection, substantially as described.

3. The combination of a door or shutter and frame having retaining-hooks with a locking-bolt having a projecting pin, and a fastening-bar pivoted to the door or shutter, and provided with an incline or cam, and a locking-finger to engage with the pin on the bolt, substantially as set forth.

327,374. STILT FOR ROLLER-SKATES. MARSHALL ZACK and FRANK GERAGHTY, Streator, Ill. Filed June 11, 1885. (No model.)



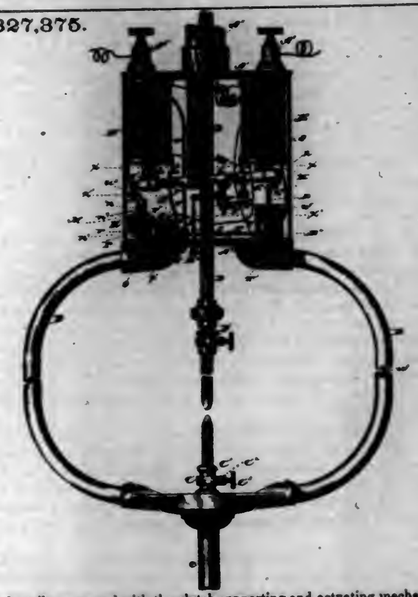
Claim.—In a stilt for roller-skates, an upright piece having a notch or shoulder at the desired height, a foot-piece rigidly secured thereto and means for securing the foot thereon, a bottom piece rigidly secured to the lower end of said stilt and means for securing the skate thereto, and a strap at the upper end of said stilt for securing the same to the leg of the skater, substantially as and for the purpose set forth.

327,375. ELECTRIC-ARC LAMP. JOHN G. ALLEN, Worcester, Mass.; Sylvia A. Wood Gould administratrix of said John G. Allen, deceased. Filed Feb. 8, 1884. (No model.)

Claim.—1. In combination with the carbon-carrier rod, the tilting clutch-piece provided with an opening through which the carrier-rod passes, and a spring attached to the clutch-piece and having its rod-engaging portion situated between the carrier rod and one end of the opening in the clutch-piece, substantially as and for the purpose described.

2. In combination with the carbon-carrier rod, the cramping-clutch

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pivotally connected with the clutch supporting and actuating mechanism, and having an opening through which passes the carrier-rod, the spring between one end of the opening and the rod, and the spring for holding the end of the clutch beyond the rod down, substantially as and for the purpose described.

3. In combination with the frame or lever G and the carrier-rod, the cramping-clutch embracing the rod supported from the lever by means of a link, the spring tending to hold down the end of the clutch which embraces the rod, and a stop or lug on the lever beyond the point of connection of the link therewith adapted to engage an arm of the clutch-piece, substantially as and for the purpose described.

4. In combination with the carbon-carrier rod, the tilting frame, the cramping clutch-piece suspended therefrom by a link having an arm extending inward provided with an opening through which passes the carbon-carrier rod, and an arm extending outward, an adjustable trip on the frame beyond the suspending link adapted to engage the outwardly-extending arm of the clutch-piece, and yielding means for holding the cramping portion of the clutch-piece down, substantially as and for the purpose described.

5. In the cramping feed-clutch for the carbon-carrier rod, the spring adapted to engage one side of the rod and hold the rod by friction, and the lug or solid portion of the clutch-piece adapted to limit the yielding or backward movement of the spring, substantially as and for the purpose described.

6. In combination with the pivoted lever-frame and the carbon-carrier rod, the link dependent from the frame at a point on the opposite side of the carrier-rod from the frame-pivot, the cramping clutch-piece having the inwardly-extending arm embracing the rod and the outwardly-extending arm, the stop or trip on the frame beyond the link, and devices, substantially as described, adapted to raise the frame-arm carrying the clutch as the carbon in the carrier tends to approach the lower carbon too nearly, substantially as and for the purpose described.

7. In an automatic cut-off for electric lights, in combination with the magnet M, located in the main circuit, the pivoted contact-lever and suitable connections whereby said lever normally short-circuits the magnet, a high-resistance magnet, a device controlled by the armature of such magnet to move the lever and break the short circuit of the magnet M when the resistance of the arc exceeds a certain point, the armature-lever for the magnet M, and suitable devices and connections whereby, when the armature-lever is attracted by magnet M, the carbons will be short-circuited, substantially as and for the purpose described.

8. In an electric-light apparatus, in combination with the feed-clutch carrying pivoted frame or lever, having its opposite arms provided with suitable armatures, the low-resistance magnet placed in circuit with the carbons adapted to act upon the armature on that arm of the lever which carries the clutch, the high-resistance magnet adapted to act upon the other armature, suitable connections, so that when the resistance of the arc increases above a certain point the current passes through the coil of the high-resistance magnet, and a cut-out device for short-circuiting both magnets, and the carbons adapted to be set in action as the arm of the lever is raised by the high-resistance magnet, substantially as and for the purpose described.

9. In combination with magnet M, the armature-lever N, the contact-stud thereon, and the spring tending to keep the lever N from the magnet, the conducting-lever R, in electrical connection with plate P, and provided with means for normally establishing connection between plates P and S, connected with opposite ends of the coil of the magnet, a connection between the stud and one wire of the supply-circuit and the plate S and the other wire of such circuit, the clutch-lever, and the high and low resistance magnets actuating opposite ends of the lever, and means, substantially as described, whereby as the high-resistance magnet raises its ends of the clutch-lever the lever R is moved to break the connection between plates P and S, substantially as and for the purpose described.

10. In a cut-out apparatus for electric-arc lights, the combination of the cut-out magnet located in the main circuit, a movable short-circuiting conductor for normally diverting the current from said magnet, means for breaking said short circuit, a magnetic device for automatically actuating the means for breaking the short circuit when the resistance in the arc reaches a certain point, the conductor for short-circuiting the carbons having a movable point controlled by the armature of the cut-out magnet, and means for retaining the cut-out or short-circuiting devices from returning to their normal position while the current continues to flow through the cut-out magnet, substantially as and for the purpose described.

11. In combination with the contact-plates P and S, located in the main circuit, the cut-out magnet, the armature-lever, the contact-stud thereon electrically connected with one of the main binding-posts, the conducting switch-lever adapted to make contact between the plates P and S, the arm on the lever, the tilting frame O, the lug thereon adapted to engage a portion of the arm on the lever, substantially as and for the purpose described.

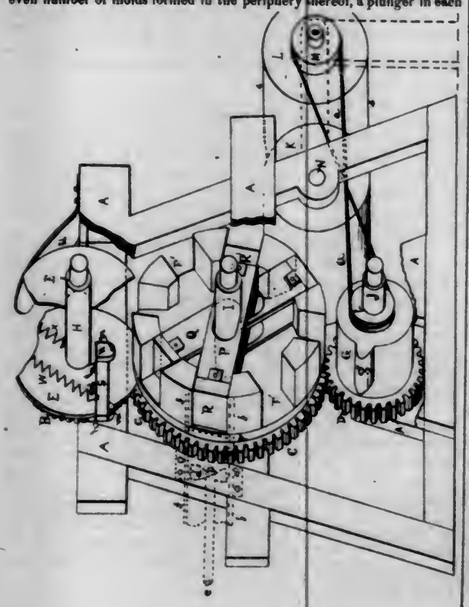
12. In combination with the dash-pot cylinder closed at both ends and provided with the grooves or by-passes on its inner face, the piston fitting and moving within such cylinder, substantially as and for the purpose described.

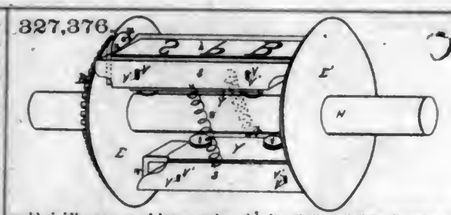
13. In an electric-light mechanism, in combination with the clutch mechanism and the magnets for operating the same, the plunger or piston, and the inclosing-cylinder, closed at both ends and having grooves or by-passes on its inner face adapted to establish connection between the spaces above and below the piston or plunger head during a certain portion of its stroke, substantially as and for the purpose described.

327,376. BRICK-MACHINE. SYLVESTER P. BABCOCK, Adrian, Mich., assignor of one-fourth to James R. Haight, same place. Filed Feb. 12, 1885. (No model.)

Claim.—1. In a brick-machine, the combination of a repressing-wheel carrying one or more pivoted repressing-plungers with the mold-wheel having an even number of molds formed in the periphery thereof for the reception of the pivoted plungers on the repressing-wheel, and a plunger arranged in each mold and adapted to sustain the contents thereof against pressure, substantially as described.

2. In a brick-machine, the combination of a mold-wheel having an even number of molds formed in the periphery thereof, a plunger in each





mold rigidly connected by cross-bars having elongated slots therein with the opposite plunger, a repressing-wheel rotating in contact with the mold-wheel and carrying thereon repressing-plungers adapted to enter said molds successively, and a rotating drum carrying thereon one or more cams adapted to successively enter the mold opposite the one occupied by the repressing-plunger, substantially as and for the purposes set forth.

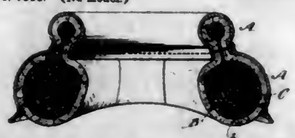
3. In a brick-machine, the combination, with a mold-wheel having molds in its periphery arranged in pairs diametrically opposite to each other, of plungers operating in said molds, the cross-bar connected with each pair of plungers and having an elongated slot, and the shaft of the mold-wheel passing through said slot, substantially as described.

4. In combination with the mold-wheel F, having therein the molds F', and connected plungers R R, the repressing-wheel E, carrying the pivoted repressing-plungers *h*, each surrounded by the box S, and having thereon the spring Y and set-screws *t t*, substantially as shown and described.

5. The combination, in a brick-machine, of a rotating mold-wheel having molds formed in the periphery thereof with a repressing-wheel having repressing-plungers pivoted thereto, a box surrounding said repressing-plunger and adapted to fit closely around the mouth of each mold and guide the repressing-plunger, and a spring attached to said repressing-plunger and adapted to press said box closely against the mold-wheel, substantially as shown and described.

6. In combination with the mold-wheel F, the repressing-wheel E, having pivoted thereto the repressing-plungers *h h*, the connecting-springs W X, and the spring U, substantially as shown and described.

327,377. HORSE-COLLAR. HENRY BROOKS, Brooklyn, Ohio. Filed Apr. 30, 1885. (No model.)



Claim.—In a horse-collar, the combination of the outer covering, A, the felt lining B, the filling C, and its wrapper *b*, essentially as shown and described.

327,378. CURTAIN-FIXTURE. RICHARD R. BROUNER, Washington, D. C. Filed July 24, 1885. (No model.)



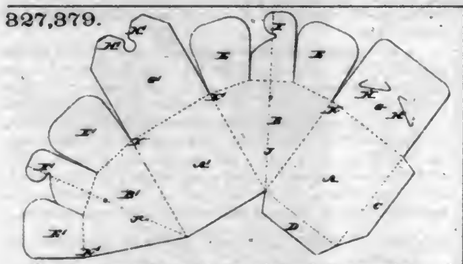
Claim.—1. A bearing-screw having a central socket for the reception of the roller-end, substantially as and for the purpose described.

2. A bearing-screw having a central socket for the reception of the roller-end, and a slot through which the roller-journal may be dropped into the socket, substantially as shown and described.

327,379. PAPER BOX. ROBERT P. BROWN and EDWARD L. BAILEY, Philadelphia, Pa. Filed July 17, 1885. (No model.)

Claim.—1. A sector-shaped box having quadrilateral sides A A' and sector-shaped sides B B', with securing-strips C D, the said sides B B' having flaps with locking-tongues F F', formed so as to lock sidewise or laterally with each other, substantially as described.

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2. A sector-shaped paper box formed of a single piece of material, having the opposite sides, B B', provided with flaps having tongues interlocking sidewise or laterally, as described, and side A, having a flap with tongues H' H' interlocking with flap G, having slots H H, substantially as described.

3. A paper box of sector shape, formed of sides A A' B B', with the securing-strips C D and top-closing parts, consisting of the folds E E', inner locking-tongues, F F', and outer locking-flaps, G G', substantially as described.

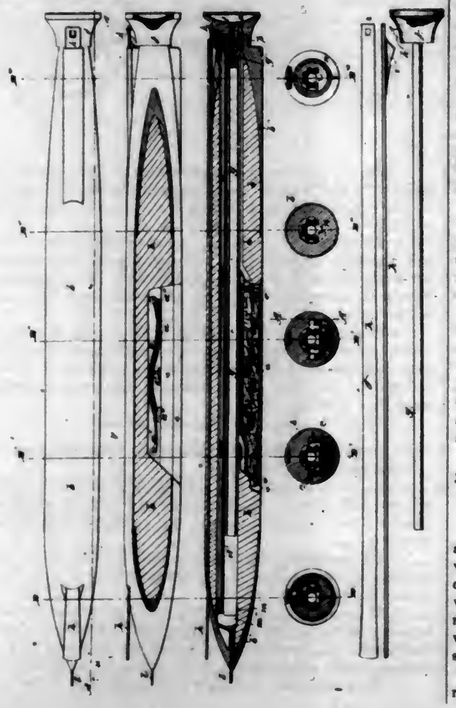
4. A sector-shaped box, substantially as described, provided with the kerfs or score-marks J J', for the purpose set forth.

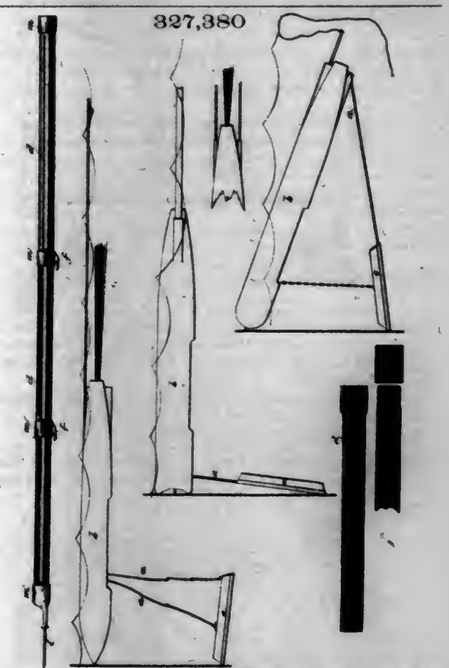
327,380. MARINE TORPEDO. WASHINGTON I. CHAMBERS, Kingston, N. Y. Filed Jan. 26, 1884. (No model.)

Claim.—1. In a rocket-torpedo, the combination of a body, *b*, provided with a longitudinal channel at or near its axis open at the rear end of the projectile, an opening or chamber in its lower part connected therewith, a magazine to contain an explosive charge arranged in said opening and provided with a time-fuse, and means for holding and releasing said magazine, as and for the purpose described.

2. A rocket-torpedo constructed substantially as described and having a detachable magazine arranged in a chamber at or near its longitudinal center, with a preponderance of weight, caused by this arrangement of the magazine, at one side of the axial center of the torpedo, whereby said magazine is made to serve as ballast to prevent rotation during the flight of the torpedo, as described.

3. In a rocket-torpedo the combination of a body, *b*, provided with a chamber or recess to receive the magazine, a magazine arranged in said chamber, means for holding and releasing the magazine, and a spring or springs to force the magazine out of its chamber when released, substantially as described.





4. In a rocket-torpedo, the combination of a body, *b*, provided with a chamber or recess to receive the magazine, a magazine arranged in said recess or chamber, means for holding and releasing the magazine, and two or more spring-bars jointed to the magazine and to the body and arranged to fold and be sprung between the magazine and the body, whereby the magazine, when released, is forced from its chamber and supported in firing position, as described.

5. In a rocket-torpedo, the combination of a series of tubes, as *d*, for containing the rocket composition, arranged in the longitudinal axis of the projectile and closed at their rear ends, and an unpacked tube, *d'*, open at both ends, said tubes *d* and *d'* opening into a common chamber at their front ends, whereby the rocket composition is adapted to be burned from the front and the gases discharged at the rear, as described.

6. In a rocket-torpedo, the combination of a series of tubes, as *d*, for containing the rocket composition, an unpacked tube, *d'*, open at both ends, said tubes *d* and *d'* opening into a common chamber at their front ends, and a sabot, *j*, arranged upon the rear end of the projectile and having a stem which projects into the tube *d'*, as and for the purpose described.

7. In a rocket-torpedo, the combination of a series of tubes, *d*, packed with rocket composition, an unpacked tube, *d'*, open at both ends, said tubes *d* and *d'* opening into a common chamber at their front ends, a sabot, *j*, arranged on the rear end of the projectile and having a hollow stem which projects into the tube *d'*, and an opening, *p*, into the hollow stem, all as and for the purposes set forth.

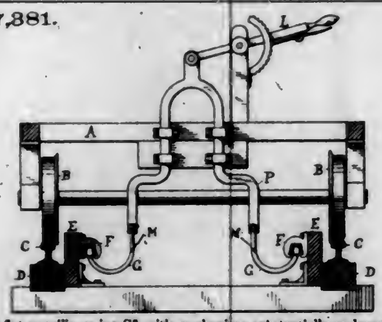
8. In a rocket-torpedo, the combination of one or more sliding bars arranged in longitudinal channels in the body of the projectile and provided with a stop or shoulder to limit the backward movement, a tube, *d'*, in the longitudinal axis of the projectile through which the gases from the rocket composition are discharged, a sabot arranged on the rear end of the projectile and provided with a stem which projects into the tube *d'*, and a separable connection between the sliding bar or bars and the sabot, as and for the purpose described.

327,381. ELECTRIC RAILWAY. HENRY T. CLAY, Philadelphia, Pa., assignor of one-third to Samuel G. Diehl, same place. Filed Feb. 7, 1885. (No model.)

Claim.—1. In a railway for the propulsion of a car provided with an electric motor, a rigid metallic conductor, F, constructed, as described, with a flat upper internal surface, and supported between the rails, in combination with one or more adjustable contact spring-brushes, G' G², with means to support the same and bring one or more of them, while moving in said conductor, against the upper internal surface thereof, whereby the electric current is supplied or led from said conductor to said motor, substantially as set forth.

2. The combination, with the rigid metallic conductor of an electric railway, of an adjustable contact device consisting of the insulated arm

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G and flat metallic spring G^2, with mechanism, substantially as described, to bring said spring-brush G^2 into electrical contact with the interior surface of said conductor from time to time, as may be desired, as and for the purpose set forth.

3. In an electric railway provided with a rigid metallic conductor, the switch herein described, consisting of arms K K, joint N, lip *n*, and spring S, constructed and operating substantially as set forth.

327,382. ELECTRIC RAILWAY. ROBERT L. COHEN, Philadelphia, Pa., assignor of one-half to Samuel G. Diehl, same place. Filed Mar. 20, 1885. (No model.)

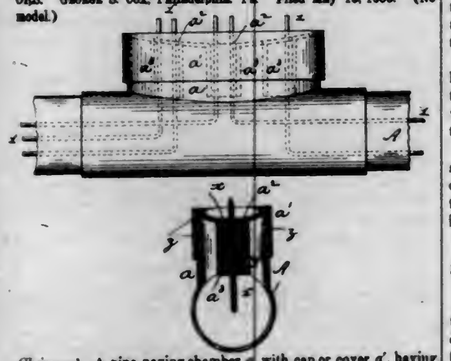


Claim.—1. In an electric railway, a rigid metallic conductor leading the current from the dynamo or other source of supply to a brush moving freely therein provided with a rounded internal upper surface and flaring or flanged sides, as set forth.

2. In an electric railway system wherein a car is propelled by means of a motor driven by an electric current supplied through a rigid metallic conductor by means of a moving brush, mechanism for connecting said brush with the motor, consisting of two bars or plates sliding vertically, one within the other, against spring-pressure applied between them, one of which bars being rigidly attached to the car and the other to the wheel-brush, substantially as described.

3. Mechanism for electrically connecting a moving brush bearing against a rigid metallic conductor with an electric motor in a car, consisting of the plates or bars A and B, sliding one within the other, and having cross-bars C and D, respectively, guide-rod E, and spring M, constructed and operating substantially as set forth.

327,383. UNDERGROUND CONDUIT FOR ELECTRIC CONDUCTORS. GEORGE S. COX, Philadelphia, Pa. Filed May 15, 1885. (No model.)



Claim.—1. A pipe having chamber *a*, with cap or cover *a'*, having opening a^3, with depending flanges or pipe-sections a^3, substantially as set forth.

2. A conduit for electric wires or cables, having a longitudinally-arranged tapping chamber provided with a cap or cover, having one or more openings and depending flanges or pipe-sections in line with said openings, substantially as shown and described.

3. The pipe A, having tapping-stations *a*, provided with covers *a'*, having one or more openings, a^3, and pipe-sections or flanges a^3, and a packing material between said stations and covers, substantially as shown and described.

4. In a system of underground conduits for electric cables, the combination of main conduit C and the sub conduits or pipes A, having tapping-chambers *a*, provided with caps *a'*, having openings a^3, and depending flanges or pipe-sections a^3, substantially as shown and described.

5. In a system of underground conduits for electric cables or wires, the combination, with main conduit C, having at intervals along its length top, bottom, and side openings *c*, and doors or covers *c'* therefor, of sub-conduits A, having adjacent to openings *c* in said main conduit separately-attached chambers *a*, provided with caps *a'*, having openings a^3 and depending flanges a^3, arranged substantially as shown and described.

327,384. FENCE. JAS. H. CRAIN, Junction, Ill. Filed June 8, 1885. (No model.)

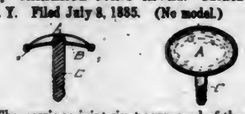


Claim.—1. In a fence, the combination, with a cable consisting of two or more strands of wire, of short wires interwoven in the cable and adapted to be secured together as described, to form loops for the pickets.

2. Cable for picket-fences, consisting of two or more strands of wire twisted together and a series of short wires interwoven with the strands of the cable, substantially as and for the purpose set forth.

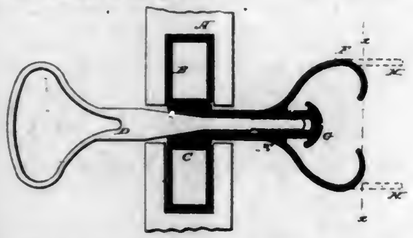
3. The combination, with a cable consisting, essentially, of two or more strands of wire twisted together, of a series of short wires interwoven with the cable and adapted to be united in pairs for the purpose of forming picket-loops, substantially as set forth.

327,385. CARRIAGE-JOINT RIVET. GEORGE L. CRANDAL, Binghamton, N. Y. Filed July 8, 1885. (No model.)



Claim.—The carriage-joint rivet composed of the metal cap A, rivet C, and metal plate B, substantially as shown and described.

327,386. KNOB ATTACHMENT. THEODORE D. DAVIS, Williamsport, Pa. Filed Aug. 29, 1884. (Model.)



Claim.—1. The combination, substantially as before set forth, of the hub of a latch, a spindle passing through said hub and having a tapering surface, and a nut on the spindle to cause it to firmly bind on the hub.

2. The combination, substantially as before set forth, of the hub of a latch, a sectional spindle having a tapering surface, and a screw-connection for drawing the sections of the spindle together and toward the hub, whereby the said sections of the spindle and the hub are all firmly bound together.

3. The combination, substantially as before set forth, of the hub of a latch, a spindle composed of a male section and a female section, each of which is constructed with a tapering surface, and a nut for moving the sections of the spindle on each other to force their tapering surfaces into the eye of the said hub.

327,387. CAR-COUPLING. THEODORE D. DAVIS, Williamsport, Pa. Filed June 1, 1885. (No model.)

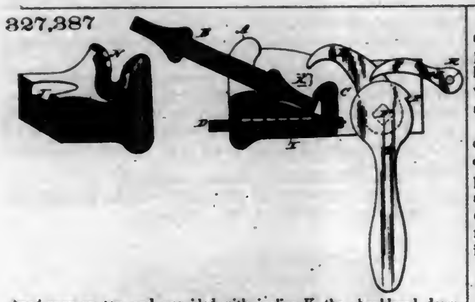
Claim.—1. The combination, substantially as before set forth, of the draw-head open on top, the draw-bar, the latch for holding the draw-bar in an inclined position ready for coupling, the latch-rod, and the spring.

2. The combination, substantially as before set forth, of the draw-head open on top, the draw-bar, the spring-latch, and a lever for uncoupling the draw-bar.

3. The combination, substantially as before set forth, of the draw-head open on top, the draw-bar, the spring-latch, a lever for uncoupling the draw-bar, and a pawl for locking the said lever to prevent the draw-bar from coupling notwithstanding its release from the spring-latch.

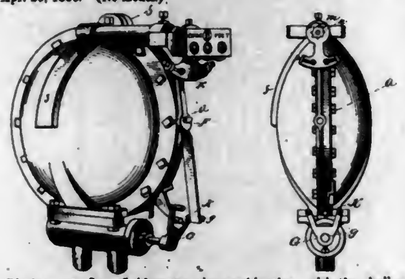
4. The combination, substantially as before set forth, of the draw-

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head open on top, and provided with incline K, the shouldered draw-bar, the spring-latch, and a lever for uncoupling the draw-bar.

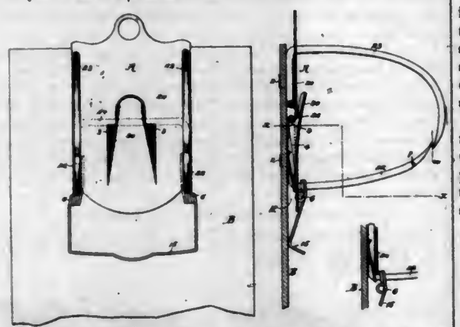
327,388. FLUID DIAPHRAGM-METER. REUBEN DEUEL, Terre Haute, Ind., assignor of one-half to Jacob A. Parker, same place. Filed Apr. 25, 1885. (No model.)



Claim.—1. In a fluid-meter, the combination, with the shell constructed of two parts united together, one of which parts being formed with a bulge or interior pocket, of the intervening flexible diaphragm, the vibrating slotted lever, the central plates and pin connecting said lever with the diaphragm, the rock-shaft and its segment having pins and adjusting-screws, the outer lever, and the lower segment attached to the stem of a suitable oscillating valve, all substantially as shown and described.

2. The combination, with the shell of the meter constructed in two parts, as described, of the intervening diaphragm, the central plates, the connecting-lever, its spindle and segment, and the outer lever and lower segment, and suitable valve, the whole arranged to operate substantially in the manner and for the purpose set forth.

327,389. LETTER-FILE. LANING L. FERRIS, New York, N. Y. Filed Mar. 5, 1885. (No model.)



Claim.—1. The combination, with the base-plate A, supporting the stationary arm or arms 23, of the removable impaling arm or arms 22, adapted to be engaged and held in position by a locking-tongue, and a locking-tongue, as 30, substantially as described.

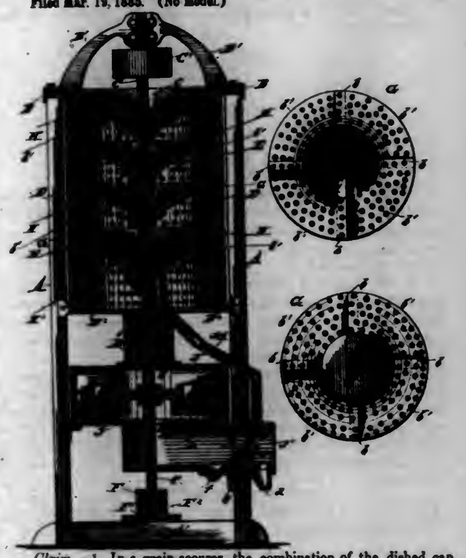
2. The combination, with the base-plate A, supporting the stationary arm or arms 23, of the removable impaling arm or arms 22, and a spring locking-tongue, as 30, formed integral with said base-plate, substantially as described.

3. The combination, with a base-plate supporting impaling-arms and provided with a locking-tongue, as 30, of a removable impaling arm or arms provided with a base or foot that is adapted to be engaged by said locking-tongue, and held thereby in position on the base-plate, substantially as described.

4. The combination, with the base-plate A, supporting the stationary arm or arms 23, and formed with the side flanges, 10, that provide a pocket, 12, of the removable impaling arm or arms 22, adapted to be held in said pocket by a locking-tongue, and a locking-tongue, as 30, whereby said arm or arms is or are held in position over the base-plate, substantially as described.

5. A paper-file consisting of a base-plate providing two pairs of curved arms, 22 23, the ends of which are arranged to lap past each other, so that papers can be inserted between said ends, impaled by one pair of arms without adjusting the relation of the arms with each other, and transferred from one pair of arms to the other pair, one of said pair of arms being wholly removable from said base-plate by sliding them from within a recess or pocket formed by the base-plate without disturbing the relation of the latter with its support, substantially as described.

327,390. GRAIN-SCOURER. GARDNER B. GRAY, Cardington, Ohio. Filed Mar. 19, 1885. (No model.)

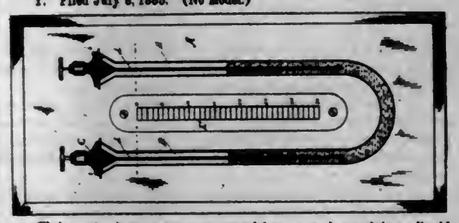


Claim.—1. In a grain-scourer, the combination of the dished cap B *c*, the base-plate B^2, having a central tube, B^3, the fan-casing, the fan, the stationary center discharge, inverted conical frusta, the revolving perforated inverted conical frusta, the perforated shell, and the imperforate case surrounding the same, substantially as specified.

2. In a grain-scourer, the combination of the stationary and revolving inverted conical frusta with the central discharge dished cap to feed the machine, the base-plate opening centrally into the fan-case, the fan secured to and turning on the shaft to which the revolving frusta are secured and adapted to draw the impurities out of the case of the machine, and the central discharge-frustum, H', provided with a discharge-spout, M, substantially as specified.

3. The combination of the inverted conical frusta secured to and rotating with the shaft C, and each consisting of a central hub, *a*, four upwardly-inclined radial arms, *b*, and four perforated quadrants overlapping at their edges and having the arms *b* between them, with the stationary center discharge, inverted conical frusta having their outer edges secured to the case of the machine, substantially as specified.

327,391. ELECTRIC-CURRENT METER. JOHN J. GREEN, Boonton, N. J., assignor of one-half to H. C. Willis and T. F. Hunter, Brooklyn, N. Y. Filed July 8, 1885. (No model.)



Claim.—1. A current-meter comprising a vessel containing a liquid, having an outlet for the gases of decomposition, two electrodes, and a scale adapted to indicate the change of level due to the amount of liquid decomposed by the current, substantially as described.

2. A current-meter comprising a bi-branched transparent glass tube adapted to contain a liquid, having an outlet for the gases of decomposition, two electrodes therein, and a scale adapted to indicate the fall of level of said liquid due to the decomposition thereof, substantially as described.

3. In a current-meter adapted to indicate the current passed by the decomposition of a liquid and consequent fall of level of said liquid, the combination therewith of one or more valves adapted to permit escape of the gases formed but to prevent access of air to the interior of said meter, substantially as described.

4. The electric-current meter consisting of the bi-branched glass tube B, adapted to contain a liquid, having an outlet for the gases of decomposition, electrodes *d*, and the scale E, having its zero at the upper end, and then reading downwardly, substantially as described.

327,392. CUTTER-HEAD. BENJAMIN R. HAND, Camden, N. J., assignor of one-half to George A. Munger, same place. Filed May 21, 1885. (No model.)



Claim.—1. The blade B, in combination with the clamp A, having its inner face recessed and provided with a shoulder, in combination with adjusting-screws D, working in said recessed face of the clamp A, and having their points in adjustable contact with the back of the blade, substantially as described.

2. The blade B, in combination with the head A', the clamp A, securing the said blade to said head, the clamping-screw E, passing through the said clamp A into the said head A', and the dowel-pins F, secured to said clamp A, and entering in recesses in said head A', substantially as and for the purpose set forth.

3. The head A', in combination with the narrow blade B, clamp A, having its inner face recessed and provided with shoulders C, the said clamp A being secured to said head A' by screw E, holding said blade in position, screws D, working in recess in said clamp A, and having their points in adjustable contact with the back of blade B, and dowel-pins F, attached to said clamp A and resting in recesses in head A', substantially as described.

327,393. AUXILIARY MOUTH-PIECE FOR TELEPHONES. CHAS. A. HARRISON, Bridgeport, Conn. Filed Aug. 11, 1884. (No model.)



Claim.—1. An auxiliary funnel-shaped mouth-piece for telephones, having inwardly-curving sides, and adapted, by means of grappling-rods, to be readily attached to and removed from the transmitter-case, substantially as described.

2. The combination, with a telephone-transmitter case, of the auxiliary detachable mouth-piece A, having grappling-rods *b*, adapted to act in the manner specified.

327,394. DIAMOND-TWEEZERS. RICHARD HEINSLEY, Montreal, Quebec, Canada. Filed Nov. 7, 1884. (No model.)



Claim.—1. A pair of tweezers for diamonds and other precious stones, consisting of a handle and converging spring-prongs having outwardly-bent and tipped ends, substantially as set forth.

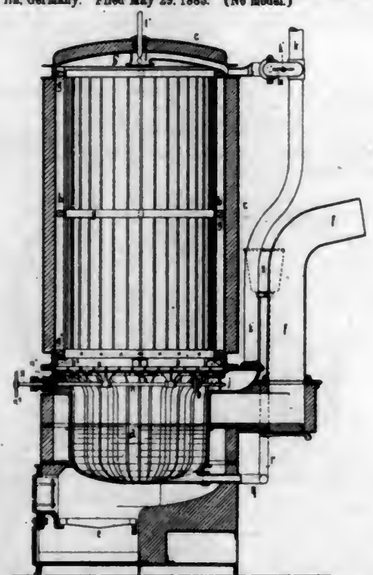
2. A pair of tweezers for diamonds and other precious stones, consisting of a handle and converging spring-prongs having outwardly-bent ends provided with inwardly-bent tips or serrations, the spring-prongs being adapted to be spread apart so as to grip the stone, substantially as set forth.

3. A pair of tweezers consisting of a handle, converging spring-prongs having outwardly-bent ends with inwardly-bent tips or serrations, and means for spreading the spring-prongs apart for releasing the stone, substantially as set forth.

4. A pair of tweezers consisting of a handle, converging spring-prongs having outwardly-bent ends provided with inwardly-bent tips, and a wedge-piece engaging projections at the inside of the prongs so as to spread them apart for releasing them from the stone, substantially as set forth.

5. The combination, in a pair of tweezers, of a hollow handle, converging spring-prongs attached to the handle and provided with outwardly-bent ends having inwardly-bent tips or serrations, projections at the inside of the prongs, a wedge engaging said projections, and a shank attached to the wedge and guided in the hollow handle, substantially as set forth.

327,395. DISINFECTING APPARATUS. RUDOLF HENNEBERG, Berlin, Germany. Filed May 29, 1885. (No model.)



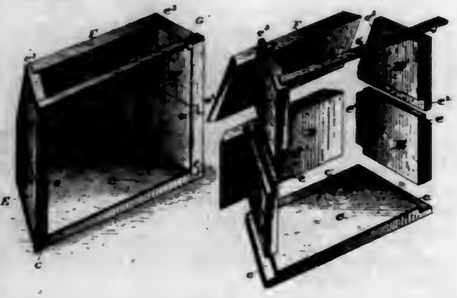
Claim.—1. The combination, with the vessel or boiler *a*, the vessel or disinfecting-chamber *b*, and means for heating the water in *a*, of an exhaust-pipe, *k*, connected to *a* and *b*, a plate, *h*, having apertures and inserted between *a* and *b*, a slide, *p*, adapted to cover and uncover the apertures of *h*, a valve, *o*, adapted to close the channel *j*, and means whereby the slide *p* and the valve *o* may be operated simultaneously, substantially as and for the purpose specified.

2. The combination, with the vessel or disinfecting-chamber *b*, of a vessel or boiler, *a*, having vertical ribs integral therewith on the inside, and means for heating the vessel *a* from the outside, substantially as described.

3. The combination, with the vessel or boiler *a* and vessel or chamber *b*, and adapted to be turned down horizontally, having the lid *b*, of a cage, *g*, having rollers, as described, and adapted to be removed from *b* and to contain the articles to be disinfected, substantially as set forth.

4. The combination, with the vessel or boiler *a*, connected to the removable vessel or chamber *b*, of the pipes *q* and *r* and the funnel *s*, the boiler *a* being provided with means for closing its top and the pipe *q* being conducted into the boiler at or near the bottom thereof, as and for the purpose specified.

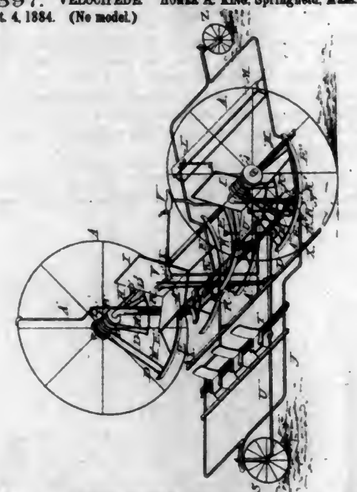
327,396. OPEN FIRE-PLACE. DANIEL E. JONES, Denton, Tex. Filed Dec. 24, 1884. (No model.)



Claim.—1, The combination, in an open fire-place, of a hearth grooved as described, side sections rabbeted together, and the back vertical and inclined sections jointed to the side sections, substantially as described.

2. The combination, in an open fire-place, of the bar G, a hearth grooved as described, side sections rabbeted together, and the back vertical and inclined sections jointed to the side sections, substantially as described.

327,397. VELOCIPEDE. HOMER A. KING, Springfield, Mass. Filed Sept. 4, 1884. (No model.)



Claim.—1. A vehicle propelled by a rocking chair in which are combined levers and connection to propelling-boxes and driving-wheel, the combination and arrangement being such that each movement of the rocking chair forward or backward causes the rotation of the driving-wheel in one direction.

2. Connection between the lever with treadle R on one side of seat V, and the lever with treadle on the other side of seat V, and with connection to propelling-boxes and driving-wheel, causing the depression of one treadle on one side of the seat to elevate the treadle on the other side of the same seat, for the purpose set forth.

3. Levers projecting in opposite directions, each receiving power and transmitting it by connection to propelling-boxes and to a driving-wheel, causing the wheel to rotate in one direction.

4. A double-box propelling mechanism, in combination, to levers and to a driving-wheel, receiving power and transmitting it to the driving-wheel, causing the wheel to rotate in one direction, the combination and arrangement being such that the depression of a lever turning one propelling-box forward brings the other propelling-box back into position to again receive power and transmit it to the driving-wheel.

5. Springs N, in combination with axle, levers, and connection to propelling-boxes and driving-wheel, for the purpose set forth.

6. The oscillating steering-rod U, in combination with rocking chair I, the upper end of the steering-rod oscillating with and by the motion of the rocking chair, keeping the handle of the steering-rod always within reach of the hand of the rider in the rocking chair, for convenience in steering when the rocking chair is in any position, substantially as set forth.

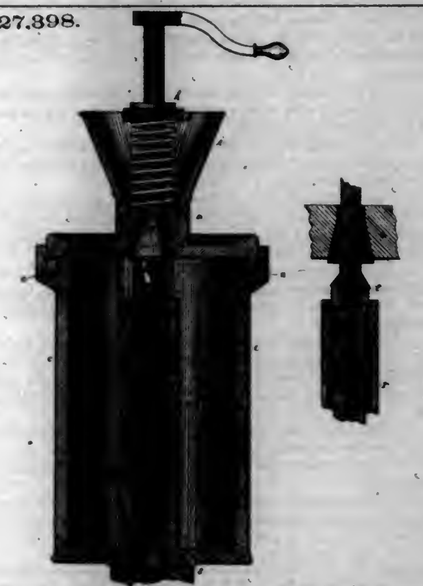
7. The combination, in a vehicle, of a truck or caster wheel attachment, *z*, with rocking chair I, and with connection to propelling-boxes and driving-wheel, the truck attachment arresting the movement of the chair when it is rocked far backward, preventing any jerking up of the front part or tipping backward, substantially as set forth.

327,398. LUBRICATOR. THOMAS W. KINKAID, U. S. Navy. Filed July 29, 1885. (No model.)

Claim.—1. A lubricator consisting of the cylindrical cup communicating with the steam-chest, and provided with the central tube, *r*, having an opening near the bottom, the tube *b*, adapted to be adjusted in the said tube *r*, and provided with an opening near each end, and with the socket square in cross-section in its upper end, and a rod having a projection extending into the said socket, for the purpose set forth.

2. A lubricator consisting of the cylindrical cup communicating with the steam-chest, the central tube, *r*, having an opening near its lower end, the tube *b*, placed within and adapted to adjustment up and down in the said tube *r*, and provided with an opening near each end and the square socket in its upper end, the cover *a*, provided with the central conical seat, and the rod *d*, provided with the conical plug and square extension *w*, substantially as described.

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3. In a lubricator, the combination of the casing having the central tube, the tube *b*, placed in said central tube, adapted to adjustment up and down therein and provided with the upper square opening, the cover screwed into the annular groove in the top of the cup and provided with the conical valve-seat, and the rod *d*, provided with the conical plug and the square downward projection.

4. The combination, in a lubricator, of the casing provided with the central tube communicating with the steam-chest and provided with an opening near its lower end, the tube adapted to slide in said central tube and provided with openings near its upper and lower ends, the cover *a*, provided with a depending flange taking into an annular groove in the top of the cup, and also provided with the conical valve-seat and funnel-shaped opening, and the rod *d*, provided with the conical plug.

5. The combination, in a lubricator of the casing provided with the tubes, the tube adapted to rotate within the tube *r*, as described, and the cover provided with the conical valve-seat and funnel-shaped opening, and the rod provided with the conical plug, and having the spring *f* coiled around it and exerting an upward strain thereupon.

327,399. VELOCIPEDE. ERNST G. LATTA, Friendship, N. Y., assignor of one-half to Adrian C. Latta, same place. Filed Mar. 31, 1885. (No model.)



Claim.—1. The combination, with the fork A^3, provided with an extension, B, of an arm, E, projecting rearwardly from the extension B, and a crank-wheel support, F, adjustably secured to the arm E, substantially as set forth.

2. The combination, with the fork A^3, provided with an extension, B, of an arm, E, made vertically adjustable on the extension B and projecting therefrom, and a crank-wheel support, F, adjustably secured to the arm E, substantially as set forth.

3. The combination, with the crank-wheel arranged below the center of the driving-wheel, of a brake adapted to be tightened against the crank-wheel, substantially as set forth.

4. The combination, with the crank-wheel arranged below the center of the driving-wheel, of a brake adapted to be tightened against the crank-wheel and a foot-lever whereby the brake is operated, substantially as set forth.

5. The combination, with the fork, of a brake-lever provided with a stop which supports the brake-lever and adapts the same for use as a foot-rest, substantially as set forth.

6. The combination, with the fork provided with an extension, B, of an arm, E, bracket F, crank-wheel C, and brake-lever K, pivoted to the bracket F, substantially as set forth.

7. The combination, with the crank-wheel C, provided with an axle, *g*, of a bearing-box, I, an inner adjustable cone, *j*, and a crank, G, provided with a cone, *i*, and secured to the outer end of the axle by a screw-thread and key, substantially as set forth.

8. The combination, with the fork provided with circular frames D, of bearings *d*, seated in said frames and capable of being turned therein, and the axle *d'*, eccentrically journaled in the bearings *d*, substantially as set forth.

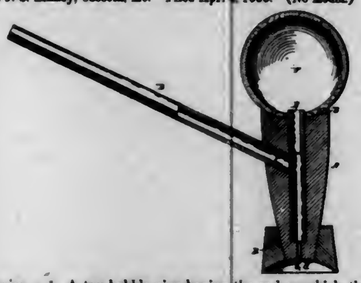
9. The combination, with the fork provided with circular frames D, of circular bearings *d*, seated in said frames, a driving-wheel, A, having its axle journaled eccentrically in the bearings *d*, and provided with chain-wheels C', crank-wheels C, and drive-chains *c*, substantially as set forth.

10. The combination, with the perch and saddle, of the scroll-spring N and the supporting-bracket Q, provided with a curved seat, n^2, to which the curved end of the spring is adjustably secured, substantially as set forth.

11. The combination, with the perch and saddle, of the scroll-spring N, the supporting-bracket Q, provided with a curved seat, n^2, and slot q^2, and a clip, R, substantially as set forth.

327,400. TOY BUBBLE-BLOWER.

CHARLES L. LIDNEY, Danville, Ky., assignor of one-half to E. B. Linney and T. E. Linney, same place, and J. S. Linney, Osceola, Mo. Filed Apr. 4, 1885. (No model.)

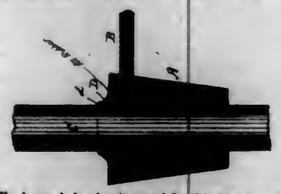


Claim.—1. A toy bubble-pipe having the end on which the bubbles are formed of comparatively small diameter, and having a supplementary ring or sleeve removably attached to said bubble end, substantially as and for the purpose specified.

2. A toy bubble-pipe having a bowl large at one end and small at the other, and concaved at each end, provided with a flexible reservoir normally resting on the larger end, and having a supplementary concave-ended ring or sleeve removably attached to the smaller end, substantially as and for the purpose specified.

327,401. SIPHON-CORK.

JOSHUA LOW, Steubenville, Ohio, assignor to Thomas B. McCrystal. Filed July 31, 1885. (No model.)



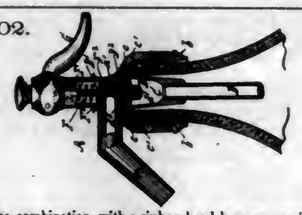
Claim.—The bung A, having integral flexible diaphragm D, provided with bole *d*, in combination with the air-tube B and siphon-tube C, as set forth.

327,402. SIPHON-HEAD.

PETER E. MALMSTRÖM and PAUL E. DUBBE, New York, N. Y., assignors to Carl H. Schultz, same place. Filed July 23, 1885. (No model.)

Claim.—1. A valve-stopper for a siphon-head, consisting of a core, *d*, having a head, d^3, an elastic neck-washer, d^3, through which the core passes, and a thimble, *d*†, secured around the lower end of the core, and having at its upper end a surrounding rim or flange, d^5, forming a socket in which the lower end of the neck-washer is seated, substantially as described.

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2. The combination, with a siphon-head having a conical valve-seat and a plunger, of the cord *d*, having the head d^3, connected with the plunger, the elastic conical neck-washer d^3, through which the cord passes, and the thimble d^4, secured around the lower end of the cord and having at its upper end a surrounding rim or flange, d^5, forming a socket in which the lower end of the conical neck-washer is seated, substantially as described.

327,403. EXERCISING APPARATUS.

PATRICK E. MCDONNELL, Chicago, Ill., assignor to the McDonnell Odometer Company, same place. Filed July 31, 1884. (No model.)



Claim.—1. An exercising apparatus for use with a suitable registering-gage constructed to register the degree of force exerted upon a fluid contained in the said apparatus, and comprising a receptacle, formed wholly or in part of flexible material, to contain a fluid, and containing a receptacle of elastic material provided with means forming a communication from without the said first-named receptacle with the said elastic receptacle, whereby the said elastic receptacle may be expanded by a current of air expelled from the lungs of the operator, and caused to collapse after its expansion, substantially as described, and for the purpose set forth.

2. An exercising apparatus comprising, in combination, a receptacle, A, formed wholly or in part of flexible material, to contain a fluid, and containing a receptacle, *p*, of elastic material, a tube, *o*, communicating from without the receptacle A with the said elastic receptacle *p*, and a suitable registering-gage communicating with the interior of the receptacle A and constructed to register the degree of force exerted upon the fluid contained in the said receptacle A, substantially as described.

327,404. MACHINE FOR LINING STRAW AND OTHER BOARDS.

GORDON MUNRO, Troy, N. Y. Filed Apr. 14, 1884. (No model.)

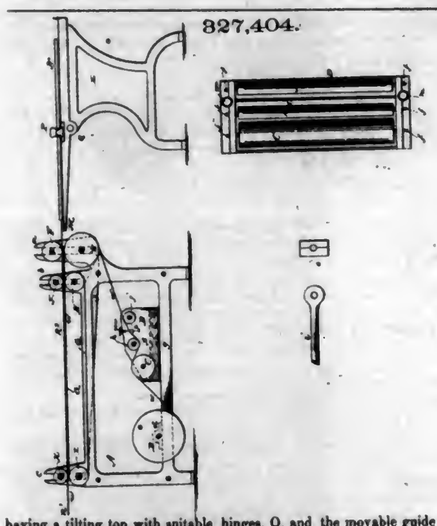
Claim.—1. In a machine for lining straw-board, the combination, with the delivering-reel located beneath the table, of the paste-box extending transversely across the machine, and provided with bearings for the reception of a pasting-roller, and guiding-rollers for regulating the path of the lining material, also journaled in the side walls of the paste-box, all located beneath the table, substantially as and for the purpose specified.

2. In a machine for lining straw-board, the delivering-reel and paste-box extending transversely across the machine, and located beneath the table, in combination with a pasting-roller, and guiding-rollers for regulating the path of the lining material, said rollers being journaled in the side walls of the paste-box, and an adjustable scraper-bar, substantially as and for the purpose described.

3. In a machine for lining straw-board, the combination of the delivering-reel B and paste-box D, located beneath the table, paste-roller C, guide-rollers *h* and *j*, and scraper *i*, located within said box, and the reversing feed-rolls E and F, all arranged in the manner substantially as and for the purpose described.

4. The feed-table L, suitable for a straw-board-lining machine,

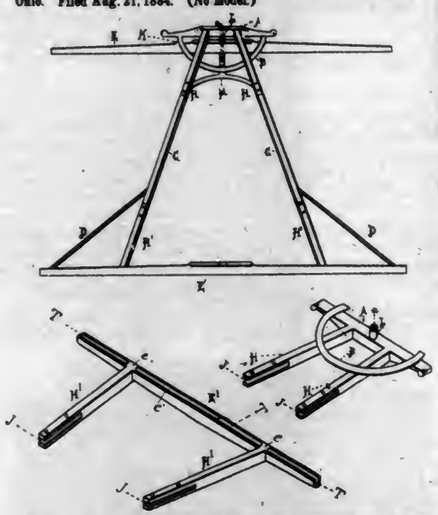
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having a tilting top with suitable hinges, Q, and the movable guide N, substantially as described and set forth.

327,405. VEHICLE RUNNING-GEAR.

THEODORE C. MUNK, Toledo, Ohio. Filed Aug. 21, 1884. (No model.)



Claim.—1. In a vehicle running-gear, the combination, with the rear axle-bed, E', having the longitudinal recess T, forming walls *e'*, of the reaches H' H', cast in one piece of metal with one of said walls, and partitions *e*, integral with and connecting and stiffening the walls *e'* at the junction of said reaches, substantially as set forth.

2. In a vehicle running-gear, the combination, with the front axle-bed and head-block having the reaches H H, of the rear axle-bed, the reaches H' H', formed integral therewith, the intermediate pieces, C, and the braces D, arranged to prevent lateral flexion of the reach-sections at their joints, said sections being formed of malleable cast-iron, substantially as set forth.

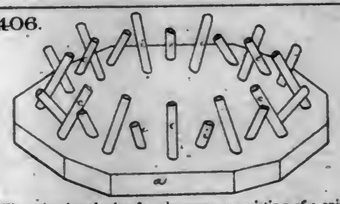
327,406. CRIMPING DEVICE FOR GLASSWARE.

JOHN NORTHWOOD, Brierly Hill, County of Stafford, England, assignor to Harry Northwood, Bridgewater, Pa. Filed Aug. 3, 1885. (No model.) Patented in England Feb. 1, 1884, No. 2,506.

Claim.—1. The crimping device for glassware, consisting of a number of guide pins or blades, *c i*, arranged in two rows, with their adjacent edges inclined in alternately opposite directions, substantially as described.

2. The crimping device for glassware, consisting of a suitable base, A, having two rows of guide pins or blades, *c i*, projecting therefrom, and having their adjacent edges overlapping and alternately oppositely inclined, substantially as described.

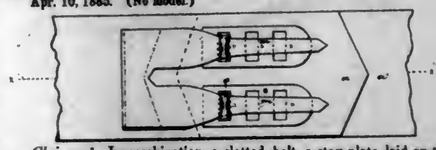
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3. The crimping device for glassware, consisting of a suitable base having two series of inclined pins projecting in alternately opposite directions and adapted to receive between them the edges of articles of glassware, substantially as described.

327,407. CATCH FOR BELTS.

LOUIS OSWALD, Newark, N. J. Filed Apr. 10, 1885. (No model.)



Claim.—1. In combination, a slotted belt, a stay-plate laid on the outside thereof, a loop having tongues provided with shoulders which engage said stay-plate, said tongues passing through said belt and being fastened on the under side to hold the parts together, and a tongue to enter the loop, substantially as set forth.

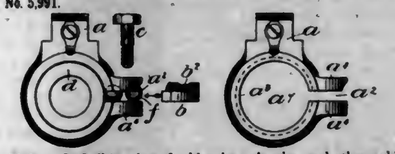
2. A belt having at one end a series of slots, and a plate fastened thereon with a corresponding series of slots, and having fastened at the other end a loop to enter either of the said slots, and a tongue of the same material as the belt, sewed on the outside thereof, and adapted to be thrust through said loop to secure the ends of the belt together, substantially as set forth.

3. In combination, the belt having ends *a a'*, one of which is provided with a tongue, *m*, and the other is slotted, a plate, *b*, correspondingly slotted, a stay-plate, *g'*, and a loop having tongues *g*, which pass through said stay-plate, and are bent down on the under side of said belt, and hold said stay-plate and loop on said belt, substantially as set forth.

4. A belt for ladies' waists, having at one end a stay-plate and loop, and at the other end an opening through which the loop may pass, and a tongue secured on the face of the belt back from the opening, so as to be passed through the loop to hold the ends of the belt together around the said waist, substantially as set forth.

327,408. BALL-BEARING FOR VELOCIPEDES.

OLAF PIHLFELDT, Cooksey Road, Small Heath, near Birmingham, County of Warwick, England. Filed July 6, 1885. (No model.) Patented in England Dec. 15, 1882, No. 5,991.



Claim.—In ball-bearings for bicycles, tricycles, and other vehicles the ring or casing *a*, adapted for the reception of balls, and formed with the gap or opening a^2, for the insertion of said balls, and the lugs a^4, embracing said gap, in combination with the block or closer *b*, fitting said gap or opening and fastened to the lugs a^4 by means of the screw-bolt *c*, substantially as described.

327,409. AUTOMATIC REVERSING MECHANISM.

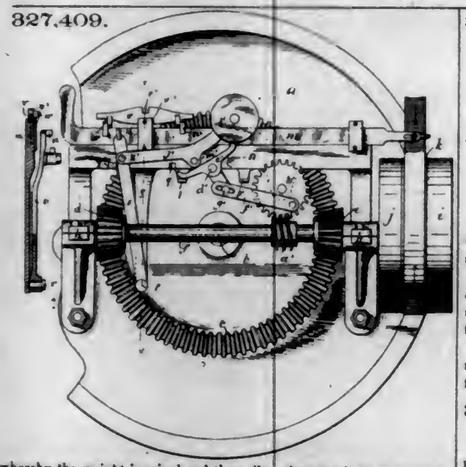
JOHN C. POLAND, Boston, Mass. Filed Feb. 14, 1885. (No model.)

Claim.—1. In an automatic reversing mechanism, the combination of a bevel-gear on the shaft or body to be rotated, two pinions, *d e*, meshing with said gear at opposite sides of its center, an arbor, *f*, having a pulley, *i*, affixed to the pinion *d*, a sleeve having a pulley, *j*, affixed to the pinion *e* and placed loosely on said arbor, and automatic mechanism, substantially as described, operated by the rotation of said arbor, whereby a driving-belt is alternately moved from one of said pulleys to the other, and caused to communicate motion to the shaft alternately through the pinion *d* and the pinion *e*, as set forth.

2. The shipper-bar having the hinged dog or piece *v*, combined with the lever *o* and mechanism, substantially as described, for oscillating it, said lever having a pin or device to engage with said dog, as set forth.

3. In an automatic reversing mechanism, the combination, with a belt-shipper, two operative pulleys on which a driving-belt is alternately placed by the belt-shipper, a weight or weighted arm having a connection with the belt-shipper, and mechanism, substantially as described,

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whereby the weight is raised and then allowed to gravitate to move the belt-shipper when the driving-belt is on one of said pulleys, and is raised and then allowed to gravitate in the opposite direction when the driving-belt is on the other pulley, as set forth.

4. In an automatic reversing mechanism, the combination of a bevel-gear on the shaft or body to be rotated, two pinions, *d e*, meshing with said gear at opposite sides of its center, an arbor, *j*, having a pulley, *i*, affixed to the pinion *d*, a sleeve loose upon said arbor having a shipper-bar adapted to move a driving-belt from one of said pulleys to the other, a lever engaged with the shipper-bar, a weight or weighted arm connected to said lever, and mechanism, substantially as described, whereby said weight is alternately raised and allowed to gravitate and thereby move the belt-shipper, as set forth.

5. The combination of the bevel-gear on the shaft to be rotated, the arbor having the pulley *i* and pinion *d*, the sleeve on said arbor having the pulley *j* and pinion *e*, the worm on the arbor and worm-wheel engaging therewith, the pivoted lever *o*, the shipper-bar engaged with said lever, the weight or weighted arm connected with said lever, and devices, substantially as described, operated by the worm-wheel, whereby the weight is alternately raised and allowed to gravitate and thus move the shipper-bar, as set forth.

6. The combination of the arbor *f*, mechanism, substantially as described, to rotate it, the worm and worm-wheel rotated by the arbor, the pivoted bar *c'*, the rod *f'*, connecting said bar with the worm-wheel, whereby the bar is rocked or inclined in different directions, the shipper-bar *m*, the pivoted lever *o*, engaged therewith, and the weight or weighted arm connected to said lever and bearing on the bar *c'*, said bar being successively inclined in opposite directions by the worm-wheel and connecting-rod, whereby the weight is successively raised and allowed to gravitate, as set forth.

7. The combination of the sliding shipper-bar, the latch *c*, pivoted thereto, and a fixed projection or stop, *r'*, arranged to engage with the latch *c* and lock the shipper-bar when the belt is in the loose pulley, as set forth.

327,410. TAKE-UP MECHANISM FOR SEWING-MACHINES. DAVID P. RANNEY, Florence, Mass., assignor to the Florence Machine Company, same place. Filed Oct. 8, 1884. (No model.)

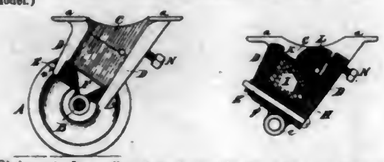


Claim.—1. The combination, substantially as hereinbefore described, of the needle-bar, provided with a projecting pin or stud, and a thread-arm having a cam-slot provided with a yielding face at one or more points therein.

2. The thread-arm provided with a cam-slot, and with a spring-plate pivoted upon said arm, to serve as a yielding face for a portion of the cam-slot, substantially as described.

3. The combination of the cam-slotted thread-arm, the plate serving as a portion of the cam-slot, and a spring mounted on said arm for controlling said plate, substantially as described.

327,411. ROLLER-SKATE. WINFIELD S. ROGERS, Cincinnati, Ohio, assignor to Perrin G. March, same place. Filed Mar. 11, 1885. (No model.)



Claim.—1. In a roller-skate, in combination with a rocking axle, F, the housing J, cushion I, pressure-plate K, quadrant-lever L, and set-screw N, substantially as described.

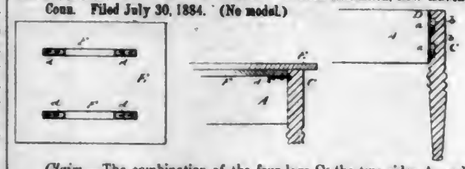
2. A hanger-frame composed of the base C, pendants D D, housing J, loose pressure-plate K, working therein, forming the upper cushion-seat, and the oscillating quadrant-lever L, for adjusting the position of the pressure-plate, substantially as described.

3. In combination with the hanger-frame C, provided with pendent arms D D, the quadrant-lever L, journaled in recesses *i*, formed in the frame C, substantially as described.

327,412. MEDICINE FOR HOG-CHOLERA. CHARLES ROHNING, Lincoln, Mo. Filed Nov 3, 1884. (No specimens.)

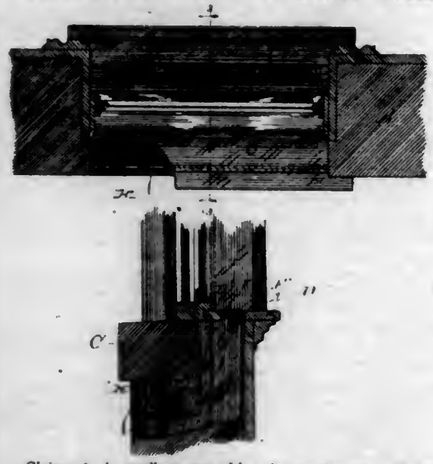
Claim.—The herein-described composition of matter for the treatment of hog-cholera, consisting of alum, oxalic acid, and Prussian blue, the proportional amount of each of which relatively to the others is substantially that set forth.

327,413. KNOCKDOWN TABLE. GEORGE ROHRBACH, New Haven, Conn. Filed July 30, 1884. (No model.)



Claim.—The combination of the four legs C; the two sides A, and the ends B, said sides and ends each provided with downwardly-turned hooks *a* at both ends of said parts A B, the legs constructed with recesses *b*, through which said hooks may engage the sides and ends with the respective legs, the top E, provided with bolts *d*, corresponding to the respective legs of the table, the legs constructed with a recess, into which said bolts may be thrown to engage the said top with said legs after the sides and ends have been hooked to the respective legs, substantially as described, and whereby said top serves to hold the sides and ends in engagement with the legs or permit the separation of the parts.

327,414. VENTILATOR. WILLIAM SCHARNWEBER, Jefferson, assignor of one-half to Gay Dorn, Chicago, Ill. Filed June 28, 1884. (No model.)



Claim.—1. A ventilator comprising, in combination, a chamber underneath the sill of a window, communicating through the top of the said sill with the interior of an apartment and provided with one or more openings leading to the exterior air, and means, substantially as described, for opening and closing and graduating the communication through the top of the sill with the interior of the said apartment, whereby the vertical flow of air in an upward direction into the said apartment and the flow therefrom may be regulated, or the flow wholly shut off, as set forth.

2. A ventilator comprising the combination, with a window-sill having a chamber underneath it leading to an opening or openings to the exterior air formed in the wall of a building, of a box, F, set into an opening formed in the top of the said window-sill and provided with apertures *s*, a sliding plate, F^2, within the box F, and provided with apertures s^2 to correspond with the apertures *s*, substantially as described, and for the purpose set forth.

3. The combination, with a wall of a house having an opening or openings formed in it leading from the exterior air to a chamber, *v'*, underneath a window-sill, D, having an opening through it leading to the chamber *v'*, and means, substantially as described, for controlling the flow of air through the said opening or openings and chamber, of a grating, H, formed in sections, each provided with one or more ears, *q*, bolted together, as and for the purpose set forth.

327,415. WINDOW-VENTILATOR. WILLIAM SCHARNWEBER, Jefferson, assignor of one-half to Gay Dorn, Chicago, Ill. Filed July 25, 1884. (No model.)



Claim.—1. In a ventilator comprising the box A, having openings regulated by a slide, and open back C, the combination, with the vertically-sliding leg D, of the booked rod E and nut *n*, substantially as described.

2. In a window-ventilator comprising the box A, having openings regulated by a slide, and the open back C, the combination, with the leg D, provided with the slot *r*, and notches *p*, and secured to the front wall of the box by means of a screw, *q*, passing through the slot, whereby the leg may be moved vertically, of the rod E, extending through the end of the box and hooking around the leg and having its outer end screw-threaded and provided with a nut, *n*, substantially as described.

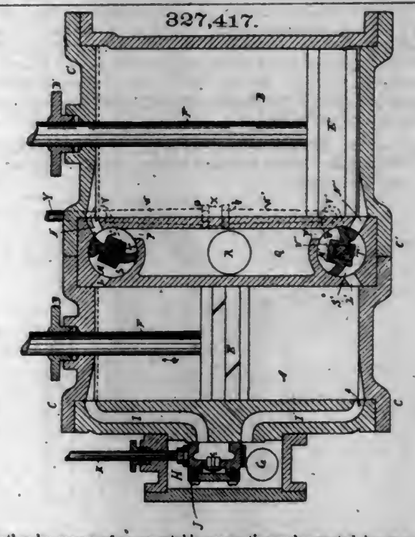
327,416. SAW-SHARPENING DEVICE. WM. TUCKER, East Brookfield, Mass. Filed May 23, 1884. (No model.)



Claim.—1. A rotatory saw-file of spiral form, formed upon a metallic cylinder, with intervening spaces or ways for each alternate tooth of the saw, substantially as set forth.

2. The combination, with a rotatory spiral file, mounted as shown and described, of a flat rest or table for a straight saw, substantially as and for the purpose set forth.

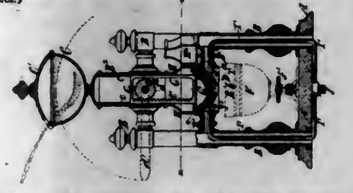
327,417.



gether by means of an adjustable connecting-rod operated by an eccentric upon the main shaft, substantially as and for the purposes described.

5. A steam-engine having two cylinders of different areas side by side, with heads, pistons, piston-heads, and stuffing-boxes, in combination with a steam-chest, H, having an inlet-port, G, and a slide-valve, ports I I' L L' N N' P P', valve-chambers M M', located at either end of the exhaust-chamber Q, and in the division-wall between such two cylinders, valves S, connected with the adjustable connecting-rod formed of the two parts W W', adjustably secured together by the nut X, the parts being constructed, arranged, and operating substantially as and for the purpose described.

327,418. APPARATUS FOR MAKING AND DISPENSING LEMONADE. SEBASTIAN VAN HENNIK, Yonkers, N. Y. Filed Oct. 14, 1884. (No model.)



Claim.—1. The combination, with a fixed lemon-squeezer, of a pipe or conduit arranged to deliver water at or near the point of delivery of the lemon-juice whereby a glass placed below the squeezer will receive both the lemon-juice and the water for mixing therewith, substantially as herein described.

2. The combination, with the frame having a sugar-bowl at the top, of a lemon-squeezer supported by said frame, the presser of which is movable in said frame, and a pipe or conduit arranged to deliver water at or near the point of the delivery of the lemon-juice, substantially as herein described.

3. The combination, with a lemon-squeezer and a hollow support therefor, of a pipe or conduit in the hollow support for delivering water at or near the point of delivery of the lemon-juice, substantially as herein described.

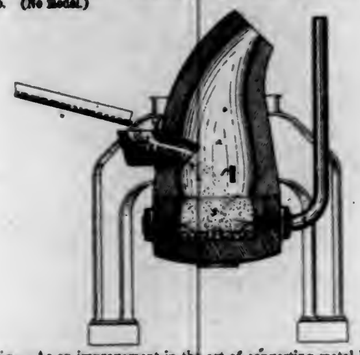
4. The combination, with a lemon-squeezer and a support for the same, of pipes or conduits arranged to discharge jets of water from different directions into a glass placed below the lemon-squeezer for mixing the ingredients therein, substantially as herein described.

5. The combination, with hollow posts or uprights and a lemon-squeezer supported between and by them, of pipes or conduits in said posts or uprights for discharging water at or near the point of delivery of the lemon-juice, and a single valve controlling the discharge of water from said pipes or conduits, substantially as herein described.

6. The combination, with the frame portion B' and the hollow frame portion B^2, extending upward therefrom, of a plunger, G, movable in the frame portion B^2 and having an attached presser, G', a concentrator and bed, D E, supported by the frame portion B', and the petticoat or guard A, extending from the frame portion B^2 downward to the concentrator and having a movable portion or apron H^*, substantially as herein described.

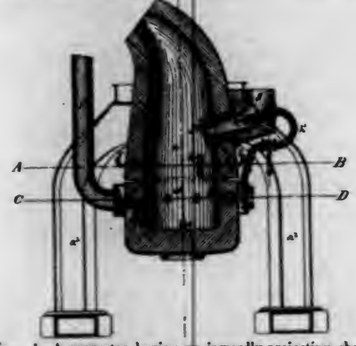
7. The combination, with the bed of a lemon-squeezer and a skeleton plunger, G, comprising parallel portions, on the inner side of one of which is a rack, *d'*, and having an attached presser, of a support for the bed and guides above the bed for the plunger and a shaft extending through the plunger and provided with a pinion, *e*, arranged between the parallel portions of the plunger and engaging with the rack *d'*, substantially as herein described.

327,419. PROCESS OF MAKING STEEL BY THE PNEUMATIC OPERATION. JAMES P. WITHEROW, Allegheny City, Pa. Filed July 3, 1885. (No model.)



Claim.—As an improvement in the art of converting metal by the pneumatic process, the method herein described, which consists in first oxidizing a portion of a charge to form a base by treating it with a blast of air when in a divided state, and then blowing the charge in a converter to eliminate the impurities and effect the conversion of the same, substantially as and for the purposes described.

327,420. CONVERTER. JAMES P. WITHEROW, Allegheny City, Pa. Filed July 3, 1885. (No model.)



Claim.—1. A converter having an inwardly-projecting charging-spout, substantially as and for the purposes described.

2. A converter having a charging-spout provided with water-coils, substantially as and for the purposes described.

3. A converter having a charging spout or opening, in combination with a tuyere for blowing a jet of air into or through the same, substantially as and for the purposes described.

4. A converter having a charging spout or opening, with a tuyere projecting into said spout or opening, substantially as and for the purposes described.

5. A converter having a removable lower section containing the tuyeres, and upper section provided with a charging-hole, and water-coils arranged in the lining at the lower end of the upper section, substantially as and for the purposes described.

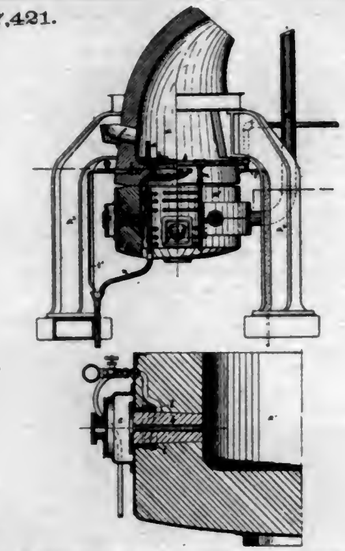
327,421. CONVERTER. JAMES P. WITHEROW, Allegheny City, Pa. Filed July 3, 1885. (No model.)

Claim.—1. A converter having a metal shell and a lining of refractory material, with its sides and bottom provided with water-coils embedded in the lining, substantially as and for the purposes described.

2. A converter provided with a removable bottom or lower section, having a metal shell and a lining of refractory material with water-coils embedded in the lining, substantially as and for the purposes described.

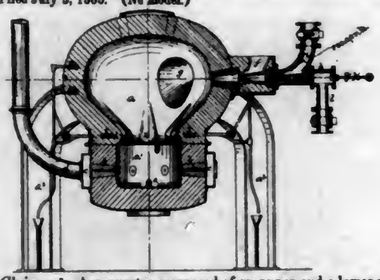
3. A converter provided with tuyeres, having water-pipes placed in the lining and coiled around the tuyeres, substantially as and for the purposes described.

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4. A converter having a water-cooled neck and charging and slagging holes above the neck, substantially as and for the purposes described.

327,422. CONVERTER. JAMES P. WITHEROW, Allegheny City, Pa. Filed July 3, 1885. (No model.)



Claim.—1. A converter composed of an upper and a lower section, the lower section constituting the crucible for containing the metal, and the upper section having a contraction or neck in its lower end and a charging-hole above the neck, substantially as described.

2. A converter having a contraction or neck between the charging-hole and the part which contains the charge, and grooves in the same, arranged directly over the tuyeres, substantially as and for the purposes described.

3. A converter having a charging spout or hole, with a tuyere provided with concentric nozzles having separate connections blowing into or through said charging-hole, substantially as and for the purposes described.

4. A converter having a charging spout or opening provided with a tuyere for blowing a jet of air into or through said charging-spout, and water-coils arranged in the side opposite thereto, substantially as and for the purposes described.

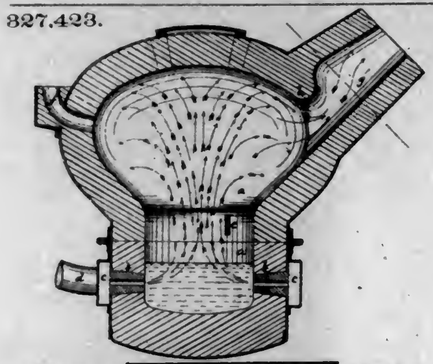
327,423. CONVERTER. JAMES P. WITHEROW, Allegheny City, Pa. Filed July 3, 1885. (No model.)

Claim.—1. A converter having a removable narrow lower section containing the tuyeres, in combination with an enlarged upper section the inclined sides of which merge down into those of the narrow lower section, substantially as and for the purposes described.

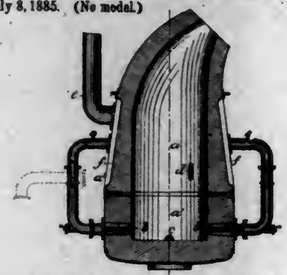
2. A converter having a removable bottom and an enlarged dome-shaped upper section, provided with charging and slagging holes and a bridge or arch spanning the mouth, substantially as and for the purposes described.



327,423.



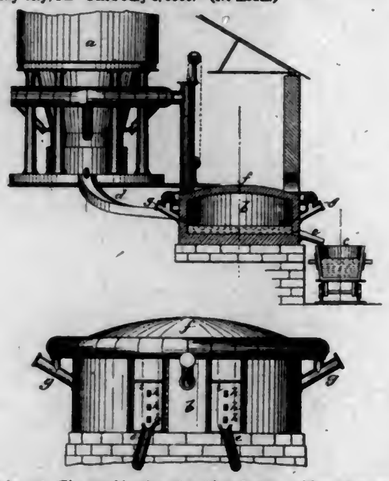
327,424. CONVERTER. JAMES P. WITHEROW, Allegheny City, Pa. Filed July 3, 1885. (No model.)



Claim.—1. A converter provided with a blast-distributing chamber arranged inside of the shell and connected with the blowing-engine, in combination with tuyere-pipes leading to the tuyeres, substantially as and for the purposes described.

2. A converter provided with a fixed upper section, having blast-chamber in the shell or jacket of the same, a removable lower section having a tuyere or tuyeres, a blast-pipe connected to the hollow shell, and a tuyere pipe or pipes extending from the hollow shell to the tuyere or tuyeres, substantially as and for the purposes described.

327,425. STEEL-PLANT APPLIANCE. JAMES P. WITHEROW, Allegheny City, Pa. Filed July 3, 1885. (No model.)



Claim.—1. The combination of a blast-furnace with a storage-receptacle provided with tuyeres for receiving and holding the fluid cast of the furnace, a distributing-ladle, and conducting-spouts for transferring the metal from one to another, substantially as and for the purposes described.

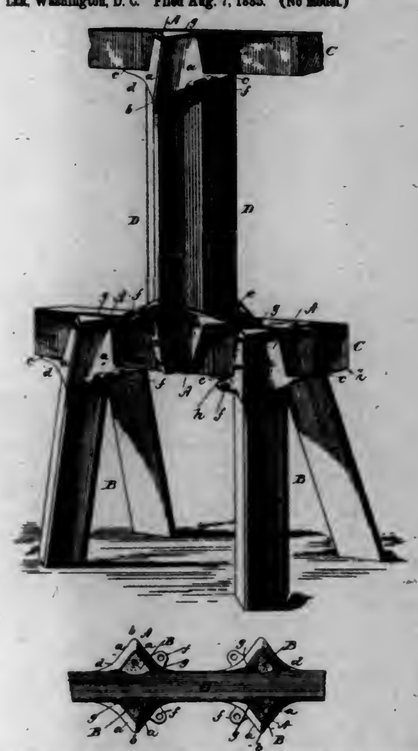
2. A storage-receptacle for containing and dispensing fluid metal provided with a tuyere or tuyeres for supplying a blast of air or gas to maintain the metal in a fluid condition and a suitable tapping-hole, substantially as and for the purposes described.

3. A storage-receptacle for containing and dispensing fluid metal provided with a tuyere or tuyeres for supplying a blast of air or gas to maintain the temperature of the metal and a series of metal tapping-holes arranged at different heights in the sides of the same, substantially as and for the purposes described.

327,426. COMPOSITION FOR CLEANING AND POLISHING GOLD, SILVER, &c. ORESTA W. YOUNG, Chicago, Ill. Filed Jan. 26, 1885. (Specimens.)

Claim.—The herein-described composition of matter to be used for cleaning and polishing gold, silver, and all composite metals, consisting of distilled water, aqua-ammonia, alcohol, and infusorial earth, substantially in the proportions as herein specified and set forth.

327,427. SOCKET-CLAMP FOR SCAFFOLDING, &c. GEO. W. ZENGLER, Washington, D. C. Filed Aug. 7, 1885. (No model.)



Claim.—1. In a trestle or scaffold, a clamp consisting of two sockets, each formed of two sides, which are right angled in cross-section, and having lateral supports extending therefrom, substantially as described.

2. In a trestle or scaffold, a socket-clamp formed in one piece and consisting of two tapering and convergent right-angled sides having lateral supports extending therefrom, substantially as described.

3. In a trestle or scaffold, a socket-clamp formed of two pairs of tapering and convergent sides having lateral ledger-supports, each side being right angled in cross-section, and terminating in a point where they intersect at the bottom, and thence extending outward to the ends of said supports, substantially as described.

4. In a trestle or scaffold, a socket-clamp formed of two right-angled sides having lateral supports, as described, and having the perforated lugs and transverse strengthening-ribs, substantially as and for the purpose set forth.

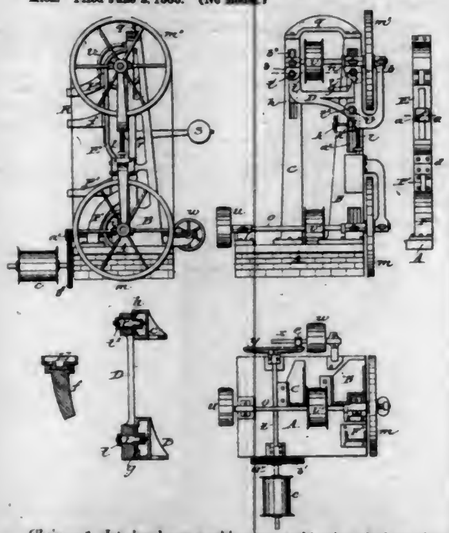
5. The combination, with the socket-clamp, constructed substantially as described, of the legs or risers conforming to the contour of the clamp, and the ledger or beam formed with grooves in its sides adjacent to said legs or risers, substantially as shown, and for the purpose set forth.

6. The combination, with the socket-clamp, constructed substantially as described, of the ledger or beam and the legs or risers formed of a single piece mortised a suitable distance from its ends, and having the portions thus formed beveled or chamfered, substantially as specified.

7. The combination, with the socket-clamp, constructed substantially as described, of the legs or supports having beveled sides or edges, and the ledger grooved at points adjacent to such legs, and having its

under side beveled or chamfered, substantially as and for the purpose specified.

327,428. **BAND-SAW MILL.** DAVID K. ALLINGTON, East Saginaw Mich. Filed June 2, 1885. (No model.)



Claim.—1. In a band-saw machine, the combination of a base-plate, supporting-columns B and C, upper and lower saw-wheels journaled therein, an endless saw carried on said wheels, and means for adjusting the upper wheel to regulate the tension of the saw, substantially as described.

2. In a band-saw machine, the combination of two supporting-columns fastened together at their upper ends and resting on and secured to a base-plate, an adjustable bracket having vertical movement on said columns, and means for securing and adjusting said bracket thereto, substantially as described.

3. In a band-saw machine, the combination of supporting-columns B and C, secured to a base-plate, upper and lower band-wheels, the lower wheel journaled in column B, the upper wheel having adjustable bearings in a bracket secured to both columns, and the mechanism for adjusting the same, substantially as described.

4. In a band-saw machine, the combination of two supporting-columns, upper and lower saw-wheels, an adjustable bracket supporting the upper wheel on a shaft having bearings therein, which bracket is secured to both of said columns, whereby uniform and steady movement is given to said wheel, sliding plates in each of said columns for supporting said bracket, and means for adjustably securing the same, substantially as described.

5. In a band-saw machine, the combination of the supporting-columns B and C, resting on and secured to a base-plate, band-wheels *m* and *m'*, band-wheel *m* being carried on shaft *o*, having suitable bearings, band-wheel *m'* being carried on shaft *n*, having three bearings in bracket D, one on the outside of the wheel and the other two nearly opposite the supporting-columns B and C, whereby uniform motion is given to said wheel, the endless saw, and adjusting and operating mechanism, substantially as described.

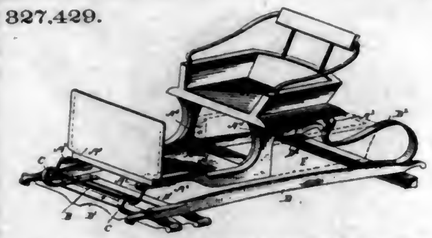
6. In a band-saw machine, the combination of the base supporting two columns, B and C, upper and lower band-wheels, the lower band-wheel being carried on a shaft having three bearings, one on the base, one on the lower portion of column B, and one on a bracket rigidly suspended from the column B, the upper band-wheel being carried on a shaft having three journal-bearings upon a bracket adjustably supported on both columns, and means for operating the same, substantially as and for the purposes set forth.

7. In a band-saw machine, the combination of the base-plate A, supporting-columns B and C, cap *q*, adjustable bracket D, sliding plates *g* and *h*, band-wheels *m* and *m'*, endless saw R, brackets E and F, guide-arms P, *f*, and P', and mechanism for adjusting and operating the same, substantially as described.

327,429. **VEHICLE.** DAVID S. ANDERSON, McGrawville, N. Y. Filed June 22, 1885. (No model.)

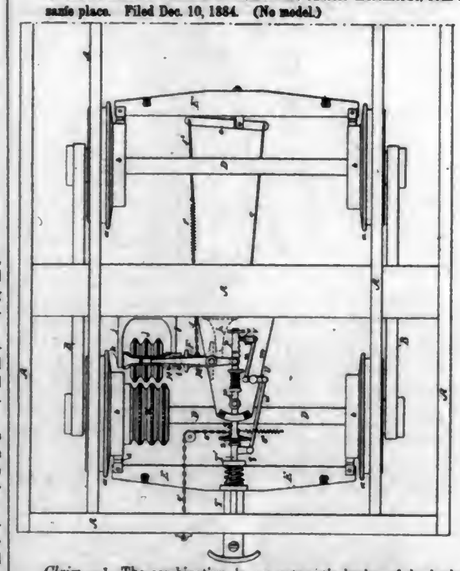
Claim.—1. As an improvement in vehicles, the combination, with the vehicle-body, of the rear S-shaped springs, arranged as described, the front curved springs and the connecting link or frame, all constructed and arranged to operate in the manner and for the purpose shown and set forth.

327,429.



2. As an improvement in vehicles, the combination, with the vehicle-body having the transverse studs or pins and the apertures, arranged as described, of the detachable box having the forwardly-projecting pins and the spring-catches, arranged as described, for the purpose set forth.

327,430. **CAR-BRAKE.** ARTHUR BIXBY, Philadelphia, Pa., assignor of three-fourths to William E. Jackson and Charles Hartshorne, both of same place. Filed Dec. 10, 1884. (No model.)



Claim.—1. The combination, in an automatic brake, of the brake beams and chain, a friction-drum on one of the axles, a drum, J, engaging therewith, a winding-drum driven from the shaft of said drum J and connected to the brake-chain, a push-bar, P, a lever, H, carrying the shaft of the drum J, and a lever, M, whereby the movement of the bar P is transmitted directly to the lever H, as set forth.

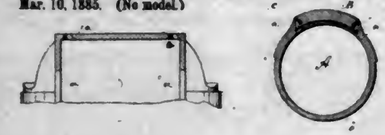
2. The combination of the drum on the axle, the drum J, the lever H, carrying the same, the push-bar P, the lever M, connecting said push-bar and lever H, the winding-drum F, the shaft of which has at one end a bearing in a fixed bracket, and is connected at the opposite end to the shaft of the drum J by a gimbal-joint, and brake-beams, the chain of which is connected to the drum F, as set forth.

3. The combination of the axle-drum and drum J, having serrated ribs, with the push-bar P and mechanism whereby the movement of said bar is transmitted to the drum J, as set forth.

4. The combination of the brake-operating mechanism, a guided bar, P, connected thereto and having a rack, *f*, a bumper-bar, a tooth or catch engaging with the rack *f*, and serving to retain the latter when pushed inward, and means whereby said catch is tripped so as to release the bar P on the outward movement of the bumper-bar, as set forth.

5. The combination of the axle having a drum, K, the drum J, the lever H, carrying the same, means for vibrating the lever, the rail G, and the supporting-bracket *j*, having a yielding connection with the said rail, as set forth.

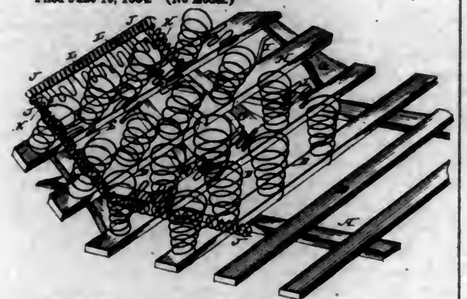
327,431. **FINGER-RING.** JOSEPH BULOVA, New York, N. Y. Filed Mar. 10, 1885. (No model.)



Claim.—1. As a new article of manufacture, a finger-ring, A, the head of which is perforated, in combination with grooved stone B and pins *c*, substantially as specified.

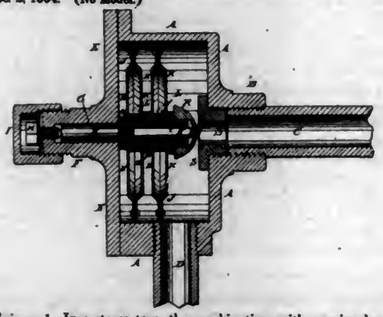
2. The combination of a finger-ring having flaring perforations with a grooved stone, B, and pin *c*, substantially as specified.

327,432. **SPRING BED-BOTTOM.** JAMES F. BUNNELL, Mexia, Tex. Filed June 19, 1884. (No model.)



Claim.—The combination of the main frame, the springs having their connecting-pieces curved or coiled to form double heart-shaped configurations, the hinged head-rests, the wide bails movably attached at the ends of their side pieces to the connecting-pieces of the springs at the side edges of the head-rests, and having their middle pieces curved or coiled to form heart-shaped configurations resting upon the tops of the springs of the head-rest, and the coiled wire coiled around all the portions of the springs, and their connecting-pieces exposed toward the edges of the bed, and coiled around all the portions of the wide bails exposed to the edges of the head-rests, as and for the purpose shown and set forth.

327,433. **STEAM-TRAP.** ISAAC CUMBERBATCH, Newark, N. J. Filed Dec. 2, 1884. (No model.)

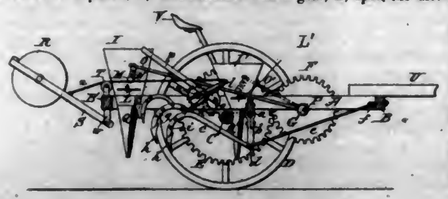


Claim.—1. In a steam-trap, the combination, with a casing having a valve-seat and a rod projecting into the same, of an expansion-chamber composed of two disks, one of which is secured to the said rod and the other to a collar loose on the said rod, and a cap-nut valve on the end of the loose collar, substantially as herein shown and described.

2. In a steam-trap, the combination, with the casing A, provided with the valve-seat S and the rod N, of the expansion-chamber J, composed of the disks K, the fixed collar M, the loose collars O Q, and the cap-nut valve R, secured on the end of the collar Q, substantially as herein shown and described.

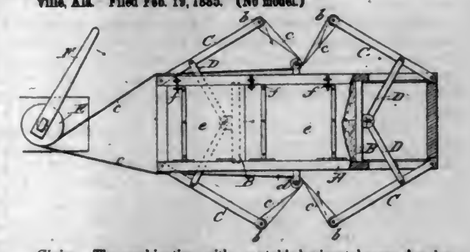
327,434. **PLANTER AND CULTIVATOR.** BURWELL J. CURRY, Huntsville, Ala. Filed Jan. 30, 1885. (No model.)

Claim.—1. In a cultivator, the combination of the hopper I, having a feed-slot, K, adjustable gate L, and flexible spout Q, the semi-rotary shaft M, provided with fingers *t t* and *u u*, the crank N, pitman O, eccentric P, and rotary shaft G, journaled in the frame A, and carrying at each end a pinion, F, which meshes with a gear, E, upon the driving-wheel, whereby the said shaft is operated, substantially in the manner and for the purpose shown and described.



2. In a cultivator, the combination, with the cultivator-beams *c c*, rock-shaft *m*, having adjustable arms *l l*, and the rods or bars *k k*, of the covering-roller R, pivoted frame S, chain *z*, lever *p*, and gears *n o*, whereby the roller and cultivators can be simultaneously raised or lowered, substantially as described

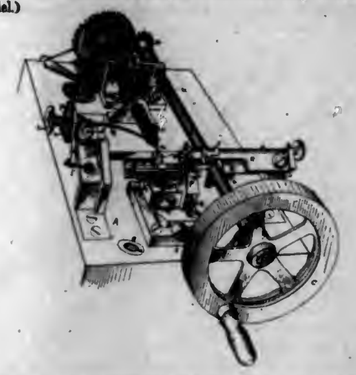
327,435. **HAY OR COTTON PRESS.** BURWELL J. CURRY, Huntsville, Ala. Filed Feb. 19, 1885. (No model.)



Claim.—The combination, with a portable horizontal press-chamber, A, having doors *e e e* and movable platens B B, of the levers C C C C, pivoted at opposite ends on each side of the press, and carrying pulleys *b b*, the connecting-bars D D D D, the double sheaves *d d*, secured to the sides of the press, the ropes *c c c c*, and the capstan E, all as and for the purpose described.

327,436. WITHDRAWN.

327,437. **MACHINE FOR BARBING DENTAL BROACHES, &c.** ROBERT B. DONALDSON, Washington, D. C. Filed Aug. 4, 1885. (No model.)



Claim.—1. The reciprocating knife-bar H, and the knife-carriage N, fitted to slide thereon, combined with the screw O, whereby said knife may be moved and held in position, as set forth.

2. The reciprocating knife-bar H, provided with an arm, Q, and a knife, I, combined with the anvil M, and the arm P, provided with a regulating-screw, *h*, to prevent torsion of said knife and bar at the moment of delivering its blow.

3. The reciprocating knife-bar H, with its knife I, and the anvil M, combined with the impelling-spring K, and the screw L, whereby the tension of said spring may be controlled and the force of the knife-blow regulated at will.

4. The reciprocating knife-bar with its knife I, and the impelling-spring K, combined with the tension-screw L, and the pointer *n*, and dial *p*, whereby the tension of the spring may be noted and regained, as set forth.

5. The reciprocating knife I, and the anvil M, with the driving-shaft B, and screw feed-shaft F, combined with the divided nut S, and rotating cam T, with its ribs U, whereby said nut is opened to permit the shaft F to slide freely, or locked to engage the screw, as set forth.

6. The anvil M and reciprocating knife I, combined with the pivoted clamp *l*, provided with the V-shaped notch 9, and its impelling-

spring *m*, whereby the blank is centered and firmly held upon the anvil while being acted on by said knife without regard to its diameter.

7. The reciprocating knife I, the anvil-block W, and anvil M, with a groove between, combined with a pivoted clamp, *l*, adapted to close down into said groove, and provided with a V-shaped notch, 9, and overhanging shoulder 12, for the purpose of centering and securely holding the blank upon the anvil close to the point where the knife will strike, as and for the purpose set forth.

327,438. MASK. CHARLES C. FULLER, Worcester, Mass. Filed May 4, 1885. (No model.)



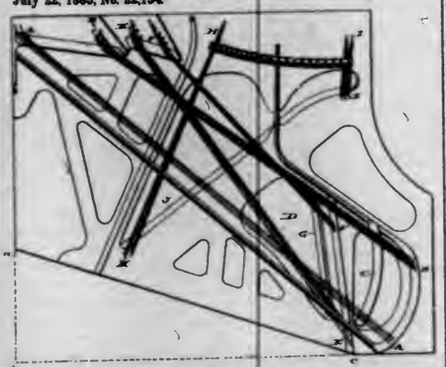
Claim.—1. A hoodwink for lodge and society work, constructed, substantially as described, with a soft fabric pad adapted to fit upon and cover the face around the eyes and having through it eye-spaces provided with the movable blinding-shutters and means whereby said shutters can be instantaneously opened or closed, for the purpose set forth.

2. In a hoodwink for the purpose set forth, the combination of a blinding-pad formed of soft fabric having a space or openings for the eyes surrounded by conoidal tubular frames, a solid shutter or disks closing over the ends of said tubular frames, a shaft and thumb-piece for operating said shutter-disks, and a spring adapted for retaining the parts with the shutters open or closed, substantially as hereinbefore set forth.

3. The combination, substantially as hereinbefore described, of the soft-fabric blinding-pad A, provided with attaching-band B, the projecting tubular eye-frames D, bordering openings through said pad, and rigidly connected, as at *m*, the shutters F, operating-bar F', with thumb-knob *f*, and the spring I, for the purposes set forth.

4. The combination, substantially as described, of the soft-fabric pad A, having the triangular piece *a* inserted therein, the band B, formed with elastic sides B' and provided with attaching devices, as *b*, the eye-frames D, shutters F, and means, substantially as described, for operating said shutters, for the purpose set forth.

327,439. STRINGING PIANOS. FREDERIC A. R. GÜNTHER, Toronto, Ontario, Canada. Filed Apr. 2, 1885. (No model.) Patented in Canada July 22, 1885, No. 22,134.



Claim.—A piano-forte scale having lower bass-strings A B supported on bridge C at a sufficient height to have the higher bass and middle note strings pass below them and vibrate without contact, the higher bass-strings E F supported on bridge C at a height sufficient to allow the middle-note strings to pass below without contact, and the middle note and treble strings H I supported on a bridge, J, as shown, the several sets of strings passing upon different planes in different directions, as shown, whereby the sound-board D is cut off and damped at *a b c*, all combined and operating as and for the purposes set forth.

327,440.



UPRIGHT PAPER-CLIP. ISAAC W. HEYSINGER, Philadelphia, Pa. Filed May 16, 1885. (No model.)

Claim.—1. The combination of the horizontal base A, spring C, upright jaw A^2, extending vertically above said base, pivoted upright clamping-jaw B^2, adapted to impinge thereupon and hold cards, papers, &c., in substantially a vertical position, and laterally-projecting thumb-piece B', substantially as described.

2. An upright paper-holding clip and weight, consisting of an expanded horizontal base provided with an upwardly-projecting central jaw extending vertically above the said base and adapted to be used as a handle for the paper-weight and a jaw for the paper-clip, and a laterally-projecting thumb-lever actuated by a spring and provided with an angularly raised clamping-jaw to close against said upright jaw of the base, and hold papers or other articles between the said jaws in an upright or inclined position upon a desk or table, substantially as described.

3. In combination with the base A, provided with a transverse spring-slot, A^5, having terminal spring-supporting shoulders *a a*, and an upright jaw, A^2, arched over said spring-slot and extending upward from the same, a clamping-lever, B, having pivoted supports B^2 B^2 seated from beneath in the open sockets A^2 A^2, a projecting thumb-piece, B, an upwardly-projecting clamping-jaw, B^2, and a heel, B^5, in rear of said pivots B^2 B^2, together with a flat spring, C, supported upon said shoulders *a a*, and extending beneath the arched upright A^2, the clamping-jaw B^2, and the thumb-piece, B', and impinging against the under surface of the said heel B^5, substantially as and for the purposes described.

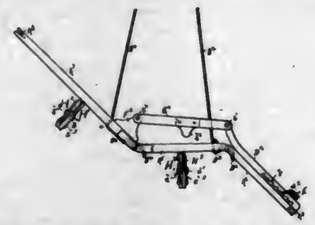
4. In combination with the upright paper-clip, consisting of the base A, having the upright jaw A^2, and a spring thumb-lever, B, having the clamping-jaw B^2, adapted to impinge against the said upright jaw A^2, the transverse serrations B^4 B^4, formed within the jaws B^2 A^2, to receive the lower edge of the card P, and secure adjustment thereof at different angles, substantially as described.

5. The adjustable upright clip A B C, having base A, upright jaw A^2, spring clamping-lever B, having thumb-piece B', and clamping-jaw B^2, and a spring, C, adapted to compress together the jaws B^2 and A^2, said jaws being made independently adjustable upon their supporting parts by means of the hinged joints E E', substantially as and for the purposes set forth.

6. As an article of manufacture, an upright paper-clip, consisting of a horizontal metallic base provided with a transverse spring-slot, A^5, shoulders *a a*, upright jaw A^2, extending vertically above the said spring-slot, the pivoted spring clamping-jaw B^2, adapted to impinge against the said upright jaw A^2, and the spring C, the said base A being provided with the holes A^4 A^4, or their equivalents, for the reception of screws, &c., for permanent attachment of the said clip to a desk or table, or to an extended wooden or other base, substantially as described.

7. As an article of manufacture, the upright paper-clip consisting of the horizontal base A, having spring-slot A^5, provided with shoulders *a a*, journal-boxes A^3 A^3, opening downward, and vertical jaw A^2, together with the clamping-lever B, having the horizontal thumb-piece B', angularly-raised clamping-jaw B^2, heel B^5, and journals or pins B^2 B^2, the said lever B, with its journals, being held up in place and the parts kept together by the upward impingement of the spring C against the heel B^5 thereof, substantially as described.

327,441. ADJUSTABLE CAMP CHAIR OR HAMMOCK. ARTHUR O. HUBBARD, St. Cloud, Minn. Filed Aug. 11, 1884. (No model.)



Claim.—1. A hammock-chair consisting of foot-section side bars A' A^3, having mortises in their lower ends, cross-bar A^3, fitting by its ends in said mortises, back-section side bars A^6 A^7, having mortises in their upper ends, and with cross-bar A^8 fitting into said mortises, seat-section side bars A^4 A^5 interposed between said foot and back section side bars, flexibly jointed thereto by combined suspension and jointing cords B' B^2 B^3 B^4, and a web or canvas covering, C, substantially as and for the purpose set forth.

2 The combination, with a hammock-chair, constructed substantially as described, of a foot-rest consisting of notched bars D' D^2, cords d' d^3, and cross-bar E, substantially as shown.

3. In combination with the side bars of a hammock-chair, the notched stretcher-bars H' H^2, pivoted together, and adjusting links or straps i^3, substantially as and for the purpose herein specified.

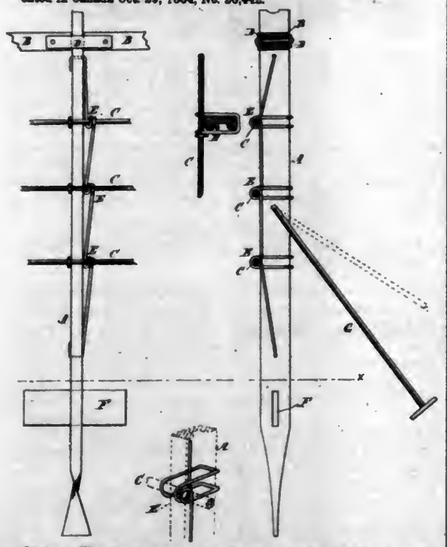
327,442. BUTTON. THEOPHILUS R. HYDE, Jr., Waterbury, Conn., assignor to Scovill Manufacturing Company, same place. Filed Feb. 16, 1885. (No model.)



Claim.—1. A button the body A of which is constructed with a screw-threaded hole at its center, combined with a metal cap adapted to be set upon and cover the said body, the cap constructed with a central concentric stud upon its inside, threaded corresponding to the screw-threaded hole in the center of the body, substantially as described.

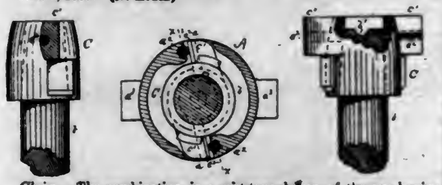
2. A button the body A of which is of a non-metallic material, constructed with a metal socket, *a*, at its center, screw-threaded upon its inside, the bottom of the socket constructed for attaching the button, combined with a metal cap adapted to be set upon and cover the said button, the said cap constructed with a central concentric stud upon its inside, threaded corresponding to the socket in the button, substantially as described.

327,443. FENCE-POST AND WIRE-FASTENING. EDWARD C. JONES, Hamilton, assignor to John Darling Smith and William Lutes, Townsend Township, Ontario, Canada. Filed June 18, 1885. (No model.) Patented in Canada Oct. 29, 1884, No. 20,442.



Claim.—The fence herein described, consisting of the post, the plates D, the rails B, having ends interposed between said plates, the steadying-plate F, the pivoted brace G, the rails C, and the wire-fastening E, looped at the ends through apertures in the post, thence carried downward and around the wire C, then around the rear of the post over the wire C, and back again to the other side of the post, where it is again carried around the wire C, and then dropped to the next wire, substantially as described.

327,444. MILLSTONE-DRIVER. JOHN E. JONES, Utica, N. Y. Filed June 1, 1885. (No model.)

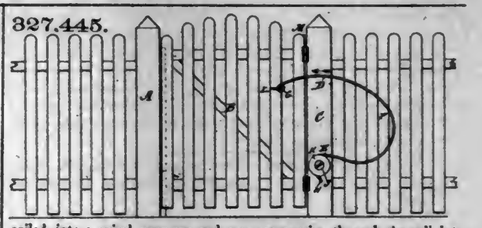


Claim.—The combination, in a millstone-driver, of the eye having openings provided with hardened removable pins in the walls thereof, said pins projecting slightly above the surfaces of the walls, with the driver-arms working loosely in said openings, and also provided with hardened removable pins projecting slightly above their surfaces and contacting with the pins in the eye, substantially as described.

327,445. GATE-SPRING. MILES KNOX and WILLIAM A. MORTON, Le Roy, Kans. Filed May 29, 1885. (No model.)

Claim.—The combination of a gate hinged to a post, the pivot of the hinge being in front of the plane of the face of the gate, a spring

327,445.



coiled into a spiral near one end, a screw passing through the coil into the gate-post, a washer on the screw over the coil, means for fastening the end of the coil to the post, the spring bent along its body into the shape of a U turned on its side and provided with an eye at its free end, and a staple connecting the said eye with the gate outside of the front face thereof, substantially as shown and described.

327,446. CHAIN-GEARING. HENRY KNOWLTON, West Bay City, Mich., assignor of one-half to Ferdinand Johnson, same place. Filed Mar. 18, 1885. (No model.)

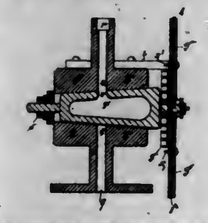


Claim.—In a chain-gear, the combination of a chain formed of a series of like-curved links with half-circular ends connected by half-circular bends of the same radius between the ends, and pivoted together to form a flexible rack, with a cog-wheel having half-circular cogs and half-circular indentations between the cogs of like radius and corresponding to the curved links of the chain, substantially as described.

327,447. MIXED PAINT. DAVID LUBLINSKI, Schwetz, Prussia, Germany. Filed July 6, 1885. (No specimens.)

Claim.—A composition for painting wood, metal, and stone, consisting of a solution of linseed-oil, colophony, petroleum, litharge, sulphate of zinc, potash-alum, and carbolic acid, substantially as set forth.

327,448. MEASURING APPARATUS FOR LIQUID CARBONIC ACID. EDUARD LUHMANN, Regasen, Prussia, Germany. Filed Aug. 11, 1884. (No model.) Patented in England July 22, 1884, No. 10,437; in Belgium Aug. 16, 1884, No. 65,858; in Germany Sept. 19, 1884, No. 29,678; in France Feb. 2, 1885, No. 165,083, and in Spain Mar. 20, 1885, No. 6,635.



Claim.—1. A measuring apparatus for liquefied gases, consisting of a hollow plug, P, having admission-opening *v*, in combination with a guide-casing, O, having a supply-opening, *u*, and a discharge-opening, *t*, in line with the opening of the plug, and means for causing said plug P to automatically turn on its axis, so that the admission-opening *v* shall register normally with the supply-opening *u*, substantially as described.

2. A measuring apparatus for liquefied gases, consisting of a hollow plug, P, having admission-opening *v*, in combination with a guide-casing, O, having a supply-opening, *u*, and a discharge-opening, *t*, in line with the opening of the plug, and the spring F, for causing said plug P to automatically turn on its axis, so that the admission-opening *v* shall register normally with the supply-opening *u*, substantially as described.

3. A measuring apparatus for liquefied gases, consisting of a hollow plug, P, having admission-opening *v*, in combination with a guide-casing, O, having a supply-opening, *u*, and a discharge-opening, *t*, in line with the opening of the plug, a bracket-arm, *f*, attached to said casing, a disk, S, mounted on an axial extension, *w*, of said plug, pins *x* and *x'* in said disk, adapted to strike said bracket-arm *f*, and limit the axial movement of said disk and plug, and the spring F, for causing said plug P to automatically turn on its axis, so that the admission-opening *v* shall register normally with the supply-opening *u*, substantially as described.

4. A measuring apparatus for liquefied gases, consisting of a hollow plug, P, having admission opening *v*, in combination with a guide-casing, O, having a supply-opening, *u*, and a discharge-opening, *t*, in line with the opening of the plug, a bracket-arm, *f*, attached to said casing, a

grooved pulley, 8, mounted on an axial extension, *w*, of said plug, pins *x* and *x'* in said pulley, adapted to strike said bracket-arm *f*, and limit the axial movement of said pulley and plug, the spring F, for causing said plug P to automatically turn on its axis, so that the admission-opening *o* shall register normally with the supply-opening *u*, and the cord *l*, wound on said pulley in a direction the reverse of the force of said spring, for turning said plug in the opposite direction to permit the discharge of its contents, substantially as described.

327,449. STEREOSCOPE. JOSEPH LYONS, London, England. Filed Apr. 1, 1885. (No model.) Patented in England Sept. 12, 1884, No. 12,329.



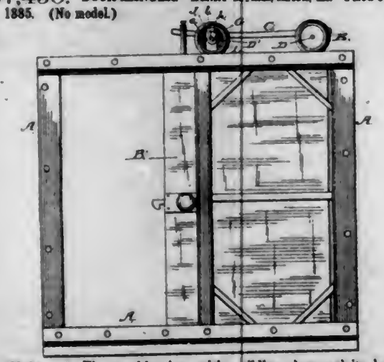
Claim.—1. A stereoscope provided with a support, a sleeve surrounding said support, and a lamp-supporting arm attached to said sleeve all substantially as stated.

2. A stereoscope eye-piece, in combination with a frame pivoted to said stereoscope and containing two or more differently-colored panes or plates of glass, which are arranged to be brought at will across the sight of said eye-piece, for the purpose set forth.

3. A pair of slotted eye-pieces for a stereoscope, in combination with two frames pivoted to said stereoscope and arranged to turn in the slots of said eye-pieces, respectively, each frame being provided with plates of glass of different colors arranged to come into its eye-piece as the frame is turned, to color the view, substantially as set forth.

4. In combination with a stereoscope, one or more movable frames provided with separate panes or plates of glass having different colors, said frame or frames being attached to said stereoscope, but movable to present any one of said colors in the line of vision, substantially as set forth.

327,450. DOOR-HANGER. HENRY MYERS, Alton, Ill. Filed July 16, 1885. (No model.)



Claim.—1. The combination, with a sliding door and its hangers, of the rollers E, F, and G, the latter having a serrated or roughened surface, whereby it is held in frictional contact with its track, and provided with a coiled spring which automatically returns the door to its normal position when released, substantially as herein described.

2. As an improvement in sliding doors, a roller having an internally-placed spring, and provided with an arm having a pin which engages and coils the spring by the revolution of the roller, substantially as herein described.

327,451. HAY-CARRIER. LEWIS Y. MYERS, Canton, Ohio. Filed May 4, 1885. (No model.)



Claim.—1. The vertical locking-bolt B, provided with converging hooks, as described, and for the purpose set forth.

2. The cam J, provided with projecting jaw *l*, finger *m*, and teeth *n* and O, as shown and described, and for the purpose set forth.

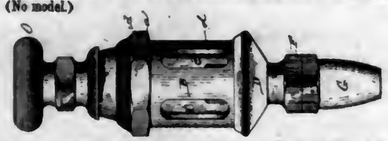
3. The locking-plate F, having ribs *s s s s*, the inclines *e e e e*, shoulders *f f f f*, the declining points *i i*, and the tubes O O, as shown and described, and for the purpose set forth.

4. The combination of the locking-bolt, as described, with the cam, when used in the manner and for the purpose set forth.

5. In a hay-carrier, a vertically-moving locking-bolt, as described, a rotating cam provided with projecting jaw *l*, and finger *m*, substantially as set forth, and for the purpose specified.

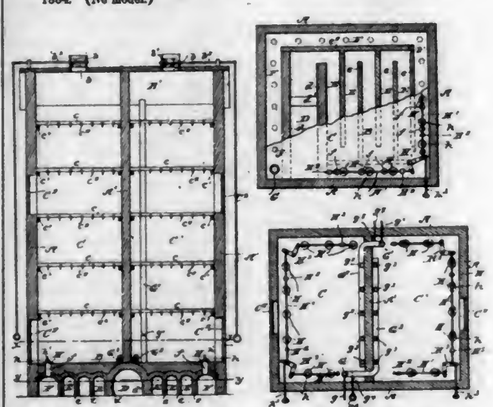
6. The combination of the locking-bolt, as described, the rotating cam, and the locking-plate, as described, and operating substantially as set forth.

327,452. OIL-CUP. GEORGE G. PREVANTANDE, Whitehall, N. Y., assignor of one-half to Frank A. Hotchkiss, same place. Filed May 7, 1885. (No model.)



Claim.—The combination, in a lubricator, of an oil-chamber, a depending extension having a neck, E, threaded to engage with an opening in the bottom of said oil-chamber, the extremity of said neck being extended slightly upon the bottom of said chamber, a valve bearing on said extremity, a mouth-piece threaded at its upper end to engage the lower portion of the threaded extension and externally recessed to present an internal shoulder, a second valve bearing on said shoulder, and having an upwardly-extending shank adapted, when said valve is raised, to contact with the depending shank of said first-mentioned valve, substantially as set forth.

327,453. SMOKE-HOUSE. JOHN PEIKE, Chicago, Ill. Filed May 8, 1884. (No model.)



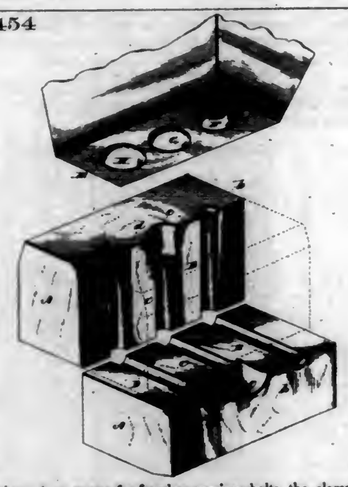
Claim.—1. The combination, in a smoke-house, of a furnace and a series of parallel connected flues, E, located beneath the floor of the chamber and forming a tortuous smoke-passage, a valved opening or openings connecting the smoke-passage with the chamber, and a valved passage connecting the said smoke-passage with the open air, substantially as described.

2. The combination, in a smoke-house having two chambers, C and C', of a furnace and a separate smoke-flue located beneath the floor of each of the said chambers, and communicating with the said furnace and chambers by valved openings, substantially as and for the purpose set forth.

3. The combination, in a smoke-house having two chambers divided by a partition-wall, of a central furnace, D, smoke-flues E, arranged beneath the floors of the chambers and communicating therewith by valved openings, a pipe, G, in communication with one of the flues E, and extending upwardly through one of said chambers to the open air, a damper, *g*, in said pipe, a pipe, G^2, extending from the pipe G through the said partition-wall and opening into the adjoining chamber, a valve in said pipe G^2, substantially as and for the purpose set forth.

327,454. DIE FOR FORMING CARRIAGE-BOLTS. CHARLES W. ROOT, Southington, assignor to himself and M. N. Woodruff, Plantsville, Conn. Filed May 9, 1885. (No model.)

327,454



Claim.—As a means for forming carriage-bolts, the clamping-dies A and A, provided with the coinciding recesses B *b* C *c* D *d*, in combination with the plunger E, having the recesses F, G, and H, substantially as and for the purpose shown and described.

327,455. BUSTLE. MORITZ ROSENSTOCK, New York, N. Y. Filed Sept. 2, 1885. (No model.)

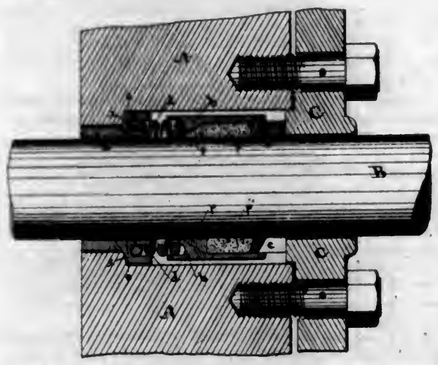


Claim.—1. A bustle having two or more braided springs, each having tapering ends, said springs having independent transverse connection together and to the attaching-band at and between each end, substantially as and for the purpose set forth.

2. A bustle having two or more overlying braided or plaited wire springs connected together at their respective ends and having loose and independent transverse connection together between their ends and to the attaching-band, substantially as set forth.

3. A bustle having two or more braided wire springs connected together at their respective ends and having independent transverse connection together and to the attaching-band at a point or points between their ends, an attaching-band and adjusting bands or straps attached to the bustle sides, substantially as and for the purpose set forth.

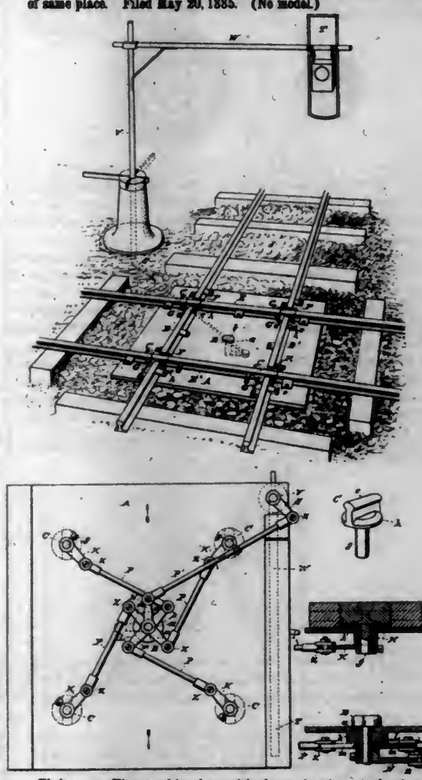
327,456. STUFFING-BOX PACKING. FRANK J. ROTH, Cincinnati, Ohio, assignor to the Lane & Bodley Company, same place. Filed Mar. 23, 1885. (No model.)



Claim.—1. In combination with the stuffing-box A and gland C, the rings *a c*, cup *b*, spring *d*, and the contained elastic packing, substantially as set forth.

2. In stuffing-box packing, in combination with the ring *c* and spring-impelled cup *b*, the compound packing consisting of a body portion, *p'*, of felt or other elastic material, and an edging, *p*, of asbestos or other heat-resisting material, substantially as set forth.

327,457. RAILROAD-CROSSING. A. CARSON RUEBLE, Lima, Ohio, assignor of two-thirds to Charles E. Phinney and Samuel A. Baxter, both of same place. Filed May 20, 1885. (No model.)



Claim.—1. The combination, with the main plate A, having bearing apertures, of the rail-sections having an interval between their ends at the crossing-points, the bridge-pivots at said crossing-points having arms under said plate, the central turning-post, having arms under said plate, and the adjustable rods connecting the arms of the bridge-pivots to the arms of the turn-post, substantially as specified.

2. A bridge-pivot for a railroad-crossing cast entire, and consisting of the upper bridge portion, the bearing-flange, and the descending pivot-stem adapted to engage a bearing in the supporting-plate of the crossing, substantially as specified.

327,458. UNDERGROUND CONDUCTOR. PETER MCMACKIN, Lonsdale, R. I. Filed May 31, 1884. Renewed May 21, 1885. (No model.)

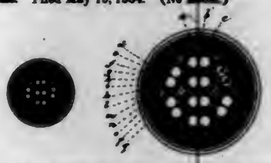


Claim.—1. The combination, with a pipe composed of longitudinal sections fitted together and the upper sections provided with apertures, substantially as described, of electrical conductor-supports placed at intervals for receiving and holding said conductors in position, and a filling of insulating material.

2. The combination, with a pipe composed of two longitudinal sections adapted to be fitted together, substantially as described, of disks arranged at intervals in said pipe, and provided with a series of parallel slots open at their upper extremities for receiving the electrical conductors, cross-bars for holding the same in position, and an insulating-filling, as set forth.

3. The combination of the pipe-sections, the slotted wire-receiving disks or holders placed at intervals throughout the length of the pipe, the cross-bars placed at right angles to the slots for holding the wires in position, and an insulating compound which hardens when cold and fills the spaces in the pipe between the disks, as described.

327,459. COMPOUND ELECTRICAL CABLE. HENRY C. SPALDING, Boston, Mass. Filed May 15, 1884. (No model.)

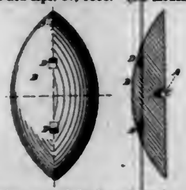


Claim.—1. In a compound electrical cable, the combination, with a number of insulated pairs of wires or minor cables elliptical in cross-section and grouped in a substantially-circular bundle, of a covering composed of layers of insulating material and metal sheaths or screens, as herein set forth.

2. In a compound electrical cable, the combination, with a number of pairs of insulated wires, each pair surrounded by a covering composed of layers of insulating material and a metallic sheath, and forming cables elliptical in cross-section, which are grouped in a substantially-circular bundle, of a covering composed of layers of insulating material and metal sheaths or screens, as herein set forth.

3. In a compound electrical cable, the combination, with a central strengthening-core, of a group of minor cables arranged around the same, both the core and the cables being elliptical in cross-section, and each cable containing two insulated wires, substantially as herein set forth.

327,460. ANCHOR FOR TELEGRAPH-CABLES. HENRY C. SPALDING, Boston, Mass. Filed Apr. 17, 1885. (No model.)



Claim.—1. An anchor or weight for submarine cables, consisting of a heavy body of approximately-elliptical shape, having one flat side for resting on the bottom, and adapted to be placed over a cable, as set forth.

2. An anchor or weight for submarine cables, consisting of a heavy body having one flat side for resting on the bottom, and formed with a groove in which the cable is confined when the weight is placed over the same, as set forth.

3. An anchor or weight for submarine cables, composed of a heavy body adapted to rest on the bottom and confine the cable thereto, and provided with means for connecting the lowering rope or cable to it, as set forth.

4. The combination, with a cable, of anchors or weights laid over the cable, but not connected therewith, for the purpose of confining the same to the bed or bottom of the river or channel in which it is laid.

5. The combination, with a cable, of anchors or weights having a flat side containing a groove, the said weights being laid over the cable upon the bottom, with the cable passing through the grooves, as described.

327,461. TELEGRAPH-CABLE. HENRY C. SPALDING, Boston, Mass. Filed May 21, 1885. (No model.)



Claim.—1. In an electrical cable, the combination of a metallic core and a series of insulated conducting-wires helically wound thereon, a portion of said wires being grouped in pairs, so as to form metallic circuits, and the remaining portions being disposed so as to intervene between the several circuits, in the manner set forth.

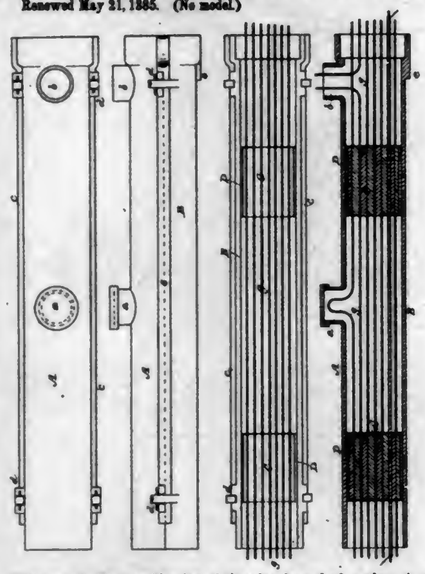
2. An electrical cable having its conducting-wires helically wound and grouped in pairs to constitute metallic circuits, the several circuits being separated from one another by intervening wires, substantially as set forth.

3. An electrical cable consisting in the combination of insulated conducting-wires helically wound and grouped in pairs to form metallic circuits, the two wires forming each circuit being separated from each other by an intervening wire, and a conducting-core consisting of iron or steel wires or strands, as set forth.

327,462. INSULATING COMPOUND FOR ELECTRICAL CABLES, &c. HENRY C. SPALDING, Boston, Mass. Filed Mar. 17, 1885. (No specimens.)

Claim.—The permanently viscous or plastic insulating compound herein described, consisting of boiled linseed-oil and crude turpentine or its described equivalent.

327,463. MEANS FOR PROTECTING ELECTRICAL CONDUCTORS UNDERGROUND. HENRY C. SPALDING, Boston, Mass. Filed Dec. 7, 1881. Renewed May 21, 1885. (No model.)



Claim.—1. The combination of the pipe formed of sections A and B, the non-conducting wire-supports composed of superposed grooved segments placed at intervals in the pipe, the wires or electrical conductors, and the non-conducting filling, all substantially as herein set forth.

2. The combination of the pipe formed of sections A and B and provided with orifices in the section A, the non-conducting wire-supports composed of superposed grooved segments of fusible non-conducting material placed at intervals in the pipe, the wires or conductors, and the filling of fusible insulating material, all substantially as set forth.

3. The combination of the pipe formed of sections A and B, the non-conducting wire-supports composed of superposed grooved segments of insulating material, the wrappers surrounding the supports, the wires or conductors, and the filling of insulating material.

4. The combination of the pipe formed of sections A and B, means for locking the same together, the non-conducting wire-supports composed of superposed segments grooved upon their contiguous faces and placed at intervals in the pipe, the wires or electrical conductors, and the non-conducting filling, all substantially as herein set forth.

5. The combination, with the main pipe composed of the semi-cylindrical sections A and B and means for locking the same together, branch pipes extending from the main pipe, sectional wire-supports placed at intervals in the pipes, and a filling of plastic insulating material, all as set forth.

327,464. INSULATED CONDUCTOR. HENRY C. SPALDING, Boston, Mass. Filed Nov. 19, 1883. Renewed Feb. 28, 1885. (No model.)



Claim.—1. In a cable, the combination, with two insulated conductors forming a complete metallic or round wire circuit, of an insulated metallic sheath or jacket inclosing said conductors, as set forth.

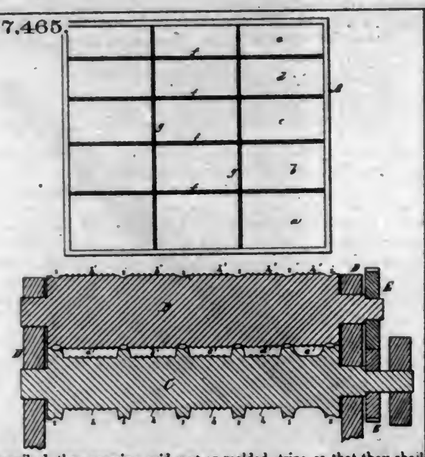
2. A cable composed of two conductors forming a complete or round wire circuit and insulated by a covering of paper and an insulated metal sheath inclosing or surrounding the two conductors, as and for the purpose set forth.

3. A cable composed of two conductors insulated by a covering of paper, a metallic sheath around said conductors, and a paper covering around the sheath, substantially as herein set forth.

327,465. MANUFACTURE OF INSULATING-BLOCKS FOR ELECTRICAL CONDUCTORS. HENRY C. SPALDING, Boston, Mass. Filed June 8, 1883. Renewed Feb. 28, 1885. (No model.)

Claim.—1. The method of making insulating block-segments for electrical conductors, which consists in first forming the insulating compound into strips of proper width by casting or molding, substantially

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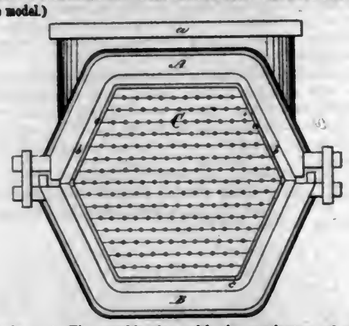


as described, then pressing said cast or molded stripe so that they shall have cross-section of the requisite shape and dimension with grooved faces for reception of the conductors, and said stripe being subdivided either before or after the pressing operation into blocks or segments, substantially as set forth.

2. The roll C, constructed with strip forming or shaping recesses, *a'*, &c., grooves *i* and ribs *h*, in combination with the roll B, formed with like grooves, *i*, and ribs *h'*, for joint operation, as hereinbefore set forth.

3. The casting or molding table A, provided with partition *f* and lower cross-partition, *g*, as and for the purposes hereinbefore set forth.

327,466. CONDUIT FOR UNDERGROUND CONDUCTORS. HENRY C. SPALDING, Boston, Mass. Filed Nov. 23, 1883. Renewed Feb. 28, 1885. (No model.)



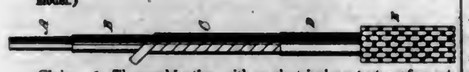
Claim.—1. The combination, with the conductors of an underground system, of a metal sheath or screen inclosing all of said conductors and insulated from both the conductors and the ground, as and for the purpose set forth.

2. In an underground conduit for electrical conductors, the combination, with said conductors, of a sheath or screen interposed between the conductors and the conduit and insulated from both, as set forth.

3. The combination, with a sectional conduit and the conductors contained therein, of a sectional metallic sheath between the conduit and the group of conductors and insulated from both, as set forth.

4. The combination, with a conduit composed of sections A and B, of a group of wires contained therein, a metal sheath or screen inclosing and insulated from the conductors, and layers or plates of insulating material, *b*, between the screen and the conduit, as set forth.

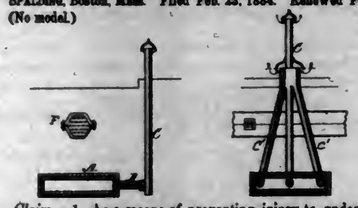
327,467. INSULATED ELECTRICAL CONDUCTOR. HENRY C. SPALDING, Boston, Mass. Filed Dec. 10, 1883. Renewed Feb. 28, 1885. (No model.)



Claim.—1. The combination, with an electrical conductor, of a coating of a permanently-viscous or non-drying insulating material, a wrapping of paper, and an exterior coating of the viscous or non-drying material, substantially as herein set forth.

2. The combination, with an electrical conductor, of a coating of viscous insulating material composed of asphalt and linseed-oil, or its equivalent, a wrapping of spirally-wound paper, and an exterior coating of the viscous material, as herein set forth.

327,468. MEANS FOR PROTECTING ELECTRICAL CONDUCTORS FROM THE HEAT OF SUBTERRANEAN STEAM-PIPES. HENRY C. SPALDING, Boston, Mass. Filed Feb. 23, 1884. Renewed Feb. 23, 1885. (No model.)



Claim.—1. As a means of preventing injury to underground conductors from the heat of adjacent steam or hot-air pipes, the combination, with said conductors, of a ventilated box or chamber placed between the pipe or conduit containing them and the steam-pipe, substantially as set forth.

2. The combination, with an underground conduit containing electrical conductors, of a box or chamber, and ventilating tubes or pipes extending from the same above the surface of the ground, the box being interposed between the conduit and a steam or hot-air pipe when in proximity to the conduit, for the purpose of preventing injury to the conductors by heat, as set forth.

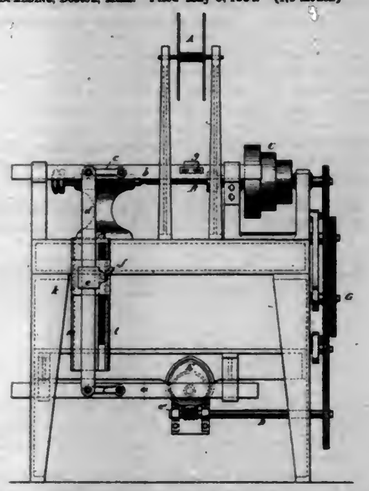
327,469. ELECTRO-MAGNET. HENRY C. SPALDING, Boston, Mass. Filed Dec. 21, 1883. (No model.)



Claim.—1. The combination, with a core or spool, of a coil wound thereon, the wire of which is insulated by a coating of viscous insulating material and a spirally-wound wrapping of paper.

2. The combination, with a core or spool, of a coil wound thereon, the wire of which is insulated by a coating of a compound of crude turpentine and boiled linseed-oil and a spirally-wound wrapping of paper, as set forth.

327,470. MACHINE FOR WINDING ELECTRO-MAGNETS. HENRY C. SPALDING, Boston, Mass. Filed May 5, 1884. (No model.)



Claim.—1. In a wire-winding mechanism, the combination, with the core or spool for receiving the wire, of a guide for directing the wire, means for varying the feed or relative movements of the core and guide, and means for regulating or limiting the range of movement of the guide, all as set forth.

2. In a wire-winding mechanism, the combination, with the core or spool for receiving the wire, a guide for directing the wire, means for varying the feed or relative movements of the core and guide, means for limiting the motion of the guide, and means for adjusting its position relatively to the core, all as set forth.

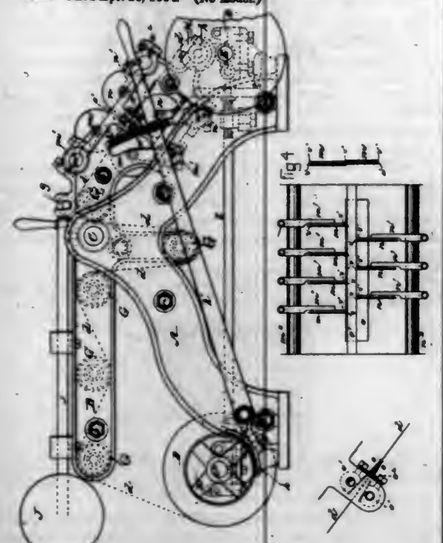
3. The combination, with the pulleys of varying diameters, of a spool or core for receiving a coil of wire, a guide-bar and guide for the

wires, means for reciprocating said bar, and means for varying or adjusting the range of movement of the same, all as set forth.

4. The combination of the reciprocated bar *a*, the guide-bar *b*, connecting-lever *d*, links *c*, and an adjustable fulcrum for the lever, as set forth.

5. The combination, with the pulleys C and core B, of the variable gears G, heart-cam E, guide *g*, and intermediate adjustable connections, substantially as herein set forth.

327,471. PAPER-CUTTING MACHINE. HENRY C. SPALDING, Boston, Mass. Filed Apr. 21, 1884. (No model.)



Claim.—1. In a machine for dividing a web of paper, the combination, with means, substantially as described, for delivering, and means, as indicated, for receiving and reeling the web, of two rows or series of cutters for dividing and subdividing the web and a guide or guides between said rows or series of cutters, substantially as and for the purpose set forth.

2. In a machine of the kind described, the combination, with the two rows or series of cutters, of the flexible metal plates *o o* and springs o^2, located between the two series of cutters and forming a guide or guides for the divided web, substantially as herein described.

3. In a machine of the kind described, the combination, with the delivery-reel, of the bell-crank lever l^2, the link-connection to or with the bushing of the delivery-reel, and the threaded bar or rod *l*, for adjusting the position of the bushing and reel, as and for the purpose set forth.

327,472. COMPOSITE ELECTRIC CABLE. HENRY C. SPALDING, Boston, Mass. Filed Dec. 7, 1883. Renewed Feb. 28, 1885. (No model.)



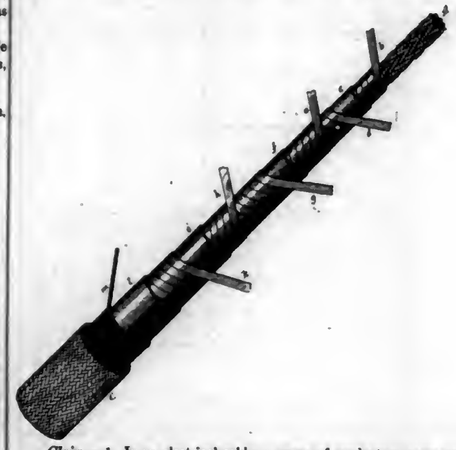
Claim.—1. In an electrical cable, the combination, with a core composed of twisted strands, each consisting of two insulated wires forming or adapted to form a complete or round wire circuit, of one or more insulated metallic sheaths, substantially as set forth.

2. In an electrical cable, the combination, with a core composed of twisted strands, each consisting of two insulated wires forming or adapted to form a complete or round wire circuit and twisted together, of one or more insulated metallic sheaths, substantially as set forth.

3. In an electrical cable, the combination, with a core composed of twisted strands, each consisting of two insulated wires forming or adapted to form a complete or round wire circuit, of one or more insulated metallic sheaths and a protective armor, as set forth.

4. In an electrical cable, the combination, with a core composed of twisted strands, each consisting of two insulated wires forming or adapted to form a complete or round wire circuit, of one or more insulated metallic sheaths and an armor composed of spirally-wound strands of wires, all as set forth.

327,473. MULTIPLEX ELECTRICAL CABLE. HENRY C. SPALDING, Boston, Mass. Filed Dec. 14, 1883. Renewed Feb. 28, 1885. (No model.)



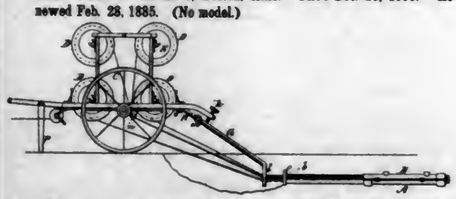
Claim.—1. In an electrical cable, a group of conductors composed of a number of strands consisting of two insulated conductors forming a complete or round wire circuit, the strands being braided together in substantially the manner set forth.

2. In an electrical cable, the combination, with a core composed of strands braided together and each consisting of the two insulated wires, of a complete or round wire circuit of insulating or protective coatings or layers surrounding said core, as set forth.

3. In an electrical cable, the combination, with a core composed of strands braided together and each composed of the two insulated wires, of a complete or round wire circuit of layers or coatings of insulating material and one or more insulated sheaths of metal surrounding said core, as set forth.

4. In a multiple-conductor cable, the combination of a core composed of a series of strands braided together, each strand consisting of two insulated wires forming a metallic circuit, and the two wires of each strand being also twisted together with insulating anti-inductive and protective coatings and layers surrounding said core, substantially as hereinbefore described.

327,474. APPARATUS FOR LAYING UNDERGROUND CONDUCTORS. HENRY C. SPALDING, Boston, Mass. Filed Dec. 29, 1883. Renewed Feb. 28, 1885. (No model.)



Claim.—1. In an apparatus for laying underground conductors, the combination, with the reel or spool holding frame or carriage, of a guide-bar for delivering the wires connected adjustably to the frame, in substantially the manner set forth.

2. In an apparatus for laying underground conductors, the combination, with the reel or spool holding frame or carriage, of a pivoted guide-bar for delivering the wires, and a screw for adjusting the vertical position of said bar with reference to the frame, as set forth.

3. In an apparatus for laying underground conductors, the combination, with a traveling frame or carriage, of reels or spools carried thereby, a guide for the wires of the upper spools, and an adjustable guide-bar for delivering the wires, substantially as herein described.

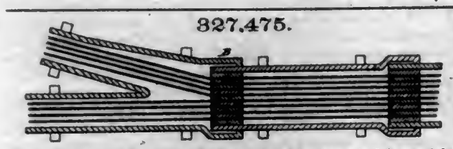
4. The combination, with the wheeled reel or spool frame or holder, of the adjustable bar G, extending downward from the frame, and provided with a guide, *l*, at its extremity, as set forth.

5. The combination, with the wheeled reel or spool frame or holder, of the pivoted supporting-bar *p* and the adjustable guide-bar G, extending downward from the frame, as set forth.

327,475. PIPE FOR UNDERGROUND ELECTRICAL CONDUCTORS. HENRY C. SPALDING, Boston, Mass. Filed Feb. 23, 1884. (No model.)

Claim.—1. In a pipe for carrying or conveying electrical conductors, the combination, with a straight section, of a forked section adapted to fit the straight section and tapered into two branches of smaller diameter,

327,475.



a series of superposed segmental blocks placed in the end of the straight section, and conducting-wires laid between said blocks and carried into the branches of the forked section, as set forth.

2. In a pipe or tube for carrying or conveying electric conductors, the combination, with a straight section composed of upper and lower parts suitably joined, of a longitudinally-divided forked or branch section adapted to fit the end of the straight section and tapered on the upper side into branches of smaller size, each part of the forked section being provided with lugs for securing the two parts together, all substantially as set forth.

327,476. COMPOUND ELECTRICAL CABLE. HENRY C. SPALDING, Boston, Mass. Filed Mar. 29, 1884. Renewed Feb. 28, 1885. (No model.)



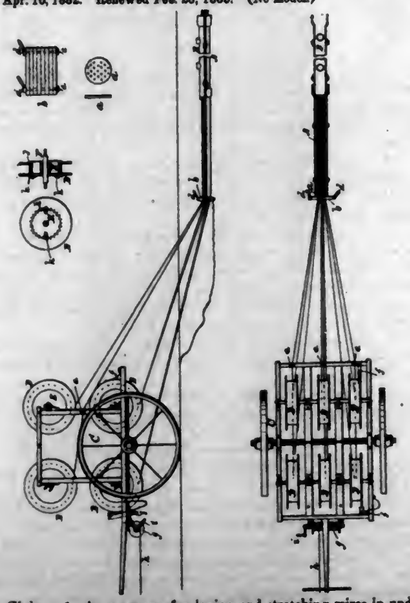
Claim.—1. In an electrical cable, the combination, with an assemblage or bundle of pairs of insulated wires, each pair forming a complete or round wire circuit and inclosed in an insulated metallic sheath, of a flexible covering surrounding said bundle and composed of two or more layers of insulating material with an intermediate layer or layers of metal, as and for the purpose specified.

2. In an electrical cable, the combination, with an assemblage or bundle of pairs of insulated wires, each pair forming a complete or round wire circuit and inclosed in an insulated metal sheath, of a flexible covering composed of two or more layers of paper with intermediate coats of varnish and an intermediate layer or layers of metal foil, substantially as and for the purpose set forth.

327,477. COMPOUND FOR INSULATING UNDERGROUND ELECTRIC CONDUCTORS. HENRY C. SPALDING, Boston, Mass. Filed Feb. 24, 1885. (Specimens.)

Claim.—As a filling for underground conduits containing electric conductors, an insulating compound consisting of refined asphalt and petroleum residue, substantially as herein set forth.

327,478. APPARATUS FOR LAYING UNDERGROUND LINES OF ELECTRICAL CONDUCTORS. HENRY C. SPALDING, Boston, Mass. Filed Apr. 10, 1882. Renewed Feb. 28, 1885. (No model.)



Claim.—1. As a means for laying and stretching wires in underground conduits, the combination, with the traveling reel or spool-holding carriage, of the perforated guide-disk constructed and adapted to be used in conjunction with the wires and their inclosing-pipe, substantially as set forth.

2. The combination, with the traveling reel or spool-holding carriage, of the clamping-guide composed of a pile of superposed grooved bars, and means for clamping the same together, these devices being constructed and adapted for co-operative use in laying and stretching the wires in an underground conduit, substantially as herein set forth.

3. The spool-holding carriage, combined with the spools, their guides and supporting arms or axles, and the draft mechanism for stretching the wires when laid, and arranged and adjusted to be used in connection with the wire-clamping guide and wires, as and for the purpose hereinbefore set forth.

327,479. SPLICE FOR ELECTRICAL CONDUCTORS. HENRY C. SPALDING, Boston, Mass. Filed Apr. 18, 1884. (No model.)



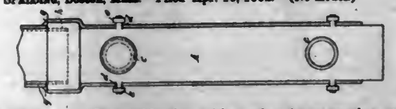
Claim.—1. The combination, with conductors the ends of which are joined by solder, of a slotted metal tube surrounding the joint and held in position on the conductors by friction, as and for the purpose set forth.

2. The combination, with conductors the ends of which are joined by solder, of a slotted tube of silver surrounding the joint and held in position by friction, as and for the purpose set forth.

3. The combination, with conductors the ends of which are joined by solder, of a spirally-slotted tube surrounding the joint and held in position thereon by friction, as set forth.

4. The combination, with conductors the ends of which are joined by a solder composed of copper and silver, of a slotted tube surrounding the joint and held in position thereon by friction, as described.

327,480. UNDERGROUND ELECTRIC CONDUCTOR. HENRY C. SPALDING, Boston, Mass. Filed Apr. 10, 1882. (No model.)

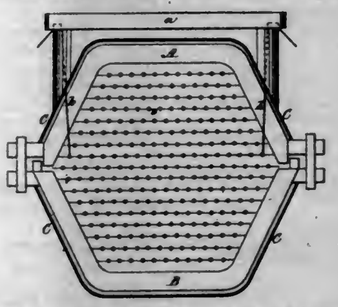


Claim.—1. In combination with a pipe for conveying electric wires and divided into longitudinal sections, the wire-supports constituted of superposed grooved segmental blocks, the said supports being each of a height greater than the internal diameter of the pipe, so that when the sections are fitted together the upper shall rest and press upon the said supports, instead of upon the lower section, as and for the purpose specified.

2. The combination, with a pipe for conveying electric wires and divided into longitudinal sections, of the wire-supports formed of superposed grooved segments contained and inclosed within said pipe and supporting the upper section thereof, and the stud and link clamping devices, whereby the sections are held in place, for the purpose specified.

3. The sectional pipe-lengths formed with sleeve ends enlarged, as described, to form an annular chamber, *h*, around the spigot end of the adjoining length, in combination with the wire-supports, wires, and a filling of non-conducting composition, all substantially as set forth.

327,481. UNDERGROUND ELECTRICAL CONDUCTOR. HENRY C. SPALDING, Boston, Mass. Filed Dec. 29, 1883. (No model.)

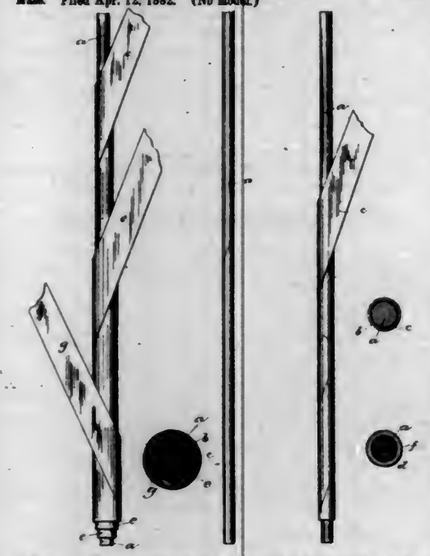


Claim.—1. A pipe or tube for conveying electric wires provided with the transverse strengthening-ribs C and with transversely-elongated openings *b*, together with suitable caps or covers, *a*, therefor, substantially as described.

2. A pipe or tube for conveying electric wires divided longitudinally into the upper and lower sections A and B, the said sections being adapted to be clamped together when the wires are laid therein, each section being provided with the transverse strengthening-rib C, and the upper

section with transversely-elongated openings *b*, whereby the inclosed wires may be inspected or manipulated, together with caps or covers *a* therefor, substantially as specified.

327,482. ELECTRICAL CONDUCTOR. HENRY C. SPALDING, Boston, Mass. Filed Apr. 12, 1882. (No model.)

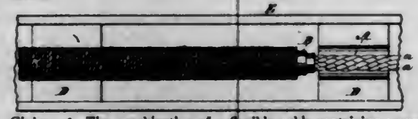


Claim.—1. The combination of the wire *a*, the coating *b* of adhesive material, the spirally-wound strip *c* of paper, the spirally-wound strip *e* of metal foil, and the insulating-cover *g*, all as described.

2. The wire *a*, coating *b* of adhesive material, and the strips of paper *c g*, in combination with the metallic sheath or screen intervening between said strips, substantially as and for the purpose set forth.

3. The combination of the electrical conducting-wire, an insulating-coating therefor, consisting of adhesive material and spirally-wound paper consecutively applied, an induction-screen of metal surrounding the insulated conductor, and an outer layer of insulating material, all as described.

327,483. SUBTERRANEAN ELECTRIC CABLE. HENRY C. SPALDING, Boston, Mass. Filed Dec. 21, 1883. Renewed Feb. 28, 1885. (No model.)



Claim.—1. The combination of a flexible cable containing a number of insulated wires surrounded by layers of insulating material, a sectional conduit or trough, and insulating blocks or rests for supporting the cable in the conduit, as herein set forth.

2. The combination of a flexible cable containing a number of insulated wires surrounded by layers of insulating material, a sectional conduit or trough, insulating blocks or rests for supporting the cable in the conduit, and a filling of insulating material, as herein described.

3. The combination of a flexible cable containing a number of insulated wires surrounded by layers of insulating material and a metal screen or sheath, a sectional conduit, means for supporting the cable in the conduit, and a filling of insulating material.

327,484. SUBMARINE ELECTRICAL CABLE. HENRY C. SPALDING, Boston, Mass. Filed Apr. 12, 1884. Renewed Feb. 28, 1885. (No model.)



Claim.—1. An electrical cable consisting of a central wire or wires, a layer of insulating material composed of paper saturated with paraffine and coated with a resinous varnish, sheathings of metal insulated from one another, and an external insulation, as set forth.

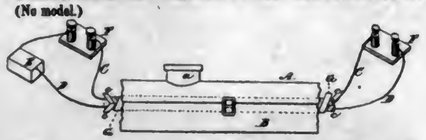
2. The combination, in an electrical cable, with a conducting wire or wires, of sheaths or layers composed of paper saturated with paraffine and coated with a resinous varnish, and of metal, the latter being interposed between the layers of paper, so as to be completely insulated thereby, as set forth.

3. The combination, in an electrical cable, with a conducting wire or wires, of a layer of paper saturated with paraffine and coated with a resinous varnish, layers or sheaths of metal insulated from each other, and a protective jacket or armor surrounding the same, as described.

4. An electrical cable consisting of a central conducting wire or wires, a layer of insulating material composed of paper saturated with paraffine and coated with a resinous varnish, two sheathings of metal insulated from one another and from the central core, a serving of twine or cord wound in a bituminous coating, and a protective armor or jacket surrounding the whole, substantially as set forth.

5. In an electrical cable, the combination, with a central conducting wire or wires, of sheathings of metal insulated from one another and from the conducting wire or wires, the outer sheathing being of non-corrosive metal—such as pure tin—as and for the purpose set forth.

327,485. SUBTERRANEAN ELECTRIC CONDUCTOR. HENRY C. SPALDING, Boston, Mass. Filed Nov. 24, 1883. Renewed Feb. 28, 1885. (No model.)

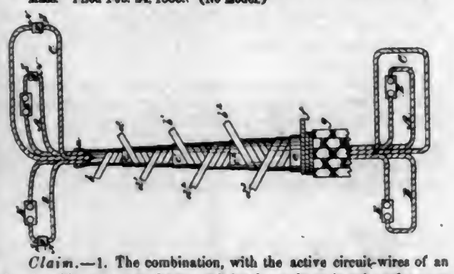


Claim.—1. In an underground system, the combination, with a group of cables, each composed of two insulated conductors forming a complete or round wire circuit, of an insulated metal sheath or screen surrounding and inclosing the cables, substantially as set forth.

2. The combination, with a group of cables, each composed of two insulated conductors forming a complete or round wire circuit and inclosed within a metallic sheathing or wrapping, of an insulated sheath or screen and an inclosing conduit or casing, all substantially as described.

3. The combination, with a group of cables, each composed of two insulated conductors forming a complete or round wire circuit and inclosed within a metallic sheathing or wrapping, of a sectional screen and a sectional inclosing conduit or casing, all substantially as herein described.

327,486. ANTI-INDUCTION CABLE. HENRY C. SPALDING, Boston, Mass. Filed Feb. 24, 1885. (No model.)



Claim.—1. The combination, with the active circuit-wires of an electric cable and means for transmitting intermittent impulses of current through the same, of idle wires through which a continuous current is made to flow in an opposite direction to that in the adjacent wires, as set forth.

2. In an electrical cable, the combination, with insulated conductors forming complete or round-wire working-circuits, of insulated idle conductors interposed between the working-circuits and connected in metallic circuit, as set forth.

3. In an electrical cable, the combination, with insulated conductors forming complete or round wire working-circuits, of insulated idle wires interposed between the working-circuits and connected in metallic circuit, and batteries connected with said circuits in such order that the current passing in any idle wire shall be opposite in direction to the currents in the two adjoining working-wires, as set forth.

4. In an electrical cable, the combination, with a complete or round wire active circuit or circuits, of a complete or round wire induction-circuit, as set forth.

5. In an electrical cable, a metallic screen or screens surrounding complete or round wire active or working and idle or induction circuits, as set forth.

327,487. ANTI-INDUCTION CABLE. HENRY C. SPALDING, Boston, Mass. Filed Dec. 7, 1883. Renewed Feb. 28, 1885. (No model.)

Claim.—1. In an electrical cable, the combination, with a central core composed of twisted iron or steel wires, of a group of insulated conductors, part of which form the leading and return wires of electric circuits, the remainder being dead or not connected with a battery, and layers of insulating material and of metal surrounding the conductors, substantially as herein set forth.

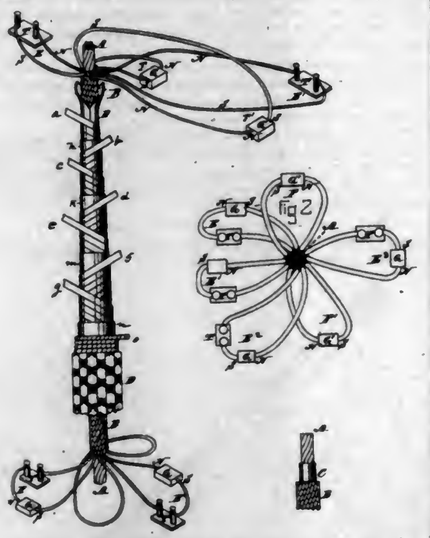
2. In an electrical cable, the combination of a central core composed of twisted steel or iron wires, insulated conductors laid spirally thereon, a coating of plastic material inclosing the conductors, alternate layers of insulating material and metal applied around said plastic material, and a braided jacket or cover, all as set forth.

3. In an electrical cable, the combination of a central core composed of twisted iron or steel wires, insulated electrical conductors laid spirally around the core, part of said conductors being dead, or not connected with a battery, and, interposed between conductors of separate circuits, layers alternately of insulating material and metal inclosing the conductors, and a braided jacket or cover for protecting the same from abrasion, as and for the purpose specified.

327,487.



327,488. ANTI-INDUCTION ELECTRICAL CABLE. HENRY C. SPALDING, Boston, Mass. Filed Apr. 1, 1884. Renewed Feb. 28, 1885. (No model.)



Claim.—1. In an electrical cable, the combination, with a central core and two or any even number of pairs of insulated conductors laid thereon and forming complete or round wire circuits, of insulated idle conductors interposed between said pairs and connected in circuits, substantially as set forth.

2. The combination, with the central core of an electrical cable and two or other even number of pairs of insulated conductors forming complete or round wire circuits, of insulated idle conductors interposed between said pairs and connected in circuits, and electrical generators included in said circuits, substantially as set forth.

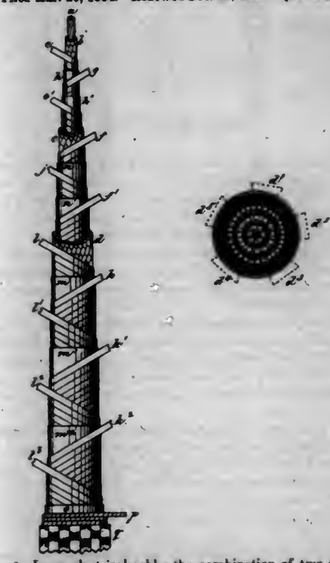
3. The combination, with the central core of an electrical cable and two or more pairs of insulated conductors forming complete or round wire circuits, of generators connected with said circuits in reverse order in substantially the manner set forth.

4. The combination, with the central core of an electrical cable and two or more pairs of insulated conductors forming complete or round wire circuits, of generators connected with said circuits in reverse order and insulated idle conductors interposed between said circuits in substantially the manner set forth.

5. The combination, with the central core of an electrical cable and two or other even number of pairs of insulated conductors forming complete or round wire circuits, of generators connected in reverse order with said circuits and insulated idle conductors interposed between the pairs of conductors and connected up in circuits in substantially the manner described.

6. The combination, with the central core of an electrical cable and two or other even number of pairs of insulated conductors forming complete or round wire circuits, of generators connected in reverse order with said circuits, idle conductors interposed between the pairs of conductors and connected in circuits, and generators connected with said circuits in such manner that the current in the idle wires may flow in an opposite direction to that of the currents in the adjacent active conductors, substantially as and for the purpose set forth.

327,489. ANTI-INDUCTION CABLE. HENRY C. SPALDING, Boston, Mass. Filed Mar. 29, 1884. Renewed Feb. 28, 1885. (No model.)



Claim.—1. In an electrical cable, the combination of two or more groups or layers of independently-insulated conductors, with interposed and inclosing insulated metallic screens, as set forth.

2. In an electrical cable, the combination of two or more groups or layers of insulated conductors forming or adapted to form complete or round wire circuits, with interposed and inclosing insulated metallic screens, as and for the purpose specified.

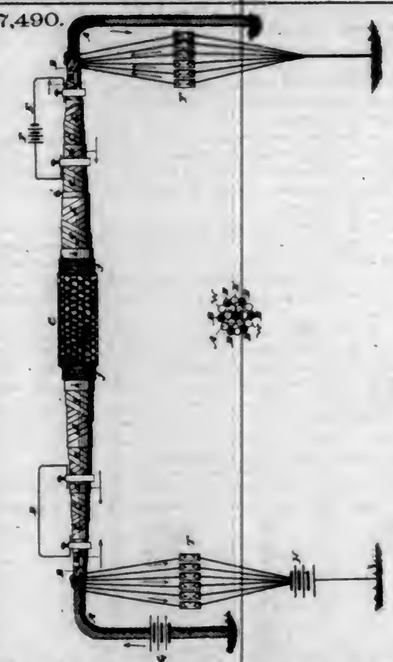
3. In an electrical cable, two or more groups or layers of insulated wires, forming complete or round wire circuits, with idle wires between the wires of each circuit, in combination with insulated metallic screens or sheaths interposed between and surrounding the said groups of conductors, in substantially the manner specified.

4. In an electrical cable, the combination of a central supporting-core, a series of insulated conductors adapted to form complete circuits laid thereon, an insulated metallic screen or layer surrounding the conductors, a surrounding layer or layers of insulated conductors adapted to a similar purpose, and an external insulation, all as set forth.

5. In an electrical cable, the combination of a central supporting-core, two or more groups or layers of insulated conductors, anti-induction and insulating layers separating said groups or layers, and insulated metallic screens inclosing the same, all as set forth.

327,490. ANTI-INDUCTION CABLE. HENRY C. SPALDING, Boston, Mass. Filed Apr. 27, 1885. (No model.)

327,490.



Claim.—1. In a telegraph-cable, the combination, with a central core composed of steel or iron wires, grounded at the ends and connected with a battery, of insulated conducting-wires and bare steel or iron wires alternately disposed and wound around the core, as set forth.

2. In a telegraph-cable, the combination, with a central core composed of bare wires of iron or steel twisted together, grounded at the ends, and connected with a battery, of insulated conducting-wires and bare steel or iron wires alternately disposed and wound directly upon the core, as set forth.

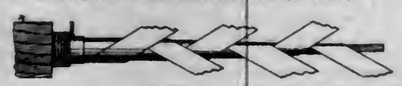
3. In a telegraph-cable, the combination, with a grounded conducting-core, insulated conductors wound thereon, and an insulated metallic sheathing inclosing the wires, of batteries connected to the core and to the sheathing in such manner as to send continuous currents through the same in an opposite direction to the currents in the insulated wires, as set forth.

4. In a telegraph-cable, the combination, with a grounded core and insulated and bare wires laid thereon, the insulated wires alternating with the bare wires, and the latter being in metallic contact with the core, of a battery connected with the core in such manner as to send a continuous current through the same and the bare wires in contact therewith in an opposite direction to the currents in the insulated wires, as set forth.

5. In a telegraph-cable, the combination, with a grounded central conducting-core, insulated wires wound thereon, and a protective covering containing two insulated metallic sheathings, of a battery connected with the core for sending a current through the same in an opposite direction to the currents in the insulated wires, and a battery connected with the circuit formed by connecting the ends of the metallic sheathings, for sending a continuous current through the same, the current in the inner sheathing being in an opposite direction to that in the insulated wires, as set forth.

6. In a telegraph-cable, the combination, with a core composed of bare steel or iron wires twisted about a central insulated wire and insulated wires wound about said core, of ground-connections from the ends of a core and a battery connected therewith for sending a current through the core in an opposite direction to those in the insulated wires, as set forth.

327,491. ELECTRICAL CABLE. HENRY C. SPALDING, Boston, Mass. Filed Nov. 30, 1883. Renewed Feb. 28, 1885. (No model.)



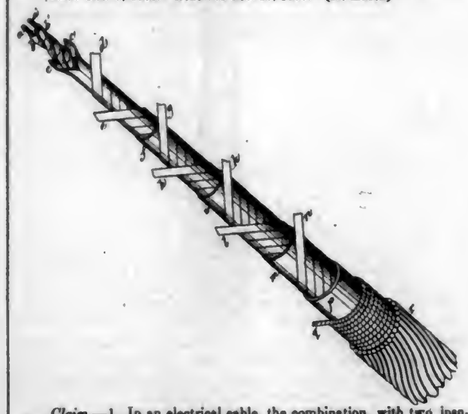
Claim.—1. An electrical cable having a central conductor insulated by layers of fibrous material saturated with paraffine and coated with resinous varnish

2. An electrical cable having a central conductor insulated by one or more layers of paper saturated with paraffine and coated with a resinous substance.

3. An electrical cable having a central conductor insulated by one or more layers composed of a spirally-wound strip of paper saturated with paraffine and coated with a resinous substance, as set forth.

4. In an electrical cable, the combination, with an insulating material composed of layers of fibrous material saturated with paraffine and coated with a resinous substance, of a serving of twine wound in a viscous bituminous coating, substantially as set forth.

327,492. ELECTRIC CABLE. HENRY C. SPALDING, Boston, Mass. Filed Dec. 5, 1883. Renewed Feb. 28, 1885. (No model.)



Claim.—1. In an electrical cable, the combination, with two insulated conductors adapted to form a complete or round wire circuit, of an insulated metallic sheath or sheaths surrounding said conductors, and a flexible insulating and protective sheathing or armor, substantially as set forth.

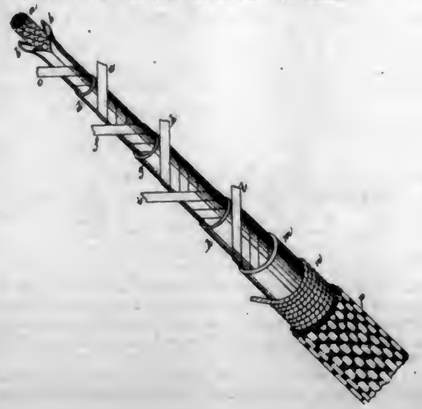
2. In an electric cable, the combination, with two insulated conductors twisted together and adapted to form a complete or round wire circuit, of a plastic envelope applied to and compressed around said conductors to form a smooth and round core for the outer layers or sheathings, substantially as described.

3. In an electric cable, the combination, with two insulated conductors forming or adapted to be used as a complete metallic or round wire circuit, of three insulated metallic sheaths and a protective flexible armor, substantially as set forth.

4. In an electrical cable, the combination, with the insulated conductors *a a'*, of the insulating-envelope composed of the oppositely-laid strips *c c*, of plastic material, compressed around the conductors, substantially as and for the purpose specified.

5. In an electric cable, the combination, with two insulated conductors forming or adapted to be used as a complete or round wire circuit, layers or sheaths surrounding the same, and consisting of spirally-wound strips of paper and metal, and a flexible protective jacket or armor, all substantially as set forth.

327,493. ELECTRICAL CABLE. HENRY C. SPALDING, Boston, Mass. Filed Dec. 10, 1883. Renewed Feb. 28, 1885. (No model.)



Claim.—In an electrical cable, the combination, with the conductors and insulating layers or coatings, of a coating of viscous insulating material, a serving of spirally-wound twine embedded therein, and an inclosing-jacket of braided twine, substantially as set forth.

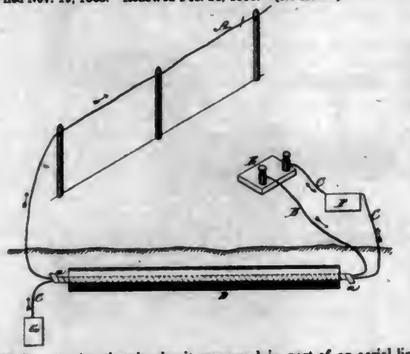
327,494. ELECTRIC CABLE. HENRY C. SPALDING, Boston, Mass. Filed Dec. 14, 1883. Renewed Feb. 28, 1885. (No model.)



Claim.—1. The combination, with two insulated conductors forming a complete or round wire circuit, of a spirally-wound wire between layers of plastic insulating material surrounding said conductors, as and for the purpose set forth.

2. The combination, in an electrical cable, of the two separately-insulated wires *a a*, the coating of plastic material *d*, the spirally-wound wire *e*, and the coating of plastic material *f*, substantially as herein set forth.

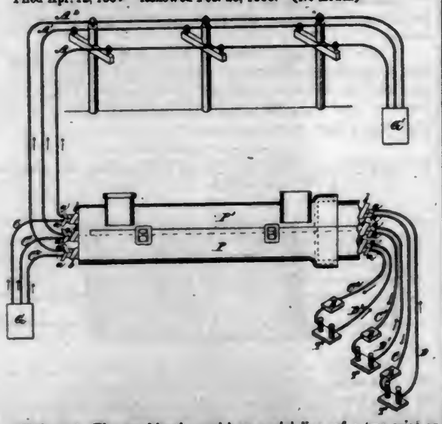
327,495. ELECTRIC CIRCUIT. HENRY C. SPALDING, Boston, Mass. Filed Nov. 19, 1883. Renewed Feb. 28, 1885. (No model.)



Claim.—1. An electric circuit composed in part of an aerial line and the ground and in part of two insulated conductors inclosed in a metal sheath in an insulating-conduit, the two conductors constituting, respectively, leading and return wires, and the return-wire being grounded at the end of the conduit, substantially as and for the purpose specified.

2. An electric circuit consisting in part of two conductors insulated from one another and inclosed within an insulated metallic sheath and in part of an aerially-suspended wire, the suspended wire and one of the insulated wires being connected to earth at or beyond the same end of the said sheath, substantially as and for the purpose herein set forth.

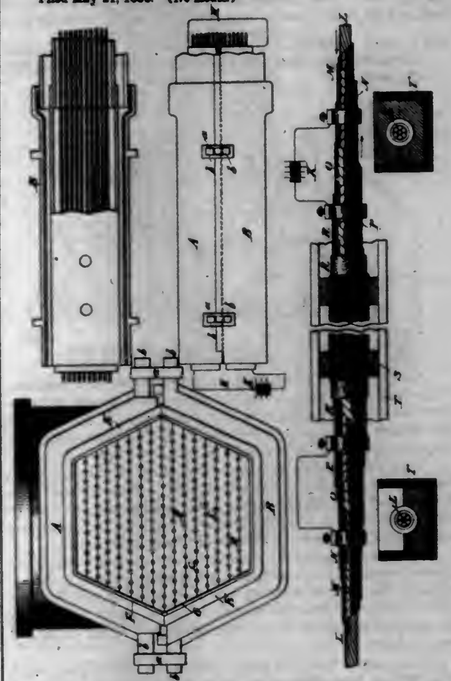
327,496. ELECTRICAL CIRCUIT. HENRY C. SPALDING, Boston, Mass. Filed Apr. 12, 1884. Renewed Feb. 28, 1885. (No model.)



Claim.—1. The combination, with an aerial line, of a two-wire or metallic circuit, underground cable, and two insulated metallic sheaths or screens surrounding the same, substantially as set forth.

2. The combination, with a series of aerial lines, of two wire or metallic circuit underground cables connected therewith, metallic sheathings or screens surrounding each cable, and an insulated metallic screen inclosing all of the cables, substantially as set forth.

327,497. ELECTRIC CIRCUIT. HENRY C. SPALDING, Boston, Mass. Filed May 21, 1885. (No model.)



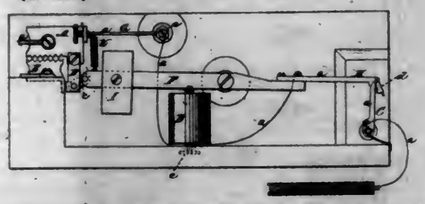
Claim.—1. In a system for the transmission of electrical signals, the combination, with the line-wires of one or more working or signaling circuits, of two insulated conductors in proximity thereto, the said conductors forming an idle or induction circuit, including only a generator of electricity, whereby continuous currents are caused to flow in opposite directions in the vicinity of the working-circuits, as described.

2. In a system for the transmission of electrical signals, the combination, with a group of insulated wires forming the line-wires of working or signaling circuits, of two insulated metallic sheathings or screens connected to form an idle or induction circuit including only a generator of electricity, as set forth.

3. In a system for the transmission of electrical signals, the combination, with a group of insulated wires, of two concentric insulated metallic sheathings or screens surrounding the wires and connected at the ends to form a metallic circuit, and a battery or generator included in the circuit.

4. In an underground cable or conduit, the combination, with a group of wires, of two insulated metallic sheathings or screens connected to form a metallic circuit, and a battery included in said circuit in such manner as to cause the current to flow in a sheathing or screen in a direction opposite to that of the currents in the wires nearest to it, as set forth.

327,498. SAFETY DEVICE FOR ELECTRIC CIRCUITS. HENRY C. SPALDING, Boston, Mass. Filed Feb. 21, 1884. Renewed May 21, 1885. (No model.)

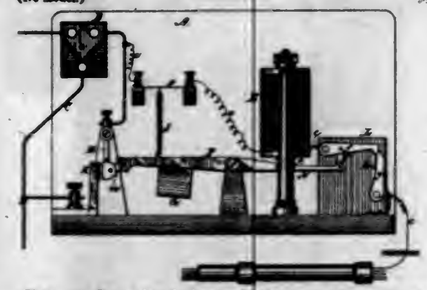


Claim.—1. In a safety device for electric circuits, the combination, with a fusible safety-strip, an electro-magnet, and a pivoted armature-lever connected by a spring with the safety-strip, of a circuit-breaker and a shunting device operated by the lever and a locking device for preventing the reaction of the same, as set forth.

2. The combination, with the plate A, safety-strip G, and electro-magnet B, of the pivoted and weighted armature-lever F, connected to

the safety-strip by a spring, the pivoted shunting-lever D, and the circuit-breaking lever C, both arranged to be operated by the movement of the lever, and the locking-lever or catch *d*, all substantially as set forth.

327,499. SAFETY DEVICE FOR ELECTRIC CIRCUITS. HENRY C. SPALDING, Boston, Mass. Filed Feb. 21, 1884. Renewed May 21, 1885. (No model.)



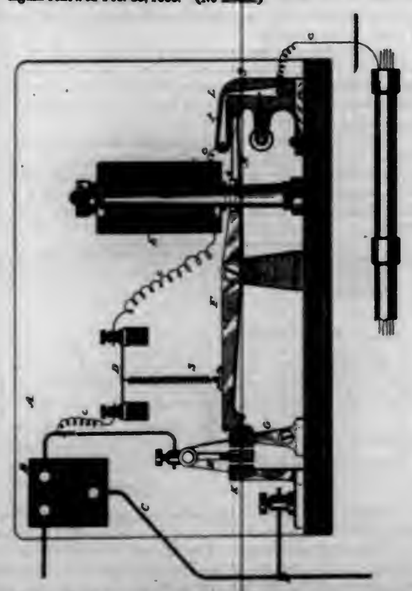
Claim.—1. In a safety device for electric circuits, the combination, with a fusible safety-strip, an electro-magnet, and a pivoted armature-lever connected by a spring with the safety-strip, of a circuit-breaker and shunting device connected with the lever, and constructed and arranged for operation in substantially the manner set forth.

2. In a safety device for electric circuits, the combination, with a fusible safety-strip, an electro-magnet, and pivoted armature-lever weighted and connected by a spring with the safety-strip, of a circuit-breaker and shunting device connected with the lever, and constructed and arranged for operation in substantially the manner described.

3. In a safety device, the combination, with an electro-magnet and pivoted armature, of a circuit-breaker and a shunting device, each comprising as the means for operating them a pivoted lever, and links connecting the pivoted armature with said levers, whereby a movement of the armature is imparted to the levers, substantially as and for the purpose specified.

4. In a safety device for electric circuits, the combination, with a safety-strip, an electro-magnet, and a pivoted armature connected by a spring with a safety-strip, of a circuit-breaker and a shunting device, each comprising as the means for operating them a pivoted lever and links connecting the pivoted armature with said levers, whereby a movement of the armature is imparted to the levers, substantially as and for the purpose specified.

327,500. SAFETY DEVICE FOR ELECTRIC CIRCUITS. HENRY C. SPALDING, Boston, Mass. Filed Apr. 17, 1882. Renewed Feb. 21, 1884. Again renewed Feb. 28, 1885. (No model.)

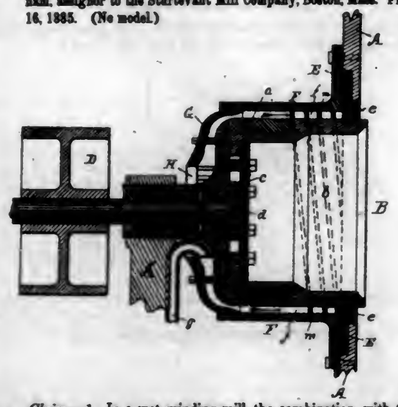


Claim.—1. In an apparatus for the protection of electric circuits, the combination of the lightning-arrester composed of the separated corrugated plates, one of which is in permanent connection with the earth, with the fusible wire and devices, as described, connected therewith and adapted to operate, on the fusion of the wire, to establish an earth-connection, by means of which the current may be divarted from the line in the manner set forth.

2. The combination, with a main electric circuit, of a fusible safety-wire included in said circuit, a normally-open branch circuit to earth, and a mechanical circuit-closer connected with the fusible wire by a distensible spring, and constructed and arranged to operate on the fusion of the safety-wire, and thereby close the said branch circuit, as and for the purpose set forth.

3. The combination, with a main electric circuit, of an electro-magnet, a pivoted armature-lever and circuit-breaker, a normally-open branch circuit to earth, and a circuit-closer connected therewith, a fusible safety-wire included in the main circuit, and a spring sustaining the pivoted armature-lever connected therewith, these parts being constructed and arranged for operation substantially in the manner set forth.

327,501. WET-GRINDING MILL. THOMAS L. STURTEVANT, Framingham, assignor to the Sturtevant Mill Company, Boston, Mass. Filed Apr. 16, 1885. (No model.)



Claim.—1. In a wet-grinding mill, the combination, with the mill-casing, the boss, and rotary head, of the jacket secured to and partially inclosing the latter and constructed to force liquid within the mill, substantially as herein described.

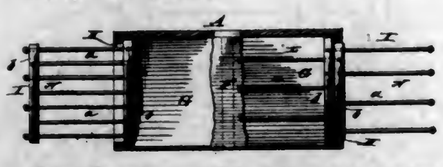
2. The combination, with the rotary head B, casing A, and boss F, of a jacket, G, provided with the interior peripherally-disposed ribs *i i*, substantially for purposes herein specified.

3. In a wet-grinding mill, the combination, with the rotary head and boss of the jacket, the rotary action of the jacket and head supplying liquid to the mill, substantially as described.

4. In a wet-grinding mill, the combination, with the mill-casing, a rotary head, and its jacket secured to and partially inclosing said head, of means for supplying liquid and the boss F, provided with the continuous spiral rib *m*, whereby liquid is forced within the mill, as herein described.

5. The combination of the head B, means for supplying liquid, and boss F, interiorly provided with a continuous spiral rib, *m*, adapted to inclose the head B, revolving therein, and thus effect a continuous forced supply of liquid within the mill through the annular space *f*, all operating for the purpose herein described

327,502. COOKING-TABLE. EUGENE R. SWAN, Aplington, Iowa. Filed Apr. 1, 1885. (No model.)

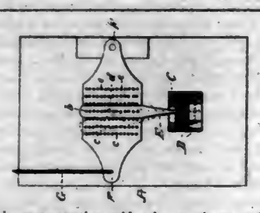


Claim.—The combination, with the shallow chamber in the top of the case opening at the sides thereof, of the adjustable rack I, consisting of the engaging sliding sections formed of rods *a*, secured to bars *b*, through which the rods of the opposite section pass, substantially as specified.

327,503. WINDMILL WATER-SUPPLY REGULATOR. BEERI W. TUTTLE, Council Hill, Ill., assignor of one-half to Anthony W. T. Raw, same place. Filed Feb. 19, 1885. (No model.)

Claim.—1. In an apparatus of substantially the character described, the combination of a tank or reservoir, a valve or piston in the bottom

327,503.



thereof, a hinged lever supporting said valve or piston, and two adjustably-connected levers or arms, substantially as described.

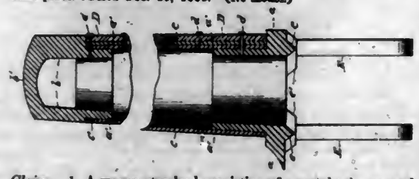
2. In an apparatus of substantially the character described, the combination, with a water-tank and means adapted to cut off the water-supply, of a valve or piston arranged within a tube in the bottom of said tank and having flexible connections with the tube all around, substantially as described.

3. In an apparatus of substantially the character described, the combination, with the water-tank and a rod adapted to cut off the water-supply, of an intermediate lever having an adjustable connection with an arm attached to a hinged lever supporting a valve or piston adapted to vertical movement in the bottom of the tank, substantially as described, and for the purpose set forth.

4. In an apparatus of substantially the character described, the combination of a tank or reservoir, a valve or piston in the bottom thereof, a hinged lever supporting said valve or piston, and a perforated arm and perforated lever having connections with the means for cutting off the water-supply, substantially as described.

5. In the apparatus described, the combination of the water-tank A, tube B, valve or piston C, lever D, bifurcated and perforated arm E, perforated lever F, coupling-pin *d*, and connecting-rod G, substantially as described.

327,504. WAGON-STANDARD. BEERI W. TUTTLE, Council Hill, Ill., assignor of one-half to Peter J. Raw and Anthony W. T. Raw, both of same place. Filed Feb. 19, 1885. (No model.)



Claim.—1. A wagon-standard consisting of a metal tube secured at its ends to top and bottom plates, and secured to the bolster by clips or stirrups, substantially as described.

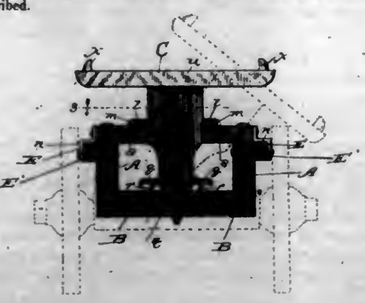
2. A wagon-standard consisting of a sheet of metal fitted around cylindrical sockets of a top and bottom plate, and covered at its overlapping edges by a metal strip secured to the same, substantially as described.

3. A wagon-standard consisting of the hollow bed-plate *a*, hollow top casting, *b*, intermediate connecting-tube, *c*, and strip D, and secured to the wagon-bolster by the clips or stirrups E E, and ridges on the bottom of the base-plate *a*, substantially as described.

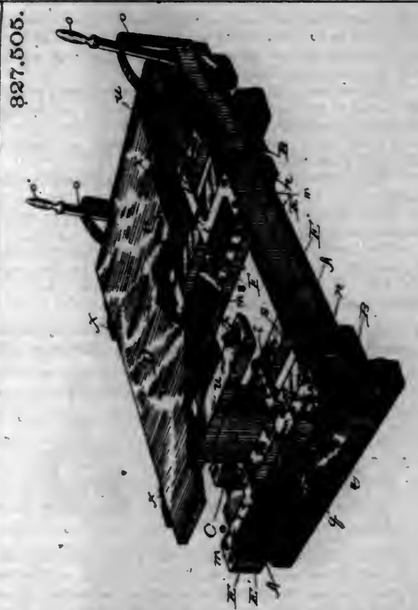
4. In combination with a wagon-standard, the ring or rings F, having ends embracing and pivoted to the wedge-shaped ear or plates *f*, secured to the standard, substantially as described.

327,505. DUMPING-VEHICLE. ERNEST VON OVEN, Naperville, Ill. Filed May 8, 1885. (No model.)

Claim.—1. A dumping-wagon, having the vertically and laterally shifting supports C for the load of sufficient length to oscillate over the sides of the vehicle, and guides secured toward the lower end of the supports moving in guides in the wagon-frame, whereby the movement of the lower end of the support shall be in a vertical line, substantially as described.



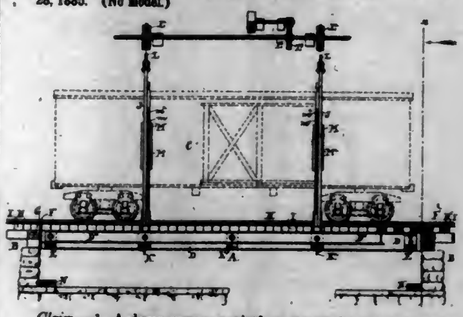
327,505.



2. A dumping-vehicle having supports C for a platform pivotally secured toward their lower ends and provided with lateral brackets *q* to engage with bearings *r*, provided on the vehicle, sustaining-bars *m* on opposite sides of the supports C and moving within suitable guides, and levers *o*, connected with the sliding bars, the whole being constructed and arranged to operate substantially as described.

3. A dumping-vehicle comprising, in combination with the body of the vehicle, supports C for a platform pivoted within staples *p* toward their lower ends to oscillate laterally, brackets *q*, projecting from the sides of the supports C, bearings *r* for the brackets *q*, sliding bars E, confined between guides on the sides of the vehicle and provided with sustaining-bars *m* for the supports C, moving within suitable guides, and a lever, *o*, for each bar E, fulcrumed to the body of the vehicle and pivotally connected to the bars E, the whole being constructed and arranged to operate as and for the purpose set forth.

327,506. CAR-DUMP. AMBON WOLCOTT, Wolcott, Ind. Filed Apr. 28, 1885. (No model.)



Claim.—1. A dump frame or platform mounted to rotate upon an axis parallel with the track-rails, substantially as described.

2. A pivoted dump-frame for railways, mounted to rotate upon an axis parallel with the track-rails and provided with side supports for sustaining the cars, substantially as described.

3. A pivoted dump-frame for railways, mounted to rotate upon an axis parallel with the track-rails and provided with a counterbalance-weight, substantially as and for the purpose set forth.

4. A pivoted dump frame or platform for railways, mounted to rotate upon an axis parallel with the track-rails and provided with suitable journal-bearings at its ends and one or more intermediate journal-bearings, substantially as and for the purpose set forth.

5. A pivoted dump-frame for railways, mounted to rotate upon an axis parallel with the track-rails, said axis being located in a vertical plane at one side of the center of gravity of the frame and cars, substantially as described.

6. The combination, with a pivoted dump-frame for railways, mounted to rotate upon an axis parallel with the track-rails and provided with laterally-extending arms, of means applied to the ends of the arms for moving the frame, substantially as described.

7. The combination, with a pivoted dump-frame for railways, mounted to rotate upon an axis parallel with the track-rails and provided with horizontally and vertically projecting arms J and K, of a drive-chain, L, attached to said arms, a pulley engaged with said chain, and means for actuating said pulley, substantially as described.

8. The combination, with a laterally-swinging dump-frame provided with rigid posts or arms located at the side of the car, of adjustable supports located between the said posts or arms and the sides of the car, substantially as and for the purpose set forth.

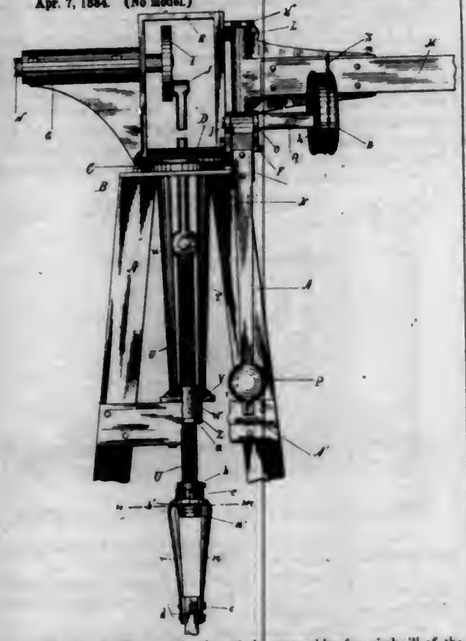
9. The combination, with a laterally-swinging dump-frame provided with rigid posts or arms located at the sides of the car, of movable wedge-shaped blocks M, located between the posts or arms and the car, substantially as and for the purpose set forth.

327,507. WASHING-MACHINE. JAMES F. WOOD, Woodyard, assignor of one-fourth to Buell E. Russell, Downington, Ohio. Filed Feb. 11, 1885. (No model.)



Claim.—A washing-machine comprising a handle, bars depending from the ends thereof, tubes B B', secured to the lower ends of said bars, pipes depending from the ends of said tubes, conical shells secured to said pipes, bracing-strips connecting the shells and the escape-pipes in the tubes B B', substantially as set forth.

327,508. WINDMILL. HARRISON WOODMANSE and SAMUEL LEBKICHER, Freeport, Ill.; said Lebkicher assignor to said Woodmanse. Filed Apr. 7, 1884. (No model.)



Claim.—1. The combination of the turn-table of a windmill of the class described, a suitably-journaled horizontal shaft mounted on said turn-table, a weighted lever rigidly attached to said journaled shaft and oscillating in a vertical plane upon the reciprocal rotation of said shaft in its bearings, a pulley adjustably mounted on said lever-supporting shaft, and a band or chain, one end of which is attached to the regulating-vane of the mill, while the other passes partly around and is fastened to said pulley, whereby the changing of the angle between the vane and the wind-wheel rotates said pulley, and thereby raises or lowers the free end of the weighted lever.

2. In a mill of the class described, the combination of the turn-table of the mill, a suitably-journaled horizontal shaft mounted thereon, a weighted lever suspended from and rigidly fastened to said horizontal shaft, a pulley mounted eccentrically on said lever-supporting shaft, and a chain or band, one end of which is attached to the regulating-vane of the mill, while the other end thereof passes partly around and is fastened to said eccentric pulley, whereby the changing of the angle of said vane to the wind-wheel rotates said eccentric pulley, and thereby exerts a varying force on said weighted lever, substantially as shown and described, and for the purpose set forth.

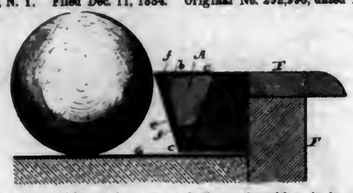
3. The combination of the turn-table D, journaled shaft *j*, weighted lever N, rigidly attached to said shaft, pulley R, rigidly and eccentrically mounted on said shaft and provided with means whereby its eccentricity may be varied, the regulating-vane M, and the band or chain S, connecting said vane and pulley, substantially as shown and described, and for the purpose set forth.

4. The combination of the turn-table D, cone T, formed integrally therewith, bushing Z, provided with an annular retaining-flange at its upper end and screw-threaded at its lower end, the nut *a*, securing the lower end of said bushing, and the connecting rod U, sliding within the same, substantially as shown and described, and for the purpose set forth.

5. The combination of the connecting-rod U, collar *b*, swivel *n c*, washer *b'*, and nut *a'*, all combined and operating substantially as and for the purpose set forth.

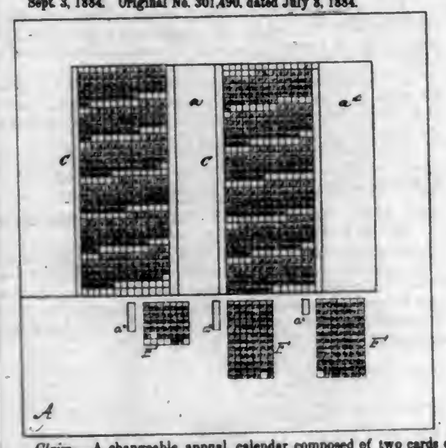
REISSUES.

10,647. BILLIARD-TABLE CUSHION. HUGH W. COLLENDER, New York, N. Y. Filed Dec. 11, 1884. Original No. 292,990, dated Feb. 5, 1884.



Claim.—A cushion-strip composed of a soft-rubber body, a face-hardening strip or strips, and means, substantially such as described, for holding down (against any upwardly-stretching tendency) such strip or strips, said soft-rubber body, said face-hardening strip or strips, and the device for holding the latter down being all firmly united in the final and usual process of vulcanization, as set forth.

10,648. CALENDAR. CHARLES W. FROST, Philadelphia, Pa. Filed Sept. 3, 1884. Original No. 301,490, dated July 8, 1884.



Claim.—A changeable annual calendar composed of two cards or sheets, each of which is provided with the names or initials of the days of the week and the names of the months on one side, and with tables of the days of the months of the whole year and of the year-numerals on the other side, said cards having also slots or openings through which the tables on one card will show in connection with the names and columns on the corresponding side of the other card, whereby the entire calendar for the year is shown at one time with the century-numerals for that year, one side of said calendar showing common years and the other side leap-years, such calendar being changeable, substantially as set forth.

N. PETERS, Photo-Lithographer, Washington, D. C.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

COMMISSIONER'S DECISIONS.

EX PARTE TROTTER.

Decided September 22, 1885.

Order No. 174, enforcing Rule of Practice 39, and requiring, where it is disclosed that applications for foreign patents have been pending for six months or more, evidence as to whether such patents have issued, together with their dates and numbers, if issued, is satisfied by copies of such patents officially furnished the Patent Office.

APPEAL from the Primary Examiner.

Mr. A. Pollok for the appellant.

Application of Alexander P. Trotter, No. 88,597, filed March 17, 1883, for improvement in distributing and diffusing powerful lights.

MONTGOMERY, *Commissioner:*

Applicant is a citizen of England, and filed his application on the 17th of March, 1883. In his oath, which was dated March 5, 1883, he states that his invention has not been patented, except in the following countries:

"Great Britain by the Letters Patent No. 233, dated January 15, 1883; France by the application dated the 24th of January, 1883, and Belgium by an application dated the 1st of February, 1883."

I suppose, and it is agreed, that he means by this that when the oath was taken the letters patent had issued in Great Britain, and applications were pending in France and Belgium, respectively.

Under Rule 39 applicant is required to state, in case his invention has been patented in any foreign country, "the country or countries in which it has been so patented, giving the date and number of each patent." Of course this requirement as to date could hardly be said to apply to a pending application.

On the 3d day of August last the "preamble of the specification" was amended, and the date and number of the French and Belgian patents, (which had then both issued,) respectively, were given. The Examiner thereupon declined to proceed in the case until applicant had furnished upon oath a statement of the date and number of such French and Belgian patents, respectively. From this requirement an interlocutory appeal is taken to the Commissioner, and this is the question which I am called upon to review. My attention has been called to an order of my predecessor, dated September 19, 1884, and numbered 174, wherein it is directed that in cases where the applicant makes oath that he has made application for a patent, examiners will require evidence as to whether or not any foreign patent has been issued upon such application before passing the case to issue, provided six months have elapsed since the filing of such application—that is to say, in all cases where it is disclosed that applications for foreign patents were pending, and have been so pending six months or more, the Examiner will require evidence as to whether or not such foreign patent has been obtained. Of course if it has been obtained, then it must be reasonably described and identified. Now, in this case the foreign patents have been obtained, though they have not been identified by number. Copies, however, have been officially furnished the Patent Office, from which the claims, specifications, dates, and numbers are before the Office. Shall the Examiner require anything further? Of course the purpose of the rule was to provide the means of clear identification. The rule, however, (Rule 35,) does not apply in express terms to this case, for the reason that no patent had issued when it was made. The applications in France and Belgium were then pending. It is now shown to the Office that the patents had issued upon these applications. The same showing—viz., the official copies furnished the Patent Office—exhibit the date and number and the description contained in foreign patents.

It seems to me that this is ample and complete, and that the Examiner should and he is hereby directed to proceed in the case without further amendment of the oath.

DECISIONS OF THE U. S. COURTS.

U. S. Circuit Court—Eastern District of Wisconsin.

GRAHAM *v.* THE GENEVA LAKE CRAWFORD MANUFACTURING COMPANY.

Decided May 10, 1885.

1. DAMAGES—LICENSE-FEE.
Where a patentee does not desire to retain a close monopoly of his invention, the amount of the license-fee which he has fixed in his dealings with other parties may be considered a proper compensation in damages where the character of the infringement does not justify exemplary damages.

2. DAMAGES.
Although the questions may be close, still it is manifestly wrong, his invention appearing to be valuable, that a patentee should only be allowed nominal damages against an infringer.

3. SAME.
Agreements made to secure the manufacture and introduction of a patented machine are not to be considered as unqualified licenses fixing a royalty or license-fee which can be accepted as establishing, within the language of the court in *Seymour v. McCormick*, (16 How., 490,) the average of actual damages sustained by a patentee when his invention is used without license.

4. SAME—ROYALTY.
Where a license under letters patent provides for the payment of a royalty of five dollars a machine, but subject to a re-

duction of three dollars, if paid promptly, &c., it will, on the question of assessing damages against a third party, be considered as establishing a royalty at the lower rate.

5. SAME—SAME.

Where the question is close, a revoked or abandoned license may be considered as throwing light upon the value which an inventor has put upon the right to manufacture his patented machine.

6. SAME—INTEREST.

In this case the court reduces the amount reported by the master from five dollars to three dollars a machine, but allows interest from the date of the interlocutory decree establishing the patent and the fact of infringement.

Messrs. Banning & Banning for the complainant.
Messrs. Flanders & Bottum for the defendant.

DYER, *J.*:

In a case of the character of this, the theory of the law is that the complainant shall recover the actual damages which he has sustained by reason of the infringement. In arriving at such damages, it is held that where the patentee does not desire to retain a close monopoly of his invention the amount of the license-fee which he has fixed in his dealings with other parties may be considered a proper compensation in damages where the character of the infringement does not justify exemplary damages.

I have examined with care all the cases cited in which the rule just stated is enunciated, and uniformly they are cases where the license-fee or royalty was fixed without question by the patentee, and was well established; and the difficulty in the present case is in determining whether Graham had an established price for a license while the defendant was manufacturing and selling its infringing machine, which can be adopted as a measure of actual damages within the principle laid down by the authorities. This is the pinch of the case, and I have been not a little perplexed to know just what the court should do in disposing of the exceptions to the master's report. Undoubtedly the complainant should not have his claim reduced to nominal damages. That I think would be manifestly wrong.

Not much satisfactory light can be extracted from the Waterman and Waterman & Bloom contracts. The two contracts first made have been lost and cannot be produced. The one of date January 29, 1870, is in evidence. They all, according to the evidence, provided for the payment of a royalty of $10 on each machine; but they appear to have contained various provisions and qualifications to cover contingencies, which materially affected their character as licenses by which an absolute license-fee was fixed. The contract in evidence contains numerous conditions intended, evidently, to secure the introduction to public notice and use of the Graham invention, and providing for the return to Waterman of certain proportions of the royalty upon the happening of certain contingencies; and I am inclined to look upon all of these agreements made with Waterman and Waterman & Bloom as rather partaking of the nature of efforts to secure the manufacture of the machine and its introduction into public use, than as unqualified licenses fixing a license-fee which could be accepted as establishing, within the language of the court in *Seymour* v. *McCormick* (16 How., 480) the average of actual damages sustained by the patentee when his invention should be used without his license.

By the arrangement with the Bloomington Company, which was verbal, it is said that a royalty of $10 was to be paid, but nothing was ever done by that company, and nothing was ever realized by Graham. By the agreement with the Wayne Agricultural Company a royalty of $3 was to be paid, and the license included something more than the invention in question. Nothing was done under this license, and it was afterward revoked. By the license granted to the Ann Arbor Agricultural Company a royalty of $5 was to be paid, subject, however, to a reduction to $3 if the company should faithfully perform the contract on its part, and should make prompt payments as the contract requires. This license is understood to be now in force, and it is evidently the license upon which complainant's counsel depends as establishing a license-fee of $5, and upon which the master also relied in adopting that amount as measuring the complainant's damages. It is to be observed, however, of this license that it was granted pending this suit, and therefore it can hardly be claimed that it proves a license-fee established before this case was commenced and while the defendant was infringing. However that may be, the question is whether, if the complainant has established a license-fee at all which should govern in the present controversy, it may not be said to be $3 with as much force as it may be said to be $5.

As we have seen, the license to the Wayne Company provided for a royalty of $3. True, it was revoked and abandoned, and it has been held that the price for which an inventor in a single instance may have sold his right to certain territory is not a criterion by which to determine the value of his patent or the damages sustained from its infringement; but in a case like the present, where it is a close question whether it can be said that the patentee has established a fixed and positive license-fee or royalty at all, it seems to me that this license may be looked at as throwing light upon the value which the inventor has put upon the right to manufacture his machine, so far as it is to be considered in disposing of the present case.

Further, we find that by the license to the Ann Arbor Company the royalty of $5 is subject to be reduced to $3 if the company performs its contract, and the legal presumption is that the company will perform. Now, in view of this state of the case, has not the patentee really established $3 as his license-fee as effectually, for present purposes, as it may be said he has established $5 as such fee, and even more effectually? I admit that upon the facts presented any course of reasoning by which a conclusion may be sought on this question of damages is not very satisfactory. In other words, it is not easy in such a case as this to determine what is precisely just and right between the parties, but on the whole I have concluded to somewhat reduce the amount which the master has allowed. I will put the license-fee on each machine at $3, as in the light of the evidence before me most nearly measuring or approximating the compensation in damages to which the complainant is entitled; and in arriving at this conclusion I take also into consideration the fact that a large number of the machines in question were not manufactured by the defendant, but were purchased for sale from other manufacturers. The master has found that the defendant has manufactured seven hundred and forty-seven machines, and has sold eight hundred and twenty-three machines manufactured by other parties, all of which infringe complainant's patent, making in all fifteen hundred and seventy machines to be included in an estimate of damages. The two hundred and sixteen other machines spoken of in the master's report are not here considered or included. A royalty or license of $3 on each machine, if paid on fifteen hundred and seventy machines, would make an aggregate of $4,710, and on that sum I shall also allow interest at seven per cent. from the date of the entry of the interlocutory decree, which was October 11, 1880. Such interest amounts to $192.29, so that the total amount to be allowed is $4,902.29.

To the extent thus indicated the exceptions to the master's report will be sustained, and decree accordingly.

NOTE.—In the case of *Graham* v. *McCormick*, Northern District of Illinois, decided April 17, 1885, unreported, Judge Gresham confirmed a master's report as to the allowance of $3 a machine under this same patent, but set it aside as to an allowance of interest from the date of the decision sustaining the patent and charge of infringement. The decree entered in the McCormick case amounted to $85,351.

U. S. Circuit Court—Northern District of Illinois.

ECLIPSE WINDMILL COMPANY v. WOODMANSE WINDMILL COMPANY *et al.*

Decided July 27, 1885.

1. ECLIPSE WINDMILL—NOVELTY—INFRINGEMENT.

Reissued Patent No. 9,493, issued December 7, 1880, to William H. Wheeler, and Reissue No. 6,101, granted to E. Stover and D. C. Stover, on October 27, 1884, for improvements in windmills, *Held* not void for want of novelty, and claim 1 of No. 9,493 and claims 3, 4, 5, and 6 of No. 6,101 infringed by the mill manufactured and sold by the Woodmanse Windmill Company.

2. SAME—LICENSE NOT TRANSFERABLE.

A license by a patentee to use his invention is personal to the licensee, and not transferable to a third party.

Messrs. Hill & Dixon for the complainant.
Messrs. Coburn & Thatcher for the defendants.

BLODGETT, *J.*:

This is a bill to restrain an alleged infringement and for an accounting as to Reissued Letters Patent No. 9,493, dated December 7, 1880, issued to the complainant as assignee of William H. Wheeler, the original patent having been granted to William H. Wheeler October 20, 1874, for an improvement in windmills; and also as to Reissued Letters Patent No. 6,101, granted to E. Stover and D. C. Stover on October 27, 1874, the original patent having been granted to said parties on December 3, 1872, for an improvement in windmills; the infringement being charged as to the first claim of Patent No. 9,493, and the third, fourth, fifth, and sixth claims of Patent No. 6,101. The defenses interposed are: (1) That the patents in question are void for want of novelty; (2) that the defendants do not infringe; (3) that the defendants are using the said patents by the license and authority of complainant and the original patentees.

The main controversy is as to the validity of Reissued Patent No. 9,493. Both the inventions in question are devices applicable to that class of windmills in which a flexible tail-vane or rudder is employed to carry the wind-wheel more or less out of the wind, as the velocity increases or diminishes, for the purpose of maintaining the mill at a uniform rate of speed, or of stopping its motion entirely; and the Wheeler device consists of a weighted arm arranged at one side of the vertical or horizontal axis of the windmill, for the purpose of counteracting the lateral strain on the vertical axis of the wind-wheel when the latter is carried obliquely to the wind, and in increasing the force of the counterbalancing-weight in proportion as the strain upon the vertical axis of the windmill is increased; or, as it is now popularly known and described in the art, a counterbalancing-weight of varying resistance. In all windmills in which a flexible tail-vane or rudder is employed, by means of which the wind-wheel is turned out of the wind, some mode of initiating the turning of the wheel from its direct front to the wind, so as to carry it around out of the wind, has been found necessary; and in the first practical windmill of this kind which was constructed, this initial motion was obtained by a side vane which caused a heavier pressure of the wind upon one side of the wheel than was received upon the other, whereby, when the wind reached a certain pressure or velocity, the wheel would swing laterally around, so as to bring itself parallel to the wind. The operation of this device was unsatisfactory, for the reason that the side vane operated too abruptly, and frequently swung the wheel entirely out of the wind when it was not desirable to do so, but was rather desirable to swing it only partly out of the wind, so as to relieve the wheel of a portion of the pressure; and the Wheeler device, now in question, consisted of the arrangement of a lever weighted at the extreme end and so fixed to the operative parts of the device as that, when at rest, and when the wheel faced the wind, the lever hung suspended with the weight at its lower end, but when the wheel commenced to swing out of the wind, the lever began to rise in the arc of a circle from a vertical to a horizontal position, and as it so raised, the weight at its further end, by its increasing leverage as it swung in the arc, increased the resistance to the swinging of the wheel, and therefore resisted, or prevented, the entire swinging of the wheel out of the wind unless the pressure of the wind increased. The main feature of the Stover device consists in adjusting the wind-wheel at an angle to its axis and to the line of the jointed tail-vane, so that the wheel could itself, on an increase of the wind, initiate its own swinging motion out of the wind; and the various claims of the Stover patent charged to be infringed have reference to this feature. A large number of prior patents for windmill devices are cited as anticipating the devices covered by these two patents, but after a careful examination of them I do not find that they can be said to anticipate either of the devices covered by the complainant's patents. Many, if not all of them, show weights; but they are not weights which are so arranged or adjusted as to increase the resistance as the wheel moved away from the wind, or diminish it as the wheel swung back to face the wind. I feel compelled to say, after a careful examination of the arguments of counsel and the various illustrations presented, that it seems to me the

proof is full and satisfactory to the point that William H. Wheeler was the first to apply to a practical wind-wheel the idea of a weight of varying resistance to regulate the swinging of the wheel out of or into the wind, and that the Stover patent was the first to show the mode of initiating the swinging of the wheel out of the wind, in wind-wheels where the jointed tail-vane was used, by setting the wheel at an angle with its own axis. I must therefore find that the defense of want of novelty is not sustained by the proof. As to the question of infringement, there can be no doubt that the defendants' device is not only a weight of varying resistance, but it is so nearly the exact counterpart of that of the Wheeler device as to hardly have any other feature than a mere mechanical change. Whatever there is in it different from that of the complainant's device covered by the Wheeler patent is merely mechanical, and not such a change as evades contribution to the owners of the Wheeler patent. The proof also shows that the defendants set their wind-wheel at an angle with the line of the tail-vane for the purpose of initiating the swinging out of the wind, instead of using the side vane, or any other device, to accomplish that purpose.

As to the claim that the defendants are using the device in question by the license of the complainant, or the original patentees, it appears from the proof that about September 11, 1874, the Eclipse Windmill Company, complainant in this case, was carrying on business as a manufacturer of windmills at Beloit, Wisconsin. E. & D. C. Stover were carrying on the same business at Freeport, in this State, and Harrison Woodmanse was also engaged in the same manufacture at Freeport. The Stovers were patentees and owners of certain patents pertaining to windmills, and had given a license to Mr. Woodmanse to use their patents in his business. William H. Wheeler had an application pending before the Patent Office for a patent for his device, covered by the patent of October 20, 1874; and the Stovers had also pending before the Patent Office an application for a patent on a kindred device, and an interference had been declared between them. On the 11th of September an agreement was made by which the Stovers admitted that Wheeler was the prior inventor of the device covered by his application, and a settlement of the controversy involved in the interference was made between the parties. At the same time a license was issued by Wheeler to the Stovers, authorizing the use by them and their licensees of the device covered by his application for the patent now in question, which license was confirmed by Wheeler after the issue of his patent, and about September 22, 1874, a large number of windmill manufacturers, among whom were the Eclipse Windmill Company, William H. Wheeler, Harrison Woodmanse, and the Stovers, formed an association for the purpose of protecting the windmill interests and patents in which they were respectively interested, by which it was agreed that each party to or member of the association might use so much of the patents owned by the other members as was necessary in building their respective mills as then constructed, so long as the association should continue in existence. It is conceded that the license of the Stovers to Harrison Woodmanse was not in force at the time this suit was commenced, nor at the time of the infringement now complained of. The proof also shows that the present corporation, the Woodmanse Windmill Company, was organized about June, 1881, and that the only color of authority or license that said corporation has for using the patent in question is an assignment from Harrison Woodmanse to said corporation of all his right to use said patent. The proof also shows that while the Windmill Protective Association, formed in September, 1874, may still have a nominal existence, yet a large number of its members, including Wheeler and the present complainant, withdrew therefrom several years since, and the association can hardly be said now to continue in existence as it was at the time the agreement for interchangeable use of the patents of the respective members was made. But, without reference to that question, I think it is sufficient to say that the law is well established that a license by a patentee is personal to the licensee, and not transferable, and that Harrison Woodmanse could not clothe the present defendants with any authority to use the patents in question by virtue of his membership in the Windmill Protective Association. (*Troy Iron and Nail Factory* v. *Corning*, 14 How., 216; Curt. Pat., § 213.) The bill in this case charged the infringement by defendants of several other patents besides the ones which I have considered, but upon the hearing all the infringements charged were abandoned except the two patents now mentioned. No question can arise as to the validity of the reissue of this patent, because the claims alleged to be infringed in this case are the same as the claims in the original patent.

The court therefore finds that the defendants have infringed the first claim of Reissued Patent No. 9,493, and the third, fourth, fifth, and sixth claims of Reissued Patent No. 6,101, and a reference to a master will be ordered to take an account of the damages; and the bill is dismissed for want of equity as to the other patents mentioned therein.

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DIGEST OF DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS.

IN THE MATTER OF

PATENTS, TRADE-MARKS, &c.

OFFICIAL GAZETTE—July—September, 1885.

DIGEST OF DECISIONS.

[Decisions of U. S. court cases are designated by an asterisk (*); State courts by a double dagger (‡).]

ABANDONED CLAIMS.

(See Rehearing, 23.)

ACQUIESCENCE.

(See Injunction, 1.)

1. INFRINGEMENT—PRELIMINARY INJUNCTION—LACHES.

Where a patentee has known of infringement by a party of his patent, and acquiesced therein for a considerable length of time, a preliminary injunction will not be granted without an explanation of such acquiescence.

[*Mundy *v.* Kendall *et al.*, 1237.

2. LACHES OF PATENTEE—RIGHT OF VENDER TO SECURE DAMAGES.

The patentee's previous laches and indifference in regard to the use of his patents by defendant corporation *Held* sufficient to prevent the enforcement by a court of equity of the pecuniary claims of his vender against it for infringements before the purchase of the patent.

[*New York Grape Sugar Company *v.* Buffalo Grape Sugar Company *et al.*, 1356.

ADMISSION OF EVIDENCE.

(See Rehearing, 4.)

AGENTS.

1. AGENT NOT BOUND BY PREVIOUS SUIT AGAINST PRINCIPAL.

A servant or agent, being sued separately, is not bound by an adjudication in a former suit against his principal upon the question of the validity of the patent.

[*Hayes *v.* Bickelhoupt *et al.*, 136.

2. By reason of the several considerations mentioned, there is sufficient doubt about the propriety of an injunction in this case to warrant continuing the motion to final hearing.

[*Id.

AGREEMENTS.

(See License, 1.)

AMENDED CLAIMS.

(See Reissues, 3.)

AMENDMENTS.

(See Rehearing, 2, 3.)

AMENDMENTS BY ATTORNEYS.

(See Reissues, 3.)

ANALOGOUS DEVICES.

(See Anticipation, 1; Infringement, 3.)

ANSWER TO BILL.

(See Suits for Infringement, 1.)

ANTICIPATION.

(See Injunction, 5, 6; Particular Patents, 5, 7, 17, 21.)

1. Proof that two hundred metal tenons were made in 1837 or 1838, which could only be used for purposes of repair by taking the frames apart, and that a similar tenon was used to repair an iron shutter in New York in 1849, and that similar tenons were used in constructing iron shutters in Germany in 1844 and 1846, and that for three hundred years shutters so made have been used in a church-tower in Germany, is wholly inadequate to defeat the patent.

[*McFarland *et al. v.* Spencer *et al.*, 893.

2. Such testimony might be admitted to show the state of the art, or to narrow a broad claim, if the question were one of infringement; but it cannot avail the defendants, who deal in the identical contrivance covered by the patent.

[*Id.

ASSIGNEES.

(See Damages and Profits, 2.)

ASSIGNMENTS.

(See License, 1; Trade-Marks, 9.)

BAR TO SUIT.

(See Licensees.)

BILL IN EQUITY.

MULTIFARIOUSNESS.

If a bill charge infringement of separate patents in one machine, it will not be rendered multifarious by the mere fact that the several inventions relate to different and distinct parts of the machine.

[*Deering *v.* Winona Harvester Works *et al.*, 654.

CANCELED PATENTS.

(See Particular Patents, 2.)

CANCELED PATENT—TERM OF PATENT ISSUED IN PLACE OF.

Where letters patent have been issued by the Patent Office for a period of less than seventeen years, because of a reference to a supposed foreign patent, and the inventor has refused to accept them, and on further examination such letters are canceled and a new patent issued, the time intervening between the issue and allowance of the patent should not be deducted from the term of the patent, but the patentee be allowed to enjoy his monopoly for the full term of seventeen years.

[*Railway Register Manufacturing Company *v.* North Hudson C. R. Co. *et al.*, 519.

CLAIMS.

(See Construction of Specifications and Patents; Reissues, 3, 4.)

COMBINATION.

(See Reissues, 1, 3.)

COMMISSIONER OF PATENTS.

(See Validity of Patents, 1.)

CONSOLIDATION OF SUITS.

(See Suits for Infringement, 1.)

CONSIDERATION.

(See Estoppel, 1.)

CONSTRUCTION OF RULES.

(See Limitation of United States Patents by Foreign Patent Previously Granted, 3.)

CONSTRUCTION OF SPECIFICATIONS AND PATENTS.

(See Anticipation, 2; Canceled Patents, 1; Reissues, 1, 2, 4, 6; Validity of Patents, 1.)

CLAIM FOR MACHINE AND PROCESS FOR USING IT.

There cannot be in the same patent a claim for a machine and a claim for the process of using that machine.

[*Gage v. Kellogg *et al.*, 381.

CONTEMPT OF COURT.

(See Service of Process, 1.)

CONVEYANCE OF TITLE.

(See Estoppel, 1.)

CORPORATIONS.

(See Damages and Profits, 2.)

DAMAGES AND PROFITS.

(See Acquiescence, 2; License, 1.)

1. ROYALTY—JURISDICTION.

In this case the bill prayed that the defendants be required to account with the complainants and pay over all royalties at the rate of three dollars for each machine not heretofore reported and paid for. *Held*, that the complainants had a plain, adequate, and complete remedy at law under the terms of the license, as stated in the bill.

[*Crandell *et al. v.* Plano Manufacturing Company *et al.*, 1123.

2. INFRINGEMENT BY CORPORATION—PURCHASE BY FORMER DIRECTORS—RIGHT OF ASSIGNEE TO DAMAGES.

When the executive officers and managers of a corporation that has been infringing a patent, having sold their stock, purchase the patent, their assignee will not be allowed in equity to make the corporation pay the profits created by their own acts of infringement.

[*New York Grape Sugar Company *v.* Buffalo Grape Sugar Company *et al.*, 1356.

3. MANUFACTURE AND SALE OF ONE MACHINE—USE BY PURCHASER—REMEDY OF PATENTEE.

Peters manufactured a single machine protected by complainants' patent, and Sands bought the machine and continued to use it in his saw-mill for disposing of the sawdust and refuse of the mill, the purpose for which it was intended. It appeared that the right of action against Peters was barred by the statute of limitations. *Held*, that the extent of the injury to complainant was the royalty or proper license for the use of the machine; that he had an adequate remedy by action at law, and that the bill for an injunction and accounting should be dismissed.

[*Smith *et al. v.* Sands *et al.*, 1467.

4. DAMAGES—LICENSE-FEE.

Where a patentee does not desire to retain a close monopoly of his invention, the amount of the license-fee which he has fixed in his dealings with other parties may be considered a proper compensation in damages where the character of the infringement does not justify exemplary damages.

[*Graham *v.* The Geneva Lake Crawford Manufacturing Company, 1603.

5. DAMAGES.

Although the questions may be close, still it is manifestly wrong, his invention appearing to be valuable, that a patentee should only be allowed nominal damages against an infringer.

[*Id.

6. SAME—ROYALTY.

Where a license under letters patent provides for the payment of a royalty of five dollars a machine, but subject to a reduction of three dollars, if paid promptly, &c., it will, on the question of assessing damages against a third party, be considered as establishing a royalty at the lower rate.

[*Id.

7. SAME—SAME.

Where the question is close, a revoked or abandoned license may be considered as throwing light upon the value which an inventor has put upon the right to manufacture his patented machine.

[*Id.

8. SAME—INTEREST.

In this case the court reduces the amount reported by the master from five dollars to three dollars a machine, but allows interest from the date of the interlocutory decree establishing the patent and the fact of infringement.

[*Id.

DECISION OF PATENT OFFICE IN INTERFERENCE CASES.

(See Injunction, 4.)

DECREE.

(See Rehearing, 5; Reissues, 2.)

DECREE BY CONSENT—RES JUDICATA.

When a decree has been entered by consent in a prior suit declaring a patent valid, and that complainant is the sole owner thereof, such decree will be considered binding as to all questions determined thereby in a second suit between the same parties.

[*Tomkinson *v.* Willets Manufacturing Company, 382.

DELAY IN APPLYING FOR REISSUE.

(See Reissues, 4, 6.)

DELAY IN BRINGING SUIT.

(See Acquiescence, 2; Injunction, 1; Rehearing, 5.)

DEMURRER.

(See Injunction, 7, 8; Rehearing, 1.)

DESIGN PATENTS.

(See Infringement, 4, 5.)

DISCLAIMER.

(See Reissues, 2.)

ENLARGEMENT OF CLAIMS.

(See Particular Patents, 6, 14; Reissues, 1, 4, 6.)

ESTOPPEL.

Where a member of a firm alleged to be infringing was formerly a part owner of the patent, he would be estopped from denying its validity unless it sufficiently appeared that the conveyance of his title to the plaintiff was wholly without consideration.

[*Parker, trustee, *v.* McKee *et al.*, 137.

EVIDENCE.

(See Anticipation, 2; Particular Patents, 12; Rehearing, 4.)

EXPIRED PATENTS.

(See Injunction, 7, 8.)

FILE WRAPPER AND CONTENTS.

(See Rehearing, 2, 3.)

FOREIGN PATENTS.

(See Limitation of United States Patent by Foreign Patent Previously Granted, 1, 2.)

FORMER DECISIONS.

(See Agents, 1, 2; Licenses.)

FORMER DECISIONS AFFIRMED.

(See Infringement, 6; Injunction, 2; Particular Patents, 5; Reissues, 5.)

1. Upon motion for a preliminary injunction to restrain infringement of Letters Patent No. 116,266, which has been twice sustained in suits before other courts, as there appears to be no sufficient reason for rejecting said decisions, the injunction is ordered to issue.

[*Cary *et al. v.* The Lowell Manufacturing Company, (Limited,) 1009.

2. Upon such a motion the court will accept and follow an adjudication sustaining the patent, made in another circuit on a final hearing and after full consideration.

[*Id.

IDENTITY OF DEVICES.

(See Anticipation, 2.)

INFRINGEMENT.

(See Acquiescence, 1, 2; Anticipation, 2; Damages and Profits, Estoppel, 1; Former Decisions Affirmed, 1, 2; Injunction, 1, 3, 4, 6, 7, 8; Particular Patents, 1, 16, 19, 23; Reissues, 1, 2, 3, 6; Service of Process, 1; Suits for Infringement, 1; Trade-Marks, 4, 5, 6, 7, 8.

1. It is not necessary that the manner of infringement be shown by expert testimony. It is enough if it is proved that the defendant has done what is plainly an infringement.

[*Hayes *v.* Bickelhoupt, 136.

2. The defendants, who use the same process for the same purpose and with the same result, although with a higher degree of heat, are held to infringe.

[*Cary *et al. v.* Wolff *et al.*, 257.

3. INFRINGEMENT.

Reissue No. 8,615, compared with defendants' machine which is used to moisten meal, and not to dry or clean the seed for storage or shipping, and *held* not infringed.

[*Gage *v.* Kellogg *et al.*, 381.

4. DESIGN PATENTS—INFRINGEMENT—RESEMBLANCE.

It is not necessary that a design patent should be copied in every particular to constitute an infringement. It is sufficient if the resemblance is such that an ordinary purchaser would be deceived, although the infringer has deviated slightly in details or has omitted something which an expert could discover.

[*Tomkinson *v.* Willets Manufacturing Company, 382.

5. In Design Letters Patent No. 10,448, for a design for a fringed lace fabric, the novelty of the patented design appertains to the fringe, and not to the rest of the fabric. It is therefore not infringed by nubias having such fringes, in which, however, the similarity arises from the body of the nubias rather than from the fringe.

[*Jennings *et al. v.* Kibbe *et al.*, 653.

6. The plea of William D. Bishop, which sets up non-infringement, is overruled under *Sharpe v. Reisner*, (9 Fed. Rep., 445.)

[*Brush *et al. v.* The Naugatuck Railroad Company *et al.*, 894.

7. INFRINGEMENT.

The evidence failing to satisfy the court that the Deplanque plaque is infringed by the plaque of Ripka, the bill is dismissed.

[*Deplanque *v.* Ripka *et al.*, 1012.

8. The first three claims of the Doan and Bisbee patent are infringed by the patent to Allen. The fact that Allen accepted a rejection by the Patent Office on the Doan and Bisbee patent without asking an interference is of weight to show that he did not then claim priority to them. Injunction and accounting allowed.

[*J. A. Fay & Co. *v.* Allen. 1355.

9. Bill for injunction dismissed as to the Locke patent, which, construed strictly in view of the state of the art and of the claims rejected by the Patent Office, is not infringed by the defendant.

[*Id.

10. USE OF INFRINGING MACHINE BY SUPERINTENDENT—PARTNERSHIP.

When an infringing machine is used by a father and son, and it is not shown that they were partners, but it appears that the son was a superintendent in the shop where the machine was used, no action for infringement will lie against the son.

[*McDonald *v.* Whitney *et al.*, 1465.

INJUNCTION.

(See Acquiescence, 1; Former Decisions Affirmed, 1, 2; Infringement, 9; Reissues, 3.)

1. As the complainant here is in laches in bringing suit, (eleven years after knowledge of the infringement,) and as the circumstances justified the defendant in believing that he was licensed by silence, the relief granted must be limited to an injunction.

[*Holt *et al. v.* Menendez *et al.*, 136.

2. Following the decisions in Parker *v.* Stow and Parker *v.* Montpelier Carriage Company, the motion for a preliminary injunction is granted. On comparison of the second reissue with the first and with the original patent its validity is sustained.

[*Parker, trustee, *v.* McKee *et al.*, 137.

3. Where a bill for an injunction and accounting for infringement of three patents was filed more than three months before the expiration of the earliest patent, and it does not appear that it was filed too late to render it impossible to obtain an injunction, and it does appear that it may be necessary to consider the value of all the patents in the common process in which the defendants are alleged to use them, the bill will not be dismissed as to earliest patent.

[*New York Grape Sugar Company *v.* Peoria Grape Sugar Company, 138.

4. The decision upon an interference is not conclusive in suits upon the patent granted in pursuance of it, but it is a sufficient foundation for a preliminary injunction against the losing parties and their privies to prevent infringement of it.

[*Celluloid Manufacturing Company *et al. v.* Chrolithian Collar and Cuff Company *et al.*, 383.

5. Alleged anticipation of the invention, either by the defendants or by others known to them while they were applicants for patent, must be made to clearly appear in order that it may prevent the injunction.

[*Id.

6. In this case, the anticipation relied on not being clearly shown, and there being no question that the patent is infringed if valid, the injunction is granted.

[*Id.

7. The demurrer is overruled, with costs, where the bill for injunction and account was filed twenty-six days before the patent expired, and where it sets forth special ground of equitable relief, and prays for an injunction restraining the sale of the unlawfully-made machines after as well as before the patent expires.

[*The Toledo Mower and Reaper Company *v.* The Johnston Harvester Company *et al.*, 1010.

8. Demurrer is allowed, with costs, where the bill for injunction and account was filed six days before expiration of the patent, the rules of court requiring a notice of eight days of a motion for an injunction.

[*Mershon *v.* The J. F. Pease Furnace Company, 1011.

INTERFERENCE.

(See Infringement, 8; Injunction, 4.)

INTEREST.

(See Damages and Profits, 8.)

INVALIDITY OF PATENTS.

(See Rehearing, 2, 3.)

INVENTION.

(See Particular Patents, 4, 7, 13, 15.)

PATENTABILITY.

Making letters or figures of enamel baked on copper or other metal out of old materials in an old way not a patentable invention.

[*United States *v.* Gunning *et al.*, 1468.

LICENSE.

(See Damages and Profits, 3, 4, 5, 6, 7, 8; Injunction, 1.)

1. Agreements made to secure the manufacture and introduction of a patented machine are not to be considered as unqualified licenses fixing a royalty or license-fee which can be accepted as establishing, within the language of the court in *Seymour v. McCormick*, (16 How., 480,) the average of actual damages sustained by a patentee when his invention is used without license.

[*Graham *v.* The Geneva Lake Crawford Manufacturing Company, 1603.

2. LICENSE NOT TRANSFERABLE.

A license by a patentee to use his invention is personal to the licensee, and not transferable to a third party.

[*Eclipse Windmill Company *v.* Woodmanse Windmill Company *et al.*, 1605.

LICENSEES.

The plea of the Naugatuck Railroad Company, licensees under the Weston patent, which sets up privity of estate with their licenser, the United States Electric Lighting Company, the real defendants in the suit of *Brush v. Condit*, involving the Brush and Weston patents, and which sets up the judgment in said suit (that the Brush patent was anticipated by the Hager patent) as a bar to the present suit, is overruled, for the reason that the Brush and Weston patents are for different inventions, although the Weston lamp cannot be made without using the Brush clamp, and the judgment in the former suit (which threw the claimed combination open to the public) was not an adjudication of the validity or scope of the Weston patent, so as to make a case of privity of estate in behalf of licensees under it.

[*Brush *et al. v.* The Naugatuck Railroad Company *et al.*, 894.

LIMITATION OF UNITED STATES PATENT BY FOREIGN PATENT PREVIOUSLY GRANTED.

(See Canceled Patents, 1.)

1. It is only a patent for an invention that has been previously actually *patented* in a foreign country that is limited by the foreign patent.

[*Holmes Electric Protective Company *v.* Metropolitan Burglar Alarm Company, 384.

2. The mere *description* of an invention in a foreign patent does not operate, under section 4887 of the Revised Statutes, to limit a domestic patent for such invention.
[*Id.

3. Order No. 174, enforcing Rule of Practice 39, and requiring, where it is disclosed that applications for foreign patents have been pending for six months or more, evidence as to whether such patents have issued, together with their dates and numbers, if issued, is satisfied by copies of such patents officially furnished the Patent Office.
[*Ex parte* Trotter, 1603.

MACHINE AND PROCESS.

(See Construction of Specifications and Patents, 1.)

MECHANICAL SKILL.

(See Invention, 1; Particular Patents, 7, 13.)

MULTIFARIOUSNESS.

(See Bill in Equity, 1.)

NEWLY-DISCOVERED EVIDENCE.

(See Rehearing, 1.)

NEW RESULT.

(See Particular Patents, 4.)

NEW PATENTS.

(See Canceled Patents, 1.)

NON-INVENTION.

(See Particular Patents, 3, 7, 13, 15.)

OFFICERS OF A CORPORATION.

(See Damages and Profits, 2.)

OLD PROCESS.

(See Infringement, 2; Particular Patents, 4.)

PARTICULAR PATENTS.

(See Canceled Patents, 1.)

1. ALDEN—PROCESS AND APPARATUS FOR PRESERVING ANIMAL AND VEGETABLE SUBSTANCES.
Claim 1 of Reissued Letters Patent No. 5,642, to Charles Alden, for a process for preserving animal and vegetable substances, is void for want of novelty. Claim 2, which is for an apparatus for carrying out the process, is not infringed.
[*Alden Evaporating Fruit Company v. Bowen *et al.*, 1355.

2. BENTON—FARE-REGISTER.
Letters Patent No. 233,915, granted November 2, 1880, to John B. Benton, for an improvement in fare-registers, in place of Letters Patent No. 211,207, issued to same party for same invention August 17, 1880, which latter patent was cancelled because of error therein and returned to the files, declared valid for the term of seventeen years from its date.
[*Railway Register Manufacturing Company v. North Hudson C. R. Co. *et al.*, 519.

3. BOYINGTON—SPRING BED-BOTTOM.
Letters Patent of May 24, 1881, to Levi C. Boyington, whose improvement upon the Kneppler patent consisted in the removal of the side rods to which his wire fabric was attached, are void, because at said date it required no invention to make the alteration.
[*Ames *et al.* v. Carleton Spring Bed Company *et al.*, 1238.

4. CARY—MODE OF TEMPERING SPRINGS.
Letters Patent No. 116,266, for a method of tempering furniture and other coiled springs by subjecting them to a "spring-temper heat," whereby the strength and elasticity lost in coiling are restored, are valid, because, though the process is old, the result is new and useful.
[*Cary *et al.* v. Wolff *et al.*, 257.

5. DADDOW—FUSE, BLASTING.
The prior use of fuses embodying the essential features of the Patents Nos. 8,361 and 134,128 being shown, *Held* that such patents are void for want of novelty.
[*Richards v. Hays, 1011.

6. FISHER—METHOD AND APPARATUS FOR TREATING SEEDS.
Reissued Letters Patent No. 8,615, dated March 11, 1879, and granted to William B. Fisher for an improvement in seed-steaming apparatus, expands the claims in the original patent, and is void.
[*Gage v Kellogg *et al.*, 381.

7. GORDON—APPARATUS FOR COOLING AND DRAWING BEER.
The invention secured by Letters Patent No. 248,646, which was made in 1879, was anticipated by an apparatus used by one Meinhard in 1877, though the latter was less perfect and useful, and was without the non-conducting jacket. It was not invention to add the non-conducting jacket to what Meinhard had.
[*Magin v. McKay, 1237.

8. GUNNING—LETTER AND FIGURE.
Decision of United States Circuit Court, Southern District of New York, December 26, 1884, declaring Letters Patent No. 265,061, granted September 26, 1882, to John Gunning, void, affirmed.
[*United States v. Gunning *et al.*, 1468.

9. HAYES—SKYLIGHTS.
Reissued Letters Patent No. 8,675, granted April 18, 1879, to George Hayes, for an improvement in skylights, construed and limited.
[*Hayes v. Bickelhoupt, 135.

10. HAYES—SKYLIGHTS.
Reissued Letters Patent No. 8,688, granted April 29, 1879, to George Hayes, for an improvement in skylights, construed, and held to be valid.
[*Id.

11. HAYES—SKYLIGHT TURRETS AND CONSERVATORIES.
Former construction of Reissued Letters Patent No. 8,689, granted to George Hayes, for an improvement in skylight turrets and conservatories, affirmed.
[*Id.

12. JENNINGS AND JENNINGS—LACE PURLING.
Letters Patent No. 218,032, for an improvement in lace purling, held to be valid. The sole anticipation relied on is a sample in a book of samples belonging to the defendant, which is shown to have been put in the book since controversy about this invention began, and concerning the identity of which there is so much doubt as to bring the whole proof below the degree of certainty requisite to defeat a patent.
[*Jennings *et al.* v. Kibbe *et al.*, 653.

13. KAPPES—MOSAIC FLOOR.
Letters Patent No. 87,853, for an improved mosaic floor, relating to a new manner of constructing the lower soft-wood layer—namely, of narrow parallel strips, tongued and grooved, with strips of equal thickness fastened transversely across their ends—are void for want of invention. Experience had demonstrated that such a construction was valuable in resisting the tendency of the wood to shrink and swell, and it was an exercise of mere mechanical skill to apply it to mosaic floorings.
[*Kappes *et al.* v. Hartung, 652.

14. KELLY—ATMOSPHERE-COOLER.
Original Letters Patent No. 44,731, granted to Moses J. Kelly, for an improvement in air cooling and distributing apparatus, described two forms of ice-chest, through which the air was passed for the purpose of cooling it by contact with the ice, and his claim was precisely commensurate therewith. It is apparent that there was no inadvertence, accident, or mistake in so limiting the claim, and therefore the claim in the reissue, No. 7,643, broadening the invention so as to include any and all methods of chilling the air which were known at date of the patent, is invalid.
[*Bate Refrigerating Company v. Eastman, 517.

15. KNEPPLER—SPRING BED-BOTTOM.
Letters Patent of July 27, 1869, to Alois Kneppler are void, because, in view of the prior use of coiled-wire springs to support a bed-mattress and the occupant, there was no invention in placing them underneath a woven-wire fabric used for bed-bottom purposes.
[*Ames *et al.* v. Carleton Spring Bed Company *et al.*, 1238.

16. MCDONALD—MACHINE FOR UNHAIRING AND SCOURING HIDES AND SKINS.
Patent No. 200,078, dated February 5, 1878, and Patent No. 210,797, dated December 10, 1878, issued to James W. McDonald for machines for unhairing and scouring hides and skins, *Held* valid, and infringed by defendants.
[*McDonald v. Whitney *et al.*, 1165.

17. MCFARLAND—TENON FOR BLIND-SLATS.
Letters Patent No. 76,491, for a metal tenon for repairing wooden blind-slats, are not anticipated by a patent granted to George R. Clark, March 5, 1867, for an improved metallic blind slat, clasp, and pivot.
[*McFarland *et al.* v. Spencer *et al.*, 893.

18. PEARD—SCHOOL-DESKS.
Assuming that claim 2 of Letters Patent No. 86,440, for an improvement in school-desks, is not functional and void, it must, in view of the state of the art, be limited to the apparatus described or its equivalent, and so construed the defendant does not infringe.
[*Peard v. Johnson, 895.

19. SAME.
The claims of Letters Patent No. 115,232, for an improvement in school-desks, are for aggregations merely, and the patent is therefore invalid.
[*Id.

20. THOMPSON—BUSHING FOR FAUCET-HOLES.
It is held that there is no infringement, because what the defendant uses is covered by the broad claim of Reissued Patent No. 8,483, (the first reissue,) which has been judicially declared to be void. (20 Blatchf. C. C., 3.)
[*New York Bung and Bushing Company v. Doelger, 651.

21. THOMPSON—BUNG AND BUSHING.
Reissued Letters Patent No. 10,368, (the second reissue,) for an improvement in bushings for faucet-holes, which in the first claim limited the invention to a "wooden" bushing, is not anticipated by Letters Patent No. 107,473; but said patent, in connection with the other proof, defeats the reissued patent for want of invention.
[*New York Bung and Bushing Company v. Doelger, 651.

22. WALKER—POCKET-COMB CASES.
Patent No. 184,310, granted to Charles W. Walker, November 14, 1876, for an improvement in pocket-comb cases, *Held* not void for want of novelty.
[*Walker Glass Company v. Souweine *et al.*, 1466.

23. WHEELER—WINDMILL.
Reissued Patent No. 9,493, issued December 7, 1880, to William H. Wheeler, and Reissue No. 6,101, granted to E. Stover and D. C. Stover, on October 27, 1874, for improvements in windmills, *Held* not void for want of novelty, and claim 1 of No. 9,493 and claims 3, 4, 5, and 6 of No. 6,101 infringed by the mill manufactured and sold by the Woodmanse Windmill Company.
[*Eclipse Windmill Company v. Woodmanse Windmill Company *et al.*, 1605.

PARTIES TO SUIT.

(See Infringement, 10.)

PARTNERSHIP.

(See Estoppel, 1; Infringement, 10; Trade Marks, 1.)

PATENTABILITY.

(See Invention, 1; Particular Patents, 4.)

PATENT OFFICE.

(See Infringement, 8; Validity of Patents.)

PATENTS.

(See Canceled Patents, 1.)

PETITION FOR REHEARING.

(See Rehearing, 1.)

PLEA.

(See Infringement, 6; Licenses, 1.)

POWER OF THE COURT.

(See Rehearing, 4.)

PRACTICE IN THE COURTS.

(See Agents, 1, 2; Bill in Equity, 1; Damages and Profits, 1; Decree, 1; Former Decisions Affirmed, 2; Injunction, 3, 4, 5, 6, 7, 8; Licensees; Rehearing, 1, 4, 5; Service of Process, 1; Suits for Infringement, 1; Validity of Patents, 1.)

That in the interest of the litigants and the public as well, considering the newness of the patent, it is desirable that the cases should be as full as may be in respect to the validity of the claims sued upon.
[*Railway Register Manufacturing Company v. Broadway and Seventh Avenue Railroad Company, 257.

PRACTICE IN THE PATENT OFFICE.

(See Limitation of United States Patent by Foreign Patent Previously Granted, 3.)

PRIORITY OF INVENTION.

(See Anticipation, 1; Infringement, 8.)

PRIOR USE.

(See Anticipation, 1; Particular Patents, 5.)

PROCESS.

(See Infringement, 2; Particular Patents, 4.)

PROCESS AND MACHINE.

(See Construction of Specifications and Patents, 1.)

PRIVITY OF ESTATE.

(See Licensees.)

REHEARING.

(See Reissues, 5.)

1. Petition for rehearing held sufficient and demurrer thereto overruled, although the petition failed to show newly-discovered evidence which might have entitled petitioners *as a matter of right* to have the cases reopened.
[*Railway Register Manufacturing Company v. Broadway and Seventh Avenue Railroad Company, 257.

2. Cases reopened and rehearing granted upon facts disclosed by file-wrapper and contents, showing that claims formerly embraced in a prior application upon which a patent was granted were abandoned and afterward patented to same applicant in a subsequent patent.
[*Id.

3. The five claims upon which a decree was directed for plaintiff were pending with the application of the same inventor for Patent No. 226,626, and disallowed. Applicant thereupon notified the Commissioner of Patents that he acquiesced in the decision and waived all right of an appeal. He afterward applied for and obtained these claims in the patent sued upon. In view of the decisions of the Supreme Court as to the effect of such proceedings, the evidence disclosed may be quite important and decisive.
[*Id.

4. The right to reopen cases rests largely in the discretion of the court, and in the exercise of such it is proper that these cases should be opened for the admission of such evidence.
[*Id.

5. LACHES—DECREE.
Application to open an interlocutory decree for the purpose of setting up a new defense because, as alleged, the defendants were misled in preparing their defense by a false allegation in the bill of complaint, refused on the ground of laches, as more than twelve years had elapsed since the bill of complaint was filed and the error committed.
[*Willimantic Linen Company *et al.*, v. Clark Thread Company *et al.*, 1356.

REISSUES.

(See Injunction, 2; Particular Patents, 14, 18.)

1. Claim 2 of Reissue No. 8,675, which is for a combination, is based on the first claim of the original, which was for an arrangement. It contains an element not mentioned in the original, and not used by the infringer. Construed to cover the infringement it would depart from the original, and construed to follow the original there is no infringement.
[*Hayes v. Bickelhoupt *et al.*, 136.

2. Claim 2 of Reissue No. 8,688 is held to be valid and to be infringed. The disclaimer reducing claim 3 of said reissue was properly filed after commencement of the suit, but there cannot be a decree for costs. The claim is held to be valid and to be infringed.
[*Id.

3. Application for patent for an improvement in caps covered a combination of the body of a cap and a neck-protector. This was rejected on references, with the suggestion that the forward band be included, and the claim being so amended patent issued. The patent was afterward reissued for the original combination, on the ground of a mistake by his solicitor, of which the patentee first learned shortly before the reissue. *Held*, that the validity of the patent is too doubtful to support a motion for injunction because of alleged infringement, for the reason that this does not appear to be such a mistake as would allow him to resume what the record of the Patent Office would show he had for so long a time left surrendered.
[*Arnheim v. Finster *et al.*, 256.

4. In view of the recent decisions of the Supreme Court relative to reissues, the claims of the Blessing reissued patent herein involved—which were broadened upon application made four and a half years after the original grant without change in the specification—may not be construed more broadly than the claims of the original.
[*The Albany Steam Trap Company v. Felthousen *et al.*, 1239.

5. In view of the decisions of the Supreme Court in relation to reissues, a rehearing is granted, but without prejudice to the proceedings before the master.
[*American Diamond Rock Boring Company *v.* Sheldons *et al.*, 1240.

6. As the reissue was taken out solely to enlarge the claims, the delay of nearly eight years in applying for it, in the absence of any excuse therefor, is fatal to the enlarged claims Nos. 1 to 7. As to claims 8 to 12, which were substantially the five claims of the original patent, there is no infringement. Bill dismissed, with costs.
[*Arden *v.* Jewett, receiver, &c., 1240.

REJECTED CLAIMS.

(See Infringement, 8, 9; Rehearing, 2, 3.)

REMEDY AT LAW.

(See Damages and Profits, 1, 3.)

RES ADJUDICATA.

(See Decree, 1.)

RESULTS.

(See Infringement, 2; Particular Patents, 4.)

RULES OF PRACTICE.

(See Limitation of United States Patent by Foreign Patent Previously Granted, 3.)

SERVICE OF PROCESS.

Motion for attachment for contempt of court in violating an injunction must be refused when the affidavits fail to show a personal service of the motion, or a substituted service by order of the court on the defendants.
[*Bate Refrigerating Company *v.* Gillett *et al.*, 1466.

SIMILARITY OF FORM.

(See Infringement, 4, 5.)

SUBSEQUENT PATENTS.

(See Rehearing, 2, 3.)

SUITS FOR INFRINGEMENT.

(See Damages and Profits, 1; Decree, 1; Practice in the Courts, 1; Validity of Patents, 1.)

1. CONSOLIDATION OF SUITS.
Where separate suits are brought at different times by the same complainant against the same defendant, charging infringement of separate patents covering different devices embodied in the same machine, the suits may be consolidated, and for purposes of answer, proofs and hearing treated as one and the same suit.
[*Deering *v.* Winona Harvester Works *et al.*, 654.

SUITS IN EQUITY.

(See Agents, 1.)

TERM OF PATENT.

(See Canceled Patents, 1.)

TRADE-MARKS.

1. A junior partner retiring from a firm is held to have retained no interest in a trade-mark used by the firm and originated by its senior member, particularly when the weight of evidence indicates that he released all right to their brands.
[*Holt *et al. v.* Menendez *et al.*, 136.

2. A casual and fortuitous use of the trade-mark by another for a short time will not impair the right of one who subsequently adopted it and gave it celebrity.
[*Id.

3. The use of a trade-mark for flour by one who selects and sells flours manufactured by others is a valid use.
[*Id.

4. The complainant registered in December, 1881, as a trade-mark for corn-flour, the word "Maizena," and an allegorical picture representing the cultivation of corn and the preparation of flour. In December, 1882, the defendant registered for the same purpose the word "Maizharina," accompanied with a pictorial representation of a man carrying a quantity of maize under his arm. Prior to the last-mentioned date the complainant had acquired a good common-law title to his trade-marks. *Held*, that as to the picture there is not, but that as to the word there is, infringement.
[*Glen Cove Manufacturing Company *v.* Ludeman, 235.

5. To entitle to relief, it is not necessary that the imitation should be so close as to deceive persons seeing the two marks side by side. It is sufficient if there is such a degree of resemblance as would deceive ordinary purchasers using ordinary caution.
[Id.

6. A word used as a trade-mark is addressed to the eye as well as to the ear, and cannot be disassociated from its surroundings when the inquiry is whether it is a colorable imitation.
[*Id.

7. Registration of a trade-mark is only *prima facia* evidence of ownership, and the validity of the title so evidenced is always open to judicial inquiry.
[*Id.

8. GEOGRAPHICAL NAME—"ST. LOUIS LAGER BEER"—FRAUDULENT SIMULATION OF LABELS—INJUNCTION.
Complainant, a brewer in St. Louis, Missouri, made and exported to Panama and South American ports beer in bottles, with a label bearing the words "St. Louis Lager Beer." Defendant, a shipper of beer from New York city, and a competitor of complainant in trade in Panama and South America, labeled his bottles "St. Louis Lager Beer." *Held*, that although complainant could not have an exclusive property in the words "St. Louis" as a trade-mark, or the exclusive right to designate his beer by the name of "St. Louis Lager Beer," yet, as his beer had always been made at that city, his use of the designation upon his labels was legitimate, and that defendant, whose beer was made in New York, should be enjoined from diverting his trade by simulating his labels or representing in any other way his products as those of complainant.
[*Anheuser-Busch Brewing Association *v.* Piza, 1123.

9. TRADE-MARK—ASSIGNMENT OF.
A trade-mark cannot be assigned as a mere abstract right and independent of or disconnected from the business in which it is used.
[*McVeagh *et al. v.* Valencia Cigar Factory *et al.*, 1124.

TRANSFER OF LICENSE.

(See License, 2.)

USE OF PATENTED ARTICLES.

(See Damages and Profits, 3.)

VALIDITY OF PATENTS.

(See Agents, 1, 2; Anticipation, 1; Construction of Specifications and Patents, 1; Estoppel, 1; Practice in the Courts, 1.)

1. INFRINGEMENT—DEFENSE OF IRREGULAR ISSUE BY PATENT OFFICE.
In a suit for infringement a patent cannot be invalidated by showing that the requirements of the statute to be observed by the Commissioner of Patents in order to its issue have not been regarded.
[*Railway Register Manufacturing Company *v.* North Hudson C. R. Co. *et al.*, 519.

VALID PATENTS.

(See Canceled Patents, 1; Particular Patents, 2, 4, 10, 12, 16, 17, 21, 23.)

VOID CLAIMS.

(See Particular Patents, 1; Reissues, 6.)

VOID PATENTS.

(See Particular Patents, 3, 5, 6, 7, 8, 13, 14, 15, 18, 20, 22.)

ALPHABETICAL LIST OF PATENTEES

FOR

THE QUARTER ENDING SEPTEMBER 30, 1885.

[Claims and drawings of Designs do not appear in the Monthly Volumes or the Gazette. Separate indexes for Designs, Trade-Marks, Labels, and Disclaimers follow this.]

Name, residence, and invention.	No.	Date.	Monthly volume. Specification.	Monthly volume. Drawing.	Official Gazette. Volume.	Official Gazette. Page.
Aasen, Siver J., Republican, Dak. Ter. Fanning-mill sieve	323,096	July 28	2303	608	32	442
Abbott, Arthur A., Chicago, Ill. Two-wheeled vehicle	324,794	Aug. 25	1901	523	32	899
Abbott, J. Varnum, and C. E. Luce, Dedham, Mass. Leather cutting and piling mechanism	325,037	Aug. 25	2229	611, 612	32	960
Abbott, John E. (See Dillingham, Fred B., assignor.)						
Abell, Joshua L., Chicago, Ill. Strainer for liquids	321,877	July 7	647	168	32	117
Abendroth, Frank A., New York, N. Y. Oil-stove	325,471	Sept. 1	339	82	32	1060
Abercrombie, Thomas H., Tumbling Shoals, S. C. Churn-dasher	324,511	Aug. 18	1511	416	32	818
Abernethy, William J., Minneapolis, Minn. Signaling attachment for change-boxes	323,384	Aug. 4	1	1	32	523
Abney, William W. (See Cabell and Abney.)						
Abrahamson, Abraham, Chicago, Ill. Milk or coffee flask	326,806	Sept. 8	798	201	32	1169
Abramowsky, Julius. (See Walsh and Abramowsky.)						
Abrams, Lorenzo D., Tuskola, Ill. Wind-wheel	326,086	Sept. 15	1155	295	32	1243
Achter, William F. (See Kleine and Achter.)						
Ackerman, Frederick P. (See Bosmann, Nicolas, assignor.)						
Ackley, Griffin S., Towanda, Pa. Adjustable bale-tie	324,348	Aug. 18	1291	351	32	779
Acme Paper Box Company. (See Merrill, Rufus S., assignor.)						
Acme Paper Box Company. (See Smith, Desbrow M., assignor.)						
Adam, William, Kidderminster, county of Worcester, England. Loom for weaving chenille or fur pile fabrics	324,287	Aug. 11	1201	326, 327	32	754
Adam, William J., Joliet, Ill. Wire fence	326,087	Sept. 15	1156	295	32	1243
Adams, Benjamin B., Roswell, N. Mex. Ter. Roofing	326,374	Sept. 15	1550	402	32	1316
Adams, Charles B., Quincy, Ill. Tobacco-press	324,631	Aug. 18	1675	462, 463, 464	32	849
Adams, Charles D., Geneva, Ga. Plow	323,097	July 28	2304	608	32	442
Adams, Daniel, Philadelphia, Pa. Table for gaining-machines	322,237	July 14	1122	292	32	214
Adams, Edwin. (See Eppler, Andrew, Jr., assignor.)						
Adams, George B., assignor of one-half to C. Campbell, Newark, N. J. Purse, bag, &c.	325,807	Sept. 8	800	201	32	1169
Adams, George M., Franklinton, Ky. Car-coupling	321,935	July 14	729	191	32	141
Adams, Gilbert L., Altoona, Pa., assignor of one-third to Alexander & Herr. Car-brake	326,191	Sept. 15	1299	336	32	1268
Adams, Jesse, Guernsey, Ark. Bed-rail brace	326,618	Sept. 22	1863	488	32	1480
Adams, John, Piqua, Ohio. Toe-calk for horseshoes	325,145	Aug. 25	2363	651	32	985
Adams, John, Montrose, Colo. Cravat-fastener	327,216	Sept. 29	2703	703	32	1538
Adams, John K. (See Shaffer, Adams, and Hunter.)						
Adams, John Q., Alamo, Mich. Windmill	323,485	Aug. 4	129	37	32	546
Adams, Nelson B. (See Orvis and Adams.)						
Adams, Peter, Jr. (See Shepard and Adams.)						
Adams, Thomas C., assignor to himself and H. Holsten, Brooklyn, N. Y. Tin can	324,512	Aug. 18	1512	416	32	818
Aden, Habbe L., Jr., Rising City, Nebr. Well-pipe-closing clamp	323,098	July 28	2305	609	32	442
Adkins, William H. (See Cass, McArthur, and Adkins.)						
Adler, Abraham S., Baltimore, Md. Shoe-maker's measure	322,238	July 14	1123	292	32	214
Adler, Jacob, Mülheim, Prussia, Germany. Watch-protector	321,471	July 7	90	24	32	18
Adt, John, New Haven, Conn. Cotter-pin	324,206	Aug. 11	1101	297	32	735
Adt, John, New Haven, Conn. Machine for making staples	327,217	Sept. 29	2704	703, 704	32	1538
Adt, John B., Baltimore, Md. Tobacco-drier	323,251	July 28	2512	667	32	481
Agnew, James, Allegheny, and W. Agnew, Pittsburg, Pa. Pipe-coupling	325,895	Sept. 8	896	226	32	1188
Agnew Shafting Company. (See Allderdice, Winslow, assignor.)						
Agnew, William. (See Agnew, James and W.)						
Ahlberg, Olof M., Pullman, Ill. Swing	327,051	Sept. 29	2481	648	32	1498
Ahnlund, Peter, West Unity, Ohio. Ditching-machine	322,771	July 21	1828	484	32	348
Ahrens, Christopher, Cincinnati, Ohio. Running-gear for vehicles	324,207	Aug. 11	1002	297	32	735
Aiken, Walter, Franklin, N. H. Knitting-machine	324,795	Aug. 25	1902	523, 524	32	899
Aiken, Walter, Franklin, N. H. Transferring device for knitting machines	324,797	Aug. 25	1910	525	32	900
Aiken, Walter, Franklin Falls, N. H. Knitting-machine	324,796	Aug. 25	1907	525	32	900
Ainslie, James, Jr., Brooklyn, N. Y. Folding bed-bottom	326,375	Sept. 15	1550	402	32	1316
Aitcheson, Peter and R. P., Alexandria, Va. Box for bottled liquids	323,486	Aug. 4	130	37	32	546
Aitcheson, Robert P. (See Aitcheson, Peter and R. P.)						
Aitken, Robert, Brampton, Ontario, Canada. Band-cutter and feeder for thrashing-machines	322,886	July 28	2003	529	32	387

Alphabetical list of patentees, July to September, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Ajax Forge Company. (See Griffin and Alkins, assignors.)						
Akeson, Magnus. (See Sandberg and Akeson.)						
Akin, Leonidas T., Fort Worth, Tex. Farm-gate	321,413	July 7	1	1	32	3
Albach, William H., Mansfield, Ohio. Oven	324,448	Aug. 18	1422	388	32	802
Albers, George H. (See Smith and Albers.)						
Albey, John, assignor to F. A. Wheeler & Co., Montclair, N. J. Straw-board-lining machine	325,779	Sept. 8	761	190	32	1162
Albrecht, Hermann, New York, N. Y. Combined swing and exercising apparatus	324,513	Aug. 18	1513	416	32	818
Albright, Andrew. (See Finch, James B., assignor.)						
Albright, Andrew. (See Widmer, Frank, assignor.)						
Alcorn, David, Jr., and R. A. Blake, New York, N. Y. Corset-steel fastening	326,259	Sept. 15	1397	364	32	1286
Alcorn, John S., assignor of one-half to J. B. Sexton, Hartford, Conn. Machinist's planer	325,229	Sept. 1	1	1	32	1015
Alden, Charles E., assignor of five-eighths to D. Buist and J. Caldwell, Philadelphia, Pa. Drive-chain	322,405	July 21	1341	349	32	261
Alden, Charles S., Rochester, N. Y. Cigar-tip cutter	325,896	Sept. 8	898	226	32	1188
Alden, Rinaldo. (See Earhuff and Alden.)						
Aldrich, Hosea P., Boston, Mass. Lasting-pinchers	322,338	July 14	1242	326	32	236
Alexander, Henry D., and D. Harrington, assignors of one-third to M. Bast, Canton, Ohio. Lawn-rake	323,252	July 28	2513	667	32	461
Alexander & Herr. (See Adams, Gilbert L., assignor.)						
Alexander, James H., Philadelphia, Pa. Trunk-fastening	321,779	July 7	503	134	32	94
Alexander, James H., assignor of one-half to C. L. Baker and J. W. Williams, Syracuse, N. Y. Prop-block cushion	324,632	Aug. 18	1684	464	32	851
Alexander, James M., Clarksburg, W. Va. Cultivator and seed-dropper or planter combined	324,908	Aug. 11	1103	298	32	735
Alexander, John W., New York, N. Y. Pencil-sharpener	324,798	Aug. 25	1911	526	32	900
Alexander, Max. (See Alexander, Oscar and M.)						
Alexander, Oscar and M., New York, N. Y. Bed-lounge	325,897	Sept. 8	899	226	32	1188
Alexander, Thomas W., Chartiers township, Allegheny county, Pa. Pipe-coupling	325,191	Aug. 25	2427	667	32	996
Alexander, Samuel G., Detroit, assignor to C. E. Wakeman & Co., Pontiac, Mich. Combined felt and knit fabric	325,808	Sept. 8	801	201	32	1169
Alexander, William O., Richland, Mo. Corn-stalk chopper	321,566	July 7	219	58	32	43
Alexanderson, Nils A., Stockholm, Sweden. Rendering cloth, wood, paper, &c., waterproof	326,088	Sept. 15	1156	.....	32	1243
Alkins, Charles. (See Griffin and Alkins.)						
Allderdice, Winslow, assignor to Agnew Shafting Company, Chicago, Ill. Machine for drawing metal rods or bars	323,619	Aug. 4	313	90, 91	32	580
Allee, Elias W., Linnville, Iowa. Car-coupling	322,339	July 14	1243	326	32	237
Allen, Chancellor C. (See Crockett and Allen.)						
Allen, Charles C. (See Allen, Daniel W., assignor.)						
Allen, Charles C., assignor of one-half to N. A. Dorn, Salinas, Cal. Expanding horse-shoe	322,671	July 21	1697	450	32	325
Allen, Daniel W., assignor of one-half to C. C. Allen, Abington, Mass. Presser-foot-lifting and brake mechanism for sewing-machines	327,218	Sept. 29	2706	704	32	1539
Allen, Edward M., assignor to S. E. Allen, Stafford, Md. Wagon-brake	322,340	July 14	1244	326	32	237
Allen, George, Franklin, Pa. Converting motion in oil-pumping apparatus	326,068	Sept. 8	1046	266	32	1215
Allen, George H., Brooklyn, N. Y. Folding table	326,260	Sept. 15	1306	364	32	1287
Allen, Horace R., Indianapolis, Ind. Platform-scale	322,146	July 14	1012	263, 264	32	193
Allen, Horace R., Indianapolis, Ind. Chromatic printing apparatus	322,147	July 14	1014	264	32	193
Allen, John F., Martindale, Mont. Ter. Agricultural fork	327,052	Sept. 29	2482	648	32	1498
Allen, John G., deceased, (S. A. W. Gould administratrix,) Worcester, Mass. Electric-arc lamp	327,375	Sept. 29	2911	760	32	1573
Allen, Leicester. (See Rogers and Allen.)						
Allen, Louis H., New York, N. Y. Paper mold for casting stereotype-plates	326,376	Sept. 15	1551	403	32	1316
Allen, Orren C., *et al.* (See Henderson, Charles C., assignor.)						
Allen, Richard N., Cleveland, Ohio. Car-wheel	323,551	Aug. 4	224	66	32	563
Allen, Sallie E. (See Allen, Edward M., assignor.)						
Allen, Stephen M., Duxbury, Mass. Manufacture of paper-pulp	323,771	Aug. 4	510	.....	32	618
Allen, Stephen S. (See Lewis and Allen.)						
Allen, William P. C., Hoosierville, Ind. Coal-screen	323,772	Aug. 4	512	143	32	618
Allen, William R., assignor of three-fourths to P., L. C., and H. W. Marks, Cape Vincent, N. Y. Windmill	322,341	July 14	1245	327	32	237
Allender, Henry, Detroit, Mich. Machine-gun	323,997	Aug. 11	794	221	32	619
Allington, David K., East Saginaw, Mich. Band-saw mill	327,428	Sept. 29	2990	779	32	1586
Almond, David, Newark, N. J. Hat-forming machine	326,377	Sept. 15	1552	403	32	1316
Alafasser, Joseph, Chicago, Ill. Bottle-stopper	324,449	Aug. 18	1424	389	32	802
Alsop, Samuel, Jr., *et al.* (See Hardwick, Joseph O., assignor.)						
Alston, Kemp P., Jr., Leota Landing, Miss. Cotton and corn planter	322,772	July 21	1831	484	32	349
Altaffer, L. B. (See Walker and Altaffer.)						
Altmann, Alois, Manitowoc, Wis. Mattress	324,349	Aug. 18	1292	351	32	779
Alvord, Ira M. (See Skinner, Henry M., assignor.)						
Amberg, William A. (See Patten, George M., assignor.)						
Amer, Elvira S. (See Amer, Maurice W., assignor.)						
Amer, Maurice W., assignor to E. S. Amer, Glens Falls, N. Y. Harness	326,932	Sept. 29	2331	611	32	1471
American Bell Telephone Company. (See Farnham, Isaiah H., assignor.)						
American Bell Telephone Company. (See Price and Barrett, assignors.)						
American Button Fastener Company. (See Richards, Francis H., assignor.)						
American Button Hole, Overseaming and Sewing Machine Company. (See Goodwin, Julius C., assignor.)						
American Button Hole, Overseaming and Sewing Machine Company. (See Larkin, Samuel, assignor.)						
American Live Stock Express Company. (See Hicks, Henry C., assignor.)						
American Marble Cutting Company. (See Maloy, James W., assignor.)						
American Oil Stove Company. (See Fletcher and Wilder, assignors.)						
American Optical Company. (See Currin, John, assignor.)						
American Optical Company. (See Wells, George W., assignor.)						
American Wire Nail Company. (See Gedge and Meyerer, assignors.)						
Ames, Joseph R., Clearfield County, Pa. Lock	327,053	Sept. 29	2483	649	32	1498
Ames, Walter, Toronto, Ontario, Canada. Machine for shearing card-board	324,633	Aug. 18	1685	464	32	851
Amet, Edward H., assignor to H. A. Streeter, Chicago, Ill. Electric steam-governor	326,933	Sept. 29	2332	611	32	1471
Amet, Edward H., assignor to H. A. Streeter, Chicago, Ill. Electric water-wheel governor	326,934	Sept. 29	2334	611	32	1471
Amnon, Jacob S. (See Guss, Samuel M., assignor.)						
Amsbry, Frank M., Binghamton, N. Y. Overdraw-check for bridles	323,620	Aug. 4	317	91	32	581
Amundson, Hans, and F. J. Henrichsen, Racine, Wis. Force-feed seed-sower	321,878	July 7	648	168	32	118

Alphabetical list of patentees, July to September, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Amundson, Hans, and F. J. Henrichsen, Racine, Wis. Seed-sower	321,879	July 7	649	168, 169	32	118
Amundson, Hans, and M. S. Field, Racine, Wis. Seeder	321,880	July 7	650	169	32	118
Andersen, Peter, assignor to H. G. Olds, Fort Wayne, Ind. Wagon-box brace	323,552	Aug. 4	225	66	32	563
Anderson, Alphonso L. and W. T., Tolland, Conn. Grinding-mill	322,773	July 21	1832	484, 485	32	349
Anderson, David S., McGrawville, N. Y. Vehicle	327,429	Sept. 29	2983	779	32	1586
Anderson, Carl B. (See Dunham, George, assignor.)						
Anderson, Charles, assignor to C. Anderson and E. W. Farrar, Downer's Grove, Ill. Combined screen and storm door	321,936	July 14	730	191	32	141
Anderson, Charles A., Des Moines, Iowa. Car-coupling	322,887	July 28	2004	529	32	387
Anderson, Charles L., New York, N. Y., and C. F. Reed, Greene, Me., assignors to Elevator Safety and Motor Company, New York, N. Y. Elevator	321,567	July 7	219	58, 59	32	43
Anderson, George K., Memphis, Tenn. Stenographic printing-machine	323,286	July 28	2559	681	32	490
Anderson, George P. (See Hogeland, Israel, assignor.)						
Anderson, James, Oshtemo, Mich. Horse hay-rake	321,472	July 7	90	24	32	18
Anderson, James C., Highland Park, Ill. Construction of buildings	324,634	Aug. 18	1686	464	32	851
Anderson, John N., and J. M. Sherman, Ellsworth, Kans. Steam-cooker	326,702	Sept. 22	1975	519	32	1401
Anderson, John P., and J. C. Keller, Philadelphia, Pa. Ice-cream freezer	326,827	Sept. 22	2180	569	32	1436
Anderson, Oliver H., Springfield, Ohio. Burial-vault	325,230	Sept. 1	2	1	32	1015
Anderson, William, Westminster, England. Filtering apparatus	322,148	July 14	1015	264	32	193
Anderson, William G., Boston, Mass. Window-screen	323,898	Aug. 11	673	189	32	657
Anderson, William T. (See Anderson, Alphonso L. and W. T.)						
Andrew, Frederick, Burnt Ash, county of Kent, assignor of one-half to J. Christie, Mark Lane, London, England. Barrel-making machine	323,253	July 28	2514	667	32	461
Andrews, Alfred H., *et al.* (See Dodge, James M., assignor.) (Reissue.)						
Andrews, Charles E., Boston, Mass. Spring-shank for boots or shoes	324,065	Aug. 11	894	247	32	606
Andrews, Henry K., Eureka Springs, Ark. Band-cutter and feeder	325,222	Aug. 25	2469	679	32	1004
Andrews, Herbert L., *et al.* (See Dodge, James M., assignor.) (Reissue.)						
Andrews, John S., *et al.* (See Peck, James A., assignor.)						
Andrews, Robert W., Staffordville, Conn. Fishing-rod	324,450	Aug. 18	1425	389	32	803
Andrews, Tyler, Boston, Mass. Broom-sprinkler	325,375	Sept. 1	202	51	32	1052
Andrus, Frank D., *et al.* (See Bolton, George W., assignor.)						
Aneshaensel, Charles, Jr. (See Strong, William, assignor.)						
Angell, Thomas, assignor to E. B. Willcox and W. Thompson, Brooklyn, N. Y. Gas-regulator	322,572	July 21	1577	415	32	302
Angus, Charles, Albany, assignor to Troy Laundry Machinery Company, (limited,) Troy, N. Y. Ironing-machine	321,671	July 7	349	93	32	66
Annable, George G., and H. W. Leonard, assignors to Syracuse Paper Ware Company, Syracuse, N. Y. Machine for rolling hoops	324,973	Aug. 25	2142	585	32	944
Ansley, Alanson, Geneva, N. Y. Potato-digger	324,911	Aug. 25	2063	564	32	928
Ansonia Brass and Copper Company *et al.* (See Lyman, Charles H., assignor.)						
Ansonia Brass and Copper Company. (See Lyman, William T., assignor.)						
Ansonia Brass and Copper Company. (See Stone and Walton, assignors.)						
Ansonia Brass and Copper Company. (See Walton, William R., assignor.)						
Ansonia Brass and Copper Company *et al.* (See Weber, Theodore A., assignor.)						
Ansonia Clock Company. (See Davies, Walter D., assignor.)						
Ansonia Clock Company. (See Ganss, Jacob, assignor.)						
Antes, Robert H., Geneseo, Ill. Dental plugger	326,537	Sept. 22	1749	457	32	1361
Anthony, Edwyn, Jersey City, N. J., assignor to R. Hoe & Co., New York, N. Y. Printing-machine	324,974	Aug. 25	2144	586	32	944
Anthony, Edwyn, Jersey City, N. J., assignor to R. Hoe & Co., New York, N. Y. Printing-machine	324,975	Aug. 25	2145	586	32	944
Anthony, Edwyn, Jersey City, N. J., assignor to R. Hoe & Co., New York, N. Y. Printing-machine	324,976	Aug. 25	2146	586, 587	32	945
Anthony, Edwyn, Jersey City, N. J., assignor to R. Hoe & Co., New York, N. Y. Printing-machine	325,140	Aug. 25	2365	651, 652	32	985
	324,912	Aug. 25	2063	565	32	929
Anthony, Jesse, Covelo, Cal. Rasp						
Anthony, Marcus O., Bay City, assignor of one-half to I. Landsbery, Detroit, Mich. Swing-bridge	325,472	Sept. 1	341	83	32	1060
Anthony, Mark, San Francisco, Cal. Station indicator	325,643	Sept. 8	571	145	32	1129
Anthony, William H. (See Emmert, Jesse A., assignor.)						
Apple, John B., Philadelphia, Pa. Hydrocarbon-burner	323,385	Aug. 4	2	1	32	523
Appleby, John F., assignor to Minneapolis Harvester Works, Minneapolis, Minn. Grain-carrier for low-down grain-binders	323,386	Aug. 4	4	1, 2	32	523
Appleby, John F., assignor to Minneapolis Harvester Works, Minneapolis, Minn. Harvester	324,350	Aug. 18	1292	351	32	779
Appleby, John W., Kalamazoo, Mich. Temporary binder	324,451	Aug. 18	1426	389	32	803
Appleton, Samuel, Bristol, Pa. Stocking	323,287	July 28	2561	682	32	490
Applewhite, David T., Clayton, Tex. Cotton, corn, and pea planter	324,514	Aug. 18	1513	416	32	818
Arbenz, Fredrick C., Wheeling, W. Va. Portable wardrobe and book-case	325,644	Sept. 8	573	145	32	1129
Archibald, Charles. (See Ross, Daniel, assignor.)						
Aregood, George H. (See Aregood, John W. and G. H.)						
Aregood, John W. and G. H., Chicago, Ill. Carrier for clay and brick	323,621	Aug. 4	319	91, 92	32	581
Arents, Albert, Alameda, Cal. Rotary roasting-furnace	321,790	July 7	504	134	32	94
Arkell, James, Canajoharie, N. Y. Making paper bags	325,148	Aug. 25	2368	652	32	986
Arkell, James, assignor to Arkell & Smiths, Canajoharie, N. Y. Paper bag	325,147	Aug. 25	2366	652	32	986
Arkell & Smiths. (See Arkell, James, assignor.)						
Armbruster, Frederick, New York, N. Y. Manufacturing handles for traveling-bags	326,471	Sept. 15	1662	434	32	1337
Armington, Monterey, Spring City, Pa. Oven-shelf	325,645	Sept. 8	574	145	32	1129
Armington, Pardon, Providence, R. I. Steam-engine governor	327,128	Sept. 29	2591	675	32	1516
Armington, William W., Providence, R. I. Toy-ball-throwing device	323,843	Aug. 4	592	166	32	635
Arms, Henry F. (See Perkins, William C., assignor.)						
Armstrong, Albert, assignor of one-half to H. Wende, Cincinnati, Ohio. Vehicle-spring	326,472	Sept. 15	1664	434	32	1337
Armstrong, David M., Roanoke, Va. Steam-cooker	322,774	July 21	1833	485	32	350
Armstrong, Frank, Bridgeport, Conn. Water-back	324,515	Aug. 18	1515	417	32	818
Armstrong, Frank, Bridgeport, Conn. Die-stock	324,516	Aug. 18	1515	417	32	819
Armstrong, George F., Philadelphia, Pa. Warehouse-truck	324,066	Aug. 11	895	247	32	606
Armstrong, George S., assignor of one-half to W. G. Hutchinson and J. L. Berger, Denver, Colo. Pipe and monkey wrench	323,017	July 28	2186	580	32	421
Arndt, Theophilus, Florin, assignor to himself and W. Scholing, Mount Joy, Pa. Stock-releasing device	324,742	Aug. 18	1818	502	32	877
Arnold, Alonzo C., and W. Thompson, Norwalk, Conn.; said Arnold assignor to said Thompson. Machine for curling hat-brims	326,935	Sept. 29	2336	611	32	1473

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Arnold, Anna M. (See Arnold, Satterlee, assignor.)						
Arnold, Cornelius, Raymond, Ill. Hog-trap	325,473	Sept. 1	342	83	32	1081
Arnold, Johann G. (See Fleischer, Müller, and Arnold.)						
Arnold, Olney, Pawtucket, R. I. Life-saving apparatus	322,149	July 14	1016	264	32	193
Arnold, Rouse H. (See Whittemore, Arnold, and Staples.)						
Arnold, Satterlee, assignor to A. M. Arnold, Brooklyn, N. Y. Shuttle and shuttle-holder for sewing-machines	324,351	Aug. 18	1293	351 352	32	779
Arnold, William B., North Abington, Mass. Boot or shoe and welt therefor	324,352	Aug. 18	1295	352	32	780
Arrieta, Apolinar, Pamplona, Spain. Machine for thrashing grain	325,582	Sept. 1	487	121 122	32	1108
Arrowsmith, Mary A., Freehold, N. J. Fire-escape	323,288	July 28	2561	699	32	490
Ashcroft, Charles E., Lynn, Mass. Radiator	326,473	Sept. 15	1664	434	32	1337
Ashcroft, Edward H., Lynn, Mass. Automatic fire-extinguisher	324,209	Aug. 11	1104	298	32	735
Ashley, Charles W., Chatham, N. Y. Potato-digger	324,743	Aug. 18	1819	503	32	877
Ashley Wire Company. (See Hanaman, Joshua F., assignor.)						
Ashton, Frank, Washington, D. C. Support for pantaloons	323,899	Aug. 11	673	189	32	657
Ashurst, John L., assignor to L. B. Ashurst, Havana, Ill. Grain drill	325,583	Sept. 1	488	122	32	1109
Ashurst, Lewis B. (See Ashurst, John L., assignor.)						
Ashworth, John, assignor to himself, C. S. Petrie, and D. J. Sweenie, Chicago, Ill. Valved hose-nozzle	325,720	Sept. 8	682	170	32	1147
Athearn, William E, New York, N. Y. Telegraphy	324,799	Aug. 25	1912	526	32	901
Atherton, Abel T. (See Potter, James C., assignor.)						
Atherton Machine Company. (See Potter, James C., assignor.)						
Atkins & Co., E. C. (See Black, George S., assignor.)						
Atkins, George T. (See Monday, Robert O., assignor.)						
Atkins, Sullivan H., Lynn, Mass., assignor to Eureka Axle Company, Portland, Me. Hinge	321,018	July 28	2187	580	32	421
Atkinson, Charles, Chicago, Ill. Plow	322,573	July 21	1578	415 416	32	302
Atkinson, John B., Kansas City, Mo. Folding wardrobe or clothes press	322,888	July 28	2005	529	32	387
Atwater, William, Coldwater, Mich. Chair	324,298	Aug. 11	1204	328	32	754
Atwell, William, and R. Floeter, assignors of one-third to M. Campbell, Chatham, Ontario, Canada. Riddle for extracting cockle and wild peas from grain	321,881	July 7	652	109	32	119
Atwood, Lewis J., Waterbury, Conn. Lamp-burner	324,067	Aug. 11	896	247	32	697
Atwood, Lewis J., Waterbury, Conn. Lamp-burner	324,068	Aug. 11	897	247	32	697
Atwood, Lewis J., Waterbury, Conn. Lamp-burner	324,069	Aug. 11	898	248	32	697
Atwood, Lewis J., Waterbury, Conn. Lamp-burner	327,054	Sept. 29	2484	649	32	1498
Atwood, Lewis J., assignor to Plume & Atwood Manufacturing Company, Waterbury, Conn. Shoe-nail	324,070	Aug. 11	898	248	32	697
Ault, Samuel, Baltimore, Md. Book-binder's pallet	324,289	Aug. 11	1204	328	32	754
Austin, Dor, and F. H. Smith, Kansas City, Mo. Check-valve	322,869	July 28	2006	530	32	388
Austin, James C., Brooklyn, N. Y. Powder-puff	324,860	Aug. 25	1915	526	32	901
Austin, John O., Bonham, Tex. Washing-machine	325,306	Sept. 1	104	29	32	1034
Austin, S. Jay, and E. J. Stone, Waverly, Pa. Bag-fastener	324,913	Aug. 25	2064	565	32	929
Austin, Selden, North Haven, assignor to E. T. Beach, East Windsor, Conn. Whiffletree-hook	325,192	Aug. 25	2428	667	32	997
Autley, John C., Rock Falls, Ill. Churn-cover	325,646	Sept. 8	575	146	32	1129
Automatic Safety Boiler and Engine Company. (See Sanford, Hopkins A., assignor.)						
Autophone Company. (See Morris, Henry B., assignor.)						
Averell, John D. (See Boeklen and Averell.)						
Avery & Sons, B. F. (See Laughlin, John L., assignor.)						
Avery, Thomas M., *et al.*, trustees. (See Church, Duane H., assignor.) (Reissue.)						
Ayer, Alfred, Lake Weir, Fla. Device for handling boxes	323,844	Aug. 4	593	167	32	635
Ayres, Ruben B., St. Louis, Mo. Car-coupling link	321,473	July 7	91	24	32	18
Ayres, Ruben B., St. Louis, Mo. Window-blind	321,474	July 7	92	24	32	19
Ayrton, William E. (See Perry and Ayrton.)						
Baar, N. Robert, Lowville, N. Y. Self-basting roaster	323,622	Aug. 4	320	92	32	582
Baas, Isaac, Jr., and L. B. Benton, Milwaukee, Wis., assignors to Benton, Waldo & Co. Type-mold	326,009	Sept. 8	1047	266	32	1215
Babbitt, Charles E., Cincinnati, Ohio. Paper-weight and guide-rule	321,672	July 7	351	93	32	66
Babbott, William M. (See Banker and Roberts, assignors.)						
Babcock, D. Marshall, Worcester, Mass. Tricycle	322,406	July 21	1342	349	32	261
Babcock, Paul, Jr., Montclair, N. J. Closing cans	321,568	July 7	221	59	32	44
Babcock, Sylvester P., assignor of one-fourth to J. R. Haight, Adrian, Mich. Brick-machine	327,376	Sept. 29	2917	761	32	1574
Babcock & Wilcox Company. (See Hazelton, Milton W., assignor.)						
Babcock & Wilcox Company. (See Knight and Thode, assignors.)						
Babcock & Wilcox Company. (See Pratt, Nathaniel W., assignor.)						
Babcock, William L. (See Herrick and Babcock.)						
Bachelor, Frank A., *et al.* (See Mulberry, James C., assignor.)						
Backus, Samuel R., Toledo, Ohio. Grain cleaner and grader	323,099	July 28	2306	609	32	443
Bacon, Henry S., Milford, Mass. Opera-chair	325,149	Aug. 25	2368	652	32	986
Bacon, Joseph T. (See Bisbee and Bacon.)						
Bacon, Murray, assignor to Novelty Electric Company, Philadelphia, Pa. Electrical indicator	324,635	Aug. 18	1687	465	32	851
Badger, George A., Quincy, assignor to J. H. Lakin, Boston, Mass. Store-service apparatus	324,210	Aug. 11	1105	298	32	736
Badger, Jonathan, New York, N. Y. Programme and hat holder	323,773	Aug. 4	512	143	32	619
Badgley, Howard G., New York, N. Y. Sewer-trap and cesspool	325,231	Sept. 1	2	1	32	1015
Badia, Joseph S., Philadelphia, Pa. Apparatus for operating car-brakes	325,474	Sept. 1	344	84	32	1081
Badische Anilin und Soda Fabrik. (See Ziegler, Henry, assignor.)						
Baer, John N., and J. S. Edwards, Philadelphia, Pa. Ventilator for show-windows	323,387	Aug. 4	7	2	32	524
Baer, Michael Brillion, Wis. Washing-machine	326,378	Sept. 15	1553	403	32	1316
Bagg, Albert W., Detroit, Mich. Vehicle-pole tip	326,379	Sept. 15	1554	404	32	1317
Bailey, Amos M., assignor to Bailey Canning Company, Middle Branch, Ohio. Purifying maple-sirup	323,254	July 28	2515	.....	32	482
Bailey, Andrew J. (See Ethridge, Martin V. B., assignor.)						
Bailey Canning Company. (See Bailey, Amos M., assignor.)						
Bailey, Edward L. (See Brown and Bailey.)						
Bailey, Ellene A., St. Charles, Mo. Powder-puff	323,255	July 28	2515	668	32	482
Bailey, Harry J., Pittsburg, Pa. Water-closet	327,219	Sept. 29	2707	704 705	32	1539
Bailey, Howard S., Denver, Colo. Miner's hoist	322,516	July 21	1501	324 325	32	289
Bailey, James M., Pittsburg, Pa. Pipe-coupling	324,211	Aug. 11	1106	299	32	736
Bailey, John W. (See Ryder, Edwin P., assignor.)						
Bailey, John W., Denver, Colo. Ore pulverizing and amalgamating mill	321,887	July 14	731	191	32	141

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Baily, George D., Spiceland, Ind. Speculum	325,647	Sept. 8	576	146	32	1130
Baily, George S. (See Carter, William C., assignor.)						
Baine, John, Piqua, Ohio. Shelving-bracket	327,129	Sept. 29	2592	675	32	1516
Baird, Robert H. (See Mallory, Lewis A., assignor.)						
Baird, William C., New York, assignor to Copeland Manufacturing Company, New York and Syracuse, N. Y. Railway-gate	326,898	Sept. 22	2181	569	32	1437
Baker, Alonzo A., *et al.* (See Hiser, Daniel B., assignor.)						
Baker, C. J. (See Smith, Clement, assignor.)						
Baker, Caleb J., Chicago, Ill. Folding cot	327,055	Sept. 29	2485	649	32	1498
Baker, Charles, Minneapolis, Minn. Bridle-bit	325,232	Sept. 1	4	1	32	1015
Baker, Charles H., assignor of two-thirds to F. L. Bestor, Knoxville, and T. C. Cunningham, Sigourney, Iowa. Barb-wire machine	323,490	Aug. 4	136	40	32	547
Baker, Charles H., and F. L. Bestor, Knoxville, assignors to themselves and T. C. Cunningham, Sigourney, Iowa. Barb-wire machine	323,487	Aug. 4	131	38, 39	32	546
Baker, Charles H., and F. L. Bestor, Knoxville, assignors to themselves and T. C. Cunningham, Sigourney, Iowa. Barb-wire machine	323,488	Aug. 4	133	39	32	546
Baker, Charles H., and F. L. Bestor, Knoxville, assignors to themselves and T. C. Cunningham, Sigourney, Iowa. Barb-wire machine	323,489	Aug. 4	134	40	32	547
Baker, Clayton L., *et al.* (See Alexander, James H., assignor.)						
Baker, Curtis Miller's Corners, N. Y. Potato digger and coverer	325,475	Sept. 1	350	85	32	1092
Baker, David P., Shambaugh, Iowa. Fence-post	322,256	July 28	2516	668	32	489
Baker, Edmund K., Springfield, Mass. Cap for sheet-metal paint-cans	323,623	Aug. 4	321	92	32	582
Baker, Elbridge, Boston, Mass., assignor to National Therm Motor Company, Nashua, N. H. Apparatus for burning hydrocarbons	325,376	Sept. 1	203	52	32	1053
Baker, Elijah E., assignor of one-half to M. Sharp, Providence, R. I. Drawing mechanism for spinning and twisting machines, &c	326,538	Sept. 22	1750	457	32	1361
Baker, Frank M., Birmingham, Conn. Button and fastening therefor	324,212	Aug. 11	1107	299	32	736
Baker, George W., Cleveland, Ohio. Roller-skate	326,539	Sept. 22	1751	457	32	1361
Baker, George W., Cleveland, Ohio. Roller-skate	326,540	Sept. 22	1752	457	32	1361
Baker, Henry B., Hulls, Ohio. Steam-boiler cleaner	325,476	Sept. 1	351	85	32	1092
Baker, John, Sedalia, Mo. Means for supplying water	326,192	Sept. 15	1300	336	32	1269
Baker, John E., New York, N. Y. Railway-signal	323,388	Aug. 4	8	3	32	524
Baker, John J. (See Meltzer and Baker.)						
Baker, John M., Allentown, Pa. Rolling-mill	323,100	July 28	2307	609 610	32	443
Baker, John W., Philadelphia, Pa. Gas-stove	326,089	Sept. 15	1157	295 296	32	1243
Baker, Thomas C., Ashland, Mo. Cultivator	325,477	Sept. 1	351	85	32	1092
Baker, William R., Chicago, Ill. Harvester-reel	324,290	Aug. 11	1206	328	32	755
Baker, William R., Chicago, Ill. Harvester	324,744	Aug. 18	1820	503	32	877
Baker, William R., Chicago, Ill. Harvester	324,745	Aug. 18	1822	503	32	878
Baker, William R., assignor to McCormick Harvesting Machine Company, Chicago, Ill. Cord-holder for grain-binders	324,353	Aug. 18	1296	352	32	780
Baker, William R., assignor to McCormick Harvesting Machine Company, Chicago, Ill. Harvesting-machine	324,354	Aug. 18	1298	353	32	780
Balch, Andrew J., assignor of two-thirds to L. P. Lester and G. W. Getrost, Halstead, Kans. Stock-waterer	326,899	Sept. 22	2183	569	32	1437
Baldwin, Alexander P., Newark, N. J. Bridle-bit	326,703	Sept. 22	1977	519	32	1402
Baldwin, Cyrus W., Yonkers, N. Y., assignor to W. E. Hale, Chicago, Ill. Gas-engine	325,377	Sept. 1	206	52	32	1053
Baldwin, Cyrus W., Yonkers, N. Y., assignor to W. E. Hale, Chicago, Ill. Gas-engine	325,378	Sept. 1	208	53, 54	32	1053
Baldwin, Cyrus W., Yonkers, N. Y., assignor to W. E. Hale, Chicago, Ill. Gas-engine	325,379	Sept. 1	212	54, 55	32	1053
Baldwin, Cyrus W., Yonkers, N. Y., assignor to W. E. Hale, Chicago, Ill. Gas-engine	325,380	Sept. 1	215	55	32	1053
Baldwin, Eli, New York, N. Y. Fare-recorder	323,553	Aug. 4	226	67	32	564
Baldwin, Elizabeth M., administratrix. (See Baldwin, Ruel S.)						
Baldwin, Frank, New York, N. Y. Scarf	324,802	Aug. 25	1916	527	32	901
Baldwin, James, Manchester, N. H. Loom-shuttle	323,554	Aug. 4	228	67	32	564
Baldwin, James H. (See Watson, Charles H., assignor.)						
Baldwin, Joel C., Oakland, Cal. Fruit-jar fastener	321,475	July 7	92	25	32	19
Baldwin, Ransom G., Oskaloosa, Iowa. Agitator for washing-machines	326,830	Sept. 22	2183	570	32	1437
Baldwin, Ruel S., deceased; E. M. Baldwin, Sparta, Wis., administratrix. Swinging chair convertible into a swinging hammock	326,619	Sept. 22	1864	488	32	1380
Bale, George T., Tama City, Iowa. Portable fence	324,801	Aug. 25	1915	526 627	32	901
Ball, Albert, assignor to Sullivan Machine Company, Claremont, N. H. Safety-jack for holding drill-rods	326,380	Sept. 15	1555	404	32	1317
Ball and Socket Fastener Company. (See Mead, Albert G., assignor.)						
Ball, Charles A. (See Grocebeck, Ball, and Sterling.)						
Ball, James A. (See Moore and Ball.)						
Ball, Paige B., *et al.* (See Collyer, Charles W. and W. C., assignors.)						
Baltimore & Ohio Telegraph Company. (See Gardanier, George W., assignor.)						
Bamboo and Brass Manufacturing Company. (See Mazergue, George, assignor.)						
Bancroft, Fredric J., Pawtucket, R. I. Clamp	324,803	Aug. 25	1917	527	32	901
Bancroft, J. Sellers, assignor to W. Sellers, Philadelphia, Pa. Injector	322,342	July 14	1247	327	32	237
Bancroft, John S., assignor to W. Sellers, Philadelphia, Pa. Machinery for transmitting motion	323,019	July 28	2180	580	32	421
Bandel, Wilhelm, deceased; J. L. Norris, Washington, D. C., administrator, and assignor to Heberlein Self Acting Railway Brake Company, (limited,) London, England. Car-brake	326,883	Sept. 22	2256	588	32	1450
Banker, Christ, and J. H. Roberts; said Banker assignor to W. M. Babbott, Pittsburg, Pa. Elevator-bucket	325,478	Sept. 1	353	86	32	1092
Bannister, Alfred F., Newark, N. J. Carving-fork	324,071	Aug. 11	899	248	32	697
Banowetz, Mathias B., Brown's, Iowa. Saw-table gage	322,775	July 21	1834	485	32	350
Banta, John J., Pacific, Mo. Ratchet-drill	326,381	Sept. 15	1556	404	32	1317
Bantin, Alfred J., Norwalk, Conn. Faucet	321,476	July 7	93	25	32	19
Bara, Auguste, and E. Desjardins-Lieux, Paris, France. Lamp-shade	323,624	Aug. 4	322	92	32	582
Barber, Adin M. (See Brown, Mathew, assignor.)						
Barber, Edwin L., Chicago, Ill. Sieve for sifting flour, meal, &c	325,780	Sept. 8	763	190	32	1102
Barber, John H., Pierce City, Mo. Combined broom and tool rack	326,193	Sept. 15	1301	336	32	1269
Barber, Spencer F., Rutherford, Pa. Seed-drill gage	324,805	Aug. 25	1919	528	32	902
Barber, Thomas, Flatbush, N. Y. Piston-packing. (Reissue)	10,628	July 28	2707	721	32	515
Barber, Thomas, Flatbush, N. Y. Boiler-feed and alarm	325,698	Sept. 8	900	227	32	1188
Barclay, James. (See Weigel and Barclay.)						
Barclay, Peter, Boston, Mass. Lubricator	322,407	July 21	1343	349	32	261
Bard, Cephas L., San Buenaventura, Cal. Check-rein and post-hook	327,056	Sept. 29	2487	649	32	1498

Alphabetical list of patentees, July to September, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Bard, Cephas L., San Buenaventura, Cal. Check-rein and post-hook	327,057	Sept. 29	2489	650	32	1499
Bard, Cephas L., San Buenaventura, Cal. Check-rein and post-hook	327,058	Sept. 29	2490	650	32	1499
Bard, James H., Jackson, Tenn. Hoop for barrels, tubs, &c.	325,809	Sept. 8	802	202	32	1170
Bard, Reuben B., Williamstown, N. J. Preserve-jar fastening	323,101	July 28	2308	610	32	443
Bardsley, Henry, assignor of one-half to G. Brooks & Son, Philadelphia, Pa. Loom-shuttle	325,721	Sept. 8	683	171	32	1147
Baringer, John I., Waterford, N. Y. Sash-fastener	323,098	Aug. 11	796	221	32	680
Barker, John, Lawrence, Mass. Guide-board for spinning-frames	323,307	Sept. 1	105	29	32	1035
Barker, John R., Chicago, Ill. Hot-air furnace	326,541	Sept. 22	1753	458	32	1361
Barker, Joseph H., Cincinnati, Ohio. Two-wheeled vehicle	321,477	July 7	94	25	32	19
Barker, Robert, Lansing, Mich. Spirit-level	325,479	Sept. 1	354	86	32	1063
Barkholder, Clark. (See Sigler, George R. and W. G., assignors.)						
Barley, James H., Sedalia, Mo. Harness	326,704	Sept. 22	1978	519	32	1402
Barley, James H. and T. K., Sedalia, Mo. Hay-stacker fork	324,636	Aug. 18	1689	465	32	852
Barley, Thomas K. (See Barley, James H. and T. K.)						
Barkley, Jacob C., Nevada, Ky. Tobacco-press	322,776	July 21	1835	485	32	350
Barkley, William C., Litchfield, Ill. Fire-escape	325,381	Sept. 1	217	55	32	1056
Barlow, George A., Hamilton, Mo. Gate	323,102	July 28	2309	610	32	443
Barmore, Albert K., Milano, Tex., assignor to W. H. Brevoort, Vincennes, Ind. Wagon-brake	325,038	Aug. 25	2233	612	32	960
Barnard, George D. (See Welch, Reuel H., assignor.)						
Barnard, Heman A., and J. B. Cornwall, assignors to Barnard & Leas Manufacturing Company, Moline, Ill. Corn-sheller	322,777	July 21	1836	{486 487}	32	350
Barnard, Henry C., Charleston, Ill. Washing-machine	327,059	Sept. 29	2492	650	32	1500
Barnard & Leas Manufacturing Company. (See Barnard and Cornwall, assignors.)						
Barnard, Robert, and E. Miles, London, England. Tube-expander	325,150	Aug. 25	2309	653	32	986
Barnes, Andrew N., assignor of one-half to C. L. Edmonds, Rondout, N. Y. Holder for bags, &c.	322,408	July 21	1344	350	32	261
Barnes, Charles, Dayton, Ky. Automatic fire-extinguisher	324,977	Aug. 25	2149	587	32	945
Barnes, Charles P. (See Talley and Barnes.)						
Barnes, Charles W., Crookston, Minn. Cask-hoop fastening	321,938	July 14	733	192	32	142
Barnes, Elizur, assignor of one-half to C. A. Richards, Boston, Mass. Rail for street-railways	321,414	July 7	2	1	32	3
Barnes, James M., Cuba, N. Y. Sleigh	322,085	July 14	927	240	32	177
Barnes, Lewis, Somerville, N. J. Fence	324,517	Aug. 18	1516	417	32	819
Barnes, Merrick M., Boston, Mass. Micrometer-calipers	324,804	Aug. 25	1918	{527 528}	32	902
Barnes, Merrick M., Boston, Mass. Micrometer-calipers	325,233	Sept. 1	4	2	32	1015
Barnes, Philo M., Lockport, N. Y. Dash-board	324,355	Aug. 18	1299	353	32	780
Barnes, Raymond F., Brooklyn, N. Y. Chandelier	323,025	Aug. 4	322	93	32	592
Barnes, Thomas, Philadelphia, Pa. Open link	324,637	Aug. 18	1690	465	32	852
Barnett, George W. (See Taliaferro, Elbeck H., assignor.)						
Barney, George D., assignor to N. Barney, Brooklyn, N. Y. Dumping-scow	322,409	July 21	1346	350	32	262
Barney, Nathan. (See Barney, George D., assignor.)						
Barnhart, Henry M., and E. Huber, Marion, Ohio. Loading and unloading cars	325,308	Sept. 1	106	30	32	1035
Barnhart, Henry M., and E. Huber, Marion, Ohio. Device for loading and unloading cars	325,309	Sept. 1	107	30	32	1035
Barrack, Charles W. (See Sayre, Sylvester P., assignor.)						
Barrett, Albert. (See Price and Barrett.)						
Barrett, Henry J., Kingston-upon-Hull, county of York, England. Vehicle-wheel	324,072	Aug. 11	900	{248 249}	32	697
Barrett, Samuel E., Weston, W. Va. Bier	321,781	July 7	505	134	32	94
Barrett, Timothy, Cascade, Iowa. Harness-loop	327,060	Sept. 29	2493	651	32	1500
Barrett, William, Sedalia, Mo. Hay and straw cutter	326,382	Sept. 15	1558	404	32	1317
Barrez, Charles J. P. (See Guerrand, René, assignor.)						
Barron, Randolph M., Castleberry, Ala. Hacker for chipping pine trees	325,480	Sept. 1	355	86	32	1063
Barron, William J., Huntsville, Ala. Sash-fastener	325,481	Sept. 1	356	86	32	1063
Barrows, Hollis W., Muncie, Ind. Roller-skate	326,261	Sept. 15	1399	364	32	1287
Barrows, J. Frank, Springfield, Ill. Piano-truck	322,150	July 14	1018	265	32	194
Barry, James, Willmar, Minn. Car-coupling	322,672	July 21	1698	450	32	326
Barstow & Luther. (See Tingley, Frank F., assignor.)						
Bartel, Rudolph F., Jersey City, N. J. Glove	325,899	Sept. 8	901	227	32	1189
Bartels, William H., assignor of two-thirds to G. Edmunds, Carthage, Ill., and G. Vote, Fairfield, Iowa. Machine for cutting grass and weeds from railway-tracks	325,584	Sept. 1	490	.....	32	1109
Bartholomew, Daniel, Red Cloud, Nebr. Threshold	322,086	July 14	928	240	32	177
Bartlett & Co., A. F. (See Campbell, William A., assignor.)						
Bartlett, John S., Akron, Ohio. Steam-actuated valve	325,900	Sept. 8	901	227	32	1189
Barton, Charles, Brandon, county of Warwick, assignor of one-half to A. Ratherham, Coventry, England. Vapor-burner	323,103	July 28	2310	611	32	444
Bartram, Ferdinand S. (See Hoyt and Bartram.)						
Bartsch, Charles A. (See Banmeister and Bartsch.)						
Baruch, Nathan, Schwersenz, Germany, and O. L. Williams, Portsmouth, county of Hants, England. Hat or cap	324,073	Aug. 11	902	249	32	697
Bascom, Frank A., Greenville, Pa. Sash-fastener	326,090	Sept. 15	1158	296	32	1244
Basinger, James M., assignor of one-half to Pratt & Letchworth, Buffalo, N. Y. Harness-buckle	322,087	July 14	929	240	32	177
Basse, Gerhard D., Milwaukee, Wis. Apparatus for preserving and displaying vegetables, &c.	325,310	Sept. 1	108	31	32	1035
Bassell, John Y., assignor to R. G. Bassell, Cincinnati, Ohio. Sash-fastener	323,020	July 28	2190	581	32	421
Bassell, Rebecca G. (See Bassell, John Y., assignor.)						
Bassett, Ernest A., assignor to himself and N. M. Lowe, Boston, Mass. Breech-loading fire-arm	325,901	Sept. 8	903	228	32	1189
Bassett, Jesse N. (See Wilson, John, assignor.)						
Bassett, Marshall L., assignor to G. R. Kelsey, West Haven, Conn. Machine for forming blanks or articles from wire	323,696	Aug. 4	324	93	32	583
Bast, Mathew. (See Alexander and Barrington, assignors.)						
Bastien, Joseph. (See Long, John S., assignor.)						
Bates, Albert J., assignor to Joliet Barb Wire Company, Joliet, Ill. Wire-barbing machine	325,311	Sept. 1	109	31	32	1036
Bates, Daniel, Coldwater, Mich. Self-supporting structure	321,939	July 14	733	192	32	142
Bates, Marshall A. (See Brooks, Samuel T., assignor.)						
Bates, Richard W., Chicago, Ill. Store casing or finishing	324,518	Aug. 18	1517	418	32	819
Bates, Richard W., Chicago, Ill. Window-shade	324,519	Aug. 18	1518	418	32	819
Batt, John B., assignor of one-half to C. Hager, Buffalo, N. Y. Railway-switch	327,220	Sept. 29	2709	705	32	1539
Battle, James. (See Bloom, Silas N., assignor.)						
Batzlaff, Frederick T., La Porte, assignor to E. E. Stutz, Middleburg, Ind. Vehicle-spring	323,291	July 28	2564	683	32	491

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Bauer, Heribert, Pforzheim, Baden, Germany. Fastening for gloves and other articles	321,940	July 14	734	192	32	142
Bauer, Jacob C., Philadelphia, Pa. Knockdown paper box	326,705	Sept. 22	1980	520	32	1402
Bauer, John C., Detroit, Mich. Hopping wort	326,383	Sept. 15	1559	405	32	1318
Bauer'sche Glesserei. (See Hepburn, John M., assignor.)						
Baughman, Nelson C., administrator. (See Becker, Leander.)						
Baumeister, Leopold, and C. A. Bartsch, Bridgeport, Conn. Apparatus for supplying and regulating the pressure of carbonic-acid gas in beer-kegs	322,410	July 21	1347	{350 351}	32	262
Bauroth, Emil. (See Winchell, James F., assignor.)						
Bausch, Edward, Rochester, N. Y. Microtome	325,722	Sept. 8	684	171	32	1147
Bausch, John J., assignor to Bausch & Lomb Optical Company, Rochester, N. Y. Eye-glass	322,673	July 21	1699	450	32	326
Bausch & Lomb Optical Company. (See Bausch, John J., assignor.)						
Baxter, John N. (See Morrison, Andrew J., assignor.)						
Baxter, Samuel, London, England. Fitting for and method of seating ships' anchors	323,774	Aug. 4	513	144	32	619
Baxter, Samuel A., *et al.* (See Rumble, A. Carson, assignor.)						
Bayless, Nelson. (See Cartmell and Bayless.)						
Bayley, William. (See Whiteley and Bayley.)						
Bayliss, Moses, *et al.* (See Howarth, Robert, assignor.)						
Bayliss, Samuel, *et al.* (See Howarth, Robert, assignor.)						
Bayliss, William, *et al.* (See Howarth, Robert, assignor.)						
Bayot, Emile. (See Huber, Emil, assignor.)						
Beach, Charles S., Gloversville, N. Y. Lathe-dog	323,900	Aug. 11	674	189	32	657
Beach, Edward T. (See Austin, Selden, assignor.)						
Beach, Elias, Chicago, Ill. Oil-burner for lamps or stoves	326,706	Sept. 22	1981	520	32	1402
Beach, Elias, Chicago, Ill. Lamp-extinguisher	326,707	Sept. 22	1983	520	32	1403
Beach, Hannah. (See Beach, Thaddeus C., assignor.)						
Beach, Thaddeus C., assignor to H. Beach, Detroit, Mich. Removable table-leg	327,221	Sept. 29	2710	705	32	1539
Beale, Benjamin. (See Geiger and Beale.)						
Beals, David K., Strasburg, Ill. Shears for iron	323,389	Aug. 4	9	3	32	594
Beaman, Timothy L., Knoxville, Tenn. Rail-chair	321,673	July 7	352	93	32	66
Bean, Albert B., New Haven, Conn. Friction-clutch	321,941	July 14	735	{192 193}	32	142
Bean, Albert B., New Haven, Conn. Friction-clutch	326,091	Sept. 15	1159	296	32	1244
Bear, George H., *et al.* (See Donecker, Orin C., assignor.)						
Beard, George M., assignor of one-half to W. H. Rakestraw, Auburn, Ind. Proportional balance	324,638	Aug. 18	1690	466	32	852
Beard, Huntington, Fayetteville, N. Y. Pulley-block	322,890	July 28	2007	530	32	388
Beard, James P., Gadsden, Ala. Churn	326,936	Sept. 29	2337	612	32	1472
Beardslee, William F., Boston, Mass., assignor to Manufacturers Special Machine Company, Danbury, Conn. Adjustable cam or eccentric	324,639	Aug. 18	1692	466	32	852
Beaver, George W., assignor of three-fourths to H. Gregory, F. Leonard, and J. A. Wynne, Mann's Choice, Pa. Thill-coupling	325,648	Sept. 8	577	146	32	1130
Beaumont, Robert L., assignor to himself and J. J. Sheridan, St. Joseph, Mo. Strap-holder	322,151	July 14	1019	265	32	194
Beazell, John S., Chillicothe, Mo. Washing-machine	321,782	July 7	506	{134 135}	32	95
Bechtel, William H., Brooklyn, N. Y. Portable fire-escape	322,778	July 21	1638	488	32	351
Beck, Charles F. (See Van Gestel and Beck.)						
Beck, Charles F., Paris, France, assignor to T. S. Harrison, Philadelphia, Pa. Electric light	322,033	July 14	857	223	32	164
Beck, Frederick, New York, N. Y. Decorating wall-paper	322,034	July 14	859	.....	32	164
Beck, James P., Lawrence, Kans. Combined stove lifter, rake, and poker	323,845	Aug. 4	594	167	32	635
Becker, August, Arlington Heights, Ill. Take-up device for sewing-machines	323,999	Aug. 11	797	222	32	680
Becker, Leander, deceased, N. C. Baughman administrator, and assignor to E. E. Johnston, York, Pa. Washing-machine	325,312	Sept. 1	111	32	32	1036
Beckert, Andrew, Baltimore, Md. Balance-valve	325,649	Sept. 8	578	146	32	1130
Beckman, Henry. (See Wally and Beckman.)						
Beckwith, Frank W., assignor of one-half to H. W. Fairbank, Detroit, Mich. Hinge	322,239	July 14	1124	292	32	214
Beebe, Allen G., Los Angeles, Cal. Mineral separator and amalgamator	325,810	Sept. 8	803	202	32	1170
Beebe, Charles S., Racine, Wis. Two-wheeled vehicle	323,257	July 28	2517	668	32	492
Beecher, Ebenezer B. (See Newton and Beecher.)						
Beecher, Thomas, assignor to J. H. Kearney, New Haven, Conn. Snap-hook	322,674	July 21	1700	451	32	326
Beecher, William H., *et al.* (See Forrest, Hamlet E., assignor.)						
Beers, Elbert H., Bethel, assignor to D. E. Rogers, Danbury, Conn. Commode-pail	325,039	Aug. 25	2234	612	32	961
Begley, Philip T., assignor to Pettee Machine Works, Newton Upper Falls, Mass. Carding-machine	323,021	July 28	2193	581	32	422
Begtrup, Julius, Elizabeth, N. J. Steam-engine governor	326,092	Sept. 15	1160	{296 297}	32	1244
Behrens, Henry C., Baltimore, Md. Fishing-line float	322,088	July 14	930	241	32	178
Belden, Edwin S., San Francisco, Cal. Type-writing machine	324,320	Aug. 18	1518	{418 419}	32	819
Beliel, Frank, Hastings, Nebr. Washing-machine	326,708	Sept. 22	1984	521	32	1403
Belknap, Charles J., and F. W. Wood, Bridgeport, Conn. Roller-skate	327,222	Sept. 29	2711	705	32	1540
Belknap, Lewis B., Newton, Mass. Fastening for overshoes	325,650	Sept. 8	579	147	32	1130
Belknap, Willis H., New York, N. Y. Lamp-shade	321,942	July 14	736	193	32	142
Bell, Alonzo, Philadelphia, Pa. Bed or furniture spring connection	323,555	Aug. 4	229	67	32	564
Bell, Alonzo, Washington, D. C. Car-ventilation	325,040	Aug. 25	2234	613	32	961
Bell, Axel H., Belle Plaine, Iowa. Harrow	325,151	Aug. 25	2371	653	32	986
Bell, John E. (See Dick, George, assignor.)						
Bell, Robert C., *et al.* (See White, Luther N., assignor.)						
Bell, Stephen B., Cedartown, Ga. Cultivator	325,723	Sept. 8	686	171	32	1148
Bell, Thomas H. (See Ramsay, William, assignor.)						
Bell, William G. (See Otis, Elisha W., assignor.)						
Bellamy, John, Boston, Mass. Knob attachment	324,640	Aug. 18	1692	466	32	852
Belus, Adolf, Brooklyn, N. Y. Construction of vessels	321,569	July 7	223	59	32	44
Bender, John W., and J. C. Hinkle, Shippensburg, Pa. Plaster-of-paris splint	323,775	Aug. 4	514	144	32	619
Bendick, Max, New York, N. Y. Stencil	325,041	Aug. 25	2235	613	32	961
Benedict, Read, New Brighton, and H. M. Scott, Brooklyn, N. Y. Button or stud	322,152	July 14	1019	265	32	194
Benham, Elijah B., Holyoke, and H. B. Richardson, Amherst, Mass. Motor	323,258	July 28	2517	{668 669}	32	492
Benham, Elijah B., Groton, and C. R. Watrous; said Benham assignor to S. A. and S. S. Whipple, Ledyard, Conn. Nut-cracker	322,240	July 14	1125	293	32	214
Benjamin, Amedee J., Valley Falls, R. I. Magazine spring-gun	325,042	Aug. 25	2236	613	32	961
Benjamin, George G., New York, N. Y. Music-leaf turner	321,570	July 7	224	60	32	44
Bennett, Andrew R., Utica, N. Y. Asbestus or amianthus stove and furnace pipe	326,093	Sept. 15	1161	297	32	1244

Alphabetical list of patentees, July to September, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Bennett, Andrew R., Utica, N. Y. Decorated stove-pipe	326,094	Sept. 15	1162	297	32	1244
Bennett, Benjamin F., Lockport, N. Y. Automatic self-setting wrench	321,776	Aug. 4	515	145	32	619
Bennett, Harnell L., Westerville, Ohio. Stump-puller	326,095	Sept. 15	1162	297	32	1244
Bennett, John M., assignor to S. C. Tatum & Co., Cincinnati, Ohio. Window-garden	324,291	Aug. 11	1207	329	32	755
Bennett, Thomas O., Atlantic Mine, Mich. Metal mold	325,043	Aug. 25	2237	614	32	902
Benner, Lorenzo D., Peoria, Ill. Checkrower for corn-planters	321,943	July 14	737	193	32	142
Bennor, Joseph, Philadelphia, Pa. Commode	322,891	July 28	2008	530	32	388
Bensel, Peter C., New York, N. Y. Clock	321,674	July 7	353	93	32	66
Benson, John. (See Hewitt, Benjamin J., assignor.)						
Benson, Leander C., and E. F. Perry, Susquehanna, Pa. Siding-gage	325,811	Sept. 8	804	202	32	1170
Bentel, Frederick, assignor to J. W. Sohn, Hamilton, Ohio. Horse hay-rake	324,000	Aug. 11	798	229	32	680
Bentley, Edward M., Brooklyn, N. Y. Electric railway	322,517	July 21	1502	395	32	289
Bentley, John, Birmingham, county of Warwick, England. Screw-stock	327,223	Sept. 29	2712	706	32	1540
Benton, Alexander R., Boston, Mass., assignor to S. G. Nail Company, Portland, Me. Machine for drawing wire	321,478	July 7	95	25	32	10
Benton, Charles H. (See Grabbe, Hubert H., assignor.)						
Benton, Linn B. (See Baas and Benton.)						
Benton, Waldo & Co. (See Baas and Benton, assignors.)						
Berbecker, Julius, New York, N. Y. Lambrequin-pin	323,259	July 28	2519	669	32	482
Bergen, Garret. (See Geran, Josiah P., assignor.)						
Berger, George, and A. M. Harris, Concordia, Mo. Sheaf-carrier	322,779	July 21	1839	488	32	351
Berger, Herman, Milwaukee, Wis. Feather-renovator	324,521	Aug. 18	1521	419	32	820
Berger, John L., *et al.* (See Armstrong, George S., assignor.)						
Berger, William H., Philadelphia, Pa. Eaves-trough hanger	324,213	Aug. 11	1108	299	32	736
Bergin, Michael F., *et al.* (See Winters, John B., assignor.)						
Bergland, Andrew. (See Henderson and Bergland.)						
Bergmann, Edward H., Cimarron, N. Mex. Ter. Fire-escape	324,914	Aug. 25	2065	565	32	929
Bernadac, Jean, New Iberia, La. Tool for trimming horses' hoofs	326,831	Sept. 22	2184	570	32	1437
Bernard, William A., Danville, Va. Combined nail and ear cleaner	324,001	Aug. 11	799	222	32	680
Bernhamer, Edward R., Indianapolis, Ind. Harrow	322,241	July 14	1126	293	32	214
Bernritter, Adolph, New York, N. Y. Scroll-saw article	321,571	July 7	225	60	32	44
Berrill, John A., Waterville, N. Y. Double-grinding paint-mill	321,675	July 7	355	94	32	67
Berry, David. Balltown, Pa. Casing-head for oil, gas, and other deep-bored wells	322,242	July 14	1126	293	32	214
Berry, John, assignor to National Needle Company, Springfield, Mass. Machine for grinding the ends of wires	324,641	Aug. 18	1694	467	32	853
Berry, Pembroke B. (See Huff, Mark S., assignor.)						
Berry, Selby C., Williamstown, W. Va. Stuffing-box for steam-engines	326,324	Sept. 15	1560	405	32	1318
Berthelot, Victor, Cannon Store, La. Hook-buckle	326,385	Sept. 15	1561	405	32	1318
Bertram, Wilhelm, Lauban, Silesia, Germany. Lamp-burner	322,035	July 14	861	223	32	164
Bestor, Francis L., *et al.* (See Baker, Charles H., assignor.)						
Bestor, Francis L. (See Baker and Bestor.)						
Bettendorf, William P., assignor to himself and Peru City Flow Company, Peru, Ill. Wheel	325,585	Sept. 1	491	123	32	1109
Bettreton, Elijah T., Atlanta, Tex. Harrow	323,104	July 28	2311	611	32	444
Betts, Lewis F., New York, N. Y., assignor to J. H. Irwin, Morton, Pa., and R. E. Dietz, New York, N. Y. Stove	326,386	Sept. 15	1562	406	32	1318
Betts, Robert W., assignor to S. Crump, Montclair, N. J. Paper box	327,224	Sept. 29	2713	706	32	1540
Betty, Alonzo A., Butler, Ill. Sulky-plow	322,243	July 14	1127	294	32	215
Bickford, Willis J., North Attleborough, Mass. Dental jaw-brace	323,627	Aug. 4	326	93	32	583
Bickle, Henry J., Dungannon, Ontario, Canada. Hame tug and buckle	321,944	July 14	739	193	32	143
Bierce, Calvin A., *et al.* (See Jeffrey, Henry D., assignor.)						
Bigelow, Albert S., assignor to Eureka Spund Apparatus Company, Rochester, N. Y. Pressure-regulator for fermenting liquids	324,642	Aug. 18	1696	{467 468}	32	853
Bigeon, Charles, Cincinnati, Ohio. Bed-bottom	326,096	Sept. 15	1164	298	32	1244
Billings, Andrew W., Brooklyn, N. Y. Manufacturing beer or ale	324,522	Aug. 18	1523	{419 420}	32	820
Billings, Andrew W., Brooklyn, N. Y. Apparatus for the manufacture of beer	324,523	Aug. 18	1525	{420 421}	32	821
Bills, Seth H., Mount Morris, N. Y. Grain-screen	327,061	Sept. 29	2404	651	32	1500
Bingham, Albert D., New Haven, Conn. Watch-movement	323,777	Aug. 4	515	145	32	619
Bingham, Samuel H., Hartford, Conn. Folding bed	321,572	July 7	226	60	32	44
Bingman, Martin, Snow Shoe, Pa. Eaves-trough holder	326,709	Sept. 22	1985	521	32	1403
Binns, Leedham, Philadelphia, Pa. Machine for spinning and twisting	322,675	July 21	1701	451	32	326
Birch, George A., East Greenbush, N. Y. Snow-scraper	323,491	Aug. 4	137	41	32	547
Birch, John E., assignor of one-half to D. Henderson, Winnipeg, Manitoba, Canada. Automatic cut-off for gas-burners	326,832	Sept. 22	2185	570	32	1438
Bird, Charles B., Sioux City, Iowa. Suspenders	326,194	Sept. 15	1302	337	32	1269
Bird, Charles S. (See Piper, Myron H., assignor.)						
Bird, Charles S., East Walpole, Mass. Paper box	326,937	Sept. 29	2338	612	32	1472
Bird, John T., and R. Simons, Rochelle, Ill. Harrow	324,292	Aug. 11	1208	329	32	755
Birdsell, Joseph B., L. H. Bratt, and W. F. Wetmore, South Bend, Ind. Steam-boiler	326,833	Sept. 22	2187	570	32	1438
Birgé, Isidore, assignor to Transit Apparatus Company, (limited,) Philadelphia, Pa. Store-service apparatus	325,382	Sept. 1	218	56	32	1056
Birgé, Isidore, assignor to Transit Apparatus Company, (limited,) Philadelphia, Pa. Store-service apparatus	325,383	Sept. 1	220	56	32	1056
Birgé, Isidore, assignor to Transit Apparatus Company, (limited,) Philadelphia, Pa. Store-service apparatus	325,384	Sept. 1	221	56	32	1056
Birgé, Isidore, assignor to Transit Apparatus Company, (limited,) Philadelphia, Pa. Store-service apparatus	325,385	Sept. 1	224	57	32	1057
Birge, Walter F., Buffalo, N. Y. Stirrup	325,902	Sept. 8	906	228	32	1190
Birkimer, John A., assignor to himself, A. and W. Bringardner, New Lexington, Ohio. Vehicle-spring	322,574	July 21	1580	416	32	302
Birth, William, Blairstown, Iowa. Washing-machine	323,260	July 28	2519	669	32	483
Bisbee, Albert, and J. T. Bacon, Plainville, Mass. Machine for roll-finishing seamless balls	322,343	July 14	1253	327	32	238
Bischoff, Max, New York, N. Y. Separable garment	326,834	Sept. 22	2188	571	32	1438
Bishop, Edward W. (See Loug, Nathan H., assignor.)						
Bissell, Titus L., Charleston, S. C. Alarm-clock	321,415	July 7	3	1	32	3
Bissell, Titus L., Charleston, S. C. Time stock-feeder	327,062	Sept. 29	2495	651	32	1500
Bittenbender, Jonas, Mifflinville, Pa. Apple-parer	325,903	Sept. 8	906	229	32	1190
Bittner, Adam, Berry, Ill. Pot-hook or trammel	326,835	Sept. 22	2189	571	32	1438
Biven, Frederick, San Francisco, assignor of two-thirds to C. C. Moore and W. C. Seamands, Stockton, Cal. Thermostat	323,556	Aug. 4	230	67	32	564
Bixby, Arthur, assignor of three-fourths to W. E. Jackson and C. Hartshorne, Philadelphia, Pa. Car-brake	327,430	Sept. 29	2984	{779 780}	32	1586

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Black, Francis B., Mount Carmel, Ind. Washing-machine	323,273	July 28	2539	675	32	486
Black, George S., assignor to E. C. Atkins & Co., Indianapolis, Ind. Saw-tooth swage	323,628	Aug. 4	326	93	32	583
Black, Joseph H., Columbia, Pa. Car wheel and axle	322,575	July 21	1580	416	32	302
Black, Julius, Toledo, Ohio. Garment-hanging stand	322,036	July 14	861	224	32	164
Black, Richard W. (See Lancaster, Bradford F., assignor.)						
Black, William, and T. Larkin, South Shields, county of Durham, England. Roasting-furnace	322,780	July 21	1840	488	32	351
Black, William T., Canton, Ohio. Acoustic telephone	324,356	Aug. 18	1300	353	32	780
Black, William W., *et al.* (See Kidder, George R., assignor.)						
Blackburn, Claude W., Chicago, Ill. Piano-stool	325,044	Aug. 25	2238	614	32	902
Blackburn, George W., and W. F. Cordray; said Cordray assignor to H. Cordray, Columbus, Ohio. Furnace-grate	325,651	Sept. 8	580	147	32	1130
Blackmer, Napoleon B., Portage, Wis. Vacuum-creamer	325,482	Sept. 1	357	87	32	1063
Blades, Leonard J., Chicago, Ill. Ticket-case	321,783	July 7	507	135	32	95
Blaesius, Emile, New York, N. Y. Adjustable plaque-stand	326,387	Sept. 15	1563	406	32	1318
Blair, George W., and W. Buttler, Pittsburg, Pa. Apparatus for cooling glass-molds	325,724	Sept. 8	187	172	32	1148
Blair, Lewis F., and J. W. Roche, Oswego, N. Y. Felt roofing	322,153	July 14	1020	265	32	194
Blaisdell, Joseph W., Brooklyn, N. Y. Wood-bundling machine	325,483	Sept. 1	358	87	32	1064
Blake, Edward A., Chicago, Ill. Roll-guard for roughing-machines	324,806	Aug. 25	1920	528	32	902
Blake, Edward A., Chicago, Ill. Electrotype-plate-shaving attachment for roughing-machines	325,781	Sept. 8	763	191	32	1162
Blake, Francis M., Worcester, Mass. Wire-drawing die	326,097	Sept. 15	1166	298	32	1245
Blake, Lowell E., El Paso, Tex. Sinking hydraulic piles	325,484	Sept. 1	360	87	32	1064
Blake Manufacturing Company, George F. (See Broadbent, Charles L., assignor.)						
Blake Manufacturing Company, George F. (See Coryell and Wheeler, assignors.)						
Blake, Robert A. (See Alcorn and Blake.)						
Blake, Samuel D., Dallas, Tex. Drawers and pantaloons	321,416	July 7	4	1	32	3
Blakely, Caleb J., assignor of two-thirds to D. E. Fifield and L. N. Williamson, Janesville, Wis. Burnishing-machine for boots or shoes	323,901	Aug. 11	676	189	32	657
Blakely, Edward A. (See Brigg, William W., assignor.)						
Blakeslee, George W., Perry, Iowa. Self-binding harvester	324,524	Aug. 18	1527	421	32	821
Blakeslee, George W., New York, N. Y. Watch-case spring	326,710	Sept. 22	1985	521	32	1403
Blakesley, Gilbert H., Bristol, assignor to Corbin Cabinet Lock Company, New Britain, Conn. Trunk catch or fastener	325,234	Sept. 1	5	2	32	1016
Blancard, Christian, New York, N. Y. Diamond-setting	325,485	Sept. 1	361	88	32	1064
Blanchard, Alanson, Arlington, Mass. Clothes-drier	326,836	Sept. 22	2190	571	32	1438
Blanchard, Virgil W., New York, N. Y. Type-writing machine	321,479	July 7	97	26	32	19
Blascow, David H., assignor of one-half to G. Sylvester, Milwaukee, Wis. Street carriage-block	321,417	July 7	5	2	32	3
Blatchly, Ambrose, and A. J. Hatch, San Francisco, Cal. Fruit-drier	325,782	Sept. 8	764	191	32	1163
Blazier, Fredrick, assignor of two-thirds to C. H. Town, Royalton, and R. Blazier, Muckwa, Wis. Stump-puller	322,781	July 21	1841	489	32	351
Blazier, Rachel, *et al.* (See Blazier, Fredrick, assignor.)						
Bleser, Daniel B., Manitowoc, Wis. Interfering-pad for horses	326,010	Sept. 8	1048	267	32	1215
Blessing, Charles A., Philadelphia, Pa. Trap for bath-tubs, sinks, &c.	325,486	Sept. 1	302	88	32	1064
Blessing, James H., Albany, N. Y. Turning plug	326,195	Sept. 15	1303	337	32	1269
Blessing, James H., Albany, N. Y. Mechanism for operating valves	326,196	Sept. 15	1304	337	32	1269
Blessing, James W. (See Pfau, Julius, assignor.)						
Bleton, Camille S., and A. Maleville, Paris, France. Stand or casing for bottles	327,225	Sept. 29	2714	706	32	1540
Blickenaderfer, George C. (See Smith, Hervey, assignor.)						
Biller, William C., Decatur, Ill. Hog-snout cutter	323,261	July 28	2520	669	32	483
Blinzler, Fredrick, Blakeslee, Ohio. Hat-holder	323,262	July 28	2521	670	32	483
Bliss, E. W. (See Leavitt, Frank M., assignor.)						
Bliss, George H. (See Bliss, John and G. H.) (Reissue.)						
Bliss, Irving W., Providence, R. I. Bolt-heading machine	324,214	Aug. 11	1100	{299 300 301}	32	736
Bliss, John and G. H., Brooklyn, N. Y. Registering ship's log. (Reissue)	10,025	July 21	1907	528	32	379
Bliss Manufacturing Company, E. (See Wood, John B., assignor.)						
Bliss, William L., and G. F. Kopp, South Egremont, Mass. Barn-door fastening	324,525	Aug. 18	1528	422	32	821
Bliven, Charles, Norfolk, Va. Circular-traveling device	325,386	Sept. 1	227	57	32	1057
Bloch, Oscar, New York, N. Y. Temporary binder	327,063	Sept. 29	2496	651	32	1500
Blomstrom, John, assignor to H. W. Price, Rockford, Ill. Glove	323,263	July 28	2522	670	32	483
Blood, Maurice E. (See Marsh and Blood.)						
Bloom, Silas N., assignor of one-half to J. Battle, Detroit, Mich. Mechanism for raising ladders, pipes, &c.	323,264	July 28	2523	670	32	483
Blount, John G., Boston, Mass., assignor of one-half to H. M. Clark, New York, N. Y. Bicycle	323,289	July 28	2562	682	32	490
Blue, Dennis S., Fremont, Ohio, assignor of one-half to W. F. Jobbins, New York, N. Y. Wrench	326,837	Sept. 22	2191	571	32	1439
Blun & Henius Manufacturing Company. (See Croal, William, assignor.)						
Blundstone, Benjamin. (See Moseley and Blundstone.)						
Blyth, Henry G., London, England. Apparatus for the manufacture of white lead	322,782	July 21	1842	489	32	352
Blythe, George, Chillicothe, Mo. Tobacco-stick holder	322,244	July 14	1128	294	32	215
Boalt, Francis B., Binghamton, N. Y. Device for hanging doors	322,037	July 14	862	224	32	165
Boatner, Willie, Woodville, Miss. Adjustable harrow	321,676	July 7	356	94	32	67
Board, James L. (See Clapp, James H., assignor.)						
Bobrick, Gabriel A., Boston, assignor, by mesne assignments, to himself and F. N. Wales, Newton, Mass. Automatic specific-gravity apparatus	324,808	Aug. 25	1922	529	32	902
Bock, Henry F., Lansing, Ill. Shaft-loop	325,045	Aug. 25	2239	614	32	902
Bock, Henry F., Lansing, Ill. Harness-buckle	327,120	Sept. 29	2593	675	32	1517
Boda, A. Zellar, and L. Klopsch, New York, N. Y., assignors to said Klopsch. Stereotype-plate holder	323,557	Aug. 4	231	68	32	564
Bodenhamer, Levi I., Kernersville, N. C. Compound for preserving eggs	326,895	Sept. 22	2280	.....	32	1454
Bodman, Elam, Gibbon, Nebr. Wagon-step	326,008	Sept. 15	1167	298	32	1245
Boecher, Adam, New York, N. Y. Sewing-machine	322,245	July 14	1129	294	32	215
Boehncke, Max A. T., and H. Rohwer, Omaha, Nebr. Continuous brick-kiln	323,492	Aug. 4	138	41, 42	32	547
Boeklen, Reinhold. (See Potter and Boeklen.)						
Boeklen, Reinhold, and J. D. Averell, Brooklyn, N. Y. Apparatus for generating illuminating-gas	324,809	Aug. 25	1925	529	32	903
Boerner, Wunibald R., Chicago, Ill. Attaching cuttle-bone to bird-cages	325,313	Sept. 1	112	32	32	1036
Boettcher, John G. L., Brooklyn, N. Y. Combined water-gage and faucet	323,778	Aug. 4	516	145	32	619
Boeye, Marinus J. S., Zwolle, Overyssel, Netherlands. Heating-stove	324,074	Aug. 11	903	249	32	698

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Bogart, Garrett. (See Evans, James D., assignor.)						
Bogert, John L., Flushing, N. Y. Steam-engine	325,487	Sept. 1	363	88	32	1085
Bogert, John L., Flushing, N. Y. Valve for engines	325,488	Sept. 1	364	88, 89	32	1085
Bogert, John L., Flushing, N. Y. Crank for engines	325,489	Sept. 1	366	89	32	1085
Bohaker, Andreas W., Boston, Mass. Device for elevating and suspending bed-clothing	323,265	July 28	2524	670	32	483
Böhm, Sören C. K., South Natick, Mass. Shoe	324,810	Aug. 25	1927	530	32	903
Boissonneault, André, Lawrence, Mass. Loom-shuttle	322,892	July 28	2010	530	32	388
Bold, Fred, assignor of one-half to W. M. Stanton, St. Louis, Mo. Lubricator	325,904	Sept. 8	910	229	32	1190
Bolgiano, Gilbert C., Baltimore, Md. Sash-balance	325,152	Aug. 25	2372	653	32	967
Bollinger, William H., *et al.* (See Smith, John A., assignor.)						
Bollinger, Harry S. (See Cooper and Bollinger.)						
Bollmann, Louis, Vienna, Austria-Hungary. Dynamo-electric machine	323,108	July 28	2315	612, 613	32	445
Bolman, William G., *et al.* (See Cassidy, Jacob H., assignor.)						
Bolte, Frank H., assignor to H. J. Delany and R. C. Giljohan, Milwaukee, Wis. Grease-trap	325,726	Sept. 8	900	172	32	1148
Bolton, George W., assignor of one-half to J. B. Corliss and F. D. Andrus, Detroit, Mich. Car-coupling	321,677	July 7	357	94	32	67
Bolton, James M., Mapleton, Iowa. Corn-planter	326,388	Sept. 15	1563	406	32	1318
Bolze, Hans, Brunswick, Germany. Machine for producing cylindrical non-conductors of heat	325,490	Sept. 1	367	89, 90	32	1085
Boman, Claes W., assignor to Eagle Pencil Company, New York, N. Y. Lead and crayon holder	321,784	July 7	510	135	32	95
Boman, Claes W., assignor to Eagle Pencil Company, New York, N. Y. Lead and crayon holder	321,785	July 7	512	135	32	95
Boman, Claes W., assignor to Eagle Pencil Company, New York, N. Y. Pencil and crayon holder	321,786	July 7	513	136	32	95
Bomar, Thomas E., McKinney, Tex. Ink-fountain for printing-machines	326,938	Sept. 29	2339	612	32	1472
Boma, Joseph C. (See Coon and Boma.)						
Bond, George C., and J. Sadler, Nottingham, England. Convertible carriage and cradle	323,390	Aug. 4	10	3	32	525
Bond, H. G. (See Mathey, Henry, assignor.)						
Bond, John M. (See Delaney and Bond.)						
Bond, John T., Bond's Mill, Ga. Cultivator	324,215	Aug. 11	1112	301	32	737
Bond, Nathan O., Fairfax Court-House, Va. Door-check	324,452	Aug. 18	1426	389	32	903
Bonnell, William H., St. Louis, Mo. Ticket-punch	326,389	Sept. 15	1565	406	32	1319
Bonzano, Adolphus, Phœnixville, Pa. Cable railway	326,536	Sept. 15	1746	456	32	1354
Bonzano, Maximilian F., Philadelphia, Pa. Safety-guard for railway-switches	322,783	July 21	1845	489, 490	32	392
Booker, J. T., *et al.* (See Harris, James G., assignor.)						
Booker, James T., *et al.* (See Malone, Alexander and B. A., assignors.)						
Bookout, Hugh B., Long's Mills, Tenn. Swinging gate	326,620	Sept. 22	1865	488	32	1380
Boone, Robert, Jr., Philadelphia, Pa. Visible guard for wire fences	321,787	July 7	515	136	32	96
Boone, William C., Brooklyn, N. Y. Hitching device	323,022	July 28	2198	582	32	422
Booth, Ebenezer H., Kirkwood, N. Y. Seat-lock	324,643	Aug. 18	1697	468	32	853
Booth, Erastus L., Mount Zion, Ill. Buggy-top	321,945	July 14	740	194	32	143
Booth, Erastus L., Mount Zion, Ill. Spring attachment for carriage-bows	321,946	July 14	741	194	32	143
Booth, George, Philadelphia, Pa. Flue-stop	324,216	Aug. 11	1113	301	32	737
Booth, George, assignor to Booth & Son, Toronto, Ontario, Canada. Bath	324,293	Aug. 11	1210	329	32	756
Booth & Son. (See Booth, George, assignor.)						
Borah, James, Altoona, Dak. Ter. Automatic grain-measure for thrashing-machines	325,046	Aug. 25	2240	614	32	962
Borchardt, Hugo, Bridgeport, Conn. Machine for cleaning wire	326,939	Sept. 29	2340	612, 613	32	1473
Borchardt, John F., Pierce City, Mo. Clinometer	326,390	Sept. 15	1566	407	32	1319
Born, John C., Belleville, Ill. Steam pumping-engine	322,784	July 21	1846	490	32	352
Borsch, John L. (See Wagner, Anton, assignor.)						
Bortree Corset Company, M. K. (See Prouddit, Andrew E., assignor.)						
Bosch, Andreas, Prairie du Chien, Wis. Guard for draw-bridges	325,905	Sept. 8	911	230	32	1191
Boschke, Albert, San Pedro, Cal. Hydraulic dirt-conveyer	321,573	July 7	227	60	32	45
Bosmann, Nicolas, assignor of one-half to F. P. Ackerman, Buffalo, N. Y. Nut-lock	325,906	Sept. 8	913	230	32	1191
Bosa, Martin P., Oakland, Cal. Amalgamating-pan	325,387	Sept. 1	227	58	32	1058
Bosa, Martin P., Oakland, Cal. Friction-clutch	325,388	Sept. 1	228	58	32	1058
Bossard, August, New York, N. Y. Electric-lamp-globe support	321,788	July 7	516	136	32	96
Bosworth, Fred. (See Bosworth, William H., assignor.)						
Bosworth, William H., assignor of one-half to F. Bosworth, Shaytown, Mich. Animal-poke	321,789	July 7	516	136	32	96
Bothe, Henry F. H. (See Fisher, Robert F., assignor.)						
Bothner, Oscar, Leipsic, Germany. Spraying apparatus for malt-floors	326,197	Sept. 15	1305	398	32	1270
Boulden, Holman, Millersburg, Ky. Knockdown box	326,262	Sept. 15	1400	364, 365	32	1287
Bouret, Napoleon. (See Darozier and Bouret.)						
Bourne, Edward, Allegheny, Pa. Range-boiler	321,790	July 7	517	137	32	96
Bourne, Theodore F., Bloomfield, N. J. Car-starter	323,629	Aug. 4	327	94	32	583
Bourry, Jean, Zurich, Switzerland. Piano-frame	322,154	July 14	1022	266	32	194
Bouvier, Louis P., assignor of one-half to J. F. Ellis, P. T. Perrott, and T. J. Clark, Toronto, Ontario, Canada. Envelope-blank-feeding mechanism	324,644	Aug. 18	1698	468	32	853
Bowater, Richard. (See Grey and Bowater.)						
Bowen, David, assignor of one-fourth to T. B. Peacock, Topeka, Kans. Switch-stand	324,326	Aug. 18	1529	422	32	821
Bower, Anthony S., St. Neots, county of Huntingdon, and T. Thorp, Whitefield, county of Lancaster, England. Regenerative gas-burner	322,038	July 14	864	224, 225	32	165
Bower, Buckland P., Cleveland, Ohio. Sewer-trap	324,645	Aug. 18	1701	469	32	854
Bower, George P., Milwaukee, Wis. Curtain-fastener	325,491	Sept. 1	369	90	32	1086
Bower, William. (See Miller, Bower, and Coleman.)						
Bowker, Charlotte J., *et al.* (See Fuller, Solomon, assignor.)						
Bowker, William, Somerville, Mass. Machine for bundling hoops	325,492	Sept. 1	369	90	32	1086
Bowman, Alexander H., Packerton, Pa. Arc lamp	324,978	Aug. 25	2151	587, 588	32	945
Bowman & Co., Manning. (See Seips, Michael, assignor.)						
Bowman, Robert D. (See Clark and Bowman.)						
Bowron, William L., *et al.* (See Vogel, John B., assignor.)						
Boyce, Caroline, New York, N. Y. Book cover or protector	326,838	Sept. 22	2192	572	32	1439
Boyd, J. A., *et al.* (See Brewis, John J., assignor.)						
Boyd, John, Glasgow, county of Lanark, Scotland. Stop-motion mechanism for winding and twisting machines, &c	326,391	Sept. 15	1567	407	32	1319

Alphabetical list of patentees, July to September, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume.		Official Gazette.	
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Boyd, William S., Washington, D. C. Escapement or feeding device for type-writing machines	326,011	Sept. 8	1049	267	32	1216
Boyer, Oliver P., Dayton, Ohio. Cooling-board	323,391	Aug. 4	12	3	32	525
Boyes, Ebenezer, Peckham, county of Surrey, England. Coffee or tea pot	325,223	Aug. 25	2470	679, 680	32	1004
Boyle, William C., Arcola, Ill. Wagon running-gear	322,246	July 14	1131	295	32	215
Boynton, George O., and G. Stephen, Boston, Mass., assignors, by mesne assignments, to Leatheroid Novelty Company. Top roll for spinning-machines, &c	321,574	July 7	228	61	32	45
Boynton, Leander W., Hartford, Conn. Turn-up bed	321,418	July 7	6	2	32	4
Boynton, Leander W., Hartford, Conn. Spring bed-bottom	321,419	July 7	7	2	32	4
Bracher, Thomas W., Woodbridge township, Middlesex county, N. J., and T. Webb, New York, N. Y., assignors to said Bracher. Sewing-machine	324,217	Aug. 11	1114	301, 302	32	737
Brackett, Hiram E., and F. L. Sawyer, Hampden, Me. Band for shingle-bunches	323,493	Aug. 4	140	42	32	548
Brackett, Hiram E., and F. L. Sawyer, Hampden, Me. Shingle-binding tool	326,621	Sept. 22	1867	489	32	1380
Bradbury, Edward T., Mahanoy City, Pa. Weight-cord and attachment for windows	326,392	Sept. 15	1569	407	32	1319
Bradford, Chester. (See Leonard, Charles N., assignor.)						
Bradford, Daniel W., Allegheny, Pa. Roll for rolling-mills	324,807	Aug. 25	1921	528	32	902
Bradley, Alfred, Dayton, Ohio. Hub for vehicle-wheels	324,218	Aug. 11	1115	302	32	737
Bradley, Henry A., New York, N. Y. Hydrocarbon-burner	322,676	July 21	1702	451	32	326
Bradley & Hubbard Manufacturing Company. (See Evarts, John A., assignor.)						
Bradley, James J., Harrison, assignor of one-half to F. R. Upton, Orange, N. J. Dynamo-electric machine	324,075	Aug. 11	904	250	32	608
Bradley, John L., and R. T. Smith, New Haven, Conn. Jib-bank	325,047	Aug. 25	2242	615	32	962
Bradley, Joseph G., Wetmore, Kans. Rolling cultivator and pulverizer	323,266	July 28	2526	671	32	484
Bradley Manufacturing Company, David. (See Packer, John F., assignor.)						
Bradley & Metcalf. (See Walden, Frank D., assignor.)						
Bradley, Sylvester, Bloomington, Ill. Machine for making lightning-rod connections	323,105	July 28	2313	611	32	444
Bradshaw, Silas S., assignor to S. S. Chisholm, Chicago, Ill. Cabinet-bedstead	323,267	July 28	2527	671	32	484
Bradway, Charles P., Stafford, Conn. Water-motor	322,785	July 21	1847	490, 491	32	353
Bragg, Fredrick S., Corning, N. Y. Spark-arrester	325,907	Sept. 8	914	230	32	1191
Bragg, Thomas P., Ennis, assignor of one-half to G. S. Higginbotham, Ellis County, Tex. Hay or cotton press	323,268	July 28	2530	672	32	484
Brainard, Edwin S., Manchester, Conn. Composite metal bar	324,527	Aug. 18	1531	422	32	822
Brainard, Edwin S., Manchester, Conn. Combined iron and steel file	324,528	Aug. 18	1532	422	32	822
Brainerd, Orrin N., St. Louis, Mo. Box-fastener	323,106	July 28	2313	612	32	444
Braithwaite, Charles L., Jr., and I., Kendal, county of Westmoreland, England. Apparatus for transferring heat from one current of air to another	326,839	Sept. 22	2193	572	32	1439
Braithwaite, Isaac. (See Braithwaite, Charles L., Jr., and I.)						
Brambach, Stephan, New York, N. Y. Upright-piano action	322,089	July 14	931	241	32	178
Bramhall, Charles E., Boston, Mass. Musical reed	321,882	July 7	653	169	32	119
Branch, Joseph W. (See Fosburgh, Robert L., assignor.)						
Brandon, George M., Harveyville, assignor to himself and R. P. Robinson, Wilkes-Barré, Pa. Carpet stretcher and tacker	327,131	Sept. 29	2594	676	32	1517
Brandt, Louis, assignor, to himself, D. Edwards, and B. F. Darbyshire, Sabina, Ohio. Nut-lock	322,155	July 14	1022	266	32	195
Branford Lock Works. (See Regan, William, assignor.)						
Branstetter, Simon U., Vandalia, Mo. Car-coupling	326,622	Sept. 22	1868	489	32	1380
Brantley, Thomas, assignor of one-half to W. H. Sawyer, Fort Valley, Ga. Steam-engine	325,725	Sept. 8	689	172	32	1148
Brassington, Walter J., Brooklyn, N. Y. Blind-slat fastener	322,247	July 14	1132	295	32	215
Bratt, Levi H. (See Birdsell, Bratt, and Wetmore.)						
Bralt, Louis P., assignor of one-half to H. Dozois, Lowell, Mass. Paper-folding machine	323,558	Aug. 4	232	68	32	564
Braune, Heinrich A. W., Valparaiso, Ind. Self-acting solar reflector	326,711	Sept. 22	1987	521, 522	32	1403
Brauninger, George M., Janesville, assignor of one-half to E. Wuesthoff, Milwaukee, Wis. Boiler-water purifier	323,494	Aug. 4	142	42	32	548
Bray, Austin B., Gloucester, Mass. Cake of cured fish and method of preparing	326,099	Sept. 15	1167	.....	32	1245
Bray, Mellen. (See Meade, George H., assignor.)						
Bray, Morris P., Birmingham, Conn. Corset	321,791	July 7	518	137	32	97
Bray, Morris P., Birmingham, Conn. Corset	323,630	Aug. 4	328	94	32	583
Bray, Morris P., Anaonia, Conn. Corset	322,677	July 21	1703	451	32	327
Bray, William C., Newton, Mass. Rivet	326,100	Sept. 15	1168	208	32	1245
Breckenridge, Moses P. (See Campbell, Thomas J., assignor.)						
Breckenridge, Orlo, Westfield, Mass. Churn attachment	321,678	July 7	358	95	32	67
Bredée, Giacomo, New York, N. Y. Alarm-lock	326,840	Sept. 22	2195	572	32	1439
Bredée, Giacomo, New York, N. Y. Bird-cage	326,841	Sept. 22	2196	573	32	1439
Breed, Richard E. (See Ellis, Josiah W., assignor.)						
Breed, Sylvester B., Lynn, Mass. Buffing-roll	323,779	Aug. 4	517	146	32	619
Breer, Caroline H. (See Breer, Henry, assignor.)						
Breer, Henry, assignor to C. H. Breer, De Witt, N. Y. Desiccating apparatus	326,842	Sept. 22	2196	573	32	1440
Breer, Henry, assignor to C. H. Breer, De Witt, N. Y. Desiccating apparatus	326,843	Sept. 22	2198	574	32	1440
Breithut, Oscar P., Williamsport, Pa. Spring-friction mirror-pivot	325,493	Sept. 1	371	91	32	1086
Breman & Co. South Western Agricultural Works, *et al.* (See Wolfe, Harvey R., assignor.)						
Brennan & Co. South Western Agricultural Works *et al.* (See Wolfe, Harvey R., assignor.)						
Brenner, Morris, New Haven, Conn. Show-stand	323,631	Aug. 4	329	94	32	583
Breon, George. (See Shoesmith, Edward W., assignor.)						
Brevoort, H. N., *et al.* (See Brooks, George, assignor.)						
Brevoort, William H. (See Barmore, Albert K., assignor.)						
Brewer, Charles W., Racine, Wis. Piano-action	323,632	Aug. 4	330	95	32	584
Brewer, Horatio J., New York, N. Y. Galvanic battery	323,902	Aug. 11	677	190	32	658
Brewer, Horatio J., New York, N. Y. Galvanic battery	323,903	Aug. 11	678	190	32	658
Brewer, Horatio J., New York, N. Y. Galvanic battery	323,904	Aug. 11	679	190	32	658
Brewer, Horatio J., New York, N. Y. Galvanic battery	323,905	Aug. 11	680	190	32	658
Brewer, William J., London, England. Road-vehicle. (Reissue)	10,635	Aug. 18	1894	520	32	891
Brewis, John J., assignor of two-thirds to J. A. Boyd, Minneapolis, Minn., and H. R. Dickinson, Keokuk, Iowa. Brick-machine	324,453	Aug. 18	1427	390	32	803
Brewster, John C., Raleigh, N. C. Sign	322,248	July 14	1133	295	32	215
Brewster, Walter M. (See Ruel, Laurent, assignor.)						
Breyer, Friedrich, Vienna, Austria-Hungary. Producing filtering media	321,947	July 14	742	194	32	143
Bricker, David W., Mercersburg, Pa. Combined cultivator and plow	324,219	Aug. 11	1116	302	32	737
Bridewell, Richard F., San Francisco, Cal. Hydromotor for street-railways	326,198	Sept. 15	1305	338, 339	32	1270
Bridge, Thomas, Eastbourne, county of Sussex, England. Saving ships from foundering, &c	326,896	Sept. 22	2280	506	32	1454

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Bridgers, Robert R., Jr., Wall, and W. H. Good, Greensburg, Pa. Fish-plate for railway-rails	326,393	Sept. 15	1570	408	32	1390
Bridges, Appleton S., St. Louis, Mo. Vehicle-spring	323,906	Aug. 11	661	191	32	658
Bridgman, Edward H., Pittsfield, Mass. Slitter-shaft for paper-cutting machines	325,812	Sept. 8	805	202	32	1170
Brigg, William W., Washington, D. C., assignor of one-third to E. A. Blakely, New Orleans, La. Cotton-gin	324,646	Aug. 18	1702	469	32	854
Briggs, Charles H., Kankakee, Ill. Line-reel for fishing-tackle	325,813	Sept. 8	807	203	32	1170
Briggs, George S., Rockford, Ill. Drive-chain	325,494	Sept. 1	372	91	32	1066
Briggs, George W., assignor of one-half to W. J. Hall, Chicago, Ill. Rowing appliance, &c.	323,292	July 28	2565	683	32	491
Briggs, John G., San José, Cal. Cooking and canning apparatus	321,480	July 7	97	26	32	19
Briggs, Orlando P., assignor to Thorn Wire Hedge Company, Chicago, Ill. Staple-making machine	325,814	Sept. 8	808	203	32	1171
Briggs, Warren R., Bridgeport, Conn. Student's drafting-case	327,226	Sept. 29	2715	706	32	1540
Bright, Ferguson G., Greenwich, Kans. Running-gear for cultivators	322,411	July 21	1349	351	32	262
Brill, George M., Philadelphia, Pa. Car-axle box	324,220	Aug. 11	1117	302, 303	32	738
Bringardner, Albert, *et al.* (See Birkimer, John A., assignor.)						
Bringardner, William, *et al.* (See Birkimer, John A., assignor.)						
Brinkerhoff, John J., Auburn, N. Y. Metallic fencing	324,221	Aug. 11	1118	303, 304	32	738
Briody, Barnad, and G. W. McHale, assignors of one-third to W. E. Lennane, Detroit, Mich. Car-pedestal	326,394	Sept. 15	1571	408	32	1390
Briody, Philip, assignor of one-half to J. W. Flinn, San Francisco, Cal. Jar-fastening	321,575	July 7	229	61	32	45
Bristol Brass and Clock Company. (See Oakley, Junius S., assignor.)						
Britton, James C., Hartford, Conn. Self opening can	321,948	July 14	745	195	32	144
Britton, Joseph, New York, N. Y. Fan attachment for rocking-chairs	322,893	July 28	2011	531	32	386
Broadbent, Charles L., New York, N. Y., assignor to G. F. Blake Manufacturing Company, Boston, Mass. Engine for pneumatic systems	324,076	Aug. 11	906	250, 251	32	698
Brock, Adaline, Dunellen, N. J. Fence	321,576	July 7	230	61	32	45
Brock, Matthias, Boston, Mass., assignor to McKay & Copeland Lasting Machine Company, Portland, Me. Machine for forming heads on shoe-nail strips	323,846	Aug. 4	595	167	32	635
Brock, Matthias, Boston, Mass., assignor to McKay & Copeland Lasting Machine Company, Portland, Me. Forming heads on nail-strips	323,847	Aug. 4	596	168	32	636
Brock, William E., Dunellen, N. J. Hammock-spreader	327,048	Aug. 25	2242	615	32	963
Brock, William E., New York, N. Y., assignor to C. Richardson, Newark, N. J. Buck-saw	323,107	July 28	2314	612	32	444
Brogden, Aaron, Oshkosh, Wis. Circular saw mill	325,727	Sept. 8	691	172	32	1149
Broichgans, Stephan, Milwaukee, Wis. Burglar-alarm	321,679	July 7	350	95	32	67
Brokaw, Isaac, and W. Butler, Litchfield, Ill. Straw-stacker	322,249	July 14	1134	295, 296	32	216
Brolaski, Joseph B., St. Louis, Mo. Knockdown furniture	325,049	Aug. 25	2243	615, 616, 617	32	963
Bromley, William H., and P. J. Gately, Brooklyn, N. Y. Cracker-machine	323,848	Aug. 4	597	168	32	636
Bromley, William H., and P. J. Gately, Brooklyn, N. Y. Adjustable scraper for cracker-machine feed-rollers	324,529	Aug. 18	1533	423	32	892
Bronson, Ira, Lockport, N. Y. Bob-sleigh	327,227	Sept. 29	2716	707	32	1540
Bronson, John G., Chicago, Ill. Window-screen and ventilator	324,077	Aug. 11	908	251	32	698
Brooke, Isaac, *et al.* (See Caley, Edward L., assignor.)						
Brookhart, Levi T. and W. H., Lima, Ohio; said W. H. Brookbart assignor to said Levi T. Brookhart. Metallic fence	326,535	Sept. 15	1745	455, 456	32	1353
Brookhart, William H. (See Brookhart, Levi T. and W. H.)						
Brooklyn Electric Construction Company. (See Moffatt, Richard R., assignor.)						
Brooks, Byron A., Brooklyn, N. Y. Type-writing machine	323,495	Aug. 4	143	42, 43	32	548
Brooks & Co., E. J. (See Brooks, Edward J., assignor.)						
Brooks, Daniel V. (See Harper and Brooks.)						
Brooks, David, Philadelphia, Pa. Underground electrical conductor	325,495	Sept. 1	373	91	32	1066
Brooks, Edward J., East Orange, N. J., assignor to E. J. Brooks & Co., New York, N. Y. Tin-strip seal	323,633	Aug. 4	331	95	32	584
Brooks, Edward J., East Orange, N. J., assignor to E. J. Brooks & Co., New York, N. Y. Seal	323,849	Aug. 4	598	168	32	636
Brooks, Edward J., East Orange, N. J., assignor to E. J. Brooks & Co., New York, N. Y. Metallic seal	324,647	Aug. 18	1703	469	32	854
Brooks, Edward J., East Orange, N. J., assignor to E. J. Brooks & Co., New York, N. Y. Seal	326,199	Sept. 15	1307	339	32	1271
Brooks, Edward J., East Orange, N. J., assignor to E. J. Brooks & Co., New York, N. Y. Seal-press	326,897	Sept. 22	2281	596	32	1454
Brooks, Franklin W., New York, N. Y. Street-car	325,908	Sept. 8	915	231	32	1192
Brooks, Frederick W., Oak Grove, Wis. Railway-rail	322,412	July 21	1350	352	32	262
Brooks, George, and S. B. Pike, Detroit, Mich. Grain-separator	324,454	Aug. 18	1429	391	32	804
Brooks, George, assignor of two-thirds to H. N. Brevoort and R. J. Marsh, Detroit, Mich. Excelsior-machine	326,395	Sept. 15	1572	408	32	1390
Brooks, Henry, Brooklyn, Ohio. Horse-collar	327,377	Sept. 29	2919	761	32	1574
Brooks, Henry O., Lowell, Mass. Odometer	326,396	Sept. 15	1573	408	32	1390
Brooks, James M. (See Brooks, Rhodom M. and J. M.)						
Brooks, John, Plainfield, N. J. Printing-machine	322,090	July 14	932	241	32	178
Brooks, John, Plainfield, N. J. Printing-machine	322,091	July 14	933	241	32	178
Brooks, Morgan, and H. R. Mason, Boston, Mass. Telephone-circuit	323,269	July 28	2531	672	32	485
Brooks, Rhodom M. and J. M., Jenkinsville, Ga. Seed-planter and fertilizer-distributer	325,496	Sept. 1	374	91, 92	32	1067
Brooks, Samuel T., assignor of one-half to M. A. Bates, San Francisco, Cal. Hose-patch	326,012	Sept. 8	1050	267	32	1216
Brooks & Son, George. (See Bardsley, Henry, assignor.)						
Brotherhood, Charles. (See Leipner and Brotherhood.)						
Brotherhood, Peter, Lambeth, county of Surrey, England. Valve-gear	323,270	July 28	2533	672, 673	32	485
Brothers, Alphonso H., assignor to Dunham Hosiery Company, Naugatuck, Conn. Needle-presser for knitting-machines	325,815	Sept. 8	814	204	32	1170
Brothwell, John G., assignor to Turner & Seymour Manufacturing Company, Torrington, Conn. Clasp	324,294	Aug. 11	1211	330	32	756
Broughton, Frederick S. D., assignor of one-half to S. P. Wolverton, Sunbury, Pa. Nut-lock	324,295	Aug. 11	1212	330	32	756
Brouner, Richard R., Washington, D. C. Curtain-fixture	327,378	Sept. 29	2920	761	32	1574
Brower, Bloomfield, New York, N. Y. Desk	323,271	July 28	2534	673, 674	32	485
Brown, Alpheus R., Jr., Boston, Mass. Lock-hinge	325,909	Sept. 8	916	231	32	1191

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Brown, Charles E., assignor of one-half to S. Southall, Rome, N. Y. Alarm for steam-boilers	325,193	Aug. 25	2429	667, 668	32	997
Brown, Charles T., assignor, by mesne assignments, to F. L. Brown, Chicago, Ill. Counter for printing-presses, &c	323,382	July 28	2704	720	32	515
Brown, Charles T., assignor to F. L. Brown, Chicago, Ill. Counter for printing-presses, &c	324,002	Aug. 11	801	222, 223	32	680
Brown, Charles T., assignor to F. L. Brown, Chicago, Ill. Mechanical movement	324,003	Aug. 11	803	223	32	681
Brown & Company, George W. (See Tunnicliff, John C., assignor.)						
Brown & Co., S. N. (See Brown, Thomas, assignor.)						
Brown, D. Arthur, Concord, N. H. Carriage-axle	325,050	Aug. 25	2247	617	32	963
Brown, Daniel W., Woodbridge, N. J. Cuff-holder	323,559	Aug. 4	233	68	32	565
Brown, Edward F., New York, N. Y. Brushing and finishing silk hats	321,680	July 7	361	96	32	68
Brown, Edward H., New York, N. Y. Tintograph	324,648	Aug. 18	1704	470	32	855
Brown, Edwin H., Brooklyn, N. Y. Suspension device for lamps, &c	323,293	July 28	2566	683	32	491
Brown, Edwin H., Brooklyn, N. Y. Suspension device for lamps	323,294	July 28	2568	684	32	491
Brown, Fayette, Cleveland, Ohio. Blast-furnace	323,634	Aug. 4	333	95	32	584
Brown, Flora L. (See Brown, Charles T., assignor.)						
Brown Folding Machine Company. (See Brown, Richard T., assignor.)						
Brown, Frank M., Boston, assignor to N. S. White, Canton, Mass. Holder for incandescent electric lamps	324,530	Aug. 18	1533	423	32	892
Brown, Fred. H., Fort Worth, Tex. Magneto-electric telegraphy	324,746	Aug. 18	1823	504	32	978
Brown, Frederick L., Scranton, Pa. Overflow-fixture trap	325,153	Aug. 25	2373	653	32	987
Brown, George S., Providence, R. I. Insole for boots and shoes	321,577	July 7	231	61	32	45
Brown, George W., *et al.* (See Wiggin, John E., assignor.)						
Brown, Harold P., Chicago, Ill. Circuit for arc and incandescent electric lights	325,389	Sept. 1	230	58	32	1058
Brown, Harold P., Chicago, Ill. Arc and incandescent lighting system	325,390	Sept. 1	233	59	32	1059
Brown, Harold P., Chicago, Ill. System for operating incandescent lamps	325,391	Sept. 1	235	59, 60	32	1059
Brown, Henry H. (See Hill and Brown.)						
Brown, Isaac F., Hyde Park, Mass. Hat-forming machine	323,023	July 28	2197	582	32	422
Brown, Israel F., New London, Conn. Roller-skate	321,931	July 7	715	196	32	130
Brown, J. Burns, New York, N. Y. Music-desk for pianos	326,542	Sept. 22	1754	458	32	1362
Brown, John A., Bloomfield, N. J., assignor of two-thirds to W. F. Dorflinger, New York, N. Y. Bottling-machine	322,576	July 21	1581	416, 417	32	302
Brown, John F., Providence, R. I., assignor of one-half to Fitz Gerald & Co., Newark, N. J. Shipping-can	326,940	Sept. 29	2342	613	32	1473
Brown, John H., Oskaloosa, Iowa. Bed-bottom	322,577	July 21	1582	417	32	303
Brown, Mathew, assignor of one-half to A. M. Barber, Bridgeport, Conn. Saw	324,357	Aug. 18	1300	353	32	781
Brown, Maurice T., Tyler, Tex. Cotton-compressor	325,314	Sept. 1	113	32, 33	32	1036
Brown, Moses B., Waltham, Mass. Broom-holder	321,883	July 7	654	170	32	119
Brown, Moses B., Waltham, Mass. Nail-machine	322,413	July 21	1351	352	32	263
Brown, Nicholas H., Mobile, Ala. Locking-bolts	326,101	Sept. 15	1169	299	32	1245
Brown, Richard, Youngstown, assignor to Cleveland, Brown & Co., Cleveland, Ohio. Dressing rolls	326,263	Sept. 15	1401	365	32	1287
Brown, Richard T., assignor to Brown Folding Machine Company, Erie, Pa. Sheet-conveyer for folding-machines	322,344	July 14	1254	328	32	238
Brown, Robert B., Washington, D. C. Tennis-court marker	324,649	Aug. 18	1707	470	32	855
Brown, Robert P., and E. L. Bailey, Philadelphia, Pa. Paper box	327,379	Sept. 29	2921	762	32	1574
Brown, Sampson H., Leesville, Tex. Marking device	325,154	Aug. 25	2374	654	32	987
Brown & Sharpe Manufacturing Company. (See Carleton, Cyrus, assignor.)						
Brown & Sharpe Manufacturing Company. (See Parks, Edward H., assignor.)						
Brown, Simon H., and L. Sibley, Ramapo, N. Y. Centering and holding device for tires	325,315	Sept. 1	114	33	32	1037
Brown, Thomas, assignor to S. M. Brown & Co., Dayton, Ohio. Hub-band	324,792	July 7	519	137, 138	32	97
Brown, Thomas S., Greenfield, assignor of one-half to W. D. Lobin and D. F. Henry, Detroit, Mich. Fishing-net	325,652	Sept. 8	581	147	32	1130
Brown, Thomas W. (See McKenney and Brown.)						
Brown, Thomas W., Belmont, assignor to H. W. Mason, Worcester, Mass. Egg-beater	322,250	July 14	1136	296	32	216
Brown, Wilbert F., Richmond, Mich. Device for clamping tire-bolts	323,392	Aug. 4	12	4	32	525
Brown, William. (See Smith, Moses H., assignor.)						
Brown, William D., Le Roy, Ill. Coffee-strainer	323,780	Aug. 4	517	146	32	620
Brown, William H. (See Miller and Brown.)						
Brown, William J., Webster City, Iowa. Car-coupling	325,155	Aug. 25	2375	654	32	987
Brown, William J. H., *et al.* (See Long, William S., assignor.)						
Brown, William P., Zanesville, Ohio. Wheel-cultivator	326,200	Sept. 15	1309	339, 340	32	1271
Brown, William T., *et al.* (See Mingle, George W., assignor.)						
Browne, Arthur W., Westfield, N. Y., assignor to S. S. White Dental Manufacturing Company, Philadelphia, Pa. Flexible shaft and coupling	326,941	Sept. 29	2343	613	32	1473
Browne, Arthur W., Westfield, N. Y., assignor to S. S. White Dental Manufacturing Company, Philadelphia, Pa. Dental-engine hand-piece coupling	326,942	Sept. 29	2346	613, 614	32	1473
Browne, William H., Brooklyn, N. Y. Grinding-mill	326,264	Sept. 15	1402	365	32	1287
Browne, William J., Fort Madison, Iowa. Wheel gang-plow	325,783	Sept. 8	765	191, 192	32	1163
Browning, John M. and M. S., Ogden City, Utah Ter., assignors to Winchester Repeating Arms Company, New Haven, Conn. Magazine-gun	324,296	Aug. 11	1213	330, 331	32	756
Browning, John M. and M. S., Ogden City, Utah Ter., assignors to Winchester Repeating Arms Company, New Haven, Conn. Magazine fire-arm	324,297	Aug. 11	1216	331	32	757
Browning, Matthew S. (See Browning, John M. and M. S.)						
Brownlee, John, Evansville, Ind. Map, chart, or picture suspender	326,013	Sept. 8	1051	267	32	1216
Brownson, Chancey E., Lansing, Mich. Step-ladder	322,414	July 21	1353	352	32	263
Brownson, Ralph, assignor of one-half to P. R. L. Hardenbergh, St. Paul, Minn. Fly-net for horses	321,884	July 7	655	170	32	119
Bruce, James L., and T. E. Sikes, Chauncey, Ga. Seed-planter	326,712	Sept. 22	1969	522	32	1404
Bruchmann, Gustav R., Milwaukee, Wis. Still	325,728	Sept. 8	692	173	32	1149
Brumbelow, James N. (See Gardner and Brumbelow.)						
Brunner, Edward H. (See Leinbach, Wolle, and Brunner.)						
Brunswick, Emanuel, San Francisco, Cal. Billiard-table	324,004	Aug. 11	805	223, 224	32	681
Bruschke, Charles J., Chicago, Ill. Smoke-burning appliance for steam-boilers	322,894	July 28	2013	531	32	388
Brustlein, John E., *et al.* (See Müller, Armand, assignor.)						
Bryan, Anthony H., Evansville, Ind. Automatic pump and water-elevator	326,266	Sept. 15	1404	366	32	1288
Bryant, James T., Richmond, Va. Feed-water cleaner	326,014	Sept. 8	1053	268	32	1216
Bryant, P. B., *et al.* (See Draper, Charley A., assignor.)						
Bryant, Samuel T., Shelburn, Ind. Link for steam-engines	322,415	July 21	1353	353	32	263

Alphabetical list of patentees, July to September, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Pages.
Bryant, Solon, Worcester, Mass. Corset	322,251	July 14	1136	296	32	216
Buatt, Solomon P., Bastrop, La. Gold and other metallic amalgam	324,620	Aug. 18	1707	.....	32	855
Buchan, William P., Glasgow, county of Lanark, Scotland. Siphon water-trap	320,713	Sept. 22	1990	522	32	1404
Buchanan, David R., and E. L. Dodge, assignors to R. L. Taft, Springfield, Ill. Producing upon the dials and faces of watches the painted Roman capital numeral letters	323,272	July 28	2538	674	32	486
Buchanan, James A., Hunts City, Ill. Straw-cutting attachment for thrashing-machines	327,064	Sept. 29	2496	652	32	1500
Buchholz, William F., *et al.* (See Roset, Charles F., assignor.)						
Buck, D. Azro A., Waterbury, Conn. Spirometer	325,764	Sept. 8	767	192	32	1163
Buck, Edward A., assignor to himself and E. W. Veazie, Bangor, Me. Driving-calk	325,104	Aug. 25	2431	668	32	997
Buckingham, Joseph P., New York, N. Y. Box	325,729	Sept. 8	693	173	32	1149
Buckler, David, R. D. Cain, J. Tanbert, and E. N. Pelzer, Ionia, Mich. Buggy-boot	322,518	July 21	1504	395	32	290
Buckley, John P., assignor of one-half to P. Echert, Cincinnati, Ohio. Steam-boiler water-feeder	325,195	Aug. 25	2433	668	32	997
Buckner, Marion S., Savannah, Ga. Window	326,943	Sept. 29	2348	614	32	1474
Buehler, Rudolph R., Philadelphia, Pa. Gong door-bell	324,915	Aug. 25	2066	565	32	929
Buffalo Electric Works. (See Lannert, John A., assignor.)						
Bugbee, George W. (See Doane and Bugbee.)						
Buhl & Keller. (See Schneider, Carl H., assignor.)						
Buick, David D., Detroit, Mich. Valve	321,895	July 7	655	170	32	119
Buie, Alfred J., St. Louis, Mo. Grain-scale	321,481	July 7	98	26	32	20
Buist, David, *et al.* (See Alden, Charles E., assignor.)						
Bull, Arthur T., and W. Hill, Jr., Limestone, N. Y. Agitator for tan-vats	324,916	Aug. 25	2067	566	32	929
Bull, Sumner, Walden, N. Y. Soldering-clamp	325,497	Sept. 1	375	92	32	1087
Bull, William B. (See Cahill, William J., assignor.)						
Bullard, Charles W., Chicago, Ill. Knob attachment	323,393	Aug. 4	13	4	32	525
Bullard, George W. (See Enos, John R., assignor.)						
Bulloch, Robert H., assignor of one-half to F. C. Garmany, Savannah, Ga. Mechanical board-measure calculator	324,078	Aug. 11	909	251	32	699
Bullock, Henry P., and H. B. Cook, Jonesborough, Tex. Well-cover	325,816	Sept. 8	815	204	32	1172
Bullock, Jeff. D. (See Noble and Bullock.)						
Bullock, Russell D., *et al.* (See Cary, Charles H., assignor.)						
Bullock, William D., Providence, R. I. Draw-bridge	322,787	July 21	1848	491	32	353
Bulmer, Charles. (See Bulmer, George D. and C.)						
Bulmer, George D. and C., White House, assignors of one-third to W. R. Jones, Braddocks, Pa. Nut-lock	323,235	Sept. 1	6	2	32	1016
Bulova, Joseph, New York, N. Y. Finger-ring	327,431	Sept. 29	2985	780	32	1586
Bumgarner, Abraham, Given, Ohio. Harvester	325,302	Sept. 1	241	60	32	1061
Bumstead, Edwin S., *et al.* (See Hardwick, Joseph O., assignor.)						
Bundsen, Victoria I. H., London, England. Apparatus for affixing stamps	322,578	July 21	1583	{417 418}	32	303
Bungarz, Gottfried, Brooklyn, N. Y. Roundabout	326,474	Sept. 15	1665	435	32	1337
Bunker, William I., Chicago, Ill. Spring	326,944	Sept. 29	2349	614	32	1474
Bunn, Edward F., Westborough, Mo. Cultivator	323,907	Aug. 11	681	191	32	658
Bunnell & Co., J. H. (See Casey, Thomas A., assignor.)						
Bunnell, David M., assignor of one-half to J. H. Bunnell, Brooklyn, N. Y. Drying grain	322,252	July 14	1137	297	32	216
Bunnell, James F., Mexia, Tex. Spring bed-bottom	327,432	Sept. 29	2986	780	32	1587
Bunnell, Jesse H. (See Bunnell, David M., assignor.)						
Bunnell, Jesse H., Brooklyn, N. Y. Electric-switch plug	325,653	Sept. 8	582	147	32	1131
Bunting, John T., Chicago, Ill. Medical compound	325,586	Sept. 1	492	.....	32	1110
Bunting, William, Jr., Boston, Mass., assignor to Meyer, Sniffin Company, (limited,) New York, N. Y. Water-closet	325,587	Sept. 1	492	123	32	1110
Burch, Nancy E., Carthage, Mo. Flower-stand	324,079	Aug. 11	910	252	32	699
Burchfield, Mary M., Kingston, Ill. Steam fruit-drier	323,781	Aug. 4	518	146	32	620
Burden, Frederick L. (See Davis, William F., assignor.)						
Burdge, Jonathan E., Home City, Ohio. Filtering cut-off rain-water spout for cisterns	326,945	Sept. 29	2350	614	32	1474
Burdick, Justin H., Utica, assignor to Burdick Nut Lock Company, Milwaukee, Wis. Nut-lock	323,560	Aug. 4	234	69	32	565
Burdick Nut Lock Company. (See Burdick, Justin H., assignor.)						
Burge, John, Westfield, Mass. Automatic damper-regulator	327,132	Sept. 29	2595	676	32	1517
Burger, S. F., *et al.* (See Slaght, Edwin, assignor.)						
Burgert, Joseph, St. Louis, Mo. Chicken-house	323,782	Aug. 4	519	146	32	620
Burgess, Robert, assignor of one-half to J. F. Reinhard, Passaic, N. J. Engraving-machine	321,492	July 7	99	27	32	20
Burgess, Winfield S., Marathon, N. Y. Automatic lamp-extinguisher	322,579	July 21	1585	418	32	303
Burke, John, assignor of one-half to H. Ellwood, De Kalb, Ill. Cutting apparatus for grain cutting or mowing machines	324,651	Aug. 18	1708	471	32	855
Burke, Stephen M., Edon, Ohio. Grate for furnaces	323,270	July 28	2563	682	32	491
Burkel, Peter, Aurora, Ill. Circular toy bowling-alley	322,416	July 21	1354	353	32	263
Burkhard, Fredk., Trinidad, Colo. Feed-bag	322,253	July 14	1138	297	32	216
Burkhard, Thomas, Brooklyn, N. Y. Stove	322,550	July 21	1567	418	32	304
Burkman, Walfrid, assignor to C. H. Frost, Chicago, Ill. Machine for reducing clay	323,908	Aug 11	682	191	32	659
Burkman, Walfrid, assignor to C. H. Frost, Chicago, Ill. Brick-machine	323,909	Aug. 11	684	{191 192}	32	659
Burky, Joseph, Gridley, Ill. Windmill	322,345	July 14	1255	328	32	238
Burley, Franklin G., Boston, Mass. Bicycle-saddle	326,916	Sept. 29	2351	615	32	1474
Burlingame, Elisha S. (See Burlingame, Henry A. and E. S.)						
Burlingame, Elisha S., Central Falls, R. I., assignor to L. J. Knowles & Brother, Worcester, Mass. Warp-beam for looms	325,236	Sept. 1	7	3	32	1016
Burlingame, Henry A., Griswold, Conn., and E. S. Burlingame, Central Falls, R. I. Tire-tightener	321,578	July 7	232	62	32	45
Burnet, Jacob, Jr., Cincinnati, Ohio. Lamp	324,747	Aug. 18	1625	504	32	878
Burnett, Cuthbert, Hartlepool, county of Durham, England. Apparatus for raising water	325,588	Sept. 1	494	123	32	1110
Burnett, Cuthbert, Hartlepool, county of Durham, England. Apparatus for raising water	326,267	Sept. 15	1405	366	32	1288
Burnham, Alfred S., Parkersburg, Iowa. Folding bed	324,748	Aug. 18	1626	505	32	879
Burnham, Arthur M., assignor to C. Gifford and J. T. Richards, Gardiner, Me. Mop-wringer	326,898	Sept. 22	2293	{596 597}	32	1454
Burnham, George, *et al.* (See Worcester, Edward J., assignor.)						
Burnley, William, assignor of two-thirds to C. A. Hitchcock, North East, and L. F. Watson, Warren, Pa. Telephonic receiver	326,268	Sept. 15	1407	366	32	1288
Burnley, William, assignor of two-thirds to C. A. Hitchcock, North East, and L. F. Watson, Warren, Pa. Telephone-transmitter	326,269	Sept. 15	1409	367	32	1289
Burnley, William, assignor of two-thirds to C. A. Hitchcock, North East, and L. F. Watson, Warren, Pa. Induction-coil	326,270	Sept. 15	1411	367	32	1289
Burns, Robert E., San Francisco, Cal. Apparatus for burning fuel	326,947	Sept. 29	2352	615	32	1474

Alphabetical list of patentees, July to September, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Pages.
Burns, William, Jr., Coshocton, Ohio. Watch-case bezel	321,886	July 7	657	170	32	120
Burr Bed Company. (See Miller, Albert F., assignor.)						
Burrell, Christopher T., Au Sable, Mich. Combined burner and boiler-furnace	324,298	Aug. 11	1218	331	32	757
Burrell, David H., Little Falls, N. Y. Furnace for burning liquid and gaseous fuel	324,005	Aug. 11	806	224	32	681
Burrell & Whitman. (See Jacobs, Robert W., assignor.)						
Burris, Bartley L. (See Reed and Burris.)						
Burrough, Mark S., Merchantville, N. J. Damper for stove and other pipes	322,346	July 14	1256	329	32	239
Burroughs, John W., Salt Lake City, Utah Ter. Velocipede	324,749	Aug. 18	1627	505	32	879
Burroughs, William T., Fort Worth, Tex. Center or other table	326,102	Sept. 15	1170	299	32	1245
Burrows, Daniel, Brooklyn, assignor to J. L. Mott Iron Works, New York, N. Y. Door-connection for water-closet cisterns	327,133	Sept. 29	2596	676	32	1517
Burrows, Willie A., Buffalo, N. Y. Extension service and valve shut-off box	321,483	July 7	102	27	32	21
Burt, Daniel H., *et al.* (See Wiggin, John E., assignor.)						
Burt, David W., *et al.* (See Kellogg, Charles, assignor.)						
Burt, George E., Harvard, Mass. Traction-chain gearing	325,654	Sept. 8	582	148	32	1131
Burt, George E., Harvard, Mass. Pulverizer and spreader	326,015	Sept. 8	1054	268	32	1217
Burt, George E., Harvard, Mass. Automatic-loading cart	326,016	Sept. 8	1055	269	32	1217
Burton, Augustus G., Chicago, Ill. Perforating-machine	321,295	July 28	2570	{684 685 686}	32	492
Burton, George D., New Ipswich, N. H. Carbon electrode for lamps	322,895	July 28	2014	531	32	389
Burton, George D., New Ipswich, N. H. Stock-car	322,896	July 28	2014	{531 532}	32	389
Burton, George D., Boston, Mass. Apparatus for cleaning and trimming finger-nails	327,065	Sept. 29	2497	652	32	1500
Burton, George D., and E. F. Perkins, Boston, Mass. Stock-car	322,897	July 28	2016	532	32	389
Burton, Matthew, Philadelphia, Pa. Feed-bag for horses	326,103	Sept. 15	1171	299	32	1246
Bushfield, William M., Toronto, Ohio. Registering apparatus	327,134	Sept. 29	2597	676	32	1517
Bushnell, William H., and W. H. Van Gilder, Perrysville, Ohio. Sign-board	325,817	Sept. 8	816	204	32	1172
Busiel, Charles A., *et al.* (See Esty, William, assignor.)						
Busiel, Frank E., *et al.* (See Esty, William, assignor.)						
Busiel, John T., *et al.* (See Esty, William, assignor.)						
Butler, Eli T. (See Griscom, McFeely, and Butler.)						
Butler, George W., Chicago, Ill. Job-printer's case	326,475	Sept. 15	1666	435	32	1337
Butler, James D. (See Straw and Butler.)						
Butler, Wesley. (See Brokaw and Butler.)						
Butler, William P., Chicago, Ill. Street-lamp sign	323,850	Aug. 4	599	168	32	636
Butler, William P., Chicago, Ill. Vapor-burning lamp or stove	323,851	Aug. 4	600	169	32	636
Butterfield, Finley R., Concord, N. H. Car-coupling	327,066	Sept. 29	2498	652	32	1501
Butterfield, Francis O., Lynn, Mass. Strainer for funnels, &c	324,060	Aug. 11	911	252	32	699
Butterfield, George F., Stoneham, Mass. Fabric for shoe-soles and other purposes	325,785	Sept. 8	769	192	32	1163
Butterfield, George F., Stoneham, Mass. Boot or shoe sole and heel	326,476	Sept. 15	1667	435	32	1338
Buttler, William. (See Blair and Buttler.)						
Button, John A., Norwich, Conn. Beer-drawing apparatus	326,017	Sept. 8	1057	269	32	1217
Butts, J. Belton, Columbus, Ga. Planter, seeder, and fertilizer-distributer	325,393	Sept. 1	243	60, 61	32	1061
Byam, Sewall T. J., New Haven, Conn. Watch-plate	323,852	Aug. 4	601	169	32	636
Byers, Lafayette. (See Chambers and Byers.)						
Bygate, William Y. (See Hubbs and Bygate.)						
Byrne, Edward A., and J. P. Lenahan, Cincinnati, Ohio. Beer-faucet	325,316	Sept. 1	115	33	32	1037
Byrne, John J., Chicago, Ill. Thermostat for fire-alarms	322,417	July 21	1355	354	32	263
Cabell, Milton S., and W. W. Abney, assignors of one-third to R. W. Hanna, Quincy, Ill. Fluid-pressure regulator	322,519	July 21	1505	396	32	290
Cabot Electric Light and Manufacturing Company of New York. (See Cabot, John A., assignor.)						
Cabot, John A., New York, N. Y. Telephone-switch	324,358	Aug. 18	1301	354	32	781
Cabot, John A., New York, N. Y., assignor to Cabot Electric Light and Manufacturing Company of New York. Alternating switch for incandescent lamps	324,979	Aug. 25	2153	588	32	946
Cabot, John A., New York, N. Y., assignor to Cabot Electric Light and Manufacturing Company of New York. Safety device for incandescent lamps	324,980	Aug. 25	2154	588	32	946
Cabot, John A., New York, N. Y., assignor to Cabot Electric Light and Manufacturing Company of New York. Making incandescents	324,981	Aug. 25	2154	589	32	946
Cabot, John A., assignor of one-half to C. G. Worden, New York, N. Y. Gas-lighter	325,786	Sept. 8	769	192	32	1163
Cadby, John W., Troy, N. Y. Attaching bosoms to shirts	323,783	Aug. 4	520	147	32	620
Cadwallader, Frank, Philadelphia, Pa. Hanger for shaftings, pipes, &c	325,051	Aug. 25	2248	617	32	963
Cadwell, Jonathan W. (See Cadwell, Nelson A. and J. W.)						
Cadwell, Nelson A. and J. W., Springfield, Mass. Letter-box	326,948	Sept. 29	2353	615	32	1475
Cadwgan, Thomas C., assignor of one-half to B. F. K. Jennings, Springfield, Ohio. Feed-mill	323,561	Aug. 4	235	69	32	565
Cady, Edward B., Jackson, Mich. Bustle	322,678	July 21	1704	452	32	327
Cady, Henry G., Pine Bluff, Ark. Wedge for vehicle-wheels	323,010	Aug. 11	685	192	32	659
Cady, John W., Hamilton, R. I. Churn	323,784	Aug. 4	520	147	32	620
Caffrey, Francis. (See Pickett, Alva L., assignor.)						
Caffrey, Richard, White Haven, Pa. Track-gage	326,271	Sept. 15	1412	367	32	1289
Cahill, William J., assignor of one-half to W. B. Bull, Lenox, Mass. Wash-basin, &c	323,911	Aug. 11	686	192	32	659
Cahoone, Edwin R., Newark, N. J. Mucilage-bottle	326,949	Sept. 29	2355	616	32	1475
Cain, Robert D. (See Buckler, Cain, Taubert, and Pelzer.)						
Cain, Robert M., Kokomo, Ind. Oven for gas, oil, and vapor stoves	322,418	July 21	1357	354	32	264
Cairns, Thomas. (See Pruim, Hiram P., assignor.)						
Calahan, Edward A. (See Delaney and Calahan.)						
Calaway, Carmi A., Austinburg, Ohio. Road-grader	325,156	Aug. 25	2376	654	32	987
Caldwell, Benjamin F., assignor of one-half to A. Wally, Montrose, Mo. Bracket	325,196	Aug. 25	2434	669	32	998
Caldwell, Charles H. (See Caldwell, William C. and C. H.)						
Caldwell, John, *et al.* (See Alden, Charles E., assignor.)						
Caldwell, William C. and C. H., Monroe, Mich. Folding clothes-line supporter	326,623	Sept. 22	1869	489	32	1381
Calef, Joseph W., North Easton, Mass. Combined rake and hoe	322,254	July 14	1139	297	32	217
Calely, Edward L., Philadelphia, assignor to G. W. Floyd, I. I. Wells, I. Brooke, C. W. and W. Wagner, I. Hallman, and D. Finkbiner, Royer's Ford, Pa. Heating-stove	321,681	July 7	361	96	32	68
Calhoun, Walter, Troy, assignor of one-half to J. Pennie, Jr., Albany, N. Y. Metallic bung-bush	322,255	July 14	1140	298	32	217
Call, James, Boston, Mass. Boot-treeing machine	324,982	Aug. 25	2155	589	32	946
Cameron, Donald R., Military Barrack, Sheerness, county of Kent, England. Coupling to communicate rotary motion between axes	321,579	July 7	233	62	32	45
Camp, Edgar B. (See Oakes and Camp.)						
Camp, Myron, Sedgwick, Kans. Door-shield	327,238	Sept. 29	2717	707	32	1540
Campany, Milton E., assignor of one-half to F. W. Thompson, Muskegon, Mich. Hame-fastener	323,853	Aug. 4	602	169	32	636

Alphabetical list of patentees, July to September, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Campbell, Alexander, Brooklyn, N. Y. Pipe-flanging machine	323,109	July 28	2319	613, 614	32	445
Campbell, Andrew, Brooklyn, assignor to J. and E. McLoughlin, New York, N. Y. Gripper-motion for printing-machines	321,922	July 7	362	96, 97	32	68
Campbell, Andrew, Brooklyn, assignor to J. and E. McLoughlin, New York, N. Y. Superimposing and folding machine	321,683	July 7	366	97, 98	32	69
Campbell, Andrew, Brooklyn, assignor to J. and E. McLoughlin, New York, N. Y. Rotary folding-machine	321,684	July 7	369	98, 99	32	69
Campbell, Andrew, Brooklyn, assignor to J. and E. McLoughlin, New York, N. Y. Delivery apparatus for printing-machines	323,394	Aug. 4	14	4	32	525
Campbell, Charles. (See Adams, George B., assignor.)						
Campbell, Henry F., and G. H. Mills, Concord, N. H. Device for supporting saws while being ground	326,397	Sept. 15	1574	409	32	1320
Campbell, James, Harrison, Ohio. Combined corn-planter and fertilizer-distributer	324,983	Aug. 25	2156	589	32	946
Campbell, James B., Normanda, Ind. Gate	323,395	Aug. 4	16	5	32	526
Campbell, James E. (See Kramer and Snider, assignors.)						
Campbell, John R., Troy, Minn. Bag filling, weighing, and registering machine	321,793	July 7	521	138	32	97
Campbell, Manson. (See Atwell and Floeter, assignors.)						
Campbell Printing Press and Manufacturing Company. (See Scheidell, John S., assignor.)						
Campbell, Robert, Allegheny, Pa. Device for converting motion	322,679	July 21	1705	452	32	327
Campbell, Robert, Allegheny, assignor to G. L. Peabody, Pittsburg, Pa. Gearing	324,455	Aug. 18	1432	391	32	804
Campbell, Robert, Allegheny, assignor to G. L. Peabody, Pittsburg, Pa. Wrench	322,256	July 14	1141	298	32	217
Campbell, Thomas J., assignor of one-half to M. P. Breckenridge, Westfield, Mass. Wrench	324,299	Aug. 11	1219	332	32	758
Campbell, William A., East Saginaw, Mich. Balance slide-valve	324,222	Aug. 11	1120	304	32	738
Campbell, William A., assignor of one-half to A. F. Bartlett & Co., East Saginaw, Mich. Reversing-valve	324,223	Aug. 11	1121	304	32	738
Campbell, William A., assignor of one-half to A. F. Bartlett & Co., East Saginaw, Mich. Feed mechanism for saw-mill carriages	322,156	July 14	1023	266	32	195
Campfield, Hampton R., Susquehanna, Pa. Sand-feeder for locomotives	324,224	Aug. 11	1122	305	32	739
Candee & Co., L. (See Watkinson, George, assignor.)						
Canniff, George F., Jr., Cleveland, Ohio. Fire-hose bridge for railway-tracks	326,272	Sept. 15	1412	367	32	1289
Canterbury, George W., Bondaville, Mass. Bottle-stopper	324,006	Aug. 11	807	224, 225	32	681
Capell, George M., Passenham, county of Northampton, England. Rotary fan						
Capron, Maturen R. (See Sumner, James J., assignor.)						
Carbonate Mining Company. (See Davis, Robert W., assignor.)						
Card, Augustus M., assignor of one-half to J. A. Skelton, Buffalo, N. Y. Nut-lock	325,589	Sept. 1	495	124	32	1110
Card, George P., assignor of one-fourth to C. B. Parker, Olean, N. Y. Wagon-brake	322,788	July 21	1849	491	32	353
Carey, Elias R., Philadelphia, Pa. Spring-roller curtain-fixture	322,347	July 14	1257	329	32	239
Carey, John E., Gladbrook, Iowa. Measuring-faucet	325,317	Sept. 1	117	33	32	1037
Carey, Wilson W., Lowell, Mass. Pulley	322,898	July 28	2016	533	32	380
Carhart, Edwin M., Providence, R. I., assignor of one-half to E. Holmes, Brooklyn, N. Y. Support for electric cables	324,225	Aug. 11	1123	305	32	739
Caria, William I. (See Keavy, Thomas E., assignor.)						
Carleton, Charles, Lake, Ill. Attachment for connecting coil-springs	325,818	Sept. 8	817	204	32	1172
Carleton, Cyrus, assignor to Brown & Sharpe Manufacturing Company, Providence, R. I. Hair-clipping machine	321,685	July 7	373	99	32	70
Carlewitz, Augnat, Newark, N. J. Cornice and ceiling decoration	323,110	July 28	2321	615	32	446
Carley, John, *et al.* (See Rees, John W., assignor.)						
Carlough, Daniel, Paterson, N. J. Car-coupling	325,819	Sept. 8	818	205	32	1172
Carlson, Carl A., Boston, Mass. Valve for steam-engines	326,398	Sept. 15	1576	409, 410	32	1321
Carlson, Edward, San Francisco, Cal. Portable spool-holder	325,655	Sept. 8	584	148	32	1131
Carnahan, Cyrus M., Pittsburg, Pa. Car-brake	322,899	July 28	2017	533	32	389
Carnahan, Cyrus M., Pittsburg, Pa. Punching-machine	326,950	Sept. 29	2356	616	32	1475
Carney, Charles J. (See Martignoni and Carney.)						
Carnrick, John, New York, N. Y. Medicinal emulsion	327,229	Sept. 29	2717	.....	32	1541
Carnrick, John, New York, N. Y. Medicinal emulsion	327,230	Sept. 29	2718	.....	32	1541
Carnrick, John, New York, N. Y. Medicinal emulsion	327,231	Sept. 29	2719	.....	32	1541
Carnrick, John, New York, N. Y. Medicinal emulsion	327,232	Sept. 29	2720	.....	32	1541
Carnrick, John, New York, N. Y. Medicinal emulsion	327,233	Sept. 29	2721	.....	32	1541
Carpenter, Alice P. (See Carpenter and Wright, assignors.)						
Carpenter, Charles C. (See Phillips, Mary, assignor.)						
Carpenter, Charles C., New York, N. Y. Bustle	324,226	Aug. 11	1124	305	32	739
Carpenter, Charles C., New York, and G. W. Lockwood, Brooklyn, N. Y.; said Lockwood assignor to said Carpenter. Pannier or pannier-skirt	324,360	Aug. 11	1220	332	32	758
Carpenter, Clarence E., Horseheads, N. Y. Catch for jewelry-pins, &c	326,477	Sept. 15	1668	336	32	1338
Carpenter, Edwin P., and M. S. Wright, assignors to A. P. Carpenter, Foxcroft, Me. Organ-action	326,624	Sept. 22	1869	489, 490	32	1381
Carpenter, Robert P., Philadelphia, Pa. Seed-case	323,396	Aug. 4	18	5	32	526
Carpenter, William, Salida, Colo. Watch-case	322,650	July 21	1705	452	32	327
Carpenter, William B., *et al.* (See Long, Edwin, assignor.)						
Carpenter, William L. (See Jorgenson, Axel, assignor.)						
Carpenter, William W., and A. S. Dudley, Granville, Ohio. Gate	322,419	July 21	1358	354	32	264
Carpentier, Eugène N., Paris, France. Looking-glass	324,227	Aug. 11	1125	306	32	739
Carricaburu, Leon B., New York, N. Y. Duplex engine	321,580	July 7	234	62	32	46
Carricaburu, Leon B., New York, N. Y. Steam-actuated valve	321,581	July 7	235	62	32	46
Carrier, Arthur, Bay City, Mich. Door-spring	321,949	July 14	746	195	32	144
Carroll, Michael, Fredericksburg, Iowa. Washing-machine	324,811	Aug. 25	1928	530	32	904
Carroll, William T., Worcester, assignor to G. Draper & Sons, Hopedale, Mass. Spindle-bolster	327,135	Sept. 29	2598	677	32	1517
Carskadon, Thomas R., Keyser, W. Va. Portable building	324,456	Aug. 18	1432	301, 302	32	804
Carson, Charles W. (See Friedrich and Carson.)						
Carson, Franklin R., *et al.* (See Lindgren, George A., assignor.)						
Carson, Robert J., and W. D. Sherman, Dixon; said Sherman assignor to S. B. Wadsworth, C. D. Etnyre, and B. F. Wadsworth, Oregon, Ill. Machine for making drain-tile	326,018	Sept. 8	1058	269	32	1217
Carter, Alba B., Great Falls, N. H., assignor to Eureka Axle Company, Portland, Me. Wheel and axle coupling	324,653	Aug. 18	1709	471	32	856
Carter, Alba B., Great Falls, N. H., assignor to Eureka Axle Company, Portland, Me. Wheel and axle coupling	324,654	Aug. 18	1711	471	32	856
Carter, Caleb H. B., and W. S. Johnson, Omaha, Nebr. Drier	323,785	Aug. 4	521	147	32	620
Carter, Charles C., Burton, Ohio. Hand hay-rake	323,786	Aug. 4	522	147	32	621
Carter, Charles C., Burton, Ohio. Hand hay-rake	323,787	Aug. 4	523	148	32	621
Carter, Charles C., Burton, Ohio. Hand hay-rake	323,788	Aug. 4	524	149	32	621

Alphabetical list of patentees, July to September, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Carter, Charles C., San Francisco, Cal. Smoke-consuming furnace	324,532	Aug. 18	1535	423, 424	32	822
Carter, Clement L., Union City, Ind. Machine for shaping post-auger blades	326,399	Sept. 15	1578	410	32	1321
Carter, David W., Carrington, Dak. Ter., assignor to J. W. Scott, Listowel, county of Perth, Ontario, Canada. Wheel-harrow	324,655	Aug. 18	1712	472	32	856
Carter, Ezra W., Coboes, N. Y. Filtering-paper	324,750	Aug. 18	1828	505	32	879
Carter, Henry C., Montclair, N. J. Wash-board	326,400	Sept. 15	1579	410	32	1321
Carter, Hyland M., Cincinnati, Nebr. Hog-feeder	324,531	Aug. 18	1534	423	32	822
Carter, Thomas C. (See Houck and Carter.)						
Carter, William C., assignor to G. S. Baily, Cincinnati, Ohio. Umbrella-stand	323,397	Aug. 4	19	5	32	526
Cartmell, Minor, and N. Bayless, Urbana, Ohio. Wagon-brake	324,081	Aug. 11	911	252	32	700
Carver Cotton Gin Company. (See Strong, Frederick S., assignor.)						
Carver, Joseph E., Bridgewater, Mass. Cotton-gin	324,457	Aug. 18	1434	392	32	804
Cary, Charles H., assignor of three-fourths to R. D. Bullock, W. T. C. Wardwell, S. P. Colt, P. Hammill, and E. Horton, Bristol, R. I. Rotary engine or pump	326,543	Sept. 22	1755	459	32	1362
Casaday, William L., assignor of one-half to South Bend Iron Works, South Bend, Ind. Wheel-plow	323,496	Aug. 4	145	44	32	549
Case, Bradley W. (See Roberts and Case.)						
Case, Henry, assignor to M. A. Case, Brooklyn, N. Y. Structure for submarine sewers	326,544	Sept. 22	1756	459	32	1362
Case, Margaret A. (See Case, Henry, assignor.)						
Case, Warren, Collinsville, Ill. Churn	325,910	Sept. 8	917	231	32	1192
Case & Willard Thresher Company. (See Lafever, Minard, assignor.)						
Casey, Frederick A., Saco, Me. Car-coupling	326,401	Sept. 15	1579	410, 411	32	1321
Casey, Thomas A., assignor to J. H. Bunnell & Co., New York, N. Y. Electric door-opener	322,681	July 21	1706	452	32	327
Cash, Lewis N., near Eddyville, Ky. Wagon-frame for moving tobacco	322,039	July 14	865	225	32	165
Cashin, Michael, San Francisco, Cal. Boiler-tube expander	324,007	Aug. 11	808	225	32	682
Cashin, Michael, San Francisco, Cal. Billiard-table leg	324,917	Aug. 25	2068	566	32	930
Casner, John, Covington, Pa. Apparatus for removing sheets of glass from annealing-ovens	324,533	Aug. 18	1536	424	32	823
Caspersson, Carl A., Forsbacka, Sweden. Apparatus for pouring and casting metals	324,918	Aug. 25	2069	566	32	930
Cass, Riley, J. McArthur, and W. H. Adkins, Harlan, Iowa. Combined end-gate and scoop-board	326,714	Sept. 22	1993	522, 523	32	1404
Cassidy, Henry R., Delhi, Ohio, and A. Fries, Brookville, Ind. Brick-burning kiln	325,787	Sept. 8	771	193	32	1163
Cassidy, Jacob H., assignor of two-thirds to C. L. Knapp and W. G. Bolman, Leavenworth, Kans. Fruit-jar fastener	326,625	Sept. 22	1872	490	32	1381
Cassidy, Thomas W., Bangor, assignor, by mesne assignments, to himself, C. R. Jones, and W. B. Sawyer, Portland, Me. Cant-hook	326,951	Sept. 29	2358	616	32	1475
Castell, James, Blue Rapids, Kans. Refrigerator	326,952	Sept. 29	2359	617	32	1476
Castle, Goswin, Ava, N. Y. Heel-band for boots and shoes	325,730	Sept. 8	694	173	32	1149
Castro, Angel, New York, N. Y. Marine torpedo	323,900	July 28	2019	533	32	390
Catlin, Charles A., Providence, R. I. Recovering tin from tin-scrap	322,157	July 14	1024	.....	32	195
Catlin, Frank P., Clayton, Wis. Sash-holder	322,520	July 21	1506	396	32	290
Cattanach, Donald D., Providence, R. I. Manufacturing and distilling alcohol and hydrocarbons and rectifying and aging liquors	326,715	Sept. 22	1994	523	32	1405
Cattanach, Donald D., Providence, R. I. Apparatus for the manufacture and distillation of alcohol, hydrocarbons, and acetic acid, and for aging and refining liquors	326,716	Sept. 22	2000	524	32	1404
Cavalli, Andrea, San Francisco, Cal. Reel for holding wire in the coil	325,394	Sept. 1	244	61	32	1062
Cavanagh, Michael F., St. Louis, assignor to J. P. Snyder, Jefferson City, Mo. Horse-collar	323,274	July 28	2541	675	32	467
Cavelle, George W., Cleveland, Ohio. Button	326,080	Sept. 8	1147	292	32	1234
Celluloid Manufacturing Company. (See Hyatt and Everding, assignors.)						
Chabot, Cyprien, assignor to Philadelphia Machinery Company, Philadelphia, Pa. Mechanism for forming beveled rims on watch-cases	321,686	July 7	375	100	32	70
Chabot, Cyprien, assignor to Philadelphia Machinery Company, Philadelphia, Pa. Forming rims on watch-cases	321,687	July 7	376	100	32	70
Chadwick, Horace E., Providence, R. I. Bracelet	322,901	July 28	2021	534	32	390
Chain, Newton W., assignor of one-half to F. E. Norwood, Columbia, Mo. Boiler washing-machine	327,136	Sept. 29	2599	677	32	1518
Chalfant, George M. (See Wilson and Chalfant.)						
Chamberlain, Marcus W., assignor of three-fourths to E. A. and F. S. Ely, Branchville, N. J., and P. A. Ely, Madison, N. Y. Grappling-fork	326,953	Sept. 29	2360	617	32	1476
Chamberlin, Hiram M., Waltham, Mass. Saw-set	325,052	Aug. 25	2248	617	32	904
Chambers, Asa. (See Chambers and Davis.)						
Chambers, Daniel T., Mechanicsburg, Ohio, assignor of one-third to E. P. Clark, Holyoke, Mass. Holdback	322,158	July 14	1026	266	32	195
Chambers, Daniel T., Mechanicsburg, Ohio, assignor to himself and E. P. Clark, Holyoke, Mass. Holdback for vehicle-shafts	322,159	July 14	1027	267	32	195
Chambers, Daniel T., Mechanicsburg, Ohio, assignor, by mesne assignments, of one-third to E. P. Clark, Holyoke, Mass. Scythe-snath fastener	322,692	July 21	1708	453	32	328
Chambers, George, Peckham, county of Surrey, England. Tip and stud for boots or shoes	326,844	Sept. 22	2200	574	32	1441
Chambers, John G., and L. Byers, Thorntown, Ind. Fence	324,656	Aug. 18	1713	472	32	856
Chambers, John R., S., and A., and W. J. Davis, Cleburne, Tex. Pulverizer and cultivator	322,420	July 21	1360	355	32	264
Chambers, Josephus C. (See Jackson and Chambers.)						
Chambers, Silas. (See Chambers and Davis.)						
Chambers, Washington I., Kingston, N. Y. Marine torpedo	327,390	Sept. 29	2922	702	32	1575
Champe, James M., Litchfield, Ill. Churn	321,688	July 7	377	100	32	70
Champion Safety Lock and Novelty Company. (See Rosentreter, Frank L., assignor.)						
Chance, William E. (See Mason and Conqueror, assignors.)						
Chandler, Clarence A., East Bridgewater, Mass. Faucet-socket	321,689	July 7	377	101	32	70
Chandler, Pliny F., Springfield, Mass. Gage for drawing-knives	322,040	July 14	866	225	32	166
Chapin, George L., Chicago, Ill. Hand fire-extinguisher	322,683	July 21	1709	453	32	328
Chapin, William G., Brooklyn, N. Y., assignor to J. T. Halsey, Richmond, Va. Valve-motion for steam-engines	322,348	July 14	1259	329	32	239
Chapin, William H., Springfield, Mass. Elastic-tired wheel	323,635	Aug. 4	335	95	32	584
Chapman, Elwood, Emporia, Kans. Store-service apparatus	326,845	Sept. 22	2201	574, 575	32	1441
Chapman, Eugene M., Holyoke, Mass. Combined button and pin	326,717	Sept. 22	2007	524	32	1406
Chapman, Samuel A., Waterbury, assignor to J. C. Hammond, Jr., Rockville, and T. E. King, Westport, Conn. Shoe-clasp	322,789	July 21	1850	493	32	353
Chapman, William D., Theresa, N. Y. Trolling-bait	323,111	July 28	2322	615	32	446
Charles, Cassina M. (See Charles, James D., L. H., and C. M.)						
Charles, James D., L. H., and C. M., Litchfield, Ill. Stretcher	324,228	Aug. 11	1126	306	32	739
Charles, Leonidas H. (See Charles, James D., L. H., and C. M.)						
Charmbury, Henry, Newark, N. J. Hat-sweat	324,082	Aug. 11	913	253	32	700

Alphabetical list of patentees, July to September, inclusive—Continued

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Charpantier, Jules V., New Orleans, La. Apparatus for facilitating the multiplication of numbers	322,160	July 14	1027	267	32	195
Charpantier, Jules V., New Orleans, La. Calculator	322,161	July 14	1031	267	32	196
Chase, Alfred A., and D. H. Hesselton, Holden, assignors of one-third to G. W. Fiske, Worcester, Mass. Device to be substituted for thresholds	325,237	Sept. 1	8	3	32	1016
Chase, Andrew J., assignor to Childs, Chase & Co., Boston, Mass. Refrigerator	324,229	Aug. 11	1127	307	32	740
Chase, Edward A. (See Monteiro, Garcia, assignor.)						
Chase, Elbredge O., Lynn, Mass. Man-hole for fire-engine houses	325,731	Sept. 8	695	173	32	1149
Chase Elevator Company. (See Chase, Henry I., P. F., and H. G., assignors.)						
Chase, Henry G. (See Chase, Henry I., P. F., and H. G.)						
Chase, Henry I., P. F., and H. G., assignors to Chase Elevator Company, Chicago, Ill. Drying grain	322,257	July 14	1142	298	32	217
Chase, Horace. (See Chase, Milton, assignor.)						
Chase, Horace P., New Bedford, assignor of three-fourths to G. Draper & Sons, Hopedale, Mass. Spindle-bolster	327,137	Sept. 29	2600	677	32	1518
Chase, Milton, Haverhill, Mass. Machine for forming flanges upon soft pipes	322,790	July 21	1851	492	32	353
Chase, Milton, Haverhill, Mass. Cushion for the tires, &c., of vehicle-wheels	324,534	Aug. 18	1538	424	32	823
Chase, Milton, Haverhill, assignor of one-half to H. Chase, Boston, Mass. Vapor-generator	326,478	Sept. 15	1669	436	32	1336
Chase, Nehemiah, *et al.* (See Stanton, Lafayette J., assignor.)						
Chase, Philander F. (See Chase, Henry I., P. F., and H. G.)						
Chemische Fabrik auf Actien. (See Kempf, Theodor, assignor.)						
Cheney, Cleveland J., Lowell, Mass. Water-gate	323,562	Aug. 4	236	69	32	565
Chesebro, Denison S., Geddes, N. Y. Machine for forming earthen and stone ware	325,911	Sept. 8	918	231, 232	32	1192
Chesebro, Frank H., South Haven, Mich. Hand seed-drill	327,234	Sept. 29	2722	707	32	1541
Cheshire Watch Company. (See Guernsey, Charles S., assignor.)						
Chess, Harvey B., Pittsburg, Pa. Rolling-mill	321,794	July 7	523	138, 139	32	97
Chess, Harvey B., Pittsburg, Pa. Heating-burner for gas and other hydrocarbons	322,791	July 21	1852	492	32	354
Chester, Samuel M., Cincinnati, Ohio. Vehicle-top	321,795	July 7	529	140	32	98
Chester, Samuel M., Cincinnati, Ohio. Carriage	326,846	Sept. 22	2203	575	32	1441
Chevalier, Edward Y., Hannibal, Mo. Altar	325,498	Sept. 1	376	92	32	1087
Chevallier, Louis, Brooklyn, N. Y. Mechanical movement	323,789	Aug. 4	524	148	32	621
Childers, Hiram, El Dorado, Kans. Combined anvil, drill, and vise	326,402	Sept. 15	1581	411	32	1322
Childs, Chase & Co. (See Chase, Andrew J., assignor.)						
Chilton, Franklin H., assignor to Empress Embroiderer Company, New York, N. Y. Embroidering attachment for sewing-machines	322,902	July 28	2022	534	32	300
Chilton, Franklin H., New Rochelle, assignor to Empress Embroiderer Company, New York, N. Y. Embroidering attachment for sewing-machines	325,499	Sept. 1	377	92	32	1067
Chisholm, Samuel S. (See Bradshaw, Silas S., assignor.)						
Chisholm, Samuel S. (See White, B. Clark, assignor.)						
Chisholm, Toliver L., Sherman, Tex. Motor	325,318	Sept. 1	118	34	32	1037
Choate, Augustus E., Cochran, Ga. Seed-planter	322,421	July 21	1361	356	32	265
Christiansen, Simon. (See Theinert and Christiansen.)						
Christie, John. (See Andrew, Frederick, assignor.)						
Christin, Arthur, Chicago, Ill. Sleeping-car	324,815	Aug. 25	1933	531, 532	32	904
Christopher, George W., Paris, assignor of one-half to J. M. Grant, Deport, Tex. Liniment	324,919	Aug. 25	2070	.....	32	930
Christy, L. A., *et al.* (See Hummel, William C. B., assignor.)						
Chubb, George H. and H. W., London, England. Combined latch and lock	326,696	Sept. 22	1873	491	32	1381
Chubb, Harry W. (See Chubb, George H. and H. W.)						
Chuchu, Athanase, Bahia, Brazil. Repeating fire-arm	325,053	Aug. 25	2250	618	32	964
Church, Duane H., Waltham, assignor, by mesne assignments, to R. E. Robbins, Boston, Mass., and T. M. Avery, Chicago, Ill., trustees. Stem-winding watch. (Reissue)	10,631	Aug. 4	665	187	32	648
Churchill, Henry R., Buffalo, N. Y. Machine for softening sheep-skins	327,138	Sept. 29	2600	677	32	1518
Chrystler, William, La Grange, Ind. Molasses-cooler	327,067	Sept. 29	2500	653	32	1501
Cilla, William. (See Davey, Petherick, assignor.)						
Cissel, Richard S. T., Elizabeth, N. J. Furnace-grate	323,112	July 28	2323	615	32	446
Clapp, George. (See Marston and Clapp.)						
Clapp, James H., Chicago, Ill., assignor to J. L. Board. Stamping-press	324,812	Aug. 25	1929	530	32	904
Clapp, Julius M., Newton, Mass. Exhibiting-case	322,903	July 28	2024	534	32	300
Clapp, Rollin M., Burlington, Vt. Sliding window-blind	327,235	Sept. 29	2723	707	32	1541
Clapp, Rollin M., Burlington, Vt. Sliding window-blind	327,236	Sept. 29	2724	708	32	1541
Clare, George T., Jersey City, N. J. Mixed paint	324,230	Aug. 11	1120	307	32	740
Clark, Aaron, Jersey City, N. J. Apparatus for cleaning gas	324,231	Aug. 11	1130	307	32	740
Clark, Alfred S., Broadhead, Wis. Covering for spring bed-bottoms	322,102	July 14	1032	268	32	196
Clark, Benjamin S., *et al.* (See Stanford, Frank H., assignor.)						
Clark, Charles D. (See Hanson and Clark.)						
Clark, Charles S. (See Harvey and Clark.)						
Clark, E. P. (See Chambers, Daniel T., assignor.)						
Clark, Embury P. (See Chambers, Daniel T., assignor.)						
Clark, Emri W., Nashua, N. H. Fish-grapple	321,796	July 7	531	140	32	99
Clark, Franklin H., Cleveland, Ohio. Atomizer	327,237	Sept. 29	2725	708	32	1541
Clark, George A. (See Joslin, Hiram L., assignor.)						
Clark, George P., Windsor Locks, Conn. Wheel or pulley	322,581	July 21	1568	418, 419	32	304
Clark, Harry M. (See Blount, John G., assignor.)						
Clark, Heman, New York, N. Y. Dredging and grappling apparatus	326,627	Sept. 22	1874	491	32	1381
Clark, Herbert M. (See Swan, Henry C., assignor.)						
Clark, James H., Chicago, Ill. Sewer	325,220	Sept. 8	819	205	32	1172
Clark, John K., Buffalo, N. Y. Rail support or tie for railways	323,275	July 28	2541	675, 676	32	487
Clark, John M. (See Littleton and Clark.)						
Clark, John R., and H. Tindell, Harrison, N. J. Machine for picking and burring wool or cotton	326,273	Sept. 15	1413	368	32	1289
Clark, John W., Hermanville, Miss. Seed-planter	324,458	Aug. 18	1435	392	32	805
Clark, Joseph, *et al.* (See Roach, Michael J., assignor.)						
Clark, Joseph E. L. and W. J. K., Brixton, county of Surrey, and R. D. Bowman, Leyton-stone, county of Essex, England. Electric-arc lamp	324,008	Aug. 11	809	225, 226	32	682
Clark, Julius S., Melrose, Mass. Foot-rest	322,792	July 21	1854	492	32	354
Clark, Marcus M., Vermont, Ill. Bow-facing oar	325,055	Aug. 25	2252	618	32	964
Clark, Melville, Chicago, Ill. Reed-organ stop-action	326,274	Sept. 15	1415	368	32	1290
Clark, Thomas C., Cohoes, N. Y. Faucet for wash-bowls	323,563	Aug. 4	237	69	32	565

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Clark, Thomas J., *et al.* (See Bouvier, Louis P., assignor.)						
Clark, Thomas R., New York, N. Y. Glazed kid-leather	322,521	July 21	1507	.....	32	290
Clark, William J. K. (See Clark and Bowman.)						
Clark, William S., and J. F. Murphy, Little Falls, N. Y. Trimming attachment for sewing-machines	324,813	Aug. 25	1930	531	32	904
Clarke, Alauson P., Auburn, N. Y. Manufacture of rakes	323,913	Aug. 11	688	193	32	660
Clarke, Alexander D., New York, N. Y. Apparatus for cleaning filters of ore-concentrators	323,790	Aug. 4	525	148	32	621
Clarke, Alexander D., New York, N. Y. Filtering-table for ore-concentrators	323,791	Aug. 4	526	149	32	622
Clarke, Charles L., Manchester, county of Lancaster, England, assignor to Domestic Electrical Manufacturing Company, Boston, Mass. Portable electrical gas-lighting apparatus	324,009	Aug. 11	812	226	32	682
Clarke, Charles L., Manchester, county of Lancaster, England, assignor to Domestic Electrical Manufacturing Company, Boston, Mass. Electric generator or spark-producing apparatus	324,010	Aug. 11	816	226	32	683
Clarke, Erwin B., Grand Rapids, Mich. Carpet-sweeper	325,732	Sept. 8	696	174	32	1150
Clarke, John N., Jr., Cincinnati, Ohio. Horseshoe-machine	325,054	Aug. 25	2251	618	32	964
Clarke, Joseph H., Springfield, Ohio. Chin-rest	324,083	Aug. 11	914	253	32	700
Clarke, Royal W., Richland Centre, Wis. Adjusting saws	323,912	Aug. 11	687	192	32	660
Clarkson, Joseph T., Amesbury, Mass. Jump-seat carriage	324,232	Aug. 11	1131	307	32	740
Clarkson, William H., New York, N. Y. Copy-holder and blotter	324,359	Aug. 18	1303	354	32	781
Class, William F., and A. J. Weatherhead, assignors of one-third to G. Collins, Cleveland, Ohio. Reciprocating motor	326,545	Sept. 22	1757	460	32	1362
Claude, Louis G., assignor, by mesne assignments, to Russell Horseshoe Company, New York, N. Y. Manufacture of horseshoes	324,360	Aug. 18	1304	354	32	781
Claude, Louis G., assignor, by mesne assignments, to Russell Horseshoe Company, New York, N. Y. Manufacture of horseshoes	324,361	Aug. 18	1306	355	32	781
Clausen, Adler C., assignor of one-half to J. C. Slafter, Minneapolis, Minn. Button-fastener	321,690	July 7	679	101	32	71
Clay, Henry T., assignor of one-third to S. G. Diehl, Philadelphia, Pa. Electric railway	327,381	Sept. 29	2925	762, 763	32	1575
Clayton, Edward, Halifax, Nova Scotia, Canada. Clothing sample	323,113	July 28	2324	616	32	447
Clayton, James, Brooklyn, N. Y. Sliding connection for machinery	326,628	Sept. 22	1876	491	32	1381
Clayton, John H., St. Johnsbury, Vt. Mechanism for operating road-crossing gates	326,275	Sept. 15	1416	368, 369	32	1290
Clayton, Thomas. (See Judge and Clayton.)						
Cleaver, Joseph B., New York, N. Y. Acoustic telephone	325,500	Sept. 1	379	93	32	1088
Clemence, Addison B. (See Hall, Clemence, and Setterwall.)						
Clemens, Samuel L., Hartford, Conn. Game apparatus	324,535	Aug. 18	1539	425	32	824
Clemens, Hiram M., Virginia City, Nev. Bridle-bit	327,139	Sept. 29	2601	678	32	1518
Clemson, George N., Middletown, N. Y. Handsaw	325,157	Aug. 25	2276	654	32	967
Clemson, William, Middletown, N. Y. Velocipede	324,536	Aug. 18	1540	425	32	824
Cleveland, Brown & Co. (See Brown, Richard, assignor.)						
Cleveland Electric Motor Company. (See Stockwell, Levi W., assignor.)						
Clewes, William B., and F. G. Ryan, Brattleborough, Vt. Combined foot-treadle and rod	322,793	July 21	1854	493	32	354
Cliff, Edward, assignor to Cliff & Righter Company, (limited,) Oswego, N. Y. Elliptic spring	326,847	Sept. 22	2205	575	32	1442
Cliff & Righter Company. (See Cliff, Edward, assignor.)						
Clift, Charles W. (See Smith and Clift.)						
Cline, George J., Goshen, Ind. Wheel-harrow	322,258	July 14	1144	299	32	217
Cline, George J., Goshen, Ind. Step-ladder hinge	325,501	Sept. 1	380	93	32	1088
Clinkscales, Albert M., *et al.* (See Jernagan, Alexander J., assignor.)						
Clopton, John B., Bastrop, Tex. Saw-gummer	323,114	July 28	2324	616	32	447
Clot, John B., San Francisco, Cal. Air or gas compressing pump	325,395	Sept. 1	245	61	32	1062
Clother, Jane A., Cumberland, Wis. Kettle-drainer and steam ventilator and conductor	326,629	Sept. 22	1878	492	32	1382
Cloud, Daniel R., Detroit, Mich. Double-acting pump	323,398	Aug. 4	20	5, 6	32	526
Cloud, John W., Altoona, Pa. Draft apparatus for cars	324,084	Aug. 11	915	253	32	700
Cloud, John W., Altoona, Pa., assignor of one-third to C. F. Houghton, Corning, N. Y. Lens	325,656	Sept. 8	584	148	32	1131
Cloud, John W., and S. Porcher, Altoona, Pa. Lubricator for steam-engines	324,362	Aug. 18	1309	355, 356	32	782
Cloud, John W., and A. Vogt, Altoona, Pa. Motor	322,794	July 21	1856	493	32	354
Cloud, John W., and A. S. Vogt, Altoona, Pa. Device for securing doors	327,238	Sept. 29	2726	708	32	1542
Clow, William M., East Wheatland, Ill. Wire fence-stay	323,399	Aug. 4	21	6	32	527
Coalter, John A., Wolf Creek, W. Va. Bee-hive	324,657	Aug. 18	1714	472	32	856
Coates, Joseph H. (See Potts, Joseph C., assignor.)						
Coats, Samuel, Bridgeport, Pa. Animal-releasing device	327,239	Sept. 29	2727	708	32	1542
Cobb, Edward S., Terre Haute, Ind. Tool-feeding mechanism for lathes	322,904	July 28	2025	535	32	391
Cobb, John P., College City, Cal. Boring-machine	324,930	Aug. 25	2070	566, 567	32	930
Cobb, John P., College City, Cal. Pump	326,201	Sept. 15	1312	340	32	1271
Cobb, Oliver P., Aurora, Ind. Trace and hame connection	326,546	Sept. 22	1758	460	32	1362
Cochran, John J., *et al.* (See Iske, Anthony, assignor.)						
Cochran, Rufus F., Chiversville, Ga. Cotton-chopper	323,497	Aug. 4	147	44	32	549
Cochrane, William F., Harper's Ferry, W. Va. Harvester	325,319	Sept. 1	119	34	32	1037
Cochrane, William F., Cambridge City, Ind. Gearing and relief mechanism for driving rolls	327,240	Sept. 29	2728	709, 710	32	1542
Cocker, Frederick, Danbury, Conn., and G. Yule, Newark, N. J. Hat-curling machine	323,296	July 28	2583	686, 687	32	493
Cockrell, Allin, Lamar, Mo. Churn	327,241	Sept. 29	2734	710	32	1543
Codd, Hiram, London, England. Apparatus for opening bottles used for containing aerated liquids and which are fitted with internal stoppers	326,630	Sept. 22	1879	492	32	1382
Codling, Robert B. (See Ingraham and Codling.)						
Cody, Elmore D., Dunkirk, N. Y. Universal joint for steam, water, and other liquid pipes	325,056	Aug. 25	2253	619	32	964
Coester, Charles, Jr., Bridgeport, Conn. Toy	324,233	Aug. 11	1132	308	32	740
Coffee, Robert W., Liberty, Va. Soldering-iron	325,158	Aug. 25	2277	655	32	988
Cofield, Peter T., New Carlisle, Ohio. Pump-valve	322,795	July 21	1857	494	32	355
Cofield, Peter T., New Carlisle, Ohio. Wind-engine	322,796	July 21	1859	494	32	355
Coffin, David N. B., Newton Center, Mass. Odometer	323,498	Aug. 4	148	44, 45	32	549
Coffin, John. (See Leighton and Coffin.)						
Coffin, Norman E., Elm Hall, Mich. Churn	322,349	July 14	1261	329	32	239
Coggeshall, William T., Lowell, Mass. Loom-shuttle spindle	323,115	July 28	2326	616	32	447
Cogswell, Merritt H., Blissfield, Mich. Harrow	323,400	Aug. 4	22	6	32	527
Cogswell, Mortimer C., New York, N. Y. Grinding-mill	324,363	Aug. 18	1310	356	32	782
Cohen, Robert L., assignor of one-half to S. G. Diehl, Philadelphia, Pa. Electric railway	327,382	Sept. 29	2926	763	32	1576

Alphabetical list of patentees, July to September, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Cohin, Stanislas F., Villaines-la-Gandis, assignor to Roquet & Cohin, Rouen, France. Boring-machine	326,202	Sept. 15	1313	340 341	32	1272
Colburn, George S., Gardner, Mass. Boot and shoe blacking	325,320	Sept. 1	120	.....	32	1038
Colburn, Ledyard, Boston, Mass., assignor of one-half to R. R. Colburn, Ansonia, Conn. Hydrocarbon-burner	324,816	Aug. 25	1935	532	32	905
Colburn, Richard R. (See Colburn, Ledyard, assignor.)						
Colby, Branch H., Hillsdale, Mich. Prescription-file for preserving prescriptions	327,140	Sept. 29	2602	678	32	1518
Colby, James F., Buffalo, N. Y. Baby-carriage	326,954	Sept. 29	2362	617	32	1476
Coldwater Road Cart Company. (See Schmedlen, William H., assignor.)						
Cole, Alma B., Kingston, Ill. Wheel-guard	325,821	Sept. 8	920	205	32	1173
Cole, Cary O., assignor of two-thirds to D. W. Shiek, Letts, Iowa, and E. G. Grosjean, Mount Eaton, Ohio. Sash-fastener	326,848	Sept. 22	2207	575	32	1442
Cole, Sherman M., Anamosa, Iowa. Measuring-pump	324,301	Aug. 11	1222	332	32	758
Cole, Thomas H., East Albany, and C. McCarrick, Tivoli, N. Y. Combination-lock	325 321	Sept. 1	121	34, 35	32	1038
Cole, Warren, Jr., Keokuk, Iowa. Axle-lubricator	322,905	July 28	2028	535	32	391
Cole, William A. (See Fairbanks and Cole.)						
Cole, William H., Marysville, Ohio. Book-holder	324,234	Aug. 11	1132	308	32	741
Cole, William M. A., Baltimore, Md. Canopy	326,849	Sept. 22	2208	576	32	1442
Coleman, Abner, Newark, N. J. Drying apparatus	323,041	July 14	868	225 226	32	166
Coleman, Abner W. (See Miller, Bower, and Coleman.)						
Coleman, Francis W., Rodney, Miss. Vehicle-seat	322,684	July 21	1710	453	32	328
Coleman, Hamilton D., New Orleans, La. Reversing-gear	322,797	July 21	1859	494	32	355
Collender, Hugh W., New York, N. Y. Billiard-table cushion. (Reissue)	10,647	Sept. 29	3079	802	32	1602
Coller, Philip A., New Gloucester, Me. Skimming device for creaming-cans	323,297	July 28	2587	687	32	493
Collins, Alonzo, Chetopa, Kans. Trace-holder for back-bands	325,502	Sept. 1	380	93	32	1088
Collins, Charles H., assignor of one-half to R. C. Collins, Elkton, Md. Whiffletree-hook	323,116	July 28	2327	616	32	447
Collins, Eugene F., Anson, Me. Hoof-pad	323,914	Aug. 11	689	193	32	660
Collins, George. (See Claas and Weatherhead, assignors.)						
Collins, George H. (See Smith and Collins.)						
Collins, John T., Norwich, Conn. Lounge	323,915	Aug. 11	689	193	32	660
Collins, Joseph B., Grand Rapids, Mich. Water-wheel	326,718	Sept. 22	2007	525	32	1406
Collins, R. C. (See Collins, Charles H., assignor.)						
Collins, Stephen, Huntsville, Ala., assignor of two-thirds to J. S. Elder and A. B. Maxey, Clarksville, Tenn. Tobacco-drier	321,797	July 7	531	140	32	99
Collins, W. Newton, *et al.* (See Wittmack, Charles A., assignor.)						
Collins, Wallace G. (See Sloan, Leander E., assignor.)						
Collis, John, Des Moines, Iowa. Boiler-furnace	326,547	Sept. 22	1761	461	32	1363
Collyer, Charles W. and W. C., assignors of one-half to P. B. Ball and G. Jenkins, Lynn, Mass. Sewing-machine or other motor	322,422	July 21	1363	356	32	265
Collyer, Charles W. and W. C., assignors of one-third to C. H. Ward, Lynn, Mass. Seam-rubbing machine	324,085	Aug. 11	916	254	32	701
Collyer, Charles W. and W. C., assignors of one-third to C. H. Ward, Lynn, Mass. Seam-beating machine	324,086	Aug. 11	918	254	32	701
Collyer, William C. (See Collyer, Charles W. and W. C.)						
Colt, Samuel P., *et al.* (See Cary, Charles H., assignor.)						
Colt, Samuel S., Orange, N. J. Bevel and miter	322,906	July 28	2029	536	32	392
Colts Patent Fire Arms Manufacturing Company. (See Franklin, William B., assignor.)						
Colts Patent Fire Arms Manufacturing Company. (See Knons, Franklin F., assignor.)						
Colwell, Edward, Milwaukee, Wis. Double-tree	326,850	Sept. 22	2209	576	32	1442
Combination Power Punch Eyeleting Machine Company. (See Hawkins, Lorenzo D., assignor.)						
Combs, Abel, Philadelphia, Pa., assignor to Plume & Atwood Manufacturing Company, Waterbury, Conn. Wick-raiser for lamps	324,087	Aug. 11	920	254	32	701
Comegys, Edward W., Edesville, Md. Corn-shocker	326,403	Sept. 15	1582	411	32	1322
Comer, Joseph A., assignor to National Saw Guard Company, Indianapolis, Ind. Saw-guard	321,484	July 7	103	28	32	21
Comins, Frank B., New Bedford, Mass. Automatic sprinkler	322,685	July 21	1711	453	32	328
Comly, James, Philadelphia, Pa., assignor to G. W. Root, Hartford, Conn. Preserve-jar stopper	323,636	Aug. 4	336	96	32	584
Comstock, Isaac D., and E. J. Gibson, Adrian, Mich. Corner-iron for chairs	323,117	July 28	2328	617	32	447
Comstock, James H., Newport, R. I. Nut-lock	321,691	July 7	379	101	32	71
Conard, Léon P., assignor of one-half to C. F. Veit and G. Dickman, London, England. Button or stud	324,302	Aug. 11	1222	332	32	758
Conard, Léon P., assignor of two-thirds to C. F. Veit and G. Dickman, London, England. Button	324,303	Aug. 11	1223	333	32	758
Conard, Léon P., assignor of one-half to C. F. Veit and G. Dickman, London, England. Button	325,912	Sept. 8	921	232	32	1193
Condit, Edward A., Hoboken, N. J. Drip-cup for lamps	325,057	Aug. 25	2254	619	32	965
Connel, James M., Newark, Ohio. Machine for sharpening mower and reaper knives	325,159	Aug. 25	2378	655	32	988
Connell, Lewis W., Joliet, Ill. Barb-fence-wire machine	325,733	Sept. 8	697	174	32	1150
Connell, Platt C., Chicago, Ill. Paint composition	325,160	Aug. 25	2380	.....	32	988
Connelly, William A., Boston, Mass. Indicating-plate	322,259	July 14	1145	299	32	217
Conner and Mather Manufacturing Company. (See Conner, Thompson M. and T. M., assignors.)						
Conner, Laurence H., Grand View, Tex. Churn	324,537	Aug. 18	1541	425	32	824
Conner, Ovid W., Wabash, Ind. Tag and tag-fastener	326,404	Sept. 15	1583	411	32	1322
Conner, Theodore M. (See Conner, Thompson M. and T. M.)						
Conner, Thompson M. and T. M., assignors to Conner and Mather Manufacturing Company, Richmond, Ind. Roller-skate	322,350	July 14	1262	330	32	240
Conner, William P., assignor to School Furnishing Company, Bloomsburg, Pa. School-desk	327,242	Sept. 29	2735	710	32	1544
Connett, Matthew F., assignor of two-thirds to C. A. Orr, Springfield, Ill. Machine for making wire and picket fencing	325,504	Sept. 1	382	94, 95	32	1088
Connolly, Charles, Turner's Falls, Mass. Self-closing glove-holder	326,104	Sept. 15	1172	299	32	1246
Connolly, William, South Norwalk, Conn. Oil-drip pan for sewing-machines	322,522	July 21	1507	396	32	290
Connolly, William, South Norwalk, Conn. Oil-strainer	323,637	Aug. 4	337	96	32	585
Conover & Co., J. S. (See Mac Kusick, Elmer F., assignor.)						
Conover, David, Mount Vernon, Ind. Churn	325,238	Sept. 1	9	4	32	1017
Conover, George W., Philadelphia, Pa. Combined cigar-case and match-holder	321,485	July 7	104	28	32	21
Conqueror, John. (See Mason and Conqueror.)						
Conrad, David S., Waynesborough, Pa. Scratch-gage	325,505	Sept. 1	389	96	32	1089
Conroy, Thomas J. (See Robinson, Frederic C. P., assignor.)						
Converse, Samuel, Middletown, Conn. Washing-machine	325,913	Sept. 8	922	232 233	32	1193
Cook, Albert G., Boston, Mass. Constructing oil-troughs for tree-protectors	322,523	July 21	1508	396	32	290

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Cook, George, Boston, Mass. Piano	326,105	Sept. 15	1173	300	32	1246
Cook, George, Boston, Mass. Piano	326,106	Sept. 15	1174	300	32	1246
Cook, George W., assignor to M. B. Kennedy, Chicago, Ill. Rope-lock	324,984	Aug. 25	2158	589	32	947
Cook, Harry C., *et al.* (See Watson, Charles S., assignor.)						
Cook, Henry B. (See Bullock and Cook.)						
Cook, Israel. (See Potter and Boekien, assignors.)						
Cook, Lorenzo S., Borden, N. Y. Bee-hive	324,538	Aug. 18	1541	425	32	824
Cook, Marcus E., Wallingford, Conn. Road-scraper	326,719	Sept. 22	2008	525 526	32	1406
Cook, Roswell F., Ilion, N. Y. Wrench	325,503	Sept. 1	381	93	32	1088
Cook, Thomas G., assignor of one-half to V. Marshall and J. A. Publow, Brockville, Ontario, Canada. Spring harrow-tooth	322,351	July 14	1263	330	32	240
Cook, Thomas W. G. (See Davis and Cook.)						
Cook, Winfield S. (See Westbrook and Cook.)						
Cooke, Charles M., Brooklyn, N. Y. Gridiron	322,686	July 21	1712	454	32	328
Cooke, Robert F., Brooklyn, N. Y., assignor to H. Holden, East Orange, N. J. Match	326,851	Sept. 22	2210	576	32	1443
Cooke, Robert F., Brooklyn, N. Y., assignor to H. Holden, East Orange, N. J. Lighting device	326,852	Sept. 22	2211	576 577	32	1443
Cool, Peter, Manhattan, Kans. Car-axle bearing	326,955	Sept. 29	2402	618	32	1476
Cooley, Albert, Osceola, Iowa. Stack-cover	323,638	Aug. 4	339	96	32	585
Cooley, Orville, assignor to Johnston Harvester Company, Batavia, N. Y. Grain-binder	321,692	July 7	380	101	32	71
Cooley, William M., *et al.* (See Wingo, Robert A., assignor.)						
Coombes, Edwin T. (See Hobart and Coombes.)						
Coomba, Eden M., Memphis, Ind. Farm-gate	325,657	Sept. 8	585	148	32	1131
Coons, Robert H., Taylor, Mo. Bee-hive	327,068	Sept. 29	2501	653	32	1501
Coop, William L., and J. C. Boma, Providence, R. I. Exercising-machine	323,792	Aug. 4	527	149	32	622
Cooper, Charles J., and H. S. Bollinger, assignors to C. J. and H. W. Cooper, Chicago, Ill. Cockeye	322,907	July 28	2029	536	32	392
Cooper, Herbert W. (See Cooper and Bollinger, assignors.)						
Cooper, James J. (See Porter, Alonzo W., assignor.)						
Cooper, Newton A., Back Creek Valley, Va. Buckle	324,921	Aug. 25	2071	567	32	931
Cooper, Thomas G., Jarvis, Ontario, assignor of one-tenth to S. J. Moore, Toronto, Canada. Black-leaf check-book	323,276	July 28	2543	676	32	487
Cooper, William D., Wayne, Mich. Car-axle box	326,405	Sept. 15	1583	412	32	1322
Copeland, Edwin R., Monroe, Wis. Fence-post	323,793	Aug. 4	527	149	32	622
Copeland Manufacturing Company. (See Baird, William C., assignor.)						
Coppock, Joseph A., assignor of one-half to A. L. Harbuck, Norwood, Ga. Quilting-support for sewing-machines	323,118	July 28	2328	617	32	447
Coquard, Leon H. F., and F. A. McGinnis, Detroit, Mich. Pool-ball cabinet	323,854	Aug. 4	603	169	32	637
Corbett, Frank, New York, N. Y. Ironing-machine	324,088	Aug. 11	921	255	32	701
Corbett, Joseph, New York, assignor to Railway Register Manufacturing Company, Buffalo, N. Y. Fare register and recorder	326,720	Sept. 22	2011	526 527 528 529	32	1407
Corbett, William, Smith's Falls, Ontario, Canada. Grave-vault	323,917	Aug. 11	691	194	32	660
Corbin Cabinet Lock Company. (See Blakesley, Gilbert H., assignor.)						
Corbin Cabinet Lock Company. (See Cowles, George B., assignor.)						
Corbin Cabinet Lock Company. (See Gory, Emanuel G., assignor.)						
Corbin Cabinet Lock Company. (See Seymour, Henry A., assignor.)						
Corbin, Jay S., Gouverneur, N. Y. Disk-harrow	325,224	Aug. 25	2471	660	32	1005
Corbly, John F., Chicago, Ill. Atomizer	322,908	July 28	2030	536	32	392
Corby, Thomas W., Grosse Point, Mich. Colter and plow cleaner	324,817	Aug. 25	1937	532	32	905
Cordray, Harriet. (See Blackburn and Cordray, assignors.)						
Cordray, William F. (See Blackburn and Cordray.)						
Corey, Daniel W., Galena, Ill. Bobbin for sewing-machine shuttles	323,916	Aug. 11	690	193	32	660
Corey, Frank E., Westborough, Mass. Rein-guard for whiffletrees	322,909	July 28	2031	536	32	392
Corey, Francis E., Westborough, Mass. Radiator	323,277	July 28	2544	676	32	487
Corey, Jasper W., assignor to H. Muhlhauser, Cincinnati, Ohio. Clutch or loose-pulley device	322,423	July 21	1364	356	32	265
Corey, Jasper W., assignor to H. Muhlhauser, Cincinnati, Ohio. Feeding mechanism for sewing-machines	325,396	Sept. 1	247	62	32	1062
Corliss, Charles P., Elgin, assignor to Elgin National Watch Company, Chicago, Ill. Stem winding and setting watch	325,506	Sept. 1	389	96	32	1089
Corliss, George H., Providence, R. I. Governor for steam-engines	324,459	Aug. 18	1436	392	32	805
Corliss, John B., *et al.* (See Bolton, George W., assignor.)						
Cormack, George H., Rockford, Ill. Oatmeal-machine	326,853	Sept. 22	2212	577	32	1443
Cornelius, Wilber F., Muncie, Ind. Roller-skate	324,364	Aug. 18	1311	356	32	782
Cornelius, Wilber F., assignor, by mesne assignments, to Victor Adjustable Truck Roller Skate Company, Muncie, Ind. Roller-skate	325,161	Aug. 25	2381	656	32	988
Cornell, Joseph, Petersburg, Colo. Automatic water-distributer	327,141	Sept. 29	2603	678	32	1519
Cornell, S. Douglas, Buffalo, N. Y. Apparatus for the manufacture of white lead	323,499	Aug. 4	153	45	32	550
Cornely, Emil, Paris, France. Imitation-bead embroidery	322,582	July 21	1589	419	32	304
Cornils, Peter V., Chicago, Ill. Car-coupling	323,278	July 28	2545	676	32	487
Corning, Charles S., Peoria, Ill. Making whisky	325,322	Sept. 1	123	35	32	1038
Corning, Charles S., Peoria, Ill. Apparatus for mashing grain in distilleries	325,323	Sept. 1	125	35	32	1038
Cornish, Oscar S., *et al.* (See Curtis, David W., assignor.)						
Cornwall, John B. (See Barnard and Cornwall.)						
Coronet Corset Company. (See McGee, Charlotte A., assignor.)						
Corry, William, assignor to J. L. Hall, Cincinnati, Ohio. Prison-door bolt	323,855	Aug. 4	604	170	32	637
Corson, William T., *et al.* (See Reeves, Albert S., assignor.)						
Corum, John J., *et al.* (See Hardwick, Joseph O., assignor.)						
Corwin, John H., *et al.* (See Stanford, Frank H., assignor.)						
Coryell, Edwin M., Brooklyn, N. Y. Steam-actuated valve	327,069	Sept. 29	2502	653	32	1501
Coryell, Miers, New York, N. Y. Furnace for steam-boilers	326,631	Sept. 22	1880	492	32	1382
Coryell, Miers, New York, N. Y., and F. M. Wheeler, Montclair, N. J., assignors to G. F. Blake Manufacturing Company, Boston, Mass. Air-pump	324,089	Aug. 11	922	255	32	702
Cosgrove, Edward J., Augusta, Ga. Automatic air or steam brake	322,042	July 14	869	226	32	166
Cosgrove, James, Flatbush, N. Y. Barrel	322,910	July 28	2032	537	32	392
Cosgrove, James, Flatbush, N. Y. Paper keg or barrel	322,911	July 28	2033	537	32	393
Cosgrove, William F., and E. F. Jennings, Jersey City, N. J. Automatic stop-valve for gas and oil pipes	325,590	Sept. 1	406	124	32	1110
Costello, Thomas H., assignor to H. H. Goss, Chicago, Ill. Lathe-chuck jaw	323,279	July 28	2546	677	32	488
Cothermon, Simon, Constantine, Mich. Shifting-rail for buggy-seats	326,019	Sept. 8	1059	270	32	1218
Cottrell, Calvert B., Stonington, Conn. Printing-machine	327,243	Sept. 29	2737	710 711	32	1544

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Cottrell, George, San Francisco, Cal. Grain-drier	322,092	July 14	935	242	32	179
Cottrell, George, San Francisco, Cal. Mill-stock feeder	325,788	Sept. 8	772	193	32	1164
Couchois, Garrett J., Chicago, Ill. Agraffe for pianos	326,020	Sept. 8	1060	270	32	1218
Couffinhal, Gustave J. P., St. Etienne, France. Machine for agglomerating coal and other materials	323,856	Aug. 4	605	170, 171	32	637
Coultas, Charles, Sharpsburg, assignor to Empire Electric Carbon Company, Pittsburg, Pa. Furnace for baking incandescents	323,500	Aug. 4	154	45, 46	32	550
Coultas, Joseph A., assignor to himself and D. M. Rollins, Brooklyn, and P. R. Day, New York, N. Y. Spring-armored hose-pipe	325,591	Sept. 1	497	124	32	1110
Conlter, David. (See Long, James N., assignor.)						
Conpland, Charles Seymour, Conn. Machine for preparing the covering for top rolls for drawing and spinning machines	321,952	July 14	749	196	32	144
Couteau, Louis A., Léonville, France. Cover for hay or corn ricks	324,985	Aug. 25	2159	590	32	947
Covert, James C., West Troy, N. Y. Bull-lead	326,899	Sept. 22	2284	597	32	1455
Covey, John A., *et al.* (See Taber, William D., assignor.)						
Cowan, Edmund, Boston, Mass. Overgaiter	324,365	Aug. 18	1312	356	32	782
Cowan, John. (See Hannay and Cowan.)						
Cowden, William F., Cumberland, Md. Gearing for reverse-shafts	322,798	July 21	1860	494	32	535
Cowden, William F., Cumberland, Md. Canal-convoy	323,639	Aug. 4	340	96	32	585
Cowen, William C., Hyde Park, Mass. Car-coupling	324,366	Aug. 18	1313	357	32	783
Cowles, Alfred H. (See Cowles, Eugene H. and A. H.)						
Cowles, Alfred H. (See Cowles, Mabery, and Cowles.)						
Cowles, Eugene H. and A. H., Cleveland, Ohio. Electric process of smelting ore for the production of alloys, bronzes, and metallic compounds	324,658	Aug. 18	1716	472	32	857
Cowles, Eugene H., C. F. Mabery, and A. H. Cowles, Cleveland, Ohio. Electric smelting for obtaining aluminium	324,659	Aug. 18	1717	.....	32	857
Cowles, George B., assignor to Corbin Cabinet Lock Company, New Britain, Conn. Mortise-lock	323,564	Aug. 4	239	70	32	566
Cowles, George B., assignor to Corbin Cabinet Lock Company, New Britain, Conn. Lock	324,818	Aug. 25	1938	533	32	906
Cox, George S., Philadelphia, Pa. Underground conduit for electric conductors	327,383	Sept. 29	2927	763, 764	32	1376
Cox, Seaborn J. M., Johnston, S. C. Horse-collar	322,260	July 14	1146	299	32	218
Cox, Stephen J., New York, N. Y. Device for salting cattle	321,582	July 7	237	63	32	46
Cox, Thomas, Gloster, Mont. Ter. Miner's candlestick	321,798	July 7	532	140	32	99
Cox, William H., Virden, Ill. Gate	322,352	July 14	1264	330	32	240
Coxeter, Samuel J., and H. Nehmer, 28 Grafton Street East, county of Middlesex, England. Making plates or masses of carbon	325,822	Sept. 8	821	.....	32	1173
Coy, Frederick W., assignor to G. B. P. Flagg, trustee, Boston, Mass. Apparatus for molding sand-paper	325,789	Sept. 8	773	193, 194	32	1164
Coy, Henry E. (See Cromwell and Coy.)						
Coy, Perry, East Toledo, Ohio. Sled	325,658	Sept. 8	586	149	32	1131
Crabtree, Hamilton S., Anna, Ill. Feed-rack	327,070	Sept. 29	2503	654	32	1501
Crafts, Wilbur F., New York, N. Y. Paper-file	321,950	July 14	747	195	32	144
Craig, Andrew J., Hickory, Miss. Plow	324,660	Aug. 18	1718	473	32	857
Craig, Isaac E., Camden, Ohio. Manufacture of sheet iron	321,693	July 7	381	102	32	71
Craig, John W., Detroit, Mich. Feeding device	324,090	Aug. 11	923	255	32	702
Craig, Warren H., Lawrence, Mass. Steam-engine lubricator	322,912	July 28	2036	537	32	393
Crain, James H., Junction, Ill. Fence	327,384	Sept. 29	2928	764	32	1576
Cramer, Don, Walnut, Iowa. Plant-shield for cultivators	322,524	July 21	1509	397	32	290
Cramp & Sons Ship and Engine Building Company, William. (See See, Horace, assignor.)						
Crandal, George L., Binghamton, N. Y. Carriage-joint rivet	327,385	Sept. 29	2929	764	32	1576
Crandall, Jesse A., Brooklyn, N. Y. Child's carriage	323,401	Aug. 4	22	6	32	527
Crandall, Jesse A., Brooklyn, N. Y. Combined chair and couch	324,661	Aug. 18	1719	473	32	857
Crandall, William E., New York, N. Y. Rocking-horse	326,721	Sept. 22	2035	529	32	1410
Crane Bros. Manufacturing Company. (See Reynolds, George H., assignor.)						
Crane, Calvin D., St. Louis, Mo. Paper clip or file	322,913	July 28	2039	538	32	394
Crane, Martin H., Cincinnati, Ohio. Boot for drivers' seats for vehicles	325,914	Sept. 8	923	233	32	1193
Crane, William, Boston, Mass. Car-coupling	324,814	Aug. 25	1931	531	32	904
Crass, Frederick H., Murfreesborough, Tenn., assignor of one-fourth to W. P. and C. F. Fogarty, Louisville, Ky. Rotary engine	322,353	July 14	1266	331	32	241
Craver, Steele & Austin. (See Leffler, Paul W., assignor.)						
Crawford, Harry C., and E. V. Mundy, Duluth, Minn. Cant-hook	325,058	Aug. 25	2255	619	32	965
Crawford, Robert T., New Castle, Pa. Vehicle-seat	324,662	Aug. 18	1720	473	32	857
Crawford, Samuel E., Ripon, Wis. Valve-gear	321,583	July 7	238	63	32	46
Creelman, William J., assignor to Woodbury Engine Company, Rochester, N. Y. Engine cross-head	324,367	Aug. 18	1314	357	32	783
Cregan, Patrick T., Troy, N. Y. Burial-case	322,424	July 21	1365	356	32	265
Crescent Manufacturing Company. (See Schuster, George P., assignor.)						
Crippen, Daniel F., Riverside, Cal. Cover for milk-cans	324,539	Aug. 18	1543	426	32	824
Crist, William E., New York, N. Y. Bearing for shafts and pulleys	322,525	July 21	1510	397	32	291
Crites, Silas J., assignor of one-half to J. C. Hissem, Ashland, Ohio. Rope-fastener	321,799	July 7	533	141	32	99
Croal, William, Brooklyn, assignor to Blun & Henius Manufacturing Company, New York, N. Y. Machine for covering, measuring, and cutting off strips, &c	323,119	July 28	2329	617	32	448
Crocker, Charles T., *et al.* (See Hodges, Horace F., assignor.)						
Crockett, Charles F., Mount Vernon, N. Y. Package for whitewash	322,583	July 21	1590	419	32	304
Crockett, Charles F., Mount Vernon, N. Y. Carpet-stretcher and tack-driver combined	322,709	July 21	1861	495	32	353
Crockett, Charles H., and C. C. Allen, Boston, Mass. Locking and unlocking mechanism for electric locks	323,918	Aug. 11	692	194	32	660
Croft, Henry, Jr. (See Paxson and Croft.)						
Cromwell, Frank Y., Erie, Pa. Disinfectant	326,479	Sept. 15	1671	.....	32	1338
Cromwell, George O., and H. E. Coy, Toledo, Ohio. Process of and apparatus for reclaiming oil previously used in mechanical operations	322,425	July 21	1366	357	32	265
Croom, Wiley G., Vicksburg, Miss. Domestic oven	323,280	July 28	2547	677	32	488
Cross, Flavius J., Kersey, Pa. Lamp-bracket	321,887	July 7	658	171	32	120
Cross, William C., Boston, Mass. Lasting the uppers of boots or shoes	324,304	Aug. 11	1224	333	32	758
Cross, William C., Boston, Mass. Machinery for making satchel-bottom paper bags	325,059	Aug. 25	2256	620	32	965
Cross, William C., Boston, Mass., assignor to Standard Boot and Shoe Lasting Company, Portland, Me. Lasting boots or shoes. (Reissue)	10,642	Sept. 1	567	144	32	1122
Crouch, George, New York, N. Y. Trunk	324,091	Aug. 11	924	255	32	702
Crouse, George W., Lexington, N. C. Wash-tub	326,460	Sept. 15	1671	437	32	1338
Crow, Henry, Grand Rapids, Mich. Milling-spont for conducting granular pulverized material	321,888	July 7	659	171	32	120
Crowell, Luther C., Brooklyn, N. Y. Printing-machine	325,197	Aug. 25	2435	669, 670	32	998

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Crowell, Luther C., Brooklyn, assignor to R. Hoe & Co., New York, N. Y. Printing-machine	324,986	Aug. 25	2160	500, 591, 592, 593	32	947
Crowfoot, Issacher, Hartford, Wis. Gate-hanger	326,548	Sept. 22	1702	461	32	1362
Crowley, Daniel, Boston, Mass. Velocipede	323,640	Aug. 4	341	97	32	585
Crowley, Daniel, Boston, Mass. Cane	325,198	Aug. 25	2439	670	32	998
Crowley, James, *et al.* (See O'Brien, Timothy, assignor.)						
Croxton, Samuel W. (See Dela and Croxton.)						
Cruickshank, George M., Providence, R. I. Die for covering wire with insulating material	326,021	Sept. 8	1062	270	32	1218
Crump, Samuel. (See Betts, Robert W., assignor.)						
Cryderman, Jacob. (See Hofbrook, Byron, assignor.)						
Cullen, John, Janesville, Wis. Harrow	325,734	Sept. 8	702	175	32	1151
Culp, Samuel T., assignor of one-half to A. G. Penchen, Toronto, Ontario, Canada. Revolving show-stand	324,663	Aug. 18	1720	473	32	857
Culver, Arthur T., assignor to J. J. Parkhurst, Chicago, Ill. Horseshoe-bar	321,420	July 7	8	2	32	4
Culver, Fitz E., Chicago, Ill. Furnace-grate	321,951	July 14	748	195	32	144
Culver, John M. (See Hoyt, Lewis S., assignor.)						
Culver, Lucius L., St. Louis, Mo. Grate	326,481	Sept. 15	1673	437	32	1338
Culver, Willard B. (See Thomas, William Y., assignor.)						
Cumberbatch, Isaac, Newark, N. J. Steam-trap	327,433	Sept. 29	2987	780	32	1587
Cummings, Hannibal, Meadville, Pa. Feed-water heater	326,203	Sept. 15	1318	341	32	1272
Cummings, Henry H., Malden, assignor of one-half to J. J. Sullivan, Ipswich, Mass. Eyeleting-machine	327,142	Sept. 29	2604	679, 680	32	1519
Cummings, Uriah, Buffalo, N. Y. Hydraulic testing-machine	322,800	July 21	1862	495	32	355
Cummings, Uriah, Buffalo, N. Y. Ore-crusher	324,664	Aug. 18	1721	474	32	858
Cummings, J. Raymond, assignor of one-third to J. P. Ellacott, Chicago, Ill. Stereotype-plate and securing it in printers' forms	325,324	Sept. 1	196	35	32	1039
Cummins, John R., assignor of two-thirds to F. Emerson and J. J. Faires, McKinney, Tex. Plow	325,239	Sept. 1	10	4	32	1017
Cunnig, James M., Haskins, Ohio. Tree-ladder	323,641	Aug. 4	342	97	32	586
Cunningham, Albert, Milwaukee, Wis. Oscillating engine	323,298	July 28	2588	687	32	493
Cunningham, Christopher. (See Graves, John, assignor.)						
Cunningham, John, Hampton Junction, N. J. Nut-lock	325,397	Sept. 1	248	62	32	1062
Cunningham, Thomas A. (See Elliot and Cunningham.)						
Cunningham, Thomas C. (See Baker and Bestor, assignors.)						
Cunningham, Thomas C., *et al.* (See Baker, Charles H., assignor.)						
Cunningham, Winfield S., Springfield, Ohio. Sash-fastener	322,426	July 21	1367	357	32	265
Cureton, John W., and J. Kaino, Caffey's Cove, Cal. Rotary harrow	323,299	July 28	2591	687	32	494
Curley, Patrick J., Boston, Mass. Hinge for scuttles, skylights, &c	324,368	Aug. 18	1315	357	32	783
Currie, Stanley C. C. (See Timmis and Currie.)						
Currier, William M., *et al.* (See Fuller, Solomon, assignor.)						
Currin, John, assignor to American Optical Company, Southbridge, Mass. Nose-guard for eyeglasses	324,540	Aug. 18	1543	426	32	824
Curry, Burwell J., Huntsville, Ala. Planter and cultivator	327,434	Sept. 29	2988	781	32	1587
Curry, Burwell J., Huntsville, Ala. Hay or cotton press	327,435	Sept. 29	2990	781	32	1587
Curtis, David W., assignor of two-thirds to O. S. Cornish and W. S. Greene, Fort Atkinson, Wis. Churn	321,486	July 7	105	28	32	21
Curtis, Frank E. (See Maddock, John, assignor.)						
Curtis, Richard, and W. H. Rhodes, Manchester, county of Lancaster, England. Roving-frame, &c	323,857	Aug. 4	609	171, 172	32	638
Curtiss, Everett P., Hartford, Conn. Axle-box	322,584	July 21	1590	419	32	304
Curtiss, Robert M., Brooklyn, N. Y. Safety device for elevators	324,751	Aug. 18	1829	505, 506	32	879
Cushman, Holbrook, New York, N. Y., and J. P. Hall, Oldham, county of Lancaster, England. Dynamo-electric machine	324,752	Aug. 18	1835	506	32	880
Cuthbert, William M., Pittsburg, Pa., assignor of one-half to W. C. Donn, Brooklyn, N. Y. Sewing-machine table	324,753	Aug. 18	1838	507	32	880
Cuthbertson, John, Lowell, Mass. Spinning-machine	326,900	Sept. 22	2285	597	32	1455
Cutten, Elisha B., assignor to Electrical and Mechanical Developing Company, Pittsburg, Pa. Electric-arc lamp	324,305	Aug. 11	1227	334, 335	32	759
Cutten, Elisha B., assignor to Electrical and Mechanical Developing Company, Pittsburg, Pa. Electric head-light	327,143	Sept. 29	2609	680	32	1520
Cutter, George, Boston, Mass. Combination-tool	322,914	July 28	2041	538	32	394
Daelen, Vital, Berlin, Germany. Machine for rolling metal cylinders	323,281	July 28	2547	677, 678	32	488
Daft, Leo, Greenville, N. J. Electric switch	322,915	July 28	2042	538, 539	32	394
Daft, Leo, Greenville, N. J. Electric switch	322,916	July 28	2043	539	32	394
Daft, Leo, Greenville, N. J. Electric locomotive-engine	325,915	Sept. 8	924	233	32	1193
Dager, William B., assignor of two-thirds to J. and C. A. Leonard, Canton, Ohio. Sash-fastener	327,144	Sept. 29	2611	681	32	1520
Daggett, Henry S., Gypsum, Colo. Water-elevator	324,235	Aug. 11	1133	308	32	741
Daignean, Jérémie, Lowell, Mass. Bark-press	322,667	July 21	1714	454	32	328
Dalton, Thomas, Sr., *et al.* (See Okey, Joseph B., assignor.)						
Daly, John, New York, assignor to W. White, White Plains, N. Y. Railway-crossing	322,801	July 21	1863	495	32	356
Damann, Rudolph, Augusta, Mo. Hair-restorative	321,487	July 7	106	.....	32	21
Dancel, Christian, New York, N. Y. Machine for making heel-stiffeners	327,244	Sept. 29	2740	711	32	1544
Danforth, George E. (See Reynolds and Danforth.)						
Daniel, Thomas R., Parkville, Mo. Car-coupling	325,398	Sept. 1	249	62	32	1062
Daniell, John S., Conyers, Ga. Cotton-planter	323,642	Aug. 4	343	97	32	586
Daniels, George D., *et al.* (See Rumsey, Charles B., assignor.)						
Daniels, Thomas, Jr., New York, N. Y. Book-binder's gold-saving cleaning-box	325,916	Sept. 8	925	234	32	1143
Danly, Jehiel W., Attica, N. Y. Clapboard-gage	324,011	Aug. 11	819	227	32	683
Danner, Jacob, *et al.* (See Hardy, Leslie T., assignor.)						
Darby, Joseph, Washington, D. C. Harrow	325,735	Sept. 8	703	175	32	1151
Darbyshire, B. Frank, *et al.* (See Brandt, Louis, assignor.)						
Darcus, James. (See Wallace and Darcus.)						
Darling, Joseph, Kansas City, Pa. Faucet or valve	321,694	July 7	382	102	32	71
Darozir, Levi, and N. Bonret, Lynn, Mass. Device for tapping barrels	321,421	July 7	9	3	32	4
Daso, Levi, Montpelier, Ohio. Elevator	323,919	Aug. 11	695	195	32	661
Dathis, Leon, Fils, Paris, France. Baker's oven	323,643	Aug. 4	344	98	32	586
Daudelin, Joseph M. T., Jefferson, Tex. Car-brake	322,585	July 21	1591	420	32	304
Davenport, Frank W., Providence, R. I. Book-finishing machine	322,526	July 21	1510	397, 398	32	291

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Davenport, William H., Uxbridge, Mass. Fire-arm	326,276	Sept. 15	1417	369	32	1290
Davey, Petherick, Philadelphia, Pa. Railway chair, tie, and break-joint	322,261	July 14	1147	299	32	218
Davey, Petherick, assignor of one-half to W. Cilla, Philadelphia, Pa. Convertible cot, chair, &c	322,354	July 14	1267	331	32	241
Davey, Windsor S., assignor of one-half to Monitor Works, Beloit, Wis. Twine-binder	326,304	Sept. 15	1319	342	32	1272
Davidson, George. (See Schofield and Davidson.)						
Davidson, John M., Bradford, Pa. Sucker-rod for deep wells	324,922	Aug. 25	2072	567	32	931
Davidson Rubber Company. (See Ware, Charles, assignor.)						
Davies, Thomas, Poughkeepsie, N. Y. Bottle-washer	327,071	Sept. 29	2505	654	32	1502
Davies, Walter D., Brooklyn, N. Y., assignor to Ansonia Clock Company, Ansonia, Conn. Balance-wheel for watches	322,093	July 14	937	242	32	179
Davies, William J., and W. Penglase, Stoneville, Mich. Railway-switch	326,406	Sept. 15	1564	412	32	1322
Davis, Albert D., Colorado Springs, Colo. Tubular boiler. (Reissue)	10,636	Aug. 18	1895	520	32	892
Davis, Albert T. L., assignor of one-half to W. H. Pepper, Lake Village, N. H. Knitting-machine	326,854	Sept. 22	2214	578, 579, 580	32	1443
Davis, Catherine A., administratrix. (See Davis, Job C.)						
Davis, Charles R., Dallas, Tex. Bustle	321,584	July 7	239	63	32	46
Davis, Cornelius H., Philipsburg, Pa. Watch-charm	327,245	Sept. 29	2741	711	32	1545
Davis, Daniel F., Easton, Pa. Fire-escape	325,399	Sept. 1	250	62	32	1062
Davis, George, Elizabeth, N. J. Feed-regulator for hemp drawing and spinning machines	326,723	Sept. 22	2037	530	32	1411
Davis, George F. (See Huse, Sheehan, and Davis.)						
Davis, Henry T., assignor to Davis Quilting Frame Company, New York, N. Y. Quilting-frame for sewing-machines	322,202	July 14	1148	300	32	218
Davis, Hiram B., St. Paris, Ohio. Whiffletree-hook	322,163	July 14	1033	268	32	196
Davis, James B., Eureka Springs, Ark. Band-cutting feeder for thrashing-machines	325,736	Sept. 8	704	176	32	1151
Davis, James E., Boston, Mass. Pop safety-valve	323,794	Aug. 4	528	150	32	622
Davis, Job C., deceased; C. A. Davis, San Francisco, Cal., administratrix. Machine for making cigarette mouth-pieces	324,923	Aug. 25	2073	567, 568	32	931
Davis, John B., and W. Walker, Jermyn, Pa. Air-injector for furnaces and forges	323,644	Aug. 4	345	96	32	526
Davis, John P., Rockford, assignor to R. Harvey, D. P. Greenlee, and H. List, Belvidere, Ill. Hay-carrier	323,858	Aug. 4	611	172	32	638
Davis, John R., Bristol, Wis. Whiffletree-hook	322,527	July 21	1512	398	32	291
Davis, Joseph A., New York, N. Y. Refrigerator	322,043	July 14	872	226, 227	32	167
Davis, Lorenzo V., *et al.* (See Slater, Warren G., assignor.)						
Davis, Mark, and T. W. G. Cook, New York, N. Y. Hat-ironing machine	322,263	July 14	1149	300	32	218
Davis, Mary J., administratrix. (See Davis, Merwin.)						
Davis, Merwin, deceased, (M. J. Davis, administratrix,) assignor of one-eighth to J. W. Peckett, Brooklyn, N. Y. Printing-machine	323,024	July 28	2199	582, 583	32	423
Davis Quilting Frame Company. (See Davis, Henry T., assignor.)						
Davis, Robert W., assignor to Carbona to Mining Company, Elmira, N. Y. Mixed paint	324,236	Aug. 11	1134	.....	32	741
Davis, Samuel. (See Gerhardt, John, assignor.)						
Davis, Theodore D., Williamsport, Pa. Knob attachment	327,386	Sept. 29	2930	764, 765	32	1576
Davis, Theodore D., Williamsport, Pa. Car-coupling	327,387	Sept. 29	2931	765	32	1576
Davis, William F., assignor of one-half to F. L. Burden, Attleborough, Mass. Attachment for articles of furniture	325,737	Sept. 8	706	176	32	1152
Davis, William J. (See Chambers and Davis.)						
Davis, Winfield S. (See Sell and Davis.)						
Davis, Zebulon, Cleveland, Ohio. Vapor-burner stove	323,120	July 28	2330	618	32	448
Davis, Zebulon, assignor to Standard Lighting Company, Cleveland, Ohio. Vapor-burner stove	325,592	Sept. 1	499	124, 125	32	1110
Davison, Frank G., Jamaica, assignor to A. L. Shipman's Sons, New York, N. Y. Holder for pens and pencils	325,060	Aug. 25	2259	620	32	966
Dawes, Charles K., assignor of one-half to T. H. Dibble, Trenton, N. J. Planing and slotting machine	325,061	Aug. 25	2260	620, 621	32	966
Dawley, William H., St. Louis, Mo. Harmonica-holder	322,586	July 21	1592	420	32	305
Dawson, Frank, Sr., Williamsport, Pa. Harrow	325,917	Sept. 8	926	234	32	1194
Dawson, George B., O'Neill, Neb. Milk-cooler	322,044	July 14	874	227	32	167
Dawson, William. (See Frost and Dawson.)						
Day, Austin G., New York, N. Y. Making the compound termed "Kerite"	322,602	July 21	1864	.....	32	356
Day, Austin G., New York, N. Y. Vulcanized product termed "Kerite"	322,603	July 21	1866	.....	32	356
Day, Austin G., New York, N. Y. Manufacturing crude kerite compounds	322,604	July 21	1868	.....	32	356
Day, Austin G., New York, N. Y. Vulcanizable compound or crude kerite	322,605	July 21	1869	.....	32	356
Day, George W., Haverhill, Mass. Manufacture of boots or shoes	325,240	Sept. 1	11	4	32	1017
Day, Lyman H., New York, N. Y. Hoop-skirt	322,606	July 21	1870	496	32	356
Day, Philemon R., *et al.* (See Coultas, Joseph A., assignor.)						
Dayhuff, Martin, Volcano, W. Va. Packing for oil-well tubing	321,488	July 7	106	29	32	21
De Ferranti, Sebastian Z., West Kensington, county of Middlesex, England. Spectacle-frame	327,145	Sept. 29	2612	681	32	1520
De Forest, Frank, Bonne Terre, Mo. Drill-chuck	322,607	July 21	1872	496	32	356
De Lamater, Cornelius H., *et al.* (See Rider, Thomas J., assignor.)						
De Lamater, William, *et al.* (See Rider, Thomas J., assignor.)						
De La Vergne Refrigerating Machine Company. (See Wainwright, Ellis, assignor.)						
De Mauclerc, Joseph A., Paris, France. Chemical fire-extinguisher	322,587	July 21	1593	420	32	305
De Roux, Louis, Bègles, near Bordeaux, France. Producing photo-mechanical printing-plates	322,046	July 14	875	.....	32	168
De Valin, William H., San Rafael, Cal. Single-acting pump	326,409	Sept. 15	1586	413	32	1323
De Vaux, Charles L. A., *et al.* (See Vogel, John B., assignor.)						
De Witt, Charles H., Weatherly, Pa. Gage-cock	326,022	Sept. 8	1063	270	32	1218
Dean, Frank, Wahoo, Nebr. Stack-cover	322,045	July 14	874	227	32	167
Dean, John C., Indianapolis, Ind. Hand-truck	321,695	July 7	383	102	32	72
Death, Daniel. (See Snook and Death.)						
Decker, Cornelius, Pullman, Ill. Car-axle box	325,593	Sept. 1	500	125	32	1111
Decker, John J., New York, N. Y. Music-rack for upright pianos	323,282	July 28	2550	679	32	488
Decker, Theodore, Charlottesville, Ind. Nut-lock	326,407	Sept. 15	1585	412	32	1323
Decrow, Anson W., Bangor, Me. Grate for burning anthracite coal	321,585	July 7	240	64	32	47
Dederick, Peter K., Loudonville, N. Y. Baling-press	324,924	Aug. 25	2078	568	32	932
Deering, Mark L., Cleveland, Ohio. Beer-faucet and air-pump combined	326,482	Sept. 15	1673	437	32	1339
Deering, William. (See Mouck, Andrew B., assignor.)						
Deering, William. (See Noyes, La Verne W., assignor.)						
Deering, William. (See Noyes and Perry, assignors.)						
Deering, William. (See Olin, William F., assignor.)						
Dees, John T., Goldsborough, N. C. Swing	323,121	July 28	2332	618	32	448
Dees, Mark A., Scranton, Miss. Traction-increaser for locomotives	323,283	July 28	2551	679	32	488

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Deffenamith, Phillip, Hamden, Conn. Machine for making clip-yokes	321,284	July 28	2552	679	32	489
Deis, Philip H., and S. W. Croxton, Canal Dover, Ohio. Cuspidor and dust-trap	323,122	July 28	2333	619	32	448
Deisen, Charles W. (See Dimelow, John, assignor.)						
Delamater, George W., assignor of one-third to J. R. Potts, New York, N. Y. Folding bedstead	327,246	Sept. 29	2742	712	32	1545
Delaney, Alexander, and J. M. Bond, Richmond, Va. Saw-mill dog	325,507	Sept. 1	392	97	32	1090
Delano, Eben A., assignor to D. W. Ryan, Chicago, Ill. Machine for hooping barrels	323,565	Aug. 4	240	70, 71	32	566
Delano, William, Brooklyn, N. Y. Shutter-fastener	324,460	Aug. 18	1437	393	32	805
Delany, H. J., *et al.* (See Bolte, Frank H., assignor.)						
Delany, Patrick, Newburg, N. Y. Buoy	325,162	Aug. 25	2282	656	32	988
Delany, Patrick B., assignor to Standard Multiplex Telegraph Company, New York, N. Y. Synchronous telegraphy	322,427	July 21	1368	357	32	266
Delany, Patrick B., assignor, by mesne assignments, to Standard Multiplex Telegraph Company, New York, N. Y. Receiving apparatus for synchronous telegraphs	322,688	July 21	1716	455	32	329
Delany, Patrick B., assignor, by mesne assignments, to Standard Multiplex Telegraph Company, New York, N. Y. Printing device for synchronous telegraphy	322,689	July 21	1718	455	32	329
Delany, Patrick B., assignor to Standard Multiplex Telegraph Company, New York, N. Y. Effecting electrical synchronous movements	322,690	July 21	1721	455	32	330
Delany, Patrick B., assignor to Standard Multiplex Telegraph Company, New York, N. Y. Effecting electrical synchronous movements	322,691	July 21	1723	455	32	330
Delany, Patrick B., assignor to Standard Multiplex Telegraph Company, New York, N. Y. Electrically maintaining synchronous movements	322,692	July 21	1725	456	32	331
Delany, Patrick B., assignor to Standard Multiplex Telegraph Company, New York, N. Y. Regulating the vibrations of forks, reeds, &c	322,694	July 21	1733	458	32	332
Delany, Patrick B., assignor to Standard Multiplex Telegraph Company, New York, N. Y. Mechanically correcting the vibrations of reeds and forks	322,695	July 21	1734	458	32	332
Delany, Patrick B., assignor to Standard Multiplex Telegraph Company, New York, N. Y. Actuating and correcting the vibrations of reeds	322,696	July 21	1735	458	32	332
Delany, Patrick B., assignor to Standard Multiplex Telegraph Company, New York, N. Y. Relay for synchronous multiplex telegraphy	322,808	July 21	1873	496, 497	32	357
Delany, Patrick B., assignor to Standard Multiplex Telegraph Company, New York, N. Y. Actuating and correcting the vibrations of forks, reeds, &c	322,809	July 21	1874	497	32	357
Delany, Patrick B., New York, and E. A. Calahan, Brooklyn, assignors to Standard Multiplex Telegraph Company, New York, N. Y. Printing-telegraph for synchronous telegraphy	322,693	July 21	1727	456, 457	32	331
Delehanty, William E., Albany, and E. J. Murphy, Greenbush, N. Y. Automatic trap for wash-basins	326,277	Sept. 15	1418	369	32	1290
Delffs, Arnold N. D., Bedford, Tenn. Cement roof	321,800	July 7	533	141	32	99
Delmont, François, San Francisco, Cal. Guide-track for heavy furniture	323,566	Aug. 4	242	71	32	566
Demarest, John, New York, N. Y. Filter	324,541	Aug. 18	1544	426	32	825
Demarest, John, assignor to J. L. Mott Iron Works, New York, N. Y. Overflow and discharge valve for baths	324,542	Aug. 18	1545	426	32	825
Demary, George T., assignor to National Heeling Machine Company, Boston, Mass. Manufacturing and attaching heels to boots or shoes	321,696	July 7	384	102	32	72
Deming, Ernest, Middletown, Conn. Halter	324,237	Aug. 11	1135	309	32	741
Deming, Lysander F., New York, N. Y. Folding cabinet-furniture	321,586	July 7	242	64	32	47
Deming, Lysander F., New York, N. Y. Repetition-action for upright pianos	326,278	Sept. 15	1420	370	32	1291
Dempster, Alexander R. and C. B., Beatrice, Nebr. Windmill	324,092	Aug. 11	925	256	32	702
Dempster, Charles B. (See Dempster, Alexander R. and C. B.)						
Demuth, William, New York, N. Y. Tobacco-box	325,918	Sept. 8	927	234	32	1194
Denison, Charles H., Springfield, Mass. Collar or cuff	322,697	July 21	1738	459	32	333
Denison, Russel A., Providence, R. I. Electric conductor	323,920	Aug. 11	697	195	32	662
Dennett, Charles N., Salisbury, Mass. Jump-seat carriage	324,306	Aug. 11	1230	335	32	759
Dennett Harvesting Machine Company. (See Young, Charles M., assignor.)						
Dennis, Samuel, Hornellsville, N. Y. Rat-trap	324,925	Aug. 25	2079	569	32	932
Denny, Edward B., and A. B. Griffen, Newark, N. J., assignors to Imperial Manufacturing Company, of New Jersey. Apparatus for mixing aeriform fluids	327,146	Sept. 29	2613	681	32	1520
Denton, James E., Hoboken, N. J. Steam-actuated valve	325,508	Sept. 1	394	97	32	1090
Deobold, Augustus G., Bloomington, Ill. Grain scouring and cleaning machine	325,919	Sept. 8	928	234, 235	32	1194
Depue, Elisha, Skinner's Eddy, Pa. Side-bar vehicle	321,587	July 7	244	65	32	47
Derby & Co., Philander. (See Parker, Frank F., assignor.)						
Derby, Walter N., Etna, N. H. Extension-ladder	326,205	Sept. 15	1321	342	32	1273
Derval, Eugène, Paris, France. Gas-pressure regulator	325,509	Sept. 1	395	97	32	1090
Derx, Martin. (See Neumer and Derx.)						
Desart, Joshua M., Hillsborough, Ill. Animal-trap	324,238	Aug. 11	1136	309	32	741
Desjardins-Lieux, Erneste. (See Bara and Desjardins-Lieux.)						
Desler, Henry R., Freeburg, Ohio. Mill-feed regulator	322,164	July 14	1034	268	32	196
Desmond, John, assignor to Simon & O'Neill, Cleveland, Ohio. Steam-injector	326,408	Sept. 15	1586	413	32	1323
Desnureau, William H., Otsego Lake, Mich. Device for fitting crosscut-saws	322,165	July 14	1035	268	32	196
D'Esté, Julian, Medford, Mass. Check-valve	326,549	Sept. 22	1762	461	32	1363
Detroit Steel and Spring Works. (See Woolley, James K., assignor.)						
Detwiler, Emanuel, Milwaukee, Wis. Gas-burner	324,665	Aug. 18	1723	474	32	858
Deuel, Reuben, assignor of one-half to J. A. Parker, Terre Haute, Ind. Fluid diaphragm-meter	327,388	Sept. 29	2933	765	32	1577
Deutsch, Sigmund, Philadelphia, Pa. Shirt-bosom	321,801	July 7	535	141	32	99
Devoe & Co., F. W. (See Stuart, Carl W., assignor.)						
Devore, Levi M., Freeport, Ill. Sash-balance	324,819	Aug. 25	1939	533	32	906
Devore, Levi M., assignor to Freeport Spring Hinge Company, Freeport, Ill. Spring-hinge	326,936	Sept. 29	2363	618	32	1476
Dewey, Charles M., Jersey City, N. J. Sewing-machine	326,724	Sept. 22	2038	530	32	1411
Dewey, Charles M., Jersey City, N. J. Puzzle	326,725	Sept. 22	2040	531	32	1411
Dewey, Hosea B., Milwaukee, Wis. Hot-air furnace	324,239	Aug. 11	1137	309	32	742
Dewhurst, Algernon, Skipton, county of York, England. Thread-case for sewing-machines	324,240	Aug. 11	1138	309	32	742
Dexter, Fred W., Pawtucket, R. I. Marking spoons, &c	324,241	Aug. 11	1139	310	32	742
Dexter, Himan C., New York, N. Y. Scraper attachment for removing calcimine and the like from ceilings	323,123	July 28	2334	619	32	449
Dexter, Talbot C., Des Moines, Iowa. Paper-folding machine	324,926	Aug. 25	2080	569	32	932
Dey, Charles E., Denver, Colo. Annunciator	323,921	Aug. 11	698	195	32	662
Dezendorf, John F., *et al.* (See Warner, John P., assignor.)						
Dibben, Frank, San Francisco, assignor of one-half to E. J. Dubbs, Alameda, Cal. Manufacture of superphosphate	322,698	July 21	1739	.....	32	333
Dibble, Theodore H. (See Dawes, Charles K., assignor.)						
Dicey, Elmer C., Chicago, Ill. Cut-off-valve gear	322,264	July 14	1151	300, 301	32	219

Alphabetical list of patentees, July to September, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Dick, George, assignor of one-half to J. E. Bell, Baltimore, Md. Piston-packing	324,754	Aug. 18	1841	507	32	880
Dick, Robert B., Philadelphia, Pa. Gas-pressure regulator	325,510	Sept. 1	398	98	32	1091
Dickenson, Charles, Portland, Oreg. Car-starter	326,855	Sept. 22	2223	580	32	1444
Dicker, John, Newark, N. J. Pencil-case	325,325	Sept. 1	127	36	32	1039
Dickerman, Amos, New Haven, Conn. Breech-loading fire-arm	323,501	Aug. 4	156	46	32	551
Dickey, William H. (See Smith and Dickey.)						
Dickie, Edward. (See Hirst and Dickie.)						
Dickinson, Charles, Chicago, Ill. Blast-regulator for fanning-machines, &c	324,242	Aug. 11	1140	310	32	742
Dickinson, Cyrus F. (See Dickinson, Henry and C. F.)						
Dickinson, H. R., *et al.* (See Brewis, John J., assignor.)						
Dickinson Hard Rubber Company. (See Nickerson, Fred. A., assignor.)						
Dickinson, Henry and C. F., Lowell, Ind. Chain-pump	324,243	Aug. 11	1141	310	32	742
Dickinson, Thomas W., Sharon, Pa. Fire-place attachment	321,588	July 7	245	65	32	47
Dickman, George, *et al.* (See Conard, Léon P., assignor.)						
Dickson, David A., Chicago, Ill. Clothes-drier	324,987	Aug. 25	2169	593	32	948
Diehl, Philip, Elizabeth, N. J. Regulator for dynamo-electric machines	324,666	Aug. 18	1725	475	32	858
Diehl, Philip, Elizabeth, N. J. Electric motor	324,667	Aug. 18	1726	475	32	858
Diehl, Philip, Elizabeth, N. J., assignor to Singer Manufacturing Company of New Jersey. Button-hole sewing-machine	322,428	July 21	1370	{357 358}	32	266
Diehl, Samuel G. (See Clay, Henry T., assignor.)						
Diehl, Samuel G. (See Cohen, Robert L., assignor.)						
Diener, Carl. (See Mayrhofer, Charles A., assignor.)						
Dierks, John, Harlan, Iowa. Shutter-worker	322,588	July 21	1594	420	32	305
Dierks, John, and T. B. Kail, Harlan, Iowa. Cane	324,093	Aug. 11	928	256	32	703
Dietz, Robert E., *et al.* (See Betts, Lewis F., assignor.)						
Diffenderffer, Frank A., *et al.* (See Iske, Anthony, assignor.)						
Dillard, Robert M., Geneva, Nebr. Buckle	326,410	Sept. 15	1587	413	32	1323
Dille, Henry H., and E. W. McGuire, Richmond, Ind. Lawn-mower	323,285	July 28	2554	{680 681}	32	489
Dillenburg, Michael, San Francisco, Cal. Pipe-coupling	323,567	Aug. 4	243	71	32	567
Dillin, Maurice R. (See Mander, James, assignor.)						
Dillingham, Fred B., Freeport, Me., assignor of one-half to J. E. Abbott, Watertown, Mass. Trimming attachment for sewing-machines	322,355	July 14	1268	331	32	241
Dillon, James M., Birmingham, Ala. Velocipede	325,823	Sept. 8	822	205	32	1173
Dillon, John S., assignor to Foster & Bailey, Providence, R. I. Button	321,953	July 14	751	196	32	145
Dillon, N. G. (See Heldreth, Joseph W., assignor.)						
Dillon, Washington M. (See Upham, Andrew J., assignor.)						
Dimelow, John, Post Oak Grove, assignor to himself and C. W. Deisen, Austin, Tex. Manufacture of hydraulic cement	321,589	July 7	246	.....	32	48
Dimond, George H., Bridgeport, Conn. Sewing-machine tension	324,755	Aug. 18	1842	507	32	881
Direction der Patentpapierfabrik zu Penig. (See Schreiber, Gerhard, assignor.)						
Dismant, Enos. (See Goodwin, Thomas A., assignor.)						
Diss, Albert B., Brooklyn, N. Y. Furniture-caster	324,890	Aug. 25	1940	533	32	906
Disston, Hamilton, *et al.* (See Shoemaker, Charles T., assignor.)						
Disston, Hamilton, *et al.* (See Smith, John, assignor.)						
Disston, Horace C., *et al.* (See Shoemaker, Charles T., assignor.)						
Disston, Horace C., *et al.* (See Smith, John, assignor.)						
Disston, Jacob S., *et al.* (See Shoemaker, Charles T., assignor.)						
Disston, Jacob S., *et al.* (See Smith, John, assignor.)						
Disston, Thomas S., Philadelphia, Pa. Folding ladder	322,699	July 21	1740	459	32	333
Disston, William, *et al.* (See Shoemaker, Charles T., assignor.)						
Disston, William, *et al.* (See Smith, John, assignor.)						
Ditmars, John V. H., New York, N. Y. Combined easy-chair and couch	325,326	Sept. 1	128	36	32	1039
Dittrick, John, Smith's Falls, Ontario, Canada. Fire-escape	326,726	Sept. 22	2040	531	32	1412
Ditwiler, Homer B., Mansfield, Ohio. Armlet	321,422	July 7	10	3	32	4
Dixon, Henry L., Pittsburg, Pa. Glass-furnace	324,307	Aug. 11	1231	{335 336}	32	760
Dixon, John, and E. B. Rhodes, West Baden, Ind. Freight-truck	321,802	July 7	536	141	32	100
Dixon, Michael J., New York, and J. W. Wallace, Brooklyn, N. Y. Ice-cream can	321,954	July 14	752	196	32	145
Dixon, Robert W., assignor of two-thirds to C. Stewart, Springfield, Ohio. Knotter mechanism for self-binders	324,988	Aug. 25	2170	593	32	948
Doane, William H., and G. W. Bugbee, Cincinnati, Ohio. Lathe for turning irregular forms	321,423	July 7	11	3	32	5
Dobb, William A., Smithville, Miss. Combined harrow and cotton planter	326,206	Sept. 15	1322	343	32	1273
Doble, Lucius A., Des Moines, Iowa. Skeleton furnace and steam-generator	324,461	Aug. 18	1438	393	32	805
Docker, Harry. (See Knight and Docker.)						
Dodge, Arthur C., Gardiner, assignor of one-half to A. W. Reynolds, Machias, Me. Car-brake	324,308	Aug. 11	1233	336	32	760
Dodge, Edward L. (See Buchanan and Dodge.)						
Dodge, James, Newark, N. J. Machine for making claw-ends of hammers	326,632	Sept. 22	1681	493	32	1333
Dodge, James M., assignor by mesne assignments, to A. H. and H. L. Andrews, Chicago, Ill. Stop-hinge. (Reissue)	10,637	Aug. 18	1696	521	32	892
Dodge, James M., assignor, by mesne assignments, to A. H. and H. L. Andrews, Chicago, Ill. Stop-hinge. (Reissue)	10,638	Aug. 18	1698	521	32	892
Dodge, John C., New York, N. Y. Can-opener	324,012	Aug. 11	820	227	32	634
Dodge, John S., Mayersville, Miss. Vegetable-washer	322,429	July 21	1372	358	32	266
Dodge, Philip T., Washington, D. C., assignor to E. Remington & Sons, Ilion, N. Y. Type-writing machine	322,810	July 21	1877	497	32	357
Doetsch, Nicolaus, Detroit, Mich. Cigar-bunching tool	322,356	July 14	1271	332	32	241
Doetsch, Nicolaus, assignor of one-half to J. B. Klee, Detroit Mich. Cigar-bunching tool	322,357	July 14	1271	332	32	241
Doetsch, Nicolaus, assignor of one-half to J. B. Klee, Detroit, Mich. Manufacturing cigars	325,062	Aug. 25	2262	621	32	906
Doherty, John H., San Francisco, Cal. Stove-pipe damper	323,568	Aug. 4	244	71	32	567
Dolbear, Amos E., Boston, Mass. Telephone system	325,659	Sept. 8	587	149	32	1131
Dolbear, Amos E., Boston, Mass. Increasing the efficiency of telephones	325,660	Sept. 8	588	149	32	1132
Dollison, Jasper, and J. Long, Salesville, Ohio. Combined bug-holder, scale, and truck	324,668	Aug. 18	1738	476	32	859
Domestic Electrical Manufacturing Company. (See Clarke, Charles L., assignor.)						
Donaldson, George W. (See Hussey, Levi, assignor.) (Reissue.)						
Donaldson, John E., assignor of one-half to O. B. Price, Montezuma, Ind. Roofing-tile	322,917	July 28	2044	540	32	395
Donaldson, Robert B., Washington, D. C. Dental instrument	322,265	July 14	1151	301	32	219
Donaldson, Robert B., Washington, D. C. Machine for barbing dental broaches, &c	327,437	Sept. 29	2991	782	32	1567
Donaldson, Walter H., San Francisco, Cal. Valve-gear	324,094	Aug. 11	929	256	32	703
Donecker, Orin C., assignor to E. J. Schneck and G. H. Bear, Allentown, Pa. Wood-fluting mechanism	324,669	Aug. 18	1739	476	32	859
Donn, W. C., *et al.* (See Kellogg, Charles, assignor.)						
Donn, Wilton C. (See Cuthbert, William M., assignor.)						
Donnan, William, Burgettstown, Pa. Flood-gate	321,607	July 7	385	103	32	72

Alphabetical list of patentees, July to September, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Donneley, Adolph, Hamburg, Germany. Furnace for steam-boilers	323,124	July 28	2335	619	32	449
Donnell, William A., Greensburg, Ind. Revolving horse hay-rake	325,511	Sept. 1	400	98	32	1091
Doolittle, William B. (See Herrmann and Doolittle.)						
Doolittle, William B., Chicago, Ill. Fire-escape	324,670	Aug. 18	1730	{476 477}	32	859
Doolittle, William E., New Haven, Conn. Hand-setting attachment for time-pieces	323,796	Aug. 4	530	150	32	623
Doolittle, William E., assignor to New Haven Watch Company, New Haven, Conn. Hand-setting mechanism for watches	323,795	Aug. 4	529	150	32	622
Dooly, Martin H., Atlanta, Ga., and J. D. O'Callaghan, Chattanooga, Tenn. Car-axle box	323,645	Aug. 4	347	98	32	587
Doremus, William T., Flatbush, N. Y. Draft, check, and other money orders	322,166	July 14	1036	269	32	197
Doremus, William T., Flatbush, N. Y. Check, draft, or other money-order	325,199	Aug. 25	2440	671	32	999
Dorflinger, William F. (See Brown, John A., assignor.)						
Dorn, Gay. (See Scharnweber, William, assignor.)						
Dorn, N. A. (See Allen, Charles C., assignor.)						
Dorneck, Vesper, Indianapolis, assignor of one-half to W. H. Mahan, Princeton, Ind. Ventilator	323,300	July 28	2592	668	32	494
Dorrance, David W., Moore's Salt Works, Ohio. Log-turner	321,603	July 7	537	142	32	100
Dorsett, Daniel H., Chicago, Ill. Underground conduit	322,529	July 21	1513	399	32	291
Dorsey, Frederick, Hagerstown, Md. Wheat scouring and cleaning machine	322,700	July 21	1741	459	32	333
Douglas, Joseph W., Middletown, Conn. Lever-shears	321,604	July 7	538	142	32	100
Douglass, Elias B., Cortland, Ind. Stem winding and setting mechanism	325,594	Sept. 1	502	125	32	1111
Dow, Frank L., assignor to Frisbie & Starsfield, Camden, N. Y. Automatic belt-shifter	326,633	Sept. 22	1681	493	32	1333
Dowe, Percy E., Black River, N. Y. Chair	323,797	Aug. 4	531	{150 151}	32	623
Downend, Franklin L., Idaho Springs, Colo. Amalgamator	326,483	Sept. 15	1675	437	32	1339
Downey, William, New York, N. Y. Awning	322,266	July 14	1152	301	32	219
Downie, George, and A. F. Elsan, Marysville, Cal. Mill-stock feeder	325,327	Sept. 1	129	36	32	1039
Downing, James H., Aberdeen, Miss. Combined poke and muzzle	326,634	Sept. 22	1683	493	32	1333
Downton, Robert L., St. Louis, Mo. Bolting-reel	322,358	July 14	1272	332	32	242
Dowson, Ralph, and J. Taylor, Bolton, county of Lancaster, England. Chemical fire-extinguisher	323,859	Aug. 4	612	172	32	638
Doty, Charles H., assignor of one-half to S. M. Latman, Columbus, Ohio. Roller-skate	324,309	Aug. 11	1234	336	32	760
Doyle, Michael V., assignor of one-half to C. E. Sovereign, Rockford, Ill. Machine for cutting washers	323,660	Aug. 4	614	173	32	639
Dozois, Hilaire. (See Brault, Louis P., assignor.)						
Drais, Lawson, assignor of one-half to P. Drais, Washington Court-House, Ohio. Nose-ring	321,889	July 7	659	171	32	120
Drais, Peter. (See Drais, Lawson, assignor.)						
Drake, John O., Fort Scott, Kans. Frying-pan	324,671	Aug. 18	1732	477	32	859
Draper, Charley A., assignor of two-thirds to P. B. Bryant and E. Probst, Centralia, Ill. Buckle	326,279	Sept. 15	1421	370	32	1291
Draper & Son, George. (See Northrop, James H., assignor.)						
Draper & Sons, George. (See Carroll, William T., assignor.)						
Draper & Sons, George. (See Chase, Horace P., assignor.)						
Draver, Emil R., Stillwater, Minn. Centrifugal reel	326,901	Sept. 22	2286	598	32	1455
Dreifus, Emanuel, *et al.* (See Vogel, John B., assignor.)						
Drew, Henry P., New York, N. Y. Jointed gas and lamp bracket	322,167	July 14	1037	269	32	197
Drew, Henry P., New York, N. Y. Cock for gas, steam, &c., fittings	325,824	Sept. 8	823	206	32	1173
Drew, Henry P., New York, N. Y. Faucet	325,825	Sept. 8	824	206	32	1173
Drew, William E., *et al.* (See Whitney, Edwin R., assignor.)						
Driggs, Jehiel C., Newark, N. J. Shutter-worker	324,989	Aug. 25	2171	594	32	948
Drodzewski, Julius R. (See McConnell, John, assignor.)						
Drodzewski, Julius R., and J. McConnell, Erie, Pa. Printer's quoin	326,484	Sept. 15	1676	438	32	1339
Droege, Ignatius, Jr., Toledo, Ohio. Wire-fastening device for fence-posts	322,359	July 14	1273	332	32	242
Drown, Aaron, South Barton, Vt. Cant-hook	324,095	Aug. 11	930	257	32	703
Dubrenil, George A., *et al.* (See Gornail, Richard, assignor.)						
Drucker, Nathan, Cincinnati, Ohio. Caster	327,147	Sept. 29	2615	681	32	1521
Drummond, Thomas, Norwich, Conn. Steam-boiler	322,701	July 21	1743	460	32	333
Du Bois, Frederick N., New York, N. Y. Machine for making lead traps	321,955	July 14	752	197	32	145
Du Shane, James, South Bend, Ind. Electric lamp	326,487	Sept. 15	1679	{438 439}	32	1340
Dubbs, Edgar J. (See Dibben, Frank, assignor.)						
Ducker, William M., Brooklyn, N. Y. Combined match-box and cigar-cutter	323,025	July 28	2207	583	32	423
Ducker, William M., New York, N. Y. Combined match-box and cigar-cutter	323,026	July 28	2209	584	32	423
Ducker, William M., New York, N. Y. Spring for boxes, &c	323,027	July 28	2210	584	32	424
Ducker, William M., New York, N. Y. Combined match-box and cigar-cutter	323,028	July 28	2211	584	32	424
Ducker, William M., New York, N. Y. Combined match-box and cigar-cutter	323,029	July 28	2212	584	32	424
Dudley, Adolphus S. (See Carpenter and Dudley.)						
Dudley, John W., Portland, Oreg. Piston-rod packing	324,096	Aug. 11	930	257	32	703
Dufrane, John L., Rockford, Ill. Shears	326,485	Sept. 15	1678	438	32	1339
Dummer, Paul E. (See Malmström and Dummer.)						
Dump, Jacob, Chillicothe, Ohio. Vehicle-hub	321,424	July 7	10	4	32	6
Duncan, James, Coshocton, Ohio. Coal-scuttle	325,595	Sept. 1	504	125	32	1111
Duncan, Joseph M., assignor to himself and E. O. McNair, Warsaw, N. Y. Furnace-grate	321,890	July 7	660	171	32	120
Duncan, Joseph M., assignor to himself and E. O. McNair, Warsaw, N. Y. Salt-hopper	322,360	July 14	1274	333	32	242
Duncan, Martin B., Angelica, N. Y. Horse block or step	323,646	Aug. 4	348	99	32	587
Dunham, George, assignor to C. B. Anderson, Unionville, Conn. Die for cutting hexagonal nuts	324,756	Aug. 18	1843	{507 508}	32	881
Dunham Hosiery Company. (See Brothers, Alphonso H., assignor.)						
Dunham, Ira R., Newark, N. J. Ear-ring	324,757	Aug. 18	1845	508	32	881
Dunham, Joseph S., Salem, N. J. Shutter-fastener	326,486	Sept. 15	1679	438	32	1340
Dunkerly, Walter, Providence, R. I. Fan attachment for rocking furniture	326,727	Sept. 22	2041	531	32	1412
Dunklau, William F. C., Chicago, Ill. Game apparatus	324,462	Aug. 18	1439	393	32	805
Dunn, George, Middletown, Ohio, assignor of one-half to Lobdell Car Wheel Company, Wilmington, Del. Calendering-roll	324,758	Aug. 18	1846	508	32	881
Dunn, Patrick, Côte St. Paul, Quebec, Canada, and T. Harris; said Dunn assignor to C. French, Seymour, Conn. Barbed-wire-fence nail	324,310	Aug. 11	1235	336	32	760
Dupret, Jean B., Brussels, Belgium. Compound for waterproofing boots, shoes, &c	323,402	Aug. 4	24	.....	32	527
Dupuis, Eugene. (See Morlet and Dupuis.)						
Durand, Louis, Ticonderoga, N. Y. Dough-kneador	326,023	Sept. 8	1064	{271 272}	32	1218
Durant, Edward G., Racine, Wis., assignor of one-half to T. Kane, Chicago, Ill. Opera-chair	323,301	July 28	2593	688	32	494
Durden, Gus M., Birmingham, Ala. Car-replacer	327,072	Sept. 29	2505	654	32	1502
Durfee, Edgar, *et al.* (See Sturgis, David, assignor.)						
Durfee, William F., Bridgeport, Conn. Hydraulic jack for cranes	323,403	Aug. 4	26	7	32	528

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Durfee, William F., Bridgeport, Conn. Valve	323,404	Aug. 4	28	8	32	592
Dürkoop, John, Brunswick, Germany. Churn	323,861	Aug. 4	616	173	32	639
Durrant, George W., *et al.* (See Poage, James H., assignor.)						
Dutrisac, Moses, Muskegon, Mich. Lumber-trimmer	326,635	Sept. 22	1883	494	32	1383
Dwigans, James, Tipton, Iowa. Hay rake and loader	321,489	July 7	107	29	32	22
Dyar, George F., Chelmsford, Mass. Picture-exhibitor	321,425	July 7	17	4	32	6
Dydynski, Leonard, Buena Vista, Ohio. Burial-vault	325,826	Sept. 8	825	206	32	1174
Dyer, George W., *et al.* (See Hess, Godfrey, assignor.)						
Dymond, Joshua H., assignor to himself and W. W. Dymond, Carbondale, Kans. Car-coupling	325,200	Aug 25	2441	671	32	999
Dymond, William W. (See Dymond, Joshua H., assignor.)						
Dyott, Charles G. (See Dyott, Michael B. and C. G.)						
Dyott, Michael B. and C. G., Philadelphia, Pa. Gas or vapor burner	326,550	Sept. 22	1763	461, 462	32	1363
Eagan Mathew, Cleveland, Ohio. Carbon-cutting machine	323,125	July 28	2336	620	32	449
Eagle Pencil Company. (See Boman, Claes W., assignor.)						
Eames, Frank M. (See Esleeck and Eames.)						
Eames, William S., St. Louis, Mo. Trimmer-arch	322,047	July 14	876	227	32	168
Eargle, John J. (See Keith, Stephen P., assignor.)						
Earhuff, John G., and R. Alden, Chicago, Ill. Reed-organ mute	326,551	Sept. 22	1765	462	32	1364
Earle, Edward J. V. (See Pierce, John, assignor.)						
Earles, John H., Denver, Colo. Car-coupling	324,013	Aug. 11	822	227, 228	32	684
Early, William J., assignor to Jonea & Laughlins, (limited,) Pittsburg, Pa. Apparatus for molding pulleys	323,302	July 28	2595	688, 689	32	495
Earnshaw, Charles W., Boston, Mass. Sales-book. (Reissue)	10,619	July 7	722	189	32	131
Earth, Levi, Chicago, Ill. Hoisting and conveying apparatus	325,328	Sept. 1	131	36, 37	32	1040
Easley, Levi, Whitt, Tex. Corn-planter	325,400	Sept. 1	250	63	32	1063
Eastman, John F., Triumph, Ill. Wagon-jack	324,543	Aug. 18	1546	427	32	825
Eastman, William E., Boston, Mass. Car-ventilator	326,411	Sept. 15	1588	413, 414	32	1323
Eaton, Ambrose C. (See Eaton, David H. and A. C.)						
Eaton, Charles E., Chelsea, Mass. Fan attachment	322,530	July 21	1514	390	32	291
Eaton, David H. and A. C., Waverly, N. Y. Reshipping butter-pail	322,267	July 14	1153	301	32	219
Eberhard, John G., Akron, Ohio. Bridle-bit	324,821	Aug. 25	1941	533	32	906
Eberhardt, Henry E. (See Eberhardt, Ulrich and H. E.)						
Eberhardt, Ulrich and H. E., Newark, N. J. Chip-clearer for gear-cutting machines	321,698	July 7	386	103	32	72
Ebert, Oscar C. (See Gillick, Peter, assignor.)						
Ebi, Edward, Cedar Rapids, Iowa. Knotter for grain-binders	323,126	July 28	2337	620, 621	32	449
Echert, Peter. (See Buckley, John P., assignor.)						
Eckhardt, Jacob, St. Louis, Mo. Vegetable-cutter	323,127	July 28	2340	621	32	450
Economist Plow Company. (See Margedant, William C., assignor.)						
Eddington, William R., Woodburn, Ill. Key-board attachment for musical instruments	326,412	Sept. 15	1501	414	32	1324
Eddington, William R., Woodburn, Ill. Mechanical key-board attachment for pianos and organs	326,413	Sept. 15	1503	414	32	1324
Ede, Samuel. (See Lux and Ede.)						
Edgar, Joseph M., Argentine, Kans., assignor to J. Z. Roraback, Kansas City, Mo. Seal-lock	325,661	Sept. 8	589	150	32	1132
Edge, Isaiah J., Minneapolis, Minn. Implement for catching flies, &c.	322,268	July 14	1154	302	32	219
Edge, John S., Bryan, Tex. Machine for building and rerolling wire fences	323,303	July 28	2337	689	32	495
Edge, William C., Newark, N. J. Metallic fabric	324,014	Aug. 11	823	228	32	684
Edge, William C., Newark, N. J. Metallic fabric	324,015	Aug. 11	824	228	32	684
Edge, William C., Newark, N. J. Chain	324,016	Aug. 11	825	228	32	684
Edmonds, Abraham. (See Krichevski and Edmonds.)						
Edmonds, Charles L. (See Barnes, Andrew N., assignor.)						
Edmonds, Elijah L., Dayaville, Ill. Railway-alarm	322,430	July 21	1373	350	32	267
Edmunds, George, *et al.* (See Bartels, William H., assignor.)						
Edmunds, Henry, London, England, and C. T. Howard, Providence, R. I. Telephone-toll system	327,073	Sept. 29	2506	654, 655	32	1502
Edson, George W. W., Stow, Mass. Fly-trap	325,163	Aug. 25	2383	656	32	988
Edwards, David, *et al.* (See Brandt, Louis, assignor.)						
Edwards, George B. (See Richardson, Alister M., assignor.)						
Edwards, Jesse S. (See Baer and Edwards.)						
Edwards, Oliver H., assignor, by mesne assignments, of one-half to F. H. McConn, New York, N. Y. Attachment for stop-motions of knitting-machines	324,097	Aug. 11	931	257	32	704
Edwards, Robert, New York, N. Y. Electrical annunciator	324,369	Aug. 18	1316	357	32	783
Edwards, William, Glendive, Mont. Ter. Implement for cleaning machinery	323,502	Aug. 4	157	47	32	552
Egan, John F. (See Holmes and Egan.)						
Ego, Alexander H. (See Richardson, John T., assignor.)						
Egerton, Benjamin I., *et al.* (See Jernagan, Alexander J., assignor.)						
Egge, Frederick, assignor to Smith & Egge Manufacturing Company, Bridgeport, Conn. Overseaming-machine	324,672	Aug. 18	1733	477, 478	32	860
Egge, Frederick, and C. J. A. Sjoberg, assignors to Smith & Egge Manufacturing Company, Bridgeport, Conn. Button-hole attachment for sewing-machines	322,811	July 21	1379	498	32	357
Eggleston, Charles H., Marshall, Mich. Drive-chain	322,431	July 21	1374	359	32	267
Egleston, Thomas, New York, N. Y. Method of and compound for preserving stone	323,128	July 28	2341	.....	32	450
Egner, Frederic, St. Louis, Mo. Apparatus for the manufacture of illuminating-gas	326,488	Sept. 15	1681	439	32	1340
Ehrenfeld, Charles, Pasadena, Cal. Wire-screen stretcher	324,673	Aug. 18	1735	478	32	860
Ehrlich, Leo, St. Louis, Mo. Bottle-stopper	322,702	July 21	1743	460	32	333
Eickhoff, August. (See Kramer and Eickhoff.)						
Eisan, Albert F. (See Downie and Eisan.)						
Eisely, John G., Philadelphia, Pa. Ornamental comb	323,798	Aug. 4	533	151	32	623
Eisenberg, Israel H., New York, N. Y. Adjusting device for flouring-mill rolls	322,432	July 21	1374	359	32	267
Eisenhart, Charles A., York, Pa. Electrical attachment for dental chairs	326,057	Sept. 29	2364	618	32	1477
Eisenhart, Edward H., New York, N. Y. Preparing yarn or thread for filling	325,241	Sept. 1	12	4, 5	32	1017
Eisenhart, Edward H., New York, N. Y. Manufacturing filling for rag carpets	325,242	Sept. 1	13	5	32	1017
Eisenstein, Toba. (See Roggen and Eisenstein.)						
Eisner, Joseph, Baltimore, Md. Pantaloons, drawers, or overalls	323,569	Aug. 4	245	72	32	567
Ekman, Axel F., Austin, Tex. Washing-machine	321,699	July 7	388	103	32	72
Elam, Willoughby P., Dubuque, Iowa. Grain-drill	325,512	Sept. 1	401	98	32	1092
Elder, Cornelius D., Osage, Iowa. Cream-transportation tank. (Reissue)	10,643	Sept. 1	569	144	32	1122
Elder, John S., *et al.* (See Collins, Stephen, assignor.)						
Elder, William, Fort Cœur d'Alene, Idaho Ter. Oscillating steam-engine	324,098	Aug. 11	933	257	32	704

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Eldridge, Henry, Toronto, Ontario, Canada. Feather-renovator	324,463	Aug. 18	1440	394	32	806
Electric Appliance Company. (See White, Le Roy S., assignor.)						
Electric Manufacturing Company. (See Pratt, Robert J., assignor.)						
Electrical and Mechanical Developing Company. (See Catten, Elisha B., assignor.)						
Elevator Safety and Motor Company. (See Anderson and Reed, assignors.)						
Elford, William, Oakland, Cal. Portable house	323,030	July 28	2213	585	32	424
Elgin National Watch Company. (See Corliss, Charles P., assignor.)						
Elkins, Orlon N. (See Hunt, James R. B., assignor.)						
Ellacott, Joseph P. (See Cummings, J. Raymond, assignor.)						
Eller, James H., Canton, Ohio. Metal roofing	326,958	Sept. 29	2366	618	32	1477
Elliot, John, Jr., and T. A. Cunningham, Dalbeattie, county of Kirkcudbright, Scotland. Steam-boiler	323,647	Aug. 4	349	99	32	587
Elliot, William H., Ilion, N. Y. Roller-skate	323,405	Aug. 4	30	8	32	528
Elliot, William H., Brooklyn, N. Y. Magazine fire-arm	323,922	Aug. 11	699	196	32	662
Elliot, William H., Brooklyn, N. Y. Fire-arm	325,513	Sept. 1	403	98	32	1092
Elliott, John H., Mason City, Iowa. Fastener for churn-tops	325,164	Aug. 25	2385	657	32	989
Elliott, Sterling, Watertown, Mass. Drilling-machine	324,750	Aug. 18	1647	508	32	882
Elliott, Walter P., New Brunswick, N. J. Apparatus for making gas	326,959	Sept. 29	2366	619	32	1477
Ellis, Charles S., Memphis, Tenn. Letter-box alarm	323,129	July 28	2342	621	32	450
Ellis, Daniel. (See Sherman, Nicholas W., assignor.)						
Ellis, Elisha W., Lake, Ill. Railway bumping-post	322,812	July 21	1382	499	32	358
Ellis, Frederick L., New Haven, Conn. Toggle-joint	322,531	July 21	1516	399	32	292
Ellis, James W., assignor of two-thirds to J. W. Parker, Brooklyn, and H. D. Harris, New York, N. Y. Composition of matter for the preservation and insulation of wires	321,956	July 14	754	197	32	145
Ellis, John F. (See Freeman, Thomas, assignor.)						
Ellis, John F., *et al.* (See Bouvier, Louis P., assignor.)						
Ellis, Joseph G., Oak Ridge, La. Speculum	326,856	Sept. 22	2224	580	32	1444
Ellis, Oliver J., Dartford, county of Kent, assignor to I. and E. Hall, London, England. Air-refrigerating apparatus	323,304	July 28	2596	689, 690, 691	32	495
Ellison, John M., Pittsburg, Pa. Ironing-table	326,857	Sept. 22	2225	581	32	1444
Elliston, John J., Halesborough, Tex. Cotton-seed planter	325,514	Sept. 1	404	99	32	1092
Ellithorp, Archibald M. (See Macomber, Louis H., assignor.)						
Elle, Elisha E., Canning P. O. Nova Scotia, Canada. Steam-boiler	326,960	Sept. 29	2369	619	32	1477
Ellis, Josiah W., Pittsburg, Pa. Controlling gas under pressure	321,426	July 7	18	4	32	6
Ellis, Josiah W., assignor to R. E. Breed, Pittsburg, Pa. Manufacture of hoes	323,130	July 28	2343	622	32	450
Ellsworth, Henry W., Fredonia, N. Y. Writing-desk	326,636	Sept. 22	1885	494	32	1384
Ellwood, Abram. (See Stangaard, Hans H., assignor.)						
Ellwood, Abram, *et al.* (See Long, Edwin, assignor.)						
Ellwood, Hiram. (See Burke, John, assignor.)						
Ellwood, Reuben, *et al.* (See Long, Edwin, assignor.)						
Elmes, Charles F., Chicago, Ill. Rolling-mill	321,427	July 7	20	4	32	7
Elmore, Benton, Shasta, Cal. Screw-plate	325,790	Sept. 8	775	194	32	1164
Ely, David A. (See Postlethwaite, Charles W., assignor.)						
Ely, E. A., *et al.* (See Chamberlain, Marcus W., assignor.)						
Ely, Edward O., Boston, Mass. Button-fastener	323,923	Aug. 11	700	196	32	662
Ely, F. S., *et al.* (See Chamberlain, Marcus W., assignor.)						
Ely, P. A., *et al.* (See Chamberlain, Marcus W., assignor.)						
Elzenheimer, Emil, Toledo, Ohio. Hair-frizzling iron	325,515	Sept. 1	405	99	32	1092
Elzey, Samuel B., Morrisville, Mo. Gate-latch	322,589	July 21	1504	421	32	305
Emans, Theodore F., Mendon, Ohio. Clod crusher and pulverizer	326,489	Sept. 15	1682	439	32	1340
Embry, Leonard B., Corsicana, Tex. Rock-drilling and well-boring machine	321,700	July 7	389	103, 104	32	73
Emerson, Alfred S., Charleston, S. C. Car-ventilator	324,090	Aug. 11	935	258	32	704
Emerson & Fisher Company. (See Ransom, Hiram W., assignor.)						
Emerson, Francis, *et al.* (See Cummins, John R., assignor.)						
Emerson, Frank H., Lynn, Mass. Buffing-roll	325,329	Sept. 1	133	37	32	1040
Emerson, George C. (See Fenton, Hiram C., assignor.)						
Emerson, Talcott & Co. (See Traphagen, William H., assignor.)						
Emery, Albert H., Stamford, Conn. Manufacture of eye-links	322,048	July 14	877	228	32	168
Emery, Albert H., Stamford, Conn. Manufacturing girders	322,049	July 14	879	228	32	168
Emery, Albert H., Stamford, Conn. Manufacture of metallic columns	322,050	July 14	880	228	32	168
Emery, Albert H., Stamford, Conn. Plate for boilers	322,051	July 14	882	228, 229	32	169
Emery, Albert H., Stamford, Conn. Construction of screw-threaded links, bars, or bolts	322,052	July 14	884	229	32	169
Emery, Albert H., Stamford, Conn. Construction of wrought-metal pipes or tubes	322,053	July 14	885	229	32	169
Emery, Charles E., *et al.* (See Smith, Walton D., assignor.)						
Emery, Charles E., Brooklyn, N. Y. Steam-table	323,570	Aug. 4	246	72	32	567
Emery, Cora L., *et al.* (See Smith, Walton D., assignor.)						
Emery, Cyrus, *et al.* (See Smith, Walton D., assignor.)						
Emmert, Jesse A., assignor of one-half to W. H. Anthony, Montrose, Mo. Bosom-board	322,703	July 21	1744	460	32	334
Empire Electric Carbon Company. (See Coultass, Charles, assignor.)						
Empress Embroiderer Company. (See Chilton, Franklin H., assignor.)						
Endres, John J., Hoboken, N. J. Truck for cable cars	326,167	Sept. 15	1175	300	32	1246
Engel, Louis G., Tilly Foster, N. Y. Pump	322,969	July 14	1155	302	32	219
Engel, Louis G., Tilly Foster, N. Y. Valve	322,270	July 14	1156	303	32	220
Engelhard, Frank, assignor of one-half to D. S. Loomis, Springfield, Mass. Lock-valve	322,590	July 21	1595	421	32	305
Engelhardt, Frederick, New York, N. Y. Piano-action	325,401	Sept. 1	251	63	32	1063
Engelke, Leonold A. H., Philadelphia, Pa. Fire-escape	326,961	Sept. 29	2369	619	32	1477
English, Daniel, Brookville, Pa. Stove-lifter	322,813	July 21	1882	499	32	358
English, James G., New Haven, Conn. Carriage-curtain button	323,131	July 28	2344	622	32	451
Enoch, Alexander B., *et al.* (See Winters, John B., assignor.)						
Enoch, Benjamin F., Bergen Point, N. J. Lamp for illuminating, heating, and ventilating rooms	322,168	July 14	1038	269	32	197
Enoch, John, Chicago, Ill. Halter	321,957	July 14	755	197	32	145
Enos, John R., Buffalo Hart, assignor of one-half to G. W. Bullard, Springfield, Ill. Carriage-jack	326,024	Sept. 8	1067	272	32	1210
Enominger, John R., Palmyra, Pa. Milk-cooler	321,490	July 7	108	29	32	22
Eppler, Andrew, Jr., Boston, assignor of one-half to E. Adams, Newburyport, Mass. Boot and shoe sewing machine	325,063	Aug. 25	2363	621, 622	32	966
Equitable Electric Company. (See Pendleton, John M., assignor.)						
Erlanger, Charles, Baltimore, Md. Button-fastening machine	325,516	Sept. 1	405	99, 100, 101	32	1093
Erler, Albert L., Lawler, Iowa. Car-coupling	322,814	July 21	1883	499	32	358

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Ernst, John, Bay City, Mich. Boring-machine	324,100	Aug. 11	936	258	32	704
Ernst, Leo, Chicago, Ill. Making beer	324,822	Aug. 25	1942	534	32	906
Ernst, Victor H., Jersey City, N. J. Engine-lathe	325,662	Sept. 8	591	150, 151	32	1132
Ernst, Wilson, Camden, N. J. Grate	323,031	July 28	2214	585	32	424
Ervin, James R., Marshall, Mo. Sulky-plow	322,094	July 14	938	243	32	179
Erwin, James B., Milwaukee, Wis. Steam-trap	321,701	July 7	391	104	32	73
Esche, Hermann, St. Louis, Mo. Two-wheeled vehicle	324,823	Aug. 25	1943	534	32	906
Escorbia, Jean M. and M. L. S., St. Etienne, Loire, France. Bottle-stopper	325,064	Aug. 25	2266	623	32	967
Escorbia, Marguerite L. S. (See Escorbia, Jean M. and M. L. S.)						
Eshelman, Benjamin F., Harlan, Iowa. Carpet-fastener	322,095	July 14	939	243	32	179
Eshleman, J. Albert, Philadelphia, Pa. Necktie-retainer	323,648	Aug. 4	350	100	32	587
Esleeck, Augustine W., Holyoke, Mass. Car-coupling	325,518	Sept. 1	411	101	32	1094
Esleeck, Augustine W., and F. M. Eames, Holyoke, Mass. Car-coupling	325,517	Sept. 1	410	101	32	1094
Esseck, Richard M. (See Jacobsen, James M., assignor.)						
Estabrook, Alanson C., assignor to Florence Manufacturing Company, Florence, Mass. Hand-mirror	323,649	Aug. 4	350	100	32	588
Estelle, Henry, Chattanooga, Tenn. Boiler-cleaner	323,571	Aug. 4	246	72	32	567
Esten, Moses, Slatersville, R. I. Trade-wagon	325,696	Sept. 1	505	126	32	1111
Esterly & Son, George. (See Van De Water, Joseph, assignor.)						
Estey, David M. (See Osborn and Estey.)						
Esty, William, assignor of three-sixths to J. T., C. A., and F. E. Busiel, Laconia, N. H. Knitting-machine	322,361	July 14	1275	333	32	242
Ethridge, Martin V. B., assignor to A. J. Bailey, Boston, Mass. Machine for stamp-canceling and postmarking	323,799	Aug. 4	533	151, 152, 153	32	623
Etnyre, Charles D., *et al.* (See Carson and Sherman, assignors.)						
Eureka Axle Company. (See Atkins, Sullivan H., assignor.)						
Eureka Axle Company. (See Carter, Alba B., assignor.)						
Eureka Hinge Company. (See Resch, John A., assignor.)						
Eureka Mower Company. (See Markham, Dewitt C., assignor.)						
Eureka Sound Apparatus Company. (See Bigelow, Albert S., assignor.)						
Euston, Henry T. (See Weimer and Euston.)						
Evans, Andrew, Indianapolis, Ind. Device for closing air-tight vessels	322,433	July 21	1375	360	32	967
Evans, Anstin C., Springfield, Ohio. Harrow	321,605	July 7	540	142	32	100
Evans, Benjamin F., Attleborough Falls, Mass. Ornamental chain	323,862	Aug. 4	617	173	32	640
Evans, George F., Corpus Christi, Tex. Fastening for blind-slats	323,863	Aug. 4	618	174	32	640
Evans, George W., Baltimore, Md. Milk or cream can	323,864	Aug. 4	618	174	32	640
Evans, James D., and G. Bogart, Scranton, Pa. Railway-car closet	321,958	July 14	756	197	32	145
Evans, Quimby N., Boston, Mass. Regulator for hydraulic elevators	327,074	Sept. 29	2510	655	32	1503
Evans, Quimby N., Boston, Mass. Indicator for elevators	327,075	Sept. 29	2512	655	32	1503
Evans, Thomas, New York, N. Y. Fire-extinguishing apparatus	326,962	Sept. 29	2371	620	32	1478
Evans, Warren R., Portland, Me. Tooth-brush	323,305	July 28	2600	691	32	496
Evans, Warren R., Portland, Me. Artificial tooth	323,306	July 28	2601	691	32	496
Evans, William, Philadelphia, Pa. Clip for heads of vehicle-springs	323,307	July 28	2602	691, 692	32	496
Evans, William, Philadelphia, Pa. Clip for vehicle-springs	324,990	Aug. 25	2172	594	32	948
Evans, William, Philadelphia, Pa. Clip for locomotive-springs	325,201	Aug. 25	2442	671, 672	32	999
Evans, William, Philadelphia, Pa. Clip for locomotive-springs	325,202	Aug. 25	2443	672	32	999
Evans, William, Philadelphia, Pa. Clip for vehicle-springs	326,963	Sept. 29	2372	620	32	1478
Evarts, John A., assignor to Bradley & Hubbard Manufacturing Company, Meriden, Conn. Extension lamp-fixture	324,760	Aug. 18	1848	509	32	882
Evarts, John A., assignor to Bradley & Hubbard Manufacturing Company, Meriden, Conn. Suspension device for lamps	325,203	Aug. 25	2444	672	32	999
Everding, John. (See Hyatt and Everding.)						
Evered, Joshua, Duluth, Minn. Log-turner	326,280	Sept. 15	1422	370	32	1291
Everett, Eliza A. (See Everett, Richard H. and E. A.)						
Everett, Fred F., Weeping Water, Nebr. End-gate for wagons	321,891	July 7	661	172	32	120
Everett, Richard H. and E. A., Vestal Centre, N. Y. Cooking-utensil	322,532	July 21	1517	399	32	292
Everitt, Percival. (See Sandeman and Everitt.)						
Evers, Wilhelm A., Edgewood, Ga. Fire-escape	323,924	Aug. 11	701	196, 197	32	602
Everson, John Q., Pittsburg, Pa. Draft-regulator	325,791	Sept. 8	776	194	32	1164
Everts, Galen B. (See Le Roy and Martignoni, assignors.)						
Ewer, Adolph, *et al.* (See Majert, Wilhelm, assignor.)						
Ewer, Albert, Battle Creek, Mich. Farm-fence	326,902	Sept. 22	2288	568	32	1455
Ewing, Alexander. (See Pacey, John T., assignor.)						
Ewing, Alexander, New York, N. Y. Cigarette-machine	322,362	July 14	1277	333, 334	32	242
Excelsior Electric Apparatus Company. (See Haid, Alfred, assignor.)						
Excelsior Self Leveling Berth and Automatic Ladder Company. (See Milligan, Charles A., assignor.)						
Exhaust Ventilator Company. (See Kittoe, Edmund F., assignor.)						
Eynon, Thomas. (See Eynon, William R. and T.)						
Eynon, William R. and T., Cleveland, Ohio. Nut-tapping machine	322,363	July 14	1281	335	32	243
Fagan, Thomas B., Van Wert, Ohio. Wheel-harrow	323,132	July 28	2346	622	32	451
Fahlberg, Constantin, New York, N. Y. Saccharine compound	326,281	Sept. 15	1424	.....	32	1292
Fahys Watch Case Company. (See Lamont, James, assignor.)						
Fahys Watch Case Company. (See Shaw, Charles H., assignor.)						
Fairbank, Henry W. (See Beckwith, Frank W., assignor.)						
Fairbanks, Albert C., and W. A. Cole, Boston, Mass. Peg-supporting device for banjos	322,054	July 14	887	230	32	169
Fairbanks & Co., E. & T. (See Fairbanks, Franklin, assignor.)						
Fairbanks & Co., E. & T. (See Spencer and Hazen, assignors.)						
Fairbanks, Franklin, assignor to E. & T. Fairbanks & Co., St. Johnsbury, Vt. Portable or folding scale	326,025	Sept. 8	1067	272	32	1219
Fairchild, Le Roy W., New York, N. Y. Fountain-pen	325,663	Sept. 8	597	151	32	1133
Fairee, Joseph J., *et al.* (See Cummins, John R., assignor.)						
Fairman, Simon, Baltimore, Md. Car-brake	321,428	July 7	22	5	32	7
Fales, Giles S., New Bedford, Mass. Instrument for dosing animals	323,406	Aug. 4	32	8	32	529
Falkenthal, Henry, Bozeman, Mont. Ter. Washing-machine	323,133	July 28	2347	623	32	451
Fall Mountain Paper Company. (See Smith, Richard, assignor.)						
Fallis, George T., St. Joseph, Mo. Safety-gate for elevators	324,544	Aug. 18	1547	427	32	825
Farbenfabriken, vormals Friedr. Bayer & Co. See Fischer, Friedrich, assignor.)						
Faries, Robert, Decatur, Ill., assignor to Farmers Friend Manufacturing Company, Dayton, Ohio. Check-rower for corn-planters	326,282	Sept. 15	1424	370, 371	32	1292

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Faris, David J., Windom, Kans. Station-indicator for railway-cars, &c	323,407	Aug. 4	33	8	32	529
Farmer, Moses G., New York, N. Y. Apparatus for refining copper by electricity	322,169	July 14	1040	270	32	197
Farmer, Moses G., New York, N. Y. Apparatus for refining copper by electricity	322,170	July 14	1041	270	32	197
Farmer, Moses G., Newport, R. I. Cable-recorder	322,918	July 28	2045	540	32	395
Farmer, Moses G., New York, N. Y. Regulator for electric motors	323,650	Aug. 4	352	100	32	588
Farmer, Moses G., Newport, R. I. Electro-magnetic heating apparatus	323,651	Aug. 4	354	100, 101	32	588
Farmer, Moses G., Newport, R. I. Electro-magnetic motor	323,652	Aug. 4	355	101	32	588
Farmer, Moses G., Newport, R. I. Electric motor	323,653	Aug. 4	357	102	32	589
Farmer, Moses G., New York, N. Y. Exercising-chair	325,519	Sept. 1	412	102	32	1095
Farmer, Moses G., Newport, R. I. Telephone-repeater	325,920	Sept. 8	929	235	32	1194
Farmer, Moses G., Newport, R. I. Metallic shingle	326,108	Sept. 15	1176	301	32	1246
Farmer, William H., Nottingham, England. Device for securing the needles in embroidering-machines	322,704	July 21	1745	461	32	334
Farmers Friend Manufacturing Company. (See Faries, Robert, assignor.)						
Farnham, Isaiah H., assignor to American Bell Telephone Company, Boston, Mass. Apparatus for testing electrical circuits	325,590	Sept. 1	413	102	32	1095
Farrar, Benjamin F., San Francisco, Cal. Folding bed	327,076	Sept. 29	2513	655	32	1503
Farrar, Benjamin F., San Francisco, Cal. Folding bed	327,077	Sept. 29	2514	656	32	1503
Farrar, Eugene W., *et al.* (See Anderson, Charles, assignor.)						
Fasnacht, Louis U., New Orleans, La. Machine for treating ramie and sugar-cane	324,674	Aug. 18	1737	478	32	861
Faught, Luther R., Philadelphia, Pa. Car-wheel	321,590	July 7	247	65	32	48
Faught, Luther R., Philadelphia, Pa. Metal-boring bit	327,148	Sept. 29	2617	682	32	1521
Faught, Luther R., Philadelphia, Pa. Device for holding metal-cutters	327,149	Sept. 29	2619	682	32	1521
Faught, Luther R., Philadelphia, Pa. Car-wheel	327,150	Sept. 29	2621	682, 683	32	1521
Faught, Luther R., Philadelphia, Pa. Device for holding metal-cutters	327,151	Sept. 29	2623	683	32	1522
Faulkner, Alfred, Jersey City, N. J. Sewing-machine	322,533	July 21	1517	400	32	292
Favor, Lorenzo B., and C. A. Jacobs, Gloucester, Mass. Electro-magnetic log	326,207	Sept. 15	1323	343	32	1273
Fay, Franz A., Brooklyn, N. Y. Machine for making wires for metallic seals	326,283	Sept. 15	1426	371	32	1292
Fay, Richard C., Jersey City, N. J. Pen-holder	325,921	Sept. 8	930	235	32	1195
Faymonville, Bernard, San Francisco, Cal. Automatic grade-delineator	321,591	July 7	249	66	32	48
Faymonville, Bernard, San Francisco, Cal. Electro-magnetic speed-register for ships' logs	323,134	July 28	2348	623	32	451
Fearis, James H., Connersville, Ind. Bottom for roller-skates	323,135	July 28	2349	623	32	452
Feister, Henry P., Philadelphia, Pa. Printing-machine	323,925	Aug. 11	703	197	32	603
Feister, Henry P., Philadelphia, Pa. Gas-engine for railway-cars	324,244	Aug. 11	1142	311, 312	32	742
Feister, Henry P., assignor to M. and W. H. Nixon, Philadelphia, Pa. Paper bag	325,922	Sept. 8	931	236	32	1195
Felding, William I. (See Turnbull, Andrew, assignor.)						
Fellows, Edward A., Reading, Mass. Closing the openings in rubber bottles and other similar rubber articles	321,491	July 7	109	29	32	22
Fennell, Thomas J., Elmira, N. Y. Air-blast mechanism for furnaces	325,330	Sept. 1	134	37	32	1040
Fenner, George P., New London, Conn. Sheet-delivery apparatus	324,245	Aug. 11	1145	312	32	743
Fenner, Richard E., assignor to C. K. Giles, Chicago, Ill. Watch-case	323,654	Aug. 4	360	102	32	589
Fennerty, John M., Memphis, Tenn. Car-window	323,408	Aug. 4	34	9	32	529
Fenton, Charles, assignor to A. H. Vescelius, New York, N. Y. Folding bed	323,600	Aug. 4	539	153	32	624
Fenton, Ephraim H., Kansas City, Mo. Calk-sharpener	324,991	Aug. 25	2173	594	32	948
Fenton, Hiram C., assignor of one-half to G. C. Emerson, Hartford, Conn. Bench-clamp	322,434	July 21	1376	360	32	268
Fenton, Sally M., Salinas, Cal. Dish-washer	325,792	Sept. 8	777	194	32	1165
Fergus, David M., and J. A. Griffiths, Philadelphia, Pa. Combined ejector and injector	323,503	Aug. 4	158	47	32	552
Ferguson, Alvah P., Dexter, Mich. Road-cart	326,414	Sept. 15	1505	415	32	1324
Ferguson, George J., Greenville, Tex. Car-coupling	325,923	Sept. 8	932	236	32	1195
Ferguson, George W., Jr., New York, N. Y. Drapery-pin	325,924	Sept. 8	933	236	32	1195
Ferguson, James S., *et al.* (See Kidder, George R., assignor.)						
Ferguson, John S., Lewisville, Tex. Fence	323,032	July 28	2214	585	32	424
Ferguson, William T., Corning, Kans. Harrow and land-roller	322,919	July 28	2046	540	32	395
Fern, John, Scranton, Pa. Miner's lamp	326,858	Sept. 22	2226	581	32	1445
Fernie, John, Philadelphia, Pa. Ventilating apparatus for rocking-chairs	322,705	July 21	1746	461	32	334
Ferro, Alfred E., Poughkeepsie, N. Y. Making sirup and beer from maize	324,761	Aug. 18	1849	509	32	882
Ferrando, Joseph, Genoa, Italy. Steam-boiler	324,545	Aug. 18	1550	427	32	826
Ferris, Laning L., New York, N. Y. Letter-file	327,389	Sept. 29	2934	706	32	1577
Ferst, Charles. (See Hoffmann and Ferst.)						
Fertig, John T., Denver, Colo. Belt clamp and tightener	324,546	Aug. 18	1551	428	32	826
Feurie, John G. (See Tiffany, David B., assignor.)						
Field, Frank R., Greenfield, Mass. Electric clock	324,824	Aug. 25	1943	534	32	907
Field, Henry, Jr., New Bedford, Mass. Car-coupling	322,591	July 21	1596	421	32	306
Field, John C., New York, N. Y. Glove-fastening	323,926	Aug. 11	705	198	32	663
Field, Martin S. (See Amundson and Field.)						
Field, Stephen D. (See Healy, Clarence L., assignor.)						
Fielding, John, Gloucester, county of Gloucester, England. Rotary motor	324,246	Aug. 11	1147	313	32	744
Fielding, William I., New Britain, Conn. Bolster bed-bottom	323,572	Aug. 4	247	73	32	568
Fields, Charles H., assignor of one-half to E. S. Turner, Chicago, Ill. Hame	326,490	Sept. 15	1682	439	32	1340
Fife, Joel A., Chicago, Ill. Box and pad for canceling stamps	322,534	July 21	1518	400	32	292
Fifield, David E., *et al.* (See Blakely, Caleb J., assignor.)						
Filkins, Adelbert, Maltaville, N. Y. Thill-coupling	325,331	Sept. 1	134	37	32	1040
Fillebrown, Jairus A. (See Fillebrown, Luther W. and J. A.)						
Fillebrown, Luther W. and J. A., Piqua, Ohio. Machine for making wire fences	322,096	July 14	940	243, 244	32	180
Fillmore, Charles W., Marengo, Ill. Hub for vehicle-wheels	324,927	Aug. 25	2082	570	32	933
Fillmore, Charles W., Marengo, Ill. Hub for vehicle-wheels	324,928	Aug. 25	2083	570	32	933
Filson, Hiram G., New Cumberland, W. Va. Implement used in the manufacture of cans, &c.	327,247	Sept. 29	2744	712	32	1545
Finch, James B., assignor of one-half to A. Albright, Newark, N. J. Horseshoe	325,664	Sept. 8	598	151	32	1133
Finch, John M., assignor to Knickerbocker Company, Jackson, Mich. Dust-collector	325,521	Sept. 1	415	102, 103	32	1005
Finck, Julius, assignor to Will & Finck, San Francisco, Cal. Door-opener	323,308	July 28	2603	692	32	496
Finck, Nicholas, Elizabeth, N. J. Device for enriching gas supplied to burners	324,992	Aug. 25	2176	595	32	949
Finkbiner, David, *et al.* (See Caley, Edward L., assignor.)						
Finlay, William G., Lawrence, Mass. Paper-cutting machine	326,859	Sept. 22	2227	581	32	1445
Finnegan, John, Philadelphia, Pa. Support for steam-pipes	324,929	Aug. 25	2085	570	32	933
Fire Extinguisher Manufacturing Company. (See Steck, Ernst, assignor.)						
Fischer, August, *et al.* (See Naramore, Henry L., assignor.)						
Fischer, Conrad, and L. Grother, Brownsville, Mo. Harrow	325,065	Aug. 25	2267	623	32	967
Fischer, Friedrich, Barmen, assignor to Farbenfabriken, vormals Friedr. Bayer & Co., Elberfeld, Germany. Manufacture of violet dye-stuff	325,827	Sept. 8	825	.....	32	1174

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drgs.	Official Gazette. Vol.	Official Gazette. Page.
Fischer, Friedrich, Barmen, assignor to Farbenfabriken, vormals Friedr. Bayer & Co., Elberfeld, Germany. Violet methyl dye-stuff	325,828	Sept. 8	826	.....	32	1174
Fish, Abner C., assignor to M. L. Fish, Racine, Wis. Road-cart	321,806	July 7	541	142	32	101
Fish, Edwin R., Chicago, Ill. Combined step and end-gate	325,665	Sept. 8	599	151	32	1133
Fish, John, Wabash, Ind. Car-coupling	326,415	Sept. 15	1596	415	32	1324
Fisher, Alfred Edwards, Miss. Nut-lock	325,829	Sept. 8	827	207	32	1174
Fisher, Charles H., Boston, and P. Schwamb, Arlington, Mass. Pressure-indicating gage	323,033	July 28	2216	586	32	425
Fisher, Elben C., Sissonville, W. Va. Corn-sheller	322,535	July 21	1519	400	32	292
Fisher, George W., Baltimore, Md. Pea-sheller	326,026	Sept. 8	1069	272	32	1220
Fisher, Robert F., assignor to H. F. H. Bothe, Attleborough, Mass. Perfume-ejector	323,409	Aug. 4	35	9	32	529
Fisher, William B. (See McMurray and Fisher.)						
Fisher, William H., Cincinnati, Ohio. Holder for cartridge-shells	325,666	Sept. 8	599	152	32	1133
Fisk, Darwin B., Kalamazoo, Mich. Thrashing-machine elevator	326,964	Sept. 29	2373	621	32	1478
Fisk, Darwin B., Kalamazoo, Mich. Signal-gate for draw-bridges	326,965	Sept. 29	2374	621	32	1478
Fisk, John N., St. James, New Brunswick, Canada. Combined derrick and carrier	325,738	Sept. 8	707	176, 177	32	1152
Fisk, Orville C., San Bernardino, Cal. Cot-bed	322,055	July 14	888	230	32	169
Fiske, Bradley A., Washington, D. C. Arc-lamp-regulating mechanism	324,311	Aug. 11	1237	337	32	761
Fiske, George W. (See Chase and Hesselton, assignors.)						
Fiske, Samuel, New York, N. Y. Steam-generator	326,552	Sept. 22	1766	462	32	1364
Fisler, Charles F., Clayton, N. J. Fruit-jar fastening	326,416	Sept. 15	1597	415	32	1324
Fitch, Byron S. (See Fitch, Calvin H., assignor.)						
Fitch, Calvin H., Middletown Springs, Vt., assignor of one-half to B. S. Fitch, Richmond, Va. Prescription-scales	327,152	Sept. 29	2625	683	32	1522
Fitch, Ezra C., Newton, Mass. Watch-case	324,675	Aug. 18	1738	479	32	861
Fitch, Philip S. (See Sparling and Fitch.)						
Fitnam, Thomas H., Washington, D. C. Inking apparatus for printing-machines	327,248	Sept. 29	2744	712, 713	32	1545
Fitt, Frederick, Chaux-de-Fonds, Neufchâtel, Switzerland. Stop-watch	325,402	Sept. 1	252	63	32	1063
Fitz, Jacob, Hanover, Pa. Smut-mill	325,066	Aug. 25	2267	623	32	967
Fitz Gerald & Co. (See Brown, John F., assignor.)						
Fitz Gerald, Walter H., Chicago, Ill. Watch-case	327,078	Sept. 29	2517	656	32	1504
Fitzgerald, Walter S., Boston, Mass. Boot and shoe nailing machine	324,312	Aug. 11	1239	337	32	761
Flad, Philipp, Philadelphia, Pa. Shoe-fastening	325,522	Sept. 1	417	103	32	1096
Flagg, George H. P., trustee. (See Coy, Frederick W., assignor.)						
Flagg, William, Brooklyn, N. Y. Steam-boiler	325,332	Sept. 1	135	38	32	1040
Flagler, John H. (See Shelton, Thomas, assignor.)						
Flagler, John H., New York, N. Y. Roof of furnaces	325,403	Sept. 1	254	63, 64	32	1064
Flagler, Thomas, New Sharon, Iowa. Spring bed-bottom	323,309	July 28	2604	692	32	496
Flagstad, Ole, Hamar, Norway. Vise	323,655	Aug. 4	361	103	32	589
Flagstad, Ole, Hamar, Norway. Window construction and fastening and hinge	325,333	Sept. 1	137	38	32	1041
Fleischer, Johannes, H. W. Müller, and J. G. Arnold, Frankfort-on-the-Main, Germany. Gas-regulator	324,702	Aug. 18	1652	510	32	883
Fleming, Peter F. Huntsville, Mo. Horse hay-rake	326,417	Sept. 15	1598	415	32	1325
Fleming, Thomas C., Ayer, Nebr. Device for converting motion	322,815	July 21	1884	500	32	350
Flenniken, Theodore M. (See McGregor and Flenniken.)						
Fletcher, Charles A., and W. H. Wilder, assignors to American Oil Stove Company, Gardner, Mass. Securing glass or mica in sheet-metal structures	325,523	Sept. 1	417	103	32	1096
Fletcher, Henry, assignor to Sweet, Fletcher & Co., Providence, R. I. Jewelry-pin	322,364	July 14	1283	335	32	244
Fletcher, John R., assignor of one-half to J. E. Lowes, Dayton, Ohio. Electric-lamp insulator	323,504	Aug. 4	160	47	32	552
Fletcher, Joshua L., Corinth, Miss. Punching-machine	324,930	Aug. 25	2085	570	32	934
Fletcher, Mordecai H., Cincinnati, Ohio. Roller-skate	322,271	July 14	1157	303	32	220
Fletcher, Thomas, Warrington, county of Lancaster, England. Gas-stove	322,592	July 21	1597	422	32	306
Fletcher, William A., and W. E. Keightley, Clarksville, Mo. Suction-box for paper-machines	325,165	Aug. 25	2386	657	32	989
Fleury, Paul, Gonneville, France. Spinning-machine	324,931	Aug. 25	2086	571	32	934
Flenss, Henry A., Newtown, Isle of Wight, England. Ice-machine	326,027	Sept. 8	1070	273	32	1220
Flewwelling, Gilford, and G. J. Harris, Hampton, New Brunswick, Canada. Match-splint machine	322,706	July 21	1746	461	32	334
Flinn, John W. (See Briody, Philip, assignor.)						
Flinn, William H., Nashua, N. H. Tool for cutting wire	327,153	Sept. 29	2626	683	32	1522
Floeter, Robert. (See Atwell and Floeter.)						
Florence Machine Company. (See Keith, Jeremiah, assignor.)						
Florence Machine Company. (See Ranney, David F., assignor.)						
Florence Manufacturing Company. (See Estabrook, Alanson C., assignor.)						
Florsheim, Simon, Chicago, Ill. Glove-fastener	325,524	Sept. 1	418	103	32	1096
Flower, John A., and E. B. Ruddock, Campton, Ill. Air-line surveying-instrument	324,017	Aug. 11	825	229	32	684
Floyd, George W., *et al.* (See Caley, Edward L., assignor.)						
Flynn, Mary J., Cleveland, Ohio. Underwaist for children	326,553	Sept. 22	1767	462	32	1364
Flynn, Michael, Elyria, Ohio. Double plow	327,154	Sept. 29	2628	684	32	1523
Fogarty, Charles F., *et al.* (See Crass, Frederick H., assignor.)						
Fogarty, William P., *et al.* (See Crass, Frederick H., assignor.)						
Fogg, John D. (See Towle, Abner S., assignor.)						
Follansbee, George S., Boston, Mass. Water-meter	327,155	Sept. 29	2628	684	32	1523
Foos Manufacturing Company. (See Winchell, James F., assignor.)						
Foote, James H., New York, N. Y. Syringe	327,249	Sept. 29	2747	713	32	1545
Foote, Thomas M., Black Wolf, Kans. Railway-switch	322,920	July 28	2047	541	32	395
Forbes, Francis. (See Wilson, James G., assignor.)						
Forbes, George W., Gubserville, Cal. Cultivator	326,208	Sept. 15	1324	343	32	1273
Forbes, Governeur M., Salt Lake City, Utah Ter. Axle for vehicles	326,284	Sept. 15	1427	372	32	1292
Forbes, Walter T., Atlanta, Ga. Refrigerating apparatus	321,702	July 7	393	105	32	73
Forbes, Winslow, assignor to himself and F. B. Lawrence, Riverhead, N. Y. Car-coupling	325,830	Sept. 8	828	207	32	1174
Force, William A., Brooklyn, N. Y. Hand-stamp	326,418	Sept. 15	1599	416	32	1325
Ford, Addison M., and J. M. Moore, Jericho, Vt. Machine for planing and finishing thin pieces of wood	322,616	July 21	1885	500	32	359
Ford, Daniel R., San Francisco, Cal. Coin-changer's box	327,156	Sept. 29	2630	684	32	1523
Ford, George A., Cleveland, Ohio. Metal sheave	323,136	July 28	2350	624	32	452
Ford, George W., Elba, N. Y. Tire-upsetter	325,793	Sept. 8	777	195	32	1165
Forder, Charles. (See Forder, Frederick and C.)						
Forder, Frederick and C., Wolverhampton, England. Carriage-window	323,665	Aug. 4	620	174	32	640
Forder, Frederick and C., Wolverhampton, England. Opening and closing the doors of hansom-cabs	325,739	Sept. 8	708	177	32	1152

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drgs.	Official Gazette. Vol.	Official Gazette. Page.
Foreman, Milton, Philadelphia, Pa. System of steam-heating	325,607	Sept. 8	602	152	32	1134
Forest, William E., New York, N. Y. Exercising-machine	325,404	Sept. 1	256	64	32	1064
Forman, Francis M., Greenville, Mich. Boiler-cleaner	323,310	July 28	2605	602, 603	32	497
Forney, Matthias N., New York, N. Y. Car-seat	324,825	Aug. 25	1946	534, 535	32	907
Forker, William H., Meadville, Pa. Wire-stretcher	326,419	Sept. 15	1600	416, 417	32	1325
Forrest, Hamlet E., assignor of two-thirds to W. H. Beecher and E. G. Mansfield, New Haven, Conn. Tuning-pin for musical instruments	322,272	July 14	1159	303	32	220
Forrest, Hamlet E., assignor of two-thirds to W. H. Beecher and E. G. Mansfield, New Haven, Conn. Banjo	325,067	Aug. 25	2268	623	32	968
Forsaith, Samuel C., *et al.* (See Whitney, Edwin R., assignor.)						
Forster, Ferdinand E., New York, N. Y. Shallow-water indicator	326,028	Sept. 8	1072	274	32	1220
Fortier, Charles L., Milwaukee, Wis. Telephone-receiver	323,311	July 28	2606	693	32	497
Fosburgh, Robert L., assignor to J. W. Branch, St. Louis, Mo. Earth-auger	322,365	July 14	1264	335	32	244
Fosdick, Frederick, Fitchburg, Mass. Piston-valve	323,410	Aug. 4	36	9	32	529
Fosdick, Frederick, Fitchburg, Mass. Steam-engine governor	323,411	Aug. 4	38	10	32	530
Foster & Bailey. (See Dillon, John S., assignor.)						
Foster, Charles F. (See Foster, James A. and C. F.)						
Foster, Frank N., Duluth, Minn. Adjustable finger-ring	322,435	July 21	1377	360	32	268
Foster, Henry J., Racine, Wis. Seed-sower	321,703	July 7	394	105	32	74
Foster, James A. and C. F., Fulton, N. Y. Tobacco-plant cutter	323,312	July 28	2606	693	32	497
Foster, Lucian M., assignor to S. Foster and J. H. Reynolds, Troy, N. Y. Boring bit or auger	324,763	Aug. 18	1654	510	32	883
Foster, Merriam & Co. (See Sutliff, James R., assignor.)						
Foster, Samuel, *et al.* (See Foster, Lucian M., assignor.)						
Foster, Samuel B. (See Prime, William R., assignor.)						
Foster, William A. (See Putnam and Foster.)						
Foulds, Thomas H., Cincinnati, Ohio. Wheat-meal product	327,250	Sept. 29	2748	.....	32	1546
Foulke, John W. (See Niemann, James P., assignor.)						
Fowler, Arthur H., Newark, Ohio. Steam-boiler	323,412	Aug. 4	39	10	32	530
Fowler, Green L., Clarksburg, Mo. Weather-strip	325,597	Sept. 1	505	126	32	1112
Fox, Ansel E., Leadville, Colo. Attachment for coal-oil cans	325,068	Aug. 25	2270	624	32	968
Fox, Frank W. (See Fox, Lewis, assignor.)						
Fox, George, New York, N. Y. Steam-boiler	324,101	Aug. 11	938	258	32	705
Fox, Lewis, assignor to F. W. Fox, Middleburg, N. Y. Rotary steam and air pump	324,370	Aug. 18	1317	358	32	783
Fox, Perley E., Marlow, N. H. Heating-drum	325,405	Sept. 1	258	64	32	1064
Fox, Rowland, New York, N. Y. Collar-buttoner	322,273	July 14	1160	304	32	220
Fox, William H., assignor of ten-sixteenths to P. E. and R. W. Green, St. Louis, Mo. Device for filing way-bills, &c	322,274	July 14	1161	304	32	221
Fox, William J., New York, N. Y. Machine for molding cigars	321,592	July 7	200	66, 67	32	48
Fraer, Harriet L. (See Fuller, Lucinda and H., assignors.)						
Fraikin, John J., Fort Wayne, Ind. Corn-planter	323,601	Aug. 4	540	154	32	625
Frail, Aaron W., Ashland, Mass. Gas-machine	321,959	July 14	757	198	32	116
France, Lewis B., Denver, Colo. Mustache-protector	323,802	Aug. 4	540	154	32	625
Frank, Himan, assignor to Twisted Wire Box Strap Company, New York, N. Y. Wire-twisting machine	321,492	July 7	110	30	32	22
Frankel, Jacob, Baltimore, Md. Knit jacket	325,525	Sept. 1	420	104	32	1096
Franklin, Solomon, Pine Bluff, Ark. Combined harrow, cultivator, and plow	325,598	Sept. 1	506	126	32	1112
Franklin, William B., assignor to Colts Patent Fire Arms Manufacturing Company, Hartford, Conn. Magazine fire-arm	326,491	Sept. 15	1683	440	32	1341
Franz, Julius, Warsaw, Ill. Snow-plow	323,656	Aug. 4	302	103	32	590
Franzen, Nils G., Randolph, Kans. Rocking-chair	323,137	July 28	2351	624	32	452
Fraser, Peter, Hamilton, Ontario, Canada. Machine for making upholstering-springs	323,657	Aug. 4	302	103, 104	32	590
Freeland, Albert F., Malden, and C. H. Whitten, Waltham, Mass. Watch-movement box	325,204	Aug. 25	2446	673	32	1000
Freeman, Alva M., and J. B. Overmeyer, Chicago, Ill. Suspenders	325,740	Sept. 8	710	177, 178	32	1153
Freeman, Augustus M., Ocean Grove, assignor to himself and A. C. Kelly, Metuchen, N. J. Folding settee, crib, and cradle	325,794	Sept. 8	778	195	32	1165
Freeman, Michael. (See Freeman, Stephen and M.)						
Freeman, Stephen, Racine, Wis. Broadcast seeder	321,704	July 7	395	105	32	74
Freeman, Stephen, Racine, Wis. Fertilizer-distributer	321,705	July 7	396	106	32	74
Freeman, Stephen and M., Racine, Wis. Broadcast seed-sower	321,706	July 7	398	106	32	74
Freeman, Thomas, assignor of one-half to J. F. Ellis, Toronto, Ontario, Canada. Combined backing, plowing, and gilding press	323,313	July 28	2607	693	32	497
Freeport Spring Hinge Company. (See Devore, Levi M., assignor.)						
Freese, Harry E., Philadelphia, Pa. Lighting railway-cars	325,795	Sept. 8	779	195	32	1165
Freese, Harry E., Philadelphia, Pa. Car-heater	325,796	Sept. 8	780	196	32	1165
Freese, John S., Brooklyn, N. Y. Button-hole sewing-machine	325,599	Sept. 1	508	126, 127	32	1112
Freeto, James H., Mechanicsburg, Ill. Telephone	321,960	July 14	759	198	32	146
French, Carlos. (See Dunn and Harris, assignors.)						
French, George P., Rochester, N. Y. Lubricating compound	324,018	Aug. 11	827	.....	32	685
French, Henry W., assignor to Lane Manufacturing Company, Waterbury, Conn. Apparatus for manufacturing covered buttons	323,803	Aug. 4	541	154	32	625
Frergang, Albert, New York, N. Y. Device for filling lamps	324,547	Aug. 18	1552	428	32	827
Friday, Jacob, Bound Brook, N. J. Seed-planter	322,593	July 21	1598	422	32	306
Friedrich, Henry, and C. W. Carson, Port Chester, N. Y. Portable basket-grate	324,102	Aug. 11	939	259	32	705
Friemann, Heinrich. (See Wolf and Friemann.)						
Fries, Anthony. (See Cassidy and Fries.)						
Frisbee, Gideon, Elmore, Ohio. Machine for pulverizing ores, &c	321,429	July 7	22	5	32	7
Frisbee, Gideon, Elmore, Ohio. Machine for pulverizing ores, &c	321,430	July 7	23	6	32	7
Frisbie, Henry R., Cromwell, assignor to Pratt & Cody Company, Hartford, Conn. Swivel-connection for valves and their spindles	324,676	Aug. 18	1739	479	32	861
Frisbie & Starsfield. (See Dow, Frank L., assignor.)						
Fritts, William H., Plano, Ill. Grain-binding machine	324,464	Aug. 18	1441	394	32	806
Fritz, August, Chicago, Ill. Velocipede	324,826	Aug. 25	1949	535	32	907
Frizzell, D. W. (See Headen, Minnis, assignor.)						
Froeschels, Frederick, Nuremberg, Germany. Pencil or crayon holder	324,764	Aug. 18	1654	510	32	883
Frost, Charles H. (See Burkman, Walfrid, assignor.)						
Frost, Charles W., Philadelphia, Pa. Calendar. (Reissue)	10,648	Sept. 29	3081	802, 803	32	1602

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Frost, Edward J., Philadelphia, and W. Dawson, Montgomery County, Pa. Car-axle box	325,668	Sept. 8	603	152	32	1134
Frost, Stiles. (See Kempster, Daniel R., assignor.)						
Frost, William B., assignor of one-half to G. S. Ingersoll, San Francisco, Cal. Harness-check	324,765	Aug. 18	1855	511	32	863
Fry, Charles H., Jr., Wheeling, W. Va., assignor of one-half to C. M. Rhodes, Bridgeport, Ohio. Cap for fruit-jars	326,492	Sept. 15	1685	440	32	1341
Fry, John A., Bakersfield, Cal. Movable gate for irrigating	321,593	July 7	255	67	32	49
Fry, Stephen D., Attica, Ind. Fence-making machine	326,029	Sept. 8	1075	274	32	1220
Fuchs, Ernst, Chicago, Ill., assignor of one-half to K. Schrimpf, Minneapolis, Minn. Combined locket and coin and letter scale	324,465	Aug. 18	1443	395	32	866
Fuechsel, Albert E., Mount Vernon, N. Y. Garter	323,866	Aug. 4	621	174	32	640
Fnick, George. (See Spengler, Christian G., assignor.)						
Fuller, Andrew. (See Reichert and Fuller.)						
Fuller, Aspinwall, New York, N. Y. Marine-engine governor	323,314	July 28	2608	694	32	497
Fuller, Charles A., Boston, Mass., assignor to J. S. Silver, New York, N. Y., and J. W. Marden, Malden, Mass. Car-brake clamp	322,536	July 21	1520	400	32	293
Fuller, Charles C., Worcester, Mass. Mask	327,438	Sept. 29	2993	782	32	1588
Fuller Electrical Company. (See Wood, James J., assignor.)						
Fuller, George H., Pawtucket, R. I. Manufacture of jewelers' findings	323,927	Aug. 11	706	198	32	664
Fuller, Harriet. (See Fuller, Lucinda and H.)						
Fuller, J. Ensign, Chicago, Ill. Telephone-receiver	322,884	July 21	1995	527	32	339
Fuller, Levi C., Fayette, Mo. Fifth-wheel	324,827	Aug. 25	1949	535	32	907
Fuller, Lucinda and H., assignor of one-fourth to H. L. Fraer, Detroit, Mich. Window-sash	323,867	Aug. 4	621	175	32	640
Fuller, Solomon, assignor to W. M. Currier, Danvers, C. J. Bowker, Boston, and J. J. H. Gregory, Marblehead, Mass. Wheel-hoe	324,466	Aug. 18	1444	395	32	866
Fullerton, George A., Boston, Mass. Machine for molding heel-stiffeners	325,797	Sept. 8	781	196, 197	32	1106
Fulton, Samuel, Brooklyn, N. Y. Mattress	322,366	July 14	1295	336	32	244
Furlong, Robert, Sancelito, Cal. Ladder	322,171	July 14	1042	270	32	198
Furman, Lemuel, Bay City, Mich. Lifting-jack	326,966	Sept. 29	2375	621	32	1479
Furst, Michael, Brooklyn, N. Y. Safety-lock for spindles on jennies	323,315	July 28	2610	694	32	498
Fuso, Ignazio, Boston, Mass. Upright-piano action	325,669	Sept. 8	604	153	32	1134
Gaar, John M., assignor to Gaar, Scott & Company, Richmond, Ind. Straw-stacker	325,526	Sept. 1	421	104	32	1097
Gaar, Scott & Company. (See Gaar, John M., assignor.)						
Gabel, Johanna M. executrix. (See Gabel and Guelpa.)						
Gabel, John F., deceased, (J. M. Gabel executrix,) and J. B. Guelpa, Chelsea, Mass. Nipple-plate for type-casting machines	327,079	Sept. 29	2519	656	32	1504
Gabler, Emil, New York, N. Y. Piano-forte	324,467	Aug. 18	1445	395	32	867
Gadberry, Harvey O., Washington, Ind. Cog-wheel	324,932	Aug. 25	2067	571	32	934
Gage, John P., Vineland, N. J. Bench-plane	323,804	Aug. 4	543	154	32	625
Gaitley, John E., Troy, N. Y. Handle for steam-valves	327,251	Sept. 29	2749	713	32	1546
Gale, Augustus J., assignor to Gale Manufacturing Company, Albion, Mich. Sulky-plow	325,069	Aug. 25	2270	624	32	968
Gale, Clarence A., Big Rapids, Mich. Clip for wagons	321,707	July 7	399	106	32	75
Gale, Clarence A., Big Rapids, Mich. Wagon end-gate	326,420	Sept. 15	1601	417	32	1326
Gale, Franklin, Muskegon, Mich. Wood-polishing machine	325,527	Sept. 1	423	104, 105	32	1097
Galo Manufacturing Company. (See Gale, Augustus J., assignor.)						
Gallinger, Alexander, Oshkosh, Wis. Forming tracks or ruts in ice-covered logging-roads	326,209	Sept. 15	1336	343	32	1274
Gally, Merritt, New York, N. Y. Organ-reed	324,371	Aug. 18	1318	358	32	784
Gally, Merritt, New York, N. Y. Organ-reed	326,638	Sept. 22	1888	495	32	1365
Galvin, John. (See Galvin, Thaddeus and J.)						
Galvin, Thaddeus and J., Detroit, Mich. Valve	321,807	July 7	541	143	32	101
Gamblice, Jeuleos, Cresskill, N. J. Door	323,658	Aug. 4	366	104	32	501
Gammon, James G., Wayne City, Ill. Car-coupling	326,421	Sept. 15	1602	417	32	1326
Ganick, Louis, Rockford, Ill. Desk attachment for trunks	321,961	July 14	759	198	32	146
Ganick, Louis, Rockford, Ill. Desk attachment for trunks	323,505	Aug. 4	160	47, 48	32	552
Gannett, Jasper, Ruthven, Iowa. Combined corn-planter and check-rower	322,436	July 21	1378	360, 361	32	268
Ganser, Nicolas H., Chicago, Ill. Billiard-table	322,097	July 14	942	244	32	180
Ganss, Jacob, Brooklyn, N. Y., assignor to Ansonia Clock Company, Ansonia, Conn. Pendulum-regulator						
Gantter, Louis. (See Hennessy, Thomas F., assignor.)						
Gardam, Frederick W., assignor of two-thirds to W. and J. Gardam, Brooklyn, N. Y. Securing the parts of transits and other instruments of precision	325,070	Aug. 25	2271	624	32	968
Gardam, Joseph, *et al.* (See Gardam, Frederick W., assignor.)						
Gardam, William, *et al.* (See Gardam, Frederick W., assignor.)						
Gardanier, George W., New York, N. Y., assignor to Baltimore & Ohio Telegraph Company, Baltimore, Md. Repeater for quadruplex telegraphs	326,637	Sept. 22	1886	495	32	1384
Gardner, De Alton, Plymouth, Wis. Roller for gates	321,708	July 7	399	106, 107	32	74
Gardner, Edward, Allegheny City, Pa. Car-brake	324,548	Aug. 18	1553	428	32	827
Gardner, James D., and J. N. Brumbelow, Morgan, Tex. Clothes-washer	326,860	Sept. 22	2228	582	32	1445
Gardner, Marshall, Aurora, Ill. Corset	325,600	Sept. 1	509	127	32	1112
Garich, Robert, Chicago, Ill. Aligning-instrument	322,921	July 28	2048	541	32	306
Garland, Milton H., Everett, assignor of two-thirds to J. S. Rice, Cambridge, N. W. Payne and A. H. Spencer, Boston, Mass. Can or receptacle	325,925	Sept. 8	934	237	32	1195
Garlick, Charles, Syracuse, N. Y. Hinge for awning-blinds	326,967	Sept. 29	2376	622	32	1479
Garman, Adam M., assignor to himself and W. J. Garman, Sinking Creek, Va. Wagon-brake	321,709	July 7	401	107	32	75
Garman, William J. (See Garman, Adam M., assignor.)						
Garmany, Frank C. (See Bulloch, Robert H., assignor.)						
Garnar, George W. (See Maclachlan, John W., assignor.)						
Garner, Amaziah, Lynchburg, Ohio. Dental lip-holder	323,573	Aug. 4	248	73	32	508
Garrett, Henry, Dallas, Tex. Electrical alarm for window-screens	324,010	Aug. 11	628	229	32	685
Garrett, Henry H., assignor to Westinghouse Machine Company, Pittsburg, Pa. Separator for mingled oil and water	322,817	July 21	1887	501	32	359
Garrett, Henry H., assignor to Westinghouse Machine Company, Pittsburg, Pa. Molder's flask	327,252	Sept. 29	2750	713, 714	32	1546
Garrett, Lee S., Fulton, Ky. Sash-fastener	324,830	Aug. 25	1954	536	32	908
Garrick, Joseph, Michigan City, Ind. Shell	322,275	July 14	1161	304	32	221
Garrick, Joseph, Michigan City, Ind. Shell	325,166	Aug. 25	2388	657	32	969
Garsed, Robert P., Norristown, Pa. Air-pump	325,926	Sept. 8	935	237	32	1195
Gärtner, Albert. (See Howe and Gärtner.)						
Garton, James P., Jersey City, N. J. Car-axle box	321,710	July 7	401	107	32	75

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Garwood, Henry H., Trenton, N. J. Machine for making heel-stiffeners	325,071	Aug. 25	2273	625	32	968
Gary, E. Stanley, Baltimore, and H. T. Heath, Elysville, Md. Spooler	326,422	Sept. 15	1603	417	32	1326
Gary, George E. (See Haverly and Gary.)						
Gaskell, Holbrook, Jr., Widnes, county of Lancaster, England. Purifying ammonia-soda	326,423	Sept. 15	1604	418	32	1326
Gaskill, Harvey F., Lockport, N. Y. Duplex pumping-engine	322,922	July 28	2049	541, 542	32	396
Gaskill, Harvey F., Lockport, N. Y. Duplex pumping-engine	324,372	Aug. 18	1319	358, 359	32	784
Gaskill, William C., Apalachin, N. Y. Egg-box	324,829	Aug. 25	1953	536	32	908
Gass, William G., Philadelphia, Pa. Transmitting-gearing	326,961	Sept. 22	2229	582	32	1445
Gassett, Oscar, Boston, Mass. Electric railway	323,138	July 28	2252	624	32	452
Gassett, Oscar, Boston, Mass. Motor-pressure generator	324,828	Aug. 25	1951	535	32	908
Gassett, Oscar, Boston, Mass. Safe	326,424	Sept. 15	1606	418	32	1326
Gaston, George P., Silver Creek, N. Y. Adjustable embalming-table	322,437	July 21	1378	361	32	268
Gately, Michael R. (See Kelly, Timothy F., assignor.)						
Gately, Philip J. (See Bromley and Gately.)						
Gaskill, William C., Apalachin, N. Y. Egg-box	323,506	Aug. 4	102	48	32	553
Gates, George S., Athol, Mass. Sleeve for garments	326,554	Sept. 22	1767	463	32	1365
Gates, P. Tenney, New York, N. Y. Wash-board	322,172	July 14	1042	270	32	198
Gates, William H., Jesup, Iowa. Fence-post	323,659	Aug. 4	368	105	32	591
Gathright, Josiah B., Louisville, Ky. Automatic car-brake	325,831	Sept. 8	820	207	32	1174
Gathright, Josiah B., Louisville, Ky. Trace-carrier for harness						
Gaukroger, Albert. (See Watson and Gaukroger.)						
Gavin, William, Webb City, Mo. Mop-wringer	325,528	Sept. 1	424	105	32	1097
Gay, William A., Newark, N. J. Preparing articles for plating purposes	321,711	July 7	402	.....	32	75
Gearing, Charles M., assignor of one-half to J. R. McKee, Pittsburg, Pa. Manufacturing illuminating-gas	323,660	Aug. 4	369	105	32	591
Geber, Morits, Berlin, Germany. Parabolic railway and car, &c	322,594	July 21	1600	423	32	306
Gedge, Barton H., and H. Meyerer, assignors to American Wire Nail Company, Covington, Ky. Nail-machine	325,670	Sept. 8	604	153	32	1134
Gehman, Abraham A., Newton, Kans. Incubator	321,712	July 7	403	107, 108	32	75
Gehrckens, Carl O., Hamburg, Germany. Driving-belt	324,993	Aug. 25	2177	595	32	949
Geib, David W. (See Michael and Geib.)						
Geier, John L., assignor to H. Rendtorff, Chicago, Ill. Apparatus for crystallizing tin-plate	322,056	July 14	889	230	32	170
Geiger, Charles A., and B. Beale, assignors to Springfield Machine Company, Springfield, Ohio. Wind-motor	324,090	Aug. 11	899	229	32	685
Geise, Henry, Philadelphia, Pa. Barber's chair	323,661	Aug. 4	370	105	32	591
Geise, O. N. (See Gibson, William B., assignor.)						
Gendron Iron Wheel Company. (See Gendron, Peter, assignor.)						
Gendron, Peter, Toledo, Ohio. Car-wheel	322,276	July 14	1163	305	32	221
Gendron, Peter, assignor to Gendron Iron Wheel Company, Toledo, Ohio. Wheelbarrow	322,277	July 14	1164	305	32	221
George, Frank, Regents Park, county of Middlesex, England. Connection for lead and other like pipes	326,425	Sept. 15	1609	418, 419	32	1327
George, Nathan M. (See Holmes and George.)						
George, Nathan M., Danbury, Conn. Car-axle lubricator	322,278	July 14	1165	305	32	222
Georges, John J., Washington, D. C. Cushion for the feet	326,798	Sept. 22	2042	531	32	1412
Georgi, Martha, *et al.* (See Georgi, Rudolf, assignor.)						
Georgi, Rudolf, New York, assignor to G. H. Lages and M. Georgi, Brooklyn, N. Y. Artificial flower	326,367	July 14	1296	336	32	244
Geraghty, Frank. (See Zack and Geraghty.)						
Gerald, Amos F., Fairfield, Me. Sewing-machine cabinet	322,279	July 14	1167	306	32	222
Geran, Josiah P., assignor to himself and G. Bergen, Brooklyn, N. Y. Stop attachment for roller-skates	322,173	July 14	1044	271	32	198
Gerdom, Andrew H., Albany, N. Y. Curtain-supporter	321,892	July 7	662	172	32	121
Gerdom, Gregory, West Troy, N. Y. Oil-can	323,928	Aug. 11	706	198	32	664
Gerhard, Charles, New York, N. Y. Composition for Bengal lights	323,662	Aug. 4	371	.....	32	592
Gerhardt, John, assignor to S. Davis, Montreal, Quebec, Canada. Car-truck	324,831	Aug. 25	1955	536	32	909
Gernerd, Jeremiah M. M., Muncy, Pa. Spring bed-bottom	326,535	Sept. 22	1769	463	32	1365
Gerrard, Frank S., Scranton, Pa. Car-brake	323,507	Aug. 4	163	48	32	553
Getrost, G. W., *et al.* (See Balch, Andrew J., assignor.)						
Geyer, Adam J., Jr., Rahway, N. J. Automatic tap	325,072	Aug. 25	2274	625	32	968
Ghiselin, Richard, Webster Groves, Mo. Blind-hinge	326,729	Sept. 22	2043	532	32	1412
Gibbons, Gabriel J., Haven, Kans. Automatic grain-weigher	324,373	Aug. 18	1322	360	32	784
Gibbons, John. (See Meneely and Gibbons.)						
Gibbons, John, assignor to Meneely Hardware Company, West Troy, N. Y. Harness-snap	322,438	July 21	1380	362	32	268
Gibbons, John, West Troy, N. Y., assignor to Meneely Hardware Company. Car-axle oiler. (Reissue)	10,644	Sept. 8	1152	294	32	1235
Gibbons, Robert E. (See Manring and Gibbons.)						
Gibbs, Lewis, Canton, Ohio. Lawn-rake	324,374	Aug. 18	1323	360	32	784
Gibbs, Lewis, Canton, Ohio. Plow-clevis and link	326,210	Sept. 15	1327	344	32	1274
Gibby, William, Rahway, N. J. Vehicle-wheel	322,174	July 14	1045	271	32	198
Gibson, Abram J., Shrewsbury, Mass. Adjustable chair	326,968	Sept. 29	2379	622	32	1479
Gibson, Charles, assignor to himself and North Western Fertilizing Company, Chicago, Ill. Making a fertilizer from tank-waters	324,103	Aug. 11	940	.....	32	705
Gibson, Edward J. (See Comstock and Gibson.)						
Gibson, Jacob F., Red Lion, Pa. Carriage-lamp and foot-warmer	321,713	July 7	405	108	32	76
Gibson, Selden F., assignor of part to W. H. Stevens and W. F. Lunt, Portland, Me. Advertising-mat	321,431	July 7	24	6	32	7
Gibson, William B., Smithville, assignor of one-half to O. N. Geise, Terrell County, Ga. Seed-planter	323,413	Aug. 4	41	10	32	530
Giddings, Charles M., Massillon, Ohio. Wheel for traction-engines	326,109	Sept. 15	1177	301	32	1247
Gideon, Henry S. and V. M., Crescent City, Iowa. Ore-separating machine	324,550	Aug. 18	1553	429	32	827
Gideon, Valentine M. (See Gideon, Henry S. and V. M.)						
Gidley, Jennie D., New York, N. Y. Undergarment	326,639	Sept. 22	1889	495	32	1365
Giesler, Franklin B., Milwaukee, Wis., assignor of one-half to A. Logemann. Smoke-consuming furnace. (Reissue)	10,639	Aug. 25	2479	681	32	1007
Gifford, Charles, *et al.* (See Burnham, Arthur M., assignor.)						
Gifford, Ezra N., assignor to himself, W. and J. R. McLean, Cincinnati, Ohio. Car-coupling	326,285	Sept. 15	1428	372	32	1292
Gifford, Watson H., Fort Hamilton, N. Y. Apparatus for holding and shifting stage scenery	325,927	Sept. 8	936	237	32	1196
Gifford, William H., Cincinnati, Ohio. Button	324,832	Aug. 25	1956	537	32	909
Gilbert Clock Company, William L. (See Lane, Almeron M., assignor.)						
Gilbert, Orvellas H., Newark, N. J. Latch	327,157	Sept. 29	2631	684	32	1523

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Gilchrist, Daniel J., Newark, N. J. Slicer	322,175	July 14	1046	271	32	198
Gile, Henry E. (See Sly and Gile.)						
Giles, Charles K. (See Fenner, Richard E., assignor.)						
Giles, Edwin L. (See Lamson and Giles.)						
Giles, George T. (See Lavery, Dominick D., assignor.)						
Giles, Joel E., Jackson, Mich. Grain-binder	322,439	July 21	1381	362, 363	32	268
Giles, Julian A., Cortland, N. Y. Work-holding chuck	323,414	Aug. 4	42	11	32	531
Giljohan, R. C., *et al.* (See Bolte, Frank H., assignor.)						
Gill, Asher B., Philadelphia, Pa. Check-receiver	324,677	Aug. 18	1740	479	32	861
Gill, James R., Bellota, Cal. Gang-plow	326,969	Sept. 29	2380	622	32	1479
Gill, William, Toronto, Ontario, Canada. Car-brake	321,432	July 7	24	6, 7	32	8
Gillick, Peter, assignor to O. C. Ebert, Southington, Conn. Die for forging carriage-shackle blanks	325,073	Aug. 25	2275	625	32	969
Gilliland, Ezra T., Boston, Mass. Electrical contact-point	324,678	Aug. 18	1741	479	32	862
Gilliland, Ezra T., Boston, Mass. Junction between cabled and uncabled conductors	327,060	Sept. 29	2519	657	32	1504
Gilliland, James F., Indianapolis, Ind. Armature for electro-magnets	323,663	Aug. 4	371	105	32	572
Gilliland Manufacturing Company. (See Thompson, John H., assignor.)						
Gilman, John H., Ottawa, Ill. Cylinder for corn-shellers	325,671	Sept. 8	606	153	32	1135
Gilman, Jona W. C., Reading, Mass. Copy-book	321,504	July 7	255	68	32	49
Gilmer, George O., Clarksville, Tenn. Rotary shears	322,440	July 21	1385	363, 364	32	269
Gilmore, Othniel, North Raynham, Mass. Channel-flap-laying machine	327,081	Sept. 29	2521	657	32	1504
Gilmore, Richard N., Camden, Ky. Violin-bow	323,139	July 28	2354	624	32	453
Gilmore, Steele F., assignor of one-half to S. Ward, Princeton, Ind. Window-screen	325,529	Sept. 1	425	105	32	1097
Gingerick, Austin D., near North Manchester, Ind. Wagon-body	326,970	Sept. 29	2381	623	32	1480
Gingras, Timothy, Buffalo, N. Y. Leather washer	322,923	July 28	2053	542	32	396
Glaggen, Carl F., New York, N. Y. Sofa-bed	322,176	July 14	1047	271	32	199
Glanville, Herbert. (See Judge and Clayton, assignors.)						
Glen Cove Machine Company. (See Gray, William H., assignor.)						
Glen Cove Machine Company. (See Welch, Hutchinson, and Gray, assignors.)						
Glenn, Allen, Ree Heights, Dak. Ter. Combined plow and seeder	322,595	July 21	1600	423	32	306
Glidden, Joseph F., De Kalb, Ill. Fence	323,316	July 28	2612	694	32	498
Globe Files Company. (See Jenkins, John M., assignor.)						
Gloeser, Adolph, West St. Paul, Minn. Compound for treating tobacco	327,158	Sept. 29	2632	.....	32	1523
Gnehm, Robert, assignor to Society of Chemical Industry, Basle, Switzerland. Production of chlorophthalic acid	322,368	July 14	1286	.....	32	244
Gobble, William S. (See Haden and Gobble.)						
Goddard, Asa, *et al.* (See Worcester, Edward J., assignor.)						
Goddard, Charles V., Brooklyn, N. Y. Button	326,211	Sept. 15	1328	344	32	1274
Goddard, Ezra G., East Saginaw, Mich. Rotary-mold-board plow	326,030	Sept. 8	1076	275	32	1221
Godefroy, Alexandre F., St. Louis, Mo. Horse-detacher	325,334	Sept. 1	138	38	32	1041
Godfrey, George (See Patrick and Godfrey.)						
Goen, Homer B., *et al.* (See Henderson, Robert M., assignor.)						
Goepel, Paul. (See Wenmaekers, Jerome, assignor.)						
Goff, Francis C., Englewood, Ill. Coffin	321,433	July 7	26	7	32	8
Golden Gate Concentrator Company. (See Tobey and Thayer, assignors.)						
Goldenberg, Lazarus, New York, N. Y. Temporary electric lighting	324,551	Aug. 18	1554	429	32	827
Golding, Moses, Trenton, N. Y. Mining-pit	321,714	July 7	407	108, 109	32	76
Golding, William H., Boston, Mass. Chromatic attachment for printing-machines	322,441	July 21	1386	364, 365	32	269
Goldsmith, Albert, Salem, Mass. Car-coupling	323,664	Aug. 4	372	106	32	592
Goldsmith, Benjamin J., Saratoga Springs, N. Y. Ventilating attachment	325,243	Sept. 1	14	5	32	1017
Goldsmith, Ferdinand, assignor of one-half to J. W. Perrin, Saginaw, Mich. Attachment for lamps	324,933	Aug. 25	2088	571, 572	32	934
Goldsmith, Gustavus A. (See Hoffman, Joseph, assignor.)						
Goldsmith, Gustavus A. (See Merrill, Alfred K., assignor.)						
Goldsmith, John S., New York, N. Y. Apparatus for controlling the issue of time-checks	326,493	Sept. 15	1685	440	32	1341
Goldsmith, John S., New York, N. Y. Apparatus for receiving time-checks	326,494	Sept. 15	1688	441	32	1341
Goldsmith, John S., New York, N. Y. Time-check system	326,495	Sept. 15	1691	441	32	1342
Goldstein, Samuel, *et al.* (See Vogel, John B., assignor.)						
Golling, John. (See Phillips, Trodeu, and Golling.)						
Gollings, Henry, Beltzhoover, Pa. Fire-escape	323,140	July 28	2355	625	32	453
Gonser, Absalom B. (See Hollinger, Wolgemot, and Gonser.)						
Gooch, Mike M., Jefferson, Tenn. Nursery-chair	326,110	Sept. 15	1179	301	32	1247
Gooch, Thomas P., Oakland, Miss. Treadle	326,862	Sept. 22	2230	582	32	1445
Good, Louis C., *et al.* (See Long, William S., assignor.)						
Good, William H. (See Bridgers and Good.)						
Goodale, Sarah A., Watertown, N. Y. Pocket for wearing-apparel	326,971	Sept. 29	2381	623	32	1480
Goode, Sarah E., Chicago, Ill. Cabinet-bed	322,177	July 14	1048	272	32	199
Goodell Company. (See Oaks, William A. C., assignor.)						
Goodman, Henri, San Luis Obispo, Cal. Combined strap and waistband for pantaloons	321,962	July 14	761	199	32	146
Goodrich, Benjamin F., Akron, Ohio, and L. Smith, Kansas City, Mo. Pneumatic apparatus for grain-conveyers and attachments	323,317	July 28	2612	695	32	498
Goodrich, Frank L., Chicago, Ill. Combined presser-foot and clamp for holding sewing-machine attachments	324,247	Aug. 11	1148	313	32	744
Goodson, William D., Eufala, Ala. Wrench	324,104	Aug. 11	941	259	32	705
Goodwin, Asahel J., Brookline, Mass. Invalid-bedstead	326,111	Sept. 15	1180	301, 302	32	1247
Goodwin, Ella, Chicago, Ill. Washing-machine	326,903	Sept. 22	2229	599	32	1455
Goodwin, George W., Plain, S. C. Distributer and planter	324,468	Aug. 18	1446	395	32	807
Goodwin, Henry K., assignor of ten-elevenths to Ohio Molecular Telephone Company, Cleveland, Ohio. Electric switch	324,248	Aug. 11	1149	313	32	744
Goodwin, Henry L., New York, N. Y. Furniture	326,730	Sept. 22	2044	532	32	1412
Goodwin, Hiland W., Detroit, Mich., assignor to A. C. Hutchison and J. Goss, Beloit, Wis. Stove-pipe fastener or clamp	321,808	July 7	542	143	32	101
Goodwin, Julius C., assignor to American Button Hole, Overseaming and Sewing Machine Company, Philadelphia, Pa. Tension device for sewing-machines	324,249	Aug. 11	1150	313	32	744
Goodwin, Julius C., assignor to American Button Hole, Overseaming and Sewing Machine Company, Philadelphia, Pa. Tension-release for sewing-machines	324,250	Aug. 11	1151	314	32	744
Goodwin, Richard J. P., Manchester, N. H. Pneumatic dispatch and speaking tube system	322,178	July 14	1049	272, 273	32	199
Goodwin, Thomas A., assignor of one-half to E. Dismant, Camden, N. J. Stair-rod	324,679	Aug. 18	1742	480	32	862

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Goodwin, William F., Stelton, N. J. Construction and operation of permanent railways, &c.	326,212	Sept. 15	1328	344	32	1274
Gordon, Edward F., and H. Hobbs, Concord, N. H. Summer cooking-stove	323,665	Aug. 4	373	106	32	592
Gordon, Fred. W., Pittsburg, assignor to Gordon, Strobel & Laureau, Philadelphia, Pa. Blowing-engine valve	325,074	Aug. 25	2276	625	32	969
Gordon, James. (See Hanrahan, Joseph F., assignor.)						
Gordon, Strobel & Laureau. (See Gordon, Fred. W., assignor.)						
Gordon, Strobe & Laureau. (See Strobel, Victor O., assignor.)						
Gore, Russell L., Carlisle, Ky. Churn	325,530	Sept. 1	426	105	32	1098
Gornall, Richard, Baltimore, Md. Cable railway	325,205	Aug. 25	2447	673	32	1000
Gornall, Richard, assignor of ninety one-hundredths to G. A. Dubreuil and J. Hecht, Baltimore, Md. Traction-way	325,167	Aug. 25	2390	658	32	990
Gornall, Richard, assignor of ninety one-hundredths to G. A. Dubreuil and J. Hecht, Baltimore, Md. Apparatus to be used with traction-cables	325,168	Aug. 25	2392	658, 659	32	990
Gory, Emanuel G., Cincinnati, Ohio, assignor to Corbin Cabinet Lock Company, New Britain, Conn. Lock	324,313	Aug. 11	1241	337	32	702
Gory, Emanuel G., Cincinnati, Ohio, assignor to Corbin Cabinet Lock Company, New Britain, Conn. Cabinet-lock	326,972	Sept. 29	2382	623	32	1480
Goshorn, Peter C., Ligonier, Ind. Gate-hinge	323,574	Aug. 4	249	73	32	568
Gosling, Robert, Hatton Court, Ipswich, county of Suffolk, England. Baffle-plate for flues of boilers	324,552	Aug. 18	1556	429	32	827
Gosman, Robert, Jr., Wading River, N. Y. Seeding-machine	327,253	Sept. 29	2752	714	32	1546
Goss, H. H. (See Costello, Thomas H., assignor.)						
Goss, Joseph, *et al.* (See Goodwin, Hiland W., assignor.)						
Gould, Aaron P., and H. R. Spencer, Canton, Ohio. Surgical chair	321,809	July 7	543	143, 144	32	101
Gould, Edward L., *et al.* (See Heath, James S., assignor.)						
Gould, John H., Philadelphia, Pa. Combined railway-track support and traction-cable and electric-conductor conduit	325,531	Sept. 1	427	106	32	1098
Gould, Robert S., East Orange, N. J. Carpet-fastener	323,575	Aug. 4	250	73	32	568
Gould, Sylvia A. W., administratrix. (See Allen, John G.)						
Grace, Charles C. (See Williams, Thomas J., assignor.)						
Graether, Theodore, Detroit, Mich. Vehicle-spring	326,031	Sept. 8	1077	275	32	1221
Graff, Francis A., New Albany, Ind. Car-truck	325,532	Sept. 1	428	106	32	1098
Graff, Thomas J., Pittsburg, Pa. Shaking-grate	323,929	Aug. 11	708	198	32	664
Grafly, Alois. (See Wadack and Grafly.)						
Graham, Dugald. (See Parton, Charles, assignor.)						
Graham, James, Detroit, Mich. Locomotive ash-pan	326,731	Sept. 22	2046	532	32	1412
Graham, Muckersie G., Ottumwa, Iowa. Tongueless cultivator	324,834	Aug. 25	1958	537, 538	32	909
Graham, William H., St. Louis, Mo. Water-closet attachment	326,496	Sept. 15	1693	442	32	1342
Grambs, Charles H., North Abington, Pa. Car-coupling	325,798	Sept. 8	762	197	32	1166
Granger, William E., Springfield, Mass. Safety-valve	326,904	Sept. 22	2290	599	32	1456
Grant, Andrew C. (See Grant, Benjamin B. and A. C.)						
Grant, Benjamin B. and A. C., Hamilton, Ga. Guano-distributer	324,833	Aug. 25	1957	537	32	909
Grant, James M. (See Christopher, George W., assignor.)						
Grath, John R., Lorah, and T. K. Watson, Leinbach, Pa. Sausage-meat cutter	324,835	Aug. 25	1960	538	32	909
Grath, Walter P. (See Koch and Grath.)						
Grathwohl, Fritz, Covington, Ky. Malt-drier	324,469	Aug. 18	1447	396	32	807
Graveline, David U., Byron, Ill. Car-coupling	324,680	Aug. 18	1743	480	32	862
Graves, George W., Norwalk, Ohio. Sash-cord fastener	322,707	July 21	1747	461	32	334
Graves, John, assignor to C. Cunningham, Brooklyn, N. Y. Metal barrel or cask	327,254	Sept. 29	2753	714	32	1546
Graves, Willis N., assignor of one-half to Hydraulic Press Brick Company, St. Louis, Mo. Brick-kiln	326,286	Sept. 15	1430	372	32	1293
Graves, Willis N., assignor of one-half to Hydraulic Press Brick Company, St. Louis, Mo. Brick-machine attachment	326,287	Sept. 15	1431	373	32	1293
Graves, Willis N., assignor of one-half to Hydraulic Press Brick Company, St. Louis, Mo. Hydraulic brick-machine	326,288	Sept. 15	1433	373, 374	32	1294
Graves, Willis N., assignor of one-half to Hydraulic Press Brick Company, St. Louis, Mo. Brick-machine mold and frame therefor	326,289	Sept. 15	1438	375	32	1295
Gray, Albert Y. (See Gray, Leonidas, and A. Y.)						
Gray, Gardner B., Cardington, Ohio. Grain-scourer	327,200	Sept. 29	2036	766	32	1577
Gray, Henry F., Columbus, Ohio. Knockdown table	326,112	Sept. 15	1181	302	32	1247
Gray, Henry J., Staunton, Va. Railway-chair	321,595	July 7	256	68	32	49
Gray, John L., Pesltigo, Wis. Wagon-jack	321,810	July 7	546	144	32	102
Gray, Leonidas, and A. Y., Middletown Springs, Vt. Governor	326,497	Sept. 15	1694	442	32	1342
Gray, Watson, assignor of one-half to R. H. Webb, Three Rivers, Mich. Paper-stock drainer	325,206	Aug. 25	2448	673	32	1000
Gray, William, Hartford, Conn. Band or collar	325,672	Sept. 8	607	154	32	1135
Gray, William B. (See Grosvenor and Gray.)						
Gray, William H. (See Welch, Hutchinson, and Gray.)						
Gray, William H., assignor to Glen Cove Machine Company, (limited,) Brooklyn, N. Y. Fastening for cutter-heads	321,596	July 7	257	68	32	49
Greacen, John, Bloomfield, N. J. Skate-roller	325,406	Sept. 1	259	64	32	1064
Grebenau, Leopold, Stapleton, N. Y. Jewelry	324,681	Aug. 18	1744	480	32	862
Green, Edmund, Oakland, Cal. Ore-roasting furnace	323,666	Aug. 4	374	106	32	592
Green, John J., Boonton, N. J., assignor of one-half to H. C. Willis and T. F. Hunter, Brooklyn, N. Y. Electric-current meter	327,391	Sept. 29	2037	766	32	1577
Green, Joseph D., Coloma, Mo. Rail-joint	321,715	July 7	408	109	32	76
Green, Philip E., *et al.* (See Fox, William H., assignor.)						
Green, Robert W., *et al.* (See Fox, William H., assignor.)						
Green, Sanford, Marengo, Iowa. Wire-stretcher	321,963	July 14	761	199	32	147
Greene, Walter S., *et al.* (See Curtis, David W., assignor.)						
Greene, William H., Lowell, Mass. Carpenter's rule	325,533	Sept. 1	428	106	32	1098
Greener, Richard, assignor of one-half to W. A. Hedden, New Albany, Ind. Manufacturing overcocks	321,811	July 7	548	144	32	102
Greenhalgh, Robert C., Philadelphia, Pa. Machine for cutting double pile fabrics	323,667	Aug. 4	375	107	32	592
Greenlee, David P., *et al.* (See Davis, John P., assignor.)						
Greenlee, Ralph S. (See Greenlee, Robert L. and R. S.)						
Greenlee, Robert L. and R. S., Chicago, Ill. Machine-table	326,640	Sept. 22	1889	495, 496	32	1385
Greenwood, Alvin M., *et al.* (See Watkins, Gardner A., assignor.)						
Greenwood, John T., Jr., Beloit, Wis. Fireproofing compound	322,280	July 14	1168	.....	32	222
Gregory, Harvey, *et al.* (See Beaver, George W., assignor.)						
Gregory, James J. H., *et al.* (See Fuller, Solomon, assignor.)						
Gresale, John F., Hamilton, Ohio. Tree-seat	323,415	Aug. 4	43	11	32	531

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Grove, Henry B., Milwaukee, Wis. Smoke-consuming furnace	325,207	Aug. 25	2449	674	32	1001
Grey, Henry, and R. Bowater, Beaver Falls, Pa. Wire-rod-rolling mill	322,281	July 14	1169	306	32	222
Gridley, Harrison, and T. Johnson, Canandaigua, N. Y. Railway-gate	324,934	Aug. 25	2089	572	32	934
Gridley, Samuel C., Nordhoff, Cal. Gate	326,732	Sept. 22	2047	533	32	1412
Griffen, Arthur B. (See Denny and Griffen.)						
Griffin, Carrie G., Manhattan, Kans. Combined door check and buffer	321,964	July 14	702	199	32	147
Griffin, George W., Franklin Falls, N. H. Machine for finishing washers	324,662	Aug. 18	1744	480, 481	32	862
Griffin, P. Henry, Detroit, Mich. Arch for supporting electric lamps	326,498	Sept. 15	1695	442	32	1343
Griffin, Thomas A., and C. Alkins, assignors to Ajax Forge Company, Chicago, Ill. Link-machine	326,973	Sept. 29	2383	623	32	1480
Griffin, Thomas A., and C. Alkins, assignors to Ajax Forge Company, Chicago, Ill. Mandrel for use in welding links	326,974	Sept. 29	2384	624	32	1480
Griffiths, James A. (See Fergus and Griffiths.)						
Griggs, Henry C., Waterbury, Conn. Button	325,407	Sept. 1	259	65	32	1064
Grim, Charles M. (See Packer and Grim.)						
Grimm, Henry A., St. Louis, Mo. Bread-cutter	325,741	Sept. 8	713	178	32	1153
Griscom, John P. (See Griscom, Lewis and J. P.)						
Griscom, Lewis and J. P., Pottsville, Pa. Deep-well pump	323,805	Aug. 4	544	155	32	625
Griscom, Samuel E. (See Griscom, McFeely, and Butler, assignors.)						
Griscom, Walter, Philadelphia, Pa., T. McFeely, Alexandria County, Va., and E. T. Butler, Hamilton, Ohio, assignors to said Griscom and McFeely, and S. E. Griscom, Philadelphia, Pa. Roller-mill	325,601	Sept. 1	510	127, 128	32	1112
Griswold, Frank B., Troy, N. Y. Bale-tie	322,442	July 21	1393	365	32	270
Groce, Jacob M., assignor of one-fourth to A. Hertje, Ravenswood, W. Va. Floor-clamp	322,369	July 14	1287	336	32	244
Groesbeck, David, C. A. Ball, and J. A. Sterling, New York, N. Y. Spark-arrester	324,683	Aug. 18	1747	481, 482	32	863
Groff & Bennett Saw Guard Manufacturing Company. (See Groff, Joseph G., assignor.)						
Groff, Joseph G., Connersville, Ind., assignor to Groff & Bennett Saw Guard Manufacturing Company, Cincinnati, Ohio. Saw-guard	323,318	July 28	2613	695	32	499
Groojean, Charles T., assignor to Tiffany & Co., New York, N. Y. Bottle-top	322,370	July 14	1288	337	32	245
Groojean, E. G., *et al.* (See Cole, Cary O., assignor.)						
Gross, Frank. (See Kubler, John, assignor.)						
Gross, Henry, Chicago, Ill. Time-lock	321,893	July 7	663	172	32	121
Gross, Henry, Chicago, Ill. Time-lock	321,894	July 7	666	173	32	121
Gross, Henry P., assignor to P. I. Gross, Baltimore, Md. Basket	326,499	Sept. 15	1697	443	32	1343
Gross, Priscilla I. (See Gross, Henry P., assignor.)						
Grosvenor, Thomas W., Herkimer, and W. B. Gray, Utica, N. Y. Roller-skate	322,371	July 14	1289	337	32	245
Grover, Charles, Kansas City, Mo. Carpet-stretcher	324,766	Aug. 18	1856	511	32	884
Grover, Charles, Kansas City, Mo. Combined band-cutter and grain-feeder for thrashers	324,767	Aug. 18	1856	511	32	884
Grover, Morgan L., Lavalle, Wis. Washing-machine	327,159	Sept. 29	2633	685	32	1523
Groves, Josiah, Pullman, Ill. Draw-bridge	322,708	July 21	1748	462	32	334
Grovesteen, Milton W., New York, N. Y. Electric indicating apparatus	322,818	July 21	1888	501, 502	32	359
Grother, Louis. (See Fischer and Grother.)						
Grubbe, Hubert H., assignor of one-half to C. H. Benton, London, England. Making incandescents	323,319	July 28	2615	.....	32	499
Guastavino, Rafael, New York, N. Y. Construction of fire-proof buildings	323,930	Aug. 11	709	199	32	664
Guedel, John, Canal Dover, Ohio. Screw-thread-cutting tool	326,733	Sept. 22	2048	533	32	1413
Guedelhoefer, John. (See Nolen, Henry, assignor.)						
Guelpa, John B. (See Gabel and Guelpa.)						
Gumbinner, Paul, New York, N. Y. Device for stopping runaway horses	323,868	Aug. 4	622	175	32	640
Gurney, Edward, and C. Sellers, Toronto, Ontario, Canada. Steam and water boiler	324,314	Aug. 11	1242	338	32	762
Gurney, Edward, and C. Sellers, Toronto, Ontario, Canada. Furnace	324,315	Aug. 11	1244	338	32	762
Guernsey, Charles S., Waterbury, Conn. Balance-wheel for watches	325,602	Sept. 1	512	128	32	1113
Guernsey, Charles S., Waterbury, Conn. Watch-barrel	325,603	Sept. 1	512	128	32	1113
Guernsey, Charles S., Waterbury, Conn. Winding attachment for watches	325,604	Sept. 1	513	128	32	1113
Guernsey, Charles S., assignor to Cheshire Watch Company, Cheshire, Conn. Manufacture of watch-balances	325,605	Sept. 1	514	129	32	1113
Guernsey, Elmer E. (See Race and Guernsey.)						
Guerrand, René, assignor to C. J. P. Barrez, New York, N. Y. Machine for forming raised ornaments by threads on fabrics	322,537	July 21	1521	401	32	293
Guilbert, J. Murray, assignor to W. H. Hart, Jr., Philadelphia, Pa. Neck-wear tip	326,905	Sept. 22	2291	599	32	1456
Guild, Walter B., Boston, Mass. Balance weighing-scale	326,975	Sept. 29	2385	624	32	1481
Gulley, Jacob H., assignor of one-third to J. E. Wright, East Saginaw, Mich. Piston-rod packing	323,390	July 28	2617	695	32	499
Gummer, Albert, Omro, Wis. Vehicle-spring	322,924	July 28	2054	543	32	397
Günther, Frederic A. R., Toronto, Ontario, Canada. Stringing pianos	327,439	Sept. 29	2995	783	32	1588
Günther, Julius, Nakel, Prussia, Germany. Lubricator	321,597	July 7	259	69	32	49
Guptill, Winslow W., Boston, Mass., assignor to Hartford Fruit Jar Company, Hartford, Conn. Stopper for jars, &c.	326,641	Sept. 22	1890	496	32	1385
Gurney, Robert, Kirkwood, Mo. Drag-saw	322,596	July 21	1602	423	32	307
Guss, Samuel M., Reading, Pa. Tag	321,895	July 7	668	173	32	121
Guss, Samuel M., assignor of one-half to J. S. Ammon, Reading, Pa. Shear-blade for hot blooms, bars, &c.	325,673	Sept. 8	607	154	32	1135
Gustavel, Louis, Jr., Delphi, Ind. Hame-tug	323,321	July 28	2618	696	32	499
Gutenkunst, Charles A., Milwaukee, Wis. Hay-fork	324,836	Aug. 25	1961	538	32	910
Guthrie, Frank A., Gallipolis, Ohio. Metallic roofing	324,994	Aug. 25	2178	596	32	949
Guyton, Albert M., Broad Top, Pa. Tobacco-box	324,105	Aug. 11	942	259	32	706
Gwinn, James W., Providence, R. I. Finger-ring	323,322	July 28	2619	696	32	500
Gwynne, John, London, England. Portable steam pumping-engine	326,642	Sept. 22	1891	496, 497	32	1385
Haaf, Edmonds W., Brooklyn, N. Y. Bag	327,255	Sept. 29	2754	715	32	1547
Haak, Henry, Prescott, Pa. Gathering and shipping can	323,931	Aug. 11	710	199	32	664
Haak, Henry, Prescott, Pa. Creaming-can	326,426	Sept. 15	1610	419	32	1327
Haak, Henry, Prescott, Pa. Creaming-can	325,674	Sept. 8	608	154	32	1135
Haak, Thomas E., Womelsdorf, Pa. Egg-beater, batter-mixer, and churn	325,832	Sept. 8	830	207	32	1174
Haas, Jackson O., Hepler, Pa. Lathe	327,256	Sept. 29	2756	.....	32	1547
Haas, Levi, Chester, Pa. Fertilizer						
Haas, Samuel H. (See Klenk, John, assignor.)						
Haas, Samuel H. (See Klenk and Haas.)						
Habermann, Rudolph, Berlin, Germany. Absorption freezing-machine	321,965	July 14	763	199	32	147
Habenicht, Charles R. H. M., assignor to Tin-Plate Decorating Company, New York, N. Y. Apparatus for cooling tin plates in crystallization	323,806	Aug. 4	544	155	32	626

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Hack, Henry Saltley, Birmingham, county of Warwick, and F. Ley, Barrow-on-Trent, county of Derby, England. Apparatus for receiving and conveying away coke drawn from gas-retorts	321,323	July 28	2620	696, 697	32	500
Hackman, Herman H., and T. P. Walter, Vincennes, Ind. Machine for boring gun-barrels	327,160	Sept. 29	2634	685	32	1523
Haden, John J., and W. S. Gobble, Texarkana, Ark. Steam cooking apparatus	325,335	Sept. 1	139	38, 39	32	1041
Hadley, Amos, Washington, D. C. Hand-blotter	327,257	Sept. 29	2756	715	32	1547
Hagan, William E. (See Norris and Hagan.)						
Hagans, James, Maxwell, Ind. Post-hole auger	326,976	Sept. 29	2385	624	32	1481
Hagemann, Henry, Chicago, Ill. Window-platform	326,977	Sept. 29	2386	624	32	1481
Hagen, Arthur T., Rochester, N. Y. Ironing-machine	326,556	Sept. 22	1770	463	32	1365
Hagen, Augustus A., assignor of one-half to M. Hagen, New York, N. Y. Protecting-screen for air and light shafts	323,576	Aug. 4	251	74	32	568
Hagen, Macarius. (See Hagen, Augustus A., assignor.)						
Hagenbacher, Isidor S., and A. Strauss, Brooklyn, N. Y. Hoop for barrels, &c.	324,021	Aug. 11	630	230	32	685
Hagenbücble, John B., New York, N. Y. Quilting-machine	325,799	Sept. 8	783	197, 198	32	1106
Hager, Charles. (See Batt, John B., assignor.)						
Hagge, Henry. (See Petersen, Harksen, and Hagge.)						
Hagler, John W., *et al.* (See Wingo, Robert A., assignor.)						
Hahlweg, Carl, Stettin, Prussia, assignor to Gebrüder Zunghans, Schramberg, Würtemberg, Germany. Clock-striking mechanism	323,577	Aug. 4	252	74	32	569
Haid, Alfred, Rahway, N. J., assignor to Excelsior Electric Apparatus Company, New York, N. Y. Electric-lamp holder	321,493	July 7	113	30	32	23
Haight, Henry J., New York, N. Y. Poultry-coop	326,113	Sept. 15	1183	303	32	1248
Haight, James R. (See Babcock, Sylvester P., assignor.)						
Haines, Alvin S., Slatington, Pa. Mail-bag	323,670	Aug. 4	376	108	32	593
Haines, George W. (See Vincent, George, assignor.)						
Haines, John H. J., and J. F. Strong, Flushing, N. Y. Automatic safety gas-burner	325,928	Sept. 8	937	237	32	1196
Hainsworth, William, Pittsburg, Pa. Mold for casting rolls and other articles	323,607	Aug. 4	545	155	32	626
Haitz, Fredrick, Towanda, Ill. Umbrella	326,213	Sept. 15	1331	344	32	1275
Haitz, Frederick, Towanda, Ill. Umbrella-support	326,214	Sept. 15	1331	345	32	1275
Hake, Francis A., Cuero, Tex. Hame-fastener	327,258	Sept. 29	2757	715	32	1547
Hake, Philipp. (See Raisbeck, George A., assignor.)						
Hale, Bernice S. and J. B., Malden, Mass. Friction device for spools in cordage and twine making machines	325,336	Sept. 1	141	39	32	1041
Hale, Emma V. W. (See Nichols and Hale.)						
Hale, George C., Kansas City, Mo. Suspender	323,416	Aug. 4	44	11	32	531
Hale, James B. (See Hale, Bernice S. and J. B.)						
Hale, Nelson T., Cummington, Mass. Thill-coupling	326,863	Sept. 22	2231	582	32	1446
Hale, Roswell W., assignor to A. Trudo and J. K. Saunders, West Bay City, Mich. Automatic bridge-gate	323,034	July 28	2217	586	32	425
Hale, Thomas D. (See Lowe, Austin, assignor.)						
Hale, William E. (See Baldwin, Cyrus W., assignor.)						
Hale, William P., Brockport, N. Y. Harvester	325,208	Aug. 25	2450	674, 675	32	1001
Haley, Daniel F., *et al.* (See Okey, Joseph B., assignor.)						
Haley, Sam, Bramley, near Leeds, England. Leather-dressing machine	325,675	Sept. 8	609	154, 155	32	1135
Halford, Andrew J. (See Woodard, James A., assignor.)						
Hall, Arthur H., Chicago, Ill. Map-rack	325,337	Sept. 1	142	39	32	1042
Hall, Charles S., A. B. Clemence, and H. F. A. Setterwall, Worcester, Mass. Drawing wire	325,800	Sept. 8	790	.....	32	1167
Hall, E., *et al.* (See Ellis, Oliver J., assignor.)						
Hall, George D. (See Heed and Hall.)						
Hall, I., *et al.* (See Ellis, Oliver J., assignor.)						
Hall, Isaac, Brooklyn, N. Y. Violin	322,925	July 28	2054	543	32	397
Hall, James B. (See Hall, Tomas P. and J. B.)						
Hall, James T., St. Louis, Mich. Lath-sawing machine	321,716	July 7	409	109	32	70
Hall, John L., Colony, Kans. Alarm attachment for baling-presses	322,926	July 28	2056	543	32	397
Hall, John S., New York, N. Y. Feed-lubricator	322,927	July 28	2057	543	32	397
Hall, Joseph L. (See Corry, William, assignor.)						
Hall, Joseph P. (See Cushman and Hall.)						
Hall, Major, and J. C. Ryan, St. Paul, Minn. Thill-coupling	324,837	Aug. 25	1962	539	32	910
Hall, Oliver S., *et al.* (See Main, Oscar F., assignor.)						
Hall, Osborn B., Malden, Mass. Fusible link for automatic fire-extinguishers	324,316	Aug. 11	1244	338	32	762
Hall, Samuel D., *et al.* (See Watson, Charles S., assignor.)						
Hall, Samuel L., Chicago, Ill. Baker's oven	322,282	July 14	1170	307	32	222
Hall, Tomas P. and J. B., Toronto, Ontario, Canada. Tricycle	325,338	Sept. 1	143	39	32	1042
Hall, William A. (See White, Edward F., assignor.)						
Hall, William H., Brighton, county of Sussex, England. Spinning-top	323,808	Aug. 4	547	155	32	626
Hall, William J. (See Brigge, George W., assignor.)						
Hallenbeck, William W., Leon, N. Y. Horseshoe	326,290	Sept. 15	1439	375	32	1295
Halliday, George, Winnebago City, Minn. Flour-bolt	325,833	Sept. 8	831	208	32	1175
Hallidie, Andrew S., San Francisco, Cal. Gopher-trap	326,864	Sept. 22	2234	583	32	1440
Halliwell, Jane. (See Lavigne, Joseph P., assignor.)						
Halliwell, Samuel. (See Lavigne, Joseph P., assignor.)						
Hallman, Isaac, *et al.* (See Caley, Edward L., assignor.)						
Hallock, David, New York, N. Y. Weighing-scale	325,534	Sept. 1	430	107	32	1098
Halsey, James T. (See Chapin, William G., assignor.)						
Halsey, William S., assignor to Judson Manufacturing Company, Oakland, Cal. Mower	326,643	Sept. 22	1892	498	32	1385
Halter, Victor, assignor of one-half to F. Schneiderlochner, Pittsburg, Pa. Manufacture of axes	323,671	Aug. 4	378	108	32	594
Ham, Albert W. (See Mosher and Ham.)						
Hamaker, John H., assignor of one-third to C. Ite, Canton, Ohio. Sash-fastener	325,834	Sept. 8	832	208	32	1175
Hambay, James T., Pittsburg, Pa. Interlocking switch and signal apparatus	322,983	July 14	1171	307, 308	32	223
Hambay, James T., Pittsburg, Pa. Switch-stand	324,838	Aug. 25	1963	539	32	910
Hambruch, Gustav, Berlin, Germany. Producing a vacuum	323,325	July 28	2024	608	32	500
Hamilton, Edward A., New Bethlehem, Pa. Car-coupling tool	323,672	Aug. 4	380	108	32	594
Hamilton, John L., St. Joseph, Mo. Heating and ventilating apparatus	324,106	Aug. 11	943	259, 260	32	706
Hamilton, Thomas W., Springfield, Mass. Overflow device for pump-lamps	326,427	Sept. 15	1611	419, 420	32	1327
Hamilton, William W., Lexington, Ky. Picket-fastening	321,717	July 7	410	109	32	77
Hammer, Emil G., Brooklyn, N. Y. Electric battery	326,033	Sept. 8	1079	275	32	1221

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Hammick, Joseph T., Rhinebeck, N. Y. Car-coupling	321,506	July 7	260	69	32	50
Hammill, Patrick, *et al.* (See Cary, Charles H., assignor.)						
Hammill, Richard, Chicago, Ill. Manufacture of coverings for steam-pipes, &c	326,865	Sept. 22	2235	583	32	1447
Hammond, Henry, New Haven, Conn. Manufacture of axes	321,494	July 7	114	30	32	23
Hammond, Henry, New Haven, Conn. Forging-machine	322,928	July 28	2058	544; 545	32	397
Hammond, Henry, New Haven, Conn. Forging-machine	322,929	July 28	2060	545; 546; 547; 548	32	398
Hammond, Henry, New Haven, Conn. Forging-machine	322,930	July 28	2062	548; 549	32	398
Hammond, Henry, New Haven, Conn. Shearing-die	326,644	Sept. 22	1893	498	32	1386
Hammond, Henry, New Haven, Conn. Forming the edges of axes	326,645	Sept. 22	1894	498	32	1386
Hammond, Hugh, Jr., *et al.* (See Hand, Ekins, assignor.)						
Hammond, Joseph C., Jr., *et al.* (See Chapman, Samuel A., assignor.)						
Hammond, Joseph C., Jr., Rockville, Conn. Shoe-clasp	321,495	July 7	115	31	32	23
Hammond, Joseph C., Jr., Rockville, Conn. Shoe-clasp	324,107	Aug. 11	945	260	32	706
Hanavan, Philip, Oakland, Cal. Feed-roll	325,339	Sept. 1	144	40	32	1042
Hanbery, Thomas G., and J. D. Wall, Newstead, Ky. Harness attachment	324,684	Aug. 18	1751	482	32	864
Hanchett, George B. (See Hanchett, Orange R. and G. B.)						
Hanchett, Orange R. and G. B., Wichita, Kans. Plow attachment	322,443	July 21	1393	366	32	270
Hancock, Cyrus J. (See Judson and Hancock.)						
Hancock, John T., deceased; T. P. Proctor, Boston, Mass., executor. Injector	323,828	Aug. 4	569	162	32	630
Hand, Benjamin R., assignor to himself and G. A. Munger, Camden, N. J. Cutter-head	323,673	Aug. 4	381	109	32	594
Hand, Benjamin R., assignor of one-half to G. A. Munger, Camden, N. J. Cutter-head	327,392	Sept. 29	2938	766	32	1578
Hand, Ekins, Rochester, assignor of two-thirds to H. Hammond, Jr., Phelps, and L. P. Johnson, Seneca Castle, N. Y. Snow-plow	325,075	Aug. 25	2277	626	32	909
Hand, John S., San Francisco, Cal. Tailor's measuring device	324,022	Aug. 11	831	230	32	685
Handlan, Alexander H., Jr., St. Louis, Mo. Signal-lantern	324,905	Aug. 25	2179	596	32	949
Handy, Henry, Fitzwilliam, N. H. Egg-packer	322,444	July 21	1394	366	32	270
Hanf, Edwin E., Wilmington, Del. Manufacture of finger-rings	324,553	Aug. 18	1557	429	32	828
Hanford, Thomas, and J. E. McLoughlin, assignors to Mohawk Valley Scotch Cap Factory, Utica, N. Y. Mechanism for shearing caps	323,869	Aug. 4	624	175	32	641
Hankinson, John N. O., Harrisburg, Pa. Printer's locking-quoin	326,428	Sept. 15	1613	420	32	1327
Hanley, William. (See Mills and Hanley.)						
Hanlon, John, New York, N. Y. Apparatus for generating hydrocarbon gas	324,685	Aug. 18	1752	483	32	864
Hanna, Calvin, Hardin County, Tenn. Churn	322,445	July 21	1395	366	32	270
Hanna, Robert W. (See Cabell and Abney, assignors.)						
Hannah, Robert S. (See Stone, Edward H., assignor.)						
Hannay, James B., and J. Cowan, Glasgow, county of Lanark, Scotland. Car-coupling	323,142	July 28	2256	625	32	453
Hanrahan, Joseph F., assignor of one-fourth to J. Gordon, Ottawa, Ontario, Canada. Refrigerator-building	322,446	July 21	1396	366; 367	32	270
Hanscom, John F., Boston, Mass. Ticket-punch	326,429	Sept. 15	1614	420	32	1327
Hanscom, Joshua F., assignor of one-half to Ashley Wire Company, Joliet, Ill. Machine for making staples	322,372	July 14	1290	337; 338	32	245
Hanscom, William W., San Francisco, Cal. Air-brake	326,646	Sept. 22	1895	499	32	1386
Hansen, Ludvig, and A. Smith, Wilmington, N. C. Wood-preserving apparatus	322,819	July 21	1394	502	32	360
Hansen, O. C. (See Helfaer, Simon, assignor.)						
Hanson, Freeman, assignor to J. W. Meserve and G. W. Hanson, Bar Mills, Me. Folding wash-bench	324,320	Aug. 11	1251	340	32	763
Hanson, George, and C. D. Clark, Massillon, Ohio. Saw-mill set-works	326,291	Sept. 15	1440	375; 376	32	1295
Hanson, George W., *et al.* (See Hanson, Freeman, assignor.)						
Hanson, Olaus, Worcester, Mass. Roller-skate	321,434	July 7	27	7	32	8
Hanson, Paul, St. Paul, Minn. Automatic car-brake	324,375	Aug. 18	1325	360; 361	32	785
Hapgood Plow Company. (See Pates, Thomas, assignor.)						
Hapgood Plow Company. (See Pates, William S., assignor.)						
Harbuck, Amanda L. (See Coppock, Joseph A., assignor.)						
Harcourt, Guy M., Galveston, Tex. Coin-sorter	326,866	Sept. 22	2236	583	32	1447
Harden, James H., Towanda, Pa. Mail-crane	322,709	July 21	1750	462	32	334
Harden, Walter C., Valley Falls, R. I. Ticket-punch	321,718	July 7	411	110	32	77
Hardenbergh, Peter R. L. (See Brownson, Ralph, assignor.)						
Harder, Victor A., assignor to Mayor, Lane & Company Brass Works, New York, N. Y. Bathing apparatus	324,686	Aug. 18	1754	483; 484	32	864
Harding, Thomas, Detroit, Mich. Foundryman's clamp	321,812	July 7	548	144	32	102
Hardman, James, Jr., Belleville, N. J. Friction shade-roller	327,161	Sept. 29	2636	686	32	1524
Hardwick, Joseph O., Colorado City, assignor to E. S. Bumstead and J. J. Corum, Colorado Springs, B. Reeves and S. Alsop, Jr., Denver, Colo., and D. Scull, Jr., Philadelphia, Pa. Washing-machine	325,076	Aug. 25	2278	626	32	909
Hardy, Hippolyte. (See Hardy, Louis J., assignor.)						
Hardy, Leslie T., assignor of two-thirds to R. P. Kyle and J. Danner, Houston Mines, Va. Cattle-guard	325,606	Sept. 1	514	129	32	1113
Hardy, Louis J., Rouen, France, assignor to H. Hardy, New York, N. Y. Gutter and spout	326,647	Sept. 22	1897	499	32	1386
Hargreaves, George, Detroit, Mich. Ventilating sewers	321,719	July 7	412	110	32	77
Hargreaves, George, Detroit, Mich. Washing-machine	322,710	July 21	1751	462	32	335
Harkness, William, New York, N. Y. Automatic fire-extinguisher	323,578	Aug. 4	254	75	32	569
Harksen, Martin L. (See Petersen, Harksen, and Hagge.)						
Harley, Olin, South Whitley, Ind. Eaves-trough fastening	327,162	Sept. 29	2637	686	32	1524
Harlow, Cushing C., assignor to Harlow Lubricator Company, Brockton, Mass. Lubricator	324,996	Aug. 25	2179	596; 597	32	949
Harlow Lubricator Company. (See Harlow, Cushing C., assignor.)						
Harman, Frank H., Holton, Kans. Insecticide-wash	325,169	Aug. 25	2304	.....	32	991
Harmon, Charles, Tiffin, Ohio. Cut-off valve	322,711	July 21	1751	463	32	335
Harmon, Martin, East St. Louis, Ill. Car-coupling	324,108	Aug. 11	946	260	32	706
Harner, Lavender B., and W. G. Losch, Pottsville, Pa. Bottle-filler	325,929	Sept. 8	930	238	32	1196
Harper, John H., and D. V. Brooks, Allegheny City, Pa.; said Brooks assignor to said Harper. Cooking-stove	326,867	Sept. 22	2237	583	32	1447
Harrell, Ben F., New Marion, Ind. Ventilator for grain-bins	325,170	Aug. 25	2305	639	32	991
Harriman, John, Milwaukee, Wis. Thill-coupling	321,720	July 7	413	110	32	77
Harrington, David. (See Alexander and Harrington.)						
Harrington, John, Coventry, England. Velocipede	324,317	Aug. 11	1245	338; 339	32	762

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Harrington, Son & Co., Edwin. (See Sprogell and Haskins, assignor.)						
Harris, Albert M. (See Berger and Harris.)						
Harris, Daniel A., Boston, Mass. Roller-skate	326,734	Sept. 22	2049	533	32	1413
Harris, Daniel M., Aberdeen, Miss. Machine for clearing the sides of railway-tracks	325,340	Sept. 1	145	40	32	1042
Harris, Enoch, Quincy, Ill. Wrench	326,868	Sept. 22	2240	584	32	1447
Harris, Gilbert J. (See Flewwelling and Harris.)						
Harris, Henry D., *et al.* (See Ellis, James W., assignor.)						
Harris, James G., assignor of three-fourths to J. B. Montague and J. T. Booker, Franklin, Ky. Churn	322,712	July 21	1753	463	32	335
Harris, John, and J. Lucas, Brantford, Ontario, Canada. Self-binding harvester	322,931	July 28	2064	549	32	398
Harris, John, and J. Lucas, assignors to A. Harris Son & Co., (limited,) Brantford, Ontario, Canada. Mechanism for dumping the bundle-carriers of harvesting-machines	322,932	July 28	2065	550	32	399
Harris Son & Co., A. (See Harris and Lucas, assignors.)						
Harris Son & Co., A. (See Wedlake and Jones, assignors.)						
Harris, Thomas. (See Dunn and Harris.)						
Harris, Thomas, assignor to A. A. Van Voorhies & Co., Sacramento, Cal. Apparatus for forming horse-collars	324,023	Aug. 11	832	230	32	686
Harris, W. John, St. Louis, Mo. Hat	324,687	Aug. 18	1756	484	32	865
Harris, William, Pittsburg, Pa. Pipe-wrench	326,978	Sept. 29	2368	625	32	1481
Harris, William E., St. Louis, Mo. Utilizing waste hoop-iron. (Reissue)	10,620	July 7	723	189	32	131
Harrison, Charles A., Bridgeport, Conn. Auxiliary mouth-piece for telephones	327,393	Sept. 29	2939	767	32	1578
Harrison, James F., Hollonville, Ga. Combined guano-distributer and seed-planter	325,535	Sept. 1	432	107	32	1099
Harrison, James R. (See Weber and Harrison.)						
Harrison, Thomas S. (See Beck, Charles F., assignor.)						
Harrison, Thomas S. (See Van Gestel and Beck, assignors.)						
Harrison, William. (See Weber and Harrison, assignors.)						
Harrison, William, Walker, Mich. Apparatus for welding wheel-tires	326,869	Sept. 22	2240	584	32	1447
Harrison, William H., assignor to Street Car Money Drawer Company, Louisville, Ky. Money-drawer	322,373	July 14	1294	338	32	246
Harson, John N., New Haven, Conn., assignor to M. J. Harson, Providence, R. I. Hat-sweat	326,061	Sept. 8	1147	292	32	1234
Harson, M. Joseph. (See Harson, John N., assignor.)						
Harström, Carl G., and A. K. Westerdahl, Peekskill, N. Y. Drilling-machine	324,688	Aug. 18	1757	484	32	865
Hart, Alfred, San Marcos, Tex. Cotton-packer	327,259	Sept. 29	2758	715; 716	32	1547
Hart, Camillus S., Winchester, Va. Car-brake	322,597	July 21	1604	424	32	307
Hart, Charles L., Brooklyn, N. Y. Can seaming and crimping machine	324,318	Aug. 11	1247	339	32	762
Hart, George E., Waterbury, Conn. Watch-movement	324,689	Aug. 18	1758	485	32	865
Hart, George E., Waterbury, Conn. Stem-winding attachment for watches	325,536	Sept. 1	432	107; 108	32	1099
Hart, George E., assignor to Waterbury Watch Company, Waterbury, Conn. Watch-plate	321,896	July 7	669	173	32	121
Hart, Harrie B., Philadelphia, Pa. Bicycle-stand	322,057	July 14	890	230	32	170
Hart, Harrie B., Philadelphia, Pa. Oil-can	322,447	July 21	1397	367	32	271
Hart, Hubert C., Unionville, Conn. Hand-grenade fire-extinguisher	324,024	Aug. 11	833	231	32	686
Hart, Hubert C., Unionville, Conn. Roller-skate	324,376	Aug. 18	1327	361	32	785
Hart, Hubert C., Unionville, Conn. Roller-skate	324,377	Aug. 18	1328	361	32	785
Hart, Ivy J., Chandler, Ind. Violin attachment	322,098	July 14	944	245	32	180
Hart, Margaret, assignor of one-half to C. T. Moore, New York, N. Y. Syringe	322,598	July 21	1605	424	32	308
Hart, Stacy B., Peoria, Ill. Force-feed fertilizer attachment for grain-drills	323,326	July 28	2025	698	32	501
Hart, Stacy B., Peoria, Ill. Grain-drill	323,327	July 28	2027	699	32	501
Hart, Stacy B., Peoria, Ill. Broadcast-seeding machine	323,328	July 28	2028	699	32	501
Hart, William, Kirksville, Mo. Pendulum-escapement for clocks	326,292	Sept. 15	1445	376	32	1296
Hart, William H., Jr. (See Guilbert, J. Murray, assignor.)						
Hart, William H., New Britain, Conn. Series of labels for tacks, brads, or nails	327,260	Sept. 29	2759	716	32	1547
Hartford Fruit Jar Company. (See Guptill, Winslow W., assignor.)						
Hartford Silver Plate Company. (See Valentine, Newell S., assignor.)						
Hartig, Henry, Brooklyn, N. Y. Gas-engine	324,554	Aug. 18	1557	430	32	829
Hartley, Simeon, *et al.* (See McKendrick, John, assignor.)						
Hartman, Charles F., Keller's Church, Pa. Hook	324,025	Aug. 11	834	231	32	686
Hartman, James, Grant, Ind. Gate	326,870	Sept. 22	2242	584	32	1448
Hartman, John M., Philadelphia, Pa. Blast-furnace bell and apparatus for working the same	321,966	July 14	765	200	32	147
Hartman, John M., Philadelphia, Pa. Dumping-car	323,417	Aug. 4	45	11, 12	32	531
Hartshorn, Stewart, Millburn, N. J. Shade-roller	322,713	July 21	1754	463	32	335
Hartshorne, Charles, *et al.* (See Bixby, Arthur, assignor.)						
Hartt, Henry. (See Stosch, Ernst, assignor.)						
Hartwell, Abraham V., Chicago, Ill. Pressure-gage	324,251	Aug. 11	1152	314	32	744
Hartz, John A., *et al.* (See Willard, Thomas, assignor.)						
Harvey, Hayward A., Orange, N. J. Screw-tap	327,261	Sept. 29	2760	716	32	1547
Harvey, Hayward A., Orange, N. J. Screw-tap	327,263	Sept. 29	2762	717	32	1548
Harvey, Hayward A., Orange, N. J., and C. S. Clark, Providence, R. I.; said Clark assignor to Harvey Screw and Bolt Company, of Connecticut. Steel die	327,262	Sept. 29	2761	716; 717	32	1548
Harvey, Leon J., Plover, Wis. Grain-scourer	323,035	July 28	2218	586; 587	32	425
Harvey, Robert, *et al.* (See Davis, John P., assignor.)						
Harvey Screw and Bolt Company. (See Harvey and Clark, assignors.)						
Harvey, William, Augusta, Me. Scythe	327,163	Sept. 29	2638	686	32	1524
Harvey, William, Readfield, Me. Ax	327,164	Sept. 29	2639	686	32	1524
Harvin, Charles R., Manning, S. C. Rotary engine	322,179	July 14	1054	273	32	200
Haskell, Charles S. (See Roosevelt and Haskell.)						
Haskell, Frank N., Worcester, Mass. Coating for wire-drawing	325,537	Sept. 1	434	.....	32	1099
Haskins, Abel, Chicopee, Mass. Sash-holder	324,252	Aug. 11	1153	314	32	745
Haskins, Harry S. (See Sprogell and Haskins.)						
Haslam, Thomas J., Dublin, Ireland. Saddle-bar	327,165	Sept. 29	2639	687	32	1525
Hassan, Midbury W., Rochester, N. Y. Surgical instrument	321,721	July 7	414	110	32	77
Hassel, Wilhelm, Hagen, Prussia, Germany. Drop-hammer	327,082	Sept. 29	2521	657	32	1505
Hastings, Frank W., assignor to Jennings & Griffin Manufacturing Company, Wallingford, Conn. Device for making dies for forming anger-heads	321,967	July 14	766	200	32	147
Hat Curling Machine Company. (See Tweedy and Yule, assignors.)						
Hatch, Andrew J. (See Blatchly and Hatch.)						
Hatcher, Sidney W., Knoxville, Ga. Combined planter and fertilizer-distributer	325,341	Sept. 1	146	41	32	1042
Hatfield, Llewellyn T., Milan, Mo. Painting-machine	327,264	Sept. 29	2763	717; 718	32	1548
Hathaway, Thomas H., New Bedford, Mass. Music-leaf turner	321,599	July 7	262	69	32	50

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Hatheway, Edwin E., Oriskany Falls, N. Y. Wagon-gear	327,265	Sept. 29	2765	718	32	1548
Hathoway, William E., Unionville, Conn. Marking or graduating machine	324,319	Aug. 11	1248	339	32	763
Hatz, Casper, Big Stone City, Dak. Ter. Combined bag-holder and truck	323,141	July 28	2355	625	32	453
Haughey, Michael, St. Louis, Mo. Carriage-spring	321,496	July 7	116	31	32	23
Haulbrook, William C., Homer, Ga. Reversible plow	324,109	Aug. 11	947	260	32	706
Havell, George, Newark, N. J. Shoe or glove buttoner	322,284	July 14	1175	308	32	223
Haven, Egbert D., San Francisco, Cal. Cable railway	327,063	Sept. 29	2522	658	32	1505
Haverly, Curtis R., and G. E. Gary, Macon, Mo. Stove-leg	325,171	Aug. 25	2396	639	32	991
Haviside, John J., San Francisco, Cal. Support for whaling-guns	324,935	Aug. 25	2091	572	32	935
Hawkins, Charles F. (See Webber, Josiah A., assignor.)						
Hawkins, James M., *et al.* (See Platt, Albert L., assignor.)						
Hawkins, John T., Taunton, Mass. Sheet-delivery apparatus	323,329	July 28	2629	700	32	501
Hawkins, John T., Taunton, Mass. Sheet-delivery apparatus for printing-presses	323,330	July 28	2631	700	32	502
Hawkins, John T., Taunton, Mass. Sheet-delivery apparatus for printing-presses	323,331	July 28	2633	700, 701	32	502
Hawkins, John T., Taunton, Mass. Oscillating-cylinder printing-machine	324,253	Aug. 11	1154	314, 315	32	745
Hawkins, John T., Taunton, Mass. Inking apparatus for printing-machines	326,215	Sept. 15	1332	345	32	1275
Hawkins, John T., Taunton, Mass. Sheet-delivery for oscillating-cylinder printing-machines	326,216	Sept. 15	1334	345	32	1275
Hawkins, John T., Taunton, Mass., and R. Preston, Brooklyn, N. Y. Apparatus for setting lithographic stones	323,932	Aug. 11	711	199	32	665
Hawkins, Lorenzo D., Stoneham, Mass., assignor to Combination Power Punch Eyeleting Machine Company. Eyeleting-machine	325,977	Aug. 25	2279	626, 627	32	970
Hawkins, Philemon. (See Pierce, Mortimer K., assignor.)						
Hawley, Alfred A., Baltimore, Md., assignor to Merino Shoe Company, Kennebunk, Me. Manufacturing foot-wear made of combined textile and felting material	322,285	July 14	1175	308	32	224
Hawley, Benjamin R., Chicago, Ill. Laundry-reel	322,538	July 21	1522	401	32	293
Haworth, George D., Chicago, Ill. Check-rower	323,036	July 28	2219	587	32	425
Hay, Houston. (See Horn, Ferdinand, assignor.)						
Hayden, Hiram W., assignor to Holmes, Booth & Haydens, Waterbury, Conn. Lamp-burner	322,509	July 21	1606	424	32	308
Hayden, James T., Boston, Mass. Pipe-wrench	324,378	Aug. 18	1329	361	32	785
Haydn, George, Baltimore, Md. Bilge-water ejector	322,374	July 14	1205	339	32	246
Hayes, Charles W., Washington, D. C. Shell	325,538	Sept. 1	435	108	32	1099
Hayes, George, New York, N. Y. Machine for forming clamps in sheets of metal	326,557	Sept. 22	1772	464	32	1365
Hayes, Harrison, Portland, Me. Tube-expander	325,244	Sept. 1	15	6	32	1018
Hayes, William H., Paterson, N. J. Apparatus for cooling beer, &c	325,742	Sept. 8	714	178	32	1153
Hayner, William D., and C. W. Mangus, Gilliam, Mo. Check-row corn-planter	323,324	July 28	2622	697	32	500
Haynes, Edgar K., Boston, Mass. Lantern	322,448	July 21	1309	367	32	271
Hays, William L., Greenwich, county of Kent, England. Transposing-piano	326,871	Sept. 22	2243	584, 585	32	1448
Hayward, Jacob L., Framingham, Mass., assignor of two-thirds to T. C. and T. C. Simonton, Jr., Paterson, N. J. Rock-pulverizer	323,674	Aug. 4	381	109	32	504
Hazelrigg, Albert W., F. A. Jacob, and H. P. Hood, Indianapolis, Ind., assignors to said Hazelrigg, H. Scott, Jefferson County, Ky., and M. C. Woods, Indianapolis, Ind. Signal-lantern	326,223	Sept. 15	1445	377	32	1296
Hazelton, Frank R., Concord, N. H. Umbrella-displayer	322,600	July 21	1607	425	32	308
Hazelton, Milton W., Chicago, Ill., assignor of one-half to Babcock & Wilcox Company, New York, N. Y. Feed-water heater and purifier	326,082	Sept. 8	1148	292	32	1234
Hazen, Edward H., Davenport, Iowa. Car-seat rest and fire-escape	324,839	Aug. 25	1965	539	32	911
Hazen, Perley F. (See Spencer and Hazen.)						
Hazlett, William W., Toronto, Ohio. Fire-proof floor	326,735	Sept. 22	2050	534	32	1413
Headen, Minnis, assignor of seven-eighths to D. W. Frizzell, Christiansburg, Va. Oliver	325,342	Sept. 1	148	41	32	1043
Healy, Clarence L., Brooklyn, assignor to S. D. Field, Yonkers, N. Y. Controlling press-circuits of printing-telegraphs	326,084	Sept. 8	1150	293	32	1234
Heap, William, Owen Sound, Ontario, Canada. Apparatus for operating dry-earth closets	327,266	Sept. 29	2766	718	32	1548
Heath, Harris T. (See Gary and Heath.)						
Heath, James S., assignor to J. O. and W. S. Wisner and E. L. Gould, Brantford, Ontario, Canada. Combined seeding and drilling machine	324,321	Aug 11	1251	340	32	763
Heaton Button Fastener Company. (See Sweet, Parker H., Jr., assignor.)						
Hobbard, Albert H., Knoxville, Tenn. Target-trap	322,714	July 21	1755	464	32	335
Hebblewaite, James, and E. Holt, Manchester, county of Lancaster, England. Figured fabric or material for floor-cloth, water-proof cloth, &c	322,601	July 21	1608	.....	32	308
Heberlein Self Acting Railway Brake Company. (See Bandel, Wilhelm, assignor.)						
Hecht, Jacob, *et al.* (See Gornell, Richard, assignor.)						
Heckart, John. (See Taylor, Hiram, assignor.)						
Hecker, Edwin A., and C. F. McKhann, New Madison, Ohio. Composition for suppositories	327,267	Sept. 29	2767	.....	32	1549
Hecker, John V., New York, N. Y. Driving mechanism for roller-mills	321,600	July 7	263	69	32	50
Hedden, W. A. (See Greener, Richard, assignor.)						
Hedden, James, Dowagiac, Mich. Bee-hive	327,268	Sept. 29	2767	718, 719	32	1549
Hedges & Co., A. J. (See Obrig, John, assignor.)						
Hedrick, Duskin, Greenville, Cal. Brake-block holder	322,099	July 14	945	245	32	180
Heed, Albert, and G. D. Hall, Barnesville, Ohio. Cigar-perforating machine	324,936	Aug. 25	2093	573	32	935
Heffernan, Edward F., Lockport, N. Y., assignor to R. J. Quigley, Toronto, Canada. Watch-case	322,449	July 21	1400	367	32	271
Hedley, Samuel, Rochester, Ind. Sand-band for vehicle-axles	321,435	July 7	27	7	32	8
Hegeman, W. A. Ogden, New York, N. Y. Apparatus for purifying water and other fluids	327,269	Sept. 29	2769	719	32	1549
Heiman, Salomon, London, England, assignor to F. L. Pommer, New York, N. Y. Lantern for electric lamps	326,979	Sept. 29	2388	625	32	1481
Heilman, Russell P., Emporium, Pa., and R. B. Perkins, Hornellsville, N. Y. Tricycle hobby-horse	325,408	Sept. 1	261	65	32	1064
Hein, Herman. (See Hennings, Wilhelm G., assignor.)						
Heine, August, Silver Creek, N. Y. Bran-duster	322,715	July 21	1756	464	32	336
Heine, August, Silver Creek, N. Y. Bolting-reel	323,143	July 28	2357	626	32	453
Heine, August, Silver Creek, N. Y. Clothing for bolting reels	323,579	Aug. 4	256	75	32	569
Heinze, Charles E., Newark, N. J. Bridle-bit	326,648	Sept. 22	1899	499	32	1387
Heldreth, Joseph W., assignor of one-half to N. G. Dillon, Pattonsburg, Mo. Churn	322,058	July 14	891	231	32	170
Helfaer, Simon, assignor to O. C. Hansen, Milwaukee, Wis. Glove or mitten	321,497	July 7	117	31	32	23
Hellman, Abraham M., St. Louis, Mo. Metallic cover for barrel-heads	325,930	Sept. 8	940	238	32	1196
Helvin, John A., New York, N. Y., and H. Van Hoevenbergh, Elizabeth, N. J. Wire-splicer	326,906	Sept. 22	2292	599	32	1456

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Hemje, Charles, Washington, D. C. Hose-coupling	322,286	July 14	1176	309	32	224
Hemsley, Richard, Montreal, Quebec, Canada. Diamond-tweezers	327,394	Sept. 29	2940	767	32	1578
Henderson, Charles C., assignor of one-half to O. C. Allen and G. H. Higgins, Warren, Pa. Sulky corn and seed planter	324,322	Aug. 11	1252	340	32	763
Henderson, Donald. (See Birch, John E., assignor.)						
Henderson, Francis M., *et al.* (See Henderson, Robert M., assignor.)						
Henderson, Howard C. and J. A., Cherokee, Iowa. Apparatus for concentrating ores	325,835	Sept. 8	833	208	32	1175
Henderson, James A. (See Henderson, Howard C. and J. A.)						
Henderson, James M., Jr., *et al.* (See Henderson, Robert M., assignor.)						
Henderson, Johan T., Council Bluffs, Iowa. Roller-skate	321,968	July 14	767	200	32	147
Henderson, John C., New York, N. Y. Electric grip for railways	323,675	Aug. 4	382	109	32	594
Henderson, John W., *et al.* (See Henderson, Robert M., assignor.)						
Henderson, Milton P., and A. Bergland, Stockton, Cal. Steam-boiler furnace	326,980	Sept. 29	2389	625	32	1482
Henderson, Robert M., Leesville, assignor of one-half to J. W., Jr., and F. M. Henderson and H. B. Goen, Jackson County, Ind. Plow and cultivator	323,676	Aug. 4	383	109, 110	32	594
Hendrick, Jerome A., assignor to G. W. Ingalls, Worcester, Mass. Fan-tremolo	322,450	July 21	1401	368	32	271
Hendrick, Susan M., New York, N. Y. System and device for measuring garments	325,409	Sept. 1	262	65	32	1065
Hendricks, Adam C., assignor of one-half to H. S. Shepherd, Shenandoah Junction, W. Va. Grain-drill	324,110	Aug. 11	948	261	32	707
Hendrickson, Edward L., Gloucester, N. J. Step-ladder	324,254	Aug. 11	1157	315	32	745
Hendry, John C., Boston, Mass. Steam fan-blower	323,677	Aug. 4	385	110	32	594
Hendy, Joshua, San Francisco, Cal. Ore-feeder	322,716	July 21	1758	464, 465	32	336
Henkel, George, Springfield, Ohio. Pool-ball rack and spotter	322,602	July 21	1609	425	32	308
Henkel, Gustav, Cassel, Prussia, Germany. Hoisting-machine	324,690	Aug. 18	1759	465	32	865
Henneberg, Rudolf, Berlin, Germany. Disinfecting apparatus	327,395	Sept. 29	2941	767, 768	32	1578
Henneboehle, Frank, South Chicago, Ill. Valve	323,144	July 28	2358	626	32	453
Hennessy, David, New York, N. Y. Refrigerator system for cars	321,601	July 7	263	70	32	50
Hennessy, David, New York, N. Y. Refrigerator-car	321,602	July 7	265	70	32	51
Hennessy, Thomas F., assignor of one-half to L. Gantter, South Kaukauna, Wis. Velocipede	327,064	Sept. 29	2524	658	32	1505
Henning, William B., Waterloo, Ind. Railway-tie and track-fastening	323,609	Aug. 4	548	156	32	620
Hennings, Wilhelm G., assignor of one-half to H. Hein, Chicago, Ill. Register for money-drawers	326,114	Sept. 15	1184	303	32	1248
Henrichsen, Frederick J. (See Amundson and Henrichsen.)						
Henry, D. Farrand, *et al.* (See Brown, Thomas S., assignor.)						
Henry, Frank J., *et al.* (See Stanton, Lafayette J., assignor.)						
Henry, George W., Elizabeth, N. J. Window sash and frame	321,603	July 7	266	71	32	51
Henry, John J., assignor of one-half to G. A. Schaal, Baltimore, Md. Car-brake	325,209	Aug. 25	2454	675	32	1002
Hensley, James E. (See Thorp, Justus W., assignor.)						
Hepburn, John M., London, England, assignor to Bauer'sche Giesserei, Frankfort-on-the-Main, Germany. Type-founding machine	324,111	Aug. 11	949	261, 262	32	707
Herman, Adolph E., Ravenna, Ohio. Lifting-jack	323,540	Aug. 4	256	75	32	569
Herman, Ludwig, Cleveland, Ohio. Sprocket-wheel	325,539	Sept. 1	436	108	32	1099
Hermann, Christian, Bristol, R. I. Tool-handle	323,145	July 28	2360	626	32	454
Hermann, Max, Troy, N. Y. Attaching bosoms to shirts	322,718	July 21	1760	465	32	336
Hermann, Max, assignor to Tim, Wallerstein & Co., Troy, N. Y. Attaching bosoms to shirts	322,717	July 21	1759	465	32	336
Herndon, James M., Judsonia, Ark. Nail-extractor	326,649	Sept. 22	1900	500	32	1387
Herndon, James M., Judsonia, Ark. Nail-extractor	326,650	Sept. 22	1901	500	32	1387
Herrick, Hiram, and W. L. Babcock, Toledo, Ohio. Burglar-alarm	323,810	Aug. 4	549	156	32	626
Herrick, Seth W., Washington, N. J., and P. J. Lawrence, Easton, Pa.; said Herrick assignor to said Lawrence. Pedal for organs	323,678	Aug. 4	386	111	32	595
Herrington, John, Charles City, Iowa. Trace-buckle	327,166	Sept. 29	2640	687	32	1525
Herrmann, Henry, and W. B. Doolittle, Chicago, Ill. Street-bridge for fire-hose	322,287	July 14	1177	309	32	224
Herron, Hiram C., Cleveland, Ohio. Portable roof	321,722	July 7	415	111	32	78
Herron, Hiram C., Cleveland, Ohio. Sheet-iron lock-joint spile	325,172	Aug. 25	2397	650	32	991
Hersey Brothers. (See Tilden, James A., assignor.)						
Hershberger, Jonathan, Walnut Creek, Ohio. Thrashing-machine	324,997	Aug. 25	2182	597	32	950
Hertje, Abraham. (See Groce, Jacob M., assignor.)						
Herzog, Carl E., Rendnitz, near Leipsic, Germany. Potato-peeling machine	325,078	Aug. 25	2283	628	32	970
Hess, Christian W., Brenham, Tex. Pattern for bridle-blinkers	325,836	Sept. 8	834	208	32	1175
Hess, Edward B., Louisville, Ky. Electro-magnetic car-brake	324,470	Aug. 18	1449	396	32	807
Hess, Godfrey, assignor of three-fourths to H. Metzger, Williamsport, Pa., and G. W. Dyer, Washington, D. C. Socket and connection for electric-light circuits	325,540	Sept. 1	437	108, 109	32	1100
Hess, Israel, Goshen, Ind. Grain-separator	322,820	July 21	1696	503	32	361
Hess, Silas M., Bloomsburg, Pa. Culm-bar	325,837	Sept. 8	835	209	32	1175
Hesselton, Daniel H. (See Chase and Hesselton.)						
Hester, Ebenezer, Unionville, Conn. Dipper	323,332	July 28	2636	701	32	502
Hetherington, John M., Manchester, county of Lancaster, England. Apparatus for truing the flexible bends of carding-engines	322,288	July 14	1178	309	32	224
Hettinger, Mathias, Freeport, Ill. Supporting telegraph-wires	325,743	Sept. 8	716	178	32	1153
Hewitt, Benjamin J., assignor to himself and J. Benson, Manton, Mich. Water-elevator	327,167	Sept. 29	2641	687	32	1525
Hewitt, Herbert H., New York, N. Y. Sliding door	325,245	Sept. 1	16	6	32	1018
Hewitt, Joseph, Allegheny, Pa. Mantel	321,723	July 7	416	111	32	78
Hewitt, William, assignor to Trenton Iron Company, Trenton, N. J. Wire cloth or fabric	322,933	July 28	2066	550	32	399
Hewitt, Leslie, Louisville, Ky., assignor of one-half to Pratt & Letchworth, Buffalo, N. Y. Back-band hook	325,931	Sept. 8	940	238	32	1196
Heyl, Frederick, Newark, N. J. Milk-strainer	325,801	Sept. 8	792	199	32	1167
Heyman, Frederik, Copenhagen, Denmark. Apparatus to prevent frothing when filling beer into siphons, &c	322,719	July 21	1761	466	32	337
Heyman, Frederik, Copenhagen, Denmark. Preventing frothing when beer is being filled into siphons, &c	322,720	July 21	1763	466	32	337
Heysinger, Isaac W., Philadelphia, Pa. Electric incandescent sign	322,375	July 14	1296	339	32	246
Heysinger, Isaac W., Philadelphia, Pa. Conduit for cable and electric railways	325,173	Aug. 25	2397	660	32	991
Heysinger, Isaac W., Philadelphia, Pa. Upright paper-clip	327,440	Sept. 29	2095	783	32	1588
Heywood, George, *et al.* (See Watkins, Gardner A., assignor.)						
Heywood, Henry, *et al.* (See Watkins, Gardner A., assignor.)						
Hicks, Henry C., Minneapolis, Minn., assignor to American Live Stock Express Company, New York, N. Y. Door for stock or freight cars	324,255	Aug. 11	1158	315	32	745
Hicks, Henry C., Minneapolis, Minn., assignor to American Live Stock Express Company, New York, N. Y. Stock-car	324,256	Aug. 11	1160	315, 316	32	745
Hicks, Henry C., Minneapolis, Minn., assignor to American Live Stock Express Company, New York, N. Y. Stock-car	324,257	Aug. 11	1161	316	32	746

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Hicks, James R. (See Robertson and Hicks.)						
Hicks, James R., Kansas City, Mo. Rotary harrow	325,932	Sept. 8	941	238	32	1197
Hicks, Nehemiah, Attleborough, Mass., and G. A. Metcalf, Woonsocket, R. I. Card-grinding machine	325,744	Sept. 8	717	179	32	1154
Hicks, Oliver H., Chicago, Ill. Toilet-paper fixture	325,174	Aug. 25	2404	660	32	992
Hicks, Oliver H., Chicago, Ill. Package of toilet-paper	325,410	Sept. 1	263	65	32	1065
Hien, Phillip, Rock Island, Ill. Seal-lock for railway-cars	324,691	Aug. 18	1762	486	32	805
Hiestand, Benjamin E., and A. W. Swade, Mount Joy, Pa. Device for releasing animals from stalls	322,603	July 21	1611	425	32	308
Higginbotham, George S. (See Bragg, Thomas P., assignor.)						
Higgins, George H., *et al.* (See Henderson, Charles C., assignor.)						
Higgins, Solomon S. (See Lakin, Rinaldo S., assignor.)						
Higgins, Werter C., Norwich, Conn. Fire-pot	322,289	July 14	1190	310	32	224
Hilde, Hermann, Roswein, Germany. Form or mold for glass cigar-molds	321,498	July 7	118	31	32	23
Hildebrandt, Edward A., Philadelphia, Pa. Awning	323,418	Aug. 4	46	12	32	531
Hildreth, Edwin A. and S. B., Harvard, Mass. Machine for splitting wood	321,969	July 14	768	200	32	148
Hildreth, James H., *et al.* (See Mason, Henry, assignor.)						
Hildreth, Stanley B. (See Hildreth, Edwin A. and S. B.)						
Hilger, Peter, Arlington, assignor of one-half to J. Mallor, Minneapolis, Minn. Sleigh	327,168	Sept. 29	2642	687	32	1525
Hill, Andrew L., Chicago, Ill. Hame-tug	322,934	July 28	2067	550	32	399
Hill, Barton B., Lowell, Mass. Railway construction train or carriage	325,246	Sept. 1	18	6, 7	32	1018
Hill, Erwin L. (See Long and Hill.)						
Hill, Frank A. (See Mathews, William, assignor.)						
Hill, Frederick D., New York, N. Y. Burglar-alarm	325,858	Sept. 8	835	209	32	1175
Hill, George W., Quincy, Mass. Insulator for securing telegraph and other wires	324,692	Aug. 18	1763	486	32	866
Hill, Henry C., and H. H. Brown, Stalybridge, county of Chester, England. Machinery for winding yarn or thread onto spools or bobbins	322,451	July 21	1402	368	32	472
Hill, James, Cleveland, Ohio. Furnace	325,175	Aug. 25	2406	661	32	992
Hill, James H., *et al.* (See Scott, Orla J., assignor.)						
Hill, William, Jr. (See Bull and Hill.)						
Hill, William E., Kalamazoo, Mich. Log-unloader	324,840	Aug. 25	1966	539	32	911
Hill, William E., Kalamazoo, Mich. Steam-engine	325,079	Aug. 25	2283	628	32	970
Hill, William E., Kalamazoo, Mich. Log-mover and dog	325,745	Sept. 8	718	179	32	1154
Hiller, France B., Wilmington, Mass. Implement for planting cranberry-vines	323,419	Aug. 4	47	12	32	531
Hiller, Otto B. E. (See Ziurek, Otto, assignor.)						
Hills, C. (See Purviance, Benjamin F., assignor.)						
Hills, Caroline M., Chicago, Ill. Paint-pot	323,420	Aug. 4	48	12	32	532
Hilton, James, Newark, N. J. Saw-handle	323,500	Aug. 4	164	48	32	553
Hilton, James W., Brooklyn, N. Y. Scissors-sharpener	323,146	July 28	2362	626	32	454
Hilton, James W., Brooklyn, N. Y. Machine for pulverizing ores, &c.	323,147	July 28	2363	627	32	454
Hilton, James W., New York, N. Y. Cylindrical amalgamator	323,148	July 28	2363	627	32	454
Himel, Taylor P., Labadieville, La. Cane-scraper	324,258	Aug. 11	1163	316	32	746
Himrod, William G., Philadelphia, Pa. Submerged water-filter for purifying water	326,500	Sept. 15	1697	443	32	1343
Hinchliffe, John, Jr. (See Seymour, Francis, assignor.)						
Hinda, Alfred A., Lexington, Ind. Washing-machine	326,501	Sept. 15	1698	443	32	1343
Hinda, Franklin P., Boston, Mass. Automatic safety-guard for elevators	322,452	July 21	1406	368	32	272
Hinds, Joseph E., Brooklyn, N. Y. Varnishing-machine	325,176	Aug. 25	2407	{661 662}	32	993
Hines, John, Philadelphia, Pa. Tile for walls, wood-work, &c.	21,724	July 7	417	111	32	78
Hines, John, Philadelphia, Pa. Making enameled goods	322,290	July 14	1180	310	32	225
Hinkle, James C. (See Bender and Hinkle.)						
Hinman, David, Southington, Conn. Blind-slat holder	324,693	Aug. 18	1764	486	32	866
Hinman, William S. (See Merriman, Lewis, assignor.)						
Hinsdill, Henry M., Grand Rapids, Mich. Portable copying-press	326,651	Sept. 22	1901	500	32	1387
Hinshaw, Columbus and E., Snow Hill, Ind. Belt-supporter	323,679	Aug. 4	388	111	32	595
Hinshaw, Elwood. (See Hinshaw, Columbus and E.)						
Hipwell, Thomas, Astoria, assignor to Manhattan Brass Company, New York, N. Y. Lamp	323,037	July 28	2221	587	32	426
Hirsh, Ralph, Syracuse, N. Y. Apparatus for weather-signal stations	326,558	Sept. 22	1773	464	32	1365
Hirshheimer, Albert, La Crosse, Wis. Harrow	325,541	Sept. 1	439	109	32	1100
Hirshheimer, Albert, and C. M. Mueller, La Crosse, Wis. Machine for inserting harrow-teeth	325,542	Sept. 1	440	109	32	1100
Hirst, John C., and E. Dickie, South Oil City, Pa. Tool-handle	324,379	Aug. 18	1330	362	32	785
Hirt, Leo, New Kiowa, Kans. Siphon-starter	326,034	Sept. 8	1081	276	32	1221
Hirth, Joseph, and J. Ruff, East St. Louis, Ill. Lantern	325,210	Aug. 25	2455	675	32	1002
Hiser, Daniel B., Springfield, Ohio. Coffin	326,559	Sept. 22	1775	465	32	1366
Hiser, Daniel B., assignor to A. A. Baker and D. R. Hosterman, Springfield, Ohio. Coffin	322,604	July 21	1611	426	32	309
Hish, Franklin P., Shelbyville, Ill. Bench-clamp	324,555	Aug. 18	1559	430	32	828
Hiss, Hermann. (See Paillet, Joseph, assignor.)						
Hissem, J. C. (See Crites, Silas J., assignor.)						
Hitchcock, Charles A., *et al.* (See Burnley, William, assignor.)						
Hitchcock, Frank I., Bridgeport, Conn. Weighing-scale	322,100	July 14	946	245	32	181
Hitchcock, Hiram H., Detroit, Mich. Feed mechanism for saw-sets	325,060	Aug. 25	2285	628	32	970
Hiteshew, William H., Peru, Ind. Sewing-machine cabinet	325,061	Aug. 25	2287	629	32	971
Hoard, Frederick R. (See Hoard, John W. and F. R.)						
Hoard, John W. and F. R., Providence, R. I. Apparatus for mixing liquid fuel and air	326,981	Sept. 29	2390	{625 626}	32	1482
Hobart, Henry H., and E. T. Coombes, Westfield, Pa. Check-rein hook	326,217	Sept. 15	1336	346	32	1275
Hobbs, Horatio. (See Gordon and Hobbs.)						
Hodges, Alice A. (See Hodges, George W. and A. A.)						
Hodges, Charles C., *et al.* (See Turner, Chester B., assignor.)						
Hodges, Charles H., *et al.* (See Turner, Chester B., assignor.)						
Hodges, Clarence B., *et al.* (See Turner, Chester B., assignor.)						
Hodges, Clarence B., Detroit, Mich. Lubricator	322,291	July 14	1181	310	32	225
Hodges, George W. and A. A., Baltimore, Md. Brake for child's carriage	322,721	July 21	1765	466	32	337
Hodges, Henry C., *et al.* (See Turner, Chester B., assignor.)						
Hodges, Horace F., Boston, assignor to C. F. Paine, Groveland, and G. H. Spencer, Fitchburg, Mass. Rotary engine	323,038	July 28	2223	588	32	426
Hodges, Horace F., Boston, assignor to C. F. Paine, Groveland, G. H. Spencer, and C. T. Crocker, Fitchburg, Mass. Pressure-regulating valve	323,039	July 28	2224	588	32	426
Hodges, Pliny F., Davenport, Iowa. Harvesting-machine	321,813	July 7	549	145	32	102
Hodges, Pliny F., Chicago, Ill. Low-down self-binding harvester	323,333	July 28	2637	{701 702}	32	503
Hodgkinson, James, Manchester, England. Mechanical stoker	322,605	July 21	1613	426	32	309
Hodgman, Constant C., *et al.* (See McKendrick, John, assignor.)						
Hodskinson, Jabez, Salem, Mass. Leather-blacking machine	322,606	July 21	1615	427	32	309

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Hoe & Co., R. (See Anthony, Edwyn, assignor.)						
Hoe & Co., R. (See Crowell, Luther C., assignor.)						
Hoefle, Ernest W., assignor to Schener & Brother, New York, N. Y. Fan	323,811	Aug. 4	550	156	32	696
Hoeveler, William A., Pittsburg, Pa. Gas-distribution	323,685	Aug. 4	399	114	32	607
Hoexter, Adolf, Offenbach-on-the-Main, and G. Schulter, Lohr-on-the-Main, Germany. Wood-filler	327,085	Sept. 29	2525	.....	32	1505
Höfer, Julius G., assignor of one-half to Knoxville Foundry and Machine Company, Knoxville, Tenn. Stone-sawing machine	322,291	July 21	1898	503	32	361
Hoffman, Charles, and H. R. Lyman, Flemingville, Iowa. Pumping-machine	324,026	Aug. 11	835	231	32	686
Hoffman, Irenias M., Indianapolis, Ind. Refrigerator-wagon	321,970	July 14	769	201	32	148
Hoffman, Joseph, assignor to G. A. Goldsmith, New York, N. Y. Pencil	326,502	Sept. 15	1699	443	32	1343
Hoffman, Joseph, assignor to G. A. Goldsmith, New York, N. Y. Pencil or crayon holder	326,736	Sept. 22	2051	534	32	1414
Hoffman, Joseph, assignor to G. A. Goldsmith, New York, N. Y. Pencil or crayon holder	326,737	Sept. 22	2054	534	32	1414
Hoffman, William M., Buffalo, N. Y. Patting-out machine	323,334	July 28	2638	702	32	503
Hoffmann, Ferdinand, and C. Ferst, Louisville, Ky. Barber's chair	326,503	Sept. 15	1700	444	32	1344
Hofstatter, Theodore, Jr., New York, N. Y. Machine for longitudinally grooving rods for dowels	324,259	Aug. 11	1164	317	32	746
Hogan, Thomas P., Buffalo, N. Y. Steam-heating boiler	326,962	Sept. 29	2392	626	32	1482
Hogeboom, Charles E., Eau Claire, Wis. Harrow-tooth attachment	325,839	Sept. 8	836	209	32	1176
Hogeland, Israel, assignor of one-half to G. P. Anderson, Indianapolis, Ind. Lifting-jack	325,411	Sept. 1	264	66	32	1065
Holbrook, Byron, Kenosha, assignor of one-half to J. Cryderman, Milwaukee, Wis. Machine for reducing tan-bark	321,725	July 7	418	112	32	78
Holbrook, Frank B., *et al.* (See Jeffrey, Henry D., assignor.)						
Holcomb, Abel P., Silver Creek, N. Y. Steam-generator	324,694	Aug. 18	1765	{486 487}	32	866
Holcomb, Wallace W., *et al.* (See Sharp, Van Schaick, assignor.)						
Holcombe Bros. and Stone Manufacturing Company. (See Holcombe, William H. and C. A., assignors.)						
Holcombe, Clifford A. (See Holcombe, William H. and C. A.)						
Holcombe, William H. and C. A., assignors to Holcombe Bros. and Stone Manufacturing Company, (limited,) Beloit, Wis. Pump	321,499	July 7	119	32	32	24
Holden, Edgar, Newark, N. J. Filter-bed	323,680	Aug. 4	389	111	32	595
Holden, Horace. (See Cooke, Robert F., assignor.)						
Holden, Horatio N. (See Sneden and Holden.)						
Holder, Benjamin F. (See Wilson and Holder.)						
Holder, William R., Verbena, Ala. Lubricator	321,436	July 7	28	8	32	8
Holgate, George, Philadelphia, Pa. Preserving animal mattors	326,035	Sept. 8	1082	.....	32	1222
Holland, Charles L. (See Smith and Holland.)						
Holland, Enoch P., *et al.* (See Willard, Thomas, assignor.)						
Holland, Franklin, Grand Rapids, Mich. Cutter-head	326,963	Sept. 29	2392	626	32	1482
Holland, William T., Brooklyn, N. Y. Apparatus for utilizing the waste heat from ranges	324,841	Aug. 25	1967	540	32	911
Hollinger, Jacob, D. A. Wolgamot, and A. A. Gonser, Millersburg, Ohio. Horseshoe	326,738	Sept. 22	2056	534	32	1414
Hollingsworth, Joseph, assignor of one-half to S. Witkowski, Kilbourne, La. Crane	324,695	Aug. 18	1766	487	32	866
Hollingsworth, Newton. (See Hollingsworth, Wilson and N.)						
Hollingsworth, Wilson and N., Hemlock, Ind. Stalk-rake	326,739	Sept. 22	2056	535	32	1414
Hollis, George W., *et al.* (See Taylor, Eugene H., assignor.)						
Hollister, Solomon D., Crystal Falls, Mich. Wire bed-slat fastener	325,082	Aug. 25	2288	629	32	971
Hollner, Adolf, Dennison, Ohio. Composition of matter for lining or coating boxes, &c.	326,115	Sept. 15	1185	.....	32	1248
Holloway, James C., San Francisco, Cal. Oatmeal-machine	324,556	Aug. 18	1560	{430 431}	32	828
Holmes, Booth & Haydens. (See Hayden, Hiram W., assignor.)						
Holmes, Booth & Haydens. (See Jenkins, Nicholas, assignor.)						
Holmes, Charles P., Gouverneur, N. Y., and N. M. George, Danbury, Conn. Car-axle lubricator	322,292	July 14	1182	310	32	225
Holmes, Daniel M., Arlington, N. J. Cake-machine	323,681	Aug. 4	399	{111 112}	32	595
Holmes, Daniel M., Arlington, N. J. Candy-machine	323,682	Aug. 4	393	{112 113}	32	596
Holmes, Edwin. (See Carhart, Edwin M., assignor.)						
Holmes, Joseph R., and J. F. Egan, Elgin, Ill. Last	323,933	Aug. 11	713	200	32	665
Holmes, Nathan L., Racine, Wis. Circle-iron for wagons	323,934	Aug. 11	714	200	32	665
Holmes, Nathan L., Racine, Wis. Vehicle running-gear	326,116	Sept. 15	1186	303	32	1248
Holst, Constantyn P., Amsterdam, Holland, assignor of one-half to J. R. Planten, Brooklyn, N. Y. Valve-gear	323,935	Aug. 11	717	200	32	665
Holsten, Henry. (See Adams, Thomas C., assignor.)						
Holt, Albert T., Brooklyn, assignor to Loewenthal & Morganstern, New York, N. Y. Manufacture of hose	321,149	July 28	2364	627	32	454
Holt, Edward. (See Hebblewaite and Holt.)						
Holt, Henry A., Wilton, N. H. Planing-machine	322,935	July 28	2068	551	32	399
Holt, William L., Harrison, Ark. Planter, cotton-chopper, and scraper	326,560	Sept. 22	1776	465	32	1366
Holzer, William, Harrison, N. J. Manufacturing incandescent electric lamps	321,150	July 28	2366	627	32	455
Hölzgens, Joseph, Langerwehe, Prussia, assignor to O. Von Auw, Ehrenfeld, Germany. Holder for needles and other objects	324,557	Aug. 18	1561	431	32	829
Homan, Andrew J., New York, N. Y. Self-closing faucet	325,412	Sept. 1	266	66	32	1066
Home Gas and Oil Stove Company. (See Whittingham and Jones, assignors.)						
Homeher, George W., Dublin, Ind. Fence-machine	322,822	July 21	1899	{504 505}	32	361
Honey, J. W. (See Spray, William R., assignor.)						
Honigmann, Moritz, Grevenberg, near Aix-la-Chapelle, Germany. Storing power by steam under pressure	324,696	Aug. 18	1768	487	32	867
Hood, Calvine B., Kosse, Tex. Combined seed-planter and guano-distributer	326,740	Sept. 22	2057	535	32	1414
Hood, Harrison P. (See Hazelrigg, Jacob, and Hood.)						
Hood, John, and S. H. Reynolds, Boston, Mass. Dental instrument	321,814	July 7	552	145	32	102
Hook, Joseph. (See Williams and Hook.)						
Hooley, Thomas, Davenport, Iowa. Arithmetical chart	322,376	July 14	1300	339	32	247
Hooper, William J. (See Price, George W., assignor.)						
Hoops, John H., Newport, Ky. Curtain-light frame for carriages	326,036	Sept. 8	1083	276	32	1222
Hooton, Marsena M., Chicago, Ill. Device for starting the dead-wheel in mutilated gears	326,964	Sept. 29	2393	626	32	1482
Hooton, Marsena M., assignor, by mesne assignments, to Omega Binder Company, Chicago, Ill. Grain-binder	327,086	Sept. 29	2526	{658 659 660 661}	32	1506
Hoover, Jacob. (See Michael and Geib, assignors.)						
Hopgood, Daniel T., Morganfield, Ky. Water-gate	322,607	July 21	1617	428	32	310

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Hopgood, John F., Morganfield, Ky. Gate	321,604	July 7	267	71	32	51
Hopkins, Cabel B., Payne's Depot, Ky. Cash register and indicator	321,815	July 7	553	145, 146	32	102
Hopkins & Dickinson Manufacturing Company. (See Kelly, Archibald, assignor.)						
Hopkins, George M., Brooklyn, N. Y. Arc lamp	325,802	Sept. 8	793	199	32	1168
Hopkins, George M. and I. N., Brooklyn, N. Y. Gas-engine	326,561	Sept. 22	1777	465, 466	32	1366
Hopkins, George M. and I. N., Brooklyn, N. Y. Gas-engine	326,562	Sept. 22	1779	466, 467	32	1366
Hopkins, Henry L., Caro, Mich. Scroll-sawing machine	324,842	Aug. 25	1960	540, 541	32	911
Hopkins, I. Newton. (See Hopkins, George M. and I. N.)						
Hopkins, I. Newton, Brooklyn, N. Y. Tie for bales and packages	326,563	Sept. 22	1781	467	32	1367
Hopkins, Sylvanus C., Boston, Mass. Folding chair	326,564	Sept. 22	1782	467	32	1367
Hopkinson, John, Westminster, county of Middlesex, England. Conductor for electric railways	325,063	Aug. 25	2289	629, 630	32	971
Horn, Ferdinand. (See Kronenbitter, Anthony, assignor.)						
Horn, Ferdinand, assignor of one-half to H. Hay, Coshocton, Ohio. Vehicle-spring	323,335	July 28	2639	702	32	503
Horner, James H., Oxford, N. C. Apparatus for burning and preparing plant-beds	323,151	July 28	2367	628	32	455
Horner, John W., Lake City, Minn. Hammock-support	324,027	Aug. 11	837	231	32	687
Hornsby, James, F. C. Southwell, and J. Innocent, Grantham, county of Lincoln, England. Dropping-cradle for harvesting-machines	327,087	Sept. 29	2537	661	32	1507
Horr, Otis W., Chicopee Falls, Mass. Breech-loading gun	323,936	Aug. 11	719	201	32	665
Horsfield, Alfred, Hazleton, Pa. Steam-actuated valve	321,605	July 7	269	71	32	52
Horsley, James, Millerstown, Pa., and S. T. Jull, Cleveland, Ohio. Car-coupling	326,218	Sept. 15	1337	346	32	1276
Horton, Eliphalet, *et al.* (See Cary, Charles H., assignor.)						
Horton, Hilon R., St. Louis, Mo. Motor	326,117	Sept. 15	1198	304	32	1248
Horton, Numon N., Kansas City, Mo. Folding cot	324,841	Aug. 25	1971	541	32	912
Horton, Peter D., Oakland, Cal. Fly-trap	321,437	July 7	29	8	32	8
Horton & Son Company, E. (See Slate, Dwight, assignor.)						
Hosterman, David R., *et al.* (See Hiser, Daniel B., assignor.)						
Hotchkiss, Arthur E., Cheshire, Conn. Stem-winding watch	325,247	Sept. 1	20	7	32	1019
Hotchkiss, Frank A. (See Prefontaine, George G., assignor.)						
Hotchkiss & Upson Company. (See Smith, Frederick A., assignor.)						
Hotham, John, Hillside, Pa. Lime-distributer	323,683	Aug. 4	396	113, 114	32	597
Houchin, Thomas W. (See Houchin, Waldo P., assignor.)						
Houchin, Waldo P., assignor to T. W. Houchin, New York, N. Y. Insect-powder gun	326,037	Sept. 8	1084	276	32	1222
Houck, Frank A., and T. C. Carter, Holden, Mo. Churn	325,084	Aug. 25	2290	630	32	972
Hough, Earl F., Oakland, Cal. Egg-beater and liquid-mixer	325,840	Sept. 8	837	209	32	1176
Hough, William W., assignor to himself and J. P. Robarts, Mound City, Ill. Minnow-bucket	321,606	July 7	270	72	32	52
Houghton, Charles F. (See Cloud, John W., assignor.)						
Houghton, F. J. (See Hug, John, assignor.)						
Houghton, William. (See Strobridge and Houghton.)						
Houser, Daniel, Stockton, Cal. Harvester	324,697	Aug. 18	1769	487, 488	32	867
Houser, Peter. (See McFadden and Houser.)						
Housley, Daniel W., Chicago, Ill. Tilting chair	321,810	July 7	560	146	32	104
Houze, Luc, Meadville, Pa. Glass-furnace	323,937	Aug. 11	720	201	32	666
Howard, Charles P. (See Howard, James L. and C. P.)						
Howard, Charles T. (See Edmunds and Howard.)						
Howard, James L. and C. P., Hartford, Conn. Water-closet	322,101	July 14	947	246	32	151
Howard, Leonard D., St. Johnsbury, Vt. Combined try-square and bevel	324,323	Aug. 11	1253	341	32	764
Howard, Riley H., Brooklyn, N. Y. Oil-burner and oil-burning stove	325,413	Sept. 1	267	66	32	1066
Howard, Robert L., Luton, county of Bedford, England. Wiring for bottle-stoppers	321,607	July 7	271	72	32	52
Howarth, Robert, Wolverhampton, county of Stafford, England, assignor to M. Bayliss, E. Jones, W. and S. Bayliss, and W. E. Jones. Nut-lock	321,500	July 7	120	32	32	24
Howe, Charles P., Austin, Texas. Gate	323,684	Aug. 4	398	114	32	597
Howe, Edward, assignor of three-fourths to M. Scholl, Jr., Detroit, Mich. Car-coupling	326,741	Sept. 22	2058	535	32	1414
Howe, George H., Hoosick Falls, N. Y. Automatic binding-machine	321,438	July 7	30	8, 9	32	9
Howe, Solon G., Detroit, Mich. Sample-package wrapper	322,453	July 21	1408	369	32	272
Howe, Thomas B., Scranton, Pa. Filter-ventilator	325,803	Sept. 8	794	199	32	1168
Howe, William B. W., Jr., and A. Gärtner, Savannah, Ga. Automatic air-brake	321,971	July 14	771	201	32	148
Howe, William G., Boston, Mass. Feed bag holder	325,607	Sept. 1	515	129	32	1113
Howell, Charles P., Covington, Ky. Trunk-lid support	326,038	Sept. 8	1085	276	32	1222
Howes, Dr Willis, Brooklyn, assignor to New York Adjustable Stern Dock Company, New York, N. Y. Coffer-dam	326,985	Sept. 29	2395	627	32	1483
Howes, John, Worcester, Mass. Purifying and aerating apparatus for water-service	322,722	July 21	1766	466, 467	32	337
Howes, William T., White Heath, Ill. Painter's scaffold	323,152	July 28	2368	628	32	455
Howland, George B., Chicago, Ill. Oscillating grain-meter	323,509	Aug. 4	166	49	32	553
Howze, Arthur R. (See Marshall and Howze.)						
Hoxie, Herbert M., St. Louis, Mo. Tamping-tool	324,998	Aug. 25	2183	598	32	950
Hoyt, Frederick J., and A. M. Nichols, Grand Rapids, Mich. Sealing-wax lamp and holder	322,539	July 21	1523	402	32	293
Hoyt, Friend W., Birmingham, Conn. Filing-cabinet	324,324	Aug. 11	1256	341	32	764
Hoyt, James P., Newtown, Conn., and F. S. Bartram, New York, N. Y. Fountain-pen	325,211	Aug. 25	2456	676	32	1002
Hoyt, Lewis S., assignor of one-half to J. M. Culver, Boston, Mass. Rubber-covered compound	322,036	July 28	2071	551	32	400
Hoyt, Montraville, Jamaica, N. Y. Tire-heater	323,686	Aug. 4	400	115	32	598
Hubbard, Arthur O., St. Cloud, Minn. Adjustable camp chair or hammock	327,441	Sept. 29	2998	783	32	1588
Hubbard, Henry W., Aurora, Ill. Turning-tool	325,085	Aug. 25	2291	631	32	972
Hubbard, Moses G., Norristown, Pa. Car-truck	326,652	Sept. 22	1903	500, 501	32	1318
Hubbard, Moses G., Norristown, Pa. Car-truck	326,653	Sept. 22	1906	501	32	1388
Hubbard, Moses G., Norristown, Pa. Car-truck	326,654	Sept. 22	1908	501	32	1388
Hubbell, George W., assignor of one-half to Wallace & Sons, Ansonia, Conn. Hanging-lamp fixture	323,687	Aug. 4	401	115	32	598
Hubbe, Benjamin F., and W. Y. Bygate, Canton, Ohio. Chair	321,897	July 7	669	173, 174	32	122
Hubel, Fred A. (See Taylor, Harrison H., assignor.)						
Hubel, Frederick A. (See Reinhold, Frank J., assignor.)						
Huber, Edward. (See Barnhart and Huber.)						
Huber, Emil, assignor to E. Bayot, New York, N. Y. Porte caustique for testing metals	323,581	Aug. 4	257	75	32	569

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Huber, John P. (See Schmitt and Huber.)						
Huber, William B., Fremont, Nebr. Washing-machine	323,336	July 28	2640	703	32	503
Hudson, Henry A., Lyndhurst, N. J. Manufacture of beton	324,112	Aug. 11	952	.....	32	708
Huff, Mark S., assignor of one-half to P. B. Berry, Sutton, W. Va. Rotary engine	324,698	Aug. 18	1771	488	32	867
Hug, John, Ripley, assignor of one-half to F. J. Houghton, Chautauqua County, N. Y. Saw-tooth jointer and gage	326,907	Sept. 22	2294	600	32	1456
Hug, Rudolph R., Cincinnati, Ohio. Brooch or breastpin	323,688	Aug. 4	402	115	32	598
Hughes, Charles D., Brooklyn, N. Y. Door-bell	321,501	July 7	122	32	32	24
Hughes, John A., and C. S. Mengel, Philadelphia, Pa. Ventilating-cap	322,377	July 14	1301	339	32	247
Hughes, Lee, Marshall, Mo. Electric belt	325,086	Aug. 25	2293	631	32	972
Hughes, Marshall J., Jersey City, N. J. Quoin and side-stick	324,699	Aug. 18	1771	489	32	867
Hughes, Marshall J., Jersey City, N. J. Inkstand	326,118	Sept. 15	1189	304	32	1248
Hughes, Samuel R., Benton Harbor, Mich. Car-axle box	326,219	Sept. 15	1338	346	32	1276
Huiskamp, Herman J., Fort Madison, Iowa. Heel-trimming machine	324,844	Aug. 25	1972	541	32	912
Hulbert, Harry E., Santa Rosa, Cal. Budding-knife	324,700	Aug. 18	1772	489	32	868
Hulford, William J. and T. P. Walsh, Lawrence, Mass. Loom-harness	323,421	Aug. 4	49	13	32	532
Hull, Henry S., *et al.* (See Smith, Seth H., assignor.)						
Hull, John S., Baltimore, Md. Lubricating oil-can	325,087	Aug. 25	2294	631	32	972
Hull, Nicholas A., Peru, Ind. Sewing-machine table-top	326,294	Sept. 15	1446	377	32	1297
Hull, Rufus F., Fonda, Iowa. Machine for cleaning and repairing roller-skates	323,689	Aug. 4	403	115	32	598
Hull, Wolcott A., *et al.* (See Lyman, Charles H., assignor.)						
Hull, Wolcott A., *et al.* (See Weber, Theodore A., assignor.)						
Hummel, William C. B., assignor of two-thirds to R. Switzer and L. A. Christy, Winfield, W. Va. Saw-swage	324,701	Aug. 18	1773	489	32	868
Humphreys, James W., Iroquois, Ill. Ditching-plow	321,898	July 7	671	174	32	122
Hunger, Friedrich, assignor of one-half to S. Schmuck, Cleveland, Ohio. Reclining-chair	325,248	Sept. 1	21	7	32	1018
Hungerford, Edward M., Utica, N. Y. Wrench	322,937	July 28	2072	551	32	400
Hunt, Franklin B., assignor to H. W. Mendenhall, agent, Richmond, Ind. Roller-skate	324,325	Aug. 11	1257	341	32	765
Hunt, Frederic R., Leavenworth, Kans. Tubular screw	324,768	Aug. 18	1858	512	32	884
Hunt, James R. B., assignor of one-half to O. N. Elkins, North Troy, Vt. Saw-gummer	324,380	Aug. 18	1331	362	32	786
Hunt, Joshua, assignor of one-half to F. A. Ingerson, Providence, R. I. Carriage-jack	322,180	July 14	1055	273	32	200
Hunt, Reuben R., Lexington, Ky. Car-coupling	323,612	Aug. 4	552	156	32	627
Hunt, Robert W., and M. M. Suppes, Troy, N. Y.; said Suppes assignor of one-sixth to said Hunt. Feeding mechanism for rolling-mills	323,510	Aug. 4	167	49	32	553
Hunter, George W. (See Shafor, Adams, and Hunter.)						
Hunter, James, Camden, N. J. Explosive projectile	325,608	Sept. 1	516	129	32	1113
Hunter, John, Kingston, Ontario, Canada. Drilling apparatus	325,414	Sept. 1	269	66	32	1066
Hunter, John E., Mechanicsburg, Ohio. Barrel-truck	322,823	July 21	1902	505	32	362
Hunter, Joseph H., Adair, Ill. Hand water-pumping mill	321,972	July 14	772	201	32	148
Hunter, T. F., *et al.* (See Green, John J., assignor.)						
Hunter, William, San Francisco, Cal. Draft-regulator	321,502	July 7	123	32	32	24
Huntington, Frank A., San Francisco, Cal. Rock crusher or breaker	324,937	Aug. 25	2094	573	32	935
Huntington, Frank A., San Francisco, Cal. Crushing-mill	325,804	Sept. 8	795	200	32	1168
Huntington, Silas H., West Pittston, Pa. Grate for furnaces	326,295	Sept. 15	1448	377, 378	32	1297
Huntington, Thomas S., New York, N. Y., assignor to New Home Sewing Machine Company, Orange, Mass. Button-hole attachment for sewing-machines	327,169	Sept. 29	2643	688	32	1506
Hurd, Alfred P., assignor to J. L. Mott Iron Works, New York, N. Y. Hot-air engine	325,805	Sept. 8	796	200	32	1168
Hurd, Lorenzo D., Wellsville, N. Y. Running-gear for wagons	321,503	July 7	124	33	32	25
Hurley, James A., assignor of one-half to E. A. White, Boston, Mass. Brake mechanism for elevators	326,504	Sept. 15	1701	444	32	1344
Hurrle, Joseph, Oneida, N. Y. Thill-support	324,769	Aug. 18	1860	512	32	884
Hursh, John, Orrville, Ohio. Horse for suspending carcasses	322,181	July 14	1056	273	32	200
Hurst, Shrewsbury D., Versailles, Ky. Tobacco-elevator	327,088	Sept. 29	2538	662	32	1507
Huse, Warren D., W. E. Sheehan, and G. F. Davis, Laconia, N. H.; said Sheehan and Davis assignors to said Huse. Stop-motion mechanism for knitting-machines	327,170	Sept. 29	2646	688	32	1506
Hussey, Levi, assignor to G. W. Donaldson, New York, N. Y. Heating exhaust and superheating live steam. (Reissue)	10,632	Aug. 4	668	187, 188	32	649
Hussey, William J., assignor of one-half to H. A. Owen, Boston, Mass. Milk-can lock	326,083	Sept. 8	1149	292	32	1234
Huston, James N. (See Wall, Frederick W., assignor.)						
Huston, Robert M., Toronto, Ontario, Canada. Combined wardrobe and bedstead	322,938	July 28	2073	552	32	400
Hutchcraft, R. Brent, Paris, Ky. Seed cleaner and huller	322,824	July 21	1903	505	32	362
Hutcherson, John W. (See Hutcherson, Peter and J. W.)						
Hutcherson, Peter and J. W., Sandy Ridge, N. C. Fruit-gatherer	324,326	Aug. 11	1258	341	32	765
Hutches, Benjamin F., Jr., Galveston, Texas. Necktie-fastening	323,870	Aug. 4	625	176	32	611
Hutchins, George F., assignor to L. J. Knowles & Brother, Worcester, Mass. Warp-beam for looms	324,770	Aug. 18	1860	512	32	884
Hutchins, Joseph, Middlebury, Ind. Vehicle-spring	325,609	Sept. 1	517	130	32	1113
Hutchinson, Alfred B. (See Welch, Hutchinson, and Gray.)						
Hutchinson, William F., Lynn, Mass. Shaft-casing	322,540	July 21	1524	402	32	293
Hutchinson, William G., *et al.* (See Armstrong, George S., assignor.)						
Hutchison, Andrew C., *et al.* (See Goodwin, Hiland W., assignor.)						
Huth, Alfred H., 17 Kensington Square, county of Middlesex, England. Manufacture of compounds of india-rubber, gutta-percha, &c	326,220	Sept. 15	1338	.....	32	1276
Hutson, James M., Harpersville, Miss. Universal planter and cultivator	324,938	Aug. 25	2095	573	32	936
Hyatt, John W., Newark, N. J. Filtering apparatus	322,102	July 14	949	246	32	151
Hyatt, John W., Newark, N. J. Filter	322,103	July 14	951	247	32	182
Hyatt, John W., Newark, N. J. Apparatus for purifying water	322,104	July 14	955	248	32	182
Hyatt, John W., Newark, N. J. Purifying water	326,221	Sept. 15	1340	346, 347	32	1276
Hyatt, John W., and J. Everding, Newark, N. J., assignors to Celluloid Manufacturing Company, New York, N. Y. Making solid compound from soluble nitro-cellulose	326,119	Sept. 15	1190	304	32	1240
Hyatt, Thaddeus, New York, N. Y. Illuminating vault cover or grating. (Reissue)	10,626	July 21	1998	528	32	360
Hyde, Andrew, Hatfield, Mass. Fire-arm	326,986	Sept. 29	2397	627	32	1483
Hyde, Lewis W. (See Place, Oscar, assignor.)						
Hyde, Lewis W., Brooklyn, and A. H. Seaman, New York, N. Y. Flier for printing-machines	321,608	July 7	271	72	32	52
Hyde, Lewis W., Brooklyn, and A. H. Seaman, New York, N. Y. Sheet-flier for printing-machines	324,939	Aug. 25	2096	573	32	936
Hyde, Theophilus R., Jr., assignor to Scovill Manufacturing Company, Waterbury, Conn. Button	327,442	Sept. 29	2999	783	32	1589
Hydraulic Press Brick Company. (See Graves, Willis N., assignor.)						
Hydraulic Salt Forcing Company. (See Peters, John, assignor.)						
Hyndman, John T., assignor to W. G. and R. J. Hyndman, Cincinnati, Ohio. Metallic shingle	326,655	Sept. 22	1911	502	32	1389

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drf'g.	Official Gazette. Vol.	Official Gazette. Page.
Hyndman, Robert J., *et al.* (See Hyndman, John T., assignor.)						
Hyndman, William G., *et al.* (See Hyndman, John T., assignor.)						
Ibbotson, Edward C., Boston, Mass. Screw-nut	323,422	Aug. 4	50	13	32	532
Id', Albert L., Springfield, Ill. Steam-engine cross-head lubricator	321,736	July 7	418	112	32	78
Ide, Albert L., Springfield, Ill. Steam-engine cross-head	321,737	July 7	420	112	32	79
Ide, Albert L., Springfield, Ill. Valve-indicator	322,723	July 21	1768	467	32	338
Idol, Barnet V., Idol's Mills, N. C. Turbine water-wheel	324,113	Aug. 11	953	262	32	708
Ihsen, Henry, Allegheny City, Pa. Saw-gummer	324,028	Aug. 11	837	229	32	687
Illingworth, John, Batley, county of York, England. Apparatus for removing vegetable fiber from wool	321,899	July 7	672	174, 175	32	122
Imperatori, Luigi, Düsseldorf, Prussia, Germany. Extraction of phosphate of soda from slags	324,471	Aug. 18	1450	.....	32	807
Imperial Electric Light Company. (See Perkins, Charles G., assignor.)						
Imperial Manufacturing Company. (See Denny and Griffen, assignors.)						
Ingalls, Gustavus W. (See Hendrick, Jerome A., assignor.)						
Ingersoll, George S. (See Frost, William B., assignor.)						
Ingerson, Frederick A. (See Hunt, Joshua, assignor.)						
Ingham, Joseph, San José, Cal. Gang-plow	322,825	July 21	1904	505, 506	32	302
Ingham, Joseph S., Academy Corners, Pa. Carpet-stretcher	327,171	Sept. 29	2648	688	32	1526
Ingraham Company, E. (See Ingraham, Edward, assignor.)						
Ingraham Company, E. (See Ingraham and Codling, assignors.)						
Ingraham, Edward, assignor to E. Ingraham Company, Bristol, Conn. Japanning wooden clock-cases	325,543	Sept. 1	441	110	32	1100
Ingraham, Henry C., Woodbridge, N. J. Reduction-mill	323,040	July 28	2225	589	32	427
Ingraham, Irving E., and R. B. Codling, assignors to E. Ingraham Company, Bristol, Conn. Machine for polishing painted, varnished, or japanned surfaces	325,610	Sept. 1	518	130	32	1114
Innocent, John. (See Hornsby, Southwell, and Innocent.)						
Ireland, William H. (See Merritt, Henry W., assignor.)						
Irwin, John H., *et al.* (See Betts, Lewis F., assignor.)	326,190	Sept. 15	1192	304	32	1249
Isaacs, John D., Oakland, Cal. Street cable railway	322,606	July 21	1618	428, 429	32	310
Isbell, Charles W., and W. H. Taylor, New York, N. Y. Method of and apparatus for generating gas	322,122	July 14	1057	274	32	201
Isett, William D., Altoona, Pa. Sash-holder	322,293	July 14	1184	311	32	225
Iske, Albert, Lancaster, Pa. Meat and vegetable slicer	322,294	July 14	1185	311	32	225
Iske, Anthony, Lancaster, Pa. Acoustic telephone	323,090	Aug. 4	404	116	32	598
Iske, Anthony, Lancaster, Pa. Flower-stand	326,742	Sept. 22	2059	535	32	1414
Iske, Anthony, assignor to F. A. Diffenderffer and J. J. Cochran, Lancaster, Pa. Clothes-drier	322,105	July 14	956	248	32	182
Istel, Isidor C., New York, N. Y. Tip-cutting attachment for cigar-boxes	334,381	Aug. 18	1331	362, 363	32	786
Ite, Charles. (See Hamaker, John H., assignor.)						
Ives, Blakeslee & Co. (See Ives, Edward R., assignor.)						
Ives, Edward R., Bridgeport, Conn., assignor to himself and Ives, Blakeslee & Co., New York, N. Y. Toy	324,260	Aug. 11	1166	317	32	747
Ives, George H., Martin, Mich. Fence	322,939	July 28	2074	552	32	400
Ives, George H., New Haven, Conn. Mixing-machine for bakeries	325,933	Sept. 8	942	239	32	1197
Ives, Hallan L., Potsdam, N. Y. Milk-can cover	323,153	July 28	2369	628	32	455
Jackson, Byron, San Francisco, Cal. Stacking-machine	322,106	July 14	957	248, 249	32	183
Jackson, George F., Philadelphia, Pa. Car-coupling	323,154	July 28	2371	629	32	456
Jackson, H. Ayers, Chicago, Ill. System of measuring for garments	327,172	Sept. 29	2649	689, 690	32	1527
Jackson, James, New York, N. Y. Device for embalming	322,541	July 21	1524	402	32	294
Jackson, James W., Denver, Colo. Roll for roller-mills	326,121	Sept. 15	1192	305	32	1249
Jackson, Lydia N., New York, N. Y. Sewer-gas excluder	321,504	July 7	126	33	32	95
Jackson, Oswald, Carrollton, Ill. Wire-fence machine	323,423	Aug. 4	51	13, 14	32	532
Jackson, Peter H., San Francisco, Cal. Cutting and employing wooden beams and girders	323,424	Aug. 4	52	14	32	532
Jackson, Philip, Plainfield, N. J. Printing-machine	322,609	July 21	1622	429	32	311
Jackson, Samuel W., Chicago, Ill. Stove or furnace regulating device	322,610	July 21	1623	429	32	311
Jackson, William A., and J. C. Chambers, assignors to G. H. Lothrop, trustee, Detroit, Mich. Apparatus for suppressing induction disturbances	322,724	July 21	1770	467	32	338
Jackson, William A., and J. C. Chambers, assignors to G. H. Lothrop, trustee, Detroit, Mich. Neutralizing-coil	322,725	July 21	1771	467	32	338
Jackson, William A., and J. C. Chambers, assignors to G. H. Lothrop, trustee, Detroit, Mich. Suppressing induction	322,726	July 21	1772	468	32	338
Jackson, William A., and J. C. Chambers, assignors to G. H. Lothrop, trustee, Detroit, Mich. Induction-neutralizing coil	322,727	July 21	1773	468	32	338
Jackson, William A., and J. C. Chambers, assignors to G. H. Lothrop, trustee, Detroit, Mich. Neutralizing induction	322,728	July 21	1774	468	32	339
Jackson, William E., *et al.* (See Bixby, Arthur, assignor.)						
Jackson, William R. P., *et al.* (See Poage, James H., assignor.)						
Jacob, Frank A. (See Hazelrigg, Jacob, and Hood.)						
Jacob, Frederick, Newark, N. J. Shoe-fastener	324,702	Aug. 18	1774	429	32	868
Jacobs, Charles A. (See Favor and Jacobs.)						
Jacobs, Miron H., Syracuse, N. Y. Hot-air furnace	322,107	July 14	958	249	32	183
Jacobs, Robert W., Rome, assignor to Burrell & Whitman, Little Falls, N. Y. Gang cheese-press	323,337	July 28	2641	703	32	503
Jacobs, William E., Columbus, Ohio. Road-scraper	325,914	Sept. 8	943	239	32	1197
Jacobsen, James M., assignor of one-half to R. M. Easeck, Preston, Iowa. Pole and shafts	326,987	Sept. 29	2399	627	32	1483
Jacobsen, Martha, Lyons, Iowa. Adjustable pattern for drafting garments	324,472	Aug. 18	1451	396	32	807
Jacobus, Rebecca J., Oakland, Cal. Absorbent cowl for the chimneys of hydrocarbon-burners	326,565	Sept. 22	1782	468	32	1367
Jacoby, John H., New York, N. Y. Roller attachment for skates	324,327	Aug. 11	1259	342	32	765
Jacot, C. Henry, Hoboken, N. J. Safety-check for music-boxes	326,743	Sept. 22	2060	536	32	1415
Jacquot, Albert, Wilmington, Del. Harness-saddle	325,088	Aug. 25	2295	631, 632	32	972
Jaeger, Gustav L., New York, N. Y. Paper box	324,114	Aug. 11	954	263	32	708
Jaeger, Gustav L., New York, N. Y. Partition for cell-cases	324,799	Aug. 25	2184	598	32	950
Jaeger, Herman F., Chicago, Ill. Extension-lamp	324,793	Aug. 18	1892	520	32	891
James, Ira, Mattoon, Ill. Apparatus for manufacturing, using, and furnishing motive power by aid of air and hydrocarbon oils	326,430	Sept. 15	1615	420	32	1328
James, John B., Jr., Riverdale, N. Y. Heel-plate for skates	324,115	Aug. 11	955	263	32	708

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drf'g.	Official Gazette. Vol.	Official Gazette. Page.
Jamieson, George, Chicago, Ill. Safety-guard and work-holder for edge-molding machines	321,728	July 7	422	112	32	79
Jeffrey, Henry D., assignor to himself, C. A. Bierce, and F. B. Holbrook, Winona, Minn. Machine for making fellies	325,841	Sept. 8	837	210	32	1176
Jenc, Johann, Pola, Austria-Hungary. Apparatus for firing ordnance	325,544	Sept. 1	443	110	32	1100
Jenkins, Edward W., Norristown, Pa. Grain-binder	324,771	Aug. 18	1861	512, 513	32	885
Jenkins, Edward W., assignor to McCormick Harvesting Machine Company, Chicago, Ill. Harvester-binder	324,772	Aug. 18	1864	513, 514	32	885
Jenkins, George, *et al.* (See Collyer, Charles W. and W. C., assignors.)						
Jenkins, George K., Jamestown, Ohio. Holder for small wares	327,270	Sept. 29	2771	719	32	1540
Jenkins, John, Pilot Grove, Ind. Weeding implement	324,382	Aug. 18	1336	363	32	767
Jenkins, John M., assignor to Globe Files Company, Cincinnati, Ohio. Paper-file	325,676	Sept. 8	613	155	32	1136
Jenkins, Nicholas, assignor to Holmes, Booth & Haydens, Waterbury, Conn. Lamp-burner	322,183	July 14	1058	274	32	200
Jenkins, Samuel H., New York, N. Y. Automatic railway-switch	324,773	Aug. 18	1867	514	32	886
Jenkins, William H., Tazewell Court-House, Va. Wagon-body	324,558	Aug. 18	1562	431	32	829
Jenkins, William P., and J. L. Streeter, Muncie, Ind. Live-poultry car. (Reissue)	10,633	Aug. 4	670	188	32	649
Jenkinson, Richard C., Newark, N. J. Bag and satchel frame spring	321,505	July 7	127	34	32	25
Jennings, Abraham G. (See Urbahn, Alwill, assignor.)						
Jennings, Benjamin F. K. (See Cadwgan, Thomas C., assignor.)						
Jennings, Ernest F. (See Cosgrove and Jennings.)						
Jennings, George H. and S., Palace Road, Lambeth, county of Surrey, and J. Morley, Bethnal Green Road, county of Middlesex, England. Appliance and arrangement for controlling, regulating, and arresting the supply of water for sanitary purposes	326,431	Sept. 15	1616	421, 422	32	1328
Jennings, George H. and S., Palace Road, Lambeth, county of Surrey, and J. Morley, Bethnal Green Road, county of Middlesex, England. Appliance and arrangement for controlling, regulating, and arresting the supply of water for sanitary purposes, &c.	326,432	Sept. 15	1618	422, 423	32	1328
Jennings & Griffin Manufacturing Company. (See Hastings, Frank W., assignor.)						
Jennings, Russell. (See Mears and Jennings.)						
Jennings, Sidney. (See Jennings and Morley.)						
Jernagan, Alexander J., assignor of six-eighths to A. M. Clinkscales and B. I. Egerton, Starrville, Tex. Car-coupling	326,085	Sept. 8	1152	293	32	1235
Jerome, Alonzo W., Paxton, Ill. Printing-machine	326,988	Sept. 29	2400	627	32	1484
Jervey, Frank J. (See Walker and Jervey.)						
Jess, Robert W., Riverton, Ill. Car-wheel	326,433	Sept. 15	1620	423, 424	32	1328
Jewett, Edward M., assignor to E. W. Jewett, Buffalo, N. Y. Stave-bending machine	327,173	Sept. 29	2653	690	32	1527
Jewett, Edward W. (See Jewett, Edward M., assignor.)						
Jewett, Luther K. (See Loring and Jewett.)						
Jewett, Luther K., Boston, Mass. Car-truck	324,383	Aug. 18	1337	363	32	787
Jewett, Nathan, Toledo, Ohio. Sliding blind	324,384	Aug. 18	1339	364	32	787
Jewett, Nathan, Toledo, Ohio. Sliding blind	324,385	Aug. 18	1340	364	32	788
Jobbins, William F. (See Blue, Dennis S., assignor.)						
Jochum, John, Brooklyn, N. Y. Self-closing funnel	326,566	Sept. 22	1783	468	32	1367
John, August, Massillon, Ohio. Vegetable-cutter	326,222	Sept. 15	1342	347	32	1276
Johnson, Allen G., Quitman, Ga. Fifth-wheel for vehicles	324,116	Aug. 11	956	263	32	708
Johnson, Ed. H. (See Russell, Alexander, assignor.)						
Johnson, Evan, Elizabethtown, N. C. Cultivator	324,386	Aug. 18	1341	365	32	788
Johnson, Ferdinand. (See Knowlton, Henry, assignor.)						
Johnson, Frank A., assignor of one-half to F. K. Stearns, Lowell, Mass. Ironing-table	326,744	Sept. 22	2061	536	32	1415
Johnson, Frank G., New York, N. Y. Sewer-gas valve	321,973	July 14	773	201	32	149
Johnson, Frank G., New York, N. Y. Sewer-gas cut-off for basins	321,974	July 14	774	202	32	149
Johnson, Frank G., New York, N. Y. Cooling and refrigerating apparatus	322,826	July 21	1905	506	32	363
Johnson, Frederick A., Madison, Wis. Harrow	322,827	July 21	1907	506	32	363
Johnson, Frederick L., Wallingford, Conn. Bicycle alarm-whistle	326,745	Sept. 22	2063	536	32	1415
Johnson, Isaac D., Kennett Square, Pa. Invalid-bed	325,000	Aug. 25	2185	598	32	951
Johnson, John, Memphis, Tenn. Shovel	327,174	Sept. 29	2654	690	32	1527
Johnson, John A., Madison, Wis. Vehicle-shafts	326,505	Sept. 15	1702	444	32	1344
Johnson, Joseph R., and C. K. Wright, Gananoque, Ontario, Canada. Carriage-spring	324,703	Aug. 18	1774	490	32	868
Johnson, Lyman P., *et al.* (See Hand, Ekins, assignor.)						
Johnson, Moses C., assignor of one-half to A. Whitney, Hartford, Conn. Drill-milling machine	324,845	Aug. 25	1973	542, 543	32	912
Johnson, Nelson, Jasper, N. Y. Saw-swage	327,271	Sept. 29	2772	719	32	1549
Johnson, Peter, Dassel, Minn. Fertilizer-distributer	325,249	Sept. 1	22	7	32	1019
Johnson, Richard, Madison, Ind. Drying starch	323,425	Aug. 4	53	14	32	532
Johnson, Samuel C., Kenosha, Wis. Stock-salter	322,378	July 14	1301	340	32	247
Johnson, Thomas. (See Gridley and Johnson.)						
Johnson, Thomas, and J. McDonnell, Wilmington, Del. Apparatus for molding the frames of ships and transferring curves	326,506	Sept. 15	1703	444	32	1344
Johnson, Walter T., Columbus, Ga. Tucker for sewing-machines	325,089	Aug. 25	2207	632	32	973
Johnson, William A., Boston, Mass. Stand-pipe attachment for bath-tubs	327,272	Sept. 29	2773	720	32	1549
Johnson, William H., Racine, Wis. Combined gang-punch and bending-machine	326,746	Sept. 22	2064	536, 537	32	1415
Johnson, William S. (See Carter and Johnson.)						
Johnston, Allen, Ottumwa, Iowa. Attachment-holder or means for securing sewing-machine attachments	321,817	July 7	561	147	32	104
Johnston, Allen, Ottumwa, Iowa. Ruffling or gathering attachment for sewing-machines	324,261	Aug. 11	1166	317, 318	32	747
Johnston, Edward E. (See Becker, Leander, assignor.)						
Johnston Harvester Company. (See Cooley, Orville, assignor.)						
Johnston Harvester Company. (See McLachlan, John C., assignor.)						
Johnston, Walter R., Sherbrooke, Quebec, Canada. Combined belt buckle and cup	326,296	Sept. 15	1450	378	32	1297
Johnston, William, Damariscotta, Me. Plant-protector	326,872	Sept. 22	2244	585	32	1448
Johnston, William, and W. J. Taylor, Menominee, Mich. Draw-bridge gate	321,975	July 14	775	202	32	149
Joliet Barb Wire Company. (See Bates, Albert J., assignor.)						
Jolliffe, William H., Baltimore, Md. Window-awning	323,338	July 28	2642	703	32	503
Joly, Charles. (See Lloyd, Edwin L., assignor.)						
Jonas, John A., Reserve, Kans. Wagon-box fastener	322,184	July 14	1059	274	32	201
Jones, Allen, San Marcos, Tex. Self-cleaning plow	324,559	Aug. 18	1563	432	32	829
Jones, Benjamin F., Beauregard, Miss. Plate for securing traces to back-bands	322,059	July 14	892	231	32	170
Jones & Bro., C. E. (See Sec, James W., assignor.)						
Jones, Charles E., Cincinnati, Ohio. Electric car-brake	324,774	Aug. 18	1869	514	32	886
Jones, Charles T. (See Jones, John T. and C. T.)						
Jones, Clinton R., *et al.* (See Cassidy, Thomas W., assignor.)						
Jones, Daniel E., Denton, Tex. Open fire-place	327,396	Sept. 29	2042	768	32	1578

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Jones, Edgar A., Three Rivers, Mich. Spring	326,039	Sept. 8	1086	277	32	1222
Jones, Edward, Leeds, county of York, England. Dynamo-electric machine	321,609	July 7	272	72, 73	32	52
Jones, Edward C., Hamilton, assignor to J. D. Smith and W. Lutes, Townsend township, Ontario, Canada. Fence-post and wire-fastening	327,443	Sept. 29	3000	784	32	1589
Jones, Edward I. (See Patteson, William W., assignor.)						
Jones, Edwin, *et al.* (See Howarth, Robert, assignor.)						
Jones, George E., Cohoes, N. Y. Knitting-machine needle	322,454	July 21	1409	369	32	272
Jones, Joel H., Lynchburg, Va. Circular sawing machine	321,976	July 14	776	202	32	149
Jones, John D., Topeka, Kans. Splint-cutting machine	324,387	Aug. 18	1342	365	32	788
Jones, John E., Utica, N. Y. Millstone-driver	327,444	Sept. 29	3001	784	32	1589
Jones, John T. and C. T., Utica, N. Y. Roller for skates	322,611	July 21	1624	439	32	311
Jones, John W., Toronto, Ontario, Canada. Combined bedstead and dressing-table	324,775	Aug. 18	1871	514	32	896
Jones & Langhlins. (See Wedlake and Jones.)						
Jones, Lyman M. (See Wedlake and Jones.)						
Jones, Nathaniel, Berkeley, Cal. Hernial truss	326,122	Sept. 15	1193	305	32	1249
Jones, Ralph A. (See Whittingham and Jones.)						
Jones, Reuben, Atlanta, Ga. Band-pulley	326,873	Sept. 22	2245	585	32	1448
Jones, Richard F., St. Louis, Mo. Electric-arc lamp	326,123	Sept. 15	1194	305	32	1249
Jones, Robert V., Cleveland, Ohio. Rail-joint	322,828	July 21	1908	507	32	363
Jones, Thomas. (See Phillips and Jones.)						
Jones, Walter W. (See Van Anken, Thomas B., assignor.)						
Jones, Wiley, Norfolk, Va. Boot or shoe stretcher	321,610	July 7	275	73	32	53
Jones, William, and W. W. Reynolds, Cassopolis, Mich. Acoustic diaphragm	322,295	July 14	1186	311	32	226
Jones, William E., *et al.* (See Howarth, Robert, assignor.)						
Jones, William H., Liberty, Ind. Hand-rake	324,940	Aug. 25	2097	574	32	936
Jones, William R. (See Bulmer, George D. and C., assignors.)						
Jones, William R., Braddock, Pa. Making rails	326,908	Sept. 22	2294	600	32	1456
Jones, William T., Prescott, Ark. Buckle	324,846	Aug. 25	1976	543	32	913
Jönsson, Oscar F., Stockholm, Sweden. Automatic stop apparatus for motors driving dynamo-electric machines	326,223	Sept. 15	1343	347	32	1277
Jordan, Charles J., Woodbury, N. J. Bottle stopper and fastener	326,656	Sept. 22	1911	502	32	1389
Jordan, Charles M., Minneapolis, Minn. Printing-telegraph receiver	326,989	Sept. 29	2401	628	32	1484
Jordan, Edmund, Brooklyn, N. Y., assignor, by mesne assignments, to E. and O. W. Norton, Chicago, Ill. Heading-machine	322,060	July 14	892	231, 232	32	170
Jordan, George, New York, N. Y. Wall-covering	325,090	Aug. 25	2298	632	32	973
Jorgensen, Axel, assignor to W. L. Carpenter, Des Moines, Iowa. Barb-straightening and compressing attachment for wire-barbing machines	322,379	July 14	1303	340	32	248
Joslin, Alexander D., Chicago, Ill. Baggage-check	324,388	Aug. 18	1343	365	32	789
Joslin, Hiram L., assignor of one-half to G. A. Clark, Mankato, Minn. Fishing-reel	321,900	July 7	675	175	32	123
Joyce, George A. (See Rushmer and Joyce.)						
Judge, Thomas, and T. Clayton, assignors of one-third to H. Glanville, Philadelphia, Pa. Rasp	324,389	Aug. 18	1345	366	32	789
Judson, Alfred C., Floyd, Iowa. Trace-carrier	322,380	July 14	1303	340	32	248
Judson Manufactering Company. (See Halsey, William S., assignor.)						
Judson, Roswell S., and C. J. Hancock, Matteawan, N. Y. Machine for sanding brick-molds	322,455	July 21	1410	369	32	273
Juller, George C. (See White, Elisha S., assignor.)						
Julig, Leopold, San Francisco, Cal. Gas-lamp	327,069	Sept. 29	2539	602	32	1567
Jull, Samuel T. (See Horsley and Jull.)						
Kaczander, Leopold. (See Ruddy and Kaczander.)						
Kahler, Clarence H., Wilmington, Ill. Pocket-knife	323,938	Aug. 11	721	201	32	666
Kahn, Jacob, *et al.* (See Ruset, Charles F., assignor.)						
Kail, Thomas B. (See Dierks and Kail.)						
Kaino, Johan. (See Cureton and Kaino.)						
Kaiser, Alexander, Freiburg, Switzerland. Differential-pressure valve. (Reissue)	10,645	Sept. 22	2327	609, 610	32	1464
Kaiser, William, Wilkes-Barré, Pa. Bird-cage	324,704	Aug. 18	1775	490	32	868
Kalanquin, Charles. (See Reinhard and Kalanquin.)						
Kamerer, John H., assignor of one-half to W. Oliver, Plainwell, Mich. Table-waiter	321,977	July 14	778	203	32	150
Kamman, George H., Champaign, Ill. Ditching-machine	324,328	Aug. 11	1260	342	32	765
Kane, Thomas. (See Durrant, Edward G., assignor.)						
Kane, Thomas F. (See Young, Samuel H., assignor.)						
Karr, James M., Almond, N. Y. Potato-planter	321,439	July 7	33	9	32	9
Kanffeld, Elias, assignor of one-half to T. Miller, Pittsburg, Pa. Apparatus for boiling and cooling mash	325,001	Aug. 25	2299	632	32	973
Kanfhold, Henry A. and C. Steinly, Scranton, Pa. Locking-plate for table-legs	323,582	Aug. 4	258	76	32	570
Kaul, Charles. (See Kaul, Pins and C.)						
Kaul, Pins and C., assignors of one-third to E. Zeitz, Lancaster, Pa. Watch-regulator	322,185	July 14	1060	274	32	201
Kavanaugh, Frank, Harrisburg, Texas. Metallic compound	323,426	Aug. 4	54	.....	32	533
Kaylor, Mark B., Philadelphia, Pa. Cider-mill	323,041	July 28	2227	589	32	427
Kayser, Charles. (See Kayser, William J. and C.)						
Kayser, William J. and C., Milwaukee, Wis. Chimney cap and ventilator	321,729	July 7	423	113	32	79
Kearney, James, North Springfield, Mo. Engineer's valve for fluid-pressure brakes	325,092	Aug. 25	2300	633	32	973
Kearney, John H. (See Beecher, Thomas, assignor.)						
Kearns, John C., Maitland, Pa. Horseshoe-nail	322,542	July 21	1526	402	32	294
Keating, Alphonso S., Corry, Pa. Money drawer and recorder	327,175	Sept. 29	2655	690, 691	32	1528
Keating, Alphonso S., Corry, Pa. Cash-recorder	327,176	Sept. 29	2658	691	32	1528
Keating, John. (See Oakley, John M., assignor.)						
Keating, Robert M., Springfield, Mass. Attaching door-knobs to spindles	321,818	July 7	563	147	32	104
Keating, Robert M., Springfield, Mass. Knob attachment	325,545	Sept. 1	445	110	32	1101
Keavy, Thomas E., assignor of one-half to W. I. Caris, Kent, Ohio. Button-locating machine	326,567	Sept. 22	1784	468	32	1367
Keeler, Lafayette S., Hokah, Minn. Railway foot-guard	325,746	Sept. 8	719	179	32	1154
Kefuss, John D., Quincy, Ill. Roller-skate	326,224	Sept. 15	1344	348	32	1277
Keightley, Walter E. (See Fletcher and Keightley.)						
Keim, O. A. (See Schimpf, William, assignor.)						
Keiper, Martin, *et al.* (See Ruset, Charles F., assignor.)						
Keiser, Andrew. (See Motherell and Keiser.)						
Keith, George, Harmon, Ill. Tile-laying machine	327,274	Sept. 29	2775	720	32	1550
Keith, Jeremiah, assignor to Florence Machine Company, Northampton, Mass. Sewing-machine shuttle	322,381	July 14	1304	340	32	248
Keith, Reuel, Washington, D. C. Egg-holder	325,935	Sept. 8	944	239	32	1197
Keith, Reuel, Washington, D. C. Egg-carrier	325,936	Sept. 8	945	240	32	1197

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Keith, Stephen P., assignor of one-half to J. J. Eargle, Alexander, Tex. Slat-fastening	322,382	July 14	1306	341	32	248
Kelzer, Lewis R. (See Painter, William, assignor.)						
Keller, Jacob C. (See Anderson and Keller.)						
Keller, John F., Shepherdstown, W. Va. Fertilizer-distributer. (Reissue)	10,640	Aug. 25	2481	682	32	1007
Keller, John F., Shepherdstown, W. Va. Grain-drill	326,748	Sept. 22	2066	537	32	1416
Kelley, Charles H. (See Perkins and Kelley.)						
Kelley, Mart'n. (See Kelley, William, assignor.)						
Kelley, William, assignor of one-half to M. Kelley, West Florence, Ohio. Roller-skate	325,937	Sept. 8	947	240	32	1198
Kelley, William S., Smithville, N. J. Bicycle	321,819	July 7	564	147, 148	32	104
Kelley, William S., Smithville, N. J. Bicycle	321,892	July 7	716	187	32	130
Kellogg, Charles, Buffalo, N. Y. Machinery for rolling tubes	324,117	Aug. 11	957	263, 264	32	708
Kellogg, Charles, Buffalo, N. Y. Manufacturing tubing	324,118	Aug. 11	960	264, 265	32	709
Kellogg, Charles, assignor to W. C. Donn, D. W. Burt, and R. Taylor, Buffalo, N. Y., Tube-rolling machine	325,938	Sept. 8	947	240, 241	32	1198
Kellogg, Elijah, Reno, Nev. Sheep-shears	323,691	Aug. 4	405	116	32	598
Kellogg Newspaper Company, A. N. (See Pratt, Edwin E., assignor.)						
Kelle, C. Edmund, Jr., New Orleans, La. Electric thermostat	322,612	July 21	1625	430	32	311
Kelle, Edward, Cleveland, Ohio. Combined filler and faucet	326,747	Sept. 22	2065	537	32	1416
Kelle, Ross, Cleveland, Ohio. Car-wheel	324,705	Aug. 18	1776	490	32	868
Kelle, Ross, assignor to Paige Car Wheel Company, Cleveland, Ohio. Car-wheel	325,177	Aug. 25	2410	662	32	993
Kelly, Alexander C. (See Freeman, Augustus M., assignor.)						
Kelly, Archibald, assignor to Hopkins & Dickinson Manufacturing Company, Newark, N. J. Lock	326,507	Sept. 15	1705	445	32	1344
Kelly, George B., Boston, Mass. Reed-organ	321,820	July 7	573	148	32	105
Kelly, Henry and J., Osage, Iowa. Pawl and ratchet for chain-pumps	324,329	Aug. 11	1262	343	32	766
Kelly, John, *et al.* (See Pretschold, Hugo, assignor.)						
Kelly, John, Peoria, Ill. Governor for steam-engines	322,456	July 21	1411	369	32	273
Kelly, Joseph. (See Kelly, Henry and J.)						
Kelly, Lawrence A., Dayton, Wash. Ter. Pump	326,434	Sept. 15	1621	424	32	1329
Kelly, Michael, assignor of one-half to T. Rosevear, New York, N. Y. Barbed-wire fence	322,108	July 14	959	249	32	183
Kelly, Timothy F., assignor, by mesne assignments, to said Timothy F. Kelly and M. B. Gately, Boston, Mass. Canteen	321,730	July 7	425	113	32	79
Kelly, William C., Louisville, Ky. Ax	327,275	Sept. 29	2777	721	32	1550
Kelsey, Frank N., assignor of one-half to J. B. Rathburn, New Haven, Conn. Railway block signaling apparatus	324,119	Aug. 11	962	265	32	709
Kelsey, George R. (See Bassett, Marshall L., assignor.)						
Kelsey, George R., West Haven, Conn. Machine for making buckle-frames	323,155	July 28	2372	629	32	456
Kelsey, Jarvis E., assignor to West Haven Buckle Company, West Haven, Conn. Die for swaging buckle-frames	323,156	July 28	2374	629	32	456
Kelso, Robert, Philadelphia, Pa. Woven-wire bustle	323,692	Aug. 4	406	116	32	599
Kemerer, Lorenzo D., Scranton, Pa. Car-coupling	326,040	Sept. 8	1067	277	32	1222
Kemery, William, Massillon, Ohio. Portable fence	321,978	July 14	779	203	32	150
Kempf, Theodor, assignor to Chemische Fabrik auf Actien, Berlin, Germany. Manufacture of iodoform, bromoform, and chloroform	322,940	July 28	2075	.....	32	400
Kempf, Theodor, assignor to Chemische Fabrik auf Actien, Berlin, Germany. Manufacturing permanganates	326,657	Sept. 22	1913	.....	32	1389
Kempster, Daniel E., Boston, assignor of one-half to S. Frost, Newton, Mass. Roller-skate	321,979	July 14	780	203	32	150
Kenda'l, Edward D., Brooklyn, N. Y. Recovering sulphuric anhydride	323,583	Aug. 4	259	76	32	570
Kendall, Elton P., and A. S. Vose, Windsor, Vt. Beading-tool	326,435	Sept. 15	1622	424	32	1329
Kendall, John L., Brooklyn, N. Y., assignor to himself and R. H. Trested, Greenville, N. J. Hat frame and body	327,273	Sept. 29	2774	720	32	1550
Kendrick, Isaac, Philadelphia, Pa. Gas-burner	325,747	Sept. 8	720	179	32	1155
Kennedy, Lewis B., St. Louis, Mo. Brick-machine	325,939	Sept. 8	949	241, 242	32	1198
Kennedy, Lewis B., St. Louis, Mo. Brick-machine	325,940	Sept. 8	953	242	32	1199
Kennedy, Madison B. (See Cook, George W., assignor.)						
Kennedy, Sylvester, Gap, Pa. Automatic brake for wagons and carriages	326,658	Sept. 22	1913	502	32	1389
Kennedy, William B., Silver Reef, Utah Ter. Combination-tool	326,297	Sept. 15	1450	378	32	1298
Kennedy, William B., and W. M. Nesbit, Silver Reef, Utah Ter. Calculator	323,157	July 28	2376	630	32	457
Kenney, Augustus R., San Francisco, Cal. Ice-machine	322,829	July 21	1909	507	32	363
Kenney, Martin V. B., Cushman, Ill. Hay-derrick	321,821	July 7	575	149	32	96
Kent, Milton A. (See Mead, Albert G., assignor.)						
Kent, Robert, Brooklyn, N. Y. Roll for bending plate metal	325,677	Sept. 8	614	155, 156	32	1136
Kent, Thomas E., San Francisco, Cal. Method of strengthening garments	326,749	Sept. 22	2067	537	32	1416
Kent, William, Jersey City, N. J. Blowing-engine	323,427	Aug. 4	54	14	32	533
Kent, William, Jersey City, N. J. Making headers for water-tube boilers	324,706	Aug. 18	1778	491	32	868
Kent, William, Jersey City, N. J. Water-tube boiler	326,990	Sept. 29	2403	628	32	1484
Kepner, Benjamin, Philadelphia, Pa. Automatic screen chute, gate, coal-bin, &c.	325,343	Sept. 1	149	41	32	1043
Kern, George W., Chillicothe, Ohio. Fire-escape	322,613	July 21	1626	430	32	311
Kerr, Frank L., Alexandria, Ind. Shoe-box indicator	323,042	July 28	2228	589	32	427
Kerr, Thomas B. (See Stubbe, John, assignor.)						
Kessel, John A., Buffalo, N. Y. Speaking-tube	326,568	Sept. 22	1785	468	32	1368
Kettenring, Peter, Defiance, Ohio. Barrel-hoop machine	324,707	Aug. 18	1778	491	32	869
Kettenring, William A., Defiance, Ohio. Wood-turning lathe	324,847	Aug. 25	1977	543	32	913
Keyser, John H., New York, N. Y. Heating-stove	325,678	Sept. 8	615	156	32	1136
Kidder, George R., assignor of two-thirds to J. S. Ferguson and W. W. Black, Imlay City, Mich. Spoke-tenoning machine	326,508	Sept. 15	1707	445	32	1345
Kilborn, Eugenia, Cedar Rapids, Iowa. Folding basket	323,339	July 28	2643	703, 704	32	504
Killebrew, Samuel, Brownsville, Tenn. Hame-fastener	327,177	Sept. 29	2661	691	32	1529
Killey, Robert T., Tres Pinos, Cal. Running-gear for vehicles	322,109	July 14	960	249	32	183
Kilmer, Reuben W., Terre Haute, Ind. Piston-rod packing	324,776	Aug. 18	1872	515	32	907
Kilmer, Irving A., Schenectady, N. Y. Register	323,340	July 28	2644	704	32	504
Kimball, Edmund, Brunswick, N. Y. Fruit-picker	325,546	Sept. 1	446	111	32	1101
Kimball, Hiram A., Philadelphia, Pa. Heat-generating gas-burner	323,813	Aug. 4	552	157	32	627
Kimble, James E., Vicksburg, Mich. Thrashing-machine	326,991	Sept. 29	2404	628	32	1484
Kind, Clement, Addington, Canterbury, New Zealand, assignor to C. B. Taylor, San Francisco, Cal. Die for the manufacture of sheet-metal hollow ware	321,822	July 7	575	149	32	106
King, Charles F., Covington, Pa. Combined grinding-mill, bolt, and purifier	324,473	Aug. 18	1452	397	32	808

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
King, Francis. (See Reilly and King.)						
King, George D., assignor to Wood Board Manufacturing Company, Oswego, N. Y. Machine for forming and driving wire staples	325,611	Sept. 1	520	130, 131	32	1114
King, Homer A., Springfield, Mass. Velocipede	327,397	Sept. 29	2943	768, 769	32	1579
King, James M., Rochester, Minn. Wild pea and oat separator	325,093	Aug. 25	2301	633	32	974
King, Joseph D. (See Roberts, Henry P., assignor.)						
King, Simeon D., Rolling Prairie, Ind. Portfolio	326,750	Sept. 22	2068	538	32	1416
King, Theodore E., *et al.* (See Chapman, Samuel A., assignor.)						
King, Walter G., Cleveland, Ohio. Polariscope	324,560	Aug. 18	1584	432	32	829
Kingsford, Thomson. (See Stiker, Flavius P., assignor.)						
Kingston, Edward S., Little Falls, assignor to G. A. Reynolds, Utica, N. Y. Last for boots or shoes. (Reissue)	10,630	July 28	2709	721	32	516
Kinkaid, Thomas W., U. S. Navy. Lubricator	327,398	Sept. 29	2945	769	32	1579
Kintz, Joseph, Ballard Vale, Mass. Extension-chandelier	321,506	July 7	128	34	32	25
Kious, Miles, and W. A. Morton, Le Roy, Kans. Gate-spring	327,445	Sept. 29	3002	784	32	1589
Kipper, Emil, Adams, Mass. Collar or cuff	322,729	July 21	1775	469	32	339
Kirby, James A., assignor of one-half to F. P. Purtell, Chicago, Ill. Car-door seal-lock	322,830	July 21	1911	509	32	364
Kirby, James A., assignor of one-half to F. P. Purtell, Chicago, Ill. Car-door seal-lock	322,831	July 21	1913	508	32	364
Kirby, Josiah. (See Vehr and Kirby.)						
Kirk, Peter, Workington, county of Cumberland, England. Manufacture of combined chair and sleeper	325,094	Aug. 25	2302	633	32	974
Kirk, Peter, Workington, county of Cumberland, England. Sleeper for permanent ways	326,874	Sept. 22	2246	585	32	1448
Kirk, Thomas H., Newton, Mass. Stair-pad	323,341	July 28	2645	704	32	504
Kirkaldy, John, West India Dock Road Poplar, county of Middlesex, England. Heating feed-water	324,120	Aug. 11	964	265, 266	32	710
Kirkaldy, John, 40 West India Dock Road, county of Middlesex, England. Appliance for preventing dirt from passing into pipes	326,569	Sept. 22	1786	469	32	1368
Kirker, Milton B., Pittsburg, Pa. Whiffletree	324,848	Aug. 25	1978	544	32	913
Kirks, Albert, Canton, Ohio. Safe-lock	323,158	July 28	2377	630	32	457
Kisinger, Franklin P. (See Kisinger, George W., assignor.)						
Kisinger, George W., assignor of one-half to F. P. Kisinger, Danville, Ill. Reversible reflector	326,041	Sept. 8	1088	277	32	1222
Kitselman, Alva L., Ridgeville, Ind. Roller-skate	322,383	July 14	1306	341	32	248
Kitselman, Alva L. and D. M., Ridgeville, Ind. Roller-skate	321,980	July 14	781	203	32	150
Kitselman, Davis M. (See Kitselman, Alva L. and D. M.)						
Kitson, John, assignor of one-half to J. H. Russell, Jersey City, N. J. Sewing-machine-cover fastener	323,342	July 28	2646	704	32	504
Kittoe, Edmund F., assignor to Exhaust Ventilator Company, Chicago, Ill. Damper for shafts	322,832	July 21	1915	508	32	364
Kizer, Isaac H., assignor of one-half to R. P. Waite, Riverside, Cal. Tree-prop	324,777	Aug. 18	1874	515	32	887
Klaeser, William. (See Sell, Fred, assignor.)						
Klee, John, New York, N. Y. Fabric for wall-decoration	324,941	Aug. 25	2098	574	32	936
Klee, John, New York, N. Y. Paint	325,415	Sept. 1	269	.....	32	1066
Klee, John B. (See Doetsch, Nicolaus, assignor.)						
Klein, Carl, New York, N. Y. Saw-buck	321,823	July 7	577	150	32	106
Klein, George N. (See Menrer and Klein.)						
Kleine, Friedrich, and W. F. Achter, Cedar Rapids, Iowa. Feeder for steam-boilers	321,981	July 14	782	204	32	150
Kleinert, Isaac B., New York, N. Y. Combined neck and ear protector	322,614	July 21	1627	430	32	311
Klenk, John, assignor of one-half to S. H. Haas, Philadelphia, Pa. Vehicle-coupling	324,474	Aug. 18	1453	397	32	808
Klenk, John, and S. H. Haas, Philadelphia, Pa. Oar-lock	325,748	Sept. 8	721	180	32	1155
Kletzker, Albert J., St. Louis, Mo. Calendar	323,939	Aug. 11	722	202	32	666
Kline, Harvey E. (See Kline, Reuben H. and H. E.)						
Kline, Reuben H., Spring City, and H. E. Kline, Royer's Ford, Pa. Device for releasing cattle from stalls	321,901	July 7	676	175	32	123
Klingel, Joseph, Peoria, Ill. Condenser	322,615	July 21	1628	340	32	312
Klinkner, Charles A., Oakland, Cal. Inking-pad for hand-stamps	326,042	Sept. 8	1088	277	32	1223
Klopsch, Louis. (See Boda and Klopsch.)						
Klueber, Louis, East New York, N. Y. Frame for slates	323,814	Aug. 4	553	157	32	627
Knabe & Co., William. (See Polster, Ferdinand, assignor.)						
Knabe, Ernest, Jr., Baltimore, Md. Reciprocating electro-magnetic motor	322,296	July 14	1188	311, 312	32	226
Knapp, Allen C. (See Whitlock and Knapp.)						
Knapp, Charles E., Brooklyn, N. Y. Matting and carpet binding	324,942	Aug. 25	2098	574	32	936
Knapp, Chauncey L., *et al.* (See Cassidy, Jacob H., assignor.)						
Knapp, George W., Baltimore, Md. Measure	325,842	Sept. 8	838	210	32	1176
Knapp, John F. (See Taylor and Knapp.)						
Knauss, Thomas E., Nelsonville, Ohio. Mining-machine	323,940	Aug. 11	723	202	32	666
Kneeland, Joseph C., assignor to M. H. Spaulding, guardian, Northampton, Mass. Paper-feeding machine	326,124	Sept. 15	1196	305, 306	32	1250
Kneeland, Joseph C., assignor to M. H. Spaulding, guardian, Northampton, Mass. Folding-machine	326,125	Sept. 15	1198	306	32	1250
Knetzger, Leonard, Du Quoin, Ill. Crimping-machine for boot or shoe uppers	323,815	Aug. 4	554	157	32	627
Knickerbocker Company. (See Finch, John M., assignor.)						
Knickerbocker Company. (See Morse, Orville M., assignor.)						
Kniffler, Bruno, Cleveland, Ohio. Centrifugal reel	326,509	Sept. 15	1709	446	32	1346
Knight, Charles A., and G. W. Thode, Glasgow, county of Lanark, Scotland, assignors to Babcock & Wilcox Company, New York, N. Y. Boiler-furnace	323,871	Aug. 4	625	176	32	641
Knight, Frank C., and H. Docker, Philadelphia, Pa. Cartridge-shell	322,730	July 21	1776	469	32	339
Knight, Thomas I., New York, N. Y. Opera-chair	324,561	Aug. 18	1565	432, 433	32	829
Knoder, John, Auburn, Ind. Horseshoe	324,562	Aug. 18	1568	433	32	830
Knous, Franklin F., assignor to Colts Patent Fire Arms Manufacturing Company, Hartford, Conn. Magazine fire-arm	324,330	Aug. 11	1263	343	32	766
Knous, John, assignor to Pope Manufacturing Company, Hartford, Conn. Velocipede	322,543	July 21	1527	403	32	294
Knowles & Brother, L. J. (See Burlingame, Elisha S., assignor.)						
Knowles & Brother, L. J. (See Hutchins, George F., assignor.)						
Knowles Loom Works. (See Wattie, William, assignor.)						
Knowles, William, assignor to himself and G. L. Ten Brook, Rockville, Ind. Kitchen-safe and flour-chest	325,416	Sept. 1	270	67	32	1066
Knowles, William H., Bellmont, Ill. Land-roller	325,749	Sept. 8	723	180	32	1155
Knowlton, Alec E., *et al.* (See Smith, Calvin D., assignor.)						
Knowlton, Augustus *et al.* (See Smith, Calvin D., assignor.)						
Knowlton, Augustus, West Gardner, Mass. Child's chair	325,178	Aug. 25	2411	602	32	993

Alphabetical list of patentees, July to September, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Knowlton, Henry, assignor of one-half to F. Johnson, West Bay City, Mich. Chain-gearing	327,446	Sept. 29	3003	784	32	1589
Knowlton, Henry C., *et al.* (See Smith, Calvin D., assignor.)						
Knox, John L. L., Allegheny, Pa. Pneumatic railway-signal	323,498	Aug. 4	56	15	32	533
Knoxville Foundry and Machine Company. (See Höfer, Julius G., assignor.)						
Koch, Julius J., and W. P. Grath, St. Louis, Mo. Cotton-seed linter	321,824	July 7	577	150	32	106
Koch, Philipp, New York, N. Y. Expansion-joint	322,457	July 21	1413	370	32	273
Koch, William, New York, N. Y. Quilting-machine	323,584	Aug. 4	261	76, 77	32	570
Koegel, Alois, Milwaukee, Wis. Sink-trap	326,126	Sept. 15	1200	306	32	1250
Koegel, William, and F. Strohacker, Freeport, Ill.; said Strohacker assignor to said Koegel. Milk-pail	325,179	Aug. 25	2413	663	32	994
Koelner, John, Terre Haute, Ind. Flour-bolt	324,029	Aug. 11	639	232	32	687
Koenig, George, Jr., Brooklyn, N. Y. Combined sofa-bed and chair	321,825	July 7	578	150	32	106
Kogoschek, Franz, Hobokcn, N. J. Fire-escape	325,160	Aug. 25	2414	663	32	994
Kohler, Elias, York, Pa. Check-rein hook	325,612	Sept. 1	522	132	32	1114
Kohler, Elias, York, Pa. Check-hook	325,613	Sept. 1	523	139	32	1115
Kohler, Frederick E., Canton, Ohio. Post-hole digger	325,212	Aug. 25	2458	676	32	1002
Koken, Ernest E., St. Louis, Mo. Barber's chair	323,499	Aug. 4	58	15	32	533
Kolb, George F., Philadelphia, Pa. Screw-driver	324,121	Aug. 11	966	266	32	710
Kolb, John H., assignor of one-third to W. J. Matheson, Brooklyn, N. Y. Utilizing the waste cuttings of tinned iron	322,833	July 21	1917	.....	32	365
Kollenberg, George A., Owensborough, Ky. Hand-truck	321,902	July 7	677	176	32	123
Koniakowsky, Alois M., Ellingen, Tex. Air-motor	322,616	July 21	1629	431	32	312
Konigslow, Otto, Cleveland, Ohio. Cartridge-loading machine	321,982	July 14	784	204, 205	32	150
Koons, Gerow, St. Louis, Mo. Steam washing-machine	326,875	Sept. 22	2246	586	32	1448
Koplin, William, Youngstown, Ohio. Spike-blank	326,298	Sept. 15	1451	378	32	1298
Kopp, George F. (See Bliss and Kopp.)						
Korthage, Charles, Brooklyn, N. Y. Electric alarm-clock	322,110	July 14	961	250	32	183
Kornbau, Daniel, assignor of one-half to H. R. Shock, Philadelphia, Pa. Cable-conduit for underground cables	322,384	July 14	1309	341	32	249
Koska, Paul, Martinton, Ill. Handle for knives	324,563	Aug. 18	1568	433	32	830
Koskul, Frederick, St Louis, Mo. Sofa	323,872	Aug. 4	627	176	32	641
Koss, Ludwig, Brooklyn, N. Y. Baby-mattress	321,983	July 14	789	205	32	152
Krajewski, Thomas F., New York, N. Y. Evaporating-pan	326,299	Sept. 15	1452	379	32	1298
Kramer, Charles P., Hamilton, and W. S. Snider, Madison City, assignors of one-third to J. E. Campbell, Hamilton, Ohio. Roller-skate	322,617	July 21	1630	431	32	312
Kramer, Hermann H., Milwaukee, Wis. Hawse-pipe for vessels	324,202	Aug. 11	1171	318	32	747
Kramer, Ludwig, and A. Eickhoff, New York, N. Y. Ratchet-wrench	326,876	Sept. 22	2247	586	32	1449
Kratz, Ernst, Marburg, Germany. Needle	324,030	Aug. 11	640	232	32	687
Krause, Albert, Buffalo, N. Y. Tunneling-shield	326,659	Sept. 22	1914	502	32	1389
Krause, George E., Indianapolis, Ind. Bed-lounge	325,344	Sept. 1	150	42	32	1043
Krehbiel, John, Detroit, Mich. Capsule-stripping device	323,159	July 28	2378	630	32	457
Kremser, Joseph, Springfield, N. Y. Smoke-house	325,417	Sept. 1	271	67	32	1066
Krichevski, Gerson, and A. Edmonds, New York, N. Y. Escapement for watches	321,611	July 7	576	73, 74	32	53
Kricker, Engelbert, Essen, Prussia, Germany. Box-opener	326,900	Sept. 22	2226	600	32	1456
Krieg, Levi, Frankfort, Ind. Carpet-stretcher	325,345	Sept. 1	152	42	32	1043
Krömmelbein, Heinrich, New York, N. Y. Oil-cabinet	322,634	July 21	1918	508	32	365
Kronenbitter, Anthony, assignor of nine-twentieths to F. Horn, Coshocton, Ohio. Die and punch for making clips for heads of carriage-springs	322,544	July 21	1528	403	32	294
Kronenbitter, Anthony, assignor of nine-twentieths to F. Horn, Coshocton, Ohio. Ear-piece for forming the heads of springs	322,545	July 21	1529	403	32	294
Kruger, John W., Litchfield, Minn. Fabric-measuring machine	327,178	Sept. 29	2602	602	32	1529
Krueger, Max, Mexico, Mo. Neckscarf-exhibitor	321,903	July 7	678	176	32	123
Kruesi, John, Brooklyn, N. Y. Electrical conducting system	322,385	July 14	1310	341, 342	32	249
Krupp, Fried. (See Pelz, Wilhelm, assignor.)						
Kriiel, John, St. Gall, Switzerland. Embroidery	322,386	July 14	1313	342	32	249
Krizner, Adolf, and F. Tentschert, Vienna, Austria-Hungary. Car-starter	326,043	Sept. 8	1089	278	32	1223
Kubler, John, assignor to F. Gross, Hot Springs, Ark. Permutation-padlock	323,941	Aug. 11	724	202	32	667
Kuhlmann, Hermann A. (See Kuhlmann, John G., assignor.)						
Kuhlmann, John G., assignor of one-half to H. A. Kuhlmann, Cincinnati, Ohio. Snow-plow	323,043	July 28	2229	589	32	427
Kuhn, Edmond, Brooklyn, N. Y. Button	326,992	Sept. 29	2406	628	32	1485
Kuhn, Edward C., Cincinnati, Ohio. Umbrella and parasol	321,612	July 7	577	74	32	53
Kuhn, Frederick X., Buffalo, N. Y. Machine for rolling barrels after being pitched	327,179	Sept. 29	2664	692	32	1529
Kühner, Christian, Canton, Ohio. Bung and bush	326,127	Sept. 15	1201	307	32	1251
Kuhner, Louis, Decatur, Ill. Incubator	324,390	Aug. 18	1345	366	32	789
Kunsman, George H., Shakopee, Minn. Corn-harvester	326,993	Sept. 29	2406	629	32	1485
Kürschner, Edward, assignor to C. G. Schwabe, Liegnitz, Silesia, Prussia, Germany. Photograph-exhibitor	322,111	July 14	963	250	32	184
Kurten, Joseph, St. Louis, Mo. Paper-folding machine	326,910	Sept. 22	2226	601	32	1457
Kurtz, Adolph, San Francisco, Cal. Liquid-cooler	325,418	Sept. 1	272	67	32	1067
Kyker, John M. (See Yarbrough and Kyker.)						
Kyle, Rufus P., *et al.* (See Hardy, Leslie T., assignor.)						
Kyte, William G., and J. A. Martin, Middlebury, Ind. Gate	325,213	Aug. 25	2460	676	32	1002
La Dow, Charles, Albany, N. Y. Disk-harrow	323,343	July 28	2647	705	32	504
La Dow, Charles, Albany, N. Y. Disk-harrow	323,344	July 28	2652	705	32	505
La Due, Thomas R., Carson City, Mich. Wagon-spring	324,263	Aug. 11	1171	318	32	748
La Jennesse, Adolph, Oakland, Cal. Clothes-prop	323,044	July 28	2230	590	32	428
La Rue, Silas H., Reading, Pa. Stove and heater	324,944	Aug. 25	2100	575	32	937
La Société Anonyme Pour les Procédés Brevetés de Farinerie Saint Requier. (See Saint Requier, Henry F., assignor.)						
Lacey Automatic Coupling Company. (See Lacey, John J., assignor.)						
Lacey, John J., San Francisco, assignor to Lacey Automatic Coupling Company, Oakland, Cal. Coupling for connecting pipes	324,031	Aug. 11	840	233	32	688
Lackey, Sylvenus J., Indianapolis, Ind. Bosom-board	325,346	Sept. 1	153	42	32	1044
Lacosse, Callix, Bay City, Mich. Meat-tenderer	326,660	Sept. 22	1915	503	32	1389
Ladd, James E., Bristol, Conn. Trunk-catch	325,347	Sept. 1	153	42	32	1044
Lafever, Minard, assignor to Case & Willard Thresher Company, Battle Creek, Mich. Traction-engine gear	326,994	Sept. 29	2408	629	32	1485
Lafferty, Erastus S. (See Marshall and Lafferty.)						
Lages, George H., *et al.* (See Georgi, Rudolf, assignor.)						
Lain, John J., Brazos Point, Tex. Tug and hip strap attachment for harness	325,547	Sept. 1	447	111	32	1101
Laing, James M., Bay City, Mich. Automatic device for stopping steam-engines	325,941	Sept. 8	954	243	32	1200

Alphabetical list of patentees, July to September, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Lake, James K., Chicago, Ill. Combined chair and stringer	323,430	Aug. 4	60	15,16	32	534
Lakin, James A., Westfield, Mass. Damper-operating mechanism for heating apparatus	322,186	July 14	1060	275	32	201
Lakin, John H. (See Badger, George A., assignor.)						
Lakin, Rinaldo S., assignor of one-half to S. S. Higgins, Boston, Mass. Tooth-brush	325,250	Sept. 1	24	8	32	1020
Lamar, James S., Augusta, Ga. Cotton-chopper	322,941	July 28	2075	552	32	400
Lamar, James S., Augusta, Ga. Cotton-chopper	326,570	Sept. 22	1788	469	32	1368
Lamb, John J., and J. A., Waterloo, Iowa. Device for pumping or elevating water	323,816	Aug. 4	555	158	32	627
Lamb, Judson A. (See Lamb, John J. and J. A.)						
Lamble, Edward L., *et al.* (See Warner, John P., assignor.)						
Lamble, Robert M., New York, N. Y. Book-holder	323,511	Aug. 4	169	49, 50	32	554
Lambie, Robert M., New York, N. Y. Swivel for book-holders	324,032	Aug. 11	842	233	32	688
Lamm, Oscar, Jr., Stockholm, Sweden. Centrifugal creamer	327,090	Sept. 29	2541	662	32	1508
Lamont, Charles G., Astoria, Oreg. Skate	324,564	Aug. 18	1509	433	32	830
Lamont, James, assignor to Fahys Watch Case Company, Sag Harbor, N. Y. Watch-case	321,826	July 7	579	151	32	106
Lamont, James, assignor to Fahys Watch Case Company, Sag Harbor, N. Y. Watch-key and pendant	322,297	July 14	1190	312	32	226
Lamphere, George N. (See Lowry, Albert, assignor.)						
Lampingh, James A., Birmingham, county of Warwick, England. Saddle for velocipedes	323,693	Aug. 4	406	116, 117	32	599
Lamson, Frank G. (See Williams, Lemuel G., assignor.)						
Lamson, William S., and E. L. Giles, Lowell, Mass. Cash and parcel carrier	326,128	Sept. 15	1202	307, 308	32	1251
Lancaster, Bradford F., assignor of one-half to R. W. Black, Augusta, Me. Wrench	325,942	Sept. 8	956	243	32	1200
Lancaster, Charles, Newark, N. J. Stove	322,731	July 21	1777	469	32	339
Lancaster, Isaac I., Tacoma, Wash. Ter. Hoisting and lowering apparatus	325,614	Sept. 1	523	132	32	1115
Lancaster, Israel, Chicago, Ill. Grain-binder	324,122	Aug. 11	966	266, 267	32	710
Lancaster, Israel, Chicago, Ill. Church-pew	326,571	Sept. 22	1789	470	32	1368
Lancaster, William, Accrington, county of Lancaster, England. Machine for spinning and doubling yarn	326,300	Sept. 15	1455	379, 380	32	1208
Lance, William L., Philadelphia, Pa. Lap-board	322,942	July 28	2076	552	32	401
Land, Silas, assignor of one-half to J. H. Rathien, Philadelphia, Pa. Sash-cord fastener	327,276	Sept. 29	2778	721	32	1550
Lande, Hester, New York, N. Y. Safety attachment for gas cocks	324,123	Aug. 11	970	267	32	711
Landers, John S., and D. B. Wesson, assignors to Smith & Wesson, Springfield, Mass. Lock for fire-arms	323,873	Aug. 4	627	177	32	611
Landgrane, Frank O., assignor of one-half to M. E. Willis, San Francisco, Cal. Car-brake	321,507	July 7	129	34	32	26
Landgrane, Frank O., and M. E. Willis, San Francisco, Cal. Fare-box	325,348	Sept. 1	154	42	32	1044
Landis, Frank F., Waynesborough, Pa. Traction-wheel	325,750	Sept. 8	724	180, 181	32	1155
Landon, George W., Baltimore, Md. Automatic fire extinguisher and alarm	323,160	July 28	2380	631	32	457
Landsbery, Isabella. (See Anthony, Marcus O., assignor.)						
Lane, Almeron M., assignor to W. L. Gilbert Clock Company, Winsted, Conn. Clock-case	321,613	July 7	280	74	32	54
Lane & Bodley Company. (See Roth, Frank J., assignor.)						
Lane, Charles C., San Francisco, Cal. Expanding drill-bit for Artesian-well boring	326,661	Sept. 22	1916	503	32	1390
Lane, Jonathan D., Onondaga, Mich. Horse-collar fastener	326,436	Sept. 15	1023	424	32	1329
Lane Manufacturing Company. (See French, Henry W., assignor.)						
Lang, Felix, Chicago, Ill. Wagon-stake	323,512	Aug. 4	171	50	32	554
Lang, Fred N., Baraboo, Wis. Hand weeding-tool	324,565	Aug. 18	1570	434	32	830
Lang, William H., Burlington, Vt. Venetian blind	322,732	July 21	1778	469	32	339
Langbein, Charles. (See Woodrich and Langbein.)						
Langdon, Harry E., *et al.* (See Mulberry, James C., assignor.)						
Langdon, John J., South Pueblo, Colo. Adjustable mirror-bracket	325,419	Sept. 1	272	67	32	1067
Langen, Eugen, Cologne, Germany. Method of and apparatus for treating semi-liquid substances with purifying or other liquids	323,694	Aug. 4	408	117	32	599
Langford, Simeon, Cynthiana, Ind. Sulky plow and cultivator	324,849	Aug. 25	1979	544	32	914
Langford, Simeon, Cynthiana, Ind. Cultivator-shovel	324,850	Aug. 25	1980	544	32	914
Langham, Thomas, assignor of one-half to A. Oliver, Philadelphia, Pa. Knitting-machine	325,943	Sept. 8	957	243	32	1200
Langstrom, Albert, Council Bluffs, Iowa, assignor of one-half to C. Wassberg, Omaha, Nebr. Transom-lifter	324,943	Aug. 25	2099	574	32	936
Lannert, John A., Cleveland, Ohio, assignor to Buffalo Electric Works, Buffalo, N. Y. Current-regulator for dynamo-electric machines	324,566	Aug. 18	1571	434	32	830
Lantz, Isaac, Lane, Kans. Churn	326,751	Sept. 22	2069	538	32	1416
Lapham, Allyn M. (See Shank, John T., assignor.)						
Lappin, John J., Toronto, Ontario, Canada. Brake-shoe	324,851	Aug. 25	1981	544	32	914
Large, George W., Yellow Springs, Ohio. Rocking-chair	322,943	July 28	2077	553	32	401
Larkin, Samuel, assignor to American Button Hole, Overseaming and Sewing Machine Company, Philadelphia, Pa. Shuttle for sewing-machines	323,345	July 28	2652	706	32	505
Larkin, Thomas. (See Black and Larkin.)						
Larson, Arney S., Geneva, Minn. Sleigh-knee	324,567	Aug. 18	1573	434	32	831
Larson, Larits P. (See Nelson and Larson.)						
Lasar, Godfrey H., St. Louis, Mo. Barb-wire machine	322,112	July 14	963	250, 251	32	184
Lasar, Godfrey H., St. Louis, Mo. Barbed-wire machine	322,546	July 21	1530	403, 404	32	295
Lasar, Godfrey H., St. Louis, Mo. Barb-wire machine	323,161	July 28	2381	631	32	458
Lasar, Godfrey H., St. Louis, Mo. Barb-wire machine	327,277	Sept. 29	2779	721, 722	32	1551
Lathrop, Henry G., St. Johnsville, N. Y. Separable button	324,852	Aug. 25	1982	545	32	914
Lathrop, Joseph, and A. Tyrrell, Chicago, Ill. Pulley or wheel	325,251	Sept. 1	24	8	32	1020
Lathrop, Kirke E., Afton, Iowa. Apparatus for loading and unloading hay	322,618	July 21	1631	431	32	312
Lathrop, Kirke E., Afton, Iowa. Corn-harvester	323,046	July 28	2234	590, 591	32	429
Lathrop, Levi B., Hollister, Cal. Baling-press	325,843	Sept. 8	839	210, 211	32	1176
Lathrop, William. (See McGregor and Flenniken, assignors.)						
Lathrop, William C., Milton Centre, Ohio. Grain-drill attachment	322,187	July 14	1062	275	32	202
Latta, Adrian C. (See Latta, Emmit G., assignor.)						
Latta, Adrian C. (See Latta, Emmit G. and A. C.)						
Latta, Emmit G., Friendship, N. Y. Bicycle	321,508	July 7	130	34, 35	32	26
Latta, Emmit G., assignor of one-half to A. C. Latta, Friendship, N. Y. Velocipede	323,695	Aug. 4	409	117	32	599
Latta, Emmit G., assignor of one-half to A. C. Latta, Friendship, N. Y. Velocipede	326,752	Sept. 22	2069	538	32	1416
Latta, Emmit G., assignor of one-half to A. C. Latta, Friendship, N. Y. Velocipede	327,399	Sept. 29	2946	709	32	1579
Latta, Emmit G., Friendship, N. Y., assignor to Pope Manufacturing Company, Hartford, Conn. Velocipede	322,733	July 21	1780	470	32	339

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Latta, Emmit G., Friendship, N. Y., assignor to Pope Manufacturing Company, Hartford, Conn. Velocipede	323,162	July 28	2382	632	32	458
Latta, Emmit G., Friendship, N. Y., assignor to Pope Manufacturing Company, Hartford, Conn. Bicycle	324,364	Aug. 11	1173	318, 319	32	748
Latta, Emmit G., Friendship, N. Y., assignor to Pope Manufacturing Company, Hartford, Conn. Velocipede	324,568	Aug. 18	1574	435	32	831
Latta, Emmit G., Friendship, N. Y., assignor to Pope Manufacturing Company, Hartford, Conn. Velocipede	325,944	Sept. 8	958	243, 244	32	1200
Latta, Emmit G. and A. C., Friendship, N. Y. Velocipede	322,113	July 14	965	251	32	164
Latta, Emmit G. and A. C., Friendship, N. Y., assignors to Pope Manufacturing Company, Hartford, Conn. Velocipede	325,490	Sept. 1	273	68	32	1067
Laude, Joseph, Monticello, Ark. Seed-planter	325,844	Sept. 8	842	211	32	1177
Laughlin, Alexander W., Fairfield, Iowa. Wire-stretcher	325,095	Aug. 25	2304	634	32	974
Laughlin, Homer, Eastonville, Colo. Stirrup	321,984	July 14	790	205	32	152
Laughlin, John L., assignor to B. F. Avery & Sons, Louisville, Ky. Rotary cultivator	323,163	July 28	2385	632, 633	32	458
Laughlin, John L., assignor to B. F. Avery & Sons, Louisville, Ky. Rotary cultivator	323,164	July 28	2388	633, 634	32	458
Laurence, Henry, Chicago, Ill. Sash-holder	326,226	Sept. 15	1347	348	32	1278
Laurier, Leopold J. A., St. Paul, Minn. Tobacco-moistening apparatus	324,853	Aug. 25	1982	545	32	914
Laux, Isaac R., Wadsworth, Ohio. Clothes-wringer	326,995	Sept. 29	2410	629, 630	32	1426
Lauzon, Theophile, Long Island City, N. Y. Pole or shafts for vehicles	326,301	Sept. 15	1461	380	32	1299
Lavery, Dominick D., assignor to G. T. Giles, Chicago, Ill. Brush and broom holder	326,225	Sept. 15	1346	348	32	1277
Lavery, Richard, Boston, Mass. Steam-boiler furnace	322,298	July 14	1191	313	32	226
Lavigne, Joseph P., assignor to S. Halliwell, New Haven, Conn. Ripping device	322,299	July 14	1192	313	32	227
Lavigne, Joseph P., assignor to J. Halliwell, New Haven, Conn. Embroidering attachment for sewing-machines	324,124	Aug. 11	971	267	32	711
Lavigne, Joseph P., assignor to J. Halliwell, New Haven, Conn. Attachment-holding device for use on sewing-machines	326,302	Sept. 15	1462	380	32	1300
Law, Samuel H., Brooklyn, N. Y. Device for opening doors	323,165	July 28	2391	634	32	459
Lawrence Felting Company. (See Smith, William A., assignor.)						
Lawrence, Frank B. (See Forbes, Winslow, assignor.)						
Lawrence, Phillip J. (See Herrick and Lawrence.)						
Lawronce, Sumner H. (See Williams, Thomas B., assignor.)						
Lawson, Albert and H., Baltimore, Md. Oyster-dredge windlass	323,047	July 28	2236	591	32	429
Lawson, Henry. (See Lawson, Albert and H.)						
Lawson, Thomas F., Athens, Ga. Basket	325,751	Sept. 8	725	181	32	1156
Lawton, Walter, Winthrop, Mass. Coal-elevator	326,129	Sept. 15	1208	308, 309	32	1252
Le Count, Charles W., South Norwalk, Conn. Cribbage-board	321,509	July 7	132	35	32	26
Le Gay, Edward J., Boston, Mass. Mold for forming boot or shoe heels	322,301	July 14	1194	313, 314	32	227
Le Gay, Edward J., Boston, Mass. Shoe-nail	324,126	Aug. 11	974	268	32	712
Le Gay, Edward J., Boston, Mass. Boot or shoe heel	324,127	Aug. 11	975	268, 269	32	712
Le Roy, Alphonzo, Dunkirk, and B. Martignoni, Westfield; said Martignoni assignor to G. B. Everts, Dunkirk, N. Y. Addressing-machine	325,945	Sept. 8	961	244	32	1200
Leach, Edwin E., Cedar Rapids, Iowa. Heating attachment for lamps	327,278	Sept. 29	2781	722	32	1551
Leach, Henry B., Boston, Mass. Self-closing faucet	322,114	July 14	967	252	32	185
Leadbeater, Frederick, Detroit, Mich. Steam-boiler furnace	326,677	Sept. 22	2248	586	32	1449
Leadley, John, Detroit, Mich. Conductor-hook	327,279	Sept. 29	2782	722	32	1551
Leatheroid Novelty Company. (See Boynton and Stephen, assignors.)						
Leavitt, Charles, Cleveland, Ohio. Wind-engine	321,985	July 14	791	206	32	152
Leavitt, Frank M., New York, assignor to E. W. Bliss, Brooklyn, N. Y. Steam-pump	323,346	July 28	2653	706	32	505
Leavitt, W. H. (See Walter, James F., assignor.)						
Lebkicher, Samuel. (See Woodmanse and Lebkicher.)						
Lebknecher, Thomas, Newark, N. J. Bracelet	324,125	Aug. 11	973	268	32	712
Ledward, Joseph, Westerly, R. I. Cotton-harvester	321,440	July 7	35	9	32	9
Ledward, Joseph, Westerly, R. I. Saw	325,679	Sept. 8	616	156	32	1130
Lee, Charles B., Galveston, Tex. Apparatus for producing ammoniacal gas	322,458	July 21	1413	370	32	273
Lee, J. Edward, Chicago, Ill. Display box and package for laces	321,731	July 7	425	113	32	80
Lee, John E., Chicago, Ill. Handkerchief	321,732	July 7	427	114	32	80
Lee, John E., Chicago, Ill. Embroidery-envelope	324,854	Aug. 25	1983	545	32	914
Lee, Julius T., Dryden, Mich. Bolting-chest and middlings-purifier	321,441	July 7	36	10	32	10
Lee, Nathaniel, Brunswick, N. Y. Cider-press	325,252	Sept. 1	26	8	32	1020
Leeds, Albert R., Hoboken, N. J. Apparatus for purification of water	323,431	Aug. 4	61	16	32	534
Leeds, Albert R., Hoboken, N. J. Apparatus for purification of water	323,432	Aug. 4	63	16	32	534
Leeds, Albert R., Hoboken, N. J. Automatic relief-valve in water-supply pipes	327,091	Sept. 29	2542	602	32	1508
Leeds, B. Frank, Boston, Mass. Combined snow scraper and compressor	323,433	Aug. 4	64	16	32	535
Leeser, Lewis A., Baltimore, Md. Trunk	323,434	Aug. 4	65	17	32	535
Leffler, Paul W., assignor to Craver, Steele & Austin, Grinnell, Iowa. Oil-cup	326,662	Sept. 22	1918	503	32	1390
Leffler, Paul W., assignor to Craver, Steele & Austin, Grinnell, Iowa. Double-tree	327,180	Sept. 29	2663	693	32	1521
Lefor, John C., and A. Swivel, Des Moines, Iowa. Railway-rail joint	322,300	July 14	1193	313	32	227
Lefranc, Louis, Tracy-le-Val, France. Extracting sugar from juices, sirups, &c.	325,349	Sept. 1	155	.....	32	1044
Lehlbach, Gustav, Newark, N. J. Railway-frog	323,585	Aug. 4	263	77	32	570
Leighton, Edwin F., assignor of one-half to J. Serson, Boston, Mass. Galvanic battery	324,708	Aug. 18	1779	491	32	869
Leighton, Herbert J., Syracuse, N. Y., and J. Coffin, Johnstown, Pa. Graduated scale	325,096	Aug. 25	2305	634	32	974
Leinbach, Felix W., C. A. Wolle, and E. H. Brunner, Bethlehem, Pa., assignors to said Leinbach and Wolle. Paper-bag machine	327,280	Sept. 29	2783	723, 724	32	1551
Leininger, Ralph G., Philadelphia, Pa. Door-bolt	322,944	July 28	2078	553	32	401
Leipner, William A., and C. Brotherhood, Clifton, county of Bristol, England. Indicator for electric-bell circuits	322,619	July 21	1632	431	32	312
Leland, John J. (See Tiffany, Albert R., assignor.)						
Lemassena, Theodore F., Newark, N. J. Mold for cored objects of plastic material	326,678	Sept. 22	2250	586	32	1449
Lemon, Albert, Washington, assignor of one-half to B. White, Peoria, Ill. Lamp attachment for show-globe brackets	325,845	Sept. 8	845	212	32	1177
Lemos, Leon, San Francisco, Cal. Shirt	325,253	Sept. 1	27	8	32	1020
Lenahan, James P. (See Byrne and Lenahan.)						
Lendrum, Alexander T., Mount View Terrace, Cork, county of Cork, Ireland. Machine for crushing and stemming tobacco-leaves	321,614	July 7	281	74	32	54
Lennane, William E. (See Briody and McHale, assignors.)						
Lennox, Andrew J. (See McBride, Smith, and Lennox.)						
Leonard, Charles A., *et al.* (See Dager, William B., assignor.)						
Leonard, Charles N., assignor of one-half to C. Bradford, Indianapolis, Ind. Drawing-board	324,855	Aug. 25	1984	546	32	914

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Leonard, Edwin K. (See Whitman, Irvin A., assignor.)						
Leonard, Frank, *et al.* (See Beaver, George W., assignor.)						
Leonard, George H., Landisburg, Pa. Tanning composition	326,753	Sept. 22	2072	.....	32	1417
Leonard, Henry W. (See Annable and Leonard.)						
Leonard, James, *et al.* (See Dager, William B., assignor.)						
Leonard, Thomas W., Detroit, Mich. Hoof-pad	323,166	July 28	2392	634	32	459
Lepper, George W., St. Albans, Vt. Cultivator	324,265	Aug. 11	1176	319	32	749
Lester, James S., assignor of one-third to J. F. Nutting, Atlanta, Ga. Drier	322,302	July 14	1196	314	32	227
Lester, L. P., *et al.* (See Balch, Andrew J., assignor.)						
Letchworth, George J., Buffalo, N. Y. Cockeye	325,946	Sept. 8	963	245	32	1201
Letter, George A., Chicago, Ill. Socket for twist-drills	321,615	July 7	282	75	32	54
Letterhaus, Henry. (See Young, John E., assignor.)						
Letzkus, John, Allegheny, assignor to himself and C. F. McKenna, Pittsburg, Pa. Expansion-joint	327,281	Sept. 29	2786	725	32	1552
Lever, Charles, Bowdon, county of Chester, England. Electric-arc light	322,115	July 14	968	252	32	185
Levering, Abraham. (See McMartin, James I., assignor.)						
Levering, William M., Philadelphia, Pa. Cable railway	326,754	Sept. 22	2073	538, 539	32	1417
Levett, Henry H., Philadelphia, Pa. Carbon-holder	327,282	Sept. 29	2787	725	32	1552
Levette, Gilbert M., Indianapolis, Ind. Apparatus for extracting gold from placer mines	324,856	Aug. 25	1967	546	32	915
Levy, Henry, Clinton, Mo. Adjustable pitch-board for squares	327,283	Sept. 29	2788	725	32	1552
Levy, Morris R., New York, N. Y. Sign or banner	323,696	Aug. 4	411	118	32	599
Levy, Sally M., Milwaukee, Wis. Knitting-machine	321,733	July 7	428	114	32	80
Lewis, Charles P., Sweet Springs, W. Va. Spoke-setting machine	321,616	July 7	283	75	32	54
Lewis, Ledyard V., and S. S. Allen, Sun Prairie, Wis. Corn-harvesting machine	322,459	July 21	1415	370	32	274
Lewis, Lewis, Galveston, Tex. Reversible harness-hame	327,181	Sept. 29	2666	693	32	1530
Lewis, Richard G., and S. E. Mosher, Chillicothe, Ohio; said Mosher assignor to said Lewis. Shears	327,092	Sept. 29	2543	663	32	1502
Lewis, Sophronia T., Watertown, N. Y. Dress-chart	321,986	July 14	792	207	32	152
Lewis, Wallace J., assignor of one-half to W. A. Sampson, Chicago, Ill. Valve-gear for duplex pumps	326,996	Sept. 29	2411	630	32	1486
Lewis, William H., Grand Crossing, Ill. Steam-generator	326,510	Sept. 15	1711	446	32	1346
Lewis, William R., Philadelphia, Pa. Link-bending machine	321,734	July 7	429	114	32	80
Ley, Francis. (See Hack and Ley.)						
Libby, Benjamin F., assignor to Norwalk Lock Company, South Norwalk, Conn. Door-knob attachment	321,827	July 7	581	151	32	107
Libby, James L., New York, N. Y. Shirt-cabinet	322,303	July 14	1197	314	32	227
Lichtenstadt, Philip, Chicago, Ill. Drying and burning bricks	325,680	Sept. 8	618	157	32	1137
Lieb, George, New York, N. Y. Mechanism for transmitting motion	324,709	Aug. 18	1781	492	32	809
Liebel, Hugo, North Attleborough, Mass. Bracelet	322,061	July 14	895	232	32	171
Liebmann, Hermann F. W., assignor of one-half to H. K. Meyer, Chicago, Ill. File-cutting machine	323,874	Aug. 4	628	177, 178	32	642
Lightburne, Stafford, Jr., St. Louis, Mo. Gasoline-stove	322,387	July 14	1314	342	32	249
Lightfoot, Thomas B., Fenchurch street, London, England. Refrigerating apparatus	325,097	Aug. 25	2306	134	32	974
Lilly, George W., Centre, Mo. Shovel-fastener for cultivators	325,421	Sept. 1	277	68	32	1068
Lindauer, Jacob J., New York, N. Y. Button or stud	323,167	July 28	2393	635	32	459
Lindblom, Charles A., New York, N. Y. Hammock-support	324,128	Aug. 11	976	260	32	712
Lindemeyer, Philip, Jr., Jersey City, N. J. Gripper for printing-machines	323,168	July 28	2394	635	32	459
Lindgren, August, assignor to Moline Plow Company, Moline, Ill. Wheel-plow	323,169	July 28	2394	635	32	459
Lindgren, George A., assignor of one-half to E. E. Weir and F. R. Carson, La Porte, Ind. Chemical fire-extinguisher	323,170	July 28	2396	636	32	459
Lindo, Philip, Delft, Holland. Car-coupling	325,947	Sept. 8	963	245	32	1201
Lindon, Osmund S., San Francisco, Cal. Water-filter	325,681	Sept. 8	619	157	32	1137
Lindsley, James M., Grove City, Ill. Nut-lock	321,735	July 7	431	115	32	81
Lindsley, Joseph H., White House, N. J. Hog-ringing pincher	324,391	Aug. 18	1347	366	32	789
Lines, Daniel, and C. T. Long, Milano, Tex. Stock-car	326,755	Sept. 22	2076	539, 540	32	1418
Lines, John, assignor to Scovill Manufacturing Company, Waterbury, Conn. Gudgeon for window-shade rollers	325,422	Sept. 1	278	69	32	1068
Lines, Thomas D., Syracuse, N. Y. Spring-coupling	322,734	July 21	1784	470	32	340
Linney, Charles L., Danville, Ky. Portable bath-house	327,284	Sept. 29	2789	725	32	1552
Linney, Charles L., assignor of one-half to E. B. and T. E. Linney, Danville, Ky., and J. S. Linney, Osceola, Mo. Toy bubble-blower	327,400	Sept. 29	2949	770	32	1580
Linney, E. B., *et al.* (See Linney, Charles L., assignor.)						
Linney, J. S., *et al.* (See Linney, Charles L., assignor.)						
Linney, T. E., *et al.* (See Linney, Charles L., assignor.)						
Lipe, Walter. (See Ludlow, Charles A., assignor.)						
Lippy, David, assignor of one-half to P. Ott, Mansfield, Ohio. Cash-carrier	326,130	Sept. 15	1209	309	32	1252
Lippy, David, and P. Ott, Mansfield, Ohio. Cash-carrier	326,131	Sept. 15	1211	309, 310	32	1253
List, Henry, *et al.* (See Davis, John P., assignor.)						
Liston, Alfred, and W. H. Navert, Emerson, Iowa. Check-row corn-planter	323,048	July 28	2237	591, 592	32	429
Litchfield, Arthur. (See Rider, John, assignor.)						
Litle, Thomas J., Philadelphia, Pa. Inkstand	326,044	Sept. 8	1091	278	32	1223
Little, Charles G., Brooklyn, N. Y. Sewing-chair	322,547	July 21	1532	404	32	295
Little, Samuel C., Mount Vernon, Ind. Flooring	323,697	Aug. 4	412	118	32	600
Little, William G., The Priory, Conisboro, county of York, England. Gas carburetor	322,116	July 14	971	253	32	185
Littlefield, Charles W., Amesbury, Mass. Sash-fastener	325,846	Sept. 8	845	212	32	1178
Littlefield, Roger S., Empire City, Oreg. Building jetties	324,857	Aug. 25	1969	547	32	915
Littleton, Adam D., and J. M. Clark, Des Moines, Iowa. Automatic advertising device	326,997	Sept. 29	2413	630	32	1486
Livermore, Charles F. (See Waite, Henry E., assignor.)						
Livesey, Fernando H. W. (See Livesey, James and F. H. W.)						
Livesey, James and F. H. W., Victoria Mansions, Westminster, county of Middlesex, England. Reversible seat or bed frame	324,129	Aug. 11	977	269	32	713
Lletget y Sarda, José, Barcelona, Spain. Manufacturing iron and steel	324,790	Aug. 18	1889	.....	32	890
Lloyd, Edwin L., assignor of one-half to C. Joly, Philadelphia, Pa. Bottle-stopper	325,181	Aug. 25	2415	663	32	994
Loafman, John E., Liberty Hill, Tex. Combined cotton and corn planter	326,756	Sept. 22	2077	540	32	1418
Loar, James, assignor of one-half to J. N. Smith, Catlettsburg, Ky. Cutter-head	321,828	July 7	583	151	32	107
Lobdell Car Wheel Company. (See Dunn, George, assignor.)						
Lobin, William D., *et al.* (See Brown, Thomas S., assignor.)						
Lockhart, Jesse, Niantic, Ill. Clamp for railway-rails	327,285	Sept. 29	2790	726	32	1552
Lockwood, Edwin W., Nevada, Iowa. Device for dressing millstones	324,392	Aug. 18	1347	366	32	789

Alphabetical list of patentees, July to September, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Lockwood, George W. (See Carpenter and Lockwood.)						
Lockwood, Peter. (See Taylor and Lockwood.)						
Lockwood, Rhodes, Boston, Mass. Hard-rubber spring-bar for surgical and other instruments	323,698	Aug. 4	413	118	32	600
Lockwood, Rhodes, Boston, Mass. Inkstand	324,393	Aug. 18	1348	367	32	790
Lockwood, Samuel T., Chicago, Ill. Packer for bran and other articles	325,254	Sept. 1	28	9	32	1020
Loeble, J. Frederick, Philadelphia, Pa. Combined jelly-glass and money-box	326,757	Sept. 22	2078	540	32	1418
Loeba, Albert H., Rochester, assignor to Wheeler, Madden & Clemson Manufacturing Company, Middletown, N. Y. Buck-saw	326,045	Sept. 8	1092	278	32	1223
Loewenthal & Morganstern. (See Holt, Albert T., assignor.)						
Loewenthal, Siegismund, Acton, county of Middlesex, England. Manufacture of ornamental wall-covering, leather-cloth, &c.	327,286	Sept. 29	2791	.....	32	1553
Loftis, Frank P. H., San Francisco, Cal. Grip-car for cable railways	323,817	Aug. 4	557	158, 159	32	628
Loftus, John, Albany, N. Y. Injector	326,758	Sept. 22	2079	541	32	1418
Logan, Thomas H., Lowell, Mass. Device for connecting picking-straps to the picking-sticks of looms	325,350	Sept. 1	157	43	32	1044
Logan, William M., Etna, Pa. Brick-machine	323,818	Aug. 4	559	159	32	628
Logemann, Adolph. (See Giesler, Franklin B., assignor.) (Reissue.)						
Lomas, Henry E., Cresco, Iowa. Ticket-chart	326,879	Sept. 22	2251	587	32	1449
Lomax, George H., Somerville, Mass. Lantern	325,255	Sept. 1	29	9	32	1021
Long, Amos M., Monroe, Mich. Inhaler	321,904	July 7	678	176	32	123
Long, Charles T. (See Lines and Long.)						
Long, Charles W., Eaton, Ohio. Vehicle-wheel	322,188	July 14	1063	276	32	202
Long, Curtis M., Allegheny, Pa. Steam-engine	326,303	Sept. 15	1464	380, 381	32	1300
Long, Curtis M., Allegheny, Pa. Lubricating apparatus	326,304	Sept. 15	1465	381	32	1300
Long, Edwin, assignor to E. Shepard, W. B. Carpenter, Iowa City, Iowa, R. and A. Ellwood, Sycamore, Ill. Wire-stretcher	322,460	July 21	1417	371	32	274
Long, Horace B., Worcester, and E. L. Hill, West Upton, Mass.; said Long assignor to said Hill. Milk-aerator	323,347	July 28	2055	706	32	505
Long, James. (See Dellison and Long.)						
Long, James N., assignor of one-half to D. Coulter, Philadelphia, Pa. Fire-place niche	324,710	Aug. 18	1782	492	32	809
Long, John M. W., Hamilton, Ohio. Roller-skate	325,214	Aug. 25	2460	676	32	1003
Long, John M. W., Hamilton, Ohio. Lubricator	326,998	Sept. 29	2414	631	32	1486
Long, John S., assignor to himself and J. Bastien, Murphysborough, Ill. Saw-set	326,305	Sept. 15	1466	381	32	1300
Long, Nathan H., Muncie, Ind. Broom-holder	325,682	Sept. 8	619	157	32	1137
Long, Nathan H., assignor of one-half to E. W. Bishop, Muncie, Ind. Roller-skate	324,130	Aug. 11	978	269	32	712
Long, Sarah B., San Francisco, Cal. Lid for gas-stoves	325,683	Sept. 8	620	157	32	1137
Long, William S., assignor to himself, D. Treadway, W. J. H. Brown, and L. C. Good, St. Louis, Mo. Coating and coloring coffee	326,227	Sept. 15	1348	.....	32	1278
Longnecker, Jacob M., *et al.* (See Smith, Seth H., assignor.)						
Longridge, James A., Westminister, England. Locomotive-engine	323,045	July 28	2231	590	32	428
Longshaw, Thomas, Watcessing, N. J. Hat felting and sizing machine	323,171	July 28	2398	636	32	460
Look, Fredrick A., Bridgeport, Conn. Fastening for horse-blankets	326,228	Sept. 15	1349	349	32	1278
Loomis, D. S. (See Engelhard, Frank, assignor.)						
Loomis, Frank F., Akron, Ohio. Fire-alarm-telegraph box	323,435	Aug. 4	65	17	32	535
Loomis, George W., Syracuse, N. Y. Cylinder-cock	325,256	Sept. 1	30	9	32	1021
Loomis, Osborn P., Lynn, Mass. Arc lamp	324,778	Aug. 18	1874	515	32	887
Loppentien, Johann D., Pittsburg, Pa. String-holder for violins	323,513	Aug. 4	171	50	32	554
Lord, Albert C., Northfield, N. H. Eyeglasses	322,461	July 21	1418	371	32	274
Lord, Henry S., Hartford, Conn. Water-closet supply-valve	322,388	July 14	1315	342, 343	32	250
Loring, Harrison, and L. K. Jewett, Boston, Mass. Railway-car	327,093	Sept. 29	2544	663	32	1509
Lorsch, Moses S., New York, N. Y. Securing miners' lamps to hats, caps, &c.	324,131	Aug. 11	979	270	32	713
Losch, William G. (See Harner and Losch.)						
Lose, John O., Paterson, N. J. One-wheeled vehicle	325,548	Sept. 1	448	111, 112	32	1101
Losse, Henry, Pinckneyville, Ill. Fire-engine	321,510	July 7	133	35	32	27
Lothrop, Charles H., Lyons, Iowa. Telegraph cut-out	324,711	Aug. 18	1783	492	32	870
Lothrop, George H. (See Jackson and Chambers, assignors.)						
Lott, Arthur, Riddleville, Tex. Brace-wire fastening for wire fences	326,911	Sept. 22	2298	601	32	1457
Loudon, Joseph H., Westerly, R. I. Traveling emery-wheel for card-grinders	323,172	July 28	2399	636	32	460
Love, Albert. (See McCormick, Charles W., assignor.)						
Love, John J., New York, N. Y. Piston for steam-engines	326,046	Sept. 8	1093	279	32	1223
Loveland, Calvin, assignor to himself and F. Whipple, Spencer, Wis. Machine for dressing saw-teeth	321,617	July 7	284	75	32	54
Low, Albert H., Denver, Colo. Signal-call for telephone-offices	322,835	July 21	1920	509	32	365
Low, Jesse B., Watertown, N. Y. Galvanic battery	324,858	Aug. 25	1969	547	32	915
Low, Joshua, Steubenville, Ohio, assignor to T. B. McCrystal. Siphon-cork	327,401	Sept. 29	2950	770	32	1580
Lowe, Austin, assignor to himself and T. D. Hale, Minneapolis, Kans. Railway-gate	326,306	Sept. 15	1467	382	32	1301
Lowe, Henry. (See Polak and Lowe.)						
Lowe, John, New Britain, Conn. Ox-bow fastening	326,229	Sept. 15	1350	349	32	1278
Lowe, Nathaniel M. (See Bassett, Ernest A., assignor.)						
Lowes, Joseph E. (See Fletcher, John R., assignor.)						
Lowrie, Harvey C., Denver, Colo. Mechanism for converting motion	324,132	Aug. 11	980	270	32	713
Lowrie, Harvey C., Denver, Colo. Wash-bowl	327,094	Sept. 29	2546	663, 664	32	1509
Lowrie, Harvey C., Denver, Colo. Switching-wheel for street-cars	327,095	Sept. 29	2548	664	32	1509
Lowry, Albert, Lisbon, Dak. Ter., assignor of one-half to G. N. Lamphere, Moorehead, Minn. Grain-cultivator	325,549	Sept. 1	449	112	32	1101
Lublinski, David, Schwetz, Prussia, Germany. Mixed paint	327,447	Sept. 29	3003	.....	32	1589
Lucas, Austin H., Allegheny, Pa. Securing diamonds in saw-teeth	324,945	Aug. 25	2105	575	32	938
Lucas, Francis M., York, Nebr. Corn-planter	323,942	Aug. 11	725	202, 203	32	667
Lucas, John, Hastings, Minn. Wheat, oat, and cockle separator	322,548	July 21	1532	404	32	295
Lucas, John W. (See Peck, James F., assignor.)						
Lucas, Josiah. (See Harris and Lucas.)						
Luce, Charles E. (See Abbott and Luce.)						
Luchini, Ferdinando, Natchitoches, La. Marine motive power	324,266	Aug. 11	1178	319	32	749
Ludlow, Charles A., Bridgeport, Conn., assignor of one-half to W. Lipe, New York, N. Y. Lock	323,049	July 28	2239	592	32	430
Ludlow, Rodney F., Springfield, Ohio. Drive-chain	326,307	Sept. 15	1468	382	32	1301
Ludwick, Jay J., Charlotte, Mich. Oil-cup holder	321,618	July 7	286	76	32	55

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Luehrs, Michel D., Cleveland, Ohio. Bolt-cutter head	324,946	Aug. 25	2106	575, 576	32	938
Luhmann, Eduard, Rogasen, Prussia, Germany. Measuring apparatus for liquid carbonic acid	327,448	Sept. 29	3004	785	32	1589
Lukens, Charles M., Springfield, Ohio. Embalming-table	325,550	Sept. 1	451	112, 113	32	1102
Lukens, Charles M., Springfield, Ohio. Head-rest for embalming-tables	325,551	Sept. 1	453	113	32	1102
Lunge, George, Hottingen, near Zurich, Switzerland. Application of chloride of lime to bleaching purposes	325,684	Sept. 8	620	.....	32	1137
Lunt, Wilbur F., *et al.* (See Gibson, Selden F., assignor.)						
Lupher, Hiram, Tullahoma, Tenn. Brick-press	323,348	July 28	2656	706, 707	32	505
Luqueer, Francis T., Jr., *et al.* (See Wilson, John C., Sr., assignor.)						
Lusby, John, Philadelphia, Pa. Pill-making machine	323,349	July 28	2657	707, 708	32	506
Lustig, Adolphus J., St. Louis, Mo. Casting compound metal ingots	324,712	Aug. 18	1784	492	32	870
Lutes, William, *et al.* (See Jones, Edward C., assignor.)						
Lutman, Samuel M. (See Doty, Charles H., assignor.)						
Lutomski, Conrad, Pittsburg, Pa. Pipe system having auxiliary leakage-conduit	321,905	July 7	679	176	32	123
Lutz, Philip M., North Springfield, Mo. Foot-scraper	327,182	Sept. 29	2667	693	32	1530
Lux, John H., and P. and S. Ede, Earlville, Iowa. Hay-loader	322,836	July 21	1923	509	32	366
Lux, Philip. (See Lux and Ede.)						
Luxemberg, Moritz, San Francisco, Cal. Folding baby-carriage	323,050	July 28	2241	592	32	430
Luyster, Cornelius W., Newton, N. Y. Attachment for shovel-plows	326,912	Sept. 22	2299	601	32	1457
Lyall, John, Govan, county of Lanark, Scotland. Machine for cutting metal ovals	324,331	Aug. 11	1265	343	32	766
Lydon, James P., Marysville, Cal. Heating-drum	322,549	July 21	1534	405	32	295
Lyman, Charles H., assignor to Ansonia Brass and Copper Company, Ansonia, Conn., and W. A. Hull, New York, N. Y. Suspension device	323,051	July 28	2242	592	32	430
Lyman, Charles H., assignor to Ansonia Brass and Copper Company, Ansonia, Conn., and W. A. Hull, New York, N. Y. Suspension device for lamps, &c.	324,332	Aug. 11	1266	344	32	767
Lyman, Fordyce A., Cleveland, Ohio. Vapor-stove	324,947	Aug. 25	2108	576	32	938
Lyman, Henry R. (See Hoffman and Lyman.)						
Lyman, William T., assignor to Ansonia Brass and Copper Company, Ansonia, Conn. Galvanic battery	324,475	Aug. 18	1454	397	32	808
Lynch, Bernard. (See Taylor, Thomas W., assignor.)						
Lynn, Robert, Sr., Pleasant Plain, Iowa. Washing-machine	326,913	Sept. 22	2300	603	32	1457
Lyon, Frederick, O., Waltham, Mass. Imitation stained glass	326,572	Sept. 22	1790	.....	32	1368
Lyon, George W., Pennsylvania Furnace, Pa. Ore-washer	323,875	Aug. 4	632	178	32	642
Lyon, Isabella A., Boston, Mass. Cover for pots	323,169	July 14	1064	276	32	202
Lyon, James A., Washington, Pa. Gas-detector for mines	325,615	Sept. 1	525	132	32	1115
Lyon, James B., *et al.* (See Okey, Joseph B., assignor.)						
Lyons, Albert J., Lynn, Mass. Picture-hanger	324,779	Aug. 18	1875	515	32	887
Lyons, Horace C., Brookfield, Mo. Reel for fence-wire	325,616	Sept. 1	526	133	32	1115
Lyons, Joseph, London, England. Stereoscope	327,449	Sept. 29	3006	785	32	1590
Mabery, Charles F. (See Cowles, Mabery, and Cowles.)						
MacFarlane, James, Malden, Mass. Machine for spirally winding a strip of wood	323,609	Aug. 4	413	118, 119	32	600
Mac Kusick, Elmer F., assignor to J. S. Conover & Co., New York, N. Y. Tile-work adapted to hearths, fire-places, and vestibules	321,619	July 7	287	76	32	55
Macaulay, Thomas A., New York, N. Y. Mechanical movement	326,573	Sept. 22	1791	470	32	1368
Macbeth, George A., Pittsburg, Pa. Glass ornamentation	324,133	Aug. 11	982	270	32	713
Macfarlane, Stewart, Drifton, Pa. Combined gage-cock and indicator	322,837	July 21	1924	509	32	366
Machlet, George, Elizabeth, assignor to E. P. Reichelm, Jersey City, N. J. Hydrocarbon-burner	325,617	Sept. 1	526	133	32	1115
Mack, Courtland L., Perryville, Ind. Car-coupling	321,967	July 14	793	207	32	153
Mackay, Patrick N., San Francisco, Cal. Manufacture of incandescents	325,257	Sept. 1	31	.....	32	1021
Mackley, Henry, and J. B. Ross, Chicago, Ill. Non-siphoning attachment for closet and other traps	321,829	July 7	584	151	32	107
Maclachlan, John W., Brooklyn, assignor to G. W. Garnar, New York, N. Y. Numbering-machine	326,663	Sept. 22	1919	503, 504	32	1390
Macleod, Malcolm, West Hill, Molmesbury, county of Wilts, England. Riding-saddle	321,830	July 7	585	152	32	107
Macomber, Ellwood G., Portsmouth, R. I. Ankle-support for skates	323,700	Aug. 4	415	119	32	600
Macomber, Louis H., assignor to himself and A. M. Ellithorp, Montevideo, Minn. Flying target	326,664	Sept. 22	1921	504	32	1391
Macnider, Quintin, administrator. (See Macnider, William J.)						
Macnider, William, J., deceased, Greensborough, Ga.; Q. Macnider, administrator. Adding-machine	322,190	July 14	1064	276, 277	32	202
Madden, Albert F., New York, N. Y., assignor to himself and O. E. Madden, Boston, Mass. Paper-folding mechanism	324,034	Aug. 11	843	234, 235	32	688
Madden, James. (See Osborn and Madden.)						
Madden, Oscar E. (See Madden, Albert F., assignor.)						
Maddock, John, assignor of one-half to F. E. Curtis, Minneapolis, Minn. Bag	326,665	Sept. 22	1922	505	32	1391
Maddock, William H. (See Reed and Maddock.)						
Maddox, M. F. (See Swalm, John M., assignor.)						
Maddox, Milton F., Bloomingdale, Ind. Collar-fastener	322,402	July 21	1419	371	32	274
Mahan, W. H. (See Dorneck, Vesper, assignor.)						
Mahla, Johann F., Pforzheim, Germany. Setting real and artificial stones	322,191	July 14	1068	277	32	203
Maiberger, Jerome, Stratford, Conn. Banjo	324,569	Aug. 18	1579	435	32	832
Main, Harrison, Eureka, Springs, Ark. Movement-cure apparatus	323,701	Aug. 4	416	119	32	601
Main, Oscar F., assignor of two-thirds to A. R. Sargent and O. S. Hall, Marion, Iowa. Electric belt	324,713	Aug. 18	1786	493	32	870
Main, William F., *et al.* (See Payson, Joseph R., Jr., assignor.)						
Maine, Randolph S., Boston, Mass. Lamp-burner	323,173	July 28	2400	637	32	460
Mair, Robert, and W. H. Royal, Philadelphia, Pa. Loom for weaving double pile fabrics	324,304	Aug. 18	1349	367, 368	32	790
Mais, Henry, Boston, Mass. Apparatus for shampooing	325,098	Aug. 25	2307	635	32	975
Maitland, George. (See McCarty, Robert A., assignor.)						
Majert, Wilhelm, assignor of two-thirds to A. Ewer and P. Pick, Grunau, near Berlin, Germany. Manufacture of methylene-blue by electrolysis	323,514	Aug. 4	172	50	32	554
Malam, William, Edgemore, Del. Steam-boiler	324,134	Aug. 11	983	271	32	713
Maleville, Adolphe. (See Bleton and Maleville.)						
Mallitor, John. (See Hilger, Peter, assignor.)						
Mallard, William S., Darien, Ga. Fish-pond trunk	325,552	Sept. 1	454	113	32	1102
Mallory, Alonzo R., Madison, Ga. Plow-extension	326,759	Sept. 22	2080	541	32	1418

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Mallory, Lewis A., Sullivan, assignor of one-half to R. H. Baird, Wellington, Ohio. Curtain-fixture	326,287	Sept. 29	2702	726	32	1553
Malmström, Peter E., Brooklyn, N. Y. Spring-roller for curtains	324,135	Aug. 11	984	271	32	714
Malmström, Peter E., and P. E. Dummer, assignors to C. H. Schultz, New York, N. Y. Siphon-head	327,402	Sept. 29	2950	770	32	1580
Malone, Alexander and B. A., Franklin, assignors of three-fourths to J. B. Montague and J. T. Booker, Simpson County, Ky. Churn-dasher	321,831	July 7	586	152	32	108
Malone, Bernard J., Flatlands, N. Y. Corset-clasp	326,230	Sept. 15	1351	349	32	1278
Malone, Bettie A. (See Malone, Alexander and B. A.)						
Maloy, James W., Boston, Mass., assignor, by mesne assignments, to American Marble Cutting Company. Stone-polishing machine	327,288	Sept. 29	2702	726	32	1553
Maltby, Clinton H., assignor to National Cash Register Company, Dayton, Ohio. Cash register and indicator	321,988	July 14	794	207	32	153
Manchester, Thomas L. (See McHugh and Manchester.)						
Mander, James, assignor of one-half to M. R. Dillin, Philadelphia, Pa. Spokeshave and chamfer-cutter	322,304	July 14	1108	314	32	227
Mangus, Charles W. (See Hayner and Mangus.)						
Manhattan Brass Company. (See Hipwell, Thomas, assignor.)						
Manhattan Brass Company. (See White, James H., assignor.)						
Mankey, Frederick, Williamsport, Pa. Manufacturing panel and wood trimmings	325,351	Sept. 1	159	43	32	1045
Manley, William, Rochester, N. Y. Heel and sole edge trimming machine	322,945	July 28	2079	553, 554	32	401
Mann, William D., assignor to Mann's Boudoir Car Company, New York, N. Y. Car-ventilator	327,289	Sept. 29	2704	726, 727	32	1553
Manner, Charles V. (See Steber, Joseph C., assignor.) (Reissue.)	326,900	Sept. 29	2415	631	32	1487
Manning, Edwin C., Washington, D. C. Car truck	326,231	Sept. 15	1352	349	32	1278
Manning, Franklin, Marysville, Cal. Bullet						
Manning, Thomas. (See Manning, William, assignor.)						
Manning, William, Holyoke, assignor to T. Manning, Boston, Mass. Treating gypsum	326,047	Sept. 8	1093	.....	32	1224
Mann's Boudoir Car Company. (See Mann, William D., assignor.)						
Manny, John P., Rockford, Ill. Lemon-juice extractor	325,099	Aug. 25	2308	635	32	975
Mansfield, Edward G., *et al.* (See Forrest, Hamlet E., assignor.)						
Manufacturers Special Machine Company. (See Beardslee, William F., assignor.)						
Manvel, Homer, and M. B. Williams, Kalamazoo, Mich. Windmill	322,463	July 21	1420	371, 372	32	274
March, Perrin G. (See Rogers, Winfield S., assignor.)						
Marchese, Eugenio, Genoa, Italy. Extracting copper from its ores	326,760	Sept. 22	2082	.....	32	1419
Marck, Andrew, Lexington, Mo. Motor	323,943	Aug. 11	726	203	32	667
Marck, Charles, St. Louis, Mo. Ironing-machine	323,174	July 28	2401	637	32	461
Marcus, Martin H., Baltimore, Md. Filling for bed-quilts or comforts	322,735	July 21	1784	470	32	340
Marcy, Rufus G., Kansas City, Mo. Pipe-reamer	325,948	Sept. 8	966	245	32	1201
Marden, John A., Hinsdale, N. H. Steam-cooker	325,100	Aug. 25	2309	635	32	975
Marden, John W., *et al.* (See Fuller, Charles A., assignor.)						
Margedant, William C., Hamilton, Ohio, assignor to Economist Plow Company, South Bend, Ind. Machine for finishing plow-beams	322,838	July 21	1926	510	32	366
Margedant, William C., Hamilton, Ohio, assignor to Economist Plow Company, South Bend, Ind. Machine for finishing plow-handles	325,258	Sept. 1	32	10	32	1021
Marichal, Arthur, Philadelphia, Pa. Ellipsograph	324,305	Aug. 18	1352	368	32	700
Maris, Jared, Columbus, Ohio. Wheel-felly	321,832	July 7	587	152	32	108
Mark, Charlie E., Flint, Mich., assignor to Marks Automatic Car Coupler Company, Cleveland, Ohio. Draw-head attachment	326,761	Sept. 22	2085	541	32	1419
Mark, Clarton, Chicago, Ill. Fastening for trunks and boxes	324,948	Aug. 25	2110	577	32	939
Marker, Frank H., Elkhart, Ind. Trimming and extinguishing attachment for lamp-burners	321,989	July 14	795	208	32	153
Markham, Dewitt C., Towanda, Pa., assignor to Eureka Mower Company, Utica, N. Y. Mowing-machine	325,949	Sept. 8	966	246	32	1201
Markham, Dewitt C., Towanda, Pa., assignor to Eureka Mower Company, Utica, N. Y. Bell-crank for mowing-machines	325,950	Sept. 8	968	246	32	1202
Markham, Larnard F., Grand Rapids, Mich. Saw-set	325,101	Aug. 25	2310	636	32	975
Marks Automatic Car Coupler Company. (See Mark, Charlie E., assignor.)						
Marks, Henry W., *et al.* (See Allen, William R., assignor.)						
Marks, Lewis C., *et al.* (See Allen, William R., assignor.)						
Marks, Philip, *et al.* (See Allen, William R., assignor.)						
Marland, Alfred, assignor of one-half to T. Neely, Pittsburg, Pa. Nut-machine	326,762	Sept. 22	2086	541, 542	32	1419
Marquart, Friedrich, Cleveland, Ohio. Oil-vapor burner	322,620	July 21	1633	432	32	313
Marr, Nahum C. (See Marr, William C. and N. C.)						
Marr, William C., Onawa, Iowa. Combined flour box and sifter	324,859	Aug. 25	1990	547	32	916
Marr, William C. and N. C., Onawa, Iowa. Spiral conveyer	323,944	Aug. 11	728	203	32	667
Marrs, William A., *et al.* (See Smith, John A., assignor.)						
Mars, John H., Albany, N. Y. Packing for stuffing-boxes	326,574	Sept. 22	1792	470	32	1369
Marsh, Edward A., Newton, Mass. Machine for cutting teeth of duplex wheels	323,175	July 28	2402	637, 638	32	461
Marsh, Edward A., Newton, Mass. Stem-setting device	324,570	Aug. 18	1580	436	32	832
Marsh, Edward W. (See Marsh, Egbert and E. W.)						
Marsh, Egbert and E. W., Bridgeport, Conn. Composition of matter to be used as a plaster for building purposes	321,620	July 7	287	.....	32	55
Marsh, Egbert and E. W., Bridgeport, Conn. Plastic compound to be used as a stucco	321,621	July 7	289	.....	32	55
Marsh, George D., Joplin, Mo. Bed-screen frame	326,437	Sept. 15	1624	425	32	1329
Marsh, Gideon, Mancelona, Mich. Saw-set	326,308	Sept. 15	1469	382	32	1301
Marsh, Lewis F. (See Thomas, John, assignor.)						
Marsh, Robert J., *et al.* (See Brooks, George, assignor.)						
Marsh, Robert R., assignor of one-fourth to C. J. Stuart, Owosso, Mich. Car-brake	324,714	Aug. 18	1787	493	32	870
Marsh, William W., and M. E. Blood, Sycamore, Ill. Grain-binding harvester	321,511	July 7	134	35, 36, 37, 38	32	27
Marshall, Alfred W., Mortimer Street, Cavendish Square, county of Middlesex, England. Ice-cave or apparatus for freezing soufflés and molding ice-puddings, &c	322,117	July 14	972	253	32	186
Marshall, Daniel O., and C. F. York, Gloucester, Mass. Apparatus for packing fish	325,102	Aug. 25	2310	636	32	975
Marshall, Godfrey, and E. S. Lafferty, Indiana, Pa. Horse-collar fastener	324,136	Aug. 11	985	271	32	714
Marshall, Jackson P., and A. R. Howze, Winona, Miss. Exhibitor for articles of merchandise	327,000	Sept. 29	2416	631, 632	32	1487
Marshall, Major B., Vienna, Md. Animal-trap	322,736	July 21	1785	471	32	340

Alphabetical list of patentees, July to September, inclusive—Continued.

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Marshall, Thomas C., assignor to L. Miller, Akron, Ohio. Grain-binding harvester	325,752	Sept. 8	726	181, 182	32	1156
Marshall, Vanranseller, *et al.* (See Cook, Thomas G., assignor.)						
Marston, James D., Englewood, and G. Clapp, Oak Park, Ill. Device for transporting human bodies	323,515	Aug. 4	174	51	32	554
Marti, Casper, Minneapolis, Minn. Egg-tester	326,763	Sept. 22	2068	542	32	1419
Martignoni, Benjamin. (See Le Roy and Martignoni.)						
Martignoni, Benjamin, Westfield, and C. J. Carney, Dunkirk, N. Y. Self-packing and self-grinding cock	327,001	Sept. 29	2418	632	32	1487
Martin, Charles, Paris, France. Furnace-grate	326,309	Sept. 15	1470	382, 383	32	1301
Martin, Charles F. (See Scheffer and Martin.)						
Martin, Jacob A. (See Kyte and Martin.)						
Martin, James L., Decker's Point, Pa. Stump-puller	326,310	Sept. 15	1471	383	32	1301
Martin, John F., Allegheny City, Pa. Scale-collector for steam-boilers	323,703	Aug. 4	418	120	32	601
Martin, John T., Roanoke, Texas. Cotton-picker	323,702	Aug. 4	417	119	32	601
Martin, Mary B., New York, N. Y. Decorating paper and other materials with oil-colors	324,860	Aug. 25	1992	.....	32	916
Martindale, Elijah B., Indianapolis, Ind. Index or directory case	324,861	Aug. 25	1993	547	32	916
Martinez, Albert A., New Orleans, La. Lubricating composition	326,311	Sept. 15	1472	.....	32	1301
Martinez, Rafael, New York, N. Y. Window	325,753	Sept. 8	729	182	32	1156
Marvin, James F., Fort Apache, Ariz. Ter. Drenching-bit	323,183	July 28	2425	642	32	465
Mason, Edward, assignor to J. O'Connor, Detroit, Mich. Automatic advertising device	323,176	July 28	2407	639	32	462
Mason, Frederick, Ryhope Road, near Sunderland, and J. Conqueror, Hendon, Sunderland, assignors to W. E. Chance, Birmingham, England. Machinery for rolling glass	326,764	Sept. 22	2089	542, 543	32	1419
Mason, H. W. (See Brown, Thomas W., assignor.)						
Mason, Henry, assignor of three-fourths to J. H. Hildreth, J. Riordan, and W. E. S. Trowbridge, Chicago, Ill. Fuel-injector for furnaces	321,736	July 7	432	115	32	81
Mason, Howell R. (See Brooks and Mason.)						
Mason, John, Francesville, Ind. Grain-bin	322,305	July 14	1199	315	32	228
Mason, John L., Davenport, Iowa. Sleigh-runner	323,177	July 28	2407	639	32	462
Mason, William, New Haven, Conn. Drill-chuck	323,178	July 28	2409	639	32	462
Mason, William, New Haven, Conn. Drill-chuck	323,179	July 28	2410	639	32	462
Mason, William, New Haven, Conn. Drill-chuck	323,181	July 28	2421	642	32	465
Mason, William, assignor to Winchester Repeating Arms Company, New Haven, Conn. Machine for trimming cartridge-shells	323,180	July 28	2413	640, 641	32	463
Mason, William, assignor to Winchester Repeating Arms Company, New Haven, Conn. Machine for polishing cartridge-shells	327,290	Sept. 29	2796	727, 728, 729	32	1554
Massingham, George H., Saybrook, Ohio. Saw-setting device	325,951	Sept. 8	969	246	32	1202
Masten, Cornelius E., Boston, Mass. Fire-cracker	321,833	July 7	588	152	32	108
Mather, Alexander C., Montreal, Quebec, Canada. Electrical switch-board	323,182	July 28	2423	642	32	465
Mather, Richard H., Windsor, Conn. Device for preventing sparking in dynamo-electric machines	321,990	July 14	797	208	32	153
Mather, Richard H., Windsor, Conn. Support for the armatures of dynamo electric machines	321,991	July 14	799	208	32	154
Mather, Richard H., Windsor, Conn. Multiplex electric arc lamp	323,516	Aug. 4	175	51	32	554
Mather, Richard H., Windsor, Conn. Regulator for dynamo-electric machines and motors	324,862	Aug. 25	1994	548	32	916
Mather, Richard H., Windsor, Conn. Dynamo-electric machine	326,575	Sept. 22	1793	470	32	1369
Mather, William, Salford, county of Lancaster, England. Apparatus for dyeing, &c.	323,810	Aug. 4	560	159	32	629
Mather, William, Manchester, county of Lancaster, England. Apparatus for continuous bleaching	324,137	Aug. 11	966	272	32	714
Matheson, Peter C., Landisville, N. J. Applying gum-balata for insulating wires	326,132	Sept. 15	1214	.....	32	1253
Matheson, William J. (See Kolb, John H., assignor.)						
Mathews, William, St. Clair, assignor of one-half to F. A. Hill, Philadelphia, Pa. Steam and air injector for furnaces	326,232	Sept. 15	1353	350	32	1278
Mathewson, Jeremiah E., Sheffield, England, assignor to B. C. Tilghman, Philadelphia, Pa. Sand-blast process	321,512	July 7	143	38	32	28
Mathey, Henry, assignor to H. G. Bond, New York, N. Y. Revolving furnace	325,259	Sept. 1	34	10, 11	32	1021
Mathison, Joseph, Lynn, assignor to Standard Button Fastening Company, Boston, Mass. Attaching buttons	326,765	Sept. 22	2091	543	32	1420
Mathison, Joseph, Lynn, assignor to Standard Button Fastening Company, Boston, Mass. Attaching buttons	327,291	Sept. 29	2800	729	32	1555
Matlock, John N. (See Tompkins and Matlock.)						
Matteson, Don C., Stockton, Cal. Thrasher and separator	322,118	July 14	972	253, 254	32	186
Matteson, Jefferson W., Hebron, Pa. Tricycle	323,052	July 28	2243	593	32	430
Matthews, Elias E., Indianapolis, Ind. Combined crib and chair	325,685	Sept. 8	622	158	32	1137
Matthews, Marmaduke, Toronto, Ontario, Canada. Water-heater	322,946	July 28	2085	554	32	402
Matthews, Marmaduke, Toronto, Ontario, Canada. Oil-lamp	324,715	Aug. 18	1787	493	32	870
Mattice, Aaron. (See Williams and Mattice.)						
Mattice, Christopher, Delhi, N. Y. Sap-spile	323,704	Aug. 4	418	120	32	601
Mattice, John C. (See Williams and Mattice.)						
Mattoon, Frank F., Boston, Mass. Plane-holder	323,517	Aug. 4	177	51	32	555
Mattoon, Frank F., Boston, Mass. Fare-box register	324,396	Aug. 18	1354	368, 369	32	791
Matzinger, John, New York, N. Y. Hair-frizzler	323,184	July 28	2426	642	32	465
Manger, George W. (See Showalter and Manger.)						
Maunder, Joseph, Little Britain, Ontario, Canada. Harrow	323,705	Aug. 4	420	120	32	601
Maurer, Henry, New York, N. Y. Fire-proof ceiling	324,716	Aug. 18	1788	493	32	871
Manring, Brofford A., and R. E. Gibbons, assignors of one-third to W. Wiglesworth, Gunnison, Colo. Washing-machine	323,820	Aug. 4	561	160	32	629
Maver, William, Jr., Jersey City, N. J. Telegraphy	326,680	Sept. 22	2252	587	32	1449
Maxey, Abner B., *et al.* (See Collins, Stephen, assignor.)						
Maxim, Hiram S., assignor to A. Vickers and R. R. Symon, London, England. Machine-gun	321,513	July 7	144	39	32	28
Maxim, Hiram S., assignor to A. Vickers and R. R. Symon, London, England. Machine-gun	321,514	July 7	151	40	32	29
Maxson, John F., Genesee, N. Y. Regulating-valve for natural gas	324,571	Aug. 18	1581	436	32	832
Maxson, John F., Hartford, Conn. Mole-trap	326,766	Sept. 22	2092	543	32	1420
Maxwell, Walter H., Cincinnati, Ohio. Cash register and indicator	325,260	Sept. 1	36	11	32	1022
May, Alfred E. (See Nolden and May.)						
May, Charles A., and T. Siddall, Trenton, N. J. Pipe-coupling	325,686	Sept. 8	622	158	32	1137
Mayer, Jacob, New York, N. Y. Underskirt	327,183	Sept. 29	2667	693	32	1530

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Mayer, William T. (See Michaelis, Gustavus, assignor.)						
Mayher, John, East Hampton, Mass. Valve-motion for steam-pumps	327,002	Sept. 29	2418	632	32	1487
Mayor, Lane & Company Brass Works. (See Harder, Victor A., assignor.)						
Mayrhofer, Charles A., assignor of one-half to C. Diener, Vienna, Austria-Hungary. Electric railway-controlling system	324,476	Aug. 18	1455	398, 399, 400	32	808
Mazergue, George, assignor to Bamboo and Brass Manufacturing Company, New York, N. Y. Folding crib	322,947	July 28	2086	555	32	402
McAlister, James R., *et al.* (See Platt, Albert L., assignor.)						
McAlister, William B., *et al.* (See Platt, Albert L., assignor.)						
McArthur, James. (See Cass, McArthur, and Adkins.)						
McAtee, Alfred B., Maysville, Ky. Treadle attachment	325,103	Aug. 25	2311	636	32	976
McBride, Thomas, F. B. Smith, and A. J. Lennox, assignors to Smith, Sutton & Co., Allegheny, Pa. Crucible-furnace	323,876	Aug. 4	633	179	32	643
McCaban, Davis L., Baltimore, Md. Chimney-top	323,945	Aug. 11	798	203	32	668
McCaleb, John L., Benton, Tex. Adding-machine	326,767	Sept. 22	2093	543	32	1420
McCance, David, Newark, N. J. Bit for horses	321,737	July 7	434	115	32	81
McCance, David, Newark, N. J. Tumbling-barrel	322,621	July 21	1634	432	32	313
McCarrick, Charles. (See Cole and McCarrick.)						
McCarter, Samuel, Lancaster, Pa. Padlock	323,185	July 28	2427	643	32	465
McCarthy, Lawrence A., Brooklyn, N. Y. Duplex telegraph	321,992	July 14	800	209	32	154
McCarty, Benjamin F., Rolling Prairie, Ind. Shears	326,768	Sept. 22	2094	544	32	1420
McCarty, Norman, assignor to J. B. Tibbits, Hoosick, N. Y. Electric-arc lamp	325,423	Sept. 1	279	69	32	1068
McCarty, Norman, assignor to J. B. Tibbits, Hoosick, N. Y. Electric-arc lamp	325,424	Sept. 1	281	69	32	1069
McCarty, Robert A., Detroit, Mich. Store-service apparatus	325,427	Sept. 1	285	70	32	1070
McCarty, Robert A., assignor of one-half to G. Maitland, Detroit, Mich. Cash and parcel carrier	325,425	Sept. 1	282	69, 70	32	1069
McCarty, Robert A., assignor of one-half to G. Maitland, Detroit, Mich. Cash and parcel carrier	325,426	Sept. 1	283	70	32	1069
McCarty, Robert A., assignor of one-half to G. Maitland, Detroit, Mich. Store-service apparatus	325,618	Sept. 1	527	133, 134	32	1116
McCarty, Samuel, Aurora, Ill. Railway rail and joint	323,946	Aug. 11	729	204	32	668
McCarty, William B., Russellville, Ky. Stave-jointing machine	321,515	July 7	153	40	32	30
McClain, Edward L., Greenfield, Ohio. Horse-collar pad	321,622	July 7	290	76	32	55
McCloskey, John, New York, N. Y. Apparatus for making plumbers' traps	327,292	Sept. 29	2800	729	32	1555
McClure, Hay W., Inman, Nebr. Hay and straw burner	322,737	July 21	1786	471	32	340
McClure, Jesse D., Jeffersonville, Ind. Book-leaf holder	324,397	Aug. 18	1356	350	32	791
McClurg, James, Allegheny, Pa. Machine for arranging crackers for packing	326,769	Sept. 22	2095	544	32	1420
McColgan, Dennis, Butte City, Mont. Ter. Rotary engine	324,863	Aug. 25	1997	548, 549	32	917
McColl, Alexander, *et al.* (See Skinner, John, assignor.)						
McCombie, William. (See Morgan, Thomas J., assignor.)						
McConnell, Andrew, assignor of one-half to E. W. Swentzel, Pittsburg, Pa. Rock-drill	326,511	Sept. 15	1713	446	32	1346
McConnell, Hugh. (See Whittingham, Joseph F., assignor.)						
McConnell, John. (See Drodzewski and McConnell.)						
McConnell, John, Cleveland, Ohio. Oil-stove	322,949	July 28	2089	555	32	403
McConnell, John, assignor of one-half to J. R. Drodzewski, Erie, Pa. Printer's quoin	326,438	Sept. 15	1695	425	32	1329
McCorkindale, Duncan L., assignor of one-half to S. A. Orr, Troy, N. Y. Rotary lubricator	324,864	Aug. 25	2001	550	32	917
McCormick, Albert, Golden, Colo. Attachment for ore-concentrators	325,104	Aug. 25	2312	637	32	976
McCormick, Charles A., Ripley, Ohio. Machine for making hills for tobacco and other plants	327,004	Sept. 29	2420	633	32	1488
McCormick, Charles W., Emporia, Kans., assignor of one-half to A. Love. Attachment for plows	321,906	July 7	681	177	32	124
McCormick Harvesting Machine Company. (See Baker, William R., assignor.)						
McCormick Harvesting Machine Company. (See Jenkins, Edward W., assignor.)						
McCormick Harvesting Machine Company. (See Pridmore, Henry E., assignor.)						
McCormick, John M., and C. McKinnon, Laurinburg, N. C. Sash-fastener	325,754	Sept. 8	730	182	32	1157
McConn, Frederick H. (See Edwards, Oliver H., assignor.)						
McCoy, Daniel H., Smithville, N. J. Ratchet driving mechanism	322,622	July 21	1634	432	32	313
McCoy, James S., Brooklyn, N. Y. Pneumatic tool	323,053	July 28	2245	593	32	431
McCoy, James S., Brooklyn, N. Y. Pneumatic tool	326,312	Sept. 15	1473	383	32	1302
McCoy, Juan W., San Francisco, Cal., assignor, by mesne assignments, to Wood Tip Cigarette Company of California. Cigarette-machine	324,035	Aug. 11	845	235, 236	32	688
McCoy, Martha, McCoy, Ind. Eaves-trough	327,005	Sept. 29	2422	633	32	1488
McCrystal, Thomas B. (See Low, Joshua, assignor.)						
McCurley, George J., Detroit, Mich. Car-wheel chill	327,293	Sept. 29	2802	729	32	1555
McDermott, James H. (See Ward, John H., assignor.)						
McDevitt, Bernard, Chicago, Ill. Breast-harness	323,436	Aug. 4	67	17, 18	32	535
McDiarmid, Carrie J. (See McDiarmid, Donald G. and C. J.)						
McDiarmid, Donald G. and C. J., South Bend, Ind. Head-rest	324,398	Aug. 18	1357	369	32	791
McDonald, James L., Steelton, Pa. Charging-carriage for rolling-mill furnaces	323,186	July 28	2428	643	32	466
McDonald, Samuel J., Gallatin, Mo. Wire-stretcher	323,054	July 28	2246	594	32	431
McDonnell, John. (See Johnson and McDonnell.)						
McDonnell Odometer Company. (See McDonnell, Patrick E., assignor.)						
McDonnell, Patrick E., assignor to McDonnell Odometer Company, Chicago, Ill. Exercising apparatus	327,403	Sept. 29	2951	770	32	1580
McDougall, Robert, assignor of one-half to W. Sheffer, Auburn, Ind. Whip-socket lock	327,184	Sept. 29	2668	694	32	1530
McDowell, Alverow, Hudson, Ind. Thill-coupling	325,428	Sept. 1	286	70	32	1070
McDowell, Frederick H., Brooklyn, N. Y. Rock and ore crusher	321,834	July 7	589	153	32	108
McEachen, Samuel, Scranton, Pa. Protecting wells	326,439	Sept. 15	1627	425	32	1329
McEachern, James, Wenona, Ill. Coal-chute	324,865	Aug. 25	2003	550	32	918
McElligott, James R., Chicago, Ill. Fire-door casing for furnaces	325,105	Aug. 25	2313	637	32	976
McEwan, Elizabeth L. (See McEwan, James, assignor.)						
McEwan, James, assignor to E. L. McEwan, Detroit, Mich. Steam-boiler	326,440	Sept. 15	1627	426	32	1330
McEwen, James, Manchester, county of Lancaster, England. Apparatus for filling and stirring aerated beverages	322,738	July 21	1787	471, 472	32	341
McFadden, John H., and P. Houser, Williamsport, Pa. Machine for dressing mill-saws	327,294	Sept. 29	2803	730	32	1555
McFarland, Samuel G., assignor to J. L. Mott Iron Works, New York, N. Y. Slop-sink	322,119	July 14	974	254	32	186
McFarland, Samuel G., assignor to Myers Sanitary Depot, New York, N. Y. Overflow-pipe for bath-tubs	327,295	Sept. 29	2805	730	32	1555
McFeely, Thomas. (See Griscom, McFeely, and Butler.)						
McGee, Charlotte A., assignor to Coronet Corset Company, Jackson, Mich. Corset	323,706	Aug. 4	420	120	32	601
McGee, John H., Eurekaton, Tenn. Quilting-frame	326,133	Sept. 15	1215	310	32	1253
McGehee, John, Shawneetown, Ill. Car-coupling	324,132	Aug. 11	987	272	32	714

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McGinley, John R. (See Phillips and Ricketts, assignors.)						
McGinnis, Francis A. (See Coquard and McGinnis.)						
McGinnis, William T., New York, N. Y. Screw-nail	327,296	Sept. 29	2806	730	32	1556
McGovern, George, Richmond, Va. Cotton-press	327,297	Sept. 29	2807	730, 731	32	1556
McGovern, John H., and J. H. Willson, Detroit, Mich. Water-closet ventilator	323,707	Aug. 4	422	121	32	602
McGovern, Thomas, New York, N. Y. Embossed fabric for decorating walls, &c	325,687	Sept. 8	623	158	32	1138
McGregor, William, and T. M. Flenniken, deceased, assignors to W. Lathrop, Rockford, Ill. Grain-adjusting mechanism for grain-binding harvesters	323,187	July 28	2430	643	32	466
McGrory, Thomas, Philadelphia, Pa. Insulator	323,055	July 28	2247	594	32	431
McGuire, Elwood W. (See Dille and McGuire.)						
McHale, George W. (See Briody and McHale.)						
McHugh, Hugh, and T. L. Manchester, New Bedford, Mass. Machine for molding or embossing plastic material	324,399	Aug. 18	1358	369	32	791
McIntyre, William M., Pittsburg, Pa. Sad-iron holder	326,313	Sept. 15	1474	383	32	1302
McKaig, Eddy T., Chicago, Ill. Drill-chuck	324,139	Aug. 11	989	272	32	714
McKaig, Merwin. (See Muncaster, Walter J., assignor.)						
McKay, Andrew B., Woodstock, Ontario, Canada. Thill-coupling	325,352	Sept. 1	160	43	32	1045
McKay & Copeland Lasting Machine Company. (See Brock, Matthias, assignor.)						
McKay, Isaac M., Pomona, Cal. Pruning-shears	326,314	Sept. 15	1476	384	32	1302
McKay, Joseph L., Neoga, Ill. Convertible chair	322,950	July 28	2000	556	32	404
McKee, J. R. (See Gearing, Charles M., assignor.)						
McKeen, Thomas L., Easton, Pa. Automatic valve for sewer-pipes	325,553	Sept. 1	455	413	32	1102
McKeen, Thomas L., Easton, Pa. Steam-radiator	325,554	Sept. 1	456	114	32	1103
McKeen, Thomas L., Easton, Pa. Car-coupling	325,847	Sept. 8	846	212	32	1178
McKeen, Thomas L., Easton, Pa. Car-coupling	325,848	Sept. 8	847	212	32	1178
McKendrick, John, assignor to W. F. Monaghan, New York, N. Y., S. Hartley and C. C. Hodgman, Newark, N. J. Bark-mill	325,849	Sept. 8	848	213	32	1178
McKenna, Charles F. (See Letzkus, John, assignor.)						
McKenna, Robert, White, Tenn. Speed-governor	326,881	Sept. 22	2254	587	32	1450
McKenney, Jacob D., and T. W. Brown, Chattanooga, Tenn. Cartridge-loader	327,185	Sept. 29	2669	694	32	1530
McKenzie, Hugh. (See Seymour, Oliver E., assignor.)						
McKenzie, John, West Troy, N. Y. Barrel-filler	323,708	Aug. 4	423	121	32	602
McKenzie, William E., Zionsville, Ind. Blackboard	323,350	July 28	2661	708	32	506
McKhann, Charles F. (See Hecker and McKhann.)						
McKibben, Frank S., Tacoma, Wash. Ter. Wind-motor	327,186	Sept. 29	2671	694	32	1531
McKim, Daniel, *et al.* (See Roach, Michael J., assignor.)						
McKim, David F., Cable City, Mont. Ter. Ore-separator	325,429	Sept. 1	287	71	32	1070
McKim, George W., Martin's Ferry, Ohio. Nail-plate-feeding machine	324,572	Aug. 18	1582	436, 437	32	832
McKinney, Isaac R., East Portland, Oreg. Apparatus for separating fine gold from sand, &c.	321,623	July 7	291	76	32	56
McKinnon, Calvin. (See McCormick and McKinnon.)						
McKinnon, Duncan W., North Sydney, Nova Scotia, Canada. End-gate fastening	322,192	July 14	1069	277	32	403
McKinnon, John D., Bay City, Mich. Grate-bar	321,442	July 7	37	10	32	10
McLachlan, John C., London, Ontario, Canada, assignor to Johnston Harvester Company, Batavia, N. Y. Grain-binder	326,233	Sept. 15	1354	350	32	1279
McLaughlin, Henry, Bangor, Me. Coaling-locomotives	323,586	Aug. 4	264	77	32	571
McLaughlin, William, Auckland, New Zealand. Hedge-trimmer	322,193	July 14	1069	278	32	403
McLean, John, Camden, Ala. Wrench	325,001	Aug. 25	2188	599	32	951
McLean, John R., *et al.* (See Gifford, Ezra N., assignor.)						
McLean, Washington, *et al.* (See Gifford, Ezra N., assignor.)						
McLellan, Donald, Woodstock, Ontario, Canada. Mop-head	325,261	Sept. 1	40	12	32	1023
McLendon, Elijah W. and J. W., Martin's Station, Ala. Seed-planter and fertilizer-distributer	322,306	July 14	1199	315	32	228
McLendon, Joseph W. (See McLendon, Elijah W. and J. W.)						
McLoughlin, Edmund, *et al.* (See Campbell, Andrew, assignor.)						
McLoughlin, John, *et al.* (See Campbell, Andrew, assignor.)						
McLoughlin, John E. (See Hanford and McLoughlin.)						
McMackin, Peter, Lonsdale, R. I. Underground conductor	327,458	Sept. 29	3017	798	32	1591
McManus, James, New York, N. Y. Hand-strap for cars	323,188	July 28	2431	643	32	466
McManus, Samuel, Marshalltown, Iowa. Railway-track gage and level	323,351	July 28	2662	708, 709	32	507
McMartin, James I., Johnstown, N. Y., assignor of one-half to A. Levering, Lafayette, Ind. Glove and glove-fastening	326,770	Sept. 22	2096	544	32	1421
McMaster, Horace P., Leonardsburg, Ohio. Vinegar-generator	323,050	July 28	2248	594	32	431
McMickin, Levi S., Cold Springs, Tex. Wire-stretcher	323,947	Aug. 11	730	204	32	668
McMillan, George J., Teachey's, N. C. Seed-distributer	325,106	Aug. 25	2314	637	32	976
McMullen, John C., St. Augustine, Pa. Automatic swinging chair	323,709	Aug. 4	424	121	32	602
McMurray, Thomas J., and W. B. Fisher, Marion, Ohio. Sulky	324,140	Aug. 11	990	272, 273	32	715
McNab, James, assignor to United States Chemical Company, Camden, N. J. Manufacturing sulphuric acid	325,262	Sept. 1	40	12	32	1023
McNab, James, assignor to United States Chemical Company, Camden, N. J. Apparatus for the manufacture of sulphuric acid	325,263	Sept. 1	42	12, 13	32	1023
McNair, Eben O. (See Duncan, Joseph M., assignor.)						
McNaughton, John G., Marion, N. C. Fruit-drier	326,134	Sept. 15	1215	310	32	1254
McNeal, James, assignor of one-half to C. H. Seaton, Washington, D. C. Fishing-float	322,623	July 21	1636	432	32	313
McNeil, James C., Akron, Ohio. Steam-boiler	321,624	July 7	291	77	32	56
McPherson, James A., Brunswick, N. Y. Whip-rack	322,739	July 21	1788	472	32	347
McPherson, Leon O., Jefferson township, Cook county, Ill. Quadruplex telegraph	326,441	Sept. 15	1628	426	32	1330
McRae, John D., Baldwinsville, N. Y. Steam-governor	321,993	July 14	801	209, 210	32	154
McRoberts, Mortimer, Chicago, Ill. Lantern	324,573	Aug. 18	1586	437	32	833
McSpirit, John, Jersey City, N. J. Pick attachment for dredge-buckets						
McTammany, Alexander. (See McTammany, John, assignor.)						
McTammany, John, assignor to A. McTammany, Worcester, Mass. Mechanical musical instrument	321,738	July 7	435	116	32	81
McTighe, James J., Freeport, Pa. Hot-air engine	321,739	July 7	438	116, 117	32	82
Mead, Albert G., assignor of one-half to M. A. Kent, Boston, Mass. Button	325,430	Sept. 1	289	71	32	1071
Mead, Albert G., Boston, Mass., assignor to Ball and Socket Fastener Company, Nashua, N. H. Button	325,688	Sept. 8	624	158	32	1138
Mead, Charles R., Community, N. Y. Lathe-chuck	321,740	July 7	440	117	32	82
Mead, Chester K., Des Moines, Iowa. Telephone-switch-board plug	325,952	Sept. 8	970	247	32	1202

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Mead, Solomon, New Haven, Conn. Friction-clutch	323,189	July 28	2431	644	32	466
Meade, George H., Quincy, assignor to M. Bray, Newton, Mass. Anvil for rivet-setting machines	325,689	Sept. 8	627	159	32	1139
Mears, John M., and R. Jennings, Sedalia, Mo. Mattress-machine	322,740	July 21	1793	472, 473	32	342
Meats, John T., Taunton, Mass. Spindle-bearing for mules and jacks	324,866	Aug. 25	2004	550	32	918
Meatyard, Edward B., Lake Geneva, Wis. Rolling-mill	324,867	Aug. 25	2006	550, 551	32	918
Mecay, Samuel P., Kilbourn, Ohio. Washing-machine	327,003	Sept. 29	2419	632	32	1487
Mecham, George W., Columbia, Tex. Wheel	324,141	Aug. 11	991	273	32	715
Mecke, Hermann, New York, N. Y. Folding flower-stand	325,850	Sept. 8	850	213	32	1178
Meech, Harrison B., Cleveland, Ohio. Apparatus for disintegrating ores	321,835	July 7	591	153	32	108
Meier, Friedrich C. A., Walkenried-on-the-Harz, Brunswick, Germany. Apparatus for manufacturing plates, tubes, and other articles from clay, cement, plaster-of-paris, &c	323,190	July 28	2432	644	32	467
Meigs, Carlos D., Au Sable Forks, N. Y. Car-coupling	326,442	Sept. 15	1629	426	32	1330
Meikle & Company, Thomas. (See Meikle, Thomas, assignor.)						
Meikle, Thomas, assignor to T. Meikle & Company, Louisville, Ky. Cotton-seed planter	326,771	Sept. 22	2097	545	32	1421
Meley, Jane, administratrix. (See Taaffe, Henry M.)						
Melick, Peter M., Newark, N. J. Blind-slat fastener	321,836	July 7	592	153	32	108
Mellett, Frank, Sumter, S. C. Back-band buckle	322,624	July 21	1638	433	32	314
Mellinger, Christian K., Philadelphia, Pa. Shifting seat for vehicles	321,625	July 7	292	77	32	56
Mellinger, Samuel, Mount Pleasant, Pa. Horse hay-rake	322,948	July 28	2089	555	32	403
Mellor, William. (See Moon, Hermon, assignor.)						
Melohn, Siegfried L. F., Milwaukee, Wis. Window-mirror	323,191	July 28	2434	645	32	467
Meltzer, David. (See Meltzer and Baker.)						
Meltzer, John H. and D., and J. J. Baker, Meltzer, Ind. Straw-stacker	323,352	July 28	2663	709	32	507
Melzer, Adolph and C., Evansville, Ind. Compound for purifying water	322,839	July 21	1928	.....	32	367
Melzer, Charles. (See Melzer, Adolph and C.)						
Menard, George. (See Wixon and Menard.)						
Mendenhall, Henry W., agent. (See Hunt, Franklin B., assignor.)						
Mendenhall, Stephen C., Richmond, Ind. Anti-friction bearing for car-wheels	321,516	July 7	155	40, 41	32	30
Meneely, George R., Albany, and J. Gibbons, assignors to Meneely Hardware Company, West Troy, N. Y. Car-axle oiler	322,625	July 21	1638	433	32	314
Meneely Hardware Company. (See Gibbons, John, assignor.)						
Meneely Hardware Company. (See Meneely and Gibbons, assignors.)						
Mengel, Charles S. (See Hughes and Mengel.)						
Menges, Philipp, New York, N. Y. Piano-action	321,517	July 7	156	41, 42	32	31
Menges, Philipp, New York, N. Y. Repeating-action for upright pianos	326,576	Sept. 22	1795	471	32	1369
Mentel, Ferdinand L., Cincinnati, Ohio. Thawing-machine	325,002	Aug. 25	2189	599	32	951
Mercer, Andrew J., Burdenville, assignor to J. M. Mercer and L. E. White, Burden, Kans. Washing-machine	322,840	July 21	1929	510	32	367
Mercer, James M., *et al.* (See Mercer, Andrew J., assignor.)						
Mergenthaler, Ottmar, Baltimore, Md. Shaft-bearing	324,400	Aug. 18	1359	370	32	792
Merino Shoe Company. (See Hawley, Alfred A., assignor.)						
Merrell, Frederick A., Chicago, Ill. Perfumed advertising-packet	325,107	Aug. 25	2316	637	32	976
Merrill, Alfred K., Brooklyn, assignor to G. A. Goldsmith, New York, N. Y. Manufacture of paper cuffs	324,267	Aug. 11	1179	320	32	749
Merrill, Bisbee B., Brewer, Me. Tubular lantern	323,710	Aug. 4	425	122	32	603
Merrill, Charles A., Bay City, Mich. Salt-grainer	324,142	Aug. 11	992	273, 274	32	715
Merrill, Hiram T., Chicago, Ill. Piano-stool	324,143	Aug. 11	994	274	32	715
Merrill, Jonathan G., Quincy, assignor to M. Merrill, Boston, Mass. Protecting buildings from fire	323,518	Aug. 4	178	52	32	555
Merrill, Joshua. (See Woodbury, Merrill, and Patten.)						
Merrill, Joshua. (See Woodbury, Merrill, Patten, and Woodbury.)						
Merrill, Moody. (See Merrill, Jonathan G., assignor.)						
Merrill, Rufus S., assignor to Acme Paper Box Company, Boston, Mass. Folding box	325,755	Sept. 8	731	182	32	1157
Merrill, Rufus S., assignor to Acme Paper Box Company, Boston, Mass. Folding box	325,757	Sept. 8	731	183	32	1157
Merrill, Rufus S., assignor to Acme Paper Box Company, Boston, Mass. Paper box	325,758	Sept. 8	732	183	32	1157
Merrill, Rufus S., assignor to Acme Paper Box Company, Boston, Mass. Folding box	326,577	Sept. 22	1797	471	32	1369
Merriman, Lewis, assignor of one-half to W. S. Hinman, Beloit, Wis. House-ventilation	323,587	Aug. 4	265	78	32	571
Merritt, Henry W., assignor to W. H. Ireland, Boston, Mass. Plastic compound for walls, &c	322,307	July 14	1200	.....	32	228
Merritt, Samuel F., Springfield, Mass. Ear-wire catch for car-rings	326,135	Sept. 15	1216	310	32	1254
Mersereau & Co., William T. (See Pine, William K., assignor.)						
Mershon, George W., Newark, N. J. Draw-bridge joint	323,711	Aug. 4	427	122	32	603
Mershon, Samuel D., Rahway, N. J. Valve-oiler	324,574	Aug. 18	1586	437	32	833
Mertsheimer, Frederick, and S. Otis, Denver, Colo. Grease and water trap for air-brakes	324,575	Aug. 18	1587	437	32	833
Merz, Franz J., Newark, N. J. Water-closet	322,626	July 21	1640	433, 434	32	314
Merz, Theodore C., Detroit, Mich. Skate-clamp	322,464	July 21	1421	372	32	275
Merz, Theodore C., Detroit, Mich. Capsule-machine	324,868	Aug. 25	2007	551	32	918
Merz, Theodore C., Detroit, Mich. Capsule-joining machine	326,578	Sept. 22	1797	472	32	1370
Meserve, James W., *et al.* (See Hanson, Freeman, assignor.)						
Messinger, George F., Stockertown, Pa. Grain harvester and binder	326,443	Sept. 15	1630	426	32	1330
Metcalf, Erastus L., Franklin, Mass. Driving-check for horses	322,627	July 21	1640	434	32	314
Metcalf, Erastus L., Franklin, Mass. Driving-check for horses	323,948	Aug. 11	731	204	32	668
Metcalf, George A. (See Hicks and Metcalf.)						
Metcalf, Tracy M., St. Paul, Minn. Ticket-holder	324,669	Aug. 25	2008	551	32	919
Metcalfe, Charles W., Hopkinsville, Ky. Saw-mill set-works	324,576	Aug. 18	1588	438	32	834
Metherell, Thomas. (See Metherell and Keiser, assignors.)						
Metherell, William H., and A. Keiser, said Keiser assignor to T. Metherell, West Brighton, N. Y. Shifting thill for sleighs	323,821	Aug. 4	563	160	32	629
Mettler, John J., Cleveland, Ohio. Reclining-chair	327,298	Sept. 29	2807	731	32	1556
Metz, John W., Manchester, Ohio. Safety-brake for elevators	324,144	Aug. 11	995	274	32	715
Metzger, Henry, *et al.* (See Hese, Godfrey, assignor.)						
Meurer, Otto H., and G. N. Klein, Philadelphia, Pa. Wardrobe-trunk	325,555	Sept. 1	457	114	32	1103
Meusebach, Otto C., Marion, Tex. Car-coupling	325,851	Sept. 8	851	214	32	1179
Meyer, Henry K. (See Liebmann, Hermann F. W., assignor.)						
Meyer, John, Covington, Ky. Beer-cooler	323,712	Aug. 4	429	123	32	603
Meyer, John, Covington, Ky. Automatic feeder and register for barrel-elevators	327,007	Sept. 29	2423	633, 634	32	1488
Meyer, John C., New York, N. Y. Coffin	326,315	Sept. 15	1476	384	32	1302

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Meyer, Sniffin Company. (See Bunting, William, Jr., assignor.)						
Meyerer, Henry. (See Gedge and Meyerer.)						
Meyering, Charles F., Rochester, N. Y. Key-board attachment for musical instruments	326,444	Sept. 15	1631	427	32	1331
Meyers, Fredrick, Brooklyn, N. Y. Cabinet for papers of needles	324,717	Aug. 18	1789	494	32	871
Meyers, Frederick H., deceased, (M. Meyers administratrix,) Philadelphia, Pa. Emery and sand-paper machine for dressing leather	325,431	Sept. 1	290	71	32	1071
Meyers, Margaret, administratrix. (See Meyers, Frederick H.)						
Meyers, Otto. (See Overin and Meyers.)						
Meylor, Thomas, St. Louis, Mo. Grain-drier	323,057	July 28	2249	594	32	432
Meyrose, Ferdinand, St. Louis, Mo. Lantern	326,136	Sept. 15	1217	311	32	1254
Michael, William S., and D. W. Geib, assignors of one-third to J. Hoover, Lancaster, Pa. Sash-balance	321,994	July 14	804	210	32	154
Michaelis, Gustavus, assignor of one-half to W. T. Mayer, Albany, N. Y. Manufacture of chloroform and of purified acetates	322,194	July 14	1070	.....	32	203
Michaels, Dennis, Hopedale, Ohio. Cutting apparatus for harvesters	321,837	July 7	593	153	32	109
Michaels, Oliver J., assignor of one-third to C. W. Provost, Pittsburg, Pa. Car-coupling	326,882	Sept. 22	2253	587	32	1450
Michelson, Sigismund M., Milwaukee, Wis. Caster	322,308	July 14	1201	315	32	228
Michelson, Sigismund M., assignor of one-third to G. Sylvester and A. Richter, Jr., Milwaukee, Wis. Caster. (Reissue)	10,627	July 21	2000	528	32	380
Middleton, Allen, Philadelphia, Pa. Car-coupling	325,953	Sept. 8	971	247	32	1202
Middleton, Arthur, Jr., Pelzer, S. C. Tension-regulator for the let-off motions of looms	327,187	Sept. 29	2672	694	32	1531
Midwood, Henry, Providence, R. I. Carriage and wagon jack	327,096	Sept. 29	2550	664	32	1500
Miehle, Robert, Chicago, Ill. Printing-machine	322,309	July 14	1203	315 316 317	32	228
Mika, Emanuel A. and M. C., Halstead, Kans. Stock-watering device	324,870	Aug. 25	2009	551	32	919
Mika, Marion C. (See Mika, Emanuel A. and M. C.)						
Miles, Edwin. (See Barnard and Miles.)						
Miles, Peter L., administrator. (See Reset, Charles F.)						
Miles, William A., Copake Iron Works, N. Y. Joint for metal tubes	325,556	Sept. 1	458	114	32	1103
Miles, William A., Copake Iron Works, N. Y. Separator for sizing ore, &c	325,557	Sept. 1	459	114 115	32	1103
Miller, Aaron W., W. Bower, and A. W. Coleman, Newark, N. J. Apparatus for bleaching fruit	321,741	July 7	442	117	32	82
Miller, Abraham, assignor to Newark Machine Company, Newark, Ohio. Recleaner for grain and seed separators	322,465	July 21	1423	372	32	275
Miller, Abraham, assignor to Newark Machine Company, Newark, Ohio. Belt-tightener	325,558	Sept. 1	460	115	32	1104
Miller, Adam, London, England. Car-ventilator	325,003	Aug. 25	2190	599 600	32	951
Miller, Albert F., assignor, by mesne assignments, to Burr Bed Company, Chicago, Ill. Bedstead	321,742	July 7	443	117	32	82
Miller, Charles, Auburn, N. Y. Grain-binder	323,353	July 28	2064	710	32	507
Miller, Cornelius F., Hamilton, Ohio. Roller-skate	321,443	July 7	38	11	32	10
Miller, Daniel J., Chicago, Ill. Traction-rope railway	325,004	Aug. 25	2191	600	32	951
Miller, Edward J., Farmersville, Pa. Snap-hook	327,008	Sept. 29	2426	634	32	1488
Miller, Eli A., Conneaut, and W. H. Brown, North Kingsville, Ohio. Pump	324,401	Aug. 18	1360	370	32	792
Miller, Frank L., assignor of one-half to G. Preble, Indianapolis, Ind. Nut-lock	322,628	July 21	1642	434	32	314
Miller, George J., Lake View, assignor to D. W. Ryan, Chicago, Ill. Machine for crozing and howeling barrels	326,234	Sept. 15	1355	350	32	1279
Miller, Horace M., Wabash, Ind. Roofing-seamer	325,108	Aug. 25	2316	638	32	977
Miller, Jacob B., Sligo, Pa. Baling-press	326,579	Sept. 22	1799	472	32	1370
Miller, John W. (See Walker, Thomas M., assignor.)						
Miller, Joseph B., Wilkes-Barré, Pa. Grate-bar	325,852	Sept. 8	852	214	32	1179
Miller, Julian T., Branchville, Tex. Cotton-chopper	323,192	July 28	2435	645	32	467
Miller, Lewis. (See Marshall, Thomas C., assignor.)						
Miller, Lewis. (See Shepard, Sylvander C., assignor.)						
Miller, Lewis, Akron, Ohio. Grain-binder	322,951	July 28	2092	556	32	404
Miller, Newton W., Marshall, Ind. Adjusting mechanism for harvesters	323,588	Aug. 4	266	78	32	571
Miller, Tedor T., Hico, Tex. Seeding-machine	322,952	July 28	2094	557	32	404
Miller, Tedor T., Hico, Tex. Sulky-plow	322,953	July 28	2095	557	32	404
Miller, Thomas. (See Kauffeld, Elias, assignor.)						
Miller, Walker C., Wortham, Tex. Combination-tool	324,145	Aug. 11	996	274	32	716
Miller, William L. (See Mitchell, George R., assignor.)						
Milligan, Charles A., Boston, Mass., assignor to Excelsior Self Leveling Berth and Automatic Ladder Company, Portland, Me. Ship's berth	322,466	July 21	1423	372	32	275
Milligan, Elizabeth R., executrix. (See Milligan, James.)						
Milligan, James, deceased, Brooklyn, N. Y., (E. R. Milligan, executrix.) Plate-printing machinery	321,743	July 7	445	118	32	83
Milliken, Frank J. (See Smith and Milliken.)						
Millner, George W., Charlottetown, Prince Edward Island, Canada. Creaming-can	321,744	July 7	446	118	32	83
Mills, Chauncey W., Rochester, N. Y. Lubricator	325,264	Sept. 1	43	13	32	1024
Mills, Daniel, assignor to Philadelphia Machinery Company, Philadelphia, Pa. Portable milling-machine	325,559	Sept. 1	461	115	32	1104
Mills, George H. (See Campbell and Mills.)						
Mills, Mortimer B., and W. Hanley, Chicago, Ill. Signal	323,949	Aug. 11	732	205	32	668
Millspaugh, William, Middletown, N. Y. Draw-shave	325,759	Sept. 8	733	183	32	1157
Milne, Margaret, Brooklyn, N. Y. Bouquet-fastening	325,853	Sept. 8	853	214	32	1179
Minck, Friedrich W., Vienna, Austria-Hungary. Apparatus for indicating the flexure of car-springs	324,949	Aug. 25	2110	577	32	939
Minea, Peter, St. Paul, Minn. Vise	321,995	July 14	805	210	32	155
Miner, Ephraim. (See Walker and Miner.)						
Miner, Reuben F., Clam Falls, Wis. Belt-conveyer	324,402	Aug. 18	1361	370	32	792
Mingle, George W., assignor of two-thirds to E. W. Wilkins and W. T. Brown, Philadelphia, Pa. Lightning-arrester for line-wires	323,822	Aug. 4	564	160	32	629
Minneapolis Harvester Works. (See Appleby, John F., assignor.)						
Minor, George G., Cincinnati, Ohio, and J. D. Sullivan, Covington, Ky. Feed-water heater	326,580	Sept. 22	1802	473	32	1371
Misener, Richard O., Waco, Tex. Can-opener	323,193	July 28	2435	645	32	467
Miskimen, George W., Newcomerstown, Ohio. Seeding-machine	322,841	July 21	1930	510	32	367
Mitchell, George R., assignor of one-third to W. L. Miller, Chillicothe, Ohio Device for transmitting power	326,914	Sept. 22	2301	602	32	1458
Mitchell, John B., assignor of three-fourths to A. H. Sawyer and J. S. Morris, Portland, Me. Ready light or taper	323,058	July 28	2250	595	32	432
Mitchell, John S., Milford, Conn. Hame	324,950	Aug. 25	2112	577	32	939

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Mitchell, John S., Milford, Conn. Die for manufacturing hames	324,951	Aug. 25	2113	578	32	939
Mitchell & Lewis Company. (See Tecktonius, Emil C., assignor.)						
Mitchell, Noah, New York, N. Y. Hand-grenade fire-extinguisher	324,577	Aug. 18	1590	438	32	834
Mitchell, Oliver F., assignor of one-half to W. H. Swinehart, Merrill, Wis. Table-leg	321,907	July 7	682	177	32	124
Mitchell, Ransom Y., Bradford, Pa. Culm-conveyer	326,445	Sept. 15	1632	427	32	1331
Mitchell, Ransom Y., Bradford, Pa. Transporting and sorting culm	326,446	Sept. 15	1633	427	32	1331
Mitchell, Robert, Atlanta, Ga. Wardrobe-bedstead	326,316	Sept. 15	1476	384	32	1302
Mitchell, Tobias P., Haverhill, Mass. Boot or shoe	322,467	July 21	1425	373	32	275
Mittendorf, John H. (See Mittendorf, William and J. H.)						
Mittendorf, William and J. H., Dayton, Ohio. Liquid-measure	325,265	Sept. 1	45	13	32	1024
Mixer, Scott, Cincinnati, Ohio. Manufacture of artificial stone or marble	326,317	Sept. 15	1478	.....	32	1303
Mock, John F., Elt, Ohio. Attachment for swinging gates	324,871	Aug. 25	2011	552	32	919
Moebs, George, Detroit, Mich. Cigar-bunching machine. (Reissue)	10,629	July 28	2708	721	32	516
Moeller, Jacob, Manitowoc, assignor of one-half to E. Sondermann, Manitowoc County, Wis. Table	324,718	Aug. 18	1790	494	32	871
Moënoz, Paul, Passaic, N. J. Bristle-bunching tool	324,403	Aug. 18	1362	370 371	32	792
Moffatt, Richard R., assignor to Brooklyn Electric Construction Company, Brooklyn, N. Y. Regulator for dynamo or magneto electric machines	323,059	July 28	2250	595	32	432
Mohawk Valley Scotch Cap Factory. (See Hanford and McLoughlin, assignors.)						
Mohrstadt, Gustavo W., Birmingham, England. Fastener	327,009	Sept. 29	2427	634	32	1489
Moise, Lionel H., San Francisco, Cal. Fruit and vegetable preserving apparatus	325,954	Sept. 8	973	247 248	32	1203
Moline Plow Company. (See Lindgren, August, assignor.)						
Moline Plow Company. (See Sowers, Oliver P., assignor.)						
Monk, Henry, Lewiston, Maine. Elevated railway	322,954	July 28	2096	557 558	32	405
Monaghan, William F., *et al.* (See McKendrick, John, assignor.)						
Monarch, Martin V., Owensborough, Ky. Still	325,955	Sept. 8	974	248	32	1203
Monday, Robert O., assignor of one-half to G. T. Atkins, Dallas, Tex. Cloth-cutting apparatus	324,404	Aug. 18	1365	371	32	793
Monitor Works. (See Davey, Windsor S., assignor.)						
Monroe, William L., Omaha, Nebr. Churn-dasher	326,318	Sept. 15	1479	385	32	1303
Montague, J. B., *et al.* (See Harris, James G., assignor.)						
Montague, John B., *et al.* (See Malone, Alexander and B. A., assignors.)						
Monteiro, Garcia, assignor to himself and E. A. Chase, New Bedford, Mass. Calendar cuff-button	325,005	Aug. 25	2192	600	32	952
Montgomery, Frederick, Waterloo, N. Y. Removing fiber from cotton-seed	322,842	July 21	1931	.....	32	367
Montgomery, Thomas J. (See Swan, Joseph W., assignor.)						
Montross, Newman E. (See Serrell, Harold, assignor.)						
Montz, William H., Lehighton, Pa. Car-truck	322,741	July 21	1794	473 474	32	342
Moody, Jonathan C., Johnson's Station, Ind. Churn	322,742	July 21	1795	474	32	342
Moody, William C., Oakland, Cal. Fruit-jar	324,036	Aug. 11	847	236	32	689
Mooers, Henry, Toledo, Ohio. Car-coupling	323,950	Aug. 11	733	205	32	668
Moon, Hermon, assignor of one-half to W. Mellor, Grove City, Pa. Rotary steam-engine	322,389	July 14	1317	343	32	250
Mooney, John, East Saginaw, Mich. Feeder for roller-mills	326,512	Sept. 15	1714	447	32	1347
Moore, Charles C., *et al.* (See Biven, Frederick, assignor.)						
Moore, Charles T. (See Hart, Margaret, assignor.)						
Moore, Edward Y., Chicago, Ill. Sliding-door fixture	321,518	July 7	157	42	32	31
Moore, Elizabeth M., West Kensington, London, England. Fastening for belts, bandages, &c	324,719	Aug. 18	1791	494	32	871
Moore, Farnsworth G., Brooklyn, N. Y. Bustle	323,519	Aug. 4	180	52	32	555
Moore, H. Philip. (See Moore, Thomas W., assignor.)						
Moore, Ira W., assignor one-half to H. Salomon, New York, N. Y. Combined table and writing-desk	325,956	Sept. 8	975	248	32	1203
Moore, James M. (See Ford and Moore.)						
Moore, Jonathan, Brooklyn, N. Y. Drinking-trough for animals	321,626	July 7	293	78	32	56
Moore, Jonathan J., and J. A. Ball, assignors of one-half to J. C. Taylor, Thorntown, Ind. Folding conveyer-trough for straw-stackers	324,477	Aug. 18	1462	400	32	809
Moore, Joseph, San Francisco, Cal. Mine-draining machinery	322,955	July 28	2097	558	32	405
Moore, Joseph, San Francisco, Cal. Governor for steam-engines	322,956	July 28	2099	559	32	405
Moore, Joseph, San Francisco, Cal. Hydraulic-ram elevator	322,957	July 28	2100	559	32	405
Moore, N. Grier, administrator. (See Stock, Charles F.)						
Moore, Samuel J. (See Cooper, Thomas G., assignor.)						
Moore, Thomas W., Plainfield, N. J., assignor to H. P. Moore, Pima county, Arizona Ter. Splint fabric for chairs and other articles	323,060	July 28	2252	595	32	432
Moore, V. Mumford, Chicago, Ill. Vise	326,137	Sept. 15	1218	311	32	1254
Moore, V. Mumford, Chicago, Ill. Vise	326,138	Sept. 15	1219	311	32	1254
Moore, W. Henry. (See Moore, William T., assignor.)						
Moore, William T., Richview, assignor of one-half to W. H. Moore, Nashville, Ill. Animal-trap	326,513	Sept. 15	1715	447	32	1347
Moran, John D., New York, N. Y. Metallic barrel	326,669	Sept. 22	1926	507	32	1392
Moran, John H., Licking, Mo. Ash-leach	326,581	Sept. 22	1804	473	32	1371
Morehouse, Charles L., Brooklyn, N. Y. Breast-pad	326,915	Sept. 22	2302	602	32	1458
Morfit, Clarence, New York, N. Y. Stationary wash-stand	323,437	Aug. 4	68	18	32	535
Morgan Barbed Wire Company. (See Morgan, Thomas H., assignor.)						
Morgan, Benjamin B., Ann Arbor, Mich. Car-coupling	325,957	Sept. 8	976	248	32	1203
Morgan, J. Stewart. (See Stanley, Lucius T., assignor.)						
Morgan, Thomas H., assignor to Morgan Barbed Wire Company, (limited,) Pittsburg, Pa. Machine for barbing metallic strips	323,713	Aug. 4	429	123	32	604
Morgan, Thomas J., Woodlawn Park, assignor of one-half to W. McCombie, Chicago, Ill. Knob attachment	326,048	Sept. 8	1094	279	32	1224
Morger, Henry, Chicago, Ill. Convertible chair and bed	324,268	Aug. 11	1180	320	32	749
Mork, Charles G. (See Seaver and Mork.)						
Morlet, Charles, and E. Dupuis, New York, N. Y. Repeating-watch	325,854	Sept. 8	853	214 215	32	1179
Morley, E. Watson. (See Sprague, Oscar L., assignor.)						
Morley, John. (See Jennings and Morley.)						
Morley, Samuel, Stockton-on-Tees, county of Durham, assignor to Whitaker Brothers, Horsforth, England. Brush	324,037	Aug. 11	848	236	32	689
Morose, Joseph A., Detroit, Mich. Scaffold-binder	326,514	Sept. 15	1716	447	32	1347

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Morral, John. (See Titus and Morral.)						
Morral, Samuel E. (See Titus and Morral.)						
Morrell, Ephraim B. (See Williams and Morrell.)						
Morrell, Robert. (See Peck, Eugene H., assignor.)						
Morrill, Alfred A., Burnt Woods, Oreg. Railway-signal	327,299	Sept. 29	2809	732	32	1556
Morrill, Amos, *et al.* (See Watkins, Gardner A., assignor.)						
Morrill, Osgood, Salisbury, Mass. Carriage-body	324,333	Aug. 11	1269	344	32	767
Morris, Henry B., assignor to Autophone Company, Ithaca, N. Y. Barrel for mechanical musical instruments	322,390	July 14	1318	343	32	250
Morris, John S., *et al.* (See Mitchell, John B., assignor.)						
Morrison, Alexander H., and W. A. Preston, St. Joseph, Mich. Shipping-box	323,714	Aug. 4	431	123	32	604
Morrison, Andrew J., West Troy, N. Y., assignor of one-half to J. N. Baxter. Rutland, Vt. Mail-bag	323,194	July 28	2437	{645 {646	32	467
Morrison, Joshua H., Connersville, Ind. Dental-bracket case	325,500	Sept. 1	462	115	32	1104
Morrison, Robert T., Jr., Medina, Ohio. Car-coupling	323,195	July 28	2438	646	32	468
Morrow, Henry W., Wilmington, Del. Treatment of paper and other fibrous material for journal-bearings, belting, &c	322,629	July 21	1642	434	32	314
Morse, E. Fleet, Ithaca, N. Y. Vehicle-spring	324,872	Aug. 25	2013	552	32	930
Morse, John B., Providence, R. I. Game	324,873	Aug. 25	2014	552	32	930
Morse, Leonard W., Jr., Mystic River, Conn. Paper-cutting machine	326,916	Sept. 22	2303	603	32	1458
Morse, Orville M., assignor to Knickerbocker Company, Jackson, Mich. Belt-gearing	326,670	Sept. 22	1927	507	32	1392
Morse, Reuben S., Vienna, N. Y. Holdback	321,898	July 7	594	154	32	109
Morse, Waldo G., Rochester, N. Y. Copying process	325,353	Sept. 1	160	43	32	1045
Morton, Horace J., Chicago, Ill. Swing-joint for steam	324,874	Aug. 25	2015	552	32	930
Morton, James, Le Roy, N. Y. Shoe	324,405	Aug. 18	1366	371	32	793
Morton, James, Norwich, Conn. Speed-governor	326,235	Sept. 15	1357	351	32	1279
Morton, James W., Orange C. H., Va. Nut-lock	323,715	Aug. 4	432	123	32	604
Morton, William A. (See Kious and Morton.)						
Morton, William C., Coleshill, county of Warwick, England. Machinery for plowing, &c	324,578	Aug. 18	1592	439	32	835
Moschcowitz, Herman. (See Moschcowitz, Schamu M. and H.)						
Moschcowitz, Schamu M. and H., New York, N. Y. Stay for dresses, corsets, &c	323,716	Aug. 4	433	124	32	604
Moscopoulos, Basilios K., New York, N. Y. Fishing-net	326,129	Sept. 15	1220	311	32	1254
Moseley, Charles, and B. Blundstone, Manchester, county of Lancaster, England; said Blundstone assignor to said Moseley. Manufacture and application of india-rubber tires, hoops, and bands to wheels, &c	322,391	July 14	1319	.....	32	250
Moses, Otto A., New York, N. Y. Holder for incandescent electric lights	322,744	July 21	1795	474	32	342
Moses, Otto A., New York, N. Y. Incandescent electric lamp	324,038	Aug. 11	849	237	32	689
Moses, Otto A., New York, N. Y. Manufacturing incandescent electric lamps	324,334	Aug. 11	1269	{344 {345	32	767
Moses, Otto A., New York, N. Y. Incandescent electric lamp	325,958	Sept. 8	977	249	32	1204
Moses, Otto A., New York, N. Y. Lead and crayon holder	325,959	Sept. 8	983	249	32	1204
Mosher, George A., and A. W. Ham, Troy, N. Y. Button-setting machine	323,717	Aug. 4	435	124	32	604
Mosher, Samuel E. (See Lewis and Mosher.)						
Mosley, Woodson, Kingsland, Ark. Nail-tongs	322,195	July 14	1072	278	32	203
Mott Iron Works, J. L. (See Burrows, Daniel, assignor.)						
Mott Iron Works, J. L. (See Demarest, John, assignor.)						
Mott Iron Works, J. L. (See Hurd, Alfred P., assignor.)						
Mott Iron Works, J. L. (See McFarland, Samuel G., assignor.)						
Mott Iron Works, J. L. (See Reid, John, assignor.)						
Mouck, Andrew B., Fargo, Dak. Ter., assignor of one-half to W. Deering, Chicago, Ill. Harvester	325,266	Sept. 1	46	14	32	1024
Mougey, Peter, Sterling, Ohio. Riding-harrow	325,760	Sept. 8	734	184	32	1158
Moulton, Charles H., Washington, D. C. Bill-file case	323,877	Aug. 4	635	179	32	643
Moulton, Lorenzo G., Boston, Mass. Bolt-operating device	327,010	Sept. 29	2429	635	32	1469
Moulton, Stillman A., San José, Cal. Road-leveler	325,354	Sept. 1	162	44	32	1045
Moulton, Stillman A., San José, Cal. Cultivator	325,432	Sept. 1	201	72	32	1071
Mount, William R., Milton, Ind. Roller-skate	324,875	Aug. 25	2016	553	32	920
Mower, Jacob K. (See Normand, Joseph M., assignor.)						
Moxham, Arthur J., Johnstown, Pa. Roll for street girder-rails	321,627	July 7	294	78	32	56
Moyer, George W., Fremont, Nebr. Hay-stacker	322,958	July 28	2101	559	32	405
Moyer, Harvey A., Syracuse, N. Y. Side-spring vehicle	325,182	Aug. 25	2416	{663 {664	32	994
Moyer, Joseph H., Reading, Pa. Metallic shaft-tug	324,876	Aug. 25	2017	553	32	920
Moyer, William S., Philadelphia, Pa. Ice-cutting machinery	325,183	Aug. 25	2417	664	32	994
Mueller, Charles L. F., assignor of one-half to E. Schandein, Milwaukee, Wis. Dynamo-electric machine	325,619	Sept. 1	530	{134 {135	32	1116
Mueller, Charles M. (See Hirshheimer and Mueller.)						
Muhlhauser, Henry. (See Corey, Jasper W., assignor.)						
Muirhead, Alexander, Norwood, county of Surrey, England. Submarine duplex telegraph	327,097	Sept. 29	2551	665	32	1509
Mulberry, James C., assignor of two-thirds to F. A. Bachelor and H. E. Langdon, Cincinnati, Ohio. Lubricator	321,996	July 14	806	{210 {211	32	155
Müller, Armand, Mount Vernon, assignor to J. E. Brustlein and P. Sury, New York, N. Y. Insecticide	322,630	July 21	1644	.....	32	315
Müller, Ernst F. W., Berlin, Germany. Car-brake	322,959	July 28	2103	560	32	406
Müller, Friedrich C. G. (See Pleisticker and Müller.)						
Müller, Hieronymus W. (See Fleischer, Müller, and Arnold.)						
Müller, Johann G., Schöneberg, Prussia, Germany. Imitating objects of majolica-ware	323,823	Aug. 4	565	.....	32	630
Müller, Johann H., Gravesend, N. Y. Car brake and starter	323,354	July 28	2065	710	32	507
Munagle, Charles, Milwaukee, Wis. Head-rest for railway-cars	322,843	July 21	1932	511	32	367
Muncaster, Walter J., assignor of one-half to M. McKaig, Cumberland, Md. Machine for boring cylinders	326,049	Sept. 8	1095	{279 {280	32	1224
Muncaster, Walter J., assignor of one-half to M. McKaig, Cumberland, Md. Machine for boring and turning pulleys	326,050	Sept. 8	1098	{280 {281	32	1225
Munday, John L., St. Louis, Mo. Automatic car-brake	325,215	Aug. 25	2461	677	32	1003
Mundy, Edwin V. (See Crawford and Mundy.)						
Munford, William H., Anna, Ohio. Glass-cutting apparatus	325,855	Sept. 8	857	{215 {216	32	1180
Mungall, Andrew, Manchester, N. H. Machine for separating warp-yarn cha'ns	323,355	July 28	2067	711	32	508
Munger, George A. (See Hand, Benjamin R., assignor.)						
Munn, Bernard M., Elizabeth, N. J. Coal-hoisting machine or dredge	323,589	Aug. 4	267	78	32	571
Munro, Gordon, Troy, N. Y. Machine for lining straw and other boards	327,404	Sept. 29	2953	771	32	1580
Munroe Organ Reed Company. (See Stone, Frank, assignor.)						
Munroe, Robert, Allegheny, Pa. Boiler	322,120	July 14	975	254	32	186

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Munshower, George W., Bowling Green, Ohio. Reclining-chair	323,824	Aug. 4	565	161	32	630
Munton, James, Maywood, Ill. Tire-expanding machine	324,406	Aug. 18	1367	372	32	793
Munz, Theodore C., Toledo, Ohio. Vehicle running-gear	327,405	Sept. 29	2954	771	32	1581
Murch, Lewis W., Racine, Wis. Rotary churn	323,678	Aug. 4	637	180	32	643
Murch, Lewis W., Racine, Wis. Butter-worker	323,679	Aug. 4	638	180	32	644
Murphey, James L., Pittsburg, Pa. Cork-cutting machine	325,856	Sept. 8	858	216	32	1180
Murphy, Alexander A., Montreal, Quebec, Canada. Form for displaying dress-goods, &c	322,196	July 14	1072	278	32	204
Murphy, Edward, New York, N. Y. Tension device for sewing-machines	324,579	Aug. 18	1593	439	32	835
Murphy, Edward, New York, N. Y. Thread-controlling device for sewing-machines	324,580	Aug. 18	1594	439	32	835
Murphy, Edward J. (See Delehanty and Murphy.)						
Murphy, James J., New York, N. Y. Pin-tag	322,631	July 21	1645	435	32	315
Murphy, James R., Crafton, Pa. Type-writing machine	324,407	Aug. 18	1368	{372 {373	32	793
Murphy, John, Brooklyn, N. Y. Machine for cutting india-rubber	323,061	July 28	2253	596	32	432
Murphy, John, Brooklyn, N. Y. Apparatus for the manufacture of india-rubber hose	323,062	July 28	2255	596	32	433
Murphy, John F. (See Clark and Murphy.)						
Murphy, Nicholas, Chicago, Ill. Smoke-house	324,408	Aug. 18	1372	373	32	794
Murphy, William, St. John, New Brunswick, Canada. Octave-coupler for organs	322,121	July 14	976	{254 {255	32	186
Murray, David, Milwaukee, Wis. Barrel-making machine	322,960	July 28	2104	{560 {561	32	406
Murray, David A., *et al.* (See O'Brien, Timothy, assignor.)						
Murray, George W., Bluffton, Ohio. Spring-seat	324,335	Aug. 11	1271	345	32	767
Murray, Gordon, Negaunee, Mich. Railway-tie	323,356	July 28	2669	711	32	508
Murray, John J., Jr., Brooklyn, N. Y. Railway-gate	324,780	Aug. 18	1676	516	32	888
Murray, William D., Hamilton, Mo. Corn-harvester	321,908	July 7	683	{177 {178	32	124
Mustard, James E., Glen Hall, Ind. Wheel	324,952	Aug. 25	2115	579	32	940
Mustin, James G., Pittsburg, Pa. Seal-lock	325,620	Sept. 1	535	136	32	1118
Muth, Charles. (See Schumann, Henry H., assignor.)						
Mutter, Andreas, Paterson, N. J. Needle for Jacquard looms	327,188	Sept. 29	2673	695	32	1531
Myers, Albert E., Garland, Pa. Wheel-harrow	324,953	Aug. 25	2116	579	32	940
Myers, Carl E., Mohawk, N. Y. Varnishing-machine	326,051	Sept. 8	1101	281	32	1225
Myers, Ephraim, Creagerstown, Md. Fence	325,621	Sept. 1	537	136	32	1117
Myers, Henry, Alton, Ill. Door-hanger	327,450	Sept. 29	3006	785	32	1590
Myers, Henry J., *et al.* (See Ruset, Charles F. assignor.)						
Myers, Henry L., Philadelphia, Pa., and J. W. Rogers, Camden, N. J. Garment and carrying device attached thereto	322,844	July 21	1933	511	32	367
Myers, Lewis Y., Canton, Ohio. Hay-carrier	327,451	Sept. 29	3007	785	32	1590
Myers Sanitary Depot. (See McFarland, Samuel G., assignor.)						
Myers, Simon S., Philadelphia, Pa. Preparing food for poultry	321,909	July 7	684	.....	32	124
Myers, William W., Portland, Mich. Hair-clipping machine	324,781	Aug. 18	1678	516	32	888
Nadorff, Henry, Louisville, Ky. Faucet and bushing	326,319	Sept. 15	1460	385	32	1303
Naff, Jacob L. C., Winchester, Ky. Comb for grass-seed harvesters	325,109	Aug. 25	2318	638	32	977
Nagley, Charles C., Memphis, N. Y. Tobacco-plant cutter	323,718	Aug. 4	438	125	32	605
Nail Company, S. G. (See Benton, Alexander R., assignor.)						
Nally, Thomas, Lynn, Mass. Machine for crimping shoe-quarters	325,267	Sept. 1	46	14	32	1024
Nally, Thomas, Lynn, Mass. Boot or shoe upper	325,561	Sept. 1	463	116	32	1104
Naly, John N., Greensburg, Pa. Band-cutter and self-feeder for thrashing-machines	321,997	July 14	808	211	32	155
Naramore, Henry L., Sharon, Mass., assignor of one-half to A. Fischer, Winchester, and J. F. Potts, Whitehall, Ill. Striking mechanism for clocks	325,228	Aug. 25	2478	681	32	1006
Nash, Lewis H., Brooklyn, assignor to National Meter Company, New York, N. Y. Combined fuel-converter and gas-engine	322,062	July 14	896	232	32	171
Nash, Lewis H., Brooklyn, assignor to National Meter Company, New York, N. Y. Combined gas-producer and gas-engine	322,063	July 14	898	233	32	171
Natanson, Adam, Paris, France, assignor to C. Wahl, Chicago, Ill. Refrigerating apparatus	327,300	Sept. 29	2810	{732 {733	32	1557
Nathan, Benjamin. (See Smadbeck and Nathan.)						
Nathan Manufacturing Company. (See Ruddy and Kaczander, assignors.)						
National Cash Register Company. (See Maltby, Clinton H., assignor.)						
National Electrical Company. (See Parcelle, Albert L., assignor.)						
National Heeling Machine Company. (See Demary, George T., assignor.)						
National Improved Telephone Company. (See Perrin, Thomas J., assignor.)						
National Meter Company. (See Nash, Lewis H., assignor.)						
National Needle Company. (See Berry, John, assignor.)						
National Saw Guard Company. (See Comer, Joseph A., assignor.)						
National Therm Motor Company. (See Baker, Elbridge, assignor.)						
National Tube Works Company. (See Patterson, Peter, assignor.)						
Navert, William H. (See Liston and Navert.)						
Neal, George H., Falls City, Nebr. Cradle	325,960	Sept. 8	985	250	32	1204
Neal, James W., assignor of one-half to M. M. Rogers, Roanoke, Va. Car-coupling	325,622	Sept. 1	538	136	32	1117
Neale, James, Bridgeport, Conn. Sewer-gas check for sinks	322,961	July 28	2106	561	32	407
Neeley, Charles E., Gurdon, Ark. Head-rest	325,006	Aug. 25	2193	601	32	952
Neely, Thomas. (See Marland, Alfred, assignor.)						
Neff, James M. W., Cincinnati, Ohio. Ice-machine	322,550	July 21	1535	405	32	295
Nehmer, Heinrich. (See Coxeter and Nehmer.)						
Neill, John F., Rusk, Tex. Device for illustrating the transposition of musical scales	323,196	July 28	2439	{646 {647	32	468
Neisler, Oscar L., Indianapolis, Ind. Cultivator	324,720	Aug. 18	1792	{494 {495	32	871
Nelson, Charles R., New York, N. Y. Box-fastener	321,628	July 7	295	78	32	56
Nelson, Erastus C., Evanston, Ill. Fire-extinguisher holder	322,468	July 21	1425	373	32	276
Nelson, Hans and J., Waupaca, Wis. Potato-digger	321,629	July 7	296	79	32	57
Nelson, Jacob. (See Nelson, Hans and J.)						
Nelson, James, and L. P. Larson, Concordia, Kans. Hog-trough	325,690	Sept. 8	628	159	32	1138
Nelson Manufacturing Company, N. O. (See Vosburgh, Jacob, assignor.)						
Nelson, Oliver R., Chicago, Ill. Hydraulic press attachment	321,745	July 7	447	{118 {119	32	83
Nelson, William C., Santa Rosa, Cal. Napkin-supporter	324,039	Aug. 11	855	237	32	689
Nesbit, Watson M. (See Kennedy and Nesbit.)						
Nesbitt, John D., Everett, Mass. Umbrella	324,581	Aug. 18	1595	440	32	835
Nessel, John G., and W. H. Steinbrecher, Detroit, Mich. Spark-arrester and smoke-consumer	326,671	Sept. 22	1928	508	32	1392
Neuer, Stanley W., New York, N. Y. Medical compound	321,839	July 7	595	.....	32	109
Neuman, Etienne, Washington, D. C. Treating tobacco	325,110	Aug. 25	2319	638	32	977

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Neumer, Emil, and M. Derx, New York, N. Y. Extension-table	323,520	Aug. 4	180	52	32	556
Neville, John, Jersey City, N. J. Furnace	321,519	July 7	158	42	32	31
New Haven Watch Company. (See Doolittle, William E., assignor.)						
New Home Sewing Machine Company. (See Huntington, Thomas S., assignor.)						
New York Adjustable Stern Dock Company. (See Howes, D. Willis, assignor.)						
New York Steam Company. (See St. John, Thomas C., assignor.)						
Newark Machine Company. (See Miller, Abraham, assignor.)						
Newbury, Charles H., assignor of one-half to D. Phinney, Merrill, Wis. Mechanical movement	326,052	Sept. 8	1103	281	32	1226
	323,590	Aug. 4	269	78, 79	32	571
Newbury, Henry F., Brooklyn, N. Y. Burglar-proof safe	326,320	Sept. 15	1481	385, 386	32	1303
Newcomb, James E., Rock Island, Ill. Door-check	322,469	July 21	1426	373	32	276
Newell, Augustus, Chicago, Ill. Reed for organs	325,961	Sept. 8	985	250	32	1204
Newell, John G., New Haven, Conn. Burglar-alarm						
Newgent, Thomas G. (See Smith, James C., assignor.)						
Newhall, George M., Philadelphia, Pa. Apparatus for mixing, heating, and drying sugar, &c.	321,746	July 7	449	119	32	83
Newlon, William H., Beaver Falls, Pa. Car-coupling	323,951	Aug. 11	734	205	32	669
Newman, Emeline, *et al.* (See Newman, Nelson, assignor.)						
Newman, Nelson, assignor to E. Newman, J. N. Reece, L. W. Shepherd, and G. A. Sanders, Springfield, Ill. Corn-planter	327,301	Sept. 29	2812	733, 734	32	1557
Newton, Frederick P., Woodbridge, and E. B. Beecher, Westville, Conn. Machine for making match-boxes	322,470	July 21	1427	373, 374, 375, 376	32	276
Newton, Nelson A., Kalamazoo, Mich. Wagon-spring	325,355	Sept. 1	163	44	32	1045
Nicholls, Richard, Hendon, county of Middlesex, England. Apparatus for the reception and deodorization of human excreta, &c	324,146	Aug. 11	997	275	32	716
Nichols, Andrew M. (See Hoyt and Nichols.)						
Nichols, David R., Brockville, Ontario, Canada. Rod and bolt cutter	326,772	Sept. 22	2098	545	32	1421
Nichols, H. N. (See Sharpneck, William S., assignor.)						
Nichols, Kate E., and E. V. W. Hale, Leominster, Mass. Individual holder or rest for table-service articles	324,478	Aug. 18	1463	401	32	809
Nichols, Kepler H., Fairfield, Conn. Tree-box	325,184	Aug. 25	2419	664, 665	32	995
Nicholson, Charles F., Rochester, N. Y. Water-color	324,147	Aug. 11	998	.....	32	716
Nickerson, Amos, Boston, Mass. Head-rest for hammocks	325,691	Sept. 8	629	159	32	1138
Nickerson, Amos, Boston, Mass. Net attachment for hammocks	326,321	Sept. 15	1482	386	32	1303
Nickerson, Fred. A., assignor to Dickinson Hard Rubber Company, Springfield, Mass. Button	322,311	July 14	1207	318	32	229
Nicolaus, Edmund B., Cleveland, Ohio. Electric switch	322,745	July 21	1799	475	32	343
Niedermeyer, F. Louis, Schönebeck, near Magdeburg, Prussia, Germany. Button	322,064	July 14	900	233	32	172
Niemann, James P., Brooklyn, assignor to J. W. Foulke, New York, N. Y. Whip-socket.	325,562	Sept. 1	464	116	32	1104
Niemann, James P., Brooklyn, assignor to J. W. Foulke, New York, N. Y. Whip-socket.	325,563	Sept. 1	465	116	32	1105
Niles, Milton C., Oak Park, Ill. Latch	323,063	July 28	2257	596	32	433
Niles, Sidney S., Chicago, Ill. Spring-hinge	325,761	Sept. 8	734	184	32	1158
Niles Tool Works. (See Reiss, George T., assignor.)						
Nivois, Victor, New York, N. Y. Watch-case	325,433	Sept. 1	292	72	32	1071
Nixon, George, Jr., Philadelphia, Pa. Air and steam heater	325,902	Sept. 8	986	250	32	1204
Nixon, George W., Rockwood, assignor to himself and W. M. Nixon, Chattanooga, Tenn. Support for rock-drills	325,564	Sept. 1	465	116	32	1105
Nixon, Martin, *et al.* (See Feister, Henry P., assignor.)						
Nixon, William H., *et al.* (See Feister, Henry P., assignor.)						
Nixon, William M. (See Nixon, George W., assignor.)						
Nobel, Ludvig, St. Petersburg, Russia. Liquid-fuel furnace	321,840	July 7	595	154	32	109
Noble, Ludvig, St. Petersburg, Russia. Liquid-fuel furnace	325,434	Sept. 1	292	72	32	1071
Noble, John R., and J. D. Bullock, Ripley, Miss. Gag and muzzle	323,825	Aug. 4	566	161	32	630
Noble, Oscar W., Lynn, Mass. Stove-oven cover	324,148	Aug. 11	999	275	32	716
Noessel, Sarah J., Corpus Christi, Tex. Combined milk-pan and curd or cheese mold						
Noftzger, Charles F., *et al.* (See Peck, James A., assignor.)						
Nolan, Francis. (See Reynolds, Thomas J., assignor.)						
Nolan, John H., Boston, Mass., assignor to Union Shuttle Company, Portland, Me. Loom-shuttle	323,438	Aug. 4	69	18	32	536
Nolan, William F. (See Powell and Nolan.)						
Nolden, Louis, and A. E. May, Beardstown, Ill. Feeder for roller-mills	326,447	Sept. 15	1634	427	32	1331
Nolen, Henry, assignor to J. Guedelhoefer, Indianapolis, Ind. Dumping-wagon	325,185	Aug. 25	2420	665	32	995
Nolen, Stephen A., Searcy, Ark. Table	323,064	July 28	2259	596	32	433
Nordmann, Adolph J., San Francisco, Cal. Alarm and waking bed	325,437	Sept. 1	301	73	32	1073
Normand, Joseph M., assignor of one-half to J. K. Mower, Springfield, Ohio. Pump	325,623	Sept. 1	539	136	32	1117
Norris, George E., Troy, assignor of one-half to J. K. P. Pine, Lansingburg, N. Y. Bosom-tab-folding machine	322,551	July 21	1537	405, 406	32	296
Norris, George E., and W. E. Hagan, Troy, N. Y. Machine for making match-blanks	321,444	July 7	39	11, 12	32	10
Norris, George E., and W. E. Hagan, Troy, assignors of one-third to J. K. P. Pine, Lansingburg, N. Y. Machine for making matches	321,445	July 7	45	12, 13, 14, 15	32	11
Norris, James L., administrator. (See Bandel, Welhelm.)						
Norris, William R., Fort Ann, N. Y. Machine for planing and polishing lumber	327,189	Sept. 29	2674	695	32	1531
North, John, Middletown, Conn. Machine for screw-threading bolts, &c	321,841	July 7	597	155, 156	32	109
North, Selden G., assignor to Transit Apparatus Company, (limited,) Philadelphia, Pa. Store-service apparatus	323,952	Aug. 11	736	206	32	669
North, Selden G., assignor to Transit Apparatus Company, (limited,) Philadelphia, Pa. Store-service apparatus	325,435	Sept. 1	294	72, 73	32	1071
North, Selden G., assignor to Transit Apparatus Company, (limited,) Philadelphia, Pa. Store-service apparatus	325,436	Sept. 1	295	73	32	1072
North Western Fertilizing Company. (See Gibson, Charles, assignor.)						
Northen, Mary E., Lanier, Tex. Dress-chart	325,216	Aug. 25	2463	677	32	1003
Northrop, James H., assignor of one-half to G. Draper & Son, Hopedale, Mass. Knot-tying apparatus for spooling-machines, &c	325,624	Sept. 1	541	137	32	1118
	321,630	July 7	298	79, 80	32	57
Northrup, Joel G., Marcellus Falls, N. Y. Printing-machine	322,552	July 21	1539	406, 407	32	296
Northrup, Joel G., Marcellus Falls, N. Y. Folding-machine						
Northwood, Harry. (See Northwood, John, assignor.)						
Northwood, John, Brierly Hill, county of Stafford, England, assignor to H. Northwood, Bridgewater, Pa. Crimping device for glassware	327,406	Sept. 29	2956	772	32	1581

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Norton, Edwin, *et al.* (See Jordan, Edmund, assignor.)						
Norton, Edwin, assignor to himself and O. W. Norton, Chicago, Ill. Soldering-machine	322,065	July 14	901	233	32	172
Norton, Francis L., assignor of one-half to M. S. Norton, New York, N. Y. Life or other boat	323,357	July 28	2669	711, 712	32	508
Norton, Joseph D. and L. M., Loudville, Mass. Bracket for ladders	324,782	Aug. 18	1879	516	32	888
Norton, Josephus, Sr., New Albany, Ind. Potato-planter	327,011	Sept. 29	2429	635	32	1489
Norton, Leonard M. (See Norton, Joseph D. and L. M.)						
Norton, Margaret S. (See Norton, Francis L., assignor.)						
Norton, Oliver W. (See Norton, Edwin, assignor.)						
Norton, Oliver W., *et al.* (See Jordan, Edmund, assignor.)						
Norton, Philo J., Bristol, N. Y. Car-coupling	324,269	Aug. 11	1181	321	32	750
Norton, Sereno E., Chicago, Ill. Hair-crimper	324,877	Aug. 25	2018	553	32	920
Norwalk Lock Company. (See Libby, Benjamin F., assignor.)						
Norwood, Francis E. (See Chain, Newton W., assignor)						
Noteman, Alonzo, Toledo, Ohio. Lubricator	325,356	Sept. 1	164	44	32	1046
Nott, Frederick G. (See Stevenson, David J., assignor.)						
Novelty Electric Company. (See Bacon, Murray, assignor.)						
Novelty Tool Company. (See Wood, Frederick S., assignor.)						
Noyes & Co., Joseph P. (See Noyes, Joseph P., assignor.)						
Noyes & Co., Joseph P. (See Noyes and Winans, assignors.)						
Noyes & Co., Joseph P. (See Winans, Thomas J., assignor.)						
Noyes, Joseph P., and T. J. Winans, assignors to J. P. Noyes & Co., Binghamton, N. Y. Button	323,358	July 28	2671	712	32	509
Noyes, Joseph P., assignor to J. P. Noyes & Co., Binghamton, N. Y. Button	323,359	July 28	2673	712	32	509
Noyes, La Verne W., assignor to W. Deering, Chicago, Ill. Traction-wheel	323,591	Aug. 4	270	79	32	572
Noyes, La Verne W., and T. O. Perry, assignors to W. Deering, Chicago, Ill. Harvester-reel	323,592	Aug. 4	271	79	32	572
Nugent, James, Philadelphia, Pa. Loom for weaving looped or terry fabrics	321,631	July 7	299	80	32	57
Nugent, Richard C., assignor of one-half to L. Simpson, Pittsburg, Pa. Pipe-coupling	322,845	July 21	1934	511	32	367
Nutting, James F. (See Lester, James S., assignor.)						
Nutting, Luther M., Concord, N. H. Lathe	324,409	Aug. 18	1373	374	32	794
Nye, William C., Bradford, Pa. Implement for mixing and working mortar	324,336	Aug. 11	1272	345	32	767
Nye, William E., Monmouth, Ill. Velocipede	321,910	July 7	685	178	32	124
Nysewander, David J., New Carlisle, Ohio. Double-acting force-pump	326,053	Sept. 8	1104	281, 282	32	1226
O'Bolger, Thomas, assignor to himself and J. Phelan, Rochester, N. Y. Manufacture of turned shoes	321,998	July 14	810	212	32	156
O'Brien, Michel L., Joliet, Ill. Machine for straightening railway-rails	327,098	Sept. 29	2552	665	32	1510
O'Brien, Timothy, assignor of one-half to D. A. Murray and J. Crowley, Boston, Mass. Barrel-connection	321,520	July 7	159	43	32	31
O'Callaghan, John D. (See Dooly and O'Callaghan.)						
O'Connor, James H., Rome, N. Y. Spigot and faucet	326,448	Sept. 15	1635	428	32	1331
O'Connor, John. (See Mason, Edward, assignor.)						
O'Connor, Michael J., Louisville, Ky. Valveless engine	321,842	July 7	600	156	32	110
O'Donnell, George M., assignor of one-half to Western Improved Dredging Company, Pittsburg, Pa. Dredge	324,479	Aug. 18	1464	401	32	809
O Flaherty, John, Lachine, Quebec, Canada. Medical compound	325,007	Aug. 25	2194	.....	32	952
O'Haver, E. Frank, Murphysborough, Ill. Car-coupling	323,720	Aug. 4	440	125	32	605
O'Haver, E. Frank, Murphysborough, Ill. Cotton-harvester	326,142	Sept. 15	1222	312, 313	32	1255
O'Keefe, John, St. Louis, Mo. Heating-stove	325,857	Sept. 8	860	216, 217	32	1181
O'Keefe, Warner F. H., Allegheny, Pa. Apparatus for carbureting gas	327,302	Sept. 29	2814	734	32	1557
O'Keefe, William, St. Louis, Mo. Rotary engine	326,054	Sept. 8	1106	282	32	1226
O'Neil, Michael S., Rock Island, Ill. Draft-equalizer	322,197	July 14	1073	278	32	204
Oakes, Charles W., and E. B. Camp, Billings, Mont. Ter. Hot-air furnace	321,632	July 7	301	80	32	57
Oakes, F. S., *et al.* (See Slaght, Edwin, assignor.)						
Oakley, John M., Brooklyn, assignor of one-half to J. Keating, New York, N. Y. Reversing-gearing for washing-machines	326,672	Sept. 22	1930	508	32	1392
Oakley, Jumine S., Forestville, assignor to Bristol Brass and Clock Company, Bristol, Conn. Friction-pulley for lamp-chains	326,140	Sept. 15	1221	312	32	1254
Oaks, William A. C., assignor to Goodell Company, Antrim, N. H. Machine for inserting rivets in knife-handles	326,141	Sept. 15	1221	312	32	1254
Ober, Thomas K., Philadelphia, Pa. Trimmer for sewing-machines	323,439	Aug. 4	71	19	32	536
Obrig, John, Newark, N. J., assignor to A. J. Hedges & Co., New York, N. Y. Ornamental chain	324,582	Aug. 18	1507	440	32	836
Ochsner, Anton, New Haven, Conn. Coach-latch	323,719	Aug. 4	439	125	32	605
Odell, James R., *et al.* (See Slater, Warren G., assignor.)						
Odell, Levi J., Fairbury, Ill. Check-rower attachment for corn-planters	326,449	Sept. 15	1635	428	32	1332
Odell, Salmon P., *et al.* (See Slater, Warren G., assignor.)						
Odgers, George W., Elizabeth, N. J. Boiler-tube cutter	325,438	Sept. 1	302	74	32	1073
Oehrl, George F., Speers, Pa. Railway-gate	326,515	Sept. 15	1717	448	32	1347
Oettel, Carl, Gohlis, near Leipsic, Saxony, Germany. Mechanical accordion	326,773	Sept. 22	2099	545, 546	32	1421
Ogborn, Harrison, Richmond, Ind. Roller-skate	322,846	July 21	1935	511, 512	32	368
Ogden, John G., Chicago, Ill. Railway-cable-bridge system	326,322	Sept. 15	1483	386, 387	32	1303
Ogilvie, James J., Roscoe, Ohio. Fence-post	325,357	Sept. 1	165	44	32	1046
Ogilvy, David J., Cincinnati, Ohio. Rosin-oil	324,878	Aug. 25	2019	.....	32	920
Ohio Molecular Telephone Company. (See Goodwin, Henry K., assignor.)						
Okey, Joseph B., assignor to D. F. Haley, J. B. Lyon, and T. Dalton, Sr., Indianapolis, Ind. Sofa-bed	324,583	Aug. 18	1509	440	32	836
Olds, Henry G. (See Andersen, Peter, assignor.)						
Olin, William F., assignor to W. Deering, Chicago, Ill. Self-binding harvester	326,884	Sept. 22	2258	589, 590, 591	32	1451
Oliver, Alfred. (See Langham, Thomas, assignor.)						
Oliver, Elam A., Belleville, Wis. Compound metal-working machine	322,847	July 21	1937	512	32	368
Oliver, Henry J., San Francisco, Cal. Cut-off valve for engines	323,065	July 28	2260	597	32	433
Oliver, Henry W., Rome, N. Y. Photographic washing apparatus	323,731	Aug. 4	441	125	32	605
Oliver, William. (See Kamerer, John H., assignor.)						
Olmsted, Perry, Dixon, Cal. Belt-winder for thrashing-machines	321,521	July 7	160	43	32	31
Olney, Granville B., Atlantic, Iowa. Bee-hive	325,268	Sept. 1	48	14	32	1025

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Olsen, Christian, Chicago, Ill. Tank	322,746	July 21	1800	475	32	343
Olsen, Johan L. W., Copenhagen, Denmark. Bake-oven	324,721	Aug. 18	1793	495	32	872
Olson, Jennie S., Houston, Minn. Tailor's chart for cutting garments	325,358	Sept. 1	166	45	32	1046
Oltmanns, Diedrich, South Bend, Ind. Automatic wagon-brake	323,521	Aug. 4	182	53	32	556
Omega Binder Company. (See Hooton, Marsena M., assignor.)						
Omensetter, Robert L., Philadelphia, Pa. Window for street-railway cars	323,360	July 28	2674	712, 713	32	509
Opdyke, Stacy B., New Haven, Conn. Automatic bottle-stopper	321,447	July 7	51	15	32	12
Opdyke, Stacy B., New Haven, Conn. Bottle-stopper	321,448	July 7	53	16	32	12
Ordway, Ira J., Chicago, Ill. Ventilating buildings	326,055	Sept. 8	1108	283	32	1227
Orlikowski, Frank, and C. Yanker, Cleveland, Ohio. Wagon-tongue support	321,633	July 7	302	80	32	58
Orne, Charles P., Cambridge, Mass. Galvanic battery	321,446	July 7	51	15	32	12
Orr, Charles A. (See Connett, Matthew F., assignor.)						
Orr, James, *et al.* (See Rohme, James H., assignor.)						
Orr, S. Alexander. (See McCorkindale, Duncan L., assignor.)						
Orrick, Nicholas C., Canton, Miss. Cotton-scraper	327,012	Sept. 29	2430	635	32	1489
Orton, Benjamin F., East Saginaw, Mich. Commutator for dynamo-electric machines	323,361	July 28	2676	713	32	510
Orton, Benjamin F., East Saginaw, Mich. Armature for dynamo-electric machines and electric motors	323,362	July 28	2679	713	32	510
Orton, Benjamin F., East Saginaw, Mich. Armature for dynamo-electric machines	323,363	July 28	2678	713, 714	32	510
Orvis, Orel D and N. B. Adams, New York, N. Y. Cable railway	323,593	Aug. 4	275	80	32	572
Osborn, Edward L., Rose, N. Y. Machine for double-seaming tin roofing	322,848	July 21	1938	512, 513	32	369
Osborn, John H., Evansville, Ind. Thread-separator and traveler-cleaner	326,236	Sept. 15	1359	351	32	1280
Osborn, Walter A., and D. M. Estey, Owosso, Mich. Detachable table-leg	326,582	Sept. 22	1805	473	32	1371
Osborn, Walter J. S., and J. Madden, Shelby, Ohio. Shaft-liner	323,826	Aug. 4	567	161	32	630
Osgood, George A. (See Paige, John C., assignor.)						
Osgood, Leonard S., Stockton, Utah Ter. Ore-concentrating table	324,783	Aug. 18	1880	517	32	888
Ostrander, William H., Nowburg, N. Y. Spring-motor	323,197	July 28	2441	647	32	468
Oswald, Louis, Newark, N. J. Catch for belts	327,407	Sept. 29	2956	772	32	1581
Otis, Anson M., York, Nebr. Water-regulator for windmills	327,190	Sept. 29	2677	695	32	1532
Otis, Elisha W., Chelsea, assignor to W. G. Bell, Boston, Mass. Wheel	325,439	Sept. 1	303	74	32	1073
Otis, Samuel L., Birmingham, Conn. Work-holder	322,312	July 14	1208	318	32	229
Otis, Spencer. (See Mertsheimer and Otis.)						
Ott, Charles G. (See Reinmann and Ott.)						
Ott, Peter. (See Lippy, David, assignor.)						
Ott, Peter. (See Lippy and Ott.)						
Otto, Gustav, Jersey City, N. J. Connector for electric batteries	324,410	Aug. 18	1377	375	32	794
Otto, Robert, Owego, N. Y. Device for securing lids to burial-caskets	322,471	July 21	1434	376	32	277
Outram, John, Easton, Md. Attachment for grain-drill teeth	323,953	Aug. 11	737	206	32	609
Over, Ewald, Indianapolis, Ind. Nut-guard	325,762	Sept. 8	737	184	32	1158
Overin, George D., and O. Meyers, New York, N. Y. Combination-table	321,747	July 7	450	120	32	84
Overman, Bernard, assignor to himself and W. M. Whyte, Washington, D. C. Skylight	326,056	Sept. 8	1109	283, 284	32	1227
Overmeyer, John B. (See Freeman and Overmeyer.)						
Owen, Frederick D., Washington, D. C. Bicycle	323,066	July 28	2262	597	32	434
Owen, Henry A. (See Hussey, William J., assignor.)						
Owen, Silas R., St. Joseph, Mo. Cutting apparatus for harvesting-machines	323,880	Aug. 4	639	180	32	644
Owens, Sidney H., Churchland, Va. Telepher	322,392	July 14	1320	343	32	251
Pabst, Charles, Philadelphia, Pa. Lamp	321,522	July 7	161	43	32	32
Pabst, Charles, Philadelphia, Pa. Lamp	321,634	July 7	302	81	32	58
Pace, James F., Simsborough, La. Vehicle-shaft support	327,191	Sept. 29	2678	696	32	1532
Pacey, John T., assignor of one-half to A. Ewing, Philadelphia, Pa. Device for automatically opening and closing hatches of elevators	325,858	Sept. 8	862	217	32	1181
Paciorkowski, Anthony, assignor of two-thirds to K. Paciorkowski, 1st and 2d, Troy, N. Y. Lock	326,673	Sept. 22	1932	508	32	1393
Paciorkowski, Kazimierz, 1st and 2d. (See Paciorkowski, Anthony, assignor.)						
Packard, Allen O., Stevens Point, Wis. Machine for sprinkling potato-vines with a poisonous solution	322,747	July 21	1801	475	32	343
Packard, Morrill N., Baltimore, Md. Balanced valve	325,963	Sept. 8	987	251	32	1205
Packard, Morrill N., Baltimore, Md. Valve-gear	325,964	Sept. 8	988	251	32	1205
Packer, George W., Rock Falls, Ill. Check-rower	321,449	July 7	54	16	32	13
Packer, George W., Rock Falls, Ill. Hoop-driver	325,440	Sept. 1	304	74	32	1073
Packer, George W., Rock Falls, and C. M. Grim, Pierceville, Ill. Harvester	323,954	Aug. 11	739	206	32	669
Packer, John F., assignor to D. Bradley Manufacturing Company, Chicago, Ill. Cultivator	323,440	Aug. 4	71	19, 20	32	536
Packer, John F., assignor to D. Bradley Manufacturing Company, Chicago, Ill. Wheel	323,441	Aug. 4	74	20, 21	32	536
Packer, John F., assignor to D. Bradley Manufacturing Company, Chicago, Ill. Bed-plate for sulky-plow beams	323,442	Aug. 4	75	21, 22	32	536
Packer, John F., assignor to D. Bradley Manufacturing Company, Chicago, Ill. Seeding-machine	323,443	Aug. 4	77	22, 23	32	537
Packer, John F., assignor to D. Bradley Manufacturing Company, Chicago, Ill. Seeding-machine	323,444	Aug. 4	80	23	32	537
Packwood, George H., Tampa, Fla. Bit-stock	323,198	July 28	2442	647	32	468
Page, Caleb D., Morgan, Colo. Holder for hitching-straps	325,359	Sept. 1	170	45	32	1046
Page, Charles L., Chicago, Ill. Fire-place	322,962	July 28	2109	561	32	407
Page, Charles W., Cathlamet, Wash. Ter. Device for operating vertical reciprocating saws	327,303	Sept. 29	2815	734	32	1557
Page, Edwin K., Worcester, Mass. Nail	325,859	Sept. 8	863	217	32	1181
Page, William H., Norwich, Conn. Automatic boiler-feeder	326,143	Sept. 15	1225	313	32	1255
Paige Car Wheel Company. (See Kells, Ross, assignor.)						
Paige, John C., assignor of one-half to G. A. Osgood, Stoneham, Mass. Damper-regulator	324,270	Aug. 11	1182	321	32	750
Paillet, Joseph, assignor of one-half to H. Hiss, Delaware, Ohio. Sash-fastener	322,553	July 21	1543	408	32	297
Pain, Robert W., New York, N. Y. Mechanical musical instrument	322,554	July 21	1543	408	32	297
Paine, Charles F., *et al.* (See Hodges, Horace F., assignor.)						
Paine, Sidney B. (See Paine, Walter J., assignor.)						
Paine, Sidney B. (See Paine, Walter J. and S. B.)						
Paine, Walter J., assignor of one-half to S. B. Paine, Boston, Mass. Regulator for electric lights	321,843	July 7	603	156	32	110
Paine, Walter J., assignor to S. B. Paine, Boston, Mass. Regulator for electric lights	321,844	July 7	604	157	32	110
Paine, Walter J., assignor of one-half to S. B. Paine, Boston, Mass. Regulating electric lights	321,845	July 7	607	157	32	111
Paine, Walter J., assignor of one-half to S. B. Paine, Boston, Mass. Regulating electric lights	321,846	July 7	609	157	32	111

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Paine, Walter J. and S. B., Boston, Mass. Regulator for electric lights	321,748	July 7	452	120, 121	32	84
Paine, Walter J. and S. B., Boston, Mass. Regulating electric lights	321,749	July 7	457	121, 122	32	85
Painter, William, assignor of one-half to L. R. Keizer, Baltimore, Md. Bottle-stopper	324,040	Aug. 11	855	237	32	690
Painter, William, assignor of one-half to L. R. Keizer, Baltimore, Md. Bottle-stopper	327,009	Sept. 29	2554	666	32	1510
Pallister, Edgar A., Leeds, county of York, England. Machine for folding and eyeleting labels	323,067	July 28	2264	598	32	434
Palm, Charles, New York, N. Y. Float for fish-lines	327,100	Sept. 29	2556	666	32	1510
Palm, John H., Minneapolis, Minn. Circular sawing machine	326,583	Sept. 22	1805	474	32	1371
Palmer, Edgar M., Hartford, Conn. Ratchet-and-pawl mechanism	321,523	July 7	162	43	32	32
Palmer, Harden, Everett, Mass. Shutter-worker	324,149	Aug. 11	1000	275	32	716
Palmer, Isaac E., Middletown, Conn. Securing beam-heads upon beam-barrels	321,635	July 7	304	81	32	58
Palmer, Isaac E., Middletown, Conn. Suspension device for mosquito-canopies	322,066	July 14	903	233, 234	32	172
Palmer, John C., Hamilton, Ontario, Canada. High and low water indicator	327,304	Sept. 29	2816	735	32	1558
Palmer, John H., Philadelphia, Pa. Button-hole attachment for sewing-machines	324,150	Aug. 11	1001	275	32	716
Palmer, Noyes F., Jamaica, N. Y. Button	327,101	Sept. 29	2557	666	32	1510
Palmer, Noyes F., Jamaica, N. Y. Button	327,102	Sept. 29	2557	666	32	1510
Palmer, William W., Montague, Tex. Cloth-rack	323,522	Aug. 4	183	53	32	556
Pangborn, Henry, Lee's Corner, Mich. Log-binder	323,445	Aug. 4	81	24	32	537
Panzig, Bruno E., Philadelphia, Pa. Cock	324,151	Aug. 11	1003	276	32	717
Parcelle, Albert L., Boston, Mass., assignor to National Electrical Company, New York, N. Y. Vibrating electric motor	324,152	Aug. 11	1004	276, 277	32	717
Parcelle, Albert L., Boston, Mass., assignor to National Electrical Company, New York, N. Y. Electrical synchronous movement	324,153	Aug. 11	1008	277	32	718
Pardy, George, San Francisco, Cal. Propelling railway-cars	326,144	Sept. 15	1226	313, 314	32	1255
Pardy, George, San Francisco, Cal. Propelling railway-cars	326,145	Sept. 15	1229	314, 315	32	1256
Paré, Louis, and H. Reichenbach, Detroit, Mich. Stove-pipe	324,154	Aug. 11	1015	278	32	719
Pariseau, Joseph, Jr., St. Jean Baptiste, Quebec, Canada. Carriage-seat	322,555	July 21	1546	408	32	297
Park, James R., La Vergne, Tenn. Railway-signal	324,411	Aug. 18	1378	375	32	795
Park, Thomas R., Parkersburg, W. Va. Extensible ladder	322,632	July 21	1646	435	32	315
Parker, Abijah S., Cincinnati, Ohio. Hub-band	325,692	Sept. 8	630	159, 160	32	1138
Parker, Carlton B. (See Card, George P., assignor.)						
Parker, Clawson, Cowland, Kans. Animal-stock	321,999	July 14	811	212	32	156
Parker, Frank F., assignor to P. Derby & Co., Gardner, Mass. Child's chair	322,472	July 21	1434	376	32	277
Parker, Frank F., assignor to P. Derby & Co., Gardner, Mass. Hinge	327,192	Sept. 29	2679	696	32	1533
Parker, Jacob A. (See Denel, Reuben, assignor.)						
Parker, Jacob A., Terre Haute, Ind. Stock-car	327,305	Sept. 29	2817	735	32	1558
Parker, John J., Aitkin, Minn., assignor to W. W. Parker, Spearfish, Dak. Ter. Drag-saw	322,473	July 21	1436	377	32	277
Parker, Josiah W., *et al.* (See Ellis, James W., assignor.)						
Parker, William W. (See Parker, John J., assignor.)						
Parkhurst, Emily R. (See Parkhurst, Stephen R., assignor.)						
Parkhurst, Josiah J. (See Culver, Arthur T., assignor.)						
Parkhurst, Stephen R., assignor to E. R. Parkhurst, Montclair, N. J. Machine for feeding, opening, and mixing wool	323,523	Aug. 4	184	23, 24	32	556
Parkin, Edward H., assignor to Brown & Sharpe Manufacturing Company, Providence, R. I. Boring-machine	323,723	Aug. 4	443	126	32	606
Parrish, Marcus F. (See Parrish, Myron W. and M. F.)						
Parrish, Myron W. Detroit, and M. F. Parrish, Niles, assignors of one-third to H. B. Peck, Allegan, Mich. Electric-signal apparatus	322,474	July 21	1437	377	32	278
Parry, David M., Rushville, Ind. Feeding apparatus for planters	325,763	Sept. 8	738	184	32	1158
Parshall, Alfred F., Kansas City, Mo. Artificial or plastic slate for blackboards	323,722	Aug. 4	442	.....	32	606
Parsons, George W., Burlington, Iowa. Machine for measuring and trimming fabrics	324,155	Aug. 11	1016	278	32	719
Parton, Charles, Plattsburg, N. Y., assignor of one-half to D. Graham, Montreal, Canada. Shuttle for sewing-machines	323,068	July 28	2266	599	32	435
Partridge, Andrew, assignor of one-half to D. F. Sweeney, Springfield, Mass. Safety-razor	326,885	Sept. 22	2262	501	32	1451
Patch, Fred R., Proctor, assignor to himself and R. Proctor, Center Rutland, Vt. Pumping-machine for stone-saws	326,393	Sept. 15	1486	387	32	1304
Patent Paper Cigar Box Company. (See Powers, Daniel E., assignor.)						
Pates, Thomas, assignor to Hapgood Plow Company, Alton, Ill. Planting-plow	324,480	Aug. 18	1465	401	32	810
Pates, Thomas, assignor to Hapgood Plow Company, Alton, Ill. Planting-plow	324,481	Aug. 18	1466	401	32	810
Pates, William S., assignor to Hapgood Plow Company, Alton, Ill. Sulky plow	322,633	July 21	1648	435	32	315
Pates, William S., assignor to Hapgood Plow Company, Alton, Ill. Caster-colter	324,482	Aug. 18	1467	402	32	810
Patric, Charles E., Springfield, Ohio. Force-feed seeding-machine	324,722	Aug. 18	1795	495	32	872
Patrick, Robert, Jr., and G. Godfrey, Galt, Ontario, Canada. Apparatus for washing piece-goods	324,723	Aug. 18	1796	496	32	872
Patten, Edward K., Utica, N. Y. Clamping-machine	323,955	Aug. 11	741	207	32	670
Patten, George. (See Woodbury, Merrill, and Patten.)						
Patten, George. (See Woodbury, Merrill, Patten, and Woodbury.)						
Patten, George M., Jersey City, N. J., assignor to W. A. Amberg, Chicago, Ill. Permanent and temporary letter-file	325,625	Sept. 1	542	137	32	1118
Patterson, Jeptha D., Abbotts, N. Y. Device for aerating milk	323,069	July 28	2266	599	32	435
Patterson, Louis, South Pueblo, Colo. Nail-plate feeder	322,963	July 28	2110	561, 562	32	407
Patterson, Peter, assignor to National Tube Works Company, McKeesport, Pa. Pipe-joint	323,956	Aug. 11	743	207	32	670
Patterson, William F. (See Stillman and Patterson.)						
Patterson, William R., assignor to Western Electric Company, Chicago, Ill. Hydrostatic testing-machine for telegraph-cables	324,412	Aug. 18	1380	375, 376	32	795
Patterson, William R., assignor to Western Electric Company, Chicago, Ill. Terminal for electric-light cables	324,413	Aug. 18	1381	376	32	795
Patteson, William W., assignor of one-half to E. I. Jones, Staunton, Va. Writing-tablet	322,313	July 14	1209	318	32	230
Pattinson, George. (See Shearer, John, assignor.)						
Pattison, George H., Freeport, Ill. Windmill-gearing	321,750	July 7	460	122	32	85
Pattison, George H., Freeport, Ill. Windmill-gearing	322,314	July 14	1210	318	32	230
Pattison, George H., Freeport, Ill. Fence-barb	322,724	Aug. 4	445	127	32	606
Pattison, George H., Freeport, Ill. Windmill-gearing	323,725	Aug. 4	446	127	32	606
Patton, Charles W., Chicago, Ill. Churn	324,879	Aug. 25	2020	553	32	920
Paul, William H. (See Smith and Paul.)						
Paulus, Christopher. (See Roberson, James D., assignor.)						
Paulus, Jacob, Berlin, Germany. Cap for exploding dynamite	323,524	Aug. 4	186	54	32	557

Alphabetical list of patentees, July to September, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Paxson, Charles H., and H. Croft, Jr., Springfield, Ohio. Clutching device	325,565	Sept. 1	466	117	32	1105
Payne, Benjamin M., Chicago, Ill. Index	324,584	Aug. 18	1600	441	32	836
Payne, Benjamin N., Elmira, N. Y. Steam-boiler	322,475	July 21	1439	377	32	278
Payne, David H., Coffeeville, Tex. Mole-trap	321,524	July 7	163	44	32	32
Payne, Edwin, Oxbow, N. Y. Snow-plow	322,849	July 21	1940	513	32	368
Payne, Frank, East Portland, Oreg. Thrasher and separator	323,726	Aug. 4	449	127 / 128	32	607
Payne, Newton W., *et al.* (See Garland, Milton H., assignor.)						
Payne, William H., Camden, N. J. Ventilator	324,271	Aug. 11	1183	321	32	750
Payson, Edward, *et al.* (See Payson, Joseph R., Jr., assignor.)						
Payson, Joseph R., Jr., assignor to E. Payson and W. F. Main, Chicago, Ill. Caster	324,156	Aug. 11	1017	278	32	719
Peabody, George L. (See Campbell, Robert, assignor.)						
Peabody, Henry O., Boston, Mass. Fertilizer-distributer	325,269	Sept. 1	49	15	32	1025
Peach, John B., *et al.* (See Smith, John A., assignor.)						
Peacock, Thomas B. (See Bowen, David, assignor.)						
Pearce, James W., Cleveland, Ohio. Feed-water heater	323,957	Aug. 11	745	207	32	670
Pearson, Doyel, Memphis, Tenn. Hot-air fire-place	322,634	July 21	1650	436	32	316
Pearson, Wright, Jamestown, N. Y. Step-ladder	325,441	Sept. 1	305	74	32	1073
Pease, Charles F. (See Webster and Pease.)						
Pease, Horace S., Portage, Wis. Sad-iron	324,585	Aug. 18	1600	441	32	837
Pease, Warren H. (See Webster and Pease.)						
Peasley, Edward A., Pancoastburg, Ohio. Lifting-jack	322,315	July 14	1213	319	32	231
Peavey, Andrew J., Boston, Mass. Tool-holder	323,727	Aug. 4	451	128	32	607
Peck, Eugene H., Jersey City, assignor of one-half to R. Morrell, Summit, N. J. Machine for making and affixing tin tags to plug-tobacco	327,306	Sept. 29	2818	735	32	1558
Peck, Horace B. (See Parrish, Myron W. and M. F., assignors.)						
Peck, James F., assignor of one-half to J. W. Lucas, Carrolton, Ind. Gate	322,000	July 14	812	213	32	156
Peckett, J. W. (See Davis, Merwin, assignor.)						
Pedder, John, Pittsburg, Pa. Furnace for melting glass, &c.	323,728	Aug. 4	453	128	32	608
Peek, James A., assignor of one-half to C. F. Noftzger and J. S. Andrews, North Manchester, Ind. Harvester	322,001	July 14	813	213	32	156
Peeples, William A., Walthall, Miss. Gate	322,316	July 14	1214	319	32	231
Peer, John A., assignor of one-half to Thompson & Norris, Brooklyn, N. Y. Powder-gun	326,324	Sept. 15	1487	387	32	1304
Peerless Manufacturing Company. (See Rice, Arthur, assignor.)						
Pegg, James P., North Pelham, Ontario, Canada. Hay-rack elevator	324,483	Aug. 18	1467	402	32	810
Peirce, James H. (See Royce, Charles H., assignor.)						
Peirce, James M., Joliet, Ill. Automatic railway-signal	323,958	Aug. 11	745	207 / 208	32	670
Peirce, William E., Newark, N. J. Electric time-lock	322,317	July 14	1214	319	32	231
Peirce, William H., and J. A. Russell, Centreville, Mich. Dental plate	321,847	July 7	611	157	32	111
Pelton, George M., Belmont, N. Y. Saw-mill head-block	327,103	Sept. 29	2558	667	32	1510
Pelz, Wilhelm, assignor to F. Krupp, Essen, Germany. Making car-wheels	322,635	July 21	1651	436	32	316
Pelzer, Edward N. (See Buckler, Cain, Taubert, and Pelzer.)						
Pement, Edward, Esmond, Dak. Ter. Lathe-chuck	322,636	July 21	1652	436	32	316
Pence, Oliver P., Des Moines, Iowa. Hydrant	325,764	Sept. 8	739	185	32	1158
Pendleton, John M., assignor to Equitable Electric Company, New York, N. Y. Electric locomotion	323,199	July 28	2443	648	32	469
Penglase, William. (See Davies and Penglase.)						
Peninsular Novelty Company. (See Vinton, John H., assignor.)						
Penman, John. (See Schofield and Davidson, assignors.)						
Pennell, Lloyd W., *et al.* (See Taylor, Eugene H., assignor.)						
Penney, Edgar, Waynesborough, Pa. Speed-governor	322,637	July 21	1653	437	32	316
Pennie, John, Jr. (See Calhoun, Walter, assignor.)						
Penniman, Russell S., Jenkintown, Pa. Apparatus for drying fusible salts	321,636	July 7	305	81, 82	32	58
Penny, Benjamin F., Rochester, N. Y. Machine for cutting meat	321,751	July 7	463	122	32	86
Pennycuick, James G., Boston, Mass. Forming screw-threads on glass	324,157	Aug. 11	1019	278	32	719
Peoria Target Company. (See Stock, Charles F., assignor.)						
Pepper, William H. (See Davis, Albert T. L., assignor.)						
Peregrine, Seymour W., Minneapolis, Minn. School seat and desk	326,774	Sept. 22	2101	546	32	1422
Perera y Albizn, Pedro, Madrid, Spain. Speaking tube	326,450	Sept. 15	1636	428	32	1332
Perine, Aaron B., Topeka, Kans. Thill-coupling	324,725	Aug. 18	1601	497	32	873
Perkins, Charles G., assignor to Imperial Electric Light Company, New York, N. Y. Incandescent lamp	326,584	Sept. 22	1807	475	32	1372
Perkins, Edwin F. (See Burton and Perkins.)						
Perkins, Eliab, St. Joseph, Mo. Operating doors and shutters	326,325	Sept. 15	1488	388	32	1304
Perkins, Francis C., and C. H. Kelley, Boston, Mass. Cash-carrier	321,752	July 7	464	123	32	86
Perkins, John M., South Bend, Ind. Bow for vehicle-tops	326,585	Sept. 22	1808	475	32	1372
Perkins, Michael R., Portsmouth, N. H. Railway-rail brace	327,013	Sept. 29	2431	636	32	1489
Perkins, Paul B., North Springfield, Mo. Hydraulic engine	325,965	Sept. 8	990	252	32	1205
Perkins, Richard B. (See Heilman and Perkins.)						
Perkins, William C., assignor of one-half to H. F. Arms, Worcester, Mass. Frame for stretching and drying stockings	324,880	Aug. 25	2021	554	32	921
Perkins, Willis J., Grand Rapids, Mich. Circular saw mill	321,525	July 7	164	44	32	33
Perkins, Willis J., Grand Rapids, Mich. Shingle-sawing machine	325,693	Sept. 8	631	160	32	1138
Perley, Charles A., assignor to Thompson, Perley & Waite, Baldwinsville, Mass. Tilting-chair	324,954	Aug. 25	2117	579	32	940
Perrin, James W. (See Goldsmith, Ferdinand, assignor.)						
Perrin, Thomas J., New York, N. Y., assignor to National Improved Telephone Company, New Orleans, La. Telephone-switch	322,122	July 14	977	255	32	187
Perrin, Thomas J., Brooklyn, N. Y., assignor to National Improved Telephone Company, New Orleans, La. Telephone transmitter and relay	324,726	Aug. 18	1801	497	32	874
Perrin, Thomas J., Brooklyn, N. Y., assignor to National Improved Telephone Company, New Orleans, La. Telephone transmitter and relay	324,727	Aug. 18	1803	498	32	874
Perrin, Thomas J., New York, N. Y., assignor to National Improved Telephone Company, New Orleans, La. Telephone transmitting apparatus	324,728	Aug. 18	1804	498	32	874
Perrin, Thomas J., New York, N. Y., assignor to National Improved Telephone Company, New Orleans, La. Telephone-transmitter	324,729	Aug. 18	1805	499	32	874
Perrott, Philip T., *et al.* (See Bouvier, Louis P., assignor.)						
Perry, Alfred C., Covington, Ga. Hand and arm rest	326,326	Sept. 15	1489	388	32	1305
Perry, Daniel W., Harrisburg, Pa. Scroll-sawing machine	322,748	July 21	1802	475	32	343
Perry, Eugene F. (See Benson and Perry.)						
Perry, John, Falgarth Road, and W. E. Ayrton, Cowper Street, county of Middlesex, England. Electrical conductor for railways, &c	326,237	Sept. 15	1360	352	32	1220
Perry, Reuben W., Saundersville, Mass. Flower-pot shelf	323,525	Aug. 4	187	54, 55	32	557

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Perry, Reuben W., Saundersville, Mass. Drawer	327,104	Sept. 29	2550	667	32	1511
Perry, Rowland R., Peace Dale, R. I. Snare-drum	324,881	Aug. 25	2022	554	32	921
Perry, Thomas O. (See Noyes and Perry.)						
Pershing, Walter B., South Bend, Ind. Combined petit ledger and blotter	323,729	Aug. 4	455	129	32	608
Pertz, John W., assignor of one-half to G. E. Williams, Pittsburg, Pa. Power mechanism for actuating steam-hammers, &c	325,860	Sept. 8	865	217 / 218	32	1161
Peru City Plow Company. (See Bettendorf, William P., assignor.)						
Pester, Adolph, Brooklyn, N. Y. Note and memorandum book, &c	325,008	Aug. 25	2194	601	32	952
Peters, G. Moore, Xenia, Ohio. Manufacture of cartridge-shells and other receptacles from paper-pulp	321,848	July 7	612	158	32	111
Peters, G. Moore, Xenia, Ohio. Manufacture of cartridge-shells and other receptacles from paper or wood pulp	321,849	July 7	614	158	32	112
Peters, John, Haverstraw, N. Y., assignor to Hydraulic Salt Forcing Company. Making and raising salt-brine from deep veins	327,307	Sept. 29	2820	736	32	1558
Peters, John, Haverstraw, N. Y., assignor to Hydraulic Salt Forcing Company. Apparatus for making and raising salt-brine from deep salt-veins	327,308	Sept. 29	2820	736	32	1558
Petersen, Charles J., Port Chester, N. Y. Suspension device	324,724	Aug. 18	1799	497	32	873
Petersen, Louis N., M. L. Harksen, and H. Hagge, Bryant, Iowa. Rotary harrow	326,775	Sept. 22	2105	547	32	1422
Peterson, B. Walker, Wheeling, W. Va. Method of and apparatus for setting tiles	325,009	Aug. 25	2195	601	32	953
Petit, Emile, Saint Denis, near Paris, France. Safe	325,765	Sept. 8	741	185	32	1159
Petrie, Charles S., *et al.* (See Aahworth, John, assignor.)						
Pettee Machine Works. (See Begley, Philip T., assignor.)						
Pettigrew, John. (See Young and Pettigrew.)						
Peuchen, Arthur G. (See Culp, Samuel T., assignor.)						
Pew, Joseph N., Pittsburg, Pa. Natural-gas conductor	321,637	July 7	307	82	32	59
Pfau, Julius, Lansingburg, assignor of one-half to J. W. Blessing, Albany, N. Y. Stop-valve	326,238	Sept. 15	1365	352 / 353	32	1220
Pfaudler, Casper, assignor to Pfaudler Vacuum Fermentation Company, Rochester, N. Y. Pressure-regulator	323,364	July 28	2681	714	32	510
Pfaudler Vacuum Fermentation Company. (See Pfaudler, Casper, assignor.)						
Pfeil, Philip M., Pittsburg, Pa. Sand separating and washing machine	324,158	Aug. 11	1020	279	32	719
Pfeil, Philip M., Pittsburg, Pa. Sand separating and washing machine	324,159	Aug. 11	1022	279	32	720
Pfingst, John. (See Pfingst, Louis, assignor.)						
Pfingst, Louis, assignor to himself and J. Pfingst, New York, N. Y. Lubricator	322,123	July 14	979	255	32	187
Phelan, Jeremiah. (See O'Bolger, Thomas, assignor.)						
Phelps, Joseph, Newton, Mass. Car-coupling	327,014	Sept. 29	2432	636	32	1490
Philadelphia Machinery Company. (See Chabot, Cyprien, assignor.)						
Philadelphia Machinery Company. (See Mills, Daniel, assignor.)						
Philbrick, George E., Manchester, N. H. Syringe	321,850	July 7	616	158	32	112
Phillips, James, Nashville, Tenn. Hot-air fire-place	324,337	Aug. 11	1273	345	32	767
Phillippi, Abraham H., Reading, Pa. Pressure-regulator for carburetors, &c	324,160	Aug. 11	1023	279	32	720
Phillips, Andrew J., Fentonville, Mich. Snow-scraper	323,730	Aug. 4	456	129	32	608
Phillips, Charles, Richburg, N. Y. Rope drill-jar	321,753	July 7	465	123	32	86
Phillips, Charles H., J. Troden, and J. Golling, Alpena, Mich. Fire and water proof paint	326,776	Sept. 22	2106	.....	32	1423
Phillips, Charles L., and J. J. Ricketts; said Ricketts assignor of one-third to J. R. McGinley, Pittsburg, Pa. Gas-regulator	322,002	July 14	814	213	32	157
Phillips, Enoch, and T. Jones, Pulaski, Va. Preparing the charge for spelter-furnaces	323,950	Aug. 11	747	208	32	671
Phillips, George R., Providence, R. I. Packing for vessels, &c	323,731	Aug. 4	456	129	32	608
Phillips, James R., Webster, Dak. Ter. Sod cutter and pulverizer	322,638	July 21	1655	437	32	317
Phillips, Mary, assignor to C. C. Carpenter, New York, N. Y. Bustle	324,338	Aug. 11	1273	346	32	768
Phillips, Richard, Nacogdoches, Tex. Portable pump, &c	326,146	Sept. 15	1232	315	32	1256
Phillips, Thomas S., assignor of one-half to W. F. Strasmer, Buffalo, N. Y. Artificial tooth	325,626	Sept. 1	543	137	32	1118
Phinney, Charles E., *et al.* (See Rumble, A. Carson, assignor.)						
Phinney, David. (See Newbury, Charles H., assignor.)						
Phipps, Henry P., Cleveland, Ohio. Forging-dies	327,309	Sept. 29	2821	736	32	1558
Pick, Paul, *et al.* (See Majert, Wilhelm, assignor.)						
Pickett, Alva L., assignor to F. Caffrey, New Haven, Conn. Cutting-pliers	326,327	Sept. 15	1490	388	32	1305
Pickett, Rufus S., New Haven, Conn. Split nail or tack	323,200	July 28	2446	648	32*	469
Pickle, Obadiah A., Palestine, Tex. Mechanical movement	323,070	July 28	2207	599	32	435
Piesticker, Carl M., London, county of Middlesex, England, and F. C. G. Müller, Brandenburg-on-the-Havel, Prussia, Germany. Apparatus for casting steel and other metal bars, rods, &c	326,147	Sept. 15	1233	315 / 316	32	1256
Pieper, Henri, Liege, Belgium. Holder for incandescent lamps	321,933	July 7	719	187	32	130
Pierce, G. H., *et al.* (See Thompson, Edward P., assignor.)						
Pierce, Henry M., Nashville, Tenn. Apparatus for utilizing wood-gases	326,451	Sept. 15	1637	428	32	1332
Pierce, Henry M., Nashville, Tenn. Utilizing wood-gases for metallurgical purposes	326,452	Sept. 15	1638	.....	32	1332
Pierce, John, Herne Hill, county of Surrey, assignor to E. J. V. Earle, 119 Cheapside, London, England. Folding chair	327,105	Sept. 29	2560	667	32	1511
Pierce, Mortimer K., Perryvale, assignor of one-half to P. Hawkins, Marysville, Cal. Machine for forming and threading sheet-metal pipes	326,516	Sept. 15	1719	448	32	1348
Pierce, Origen A., Detroit, Mich. Lubricating car-axles	325,966	Sept. 8	991	252	32	1206
Pihlfeldt, Olaf, Cooksey Road, Small Heath, near Birmingham, county of Warwick, England. Ball-bearing for velocipedes	327,408	Sept. 29	2957	772	32	1561
Pike, Edward, Salt Lake City, Utah Ter. Amalgamator	327,193	Sept. 29	2680	696	32	1533
Pike, Solomon B. (See Brooks and Pike.)						
Pilgrim, Conrad, East New York, N. Y. Torpedo	323,071	July 28	2268	600	32	435
Pillault, Adolphe, Cleveland, Ohio. Broiler	326,328	Sept. 15	1491	388	32	1305
Pine, George W., Troy, N. Y. Bosom-plaiting machine	322,476	July 21	1440	378	32	278
Pine, James K. P. (See Norris, George E., assignor.)						
Pine, James K. P. (See Norris and Hagan, assignors.)						
Pine, William K., Newark, N. J., assignor to W. T. Mersereau & Co., New York, N. Y. Curtain-pole end	323,072	July 28	2269	600	32	435
Pinkham, Delmar D., Longview, Tex. Valve-gear	324,784	Aug. 18	1881	517	32	889
Piper, Francis M., and J. H. Reed, Lynn, Mass. Lacing-stud	326,148	Sept. 15	1235	316	32	1257
Piper, Myron H., assignor, by mesne assignments, to himself and C. S. Bird, Walpole, Mass. Fire-extinguishing grenade	324,414	Aug. 18	1382	376	32	795
Pipher, John, Hoboken, N. J. Coal-tub	324,484	Aug. 18	1468	402	32	810
Pistorius, Herman, Saginaw, Mich. Invalid-bed	321,754	July 7	466	123 / 124	32	87
Pitney, Albert L., Washington, D. C. Pillow	324,785	Aug. 18	1882	517	32	889
Pitts, Aurelius V. and M. H., Marseilles, Ill. Corn-sheller	322,964	July 28	2112	562	32	407
Pitts, Marcellus H. (See Pitts, Aurelius V. and M. H.)						
Place Gas Engine Manufacturing Company. (See Place, James F., assignor.)						
Place, Harry D., Newark, Ohio. Lamp-burner	322,850	July 21	1941	513	32	369

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Place, James F., assignor to Place Gas Engine Manufacturing Company, New York, N. Y. Gas-engine	322,477	July 21	1442	378, 379, 380	32	279
Place, Oscar, assignor of one-fourth to L. W. Hyde, Brooklyn, N. Y. Packing-box	324,485	Aug. 18	1469	402	32	810
Planten, John R. (See Holst, Constantyn P., assignor.)						
Platt, Albert L., assignor to W. B. and J. R. McAlister and J. M. Hawkins, Bowling Green, Mo. Ice-cream freezer	323,732	Aug. 4	457	129	32	608
Platt, Isaac S., Sandusky, Ohio. Fruit-crate	323,526	Aug. 4	189	55	32	557
Platt, Isaac S., Sandusky, Ohio. Fruit-basket	321,527	Aug. 4	189	55	32	557
Platt, James F., Sterling, Ill. Harrow	325,694	Sept. 8	633	161	32	1139
Pleasner, Johann M., Stuttgart, Germany. Antiphone	322,003	July 14	815	213	32	157
Plowman, Joseph G., White Pigeon, Mich. Sectional chalk-rack	326,453	Sept. 15	1640	429	32	1332
Plume & Atwood Manufacturing Company. (See Atwood, Lewis J., assignor.)						
Plumo & Atwood Manufacturing Company. (See Combs, Abel, assignor.)						
Plympton, Warren H., Providence, R. I. Weather-strip	327,106	Sept. 29	2561	668	32	1511
Poage, James H., assignor of one-half to G. W. Durrant and W. R. P. Jackson, Monroe, Mo. Hay-gatherer	322,636	July 21	1655	438	32	317
Poenagen, Reinhard, Dusseldorf, Prussia, Germany. Apparatus for making sheet-lead	323,201	July 28	2447	649	32	469
Pohl, Emilie, Baltimore, Md. Stiffener for bustles	325,861	Sept. 8	866	218	32	1182
Poindexter, Robert E., Indianapolis, Ind. Saw-handle	327,015	Sept. 29	2433	636	32	1490
Polak, Henri, and H. Lowe, Hyde, county of Chester, England. Apparatus for curling and setting silk, felt, and other hat brims	322,004	July 14	816	214	32	157
Poland, John C., Boston, Mass. Automatic reversing mechanism	327,409	Sept. 29	2959	772, 773	32	1581
Polk, Andrew J., Millersburg, Pa. Screw-cutting die	321,755	July 7	476	124	32	87
Polle, Friederich W., Greenville, Miss. Beer-faucet	322,318	July 14	1217	319	32	231
Polsey, Charles H., and A. A. Smith, Newton, Mass. Milling-cutter	327,107	Sept. 29	2562	668	32	1511
Polster, Ferdinand, assignor to W. Knabe & Co., Baltimore, Md. Repeating-action for square and grand pianos	326,586	Sept. 22	1809	475	32	1372
Pomeroy, Daniel, Brooklyn, N. Y. Truss	324,586	Aug. 18	1601	441	32	837
Pommer, Frank L. (See Heiman, Salemon, assignor.)						
Pond, Goldsbury H., New York, N. Y. Construction of the hulls of vessels, &c	321,450	July 7	57	16, 17	32	13
Pond, Goldsbury H., Glen's Falls, N. Y. Machine for reducing wood and other fibrous material to a pulp	321,451	July 7	58	17	32	13
Pond, Goldsbury H., Glen's Falls, N. Y. Bleaching wood pulp and other fibrous materials	321,452	July 7	59	.....	32	14
Pond, Joseph F., Cleveland, Ohio. Inhaler	324,161	Aug. 11	1024	280	32	720
Pope Manufacturing Company. (See Knous, John, assignor.)						
Pope Manufacturing Company. (See Latta, Emmit G., assignor.)						
Pope Manufacturing Company. (See Latta, Emmit G. and A. C., assignors.)						
Popp, William, Pittsburg, Pa. Device for slicing vegetables	323,960	Aug. 11	748	208	32	671
Porcher, Samuel. (See Cloud and Porcher.)						
Portebois, Louis F., assignor to V. E. Versepuy, Paris, France. Winding mechanism for clocks	321,526	July 7	167	45	32	33
Porter, Alonzo W., New York, N. Y., assignor to J. J. Cooper, Philadelphia, Pa. Hand fire-extinguisher	323,528	Aug. 4	190	55	32	557
Porter, Daniel R., Revere, Mass. Wrench	325,010	Aug. 25	2197	602	32	953
Porter, David W., Pittsburg, Pa. Key-seating machine	325,695	Sept. 8	635	161	32	1139
Porter, D'Arcy, assignor to White Sewing Machine Company, Cleveland, Ohio. Sewing-machine table	323,529	Aug. 4	192	56	32	558
Porter, George A., Syracuse, N. Y. Steam-boiler	325,967	Sept. 8	992	252	32	1206
Porter, John F., Red Wing, Minn. Evaporating-pan	326,149	Sept. 15	1236	316	32	1257
Porter, Rufus, Lewistown, Ill. Apparatus for the utilization or disposition of surplus or waste heat in pottery-kilns	324,882	Aug. 25	2022	554	32	921
Porter, Thomas, Abilene, Tex. Earth-auger	324,162	Aug. 11	1025	280	32	720
Post, Charles H., Guilford, Conn. Portable shelving	325,696	Sept. 8	636	162	32	1139
Postawka, Louis, Cambridge, Mass. Support for adjustable and revolving seats	322,005	July 14	817	214	32	157
Postlethwaite, Charles W., assignor of one-half to D. A. Ely, Monroe, Mo. Washing-machine	323,073	July 28	2269	600	32	435
Pot, Adriaan. (See Smit and Pot.)						
Potter, Abraham L., Boston, Mass. Refrigerator	323,733	Aug. 4	459	130	32	609
Potter, James C., assignor to Atherton Machine Company, Lowell, Mass. Machine for opening and cleaning cotton and other fibers	321,851	July 7	617	158, 159	32	112
Potter, James C., assignor to Atherton Machine Company, Lowell, Mass. Machine for opening and cleaning cotton and other fibers	321,852	July 7	619	159	32	113
Potter, James C., assignor to A. T. Atherton, Lowell, Mass. Stripping mechanism for carding-machines	325,566	Sept. 1	467	117	32	1105
Potter, Merritt F., Hinckley, Ill. Lamp-reflector	323,530	Aug. 4	192	56	32	558
Potter, Robert M., Jersey City, N. J., and R. Boeklen, assignors of one-third to I. Cook, Brooklyn, N. Y. Apparatus for generating illuminating-gas	325,766	Sept. 8	742	186	32	1159
Potter, Thomas O., Boston, Mass. Suspenders	322,478	July 21	1449	380	32	279
Potter, Thomas O., Boston, Mass. Seapender attachment	322,479	July 21	1450	380, 381	32	280
Potter, Thomas O., Boston, Mass. Suspenders	322,480	July 21	1451	381, 382	32	280
Potts, Albert. (See Potts, Clayton and A.)						
Potts, Clayton and A., Indianapolis, Ind. Clay-disintegrator	322,393	July 14	1321	344	32	251
Potts, James F., *et al.* (See Narsmore, Henry L., assignor.)						
Potts, John R. (See Delamater, George W., assignor.)						
Potts, Joseph C., assignor of one-half to J. H. Coates, Berwyn, Pa. Device for converting motion	326,777	Sept. 22	2107	547	32	1423
Pounds, Joseph E. (See Walker, Charles O. R., assignor.)						
Ponschkareff, Nicolas L., Moscow, Russia. Vapor-burner	323,504	Aug. 4	279	81	32	573
Powell, Benjamin B., Petoskey, Mich. Speed-changing mechanism	324,955	Aug. 25	2119	579, 580	32	940
Powell, Edward. (See Powell, John G., assignor.)						
Powell, Edwin A., Peoria, Ill. Flour-bin	322,965	July 28	2113	562	32	408
Powell, Hattie L., *et al.* (See Ring, Jacob, assignor.)						
Powell, James, Cincinnati, Ohio. Lubricator	326,517	Sept. 15	1719	448	32	1348
Powell, James, Cincinnati, Ohio. Lubricator	326,518	Sept. 15	1721	449	32	1348
Powell, James, Cincinnati, Ohio. Lubricator	326,519	Sept. 15	1723	449	32	1348
Powell, James, Cincinnati, Ohio. Lubricator	326,520	Sept. 15	1724	449	32	1348
Powell, James, Cincinnati, Ohio. Lubricator	326,521	Sept. 15	1726	450	32	1349
Powell, James, Cincinnati, Ohio. Gland-adjuster for stuffing-boxes	326,522	Sept. 15	1727	450	32	1349
Powell, John G., assignor to himself and E. Powell, Philadelphia, Pa. Chain	324,587	Aug. 18	1603	441	32	837

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Powell, John R., Plymouth, Pa. Miner's squib	326,057	Sept. 8	1115	284	32	1228
Powell, John R., Plymouth, Pa. Miner's squib	326,239	Sept. 15	1367	353	32	1280
Powell, Richard J., and W. F. Nolan, Evansville, Ind. Fastening for buttons	322,124	July 14	979	255	32	187
Powell, Thomas, assignor to Stockton Combined Harvester and Agricultural Works, Stockton, Cal. Combined header and thrasher	323,961	Aug. 11	749	208, 209	32	671
Powers, Daniel E., assignor, by mesne assignments, to Patent Paper Cigar Box Company, New York, N. Y. Paper box	324,588	Aug. 18	1604	442	32	837
Powers, Daniel E., assignor, by mesne assignments, to Patent Paper Cigar Box Company, New York, N. Y. Cigar-box	324,589	Aug. 18	1604	442	32	837
Powers, Daniel E., assignor to Patent Paper Cigar Box Company, New York, N. Y. Cigar-box	325,627	Sept. 1	544	138	32	1118
Powers, David J., Chicago, Ill. Folding bed	321,912	July 7	687	179	32	125
Powers, David J., assignor to Union Wire Mattress Company, Chicago, Ill. Folding bed	321,911	July 7	686	178, 179	32	124
Powers, Emory R., Paradise, Cal. Tire-tightener	325,442	Sept. 1	307	75	32	1074
Powers, Joseph A., Troy, N. Y. Commutator-brush for dynamo or magneto electric machines	324,590	Aug. 18	1606	442	32	838
Powers, William K., St. Louis, Mo. Calcimine compound	322,851	July 21	1943	.....	32	369
Poynor, John S., Walnut Springs, Tex. Surgical instrument	322,198	July 14	1075	279	32	204
Poyser, Thomas, San Francisco, Cal. Paint-breamer	324,163	Aug. 11	1026	280	32	721
Pratt & Cody Company. (See Frisbie, Henry R., assignor.)						
Pratt, Edwin E., assignor to A. N. Kellogg Newspaper Company, Chicago, Ill. Fastening for stereotype-boxes	324,956	Aug. 25	2121	580	32	941
Pratt, Francis A., assignor to Pratt & Whitney Company, Hartford, Conn. Milling-machine	323,202	July 28	2448	649, 650	32	469
Pratt, James F., Chicago, Ill. Sole-protector	327,194	Sept. 29	2681	696	32	1533
Pratt & Letchworth. (See Basinger, James M., assignor.)						
Pratt & Letchworth. (See Hewitt, Leslie, assignor.)						
Pratt, Nathaniel W., Brooklyn, assignor to Babcock & Wilcox Company, New York, N. Y. Steam-generator	323,881	Aug. 4	641	181	32	644
Pratt, Nathaniel W., Brooklyn, assignor to Babcock & Wilcox Company, New York, N. Y. Steam-generator	323,882	Aug. 4	641	181	32	644
Pratt, Nathaniel W., Brooklyn, assignor to Babcock & Wilcox Company, New York, N. Y. Furnace for steam-generators	323,883	Aug. 4	642	181	32	644
Pratt, Nathaniel W., Brooklyn, assignor to Babcock & Wilcox Company, New York, N. Y. Surface-blow for steam-generators	323,884	Aug. 4	643	182	32	644
Pratt, Robert J., Greenbush Heights, assignor to Electric Manufacturing Company, Troy, N. Y. Reflecting galvanometer	323,203	July 28	2450	650, 651	32	470
Pratt & Whitney Company. (See Pratt, Francis A., assignor.)						
Pratt & Whitney Company. (See Richards, Francis H., assignor.)						
Pratt & Whitney Company. (See Whitney, Amos, assignor.)						
Preble, Glenwood. (See Miller, Frank L., assignor.)						
Prefantaine, George G., assignor of one-half to F. A. Hotchkiss, Whitehall, N. Y. Oil-cup	327,452	Sept. 29	3009	786	32	1590
Prentice, Leon H., Waukegan, Ill. Boiler	327,016	Sept. 29	2435	636	32	1490
Prestat, Ambroise, South Abington Station, Mass. Machine for making shoe-nails	326,240	Sept. 15	1368	353, 354	32	1281
Preston, Albert F., Lynn, assignor to Preston Machine Company, Boston, Mass. Machine for stretching uppers of boots or shoes	325,567	Sept. 1	469	117	32	1105
Preston, Edward F. (See Preston, William W., assignor.)						
Preston, Ezra K., Beverly Farms, Mass. Hoisting-machine	323,074	July 28	2270	600	32	436
Preston, John, Indianapolis, Ind. Convertible chair	326,241	Sept. 15	1371	354, 355	32	1281
Preston Machine Company. (See Preston, Albert F., assignor.)						
Preston, Richard. (See Hawkins and Preston.)						
Preston, Wallace A. (See Morrison and Preston.)						
Preston, William A., Fort Branch, Ind. Gate	322,852	July 21	1943	514	32	369
Preston, William W., Coldwater, assignor to himself and E. F. Preston, Bismarck, Mich. Plane-guide	323,595	Aug. 4	280	81	32	573
Pretschold, Hugo, assignor to J. G. Weldon and J. Kelly, Pittsburg, Pa. Hinge for stoves, &c	322,394	July 14	1322	344	32	251
Price, Charles B., Pittsburg, Pa. Railway-frog	323,506	Aug. 4	282	81, 82	32	574
Price, Charles W., and A. Barrett, Kansas City, Mo., assignors to American Bell Telephone Company, Boston, Mass. Telephone system	324,591	Aug. 18	1607	442, 443	32	838
Price, George W., assignor of one-half to W. J. Hooper, Baltimore, Md. Engine	324,592	Aug. 18	1608	443	32	838
Price, George W., assignor of one-half to W. J. Hooper, Baltimore, Md. Cut-off valve for engines	324,593	Aug. 18	1611	443, 444	32	838
Price, Henry W. (See Blomstrom, John, assignor.)						
Price, John, Chicago, Ill. Smoke-house	327,453	Sept. 29	3010	786	32	1590
Price, John A., Scranton, Pa. Stove or range	321,527	July 7	167	45	32	33
Price, Joshua C., Taylorsville, assignor of one-half to A. W. Wright and F. P. Roach, Chicago, Ill. Car-starter	323,902	Aug. 11	752	209	32	672
Price, Oliver B. (See Donaldson, John E., assignor.)						
Price, Reuben L., Forestburg, Tex. Stalk-cutter	325,628	Sept. 1	545	138	32	1119
Price, William, McKeesport, Pa. Making wrought-iron	323,365	July 28	2083	714	32	511
Price, William G., New Orleans, La. Current-meter	325,011	Aug. 25	2197	602	32	953
Price, William G., New Orleans, La. Fare-box	326,778	Sept. 22	2106	548	32	1423
Pridmore, Henry E., Chicago, Ill. Mechanical movement	325,270	Sept. 1	50	15	32	1025
Pridmore, Henry E., assignor to McCormick Harvesting Machine Company, Chicago, Ill. Clutch	324,786	Aug. 18	1883	518	32	889
Priest, Augustus F., Fort William, Ontario, Canada. Rail-clearer for snow-plows	326,917	Sept. 22	2304	603	32	1458
Priest, Charles A., Fitchburg, Mass. Desk	322,125	July 14	980	256	32	187
Prime, William R., Richford, Vt., assignor of one-half to S. B. Foster, Chicago, Ill. Nursing-bottle	323,597	Aug. 4	284	82	32	574
Prince, John, West Randolph, Vt. Knife for hoop-shaving machines	322,966	July 28	2114	563	32	408
Prince, John, West Randolph, Vt. Hoop-shaving machine	322,967	July 28	2116	563, 564	32	408
Prindle, Edward T., Aurora, Ill. Sash-fastener	324,883	Aug. 25	2025	555	32	922
Pringle, James S., Richland, Iowa. Gate-hanger	322,556	July 21	1547	409	32	297
Prioleau, Philip, Jr., Melrose, Fla. Muzzle for cattle	322,199	July 14	1076	279	32	204
Prior, Thomas W., Albany, N. Y. Device for holding steam-pipes, &c	325,767	Sept. 8	745	186	32	1160
Pritchard, Hattie B., Arnoldsburg, W. Va. Extension-bed	326,918	Sept. 22	2306	604	32	1459
Pritchett, Andrew L., Maryville, Mo. Brush or broom support	323,827	Aug. 4	568	161	32	630

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Probst, Emadeus, *et al.* (See Draper, Charley A., assignor.)						
Proctor, Redfield. (See Patch, Fred R., assignor.)						
Proctor, Thomas E., Boston, R. Whitaker and H. P. Reed, Peabody, Mass. Conveying apparatus	327,108	Sept. 29	2564	668	32	1512
Proctor, Thomas P., executor. (See Hancock, John T.)						
Prosser, Thomas, Franklin Square, Ohio. Means for holding and preventing gas from escaping	326,242	Sept. 15	1373	355	32	1222
Proudfit, Andrew E., assignor to M. K. Bortree Corset Company, Madison, Wis. Corset	326,058	Sept. 8	1116	284	32	1229
Provan, James W., Oshawa, Ontario, Canada. Hay-carrier	322,968	July 28	2119	564	32	409
Provost, Charles W. (See Michaels, Oliver J., assignor.)						
Pruim, Hiram P., assignor of one-half to G. Stickney, Grand Haven, Mich. Breastpin	322,640	July 21	1656	438	32	317
Pruim, Hiram P., assignor of one-half to T. Cairus, Grand Haven, Mich. Adjusting beat of clocks	325,111	Aug. 25	2320	639	32	977
Prüsmann, Carl, assignor to Schaffer & Budenberg, Buckau, Germany. Regulator-valve	321,913	July 7	689	179 180	32	195
Publow, James A., *et al.* (See Cook, Thomas G., assignor.)						
Puffer, Alvin D., Medford, Mass. Fitting for soda-water apparatus	323,383	July 28	2706	720	32	515
Puffer, Edwin R., Riverside, Ill. Recording weighing-scale	323,885	Aug. 4	643	182 183	32	645
Pulling, James G. (See Shelburne, Cephas, assignor.)						
Pulse, Charles N., Dodsonville, Ohio. Wire-stretcher	326,919	Sept. 22	2307	604	32	1459
Purdy, Albert L., Allentown, N. Y. Potato-digger	327,017	Sept. 29	2436	637	32	1490
Purdy, William H., Brooklyn, assignor, by mesne assignments, to United States Silvered Steel Company, Greenburg, N. Y. Compound for purifying iron and steel	322,557	July 21	1547	.....	32	297
Purdy, William H., Brooklyn, assignor, by mesne assignments, to United States Silvered Steel Company, Greenburg, N. Y. Purifying iron and steel	322,558	July 21	1548	.....	32	297
Purtell, Frank P. (See Kirby, James A., assignor.)						
Purviance, Benjamin F., assignor of one-half to C. Hills, Keokuk, Iowa. Automatic railway-switch	322,395	July 14	1323	344	32	251
Putman-Cramer, Anthon W., Brooklyn, N. Y. Producing gas	323,366	July 28	2685	715	32	511
Putnam, Charles M. (See Ransom, Ezra, assignor.)						
Putnam, David V., Nolensville, Tenn. Car-coupling	327,018	Sept. 29	2437	637	32	1490
Putnam, Jacob D., South Lyndeborough, N. H. Telegraph-insulator	324,957	Aug. 25	2122	580	32	941
Putnam, John, Philadelphia, Pa. Slate-pencil sharpener	324,787	Aug. 18	1885	518	32	889
Putnam, Salmon W., and W. A. Foster, Fitchburg, Mass. Cutter-head	324,041	Aug. 11	857	238	32	690
Pyott, Louis T., Philadelphia, Pa. Band-saw mill	325,629	Sept. 1	546	138 139	32	1119
Quick, George, Chipping-Campden, county of Gloucester, England. Lock for breech-loading ordnance	324,272	Aug. 11	1184	321 322	32	750
Quigley, Robert J. (See Hefferman, Edward F., assignor.)						
Raab, Joseph, Dayton, Ohio. Turbine water-wheel	325,112	Aug. 25	2321	639	32	978
Rabe, Heinrich, Hanau, Prussia, Germany. Electric impulsion device for a torsion-pendulum	325,113	Aug. 25	2322	639	32	978
Race, Joseph P., and E. E. Guernsey, St. Paul, Minn. Car-step	322,749	July 21	1803	476	32	344
Raddatz, Gottfred. (See Stoll, Jacob, assignor.)						
Rae, Frank B., Newark, N. J. Insulating and anti-induction tube for electric conductors	325,630	Sept. 1	547	139	32	1119
Railway Register Manufactoring Company. (See Corbett, Joseph, assignor.)						
Raisbeck, George A., Brooklyn, N. Y., assignor of one-half to P. Hake, Hoboken, N. J. Ornamental embossed card	324,164	Aug. 11	1027	280	32	721
Rakestraw, William H. (See Beard, George M., assignor.)						
Ralph, Alexander, Philadelphia, Pa. Hatchway	321,618	July 7	309	82	32	59
Ralston, David, Troy, N. Y. Machine for sanding brick-molds	321,528	July 7	169	45, 46	32	34
Ramsay, William, Tursdale Colliery, county of Durham, assignor of one-half to T. H. Bell, Middlesbrough, England. Machine for washing coal, &c	323,075	July 28	2271	601	32	436
Ramseyer, George A., Dobbs Ferry, N. Y. Music-stool	325,443	Sept. 1	308	75	32	1074
Rand, Franklin M., Turner's Falls, Mass. Letter-file	327,310	Sept. 29	2823	736	32	1559
Randall, Amelia A. (See Randall, Silas G., assignor.)						
Randall, Lewis L., Hawkinsville, Ga. Water-wheel	323,734	Aug. 4	460	130	32	609
Randall, Silas G., assignor to A. A. Randall, Greene, N. Y. Mortise-cutter	321,853	July 7	690	159	32	113
Randall, Squire J., Moodyville, New Westminster, British Columbia. Saw gummer and sharpener	326,243	Sept. 15	1374	355 356	32	1282
Randall, Timothy P., Adrian, Mich. Thill-coupling	322,481	July 21	1453	382	32	280
Randles, Henry, Clark's, Ohio. Coffin-stool	327,311	Sept. 29	2824	737	32	1559
Randolph, Norman V., Richmond, Va. Watch-movement box	321,854	July 7	691	160	32	113
Ranney, David F., assignor to Florence Machine Company, Florence, Mass. Take-up mechanism for sewing-machines	327,410	Sept. 29	2960	773	32	1582
Ransom, Ezra, assignor of one-half to C. M. Putnam, Flint, Mich. Car-coupling	325,114	Aug. 25	2324	640	32	978
Ransom, Hiram W., assignor to Emerson & Fisher Company, Cincinnati, Ohio. Two-wheeled vehicle	326,587	Sept. 22	1810	475 476	32	1372
Ransom, Hiram W., assignor of one-half to Emerson & Fisher Company, Cincinnati, Ohio. Forge	326,588	Sept. 22	1811	476	32	1372
Ransom, Moses Y., Cleveland, Ohio. Interlocking spiral molding as an article of manufacture	326,329	Sept. 15	1402	389	32	1305
Ransome, Ernest L., San Francisco, Cal. Concrete-mixing machine	322,006	July 14	819	214 215	32	157
Ransome, Ernest L., Oakland, Cal. Bricks, building-blocks, &c., made of purified ashes and lime	322,559	July 21	1549	.....	32	297
Raper, William, Windsor, Ontario, Canada. Draw-bar	322,200	July 14	1076	279	32	205
Rate, Edward F., Chicago, Ill. Husking-glove	321,529	July 7	170	46	32	34
Rathburn, James B. (See Kelsey, Frank N., assignor.)						
Rathien, John H. (See Land, Silas, assignor.)						
Raw, Anthony W. T. (See Tuttle, Beeri W., assignor.)						
Raw, Peter J., *et al.* (See Tuttle, Beeri W., assignor.)						
Rawling, John. (See Shepard, Sylvander C., assignor.)						
Rawlings, George H., St. Louis, Mo. Glove	325,968	Sept. 8	992	253	32	1206
Rawlings, Henry T., New Albany, Ind. Saw-table gage	326,454	Sept. 15	1641	429	32	1333
Raymond, Freeborn F., 2d, Newton, Mass. Heel-nailing machine	321,530	July 7	172	46, 47	32	34
Raymond, Freeborn F., 2d, Newton, Mass. Heel-nailing machine	321,756	July 7	469	124 125	32	87
Raymond, Freeborn F., 2d, Newton, Mass. Heel-attaching machine	322,126	July 14	982	256	32	188
Raymond, Freeborn F., 2d, Newton, Mass. Heel-nailing machine	322,560	July 21	1551	409	32	297
Raymond, Freeborn F., 2d, Newton, Mass. Applying top lifts to heel-blanks	322,561	July 21	1553	409	32	298

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Raymond, Freeborn F., 2d, Newton, Mass. Sole-nailing machine	322,562	July 21	1554	410 411 412	32	298
Raymond, Freeborn F., 2d, Newton, Mass. Making heel-nail plates	325,271	Sept. 1	51	15	32	1026
Raymond, Freeborn F., 2d, Newton, Mass. Nail-making machine	325,272	Sept. 1	52	16, 17	32	1026
Raymond, Freeborn F., 2d, Newton, Mass. Attaching soles of boots or shoes	326,150	Sept. 15	1238	317	32	1257
Raymond, Freeborn F., 2d, Newton, Mass. Heel-attaching machine	326,779	Sept. 22	2110	548	32	1424
Raymond, Freeborn F., 2d, Newton, Mass. Nailing-machine	326,780	Sept. 22	2112	548 549	32	1424
Raymond, Freeborn F., 2d, Newton, Mass. Nailing-machine	326,781	Sept. 22	2114	549 550	32	1424
Raymond, Freeborn F., 2d, Newton, Mass. Nail for boots or shoes	326,782	Sept. 22	2116	550	32	1425
Raymond, Silas H., Grand Rapids, Mich. Shoe-fastening	325,115	Aug. 25	2326	640	32	978
Read, John W., West Salem, Ohio. Fence	325,444	Sept. 1	309	75	32	1074
Ream, John A., Barnes, Kans. Medicine for diphtheria	326,589	Sept. 22	1813	.....	32	1373
Reaume, Eli F., Amherstburg, Ontario, Canada. Coffer-dam	326,783	Sept. 22	2117	550	32	1425
Redding, William F., Tangerine, Fla. Binding for boxes or crates	325,969	Sept. 8	993	253	32	1206
Redington, William H., assignor of one-half to W. Rodiger, Chicago, Ill. Mucilage-bottle	325,970	Sept. 8	994	253	32	1206
Redmond, Mark J., Naugatuck, Conn. Steam-trap	323,204	July 28	2452	651	32	470
Reeb, Charles, Dwight, Ill. Knot-tyer for grain-binders	321,639	July 7	311	82	32	59
Reece, Jasper N., *et al.* (See Newman, Nelson, assignor.)						
Reed, Benjamin K., and B. L. Burris, Wichita, Kans. Excavator	322,319	July 14	1217	320	32	232
Reed, Beverly S., Boston, Mass. Hoop-skirt	323,963	Aug. 11	753	209	32	672
Reed, Charles F. (See Anderson and Reed.)						
Reed, Herbert P. (See Proctor, Whitaker, and Reed.)						
Reed, Hugh A., Pittsburg, and W. H. Maddock, Allegheny, Pa. Machine for turning crank-pins	322,320	July 14	1218	320	32	232
Reed, James H. (See Piper and Reed.)						
Reed, Lemon M., Cleveland, Ohio. Barrel, keg, or similar article	322,641	July 21	1657	438	32	317
Reed, Lewis C., Girard, Mich. Plow	324,415	Aug. 18	1383	377	32	796
Reed, William H., Servia, Ind. Farm-fence	321,531	July 7	175	47	32	35
Reed, William H., Chicago, Ill. Joint-ferrule for fishing-rods	322,750	July 21	1804	476	32	344
Reeder, James W., Shelbyville, Ill. Boiler-tube	324,594	Aug. 18	1612	444	32	830
Reedy, Henry J., Cincinnati, Ohio. Elevator	325,971	Sept. 8	995	253 254	32	1206
Rees, John W., Uniontown, assignor of two-thirds to W. L. Wallis and J. Carley, Mercer County, Pa. Composition for plastering	322,751	July 21	1805	.....	32	344
Reese, Abram, assignor to H. W. Reese, Pittsburg, and R. C. Totten, Allegheny City, Pa. Car-brake	321,757	July 7	472	125	32	88
Reese, Harry W., *et al.* (See Reese, Abram, assignor.)						
Reese, Isaac, Nashville, Tenn. Rock-drill	322,642	July 21	1659	438	32	317
Reeve, William G. (See Rockafellow, Samuel, assignor.)						
Reeves, Albert S., assignor of one-half to D. Silvers and W. T. Corson, Millville, N. J. Car-coupling	326,590	Sept. 22	1813	476	32	1373
Reeves, Biddle, *et al.* (See Hardwick, Joseph O., assignor.)						
Regan, William, assignor to Branford Lock Works, Branford, Conn. Attaching knobs to spindles	325,445	Sept. 1	311	75	32	1075
Rehkopf, Fredrick A., and C. A. Rogers, Chicago, Ill.; said Rogers assignor to said Rehkopf. Road-cart	327,019	Sept. 29	2438	637	32	1491
Reichardt, Ferdinand A., Elizabeth, N. J. Combined thermometer-case and magnifying-lens	325,186	Aug. 25	2421	665	32	995
Reiche, Charles E. and H. C., Hartford, Conn. Lowering coffins	323,531	Aug. 4	194	56	32	558
Reiche, Hermann C. (See Reiche, Charles E. and H. C.)						
Reichelm, Edward P. (See Machlet, George, assignor.)						
Reichenbach, Henry. (See Paré and Reichenbach.)						
Reichert, Louis P., and A. Fuller, Buffalo, N. Y. Stop-cock box for water and gas pipes	326,674	Sept. 22	1933	508	32	1393
Reid, Ida C., Oakland City, Ind. Ironing-table	326,455	Sept. 15	1643	430	32	1333
Reid, John, Yonkers, assignor to J. L. Mott Iron Works, New York, N. Y. Grease-trap for sinks	323,532	Aug. 4	195	57	32	558
Reilly, Patrick, Brooklyn, N. Y. Stop-valve	324,486	Aug. 18	1469	403	32	811
Reilly, Robert M., and F. King, Baltimore, Md. Combined bung and faucet for ale and beer barrels	322,853	July 21	1944	514	32	369
Reinecke, Herman A. T., assignor to S. Thomas Clock Company, Thomaston, Conn. Stem-winding watch	325,568	Sept. 1	472	118	32	1106
Reinhard, J. F. (See Burgess, Robert, assignor.)						
Reinhard, William, Sr., and C. Kalanquin, Eau Claire, Wis. Chisel-shoe	327,312	Sept. 29	2825	737	32	1559
Reinhardt, Julia, St. Louis, Mo. Waist-lining	325,697	Sept. 8	637	162	32	1140
Reinhold, Frank J., assignor to F. A. Hubel, Detroit, Mich. Capsule-machine	323,896	Aug. 4	647	183	32	645
Reinmann, Albert L., Pittsburg, Pa. Manufacture of incandescent lamps	323,205	July 28	2453	651	32	470
Reinmann, Albert L., and C. G. Ott, Newark, N. J. Mercurial air-pump	327,313	Sept. 29	2827	737	32	1559
Reisener, Friederich O., West Point, Iowa. Shelving	322,201	July 14	1077	279 280	32	205
Reiss, George T., assignor to Niles Tool Works, Hamilton, Ohio. Drilling-machine	322,969	July 28	2121	564	32	409
Reiss, George T., assignor to Niles Tool Works, Hamilton, Ohio. Lathe	324,416	Aug. 18	1383	377	32	796
Remington, Moses, Brownsville, Ind. Clothes-pounder	321,914	July 7	690	180	32	125
Remington & Sons, E. (See Dodge, Philip T., assignor.)						
Rendleman, Henry, Alto Pass, Ill. Traction-engine	325,768	Sept. 8	746	186	32	1160
Rendtorff, Hermann. (See Geier, John L., assignor.)						
Resch, John A., assignor to Eureka Hinge Company, Jersey City, N. J. Hinge	326,784	Sept. 22	2118	550	32	1425
Reuther, Carl, Hennef, Prussia, Germany. Automatic grain-weighing machine	323,533	Aug. 4	196	57	32	558
Rentlinger, Adolph, *et al.* (See Stitzel, Frederick, assignor.)						
Reymond, Martin, Paterson, N. J. Appliance for laying bricks	322,563	July 21	1562	412	32	299
Reynolds, Albert W. (See Dodge, Arthur C., assignor.)						
Reynolds, Andrew J., Chicago, Ill. Malt-stirring machine	325,012	Aug. 25	2199	602	32	953
Reynolds, George A. (See Kingston, Edward S., assignor.) (Reissue.)						
Reynolds, George H., New York, N. Y., assignor of one-half to Crane Bros. Manufacturing Company, Chicago, Ill. Valve for hydraulic elevators	323,367	July 28	2686	715	32	511
Reynolds, John H., *et al.* (See Foster, Lucian M., assignor.)						
Reynolds, Josiah. (See Williams and Reynolds.)						
Reynolds, Silas H., and G. E. Danforth, Lynn, Mass., assignors to said Reynolds, trustee. Piston-rod packing	324,884	Aug. 25	2026	555	32	922
Reynolds, Stephen H. (See Hood and Reynolds.)						
Reynolds, Thomas J., assignor of one-half to F. Nolan, Brooklyn, N. Y. Preventing incrustation in boilers	324,596	Aug. 18	1614	445	32	830

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Reynolds, Warren W. (See Jones and Reynolds.)						
Reynolds, Zachariah T., *et al.* (See Smith, John A., assignor.)						
Reznor, George, Mercer, Pa. Paper-folding machine	326,785	Sept. 22	2119	551, 552	32	1425
Rheubottom, Homer E., *et al.* (See Sharp, Van Schaick, assignor.)						
Rhind, Frank, Brooklyn, N. Y. Argand burner	322,321	July 14	1221	320	32	232
Rhoads, John P., Philadelphia, Pa. Railway time-indicator	326,059	Sept. 8	1119	285	32	1229
Rhodes, Charles M. (See Fry, Charles H., Jr., assignor.)						
Rhodes, Elvet B. (See Dixon and Rhodes.)						
Rhodes, William H. (See Curtis and Rhodes.)						
Rice, Arthur, New Albany, Ind., assignor, by mesne assignments, to Peerless Manufacturing Company, Louisville, Ky. Sand-molding machine	322,202	July 14	1079	280, 281	32	205
Rice, Arthur, New Albany, Ind., assignor to Peerless Manufacturing Company, Louisville, Ky. Molding-machine for making molds in sand	322,203	July 14	1081	281	32	206
Rice, Charles D., Corry, Pa. Roller-skate	326,151	Sept. 15	1239	317	32	1258
Rice, Darius C., and J. Rossman, Ontario, Ind. Horse-collar pad	323,735	Aug. 4	461	130	32	609
Rice, David H., Lowell, Mass. Ball and roller bearing for shafts	322,482	July 21	1454	382	32	280
Rice, David H., Lowell, Mass. Tricycle	326,244	Sept. 15	1376	356	32	1282
Rice, David H., Lowell, Mass. Tricycle	326,245	Sept. 15	1379	356, 357, 358	32	1283
Rice, Delos E., Detroit, Mich. Feed-water heater	323,076	July 28	2273	601	32	436
Rice, George H., Brooklyn, N. Y. Caster	324,487	Aug. 18	1471	403	32	811
Rice, George W., Manistique, Mich. Bevel	323,077	July 28	2274	601	32	436
Rice, John S., *et al.* (See Garland, Milton H., assignor.)						
Rice, John W., Springfield, Mass. Car-brake	322,127	July 14	983	256	32	188
Rice, Judson, A. Stolger, San José, and I. L. Thurber, Santa Cruz, Cal. Asphaltic tiling and paving material	322,970	July 28	2125	.....	32	410
Rich, George, assignor of one-half to J. Rich, Philadelphia, Pa. Lathe-center	322,322	July 14	1222	321	32	232
Rich, Henry M., Athol, Mass. Chair-back	323,206	July 28	2454	651	32	471
Rich, John. (See Rich, George, assignor.)						
Richards, Calvin A. (See Barnes, Elisur, assignor.)						
Richards, Edmund A., Farmington, Me. Car-coupling	321,532	July 7	176	47	32	35
Richards, Francis H., Springfield, Mass., assignor to American Button Fastener Company, New Britain, Conn. Button-fastener	322,007	July 14	821	215	32	158
Richards, Francis H., Springfield, Mass., assignor to American Button Fastener Company, New Britain, Conn. Button-fastener	322,008	July 14	822	215	32	158
Richards, Francis H., Springfield, Mass., assignor to American Button Fastener Company, New Britain, Conn. Packing-case for button-fasteners	322,009	July 14	823	215	32	158
Richards, Francis H., Springfield, Mass., assignor to American Button Fastener Company, New Britain, Conn. Button-fastener-setting instrument	322,483	July 21	1455	383	32	281
Richards, Francis H., Springfield, Mass., assignor to American Button Fastener Company, New Britain, Conn. Mechanism for feeding button-fasteners	322,971	July 28	2125	565	32	410
Richards, Francis H., Springfield, Mass., assignor to American Button Fastener Company, New Britain, Conn. Machine for making and setting button-fasteners	322,972	July 28	2128	565, 566	32	411
Richards, Francis H., Springfield, Mass., assignor to American Button Fastener Company, New Britain, Conn. Stock for making button-fasteners	326,152	Sept. 15	1241	317	32	1258
Richards, Francis H., Springfield, Mass., assignor to American Button Fastener Company, New Britain, Conn. Button-fastener-feeding machine	326,153	Sept. 15	1241	318	32	1258
Richards, Francis H., Springfield, Mass., assignor to American Button Fastener Company, New Britain, Conn. Button-fastener-feeding machine	326,246	Sept. 15	1382	358, 359	32	1283
Richards, Francis H., Springfield, Mass., assignor to American Button Fastener Company, New Britain, Conn. Button-setting machine	326,786	Sept. 22	2121	552, 553	32	1426
Richards, Francis H., Springfield, Mass., assignor of one-half to Pratt & Whitney Company, Hartford, Conn. Envelope-folding machine	323,207	July 28	2454	652	32	471
Richards, Francis H., Springfield, Mass., assignor to Pratt & Whitney Company, Hartford, Conn. Planer-table-driving mechanism	323,208	July 28	2456	652	32	471
Richards, Jackson, Philadelphia, Pa. Metallic packing	323,446	Aug. 4	82	24	32	538
Richards, John T., *et al.* (See Burnham, Arthur M., assignor.)						
Richards, Walter W., Philadelphia, Pa. Signal for locomotive head-lights	326,523	Sept. 15	1729	450	32	1349
Richards, William P., Orange, N. J. Umbrella-rib-tip shield	321,855	July 7	622	160	32	113
Richardson, Alister M., assignor to himself and G. B. Edwards, Charleston, S. C. Automatic fan	325,862	Sept. 8	867	218	32	1182
Richardson, Christopher. (See Brock, William E., assignor.)						
Richardson, George, Bridgeport, Conn. Device for tapping mains	327,314	Sept. 29	2828	738	32	1560
Richardson, George, Bridgeport, Conn. Drill	327,315	Sept. 29	2829	738	32	1560
Richardson, George W., Medford, Mass. Safety-valve	325,273	Sept. 1	54	17	32	1026
Richardson, George W., assignor to J. H. Shepard, E. T. and W. A. Fawler, Chicago, Ill. Dumping wagon-bottom	321,533	July 7	177	47	32	35
Richardson, Henry B. (See Benham and Richardson.)						
Richardson, John, St. Mary's, Ga. Combined stern-sheet-block traveler, oar-lock, and cleat for boats and other vessels	324,165	Aug. 11	1028	281	32	721
Richardson, John T., Harrisburg, assignor of one-half to A. H. Ege, Mechanicsburg, Pa. Railway-switch	322,067	July 14	905	234	32	173
Richardson, Meritt, Owosso, Mich. Tool for trimming strawberry-vines	326,787	Sept. 22	2124	553	32	1426
Richardson, Samuel O., Cantrell, S. C. Combined seed-planter and fertilizer-distributer	321,453	July 7	61	17, 18	32	14
Richardson, William S., Boston, Mass. Glove-fastening	325,698	Sept. 8	638	162	32	1140
Richardson, William S., Boston, Mass. Glove-fastening	325,699	Sept. 8	639	163	32	1140
Richey, Sarah E., Chicago, Ill. Piano-cover	326,154	Sept. 15	1243	318, 319	32	1259
Richter, August, Jr. (See Michelson, Sigismund M., assignor.) (Reissue.)						
Ricker, John E., Boston, Mass. Harness-support	326,330	Sept. 15	1493	389	32	1305
Ricketts, James J. (See Phillips and Ricketts.)						
Ricketts, Pierre D., *et al.* (See Wittmack, Charles A., assignor.)						
Rider, Alexander K., Walden, N. Y. Automatic sprinkler	326,155	Sept. 15	1244	319	32	1250
Rider, John, assignor, by mesne assignments, to himself and A. Litchfield, Watertown, Mass. Agitating-spoon	327,109	Sept. 29	2565	669	32	1512
Rider, John P., Fishkill, N. Y. India-rubber ball	326,788	Sept. 22	2126	553	32	1427
Rider, Thomas J., assignor of one-half to C. H. De Lamater, G. H. Robinson, and W. De Lamater, New York, N. Y. Duplex pumping-engine	324,488	Aug. 18	1472	403	32	811
Riglander, Jacob W., New York, N. Y. Eyeglasses	323,736	Aug. 4	462	130	32	609
Riker, Carroll L., Brooklyn, N. Y. Soldering-iron heater	323,534	Aug. 4	197	58	32	550
Ring, Jacob, assignor, by mesne assignments, to R. Ring and H. L. Powell, Cincinnati, Ohio. Snow-cutting and track-sweeping attachment for railway-cars	322,323	July 14	1222	321	32	232

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Ring, Rosalie, *et al.* (See Ring, Jacob, assignor.)						
Riordan, Bartholomew, Washington, D. C. Combined roller and tile-ruler for marking concrete surfaces	324,166	Aug. 11	1029	281	32	721
Riordan, John, *et al.* (See Mason, Henry, assignor.)						
Ripson, John D., and R. Watson, Toronto, Ontario, Canada. Spring catch or fastening	326,331	Sept. 15	1494	390	32	1306
Ritchie, Edward S., Boston, Mass. Sonometer	322,010	July 14	824	216	32	158
Ritter, Charles, Brooklyn, N. Y. Button and button-fastener	326,332	Sept. 15	1495	390	32	1306
Ritter & Conley. (See Seaver, John W., assignor.)						
Rivers, Thomas L., Montclair, assignor of one-third to J. Thomas, Newark, N. J. Hametug	325,013	Aug. 25	2201	603	32	953
Rivers, William H., assignor of one-third to E. Wright, Adams, Mass. Thread-guard for spinning-frames	324,730	Aug. 18	1807	499	32	875
Rix, Benjamin F., Kalamazoo, Mich. Harrow	327,020	Sept. 29	2440	638	32	1491
Roach, Freeman P., *et al.* (See Price, Joshua C., assignor.)						
Roach, John E., Batesville, Ohio. Safety stock-feeder	327,110	Sept. 29	2565	669	32	1512
Roach, Michael J., assignor of one-half to J. Clark and D. McKim, Lockport, N. Y. Steam-pipe joint for rotary paper-drying cylinders, &c	325,972	Sept. 8	906	254	32	1206
Robarts, Joseph P. (See Hough, William W., assignor.)						
Robb, Frank F., Monongahela City, Pa. Nut-lock	326,333	Sept. 15	1496	390	32	1306
Robbins, Albert F., Orange, Mass. Mainspring-winder	325,973	Sept. 8	907	254	32	1207
Robbins, George W., Los Angeles, Cal. Sofa-bed	322,643	July 21	1660	439	32	317
Robbins, Royal E., *et al.*, trustees. (See Church, Duane H., assignor.) (Reissue.)						
Roberson, James D., assignor of one-half to C. Paulus, Sedalia, Mo. Plow	326,501	Sept. 22	1814	476, 477	32	1373
Roberts, Albert, Marion, Iowa. Railway water-tank	322,068	July 14	906	234	32	173
Roberts, Charles, Wellsville, Mo. Wagon	327,316	Sept. 29	2830	738	32	1560
Roberts, David A., Creston, Ill. Portable wire-reel	327,195	Sept. 29	2682	697	32	1533
Roberts, David A., Creston, Ill. Portable wire-reel	327,196	Sept. 29	2682	697	32	1534
Roberts Duplex Planing Machine Tool Company. (See Roberts, James A., assignor.)						
Roberts, Edward P., *et al.* (See Thompson, Edward P., assignor.)						
Roberts, George A., Three Rivers, Mich. Thrashing-cylinder	326,334	Sept. 15	1497	390	32	1306
Roberts, Henry P., Jamestown, N. Y., assignor of one-half to J. D. King, Brantford, Ontario, Canada. Fan attachment	325,863	Sept. 8	868	218	32	1182
Roberts, James A., assignor to Roberts Duplex Planing Machine Tool Company, Detroit, Mich. Feed-roll	322,324	July 14	1223	321	32	233
Roberts, John H. (See Banker and Roberts.)						
Roberts, John M., and B. W. Case, Brownsville, Dak. Ter. Wagon-standard	324,956	Aug. 25	2124	580	32	941
Roberts, Webster, Cleveland, Ohio. Shaft hanger	326,789	Sept. 22	2127	553	32	1427
Robertson, Commodore P., and J. R. Hicks, Kansas City, Mo. Vehicle hub and axle	325,769	Sept. 8	747	187	32	1160
Robertson, John, Brooklyn, N. Y. Hydraulic lead-press	327,317	Sept. 29	2831	739	32	1560
Robertson, William H., Toronto, Ontario, Canada. Rail-scraper for street and other railways	324,731	Aug. 18	1807	499	32	875
Robey, Jacob H., Hartford, Ind. Grave coffin-receptacle	324,167	Aug. 11	1030	281	32	721
Robinson, Alfred B., Lebanon, Mo. Hook	322,484	July 21	1457	383	32	281
Robinson, Frederic C. P., New York, assignor to T. J. Conroy, Brooklyn, N. Y. Artificial bait	326,886	Sept. 22	2263	501	32	1451
Robinson, George H., *et al.* (See Rider, Thomas J., assignor.)						
Robinson, George S., Canastota, N. Y. Lock-nut	323,078	July 28	2275	602	32	437
Robinson, Robert, Brooklyn, N. Y. Cleaning bottles	322,644	July 21	1660	439	32	318
Robinson, Robert P. (See Brandon, George M., assignor.)						
Robinson, Stillman W., Columbus, Ohio. Machine for uniting the soles and uppers of boots or shoes	325,274	Sept. 1	55	17, 18	32	1026
Robinson, Stillman W., Columbus, Ohio. Machine for making screw-wire for pegs	325,275	Sept. 1	61	19	32	1027
Robinson, William, Middlesbrough-on-Tees, England. Lubricator for journals	326,156	Sept. 15	1246	319	32	1250
Robinson, William, London, Ontario, Canada. Fire-escape	327,111	Sept. 29	2566	669	32	1512
Robinson, William D., Rathboneville, N. Y. Potato-digger	325,631	Sept. 1	548	139	32	1119
Roche, Charles M., Baltimore, Md. Window-awning	327,318	Sept. 29	2833	739	32	1560
Roche, Daniel E., Rochester, N. Y. Runner attachment for carriages	326,456	Sept. 15	1644	430	32	1333
Roche, John W. (See Blair and Roche.)						
Rockafellow, Samuel, Muscatine, Iowa, assignor of one-half to W. G. Reeve, Peru, Ill. Sulky-plow	324,788	Aug. 18	1886	518, 519	32	890
Rockfellow, Albert G., Ashland, Oreg. Ball-and-socket hinge	327,319	Sept. 29	2833	739	32	1560
Rodes, Robert, Jr., Nashville, Tenn. Bicycle-handle	325,014	Aug. 25	2202	603	32	954
Rodgers, Alexander, Muskegon, Mich. Circular sawing machine	322,396	July 14	1324	345	32	251
Rodgers, Alexander, Muskegon, Mich. Reciprocating saw-mill	324,273	Aug. 11	1187	322, 323	32	751
Rodgers, Kelita A., Corning, Ohio. Churn	322,854	July 21	1945	514	32	370
Rodier, Louis C., Detroit, Mich. Combined radiator and heating-oven	323,209	July 28	2458	653	32	471
Rodiger, William. (See Redington, William H., assignor.)						
Roe, Edward R., Dixon, Ill. Type-writing machine	325,446	Sept. 1	312	76	32	1075
Rogers, Andrew W., Salem, Mass. Bottomless shoe-form	321,640	July 7	312	83	32	60
Rogers, Charles A. (See Rehkopf and Rogers.)						
Rogers, Charles E., Boston, Mass. Piano-action	326,335	Sept. 15	1497	391	32	1306
Rogers, Cyrus P., Frederica, Del., and L. Allen, New York, N. Y., assignors to Steam Heat Evaporator Company, Charlotte, Mich. Fruit-drier	325,360	Sept. 1	170	76	32	1047
Rogers, Dwight E. (See Beers, Elbert H., assignor.)						
Rogers, Enoch J., Memphis, Mich. Harrow	324,168	Aug. 11	1031	282	32	721
Rogers, J. Webb. (See Rogers, James H. and J. W.)						
Rogers, James H. and J. W., Washington, D. C. Magneto-telephone	326,675	Sept. 22	1934	509	32	1393
Rogers, John W. (See Myers and Rogers.)						
Rogers, Mort M. (See Neal, James W., assignor.)						
Rogers, William B., Philadelphia, Pa. Underground conduit for electrical conductors	323,964	Aug. 11	754	210	32	672
Rogers, William C., New York, N. Y. Advertising medium	323,210	July 28	2458	653	32	471
Rogers, Winfield S., assignor to P. G. March, Cincinnati, Ohio. Roller-skate	327,411	Sept. 29	2903	773	32	1582
Roggen, Nathan, and T. Eisenstein, New York, N. Y. Shirt	322,397	July 14	1326	345	32	252
Rohme, James H., assignor to himself, J. Orr, Newburg, C. M. Sweet, New York, and C. E. Sweet, Wappinger's Falls, N. Y. Mechanism for controlling steam-driven sewing-machines	326,457	Sept. 15	1645	430	32	1334
Rohning, Charles, Lincoln, Mo. Medicine for hog-cholera	327,412	Sept. 29	2964	.....	32	1582
Rohrbach, George, New Haven, Conn. Knockdown table	327,413	Sept. 29	2964	773	32	1582
Rohrer, John S., Lancaster, Pa. Wind-wheel	326,157	Sept. 15	1246	319	32	1250
Rohwer, Henry. (See Boehncke and Rohwer.)						
Rollin, Albert H., Coldwater, Mich. Ratchet-wrench	324,169	Aug. 11	1032	282	32	722
Rolline, Daniel M., *et al.* (See Coultane, Joseph A., assignor.)						
Romans, Abijah L., Sinclairville, N. Y. Thill-coupling	325,864	Sept. 8	869	219	32	1182

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Romigh, Daniel. (See Romigh, William S. and D.)						
Romigh, William S. and D., Wichita, Kans. Fence-making machine	321,534	July 7	179	48	32	35
Roorbach, William L., assignor of one-half to S. Twitchell & Brother, Philadelphia, Pa. Bottle-stopper	323,737	Aug. 4	463	131	32	610
Roosevelt, Hilborne L., New York, N. Y. Composition stop-action for organs	323,211	July 28	2459	653	32	472
Roosevelt, Hilborne L., New York, N. Y., and C. S. Haskell, Philadelphia, Pa.; said Haskell assignor to said Roosevelt. Pneumatic action for organs	323,829	Aug. 4	571	162	32	631
Root, Charles W., Southington, assignor to himself and M. N. Woodruff, Plantsville, Conn. Die for forming carriage-bolts	327,454	Sept. 29	3012	786	32	1500
Root, Francis H., Hyde Park, Ill. Device for lighting gas by electricity	325,569	Sept. 1	473	118	32	1106
Root, Franklin, Hartford, Conn. Curtain-fixture	324,959	Aug. 25	2125	581	32	941
Root, G. Wells. (See Comly, James, assignor.)						
Root, Henry, San Francisco, Cal. Cable railway. (Reissue)	10,621	July 7	721	189, 190	32	131
Root, John B., Port Chester, N. Y. Exercising-machine	326,247	Sept. 15	1384	359	32	1284
Roots, Francis M., Connersville, Ind. Rotary pump	325,276	Sept. 1	63	19	32	1027
Roquet & Cohin. (See Cohin, Stanislas F., assignor.)						
Roraback, John Z. (See Edgar, Joseph M., assignor.)						
Rose, George P., Fenton, Mich. Whip-socket	327,021	Sept. 29	2441	638	32	1491
Rosebrook, Frank, Elmira, N. Y. Removable egg-tray for incubators	324,274	Aug. 11	1188	323	32	751
Rosenbaum, Solomon N., New York, N. Y. Card-holder	323,598	Aug. 4	285	82	32	574
Rosenstock, Moritz, New York, N. Y. Bustle	327,455	Sept. 29	3013	787	32	1591
Rosentreter, Frank L., assignor to Champion Safety Lock and Novelty Company, Cleveland, Ohio. Sash-holder	324,885	Aug. 25	2027	555	32	922
Rosevear, Thomas. (See Kelly, Michael, assignor.)						
Rosier, Thomas R., San José, Cal. Flaxseed-cleaner	324,275	Aug. 11	1189	323	32	751
Ross, Alfred, Wichita, Kans. Automatic blotter-holder	327,022	Sept. 29	2441	638	32	1491
Ross, Daniel, assignor to C. Archibald, Cow Bay, Nova Scotia, Canada. Car-axle lubricator	326,524	Sept. 15	1729	451	32	1349
Ross, George W. (See White, Maurice W., assignor.)						
Ross, Joseph B. (See Mackley and Ross.)						
Rossman, Jerome. (See Rice and Rossman.)						
Roth, Frank J., assignor to Lane & Bodley Company, Cincinnati, Ohio. Stuffing-box packing	327,456	Sept. 29	3015	787	32	1591
Roth, John F., Chicago, Ill. Kitchen-dresser	326,248	Sept. 15	1385	360	32	1284
Rothe, Emil, Breitenau, near Oederan, Germany. Centrifugal machine	322,069	July 14	907	234	32	173
Rothengatter, Charles, Philadelphia, Pa. Fringe-reel	321,454	July 7	62	18	32	14
Rotherham, Alexander. (See Barton, Charles, assignor.)						
Rounds, Christiana. (See Smith and Rounds.)						
Rounds, Ezra, Lawrence, Mass. Silver trumpet or guide for spinning mules or frames	325,700	Sept. 8	640	163	32	1140
Rousseau, David, New York, N. Y. Circuit-controller for combined district-telegraph and domestic-supply circuits	322,973	July 28	2130	566	32	411
Rousseau, Frank, Detroit, Mich. Car-starter	326,790	Sept. 22	2129	554	32	1427
Roussel, François, Villefranche, Rhone, France. Photographic camera	324,469	Aug. 18	1474	404	32	811
Rowbotham, John, Philadelphia, Pa. Rotary water-meter	325,361	Sept. 1	172	46	32	1047
Rowbotham, John, Philadelphia, Pa. Rotary water-meter	325,362	Sept. 1	174	46, 47	32	1047
Rowe Brothers. (See Rowe, Elmer E., assignor.)						
Rowe, Elmer E., assignor to Rowe Brothers, Ellsworth, Me. Fifth-wheel for vehicles	321,641	July 7	313	83	32	60
Rowell, William A., Jesmond Gardens, Newcastle-upon-Tyne, England. Manufacture of chromic acid	322,011	July 14	825	.....	32	158
Roweton, John W., Clarksburg, Ohio. Thrashing-machine	326,249	Sept. 15	1386	360, 361	32	1284
Rowland, Thomas F., New York, N. Y. Machinery for charging retorts	322,128	July 14	965	256, 257	32	188
Royal, William H. (See Mair and Royal.)						
Royce, Charles H., assignor to J. H. Peirce, Chicago, Ill. Packing-case for bottles	323,212	July 28	2460	654	32	472
Royle, John, Jr. (See Royle, Vernon and J., Jr.)						
Royle, Vernon and J., Jr., Paterson, N. J. Machine for making tubing and cord, and for covering telegraph and other wires	325,363	Sept. 1	176	47, 48	32	1047
Rubber and Celluloid Harness Trimming Company. (See Van Ness, Thomas E., assignor.)						
Rubenstein, Barney, East Saginaw, Mich. Chair-commode	321,915	July 7	692	180	32	125
Rucker, Martin D., London, England. Bicycle	322,974	July 28	2134	567	32	412
Ruddock, Erwin B. (See Flower and Ruddock.)						
Ruddy, Robert, Mount Vernon, and L. Kaczander, assignors to Nathan Manufacturing Company, New York, N. Y. Lubricator	324,339	Aug. 11	1275	346	32	768
Ruebsam, John E., Washington, D. C. Muscle-beater	325,447	Aug. 4	83	24	32	538
Ruel, Laurent, Merrimac, assignor to W. M. Brewster, Georgetown, Mass. Machine for making felt boots, shoes, &c.	324,340	Aug. 11	1276	346, 347	32	768
Ruff, Frederick A., St. Clair, Mich. Washing-machine	326,060	Sept. 8	1120	285	32	1229
Ruff, Joseph. (See Hirth and Ruff.)						
Rugally, Adam, New York, N. Y. Velocipede	321,642	July 7	313	83	32	60
Rugland, Samuel C., San Francisco, Cal. Tailor's press-pad	325,277	Sept. 1	65	19, 20	32	1028
Rumble, A. Carson, assignor of two-thirds to C. E. Phinney and S. A. Baxter, Lima, Ohio. Railway-crossing	327,457	Sept. 29	3015	787	32	1591
Rumsey, Charles B., assignor of two-thirds to C. A. Skinner and G. D. Daniels, Homer, N. Y. Positive shuttle-motion for looms	323,738	Aug. 4	464	131	32	610
Rundell, Daniel J., Norton, Kans. Wire gate	321,535	July 7	180	48	32	36
Rundell, Luman, New Baltimore, N. Y. Cutting apparatus for mowers and reapers	323,599	Aug. 4	286	82	32	575
Rupp, Fredrick, and D. F. Smith, Milford, Ind. Vehicle-spring	325,015	Aug. 25	2203	603	32	954
Ruset, Charles F., deceased; P. L. Miles administrator and assignor to M. Keiper, H. J. Myers, W. F. Buchholz, J. Kahn, S. R. Thorman, and the estate of said Ruset, Cleveland, Ohio. Dynamo-electro machine	322,310	July 14	1206	317	32	229
Rushmer, Benjamin, and G. A. Joyce, Columbus, Ohio. Vehicle-wheel	325,278	Sept. 1	66	20	32	1028
Rushton, Frank, Provo City, Utah Ter. Cartridge-shell extractor for fire-arms	323,368	July 28	2088	715	32	511
Russell, Alexander, Hot Springs, Ark., assignor to E. H. Johnson. Drawer for drawing-paper and documents	326,061	Sept. 8	1121	285	32	1229
Russell, Buell E. (See Wood, James F., assignor.)						
Russell & Erwin Manufacturing Company. (See Russell, Henry E., Jr., assignor.)						
Russell, Henry E., Jr., assignor to Russell & Erwin Manufacturing Company, New Britain, Conn. Knob attachment	326,920	Sept. 22	2308	604	32	1459
Russell Horseshoe Company. (See Clande, Louis G., assignor.)						
Russell, James W., Ellenville, N. Y. Sled	325,570	Sept. 1	475	118	32	1106
Russell, Joseph A. (See Peirce and Russell.)						
Russell, Joseph H. (See Kitson, John, assignor.)						
Russell, Sterne, assignor to Scovill Manufacturing Company, Waterbury, Conn. Photographic-plate holder	326,921	Sept. 22	2309	604	32	1459

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Name, residence, and invention.	No.	Date	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Rutan, Jennie S., Philadelphia, Pa. Window-cleaner	322,070	July 14	908	235	32	173
Rutter, Hannah J., Oakland City, Ind. Cooking utensil	323,887	Aug. 4	648	183	32	645
Ryan, Daniel W. (See Delano, Eben A., assignor.)						
Ryan, Daniel W. (See Miller, George J., assignor.)						
Ryan, Francis G. (See Cleves and Ryan.)						
Ryan, John C. (See Hall and Ryan.)						
Ryan, Joseph P., New York, N. Y. Painter's sander	325,016	Aug. 25	2203	603	32	954
Ryan, Patrick, Chicago, Ill. Bridge gate or guard	327,112	Sept. 29	2568	669, 670	32	1512
Rybacek, Frank H., Riverside, Iowa. Corn-planter	326,525	Sept. 15	1731	451	32	1350
Ryder, Edwin P., Port Jefferson, assignor of one-half to J. W. Bailey, Brooklyn, N. Y. Dinner-pail	325,217	Aug. 25	2464	678	32	1003
Ryder, Elisha, Hartford, Conn. Envelope-moistener	325,632	Sept. 1	550	140	32	1120
Ryland, Marion W., Warsaw, Ind. Locking whip-socket	323,369	July 28	2688	715	32	511
Ryman, William P., Wilkes-Barré, Pa. Electric low-water alarm for boilers	323,600	Aug. 4	287	83	32	575
Sachs, William, Berlin, Germany. Armhole-gusset	322,855	July 21	1947	515	32	370
Sack, Hermann, Philadelphia, Pa. Foot-warmer	325,116	Aug. 25	2327	640	32	978
Sack, Hugo, Plagwitz-Leipsic, Germany. Light copying apparatus	324,960	Aug. 25	2126	581	32	941
Sadler, John. (See Bond and Sadler.)						
Saegmuller, George N., Washington, D. C. Attachment for engineers' transits for vertical sighting	327,320	Sept. 29	2834	739	32	1561
Safety Steam Generator Company. (See Zell, Robert R., assignor.)						
Sahlein, Samuel H. (See Steinan, Jacob A., assignor.)						
Saint Requier, Henry F., Asnières, assignor to La Société Anonyme Pour les Procédés Brevetés de Farinerie Saint Requier, Paris, France. Bolting-reel	324,595	Aug. 18	1613	444	32	839
Sale, James H., Murray, Ky. Cotton chopper and cultivator	322,975	July 28	2135	567	32	412
Salomon, Henry. (See Moore, Ira W., assignor.)						
Salter, William T., New York, N. Y. Folding bed	325,974	Sept. 8	998	254	32	1207
Salvator, Carl. and G. Von Dormus, Vienna, Austria-Hungary; said Von Dormus assignor to said Salvator. Magazine fire-arm	326,676	Sept. 22	1935	509, 510	32	1393
Samain, Pierre, Paris, France. Liquid-meter	325,975	Sept. 8	999	255	32	1207
Sampson, W. A. (See Lewis, Wallace J., assignor.)						
Samuel, William E., Fairfield, Nebr. Car-coupling	327,197	Sept. 29	2683	697	32	1534
Sanborn, Samuel, San Francisco, Cal. Preservative for milk	327,023	Sept. 29	2442	.....	32	1491
Sandberg, John E., and M. Akeson, Butte City, Mont. Ter. Fire-escape	326,336	Sept. 15	1499	391	32	1307
Sandel, Caleb, Campti, La. Cotton-chopper	326,791	Sept. 22	2131	554	32	1427
Sandeman, John G., and P. Everitt, London, England. Apparatus for automatically delivering prepaid goods to accord with the price paid therefor	323,213	July 28	2461	654	32	472
Sanders, George A., *et al.* (See Newman, Nelson, assignor.)						
Sanders, Louis M., Roseville, Mich. Electrical apparatus for controlling marine engines	326,337	Sept. 15	1501	392	32	1307
Sandoz, Auguste, Neuchatel, Switzerland. Stem-winding watch	326,677	Sept. 22	1943	510	32	1395
Sanford, Gelston, Brooklyn, N. Y. Machine for obtaining fibers from leaves or plants	321,536	July 7	181	48	32	36
Sanford, Hopkins A., assignor to Automatic Safety Boiler and Engine Company, New Haven, Conn. Automatic feed for steam-boilers	324,417	Aug. 18	1385	377, 378	32	796
Sapsworth, George S., Shadwell, county of Middlesex, England. Machine band or belting	323,214	July 28	2463	655	32	473
Sargeant, Thomas C., Church Stowe, Weedon, county of Northampton, England. Plow-colter	325,451	Sept. 1	319	77	32	1076
Sargent, Alden R., *et al.* (See Main, Oscar F., assignor.)						
Sargent, Allan C. (See Sargent, Frederick G. and A. C.)						
Sargent, Charles E., St. Louis, Mo. Machine for bending wood	322,856	July 21	1948	515	32	370
Sargent & Co. (See Sargent, George H., assignor.)						
Sargent & Co. (See Sargent, Henry B., assignor.)						
Sargent & Co. (See Shaw, John H., assignor.)						
Sargent, Frederick G., Westford, Mass. Electric signaling apparatus	326,158	Sept. 15	1247	320	32	1259
Sargent, Frederick G. and A. C., Graniteville, Mass. Wool-drier	327,198	Sept. 29	2684	697	32	1534
Sargent, Frederick G. and A. C., Graniteville, Mass. Wool-washing machine	327,199	Sept. 29	2685	698	32	1534
Sargent, George H., New York, N. Y., assignor to Sargent & Co., New Haven, Conn. Transom-lifter	324,170	Aug. 11	1034	282	32	722
Sargent, Henry B., assignor to Sargent & Co., New Haven, Conn. Latch-case	321,856	July 7	623	160	32	114
Sathe, Ole A., Jackson, Minn. Bolt-cutter	324,961	Aug. 25	2127	581	32	942
Sattley, Archibald. (See Sattley, Marshall, assignor.)						
Sattley, Marshall, assignor of one-third to A. Sattley, Taylorville, Ill. Vehicle-wheel	321,758	July 7	475	125	32	88
Sauerbier, Henry, Newark, N. J. Can-opener	325,770	Sept. 8	748	187	32	1160
Saunders, John K., *et al.* (See Hale, Roswell W., assignor.)						
Savage, Andrew and J. Y., Scotland Neck, N. C. Planter	322,752	July 21	1806	476	32	344
Savage, John Y. (See Savage, Andrew and J. Y.)						
Savoye, Ulysse, Jr., Brooklyn, N. Y., and W. R. Searing, Newark, N. J. Clothes-line	326,250	Sept. 15	1388	361	32	1285
Sawyer, Abel H., *et al.* (See Mitchell, John B., assignor.)						
Sawyer, Benjamin F., Oxanna, Ala., assignor to Union Paper Bag Machine Company, Philadelphia, Pa. Paper-bag machine	326,592	Sept. 22	1816	477, 478, 479	32	1373
Sawyer, Fred. L. (See Brackett and Sawyer.)						
Sawyer, Walter B., *et al.* (See Cassidy, Thomas W., assignor.)						
Sawyer, Walter H. (See Brantley, Thomas, assignor.)						
Sawyer, William H., Providence, R. I. Metal-tipped electric cord	324,171	Aug. 11	1035	283	32	722
Saxton, George W., Sterling, Kans. Remedy for hog-cholera	324,418	Aug. 18	1388	.....	32	797
Sayer, Rockwell, Chicago, Ill. Dressing-case	323,739	Aug. 4	465	131	32	610
Sayer, Rockwell, Chicago, Ill. Water-closet	324,172	Aug. 11	1036	283	32	722
Sayre, Sylvester P., New Martinsville, assignor of one-half to C. W. Barrack, Wetzel County, W. Va. Rotary harrow	325,865	Sept. 8	870	210	32	1183
Scarborough, John B., Hawkinsville, Ga. Seed-drill and fertilizer-distributer	322,976	July 28	2136	567	32	412
Schaal, George A. (See Henry, John J., assignor.)						
Schaefer, Frederic, assignor to L. Schlegelmilch, trustee, Boston, Mass. Electric switch	322,857	July 21	1949	515	32	370
Schaffer & Budenberg. (See Prüsmann, Carl, assignor.)						
Schäffer & Budenberg. (See Westphal, Otto, assignor.)						
Schandein, Emil. (See Mueller, Charles L. F., assignor.)						
Schantz, Charles, Elizabeth, N. J. Mouse-cage	321,643	July 7	314	83	32	60
Scharnweber, William, Jefferson, assignor of one-half to G. Dorn, Chicago, Ill. Ventilator	327,414	Sept. 29	2965	774	32	1582
Scharnweber, William, Jefferson, assignor of one-half to G. Dorn, Chicago, Ill. Window-ventilator	327,415	Sept. 29	2967	774	32	1583
Scharr, Jonathan, Warwick, R. I. Washing-machine	323,740	Aug. 4	466	132	32	610
Scheffer, David M., New Castle, and C. F. Martin, Evansville, Ind. Ecraseur	326,792	Sept. 22	2132	554	32	1426
Scheidell, John S., Philadelphia, Pa., assignor to Campbell Printing Press and Manufacturing Company, New York, N. Y. Delivery apparatus for printing-presses	323,215	July 28	2465	655	32	473

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Schenck, Allen. (See Thomas and Schenck.)						
Schenck, Marcus P., Fulton, N. Y. Cider or wine press	325,976	Sept. 8	1003	255, 256	32	1207
Schenck, William T. Y., San Francisco, Cal. Gasket for man-holes	326,593	Sept. 22	1922	479	32	1374
Schenck, William T. Y., San Francisco, Cal. Manufacture of gaskets for steam-boilers	326,594	Sept. 22	1923	480	32	1374
Schener & Brother. (See Hoefle, Ernest W., assignor.)						
Schenkel, Nickolas, Allegheny City, Pa. Countersink	323,448	Aug. 4	85	25	32	538
Scherer, Matthew E., Arcadia, Ind. Flood-gate	326,922	Sept. 22	2310	605	32	1460
Scherff, Henry J., and C. B. Wolf, Pulaski, Ky. Excavating-machine	322,858	July 21	1951	515, 516	32	370
Scheuermann, John, Cleveland, Ohio. Stove-pipe thimble or sleeve	327,321	Sept. 29	2835	740	32	1561
Schiffling, Albert, Indianapolis, Ind. Cuff-holder	323,449	Aug. 4	85	25	32	538
Schilling, August M., Chicago, Ill. Lumber-drier	327,322	Sept. 29	2836	740	32	1561
Schillinger, John J., New York, N. Y. Apparatus for heating asphaltum, &c	322,325	July 14	1224	321	32	233
Schimpf, William, assignor of one-third to O. A. Keim, Shenandoah, Pa. Circulating-boiler	325,977	Sept. 8	1004	256	32	1208
Schlarbaum, John C., San José, Cal. Candlestick	322,753	July 21	1807	476	32	344
Schlegelmilch, Leopold. (See Schaefer, Frederic, assignor.)						
Schlemmer, Oliver, Cincinnati, Ohio. Head-protector	321,644	July 7	315	84	32	60
Schlesinger, David, New York, N. Y. Neckscarf	326,251	Sept. 15	1389	361	32	1285
Schlichting, Albert T., New York, N. Y. Adjustable double bedstead	322,645	July 21	1662	440	32	318
Schmackers, Anton, Birmingham, Ala. Sash-fastener	323,741	Aug. 4	467	132	32	610
Schmedlen, William H., assignor to Coldwater Road Cart Company, Coldwater, Mich. Two-wheeled vehicle	326,595	Sept. 22	1924	480	32	1374
Schmelz, Henry, New York, N. Y. Toilet-powder box	322,977	July 28	2137	567	32	412
Schmidt, Andrew R., Ann Arbor, Mich. Carriage-spring	323,535	Aug. 4	199	58	32	550
Schmidt, Charles F., Cleveland, Ohio. Roller-press	325,447	Sept. 1	314	76	32	1075
Schmidt, Christian A., Hoboken, N. J. Door-check	321,645	July 7	316	84	32	60
Schmidt, Ferdinand C., Newark, N. J. Lock for the frames of satchels, &c	325,017	Aug. 25	2204	604	32	954
Schmidt, Julius, New York, N. Y. Revolving brush	327,323	Sept. 29	2837	740	32	1561
Schmitt, John, and J. P. Huber, St. Louis, Mo. Coffee roaster and cleaner	322,646	July 21	1663	440	32	318
Schmuck, Solomon. (See Hunger, Friedrich, assignor.)						
Schneck, Eli J., *et al.* (See Donecker, Orin C., assignor.)						
Schneider, Carl H., assignor to Buhl & Keller, Freiburg, Germany. Apparatus for producing ammonia	325,771	Sept. 8	748	187, 188	32	1160
Schneiderriechner, Frank. (See Halter, Victor, assignor.)						
Schoellkopf, William C. F., Cleveland, Ohio. Oil-can	321,537	July 7	183	48	32	36
Schoen, Georg, New York, N. Y. Trimming attachment for sewing-machines	322,326	July 14	1225	322	32	233
Schoettle, Ferdinand, Philadelphia, Pa. Paper-box machine	326,338	Sept. 15	1504	392	32	1308
Schofield, Richard, and G. Davidson, assignors of one-third to J. Penman, Paris, Ontario, Canada. Knitting-machine	322,978	July 28	2138	568	32	412
Scholing, William. (See Arndt, Theophilus, assignor.)						
Scholl, Martin, Jr. (See Howe, Edward, assignor.)						
Scholle, Henry E. (See Wirts and Scholle.)						
Schols, Charles, Chicago, Ill. Grip for cable railways	325,633	Sept. 1	551	140	32	1120
School Furnishing Company. (See Conner, William P., assignor.)						
Schoonmaker, Edward T., assignor of one-half to J. E. Smith, New York, N. Y. Electric-wire insulator	321,646	July 7	317	84	32	61
Schoth, Gustave A., Euston Road, county of Middlesex, England. Apparatus for mixing air and combustible vapor	325,432	Sept. 1	390	77	32	1076
Schrader, Otto, Alameda, Cal. Safety-bridle	322,012	July 14	826	216	32	159
Schreiber, Charles C., assignor to L. Schreiber & Sons Company, Cincinnati, Ohio. Metallic door-sill	324,732	Aug. 18	1808	500	32	875
Schreiber, Gerhard, Chemnitz, assignor to Direction der Patentpapierfabrik zu Penig, Penig, Saxony, Germany. Manufacturing safety-paper for checks, &c	322,130	July 14	987	.....	32	188
Schreiber, Gerhard, Chemnitz, assignor to Direction der Patentpapierfabrik zu Penig, Penig, Saxony, Germany. Manufacturing safety-paper for checks, &c	322,131	July 14	988	.....	32	189
Schreiber & Sons Company, L. (See Schreiber, Charles C., assignor.)						
Schrimpf, Karl. (See Fuchs, Ernst, assignor.)						
Schrimshaw, James R., Brooklyn, N. Y. Apparatus for mixing gas and air	325,448	Sept. 1	316	76	32	1075
Schrock, Amos, Chicago, Ill. Sofa-bed	324,490	Aug. 18	1475	404	32	812
Schroder, Friedrich, New York, N. Y. Breastpin	325,117	Aug. 25	2328	640	32	979
Schroder, John, Tama City, Iowa. Harness-buckle	324,733	Aug. 18	1809	500	32	875
Schroeder, George G., assignor of one-half to E. Steinem, Washington, D. C. Detachable horseshoe	322,398	July 14	1326	345	32	252
Schroeder, William S., Chicago, Ill. Car-axle box	323,216	July 28	2466	655	32	473
Schryver, Augustus L., New York, N. Y. Lamp	323,450	Aug. 4	86	25	32	538
Schueler, Frederick, La Salle, Ill. Cut-off	325,449	Sept. 1	318	77	32	1076
Schueller, Ernst, Columbus, Ohio. Educational toy	322,754	July 21	1807	477	32	344
Schuette, George, Manitowoc, Wis. Cheese-press	321,857	July 7	624	160	32	114
Schuh, William H., Wayland, Mich. Thermostat	327,324	Sept. 29	2839	741	32	1562
Schuhmann, George, Reading, Pa. Cut-off-valve gear	321,538	July 7	184	49	32	36
Schulter, Georg. (See Hoexter and Schulter.)						
Schultheis, John G., San Francisco, Cal. Glass case for clocks, &c	325,866	Sept. 8	871	219	32	1183
Schultz, Adam, Cincinnati, Ohio. Malt-drier	325,018	Aug. 25	2205	604	32	954
Schultz, Carl H. (See Malmström and Dummer, assignors.)						
Schulze, Carl L., Berlin, Germany. Car-coupling	322,979	July 28	2139	568	32	413
Schulze, Charles T., Cincinnati, Ohio. Elevator hatch-gate	322,485	July 21	1457	393	32	221
Schulze, Ernst, Amsterdam, Holland. Machine for slicing sugar-cane	323,742	Aug. 4	468	133	32	611
Schumann, Henry H., assignor of one-third to C. Muth, Troy, Pa. Ladder	322,980	July 28	2140	568	32	413
Schumann, Hugo, Leipsic, Germany. Profile-cutting machine	324,491	Aug. 18	1477	404, 405	32	812
Schuster, George P., assignor to Crescent Manufacturing Company, St. Louis, Mo. Barb-wire machine	322,981	July 28	2141	568	32	413
Schwaab, Lawrence, New York, N. Y. Horseshoe	323,601	Aug. 4	288	83	32	575
Schwab, Nathan, New York, N. Y. Gas-trap cover for wash-basins	324,492	Aug. 18	1479	405	32	812
Schwabe, Carl G. (See Kürschner, Eduard, assignor.)						
Schwamb, Peter. (See Fisher and Schwamb.)						
Schwartz, Moses, *et al.* (See Stitzel, Frederick, assignor.)						
Schwarz, August, Jersey City, N. J. Washing-machine	327,024	Sept. 29	2443	638	32	1491
Schwarzenhoelzer, Paul, Buffalo, N. Y. Paring and slicing device	323,451	Aug. 4	87	25	32	538
Schweickhard, Daniel, Batavia, N. Y. Fence-post	322,072	July 14	910	236	32	174
Schweitzer, Julius, New York, N. Y. Extract of meat	326,793	Sept. 22	2133	.....	32	1422
Schweizer, Charles. (See Underwood and Schweizer.)						
Schwerin, Morris, Newark, N. J. Bag or satchel	325,978	Sept. 8	1005	256	32	1208

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Schwerin, Morris, Newark, N. J. Caster	326,159	Sept. 15	1251	320	32	1260
Schwickert, August, W., and E., Höchst-on-the-Main, Germany. Spring-propelled carriage	322,071	July 14	909	235, 236	32	174
Schwickert, Eduard. (See Schwickert, August, W., and E.)						
Schwickert, Wilhelm. (See Schwickert, August, W., and E.)						
Scott, Elward, *et al.* (See Scott, Orla J., assignor.)						
Scott, Erastus W., Wauregan, Conn. Whip-socket	323,452	Aug. 4	87	26	32	538
Scott, George B., Brooklyn, assignor to Western Union Telegraph Company, New York, N. Y. Printing-telegraph transmitter	321,858	July 7	625	161	32	114
Scott, Harry M. (See Benedict and Scott.)						
Scott, Horace, *et al.* (See Hazelrigg, Jacob, and Hood, assignors.)						
Scott, John W. (See Carter, David W., assignor.)						
Scott, Orla J., assignor of two-thirds to E. Scott and J. H. Hill, Carthage, Ind. Automatic gate	323,888	Aug. 4	649	164	32	646
Scott, Walter, Plainfield, N. J. Cylinder printing-machine	321,539	July 7	185	49	32	37
Scott, Walter, Plainfield, N. J. Cylinder printing-machine	322,132	July 14	988	257, 258	32	189
Scott, Walter, Plainfield, N. J. Sheet-delivery mechanism for printing-machines	325,118	Aug. 25	2329	641	32	979
Scott, Walter, Plainfield, N. J. Dampening machine for printing-presses	325,967	Sept. 8	872	220	32	1183
Scovill Manufacturing Company. (See Hyde, Theophilus R., Jr., assignor.)						
Scovill Manufacturing Company. (See Lines, John, assignor.)						
Scovill Manufacturing Company. (See Russell, Sterne, assignor.)						
Scovill Manufacturing Company. (See Spruce and Tonks, assignors.)						
Scoville, Elijah U., Manlius, N. Y. Faucet	322,129	July 14	986	257	32	188
Scribner, James H., assignor of one-half to O. E. Weber, Atlantic, Iowa. Spectacle-frame soldering-clamp	324,276	Aug. 11	1190	323	32	752
Scull, David, Jr., *et al.* (See Hardwick, Joseph O., assignor.)						
Seabury, Frederick W., Providence, R. I. Vulcanizing rubber	325,119	Aug. 25	2330	641	32	979
Seal, Joel A., Philadelphia, Pa. Cover for milk-cans	327,325	Sept. 29	2839	741	32	1562
Seaman, Albert H. (See Hyde and Seaman.)						
Seaman, Alfred S., Frackville, Pa. Oil-cloth knife	322,755	July 21	1808	477	32	344
Seamands, William C., *et al.* (See Biven, Frederick, assignor.)						
Search, Casper F., Winona, Minn. Pitman	326,887	Sept. 22	2264	592	32	1451
Searing, William R. (See Savoye and Searing.)						
Searls, Anson, assignor to Searls Manufacturing Company, Newark, N. J. Whip-socket fastener	327,113	Sept. 29	2569	670	32	1513
Searls Manufacturing Company. (See Searls, Anson, assignor.)						
Seaton, Charles H. (See McNeal, James, assignor.)						
Seaver, George F., and C. G. Mork, Joliet, Ill. Tool for piercing holes in soles of boots or shoes	326,160	Sept. 15	1252	320, 321	32	1260
Seaver, John W., assignor of one-half to Ritter & Conley, Pittsburg, Pa. Center for turn-tables and bridges	323,743	Aug. 4	469	133	32	611
Sebastian, Fredrich L., Toledo, Ohio. Hop-breaker	325,979	Sept. 8	1006	256	32	1208
Sechler, Daniel M., Cincinnati, Ohio. Two-wheeled vehicle	324,886	Aug. 25	2028	555	32	922
Sechler, Daniel M., Cincinnati, Ohio. Two-wheeled vehicle	324,902	Aug. 25	2128	581	32	942
See, Alonzo B., Brooklyn, N. Y. Elevator-cage and safety appliance	324,493	Aug. 18	1480	406	32	812
See, Horace, assignor of one-half to W. Cramp & Sons Ship and Engine Building Company, Philadelphia, Pa. Manufacture of crank-shafts	322,204	July 14	1062	281	32	206
See, Horace, assignor of one-half to W. Cramp & Sons Ship and Engine Building Company, Philadelphia, Pa. Apparatus for fitting and finishing crank-shafts	322,205	July 14	1064	281	32	206
See, James W., Hamilton, assignor to C. E. Jones & Bro., Cincinnati, Ohio. Caster	321,859	July 7	626	161	32	114
Seedhouse, Edward, Netherton, near Dudley, county of Worcester, England. Playing-card	326,678	Sept. 22	1944	511	32	1395
Seely, Elizabeth A., Bloomfield, Ind. Kettle-holder	325,868	Sept. 8	874	220	32	1184
Seely, Frank, New York, N. Y. Screen attachment for bottling-machines	326,679	Sept. 22	1945	511	32	1395
Seeman, Henry, Durham, N. C. Wagon-gearing	325,869	Sept. 8	875	220	32	1184
Seery, Thomas F., Boston, Mass. Dumping-car	323,744	Aug. 4	470	133	32	611
Seib, Simon, Newark, N. J. Clothes-line pulley	327,326	Sept. 29	2841	741	32	1562
Seiberling, John F., Akron, Ohio. Vat for paper-making machines	323,079	July 28	2275	602	32	437
Seiberling, John F., Akron, Ohio. Grain-binding harvester	325,871	Sept. 8	876	221	32	1184
Seifried, Kasper, Mamaroneck, N. Y. Wrench	326,680	Sept. 22	1946	511	32	1395
Seips, Michael, assignor to M. Bowman & Co., Meriden, Conn. Shaker	324,173	Aug. 11	1037	283	32	723
Sell, Caleb R., and W. S. Davis, Blandinsville, Ill. Washing-machine	326,339	Sept. 15	1505	392	32	1308
Sell, Edgar E., Charleston, S. C. Car-coupling	323,080	July 28	2277	602, 603	32	437
Sell, Fred, assignor of one-half to W. Klaeser, Milwaukee, Wis. Stock-car	321,660	July 7	627	161	32	114
Seldner, Joseph J., Baltimore, Md. Drive-chain	324,734	Aug. 18	1810	500	32	875
Seligman, Henry, Irvington, N. Y. Mechanical telephone	326,458	Sept. 15	1646	430	32	1334
Sellers, Albert, Littleton, Ill. Draft-equalizer	322,647	July 21	1663	440, 441	32	318
Sellers, Charles. (See Gurney and Sellers.)						
Sellers, William. (See Bancroft, J. Sellers, assignor.)						
Sellers, William. (See Bancroft, John S., assignor.)						
Sellon, John S., Hatton Garden, county of Middlesex, England. Secondary battery or electrical accumulator	321,759	July 7	476	126	32	88
Sellon, John S., Hatton Garden, county of Middlesex, England. Secondary battery	324,597	Aug. 18	1616	445	32	839
Sellon, John S., Hatton Garden, county of Middlesex, England. Secondary battery or electrical annunciator	325,120	Aug. 25	2331	641, 642	32	979
Selwyn, Jasper H., Gloucester Crescent, Hyde Park, county of Middlesex, England. Furnace for the combustion of liquid fuel	326,161	Sept. 15	1253	321, 322	32	1260
Senate, James D., Bunker Hill, Ohio. Machine for making clothes-pins	323,453	Aug. 4	88	26	32	538
Senderling, Martin L., Jersey City, N. J. Loose pulley, wheel, &c	326,596	Sept. 22	1925	480, 481	32	1375
Sensiba, Fred W., Talbot, Mich. Mail-crane	327,200	Sept. 29	2686	698	32	1535
Sergeant, Henry C., New York, N. Y. Rock-drill	326,597	Sept. 22	1929	481	32	1375
Sergeant, Henry C., New York, N. Y. Rock-drill	326,681	Sept. 22	1947	511, 512	32	1396
Sergeant, Henry C., New York, N. Y. Rock-drill	326,682	Sept. 22	1950	512	32	1396
Serrell, Harold, Plainfield, N. J., assignor to N. E. Montross, New York, N. Y. Artist's palette-cup	325,872	Sept. 8	878	221	32	1184
Serson, James. (See Leighton, Edwin F., assignor.)						
Setterwall, H. F. Aug. (See Hall, Clemence, and Setterwall.)						
Severance, Edward A., Turner's Falls, Mass. Machine for burnishing the blades of table-knives	327,327	Sept. 29	2841	741	32	1562

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Name, residence, and invention.	No.	Date.	Monthly volume.		Official Gazette.	
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Severance, Edward A., Turner's Falls, Mass. Machine for burnishing the handles of plated knives	327,328	Sept. 29	2843	742	32	1562
Sexton, Joel B. (See Alcorn, John S., assignor.)						
Seymour, Francis, assignor of one-half to J. Hinchliffe, Jr., Paterson, N. J. Artificial feather	325,870	Sept. 8	875	220	32	1184
Seymour, Henry A., Washington, D. C., assignor to Corbin Cabinet Lock Company, New Britain, Conn. Box or trunk fastener or catch	323,830	Aug. 4	574	162	32	631
Seymour, James M., Newark, N. J. Rotary fan	325,453	Sept. 1	321	78	32	1076
Seymour, James M., Newark, N. J. Fan	326,888	Sept. 22	2265	592	32	1452
Seymour, Oliver E., assignor of one-half to H. McKenzie, Cincinnati, Ohio. Gate	324,735	Aug. 18	1810	500, 501	32	875
Seyter, Herman. (See Walworth and Seyter.)						
Shaber, William R., San Francisco, Cal. Sofa-bed	321,540	July 7	187	50	32	37
Shadday, George, Jr., Rexville, Ind. Corn-planter	325,121	Aug. 25	2333	642, 643	32	979
Shaffer, Richard S., J. K. Adams, and G. W. Hunter, Albany, Mo. Car-coupling	325,873	Sept. 8	879	221	32	1185
Shailer, Fisk, Chester, Conn. Auger-bit	323,454	Aug. 4	91	26	32	539
Shailer, Simon W. (See Shailer, William W., assignor.)						
Shailer, William W., assignor of two-thirds to S. W. Shailer, Ivoryton, Conn. Nut-lock	324,174	Aug. 11	1039	283	32	723
Shakespear, Thomas, Birmingham, county of Warwick, England. Tricycle	325,019	Aug. 25	2306	605	32	955
Shank, John H., Gallipolis, Ohio. Smoke-consumer	323,217	July 28	2467	656	32	473
Shank, John T., assignor of one-half to A. M. Lapham, Springfield, Mo. Bee-hive	322,992	July 28	2143	569	32	414
Sharp, David, Lemoore, Cal. Derrick	322,756	July 21	1809	477	32	345
Sharp, John F., Philadelphia, Pa., assignor to United States Automatic Railroad Gate and Signal Company, New York, N. Y. Automatically-operating gates and signals	322,327	July 14	1226	322	32	233
Sharp, Mark. (See Baker, Elijah E., assignor.)						
Sharp, Van Schaick, assignor of two-thirds to W. W. Holcomb and H. E. Rheubottom, Weedsport, N. Y. Machine for seaming sheet metal	324,736	Aug. 18	1812	501	32	876
Sharpe, Charles M., Philadelphia, Pa. Collar-button	321,861	July 7	698	161, 162	32	115
Sharpneck, William S., assignor to H. N. Nichols, Denver, Colo. Ore-feeder	325,701	Sept. 8	641	163	32	1140
Sharps, Charles F., Meriden, Conn. Organ stop-action	321,455	July 7	64	18	32	15
Shaw, Charles H., Brooklyn, assignor to Fahys Watch Case Company, New York, N. Y. Watch-case	323,370	July 28	2689	716	32	512
Shaw, Frederick E., Valley Falls, R. I. Plotting-scale	323,218	July 28	2469	656	32	473
Shaw, James G., New York, N. Y. Forming a pencil-pocket at the back of a book	324,175	Aug. 11	1040	284	32	723
Shaw, John A., Ayer, Mass. Steam-cooker	325,980	Sept. 8	1007	257	32	1208
Shaw, John H., assignor to Sargent & Co., New Haven, Conn. Door-knob	321,862	July 7	629	162	32	115
Shaw, John H., assignor to Sargent & Co., New Haven, Conn. Door-check	322,648	July 21	1665	441	32	319
Shaw, John H., assignor to Sargent & Co., New Haven, Conn. Door-spring	322,649	July 21	1666	441	32	319
Shaw, Marshall B., *et al.* (See Stanton, Lafayette J., assignor.)						
Shaw, Walter, Boston, Mass. Sheet-music	322,013	July 14	227	216	32	159
Shawk, George W., Cleveland, Ohio. Hydrant-filter	322,486	July 21	1458	384	32	281
Shay, Richard, New York, N. Y. Bottling-machine	324,494	Aug. 18	1482	406	32	813
Shearer, John, Preston, Ontario, Canada. Machine for pressing cloth	325,122	Aug. 25	2335	643	32	980
Shearer, John, assignor of one-half to G. Pattinson, Preston, Ontario, Canada. Gig for napping cloth	322,963	July 28	2145	569	32	414
Shears, Thomas J., Detroit, Mich. Target-dart	322,984	July 28	2146	569	32	414
Sheather, Charles, York Terrace, Regent's Park, county of Middlesex, England. Horse-shoe	322,564	July 21	1563	412, 413	32	299
Sheehan, Owen, New Bedford, Mass. Warping-machine	322,014	July 14	229	216, 217	32	159
Sheehan, William E. (See Huse, Sheehan, and Davis.)						
Sheehy, Robert J., New York, N. Y. Printing-telegraph	325,702	Sept. 8	643	164, 165	32	1141
Sheffer, William. (See McDougall, Robert, assignor.)						
Sheip, Henry H., Philadelphia, Pa. Wood-working machine	325,279	Sept. 1	67	20, 21	32	1028
Shelburne, Cephas, Richmond, Va., assignor to J. G. Pulling, Columbus, Ohio. Gas-engine	322,650	July 21	1668	441, 442	32	319
Shelby, Christopher C., New York, N. Y. Garment-supporter	321,647	July 7	318	84	32	61
Shelby, Christopher C., New York, N. Y. Garment-supporter	321,648	July 7	319	85	32	61
Shelby, Christopher C., New York, N. Y. Clasp	322,965	July 28	2146	570	32	414
Shelby, Christopher C., New York, N. Y. Garment-supporter	326,162	Sept. 15	1256	322	32	1261
Sheldon, Philo B., Erie, Pa. Grading-machine	323,536	Aug. 4	200	58, 59	32	559
Shelley, Louisa J., Keokuk, Iowa. Guard for bedsteads	321,649	July 7	321	85	32	61
Shelton, Thomas, McKeesport, Pa., assignor to J. H. Flagler, New York, N. Y. Pipe-coupling	324,598	Aug. 18	1617	445	32	839
Shepard, Charles G., and P. Adams, Jr.; said Adams assignor to W. J. Shepard, Buffalo, N. Y. Toy savings-bank	321,650	July 7	321	85	32	61
Shepard & Co., Sidney. (See Tripp and Woeppel, assignors.)						
Shepard, Edmund, *et al.* (See Long, Edwin, assignor.)						
Shepard, Edwin, Staunton, Va. Rotary shears	326,163	Sept. 15	1257	323	32	1261
Shepard, Elgin R., Northfield, Minn. School-desk	325,961	Sept. 8	1007	257	32	1208
Shepard, Henry W., St. Louis, Mo. Feed-water heater	321,541	July 7	188	50	32	37
Shepard, Jason H., *et al.* (See Richardson, George W., assignor.)						
Shepard, Robert R., New York, N. Y. Metallic railway-tie and fastener	325,090	Aug. 25	2307	606	32	955
Shepard, Sylvander C., assignor of one-half to L. Miller, Akron, Ohio. Grain-binder	322,015	July 14	832	218	32	160
Shepard, Sylvander C., assignor of one-half to J. Rawling, Akron, Ohio. Speed-indicator for shafts, pulleys, and axles	324,042	Aug. 11	858	238	32	690
Shepard, Walter J. (See Shepard and Adams, assignors.)						
Shepherd, Henry S. (See Hendricks, Adam C., assignor.)						
Shepherd, Laven W., *et al.* (See Newman, Nelson, assignor.)						
Sheppard, John L., Charleston, S. C. Cotton-press	321,542	July 7	189	50, 51	32	37
Sheridan, John J. (See Beaumont, Robert L., assignor.)						
Sherman, Jeremiah G., West McHenry, Ill. Farm-gate	325,123	Aug. 25	2338	643	32	980
Sherman, John M. (See Anderson and Sherman.)						
Sherman, Mortimer, Lowell, Mass. Apparatus for moistening the air in cotton-mills, &c.	324,043	Aug. 11	859	238	32	690
Sherman, Nicholas W., assignor of one-half to D. Ellis, Coldwater, Mich. Two-wheeled vehicle	325,772	Sept. 8	754	188	32	1161
Sherman, Wallace D., Grand Rapids, Mich. Saw-swage	326,164	Sept. 15	1258	323	32	1261
Sherman, Willis D. (See Carson and Sherman.)						
Sherred, Alfred L., Venango, Pa. Windmill	321,760	July 7	478	126	32	89
Sherwood, Henry C., Bridgeport, Conn. Corset-stay	323,219	July 28	2470	656	32	473
Shiek, D. W., *et al.* (See Cole, Cary O., assignor.)						
Shields, Benjamin F., Oskaloosa, Iowa. Coffee or nut roaster	324,599	Aug. 18	1618	445	32	840

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Shipe, Walter S., Minerva, Ohio. Chain-saw	323,602	Aug. 4	289	83	32	575
Shipe, Walter S., Minerva, Ohio. Chain-saw	325,364	Sept. 1	181	48	32	1048
Shipley, John Q. (See Zimmerman and Shipley.)						
Shipley, Malcolm A., Philadelphia, Pa. Device for holding artificial flies, hooks, &c	326,794	Sept. 22	2134	555	32	1428
Shipman's Sons, Asa L. (See Davison, Frank G., assignor.)						
Shirley, Willis H., Glenwood, Mich. Bee-hive	323,220	July 28	2471	657	32	474
Shobe, Abraham A., Jerseyville, Ill. Railway-tie support	323,455	Aug. 4	92	27	32	540
Shock, H. R. (See Kornbau, Daniel, assignor.)						
Shoemaker, Charles T., assignor to H., H. C., W., and J. S. Disston, Philadelphia, Pa. Manufacture of saws	324,600	Aug. 18	1619	446	32	840
Shoesmith, Edward W., assignor of one-half to G. Breon, Lena, Ill. Machine for winding fence-wire	324,887	Aug. 25	2029	556	32	922
Shook, Levi, Pittsburg, Pa. Gage-cock	321,761	July 7	479	126	32	89
Shorey, William F., Baltimore, Md. Device for operating tramway-switches	322,487	July 21	1459	384	32	281
Short, John Columbus, Ohio. Chair	326,165	Sept. 15	1259	323	32	1261
Showalter, John W., and G. W. Manger, Pottstown, Pa. Window-grating	323,328	July 14	1298	322	32	234
Shreffler, Samuel, Jr., Joliet, Ill. Door-hanger	322,488	July 21	1460	384	32	282
Shroeder, Leopold C., Jamestown, N. Y. Feed-regulator	324,888	Aug. 25	2031	556	32	923
Shufflebarger, Simon and W., Eddyville, Ill. Journal-box	321,651	July 7	323	86	32	62
Shufflebarger, Willis. (See Shufflebarger, Simon and W.)						
Shuler, David, New Dover, Ohio. Flour-chest	324,419	Aug. 18	1389	378	32	797
Shupe, Eli, Racine, Wis. Opera-chair	327,026	Sept. 29	2445	639	32	1492
Sibley, Dennis E., Chicago, Ill. Grain-drier	323,221	July 28	2472	657	32	474
Sibley, Josiah. (See Wood, William, assignor.)						
Sibley, Lewis. (See Brown and Sibley.)						
Siddall, Thomas. (See May and Siddall.)						
Siebel, John, Oskaloosa, Iowa. Harness attachment	321,652	July 7	324	86	32	62
Sikes, Thomas E. (See Bruce and Sikes.)						
Siemens, Ernst W., Berlin, Germany. Conveying persons, &c., by electro-motive force	321,934	July 7	720	188, 189	32	130
Siemens, Ernst W., Berlin, Germany. Electric railway	322,859	July 21	1952	516, 517	32	371
Siemens, Ernst W., Berlin, Germany. Electric railway	324,176	Aug. 11	1040	284, 285	32	723
Siemens, Frederick, Dresden, Saxony, Germany. Gas-burner	323,537	Aug. 4	202	59	32	560
Sigler, George R. and W. G., assignors of one-half to C. Barkholder, Decatur, Pa. Harvester-cutter	323,745	Aug. 4	472	133	32	612
Sigler, William G. (See Sigler, George R. and W. G.)						
Silsbee, Jonathan C., Arbela, Mich. Lifting-jack	326,340	Sept. 15	1506	393	32	1308
Silver, John S., *et al.* (See Fuller, Charles A., assignor.)						
Silvers, Daniel, *et al.* (See Reeves, Albert S., assignor.)						
Simmerly, Albert N., Cleveland, Ohio. Revolving derrick	323,538	Aug. 4	204	60, 61	32	560
Simon, Julius, New York, N. Y. Shirt or shirt-waist	327,329	Sept. 29	2844	742	32	1563
Simon & O'Neill. (See Desmond, John, assignor.)						
Simonds, George F., Fitchburg, Mass. Device for inserting and withdrawing removable saw-teeth	326,683	Sept. 22	1952	512	32	1307
Simonds, George F., Fitchburg, Mass. Saw with insertible teeth	326,684	Sept. 22	1953	513	32	1307
Simonds, George F., Fitchburg, Mass. Insertible-tooth saw	326,685	Sept. 22	1954	513	32	1307
Simonds, William E., Hartford, Conn. Silo	325,365	Sept. 1	182	48	32	1048
Simonds, William P., Competine, Iowa. Safety attachment for horned cattle	325,021	Aug. 25	2209	606	32	955
Simons, Robert. (See Bird and Simons.)						
Simonton, Thomas C., *et al.* (See Hayward, Jacob L., assignor.)						
Simonton, Thomas C., Paterson, N. J. Steaming and ore-scouring apparatus	323,456	Aug. 4	93	27	32	540
Simpson, Jerome W., Newark, N. J. Extracting gold, silver, and copper from their ores	323,222	July 28	2473	.....	32	474
Simpson, Lenox. (See Nugent, Richard C., assignor.)						
Simpson, Thomas J., Worthington, Minn. Horizontal wind-wheel	325,366	Sept. 1	183	48	32	1048
Simpson, Thomas J., Worthington, Minn. Wind-wheel	326,166	Sept. 15	1259	323, 324	32	1262
Simpson, Thomas J., Worthington, Minn. Ventilator	327,330	Sept. 29	2845	742	32	1563
Singer Manufacturing Company of New Jersey. (See Diehl, Philip, assignor.)						
Singer, William F., Carthage, N. Y. Carburetor	324,177	Aug. 11	1044	285	32	724
Sisk, Frank M., Newnan, Ga. Gin-saw-filing machine	326,167	Sept. 15	1261	324	32	1262
Sisum, William H. H., Brooklyn, N. Y. Riveting-machine	326,252	Sept. 15	1389	361, 362	32	1285
Sitler, Jesse R., Axtell, Kans. Grain-drier	324,737	Aug. 18	1814	501	32	876
Sitterley, Reuben T., Carthage, Mo. Time and interest indicator	322,757	July 21	1810	478	32	345
Sjoberg, Carl J. A. (See Eggo and Sjoberg.)						
Skelton, James A. (See Card, Augustus M. assignor.)						
Skinner Cash Transmitter Company. (See Skinner, Daniel M., assignor.)						
Skinner, Charles A., *et al.* (See Rumsey, Charles B., assignor.)						
Skinner, Courtland, Grinnell, Iowa. Barb-wire machine	322,489	July 21	1461	384, 385	32	282
Skinner, Daniel M., Center Sandwich, assignor to Skinner Cash Transmitter Company, Littleton, N. H. Parcel-transmitter for stores	322,565	July 21	1566	413	32	300
Skinner, Henry M., Rockford, assignor of one-half to I. M. Alvord, Chicago, Ill. Plow	324,789	Aug. 18	1887	519	32	890
Skinner, John, Newman, Ill. Road grader and leveler	324,178	Aug. 11	1046	285	32	724
Skinner, John, assignor of two-thirds to A. McColl and O. Stone, Flint, Mich. Car-coupling	326,795	Sept. 22	2134	555	32	1428
Sladdin, Joseph, Lawrence, Mass. Machine for opening the eyes of loom-harness	324,420	Aug. 18	1390	378, 379	32	797
Slafter, J. C. (See Clausen, Adler C., assignor.)						
Slaght, Edwin, Gowanda, assignor of one-half to F. S. Oakes and S. F. Burger, Cattaraugus, N. Y. Milk-can	326,341	Sept. 15	1507	393	32	1308
Slaughter, Lucien P., Montrose, Mo. Kitchen-cabinet	323,223	July 28	2474	657	32	474
Slate, Dwight, Hartford, assignor to E. Horton & Son Company, Windsor Locks, Conn. Gear-cutter	326,989	Sept. 22	2266	592, 593, 594	32	1452
Slater, Warren G., assignor of three-fourths to J. R. and S. P. Odell and L. V. Davis, Fremont, Mich. Shoe-upper	327,114	Sept. 29	2570	670	32	1513
Slayton & Whiting. (See Whiting, Stiles H., assignor.)						
Sledge, Clarence L., Kyle, Tex. Car-brake	322,490	July 21	1464	385	32	282
Sloan, Leander E., assignor of one-half to W. G. Collins, Milwaukee, Wis. Air-brake for railway-cars	327,027	Sept. 29	2446	639, 640	32	1492
Sloop, Jacob, Canton, Kans. Spike-extractor	322,133	July 14	992	258	32	189
Sloper, Byron, New York, N. Y. Generating hydrogen gas	324,179	Aug. 11	1047	286	32	725

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Sloper, Byron, New York, N. Y. Steam-boiler furnace	324,889	Aug. 25	2032	556	32	923
Sly, Austin, and H. E. Gile, Lebanon, N. H. Roller washing-machine	327,201	Sept. 29	2688	698	32	1535
Smadbeck, Louis, and B. Nathan, New York, N. Y. Ankle-supporting shoe	325,280	Sept. 1	69	21	32	1028
Smalstig, William C., Springfield, Mo. Sad-iron	327,331	Sept. 29	2847	742	32	1563
Smart, Ezra, Hartford, Conn. Die-holder for pin-machines	327,028	Sept. 29	2449	640	32	1492
Smead, Charles R., St. Paul Minn. Holder for legal blanks	322,758	July 21	1811	478	32	345
Smead, Isaac D., Toledo, Ohio. Hot-air furnace	326,598	Sept. 22	1833	482	32	1376
Smead, John, Toledo, Ohio. Furnace-grate	324,421	Aug. 18	1392	379	32	797
Smeltzer, Isaac S., Columbus, Ohio. Fire-escape	322,206	July 14	1085	282	32	206
Smit, Willem B., and A. Pot, Slikkerveer, Netherlands. Dynamo-electric machine	326,796	Sept. 22	2135	555; 556	32	1422
Smith, Aaron F. (See Wetmore, Joseph C., assignor.)						
Smith, Aaron F., Lynn, Mass. Sole-trimming machine	325,703	Sept. 8	654	165	32	1142
Smith, Adolph T., New York, N. Y. Circuit-closer	325,124	Aug. 25	2339	644	32	980
Smith, Alson A. (See Polsey and Smith.)						
Smith, Andrew. (See Hansen and Smith.)						
Smith, Andrew, and G. H. Albers, Sellwood, Oreg. Bed and bedstead	327,202	Sept. 29	2688	698	32	1535
Smith, C. Haldridge, Anamosa, Iowa. Wall-bracket	325,456	Sept. 1	324	78	32	1077
Smith, Calvin D., Templeton, assignor of one-half to A., H. C., and A. E. Knowlton, West Gardner, Mass. Wood-dressing machine	327,203	Sept. 29	2690	699	32	1535
Smith, Charles, Marquette, Mich. Baling-press	322,651	July 21	1671	443	32	319
Smith, Charles A., Minerva, Ohio. Railway-car roof	325,634	Sept. 1	532	140	32	1120
Smith, Charles L., Jamestown, N. Y. Distributing mechanism for seeding-machines	325,125	Aug. 25	2340	644	32	981
Smith, Charles W., Westerly, R. I. Spokeshave	325,571	Sept. 1	476	118	32	1106
Smith, Clement, assignor to C. J. Baker, Topeka, Kans. Aligner for type-writing machines	325,635	Sept. 1	553	141	32	1120
Smith, Clement, assignor to C. J. Baker, Topeka, Kans. Type-aligner for type-writing machines	326,062	Sept. 8	1121	285	32	1229
Smith, Daniel F. (See Rupp and Smith.)						
Smith, Darius B., Pine Meadow, Conn. Fire-extinguisher	325,982	Sept. 8	1008	257	32	1209
Smith, De Witt C. and S. E., St. Paul, Minn. Lathe for turning polygonal forms	321,762	July 7	480	127	32	89
Smith, De Witt C. and S. E., St. Paul, Minn. Wood-turning lathe	321,763	July 7	482	127; 128	32	90
Smith, Desbrow M., Hyde Park, assignor of one-half to Acme Paper Box Company, Boston, Mass. Paper box	325,773	Sept. 8	754	189	32	1161
Smith, Edward H., Rutherford, Cal. Thill-coupling	323,746	Aug. 4	473	134	32	612
Smith, Edwin D., New York, N. Y. Neck-wear	322,207	July 14	1086	282	32	207
Smith & Egge Manufacturing Company. (See Egge, Frederick, assignor.)						
Smith & Egge Manufacturing Company. (See Egge and Sjoberg, assignors.)						
Smith, Elbert S., *et al.* (See Smith, John A., assignor.)						
Smith, Eugene C., New York, N. Y. Belt-hinge	322,986	July 28	2147	570	32	414
Smith, Frank B. (See McBride, Smith, and Lennox.)						
Smith, Franklin A., Jr., Providence, R. I. Button	324,422	Aug. 18	1393	379	32	797
Smith, Franklin A., Jr., Providence, R. I. Button and fastener	324,890	Aug. 25	2034	557	32	923
Smith, Frederick A., assignor to Hotchkiss & Upson Company, Cleveland, Ohio. Making carriage-bolts	324,180	Aug. 11	1048	286	32	725
Smith, Frederick C., Baltimore, Md. Vacuum-pump	321,764	July 7	484	128	32	90
Smith, Frederick T., Plantaville, Conn. Die for forging blacksmiths' tongs	326,797	Sept. 22	2136	556	32	1429
Smith, Fredrick H. (See Austin and Smith.)						
Smith, Fredrick J., Chicago, Ill. Pinch-bar	327,029	Sept. 29	2450	640	32	1492
Smith, Freeborn G., Brooklyn, N. Y. Upright piano	323,747	Aug. 4	474	134	32	612
Smith, George A., Los Angeles, Cal. Track-laying device	321,765	July 7	485	128	32	90
Smith, George E., Windsor, N. Y. Dental articulator	321,457	July 7	65	19	32	15
Smith, George H., New York, N. Y. Salt-evaporating pan	321,456	July 7	64	18	32	15
Smith, George K., assignor to H. C. Staver Implement Company, Chicago, Ill. Grinding-mill	324,181	Aug. 11	1050	286; 287	32	725
Smith, George T., and W. H. Dickey, Jackson, Mich. Centrifugal reel	327,332	Sept. 29	2848	743	32	1563
Smith, George T., and W. H. Dickey, Jackson, Mich. Centrifugal reel	327,335	Sept. 29	2850	743	32	1563
Smith, George W. R., *et al.* (See Smith, John A., assignor.)						
Smith, Heman S., Brooklyn, N. Y. Lumber-drier	327,030	Sept. 29	2451	640; 641	32	1493
Smith, Henry T., Cooke County, Tex. Varnish	322,016	July 14	837	.....	32	160
Smith, Hervey, assignor to G. C. Blickensderfer, Erie, Pa. Conveyer apparatus	326,928	Sept. 22	2318	606	32	1461
Smith, Hervey, assignor to G. C. Blickensderfer, Erie, Pa. Automatic conveyer apparatus	326,929	Sept. 22	2319	607; 608	32	1461
Smith, Howard J., and C. Rounds, Brooklyn, N. Y. Umbrella and overshoe rack	322,987	July 28	2148	570	32	414
Smith, Isaac S., *et al.* (See Smith, John A., assignor.)						
Smith, Israel E., York, Pa. Washing-machine	321,766	July 7	487	129	32	91
Smith, Israel E., York, Pa. Gate	321,767	July 7	488	129	32	91
Smith, J. Wilbur, Newark, N. J. Shirt	321,544	July 7	194	51	32	38
Smith, James C., assignor of one-half to T. G. Newgent, Boston, Mass. Adjustable concentric channeler	326,342	Sept. 15	1508	393	32	1308
Smith, James T., New York, N. Y. Umbrella and parasol	326,890	Sept. 22	2270	594	32	1453
Smith, John, Columbus, Ohio. Suspender clutch-pulley	325,983	Sept. 8	1009	258	32	1209
Smith, John, assignor to H., H. C., W., and J. S. Disston, Philadelphia, Pa. Saw with insertible teeth	326,798	Sept. 22	2137	556	32	1429
Smith, John A., St. Paul, Ark., assignor of one half to I. S. Smith, W. A. Marrs, E. S. Smith, J. B. Peach, W. H. Bolinger, J. M. Williams, G. W. R. Smith, Z. T. Reynolds, and W. B. Sumner. Railway-gate	325,874	Sept. 8	880	222	32	1135
Smith, John C., Cleveland, Ohio. Screw-cutting lathe	327,334	Sept. 29	2852	744	32	1564
Smith, John D., *et al.* (See Jones, Edward C., assignor.)						
Smith, John E. (See Schoonmaker, Edward T., assignor.)						
Smith, John E., Charleston, Ark. Churn	325,572	Sept. 1	477	119	32	1106
Smith, John N. (See Loar, James, assignor.)						
Smith, John S. (See Thayer and Smith.)						
Smith, John W., and C. L. Holland, Boston, Mass. Barber's comb	323,889	Aug. 4	652	184	32	646
Smith, Joseph, Ottawa, Ontario, Canada. Post or pole	321,543	July 7	193	51	32	38
Smith, Joseph P. (See Snow, Charles, assignor.)						
Smith, Lucien A., Detroit, Mich. Parcel-carrier	322,329	July 14	1229	323	32	234
Smith, Lyman. (See Goodrich and Smith.)						
Smith, Lyman, Kansas City, Mo. Air-spring	321,768	July 7	489	129	32	91
Smith, Lyman, Kansas City, Mo. Apparatus for transferring grain and the storage thereof	321,769	July 7	491	130	32	92
Smith, Lyman, Kansas City, Mo. Mouth-piece for pneumatic lifting apparatus for grain-conveyers	323,224	July 28	2475	657	32	474
Smith, Lyman, Kansas City, Mo. Mouth-piece for pneumatic grain-transfer apparatus	323,225	July 28	2477	658	32	474

Alphabetical list of patentees, July to September, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Smith, Lyman, Kansas City, Mo. Pneumatic grain-elevator and transfer apparatus	323,226	July 28	2478	658; 659	32	475
Smith, Moses H., assignor of one-half to W. Brown, South Chicago, Ill. Automatic draft-regulator	322,491	July 21	1467	385	32	283
Smith, Orren M., Philadelphia, Pa. Gas-burner	322,309	July 14	1327	346	32	252
Smith, Parker P., Pittsburg, Pa. Vehicle-hub	322,759	July 21	1812	479	32	346
Smith, Perez B. H., Brooklyn, N. Y. Circular sawing machine	322,134	July 14	993	258	32	189
Smith, R. Hale, Springfield, Mass. Manufacturing elastic-faced printing-types	324,423	Aug. 18	1394	380	32	797
Smith, R. Hale, Springfield, Mass. Elastic-faced printing-type	326,509	Sept. 22	1634	482	32	1376
Smith, Richard, Sherbrooke, Quebec, Canada. Automatic steam-regulator for paper-machines	324,601	Aug. 18	1620	446	32	840
Smith, Richard, Sherbrooke, Quebec, Canada, assignor of one-half to Fall Mountain Paper Company, Bellows Falls, Vt. Pneumatic device for leading paper through calender-rolls	327,031	Sept. 29	2453	641	32	1493
Smith, Richard, Sherbrooke, Quebec, Canada, and G. H. Collins, Boston, Mass.; said Collins assignor to said Smith. Steam-engine for reciprocating propellers	327,335	Sept. 29	2854	744; 745	32	1564
Smith, Riley T. (See Bradley and Smith.)						
Smith, Roland H., Pittsburg, Pa. Gas-generating retort-furnace	321,770	July 7	493	130	32	92
Smith, Seth H., assignor of six hundred and five one-thousandths to J. M. Longnecker and H. S. Hull, Delta, Ohio. Knife for cutting dish-blanks	322,017	July 14	838	219	32	160
Smith & Smart. (See Spencer, John E., assignor.)						
Smith, Solomon P., Waterford, N. Y. Automatic damper	322,492	July 21	1468	386	32	283
Smith, Solomon P., Waterford, N. Y. Automatic damper	323,539	Aug. 4	207	61	32	561
Smith, Spencer E. (See Smith, De Witt C. and S. E.)						
Smith, Stephen T., *et al.* (See Wagner, Franz X., assignor.)						
Smith, Sutton & Co. (See McBride, Smith, and Lennox, assignors.)						
Smith, T. Albee, assignor of one-half to L. T. Woods, St. Louis, Mo. Fiber-decorticating machine	321,863	July 7	630	162; 163	32	115
Smith, Thomas E., Lynn, Mass. Nail-driving machine	323,081	July 28	2279	603	32	438
Smith, Walter D., and W. H. Paul, Baltimore, Md. Staying slits in garments	325,126	Aug. 25	2341	644	32	981
Smith, Walton D., assignor of three-fourths to C., C. E., and C. L. Emery, Prophetstown, Ill. Laying electric wires	325,984	Sept. 8	1009	258	32	1209
Smith, Warren D., and F. J. Milliken, Boston, Mass. Conduit for underground wires	322,018	July 14	839	219	32	161
Smith & Wesson. (See Landers and Wesson, assignors.)						
Smith & Wesson. (See Wesson, Joseph H., assignor.)						
Smith, William A., Lawrence, assignor to Lawrence Felting Company, Millville, Mass. Felt-boot machine	323,457	Aug. 4	94	27, 28	32	540
Smith, William B., Jonesborough, Ga. Grain-cradle	322,885	July 21	1996	528	32	379
Smith, William C., Warsaw, Mo. Stove	327,336	Sept. 29	2859	746	32	1564
Smith, William S., Chicago, Ill., and C. W. Clift, Rockville Center, N. Y. Sand-pump	323,458	Aug. 4	95	28	32	540
Smith, William W., Boyne, Mich. Sawing-machine	326,343	Sept. 15	1510	394	32	1309
Smith, Worthington C. (See Wellington, Amos H., assignor.)						
Smitten, Thomas W. F., Brooklyn, N. Y. Button or stud	321,653	July 7	325	86	32	62
Smyth, John M., Windsor, Ontario, Canada. Ironing-table	325,985	Sept. 8	1012	258	32	1209
Snead, Charles S. and U., Louisville, Ky. Locking device for jails	323,748	Aug. 4	475	134; 135	32	612
Snead, Udolpho. (See Snead, Charles S. and U.)						
Sneden, Leonard B., and H. N. Holden, Hackensack, N. J. Fifth-wheel for vehicles	326,686	Sept. 22	1955	514	32	1397
Snider, Worthington J. (See Kramer and Snider.)						
Snook, Franklin B., and D. Death, Franklin, Ohio. Guide for window-curtains	326,799	Sept. 22	2138	556	32	1429
Snow, Charles, assignor of one-half to J. P. Smith, Glastonbury, Conn. Mosquito-bar canopy	323,227	July 28	2480	659	32	475
Snow, Fred W., Hilburn, N. Y. Railway-switch	327,115	Sept. 29	2571	670	32	1513
Snow, William H., High Point, N. C. Device for curing tobacco	322,330	July 14	1231	323	32	234
Snowden, George T., Pittsburg, Pa. Balance slide-valve	326,900	Sept. 22	2139	557	32	1429
Snyder, Charles, Fair Mount, N. Y. Holdback	325,573	Sept. 1	478	119	32	1107
Snyder, Frank E., Massillon, Ohio. Beer-forcing pump	322,073	July 14	912	236	32	174
Snyder, James B., Bedford, Iowa. Machine for building picket fences	325,574	Sept. 1	478	119	32	1107
Snyder, John P. (See Cavanagh, Michael F., assignor.)						
Snyder, Samuel, White Sulphur Springs, Mont. Ter. Fire-escape	325,450	Sept. 1	318	77	32	1076
Snyder, Waldo V., Canton, Ohio. Plow-clevis	325,575	Sept. 1	479	119	32	1107
Sobotka, Julius, Plauen, (Voigtland,) Germany. Embroidering-machine	322,860	July 21	1956	518	32	372
Society of Chemical Industry. (See Guehm, Robert, assignor.)						
Sohn, John W. (See Bentel, Frederick, assignor.)						
Solliday, Wilson B., South Easton, Pa. Book-rest	324,602	Aug. 18	1625	447	32	841
Solter, George L., Philadelphia, Pa. Boxed demijohn	325,875	Sept. 8	881	222	32	1135
Somers, Daniel M., Brooklyn, N. Y. Insect-powder gun	326,600	Sept. 22	1835	482	32	1376
Somers, James, Moro, Oreg. Surgical instrument	327,204	Sept. 29	2692	699	32	1536
Somers, William R., Bridgeport, Conn. Right and left corder for sewing-machines	322,074	July 14	913	237	32	174
Somerville, William, Sr., Buffalo, N. Y. Horseshoe	322,652	July 21	1673	443	32	320
Sommer, John, Newark, N. J. Cork-driver	324,963	Aug. 25	2129	582	32	942
Sondermann, Ernst. (See Moeller, Jacob, assignor.)						
Sone, Louis V., New York, N. Y. Vessel for transporting liquid cargoes in bulk	326,344	Sept. 15	1511	394	32	1309
Sorgue, Philippe, Paris, France. Elastic tubular cable	322,403	July 21	1470	386	32	283
Sorior, Hobart B., Kalamazoo, Mich. Two-wheeled vehicle	326,168	Sept. 15	1263	325	32	1262
Souncy, Edward C., Sacramento, Cal. Thrashing-cylinder	322,135	July 14	994	259	32	190
South Bend Iron Works. (See Casaday, William L., assignor.)						
Southall, Samuel. (See Brown, Charles E., assignor.)						
Southwell, Frederick C. (See Hornsby, Southwell, and Innocent.)						
Southwick, George W., Stamford, Conn. Belt-fastener	322,988	July 28	2150	570	32	415
Sovereign, Clarence E. (See Doyle, Michael V., assignor.)						
Sowers, Oliver P., assignor to Moline Plow Company, Moline, Ill. Cultivator	323,228	July 28	2481	659	32	475
Spalding, Henry C., Boston, Mass. Compound electrical cable	327,459	Sept. 29	3017	788	32	1592
Spalding, Henry C., Boston, Mass. Anchor for telegraph-cables	327,460	Sept. 29	3019	788	32	1592
Spalding, Henry C., Boston, Mass. Telegraph-cable	327,461	Sept. 29	3020	788	32	1592
Spalding, Henry C., Boston, Mass. Insulating compound for electrical cables, &c	327,462	Sept. 29	3021	.....	32	1592
Spalding, Henry C., Boston, Mass. Protecting electrical conductors underground	327,463	Sept. 29	3021	789	32	1592
Spalding, Henry C., Boston, Mass. Insulated conductor	327,464	Sept. 29	3023	789	32	1592
Spalding, Henry C., Boston, Mass. Manufacture of insulating blocks for electrical conductors	327,465	Sept. 29	3024	790	32	1592
Spalding, Henry C., Boston, Mass. Conduit for underground conductors	327,466	Sept. 29	3026	790	32	1593
Spalding, Henry C., Boston, Mass. Insulated electrical conductor	327,467	Sept. 29	3027	790	32	1593
Spalding, Henry C., Boston, Mass. Protecting electrical conductors from the heat of subterranean steam-pipes	327,468	Sept. 29	3028	790	32	1593
Spalding, Henry C., Boston, Mass. Electro-magnet	327,469	Sept. 29	3029	791	32	1593

Alphabetical list of patentees, July to September, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Spalding, Henry C., Boston, Mass. Machine for winding electro-magnets	327,470	Sept. 29	3030	791	32	1593
Spalding, Henry C., Boston, Mass. Paper-cutting machine	327,471	Sept. 29	3031	791, 792	32	1594
Spalding, Henry C., Boston, Mass. Composite electric cable	327,472	Sept. 29	3032	792	32	1594
Spalding, Henry C., Boston, Mass. Multiplex electrical cable	327,473	Sept. 29	3033	792	32	1594
Spalding, Henry C., Boston, Mass. Apparatus for laying underground conductors	327,474	Sept. 29	3034	792	32	1594
Spalding, Henry C., Boston, Mass. Pipe for underground electrical conductors	327,475	Sept. 29	3035	793	32	1594
Spalding, Henry C., Boston, Mass. Compound electrical cable	327,476	Sept. 29	3036	793	32	1595
Spalding, Henry C., Boston, Mass. Compound for insulating underground electric conductors	327,477	Sept. 29	3037	.....	32	1595
Spalding, Henry C., Boston, Mass. Apparatus for laying underground lines of electrical conductors	327,478	Sept. 29	3038	793	32	1595
Spalding, Henry C., Boston, Mass. Splice for electrical conductors	327,479	Sept. 29	3039	793	32	1595
Spalding, Henry C., Boston, Mass. Underground electric conductor	327,480	Sept. 29	3040	794	32	1595
Spalding, Henry C., Boston, Mass. Underground electrical conductor	327,481	Sept. 29	3042	794	32	1595
Spalding, Henry C., Boston, Mass. Electrical conductor	327,482	Sept. 29	3042	794	32	1596
Spalding, Henry C., Boston, Mass. Subterranean electric cable	327,483	Sept. 29	3043	794	32	1596
Spalding, Henry C., Boston, Mass. Submarine electrical cable	327,484	Sept. 29	3044	795	32	1596
Spalding, Henry C., Boston, Mass. Subterranean electric conductor	327,485	Sept. 29	3045	795	32	1596
Spalding, Henry C., Boston, Mass. Anti-induction cable	327,486	Sept. 29	3047	795	32	1596
Spalding, Henry C., Boston, Mass. Anti-induction cable	327,487	Sept. 29	3048	795	32	1596
Spalding, Henry C., Boston, Mass. Anti-induction electrical cable	327,488	Sept. 29	3049	796	32	1597
Spalding, Henry C., Boston, Mass. Anti-induction cable	327,489	Sept. 29	3050	796	32	1597
Spalding, Henry C., Boston, Mass. Anti-induction cable	327,490	Sept. 29	3052	796	32	1597
Spalding, Henry C., Boston, Mass. Electrical cable	327,491	Sept. 29	3053	796	32	1598
Spalding, Henry C., Boston, Mass. Electric cable	327,492	Sept. 29	3055	797	32	1598
Spalding, Henry C., Boston, Mass. Electrical cable	327,493	Sept. 29	3056	797	32	1598
Spalding, Henry C., Boston, Mass. Electric cable	327,494	Sept. 29	3057	797	32	1599
Spalding, Henry C., Boston, Mass. Electric circuit	327,495	Sept. 29	3058	797	32	1599
Spalding, Henry C., Boston, Mass. Electrical circuit	327,496	Sept. 29	3059	798	32	1599
Spalding, Henry C., Boston, Mass. Electric circuit	327,497	Sept. 29	3060	798	32	1599
Spalding, Henry C., Boston, Mass. Safety device for electric circuits	327,498	Sept. 29	3061	798	32	1599
Spalding, Henry C., Boston, Mass. Safety device for electric circuits	327,499	Sept. 29	3063	798	32	1600
Spalding, Henry C., Boston, Mass. Safety device for electric circuits	327,500	Sept. 29	3064	799	32	1600
Spangle, William E., Lima, Wis. Belt-reel	325,986	Sept. 8	1013	259	32	1209
Spangler, Daniel, Hanford, Cal. Submarine wall	325,127	Aug. 25	2342	645	32	981
Sparks, Charles H., St. Louis, Mo. Indian-club	325,987	Sept. 8	1014	259	32	1210
Sparks, Edward G., New York, N. Y. Preparation of paraffine or wax paper	326,687	Sept. 22	1956	514	32	1397
Sparks, Edward G., Brooklyn, N. Y. Apparatus for making wax or paraffine paper	326,688	Sept. 22	1957	514	32	1398
Sparks, Edward G., Brooklyn, N. Y. Waxing paper	326,689	Sept. 22	1959	515	32	1398
Sparling, Bazzalleel D., and P. S. Fitch, Belmore, Ohio. Car-coupling	325,454	Sept. 1	322	78	32	1077
Spatzier, August W., Leipsic, Germany. Anti-friction axle-bearing	323,966	Aug. 11	756	210, 211	32	673
Spaulding, George H., Chicago, Ill. Mechanism for adjusting the platforms of harvesters	325,367	Sept. 1	183	49	32	1049
Spaulding, M. H., guardian. (See Knedland, Joseph C., assignor.)						
Spaulding, Mont, Orleans, Mich. Farm-wagon	325,455	Sept. 1	324	78	32	1077
Spear, Asa, Napa, Cal. Flood-fence	326,690	Sept. 22	1960	515	32	1398
Spear, James, Philadelphia, Pa. House-furnace	325,281	Sept. 1	70	21	32	1029
Spellier, Louis H., Philadelphia, Pa. Sparkless circuit-breaker	322,494	July 21	1470	386	32	284
Spence, Payton, New York, N. Y. Compound for laundry-bluing	326,601	Sept. 22	1837	.....	32	1376
Spencer, Albert H., *et al.* (See Garland, Milton H., assignor.)						
Spencer, George H., *et al.* (See Hodges, Horace F., assignor.)						
Spencer, George H., Chicago, Ill. Grapple	322,019	July 14	841	219	32	161
Spencer, George W., St. James, Nebr. Harrow attachment for plows	322,760	July 21	1813	479	32	346
Spencer, Herbert R. (See Gould and Spencer.)						
Spencer, John E., assignor of one-half to Smith & Smart, Salem, Mass. Automatic damper-regulator	327,337	Sept. 29	2860	746	32	1564
Spencer, Luke G., and P. F. Hazen, assignors to E. & T. Fairbanks & Co., St. Johnsbury, Vt. Weighing-scale	323,371	July 28	2090	716	32	512
Spengler, Christian G., Hoboken, N. J., assignor to G. Fulck, New York, N. Y. Operating sewing-machines	324,044	Aug. 11	860	238	32	690
Spillinger, Joseph, Lancaster, Pa. Lamp-support	321,545	July 7	195	51	32	39
Spiro, Charles, New York, N. Y. Type-writing machine	322,495	July 21	1472	386, 387, 388	32	284
Spiro, Charles, New York, N. Y. Type-writing machine	322,969	July 28	2150	571	32	415
Sporny, Josef, and I. Zarski, Warsaw, Russia. Roofing-plate	322,990	July 28	2154	571	32	415
Sprague, Albert J., Clarington, Ohio. Harrow	321,458	July 7	67	19	32	15
Sprague, D. D. (See Sprague, Pearley J., assignor.)						
Sprague Electric Railway and Motor Company. (See Sprague, Frank J., assignor.)						
Sprague, Frank J., New York, N. Y. Electric railway-motor	324,892	Aug. 25	2037	557, 558	32	924
Sprague, Frank J., New York, N. Y., assignor to Sprague Electric Railway and Motor Company. Electric railway system	323,459	Aug. 4	96	28, 29	32	540
Sprague, Frank J., New York, N. Y., assignor to Sprague Electric Railway and Motor Company. Electro-dynamic motor	323,460	Aug. 4	99	29	32	541
Sprague, Frank J., New York, N. Y., assignor to Sprague Electric Railway and Motor Company. Electro-dynamic motor	324,891	Aug. 25	2035	557	32	923
Sprague, Oscar L., assignor of one-half to E. W. Morley, Andover, Ohio. Carpet-stretcher	326,063	Sept. 8	1122	286	32	1329
Sprague, Pearley J., Higbee, assignor to D. D. Sprague, California, Mo. Straw-stacker	326,801	Sept. 22	2140	557	32	1429
Sprague, S. Howard, Pittsburg, Pa. Bulb-case for incandescent electric lamps	326,459	Sept. 15	1648	431	32	1334
Spray, William R., assignor of one-half to J. W. Honey, Newton, Ill. Bee-hive attachment	325,988	Sept. 8	1015	259	32	1210
Springer, James, assignor to Woven Cord Furniture Company, Chicago, Ill. Woven or knitted cord furniture	326,064	Sept. 8	1123	286	32	1230
Sprnce, James, and J. Tonks, assignors to Scovill Manufacturing Company, Waterbury, Conn. Screw-collar for glass vessels	327,338	Sept. 29	2862	747	32	1565
Spring, Jacob, Bridgewater, N. Y. Potato-digger	324,424	Aug. 18	1396	380	32	798
Springfield Machine Company. (See Geiger and Beale, assignors.)						
Sprogell, John, and H. S. Haskins, assignors to E. Harrington, Son & Co., Philadelphia, Pa. Hoisting-machine	324,425	Aug. 18	1397	380	32	798
Squier, Charles A., Battle Creek, Mich. Tag	323,461	Aug. 4	99	29	32	541
Squier, Edgar A., Tiffin, Ohio. Centrifugal bolting-reel	325,128	Aug. 25	2343	645	32	981
Squier, George L. (See Stevens, Henry B., assignor.)						
Squire, Rollin M., New York, N. Y. Staple	327,339	Sept. 29	2864	747	32	1565

Alphabetical list of patentees, July to September, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Stadlmeyr, Joseph, Newark, N. J. Sleeve-button	327,116	Sept. 29	2572	671	32	1513
Stahlberg, Charles, Waterbury, Conn. Manufacture of clock-works	326,602	Sept. 22	1837	482	32	1376
Stalb, Henry, Jeffersonville, N. Y. Sash-holder	323,603	Aug. 4	200	83	32	576
Stalder, Fredrick, Allegheny City, Pa. Wagon-brake	324,045	Aug. 11	862	239	32	691
Stalder, Fredrick, Allegheny City, Pa. Car-brake	324,046	Aug. 11	863	239	32	691
Standard Boot and Shoe Lasting Company. (See Cross, William C., assignor.) (Reissue.)						
Standard Button Fastening Company. (See Mathison, Joseph, assignor.)						
Standard Lighting Company. (See Davis, Zebulon, assignor.)						
Standard Multiplex Telegraph Company. (See Delany, Patrick B., assignor.)						
Standard Multiplex Telegraph Company. (See Delany and Calahan, assignors.)						
Stanford, Arthur L., Fort Hill, Ill. Wood-cutting machine	324,603	Aug. 18	1626	447	32	841
Stanford, Frank H., assignor of one-fourth to J. H. Corwin, Elizabeth, N. J., and B. S. Clark, New York, N. Y. Car-coupling	325,876	Sept. 8	882	222	32	1185
Stanley, Lucius T., New York, assignor to J. S. Morgan, Brooklyn, N. Y. Mechanical musical instrument	322,566	July 21	1567	413	32	300
Stanley, William, Jr., Pittsburg, Pa. Multiple incandescent electric lamp	322,496	July 21	1477	388	32	285
Stanley, William, Jr., Englewood, N. J. Socket for incandescent electric lampe	324,894	Aug. 25	2041	559	32	924
Stanley, William, Jr., Englewood, N. J. Electric regulator	325,576	Sept. 1	480	120	32	1107
Stanley, William, Jr., Englewood, and E. P. Thompson, Elizabeth, N. J.; said Thompson assignor to said Stanley. Carbon for incandescent lamps	323,372	July 28	2093	.....	32	512
Stannard, Monroe, Hartford, Conn. Screw-blank-heading machine	323,373	July 28	2094	716, 717	32	512
Stanton, Lafayette J., Sand Lake, assignor to N. Chase, F. A. Taylor, F. J. Henry, and M. B. Shaw, Kalamazoo, Mich. Spring harrow-tooth	327,340	Sept. 29	2865	747	32	1565
Stanton, William M. (See Bold, Fred, assignor.)						
Staples, Elisha S. (See Whittemore, Arnold, and Staples.)						
Staples, John E., York, Me. Marine way and cradle for transferring boats through or above the surf to smooth water	321,916	July 7	693	180, 181	32	196
Stark, Isidor, New York, N. Y. Supporting attachment for pants, overalls, and drawers	321,654	July 7	396	86	32	62
Stark, Michael J., Buffalo, N. Y. Solder-mold	325,704	Sept. 8	654	165	32	1142
Starkweather, Martin S., Boston, Mass. Horseshoe-pad	322,861	July 21	1959	519	32	372
Starmer, Jeffrey, Levering, Ohio. Wagon-standard	323,604	Aug. 4	291	84	32	576
Starr, E. Eugene. (See Starr, Eli T. and E. E.)						
Starr Electric Storage Company. (See Starr, Eli T. and E. E., assignors.)						
Starr, Eli T., assignor to S. S. White Dental Manufacturing Company, Philadelphia, Pa. Primary or galvanic battery	321,917	July 7	694	181	32	196
Starr, Eli T. and E. E., Philadelphia, Pa., assignors to Starr Electric Storage Company, Camden, N. J. Secondary or storage battery	323,890	Aug. 4	652	184, 185	32	646
Starr, Eli T. and E. E., Philadelphia, Pa., assignors to Starr Electric Storage Company, Camden, N. J. Secondary battery	327,341	Sept. 29	2865	747	32	1565
Starr, Ferdinand W., assignor of one-half to T. Wall, Springfield, Ohio. Windmill	322,862	July 21	1961	519	32	372
Starr, Ferdinand W., assignor of one-half to T. Wall, Springfield, Ohio. Vehicle-hub	322,863	July 21	1962	519	32	373
Staugaard, Hans H., assignor to A. Ellwood, Sycamore, Ill. Wire-stretcher	324,893	Aug. 25	2038	558	32	924
Staunton, J. Galusha, Ellicottville, N. Y. Runway for poultry-houses	322,075	July 14	914	237	32	174
Staunton, J. Galusha, Ellicottville, N. Y. Perch for fowls	322,076	July 14	915	237	32	175
Staver Implement Company, H. C. (See Smith, George K., assignor.)						
St. Claire, Josephine M., Cedar Rapids, Iowa. Corset	322,497	July 21	1480	389	32	285
Steam Heat Evaporator Company. (See Rogers and Allen, assignors.)						
Stearns, Frank K. (See Johnson, Frank A., assignor.)						
Stearns, Henry A., Lincoln, R. I. Gas-service valve	325,989	Sept. 8	1016	259	32	1210
Stearns, Walter H., Jr., Newton, Mass. Artificial stone or marble	321,459	July 7	68	.....	32	15
Steber, Joseph C., assignor to C. V. Manner, San Francisco, Cal. Screw-tap. (Reissue)	10,646	Sept. 22	2329	610	32	1464
Steck, Ernst F., Chicago, Ill. Hose-wagon	325,990	Sept. 8	1019	260	32	1210
Steck, Ernst F., Chicago, Ill. Hose-carriage	326,930	Sept. 22	2322	608, 609	32	1463
Steck, Ernst F., Chicago, Ill. Chemical fire-extinguisher	327,342	Sept. 29	2866	748, 749	32	1565
Steck, Ernst, Chicago, Ill., assignor to Fire Extinguisher Manufacturing Company. Vehicle-brake	321,546	July 7	196	52	32	39
Steel, Frederick M., administrator. (See Wilkinson, Lewis.)						
Steers, Albert W., Strawn, Ill. Combined table and culinary receptacle	326,526	Sept. 15	1733	451, 452	32	1350
Steiger, Andrew. (See Rice, Steiger, and Thurber.)						
Steinan, Jacob A., assignor to S. H. Sahlein, New York, N. Y. Elastic garment-support	324,426	Aug. 18	1399	380	32	798
Steinbach, John A., assignor of one-half to J. Steinbach, Dayton, Ohio. Coal-bucket	324,427	Aug. 18	1399	381	32	798
Steinbach, Joseph. (See Steinbach, John A., assignor.)						
Steinbrecher, William H. (See Nessel and Steinbrecher.)						
Steinebach, Fredrick, and H. Wright, New York, N. Y. Fire-escape	326,169	Sept. 15	1263	325	32	1262
Steinem, Emanuel. (See Schroeder, George G., assignor.)						
Steinly, Charles. (See Kaufhold and Steinly.)						
Stephen, George. (See Boynton and Stephen.)						
Stephens, Edward W., Erie, Pa. Ore-concentrator	325,129	Aug. 25	2344	646	32	981
Stephens, William, New Richmond, Wis. Drive-chain	322,653	July 21	1674	443	32	330
Stephenson, John, New York, N. Y. Car-window sash	323,967	Aug. 11	757	211	32	673
Stephenson, John, New York, N. Y. Tram-car signal-cord sheave	325,705	Sept. 8	656	165	32	1143
Sterling, Joseph A. (See Groesbeck, Ball, and Sterling.)						
Sterling, William H., and D. D. Wass, New York, N. Y. Car-axle lubricator	323,605	Aug. 4	292	84	32	576
Stern, Philip K., Toronto, Ontario, Canada. Incandescent electric lamp	322,498	July 21	1482	389	32	285
Stern, Rebecca, Philadelphia, Pa. Decoration of silvered glass surfaces and signs	322,864	July 21	1963	520	32	373
Sternberger, Herman S., Piqua, Ohio. Folding dress-pillow	324,604	Aug. 18	1629	448	32	841
Stevens, Alfred L., Darien, Conn. Horseshoe	323,092	July 28	2281	603	32	438
Stevens, Amasa W., East Brookfield, Mass. Rotary tray, &c	327,032	Sept. 29	2456	641	32	1403
Stevens, Andrew J., Sacramento, Cal. Valve-gear for steam-engines	324,964	Aug. 25	2130	582	32	942
Stevens, Barnard F., Scotia, Nebr. Trace-carrier	326,802	Sept. 22	2141	557	32	1430
Stevens, Francis B., Hoboken, N. J. Gage and level indicating device for railway-tracks	325,706	Sept. 8	657	166	32	1143
Stevens, Frank M., New York, N. Y., assignor to Stevens Locomotive and Machine Company. Valve-operating mechanism	323,606	Aug. 4	292	84	32	576
Stevens, Henry A., Norristown, Pa. Truck	322,499	July 21	1483	389	32	285
Stevens, Henry B., assignor to G. L. Squier, Buffalo, N. Y. Boring-lathe	327,343	Sept. 29	2872	749	32	1566
Stevens, Hermann, Homestead, Pa. Reversing-valve	323,462	Aug. 4	100	30	32	541
Stevens, John, Neenah, Wis. Automatic weighing-machine	325,222	Sept. 1	70	21	32	1029
Stevens, Levi, Washington, D. C. Casting hollow metal bodies with a non-oxidizable lining	327,033	Sept. 29	2457	.....	32	1494

Alphabetical list of patentees, July to September, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drf'g.	Official Gazette. Vol.	Official Gazette. Page.
Stevens Locomotive and Machine Company. (See Stevens, Frank M., assignor.)						
Stevens, William H., *et al.* (See Gibson, Selden F., assignor.)						
Stevenson, David J., assignor of one-half to F. G. Nott, Minneapolis, Minn. Car-coupling	321,918	July 7	697	182	32	127
Stevenson, William H. H., Baltimore, Md. Can-soldering machine	325,130	Aug. 25	2346	{646 647}	32	982
Stevenson, William H. H., Baltimore, Md. Filling fruit-cans with liquid	325,131	Aug. 25	2347	647	32	982
Stewart, Chase. (See Dixon, Robert W., assignor.)						
Stewart, Elias M., Richmond, Canada. Cuff-button	322,208	July 14	1087	282	32	207
Stewart, John, Grantville, Penn. Rail-joint	321,655	July 7	326	87	32	62
Stewart, Samuel, Newark, N. J. Coffee-roaster	327,344	Sept. 29	2874	{749 750}	32	1567
Stewart, Timothy B., Hartford, Conn. Street-railway car	326,527	Sept. 15	1734	452	32	1351
Stewart, William H., Boonville, Mo. Brick-machine	323,063	July 28	2282	604	32	438
Stewart, William J., Belleville, Ill. Sewing-machine	323,968	Aug. 11	758	212	32	673
Stickney, George. (See Prnim, Hiram P., assignor.)						
Stiker, Flavius P., assignor to T. Kingsford, Oswego, N. Y. Apparatus for the manufacture of starch	327,034	Sept. 29	2458	642	32	1494
Stiker, Flavius P., Buffalo, assignor to T. Kingsford, Oswego, N. Y. Manufacturing starch	327,035	Sept. 29	2459	642	32	1494
Stiker, Flavius P., assignor to T. Kingsford, Oswego, N. Y. Apparatus for separating the solid and liquid portions of starch refuse from each other	327,345	Sept. 29	2876	{750 751}	32	1567
Stiles, David R., Ottawa, Kans. Regulator for steam-pumps	322,077	July 14	916	237	32	175
Stiles, William C., San Francisco, Cal. Crushing and grinding mill	326,253	Sept. 15	1392	362	32	1285
Stillman, Charles F., New York, N. Y. Velocipede	324,605	Aug. 18	1630	448	32	841
Stillman, Henry B., and W. F. Patterson, Boston, Mass. Planing-machine	327,346	Sept. 29	2877	751	32	1567
Stillman, Sanford P., Westerly, R. I. Fifth-wheel	324,965	Aug. 25	2131	562	32	942
Stillson, Daniel C., Boston, Mass. Automatic fire-extinguishing apparatus	326,691	Sept. 22	1961	516	32	1398
Stitzel, Frederick, assignor of two-thirds to A. Reutlinger and M. Schwartz, Louisville, Ky. Compressor for ice-machines	323,749	Aug. 4	476	135	32	612
Stitzel, Frederick, assignor of two-thirds to A. Reutlinger and M. Schwartz, Louisville, Ky. Stuffing-box	323,750	Aug. 4	478	{135 136}	32	613
St. John, Garland B., Kalamazoo, Mich. Landside for plows. (Reissue)	10,641	Aug. 25	2483	682	32	1008
St. John, Thomas C., Willoughby, Ohio, assignor to New York Steam Company, of New York. Steam-oven	326,170	Sept. 15	1265	325	32	1263
St. John, William W., New York, N. Y. Piston-packing	325,022	Aug. 25	2209	606	32	955
Stobaeus, John B., Newark, N. J. Gas-compressor	323,751	Aug. 4	480	136	32	613
Stock, Charles F., deceased; N. G. Moore administrator and assignor, by mesne assignments, to Peoria Target Company, Peoria, Ill. Trap for throwing targets	322,020	July 14	842	219	32	161
Stock, Charles F., deceased; N. G. Moore administrator and assignor to E. H. Walker, Peoria, Ill. Apparatus for the manufacture of flying targets	323,896	Aug. 4	663	187	32	648
Stock, Charles F., deceased; N. G. Moore administrator and assignor to E. H. Walker, Peoria, Ill. Flying target	323,897	Aug. 4	664	187	32	648
Stocken, Joseph A., Goshen, N. Y. Refrigerator	323,463	Aug. 4	103	30	32	541
Stockham, Alice B. (See Wetherell, James M., assignor.)						
Stockton Combined Harvester and Agricultural Works. (See Powell, Thomas, assignor.)						
Stockton, Robert N., Philadelphia, Pa. Fishing-gig	326,803	Sept. 22	2142	557	32	1430
Stockwell, Levi W., assignor to Cleveland Electric Motor Company, Cleveland, Ohio. Switch for electric motor and other circuits	326,603	Sept. 22	1840	463	32	1376
Stoddard, E. Fowler, Dayton, Ohio. Combined horse rake and tedder	322,136	July 14	996	259	32	190
Stoll, Jacob, assignor of one-half to G. Raddatz, Milwaukee, Wis. Wheelbarrow	324,606	Aug. 18	1631	448	32	841
Stoll, Jacob, assignor of one-third to G. Raddatz, Milwaukee, Wis. Plow	324,607	Aug. 18	1632	449	32	842
Stollwerck, Gebr. (See Stollwerck, Heinrich, assignor.)						
Stollwerck, Heinrich, assignor to Gebr. Stollwerck, Cologne-on-the-Rhine, Prussia, Germany. Grain-drier	324,182	Aug. 11	1051	287	32	726
Stolterfoht, Max, Berlin, Germany. Clutch	321,656	July 7	327	87	32	62
Stone, Charles M., Belton, Tex. Ribbon and braid holder	322,209	July 14	1088	282	32	207
Stone, Edward H., assignor of one-half to R. S. Hannah, West Bay City, Mich. Shaking-grate	323,969	Aug. 11	760	212	32	673
Stone, Edward J. (See Austin and Stone.)						
Stone, Frank, assignor to Munroe Organ Reed Company, Worcester, Mass. Organ-action	326,171	Sept. 15	1266	326	32	1263
Stone, Frank, assignor to Munroe Organ Reed Company, Worcester, Mass. Mechanical musical instrument	326,172	Sept. 15	1268	{326 327}	32	1263
Stone, Frank G., New York, N. Y., and W. R. Walton, assignors to Ansonia Brass and Copper Company, Ansonia, Conn. Testing metallic tubes	324,495	Aug. 18	1484	406	32	813
Stone, George A., Richmond, Mo. Cornstalk-cutter	321,919	July 7	698	182	32	127
Stone, Irving L., Battle Creek, Mich. Opera-chair	325,283	Sept. 1	72	22	32	1029
Stone, John H., Hamilton, Ontario, Canada. Tubular lantern	324,183	Aug. 11	1054	288	32	726
Stone, Pardon B., Waverly, Pa. Tongue-support	325,187	Aug. 25	2422	665	32	995
Stone, Oren, *et al.* (See Skinner, John, assignor.)						
Stone, William G., Ellisville, Ill. Gate	326,173	Sept. 15	1271	327	32	1264
Stonemetz, John H., Erie, Pa. Pasting attachment for paper-folding machines	325,023	Aug. 25	2210	606	32	956
Stonesifer, Christian E., Boonsborough, Md. Tooth-securing device for agricultural machines	322,567	July 21	1569	414	32	300
Stoney Landing Company. (See Walker and Jorvey, assignors.)						
Storer, John, Marlborough, N. Y. Furnace-grate	324,966	Aug. 25	2132	583	32	942
St. Ores, Lewis, Guadaloupe, Cal. Two-wheeled vehicle	327,036	Sept. 29	2461	643	32	1494
Stosch, Ernst, Stettin, Germany, assignor to H. Hartt, Chicago, Ill. Paper-matrix drier	324,496	Aug. 18	1485	407	32	813
Stouffer, Luther, St. Joseph, Mo. Side-bar vehicle	326,692	Sept. 22	1963	516	32	1399
Stovall, Washington L., Winona, Miss. Gate-latch	325,577	Sept. 1	482	120	32	1107
Stover, Daniel C., Freeport, Ill. Windmill	325,707	Sept. 8	661	{166 167}	32	1143
Stover, Daniel C., Freeport, Ill. Barbed-wire spool	327,347	Sept. 29	2880	752	32	1567
Stowell, Frank L., New York, N. Y. Knife-eraser	322,991	July 28	2154	571	32	415
Strnat, Earnest A., Jersey City, N. J. Water-closet valve	326,528	Sept. 15	1735	453	32	1351
Straight, John A., Hartford, Conn. Low-water alarm	322,021	July 14	843	220	32	161
Strasmer, William F. (See Phillips, Thomas S., assignor.)						
Stratton, E. Platt, College Point, assignor to Stratton Separator Company, New York, N. Y. Steam-separator	323,891	Aug. 4	655	185	32	646
Stratton Separator Company. (See Stratton, E. Platt, assignor.)						
Stratton, William D., Boston, Mass. Buckle	323,084	July 28	2286	605	32	439
Straub, Ambrose W., Philadelphia, Pa. Grinding-mill	322,400	July 14	1329	346	32	252
Strauss, Abram. (See Hagenbacher and Strauss.)						
Strauss, Alfred A. (See Warren, Albert G., assignor.)						
Strauss, Henry S., New York, N. Y. Corset	324,497	Aug. 18	1486	407	32	814

Alphabetical list of patentees, July to September, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drf'g.	Official Gazette. Vol.	Official Gazette. Page.
Straw, Herman F., Manchester, N. H. Adjustable reed for warping-machines	322,401	July 14	1331	346	32	253
Straw, Herman F., and J. D. Butler, Manchester, N. H. Warping and beaming machine	325,284	Sept. 1	74	22	32	1030
Street Car Money Drawer Company. (See Harrison, William H., assignor.)						
Streeter, Herbert A. (See Amet, Edward H., assignor.)						
Streeter, James L. (See Jenkins and Streeter.) (Reissue.)						
Strickland, Thomas E., New York, N. Y. Glass ornamentation for imitation of fine polished stone	327,348	Sept. 29	2881	752	32	1568
Striker, George H., Buffalo, N. Y. Spectacle-case	326,065	Sept. 8	1126	286	32	1230
Strobel, Victor O., Allegheny, Pa. Valve	327,117	Sept. 29	2572	671	32	1513
Strobel, Victor O., assignor to Gordon, Strobel & Laureau, Philadelphia, Pa. Blast-furnace	326,804	Sept. 22	2142	558	32	1430
Strobridge, Charles M. (See Young, Walter F., assignor.)						
Strobridge, Charles M., and W. Houghton, Merrill, Wis. Machine for sawing spouts	323,229	July 28	2483	660	32	475
Strobridge, Frank L., deceased, (T. Strobridge administrator,) New Brighton, Pa. Straw-cutter	326,923	Sept. 22	2311	605	32	1460
Strobridge, Turner, administrator. (See Sirobridge, Frank L.)						
Strohacker, Frederick. (See Koegel and Strohacker.)						
Strong, Albert E., Paterson, N. J. Automatic frogless switch	321,920	July 7	699	182	32	127
Strong, Frederick S., assignor to Carver Cotton Gin Company, East Bridgewater, Mass. Sand-paper roll	325,708	Sept. 8	667	167	32	1145
Strong, Frederick S., assignor to Carver Cotton Gin Company, East Bridgewater, Mass. Wedge-driving machine	325,709	Sept. 8	668	167	32	1145
Strong, George S., Philadelphia, Pa. Machine for corrugating plates or tubes	324,608	Aug. 18	1633	{449 450}	32	842
Strong, George S., Philadelphia, Pa. Welding-machine	324,609	Aug. 18	1635	450	32	842
Strong, George S., Philadelphia, Pa. Machine for welding tubes	324,610	Aug. 18	1638	{450 451 452}	32	843
Strong, James F. (See Haines and Strong.)						
Strong, John W., Bridgeport, Conn. Die-stock	323,464	Aug. 4	105	30	32	541
Strong, Pitt W., Brockville, Ontario, Canada. Magazine fire-arm	325,774	Sept. 8	755	189	32	1161
Strong, William, assignor of one-half to C. Aneshaensel, Jr., Indianapolis, Ind. Cistern and flushing apparatus for water-closets	322,078	July 14	917	238	32	175
Strong, William, assignor of one-half to C. Aneshaensel, Jr., Indianapolis, Ind. Hose-coupling for street-washers	326,604	Sept. 22	1842	483	32	1377
Stroud, David L., Richford, Minn. Grain-cleaner for thrashing-machines	326,805	Sept. 22	2144	558	32	1430
Strout, George A., Lisbon, Dak. Ter. Bundle-carrier for harvester-binders	325,710	Sept. 8	669	{167 168}	32	1145
Stryker, James M., Jr., Chicago, Ill. Combined wash-stand and bureau	323,970	Aug. 11	762	213	32	674
Strype, William G., Wicklow, Ireland. Making hydrates of barium and of strontium	326,066	Sept. 8	1127	287	32	1230
Stuart, Carl W., assignor to F. W. Devoe & Co., New York, N. Y. Compass attachment for pencils	322,865	July 21	1964	520	32	373
Stuart, Chester J. (See Marsh, Robert R., assignor.)						
Stuart, John A., Austin, and J. F. Woodmansee, Flatonia, Tex. Cuff button and holder	324,184	Aug. 11	1055	289	32	726
Stubbe, John, Pittsburg, assignor to T. B. Kerr, Allegheny City, Pa. Barb-wire machine	326,806	Sept. 22	2144	{558 559 560}	32	1431
Stuber, Jacob. (See Stuber, Johann and J.)						
Stuber, Johann J., Syracuse, N. Y. Refrigerating apparatus for houses	324,278	Aug. 11	1192	324	32	752
Stuckes, John, Jr., Chicago, Ill. Confection-capsule	325,711	Sept. 8	671	168	32	1146
Sturgis, David, assignor of four-fifths to W. H., F. A., and W. H. Wilson and E. Durfee, Harrison, Mich. Car-coupling	323,752	Aug. 4	481	136	32	613
Sturtevant, Albert A., Hartford, Conn. Sewing-machine	326,067	Sept. 8	1128	287	32	1231
Sturtevant Mill Company. (See Sturtevant, Thomas L., assignor.)						
Sturtevant, Thomas L., Framingham, assignor to Sturtevant Mill Company, Boston, Mass. Rotary head for grinding-mills	324,047	Aug. 11	864	239	32	691
Sturtevant, Thomas L., Framingham, assignor to Sturtevant Mill Company, Boston, Mass. Wet-grinding mill	327,501	Sept. 29	3066	799	32	1600
Stutz, Edward E. (See Batzlaff, Frederick T., assignor.)						
Stutz, Sebastian, Pittsburg, Pa. Coal washing or separating machine	324,341	Aug. 11	1279	347	32	769
Sullivan, John D. (See Minor and Sullivan.)						
Sullivan, John J. (See Cummings, Henry H., assignor.)						
Sullivan Machine Company. (See Ball, Albert, assignor.)						
Sullivan, Samuel J., Lamar, Mo. Churn	324,277	Aug. 11	1191	324	32	752
Sullivan, Timothy J., Bowling Green, Ky. Drier	326,924	Sept. 22	2313	605	32	1460
Sulzer, Henry. (See Vetter, Caspar, assignor.)						
Sumner, Dwight C., Worcester, Mass. Machinery for shearing cloth	324,428	Aug. 18	1400	{381 382}	32	798
Sumner, James J., assignor of one-half to M. R. Capron, Providence, R. I. Spindle and bolster for spinning and twisting machines	322,654	July 21	1674	444	32	320
Sumner, William B., *et al.* (See Smith, John A., assignor.)						
Sundin, Per O., Providence, R. I. Surface-plate	326,925	Sept. 22	2314	605	32	1460
Suppes, Maximilian M. (See Hunt and Suppes.)						
Surbaugh, Joseph T., Modesto, Cal. Obstetrical supporter	324,498	Aug. 18	1487	407	32	814
Surry, Paul, *et al.* (See Müller, Armand, assignor.)						
Sutherland, David, St. Louis, Mo. Car-door	325,218	Aug. 25	2465	678	32	1003
Sutherland, George, Adelaide, South Australia. Producing typographic blocks or plates from photo-negatives	325,636	Sept. 1	554	.....	32	1120
Sutliff, James R., Meriden, assignor to Foster, Merriam & Co., West Meriden, Conn. Drawer-knob	325,712	Sept. 8	671	168	32	1146
Sutton, John W., New York, N. Y. Machine for plucking pelts	322,137	July 14	999	260	32	190
Suydam, James, Milwaukee, Wis. Syringe	324,429	Aug. 18	1402	382	32	799
Suydam, Samuel A., New York, N. Y. Siphon for ice-boxes and refrigerators	322,992	July 28	2155	572	32	415
Svedberg, John A., Washington, D. C. Steam-boiler	324,430	Aug. 18	1402	382	32	799
Svenson, Fritz S., Lund, Sweden. Lamp	321,657	July 7	330	87	32	62
Swade, Amos W. (See Hiestand and Swade.)						
Swaim, John M., assignor of three-fourths to M. F. Maddox, Bloomingdale, Ind. Kitchen-cabinet	323,374	July 28	2095	717	32	512
Swain, Addis E., Cherryvale, Kans. Rolling window-screen	321,921	July 7	701	183	32	127
Swan, Eugene R., Aplington, Iowa. Cooking-table	327,502	Sept. 29	3067	799	32	1600
Swan, George E., Beaver Dam, Wis. Spring-heel for boots or shoes	323,971	Aug. 11	763	213	32	674
Swan, Henry C., assignor of one-half to H. M. Clark, Oshkosh, Wis. Spring-wagon	324,342	Aug. 11	1282	347	32	769
Swan, Joseph W., Bromley, county of Kent, England, assignor to T. J. Montgomery, New York, N. Y. Manufacture of carbons for incandescent lamps	322,993	July 28	2156	572	32	415
Swan, Patrick J., Ira, Iowa. Grab-iron for railway-switches	323,230	July 28	2485	660	32	476

Alphabetical list of patentees, July to September, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Swasey, Ambrose, Cleveland, Ohio. Gear-cutting machine	327,037	Sept. 29	2461	643, 644	32	1495
Sweeney, David H., Fitchburg, Mass. Scraper	323,972	Aug. 11	764	214	32	674
Sweeney, Dennis F. (See Partridge, Andrew, assignor.)						
Sweenie, Dennis J., *et al.* (See Ashworth, John, assignor.)						
Sweet, Clayton E., *et al.* (See Rohme, James H., assignor.)						
Sweet, Clinton W., *et al.* (See Rohme, James H., assignor.)						
Sweet, Fletcher & Co. (See Fletcher, Henry, assignor.)						
Sweet, Parker H., Jr., Washington, D. C., assignor to Heaton Button Fastener Company, Providence, R. I. Button-fastener	323,465	Aug. 4	106	31	32	542
Sweet, Parker H., Jr., Washington, D. C., assignor to Heaton Button Fastener Company, Providence, R. I. Setting-instrument for attaching buttons to wearing-apparel	323,466	Aug. 4	107	31	32	542
Sweet, Thomas A., Cambria, Cal. Wheel-harrow	321,922	July 7	702	183	32	127
Sweet, William A., Syracuse, N. Y. Billet for rolling wire	321,658	July 7	331	88	32	63
Sweet, William A., Syracuse, N. Y. Machine for cutting toe-calks for horseshoes	321,659	July 7	331	88	32	63
Sweetland, Jerome B., Pontiac, Mich. Churn	325,637	Sept. 1	555	141	32	1121
Swentzel, Edward W. (See McConnell, Andrew, assignor.)						
Swindell, Edward, Apalachicola, Fla. Construction of ships	323,831	Aug. 4	576	163	32	631
Swindell, Edward, Apalachicola, Fla. Construction of ships	323,832	Aug. 4	577	163	32	632
Swindell, William, Allegheny, Pa. Regenerative natural-gas furnace	332,994	July 28	2157	572	32	416
Swindell, William, Allegheny, Pa. Regenerative natural-gas furnace	322,995	July 28	2158	573	32	416
Swinehart, William H. (See Mitchell, Oliver F., assignor.)						
Swivel, Andrew. (See Lefler and Swivel.)						
Switzer, Rufus, *et al.* (See Hummel, William C. B., assignor.)						
Sylvester, Charles R., Little Falls, assignor of one-half to G. Sylvester, Milwaukee, Wis. Turbine water-wheel	321,660	July 7	333	88, 89	32	63
Sylvester, George. (See Blascow, David H., assignor.)						
Sylvester, George. (See Michelson, Sigismund M., assignor.) (Reissue.)						
Sylvester, George. (See Sylvester, Charles R., assignor.)						
Symon, Robert R., *et al.* (See Maxim, Hiram S., assignor.)						
Syracuse Paper Ware Company. (See Annable and Leonard, assignors.)						
Taaffe, Henry M., deceased; J. Meley, San Francisco, Cal., administratrix. Car-brake	326,666	Sept. 22	1923	505	32	1391
Taaffe, Henry M., deceased; J. Meley, San Francisco, Cal., administratrix. Automatic car-brake	326,667	Sept. 22	1924	506	32	1391
Taaffe, Henry M., deceased; J. Meley, San Francisco, Cal., administratrix. Automatic guard or track-clearer	326,668	Sept. 22	1925	506, 507	32	1391
Taber, William D., assignor to himself, C. A. Tabor, Rockville, and J. A. Covey, Hope Valley, R. I. Check-rein holder	325,285	Sept. 1	76	22	32	1030
Tabor, Clark A., *et al.* (See Taber, William D., assignor.)						
Tabor, Harris, New York, N. Y. Shaft-coupling	322,866	July 21	1965	520	32	373
Tabor, Harris, New York, N. Y. Speed-indicator	325,991	Sept. 8	1022	260	32	1211
Taft, Ryland L. (See Buchanan and Dodge, assignors.)						
Tagliabue, Charles J., Brooklyn, N. Y. Syringe	325,132	Aug. 25	2348	647	32	982
Taliaferro, Ellbeck H., assignor of one-half to G. W. Barnett, Big Spring, Va. Quilting-frame for sewing-machines	327,118	Sept. 29	2575	671	32	1514
Talley, Jame. H. R., and C. P. Barnes, Sheldon, Mo. Dumping-car	326,907	Sept. 22	2151	560	32	1431
Tanner, Benjamin, Sturgis, Mich. Hay-rack	323,467	Aug. 4	108	31	32	542
Tanner, George W., Providence, R. I. Cigar-machine	324,185	Aug. 11	1056	289	32	726
Tanner, James M., Herrick, Ill. Washing-machine	325,457	Sept. 1	325	79	32	1077
Tarkington, William S. R., Indianapolis, Ind. Rein-support	321,460	July 7	69	19	32	15
Tasker, Charles P. (See Wendell, Isaac P., assignor.)						
Tasker, Stephen P. M., Philadelphia, Pa. Manufacture of leathery compound	322,996	July 28	2159	.....	32	416
Tate, Minnie E., Johnstown, Ill. Cooking utensil	325,188	Aug. 25	2422	666	32	996
Tate, Robert M., Somerset, Ky. Animal-trap	326,460	Sept. 15	1649	431	32	1334
Tatham, Edwin, Balmain, New South Wales. Oscillating meter	322,500	July 21	1484	389, 390	32	286
Tatum & Co., Samuel C. (See Bennett, John M., assignor.)						
Tanbert, Julius. (See Buckler, Cain, Taubert, and Pelzer.)						
Tawler, E. T., *et al.* (See Richardson, George W., assignor.)						
Tawler, Willard A., *et al.* (See Richardson, George W., assignor.)						
Taylor, Charles B. (See Kind, Clement, assignor.)						
Taylor, Charles W., Gallatin, Tenn. Hand-motor for sewing-machines	327,349	Sept. 29	2881	752	32	1568
Taylor, Cyrus, Denver, Colo. Railway-rail joint	325,458	Sept. 1	326	79	32	1077
Taylor, De Witt C., New York, N. Y. Alphabet-block	322,210	July 14	1069	283	32	207
Taylor, Edward R., Cleveland, Ohio. Apparatus for the manufacture of carbon bisulphide	321,661	July 7	333	89	32	63
Taylor, Edward R., Cleveland, Ohio. Apparatus for the manufacture of carbon bisulphide	321,662	July 7	335	89	32	64
Taylor, Edward R., Cleveland, Ohio. Apparatus for the manufacture of carbon bisulphide	321,771	July 7	494	131	32	92
Taylor, Elizabeth A., Baltimore, Md. Fruit-jar	325,877	Sept. 8	882	222	32	1185
Taylor, Eugene H., Lynn, assignor of two-thirds to G. W. Hollis, Boston, and L. W. Pennell, Watertown, Mass. Tag-fastener	321,864	July 7	632	163	32	115
Taylor, Franklin, assignor to Vulcanized Fiber Company, Wilmington, Del. Nut-lock	326,345	Sept. 15	1518	395	32	1310
Taylor, Frederick A., *et al.* (See Stanton, Lafayette J., assignor.)						
Taylor, George, Jersey City, N. J. Device for regulating the flow of gases and fluids	325,459	Sept. 1	327	79	32	1077
Taylor, George J., Salt Lake City, Utah Ter. Treadle for pedomotors	323,085	July 28	2287	605	32	439
Taylor, Harrison H., assignor to F. A. Hubel, Detroit, Mich. Capsule-machine	323,753	Aug. 4	482	136, 137	32	614
Taylor, Hiram, assignor of one-half to J. Heckart, Salem, Ohio. Milk-can	324,611	Aug. 18	1641	452	32	843
Taylor, J. C. (See Moore and Ball, assignors.)						
Taylor, James, Wigan, county of Lancaster, England. Vehicle-wheel	325,024	Aug. 25	2212	607	32	956
Taylor, James A., and J. F. Knapp, Hamburg, N. Y. Folding settee or bench	324,431	Aug. 18	1404	382	32	709
Taylor, James H., Westfield, Mass. Butter-worker	324,186	Aug. 11	1057	289	32	727
Taylor, James R., and P. Lockwood, Marshall, Mich. Combined dust catcher and separator for middlings-purifiers	325,713	Sept. 8	672	168	32	1146
Taylor, John. (See Dowson and Taylor.)						
Taylor, John F., West Park, N. Y. Door-bolt	322,211	July 14	1069	283	32	207
Taylor, Richard, *et al.* (See Kellogg, Charles, assignor.)						
Taylor, Samuel C., Morton, near Bingley, county of York, England. Window	326,605	Sept. 22	1844	483, 484	32	1377
Taylor, Stephen H., Remington, Ind. Hog-ringer	327,119	Sept. 29	2575	671	32	1514
Taylor, Theodore, Mount Vernon, N. Y. Rope-fastener	322,501	July 21	1487	390	32	286
Taylor, Thomas W., assignor to himself and B. Lynch, Worcester, Mass. Glazing	324,499	Aug. 18	1488	407	32	814
Taylor, William H. (See Isbell and Taylor.)						
Taylor, William J. (See Johnston and Taylor.)						
Taylor, William S., Huntingdon, Pa. Hydraulic air-pump	326,346	Sept. 15	1519	395	32	1310

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Taylor, William W., New Orleans, La. Steam-trap	326,347	Sept. 15	1520	395	32	1310
Teague, Vandiver, Lenoir, N. C. Flour-bolt reel	324,187	Aug. 11	1058	290	32	727
Teal, B. Frank, Philadelphia, Pa. Spring-motor	323,540	Aug. 4	209	61, 62	32	561
Teall, William S., Little Falls, N. Y. Breech-loading fire-arm	322,568	July 21	1570	414	32	300
Tecktonius, Emil C., assignor of one-half to Mitchell & Lewis Company, (limited,) Racine, Wis. Vehicle-spring	321,663	July 7	337	89	32	64
Teets, William H., Allegheny, Pa. Wagon-body	323,973	Aug. 11	765	214	32	674
Tefft, Pha, Saguache, Colo. Windmill	325,095	Aug. 25	2213	607	32	956
Teggart, John, San Francisco, Cal. Conduit for underground electric wires	321,865	July 7	633	163, 164	32	115
Tegner, Albert J. V., Copenhagen, Denmark. Self-leveling ship's furniture	323,231	July 28	2486	660	32	476
Ten Brook, Garrett L. (See Knowles, William, assignor.)						
Tentschert, Florian. (See Krüzner and Tentschert.)						
Terherst, Frank. A., Kansas City, Mo. Convertible skate	327,350	Sept. 29	2882	752, 753	32	1568
Terhune, Richard H., Salt Lake City, Utah Ter. Slag and matte pot	323,541	Aug. 4	210	62	32	561
Terhune, Richard H., Salt Lake City, Utah Ter. Slag-pot	323,607	Aug. 4	295	84	32	576
Terpening, Clinton W., Bedford, Iowa. Hand-plow	325,775	Sept. 8	757	189	32	1162
Tesseyman, John, Dayton, Ohio. Car-axle-box cover	321,664	July 7	337	90	32	64
Thacher, Seth T., Jr. (See Woodbury and Thacher.)						
Thain, Richard S., Oak Park, Ill. Combination ruler and paper-cutter	325,992	Sept. 8	1024	260	32	1211
Thal, Samuel, Milwaukee, Wis. Shirt	322,502	July 21	1488	391	32	286
Thatcher, Charles D., Springfield, Ohio. Cap-headed screw-nut	322,867	July 21	1966	520	32	373
Thaxter, William S., Oakland, Cal. Azimuth attachment to compasses	327,351	Sept. 29	2883	753	32	1568
Thayer, George B. (See Tobey and Thayer.)						
Thayer, James F., Providence, R. I. Button-fastener	321,665	July 7	338	90	32	64
Thayer, James F., Providence, R. I. Button-attaching instrument	322,655	July 21	1675	444	32	320
Thayer, James F., Providence, R. I. Cutting staples	322,997	July 28	2160	573	32	416
Thayer, James F., Providence, R. I. Fastener	324,895	Aug. 25	2043	559	32	924
Thayer, Marion F., and J. S. Smith, Westborough, Mass. Rake	322,022	July 14	844	220	32	162
Thayer, William S., Owego, N. Y. Box-fastening	322,868	July 21	1967	521	32	373
Theinert, Charles, and S. Christiansen, New York, N. Y. Making plush articles of clothing	326,348	Sept. 15	1521	395	32	1311
Theis, Leonard, Cabery, Ill. Harrow	324,696	Aug. 25	2044	559	32	925
Thew, Walter H., Liverpool, county of Lancaster, England. Condensed peptonized milk	323,754	Aug. 4	484	.....	32	614
Thew, Walter H., Liverpool, county of Lancaster, England. Condensing peptonized milk	324,048	Aug. 11	866	.....	32	691
Thew, Walter H., Liverpool, county of Lancaster, England. Condensed peptonized milk with cocoa	324,049	Aug. 11	868	.....	32	691
Thew, Walter H., Liverpool, county of Lancaster, England. Condensed peptonized milk with coffee	324,050	Aug. 11	868	.....	32	691
Thickins, John C., Hinsdale, Mass. Automatic oiler for lubricating wool	324,612	Aug. 18	1642	452, 453	32	843
Thode, George W. (See Knight and Thode.)						
Thode, Gustav A., Holstein, Iowa. Upright steam-boiler	324,188	Aug. 11	1059	290	32	727
Thomas Clock Company, Seth. (See Reinecke, Herman A. T., assignor.)						
Thomas, Eddy T., and A. Schenck, New York, N. Y. Belt-applying device for sewing and other machines	324,492	Aug. 18	1404	383	32	709
Thomas, George J., Newton, Mass. Shutter-fastener	323,232	July 28	2487	660	32	476
Thomas, George W., assignor of one-half to J. A. Wright, Baltimore, Md. Parcel-carrier	323,233	July 28	2488	661	32	476
Thomas, Henry O., Fremont, Nebr. Wire gate	325,219	Aug. 25	2466	678	32	1004
Thomas, Hugh, New York, N. Y. Device for attaching music-sheets to rollers	327,038	Sept. 29	2465	644	32	1495
Thomas, James F., Denver, Colo. Chair-socket	325,096	Aug. 25	2214	607	32	956
Thomas, John, assignor to L. F. Marsh, Bristol, England. Sewing-machine	327,352	Sept. 29	2884	753, 754	32	1568
Thomas, John, assignor to L. F. Marsh, Bristol, England. Finishing or binding the edges of hat-brims	327,353	Sept. 29	2887	754	32	1569
Thomas, John, assignor to L. F. Marsh, Bristol, England. Hat	327,354	Sept. 29	2888	754	32	1569
Thomas, Josephine. (See Rivers, Thomas L., assignor.)						
Thomas, Mahlon S., Philadelphia, Pa. Parlor-game apparatus	324,189	Aug. 11	1060	290	32	727
Thomas, Nicholas, Chicago, Ill. Lathe for turning cross-head pins	322,212	July 14	1069	283	32	207
Thomas, William, Jersey City, N. J. Pipe-cleaning apparatus	323,542	Aug. 4	211	62	32	561
Thomas, William, Jersey City, N. J. Pneumatic annunciator	324,500	Aug. 18	1489	408	32	814
Thomas, William Y., assignor of one-third to W. B. Culver, West Pittston, Pa. Lubricator	325,578	Sept. 1	483	121	32	1108
Thommen, Adolph, New York, N. Y. Pin-tongue for breastpins	323,543	Aug. 4	213	63	32	561
Thompson, Cassius C., East Liverpool, Ohio. Bed-pan	322,503	July 21	1488	391	32	286
Thompson, Charles A., Hopkinsville, Ky. Cartridge-loader	326,603	Sept. 22	1963	516	32	1399
Thompson, Edward P. (See Stanley and Thompson.)						
Thompson, Edward P., Elizabeth, N. J., assignor of three-fourths to E. P. Roberts and G. H. Pierce, Cheyenne, Wyoming Ter. Apparatus for the separation of gold from its ores by chlorination	323,755	Aug. 4	485	137	32	614
Thompson, Frederick W. (See Campany, Milton E., assignor.)						
Thompson, George W., Shickshinny, Pa. Sleigh-runner	323,234	July 28	2488	661	32	476
Thompson, George W., Shickshinny, Pa. Pulley	327,120	Sept. 29	2577	672	32	1514
Thompson, Homer P., Cincinnati, Ohio. Automatic circuit-closer for telegraph-keys	322,023	July 14	845	220	32	162
Thompson, John H., assignor of one-half to Gilliland Manufacturing Company, Indianapolis, Ind. Roller-skate	322,504	July 21	1489	391	32	286
Thompson & Norris. (See Peer, John A., assignor.)						
Thompson, Orrin B., Jersey, Ohio. Device for overcoming dead-centers and starting fly-wheels	327,355	Sept. 29	2889	754	32	1569
Thompson, Perley & Waite. (See Perley, Charles A., assignor.)						
Thompson, Richard H. S., New York, N. Y. Electric primer	323,974	Aug. 11	766	214	32	674
Thompson, Robert A., Montrose, Mo. Sulky-plow	322,331	July 14	1232	323	32	235
Thompson, Willett, *et al.* (See Angell, Thomas, assignor.)						
Thompson, William. (See Arnold and Thompson.)						
Thomson, Elihu, Lynn, Mass. Lightning-arrester	321,464	July 7	77	21	32	16
Thomson, Elihu, Lynn, Mass. System of electric distribution	322,138	July 14	1003	261	32	191
Thomson, Elihu, Lynn, Mass. System of electric distribution	322,139	July 14	1005	261	32	191
Thomson, Elihu, Lynn, Mass. Automatic commutator-adjuster for dynamo-electric machines	323,976	Aug. 11	770	215	32	675
Thomson, Elihu, Lynn, Mass. Regulator for dynamo-electric machines	324,501	Aug. 18	1491	408	32	815
Thomson, Elihu, Lynn, Mass. Electric-arc lamp	324,502	Aug. 18	1493	408	32	815
Thomson, Elihu, Lynn, Mass., assignor to Thomson-Houston Electric Company, of Connecticut. Electric lighting system	321,461	July 7	69	20	32	16

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Thomson, Elihu, Lynn, Mass., assignor to Thomson-Houston Electric Company, of Connecticut. Electric switch	321,463	July 7	75	21	32	16
Thomson, Elihu, Lynn, Mass., assignor to Thomson-Houston Electric Company, of Connecticut. Dynamo-electric or electro-dynamic machine	323,975	Aug. 11	768	214, 215	32	675
Thomson, Elihu, Lynn, Mass., assignor to Thomson-Houston Electric Company, of Connecticut. Safety device for electrical circuits	327,039	Sept. 29	2466	644	32	1495
Thomson-Houston Electric Company. (See Thomson, Elihu, assignor.)						
Thorman, Simon R., *et al.* (See Russ, Charles F., assignor.)						
Thormann, Franz, and L. Von Bonhorst, Wiesbaden, Germany. Comb	327,356	Sept. 29	2891	755	32	1569
Thorn, Frank M., Orchard Park, N. Y. Potato-digger	327,357	Sept. 29	2892	755	32	1570
Thorn Wire Hedge Company. (See Briggs, Orlando P., assignor.)						
Thornton, Hiram W., Millersburg, Ill. Constructing roads	323,086	July 28	2288	605	32	439
Thornton, John, Cleckheaton, county of York, England. Apparatus for hardening and tempering wire	323,087	July 28	2289	605	32	439
Thorp, Justus W., assignor to himself and J. E. Hensley, Dayton, Wash. Ter. Water-elevator	327,205	Sept. 29	2693	699, 700	32	1536
Thorp, Thomas. (See Bower and Thorp.)						
Thorwarth, John B., and W. Tunstill, Jr., Brooklyn, N. Y. Bobbin	321,772	July 7	496	131	32	93
Thoubboron, James, Brooklyn, N. Y. Manufacturing show-cards	326,174	Sept. 15	1273	327	32	1264
Thrash, William R., Selma, Ala. Loom-picker	322,140	July 14	1008	262	32	192
Thurber, Isaac L. (See Rice, Steiger, and Thurber.)						
Thurmond, George F., *et al.* (See Thurmond, William H., assignor.) (Reissue.)						
Thurmond, James M., *et al.* (See Thurmond, William H., assignor.) (Reissue.)						
Thurmond, Warren E., *et al.* (See Thurmond, William H., assignor.) (Reissue.)						
Thurmond, William H., Forsyth, Ga. Car-coupling. (Reissue)	10,623	July 7	725	190	32	132
Thurmond, William H., assignor of one-fourth to J. M., W. E., and G. F. Thurmond, Forsyth, Ga. Car-coupling. (Reissue)	10,622	July 7	724	190	32	132
Thurston, Robert H., Hoboken, N. J. Apparatus for purifying water	322,332	July 14	1233	323	32	235
Tibbits, John B. (See McCarty, Norman, assignor.)						
Tiemann, Julius H., Brooklyn, N. Y. Refining petroleum	321,465	July 7	79	.....	32	16
Tierney, Catharine A., Chicago, Ill. Guide for use in cutting garments	322,402	July 14	1332	346, 347	32	253
Tiffany, Albert R., assignor of one-half to J. J. Leland, Dayton, Ohio. Belt-shifter	324,190	Aug. 11	1060	290	32	727
Tiffany & Co. (See Grosjean, Charles T., assignor.)						
Tiffany, David B., assignor of one-half to J. G. Feurle, Xenia, Ohio. Wheelbarrow	326,349	Sept. 15	1522	396	32	1311
Tighe, Lewis, Detroit, Mich. Mortise-lock	322,505	July 21	1490	391	32	287
Tilden, James A., Hyde Park, assignor to Hersey Brothers, Boston, Mass. Rotary fluid-meter	324,503	Aug. 18	1496	409, 410	32	815
Tilghman, Benjamin C. (See Mathewson, Jeremiah E., assignor.)						
Tim, Wallerstein & Co. (See Hermann, Max, assignor.)						
Timmis, Illius A., and S. C. C. Currie, London, county of Middlesex, England. Railway-signal	326,068	Sept. 8	1130	287	32	1231
Tin-Plate Decorating Company. (See Habenicht, Charles R. H. M., assignor.)						
Tindall, George G., Oakland, Cal. Steam-boiler	325,027	Aug. 25	2214	608	32	956
Tindel, Adam, Philadelphia, Pa. Manufacturing steel forgings and castings	324,433	Aug. 18	1405	.....	32	799
Tindell, Henry. (See Clark and Tindell.)						
Tingley, Frank F., assignor to Barstow & Luther, Providence, R. I. Bracelet	326,606	Sept. 22	1846	484	32	1377
Tingley, John, Philadelphia, Pa. Heel-machine	322,761	July 21	1814	479	32	346
Tingley, John, Philadelphia, Pa. Machine for attaching boot or shoe heels	324,279	Aug. 11	1193	324	32	752
Tinsley, William P., Dallasbury, Ky. Buckle attachment	326,350	Sept. 15	1522	396	32	1311
Titus, John C., J. and S. E. Morral, Marion, Ohio, assignors of one-half to said Titus and of one-fourth each to said J. and S. E. Morral. Ditching-machine	322,656	July 21	1677	444	32	320
Tobey, Elisha H., Denver, Colo. Safety railway-switch	324,613	Aug. 18	1646	453, 454	32	844
Tobey, Eliaha H., Denver, Colo. Interlocking mechanism for railway switches and signals	324,614	Aug. 18	1648	454, 455	32	845
Tobey, Horace P., Wareham, and G. B. Thayer, assignors to Golden Gate Concentrator Company, Boston, Mass. Ore-concentrator	326,806	Sept. 22	2152	560, 561	32	1431
Togus, Theodore M., Concord, N. H. Umbrella show-stand	323,977	Aug. 11	772	215	32	675
Tolhurst, William H., Troy, N. Y. Centrifugal machine	322,762	July 21	1816	480	32	346
Tolman, Gayger D., Shawano, Wis. Screw-bolt lock	322,657	July 21	1679	445	32	321
Tolman, James P., West Newton, Mass. Machine for making cordage	326,607	Sept. 22	1847	484, 485	32	1377
Tomlinson, Nathan, Princeton, Ind. Window-shade fastener	324,738	Aug. 18	1815	501	32	876
Tompkins, Samuel D., Jersey City, N. J., and J. N. Matlock, Brooklyn, N. Y. Hot-water or steam radiator	323,235	July 28	2489	661	32	476
Toney, Tennille, Union Springs, Ala. Car-step	323,236	July 28	2490	662	32	477
Tonks, James. (See Spruce and Tonks.)						
Toole, James N., Jackson, Mich. Railway-signal	325,286	Sept. 1	77	23	32	1030
Torrey, Charles S., Dimondale, Mich. Potato-digger	326,461	Sept. 15	1650	431	32	1334
Torrey, Charles S., Dimondale, Mich. Root-digger	326,462	Sept. 15	1651	431	32	1335
Totman, James H., Deseronto, Ontario, Canada. Machine for sharpening and gumming saws	324,434	Aug. 18	1406	383	32	799
Totten, Robert C., *et al.* (See Reese, Abram, assignor.)						
Towers, John V. R., assignor of one-half to L. Towers, Jr., Washington, D. C. Picture-hanger	321,866	July 7	634	164	32	116
Towers, Lemuel, Jr. (See Towers, John V. R., assignor.)						
Towle, Abner S., assignor of one-half to J. D. Fogg, Rochester, N. H. Compound metal-working machine	321,547	July 7	198	52	32	39
Town, Curtis H., *et al.* (See Blazier, Fredrick, assignor.)						
Townsend, Joseph F., Cambridgeport, Mass. Suspender-buckle	324,897	Aug. 25	2045	559	32	925
Towse, William R., Columbus, Ohio. Saw-handle	323,833	Aug. 4	578	163	32	632
Tracy, H. P. (See Wilson, Alexander W., assignor.)						
Train, Edgar H., Union City, Conn. Press for setting lacing-hooks	323,978	Aug. 11	773	216	32	675
Transit Apparatus Company. (See Birgé, Isidore, assignor.)						
Transit Apparatus Company. (See North, Selden G., assignor.)						
Traphagen, William H., assignor to Emerson, Talcott & Co., Rockford, Ill. Cultivator	327,358	Sept. 29	2894	755	32	1570
Trask, Henry C., Vienna, Me. Car-coupling	321,773	July 7	497	131	32	93
Travis, Samuel G., Leavenworth, Kans. End-gate for wagons	322,506	July 21	1491	392	32	287
Treadway, Dwight, *et al.* (See Long, William S., assignor.)						
Trenton Iron Company. (See Hewitt, William, assignor.)						
Trenton Iron Company. (See Withington, James, assignor.)						
Trested, Richard H. (See Kendall, John L., assignor.)						
Trier, Conrad, Chicago, Ill. Circular sawing machine	322,658	July 21	1680	445, 446	32	321

Alphabetical list of patentees, July to September, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume.		Official Gazette.	
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Tripp, Augustus F., and I. Woeppel, assignors to S. Shepard & Co., Buffalo, N. Y. Flour-sifter	322,141	July 14	1009	262	32	192
Tripp, Thomas, Stoughton, Mass. Anti-friction journal-box	323,466	Aug. 4	109	31	32	542
Trites, John S., Moncton, New Brunswick, Canada. Railway-signal	326,060	Sept. 8	1132	288	32	1231
Trobach, Konrad, Berlin, Germany. Manufacture of sugar	322,079	July 14	919	.....	32	175
Troden, James. (See Phillips, Troden, and Golling.)						
Trout, John F., Chicago, Ill. Water-urn for cooking purposes	326,529	Sept. 15	1736	453, 454	32	1351
Trout, Silas E., assignor to H. S. Wendell, Philadelphia, Pa. Manufacture of wall-paper, &c	322,507	July 21	1492	.....	32	287
Trowbridge, John H., New York, N. Y. Machine for gathering and ruffling fabrics	323,544	Aug. 4	214	63	32	562
Trowbridge, W. E. S., *et al.* (See Mason, Henry, assignor.)						
Troy, Daniel S., Montgomery, Ala. Nut-lock	322,869	July 21	1967	521	32	374
Troy Laundry Machinery Company. (See Angus, Charles, assignor.)						
Trudo, Allson, *et al.* (See Hale, Rosswell W., assignor.)						
True, Daniel E., Leominster, Mass. Pail for commodes	323,469	Aug. 4	111	32	32	542
True, David, Salisbury, Mass. Carriage-jack	323,237	July 28	2480	662	32	477
True, Reuben M., Cincinnati, Ohio. Bolting-chest	326,175	Sept. 15	1274	328	32	1264
Trum, Emanuel J., Brooklyn, N. Y. Temporary cover for books and similar articles	324,791	Aug. 18	1890	519	32	990
Tubbs, Alfred L., San Francisco, Cal. Machine for spinning hemp, &c	325,368	Sept. 1	184	49	32	1049
Tuck, Josiah H. L., San Francisco, Cal. Heat-transmitter	323,545	Aug. 4	215	64	32	562
Tucker, Frank W., Waterbury, Conn. Machine for making toe-calks	326,463	Sept. 15	1653	432	32	1335
Tucker, Stephen D., New York, N. Y. Delivery apparatus for printing-machines	324,967	Aug. 25	2133	583, 584	32	943
Tucker, William, East Brookfield, Mass. Saw-sharpening device	327,416	Sept. 29	2968	775	32	1583
Tuckwood, Charles H., Janesville, Wis. Device for converting motion	323,546	Aug. 4	217	64	32	562
Tufts, Augustus, assignor to E. H. Tufts, Malden, Mass. Oil-can	322,569	July 21	1574	414	32	301
Tufts, Emily H. (See Tufts, Augustus, assignor.)						
Tunnicliff, John C., assignor to G. W. Brown & Company, Galesburg, Ill. Corn-planter	325,638	Sept. 1	556	141	32	1121
Tunstill, William, Jr. (See Thorwarth and Tunstill.)						
Tupper, John B., Jr., assignor of one-half to G. W. Young, Petaluma, Cal. Wine-press	327,121	Sept. 29	2577	672	32	1514
Turnbull, Andrew, assignor of one-half to W. I. Felding, New Britain, Conn. Weighing-scale	322,870	July 21	1969	521	32	374
Turnbull, Walter, New Orleans, La. Car-coupling	322,996	July 28	2160	573, 574	32	416
Turner, Chester B., Detroit, Mich. Relief-valve for engines	326,070	Sept. 8	1134	288	32	1231
Turner, Chester B., assignor to H. C., C. C., C. B., and C. H. Hodges, Detroit, Mich. Steam-engine	327,417	Sept. 29	2968	775	32	1583
Turner, Edward S. (See Fields, Charles H., assignor.)						
Turner, Isaac J., Princeton, N. J. Tennis-racquet	323,608	Aug. 4	296	85	32	577
Turner, James A., West Gorton, near Manchester, county of Lancaster, England. Manufacture of material for covering and decorating walls, &c	324,343	Aug. 11	1283	.....	32	769
Turner, James P., Osseo, Mich. Force-pump	326,891	Sept. 22	2271	594	32	1453
Turner, John, Boston, Mass. Breech-loading fire-arm	321,923	July 7	703	184	32	128
Turner & Seymour Manufacturing Company. (See Brothwell, John G., assignor.)						
Turner, Squire S., Columbia, Mo. Endless-chain sickle for mowers and reapers	323,609	Aug. 4	297	85	32	577
Turner, Winfield S., assignor of one-half to E. Wicoff, Pittsburg, Pa. Expansion-joint for gas-pipes	323,634	Aug. 4	579	163	32	632
Tuttle, Beeri W., assignor of one-half to A. W. T. Raw, Council Hill, Ill. Windmill water-supply regulator	327,503	Sept. 29	3068	799	32	1600
Tuttle, Beeri W., assignor of one-half to P. J. and A. W. T. Raw, Council Hill, Ill. Wagon-standard	327,504	Sept. 29	3070	800	32	1601
Tuttle, Hosmer, Cedar Rapids, Iowa. Grain-adjuster	326,464	Sept. 15	1655	432	32	1335
Tuttle, Joseph P., Onondaga Valley, N. Y. Steam-boiler furnace	323,375	July 28	2696	717	32	513
Tuttle, Joseph P., Onondaga Valley, N. Y. Damper	323,376	July 28	2697	718	32	513
Tweedy, Edmund, Danbury, Conn., and G. Yule, Newark, N. J., assignors to Hat Curling Machine Company, Danbury, Conn. Hat-paring machine	327,122	Sept. 29	2578	672, 673	32	1515
Tweedy, Edmund, Danbury, Conn., and G. Yule, Newark, N. J., assignors to Hat Curling Machine Company, Danbury, Conn. Hat-paring machine	327,123	Sept. 29	2582	673	32	1515
Twichell, Horace E., Highland, N. Y. Automatic revolving manuscript-holder	324,979	Aug. 11	775	216	32	676
Twisted Wire Box Strap Company. (See Frank, Himan, assignor.)						
Twitchell & Brother, S. (See Roorbach, William L., assignor.)						
Tyler, John E., Roxobel, N. C. Gas-check for fire-arms	325,878	Sept. 8	883	223	32	1185
Tynan, Joseph E., Paterson, N. J. Machine for doubling and twisting thread	321,924	July 7	706	184	32	128
Tynan, Joseph E., Paterson, N. J. Machine for doubling and twisting silk and other threads	326,530	Sept. 15	1737	454	32	1351
Tynan, Joseph E., Paterson, N. J. Machine for throwing silk	326,531	Sept. 15	1740	454	32	1352
Tyrrell, Abira. (See Lathrop and Tyrrell.)						
Tyson, Benjamin H., Wilson, N. C. Car-coupling	327,124	Sept. 29	2586	674	32	1516
Ubellar, James L., Kankakee, Ill. Hat and bonnet fastener	322,213	July 14	1092	284	32	208
Uhlhorn, Diedrich, Jr., Grevenbroich, Germany. Mill for hulling grain	322,080	July 14	921	236	32	176
Umbstaetter, Daniel, Cleveland, Ohio. Steam-boiler furnace	324,898	Aug. 25	2046	560	32	925
Umland, Wilhelm, New York, N. Y. Upright-piano case	324,051	Aug. 11	869	240	32	691
Umland, Wilhelm, New York, N. Y. Upright-piano case	324,052	Aug. 11	870	240	32	692
Unbehend, Jacob J., Syracuse, N. Y. Clasp	326,351	Sept. 15	1523	396	32	1311
Unbehend, Jacob J., Syracuse, N. Y. Spring-clasp	326,352	Sept. 15	1525	396	32	1311
Unbehend, Jacob J., Syracuse, N. Y. Spring-clasp	326,353	Sept. 15	1526	397	32	1312
Unbehend, Jacob J., Syracuse, N. Y. Clasp-plate	326,355	Sept. 15	1529	397	32	1312
Unbehend, Jacob J., Syracuse, N. Y. Clasp	326,356	Sept. 15	1531	397	32	1312
Unbehend, Jacob J., Syracuse, N. Y. Clasp	326,357	Sept. 15	1532	398	32	1312
Underhill, William P., Brooklyn, N. Y. Invalid-bedstead	325,903	Sept. 8	1025	261	32	1211
Underwood, Harrison, and C. Schweizer, New York, N. Y. Split pulley	327,206	Sept. 29	2694	700	32	1536
Underwood, Walter H., Denver, Colo. Hair-clipper	324,435	Aug. 18	1408	384	32	800
Union Paper Bag Machine Company. (See Sawyer, Benjamin F., assignor.)						
Union Paper Bag Machine Company. (See West, James, assignor.)						
Union Shuttle Company. (See Nolan, John H., assignor.)						
Union Wire Mattress Company. (See Powers, David J., assignor.)						
United States Automatic Railroad Gate and Signal Company. (See Sharp, John F., assignor.)						
United States Chemical Company. (See McNab, James, assignor.)						
United States Combustion Company. (See Westlake, William, assignor.)						
United States Silvered Steel Company. (See Purdy, William H., assignor.)						
Unz, Henry H., *et al.* (See Wagner, Franz X., assignor.)						
Updegraff, Horace, Hampton, Kans. Magazine-gun	325,369	Sept. 1	186	49, 50	32	1049

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Upham, Andrew J., Sycamore, assignor to W. M. Dillon, Sterling, Ill. Wire-stretcher	325,460	Sept. 1	398	79	32	1077
Upton, Francis R. (See Bradley, James J., assignor.)						
Urbahn, Alwill, Paterson, N. J., assignor of one-half to A. G. Jennings, Brooklyn, N. Y. Loom	326,071	Sept. 8	1134	288, 289	32	1231
Urey, Adam P., Sandy Lake, Pa. Feed-water alarm	326,465	Sept. 15	1657	432	32	1336
Utley, Charles P., Milwaukee, Wis. Landing-net	325,287	Sept. 1	78	23	32	1031
Utter, John S. (See Ward and Utter.)						
Vail, Theodore N., Boston, Mass. Electric apparatus protector	322,214	July 14	1093	284	32	208
Vail, Theodore N., Boston, Mass. Telephone circuit and apparatus	324,191	Aug. 11	1062	291	32	728
Vail, Theodore N., Boston, Mass. Central and subsidiary telephone-exchange system, circuit, and apparatus	324,192	Aug. 11	1071	291, 292	32	729
Valentine, James H., Stanley, N. J. Vaporizer	323,547	Aug. 4	218	64, 65	32	562
Valentine, Newell S., assignor to Hartford Silver Plate Company, Hartford, Conn. Fluid-cooler	322,081	July 14	922	238	32	176
Van Allen, Cicero D., Brussels, Ontario, Canada. Air-tight package for butter	323,980	Aug. 11	775	216	32	676
Van Anken, Thomas B., assignor, by mesne assignments, to himself and W. W. Jones, Auburn, N. Y. Steam-engine valve-gear	323,238	July 28	2492	662	32	477
Van Bemmel, Louis, Maestricht, Holland. Watch-barrel	327,339	Sept. 29	2895	755	32	1570
Van Benschoten, Charles H., Cincinnati, Ohio. Furnace	322,215	July 14	1095	284	32	208
Van Camp, Lyman, Howell, Mich. Car-coupling	323,756	Aug. 4	487	137	32	615
Van Choate, Silvanus F., New York, N. Y. Armature for dynamo-electric machines and electric motors	325,714	Sept. 8	673	169	32	1146
Van Depoele, Charles J., Chicago, Ill. Cut-out for dynamo-electric machines	323,470	Aug. 4	111	32	32	542
Van Depoele, Charles J., Chicago, Ill. Regulator for incandescent electric-lighting systems	323,981	Aug. 11	777	216	32	676
Van Depoele, Charles J., Chicago, Ill. Electric motor	323,982	Aug. 11	779	217	32	677
Van Depoele, Charles J., Chicago, Ill. Incandescent lamp	323,983	Aug. 11	780	217	32	677
Van Depoele, Charles J., Chicago, Ill. Suspended electrical conveyer	323,984	Aug. 11	781	217	32	677
Van Depoele, Charles J., Chicago, Ill. Making incandescents	324,193	Aug. 11	1085	292	32	732
Van Depoele, Charles J., Chicago, Ill. Electric railway	324,899	Aug. 25	2048	560	32	925
Van Depoele, Charles J., Chicago, Ill. Regulator for dynamo-electric machines	325,133	Aug. 25	2349	648	32	983
Van Depoele, Charles J., Chicago, Ill. Electric-current meter	325,225	Aug. 25	2473	680	32	1005
Van De Water, Joseph, assignor to G. Esterly & Son, Whitewater, Wis. Bundle-carrier for grain-binding machines	326,694	Sept. 22	1966	517	32	1400
Van Dreizen, John A., Peoria, Ill. Cooler for water and other liquids	321,666	July 7	339	90	32	64
Van Duzee, Arthur H., Leavenworth, Kans. Centrifugal separator	325,288	Sept. 1	79	23, 24	32	1031
Van Gelder, Pieter, Sowerby Bridge, county of York, England. Dust-collector	326,176	Sept. 15	1275	328, 329, 330	32	1264
Van Gestel, Jean, and C. F. Beck, Patis, France; said Beck assignor to said Van Gestel; said Van Gestel assignor of one-third to T. S. Harrison, Philadelphia, Pa. Incandescent electric lamp	322,024	July 14	847	220	32	102
Van Gilder, William H. (See Bushnell and Van Gilder.)						
Van Hennik, Sebastian, Yonkers, N. Y. Apparatus for making and dispensing lemonade	327,418	Sept. 29	2970	775	32	1583
Van Hoevenbergh, Henry. (See Helvin and Van Hoevenbergh.)						
Van Keuren, William H., Winona, Minn. Mixed paint	322,659	July 21	1662	.....	32	322
Van Kuran, Isaac, Omaha, Nebr. Nut-lock	324,194	Aug. 11	1086	293	32	732
Van Ness, Thomas E., Vallaburg, assignor to Rubber and Celluloid Harness Trimming Company, Newark, N. J. Hame and clip	324,739	Aug. 18	1815	502	32	877
Van Rysselberghe, François, Schaerbeek, Belgium. Preventing interference in combined telegraphic and telephonic systems	322,333	July 14	1234	394	32	235
Van Rysselberghe, François, Schaerbeek, Belgium. Preventing interference in combined telegraphic and telephonic systems	323,239	July 28	2493	663	32	477
Van Rysselberghe, François, Schaerbeek, Belgium. Preventing false signals on reversals in quadruplex telegraphs	326,892	Sept. 22	2272	595	32	1453
Van Valkenburgh, Levi D., Holyoke, Mass. Spindle and bearing	324,900	Aug. 25	2050	560	32	926
Van Vleck, Alexander, Hart Lot, N. Y. Safety apparatus for skaters	321,867	July 7	635	164	32	116
Van Voorhies & Co., A. A. (See Harris, Thomas, assignor.)						
Van Wagenen, William M., assignor to M. L. Ward, Newark, N. J. Life-raft	323,377	July 28	2698	718	32	513
Van Wie, Avery, Indianapolis, Ind. Extensible bottom for chairs and like articles	323,610	Aug. 4	298	85	32	577
Van Wie, Peter G., Cleveland, Ohio. Check-valve	325,289	Sept. 1	81	24	32	1031
Vance, Isaac P., West Stockholm, N. Y. Stove and boiler	322,216	July 14	1097	285	32	208
Vandemark, Archibald B., New York, N. Y. System for heating freight-cars	326,809	Sept. 22	2157	561, 572	32	1432
Vanderburg, Robert B., Iowa Falls, Iowa. Automatic car-brake	322,082	July 14	923	239	32	176
Vandernoth, Peter, New York, N. Y. Self-opening lid for cabinets, &c.	326,810	Sept. 22	2158	562	32	1432
Vanes, John, Brazil, Ind. Girder	327,360	Sept. 29	2896	756	32	1570
Vannice, Peter T., Clarinda, assignor of one-half to J. T. Wickersham, Red Oak, Iowa. Plaiting-board	325,994	Sept. 8	1027	261	32	1211
Vardell, William B., assignor of one-half to J. Von Oven, Charleston, S. C. Rice-cleaning machine	326,532	Sept. 15	1742	454	32	1352
Varley, John J., Merton, county of Surrey, England. Plastic composition	321,548	July 7	199	.....	32	39
Varley, John J., Phœnix Villas, Merton, county of Surrey, England. Seating for bottle-stoppers	325,776	Sept. 8	758	189	32	1162
Varney, Al. New Market, N. H. Tailor's pressing-machine	322,217	July 14	1098	285	32	209
Varney, Nicholas R., Waltham, Mass. Stem winding and setting watch	323,985	Aug. 11	782	217	32	677
Vaughan, John T., Leicester, England. Stand and tilter for casks	324,436	Aug. 18	1409	384	32	800
Veazie, Edward W. (See Buck, Edward A., assignor.)						
Vehr, John H., and J. Kirby, Cincinnati, Ohio. Beer-ventilator	327,040	Sept. 29	2469	644, 645	32	1495
Veit, Charles F., *et al.* (See Conard, Léon P., assignor.)						
Veit, Charles F., London, England. Mechanical movement	324,280	Aug. 11	1195	324	32	753
Veit, Charles F., London, England. Combined ornamental chain-link and cigar-cutter	324,281	Aug. 11	1196	325	32	753
Veit, Charles F., London, England. Lock	325,028	Aug. 25	2216	608	32	957
Veit, Charles F., London, England. Trunk-lock	325,995	Sept. 8	1028	261	32	1212
Venners, James H., Philadelphia, Pa. Bowling-hoop	324,344	Aug. 11	1284	348	32	769
Vermont Farm Machine Company. (See Williams, Nathan G., assignor.)						
Versepuy, Victor E. (See Portebois, Louis F., assignor.)						
Vescelius, Aaron H. (See Fenton, Charles, assignor.)						
Vessier, Hippolyte, and A. Wilbaux, Paris, France. Cold process of manufacturing paper-pulp and bleached or unbleached textile fabric	323,378	July 28	2699	718	32	513
Vetter, Caspar, assignor to H. Sulzer, Louisville, Ky. Casing for casting stove-door catches	321,549	July 7	200	53	32	39

Alphabetical list of patentees, July to September, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Vickers, Albert, *et al.* (See Maxim, Hiram S., assignor.)						
Victor Adjustable Truck Roller Skate Company. (See Cornelius, Wilber F., assignor.)						
Vignon, Leo, Lyons, France. Manufacture of coloring-matter from alpha-naphthol and dinitro-naphthol	324,615	Aug. 18	1651	.....	32	845
Vincent, George, assignor of one-half to G. W. Haines, Stockton, Cal. Pneumatic door-check	322,763	July 21	1818	481	32	347
Vincent, Henry H. B., Minneapolis, Minn. Damper	322,403	July 14	1335	347	32	253
Vincent, Samuel E., Bridgeport, Conn. Barrel-cover holder	326,177	Sept. 15	1281	330	32	1265
Vinton, John H., Boston, Mass., assignor to Peninsular Novelty Company, Grand Rapids, Mich. Button-fastening staple	324,053	Aug. 11	871	240	32	692
Visger, Elisha W., Alexandria Bay, N. Y. Ash-receptacle for furnaces	323,986	Aug. 11	783	218	32	678
Vivier, Joseph, Brussels, Belgium. Stringing pianos	325,189	Aug. 25	2424	666	32	996
Vogel, John B., assignor to himself, E. Dreifus, C. L. A. De Vaux, New Orleans, La., S. Goldstein, Sallie, Miss., and W. L. Bowron, New York, N. Y. Machine for separating fibers from plants	324,054	Aug. 11	872	240, 241	32	692
Vogt, Axel S. (See Cloud and Vogt.)						
Von Auw, Otto. (See Hölzgens, Joseph, assignor.)						
Von Bonhorst, Leonhard. (See Thormann and Von Bonhorst.)						
Von Dormus, Georg. (See Salvator and Von Dormus.)						
Von Oven, Ernest, Naperville, Ill. Dumping-vehicle	327,505	Sept. 29	3071	800	32	1601
Von Oven, John. (See Vardell, William B., assignor.)						
Von Palstring, Franz, Kolitz, near Coswig, Saxony, Germany. Tricycle. (Reissue)	10,624	July 14	1337	348	32	254
Von Pittler, Wilhelm, Leipsic, assignor to Wezel & Naumann, Rendnitz, Leipsic, Germany. Artificial lithographic stone	326,254	Sept. 15	1393	362	32	1286
Von Schmidt, Alexey W., San Francisco, Cal. Discharge-pipe for dredging-machines	326,072	Sept. 8	1139	289	32	1232
Vosburgh, Jacob, assignor to N. O. Nelson Manufacturing Company, St. Louis, Mo. Driven-well point	321,550	July 7	201	53	32	40
Vosburgh, Reuben, assignor of one-half to S. D. Wallace, Oregon, Ill. Sash-weight	326,073	Sept. 8	1140	290	32	1232
Vose, Ambrose S. (See Kendall and Vose.)						
Vote, Gus, *et al.* (See Bartels, William H., assignor.)						
Vreeland, Aaron, Cedar Grove, N. J. Gas-burner	326,358	Sept. 15	1533	398	32	1312
Vreeland, Aaron, Cedar Grove, N. J. Velocipede	327,125	Sept. 29	2588	674	32	1516
Vuitton, Georges, Paris, France. Combined trunk and camp-bedstead	325,879	Sept. 8	885	223	32	1185
Vulcanized Fiber Company. (See Taylor, Franklin, assignor.)						
Wacker, George G., New York, N. Y. Electric organ-action	326,359	Sept. 15	1534	398	32	1313
Wackerman, Joseph, Warren, Pa. Snow-plow	325,029	Aug. 25	2217	608, 609	32	957
Wadack, Leo, and A. Graffy, Berlin, Germany. Hydraulic door-check	322,218	July 14	1099	285	32	209
Waddell, William, Orange, Mass. Turbine water-wheel	322,764	July 21	1819	481	32	347
Wade, Joseph M., New York, N. Y. Ornamenting surfaces of wood, &c.	322,219	July 14	1100	.....	32	209
Wadsworth, Benjamin F., *et al.* (See Carson and Sherman, assignors.)						
Wadsworth, Samuel B., *et al.* (See Carson and Sherman, assignors.)						
Waggoner, Benjamin F., Litchfield, Ill. Feed-rack	325,461	Sept. 1	329	80	32	1078
Wagner, Anton, assignor to J. L. Borsch, Philadelphia, Pa. Lens for optical instruments	326,255	Sept. 15	1393	363	32	1286
Wagner, Christian W., *et al.* (See Calely, Edward L., assignor.)						
Wagner, Franz X., assignor to S. T. Smith and H. H. Uns, New York, N. Y. Type-writing machine	326,173	Sept. 15	1282	330, 331	32	1265
Wagner, John and W., Coe Ridge, Ohio. Animal hitching and releasing device	325,462	Sept. 1	330	80	32	1078
Wagner, Julius, Reading, Pa. Roll for harness loop-tugs	322,570	July 21	1575	415	32	301
Wagner, Philip D., Dayton, Ohio. Track	322,660	July 21	1683	446	32	322
Wagner, William. (See Wagner, John and W.)						
Wagner, William, *et al.* (See Calely, Edward L., assignor.)						
Wahl, Christian. (See Natanson, Adam, assignor.)						
Wainwright, Ellis, St. Louis, Mo., assignor to De La Vergne Refrigerating Machine Company, New York, N. Y. Apparatus for cooling beer, &c.	325,996	Sept. 8	1028	262	32	1212
Wainwright, Ira, New York, N. Y. Height-measure for horses	325,134	Aug. 25	2351	648	32	983
Wainwright, Jacob T., Homestead, Pa. Rolling-mill	324,282	Aug. 11	1196	325	32	753
Waite, Benjamin C., Brooklyn, N. Y. Steam-engine	322,999	July 28	2163	574	32	416
Waite, Charles N., Medford, Mass. Distilling lactic acid	321,925	July 7	709	.....	32	129
Waite, Charles N., Medford, Mass. Soldering-fluid	325,579	Sept. 1	484	.....	32	1108
Waite, Enoch, Franklin, Mass. Packing for axle-boxes	326,179	Sept. 15	1283	331	32	1265
Waite, Henry E., assignor to C. F. Livermore, New York, N. Y. Annunciator	325,463	Sept. 1	332	80	32	1078
Waite, Russell P. (See Kizer, Isaac H., assignor.)						
Wakeford, William H., Baltimore, Md. Roller grinding-mill	321,551	July 7	202	53	32	40
Wakeford, William H., Baltimore, Md. Gravity-separator	321,552	July 7	202	53	32	40
Wakeley, Seth J., New York, N. Y. Gas-governor	322,083	July 14	924	239	32	176
Wakeman & Co., C. E. (See Alexander, Samuel G., assignor.)						
Walden, Frank D., assignor to Bradley & Metcalf, Milwaukee, Wis. Bracing or staying attachment for button-hole sewing-machines	326,811	Sept. 22	2159	562	32	1432
Waldron, John, New Brunswick, N. J. Hanging-up and carrying-off machine for wall-paper manufacturers' use	322,765	July 21	1820	481	32	347
Waldron, John, New Brunswick, N. J. Hanging-up and carrying-off machine for wall-paper	322,871	July 21	1970	521, 522	32	374
Wales, Arthur, Minneapolis, Minn. Pipe-organ	324,437	Aug. 18	1410	384	32	800
Wales, Frederick N. (See Bobrick, Gabriel A., assignor.)						
Walker, Albert H., Brooklyn, N. Y. Mechanism for feeding boards to be printed	324,195	Aug. 11	1086	293	32	733
Walker, Benjamin F., Allentown, N. Y. Thread-cutter	324,616	Aug. 18	1652	455	32	845
Walker, C. Irvine, and F. J. Jervey, assignors to Stoney Landing Company, Charleston, S. C. Press for plastic material for building-blocks	323,757	Aug. 4	488	138	32	615
Walker, Charles O. R., Coolart-Balnaring, assignor to J. E. Pounds, Lockinge House Kew, Victoria. Wire-strainer	327,126	Sept. 29	2589	674	32	1516
Walker, Edward H. (See Stock, Charles F., assignor.)						
Walker, George, Deseronto, Canada. Apparatus for manufacturing gas from sawdust	321,868	July 7	635	164, 165	32	116
Walker, James M., Roopville, Ga. Combined planter, harrow, and cultivator	326,180	Sept. 15	1284	331	32	1266
Walker, Malcom, and E. Miner, Yankton, Dak. Ter. Portable brick-hack	326,812	Sept. 22	2160	562	32	1432
Walker, Oliver C., and L. B. Altaffer, East Palestine, Ohio. Hay-wagon brake	322,025	July 14	849	221	32	162
Walker, Thomas M., assignor of one-half to J. W. Miller, Bellefontaine, Ohio. Combined pool-rack and ball-spotter	323,835	Aug. 4	581	164	32	632
Walker, William. (See Davis and Walker.)						
Walkhoff, Johannes H. G., Hamburg, Germany. Canned fish and method of canning	325,997	Sept. 8	1031	.....	32	1212
Wall, Frederic W., assignor of one-half to J. N. Huston, Connersville, Ind. Roller-skate	321,466	July 7	80	21	32	16

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Wall, John D. (See Hanbery and Wall.)						
Wall, Thomas. (See Starr, Ferdinand W., assignor.)						
Wallace, David, and J. Darcus, Rockton, Ill. Tongue-support for harvesters	323,471	Aug. 4	113	32	32	547
Wallace, John W. (See Dixon and Wallace.)						
Wallace, Robert, Wallingford, Conn. Making handles for cutlery	323,240	July 28	2496	663	32	478
Wallace, Sanford D. (See Vosburgh, Renben, assignor.)						
Wallace & Sons. (See Hubbell, George W., assignor.)						
Wallace, William W., Fleetville, Pa. Boot or shoe heel	321,869	July 7	637	165	32	116
Walling, Reverdy R. (See Zimmerman, George F. S., assignor.)						
Walling, William P., Albany, Wis. Combined vehicle-seat and end-gate	324,196	Aug. 11	1088	293	32	733
Wallis, William L., *et al.* (See Rees, John W., assignor.)						
Walloch, Frank, assignor to I. Walloch, New York, N. Y. Hunting-jacket	323,987	Aug. 11	784	218	32	678
Walloch, Frank, assignor to I. Walloch, New York, N. Y. Pantaloons for hunters, &c	323,988	Aug. 11	785	218	32	678
Walloch, Isaac. (See Walloch, Frank, assignor.)						
Wally, Andrew. (See Caldwell, Benjamin F., assignor.)						
Wally, Andrew, and H. Beckman, Montrose, Mo. Attachment for check-row corn-planters	326,813	Sept. 22	2162	563	32	1433
Walpuski, Charles, New York, N. Y. Pencil or crayon holder	324,504	Aug. 18	1501	411	32	816
Walsh, Allan H., and J. Abramowsky, Chicago, Ill. Folding carriage	324,617	Aug. 18	1652	456	32	846
Walsh, John, Cleveland, Ohio. Fire-escape	325,998	Sept. 8	1031	262	32	1212
Walsh, Joseph J., Stratford, Ontario, Canada. Machine for cleaning and brightening dried fruit	321,000	July 28	2164	574	32	417
Walsh, Matthew M., Hillsborough, Ill. Combined table and writing-desk	326,814	Sept. 22	2163	563	32	1433
Walsh, Thomas P. (See Hulford and Walsh.)						
Walter, Charles L., Boston, Mass. Cotton-harvester	325,820	Sept. 8	885	223, 224, 225	32	1186
Walter, James F., assignor to W. H. Leavitt, Waterloo, Iowa. Mop-wringer	323,758	Aug. 4	491	138	32	615
Walter, Theophiel P. (See Hackman and Walter.)						
Walter, William, Philadelphia, Pa. Underground conduit for cables, electric wires, &c	323,241	July 28	2497	663	32	478
Walters, Charles F. and W. J., Prospect, N. Y. Clasp	322,026	July 14	850	221	32	162
Walters, Daniel, Richmond, Ind. Roller-skate	324,618	Aug. 18	1654	456	32	846
Walters, William J. (See Walters, Charles F. and W. J.)						
Walton, Joseph J., Newark, N. J. Lamp-box for cars	325,135	Aug. 25	2353	648	32	983
Walton, William R. (See Stone and Walton.)						
Walton, William R., assignor to Ansonia Brass and Copper Company, Ansonia, Conn. Refining or preparing copper for casting	324,505	Aug. 18	1502	.....	32	816
Walton, William R., assignor to Ansonia Brass and Copper Company, Ansonia, Conn. Draw-bench	324,506	Aug. 18	1503	411	32	816
Walton, William R., assignor to Ansonia Brass and Copper Company, Ansonia, Conn. Machine for contracting the end of a tube	324,507	Aug. 18	1504	411, 412	32	816
Walworth, Caleb C., and H. Seyter, Boston, Mass. Apparatus for mixing aeriform fluids	322,661	July 21	1684	446, 447	32	322
Ward, Charles H. (See Collyer, Charles W. and W. C., assignors.)						
Ward, Henry, and J. S. Utter, Stockton, Cal. Piano-forte music-rack illuminator	324,901	Aug. 25	2051	561	32	926
Ward, Henry H., Batavia, Ill. Steam-generator	326,466	Sept. 15	1658	433	32	1336
Ward, John H., Delphos, Ohio. Water-cooler	327,361	Sept. 29	2896	756	32	1570
Ward, John H., assignor to himself and J. H. McDermott, Lowell, Mass. Car-coupling	323,242	July 28	2498	664	32	478
Ward, Marcus L. (See Van Wagenen, William M., assignor.)						
Ward, Philip R., Quincy, Ill. Saw-swaging machine	326,360	Sept. 15	1535	398, 399	32	1313
Ward, Seth. (See Gilmore, Steele F., assignor.)						
Ward, Thomas, Harper's, N. C. Plow	323,836	Aug. 4	582	164	32	633
Wardwell, Claison S., Stamford, Conn. Belt-tightening device	326,695	Sept. 22	1967	517	32	1400
Wardwell, Jeremy B., Ormond, Fla. Basket-support for ladders	325,290	Sept. 1	82	24	32	1031
Wardwell, Simon W., Jr., Providence, R. I. Sewing-machine	322,571	July 21	1576	415	32	301
Wardwell, William T. C., *et al.* (See Cary, Charles H., assignor.)						
Ware, Charles, New York, N. Y., assignor to Davidson Rubber Company, Boston, Mass. Nipple-protector	322,508	July 21	1493	392	32	257
Wareheim, William W. (See Wooden, Lewis H., assignor.)						
Warefield, Solomon D., Baltimore, Md. Corn-silker	322,220	July 14	1101	286	32	209
Waring, John T., Yonkers, N. Y. Machinery for felting hat-bodies and other articles	326,608	Sept. 22	1849	485	32	1378
Waring, Wilson, Colora, Md. Ore-crushing machine	324,197	Aug. 11	1089	294	32	733
Warner, James, Philadelphia, Pa. Conduit for cable roads	322,766	July 21	1823	482	32	347
Warner, James C., assignor to Western Electric Company, Chicago, Ill. Spring-jack switch	321,553	July 7	203	54	32	40
Warner, John P., Philadelphia, Pa., assignor of five-eighths to E. L. Lamble, Washington, D. C., and J. F. Dezendorf, Norfolk, Va. Feed-water purifier and heater	322,767	July 21	1824	482	32	347
Warner, William L., New Haven, Conn. Shears for metal-workers	325,291	Sept. 1	82	24	32	1031
Warren, Albert G., assignor of one-fourth to A. A. Strauss, Mayesville, S. C. Electric railway-signal	323,243	July 28	2499	664	32	479
Warren, Edward K., assignor to Warren Feather Bone Company, Three Oaks, Mich. Preparing feather-vanes for upholstering purposes	327,127	Sept. 29	2590	.....	32	1516
Warren Feather Bone Company. (See Warren, Edward K., assignor.)						
Warren, Jabes S., Burlingame, Kans. Rail-joint	322,027	July 14	850	221	32	163
Warren, Joseph A., Detroit, Mich. Reed-organ stop-action	322,509	July 21	1494	392	32	287
Warren, Robert W., Houghton, Mich. Dynamite	323,088	July 28	2289	.....	32	410
Warwick, George T., Springfield, Mass. Bicycle	322,221	July 14	1103	287	32	210
Washburn, Nathan, Boston, Mass. Car-wheel	326,256	Sept. 15	1394	363	32	1296
Washburn, Nathan, Boston, Mass. Car-wheel	327,041	Sept. 29	2470	645	32	1496
Washburn, William S., East Bridgewater, Mass. Bit-stock	323,989	Aug. 11	785	218	32	678
Washburne, Mary E. (See Washburne, Oscar, assignor.)						
Washburne, Oscar, assignor to M. E. Washburne, Sing Sing, N. Y. Cotton-gin	323,548	Aug. 4	220	65	32	562
Wass, Dyson D. (See Sterling and Wass.)						
Wass, Dyson D., San Francisco, Cal. Feed-water heater and purifier	323,611	Aug. 4	299	85	32	577
Wasseberg, Conrad. (See Langstrom, Albert, assignor.)						
Waterbury Watch Company. (See Hart, George E., assignor.)						
Waterhouse, Charles N., St. Louis, Mo. Connecting-link for chains	321,554	July 7	205	54	32	40
Waters, Francis M., Ashmore, Ill. Thill-coupling	322,510	July 21	1495	393	32	288
Waters, George D., Cedarvale, Kans. Clamp for eaves-troughs	322,222	July 14	1105	287	32	210
Waters, Michael, Buffalo, N. Y. Bilge-pump	324,438	Aug. 18	1411	385	32	800
Watkins, Elisha, Eagleville, Cal. Welding compound	322,223	July 14	1106	.....	32	210
Watkins, Frank M., assignor of one-half to J. T. Weigbell, Cincinnati, Ohio. Driving mechaniam for washing-machines	321,555	July 7	205	54	32	40

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Watkins, Gardner A., assignor to H. and G. Heywood, A. M. Greenwood, and A. Morrill, Gardner, Mass. Base rocking-chair	326,361	Sept. 15	1537	399	32	1313
Watkins, William, Moss Point, Miss. Weighing-scale	326,815	Sept. 22	2164	564	32	1433
Watkinson, George, assignor to L. Candee & Co., New Haven, Conn. Rubber boot or shoe	322,224	July 14	1106	287	32	210
Watrous, Charles R. (See Benham and Watrous.)						
Watson, Charles, and A. Gaukroger, San Francisco, Cal. Steam-trap	321,556	July 7	207	54	32	41
Watson, Charles H., Omaha, Neb., assignor of one-half to J. H. Baldwin. Excavator	325,370	Sept. 1	193	50	32	1051
Watson, Charles S., assignor of two-thirds to S. D. Hall and H. C. Cook, Philadelphia, Pa. Lamp and window-sign	327,362	Sept. 29	2897	756	32	1570
Watson, Isaac N., Defiance, Ohio. Fence	324,439	Aug. 18	1412	385	32	801
Watson, John, St. Albans, county of Hertford, England. Boiler	324,902	Aug. 25	2052	561	32	926
Watson, John G., Ayr, Ontario, Canada. Harvester-binder	324,983	Aug. 11	1197	325	32	753
Watson, Lewis F., *et al.* (See Burnley, William, assignor.)						
Watson, Olin A., Chicago, Ill. Mouth-piece for wind-instruments	325,715	Sept. 8	676	169	32	1146
Watson, Robert. (See Ripson and Watson.)						
Watson, Sam, Straughn, Ind. Wire-fence machine	322,872	July 21	1972	522, 523	32	374
Watson, Thomas A., Houston, Tex. Mosquito-net frame	325,464	Sept. 1	333	80	32	1079
Watson, Thomas K. (See Grath and Watson.)						
Watson, Walter, Fayetteville, N. C. Turpentine-hacker	327,207	Sept. 29	2695	700	32	1536
Wattie, William, assignor to Knowles Loom Works, Worcester, Mass. Tube-machine	324,198	Aug. 11	1089	294, 295	32	733
Watts, Charles, Crooksville, Ohio. Jar-fastener	326,696	Sept. 22	1969	517	32	1400
Watts, Elias, Keyport, N. J. Oyster-dredge	322,511	July 21	1496	393	32	288
Wear, William F., Buffalo Springs, Tex. Corn and cotton planter	326,609	Sept. 22	1851	485	32	1378
Weatherhead, Albert J. (See Claas and Weatherhead.)						
Weatherly, Jared G., Tecumseh, Ala. Fish-hook	326,816	Sept. 22	2166	564	32	1434
Webb, John R., St. Joseph, Mich. Cooking-stove	324,055	Aug. 11	873	241	32	692
Webb, Richard H. (See Gray, Watson, assignor.)						
Webb, Thomas. (See Bracher and Webb.)						
Webber, Josiah A., Brooklyn, assignor, by mesne assignments, to C. F. Hawkins, Goshen, N. Y. Corn-husking machine	327,042	Sept. 29	2471	645	32	1496
Weber, Frank, Cincinnati, Ohio. Toy top	327,043	Sept. 29	2472	646	32	1496
Weber, Frederick C., Chicago, Ill. Apparatus for applying liquid fuel to blast-furnaces	325,292	Sept. 1	83	25	32	1032
Weber, Frederick C., Chicago, Ill. Smelting ore by means of petroleum	325,293	Sept. 1	85	25	32	1032
Weber, Otto E. (See Scribner, James H., assignor.)						
Weber, Theodore A., New York, N. Y., assignor to Ansonia Brass and Copper Company, Ansonia, Conn., and W. A. Hull, New York, N. Y. Suspension device for lamps	323,089	July 28	2290	606	32	440
Weber, Theodore A., New York, N. Y., assignor to Ansonia Brass and Copper Company, Ansonia, Conn., and W. A. Hull, New York, N. Y. Suspension device for lamps	323,090	July 28	2293	606	32	440
Weber, Theodore A., New York, N. Y., assignor to Ansonia Brass and Copper Company, Ansonia, Conn., and W. A. Hull, New York, N. Y. Suspension device for lamps	323,091	July 28	2296	606	32	441
Weber, Valentin, and J. R. Harrison, assignors of one-third to W. Harrison, Princeville, Ill. Automatic weighing-machine	326,074	Sept. 8	1140	290	32	1232
Webster, Clinton F., Brockton, Mass. Tag	323,472	Aug. 4	113	33	32	543
Webster, Henry W., Nashua, N. H. Washing-machine	324,199	Aug. 11	1091	295	32	734
Webster, John F., W. H. and C. F. Pease, Elkhart, Ind.; said W. H. and C. F. Pease assignors to said Webster. Harvester-knife grinder	323,244	July 28	2501	664, 665	32	479
Weck, Friedrich, Lilleshall, county of Salop, England. Apparatus for washing and scrubbing coal-gas	321,870	July 7	639	165, 166	32	116
Wedlake, James, Brantford, Ontario, and L. M. Jones, Winnipeg, Manitoba, assignors to A. Harris, Son & Co., (limited.) Brantford, Canada. Grain-binder	323,001	July 28	2165	575	32	417
Weeden, Henry C., Boston, Mass. Water-closet bowl	323,473	Aug. 4	114	33	32	543
Weeden, Henry C., Boston, Mass. Water-closet bowl	323,549	Aug. 4	221	65	32	563
Weeks, Chester B., Jackson, Mich. Garment-clasp	327,363	Sept. 29	2898	756	32	1570
Weigel, Joel, and J. Barclay, Erie, Pa. Rope-clamp	325,136	Aug. 25	2353	648	32	983
Weighell, John T. (See Watkins, Frank M., assignor.)						
Weimar, Peter, Philadelphia, Pa. Carriage-door	325,580	Sept. 1	484	121	32	1108
Weimer, Peter L., Lebanon, Pa. Valve for steam-engines	323,474	Aug. 4	115	33, 34	32	543
Weimer, Peter L., Lebanon, Pa. Apparatus for converting iron into steel	324,903	Aug. 25	2052	561, 562	32	927
Weimer, Peter L., and H. T. Euston, Lebanon, Pa. Filling furnaces	326,181	Sept. 15	1285	332	32	1266
Weimer, Peter L., and H. T. Euston, Lebanon, Pa. Blast-furnace	326,182	Sept. 15	1288	333	32	1266
Weir, Ellsworth E., *et al.* (See Lindgren, George A., assignor.)						
Weir, William H., Springfield, Ohio. Portfolio	325,294	Sept. 1	91	26	32	1032
Weir, William S., Monmouth, Ill. Cultivator	324,904	Aug. 25	2054	562	32	927
Weirick, William F., Charlestown, W. Va. Harvester	326,817	Sept. 22	2166	564, 565	32	1434
Weisgerber, Charles H., Jr., Philadelphia, Pa. Convertible chair	325,999	Sept. 8	1033	262	32	1212
Weisgerber, Charles H., Jr., Philadelphia, Pa. Sled	326,362	Sept. 15	1538	399	32	1313
Weiser, John W., Chicago, Ill. Wagon-wheel	325,137	Aug. 25	2354	649	32	983
Weitzel, George, Toledo, Ohio. Drink-register for bottles	327,364	Sept. 29	2899	757	32	1571
Welch, James F., A. B. Hutchinson, and W. H. Gray, assignors to Glen Cove Machine Company, (limited,) Brooklyn, N. Y. Wood-planing machine	324,056	Aug. 11	875	241	32	692
Welch, Marshall M., Atlanta, Ga. Duplex ticket-punch	322,662	July 21	1685	447	32	323
Welch, Renel H., assignor of two-thirds to G. D. Barnard, St. Louis, Mo. Paper-file	322,663	July 21	1687	448	32	323
Welch, S. Frank, assignor to Western Wheel Scraper Company, Mount Pleasant, Iowa. Road-working machine	323,002	July 28	2167	575	32	417
Welch, William M., Windsor, Ontario, Canada. Wheel-scraper	321,557	July 7	208	55	32	41
Weld, Charles W., Southbridge, Mass. Wire fence	327,308	Sept. 29	2695	700	32	1537
Weldon, James G., *et al.* (See Pretschold, Hugo, assignor.)						
Weller, M. Scott, Charlestown, W. Va. Spoke-socket	323,990	Aug. 11	786	219	32	678
Wellhouse, George, Akron, Ohio. Balance-door for stoves and grates	323,379	July 28	2700	719	32	514
Wellington, Amos H., Lebanon, N. H., assignor to W. C. Smith, St. Albans, Vt. Straw-cutter	327,365	Sept. 29	2901	757	32	1571
Wellman, Francis A., Owosso, Mich. Lathe	326,000	Sept. 8	1034	263	32	1213
Wells, Chester H., Meshoppen, Pa. Attachment for combs	325,226	Aug. 25	2476	681	32	1006
Wells, George W., assignor to American Optical Company, Southbridge, Mass. Cushion for eyeglass nose-guards	323,550	Aug. 4	222	66	32	563
Wells, Irvin L., *et al.* (See Caley, Edward L., assignor.)						
Wells, Joseph L., Philadelphia, Pa., assignor to Weston & Wells Manufacturing Company, Camden, N. J. Bosom-pad	325,030	Aug. 25	2220	609	32	958
Wells, Joseph L., Philadelphia, Pa., assignor to Weston & Wells Manufacturing Company, Camden, N. J. Bustle	325,031	Aug. 25	2220	609	32	958

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Wells, Thomas W., Gunn City, Mo. Fastening for egg-carriers	324,619	Aug. 18	1657	457	32	846
Welsh, Henry D., Philadelphia, Pa. Cable-conduit	322,225	July 14	1107	288	32	311
Wende, Herman. (See Armstrong, Albert, assignor.)						
Wendell, Horace S. (See Trout, Silas E., assignor.)						
Wendell, Isaac P., assignor to C. P. Tasker, Philadelphia, Pa. Composition of matter for the manufacture of axle-bearings	325,881	Sept. 8	890	.....	32	1187
Wendell, Isaac P., assignor to C. P. Tasker, Philadelphia, Pa. Composition of matter for the manufacture of axle-bearings, &c	325,882	Sept. 8	890	.....	32	1187
Wendell, Isaac P., assignor to C. P. Tasker, Philadelphia, Pa. Composition of matter for the manufacture of axle-bearings, &c	325,883	Sept. 8	891	.....	32	1187
Wendell, Isaac P., assignor to C. P. Tasker, Philadelphia, Pa. Composition of matter for the manufacture of axle or journal bearings	325,884	Sept. 8	891	.....	32	1187
Wendell, Isaac P., assignor to C. P. Tasker, Philadelphia, Pa. Composition of matter for the manufacture of axle-bearings, &c	325,885	Sept. 8	891	.....	32	1187
Wendell, Isaac P., assignor to C. P. Tasker, Philadelphia, Pa. Composition of matter for the manufacture of axle-bearings, &c	325,886	Sept. 8	892	.....	32	1187
Wendell, Isaac P., assignor to C. P. Tasker, Philadelphia, Pa. Composition of matter for the manufacture of axle-bearings, &c	325,887	Sept. 8	892	.....	32	1187
Wendell, Isaac P., assignor to C. P. Tasker, Philadelphia, Pa. Composition of matter for the manufacture of axle-bearings, &c	325,888	Sept. 8	893	.....	32	1187
Wendell, Isaac P., assignor to C. P. Tasker, Philadelphia, Pa. Composition of matter for the manufacture of axle-bearings, &c	325,889	Sept. 8	893	.....	32	1187
Wendell, Isaac P., assignor to C. P. Tasker, Philadelphia, Pa. Composition of matter for use as insulating material	325,890	Sept. 8	893	.....	32	1187
Wendell, Isaac P., assignor to C. P. Tasker, Philadelphia, Pa. Composition of matter for use as insulating material	325,891	Sept. 8	894	.....	32	1187
Wenmaekers, Jerome, Antwerp, Belgium, assignor to himself and P. Goepel, New York, N. Y. Combined aquarium and maritime theater	324,508	Aug. 18	1506	412	32	817
Werner, August, New York, N. Y. Sash-balance	321,871	July 7	641	166	32	117
Werner, August, New York, N. Y. Apparatus for filling bottles with highly-aerated liquids without pressure	323,612	Aug. 4	300	86	32	578
Werner, Leopold, Newark, N. J. Fire-escape	323,092	July 28	2298	607	32	441
Werts, William, Camden, N. J. Sheet-metal-cutting press	326,183	Sept. 15	1290	333, 334	32	1267
Wertz, Daniel, Fayette, Mo. Car-coupling	324,968	Aug. 25	2137	584	32	943
Werum, John H. (See Werum, Mary M. and J. H.)						
Werum, Mary M. and J. H., assignors, by mesne assignments, to M. M. Werum, Toledo, Ohio. Abdominal supporter	323,003	July 28	2168	575, 576	32	418
Wesely, Carl, West New York, N. J. Wash-tub, sink, or other vessel made of cement, &c	327,209	Sept. 29	2096	701	32	1537
Wesson, Daniel B. (See Landers and Wesson.)						
Wesson, Daniel B., Springfield, Mass. Safety-lock mechanism for fire-arms	323,838	Aug. 4	586	165	32	634
Wesson, Daniel B., Springfield, Mass. Safety-lock mechanism for fire-arms	323,839	Aug. 4	587	165	32	634
Wesson, Daniel B. and J. H., Springfield, Mass. Revolving fire-arm	323,837	Aug. 4	584	165	32	633
Wesson, James H., Attalla, Ala. Car-coupling	324,969	Aug. 25	2138	584	32	943
Wesson, John W., Attalla, Ala. Water-wheel	322,028	July 14	851	221	32	163
Wesson, Joseph H. (See Wesson, Daniel B. and J. H.)						
Wesson, Joseph H., Springfield, Mass. Percussion gas-lighter	323,893	Aug. 4	659	186	32	647
Wesson, Joseph H., assignor to Smith & Wesson, Springfield, Mass. Drilling-machine	323,892	Aug. 4	656	185	32	647
West, Arnold J., Aberdeen, Wash. Ter. Indicator for saw-mill set-works	325,295	Sept. 1	92	26	32	1032
West Haven Buckle Company. (See Kelsey, Jarvis E., assignor.)						
West, James, Ballston Spa, N. Y., assignor to Union Paper Bag Machine Company, Philadelphia, Pa. Paper-bag machine	324,620	Aug. 18	1657	457, 458	32	846
West, Joseph D., East Orange, N. J. Gas-regulator	325,138	Aug. 25	2356	649	32	984
Westaway, Walter C., Beloit, Wis. Grinding-mill. (Reissue)	10,634	Aug. 11	1288	349	32	770
Westbrook, Charles S., Sprague ville, N. Y. Rock-drill	323,245	July 28	2503	665	32	479
Westbrook, Frank A., and W. S. Cook, Port Jervis, N. Y. Car-coupling	324,740	Aug. 18	1816	502	32	877
Westerdahl, Axel K. (See Harström and Westerdahl.)						
Westerlund, Aron F., Stockholm, Sweden. Carbonaceous antiseptic dressing	322,664	July 21	1688	.....	32	323
Western Electric Company. (See Patterson, William R., assignor.)						
Western Electric Company. (See Warner, James C., assignor.)						
Western Electric Company. (See Young, John, assignor.)						
Western Improved Dredging Company. (See O'Donnell, George M., assignor.)						
Western Union Telegraph Company. (See Scott, George B., assignor.)						
Western Wheel Scraper Company. (See Welch, S. Frank, assignor.)						
Westinghouse, George, Jr., Pittsburg, Pa. Pipe-line	323,246	July 28	2505	665	32	480
Westinghouse, George, Jr., Pittsburg, Pa. Conveying and supplying gas	323,840	Aug. 4	587	165	32	634
Westinghouse, George, Jr., Pittsburg, Pa. Pressure-regulator and cut-off	324,905	Aug. 25	2056	563	32	927
Westinghouse, H. Herman, New York, N. Y., assignor to Westinghouse Machine Company, Pittsburg, Pa. Steam-engine	322,334	July 14	1235	324	32	235
Westinghouse, John, Schenectady, N. Y. Spark-arrester	327,366	Sept. 29	2902	757	32	1571
Westinghouse Machine Company. (See Garrett, Henry H., assignor.)						
Westinghouse Machine Company. (See Westinghouse, H. Herman, assignor.)						
Westlake, William, Brooklyn, N. Y., assignor to United States Combustion Company, of New York. Feeding fine fuel	327,210	Sept. 29	2097	701	32	1537
Westphal, Otto, assignor to Schäffer & Budenberg, Buckau, Germany. Injector and injector-nozzle	322,768	July 21	1695	482	32	348
Weston & Wells Manufacturing Company. (See Wells, Joseph L., assignor.)						
Weston, William S., Chicago, Ill. Electric-lamp hanger	326,363	Sept. 15	1540	399	32	1314
Weston, William S., Chicago, Ill. Electric-lamp hanger	326,364	Sept. 15	1541	400	32	1314
Wetherbee, Edwin D., Waltham, Mass. Apparatus for recessing watch-dials	325,296	Sept. 1	93	26	32	1032
Wetherell, James M., assignor of one-half to A. B. Stockham, Chicago, Ill. Combined safety-pin and buckle	323,759	Aug. 4	492	139	32	615
Wetherill, William H., Philadelphia, Pa. Manufacture of white lead	324,200	Aug. 11	1094	.....	32	734
Wetmore, Jean A., Brooklyn, N. Y. Electrical printing-press feeder	322,335	July 14	1237	324, 325	32	235
Wetmore, Jerome W., Erie, Pa. Chimney-cap	325,032	Aug. 25	2221	609	32	958
Wetmore, Jerome W., Erie, Pa. Vehicle-spring	325,033	Aug. 25	2222	610	32	958
Wetmore, Joseph C., assignor to A. F. Smith, Lynn, Mass. Trimming-machine	323,760	Aug. 4	492	139	32	615
Wetmore, William F. (See Birdsell, Bratt, and Wetmore.)						
Weyman, Charles T. (See Weyman, George W., assignor.)						
Weyman, George W., Clayton, N. J., assignor of one-half to C. T. Weyman, Philadelphia, Pa. Jar-fastening	326,818	Sept. 22	2168	565	32	1434
Wezel & Naumann. (See Von Pittler, Wilhelm, assignor.)						
Wharmby, Thomas W., Cleveland, Ohio. Stamp-moistener	327,211	Sept. 29	2099	701	32	1537

Alphabetical list of patentees, July to September, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Wheeler & Co., F. A. (See Albey, John, assignor.)						
Wheeler, Cyrenus, Jr., Auburn, N. Y. Grain-binder for harvesters	321,467	July 7	81	21, 22	32	17
Wheeler, Cyrenus, Jr., Auburn, N. Y. Steam-boiler	322,226	July 14	1108	288	32	211
Wheeler, Edgar L., Marlborough, Mass. Imitation-stitch machine	325,297	Sept. 1	94	26, 27	32	1033
Wheeler, Frederick W. (See Corvell and Wheeler.)						
Wheeler, Joseph F., Wyocena, Wis. Tooth-holder for cultivators	323,004	July 28	2170	576	32	418
Wheeler, Madden & Clemson Manufacturing Company. (See Loebs, Albert H., assignor.)						
Wheeler, Moses B. W., Westport, Conn. Saw-set	323,005	July 28	2171	576	32	418
Wheeler, Schuyler S., Newburg, N. Y. Electric elevator	324,621	Aug. 18	1660	459	32	847
Wheeler, William C., assignor of one-half to O. C. Wright, Lockport, N. Y. Machine for separating dust from air	324,440	Aug. 18	1413	385, 386	32	801
Wheelock, Jerome, Worcester, Mass. Valve-gear for steam-engines	326,819	Sept. 22	2169	565	32	1434
Wheelock, Jerome, Worcester, Mass. Valve for steam-engines	326,820	Sept. 22	2171	566	32	1435
Wheelock, Ezekiel F., Corning, N. Y. Filter	324,622	Aug. 18	1666	460	32	847
Whipple, Ettinger P., Eaton Rapids, Mich. Harrow	324,057	Aug. 11	877	242	32	693
Whipple, Frank. (See Loveland, Calvin, assignor.)						
Whipple, Henry J. P., assignor to V. C. Whipple, Cleveland, Ohio. Knob attachment	321,927	July 7	710	185	32	129
Whipple, Henry J. P., assignor to V. C. Whipple, Cleveland, Ohio. Attaching knobs to spindles	321,928	July 7	712	185	32	129
Whipple, Samuel A., *et al.* (See Benham and Watrous, assignors.)						
Whipple, Silas S., *et al.* (See Benham and Watrous, assignors.)						
Whipple, Victoria C. (See Whipple, Henry J. P., assignor.)						
Whisemore, John H., Mansfield, Ohio. Stove-bracket	323,380	July 28	2702	719	32	514
Whitaker Brothers. (See Morley, Samuel, assignor.)						
Whitaker, Edwin V., Gloversville, N. Y. Umbrella	322,227	July 14	1110	289	32	211
Whitaker, Robinson. (See Proctor, Whitaker, and Reed.)						
White, B. Clark, assignor to S. S. Chisholm, Chicago, Ill. Machine for drawing rods or bars	323,761	Aug. 4	493	139	32	615
White, B. Clark, assignor to S. S. Chisholm, Chicago, Ill. Machine for drawing rods and shafting	323,762	Aug. 4	495	139, 140	32	616
White, B. Clark, assignor to S. S. Chisholm, Chicago, Ill. Machine for drawing rods	323,763	Aug. 4	499	140	32	616
White, Barrett. (See Lemon, Albert, assignor.)						
White, Charles H., New York, N. Y. Car-door latch	325,371	Sept. 1	195	50	32	1051
White Dental Manufacturing Company, S. S. (See Browne, Arthur W., assignor.)						
White Dental Manufacturing Company, S. S. (See Starr, Eli T., assignor.)						
White, Edwin A. (See Hurley, James A., assignor.)						
White, Edward F., assignor of one-third to W. A. Hall, Weymouth, Mass. Telescopic rotary sole-trimming cutter	324,345	Aug. 11	1285	348	32	769
White, Elisha S., assignor of one-half to G. C. Juller, Cleveland, Ohio. Die-grinding machine	326,001	Sept. 8	1035	263	32	1113
White, James H., assignor to Manhattan Brass Company, New York, N. Y. Reflector for lamps	322,142	July 14	1010	262	32	192
White, Joseph, Port Huron, Mich. Magazine-boiler	323,764	Aug. 4	501	141	32	616
White, Le Roy S., assignor to Electric Appliance Company, Waterbury, Conn. Electric gas-lighting apparatus	324,058	Aug. 11	879	242	32	693
White, Lorin E., *et al.* (See Mercer, Andrew J., assignor.)						
White, Luther N., Columbia City, assignor of one-half to W. W. Worthington and R. C. Bell, Fort Wayne, Ind. Nut-lock	326,075	Sept. 8	1142	290	32	1233
White, Luther N., Columbia City, assignor of one-half to W. W. Worthington and R. C. Bell, Fort Wayne, Ind. Nut-lock	326,076	Sept. 8	1143	291	32	1233
White, Maurice W., assignor, by mesne assignments, to himself and G. W. Ross, West Somerville, Mass. Violin	323,765	Aug. 4	502	141	32	617
White, Nelson S. (See Brown, Frank M., assignor.)						
White, Otis C., Worcester, Mass. Child's photographer's chair	326,184	Sept. 15	1291	334	32	1267
White, Otis C., Worcester, Mass. Dentist's or photographer's chair	326,185	Sept. 15	1291	334	32	1267
White, Peter, St. Louis, Mo. Stop-box	325,298	Sept. 1	96	27	32	1033
White, Ross, Brattleborough, Vt. Paper-holder	325,139	Aug. 25	2357	649	32	984
White Sewing Machine Company. (See Porter, D'Arcy, assignor.)						
White Sewing Machine Company. (See Whitney, Ruel W., assignor.)						
White, William. (See Daly, John, assignor.)						
Whitehead & Atherton Machine Company. (See Wilson, James H., assignor.)						
Whitehill, Robert, Milwaukee, Wis. Sewing-machine	326,821	Sept. 22	2174	566, 567	32	1435
Whitehill, Robert, Milwaukee, Wis. Sewing-machine	326,822	Sept. 22	2176	567	32	1435
Whiteley, Fassler & Kelly. (See Whiteley, William N., assignor.)						
Whiteley, William N., Springfield, Ohio. Bundle-carrier for harvesters	322,228	July 14	1112	289	32	211
Whiteley, William N., assignor to Whiteley, Fassler & Kelly, Springfield, Ohio. Harvester and binder	323,613	Aug. 4	301	86, 87	32	578
Whiteley, William N., and W. Bayley, Springfield, Ohio. Harvester	322,229	July 14	1113	289	32	212
Whiting, J. Hill, Detroit, Mich. Cupola-furnace	324,623	Aug. 18	1667	460	32	847
Whiting, Stiles H., assignor to Slayton & Whiting, Bridgeport, Conn. Clasp for garment-supporters	327,367	Sept. 29	2903	757	32	1571
Whitlock, Charles, and A. C. Knapp, Chicago, Ill. Telephone-switch	326,610	Sept. 22	1852	485	32	1378
Whitlock, Sturgis, Birmingham, Conn. Paper-cutting machine	326,002	Sept. 8	1037	264	32	1213
Whitman, Irvin A., assignor of one-half to E. K. Leonard, Lyons, N. Y. Car-coupling	322,512	July 21	1497	393	32	288
Whitney, Amos. (See Johnson, Moses C., assignor.)						
Whitney, Amos, assignor to Pratt & Whitney Company, Hartford, Conn. Reamer-relieving machine	323,006	July 28	2172	576, 577	32	418
Whitney, Charles E., Brooklyn, N. Y. Door-opener	325,299	Sept. 1	96	27	32	1033
Whitney, Edwin R., assignor to S. C. Forsaith and W. E. Drew, Manchester, N. H. Dynamo-electric machine	322,230	July 14	1113	290	32	212
Whitney, Eli, New Haven, Conn. Portable car-window guard	326,003	Sept. 8	1039	264	32	1214
Whitney, James A., Dobbs Ferry, N. Y. Making plumbers' traps	326,611	Sept. 22	1854	486	32	1378
Whitney, James A., Dobbs Ferry, N. Y. Plumber's trap	326,612	Sept. 22	1857	486, 487	32	1379
Whitney, Ruel W., assignor to White Sewing Machine Company, Cleveland, Ohio. Hand sewing-machine	326,365	Sept. 15	1542	400	32	1314
Whittaker, Charles, Chicago, Ill. Ball-valve	326,613	Sept. 22	1859	487	32	1379
Whittemore, John R., Chicopee, Mass. Riding harrow and cultivator	323,614	Aug. 4	303	87	32	578
Whittemore, M. Maturin, R. H. Arnold, and E. S. Staples, Norwich, Conn. Steam-generator	326,186	Sept. 15	1293	335	32	1268
Whitten, Charles H. (See Freeland and Whitten.)						
Whitten, Horace C., Plymouth, Mass. Spider	323,894	Aug. 4	661	186	32	647
Whittenburg, Jonathan D., Marshfield, Mo. Flood-fence	326,931	Sept. 22	2326	609	32	1463
Whittle, John W., Syracuse, N. Y. Spring-vehicle	326,823	Sept. 22	2176	567	32	1436
Whittier, Abel C., Boston, Mass. Dredge	322,231	July 14	1115	290	32	212

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Whittingham, Charles, and J. and R. A. Jones, assignors to Home Gas and Oil Stove Company, Detroit, Mich. Vapor-burner	321,872	July 7	642	166	32	117
Whittingham, Joseph. (See Whittingham and Jones.)						
Whittingham, Joseph F., assignor to H. McConnell, Cleveland, Ohio. Box-fastener	324,201	Aug. 11	1095	295	32	734
Whyte, Warren M. (See Overman, Bernard, assignor.)						
Wible, William H., Philadelphia, Pa. Blade-holder	321,926	July 7	709	185	32	129
Wicker, Albert G., Cincinnati, Ohio. Roller for skates	321,873	July 7	643	167	32	117
Wickersham, Charles H., Pottstown, Pa. Paper keg or cask	324,906	Aug. 25	2058	563	32	928
Wickersham, J. T. (See Vannice, Peter T., assignor.)						
Wickes, James H., New York, N. Y. Stock-car	322,336	July 14	1239	325	32	236
Wickes, James H., New York, N. Y. Stock-car	324,624	Aug. 18	1668	460	32	848
Wicoff, Ely. (See Turner, Winfield S., assignor.)						
Widemire, Thomas J., Grampian Hills, Pa. Thrashing-machine	322,232	July 14	1116	290	32	213
Widmayer, Charles A. (See Wunderlich, Gennaro, assignor.)						
Widmer, Frank, Newark, N. J. Pressure-regulator	323,093	July 28	2299	607	32	441
Widmer, Frank, assignor of one-half to A. Albright, Newark, N. J. Beer-cooling apparatus	325,892	Sept. 8	894	225	32	1167
Wiggin, John E., Stoneham, assignor of two-thirds to G. W. Brown and D. H. Burt, Boston, Mass. Take-up mechanism for sewing-machines	326,533	Sept. 15	1743	455	32	1353
Wight, Eugene B., Chicago, Ill. File-case	324,025	Aug. 18	1609	460 461	32	848
Wight, Peter B., Hyde Park, Ill. Fire-proof ceiling	322,873	July 21	1974	523	32	375
Wiglesworth, William. (See Manring and Gibbons, assignors.)						
Wilbaux, Amédée. (See Vessier and Wilbaux.)						
Wilber, Elijah S., Chicago, Ill. Heater	326,004	Sept. 8	1040	264	32	1214
Wilbur, Andrew J., Boston, Mass. Rotary cutter	324,970	Aug. 25	2138	584	32	943
Wilbur, Charles H. (See Wilbur, Greenleaf A., assignor.)						
Wilbur, Greenleaf A., assignor to himself and C. H. Wilbur, Skowhegan, Me. Pencil case and sharpener	326,697	Sept. 22	1970	517	32	1400
Wilcox, Albert, Clarence, Iowa. Harrow	324,626	Aug. 18	1671	461	32	848
Wilcox, Albert and E. B., Maple Rapids, Mich. Device for hanging wall-paper	323,991	Aug. 11	787	219	32	678
Wilcox, Daniel L., assignor to D. L. Wilcox Manufacturing Company, Pawtucket, R. I. Toy spring-gun	326,366	Sept. 15	1543	400	32	1314
Wilcox, Eliza B. (See Wilcox, Albert and E. B.)						
Wilcox, Joshua L., Flint, Mich. Apple-parer	321,667	July 7	341	90, 91	32	65
Wilcox Manufacturing Company, D. L. (See Wilcox, Daniel L., assignor.)						
Wilcox, Reuben F., Augusta, Kans. Fence	325,140	Aug. 25	2358	649	32	984
Wilcox, Reuben F., Augusta, Kans. Adding-machine	326,824	Sept. 22	2177	568	32	1436
Wilcox, Stephen, Brooklyn, N. Y. Pressure-gage	323,992	Aug. 11	788	219	32	679
Wilcox, William B., Chicago, Ill. Chain-pump bucket	322,874	July 21	1975	523	32	375
Wilde, William A., Chicago, Ill. Automatic car-brake	323,766	Aug. 4	503	141	32	617
Wilder, Henry C., Ashby, Mass., assignor of one-half to J. G. Willard, New York, N. Y. Safety-valve	322,084	July 14	925	239 240	32	177
Wilder, Jerome B., Lynn, Mass. Vise	324,907	Aug. 25	2059	563	32	928
Wilder, William H. (See Fletcher and Wilder.)						
Wildern, Adna, Vienna, Ontario, Canada. Rotary engine	323,993	Aug. 11	789	219 220	32	679
Wiley, Charles W. (See Wiley, Daniel D., G. L., and C. W.)						
Wiley, Daniel D., G. L., and C. W., Lanark, Ill. Windmill	323,615	Aug. 4	304	87, 88	32	579
Wiley, Edwin, Brooklyn, N. Y. Pen and pencil holder	327,044	Sept. 29	2473	646	32	1496
Wiley, George L. (See Wiley, Daniel D., G. L., and C. W.)						
Wiley, Henry T., Boston, Pa. Sack filler and weigher	321,468	July 7	85	23	32	17
Wilhelm, John, Jr., Wooster, Ohio. Milk-cooling can	321,774	July 7	497	131	32	93
Wilhelmi, Valentin, Paterson, N. J. Washing-machine	326,257	Sept. 15	1395	363	32	1286
Wilke, Alvin, Camden, N. J. Toy	325,141	Aug. 25	2358	650	32	984
Wilkins, E. Ward, *et al.* (See Mingle, George W., assignor.)						
Wilkinson, John M., Iuka, Miss. Boot-strap	326,187	Sept. 15	1294	335	32	1268
Wilkinson, Lewis, deceased, Chicago, Ill.; F. M. Steel administrator. Screw-cutting machine	322,875	July 21	1977	523 524	32	375
Wilkinson, Samuel L., Yazoo City, Miss. Cotton-press	326,698	Sept. 22	1971	518	32	1400
Wilkinson, William J., Philadelphia, Pa. Adjustable reflector-holder for stationary lamps and other lights	324,627	Aug. 18	1672	461	32	848
Wilks, Stephen, Chicago, Ill. Safety device for range-doors	324,441	Aug. 18	1414	386	32	801
Will & Finck. (See Finck, Julius, assignor.)						
Willard, Joel G. (See Wilder, Henry C., assignor.)						
Willard, Thomas, assignor of two-thirds to J. A. Hartz and E. P. Holland, Woodville, Pa. Rock and coal drill	323,007	July 28	2173	577	32	418
Willcox, Edwin B., *et al.* (See Angell, Thomas, assignor.)						
Williams, Charles F., Crisman, Ind. Railway-signal	325,465	Sept. 1	334	81	32	1079
Williams, Charles W. (See Ives and Williams.)						
Williams, Clark F., Reed City, Mich. Railway-signal box	321,558	July 7	209	55	32	41
Williams, Edward. (See Williams, Horace and E.)						
Williams, Edward, Brooklyn, N. Y. Safety-pin	322,143	July 14	1011	263	32	192
Williams, Edward, Lynn, Mass. Milk and water cooler	322,144	July 14	1011	263	32	192
Williams, Edward P., Jr., Brooklyn, N. Y. Combined match-box and cigar-cutter	327,369	Sept. 29	2905	758	32	1572
Williams, Elmer L., Buchanan, Mich. Clover-huller	323,475	Aug. 4	117	34	32	543
Williams, Francis H., Syracuse, N. Y. Chain-shell	325,300	Sept. 1	97	27	32	1033
Williams, Francis O., A. and J. C. Mattice, Cohocton, N. Y. Potato-digger	324,202	Aug. 11	1090	296	32	734
Williams, George E. (See Pertz, John W., assignor.)						
Williams, George W., and J. Hook, Rockdale, Tex. Corn and cotton planter	325,716	Sept. 8	676	170	32	1146
Williams, Homer L., Lind Grove, La. Blotter	324,628	Aug. 18	1673	462	32	849
Williams, Horace and E., Chicago, Ill. Folding bed	326,367	Sept. 15	1544	400 401	32	1315
Williams, Horatio N., Providence, R. I. Electric gas-lighting apparatus	322,233	July 14	1117	291	32	213
Williams, Jacob, and J. Reynolds, Dublin, Ind. Fence-making machine	323,841	Aug. 4	589	166	32	634
Williams, James M., *et al.* (See Smith, John A., assignor.)						
Williams, Jesse S., Beaver Dam, Ky. Car-axle box	325,466	Sept. 1	335	81	32	1079
Williams, John G., Chicago, Ill., assignor of one-third to L. T. Williams, Otsego, Mich. Car-coupling	326,188	Sept. 15	1295	335	32	1268
Williams, John M., Pittsburg, Pa. Boiler indicator and alarm	326,699	Sept. 22	1972	518	32	1401
Williams, John N. S., San Francisco, Cal. Water-pressure engine	321,559	July 7	210	55	32	42
Williams, John R., Newark, N. J. Machine for cutting wrappers or binders for cigars and cigarettes	322,029	July 14	852	222	32	163
Williams, John R., Newark, N. J. Machine for cutting wrappers or binders for cigars and cigarettes	322,030	July 14	853	222	32	163

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Williams, John W., *et al.* (See Alexander, James H., assignor.)						
Williams, Lemuel G., assignor of one-half to F. G. Lamson, Boston, Mass. Hat-flanging machine	327,212	Sept. 29	2700	702	32	1538
Williams, Lewis T. (See Williams, John G., assignor.)						
Williams, Malcolm B. (See Manvel and Williams.)						
Williams, Malcolm B., Kalamazoo, Mich. Wind-wheel	326,614	Sept. 22	1860	487	32	1379
Williams, Nathan G., assignor to Vermont Farm Machine Company, Bellows Falls, Vt. Fruit-drier	323,008	July 28	2176	577 578	32	419
Williams, Owen L. (See Baruch and Williams.)						
Williams, R. P., and E. B. Morrell, Santa Cruz, Cal. Well-boring drill or bit	321,560	July 7	212	56	32	42
Williams, Samuel B., Sailor's Rest, Tenn. Plow attachment	322,769	July 21	1826	483	32	348
Williams, Samuel T., Red Bank, N. J. Car-brake	322,337	July 14	1241	325	32	236
Williams, Samuel T., Red Bank, N. J. Wheel	325,301	Sept. 1	98	28	32	1033
Williams, Samuel T., Red Bank, N. J. Wheel	325,893	Sept. 8	895	225	32	1187
Williams, Thomas, New York, N. Y. Non-conducting covering for milk-cans	326,189	Sept. 15	1296	336	32	1268
Williams, Thomas B., Orange, assignor of one-half to S. H. Lawrence, Athol, Mass. Bevel-protractor	323,009	July 28	2178	578	32	419
Williams, Thomas J., assignor of one-half to C. C. Grace, Mount Lookout, Ohio. Harrow	324,442	Aug. 18	1415	386	32	801
Williams, Walter H., Wauseon, Ohio. Flour-dressing machine	326,893	Sept. 22	2274	595	32	1473
Williams, William, Jr., Sugartown, Pa. Hedge-trimmer	323,010	July 28	2179	578	32	419
Williams, William E., Independence, Iowa. Wind-wheel	327,370	Sept. 29	2906	759	32	1572
Williamson, Charles, Crawfordsville, Ind., assignor to G. W. Williamson, Sr., and G. W. Williamson, Jr., Ottawa, Kans. Corn-harvester	325,190	Aug. 25	2425	666 667	32	996
Williamson, George W., Sr., *et al.* (See Williamson, Charles, assignor.)						
Williamson, Henry, Bay City, Mich. Saw-swaging device	325,467	Sept. 1	336	81	32	1079
Williamson, Lewis J., East Fairfield, Ohio. Nut-lock	327,213	Sept. 29	2701	702	32	1538
Williamson, Lucius N., *et al.* (See Blakely, Caleb J., assignor.)						
Williamson, Thomas F., Chicago, Ill. Book-cover	324,203	Aug. 11	1097	296	32	734
Williamson, Thomas G., Philadelphia, Pa. Door-check	322,513	July 21	1498	394	32	988
Willis, H. C., *et al.* (See Green, John J., assignor.)						
Willis, Milton E. (See Landgrane, Frank O., assignor.)						
Willis, Milton E. (See Landgrane and Willis.)						
Willison, Edwin B. C., Wind Ridge, Pa. Brake-lever	323,994	Aug. 11	790	220	32	679
Willson, James H. (See McGovern and Willson.)						
Wilmans, Charles I., Chicago, Ill. Addressing-machine	327,368	Sept. 29	2904	758	32	1572
Wilson, Alexander K., and B. F. Holder, Valdosta, Ga. Running-gear for vehicles	327,371	Sept. 29	2907	759	32	1572
Wilson, Alexander W., assignor of one-half to H. P. Tracy, Elmwood, Ill. Apparatus for bleaching paper-stock	322,665	July 21	1689	448	32	323
Wilson, Calvin, Caro, Mich. Lathe-chuck	326,005	Sept. 8	1041	264	32	1214
Wilson, C. R. & J. C. (See Wilson and Chalfant, assignors.)						
Wilson, Charles R., and G. M. Chalfant, assignors to C. R. & J. C. Wilson, Detroit, Mich. Corner-iron for vehicle-bodies	327,045	Sept. 29	2473	646	32	1496
Wilson, Edgar W., Denver, Colo. Permutation-padlock	327,046	Sept. 29	2475	646	32	1497
Wilson, Eugene L. (See Wilson, Henry D. and E. L.)						
Wilson, F. Cortez, Chicago, Ill. Pocket fishing-tackle box	324,443	Aug. 18	1417	387	32	801
Wilson, Farwell A., *et al.* (See Sturgis, David, assignor.)						
Wilson, George, Jr., Chicago, Ill. Chair	326,368	Sept. 15	1545	401	32	1315
Wilson, George, Jr., Chicago, Ill. Adjustable chair	326,369	Sept. 15	1545	401	32	1315
Wilson, George S., U. S. Army. Cartridge packer and carrier	325,372	Sept. 1	197	50	32	1052
Wilson, Henry D. and E. L., Abbeville, S. C. Cotton-planter and guano-distributer	323,995	Aug. 11	792	220	32	679
Wilson, Homer T., Dallas, Tex. Wash-boiler	327,214	Sept. 29	2701	702	32	1538
Wilson, Hudson, Bradford, county of York, England. Low-water alarm	326,370	Sept. 15	1546	401	32	1315
Wilson, James G., assignor to F. Forbes, New York, N. Y. Blind	326,371	Sept. 15	1547	402	32	1315
Wilson, James H., assignor to Whitehead & Atherton Machine Company, Lowell, Mass. Cloth inspecting and trimming machine	325,581	Sept. 1	485	121	32	1108
Wilson, John, assignor of one-half to J. N. Bassett, Lowell, Mass. Rod-pointing machine	323,616	Aug. 4	306	88	32	579
Wilson, John C., Sr., assignor to F. T. Luqueer, Jr., and J. C. Wilson, Jr., New York, N. Y. Flexible shaft	322,666	July 21	1691	448	32	324
Wilson, John C., Sr., assignor to F. T. Luqueer, Jr., and J. C. Wilson, Jr., New York, N. Y. Gear-wheel	322,667	July 21	1691	448	32	324
Wilson, John C., Sr., assignor to F. T. Luqueer, Jr., and J. C. Wilson, Jr., New York, N. Y. Machine for clipping horses, &c	322,668	July 21	1692	449	32	324
Wilson, John G., Cameron, Tex. Gate	325,468	Sept. 1	337	82	32	1079
Wilson, John H., Camden, N. J. Fire-escape	325,142	Aug. 25	2359	650	32	984
Wilson, Joseph W., Brookville, Kans. Bran-duster	323,247	July 28	2507	665	32	480
Wilson, Richard F., Stockton, Cal. Windmill	324,284	Aug. 11	1199	325	32	753
Wilson, Robert A., Blue Springs, Nebr. Hog-cholera remedy	326,615	Sept. 22	1861	.....	32	1379
Wilson, Samuel J., Wellsborough, Pa. Folding umbrella	321,561	July 7	213	56	32	42
Wilson, Samuel R., Irving Park, Ill. Needle-threader for sewing-machines	321,469	July 7	86	23	32	16
Wilson, Thomas, Jr., Washington, Ind. Mine-ventilator	325,034	Aug. 25	2223	610	32	959
Wilson, Thomas E., Farmland, Ind. Farm-gate	323,476	Aug. 4	120	35	32	544
Wilson, Thomas E., Farmland, Ind. Fence-post	325,302	Sept. 1	99	28	32	1034
Wilson, William, Edgewater, N. J. Wall-paper	326,190	Sept. 15	1297	.....	32	1268
Wilson, William, Bloomington, Ill. Valve-gear	327,047	Sept. 29	2476	647	32	1497
Wilson, William H., *et al.* (See Sturgis, David, assignor.)						
Wilson, William V., London, England. Apparatus for the manufacture of white lead	322,235	July 14	1118	291	32	213
Wilt, Joseph W., Altoona, Pa. Measuring-spigot	322,876	July 21	1979	524	32	376
Wimer, L. Edmund, Marysville, Pa. Block and switch signal	322,877	July 21	1980	524 525	32	376
Winans, Edwin, New York, N. Y. Power-transmitting machinery	324,509	Aug. 18	1507	413	32	817
Winans, Thomas J. (See Noyes and Winans.)						
Winans, Thomas J., assignor to J. P. Noyes & Co., Binghamton, N. Y. Comb	327,372	Sept. 29	2908	759	32	1572
Winchell, Alvin T., Albion, Mich. Device for transmitting power to windmills	323,011	July 28	2180	578	32	419
Winchell, James F., assignor of one-fourth to E. Bauroth, Springfield, Ohio. Hay-tedder	322,878	July 21	1983	525	32	376
Winchell, James F., assignor to Foos Manufacturing Company, Springfield, Ohio. Adjustable leg for forges	326,006	Sept. 8	1042	265	32	1214
Winchester Repeating Arms Company. (See Browning, John M. and M. S., assignors.)						
Winchester Repeating Arms Company. (See Mason, William, assignor.)						
Windhausen, Franz, Berlin, Germany. Refrigerating rooms and liquids and apparatus used therefor	323,767	Aug. 4	504	142	32	617
Windt, Henry T., New York, N. Y. Wire fabric	323,477	Aug. 4	121	35	32	544
Wineman, Eli F., Joliet, Ill. Towel-rack	323,478	Aug. 4	122	35	32	544
Wingo, Robert A., assignor of two-thirds to J. W. Hagler and W. M. Cooley, Erin, Tenn. Water-wheel	322,879	July 21	1984	526	32	377

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Winning, Adna C., Boston, Mass. Tobacco-pipe	323,842	Aug. 4	591	166	32	635
Winslow, Samuel, Worcester, Mass. Skate-clamp	324,204	Aug. 11	1098	296	32	734
Winston, John H. C., Lynchburg, Va. Saw-setting machine	325,035	Aug. 25	2224	610, 611	32	959
Winters, John B., assignor of five-eighths to M. F. Bergin and A. B. Enoch, Bergen, N. Y. Car-coupling	325,303	Sept. 1	99	28	32	1034
Wirths, Walter, Jersey City, N. J. Fancy card	321,668	July 7	343	91	32	65
Wirts, Jacob C., and H. E. Scholle, Chicago, Ill. Wardrobe-bed	322,880	July 21	1985	596	32	377
Wisdom, Samuel J., Montgomery, Ala. Nut-lock	326,700	Sept. 22	1973	518	32	1401
Wise, Thomas P., Richmond, Va. Rat and mouse trap	325,717	Sept. 8	677	170	32	1147
Wisner, Jesse O., *et al.* (See Heath, James S., assignor.)						
Wisner, Wareham S., *et al.* (See Heath, James S., assignor.)						
Witherow, James P., Allegheny City, Pa. Making steel by the pneumatic operation	327,419	Sept. 29	2972	775	32	1584
Witherow, James P., Allegheny City, Pa. Converter	327,420	Sept. 29	2973	776	32	1584
Witherow, James P., Allegheny City, Pa. Converter	327,421	Sept. 29	2974	776	32	1584
Witherow, James P., Allegheny City, Pa. Converter	327,422	Sept. 29	2975	777	32	1584
Witherow, James P., Allegheny City, Pa. Converter	327,423	Sept. 29	2976	777	32	1584
Witherow, James P., Allegheny City, Pa. Converter	327,424	Sept. 29	2976	777	32	1585
Witherow, James P., Allegheny City, Pa. Steel-plant appliance	327,425	Sept. 29	2977	778	32	1585
Witherspoon, Frank, Paris, Tex. Clock striking mechanism	326,825	Sept. 22	2178	568	32	1436
Withington, James, Chambersburg, assignor to Trenton Iron Company, Trenton, N. J. Wire-unwinding reel	323,012	July 28	2181	579	32	420
Withington, James, Chambersburg, assignor to Trenton Iron Company, Trenton, N. J. Wire-feeding device	323,013	July 28	2182	579	32	420
Withington, James, assignor to Trenton Iron Company, Trenton, N. J. Implement for stretching wire	324,285	Aug. 11	1200	326	32	754
Withington, William H., Jackson, Mich. Fork	324,908	Aug. 25	2060	563, 564	32	928
Witkowski, Simon. (See Hollingsworth, Joseph, assignor.)						
Witkowsky, Abraham, Cleveland, Ohio. Combined blouse and pantaloons	324,286	Aug. 11	1201	326	32	754
Wittmack, Charles A., assignor of two-thirds to W. N. Collins and P. D. Ricketts, New York, N. Y. Drying-oil	326,467	Sept. 15	1659	.....	32	1336
Wittram, Frederick, San Francisco, Cal. Safety attachment for elevators and inclined railways	327,048	Sept. 29	2478	647	32	1497
Wixon, Howard, and G. Menard, Chicago, Ill. Box-pulling attachment	322,031	July 14	855	223	32	163
Woeppel, Ignatz. (See Tripp and Woeppel.)						
Wolcott, Anson, Wolcott, Ind. Freight-car	326,701	Sept. 22	1974	518	32	1401
Wolcott, Anson, Wolcott, Ind. Car-dump	327,506	Sept. 29	3073	800, 801	32	1601
Wolf, Abraham N., Allentown, Pa. Bolting-reel	321,675	July 7	645	167	32	117
Wolf, Abraham N., Allentown, Pa. Separator	326,077	Sept. 8	1144	291	32	1233
Wolf, Carl, Zwickau, and H. Friemann, Eisleben, Germany. Miner's safety-lamp	322,514	July 21	1499	394	32	288
Wolf, Charles B. (See Scherff and Wolf.)						
Wolf, Josef, Hoboken, N. J. Hammer	323,248	July 28	2508	666	32	480
Wolf, Josef, Hoboken, N. J. Lock-hinge	324,444	Aug. 18	1418	387	32	801
Wolfe, Charles A., *et al.* (See Wolfe, Harvey R., assignor.)						
Wolfe, Harvey R., assignor to Brennan & Co. South Western Agricultural Works and C. A. Wolfe, Louisville, Ky. Grain-drill	322,669	July 21	1693	449	32	325
Wolfe, Harvey R., assignor to Brennan & Co. South Western Agricultural Works and C. A. Wolfe, Louisville, Ky. Saw-swage	323,996	Aug. 11	793	221	32	679
Wolfe, Harvey R., assignor to Brennan & Co. South Western Agricultural Works, Louisville, Ky. Feed mechanism for saw-mill carriages	324,059	Aug. 11	882	243	32	693
Wolff, Frank F., New York, N. Y. Faucet	323,094	July 28	2301	607	32	441
Wolgamot, David A. (See Hollinger, Wolgamot, and Gouser.)						
Wolle, Clarence A. (See Leinbach, Wolle, and Brunner.)						
Wollensak, John F., Chicago, Ill. Key	323,479	Aug. 4	122	35	32	544
Wolverton, S. P. (See Broughton, Frederick S. D., assignor.)						
Womack, Alexander, Falk's Store, Idaho Ter. Pick	324,445	Aug. 18	1418	387	32	801
Wood, Arthur A., Hyde Park, Mass. Cutting-off tool	323,480	Aug. 4	123	36	32	544
Wood Board Manufacturing Company. (See King, George D., assignor.)						
Wood, Eli H., Cherry Valley, Mo. Churn	325,894	Sept. 8	897	225	32	1188
Wood, Frank E. (See Wood, Josiah W. and F. E.)						
Wood, Frederick S., assignor of one-third to Novelty Tool Company, (limited,) Pittsburg, Pa. Railway-switch	323,481	Aug. 4	124	36	32	544
Wood, Fredrick W. (See Belknap and Wood.)						
Wood, James F., Woodyard, assignor of one-fourth to B. E. Russell, Downington, Ohio. Washing-machine	327,507	Sept. 29	3076	801	32	1602
Wood, James J., Brooklyn, N. Y. Electric alarm	325,639	Sept. 1	558	142	32	1121
Wood, James J., Brooklyn, assignor to Fuller Electrical Company, New York, N. Y. Current-regulator for dynamo-electric machines	326,894	Sept. 22	2275	595	32	1453
Wood, John H., Lebanon, Ohio. Uniting gold and vulcanite	325,469	Sept. 1	338	.....	32	1080
Wood, John B., Providence, assignor to R. Bliss Manufacturing Company, Pawtucket, R. I. Railway game apparatus	326,078	Sept. 8	1145	291	32	1233
Wood, John F., Houma, La. Sugar-cane scraper and pea-vine harvester	321,562	July 7	214	56	32	42
Wood, Josiah W. and F. E., Beaver Centre, Pa. Wind-engine	324,510	Aug. 18	1510	413, 414, 415	32	818
Wood, Theodore F., Vernon, N. J. Clothes-washer	323,768	Aug. 4	507	142	32	618
Wood, Thomas W., Atlanta, Ga. Stove-back	324,346	Aug. 11	1286	348	32	770
Wood Tip Cigarette Company of California. (See McCoy, Juan W., assignor.)						
Wood, Walter S., Kalamazoo, Mich. Fanning-mill	321,563	July 7	216	57	32	43
Wood, William, assignor of one-half to J. Sibley, Philadelphia, Pa. Asbestus packing ring	326,079	Sept. 8	1146	291	32	1234
Wood, William H., New York, N. Y. Refrigerating and ice machine	321,669	July 7	344	91, 92	32	65
Wood, William R., Mapleton, Iowa. Spring for buggy-tops	324,909	Aug. 25	2061	564	32	928
Woodard, James A., assignor of one-half to A. J. Halford, Grapevine, Tex. Cotton-stalk chopper	323,014	July 28	2183	579	32	420
Woodbury, Edward F. (See Woodbury, Merrill, Patten, and Woodbury.)						
Woodbury Engine Company. (See Creelman, William J., assignor.)						
Woodbury, Hezekiah O., and S. T. Thacher, Jr., Beverly, Mass. Fire-escape	326,616	Sept. 22	1862	487	32	1379
Woodbury, James A., J. Merrill, and G. Patten, Boston, Mass. Hot-air engine	324,060	Aug. 11	883	243	32	694
Woodbury, James A., J. Merrill, G. Patten, and E. F. Woodbury, Boston, Mass. Hot-air engine	324,061	Aug. 11	886	244, 245	32	695
Woodbury, James A., J. Merrill, G. Patten, and E. F. Woodbury, Boston, Mass. Air-engine	324,062	Aug. 11	890	245	32	695

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Woodbury, James A., J. Merrill, G. Patten, and E. F. Woodbury, Boston, Mass. Hot-air engine	325,640	Sept. 1	561	142, 143	32	1121
Woodbury, Leander S., Calumet, Mich. Rock-drill	321,670	July 7	346	92	32	66
Woodbury, Leander S., Calumet, Mich. Support for rock-drills	323,482	Aug. 4	125	36	32	545
Woodcock, Shepherd S., Boston, Mass. Pencil-sharpener	323,769	Aug. 4	508	143	32	618
Wooden, Lewis H., assignor of one-third to W. W. Wareheim, Hampstead, Md. Carriage-tender	322,404	July 14	1336	347	32	253
Woodhouse, Frank B., Utica, N. Y. Inkstand	323,249	July 28	2509	666	32	480
Woodhull, Frederick W., Lincoln University, Pa. Combined caliper, protractor, and bevel	325,036	Aug. 25	2228	611	32	959
Woodmanse, Harrison, and S. Lebkicher, Freeport, Ill.; said Lebkicher assignor to said Woodmanse. Windmill	327,508	Sept. 29	3077	801	32	1602
Woodmansee, Frank A., Cincinnati, Ohio. Combined inkstand and calendar	326,468	Sept. 15	1659	433	32	1336
Woodmansee, John F. (See Stuart, John A., assignor.)						
Woodrich, Rudolf E., New York, and C. Langbein, Brooklyn, N. Y. Latch	326,258	Sept. 15	1396	363	32	1086
Woodruff, M. N. (See Root, Charles W., assignor.)						
Woods, L. T. (See Smith, T. Albee, assignor.)						
Woods, Marshall O., *et al.* (See Hazelrigg, Jacob, and Hood, assignors.)						
Woodward, Frank R., Hill, N. H. Door-securer	321,775	July 7	498	132	32	93
Woolfolk, Alexander M., Helena, Mont. Ter. Device for loading and unloading wagons	322,881	July 21	1986	526, 527	32	377
Woolley, Edward W. and S. C., Jersey City, N. J. Car-coupling	321,470	July 7	88	23	32	18
Woolley, James K., assignor to Detroit Steel and Spring Works, Detroit, Mich. Car-spring	321,776	July 7	499	132	32	93
Woolley, Leonidas G., Kalamazoo, Mich. Electric motor	325,641	Sept. 1	565	144	32	1122
Woolley, Starr C. (See Woolley, Edward W. and S. C.)						
Woolliscroft, Richard, Streator, Ill. Fire-escape	324,971	Aug. 25	2139	585	32	943
Woolnough, Charles, Henham, county of Suffolk, England. Thrashing-machine	324,063	Aug. 11	893	246	32	696
Worcester, William I., Harvard, Ill. Controlling windmills	321,777	July 7	500	132	32	93
Worcester, Edward J., assignor to G. Burnham and A. Goddard, Worcester, Mass. Drill-grinding attachment for drilling-machines	325,373	Sept. 1	198	51	32	1052
Worden, C. G. (See Cabot, John A., assignor.)						
Worrall, James, Ordsall, Salford, county of Lancaster, England. Apparatus for washing and dyeing	323,095	July 28	2302	608	32	441
Worrell, J. Leedom, Philadelphia, Pa. Bag-holder	323,617	Aug. 4	308	89	32	580
Worswick, William W., Cleveland, Ohio. Journal-box	322,032	July 14	856	223	32	164
Worth, Albert B., Brooklyn, N. Y. Electric-arc lamp	324,792	Aug. 18	1891	519, 520	32	890
Worth, John S., assignor of one-half to W. P. Worth, Coatesville, Pa. Portable speed-reducing gear	325,220	Aug. 25	2467	679	32	1004
Worth, William P. (See Worth, John S., assignor.)						
Worthen, Charles H., Lawrence, Mass. Oil-can	325,642	Sept. 1	566	144	32	1122
Worthington, Daniel, Paterson, N. J. Clothes-tongs	327,049	Sept. 29	2479	648	32	1497
Worthington, William W., *et al.* (See White, Luther N., assignor.)						
Woven Cord Furniture Company. (See Springer, James, assignor.)						
Wrench, Thomas, Liverpool, county of Lancaster, England. Umbrella, parasol, or sun-shade	323,381	July 28	2703	720	32	515
Wright, Augustin W., *et al.* (See Price, Joshua C., assignor.)						
Wright, Benjamin F., Oneida, Kans. Steam-boiler	321,929	July 7	713	186	32	129
Wright, Bushnell A., Pasadena, Cal. Fruit-drier	325,777	Sept. 8	758	190	32	1162
Wright, Charles A., Philadelphia, Pa. Card-beveling machine	323,483	Aug. 4	126	36	32	545
Wright, Charles K. (See Johnson and Wright.)						
Wright, Edgar. (See Rivers, William H., assignor.)						
Wright, Edward, assignor to Wright Machine Company, Worcester, Mass. Governor-valve	324,446	Aug. 18	1419	387	32	802
Wright, Edwin, Leesburg, Va. Fastening device	325,221	Aug. 25	2468	679	32	1004
Wright, Herman. (See Steinebach and Wright.)						
Wright, Hiram N., Indianapolis, Ind. Railway frog, crossing, &c	325,778	Sept. 8	760	190	32	1162
Wright, James E. (See Guiley, Jacob H., assignor.)						
Wright, John A. (See Thomas, George W., assignor.)						
Wright, John A., Keene, N. H. Fence-post	321,564	July 7	217	57	32	43
Wright, John P., Des Moines, Iowa. Washing-machine	326,926	Sept. 22	2315	606	32	1461
Wright, John P., Redhill, county of Surrey, England. Collapsible or folding boat	325,374	Sept. 1	199	51	32	1052
Wright Machine Company. (See Wright, Edward, assignor.)						
Wright, Morris S. (See Carpenter and Wright.)						
Wright, Oliver C. (See Wheeler, William C., assignor.)						
Wuesthoff, Eugene. (See Branninger, George M., assignor.)						
Wulfert, Friedrik, St. Charles, Mo. Grain screen or separator	327,050	Sept. 29	2480	648	32	1497
Wunderlick, Gennaro, assignor of one-half to C. A. Widmayer, Philadelphia, Pa. Portable musket-rack	321,930	July 7	715	186	32	129
Wylly, William P., Patterson, Ga. Guide-rail clamp	323,695	Aug. 4	661	186	32	648
Wyman, Richard H., Evanston, Ill. Index	323,484	Aug. 4	128	37	32	545
Wyman, William H., Oshkosh, Wis. Machine for straightening match-splints	322,145	July 14	1012	263	32	192
Wynkoop, Jehiel F., Philadelphia, Pa. Dust-pan	325,304	Sept. 1	101	28	32	1034
Wynkoop, John E., Pottsville, Pa. Making and composition for pavements, &c	325,718	Sept. 8	679	.....	32	1147
Wynn, George S., Huntsville, Ohio. Nut-lock	324,347	Aug. 11	1287	348	32	770
Wynne, Frank, Westminster, England. Electrical apparatus for the propulsion of vehicles	324,447	Aug. 18	1420	388	32	802
Wynne, Henry W., Dominion City, Manitoba, Canada. Gang-plow	326,534	Sept. 15	1744	455	32	1353
Wynne, J. A., *et al.* (See Beaver, George W., assignor.)						
Wysong, Herschel V., Winchester, Ind. Nut-lock	326,927	Sept. 22	2316	606	32	1461
Yanker, Casper. (See Orlikowski and Yanker.)						
Yarbrough, Ezekel J., and J. M. Kyker, Burns City, Tex. Animal-power	321,876	July 7	646	167	32	117
Yarnall, John T. and N. R., Phœnixville, Pa. Door and shutter fastener	327,373	Sept. 29	2909	759	32	1578
Yarnall, Nathan R. (See Yarnall, John T. and N. R.)						
Yates, Edgar, Cape Elizabeth, Me. Feeding attachment for printing-presses	322,670	July 21	1696	450	32	325
Yates, Samuel, Muscogee, Indian Ter. Clamp for soldering eaves-troughs	326,372	Sept. 15	1548	402	32	1316
Yeager, William D., Douglasville, Ga. Steam road-worker	321,778	July 7	501	132, 133	32	94
Yeoman, Edward, Chicago, Ill. Sofa-bed	324,205	Aug. 11	1099	296, 297	32	735
York, Charles F. (See Marshall and York.)						
Young, Albert A., Boston, Mass. Life-saving mattress	325,227	Aug. 25	2477	681	32	1006
Young, Alexander T., East China, Mich. Stove	323,250	July 28	2511	666	32	481

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Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Young, Augustus R., Stillwater, Minn. Capstan	325,143	Aug. 25	2360	650, 651	32	984
Young, Benjamin, Milwaukee, Wis. Apparatus for treating wheels with oil	323,615	July 28	2184	580	32	420
Young, Charles M., assignor of one-half to Dennett Harvesting Machine Company, (limited,) Milwaukee, Wis. Grain-binder	322,770	July 21	1827	483	32	348
Young, Charles W., Syracuse, N. Y. Apparatus for filling packages	326,826	Sept. 22	2179	568	32	1436
Young, David, Stockton, Cal. Traveling thrasher	326,617	Sept. 22	1862	488	32	1379
Young, Edward B., Mansfield, Mo. Folding crate	324,629	Aug. 18	1674	462	32	849
Young, George W. (See Tupper, John B., Jr., assignor.)						
Young, John, assignor to Western Electric Company, Chicago, Ill. Apparatus for suspending arc lamps	322,515	July 21	1500	394	32	288
Young, John E., assignor of one-third to H. Letterhaus, Bridgeport, Conn. Lock	325,305	Sept. 1	101	29	32	1034
Young, Joseph M., Bean's Station, Tenn. Sulky-plow	325,719	Sept. 8	681	170	32	1147
Young, Oresta W., Chicago, Ill. Composition for cleaning and polishing gold, silver, &c.	327,426	Sept. 29	2978	.....	32	1585
Young, Samuel H., assignor to himself and T. F. Kane, Bankston, Iowa. Corn-harvester	323,618	Aug. 4	310	89, 90	32	580
Young, Thomas, Bradford, Pa. Self-locking key	321,565	July 7	218	57	32	43
Young, Thomas, G. Durris, and J. Pettigrew, Dinside, county of Kincardine, Scotland. Treating vegetable substances for making paper-pulp	322,882	July 21	1993	.....	32	379
Young, Walter F., assignor of one-half to C. M. Strobridge, Merrill, Wis. Device for detachably securing desks, seats, &c., to floors	326,470	Sept. 15	1661	434	32	1336
Young, William C., Paterson, N. J. Clothes-line support	325,470	Sept. 1	339	82	32	1060
Youngs, Fred. E., Allegheny, Pa. Permanent pipe-coupling	326,469	Sept. 15	1660	433	32	1336
Youngs, Fred. E., Allegheny, Pa. Pipe-coupling	327,215	Sept. 29	2702	703	32	1538
Yule, George. (See Cocker and Yule.)						
Yule, George. (See Tweedy and Yule.)						
Zack, Marshall, and F. Geraghty, Streator, Ill. Stilt for roller-skates	327,374	Sept. 29	2910	759	32	1573
Zaehringer, William, New Orleans, La. Fare-box	322,236	July 14	1118	291, 292	32	213
Zarski, Ian. (See Sporny and Zarski.)						
Zeek, John, Canby, Oreg. Plow	323,770	Aug. 4	510	143	32	618
Zehnder, Louis, Basle, Switzerland. Watchman's time-detector	324,972	Aug. 25	2140	585	32	944
Zeigler, George W., Washington, D. C. Socket-clamp for scaffolding, &c.	327,427	Sept. 29	2979	778	32	1585
Zeitz, Ernest. (See Kaul, Pius and C., assignors.)						
Zell, Robert R., assignor to Safety Steam Generator Company, New York, N. Y. Arch for furnace-doors	322,883	July 21	1994	527	32	379
Zellers, Mahlon M., Kent, Ohio. Whip-socket	324,064	Aug. 11	894	246	32	696
Zengel, Joseph, Quincy, Ill. Machine for making fences	326,007	Sept. 8	1043	265, 266	32	1215
Ziegler, Henry, Basle, Switzerland, assignor to Badische Anilin and Soda Fabrik, Mannheim, Germany. Coloring-matter from phenylhydrazine	324,630	Aug. 18	1675	.....	32	849
Zimmerman, Aaron, and J. Q. Shipley, Disko, Ind. Fence	324,741	Aug. 18	1817	502	32	877
Zimmerman, George F. S., assignor of one-half to R. R. Walling, Frederick, Md. Shutter-bower	326,373	Sept. 15	1549	402	32	1316
Zink, George, Clear Spring, Md. Operating device for swinging gates	325,144	Aug. 25	2362	651	32	985
Zirrek, Otto, assignor to O. B. E. Hiller, Berlin, Germany. Water-proof composition for felt, paper, &c	323,016	July 28	2185	.....	32	421
Zunghans, Gebrüder. (See Hahlweg, Carl, assignor.)						
Zwickl, Francis S., Greenville, N. J. Feed-water heater	324,910	Aug. 25	2062	564	32	928

ALPHABETICAL LIST OF PATENTEES OF DESIGNS.

Name, residence, and design.	No.	Date.	Official Gazette. Volume.	Official Gazette. Page.
Adams, Peter, Jr. (See Shepard and Adams.)				
Alexander, James H., assignor to T. Devlin & Co., Philadelphia, Pa. Plate for carriage-steps	16,194, 16,195	Aug. 11	32	655
Alexander, James H., assignor to T. Devlin & Co., Philadelphia, Pa. Plate for carriage-steps	16,222, 16,223	Sept. 8	32	1128
Atterbury, Thomas B., Pittsburg, Pa., assignor to Harden Hand Fire Extinguisher Company, Chicago, Ill. Bottle	16,159	July 14	32	140
Atterbury, Thomas B., and W. Beck, Pittsburg, assignors to G. A. Macbeth, Allegheny City, Pa. Lamp-chimney	16,180	July 28	32	386
Backus, Quimby S., Winchendon, Mass. Folding bedstead	16,203	Aug. 18	32	778
Bangor Foundry and Machine Company. (See Whitman, William S., assignor.)				
Bascom, H. Clay, Troy, and T. S. Heister, Lansingburg, N. Y., assignors to Richmond Stove Company, Norwich, Conn. Stove	16,145	July 7	32	2
Baxter, Isaac J., Peekskill, N. Y. Ornamentation of sinks	16,210	Aug. 25	32	898
Beal, Morton F., Boston, assignor to Lowell Manufacturing Company, Lowell, Mass. Carpet	16,255	Sept. 22	32	1360
Beck, Washington. (See Atterbury and Beck.)				
Bradley, Daniel R., New York, N. Y. Perfumery-bottle	16,181	July 28	32	386
Brittin, Frederick W. (See Murray and Brittin.)				
Bromley & Sons, John. (See Finck, Henry, assignor.)				
Bromley & Sons, John. (See Petzold, Adolph, assignor.)				
Buhrer, John S., Chicago, Ill. Door-hanger	16,179	July 21	32	260
Butler, Richard, Secretary. (See Hunt, Richard M., assignor.)				
Cox Stove Company, Abram. (See Page, James A., assignor.)				
Crane, Richard T., Chicago, Ill. Flange-union	16,160	July 14	32	140
Dash, Bowie, New York, N. Y. Ornamentation of paper	16,291	Sept. 29	32	1470
Demuth, William, New York, N. Y. Ornamentation of paper	16,256	Sept. 22	32	1360
Devlin & Co., Thomas. (See Alexander, James H., assignor.)				
De Yough, John, New York, N. Y. Catalogue-cover	16,173	July 21	32	260
Dorman Bros. & Co. (See Righter, Oscar, assignor.)				
Dryfoos, Louis, New York, N. Y. Quilting-pattern for skirts	16,292	Sept. 29	32	1470
Dwyer, James, and J. W. Herrick, Detroit, Mich. Stove	16,196	Aug. 11	32	655
Ebenlein, Fred, Chicago, Ill. Show-card	16,246	Sept. 15	32	1242
Eddishaw, Ellen. (See Scatchard, Elmer E., assignor.)				
Einsfield, John, Oneida, N. Y. Burial-casket	16,293	Sept. 29	32	1470
Ellis, George A., Gardner, Mass. Baby-carriage body	16,224	Sept. 8	32	1128
Ennis & Co., George W. (See Hemming, Richard P., assignor.)				
Finck, Henry, New York, N. Y., assignor to J. Bromley & Sons, Philadelphia, Pa. Rug	16,161	July 14	32	140
Fisher, Edwin, Boston, assignor to Lowell Manufacturing Company, Lowell, Mass. Carpet	16,247	Sept. 15	32	1242
Fisher, Edwin, Boston, assignor to Lowell Manufacturing Company, Lowell, Mass. Carpet	16,258 to 16,267	Sept. 22	32	1360
Fiske, J. W. (See Kaiffer, Frederick, assignor.)				
Fox, Emil, New York, N. Y. Bas-relief of General Grant	16,257	Sept. 22	32	1360
Galland, Bonham, New York, N. Y. Fabric	16,163	July 14	32	140
Garbutt, Andrew, Boston, Mass. Cooking stove or range	16,189	Aug. 4	32	522
Garland, Frank M., Providence, R. I. Exhibition-case	16,211	Aug. 25	32	898
Gobeille, Joseph L., Cleveland, Ohio. Cook-stove	16,201	Aug. 11	32	656
Grosjean, Charles T., assignor to Tiffany & Co., New York, N. Y. Spoon-handle	16,216	Sept. 1	32	1014
Hall, John. (See Hils, Alfred E., assignor.)				
Harden Hand Fire Extinguisher Company. (See Atterbury, Thomas B., assignor.)				
Hart, Henry C., Detroit, Mich. Toy bank	16,146	July 7	32	2
Hausske, Adolph, Chicago, Ill. Sofa	16,248	Sept. 15	32	1242
Haviland, Edwin, Plainfield, N. J. Oyster-plate	16,204	Aug. 18	32	778
Heister, Tobias S. (See Bascom and Heister.)				
Held, Emil, assignor to himself and R. Ippich, New York, N. Y. Chenille	16,212	Aug. 25	32	898
Hemming, R. Paul, assignor to G. W. Ennis & Co., Philadelphia, Pa. Rug	16,147, 16,148	July 7	32	2
Hemming, Richard P., assignor to G. W. Ennis & Co., Philadelphia, Pa. Rug	16,164, 16,165	July 14	32	140
Herrick, John W. (See Dwyer and Herrick.)				
Hils, Alfred E., Barslem, county of Stafford, England, assignor to J. Hall, Boston, Mass. Vegetable-dish	16,166	July 14	32	140
Holyland, Charles, Pittsburg, Pa. Badge	16,197	Aug. 11	32	656
Horan, Henry, East Orange, N. J., assignor to Lowell Manufacturing Company, Lowell, Mass. Carpet	16,249, 16,250	Sept. 15	32	1242
Hunt, Richard M., assignor to R. Butler, Secretary, New York, N. Y. Pedestal or stand for a statue	16,167	July 14	32	140
Hyams, Charles. (See Koch, William, assignor.)				
Ihlenburg, Herman, assignor to MacKellar, Smiths & Jordan Company, Philadelphia, Pa. Type	16,294	Sept. 29	32	1470
Imfeld, Joseph F., Newark, N. J. Chain or bracelet	16,149	July 7	32	2
Ippich, Rudolph. (See Held, Emil, assignor.)				
Jaworski, Hermann, assignor to Sargent & Co., New Haven, Conn. Ornamentation of hardware	16,205	Aug. 18	32	778
Joyce, Alfred, Montreal, Quebec, Canada. Mold for jelly, &c	16,174	July 21	32	260
Kaiffer, Frederick, assignor to J. W. Fiske, New York, N. Y. Vase	16,288	Sept. 22	32	1360
Kaldenberg, Frederick J., New York, N. Y. Brush-handle	16,190	Aug. 4	32	522
Kilbourn, Silas, Grand Haven, Mich. Ornamentation of fish-pails	16,209	Aug. 18	32	778
Koch, William, assignor of one-half to C. Hyams, New York, N. Y. Quilting-pattern for skirts	16,175, 16,176	July 21	32	260
Kochs, Theodore A., Chicago, Ill. Arm-rest support	16,251	Sept. 15	32	1242
Kumke, Edward, New York, N. Y. Trimming	16,252	Sept. 15	32	1242
Ledig, August, Philadelphia, Pa. Tray	16,150	July 7	32	2

Alphabetical list of patentees of designs, July to September, inclusive—Continued.

Name, residence, and design.	No.	Date.	Official Gazette. Vol.	Page.
Levy, Isaac, assignor to New York Consolidated Card Company, New York, N. Y. Back of a playing-card	16,217 to 16,218	Sept. 1	32	1014
Little, Andrew, New York, N. Y. Type	16,182	July 28	32	386
Lockwood, James F., Philadelphia, Pa. Tray	16,191	Aug. 4	32	522
Loft, William, Jersey City, N. J. Candy-tray	16,213	Aug. 25	32	898
Lowe, William T. J., Buffalo, N. Y. Trolling-spoon	16,198	Aug. 11	32	656
Lowell Manufacturing Company. (See Beal, Morton F., assignor.)				
Lowell Manufacturing Company. (See Fisher, Edwin, assignor.)				
Lowell Manufacturing Company. (See Horan, Henry, assignor.)				
Lowell Manufacturing Company. (See Poole, Edward, assignor.)				
Lowell Manufacturing Company. (See Sauer, Emil G., assignor.)				
Lowell Manufacturing Company. (See Swapp, Charles W., assignor.)				
Macbeth, George A. (See Atterbury and Beck, assignors.)				
MacKellar, Smiths & Jordan Company. (See Ihlenburg, Herman, assignor.)				
Mankey, Frederick, Williamsport, Pa. Panel	16,225 to 16,238	Sept. 8	32	1128
Mankey, Frederick, Williamsport, Pa. Surface ornamentation of walls, &c	16,239 to 16,243	Sept. 8	32	1128
Mankey, Frederick, Williamsport, Pa. Surface ornamentation of walls, &c	16,289 to 16,290	Sept. 22	32	1360
Mankey, Frederick, Williamsport, Pa. Panel	16,297	Sept. 29	32	1470
Manning, Alfred J., Irvington, N. Y., assignor to Yale & Towne Manufacturing Company, Stamford, Conn. Bar-handle	16,244	Sept. 8	32	1128
Maris, Jared, Columbus, Ohio. Shell-band for wheel-hubs	16,168	July 14	32	140
Maris, Jared, Columbus, Ohio. Ornamentation of wheel-hubs	16,295 to 16,296	Sept. 29	32	1470
Meyer, Bernard, New York, N. Y. Candy-box	16,253	Sept. 15	32	1242
Meyer, Charles T. and V. E., Bergen, N. J., assignors to E. C. Sampson, New York, N. Y. Oil-cloth	16,268 to 16,270	Sept. 22	32	1360
Meyer, Victor E. (See Meyer, Charles T. and V. E.)				
Miller, Philo W., Grand Junction, Iowa. Picture-hanger	16,207	Aug. 18	32	778
Mountford, Elijah, Trenton, N. J. Table-ware	16,206	Aug. 18	32	778
Murray, Timothy, and F. W. Brittin, Birmingham, Conn. Fork	16,169	July 14	32	140
Myers, Charles H., Phelps, N. Y. Thermometer-back	16,151	July 7	32	2
Nauwerck, Johann H. L., St. Louis, Mo. Medal	16,219	Sept. 1	32	1014
New York Consolidated Card Company. (See Levy, Isaac, assignor.)				
Obrenschall, Frederick A., assignor to J. H. Winkelmann, Baltimore, Md. Bottle-stand	16,152	July 7	32	2
Page, James A., assignor to A. Cox Stove Company, Philadelphia, Pa. Fire-place lining	16,153	July 7	32	2
Palmer, Henry L., Brooklyn, N. Y. Easel frame or holder	16,199	Aug. 11	32	656
Petzold, Adolph, Philadelphia, Pa. Rug	16,156	July 7	32	2
Petzold, Adolph, Philadelphia, Pa. Rug	16,177 to 16,178	July 21	32	260
Petzold, Adolph, Philadelphia, Pa. Rug	16,183 to 16,184	July 28	32	386
Petzold, Adolph, Philadelphia, Pa. Rug	16,192	Aug. 4	32	522
Petzold, Adolph, Philadelphia, Pa. Rug	16,214	Aug. 25	32	898
Petzold, Adolph, assignor to J. Bromley & Sons, Philadelphia, Pa. Rug	16,154 to 16,155	July 7	32	2
Petzold, Adolph, assignor to J. Bromley & Sons, Philadelphia, Pa. Rug	16,170	July 14	32	140
Pirkl, John, Brooklyn, N. Y. Window-guard	16,215	Aug. 25	33	898
Platky, Adolph, New York, N. Y. Lady's muff	16,220	Sept. 1	32	1014
Poole, Edward, Boston, assignor to Lowell Manufacturing Company, Lowell, Mass. Carpet	16,271	Sept. 22	32	1360
Porter, Henry K., Boston, Mass. Axle-yoke	16,185	July 28	32	386
Porter, Henry K., Boston, Mass. Whiffletree-coupling	16,186	July 28	32	386
Preston, E. Bruce, Chicago, Ill. Rubber boot or shoe	16,208	Aug. 18	32	778
Richmond Stove Company. (See Bascom and Heister, assignors.)				
Righter, Oscar, assignor to Dornan Bros. & Co., Philadelphia, Pa. Carpet	16,298 to 16,305	Sept. 29	32	1470
Rogers, Julius F., St. Joseph, Mo. Hitching-post	16,306	Sept. 29	32	1470
Sampson, Edward C. (See Meyer, Charles T. and V. E., assignors.)				
Sargent & Co. (See Jaworski, Hermann, assignor.)				
Sauer, Emil G., New York, N. Y., assignor to Lowell Manufacturing Company, Lowell, Mass. Carpet	16,272 to 16,274	Sept. 22	32	1360
Scatchard, Elmer E., assignor of one-half to E. Eddishaw, Philadelphia, Pa. Hosiery	16,245	Sept. 8	32	1128
Shepard, Charles G., and P. Adams, Jr.; said Adams assignor to W. J. Shepard, Buffalo, N. Y. Toy savings-bank	16,171	July 14	32	140
Shepard, Walter J. (See Shepard and Adams, assignors.)				
Sherry, Louis, New York, N. Y. Dish or tureen	16,193	Aug. 4	32	522
Shirley, Frederick S., New Bedford, Mass. Glassware	16,172	July 14	32	140
Simpson, Jerome W., assignor to Wheeler, Parsons & Hayes, Newark, N. J. Jewelry-chain	16,307	Sept. 29	32	1470
Sommer, Henry B., Philadelphia, Pa. Jewelry-box	16,254	Sept. 15	32	1242
Stone, David, New York, N. Y. Shawl or breast pin	16,221	Sept. 1	32	1014
Swapp, Charles W., New York, N. Y., assignor to Lowell Manufacturing Company, Lowell, Mass. Carpet	16,275 to 16,287	Sept. 22	32	1360
Tiffany & Co. (See Grosjean, Charles T., assignor.)				
Wadsworth, Edward C., Brooklyn, N. Y. Bottle	16,200	Aug. 11	32	656
Weiss, William S., New York, N. Y. Clock-stand	16,157	July 7	32	2
Werner, Leopold, Newark, N. J. Ornamentation of a belt	16,158	July 7	32	2
Wheeler, Parsons & Hayes. (See Simpson, Jerome W., assignor.)				
Whitman, William S., assignor to Bangor Foundry and Machine Company, Bangor, Me. Range	16,202	Aug. 11	32	656
Winkelmann, John H. (See Obrenschall, Frederick A., assignor.)				
Wooster, Fred V., Boston, Mass. Carriage-step	16,187	July 28	32	386
Worden, Homer, New York, N. Y. Bottle-case	16,188	July 28	32	386
Yale & Towne Manufacturing Company. (See Manning, Alfred J., assignor.)				
Zebley, John, Philadelphia, Pa. Fringe	16,308	Sept. 29	32	1470

ALPHABETICAL LIST OF REGISTRANTS OF TRADE-MARKS.

Name, residence, and title.	No.	Date.	Official Gazette. Volume.	Page.
Adam, Alexander B. (See Keith, Adam, Faxon, and Keith.)				
Allen Company, Charles W., Chicago, Ill. Smoking and chewing tobacco	12,378	July 7	32	2
Allen & Co., William, New York, N. Y. Writing-ink	12,455	Aug. 4	32	522
Allen, John H., New York, N. Y. Tablets and other preparations containing cocaine	12,454	Aug. 4	32	522
Allsopp & Sons, Samuel, Burton-on-Trent, county of Stafford, England. Malt liquors	12,401	July 14	32	140
American Vapor Stove Company, Cleveland, Ohio. Vapor cooking and heating stoves	12,377	July 7	32	2
Ayres & Sons, William, Philadelphia, Pa. Horse-blankets	12,456	Aug. 4	32	522
Ayres & Sons, William, Philadelphia, Pa. Horse-blankets	12,457	Aug. 4	32	522
Babcock Printing Press Manufacturing Company, New London, Conn. Printing-presses	12,552	Sept. 8	32	1128
Balas, Frères, Chamond, France. Braids and laces	12,506	Aug. 18	32	778
Ball, Clinton M., Boston, Mass. Incandescent lamps	12,538	Sept. 1	32	1014
Ball, Clinton M., Boston, Mass. Substitute for carbon filament in incandescent lamps	12,539	Sept. 1	32	1014
Bartleet & Sons, William, Redditch, county of Worcester, England. Needles for hand-sewing	12,584	Sept. 22	32	1360
Bartleet & Sons, William, Redditch, county of Worcester, England. Needles, toilet-pins, bodkins, and crochet-hooks	12,585	Sept. 22	32	1360
Beall & Steele, Steubenville, Ohio. Cathartic cordial	12,402	July 14	32	140
Beardsley, John D., Ithaca, N. Y. Remedy for rheumatism	12,509	Aug. 18	32	778
Bentzen, Charles A., New York, N. Y. Washing-machine	12,553	Sept. 8	32	1128
Bereeford, George C., New York, N. Y. Cholera preventive	12,506	Sept. 15	32	1242
Bergner & Engel Brewing Company, Philadelphia, Pa. India pale ale, ale, porter, and brown-stout	12,528	Aug. 25	33	898
Blackwell, William J. (See Maginnis and Blackwell.)				
Blome, George J., Baltimore, Md. Candy	12,458	Aug. 4	32	522
Booth, Charles, London, England. Gin	12,459	Aug. 4	32	522
Borzner, Nicolaus, Philadelphia, Pa. Canned tomatoes	12,472	Aug. 4	32	522
Bradley, Voorhees & Day Manufacturing Company, (limited,) New York, N. Y. Spiral bustles	12,529	Aug. 25	32	898
Bridenthal, Hezekiah, Vincennes, Ind. Wheat-germ flakes	12,540	Sept. 1	32	1014
Brinkmann, Augustus H., Baltimore, Md. Dress-shields	12,435	July 21	32	260
Brokhahne, Alfred V., New York, N. Y. Razors, razor-guards, razor-strops, and shaving-cream	12,417	July 21	32	260
Brown, Benjamin, New York, N. Y. Laundry-starch	12,554	Sept. 8	32	1128
Brown, John W., Philadelphia, Pa. Canned goods for food	12,586	Sept. 22	32	1360
Bunnitz & Co., S., Richmond, Va. Smoking and chewing tobacco, cigars, cigarettes, and snuff	12,541	Sept. 1	32	1014
Bunnitz & Co., S., Richmond, Va. Smoking and chewing tobacco, cigars, cigarettes, and snuff	12,542	Sept. 1	32	1014
Butler Paper Company, J. W., Chicago, Ill. Printing, writing, and wrapping paper	12,515	Aug. 18	32	778
Cammeyer, Alfred J., New York, N. Y. Boots, shoes, and slippers	12,567	Sept. 15	32	1242
Carroll & Brother, J. Bond, Baltimore, Md. Whitewash-brushes	12,543	Sept. 1	32	1014
Castner & Co., (limited,) Philadelphia, Pa. Bituminous and semi-bituminous coal	12,602	Sept. 29	32	1470
Central Oil Company, Galion, Ohio. High-test carbon oil for lighting purposes	12,460	Aug. 4	32	522
Ceylon Tea and Coffee Agency, London, England. Coffee, tea, and cocoa	12,447	July 28	32	386
Commercial Rubber Company, New York, N. Y. Rubber hose	12,555	Sept. 8	32	1128
Cooper & Nephews, William, Berkhamstead, England. Sheep-dipping powder or insecticide	12,507	Aug. 11	32	656
Craighill, Robert T. (See Wright and Craighill.)				
Crew, Widgery & Co., Bristol, England. Butter and cheese	12,530	Aug. 25	32	898
Culter & Proctor Stove Company, Peoria, Ill. Wood-burning base-heating stove	12,379	July 7	32	2
Dadirrian, Markar G., New York, N. Y. Medicinal beverage made from fermented milk	12,556	Sept. 8	32	1128
Dalmo Company, Cleveland, Ohio. Medicine for horses	12,531	Aug. 25	32	898
Davidson, Gustave, Kansas City, Mo. Cigars	12,510	Aug. 18	32	778
Davis, James E., Detroit, Mich. Disinfectant	12,544	Sept. 1	32	1014
Dick, Dundas, New York, N. Y. Medicinal preparation for nervous affections	12,462	Aug. 4	32	522
Dietz, Robert E., New York, N. Y. Lamps and lanterns	12,448	July 28	32	386
Dill, Joseph G., Richmond, Va. Chewing and smoking tobacco	12,427	July 21	32	260
Dill, Joseph G., Richmond, Va. Chewing and smoking tobacco	12,428	July 21	32	260
Dudley, Edward, Camden, N. J. Desiccated cocoanut	12,545	Sept. 1	32	1014
Dukehart & Co., J., Baltimore, Md. Gilling-thread	12,461	Aug. 4	32	522
Dunn, George V., New York, N. Y. Remedy for malarial diseases	12,391	July 7	32	2
Fairbank & Co., N. K., Chicago, Ill. Family soaps	12,463	Aug. 4	32	522
Fairbank & Co., N. K., Chicago, Ill. Family soaps	12,464	Aug. 4	32	522
Fairchild Bros. & Foster, New York, N. Y. Food for infants	12,418	July 21	32	778
Farbwerke, vormals Meister, Lucius & Brüning, Höchst-on-the-Main, Germany. Remedy for certain indicated diseases	12,511	Aug. 18	32	960
Faxon, Albert E. (See Keith, Adam, Faxon, and Keith.)				
Fearon, Low & Co., New York, N. Y. Gray and bleached sheetings, shirtings, drills, and jeans	12,380	July 7	32	2
Fearon, Low & Co., New York, N. Y. Sheetings, shirtings, drills, and jeans	12,574	Sept. 15	32	1242
Fearon, Low & Co., New York, N. Y. Sheetings, shirtings, drills, and jeans	12,575	Sept. 15	32	1242
Fearon, Low & Co., New York, N. Y. Sheetings, shirtings, drills, and jeans	12,576	Sept. 15	32	1242
Fearon, Low & Co., New York, N. Y. Sheetings, shirtings, drills, and jeans	12,577	Sept. 15	32	1242
Fearon, Low & Co., New York, N. Y. Sheetings, shirtings, drills, and jeans	12,578	Sept. 15	32	1242
Fearon, Low & Co., New York, N. Y. Sheetings, shirtings, drills, and jeans	12,587	Sept. 22	32	1360
Ford & Co., Stephen V. R., Fuller's Station, N. Y. Liquid hair-restorative	12,557	Sept. 8	32	1128
Froeschels, Friedrich G., and C. L. H. Grasser, Nuremberg, Bavaria, Germany. Certain-named articles of stationery	12,381	July 7	32	2
Gall & Ax, G. W., Baltimore, Md. Smoking and chewing tobacco	12,512	Aug. 18	32	778
Gardner Pine Needle Extract Company, Sharon Springs, N. Y. Medicines containing the extract of pine needles or sprouts	12,403	July 14	32	140
Gardner Pine Needle Extract Company, Sharon Springs, N. Y. Laundry and toilet soap	12,404	July 14	32	140
Gem City Tobacco Works, Quincy, Ill. Plug-tobacco	12,513	Aug. 18	32	778
George & Barker, Astoria, Oreg. Canned salmon	12,465	Aug. 4	32	522
Ginter, Lewis, Richmond, Va. Cigarettes	12,603	Sept. 29	32	1470
Glen Cove Manufacturing Company, Glen Cove, N. Y. Corn-flour	12,485	Aug. 11	32	656
Glen Cove Manufacturing Company, Glen Cove, N. Y. Corn-flour	12,486	Aug. 11	32	656
Glen Cove Manufacturing Company, Glen Cove, N. Y. Corn-flour	12,487	Aug. 11	32	656
Glen Cove Manufacturing Company, Glen Cove, N. Y. Corn-flour	12,488	Aug. 11	32	656

Alphabetical list of registrants of trade-marks, July to September, inclusive—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Goodyear Boot and Shoe Company, New York, N. Y. Rubber, leather, and canvas boots and shoes.	12,419	July 21	32	260
Gosnell, Charles A. and C. P., London, England. Perfumery and perfumed preparations for the toilet.	12,420	July 21	32	260
Gosnell, Charles P. (See Gosnell, Charles A. and C. P.)				
Grasser, Carl L. H. (See Froeschels and Grasser.)				
Gravely & Sons, B. F., Leatherwood, Va. Plug chewing-tobacco	12,489	Aug. 11	32	656
Gravely & Sons, B. F., Leatherwood, Va. Plug chewing-tobacco	12,490	Aug. 11	32	656
Gravely & Sons, B. F., Leatherwood, Va. Plug chewing-tobacco	12,491	Aug. 11	32	656
Gravely & Sons, B. F., Leatherwood, Va. Plug chewing-tobacco	12,473	Aug. 4	32	522
Gwaltney, Pembroke D., Smithfield, Va. Peanuts	12,474	Aug. 4	32	522
Gwaltney, Pembroke D., Smithfield, Va. Peanuts	12,405	July 14	32	140
Hadley, Frank R., New Bedford, Mass. Remedy for certain named diseases	12,421	July 21	32	260
Hammond, Joseph C., Jr., Rockville, Conn. Shoe and garment clasps	12,466	Aug. 4	32	522
Havers, Robert N., Bradford, county of York, England. Fancy yarns or chenilles	12,467	Aug. 4	32	522
Havers, Robert N., Bradford, county of York, England. Fancy yarns or chenilles	12,436	July 21	32	260
Hazen, Daniel M., Cambridge, Mass. Maple-sirup and maple-sugar				
Hemingway, Fred B. (See Stephen & Hemingway.)	12,406	July 14	32	140
Hillman, Herbert & Cooper, Premier Works, Coventry, England. Velocipedes	12,437	July 21	32	260
Hirschberg, Henry, St. Louis, Mo. Spectacles and eyeglasses	12,492	Aug. 11	32	656
Hohner, Matthias, Trossingen, Württemberg, Germany. Harmonicas	12,493	Aug. 11	32	656
Hopkins, Samuel B., Dallas, Tex. Whisky	12,468	Aug. 4	32	522
Houston, Meeks & Co., St. Louis, Mo. Flour	12,514	Aug. 18	32	778
Howard Bros., Fredonia, N. Y. Eye-salve				
Iler & Morris, Shreveport, La. Remedy for diseases arising from disordered condition of the stomach, liver, and bowels	12,407	July 14	32	140
Jimenes, Haustedt & Co., New York, N. Y. Butter	12,449	July 28	32	386
Johnson, James C. (See Johnson, John T. and J. C.)				
Johnson, John T. and J. C., Bradford Iron Works, Manchester, county of Lancaster, England. Barbed-wire fencing	12,408	July 14	32	140
Johnston, Frank A., Winona and Wabasha, Minn. Straight flour	12,382	July 7	32	2
Johnston, Frank A., Winona and Wabasha, Minn. Patent flour	12,383	July 7	32	2
Jones, Georgine A., New York, N. Y. Coffee and tea urns and pots	12,384	July 7	32	2
Karluk Packing Company, San Francisco, Cal. Canned vertebrate fish, as salmon	12,558	Sept. 8	32	1128
Keith, Edson, A. B. Adam, A. E. Faxon, and O. R. Keith, (special,) Chicago, Ill. Hats for men and boys	12,559	Sept. 8	32	1128
Keith, Osborn R. (See Keith, Adam, Faxon, and Keith.)	12,532	Aug. 25	32	898
Keller, John H., New Orleans, La. Laundry and toilet soaps	12,469	Aug. 4	32	522
Kenny, Cornelius D., Baltimore, Md. Mixed teas				
Kilmer, Jonas M. (See Kilmer, S. Andral and J. M.)	12,422	July 21	32	260
Kilmer, S. Andral and J. M., Binghamton, N. Y. Herbal remedies	12,494	Aug. 11	32	656
Kipling, E. E. & A. W., New York, N. Y. Artificial precious stones	12,568	Sept. 15	32	1242
Kirk & Co., James S., Chicago, Ill. Laundry-soap	12,569	Sept. 15	32	1242
Kirk & Co., James S., Chicago, Ill. Laundry-soap	12,570	Sept. 15	32	1242
Kirk & Co., James S., Chicago, Ill. Laundry-soap	12,571	Sept. 15	32	1242
Kirk & Co., James S., Chicago, Ill. Laundry-soap	12,572	Sept. 15	32	1242
Kirk & Co., James S., Chicago, Ill. Laundry-soap	12,573	Sept. 15	32	1242
Kirk & Co., James S., Chicago, Ill. Washing compound	12,579	Sept. 15	32	1242
Kirk & Co., James S., Chicago, Ill. Laundry-soap	12,588	Sept. 22	32	1360
Kirk & Co., James S., Chicago, Ill. Laundry-soap	12,589	Sept. 22	32	1360
Kirk & Co., James S., Chicago, Ill. Laundry soap	12,590	Sept. 22	32	1360
Kirk & Co., James S., Chicago, Ill. Laundry-soap	12,604	Sept. 29	32	1470
Kirk & Co., James S., Chicago, Ill. Laundry-soap	12,495	Aug. 11	32	656
Klee, Coleman & Co., Louisville, Ky. Ginger-ale	12,393	July 7	32	2
Knorr, Herman, Detroit, Mich. Medicine for certain named diseases	12,496	Aug. 11	32	656
Krauss, Otto A., New York, N. Y. Bitters	12,470	Aug. 4	32	522
Larus & Bro., Richmond, Va. Plug tobacco	12,516	Aug. 18	32	778
Leclanché Battery Company, New York, N. Y. Electric batteries	12,450	July 28	32	386
Levor, Gustav, Gloversville, N. Y. Kid-leather	12,591	Sept. 22	32	1360
Levy, Frank, New York, N. Y. Remedy for skin diseases	12,533	Aug. 25	32	898
Lindsey & Lefevre, Baltimore, Md. Candy	12,429	July 21	32	260
Linen, Theodore T., Philadelphia, Pa. Varnishes and japans	12,440	July 28	32	386
Lister, Samuel C., Manningham Mills, near Bradford, county of York, England. Plushes and velvets	12,423	July 21	32	260
Lorillard & Co., P., Jersey City, N. J. Snuff	12,560	Sept. 8	32	1128
Loughrey, John, Cambridge, Mass. Powdered or granulated soap	12,592	Sept. 22	32	1360
Lyon & Co., New York, N. Y. Flour	12,561	Sept. 8	32	1128
Maginnis, George T., and W. J. Blackwell, Seattle, Wash. Ter. Aerated waters	12,497	Aug. 11	32	656
Marks & Son, David, New York, N. Y. Coats, vests, and pantaloons	12,385	July 7	32	2
Massachusetts Cotton Mills, Boston, Mass. Colored drillings	12,394	July 7	32	2
Massachusetts Cotton Mills, Boston, Mass. Woven cotton goods, bleached or unbleached	12,409	July 14	32	140
Massachusetts Cotton Mills, Boston, Mass. Bleached and unbleached woven cotton goods	12,386	July 7	32	2
McMonagle & Rogers, Middletown, N. Y. Fruit-flavors	12,593	Sept. 22	32	1360
McMullen & Co., Thomas, New York, N. Y. Guinness's extra stout	12,451	July 28	32	386
Meisaner, Ackermann & Co., New York, N. Y. Refined petroleum for illuminating purposes	12,471	Aug. 4	32	522
Merriam & Rolph, Fitchburg, Mass. Food for horses or cattle	12,395	July 7	32	2
Michaelis & Son, M., New York, N. Y. Flavoring extracts and powders	12,605	Sept. 29	32	1470
Miller, James W., Newark, N. J. Natural spring-water				
Montgomerie, John C., Dalmore, Stair, county of Ayr, Scotland. Certain articles for grinding, sharpening, and polishing purposes	12,441	July 28	32	386
Montgomerie, John C., Dalmore, Stair, county of Ayr, Scotland. Certain articles for grinding, sharpening, and polishing purposes	12,442	July 28	32	386
Montgomerie, John C., Dalmore, Stair, county of Ayr, Scotland. Certain articles for grinding, sharpening, and polishing purposes	12,443	July 28	32	386
Morgan & Headley Optical Manufacturing Company, Philadelphia, Pa. Certain spectacle and eyeglass frames	12,430	July 21	32	260
Morris, Francis G., New York, N. Y. Leucorrhœa pills	12,606	Sept. 29	32	1470
Morris, Letitia C., New York, N. Y. Hair-tonic	12,517	Aug. 18	32	778
Nashville Cotton Mills, Nashville, Tenn. Cotton goods	12,410	July 14	32	140
Neudecker, Leonard H., Baltimore, Md. Plug and smoking tobacco	12,562	Sept. 8	32	1128
Neuer, Stanley W., New York, N. Y. Certain named remedy	12,444	July 28	32	386
Norris, William S., Dixon, Miss. Ointment for the cure of piles, and a remedy for lung diseases	12,546	Sept. 1	32	1014
Oakley, L. & J., Newburg, N. Y. Soap for laundry and toilet use	12,547	Sept. 1	32	1014
Ober, John P., Boston, Mass. Food-preservative	12,534	Aug. 25	32	898
Oberso, Hosick & Co., Chicago, Ill. Laundry-soap	12,431	July 21	32	260
Ott & Co., Christian, Ingelheim, Germany. Bone-black, ivory-black, &c.	12,607	Sept. 29	32	1470
Pace & Sizer, Richmond, Va. Smoking and chewing tobacco, cigars, and cigarettes	12,498	Aug. 11	32	656
Pairpoint Manufacturing Company, New Bedford, Mass. Silver-plated table-ware and fancy articles	12,580	Sept. 15	42	1242

Alphabetical list of registrants of trade-marks, July to September, inclusive—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Pairpoint Manufacturing Company, New Bedford, Mass. Steel table-ware and cutlery and German-silver forks and spoons	12,594	Sept. 22	32	1360
Peabody & Co., Henry W., Boston, Mass. Refined petroleum	12,563	Sept. 8	32	1128
Phœnix Plumbago Mining Company, Philadelphia, Pa. Stove-polish	12,475	Aug. 4	32	522
Piel & Co., Wm. F., Indianapolis, Ind. Gloss lamp-starch	12,387	July 7	32	2
Pinkus, Frederick S., New York, N. Y. Velvets	12,564	Sept. 8	32	1128
Porter, John M., Boston, Mass. Laundry-starch	12,595	Sept. 22	32	1360
Portuondo, Juan F., Philadelphia, Pa. Cigars	12,499	Aug. 11	32	656
Portuondo, Juan F., Philadelphia, Pa. Cigars	12,500	Aug. 11	32	656
Potter Drug and Chemical Co., Boston, Mass. Medicated plasters	12,548	Sept. 1	32	1014
Potter, Thomas O., Boston, Mass. Suspenders and shoulder-braces	12,549	Sept. 1	32	1014
Powell & Co., Wm., Cincinnati, Ohio. Valves, lubricators, plugs, and similar devices	12,476	Aug. 4	32	522
Priestley & Co., B., Bradford, England. Ladies' dress-goods	12,581	Sept. 15	32	1242
Procter & Gamble, Cincinnati, Ohio. Candles	12,477	Aug. 4	32	522
Procter & Gamble, Cincinnati, Ohio. Laundry-soap	12,478	Aug. 4	32	522
Pugh, Richard H., London, England. Lime-juice sirup or cordial	12,479	Aug. 4	32	522
Purnell, James. (See Wallace, Purnell, and Wallace.)				
Randolph, Thaddeus F. (See Ransom and Randolph.)				
Ransom, John R. B., and T. F. Randolph, Toledo, Ohio. Dental amalgam	12,452	July 28	32	386
Rheingauer Schaumweinfabrik Schierstein, Schierstein, Germany. Champagne-wines	12,389	July 7	32	2
Richards & Co., A., Fort Scott, Kans. Baking-powder	12,535	Aug. 25	32	898
Richter & Co., F. Ad., Nuremberg and Rudolstadt, Germany, Vienna, Austria-Hungary, and Rotterdam, Netherlands. Certain-named medicines	12,388	July 7	32	2
Rodgers, Josiah W., Beverly, Mass. Boots and shoes	12,596	Sept. 22	32	1360
Roof, Clarence M., New York, N. Y. Gin	12,518	Aug. 18	32	778
Rose, McAlpin & Co., New York, N. Y. Shoe-kid leather	12,582	Sept. 15	32	1242
Ruth & Co., B. F., Reading, Pa. Flux for metals	12,608	Sept. 29	32	1470
Sauter, Albert, Geneva, Switzerland. Certain electro-homeopathic medicaments and homeopathic extracts and tinctures	12,400	July 7	32	2
Scanlan, Thomas F., Boston, Mass. Pianos	12,502	Aug. 11	32	656
Schloss & Sons, New York, N. Y. Braids and cords	12,501	Aug. 11	32	656
Schopper, Heinrich, Zeulenroda, Reuss, Germany. Hosiery	12,597	Sept. 22	32	1360
Schriber & Co., J., Cleveland, Ohio. All kinds of fine-cut chewing-tobacco	12,432	July 21	32	260
Shaw, Henry B., San Francisco, Cal. Cosmetic for the face and hands	12,411	July 14	32	140
Sidle Fletcher Holmes Company, Minneapolis, Minn. Flour	12,412	July 14	32	140
Singer, George, Coventry, county of Warwick, England. Velocipedes and their parts and materials	12,598	Sept. 22	32	1360
Singer Manufacturing Company, New York, N. Y. Sewing-machines and sewing-machine attachments and supplies	12,396	July 7	32	2
Size, Albert F., Boston, Mass. Refined petroleum-oil	12,519	Aug. 18	32	778
Soltmann, E. G., New York, N. Y. Certain named drawing materials and instruments	12,439	July 21	32	260
Somerville, Thomas. (See Turnbull and Somerville.)				
Specher, Charles, Scranton, Pa. Liniment or balsam	12,503	Aug. 11	32	656
Spencer Optical Manufacturing Company, New York, N. Y. Spectacles and eyeglasses	12,520	Aug. 18	32	778
Spencer Optical Manufacturing Company, New York, N. Y. Spectacles and eyeglasses	12,521	Aug. 18	32	778
Spencer Optical Manufacturing Company, New York, N. Y. Spectacles and eyeglasses	12,522	Aug. 18	32	778
St. Clair Mineral Springs Company, (limited,) St. Clair, Mich. Natural mineral water	12,599	Sept. 22	32	1360
Starke, Arabella G., Richmond, Va. Plows	12,413	July 14	32	140
Steel Edge Dust Pan Company, Boston, Mass. Dust-pan	12,600	Sept. 22	32	1470
Steelton Flouring Mill Company, Steelton, Pa. Wheat-flour	12,390	July 7	32	2
Steelton Flouring Mill Company, Steelton, Pa. Wheat-flour	12,433	July 21	32	260
Stephen, Andrew, and F. B. Hemingway, Clinton, Iowa. Brooms	12,504	Aug. 11	32	656
Sternsdorff, Rudolph, Buffalo, N. Y. Bitters	12,397	July 7	32	2
Stine, Isaac, Chambersburg, Pa. Hard soap	12,550	Sept. 1	32	1014
Stine, Jacob, Martinsburg, W. Va. Remedy for rheumatism	12,416	July 14	32	140
Stinson Bros. & Kurlbaum, Philadelphia, Pa. Tapestry carpets	12,505	Aug. 11	32	656
Stoffregen, Carl, Baltimore, Md. Cigars	12,480	Aug. 4	32	522
Stokes, Thomas, New York, N. Y. Smoked meats	12,523	Aug. 18	32	778
Strunz, Stephen, Pittsburg, Pa. Laundry and toilet soap	12,438	July 21	32	260
Sure Cure Medicine Company, Rochester, N. Y. Remedy for malarial diseases	12,610	Sept. 29	32	1470
Swan & Howland, Boston, Mass., and New York, N. Y. Blacking for leather	12,506	Aug. 11	32	656
Swan & Howland, Boston, Mass. Leather-dressing	12,536	Aug. 25	32	898
Taylor, Jane, Fall River, Mass. Stove-polish in powdered form	12,524	Aug. 18	32	778
Thompson, Augustin, Lowell, Mass. Preparation for the cure of paralysis and mental diseases	12,565	Sept. 8	32	1128
Thompson, Thomas J., Chicopee, Mass. Medicine for stomach complaints	12,445	July 28	32	386
Tittle & Krüger, Leipsic, Germany. Worsted	12,424	July 21	32	260
Tootal Broadhurst, Lee & Co., Manchester, county of Lancaster, England. Velveteens	12,611	Sept. 29	32	1470
Topp, John D., Brooklyn, N. Y. Ointment	12,551	Sept. 1	32	1014
Tress, Cooper, London, England. Hats, caps, and bonnets	12,425	July 21	32	260
Turnbull, James, and T. Somerville, Valetta, Malta. Cigarettes	12,600	Sept. 22	32	1360
U. S. Importing Co., Pittsburg, Pa. Disinfectant and insecticide	12,481	Aug. 4	32	522
Vail Brothers, Philadelphia, Pa. Tooth-powder and toilet-soap	12,446	July 28	32	386
Wallace, J. P., J. Purnell, and J. A. Wallace, Maysville, Ky. Cigars	12,434	July 21	32	260
Wallace, James A. (See Wallace, Purnell, and Wallace.)				
Wardsworth, E. Clifford, Brooklyn, N. Y. Tooth-powder	12,398	July 7	32	2
Warner, Hulbert H., Rochester, N. Y. Yeast	12,612	Sept. 29	32	1470
Warner, Hulbert H., Rochester, N. Y. Baking-powder	12,613	Sept. 29	32	1470
Warren, Edward K., Three Oaks, Mich. Whips	12,525	Aug. 18	32	778
Waterbury & Co., L., New York, N. Y. Binders' twine	12,483	Aug. 4	32	522
Waterbury & Co., L., New York, N. Y. Binders' twine for reaping-machines	12,482	Aug. 4	32	522
West, Lucius M., Rockford, Ill. Dressing for carriage-tops	12,601	Sept. 22	32	1360
Wetmore, Jennie C. O., Adrian, Mich. Axes	12,372	July 7	32	2
Wichert, Henry, Chicago, Ill. Mustard	12,526	Aug. 18	32	778
Wimpfheimer & Bro., A., New York, N. Y. Velvets	12,426	July 21	32	260
Wood Mowing and Reaping Machine Company, Walter A., Hoosic Falls, N. Y., and Chicago, Ill. Mowing and reaping machines and grain-binders	12,399	July 7	32	2
Wood Mowing and Reaping Machine Company, Walter A., Hoosic Falls, N. Y., and Chicago, Ill. Sections for harvester-cutters	12,414	July 14	32	140
Woodbury Glass Works, Woodbury, N. J. Glass fruit-jars	12,583	Sept. 15	32	1242
Wooden & Melvill, Kansas City, Mo. Remedy for certain named diseases	12,527	Aug. 18	32	778
Woodward & Co., H. F., Washington, D. C. Certain articles of gentlemen's underwear	12,453	July 28	32	386
Wright, Alfred A., St. Louis, Mo. Needles, sharps and betweens	12,537	Aug. 25	32	898
Wright, Cary L., and R. T. Craighill, Lynchburg, Va. Fertilizer	12,484	Aug. 4	32	522
Wunderle, Philip, Philadelphia, Pa. Confectionery made of sugar, sirup, chocolate, and nuts	12,415	July 14	32	140

ALPHABETICAL LIST OF REGISTRANTS OF LABELS.

Name, residence, and title.	No.	Date.	Official Gazette. Volume.	Page.
Armstrong, T. J., Wellsburg, W. Va. "T. J. Armstrong's Diphtheria & Quinsy Drops"	4,499	July 14	32	140
Baker, W. T., Philadelphia, Pa. "L. Wolff & Co., Copaline"	4,506	Sept. 8	32	1128
Canton Paint and Oil Company, Saco, Me., and Boston and Canton, Mass. "Vampire Black" (for a Waterproof Leather Dressing)	4,497	July 7	32	2
Clarke, John, Peterborough, Ontario, Canada. "Liebig's Condensed Mineral Waters"	4,563	Aug. 25	32	698
Clifford & Co., Boston, Mass. "Potatoe Juice Toilet Soap"	4,572	Sept. 15	32	1242
Collins & Co., John H., Philadelphia, Pa. "Dr. Davis's Compound Syrup of Wild Cherry and Tar"	4,500	July 14	32	140
Collins & Co., John H., Philadelphia, Pa. "Dr. Davis' Liver Pills"	4,574	Sept. 22	32	1360
Collins Company, Collinsville, Conn. "The Collins Clipper" (for Edge Tools, &c)	4,507	July 21	32	260
Collins Company, Collinsville, Conn. "The New Spanish—Large." (for Edge Tools, &c)	4,508	July 21	32	260
Collins Company, Collinsville, Conn. "The New Small Collins Axe"	4,509	July 21	32	260
Collins Company, Collinsville, Conn. "The B X Swift" (for Edge Tools, &c)	4,510	July 21	32	260
Collins Company, Collinsville, Conn. "The New Large Collins Axe"	4,511	July 21	32	260
Collins Company, Collinsville, Conn. "The Large King" (for Edge Tools, &c)	4,512	July 21	32	260
Collins Company, Collinsville, Conn. "The Old Collins Axe"	4,513	July 21	32	260
Collins Company, Collinsville, Conn. "The Old Spanish—Small." (for Edge Tools, &c)	4,514	July 21	32	260
Collins Company, Collinsville, Conn. "The Collins Plow"	4,515	July 21	32	260
Collins Company, Collinsville, Conn. "The Small King" (for Cast Steel Tools)	4,516	July 21	32	260
Collins Company, Collinsville, Conn. "The Collins Wrench"	4,517	July 21	32	260
Collins Company, Collinsville, Conn. "The B v Wise" (for Edge Tools, &c)	4,518	July 21	32	260
Collins Company, Collinsville, Conn. "The Challenge Clipper" (for Edge Tools)	4,519	July 21	32	260
Collins Company, Collinsville, Conn. "The New Spanish—Small." (for Edge Tools, &c)	4,520	July 21	32	260
Collins Company, Collinsville, Conn. "The Collins Spanish Machete"	4,521	July 21	32	260
Cooper & Nephews, William, Berkhamsted, England. "Cooper's Sheep Dipping Powder"	4,563	Sept. 29	32	1470
Dimmick, Ammi D., Oneonta, N. Y. "Dimmick's Kidney and Bladder Cure"	4,531	July 28	32	386
Emley, Charles A., Wrightstown, N. J. "Emley's Sarsaparilla"	4,532	July 28	32	386
Frans, Henry, New York, N. Y. "The Positive Catarrh Cure"	4,567	Sept. 8	32	1128
Fryer, Derrick F., Oroville, Cal. "Abietene and Yerbá Santa, Cough Candy"	4,533	July 28	32	386
Gates, Menzo E., Cadott, Wis. "Gates" (a Remedy for Diphtheria)	4,540	Aug. 11	32	656
Gay, A., Concordia, Kans. "Corn Husker's Salve"	4,541	Aug. 11	32	656
Geis & Co., Zanesville, Ohio. "Old Fashion Bourbon" (for Whisky)	4,571	Sept. 15	32	1242
Gifford & Douglas, Cedar Rapids, Iowa. "The Iowa Shoe"	4,568	Sept. 8	32	1128
Hadley, Frank R., New Bedford, Mass. "Egyptian Balsam"	4,522	July 21	32	260
Hand, D. B., Scranton, Pa. "Dr. Hand's General Tonic for Children"	4,542	Aug. 11	32	656
Hand, D. B., Scranton, Pa. "Dr. Hand's Pleasant Physic for Children and Invalids"	4,543	Aug. 11	32	656
Hand, D. B., Scranton, Pa. "Dr. Hand's Chafing Powder for Children and Adults"	4,544	Aug. 11	32	656
Hand, D. B., Scranton, Pa. "Dr. Hand's Diarrhœa Mixture for Children"	4,545	Aug. 11	32	656
Hand, D. B., Scranton, Pa. "Dr. Hand's Teething Lotion for Infants"	4,546	Aug. 11	32	656
Hand, D. B., Scranton, Pa. "Dr. Hand's Colic Cure for Children"	4,547	Aug. 11	32	656
Hand, D. B., Scranton, Pa. "Dr. Hand's Cough and Croup Medicine for Children"	4,548	Aug. 11	32	656
Hand, D. B., Scranton, Pa. "Dr. Hand's Worm Elixir for Children"	4,549	Aug. 11	32	656
Henn, Emil, Cincinnati, Ohio. "The Profitable Hog & Chicken Cholera Cure"	4,575	Sept. 22	32	1360
Ier & Morris, Shreveport, La. "Morris' Cascarine," (for a Medicine)	4,503	July 14	32	140
Jadwin, Charles P., Scranton, Pa. "C. P. Jadwin's Pine Tar Syrup"	4,550	Aug. 11	32	656
Johnson, Andrew, Atlantic, Iowa. "Andrew Johnson's Pain Liniment"	4,551	Aug. 11	32	656
Kirk & Co., James S., Chicago, Ill. "Post Boy" (for a laundry soap)	4,555	Aug. 18	32	778
Kirk & Co., James S., Chicago, Ill. "White Russian Soap"	4,556	Aug. 18	32	778
Kirk & Co., James S., Chicago, Ill. "Argenta" (for soap)	4,557	Aug. 18	32	778
Kirk & Co., James S., Chicago, Ill. "Ebony Harness Soap"	4,558	Aug. 18	32	778
Kirk & Co., James S., Chicago, Ill. "Entoca" (for toilet soap)	4,559	Aug. 18	32	778
Kirk & Co., James S., Chicago, Ill. "Revenue" (for laundry Soap)	4,560	Aug. 18	32	778
Kirk & Co., James S., Chicago, Ill. "Our Union Soap"	4,561	Aug. 18	32	778
Kirk & Co., James S., Chicago, Ill. "Lehigh Laundry Soap"	4,576	Sept. 22	32	1360
Kirk & Co., James S., Chicago, Ill. "Imperial Olive," (for Laundry Soap)	4,577	Sept. 22	32	1360
Kirk & Co., James S., Chicago, Ill. "Bullion," (for Laundry Soap)	4,578	Sept. 22	32	1360
Kissinger, John M., Lititz, Pa. "Improved Lititz Bretzel"	4,552	Aug. 11	32	656
Landry, J. Omer, Thibodeaux, La. "Landry's French Syrup." (for a Cough Medicine)	4,573	Sept. 15	32	1242
Lang, Charles C., Baltimore, Md. "Fresh Corn and Tomatoes, C. C. Lang, Baltimore, Md."	4,501	July 14	32	140
Lawrence, Charles, Wichita, Kans. "Dr. Gray's Detergent Perspiration Powder"	4,523	July 21	32	260
Lewis, Louis, Philadelphia, Pa. "Dr. Paris' Nervous Restorative Lozenges"	4,564	Sept. 29	32	1470
Lilly, Rogers & Co., Baltimore, Md. "Pear Phosphates" (for a beverage)	4,562	Aug. 18	32	778
Lloyd Bros., Cincinnati, Ohio. "Lloyd's Colorless Hydrastin"	4,553	Aug. 11	32	656
Mange & Son, L., St. Louis, Mo. "The L. M. and S. Shirt"	4,538	Aug. 4	32	522
McFarland, Andrew J., St. Clairsville, Ohio. "Catarrh Remedy"	4,498	July 7	32	2
McKean, M. Louisa, Philadelphia, Pa. "Egg Crystal" (a Preparation for Clearing and Enriching Coffee)	4,502	July 14	32	140
Ober, John P., Boston, Mass. "Liquid Purifier & Preserver"	4,564	Aug. 25	32	698
Payn's Son's Tobacco Company, B., Albany, N. Y. "B. Payn's Son's Tobacco Co's Little Havana"	4,554	Aug. 11	32	656
Petzold & Co., Louis, Baltimore, Md. "There's Life in Every Drop," (for Dr. Petzold's Genuine German Bitters)	4,534	July 28	32	386
Portuondo, Juan F., Philadelphia, Pa. "Factory 540, First District, Penna." (for Cigars)	4,535	Aug. 4	32	522
Potter & Co., I. A., Watertown, N. Y. "Directions for using I. A. Potter & Co's New American Strengthening Plaster"	4,579	Sept. 22	32	1360
Pugh, Richard H., London, England. "Stower's Lime Juice Cordial"	4,536	Aug. 4	32	522
Raynor & Co., Samuel, New York, N. Y. "Twenty five Cents" (for Change Envelopes)	4,585	Sept. 29	32	1470
Raynor & Co., Samuel, New York, N. Y. "Fifty cents" (for Change Envelopes)	4,586	Sept. 29	32	1470
Raynor & Co., Samuel, New York, N. Y. "One Dollar" (for Change Envelopes)	4,587	Sept. 29	32	1470
Rowland, John H., Oswego, N. Y. "John H. Rowland's Vegetable Astringent Pills"	4,537	Aug. 4	32	522
Ryder, Gilman M., Boston, Mass. "The Mexican Rheumatic Cure"	4,504	July 14	32	140
Sawyers, David A., Macksburg, Iowa. "D. A. Sawyers' Pain Specific"	4,524	July 21	32	260

Alphabetical list of registrants of labels, July to September, inclusive—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Sawyers, David A., Macksburg, Iowa. "D. A. Sawyers' Remedy for Kidney, Bladder, and Urinary Organs"	4,525	July 21	32	260
Sawyers, David A., Macksburg, Iowa. "D. A. Sawyers' Tonic Bitters"	4,526	July 21	32	260
Sawyers, David A., Macksburg, Iowa. "D. A. Sawyers' Specific for Croup"	4,527	July 21	32	260
Sawyers, David A., Macksburg, Iowa. "D. A. Sawyers' Compound Cathartic and Vegetable Blood Purifier"	4,528	July 21	32	260
Sawyers, David A., Macksburg, Iowa. "D. A. Sawyers' Cough Syrup"	4,530	July 21	32	260
Smith & Son, E. G., Kentland, Ind. "Smith's Vegetable Tonic"	4,580	Sept. 22	32	1360
Steinmetz, Uriah G., Philadelphia, Pa. "The Reliable" (for Umbrellas and Parasols)	4,581	Sept. 22	32	1360
Sure Cure Medicine Company, Rochester, N. Y. "Dr. J. B. Henion's Sure Cure for Malaria"	4,588	Sept. 29	32	1470
Talbot, Edward A., Boston, Mass. "Hakka Cream"	4,565	Sept. 1	32	1014
Tarrant & Company, New York, N. Y. "Tutti Frutti Juice"	4,505	July 14	32	140
Usher, W. H., New York, N. Y. "Sparkling Banana Liqueur"	4,582	Sept. 22	32	1360
Vanauken, C. H., Newark, N. J. "Farmer's" (for Horse and Cattle Powder)	4,529	July 21	32	260
Wadsworth, E. Clifford, Brooklyn, N. Y. "Dr. Wadsworth's Tooth Powder"	4,506	July 14	32	140
Webster, Henry W., Nashua, N. H. "Catholicon" (for Medicine)	4,569	Sept. 8	32	1128
Webster, Mary, Massillon, Ohio. "Nymphœa Vegetable Compound," (for a Medicine)	4,539	Aug. 4	32	522
Willson, B. F. B., Boston, Mass. "Improved German Fly Paper"	4,570	Sept. 8	32	1128

DISCLAIMER.

Name, residence, and invention.	No.	Filed.	Official Gazette. Vol.	Page.
Locke, Joseph, Somerville, assignor to William L. Libbey, Newton, and Edward D. Libbey, Boston, Mass.; disclaimer filed by Edward D. Libbey, present assignee. Glassware	282,002	Aug. 29, 1885	32	1128

ALPHABETICAL LIST OF INVENTIONS.

Invention.	Name.	No.	Date.	Monthly volume. Specification.	Monthly volume. Drawing.	Official Gazette. Volume.	Official Gazette. Page.
Abdominal supporter	M. M. and J. H. Werum	323,003	July 28	2168	575	32	418
					576		
Accordion. Mechanical	C. Oettel	326,773	Sept. 22	2099	545	32	1421
					546		
Acid. Apparatus for the manufacture of sulphuric	J. McNab	325,263	Sept. 1	42	12, 13	32	1023
Acid. Manufacturing sulphuric	J. McNab	325,262	Sept. 1	40	12	32	1023
Acid. Production of chlorophthalic	R. Guehm	322,368	July 14	1286	.....	32	244
Acoustic diaphragm	W. Jones and W. W. Reynolds	322,295	July 14	1186	311	32	226
Adding-machine	W. J. Macnider	322,190	July 14	1064	276	32	202
					277		
Adding-machine	J. L. McCaleb	326,767	Sept. 22	2093	543	32	1420
Adding-machine	R. F. Wilcox	326,824	Sept. 22	2177	568	32	1436
Addressing-machine	A. Le Roy and B. Martignoni	325,945	Sept. 8	961	244	32	1200
Addressing-machine	C. I. Wilmans	327,368	Sept. 29	2904	758	32	1572
Adjustable chair	A. J. Gibson	326,968	Sept. 29	2379	622	32	1479
Adjustable chair	G. Wilson, Jr	326,309	Sept. 15	1545	401	32	1315
Advertising device. Automatic	A. D. Littleton and J. M. Clark	326,997	Sept. 29	2413	630	32	1486
Advertising device. Automatic	E. Mason	323,176	July 28	2407	639	32	462
Advertising-mat	S. F. Gibson	321,431	July 7	24	6	32	7
Advertising medium	W. C. Rogers	323,210	July 28	2458	653	32	471
Advertising-packet. Perfumed	F. A. Merrell	325,107	Aug. 25	2316	637	32	976
Aerated beverages. Apparatus for filling and sirup-ing	J. McEwen	322,738	July 21	1787	471	32	341
					472		
Aeriform fluids. Apparatus for mixing	E. B. Denny and A. B. Griffen	327,146	Sept. 29	2613	681	32	1520
Aeriform fluids. Apparatus for mixing	C. C. Walworth and H. Seyter	322,661	July 21	1684	446	32	322
					447		
Agricultural fork	J. F. Allen	327,052	Sept. 29	2492	648	32	1498
Agricultural machines. Tooth-securing device for	C. E. Stonesifer	322,567	July 21	1569	414	32	300
Air and combustible vapor. Apparatus for mixing	G. A. Schoth	325,452	Sept. 1	320	77	32	1076
Air and steam heater	G. Nixon, Jr.	325,962	Sept. 8	986	250	32	1204
Air-brake	W. W. Hanscom	326,646	Sept. 22	1895	499	32	1386
Air-brake. Automatic	W. B. W. Howe, Jr., and A. Gärtner	321,971	July 14	771	201	32	148
Air-brake for railway-cars	L. E. Sloan	327,027	Sept. 29	2446	639	32	1492
					640		
Air-brakes. Grease and water trap for	F. Mertsheimer and S. Otis	324,575	Aug. 18	1587	437	32	833
Air-engine	J. A. Woodbury, J. Merrill, G. Patten, and E. F. Woodbury.	324,062	Aug. 11	890	245	32	695
Air in cotton-mills, &c. Apparatus for moistening	M. Sherman	324,043	Aug. 11	859	238	32	690
Air. Machine for separating dust from	W. C. Wheeler	324,440	Aug. 18	1413	385	32	801
					386		
Air-motor	A. M. Koniakowsky	322,616	July 21	1629	431	32	312
Air or steam brake. Automatic	E. J. Cosgrove	322,042	July 14	869	226	32	166
Air-spring	L. Smith	321,768	July 7	489	129	32	91
Air-tight vessels. Device for closing	A. Evans	322,433	July 21	1375	360	32	267
Alarm: *See* Burglar-alarm. Electrical alarm. Feed-water alarm. Low-water alarm. Railway-alarm. Steam-boiler alarm.							
Alarm-lock	G. Bredée	326,840	Sept. 22	2195	572	32	1439
Alcohol and hydrocarbons and rectifying and aging liquors. Manufacturing and distilling	D. D. Cattanach	326,715	Sept. 22	1994	523	32	1405
Alcohol, hydrocarbons, and acetic acid, and for aging and refining liquors. Apparatus for the manufacture and distillation of	D. D. Cattanach	326,716	Sept. 22	2000	524	32	1405
Aligning-instrument	R. Garich	322,921	July 28	2048	541	32	396
Alphabet-block	D. C. Taylor	322,210	July 14	1069	283	32	207
Altar	E. Y. Chevallier	325,496	Sept. 1	376	92	32	1067
Aluminium. Electric smelting for obtaining	E. H. Cowles, C. F. Mabery, and A. H. Cowles.	324,659	Aug. 18	1717	.....	32	857
Amalgamating-pan	M. P. Bose	325,387	Sept. 1	227	58	32	1058
Amalgamator	F. L. Downend	326,483	Sept. 15	1675	437	32	1339
Amalgamator	E. Pike	327,193	Sept. 29	2080	606	32	1533
Amalgamator. Cylindrical	J. W. Hilton	323,148	July 28	2363	627	32	454
Ammonia. Apparatus for producing	C. H. Schneider	325,771	Sept. 8	748	187	32	1160
					188		
Ammoniacal gas. Apparatus for producing	C. B. Lee	322,458	July 21	1413	370	32	273
Anchors. Fitting for and method of seating ships'	S. Baxter	323,774	Aug. 4	513	144	32	619
Animal-power	E. J. Yarbrough and J. M. Kyker	321,876	July 7	646	167	32	117
Animal-releasing device	S. Coate	327,239	Sept. 29	2727	708	32	1542
Animal-stock	C. Parker	321,999	July 14	811	212	32	156
Animal-trap	J. M. Desart	324,238	Aug. 11	1136	309	32	741
Animal-trap	M. B. Marshall	322,736	July 21	1785	471	32	340
Animal-trap	W. T. Moore	326,513	Sept. 15	1715	447	32	1347
Animal-trap	R. M. Tate	326,460	Sept. 15	1649	431	32	1334
Animals. Instrument for dosing	G. S. Fales	323,406	Aug. 4	32	8	32	529
Antiphone	J. M. Pleasner	322,003	July 14	815	213	32	157
Annunciator	C. E. Doy	323,921	Aug. 11	698	195	32	662
Annunciator	H. E. Waite	325,463	Sept. 1	332	80	32	1078

Alphabetical list of inventions, July to September, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Annunciator. Electrical	R. Edwards	324,369	Aug. 18	1316	357	32	783
Annunciator. Pneumatic	W. Thomas	324,500	Aug. 18	1489	408	32	814
Anvil, drill, and vise. Combined	H. Childers	326,402	Sept. 15	1581	411	32	1322
Anvil for rivet-setting machines	G. H. Meade	325,689	Sept. 8	627	159	32	1138
Aquarium and maritime theater. Combined	J. Wenmaekers	324,508	Aug. 18	1506	412	32	817
Arch. Trimmer	W. S. Eames	322,047	July 14	876	227	32	168
Argand burner	F. Rhind	322,321	July 14	1221	320	32	232
Arithmetical chart	T. Hooley	322,376	July 14	1300	339	32	247
Armlet	H. B. Ditwiler	321,422	July 7	10	3	32	4
Artist's palette-cup	H. Serrell	325,872	Sept. 8	878	221	32	1184
Ash-leach	J. H. Moran	326,581	Sept. 22	1804	473	32	1371
Asphaltic tiling and paving material	J. Rice, A. Steiger, and I. L. Thurber	322,970	July 28	2125	.....	32	410
Asphaltum, &c. Apparatus for heating	J. J. Schillinger	322,325	July 14	1224	321	32	233
Atomizer	F. H. Clark	327,237	Sept. 29	2725	708	32	1541
Atomizer	J. F. Corbly	322,908	July 28	2030	536	32	392
Auger-bit	F. Shailer	323,454	Aug. 4	91	26	32	539
Auger blades. Machine for shaping post-	C. L. Carter	326,309	Sept. 15	1578	410	32	1321
Auger. Earth-	R. L. Fosburgh	322,365	July 14	1284	335	32	244
Auger. Earth-	T. Porter	324,162	Aug. 11	1025	280	32	720
Auger-heads. Device for making dies for forming	F. W. Hastings	321,907	July 14	766	200	32	147
Auger. Post-hole	J. Hagans	326,976	Sept. 29	2385	624	32	1481
Automatic frogless switch	A. E. Strong	321,920	July 7	609	182	32	127
Automatic gate	O. J. Scott	323,888	Aug. 4	649	184	32	646
Automatic guard or track-clearer	H. M. Taaffe	326,668	Sept. 22	1925	506, 507	32	1391
Automatic sprinkler	F. B. Comins	322,685	July 21	1711	453	32	328
Automatic sprinkler	A. K. Rider	326,155	Sept. 15	1244	319	32	1259
Awning	W. Downey	322,206	July 14	1152	301	32	219
Awning	E. A. Hildebrandt	323,418	Aug. 4	46	12	32	531
Awning	W. H. Jolliffe	323,338	July 28	2642	703	32	503
Awning. Window-	C. M. Roche	327,318	Sept. 29	2833	739	32	1560
Awning. Window-	W. Harvey	327,164	Sept. 29	2639	686	32	1524
Ax	W. C. Kelly	327,275	Sept. 29	2777	721	32	1550
Ax	H. Hammond	326,645	Sept. 22	1894	498	32	1386
Axes. Forming the edges of	V. Halter	323,671	Aug. 4	378	108	32	503
Axes. Manufacture of	H. Hammond	321,494	July 7	114	30	32	23
Axes. Manufacture of	P. Cool	326,955	Sept. 29	2362	618	32	1476
Axle bearing. Car-	A. W. Spatzier	323,966	Aug. 11	756	210, 211	32	673
Axle-bearing. Anti-friction	I. P. Wendell	325,881	Sept. 8	890	.....	32	1187
Axle-bearings. Composition of matter for the manufacture of	I. P. Wendell	325,882	Sept. 8	890	.....	32	1187
Axle-bearings, &c. Composition of matter for the manufacture of	I. P. Wendell	325,883	Sept. 8	891	.....	32	1187
Axle-bearings, &c. Composition of matter for the manufacture of	I. P. Wendell	325,885	Sept. 8	891	.....	32	1187
Axle-bearings, &c. Composition of matter for the manufacture of	I. P. Wendell	325,886	Sept. 8	892	.....	32	1187
Axle-bearings, &c. Composition of matter for the manufacture of	I. P. Wendell	325,887	Sept. 8	892	.....	32	1187
Axle-bearings, &c. Composition of matter for the manufacture of	I. P. Wendell	325,888	Sept. 8	893	.....	32	1187
Axle-bearings, &c. Composition of matter for the manufacture of	I. P. Wendell	325,889	Sept. 8	893	.....	32	1187
Axle-box	E. P. Curtiss	322,584	July 21	1590	419	32	304
Axle box. Car-	G. M. Brill	324,230	Aug. 11	1117	302, 303	32	738
Axle box. Car-	W. D. Cooper	326,405	Sept. 15	1583	412	32	1322
Axle box. Car-	C. Decker	325,593	Sept. 1	500	125	32	1311
Axle box. Car-	M. H. Dooly and J. D. O'Callaghan	323,645	Aug. 4	347	98	32	587
Axle box. Car-	E. J. Frost and W. Dawson	325,668	Sept. 8	603	152	32	1134
Axle box. Car-	J. P. Garton	321,710	July 7	401	107	32	75
Axle box. Car-	S. R. Hughes	326,219	Sept. 15	1338	346	32	1276
Axle box. Car-	W. S. Schroeder	323,216	July 28	2466	655	32	473
Axle box. Car-	J. S. Williams	325,466	Sept. 1	335	81	32	1079
Axle-box cover. Car-	J. Tesseyman	321,664	July 7	337	90	32	64
Axle. Carriage-	D. A. Brown	325,050	Aug. 25	2247	617	32	963
Axle-lubricator	W. Cole, Jr.	322,905	July 28	2028	535	32	391
Axle lubricator. Car-	N. M. George	322,278	July 14	1165	305	32	222
Axle lubricator. Car-	C. P. Holmes and N. M. George	322,292	July 14	1192	310	32	225
Axle lubricator. Car-	D. Ross	326,594	Sept. 15	1729	451	32	1349
Axle lubricator. Car-	W. H. Sterling and D. D. Wass	323,605	Aug. 4	292	84	32	576
Axle or journal bearings. Composition of matter for the manufacture of	I. P. Wendell	325,884	Sept. 8	891	.....	32	1187
Axle sand-band. Vehicle-	S. Heffley	321,435	July 7	27	7	32	8
Axle. Vehicle	G. M. Forbes	326,284	Sept. 15	1427	372	32	1292
Back-band hook	L. Hewitt	325,931	Sept. 8	940	238	32	1196
Backing, plowing, and gilding press. Combined	T. Freeman	323,313	July 28	2607	693	32	497
Bag: *See* Feed-bag. Mail-bag. Paper bag.							
Bag	E. W. Haaf	327,255	Sept. 29	2754	715	32	1547
Bag	J. Maddock	326,665	Sept. 22	1922	505	32	1391
Bag and satchel frame spring	R. C. Jenkinson	321,505	July 7	127	34	32	25
Bag-fastener	S. J. Austin and E. J. Stone	324,913	Aug. 25	2064	565	32	929
Bag filling, weighing, and registering machine	J. R. Campbell	321,793	July 7	521	138	32	97
Bag-holder	J. L. Worrell	323,617	Aug. 4	308	89	32	580
Bag-holder and truck. Combined	C. Hatz	323,141	July 28	2355	625	32	453
Bag-holder, scale, and truck. Combined	J. Dollison and J. Long	324,668	Aug. 18	1728	476	32	859
Bag or satchel	M. Schwerin	325,978	Sept. 8	1005	256	32	1208
Bags, &c. Holder for	A. N. Barnes	322,408	July 21	1344	350	32	261
Bait. Artificial	F. C. P. Robinson	326,886	Sept. 22	2263	591	32	1451
Bait. Trolling	W. D. Chapman	323,111	July 28	2322	615	32	446

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Bakeries. Mixing-machine for	G. H. Ives	325,933	Sept. 8	942	239	32	1197
Balance. Proportional	G. M. Beard	324,638	Aug. 18	1690	466	32	852
Bale and package tie	I. N. Hopkins	326,563	Sept. 22	1781	467	32	1367
Bale-tie	F. B. Griswold	322,442	July 21	1393	365	32	270
Bale-tie. Adjustable	G. S. Ackley	324,348	Aug. 18	1291	351	32	779
Baling-press	P. K. Dederick	324,924	Aug. 25	2078	568	32	932
Baling-press	L. B. Lathrop	325,843	Sept. 8	839	210, 211	32	1176
Baling-press	J. B. Miller	326,579	Sept. 22	1799	472	32	1370
Baling-press	C. Smith	322,651	July 21	1671	443	32	319
Baling-press alarm attachment	J. L. Hall	322,926	July 28	2056	543	32	397
Ball: *See* Rubber ball.							
Balls. Machine for roll-finishing seamless	A. Bisbee and J. T. Bacon	322,343	July 14	1253	327	32	238
Band-cutter and feeder	H. K. Andrews	325,222	Aug. 25	2469	679	32	1004
Band or collar	W. Gray	325,672	Sept. 8	607	154	32	1135
Banjo	H. E. Forrest	325,067	Aug. 25	2268	623	32	968
Banjo	J. Malberger	324,569	Aug. 18	1579	435	32	832
Banjos. Peg-supporting device for	A. C. Fairbanks and W. A. Cole	322,054	July 14	887	230	32	169
Bar: *See* Calm-bar. Draw-bar. Grate-bar. Horseshoe-bar. Metal bar.							
Barber's chair	H. Geise	323,661	Aug. 4	370	105	32	591
Barber's chair	F. Hoffmann and C. Ferat	326,503	Sept. 15	1700	444	32	1344
Barber's chair	E. E. Koken	323,429	Aug. 4	58	15	32	533
Barber's comb	J. W. Smith and C. L. Holland	323,889	Aug. 4	652	184	32	646
Barium and of strontium. Making hydrates of	W. G. Strype	326,066	Sept. 8	1127	287	32	1230
Bark-mill	J. McKendrick	325,849	Sept. 8	848	213	32	1178
Bark-press	J. Daigneau	322,687	July 21	1714	454	32	328
Barrel	J. Cosgrove	322,910	July 28	2032	537	32	392
Barrel-connection	T. O'Brien	321,520	July 7	159	43	32	31
Barrel-cover holder	S. E. Vincent	326,177	Sept. 15	1281	330	32	1265
Barrel crozing and howeling machine	G. J. Miller	326,234	Sept. 15	1355	350	32	1279
Barrel-filler	J. McKenzie	323,708	Aug. 4	423	121	32	602
Barrel-heads. Metallic cover for	A. M. Hellman	325,930	Sept. 8	940	238	32	1196
Barrel, keg, or similar article	L. M. Reed	322,641	July 21	1657	438	32	317
Barrel-making machine	F. Andrew	323,253	July 28	2514	667	32	481
Barrel-making machine	D. Murray	322,960	July 28	2104	560, 561	32	406
Barrel. Metallic	J. D. Moran	326,669	Sept. 22	1926	507	32	1392
Barrel or cask. Metal	J. Graves	327,254	Sept. 29	2753	714	32	1546
Barrels after being pitched. Machine for rolling	F. X. Kuhn	327,179	Sept. 29	2664	692	32	1529
Barrels. Machine for hooping	E. A. Delano	323,565	Aug. 4	240	70, 71	32	566
Basin, &c. Wash-	W. J. Cahill	323,911	Aug. 11	686	192	32	659
Basket	H. P. Gross	326,499	Sept. 15	1697	443	32	1343
Basket	T. F. Lawson	325,751	Sept. 8	725	181	32	1156
Basket. Folding	E. Kilborn	323,339	July 28	2643	703, 704	32	504
Basket. Fruit-	I. S. Platt	323,527	Aug. 4	189	55	32	557
Bath	G. Booth	324,293	Aug. 11	1210	329	32	756
Bath-house. Portable	C. L. Linney	327,284	Sept. 29	2789	725	32	1552
Bath-tub stand-pipe attachment	W. A. Johnson	327,272	Sept. 29	2773	720	32	1549
Bath-tubs. Overflow-pipe for	S. G. McFarland	327,295	Sept. 29	2805	730	32	1555
Baths. Overflow and discharge valve for	J. Demarest	324,542	Aug. 18	1545	426	32	825
Bathing apparatus	V. A. Harder	324,686	Aug. 18	1754	483, 484	32	864
Battery: *See* Electric battery. Galvanic battery. Primary or galvanic battery. Secondary battery. Secondary or storage battery.							
Beading-tool	E. P. Kendall and A. S. Vose	326,435	Sept. 15	1622	424	32	1329
Beam-heads upon beam-barrels. Securing	I. E. Palmer	321,635	July 7	304	81	32	58
Beams and girders. Cutting and employing wooden	P. H. Jackson	323,424	Aug. 4	52	14	32	532
Bed. Alarm and waking	A. J. Nordmann	325,437	Sept. 1	301	73	32	1073
Bed and bedstead	A. Smith and G. H. Albers	327,202	Sept. 29	2688	698	32	1535
Bed and chair. Combined sofa-	G. Koenig, Jr	321,825	July 7	578	150	32	106
Bed-bottom	C. Bigeon	326,096	Sept. 15	1164	298	32	1244
Bed-bottom	J. H. Brown	322,577	July 21	1582	417	32	303
Bed-bottom. Bolster	W. I. Fielding	323,572	Aug. 4	247	73	32	568
Bed-bottom. Folding	J. Ainslie, Jr	326,375	Sept. 15	1350	403	32	1316
Bed-bottom. Spring	L. W. Boynton	321,419	July 7	7	2	32	4
Bed-bottom. Spring	J. F. Bunnell	327,432	Sept. 29	2966	780	32	1587
Bed-bottom. Spring	T. Flagler	323,309	July 28	2604	692	32	496
Bed-bottom. Spring	J. M. M. Gernerd	326,555	Sept. 22	1769	463	32	1365
Bed-bottoms. Covering for spring	A. S. Clark	322,162	July 14	1032	268	32	196
Bed. Cabinet-	S. E. Goode	322,177	July 14	1048	272	32	199
Bed-clothing. Device for elevating and suspending	A. W. Bobaker	323,265	July 28	2524	670	32	483
Bed. Cot-	O. C. Fisk	322,055	July 14	888	230	32	169
Bed. Extension-	H. B. Pritchard	326,918	Sept. 22	2306	604	32	1459
Bed. Folding	S. H. Bingham	321,572	July 7	226	60	32	44
Bed. Folding	A. S. Burnham	324,748	Aug. 18	1826	505	32	879
Bed. Folding	B. F. Farrar	327,076	Sept. 29	2513	655	32	1503
Bed. Folding	B. F. Farrar	327,077	Sept. 29	2514	656	32	1503
Bed. Folding	C. Fenton	323,800	Aug. 4	539	153	32	624
Bed. Folding	D. J. Powers	321,911	July 7	686	178, 179	32	124
Bed. Folding	D. J. Powers	321,912	July 7	687	179	32	125
Bed. Folding	W. T. Salter	325,974	Sept. 8	998	254	32	1207
Bed. Folding	H. and E. Williams	326,367	Sept. 15	1544	400, 401	32	1315
Bed. Invalid-	I. D. Johnson	325,000	Aug. 25	2185	598	32	951

Alphabetical list of inventions, July to September, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drgs.	Official Gazette. Vol.	Official Gazette. Page.
Bed. Invalid	H. Pistorius	321,754	July 7	406	123, 124	32	87
Bed-lounge	O. and M. Alexander	325,897	Sept. 8	899	226	32	1188
Bed-lounge	G. E. Krause	325,344	Sept. 1	150	41	32	1043
Bed or furniture spring connection	A. Bell	323,535	Aug. 4	229	67	32	564
Bed-pan	C. C. Thompson	322,503	July 21	1488	391	32	986
Bed-rail brace	J. Adams	326,618	Sept. 22	1863	488	32	1390
Bed-screen frame	G. D. Marsh	326,437	Sept. 15	1624	425	32	1329
Bed-slat fastener. Wire	S. D. Hollister	325,062	Aug. 25	2388	629	32	971
Bed. Sofa	C. F. Glaggen	322,176	July 14	1047	271	32	199
Bed. Sofa	J. R. Okey	324,583	Aug. 18	1599	440	32	836
Bed. Sofa	G. W. Robbins	322,643	July 21	1660	439	32	317
Bed. Sofa	A. Schrock	324,400	Aug. 18	1475	404	32	812
Bed. Sofa	W. R. Shaber	321,540	July 7	187	50	32	37
Bed. Sofa	E. Yeoman	324,205	Aug. 11	1099	296, 297	32	735
Bed. Turn-up	L. W. Boynton	321,418	July 7	6	2	32	4
Bed. Wardrobe	J. C. Wirts and H. E. Schollo	322,880	July 21	1985	526	32	377
Bedstead	A. F. Miller	321,742	July 7	443	117	32	82
Bedstead. Adjustable double	A. T. Schlichting	322,645	July 21	1602	440	32	318
Bedstead and dressing-table. Combined	J. W. Jones	324,775	Aug. 18	1871	514	32	886
Bedstead. Cabinet	S. S. Bradshaw	323,967	July 28	2527	671	32	484
Bedstead. Folding	G. W. Delamater	327,246	Sept. 29	2742	712	32	1545
Bedstead-guard	L. J. Shelley	321,649	July 7	321	85	32	61
Bedstead. Invalid	A. J. Goodwin	326,111	Sept. 15	1180	301, 302	32	1247
Bedstead. Invalid	W. P. Underhill	325,993	Sept. 8	1025	261	32	1211
Bedstead. Wardrobe	R. Mitchell	326,316	Sept. 15	1476	384	32	1302
Bee-hive	J. A. Coalter	324,657	Aug. 18	1714	472	32	856
Bee-hive	L. S. Cook	324,538	Aug. 18	1541	425	32	824
Bee-hive	R. H. Coons	326,068	Sept. 29	2501	653	32	1501
Bee-hive	J. Heddon	327,268	Sept. 29	2767	718, 719	32	1549
Bee-hive	G. B. Olney	325,268	Sept. 1	48	14	32	1025
Bee-hive	J. T. Shank	322,982	July 28	2143	569	32	414
Bee-hive	W. H. Shirley	323,220	July 28	2471	657	32	474
Bee-hive	W. R. Spray	325,988	Sept. 8	1015	259	32	1210
Bee-hive attachment	E. Wainwright	325,996	Sept. 8	1028	262	32	1212
Beer and other liquids. Apparatus for cooling	W. H. Hayes	325,742	Sept. 8	714	178	32	1153
Beer, &c. Apparatus for cooling	A. W. Billings	324,523	Aug. 18	1525	420, 421	32	821
Beer. Apparatus for the manufacture of	J. Meyer	323,712	Aug. 4	429	123	32	603
Beer-cooler	F. Widmer	325,692	Sept. 8	894	225	32	1187
Beer-cooling apparatus	J. A. Button	326,017	Sept. 8	1057	269	32	1217
Beer-drawing apparatus	F. Heyman	322,719	July 21	1761	466	32	337
Beer into siphons, &c. Apparatus to prevent frothing when filling	F. Heyman	322,720	July 21	1763	466	32	337
Beer into siphons, &c. Preventing frothing when filling	L. Baumeister and C. A. Bartsch	322,410	July 21	1347	350, 351	32	202
Beer-kegs. Apparatus for supplying and regulating the pressure of carbonic-acid gas in	L. Ernst	324,922	Aug. 25	1942	534	32	906
Beer. Making	A. W. Billings	324,522	Aug. 18	1523	419, 420	32	820
Beer or ale. Manufacturing	J. H. Vehr and J. Kirby	327,040	Sept. 29	2469	644, 645	32	1495
Beer-ventilator	W. A. Leipner and C. Brotherhood	322,619	July 21	1632	431	32	312
Bell circuits. Indicator for electric	C. D. Hughes	321,501	July 7	122	32	32	24
Bell. Door	R. R. Buehler	324,915	Aug. 25	2066	565	32	929
Bell. Gong door	L. Oswald	327,407	Sept. 29	2956	772	32	1581
Belt-catch	J. T. Fertig	324,540	Aug. 18	1551	428	32	826
Belt clamp and tightener	R. F. Miner	324,402	Aug. 18	1361	370	32	792
Belt-conveyer	C. O. Gehrckens	324,993	Aug. 25	2177	595	32	949
Belt. Driving	L. Hughes	325,086	Aug. 25	2293	631	32	972
Belt. Electric	O. F. Main	324,713	Aug. 18	1786	493	32	870
Belt. Electric	G. W. Southwick	322,988	July 28	2150	570	32	415
Belt-fastener	E. C. Smith	322,986	July 28	2147	570	32	414
Belt-hinge	W. E. Spangle	325,986	Sept. 8	1013	259	32	1209
Belt-reel	A. R. Tiffany	324,190	Aug. 11	1060	290	32	727
Belt-shifter	F. L. Dow	326,633	Sept. 22	1881	493	32	1383
Belt-shifter. Automatic	C. and E. Hinshaw	323,679	Aug. 4	388	111	32	595
Belt-supporter	A. Miller	325,558	Sept. 1	460	115	32	1104
Belt-tightener	C. S. Wardwell	326,695	Sept. 22	1967	517	32	1400
Belt-tightening device	E. M. Moore	324,719	Aug. 18	1791	494	32	871
Belts, bandages, &c. Fastening for	H. C. Fenton	322,434	July 21	1376	360	32	268
Bench-clamp	F. P. Hish	324,555	Aug. 18	1559	430	32	828
Bench-clamp	C. Gerhard	323,662	Aug. 4	371	.....	32	592
Bengal lights. Composition for	C. A. Milligan	322,466	July 21	1423	372	32	275
Berth. Ship's	H. A. Hudson	324,112	Aug. 11	952	.....	32	708
Beton. Manufacture of	G. W. Rice	323,077	July 28	2274	601	32	436
Bevel	S. S. Colt	322,906	July 28	2029	536	32	392
Bevel and miter	J. G. Blount	323,289	July 28	2562	682	32	490
Bicycle	W. S. Kelley	321,819	July 7	564	147, 148	32	104
Bicycle	W. S. Kelley	321,932	July 7	716	187	32	130
Bicycle	E. G. Latta	321,508	July 7	130	34, 35	32	26
Bicycle	E. G. Latta	324,264	Aug. 11	1173	318, 319	32	748
Bicycle	F. D. Owen	323,066	July 28	2202	597	32	434
Bicycle	M. D. Rucker	322,974	July 28	2134	567	32	412
Bicycle	G. T. Warwick	322,221	July 14	1103	287	32	210
Bicycle	R. Rodes, Jr	325,014	Aug. 25	2202	603	32	954
Bicycle-handle	F. G. Burley	326,946	Sept. 29	2351	615	32	1474
Bicycle-saddle	H. B. Hart	322,057	July 14	690	230	32	170
Bicycle-stand	S. E. Barrett	321,781	July 7	505	134	32	94
Bier	G. Haydn	322,374	July 14	1295	339	32	246
Bilge-water ejector	E. Brunswick	324,004	Aug. 11	805	223, 224	32	681
Billiard-table	N. H. Ganser	322,436	July 21	1378	360, 361	32	268
Billiard-table cushion	H. W. Collender. (Reissue)	10,647	Sept. 29	3079	802	32	1602
Billiard-table leg	M. Cashin	324,917	Aug. 25	2068	566	32	930
Bin: *See* Flour-bin. Grain-bin.	J. W. Appleby	324,451	Aug. 18	1426	389	32	803
Binder. Temporary	O. Bloch	327,063	Sept. 29	2496	651	32	1500
Binder. Twine	W. S. Davey	326,204	Sept. 15	1319	342	32	1272
Binders. Knotter mechanism for self	R. W. Dixon	324,988	Aug. 25	2170	583	32	948
Binding-machine. Automatic	G. H. Howe	321,438	July 7	30	8, 9	32	9
Bird-cage	G. Bredée	326,841	Sept. 22	2196	573	32	1439
Bird-cage	W. Kaiser	324,704	Aug. 18	1775	490	32	868
Bird-cages. Attaching cuttle-bone to	W. R. Boerner	325,313	Sept. 1	112	32	32	1036
Bit: *See* Anger-bit. Drenching-bit. Boring-bit. Horse-bit. Bridle-bit. Metal-boring bit.	G. H. Packwood	323,198	July 28	2442	647	32	468
Bit-stock	W. S. Washburn	323,989	Aug. 11	785	218	32	676
Bit-stock	W. E. McKenzie	323,350	July 28	2061	708	32	506
Blackboard	G. S. Colburn	325,320	Sept. 1	120	.....	32	1038
Blacking. Boot and shoe	F. Brown	323,634	Aug. 4	333	95	32	584
Blast-furnace	V. O. Strobel	326,804	Sept. 22	2142	558	32	1430
Blast-furnace	P. L. Weimer and H. T. Euston	326,182	Sept. 15	1288	333	32	1266
Blast-furnace bell and apparatus for working the same	J. M. Hartman	321,966	July 14	765	200	32	147
Bleaching. Apparatus for continuous	W. Mather	324,137	Aug. 11	986	272	32	714
Bleaching purposes. Application of chloride of lime to	G. Lunge	325,684	Sept. 8	620	.....	32	1137
Blind	J. G. Wilson	326,371	Sept. 15	1547	402	32	1315
Blind-slat fastener	W. J. Brassington	322,247	July 14	1132	295	32	215
Blind-slat fastener	P. M. Mellick	321,836	July 7	592	153	32	108
Blind-slat fastener	G. F. Evans	323,863	Aug. 4	618	174	32	640
Blind-slat fastening	D. Hinman	324,693	Aug. 18	1764	486	32	866
Blind-slat holder	N. Jewett	324,384	Aug. 18	1339	364	32	787
Blind. Sliding	N. Jewett	324,385	Aug. 18	1340	364	32	788
Blind. Sliding	R. M. Clapp	327,235	Sept. 29	2723	707	32	1541
Blind. Sliding window	R. M. Clapp	327,236	Sept. 29	2724	708	32	1541
Blind. Sliding window	W. H. Lang	322,732	July 21	1778	469	32	339
Blind. Venetian	R. B. Ayres	321,474	July 7	92	24	32	19
Blind. Window	L. E. Wimer	322,877	July 21	1980	524, 525	32	376
Block: *See* Alphabet-block. Pulley-block. Carriage-block. Saw-mill head-block. Horse-block.	H. L. Williams	324,628	Aug. 18	1673	462	32	849
Block and switch signal	A. Hadley	327,257	Sept. 29	2756	715	32	1547
Blotter	A. Ross	327,022	Sept. 29	2441	638	32	1491
Blotter. Hand	A. Witkowsky	324,286	Aug. 11	1201	326	32	754
Blotter-holder. Automatic	J. C. Hendry	323,677	Aug. 4	385	110	32	594
Blouse and pantaloons. Combined	W. Kent	323,427	Aug. 4	54	14	32	533
Blower. Steam fan	P. Spence	326,601	Sept. 22	1837	.....	32	1376
Blowing-engine							
Bluing. Compound for laundry							
Board: *See* Blackboard. Lap-board. Bosom-board. Plaiting-board. Dash-board. Sign-board. Drawing-board. Wash-board.							
Boat: *See* Collapsible or folding boat. Life or other boat.							
Boats and other vessels. Combined stern-sheet block, traveler, oar-lock, and cleat for	J. Richardson	324,165	Aug. 11	1028	281	32	721
Boats through or above the surf to smooth water. Marine way and cradle for transferring	J. E. Staples	321,916	July 7	692	180, 181	32	126
Bobbin	J. B. Thorwarth and W. Tunstill, Jr.	321,772	July 7	496	131	32	93
Bodies. Device for transporting human	J. D. Marston and G. Clapp	323,515	Aug. 4	174	51	32	554
Boiler: *See* Circulating-boiler. Steam-boiler. Heating-boiler. Steam and water boiler. Magazine-boiler. Tubular boiler. Range-boiler. Wash-boiler.							
Boiler	R. Munroe	322,120	July 14	975	254	32	186
Boiler	L. H. Prentice	327,016	Sept. 29	2435	636	32	1490
Boiler	J. Watson	324,902	Aug. 25	2052	561	32	926
Boiler-cleaner	H. Estelle	323,571	Aug. 4	246	72	32	567
Boiler-cleaner	F. M. Forman	323,310	July 28	2605	692, 693	32	497
Boiler-feed and alarm	T. Barber	325,898	Sept. 8	900	227	32	1188
Boiler-furnace	J. Collis	326,547	Sept. 22	1761	461	32	1363
Boiler-furnace	C. A. Knight and G. W. Thode	323,871	Aug. 4	625	176	32	641
Boiler furnace. Steam	M. Coryell	326,631	Sept. 22	1880	492	32	1382
Boiler furnace. Steam	A. Donneley	323,124	July 28	2335	619	32	440
Boiler furnace. Steam	M. P. Henderson and A. Bergland	326,980	Sept. 29	2389	625	32	1482
Boiler furnace. Steam	R. Lavery	322,298	July 14	1191	213	32	296
Boiler furnace. Steam	F. Leadbeater	326,877	Sept. 22	2248	586	32	1449
Boiler furnace. Steam	B. Sloper	324,889	Aug. 25	2032	556	32	923

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drgs.	Official Gazette. Vol.	Official Gazette. Page.

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Boiler furnace. Steam-	J. P. Tuttle	323,375	July 28	2696	717	32	513
Boiler furnace. Steam-	D. Umbstaetter	324,898	Aug. 25	2046	560	32	925
Boiler indicator and alarm	J. M. Williams	326,699	Sept. 22	1972	518	32	1401
Boiler-plate	A. H. Emery	322,051	July 14	882	228, 229	32	169
Boiler-tube	J. W. Reeder	324,594	Aug. 18	1612	444	32	839
Boiler-tube cutter	G. W. Odgers	325,438	Sept. 1	302	74	32	1073
Boiler-tube expander	M. Cashin	324,007	Aug. 11	808	225	32	692
Boiler-water purifier	G. M. Brauninger	323,494	Aug. 4	142	42	32	548
Boilers. Making headers for water-tube	W. Kent	324,706	Aug. 18	1778	491	32	868
Boilers. Preventing incrustation in	T. J. Reynolds	324,596	Aug. 18	1614	445	32	839
Bolt: *See* Door-bolt. Floor-bolt.							
Bolt-cutter	O. A. Sathe	324,961	Aug. 25	2127	581	32	942
Bolt-cutter head	M. D. Luehrs	324,946	Aug. 25	2106	575, 576	32	938
Bolt-heading machine	I. W. Bliss	324,214	Aug. 11	1109	299, 300, 301	32	736
Bolt lock. Screw-	G. D. Tolman	322,657	July 21	1679	445	32	321
Bolt-operating device	L. G. Moulton	327,010	Sept. 29	2429	635	32	1489
Bolts. Locking	N. H. Brown	326,101	Sept. 15	1169	299	32	1245
Bolts, &c. Machine for screw-threading	J. North	321,841	July 7	597	155, 156	32	109
Bolting-chest	R. M. True	326,175	Sept. 15	1274	398	32	1264
Bolting-chest and middlings-purifier	J. T. Lee	321,441	July 7	36	10	32	10
Bolting-reel	R. L. Downton	322,358	July 14	1272	332	32	242
Bolting-reel	A. Heine	323,143	July 28	2357	626	32	483
Bolting-reel	H. F. Saint Requier	324,595	Aug. 18	1613	444	32	839
Bolting-reel	A. N. Wolf	321,875	July 7	645	167	32	117
Bolting-reel. Centrifugal	E. A. Squier	325,128	Aug. 25	2343	645	32	981
Bolting-reel clothing	A. Heine	323,579	Aug. 4	256	75	32	569
Book-binder's gold-saving cleaning-box	T. Daniels, Jr	325,916	Sept. 8	925	233	32	1193
Book-binder's pallet	S. Ault	324,289	Aug. 11	1264	328	32	754
Book. Black-leaf check-	T. G. Cooper	323,276	July 28	2543	676	32	487
Book. Copy-	J. W. C. Gilman	321,594	July 7	255	68	32	49
Book-cover	T. F. Williamson	324,903	Aug. 11	1097	296	32	734
Book cover or protector	C. Boyce	326,838	Sept. 22	2192	572	32	1439
Book-finishing machine	F. W. Davenport	322,526	July 21	1510	397, 398	32	291
Book. Forming a pencil-pocket at the back of a	J. G. Shaw	324,175	Aug. 11	1040	284	32	723
Book-holder	W. H. Cole	324,234	Aug. 11	1132	308	32	741
Book-holder	R. M. Lambie	323,511	Aug. 4	169	49, 50	32	554
Book-holders. Swivel for	R. M. Lambie	324,032	Aug. 11	842	233	32	688
Book-leaf holder	J. D. McClure	324,397	Aug. 18	1356	369	32	791
Book, &c. Note and memorandum	A. Pester	325,008	Aug. 25	2194	601	32	952
Book-rest	W. B. Solliday	324,602	Aug. 18	1625	447	32	841
Book. Sales-	C. W. Earnshaw. (Reissue)	10,619	July 7	722	189	32	131
Books, &c. Temporary cover for	E. J. Trum	324,791	Aug. 18	1890	519	32	890
Boot and shoe insole	G. S. Brown	321,577	July 7	231	61	32	45
Boot and shoe nailing machine	W. S. Fitzgerald	324,312	Aug. 11	1239	337	32	761
Boot and shoe stretcher	W. Jones	321,610	July 7	275	73	32	53
Boot machine. Felt-	W. A. Smith	323,457	Aug. 4	94	27, 28	32	540
Boot or shoe	T. P. Mitchell	322,467	July 21	1425	373	32	275
Boot or shoe and welt therefor	W. B. Arnold	324,352	Aug. 18	1295	352	32	780
Boot or shoe burnishing machine	C. J. Blakely	323,901	Aug. 11	676	189	32	657
Boot or shoe heel	E. J. Le Gay	324,127	Aug. 11	975	268, 269	32	712
Boot or shoe heel	W. W. Wallace	321,869	July 7	637	165	32	116
Boot or shoe heels. Machine for attaching	J. Tingley	324,279	Aug. 11	1193	324	32	752
Boot or shoe heels. Manufacturing and attaching	G. T. Demary	321,696	July 7	384	102	32	72
Boot or shoe heels. Mold for forming	E. J. Le Gay	322,301	July 14	1194	313, 314	32	227
Boot or shoe last	E. S. Kingston. (Reissue)	10,630	July 28	2709	721	32	516
Boot or shoe nail	F. F. Raymond, 2d	326,782	Sept. 22	2116	550	32	1425
Boot or shoe. Rubber	G. Watkinson	322,224	July 14	1106	287	32	210
Boot or shoe sole and heel	G. F. Butterfield	326,476	Sept. 15	1667	435	32	1336
Boot or shoe soles and uppers. Machine for uniting	S. W. Robinson	325,274	Sept. 1	55	17, 18	32	1026
Boot or shoe soles. Attaching	F. F. Raymond, 2d	326,150	Sept. 15	1238	317	32	1257
Boot or shoe soles. Tool for piercing holes in	G. F. Seaver and C. G. Mork	326,160	Sept. 15	1252	320, 321	32	1260
Boot or shoe spring-heel	G. E. Swan	323,971	Aug. 11	763	213	32	674
Boot or shoe tip and stud	G. Chambers	326,844	Sept. 22	2200	574	32	1441
Boot or shoe upper	T. Nally	325,561	Sept. 1	463	116	32	1104
Boot or shoe uppers. Crimping-machine for	L. Knetzger	323,815	Aug. 4	554	157	32	627
Boot or shoe uppers. Lasting	W. C. Cross	324,304	Aug. 11	1224	333	32	758
Boot or shoe uppers. Machine for stretching	A. F. Preston	325,567	Sept. 1	469	117	32	1105
Boot-strap	J. M. Wilkinson	326,187	Sept. 15	1294	335	32	1268
Boot-treeing machine	J. Call	324,982	Aug. 25	2155	589	32	946
Boots and shoes. Heel-band for	G. Castle	325,730	Sept. 8	894	173	32	1149
Boots or shoes. Lasting	W. C. Cross. (Reissue)	10,642	Sept. 1	567	144	32	1122
Boots or shoes. Manufacture of	G. W. Day	325,240	Sept. 1	11	4	32	1017
Boots or shoes. Spring-shank for	C. E. Andrews	324,065	Aug. 11	894	247	32	696
Boots, shoes, &c. Machine for making felt	L. Ruel	324,340	Aug. 11	1276	346, 347	32	768
Boring bit or auger	L. M. Foster	324,763	Aug. 18	1854	510	32	883
Boring-machine	J. P. Cobb	324,920	Aug. 25	2070	566, 567	32	930
Boring-machine	S. F. Cohin	326,302	Sept. 15	1313	340, 341	32	1272
Boring-machine	J. Ernst	324,100	Aug. 11	936	258	32	704
Boring-machine	E. H. Parks	323,723	Aug. 4	443	126	32	606
Bosom-board	J. A. Emmert	322,703	July 21	1744	460	32	334
Bosom-board	S. J. Lackey	325,346	Sept. 1	153	42	32	1044

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Bosom-pad	J. L. Wells	325,030	Aug. 25	2220	609	32	958
Bosom-tab-folding machine	G. E. Norris	322,551	July 21	1537	405, 406	32	296
Bottle drink-register	G. Weitzel	327,364	Sept. 29	2899	757	32	1571
Bottle-filler	L. B. Harner and W. G. Losch	325,929	Sept. 8	939	238	32	1196
Bottle. Mucilage-	E. R. Cahoone	326,949	Sept. 29	2355	616	32	1475
Bottle. Mucilage-	W. H. Redington	325,970	Sept. 8	994	253	32	1206
Bottle. Nursing-	W. R. Prime	323,597	Aug. 4	284	82	32	574
Bottle-packing case	C. H. Royce	323,212	July 28	2460	654	32	472
Bottle stand or casing	C. S. Bleton and A. Maleville	327,225	Sept. 29	2714	706	32	1540
Bottle-stopper	J. Alafasser	324,449	Aug. 18	1424	389	32	802
Bottle-stopper	G. W. Canterbury	326,272	Sept. 15	1412	367	32	1289
Bottle-stopper	L. Ehrlich	322,702	July 21	1743	460	32	333
Bottle-stopper	J. M. and M. L. S. Escorbia	325,064	Aug. 25	2266	623	32	967
Bottle-stopper	E. L. Lloyd	325,181	Aug. 25	2415	663	32	994
Bottle-stopper	S. B. Opdyke	321,448	July 7	53	16	32	12
Bottle-stopper	W. Painter	324,040	Aug. 11	855	237	32	690
Bottle-stopper	W. Painter	327,099	Sept. 29	2554	666	32	1510
Bottle-stopper	W. L. Roorbach	323,737	Aug. 4	463	131	32	610
Bottle stopper and fastener	C. J. Jordan	326,656	Sept. 22	1911	502	32	1389
Bottle-stopper. Automatic	S. B. Opdyke	321,447	July 7	51	15	32	12
Bottle-stoppers. Seating for	J. J. Varley	325,776	Sept. 8	758	189	32	1162
Bottle-stoppers. Wiring for	R. L. Howard	321,607	July 7	271	72	32	52
Bottle-top	C. T. Groajean	322,370	July 14	1288	337	32	245
Bottle-washer	T. Davies	327,071	Sept. 29	2505	654	32	1502
Bottles. Cleaning	R. Robinson	322,644	July 21	1660	439	32	318
Bottles containing aerated liquids and fitted with internal stoppers. Apparatus for opening	H. Codd	326,630	Sept. 22	1879	492	32	1382
Bottles with highly-aerated liquids without pressure. Apparatus for filling	A. Werner	323,612	Aug. 4	300	86	32	578
Bottling-machine	J. A. Brown	322,576	July 21	1581	416, 417	32	302
Bottling-machine	R. Shay	324,494	Aug. 18	1482	406	32	813
Bottling-machine screen attachment	F. Seely	326,679	Sept. 22	1945	511	32	1395
Bouquet-fastening	M. Milne	325,853	Sept. 8	853	214	32	1179
Bowl. Wash-	H. C. Lowrie	327,094	Sept. 29	2546	663, 664	32	1509
Bowling-hoop	J. H. Venners	324,344	Aug. 11	1284	348	32	769
Box: *See* Axle-box. Match-box. Cigar-box. Packing-box. Egg-box. Paper box. Fare-box. Shipping-box. Fishing-tackle box. Stop-box. Flour-box. Tobacco-box. Folding box. Toilet-powder box. Knockdown box. Tree-box. Letter-box. Watch-movement box.							
Box	J. P. Buckingham	325,729	Sept. 8	693	173	32	1149
Box-fastener	O. N. Brainerd	323,106	July 28	2313	612	32	444
Box-fastener	C. R. Nelson	321,628	July 7	295	78	32	56
Box-fastener	J. F. Whittingham	324,201	Aug. 11	1095	295	32	734
Box-fastening	W. S. Thayer	322,868	July 21	1967	521	32	373
Box for bottled liquids	P. and R. P. Aitcheson	323,486	Aug. 4	130	37	32	546
Box-opener	E. Kricker	326,909	Sept. 22	2296	600	32	1456
Box-pulling attachment	H. Wixon and G. Menard	322,031	July 14	855	223	32	163
Box or truck fastener or catch	H. A. Seymour	323,830	Aug. 4	574	162	32	631
Boxes, &c. Composition of matter for lining or coating	A. Hollner	326,115	Sept. 15	1185	.....	32	1248
Boxes. Device for handling	A. Ayer	323,844	Aug. 4	593	167	32	635
Boxes or crates. Binding for	W. F. Redding	325,969	Sept. 8	993	253	32	1206
Brace: *See* Bed-rail brace. Dental jaw-brace.							
Bracelet	H. E. Chadwick	322,901	July 28	2021	534	32	390
Bracelet	T. Lebkuecher	324,125	Aug. 11	973	268	32	712
Bracelet	H. Liebel	322,061	July 14	895	232	32	171
Bracelet	F. F. Tingley	326,606	Sept. 22	1846	484	32	1377
Bracket: *See* Gas and lamp bracket. Mirror-bracket. Shelving-bracket. Ladder-bracket. Wall-bracket. Lamp-bracket.							
Bracket	B. F. Caldwell	325,196	Aug. 25	2434	669	32	998
Brake: *See* Air-brake. Wagon-brake. Air or steam brake. Wagon and carriage brake. Car-brake. Elevator safety-brake.							
Brake-block holder	D. Hedrick	322,099	July 14	945	245	32	180
Brake-lever	E. B. C. Willison	323,994	Aug. 11	790	220	32	679
Brake-shoe	J. J. Lappin	324,851	Aug. 25	1961	544	32	914
Bran and other articles. Packer for	S. T. Lockwood	325,254	Sept. 1	28	9	32	1020
Bran-duster	A. Heine	322,715	July 21	1756	464	32	336
Bran-duster	J. W. Wilson	323,247	July 28	2507	665	32	480
Bread-cutter	H. A. Grimm	325,741	Sept. 8	713	178	32	1153
Breast-pad	C. L. Morehouse	326,915	Sept. 22	2302	602	32	1458
Breastpin	H. P. Pruim	322,640	July 21	1656	438	32	317
Breastpin	F. Schroder	325,117	Aug. 25	2328	640	32	979
Breastpin pin-tongue	A. Thommen	323,543	Aug. 4	213	63	32	561
Brick-burning kiln	H. R. Cassidy and A. Fries	325,787	Sept. 8	771	193	32	1163
Brick-hack. Portable	M. Walker and E. Miner	326,812	Sept. 22	2160	562	32	1432
Brick-kiln	W. N. Graves	326,286	Sept. 15	1430	372	32	1293
Brick-kiln. Continuous	M. A. T. Boehncke and H. Rohwer	323,492	Aug. 4	138	41, 42	32	547
Brick-machine	S. P. Babcock	327,376	Sept. 29	2917	761	32	1574

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Brick-machine	J. J. Brewis	324,453	Aug. 18	1427	390	32	803
Brick-machine	W. Burkman	323,909	Aug. 11	684	191, 192	32	659
Brick-machine	L. B. Kennedy	325,939	Sept. 8	949	241, 242	32	1198
Brick-machine	L. B. Kennedy	325,940	Sept. 8	953	242	32	1199
Brick-machine	W. M. Logan	323,818	Aug. 4	559	159	32	628
Brick-machine	W. H. Stewart	323,083	July 28	2292	604	32	438
Brick-machine attachment	W. N. Graves	326,287	Sept. 15	1431	373	32	1293
Brick-machine. Hydraulic	W. N. Graves	326,288	Sept. 15	1433	373, 374	32	1294
Brick-machine mold and frame therefor	W. N. Graves	326,289	Sept. 15	1438	375	32	1295
Brick-molds. Machine for sanding	R. S. Judson and C. J. Hancock	322,455	July 21	1410	369	32	273
Brick-molds. Machine for sanding	D. Ralston	321,528	July 7	169	45, 46	32	34
Brick-press	H. Lupher	323,348	July 28	2656	706, 707	32	505
Bricks. Appliance for laying	M. Reymond	322,563	July 21	1562	412	32	299
Bricks, building-blocks, &c., made of purified ashes and lime	E. L. Ransome	322,559	July 21	1549	.....	32	297
Bricks. Drying and burning	P. Lichtenstadt	325,680	Sept. 8	618	157	32	1137
Bridge. Draw-	W. D. Bullock	322,787	July 21	1848	491	32	353
Bridge. Draw-	J. Groves	322,708	July 21	1748	462	32	334
Bridge-gate. Automatic	R. W. Hale	323,034	July 28	2217	586	32	425
Bridge gate. Draw-	W. Johnston and W. J. Taylor	321,975	July 14	775	202	32	149
Bridge gate or guard	P. Ryan	327,112	Sept. 29	2568	669, 670	32	1512
Bridge guard. Draw-	A. Bosch	325,905	Sept. 8	911	230	32	1191
Bridge joint. Draw-	G. W. Mersbon	323,711	Aug. 4	427	122	32	603
Bridge. Swing-	M. O. Anthony	325,472	Sept. 1	341	83	32	1080
Bridge system. Railway-cable	J. G. Ogden	326,322	Sept. 15	1483	386, 387	32	1303
Bridges. Signal-gate for draw-	D. B. Fisk	326,965	Sept. 29	2374	621	32	1478
Bridle-bit	C. Baker	325,232	Sept. 1	4	1	32	1015
Bridle-bit	A. P. Baldwin	326,703	Sept. 22	1977	519	32	1402
Bridle-bit	H. M. Clemons	327,139	Sept. 29	2601	678	32	1518
Bridle-bit	J. G. Eberhard	324,821	Aug. 25	1941	533	32	906
Bridle-bit	C. E. Heinze	326,648	Sept. 22	1899	499	32	1387
Bridle-bit	C. W. Hess	325,836	Sept. 8	834	208	32	1175
Bridle-blinkers. Pattern for	F. M. Amsbry	323,620	Aug. 4	317	91	32	581
Bridle overdraw-check	O. Schrader	322,012	July 14	826	216	32	159
Bridle. Safety-	P. Moñoz	324,403	Aug. 18	1362	370, 371	32	792
Bristle-bunching tool	A. Pillault	326,328	Sept. 15	1491	388	32	1305
Broiler	R. R. Hug	323,688	Aug. 4	402	115	32	598
Brooch or breastpin	J. H. Barber	326,193	Sept. 15	1301	336	32	1269
Broom and tool rack. Combined	M. B. Brown	321,883	July 7	654	170	32	119
Broom-holder	N. H. Long	325,682	Sept. 8	619	157	32	1137
Broom-holder	T. Andrews	325,375	Sept. 1	302	51	32	1052
Broom-sprinkler	S. Morley	324,037	Aug. 11	848	236	32	689
Brush	D. D. Lavery	326,225	Sept. 15	1346	348	32	1277
Brush and broom holder	A. L. Pritchett	323,827	Aug. 4	568	161	32	630
Brush or broom support	J. Schmidt	327,323	Sept. 29	2837	740	32	1561
Brush. Revolving	W. R. Evans	323,305	July 28	2600	691	32	496
Brush. Tooth-	R. S. Lakin	325,250	Sept. 1	24	8	32	1020
Brush. Tooth-	W. W. Hough	321,606	July 7	270	72	32	52
Bucket. Minnow-	N. A. Cooper	324,921	Aug. 25	2071	567	32	931
Buckle	R. M. Dillard	326,410	Sept. 15	1587	413	32	1323
Buckle	C. A. Draper	326,279	Sept. 15	1421	370	32	1291
Buckle	W. T. Jones	324,846	Aug. 25	1976	543	32	913
Buckle	W. D. Stratton	323,084	July 28	2286	605	32	439
Buckle	W. R. Johnston	326,296	Sept. 15	1450	378	32	1297
Buckle	W. P. Tinsley	326,350	Sept. 15	1522	396	32	1311
Buckle and cup. Combined belt-	F. Mellett	322,624	July 21	1638	433	32	314
Buckle attachment	J. E. Kelsey	323,156	July 28	2374	629	32	456
Buckle. Back-band	G. R. Kelsey	323,155	July 28	2372	629	32	456
Buckle-frames. Die for swaging	J. M. Basinger	322,067	July 14	929	240	32	177
Buckle-frames. Machine for making	H. F. Bock	327,130	Sept. 29	2593	675	32	1517
Buckle. Harness-	J. Schroder	324,733	Aug. 18	1809	500	32	875
Buckle. Harness-	V. Berthelot	326,385	Sept. 15	1561	405	32	1318
Buckle. Hook-	J. F. Townsend	324,897	Aug. 25	2045	559	32	925
Buckle. Suspender-	J. Herrington	327,166	Sept. 29	2640	687	32	1525
Buckle. Trace-	H. E. Hulbert	324,700	Aug. 18	1772	489	32	868
Budding-knife	S. B. Breed	323,779	Aug. 4	517	146	32	619
Buffing-roll	F. H. Emerson	325,329	Sept. 1	133	37	32	1040
Buffing-roll	D. Buckler, R. D. Cain, J. Taubert, and E. N. Pelzer.	322,518	July 21	1504	395	32	290
Buggy-boot	S. Cothermon	326,019	Sept. 8	1059	270	32	1218
Buggy-seats. Shifting-rail for	E. L. Booth	321,945	July 14	740	194	32	143
Buggy-top	W. R. Wood	324,909	Aug. 25	2061	564	32	928
Buggy-top spring	C. L. Walker and F. J. Jervey	323,757	Aug. 4	488	138	32	615
Building-blocks. Press for plastic material for	T. R. Carskadon	324,456	Aug. 18	1432	391, 392	32	804
Building. Portable	J. C. Anderson	324,634	Aug. 18	1686	464	32	851
Buildings. Construction of	R. Guastavino	323,930	Aug. 11	709	199	32	664
Buildings. Construction of fire-proof	J. C. Covert	326,899	Sept. 22	2284	597	32	1454
Bull-lead	F. Manning	326,231	Sept. 15	1352	349	32	1278
Bullet	C. Kühner	326,127	Sept. 15	1201	307	32	1251
Bung and bush	R. M. Reilly and F. King	322,853	July 21	1944	514	32	369
Bung and faucet for ale and beer barrels. Combined	P. Delany	325,102	Aug. 25	2382	656	32	988
Buoy	S. Broichgans	321,679	July 7	359	95	32	67
Burglar-alarm	H. Herrick and W. L. Babcock	323,810	Aug. 4	549	156	32	626
Burglar-alarm	F. D. Hill	325,838	Sept. 8	835	209	32	1175
Burglar-alarm	J. G. Newell	325,961	Sept. 8	985	250	32	1204
Burial-case	P. T. Cregan	322,424	July 21	1365	356	32	965

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Burial-caskets. Device for securing lids to	R. Otto	322,471	July 21	1434	376	32	277
Burner: *See* Argand burner. Gas-burner. Gas and vapor burner. Hay and straw burner. Hydrocarbon-burner. Oil-burner. Vapor-burner.							
Burner and boiler-furnace. Combined	C. T. Burrell	324,298	Aug. 11	1218	331	32	757
Burning fuel. Apparatus for	R. E. Burns	326,947	Sept. 29	2352	615	32	1474
Bush. Metallic bung-	W. Calhoun	322,955	July 14	1140	298	32	217
Bustle	E. B. Cady	322,678	July 21	1704	452	32	327
Bustle	C. C. Carpenter	324,236	Aug. 11	1124	305	32	739
Bustle	C. R. Davis	321,584	July 7	239	63	32	46
Bustle	F. G. Moore	323,519	Aug. 4	180	52	32	555
Bustle	M. Phillips	324,338	Aug. 11	1273	346	32	768
Bustle	M. Rosenstock	327,455	Sept. 29	3013	787	32	1501
Bustle	J. L. Wells	325,031	Aug. 25	2220	609	32	958
Bustle	R. Kelso	323,692	Aug. 4	406	116	32	599
Bustle. Woven-wire	E. Pohl	325,861	Sept. 8	866	218	32	1182
Bustles. Stiffener for	C. D. Van Allen	323,980	Aug. 11	775	216	32	676
Butter-package. Air-tight	D. H. and A. C. Eaton	322,267	July 14	1153	301	32	219
Butter-pail. Reshipping	L. W. Murch	323,879	Aug. 4	638	180	32	644
Butter-worker	J. H. Taylor	324,186	Aug. 11	1057	289	32	727
Butter-worker	G. W. Cavelle	326,060	Sept. 8	1147	292	32	1234
Button	L. P. Conard	324,303	Aug. 11	1223	333	32	758
Button	L. P. Conard	325,913	Sept. 8	921	232	32	1193
Button	J. S. Dillon	321,953	July 14	751	196	32	145
Button	W. H. Gifford	324,632	Aug. 25	1956	537	32	909
Button	C. V. Goddard	326,211	Sept. 15	1328	344	32	1274
Button	H. C. Griggs	325,407	Sept. 1	259	65	32	1064
Button	T. R. Hyde, Jr	327,442	Sept. 29	2999	783	32	1589
Button	E. Kuhn	326,992	Sept. 29	2406	628	32	1485
Button	A. G. Mead	325,430	Sept. 1	289	71	32	1071
Button	A. G. Mead	325,688	Sept. 8	624	158	32	1138
Button	F. A. Nickerson	322,311	July 14	1207	318	32	229
Button	F. L. Niedermeyer	322,064	July 14	900	233	32	172
Button	J. P. Noyes	323,359	July 28	2673	712	32	509
Button	J. P. Noyes and T. J. Winans	323,358	July 28	2671	712	32	508
Button	N. F. Palmer	327,101	Sept. 29	2557	666	32	1510
Button	N. F. Palmer	327,102	Sept. 29	2557	666	32	1510
Button	F. A. Smith, Jr	324,422	Aug. 18	1393	379	32	797
Button	C. Ritter	326,332	Sept. 15	1495	390	32	1306
Button and button-fastener	F. A. Smith, Jr	324,690	Aug. 25	2034	557	32	923
Button and fastener	F. M. Baker	324,212	Aug. 11	1107	299	32	736
Button and fastening therefor	J. A. Stuart and J. F. Woodmansee	324,184	Aug. 11	1055	289	32	726
Button and holder. Cuff	E. M. Chapman	326,717	Sept. 22	2007	524	32	1406
Button and pin. Combined	J. F. Thayer	322,655	July 21	1675	444	32	320
Button-attaching instrument	G. Monteiro	325,005	Aug. 25	2192	600	32	952
Button. Calendar cuff-	C. M. Sharpe	321,661	July 7	628	161, 162	32	115
Button. Collar-	E. M. Stewart	322,208	July 14	1087	282	32	207
Button. Cuff-	A. C. Clausen	321,690	July 7	379	101	32	71
Button-fastener	E. O. Ely	323,923	Aug. 11	700	196	32	662
Button-fastener	F. H. Richards	322,007	July 14	921	215	32	158
Button-fastener	F. H. Richards	322,008	July 14	922	215	32	158
Button-fastener	P. H. Sweet, Jr	323,465	Aug. 4	106	31	32	542
Button-fastener	J. F. Thayer	321,665	July 7	338	90	32	64
Button-fastener	F. H. Richards	326,153	Sept. 15	1241	318	32	1256
Button-fastener-feeding machine	F. H. Richards	326,246	Sept. 15	1382	358, 359	32	1283
Button-fastener-feeding machine	F. H. Richards	322,483	July 21	1455	383	32	281
Button-fastener-setting instrument	F. H. Richards	322,972	July 28	2128	566, 567	32	411
Button-fasteners. Machine for making and setting	F. H. Richards	322,971	July 28	2125	565	32	410
Button-fasteners. Mechanism for feeding	F. H. Richards	322,009	July 14	923	215	32	158
Button-fasteners. Packing-case for	F. H. Richards	326,152	Sept. 15	1241	317	32	1256
Button-fasteners. Stock for making	R. J. Powell and W. F. Nolan	322,124	July 14	979	255	32	187
Button-fastening	C. Erianger	325,516	Sept. 1	405	99, 100, 101	32	1093
Button-fastening machine	J. H. Vinton	324,653	Aug. 11	871	240	32	692
Button-fastening staple	T. E. Keavy	326,567	Sept. 22	1784	468	32	1367
Button-locating machine	R. Benedict and H. M. Scott	322,152	July 14	1019	265	32	194
Button or stud	L. P. Conard	324,302	Aug. 11	1222	332	32	758
Button or stud	J. J. Lindauer	323,167	July 28	2303	635	32	459
Button or stud	T. W. F. Smitten	321,653	July 7	325	86	32	62
Button. Separable	H. G. Lathrop	324,852	Aug. 25	1989	545	32	914
Button-setting machine	G. A. Mosher and A. W. Ham	323,717	Aug. 4	435	124	32	604
Button-setting machine	F. H. Richards	326,786	Sept. 22	2121	552, 553	32	1426
Button. Sleeve-	J. Stadlmeyr	327,116	Sept. 29	2572	671	32	1513
Buttons. Apparatus for manufacturing covered	H. W. French	323,803	Aug. 4	541	154	32	625
Buttons. Attaching	J. Mathison	326,765	Sept. 22	2091	543	32	1420
Buttons. Attaching	J. Mathison	327,291	Sept. 29	2800	729	32	1555
Buttons to wearing-apparel. Setting-instrument for attaching	P. H. Sweet, Jr	323,466	Aug. 4	107	31	32	542
Buttoner. Collar-	R. Fox	322,273	July 14	1160	304	32	230
Buttoner. Shoe or glove	G. Havell	322,284	July 14	1175	306	32	223
Cabinet-lock	E. G. Gory	326,972	Sept. 29	2362	623	32	1480
Cabinets, &c. Self-opening lid for	P. Vandernoth	326,810	Sept. 22	2158	562	32	1432
Cable. Anti-induction	H. C. Spalding	327,486	Sept. 29	3047	795	32	1596
Cable. Anti-induction	H. C. Spalding	327,487	Sept. 29	3048	795	32	1596
Cable. Anti-induction	H. C. Spalding	327,489	Sept. 29	3050	796	32	1597
Cable. Anti-induction	H. C. Spalding	327,490	Sept. 29	3052	796	32	1597
Cable-conduit	H. D. Welsh	322,225	July 14	1107	288	32	211

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Cable-conduit for underground cables	D. Kornbau	322,384	July 14	1309	341	32	249
Cable. Elastic tubular	P. Sorgue	322,493	July 21	1470	386	32	283
Cable-recorder	M. G. Farmer	322,918	July 28	9045	540	32	395
Cable roads. Conduit for	J. Warner	322,766	July 21	1823	492	32	347
Cables. Apparatus to be used with traction	R. Gornall	325,168	Aug. 25	2392	658, 659	32	990
Cables, electric wires, &c. Underground conduit for	W. Walter	323,241	July 28	2497	663	32	478
Cabled and uncabled conductors. Junction between	E. T. Gilliland	327,060	Sept. 29	2519	657	32	1504
Cabs. Opening and closing the doors of hansom	F. and C. Forder	325,739	Sept. 8	708	177	32	1152
Cake-machine	D. M. Holmes	323,681	Aug. 4	390	111, 112	32	595
Calcimine compound	W. K. Powers	322,851	July 21	1943	.....	32	369
Calculator	J. V. Charpantier	322,161	July 14	1031	267	32	196
Calculator	W. B. Kennedy and W. M. Nesbit	323,157	July 28	2376	630	32	457
Calculator. Mechanical board-measure	R. H. Bulloch	324,078	Aug. 11	909	251	32	609
Calendar	C. W. Frost. (Reissue)	10,648	Sept. 29	3081	302, 303	32	1602
Calendar	A. J. Kletzker	323,939	Aug. 11	722	202	32	666
Calendering-roll	G. Dunn	324,758	Aug. 18	1846	508	32	881
Caliper, protractor, and bevel. Combined	F. W. Woodhull	325,036	Aug. 25	2228	611	32	959
Calipers. Micrometer	M. M. Barnes	324,804	Aug. 25	1918	527, 528	32	902
Calipers. Micrometer	M. M. Barnes	325,233	Sept. 1	4	2	32	1015
Calk. Driving	E. A. Buck	325,194	Aug. 25	2431	668	32	997
Calk-sharpener	E. H. Fenton	324,991	Aug. 25	2173	594	32	948
Cam or eccentric. Adjustable	W. F. Beardslee	324,639	Aug. 18	1692	466	32	852
Camera: *See* Photographic camera.							
Camp chair or hammock. Adjustable	A. O. Hubbard	327,441	Sept. 29	2998	783	32	1588
Can: *See* Creaming-can. Ice-cream can. Milk-cooling can. Milk or cream can. Oil-can. Self-opening can. Tin can.							
Can-opener	J. C. Dodge	324,012	Aug. 11	820	227	32	684
Can-opener	R. O. Misener	323,193	July 28	2435	645	32	467
Can-opener	H. Sauerbier	325,770	Sept. 8	748	187	32	1160
Can or receptacle	M. H. Garland	325,925	Sept. 8	934	237	32	1195
Cans. Attachment for coal-oil	A. E. Fox	325,008	Aug. 25	2270	624	32	968
Cans. Closing	P. Babcock, Jr	321,568	July 7	221	59	32	44
Cans, &c. Implement used in the manufacture of	H. G. Filson	327,247	Sept. 29	2744	712	32	1545
Cans with liquid. Filling fruit	W. H. H. Stevenson	325,131	Aug. 25	2347	647	32	982
Canned fish and method of canning	J. H. G. Walkhoff	325,997	Sept. 8	1031	.....	32	1212
Canal-convoy	W. F. Cowden	323,639	Aug. 4	340	96	32	585
Candlestick	J. C. Schlarbaum	322,753	July 21	1807	476	32	344
Candlestick. Miner's	T. Cox	321,798	July 7	532	140	32	99
Candy-machine	D. M. Holmes	323,682	Aug. 4	393	112, 113	32	596
Cane	D. Crowley	325,198	Aug. 25	2439	970	32	998
Cane	J. Dierks and T. B. Kail	324,093	Aug. 11	928	256	32	703
Cane. Machine for slicing sugar-	E. Schulze	323,742	Aug. 4	468	133	32	611
Cane-scraper	T. P. Himel	324,258	Aug. 11	1163	316	32	746
Cane scraper and pea-vine harvester. Sugar	J. F. Wood	321,562	July 7	214	56	32	42
Canopy	W. M. A. Cole	326,849	Sept. 22	2208	576	32	1442
Cant-hook	T. W. Cassidy	326,951	Sept. 29	2358	616	32	1475
Cant-hook	H. C. Crawford and E. V. Mundy	325,058	Aug. 25	2255	619	32	965
Cant-hook	A. Drown	324,095	Aug. 11	930	257	32	703
Canteen	T. F. Kelly	321,730	July 7	425	113	32	79
Cap for exploding dynamite	J. Paulus	323,524	Aug. 4	186	54	32	557
Caps. Mechanism for shearing	T. Hanford and J. E. McLoughlin	323,869	Aug. 4	624	175	32	641
Capstan	A. R. Young	325,143	Aug. 25	2360	650, 651	32	984
Capsule-joining machine	T. C. Merz	326,578	Sept. 22	1797	472	32	1370
Capsule-machine	T. C. Merz	324,868	Aug. 25	2007	551	32	918
Capsule-machine	F. J. Reinhold	323,886	Aug. 4	647	183	32	645
Capsule-machine	H. H. Taylor	323,753	Aug. 4	492	136, 137	32	614
Capsule-stripping device	J. Krehbiel	323,159	July 28	2378	630	32	457
Car-brake	G. L. Adams	326,191	Sept. 15	1299	336	32	1268
Car-brake	W. Bandel	326,883	Sept. 22	2256	588	32	1450
Car-brake	A. Bixby	327,430	Sept. 29	2984	779, 780	32	1586
Car-brake	C. M. Carnahan	322,899	July 28	2017	533	32	389
Car-brake	J. M. T. Dandelin	322,585	July 21	1591	420	32	304
Car-brake	A. C. Dodge	324,308	Aug. 11	1233	336	32	760
Car-brake	S. Fairman	321,428	July 7	22	5	32	7
Car-brake	E. Gardner	324,548	Aug. 18	1553	428	32	897
Car-brake	F. S. Gerrard	323,507	Aug. 4	163	48	32	553
Car-brake	W. Gill	321,432	July 7	24	6, 7	32	8
Car-brake	C. S. Hart	322,597	July 21	1604	424	32	307
Car-brake	J. J. Henry	325,209	Aug. 25	2454	675	32	1002
Car-brake	F. O. Landgrane	321,507	July 7	129	34	32	26
Car-brake	R. R. Marsh	324,714	Aug. 18	1787	493	32	870
Car-brake	E. F. W. Müller	322,959	July 28	2103	560	32	406
Car-brake	A. Reese	321,757	July 7	472	125	32	88
Car-brake	J. W. Rice	322,127	July 14	983	256	32	188
Car-brake	C. L. Sledge	322,490	July 21	1464	385	32	282
Car-brake	F. Stalder	324,046	Aug. 11	863	239	32	691
Car-brake	H. M. Taaffe	326,666	Sept. 22	1923	505	32	1391
Car-brake	S. T. Williams	322,337	July 14	1241	325	32	236
Car brake and starter	J. H. Müller	323,354	July 28	2665	710	32	507
Car-brake. Automatic	J. B. Gathright	323,659	Aug. 4	368	105	32	591
Car-brake. Automatic	P. Hanson	324,375	Aug. 18	1325	360, 361	32	785

Alphabetical list of inventions, July to September, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Car-brake. Automatic	J. L. Munday	325,215	Aug. 25	2461	677	32	1003
Car-brake. Automatic	H. M. Taaffe	326,667	Sept. 22	1924	506	32	1391
Car-brake. Automatic	R. B. Vanderburg	322,092	July 14	923	239	32	176
Car-brake. Automatic	W. A. Wilde	323,766	Aug. 4	503	141	32	617
Car-brake clamp	C. A. Fuller	322,536	July 21	1320	400	32	293
Car-brake. Electric	C. E. Jones	324,774	Aug. 18	1869	514	32	896
Car-brake. Electro-magnetic	E. B. Hess	324,470	Aug. 18	1449	396	32	807
Car-brakes. Apparatus for operating	J. S. Badia	325,474	Sept. 1	344	84	32	1081
Car closet. Railway	J. D. Evans and G. Bogart	321,958	July 14	756	197	32	145
Car-coupling	G. M. Adams	321,935	July 14	729	191	32	141
Car-coupling	E. W. Alice	322,339	July 14	1243	326	32	237
Car-coupling	C. A. Anderson	322,887	July 28	2004	529	32	397
Car-coupling	J. Barry	322,672	July 21	1698	450	32	326
Car-coupling	G. W. Bolton	321,677	July 7	357	94	32	67
Car-coupling	S. U. Branstetter	326,622	Sept. 22	1868	489	32	1380
Car-coupling	W. J. Brown	325,155	Aug. 25	2375	654	32	987
Car-coupling	F. R. Butterfield	327,066	Sept. 29	2498	652	32	1501
Car-coupling	D. Carlough	325,819	Sept. 8	818	205	32	1172
Car-coupling	F. A. Casey	326,401	Sept. 15	1579	410, 411	32	1321
Car-coupling	P. V. Cornils	323,278	July 28	2545	676	32	467
Car-coupling	W. C. Cowen	324,366	Aug. 18	1313	357	32	783
Car-coupling	W. Crane	324,814	Aug. 25	1931	531	32	904
Car-coupling	T. R. Daniel	325,398	Sept. 1	249	62	32	1062
Car-coupling	T. D. Davis	327,387	Sept. 29	2931	765	32	1576
Car-coupling	J. H. Dymond	325,200	Aug. 25	2441	671	32	999
Car-coupling	J. H. Earles	324,013	Aug. 11	822	227, 228	32	684
Car-coupling	A. L. Erler	322,814	July 21	1863	499	32	358
Car-coupling	A. W. Esleeck	325,518	Sept. 1	411	101	32	1094
Car-coupling	A. W. Esleeck and F. M. Eames	325,517	Sept. 1	410	101	32	1094
Car-coupling	G. J. Ferguson	325,923	Sept. 8	932	236	32	1195
Car-coupling	H. Field, Jr	322,591	July 21	1596	421	32	306
Car-coupling	J. Fish	326,415	Sept. 15	1596	415	32	1324
Car-coupling	W. Forbes	325,830	Sept. 8	828	207	32	1174
Car-coupling	J. G. Gammon	326,421	Sept. 15	1602	417	32	1326
Car-coupling	E. N. Gifford	326,385	Sept. 15	1498	372	32	1292
Car-coupling	A. Goldsmith	323,664	Aug. 4	372	106	32	592
Car-coupling	C. H. Gramba	325,798	Sept. 8	782	197	32	1166
Car-coupling	D. U. Graveline	324,680	Aug. 18	1740	480	32	862
Car-coupling	J. T. Hammick	321,598	July 7	260	69	32	50
Car-coupling	J. B. Hannay and J. Cowan	323,142	July 28	2356	625	32	453
Car-coupling	M. Harmon	324,108	Aug. 11	946	260	32	706
Car-coupling	J. Horsley and S. T. Jull	326,218	Sept. 15	1337	346	32	1276
Car-coupling	E. Howe	326,741	Sept. 22	2058	535	32	1414
Car-coupling	R. R. Hunt	323,812	Aug. 4	552	156	32	627
Car-coupling	G. F. Jackson	323,154	July 28	2371	629	32	456
Car-coupling	A. J. Jernagan	326,085	Sept. 8	1152	293	32	1235
Car-coupling	L. D. Kemerer	326,040	Sept. 8	1087	277	32	1222
Car-coupling	P. Lindo	325,947	Sept. 8	963	245	32	1201
Car-coupling	C. L. Mack	321,987	July 14	793	207	32	153
Car-coupling	J. McGehee	324,138	Aug. 11	987	272	32	714
Car-coupling	T. L. McKeon	325,847	Sept. 8	846	212	32	1178
Car-coupling	T. L. McKeon	325,848	Sept. 8	847	212	32	1178
Car-coupling	C. D. Meigs	326,442	Sept. 15	1629	426	32	1330
Car-coupling	O. C. Mensebach	325,851	Sept. 8	851	214	32	1179
Car-coupling	O. J. Michaels	326,882	Sept. 22	2255	587	32	1450
Car-coupling	A. Middleton	325,953	Sept. 8	971	247	32	1202
Car-coupling	H. Mooers	323,950	Aug. 11	733	205	32	668
Car-coupling	B. B. Morgan	325,957	Sept. 8	976	248	32	1203
Car-coupling	R. T. Morrison, Jr	323,195	July 28	2438	646	32	468
Car-coupling	J. W. Neal	325,622	Sept. 1	538	136	32	1117
Car-coupling	W. H. Newlon	323,951	Aug. 11	734	205	32	669
Car-coupling	P. J. Norton	324,269	Aug. 11	1181	321	32	750
Car-coupling	E. F. O'Haver	323,720	Aug. 4	440	125	32	605
Car-coupling	J. Phelps	327,014	Sept. 29	2432	636	32	1490
Car-coupling	D. V. Putnam	327,018	Sept. 29	2437	637	32	1490
Car-coupling	E. Ransom	325,114	Aug. 25	2324	640	32	978
Car-coupling	A. S. Reeves	326,590	Sept. 22	1813	476	32	1373
Car-coupling	E. A. Richards	321,532	July 7	176	47	32	35
Car-coupling	W. E. Samuel	327,197	Sept. 29	2683	697	32	1534
Car-coupling	C. L. Schulze	322,979	July 28	2139	568	32	413
Car-coupling	E. E. Sell	323,080	July 28	2277	602, 603	32	437
Car-coupling	R. S. Shaffer, J. K. Adams, and G. W. Hunter.	325,873	Sept. 8	879	221	32	1185
Car-coupling	J. Skinner	326,795	Sept. 22	2134	555	32	1428
Car-coupling	B. D. Sparling and P. S. Fitch	325,454	Sept. 1	322	78	32	1077
Car-coupling	F. H. Stanford	325,876	Sept. 8	882	222	32	1185
Car-coupling	D. J. Stevenson	321,918	July 7	697	182	32	127
Car-coupling	D. Sturgis	323,752	Aug. 4	481	136	32	613
Car-coupling	W. H. Thurmond. (Reissue)	10,622	July 7	724	190	32	132
Car-coupling	W. H. Thurmond. (Reissue)	10,623	July 7	725	190	32	132
Car-coupling	H. C. Trask	321,773	July 7	497	131	32	93
Car-coupling	W. Turnbull	322,998	July 28	2160	574, 575	32	416
Car-coupling	B. H. Tyson	327,124	Sept. 29	2586	674	32	1516
Car-coupling	L. Van Camp	323,756	Aug. 4	487	137	32	615
Car-coupling	J. H. Ward	323,242	July 28	2498	664	33	476
Car-coupling	D. Wertz	324,908	Aug. 25	2137	584	32	943
Car-coupling	J. H. Wesson	324,909	Aug. 25	2138	584	32	943
Car-coupling	F. A. Westbrook and W. S. Cook	324,740	Aug. 18	1816	502	32	677
Car-coupling	I. A. Whitman	322,512	July 21	1497	393	32	288
Car-coupling	J. G. Williams	326,188	Sept. 15	1295	335	32	1268

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Car-coupling	J. B. Winters	325,303	Sept. 1	99	28	32	1034
Car-coupling	E. W. and S. C. Woolley	321,470	July 7	88	23	32	18
Car-coupling link	R. B. Ayres	321,473	July 7	91	24	32	18
Car-coupling tool	E. A. Hamilton	323,672	Aug. 4	380	108	32	503
Car-door	D. Sutherland	325,218	Aug. 25	2465	678	32	1003
Car door. Stock or freight	H. C. Hicks	324,255	Aug. 11	1158	315	32	745
Car-draft apparatus	J. W. Clond	324,084	Aug. 11	915	253	32	700
Car-dump	A. Wolcott	327,506	Sept. 29	3073	800, 801	32	1601
Car. Dumping	J. M. Hartman	323,417	Aug. 4	45	11, 12	32	531
Car. Dumping	T. F. Seery	323,744	Aug. 4	470	133	32	611
Car. Dumping	J. H. R. Talley and C. P. Barnes	326,807	Sept. 22	2151	560	32	1431
Car for cable railways. Grip	F. P. H. Loftis	323,817	Aug. 4	557	158, 159	32	628
Car. Freight	A. Wolcott	326,701	Sept. 22	1974	518	32	1401
Car hand-strap	J. McManus	323,188	July 28	2431	643	32	466
Car-heater	H. E. Freese	325,796	Sept. 8	720	196	32	1165
Car. Live-poultry	W. P. Jenkins and J. L. Streeter. (Reissue.)	10,633	Aug. 4	670	188	32	649
Car-pedestal	B. Briody and G. W. McHale	326,394	Sept. 15	1571	408	32	1320
Car. Railway	H. Loring and L. K. Jewett	327,093	Sept. 29	2544	663	32	1509
Car-replacer	G. M. Durden	327,072	Sept. 29	2505	654	32	1502
Car roof. Railway	C. A. Smith	325,634	Sept. 1	552	140	32	1120
Car-seat	M. N. Forney	324,825	Aug. 25	1946	534, 535	32	907
Car-seat rest and fire-escape	E. H. Hazen	324,639	Aug. 25	1965	539	32	911
Car signal-cord sheave. Tram	J. Stephenson	325,705	Sept. 8	656	165	32	1143
Car. Sleeping	A. Christin	324,815	Aug. 25	1933	531, 532	32	904
Car-spring	J. K. Woolley	321,776	July 7	499	132	32	93
Car-springs. Apparatus for indicating the flexure of	F. W. Minck	324,949	Aug. 25	2110	577	32	939
Car-starter	T. F. Bourne	323,620	Aug. 4	327	94	32	583
Car-starter	C. Dickenson	326,855	Sept. 22	2223	580	32	1444
Car-starter	A. Krüzner and F. Tentschert	326,043	Sept. 8	1069	278	32	1223
Car-starter	J. C. Price	323,962	Aug. 11	752	209	32	672
Car-starter	F. Rousseau	326,790	Sept. 22	2129	554	32	1427
Car-step	J. P. Race and E. E. Guernsey	322,749	July 21	1803	476	32	344
Car-step	T. Toney	323,236	July 28	2490	662	32	477
Car. Stock	G. D. Burton	322,896	July 28	2014	531, 532	32	389
Car. Stock	G. D. Burton and E. F. Perkins	322,897	July 28	2016	532	32	389
Car. Stock	H. C. Hicks	324,256	Aug. 11	1160	315, 316	32	745
Car. Stock	H. C. Hicks	324,257	Aug. 11	1161	316	32	746
Car. Stock	D. Lines and C. T. Long	326,755	Sept. 22	2076	539, 540	32	1418
Car. Stock	J. A. Parker	327,305	Sept. 29	2817	735	32	1558
Car. Stock	F. Sell	321,860	July 7	627	161	32	114
Car. Stock	J. H. Wickes	322,336	July 14	1239	325	32	236
Car. Stock	J. H. Wickes	324,624	Aug. 18	1668	460	32	848
Car. Street	F. W. Brooks	325,906	Sept. 8	915	231	32	1192
Car. Street-railway	T. B. Stewart	326,327	Sept. 15	1734	452	32	1351
Car-ventilation	A. Bell	325,040	Aug. 25	2234	613	32	961
Car-ventilator	W. E. Eastman	326,411	Sept. 15	1588	413, 414	32	1323
Car-ventilator	A. S. Emerson	324,099	Aug. 11	935	258	32	704
Car-ventilator	W. D. Mann	327,289	Sept. 29	2794	726, 727	32	1553
Car-ventilator	A. Miller	325,003	Aug. 25	2190	599, 600	32	951
Car-wheel	R. N. Allen	323,551	Aug. 4	224	66	32	563
Car-wheel	L. R. Faught	321,500	July 7	246	65	32	48
Car-wheel	L. R. Faught	327,150	Sept. 29	2621	682, 683	32	1521
Car-wheel	P. Gendron	322,276	July 14	1163	305	32	221
Car-wheel	R. W. Jess	326,433	Sept. 15	1620	423, 424	32	1328
Car-wheel	R. Kells	324,705	Aug. 18	1776	490	32	868
Car-wheel	R. Kells	325,177	Aug. 25	2410	602	32	993
Car-wheel	N. Washburn	326,256	Sept. 15	1394	363	32	1286
Car-wheel	N. Washburn	327,041	Sept. 29	2470	645	32	1496
Car wheel and axle	J. H. Black	322,575	July 21	1580	416	32	302
Car-wheel chill	G. J. McCurley	327,293	Sept. 29	2802	729	32	1555
Car-wheels. Anti-friction bearing for	S. C. Mendenhall	321,516	July 7	154	40, 41	32	30
Car-wheels. Making	W. Pelz	322,635	July 21	1651	436	32	316
Car-window	J. M. Fennerty	323,406	Aug. 4	34	9	32	529
Car-window guard. Portable	E. Whitney	326,003	Sept. 8	1039	264	32	1214
Car-window sash	J. Stephenson	323,967	Aug. 11	757	211	32	673
Cars. Device for loading and unloading	H. M. Barnhart and E. Huber	325,309	Sept. 1	107	30	32	1035
Cars. Head-rest for railway	C. Munagle	322,843	July 21	1932	511	32	367
Cars. Lamp-box for	J. J. Walton	325,135	Aug. 25	2353	648	32	983
Cars. Lighting railway	H. E. Freese	325,795	Sept. 8	779	195	32	1165
Cars. Loading and unloading	H. M. Barnhart and E. Huber	325,308	Sept. 1	106	30	32	1035
Cars. Propelling railway	G. Pardy	326,144	Sept. 15	1226	313, 314	32	1255
Cars. Propelling railway	G. Pardy	326,145	Sept. 15	1229	314, 315	32	1256
Cars. Snow-cutting and track-sweeping attachment for railway	J. Ring	322,323	July 14	1222	321	32	232
Cars. Switching-wheel for street	H. C. Lowrie	327,095	Sept. 29	2548	664	32	1509
Cars. System for heating freight	A. B. Vandemark	326,809	Sept. 22	2157	561, 562	32	1432
Cars. Window for street-railway	R. L. Omensetter	323,360	July 28	2674	712, 713	32	509

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Carbon bisulphide. Apparatus for the manufacture of	E. R. Taylor	321,661	July 7	333	89	32	63
Carbon bisulphide. Apparatus for the manufacture of	E. R. Taylor	321,662	July 7	335	89	32	64
Carbon bisulphide. Apparatus for the manufacture of	E. R. Taylor	321,771	July 7	494	131	32	92
Carbon-cutting machine	M. Eagan	323,125	July 28	2336	620	32	449
Carbon-holder	H. H. Levett	327,282	Sept. 29	2787	725	32	1552
Carbon. Making plates or masses of	S. J. Coxeter and H. Nehmer	325,922	Sept. 8	821	.....	32	1173
Carbonaceous antiseptic dressing	A. F. Westerlund	322,664	July 21	1688	.....	32	323
Carbureting gas. Apparatus for	W. F. H. O'Keefe	327,302	Sept. 29	2814	734	32	1557
Carburetor	W. F. Singer	324,177	Aug. 11	1044	285	32	724
Carburetor. Gas	W. G. Little	322,116	July 14	971	253	32	185
Carcasses. Horse for suspending	J. Hursh	322,181	July 14	1056	273	32	200
Card-beveling machine	C. A. Wright	323,483	Aug. 4	126	36	32	545
Card-board. Machine for shearing	W. Ames	324,633	Aug. 18	1685	464	32	851
Card. Fancy	W. Wirths	321,668	July 7	343	91	32	65
Card-grinding machine	N. Hicks and G. A. Metcalf	325,744	Sept. 8	717	179	32	1154
Card-holder	S. N. Rosenbaum	323,598	Aug. 4	285	82	32	574
Card. Ornamental embossed	G. A. Raisbeck	324,164	Aug. 11	1027	280	32	721
Card. Playing	E. Seedhouse	326,678	Sept. 22	1944	511	32	1395
Cards. Manufacturing show	J. Thoubboron	326,174	Sept. 15	1273	327	32	1264
Carding-engines. Apparatus for truing the flexible bends of	J. M. Hetherington	322,288	July 14	1178	309	32	224
Carding-machine	P. T. Begley	323,021	July 28	2193	581	32	422
Carding-machines. Stripping mechanism for	J. C. Potter	325,566	Sept. 1	467	117	32	1105
Carpet-fastener	B. F. Eshelman	322,095	July 14	939	243	32	179
Carpet-fastener	R. S. Gould	323,575	Aug. 4	250	73	32	568
Carpet-stretcher	C. Grover	324,766	Aug. 18	1856	511	32	884
Carpet-stretcher	J. S. Ingham	327,171	Sept. 29	2648	688	32	1536
Carpet-stretcher	L. Krieg	325,345	Sept. 1	162	42	32	1043
Carpet-stretcher	O. L. Sprague	326,063	Sept. 8	1122	286	32	1229
Carpet-stretcher and tack-driver combined	C. F. Crockett	322,799	July 21	1861	495	32	355
Carpet stretcher and tacker	G. M. Brandon	327,131	Sept. 29	2594	676	32	1517
Carpet-sweeper	E. B. Clarke	325,732	Sept. 8	696	174	32	1150
Carpets. Manufacturing filling for rag	E. H. Eisenhart	325,242	Sept. 1	13	5	32	1017
Carriage	S. M. Chester	326,846	Sept. 22	2203	575	32	1441
Carriage and cradle. Convertible	G. C. Bond and J. Sadler	323,300	Aug. 4	10	3	32	525
Carriage and wagon jack	H. Midwood	327,096	Sept. 29	2550	664	32	1509
Carriage. Baby	J. F. Colby	326,954	Sept. 29	2362	617	32	1476
Carriage-block. Street	D. H. Blascow	321,417	July 7	5	2	32	3
Carriage-body	O. Morrill	324,333	Aug. 11	1269	344	32	767
Carriage-bolts. Die for forming	C. W. Root	327,454	Sept. 29	3012	786	32	1590
Carriage-bolts. Making	F. A. Smith	324,180	Aug. 11	1048	286	32	725
Carriage-bow spring attachment	E. L. Booth	321,546	July 14	741	194	32	143
Carriage brake. Child's	G. W. and A. A. Hodges	322,721	July 21	1765	466	32	337
Carriage. Child's	J. A. Crandall	323,401	Aug. 4	22	6	32	527
Carriage-curtain button	J. G. English	323,131	July 28	2344	622	32	451
Carriage-door	P. Weimar	325,580	Sept. 1	484	121	32	1108
Carriage-fender	L. H. Wooden	322,404	July 14	1336	347	32	253
Carriage. Folding	A. C. Walsh and J. Abramowsky.	324,617	Aug. 18	1652	456	32	846
Carriage. Folding baby	M. Luxemberg	323,050	July 28	2241	592	32	430
Carriage-jack	J. R. Enos	326,024	Sept. 8	1067	272	32	1219
Carriage-jack	J. Hunt	322,180	July 14	1055	273	32	200
Carriage-jack	D. True	323,237	July 28	2490	662	32	477
Carriage. Jump-seat	J. T. Clarkson	324,232	Aug. 11	1131	307	32	740
Carriage. Jump-seat	C. N. Dennett	324,306	Aug. 11	1230	335	32	759
Carriage-runner attachment	D. E. Roche	326,456	Sept. 15	1644	430	32	1333
Carriage-seat	J. Pariseau, Jr.	322,555	July 21	1546	408	32	297
Carriage-shackle blanks. Die for forging	P. Gillick	325,073	Aug. 25	2275	625	32	969
Carriage-spring	M. Haughey	321,496	July 7	116	31	32	23
Carriage-spring	J. R. Johnson and C. K. Wright	324,703	Aug. 18	1774	490	32	868
Carriage-spring	A. R. Schmidt	323,535	Aug. 4	199	58	32	559
Carriage. Spring-propelled	A., W., and E. Schwickert	322,071	July 14	909	235, 236	32	174
Carriage-window	F. and C. Forder	323,865	Aug. 4	620	174	32	640
Carriages. Curtain-light frame for	J. H. Hoops	326,036	Sept. 8	1083	276	32	1222
Carrier: *See* Cash-carrier. Cash and parcel carrier. Clay and brick-carrier. Egg-carrier. Hay-carrier. Parcel-carrier. Sheaf-carrier. Trace-carrier.							
Cart. Automatic-loading	G. E. Burt	326,016	Sept. 8	1055	269	32	1217
Cart. Road	A. P. Ferguson	326,414	Sept. 15	1595	415	32	1324
Cart. Road	A. C. Fish	321,806	July 7	541	142	32	101
Cart. Road	F. A. Rehkopf and C. A. Rogers	327,019	Sept. 29	2438	637	32	1491
Cartridge-loader	J. D. McKenney and T. W. Brown	327,185	Sept. 29	2660	694	32	1530
Cartridge-loader	C. A. Thompson	326,693	Sept. 22	1963	516	32	1399
Cartridge-loading machine	O. Konigslow	321,982	July 14	784	204, 205	32	150
Cartridge packer and carrier	G. S. Wilson	325,372	Sept. 1	197	50	32	1052
Cartridge shell	F. C. Knight and H. Docker	322,730	July 21	1776	469	32	339
Cartridge-shell extractor for fire-arms	F. Rushton	323,368	July 28	2688	715	32	511
Cartridge-shell holder	W. H. Fisher	325,666	Sept. 8	599	152	32	1133
Cartridge-shell-trimming machine	W. Mason	323,180	July 28	2413	640, 641	32	463
Cartridge-shells. Machine for polishing	W. Mason	327,290	Sept. 29	2796	727, 728, 729	32	1554
Carving-fork	A. F. Bannister	324,071	Aug. 11	899	248	32	607

Alphabetical list of inventions, July to September, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drgs.	Official Gazette. Vol.	Official Gazette. Page.
Case: *See* Bottle-packing case. Glass case. Burial-case. Index or directory case. Cigar-case Pencil-case. Clock-case. Seed-case. Dental-bracket case. Sewing-machine thread-case. Drafting-case. Thermometer-case. Dressing-case. Ticket-case. Exhibiting-case. Watch-case. File-case.							
Cash and parcel carrier	W. S. Lamson and E. L. Giles	326,128	Sept. 15	1202	307, 308	32	1251
Cash and parcel carrier	R. A. McCarty	325,425	Sept. 1	282	69, 70	32	1069
Cash and parcel carrier	R. A. McCarty	325,426	Sept. 1	283	70	32	1069
Cash-carrier	D. Lippy	326,130	Sept. 15	1209	309	32	1252
Cash-carrier	D. Lippy and P. Ott	326,131	Sept. 15	1211	309, 310	32	1253
Cash-carrier	F. C. Perkins and C. H. Kelley	321,752	July 7	464	123	32	86
Cash-recorder	A. S. Keating	327,176	Sept. 29	9658	691	32	1528
Cash register and indicator	C. B. Hopkins	321,815	July 7	553	145, 146	32	102
Cash register and indicator	C. H. Maltby	321,988	July 14	794	207	32	153
Cash register and indicator	W. H. Maxwell	325,260	Sept. 1	36	11	32	1022
Caster	N. Drucker	327,147	Sept. 29	9615	681	32	1521
Caster	S. M. Michelson	322,308	July 14	1201	315	32	228
Caster	S. M. Michelson. (Reissue)	10,627	July 21	2000	528	32	380
Caster	J. R. Payson, Jr	324,156	Aug. 11	1017	217	32	719
Caster	G. H. Rice	324,487	Aug. 18	1471	403	32	811
Caster	M. Schwerin	326,159	Sept. 15	1251	320	32	1260
Caster	J. W. See	321,859	July 7	626	161	32	114
Caster. Furniture	A. B. Dias	324,890	Aug. 25	1940	533	32	906
Casting compound metal ingots	A. J. Lustig	324,712	Aug. 18	1784	492	32	870
Casting hollow metal bodies with a non-oxidizable lining.	L. Stevens	327,033	Sept. 29	9457	.....	32	1494
Casting machines. Nipple-plate for type	J. F. Gabel and J. B. Guelpa	327,079	Sept. 29	9519	656	32	1504
Casting. Refining or preparing copper for	W. R. Walton	324,505	Aug. 18	1502	.....	32	816
Casting rolls and other articles. Mold for	W. Hainsworth	323,807	Aug. 4	545	155	32	626
Casting steel and other metal bars, rods, &c. Apparatus for	C. M. Pielsticker and F. C. G. Müller	326,147	Sept. 15	1233	315, 316	32	1256
Casting stereotype-plates. Paper mold for	L. H. Allen	326,376	Sept. 15	1551	403	32	1316
Casting stove-door catches. Casing for	C. Vetter	321,549	July 7	200	53	32	39
Catch or fastening. Spring	J. D. Ripson and R. Watson	326,331	Sept. 15	1494	390	32	1306
Cattle-guard	L. T. Hardy	325,606	Sept. 1	514	129	32	1113
Cattle. Safety attachment for horned	W. P. Simonds	325,621	Aug. 25	2209	606	32	955
Ceiling. Fire-proof	H. Maurer	324,716	Aug. 18	1788	493	32	871
Ceiling. Fire-proof	P. B. Wight	322,873	July 21	1974	523	32	375
Cell-cases. Partition for	G. L. Jaeger	324,999	Aug. 25	2184	598	32	950
Cellulose. Making solid compounds from soluble nitro-	J. W. Hyatt and J. Everding	326,119	Sept. 15	1190	304	32	1249
Cement. Manufacture of hydraulic	J. Dimelow	321,589	July 7	246	.....	32	48
Cement, &c. Wash-tub, sink, or other vessel made of	C. Wesely	327,209	Sept. 29	9696	701	32	1537
Center or other table	W. T. Burroughs	326,102	Sept. 15	1170	299	32	1245
Centrifugal machine	E. Rothe	322,069	July 14	907	234	32	173
Centrifugal machine	W. H. Tolhurst	322,762	July 21	1816	480	32	346
Centrifugal reel	E. R. Draver	326,901	Sept. 22	9286	598	32	1455
Centrifugal reel	B. Kniffler	326,509	Sept. 15	1709	446	32	1346
Centrifugal reel	G. T. Smith and W. H. Dickey	327,332	Sept. 29	9848	743	32	1563
Centrifugal reel	G. T. Smith and W. H. Dickey	327,333	Sept. 29	9850	743	32	1563
Centrifugal separator	A. H. Van Duzee	325,288	Sept. 1	79	23, 24	32	1031
Chain	W. C. Edge	324,016	Aug. 11	925	228	32	684
Chain	J. G. Powell	324,587	Aug. 18	1603	441	32	837
Chain. Drive-	C. E. Alden	322,405	July 21	1341	349	32	261
Chain. Drive-	G. S. Briggs	325,494	Sept. 1	372	91	32	1086
Chain. Drive-	C. H. Eggleston	322,431	July 21	1374	350	32	267
Chain. Drive-	E. F. Ludlow	326,307	Sept. 15	1468	382	32	1301
Chain. Drive-	J. J. Seldner	324,734	Aug. 18	1810	500	32	875
Chain. Drive-	W. Stephens	322,653	July 21	1674	443	32	320
Chain-link and cigar-cutter. Combined ornamental	C. F. Veit	324,221	Aug. 11	1196	325	32	753
Chain. Ornamental	B. F. Evans	323,862	Aug. 4	617	173	32	640
Chain. Ornamental	J. Obrig	324,582	Aug. 18	1597	440	32	836
Chains. Connecting-link for	C. N. Waterhouse	321,554	July 7	205	54	32	40
Chair: *See* Adjustable chair. Nursery-chair. Barber's chair. Opera-chair. Camp-chair. Photographer's chair. Child's chair. Reclining-chair. Convertible chair. Rocking-chair. Dentist's or photographer's chair. Sewing-chair. Exercising-chair. Surgical chair. Folding chair. Swinging chair. Tilting-chair.							
Chair	W. Atwater	324,288	Aug. 11	1204	328	32	754
Chair	P. E. Dowe	323,797	Aug. 4	531	150, 151	32	623
Chair	B. F. Hubbs and W. Y. Bygate	321,897	July 7	669	173, 174	32	122
Chair	J. Short	326,165	Sept. 15	1259	323	32	1261
Chair	G. Wilson, Jr	326,368	Sept. 15	1545	401	32	1315
Chair	H. Morger	324,268	Aug. 11	1180	320	32	749
Chair and bed. Convertible	J. A. Crandall	324,661	Aug. 18	1719	473	32	857
Chair and couch. Combined	P. Kirk	325,094	Aug. 25	2302	633	32	974
Chair and sleeper. Manufacture of combined	J. K. Lake	323,430	Aug. 4	60	15, 16	32	534
Chair and stringer. Combined	H. M. Rich	323,906	July 28	2454	651	32	471
Chair-back							

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drgs.	Official Gazette. Vol.	Official Gazette. Page.
Chair corner-iron	I. D. Comstock and E. J. Gibson	323,117	July 28	2328	617	32	447
Chair-socket	J. F. Thomas	325,096	Aug. 25	2214	607	32	956
Chairs, &c. Extensible bottom for	A. Van Wie	323,610	Aug. 4	298	85	32	577
Chalk-rack. Sectional	J. G. Plowman	326,453	Sept. 15	1640	429	32	1332
Chandelier	R. F. Barnes	323,625	Aug. 4	322	93	32	582
Chandelier. Extension	J. Kintz	321,506	July 7	128	34	32	25
Change-box signaling attachment	W. J. Abernethy	323,384	Aug. 4	1	1	32	523
Channel-flap-laying machine	O. Gilmore	327,081	Sept. 29	9521	657	32	1504
Channeler. Adjustable concentric	J. C. Smith	326,342	Sept. 15	1508	393	32	1308
Charm. Watch-	C. H. Davis	327,245	Sept. 29	9741	711	32	1545
Chart. Dress-	S. T. Lewis	321,986	July 14	792	207	32	152
Chart. Dress-	M. E. Northen	325,216	Aug. 25	2463	677	32	1003
Chart for cutting garments. Tailor's	J. S. Olson	325,358	Sept. 1	166	45	32	1046
Check. Baggage-	A. D. Joslin	324,388	Aug. 18	1343	365	32	780
Check, draft, or other money-order	W. T. Doremus	325,199	Aug. 25	2440	671	32	999
Check for horses. Driving-	E. L. Metcalf	322,627	July 21	1640	434	32	314
Check for horses. Driving-	E. L. Metcalf	323,948	Aug. 11	731	204	32	668
Check-hook	E. Kobler	325,613	Sept. 1	523	132	32	1115
Check-receiver	A. B. Gill	324,677	Aug. 18	1740	479	32	861
Check-rein and post-hook	C. L. Bard	327,056	Sept. 29	9487	649	32	1498
Check-rein and post-hook	C. L. Bard	327,057	Sept. 29	9489	650	32	1499
Check-rein and post-hook	C. L. Bard	327,058	Sept. 29	9490	650	32	1499
Check-rein hook	H. H. Hobart and E. T. Coombes	326,217	Sept. 15	1336	346	32	1275
Check-rower	G. D. Haworth	323,036	July 28	2210	587	32	425
Check-rower	G. W. Packer	321,449	July 7	54	16	32	13
Cheese-press	G. Schuette	321,857	July 7	624	160	32	114
Cheese-press. Gang	R. W. Jacobs	323,337	July 28	2641	703	32	503
Chest: *See* Bolting-chest. Flour-chest.							
Chicken-house	J. Burgert	323,782	Aug. 4	519	146	32	620
Child's chair	A. Knowlton	325,178	Aug. 25	2411	662	32	993
Child's chair	F. F. Parker	322,472	July 21	1434	376	32	277
Chimney-cap	J. W. Wetmore	325,032	Aug. 25	2221	609	32	958
Chimney cap and ventilator	W. J. and C. Kayser	321,729	July 7	423	113	32	79
Chimney-top	D. L. McCahan	323,945	Aug. 11	728	203	32	668
Chin-rest	J. H. Clarke	324,083	Aug. 11	915	253	32	700
Chisel-shoe	W. Reinhard, Sr., and C. Kalanquin	327,312	Sept. 29	9895	737	32	1559
Chloroform and purified acetates. Manufacture of	G. Michaelis	322,194	July 14	1070	.....	32	203
Chopper: *See* Cornstalk-chopper. Cotton-stalk chopper. Cotton-chopper.							
Chromic acid. Manufacture of	W. A. Rowell	322,011	July 14	895	.....	32	158
Chuck. Drill-	F. De Forest	322,807	July 21	1872	496	32	356
Chuck. Drill-	W. Mason	323,178	July 28	2409	639	32	464
Chuck. Drill-	W. Mason	323,179	July 28	2410	639	32	462
Chuck. Drill-	W. Mason	323,181	July 28	2421	642	32	465
Chuck. Drill-	E. T. McKaig	324,139	Aug. 11	989	272	32	714
Chuck jaw. Lathe-	T. H. Costello	323,279	July 28	2546	677	32	488
Chuck. Lathe-	C. R. Mead	321,740	July 7	440	117	32	92
Chuck. Lathe-	E. Pement	322,636	July 21	1652	436	32	316
Chuck. Lathe-	C. Wilson	326,005	Sept. 8	1041	264	32	1214
Chuck. Work-holding	J. A. Giles	323,414	Aug. 4	42	11	32	531
Churn	J. P. Beard	326,936	Sept. 29	2337	612	32	1472
Churn	J. W. Cady	323,784	Aug. 4	520	147	32	620
Churn	W. Case	325,910	Sept. 8	917	231	32	1192
Churn	J. M. Champe	321,688	July 7	377	100	32	70
Churn	A. Cockrell	327,241	Sept. 29	9734	710	32	1543
Churn	N. E. Coffin	322,349	July 14	1261	329	32	230
Churn	L. H. Conner	324,537	Aug. 18	1541	425	32	824
Churn	D. Conover	325,238	Sept. 1	9	4	32	1017
Churn	D. W. Curtis	321,486	July 7	105	28	32	21
Churn	J. Dürkoop	323,861	Aug. 4	616	173	32	639
Churn	R. L. Gore	325,530	Sept. 1	426	105	32	1098
Churn	C. Hauna	322,445	July 21	1395	366	32	270
Churn	J. G. Harris	322,712	July 21	1753	463	32	335
Churn	J. W. Heldreth	322,058	July 14	891	231	32	170
Churn	F. A. Houck and T. C. Carter	325,084	Aug. 25	2290	630	32	972
Churn	I. Lantz	326,751	Sept. 22	2069	538	32	1416
Churn	J. C. Moody	322,742	July 21	1795	474	32	342
Churn	C. W. Patton	324,879	Aug. 25	2020	553	32	920
Churn	K. A. Rodgers	322,854	July 21	1945	514	32	370
Churn	J. E. Smith	325,572	Sept. 1	477	119	32	1106
Churn	S. J. Sullivan	324,277	Aug. 11	1191	324	32	752
Churn	J. B. Sweetland	325,637	Sept. 1	555	141	32	1121
Churn	E. H. Wood	325,894	Sept. 8	897	225	32	1188
Churn attachment	O. Breckenridge	321,678	July 7	358	95	32	67
Churn-cover	J. C. Autley	325,646	Sept. 8	575	146	32	1129
Churn-dasher	T. H. Abercrombie	324,511	Aug. 18	1511	416	32	818
Churn-dasher	A. and B. A. Malone	321,831	July 7	586	152	32	108
Churn-dasher	W. L. Monroe	326,318	Sept. 15	1479	385	32	1303
Churn. Rotary	L. W. Murch	323,678	Aug. 4	637	180	32	643
Churn-top fastener	J. H. Elliott	325,164	Aug. 25	2385	657	32	989
Chute. Coal-	J. McEachern	324,865	Aug. 25	2003	550	32	918
Chute, gate, coal-bin, &c. Automatic screen	B. Kepner	325,343	Sept. 1	149	41	32	1043
Cider-mill	M. B. Kaylor	323,041	July 28	2227	589	32	427
Cider or wine press	M. P. Schenck	325,976	Sept. 8	1003	255, 256	32	1207
Cider-press	N. Lee	325,252	Sept. 1	26	8	32	1020
Cigar-box	D. E. Powers	324,569	Aug. 18	1604	442	32	837
Cigar-box	D. E. Powers	325,027	Sept. 1	544	138	32	1118
Cigar-boxes. Tip-cutting attachment for	I. C. Istel	322,105	July 14	956	248	32	182
Cigar-bunching machine	G. Moebs. (Reissue)	10,029	July 28	2706	721	32	516
Cigar-bunching tool	N. Doetsch	322,356	July 14	1271	332	32	241
Cigar-bunching tool	N. Doetsch	322,357	July 14	1271	332	32	241

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drgs.	Official Gazette. Vol.	Official Gazette. Page.
Cigar-case and match-holder. Combined	G. W. Conover	321,485	July 7	104	28	32	21
Cigar-machine	G. W. Tanner	324,185	Aug. 11	1056	289	32	726
Cigar-molding machine	W. J. Fox	321,592	July 7	250	66, 67	32	48
Cigar-perforating machine	A. Heed and G. D. Hall	324,936	Aug. 25	2093	573	32	935
Cigar-tip cutter	C. S. Alden	325,896	Sept. 8	898	226	32	1188
Cigars and cigarettes. Machine for cutting wrappers or binders for	J. R. Williams	322,029	July 14	852	222	32	163
Cigars and cigarettes. Machine for cutting wrappers or binders for	J. R. Williams	322,030	July 14	853	222	32	163
Cigars. Manufacturing	N. Doetsch	325,062	Aug. 25	2262	621	32	966
Cigarette-machine	A. Ewing	322,362	July 14	1277	333, 334	32	242
Cigarette-machine	J. W. McCoy	324,035	Aug. 11	845	235, 236	32	688
Cigaretto mouth-pieces. Machine for making	J. C. Davis	324,923	Aug. 25	2073	567, 568	32	931
Circuit-breaker. Sparkless	L. H. Spellier	322,494	July 21	1470	386	32	284
Circuit-closer	A. T. Smith	325,124	Aug. 25	2339	644	32	980
Circulating-boiler	W. Schimpf	325,977	Sept. 8	1004	256	32	1208
Clamp: *See* Belt-clamp. Bench-clamp. Car-brake clamp. Eaves-trough clamp. Floor-clamp. Foundryman's clamp. Railway-rail clamp. Rope-clamp. Skate-clamp. Soldering-clamp. Well-pipe-closing clamp.							
Clamp	F. J. Bancroft	324,803	Aug. 25	1917	527	32	901
Clamps in sheets of metal. Machine for forming	G. Hayes	326,557	Sept. 22	1772	464	32	1365
Clamping-machine	E. K. Patten	323,955	Aug. 11	741	207	32	670
Clapboard-gage	J. W. Danly	324,011	Aug. 11	819	227	32	683
Clasp: *See* Corset-clasp. Garment-clasp. Garment-supporter clasp. Shoe-clasp. Spring-clasp.							
Clasp	J. G. Brothwell	324,294	Aug. 11	1211	330	32	756
Clasp	C. C. Shelby	322,985	July 28	2146	570	32	414
Clasp	J. J. Unbehend	326,351	Sept. 15	1523	396	32	1311
Clasp	J. J. Unbehend	326,356	Sept. 15	1531	397	32	1312
Clasp	J. J. Unbehend	326,357	Sept. 15	1532	398	32	1312
Clasp	C. F. and W. J. Walters	322,026	July 14	850	221	32	162
Clasp-plate	J. J. Unbehend	326,355	Sept. 15	1529	397	32	1312
Clay and brick carrier	J. W. and G. H. Aregood	323,621	Aug. 4	319	91, 92	32	587
Clay-disintegrator	C. and A. Potts	322,393	July 14	1321	344	32	251
Clay-reducing machine	W. Burkman	323,908	Aug. 11	682	191	32	659
Cleaner: *See* Boiler-cleaner. Feed-water cleaner. Grain-cleaner. Nail and ear cleaner. Seed-cleaner. Steam-boiler cleaner. Window-cleaner.							
Clevis and link. Plow	L. Gibbs	326,210	Sept. 15	1327	344	32	1274
Clevis. Plow	W. V. Snyder	325,575	Sept. 1	479	119	32	1107
Cinometer	J. F. Borchardt	326,390	Sept. 15	1566	407	32	1319
Clip: *See* Locomotive-spring clip. Paper-clip. Spring-head clip. Vehicle-spring clip. Wagon-clip.							
Clipper. Hair	W. H. Underwood	324,435	Aug. 18	1408	384	32	800
Clipping horses, &c. Machine for	J. C. Wilson, Sr	322,668	July 21	1692	449	32	324
Clipping machine. Hair	C. Carleton	321,685	July 7	372	99	32	70
Clipping machine. Hair	W. W. Myers	324,781	Aug. 18	1878	516	32	888
Clock	P. C. Bensel	321,674	July 7	353	93	32	66
Clock. Alarm	T. L. Bissell	321,415	July 7	3	1	32	3
Clock-case	A. M. Lane	321,613	July 7	280	74	32	54
Clock-cases. Japanning wooden	E. Ingraham	325,543	Sept. 1	441	110	32	1100
Clock. Electric	F. R. Field	324,824	Aug. 25	1943	534	32	907
Clock. Electric alarm	C. Korfhage	322,110	July 14	961	250	32	183
Clock-pendulum escapement	W. Hart	326,292	Sept. 15	1445	376	32	1296
Clock-striking mechanism	C. Hahlweg	323,577	Aug. 4	252	74	32	569
Clock-striking mechanism	H. L. Naramore	325,228	Aug. 25	2478	681	32	1006
Clock striking mechanism	F. Witherspoon	326,825	Sept. 22	2178	568	32	1436
Clock-winding mechanism	L. F. Portebois	321,526	July 7	167	45	32	33
Clock-works. Manufacture of	C. Stahlberg	326,602	Sept. 22	1817	482	32	1376
Clocks. Adjusting beat of	H. P. Pruim	325,111	Aug. 25	2330	609	32	977
Clod crusher and pulverizer	T. F. Emans	326,489	Sept. 15	1662	439	32	1340
Closet: *See* Water-closet.							
Cloth-cutting apparatus	R. O. Monday	324,404	Aug. 18	1365	371	32	793
Cloth. Gig for napping	J. Shearer	322,983	July 28	2145	569	32	414
Cloth inspecting and trimming machine	J. H. Wilson	325,581	Sept. 1	485	121	32	1108
Cloth-pressing machine	J. Shearer	325,122	Aug. 25	2335	643	32	980
Cloth-rack	W. W. Palmer	323,522	Aug. 4	183	53	32	556
Cloth-shearing machinery	D. C. Sumner	324,428	Aug. 18	1400	381, 382	32	798
Clothes-drier	A. Blanchard	326,836	Sept. 22	2190	571	32	1438
Clothes-drier	D. A. Dickson	324,987	Aug. 25	2169	593	32	948
Clothes-drier	A. Iake	326,742	Sept. 22	2059	535	32	1414
Clothes-drier	U. Savoye, Jr., and W. R. Searing	326,250	Sept. 15	1388	361	32	1285
Clothes-line	W. C. Young	325,470	Sept. 1	339	82	32	1080
Clothes-line support	W. C. and C. H. Caldwell	326,623	Sept. 22	1869	489	32	1381
Clothes-line supporter. Folding	M. Remington	321,914	July 7	690	180	32	125
Clothes-pounder	J. D. Senate	323,453	Aug. 4	88	26	32	538
Clothes-pins. Machine for making	A. La Jennesse	323,044	July 28	2230	590	32	429
Clothes-prop	D. Worthington	327,049	Sept. 29	2479	648	32	1497
Clothes-tongs	J. D. Gardner and J. N. Brumbelow	326,860	Sept. 22	2228	582	32	1445
Clothes-washer	T. F. Wood	323,768	Aug. 4	507	142	32	618
Clothes-wringer	I. R. Laux	326,995	Sept. 29	2410	629, 630	32	1486
Clover-huller	E. L. Williams	323,475	Aug. 4	117	34	32	543
Club. Indian	C. H. Sparks	325,967	Sept. 8	1014	259	32	1210
Clutch	H. E. Pridmore	324,786	Aug. 18	1883	518	32	889
Clutch	M. Stolterfoht	321,656	July 7	327	87	32	62
Clutch. Friction	A. B. Bean	321,941	July 14	735	192, 193	32	142
Clutch. Friction	A. B. Bean	326,091	Sept. 15	1159	296	32	1244
Clutch. Friction	M. P. Boss	325,388	Sept. 1	228	58	32	1058
Clutch. Friction	S. Mead	323,189	July 28	2431	644	32	466
Clutch or loose-pulley device	J. W. Corey	322,423	July 21	1364	356	32	265
Clutching device	C. H. Paxson and H. Croft, Jr	325,565	Sept. 1	466	117	32	1105
Coal and other materials. Machine for agglomerating	G. J. P. Couffinhal	323,856	Aug. 4	605	170, 171	32	637
Coal-bucket	J. A. Steinbach	324,427	Aug. 18	1399	381	32	798
Coal-elevator	W. Lawton	326,129	Sept. 15	1208	308, 309	32	1252
Coal, &c. Machine for washing	W. Ramsay	323,075	July 28	2271	601	32	436
Coal-screen	W. P. C. Allen	323,772	Aug. 4	512	143	32	618
Coal-scuttle	J. Duncan	325,595	Sept. 1	504	125	32	1111
Coal-tub	J. Pipher	324,484	Aug. 18	1468	402	32	810
Coal washing or separating machine	S. Stutz	324,341	Aug. 11	1279	347	32	709
Cock	B. E. Panzig	324,151	Aug. 11	1003	276	32	717
Cock and indicator. Combined gage	S. Macfarlane	322,837	July 21	1924	509	32	366
Cock box for water and gas pipes. Stop	L. P. Reichert and A. Fuller	326,674	Sept. 22	1933	508	32	1393
Cock. Cylinder	G. W. Loomis	325,256	Sept. 1	30	9	32	1021
Cock for gas, steam, &c., fittings	H. P. Drew	325,824	Sept. 8	923	206	32	1173
Cock. Gage	C. H. De Witt	326,022	Sept. 8	1063	270	32	1218
Cock. Gage	L. Shook	321,761	July 7	479	126	32	89
Cock. Self-packing and self-grinding	B. Martignoni and C. J. Carney	327,001	Sept. 29	2418	632	32	1487
Cocks. Safety attachment for gas	H. Laude	324,123	Aug. 11	970	267	32	711
Cockeye	C. J. Cooper and H. Bollinger	322,907	July 28	2029	536	32	392
Cockeye	G. J. Letchworth	325,946	Sept. 8	963	245	32	1201
Coffee. Coating and coloring	W. S. Long	326,227	Sept. 15	1348	.....	32	1278
Coffee or nut roaster	B. F. Shields	324,599	Aug. 18	1618	445	32	840
Coffee or tea pot	E. Boyes	325,223	Aug. 25	2470	679, 680	32	1004
Coffee-roaster	S. Stewart	327,344	Sept. 29	2874	749, 750	32	1567
Coffee roaster and cleaner	J. Schmitt and J. P. Huber	322,646	July 21	1663	440	32	318
Coffer-dam	D. W. Howes	326,985	Sept. 29	2395	627	32	1483
Coffer-dam	E. F. Reaume	326,783	Sept. 22	2117	550	32	1425
Coffin	F. C. Goff	321,473	July 7	26	7	32	8
Coffin	D. B. Hiser	322,604	July 21	1611	426	32	309
Coffin	D. B. Hiser	326,550	Sept. 22	1775	465	32	1346
Coffin	J. C. Meyer	326,315	Sept. 15	1476	384	32	1302
Coffin	H. Randles	327,341	Sept. 29	2824	737	32	1559
Coffin-stool	C. E. and H. C. Reiche	323,631	Aug. 4	194	56	32	558
Coffins. Lowering	H. O. Gadberry	324,932	Aug. 25	2087	571	32	934
Cog-wheel	W. A. Jackson and J. C. Chambers	322,725	July 21	1771	467	32	338
Coil. Neutralizing	D. R. Ford	327,156	Sept. 29	2630	684	32	1523
Coin-changer's box	G. M. Harcourt	326,866	Sept. 22	2236	583	32	1447
Coin-sorter	J. P. Wright	325,374	Sept. 1	199	51	32	1052
Collapsible or folding boat	M. F. Maddox	322,462	July 21	1419	371	32	274
Collar-fastener	J. D. Lane	326,436	Sept. 15	1623	424	32	1329
Collar fastener. Horse	G. Marshall and E. S. Lafferty	324,136	Aug. 11	985	271	32	714
Collar fastener. Horse	H. Brooks	327,377	Sept. 29	2919	761	32	1574
Collar. Horse	M. F. Cavanagh	323,274	July 28	2541	675	32	487
Collar. Horse	S. J. M. Cox	322,260	July 14	1146	299	32	218
Collar. Horse	C. H. Denison	322,697	July 21	1738	459	32	333
Collar or cuff	E. Kipper	322,729	July 21	1775	469	32	339
Collar or cuff	E. L. McClain	321,622	July 7	290	76	32	55
Collar pad. Horse	D. C. Rice and J. Rossman	323,735	Aug. 4	461	130	32	609
Collar pad. Horse	T. Harris	324,023	Aug. 11	832	230	32	686
Collars. Apparatus for forming horse	C. F. Nicholson	324,147	Aug. 11	998	.....	32	716
Color. Water	M. B. Martin	324,960	Aug. 25	1992	.....	32	916
Colors. Decorating paper and other materials with oil	L. Vignon	324,615	Aug. 18	1651	.....	32	845
Coloring-matter from alpha-naphthol and dinitro-naphthol. Manufacture of	H. Ziegler	324,630	Aug. 18	1675	.....	32	849
Coloring-matter from phenylhydrazine	T. W. Corby	324,817	Aug. 25	1937	532	32	905
Colter and plow cleaner	W. S. Pates	324,482	Aug. 18	1467	402	32	810
Colter. Caster	T. C. Sergeant	325,451	Sept. 1	319	77	32	1076
Colter. Plow	A. H. Emery	322,050	July 14	880	228	32	168
Columns. Manufacture of metallic							
Comb: *See* Barber's comb. Ornamental comb.							
Comb	F. Thormann and L. Von Bonhorst	327,356	Sept. 29	2891	755	32	1569
Comb	T. J. Winans	327,372	Sept. 29	2908	759	32	1572
Comb attachment	C. H. Wells	325,226	Aug. 25	2476	681	32	1006
Combination-lock	T. H. Cole and C. McCarrick	325,321	Sept. 1	121	34, 35	32	1038
Combination-table	G. D. Overin and O. Meyers	321,747	July 7	450	120	32	84
Commode	J. Bennor	322,891	July 28	2008	530	32	388
Commode. Chair	B. Rubenstein	321,915	July 7	692	180	32	125
Compasses. Azimuth attachment to	W. S. Thaxter	327,351	Sept. 29	2883	753	32	1568
Concrete-mixing machine	E. L. Ransome	322,006	July 14	819	214, 215	32	137
Concrete surfaces. Combined roller and tile-ruler for marking	B. Riordan	324,166	Aug. 11	1029	281	32	721
Condenser	J. Klingel	322,615	July 21	1628	430	32	312
Conductor-hook	J. Leadley	327,279	Sept. 29	2762	722	32	1551

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Confection-capsule	J. Stuckes, Jr	325,711	Sept. 8	671	168	32	1146
Converter	J. P. Witherow	327,420	Sept. 29	2973	776	32	1584
Converter	J. P. Witherow	327,421	Sept. 29	2974	776	32	1584
Converter	J. P. Witherow	327,422	Sept. 29	2975	777	32	1584
Converter	J. P. Witherow	327,423	Sept. 29	2976	777	32	1584
Converter	J. P. Witherow	327,424	Sept. 29	2976	777	32	1585
Converter	J. P. Witherow	327,425	Sept. 29	2977	777	32	1585
Convertible chair	J. L. McKay	322,950	July 28	2090	556	32	404
Convertible chair	J. Preston	326,241	Sept. 15	1371	354, 355	32	1281
Convertible chair	C. H. Weisgerber, Jr	325,999	Sept. 8	1033	262	32	1212
Conveyer apparatus	H. Smith	326,928	Sept. 22	2318	606	32	1461
Conveyer apparatus. Automatic	H. Smith	326,929	Sept. 22	2319	607, 608	32	1461
Conveyer. Spiral	W. C. and N. C. Marr	323,944	Aug. 11	728	203	32	667
Conveying apparatus	T. E. Proctor, R. Whitaker, and H. P. Reed.	327,108	Sept. 29	2564	668	32	1512
Cooker. Steam	J. N. Anderson and J. M. Sherman	326,702	Sept. 22	1975	519	32	1401
Cooker. Steam	D. M. Armstrong	322,774	July 21	1533	485	32	350
Cooker. Steam	J. A. Marden	325,100	Aug. 25	2309	635	32	975
Cooker. Steam	J. A. Shaw	325,960	Sept. 8	1007	257	32	1208
Cooking and canning apparatus	J. G. Briggs	321,480	July 7	97	26	32	19
Cooking apparatus. Steam	J. J. Haden and W. S. Gobble	325,335	Sept. 1	139	38, 39	32	1041
Cooking-table	E. R. Swan	327,502	Sept. 29	3067	799	32	1600
Cooking utensil	R. H. and E. A. Everett	322,532	July 21	1517	399	32	292
Cooking utensil	H. J. Rutter	323,887	Aug. 4	648	183	32	645
Cooking utensil	M. B. Tate	235,188	Aug. 25	2422	666	32	996
Cooler: *See* Beer-cooler. Fluid-cooler. Liquid-cooler. Milk-cooler. Milk and water cooler. Molasses-cooler. Water-cooler.							
Cooling and refrigerating apparatus	F. G. Johnson	322,826	July 21	1905	506	32	363
Cooling-board	O. P. Boyer	323,391	Aug. 4	12	3	32	525
Coop. Poultry	H. J. Haight	326,113	Sept. 15	1183	303	32	1248
Copper by electricity. Apparatus for refining	M. G. Farmer	322,169	July 14	1040	270	32	197
Copper by electricity. Apparatus for refining	M. G. Farmer	322,170	July 14	1041	270	32	197
Copper from its ores. Extracting	E. Marchese	326,760	Sept. 22	2062	.....	32	1419
Copy-holder and blotter	W. H. Clarkson	324,359	Aug. 18	1303	354	32	781
Copying apparatus. Light	H. Sack	324,960	Aug. 25	2126	581	32	941
Copying-press. Portable	H. M. Hinsdill	326,651	Sept. 22	1901	500	32	1387
Copying process	W. G. Morse	325,353	Sept. 1	160	43	32	1045
Cordage and twine making machines. Friction device for spools in	B. S. and J. B. Hale	325,336	Sept. 1	141	39	32	1041
Cordage. Machine for making	J. P. Tolman	326,607	Sept. 22	1847	484, 485	32	1377
Cork-cutting machine	J. L. Murphey	325,856	Sept. 8	858	216	32	1180
Cork-driver	J. Sommer	324,963	Aug. 25	2129	582	32	942
Cork. Siphon	J. Low	327,401	Sept. 29	2950	770	32	1580
Corn-husking machine	J. A. Webber	327,042	Sept. 29	2471	645	32	1496
Corn-sheller	H. A. Barnard and J. B. Cornwall	322,777	July 21	1836	486, 487	32	350
Corn-sheller	E. C. Fisher	322,535	July 21	1519	400	32	292
Corn-sheller	A. V. and M. H. Pitts	322,964	July 28	2112	562	32	407
Corn-shellers. Cylinder for	J. H. Gilman	325,671	Sept. 8	606	153	32	1135
Corn-shocker	E. W. Comegys	326,403	Sept. 15	1582	411	32	1322
Corn-silker	S. D. Warfield	322,220	July 14	1101	286	32	209
Cornstalk-chopper	W. O. Alexander	321,566	July 7	219	58	32	43
Cornstalk-cutter	G. A. Stone	321,919	July 7	698	182	32	127
Cornice and ceiling decoration	A. Carlewitz	323,110	July 28	2321	615	32	446
Corset	M. P. Bray	321,791	July 7	518	137	32	97
Corset	M. P. Bray	322,677	July 21	1703	451	32	327
Corset	M. P. Bray	323,630	Aug. 4	328	94	32	583
Corset	S. Bryant	321,251	July 14	1136	296	32	216
Corset	M. Gardner	325,600	Sept. 1	509	127	32	1112
Corset	C. A. McGee	323,706	Aug. 4	420	120	32	601
Corset	A. E. Prondfit	326,058	Sept. 8	1116	284	32	1220
Corset	J. M. St. Claire	322,497	July 21	1480	389	32	285
Corset	H. S. Strauss	324,497	Aug. 18	1486	407	32	814
Corset-clasp	B. J. Malone	326,230	Sept. 15	1351	349	32	1278
Corset-stay	H. C. Sherwood	323,319	July 28	2470	656	32	573
Corset-steel fastening	D. Alcorn, Jr., and R. A. Blake	326,259	Sept. 15	1397	364	32	1296
Cot, chair, &c. Convertible	P. Davey	322,354	July 14	1267	331	32	241
Cot. Folding	C. J. Baker	327,035	Sept. 29	2485	649	32	1498
Cot. Folding	N. N. Horton	324,843	Aug. 25	1971	541	32	912
Cotter-pin	J. Adt	324,206	Aug. 11	1101	297	32	735
Cotton and other fibers. Machine for opening and cleaning	J. C. Potter	321,851	July 7	617	158, 159	32	112
Cotton and other fibers. Machine for opening and cleaning	J. C. Potter	321,852	July 7	619	159	32	113
Cotton-chopper	R. F. Cochran	323,497	Aug. 4	147	44	32	549
Cotton-chopper	J. S. Lamar	322,941	July 28	2075	552	32	400
Cotton-chopper	J. S. Lamar	326,570	Sept. 22	1758	469	32	1368
Cotton-chopper	J. T. Miller	323,192	July 28	2435	645	32	467
Cotton-chopper	C. Sandel	326,791	Sept. 22	2131	554	32	1427
Cotton chopper and cultivator	J. H. Sale	322,975	July 28	2135	567	32	412
Cotton-compressor	M. T. Brown	325,314	Sept. 1	113	32, 33	32	1036
Cotton-gin	W. W. Brigg	324,646	Aug. 18	1702	469	32	854
Cotton-gin	J. E. Carver	324,457	Aug. 18	1434	392	32	804
Cotton-gin	O. Washburne	323,548	Aug. 4	230	65	32	562
Cotton-packer	A. Hart	327,259	Sept. 29	2758	715, 716	32	1547
Cotton-picker	J. T. Martin	323,702	Aug. 4	417	119	32	601
Cotton-press	G. McGovern	327,297	Sept. 29	2807	730, 731	32	1556

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Cotton-press	J. L. Sheppard	321,542	July 7	189	50, 51	32	37
Cotton-press	S. I. Wilkinson	326,698	Sept. 22	1971	518	32	1400
Cotton-scraper	N. C. Orrick	327,012	Sept. 29	2430	635	32	1489
Cotton-stalk chopper	J. A. Woodard	323,014	July 28	2183	579	32	420
Countersink	N. Schenkel	323,448	Aug. 4	85	25	32	538
Coupling: *See* Car-coupling. Hose-coupling. Pipe-coupling. Shaft-coupling. Spring-coupling. Thill-coupling. Vehicle-coupling. Wheel and axle coupling.							
Cover. Pot	I. A. Lyon	322,189	July 14	1064	276	32	202
Covering, measuring, and cutting off stripe, &c. Machine for	W. Croal	323,119	July 28	2389	617	32	448
Cracker-machine	W. H. Bromley and P. J. Gately	323,848	Aug. 4	597	168	32	636
Cracker-machine feed-rollers. Adjustable scraper for	W. C. Bromley and P. J. Gately	324,529	Aug. 18	1533	423	32	822
Crackers for packing. Machine for arranging	J. McClurg	326,769	Sept. 22	2095	544	32	1420
Cradle	G. H. Neal	325,960	Sept. 8	985	250	32	1204
Cradle. Grain	W. B. Smith	322,885	July 21	1996	528	32	379
Crane	J. Hollingsworth	324,695	Aug. 18	1766	487	32	866
Crank for engines	J. L. Bogert	325,499	Sept. 1	366	89	32	1085
Crate. Folding	E. B. Young	324,629	Aug. 18	1674	462	32	849
Crate. Fruit	I. S. Platt	323,526	Aug. 4	189	55	32	557
Cravat-fastener	J. Adams	327,216	Sept. 29	2703	703	32	1538
Cream-transportation tank	C. D. Elder. (Reissue)	10,643	Sept. 1	569	144	32	1122
Creamer. Centrifugal	O. Lamm, Jr	327,090	Sept. 29	2541	662	32	1508
Creamer. Vacuum	N. B. Blackmer	325,482	Sept. 1	357	87	32	1083
Creaming-can	H. Haak	326,426	Sept. 15	1610	419	32	1327
Creaming-can	G. W. Millner	321,744	July 7	446	118	32	83
Creaming-cans. Skimming device for	P. A. Coller	323,297	July 28	2587	667	32	493
Crib and chair. Combined	E. E. Matthews	325,685	Sept. 8	622	158	32	1137
Crib. Folding	G. Mazergue	322,947	July 28	2066	545	32	402
Cribbage-board	C. W. Le Count	321,509	July 7	132	35	32	26
Crucible-furnace	T. McBride, F. B. Smith, and A. J. Lennox.	323,676	Aug. 4	633	179	32	643
Crusher: *See* Clod-crusher.							
Crushing and grinding mill	W. C. Stiles	326,253	Sept. 15	1392	362	32	1285
Crushing-mill	F. A. Huntington	325,604	Sept. 8	795	200	32	1168
Cuff-holder	D. W. Brown	323,559	Aug. 4	233	66	32	585
Cuff-holder	A. Schiffling	323,449	Aug. 4	85	25	32	538
Culm-bar	S. M. Hess	325,837	Sept. 8	835	209	32	1175
Culm-conveyer	R. Y. Mitchell	326,445	Sept. 15	1632	427	32	1331
Culm. Transporting and sorting	R. Y. Mitchell	326,446	Sept. 15	1633	427	32	1331
Cultivator	T. C. Baker	325,477	Sept. 1	351	85	32	1062
Cultivator	S. B. Bell	325,723	Sept. 8	696	171	32	1148
Cultivator	J. T. Bond	324,215	Aug. 11	1112	301	32	737
Cultivator	E. F. Bunn	323,907	Aug. 11	681	191	32	658
Cultivator	G. W. Forbes	326,208	Sept. 15	1324	343	32	1273
Cultivator	E. Johnson	324,386	Aug. 18	1341	365	32	768
Cultivator	G. W. Lepper	324,265	Aug. 11	1176	319	32	749
Cultivator	S. A. Moulton	325,432	Sept. 1	291	72	32	1071
Cultivator	O. L. Neisler	324,720	Aug. 18	1792	464, 465	32	871
Cultivator	J. F. Packer	323,440	Aug. 4	71	19, 20	32	536
Cultivator	O. P. Sowers	323,228	July 28	2481	639	32	475
Cultivator	W. H. Traphagen	327,358	Sept. 29	2894	755	32	1570
Cultivator	W. S. Weir	324,904	Aug. 25	2054	502	32	927
Cultivator and plow. Combined	D. W. Bricker	324,219	Aug. 11	1116	302	32	737
Cultivator and pulverizer. Rolling	J. G. Bradley	323,266	July 28	2626	671	32	484
Cultivator and seed dropper or planter combined	J. M. Alexander	324,208	Aug. 11	1103	298	32	735
Cultivator. Grain	A. Lowry	325,549	Sept. 1	449	112	32	1101
Cultivator plant-shield	D. Cramer	322,594	July 21	1509	397	32	290
Cultivator. Rotary	J. L. Laughlin	323,163	July 28	2385	632, 633	32	458
Cultivator. Rotary	J. L. Laughlin	323,164	July 28	2388	633, 634	32	458
Cultivator running-gear	F. G. Bright	322,411	July 21	1349	351	32	262
Cultivator-shovel	S. Langford	324,850	Aug. 25	1960	544	32	914
Cultivator. Tongueless	M. G. Graham	324,834	Aug. 25	1958	537, 538	32	909
Cultivator-tooth holder	J. F. Wheeler	323,004	July 28	2170	576	32	418
Cultivator. Wheel	W. P. Brown	326,200	Sept. 15	1309	339, 340	32	1271
Cultivators. Shovel-fastener for	G. W. Lilly	325,421	Sept. 1	277	68	32	1068
Cup: *See* Artist's palette-cup. Oil-cup. Grease-cup.							
Cupola-furnace	J. H. Whiting	324,623	Aug. 18	1667	460	32	847
Current-meter	W. G. Price	325,011	Aug. 25	2197	602	32	953
Curtain-fastener	G. P. Bower	325,491	Sept. 1	369	90	32	1086
Curtain-fixture	R. R. Brouner	327,378	Sept. 29	2920	761	32	1574
Curtain-fixture	L. A. Mallory	327,287	Sept. 29	2792	726	32	1553
Curtain-fixture	F. Root	324,959	Aug. 25	2125	581	32	941
Curtain-fixture. Spring-roller	E. R. Carey	322,347	July 14	1257	329	32	239
Curtain guide. Window	F. B. Snook and D. Death	326,799	Sept. 22	2138	550	32	1429
Curtain-pole end	W. K. Pine	323,072	July 28	2269	600	32	435
Curtain-roller. Spring	P. E. Malmström	324,135	Aug. 11	984	271	32	714
Curtain-supporter	A. H. Gerdom	321,892	July 7	602	172	32	121
Cushion: *See* Prop-block cushion.							
Cushion for the feet	J. J. Georges	326,728	Sept. 22	2042	531	32	1412
Cuspidor and dust-trap	P. H. Deis and S. W. Croxton	323,122	July 28	2333	619	32	446
Cut-off	F. Schueler	325,449	Sept. 1	318	77	32	1076

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Cut-off rain-water spout for cisterns. Filtering	J. E. Burdge	326,945	Sept. 29	2350	614	32	1474
Cut-off valve	C. Harmon	322,711	July 21	1751	463	32	335
Cut-off valve for engines	H. J. Oliver	323,065	July 28	2200	597	32	433
Cut-off valve for engines	G. W. Price	324,593	Aug. 18	1611	443 444	32	838
Cut-off-valve gear	E. C. Dicey	322,264	July 14	1151	300 301	32	219
Cut-off-valve gear	G. Schuhmann	321,538	July 7	184	49	32	36
Cutlery-handles. Making	R. Wallace	323,240	July 28	2496	663	32	478
Cutter: *See* Band-cutter. Milling-cutter. Boiler-tube cutter. Mortise-cutter. Bolt-cutter. Rod and bolt cutter. Bread-cutter. Rotary cutter. Cigar-tip cutter. Sod-cutter. Gear-cutter. Stalk-cutter. Hay and straw cutter. Straw-cutter. Thread-cutter. Hog-snout cutter. Tobacco-plant cutter. Meat-cutter. Vegetable-cutter.							
Cutter-head	B. R. Hand	323,673	Aug. 4	381	109	32	594
Cutter-head	B. R. Hand	327,392	Sept. 29	2938	766	32	1578
Cutter-head	F. Holland	326,963	Sept. 29	2392	626	32	1462
Cutter-head	J. Loar	321,828	July 7	583	151	32	107
Cutter-head	S. W. Putnam and W. A. Foster	324,041	Aug. 11	857	238	32	690
Cutter-head fastening	W. H. Gray	321,596	July 7	257	68	32	49
Cutting double pile fabrics. Machine for	R. C. Greenhalgh	323,667	Aug. 4	375	107	32	592
Cutting garments. Guide for use in	C. A. Tierney	322,402	July 14	1332	346 347	32	253
Cutting-off tool	A. A. Wood	323,480	Aug. 4	123	36	32	544
Cylinders. Machine for boring	W. J. Muncaster	326,049	Sept. 8	1095	279 280	32	1224
Damper	J. P. Tuttle	323,376	July 28	2697	718	32	513
Damper	H. H. B. Vincent	322,403	July 14	1335	347	32	253
Damper. Automatic	S. P. Smith	322,492	July 21	1468	386	32	283
Damper. Automatic	S. P. Smith	323,539	Aug. 4	207	61	32	561
Damper for shafts	E. F. Kittoe	322,832	July 21	1915	508	32	364
Damper for stove and other pipes	M. S. Burrough	322,346	July 14	1256	329	32	239
Damper-operating mechanism for heating apparatus	J. A. Lakin	322,186	July 14	1060	275	32	201
Damper-regulator	J. C. Paige	324,270	Aug. 11	1182	321	32	750
Damper-regulator. Automatic	J. Barge	327,132	Sept. 29	2595	676	32	1517
Damper-regulator. Automatic	J. E. Spencer	327,337	Sept. 29	2860	746	32	1564
Damper. Stove-pipe	J. H. Doherty	323,568	Aug. 4	244	71	32	567
Dash-board	P. M. Barnes	324,355	Aug. 18	1299	353	32	780
Dead-centers and starting fly-wheels. Device for overcoming	O. B. Thompson	327,355	Sept. 29	2889	754	32	1569
Demijohn. Boxed	G. L. Solter	325,875	Sept. 8	881	222	32	1185
Dental articulator	G. E. Smith	321,457	July 7	65	19	32	15
Dental-bracket case	J. H. Morrison	325,560	Sept. 1	462	115	32	1104
Dental broaches, &c. Machine for barbing	R. B. Donaldson	327,437	Sept. 29	2991	782	32	1587
Dental chairs. Electrical attachment for	C. A. Eisenhart	326,957	Sept. 29	2364	618	32	1477
Dental-engine hand-piece coupling	A. W. Browne	326,942	Sept. 29	2346	613 614	32	1473
Dental jaw-brace	W. J. Bickford	323,627	Aug. 4	326	93	32	583
Dental instrument	R. B. Donaldson	322,265	July 14	1151	301	32	219
Dental instrument	J. Hood and S. H. Reynolds	321,814	July 7	552	145	32	102
Dental lip-holder	A. Garner	323,573	Aug. 4	248	73	32	568
Dental plate	W. H. Peirce and J. A. Russell	321,847	July 7	611	157	32	111
Dental plugger	R. H. Antes	326,537	Sept. 22	1749	457	32	1361
Dentist's or photographer's chair	O. C. White	326,185	Sept. 15	1291	334	32	1267
Derrick	D. Sharp	322,756	July 21	1809	477	32	345
Derrick and carrier. Combined	J. N. Fisk	325,738	Sept. 8	707	176 177	32	1152
Derrick. Revolving	A. N. Simmerly	323,538	Aug. 4	204	60, 61	32	560
Desk	B. Brower	323,271	July 28	2534	673 674	32	485
Desk	C. A. Priest	322,125	July 14	980	256	32	187
Desk. School-	W. P. Conner	327,242	Sept. 29	2735	710	32	1544
Desk. School-	E. R. Shepard	325,981	Sept. 8	1007	257	32	1208
Desk. Writing-	H. W. Ellsworth	326,636	Sept. 22	1685	494	32	1384
Desks, seats, &c., to floors. Device for detachably securing	W. F. Young	326,470	Sept. 15	1661	434	32	1336
Desiccating apparatus	H. Breer	326,842	Sept. 22	2196	573	32	1440
Desiccating apparatus	H. Breer	326,843	Sept. 22	2198	574	32	1440
Diamond-setting	C. Blancard	325,485	Sept. 1	361	88	32	1084
Die: *See* Forging-die. Shearing-die. Screw-cutting die. Steel die.							
Die-grinding machine	E. S. White	326,001	Sept. 8	1035	263	32	1213
Die-stock	F. Armstrong	324,516	Aug. 18	1515	417	32	819
Die-stock	J. W. Strong	323,464	Aug. 4	105	30	32	541
Digger: *See* Post-hole digger. Root-digger. Potato-digger.							
Dipper	E. Hester	323,332	July 28	2636	701	32	502
Dish-blanks. Knife for cutting	S. H. Smith	322,017	July 14	838	219	32	160
Dish-washer	S. M. Fenton	325,792	Sept. 8	777	194	32	1165
Disinfectant	F. Y. Cromwell	326,479	Sept. 15	1671	.....	32	1338
Disinfecting apparatus	R. Henneberg	327,395	Sept. 29	2941	767 768	32	1578
Distilleries. Apparatus for mashing grain in	C. S. Corning	325,323	Sept. 1	125	35	32	1038
Distilling lactic acid	C. N. Waite	321,925	July 7	709	.....	32	129
Distributer and planter	G. W. Goodwin	324,468	Aug. 18	1446	395	32	807
Ditching-machine	P. Ahnlund	322,771	July 21	1898	484	32	349

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Ditching-machine	G. H. Kamman	324,328	Aug. 11	1980	342	32	765
Ditching-machine	J. C. Titus and J. and S. E. Morral	322,656	July 21	1677	444	32	320
Door	J. Gamblee	323,658	Aug. 4	366	104	32	591
Door and shutter fastener	J. T. and N. R. Yarnall	327,373	Sept. 29	2909	759	32	1572
Door-bolt	R. L. Leininger	322,944	July 28	2078	553	32	401
Door-bolt	J. F. Taylor	322,211	July 14	1089	283	32	207
Door-bolt	W. Corry	323,855	Aug. 4	604	170	32	637
Door bolt. Prison-	N. O. Bond	324,452	Aug. 18	1496	389	32	803
Door-check	J. E. Newcomb	326,320	Sept. 15	1481	385 386	32	1303
Door-check	C. A. Schmidt	321,645	July 7	316	84	32	60
Door-check	J. H. Shaw	322,648	July 21	1665	441	32	319
Door-check	T. G. Williamson	322,513	July 21	1498	394	32	288
Door-check	C. G. Griffin	321,964	July 14	762	199	32	147
Door check and buffer. Combined	L. Wadack and A. Graffy	322,218	July 14	1099	285	32	209
Door-check. Hydraulic	G. Vincent	322,763	July 21	1818	481	32	347
Door-check. Pneumatic	C. Anderson	321,936	July 14	730	191	32	141
Door. Combined screen and storm	W. L. Bliss and G. F. Kopp	324,525	Aug. 18	1528	422	32	821
Door fastening. Barn-	E. Y. Moore	321,518	July 7	157	42	32	31
Door fixture. Sliding-	H. Myers	327,450	Sept. 29	3006	785	32	1590
Door-hanger	S. Shreffler, Jr	322,488	July 21	1460	384	32	282
Door-hanger	J. Finck	323,308	July 28	2603	692	32	496
Door-opener	C. E. Whitney	325,299	Sept. 1	96	27	32	1033
Door-opener	T. A. Casey	322,681	July 21	1706	452	32	327
Door-opener. Electric	S. H. Law	323,165	July 28	2391	634	32	459
Door-opening device	F. R. Woodward	321,775	July 7	498	132	32	93
Door-securer	J. W. Cloud and A. S. Vogt	327,238	Sept. 29	2726	708	32	1542
Door-securing device	M. Camp	327,228	Sept. 29	2717	707	32	1540
Door-shield	C. C. Schreiber	324,732	Aug. 18	1808	500	32	875
Door-sill. Metallic	H. H. Hewitt	325,245	Sept. 1	16	6	32	1018
Door. Sliding	A. Carrier	321,949	July 14	746	195	32	144
Door-spring	J. H. Shaw	322,649	July 21	1666	441	32	319
Door-spring	E. Perkins	326,325	Sept. 15	1488	388	32	1304
Doors and shutters. Operating	F. B. Boalt	322,037	July 14	862	224	32	165
Doors. Device for hanging	E. Colwell	326,850	Sept. 22	2209	576	32	1442
Double-tree	P. W. Leffler	327,180	Sept. 29	2665	693	32	1529
Double-tree	J. E. Tynan	326,530	Sept. 15	1737	454	32	1351
Doubling and twisting silk and other threads. Machine for	J. E. Tynan	321,924	July 7	706	184	32	128
Doubling and twisting thread. Machine for	T. Hofstatter, Jr	324,250	Aug. 11	1164	317	32	746
Dowels. Machine for longitudinally grooving rods for	W. T. Doremus	322,166	July 14	1036	269	32	197
Draft, check, and other money orders	M. S. O'Neil	322,197	July 14	1073	278	32	204
Draft-equalizer	A. Sellers	322,647	July 21	1063	440 441	32	318
Draft-equalizer	J. Q. Everson	325,791	Sept. 8	776	194	32	1164
Draft-regulator	W. Hunter	321,502	July 7	123	32	33	24
Draft-regulator	M. H. Smith	322,491	July 21	1467	385	32	293
Draft-regulator. Automatic	W. R. Briggs	327,226	Sept. 29	2715	706	32	1540
Drafting-case. Student's	J. Moore	322,955	July 28	2097	558	32	405
Draining machinery. Mine-	G. W. Ferguson, Jr	325,894	Sept. 8	933	236	32	1195
Drapery-pin	W. Raper	322,900	July 14	1076	279	32	205
Draw-bar	W. R. Walton	324,506	Aug. 18	1503	411	32	816
Draw-bench	C. E. Mark	326,761	Sept. 22	2085	541	32	1419
Draw-head attachment	W. Millspaugh	325,759	Sept. 8	733	183	32	1157
Draw-shave	R. W. Perry	327,104	Sept. 29	2559	667	32	1511
Drawer	A. S. Keating	327,175	Sept. 29	2655	690 691	32	1528
Drawer and recorder. Money	A. Russell	326,061	Sept. 8	1121	285	32	1229
Drawer for drawing-paper and documents	W. H. Harrison	322,373	July 14	1294	338	32	246
Drawer. Money-	S. D. Blake	321,416	July 7	4	1	32	3
Drawers and pantaloons	G. Davis	326,723	Sept. 22	2037	530	32	1411
Drawing and spinning machines. Feed-regulator for hemp	C. Coupland	321,952	July 14	749	196	32	144
Drawing and spinning machines. Machine for preparing the covering for top rolls for	C. N. Leonard	324,855	Aug. 25	1984	546	32	914
Drawing-board	P. F. Chandler	322,040	July 14	866	225	32	166
Drawing-knife gage	B. C. White	323,762	Aug. 4	495	139 140	32	616
Drawing rods and shafting. Machine for	B. C. White	323,763	Aug. 4	499	140	32	616
Drawing rods. Machine for	B. C. White	323,761	Aug. 4	493	139	32	615
Drawing rods or bars. Machine for	B. C. White	324,479	Aug. 18	1464	401	32	809
Dredge	G. M. O'Donnell	322,231	July 14	1115	290	32	212
Dredge	A. C. Whittier	324,573	Aug. 18	1586	437	32	833
Dredge-buckets. Pick attachment for	J. McSpirit	326,627	Sept. 22	1874	491	32	1381
Dredging and grappling apparatus	H. Clark	326,072	Sept. 8	1139	289	32	1232
Dredging-machines. Discharge-pipe for	A. W. Von Schmidt	323,183	July 28	2425	642	32	466
Drenching-bit	J. F. Marvin	323,739	Aug. 4	465	131	32	610
Dressing-case	R. Sayer						
Drier: *See* Clothes-drier. Malt-drier. Fruit-drier. Paper-matrix drier. Grain-drier. Tobacco-drier. Lumber-drier. Wool-drier.							
Drier	C. H. B. Carter and W. S. Johnson	323,785	Aug. 4	521	147	32	620
Drier	J. S. Lester	322,302	July 14	1196	314	32	227
Drier	T. J. Sullivan	326,924	Sept. 22	2313	605	32	1460
Drill: *See* Grain-drill. Rock and coal drill. Ratchet-drill. Seed-drill. Rock-drill. Well-boring drill.							
Drill	G. Richardson	327,315	Sept. 29	2829	738	32	1560
Drill-jar. Rope	C. Phillips	321,753	July 7	465	123	32	86
Drill-rods. Safety-jack for holding	A. Ball	326,380	Sept. 15	1555	404	32	1317
Drilling apparatus	J. Hunter	325,414	Sept. 1	269	66	32	1060

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Drilling-machine	S. Elliott	324,759	Aug. 18	1847	508	32	882
Drilling-machine	C. G. Harström and A. K. Westerdahl	324,688	Aug. 18	1757	484	32	865
Drilling-machine	G. T. Reiss	322,969	July 28	2121	564	32	409
Drilling-machine	J. H. Wesson	323,892	Aug. 4	656	185	32	647
Drilling-machines. Drill-grinding attachment for	E. J. Worcester	325,373	Sept. 1	198	51	32	1052
Drinking-trough for animals	J. Moore	321,626	July 7	293	78	32	56
Drum. Heating	P. E. Fox	325,405	Sept. 1	258	64	32	1064
Drum. Heating	J. P. Lydon	322,549	July 21	1534	405	32	295
Drum. Snare	R. R. Perry	324,881	Aug. 25	2022	554	32	921
Drying apparatus	A. Coleman	322,041	July 14	868	225, 226	32	166
Duplex engine	L. B. Carricaburu	321,580	July 7	234	62	32	46
Dust-collector	J. M. Finch	325,521	Sept. 1	415	102, 103	32	1095
Dust-collector	P. Van Gelder	326,176	Sept. 15	1275	328, 329, 330	32	1264
Dust-pan	J. F. Wynkoop	325,304	Sept. 1	101	28	32	1034
Dye-stuff. Violet methyl	F. Fischer	325,828	Sept. 8	826	.....	32	1174
Dye-stuffs. Manufacture of violet	F. Fischer	325,827	Sept. 8	825	.....	32	1174
Dyeing, &c. Apparatus for	W. Mather	323,819	Aug. 4	560	159	32	629
Dynamite	R. W. Warren	323,088	July 28	2289	.....	32	440
Dynamo-electric or electro-dynamic machine	E. Thomson	323,975	Aug. 11	768	214, 215	32	675
Ear-ring	I. R. Dunham	324,757	Aug. 18	1845	508	32	881
Ear-rings. Ear-wire catch for	S. F. Merritt	326,135	Sept. 15	1216	310	32	1254
Earth closets. Apparatus for operating dry-	W. Heap	327,266	Sept. 29	2766	718	32	1548
Earthen and stone ware. Machine for forming	D. S. Chesebro	325,911	Sept. 8	918	231, 232	32	1192
Easy-chair and couch. Combined	J. V. H. Ditmars	325,326	Sept. 1	128	36	32	1019
Eaves-trough	M. McCoy	327,005	Sept. 29	2422	633	32	1488
Eaves-trough clamp	G. D. Waters	322,222	July 14	1105	287	32	210
Eaves-trough fastening	O. Harley	327,162	Sept. 29	2637	686	32	1524
Eaves-trough hanger	W. H. Berger	324,213	Aug. 11	1108	299	32	736
Eaves-trough holder	M. Bingman	326,709	Sept. 22	1985	521	32	1403
Ecraseur	D. M. Scheffer and C. F. Martin	326,792	Sept. 22	2132	554	32	1428
Egg-beater	T. W. Brown	322,250	July 14	1136	296	32	216
Egg-beater and liquid-mixer	E. F. Hough	325,840	Sept. 8	837	209	32	1176
Egg-beater, batter-mixer, and churn	T. E. Haak	325,674	Sept. 8	608	154	32	1135
Egg-box	W. C. Gaskill	324,829	Aug. 25	1953	536	32	908
Egg-carrier	R. Keith	325,936	Sept. 8	945	240	32	1197
Egg-carriers. Fastening for	T. W. Wells	324,619	Aug. 18	1657	457	32	846
Egg-holder	R. Keith	325,935	Sept. 8	944	239	32	1197
Egg packer	H. Handy	322,444	July 21	1394	366	32	270
Egg tester	C. Martl	326,763	Sept. 22	2088	542	32	1419
Eggs. Compound for preserving	L. I. Bodenhamer	326,895	Sept. 22	2280	.....	32	1454
Ejector and injector. Combined	D. M. Fergus and J. A. Griffiths	323,503	Aug. 4	158	47	32	552
Elector. Perfume	R. F. Fisher	323,409	Aug. 4	35	9	32	529
Elastic-tired wheel	W. H. Chapin	323,635	Aug. 4	335	95	32	584
Electric alarm	J. J. Wood	325,639	Sept. 1	558	142	32	1121
Electric-apparatus protector	T. N. Vail	322,214	July 14	1093	284	32	208
Electric-arc light	C. Lever	322,115	July 14	968	252	32	185
Electric batteries. Connector for	G. Otto	324,410	Aug. 18	1377	375	32	794
Electric battery	E. G. Hammer	326,033	Sept. 8	1079	275	32	1221
Electric cable	H. C. Spalding	327,492	Sept. 29	3055	796	32	1598
Electric cable	H. C. Spalding	327,494	Sept. 29	3057	797	32	1599
Electric cable. Composite	H. C. Spalding	327,472	Sept. 29	3032	792	32	1594
Electric cable. Subterranean	H. C. Spalding	327,483	Sept. 29	3043	794	32	1596
Electric-cable support	E. M. Carhart	324,225	Aug. 11	1123	305	32	739
Electric circuit	H. C. Spalding	327,495	Sept. 29	3058	797	32	1599
Electric circuit	H. C. Spalding	327,497	Sept. 29	3060	798	32	1599
Electric-circuit safety device	H. C. Spalding	327,498	Sept. 29	3061	798	32	1599
Electric-circuit safety device	H. C. Spalding	327,499	Sept. 29	3063	798	32	1600
Electric-circuit safety device	H. C. Spalding	327,500	Sept. 29	3064	799	32	1600
Electric conductor	R. A. Denison	323,920	Aug. 11	697	195	32	662
Electric conductor. Subterranean	H. C. Spalding	327,485	Sept. 29	3045	795	32	1596
Electric conductor. Underground	H. C. Spalding	327,480	Sept. 29	3040	794	32	1595
Electric conductors. Underground conduit for	G. S. Cox	327,383	Sept. 29	2927	763, 764	32	1576
Electric cord. Metal-tipped	W. H. Sawyer	324,171	Aug. 11	1035	283	32	722
Electric-current meter	J. J. Green	327,391	Sept. 29	2937	766	32	1577
Electric-current meter	C. J. Van Depoele	325,225	Aug. 25	2473	680	32	1005
Electric distribution. System of	E. Thomson	322,138	July 14	1003	261	32	191
Electric distribution. System of	E. Thomson	322,139	July 14	1005	261	32	191
Electric elevator	S. S. Wheeler	324,621	Aug. 18	1660	459	32	847
Electric generator or spark-producing apparatus	C. L. Clarke	324,010	Aug. 11	816	226	32	683
Electric indicating apparatus	M. W. Grovesteen	322,818	July 21	1888	501, 502	32	339
Electric light	C. F. Beck	322,033	July 14	857	223	32	164
Electric-light cables. Terminal for	W. R. Patterson	324,413	Aug. 18	1381	376	32	795
Electric-light circuits. Socket and connection for	G. Hess	325,540	Sept. 1	437	108, 109	32	1100
Electric-light regulator	W. J. Paine	321,843	July 7	603	156	32	110
Electric-light regulator	W. J. Paine	321,844	July 7	604	157	32	110
Electric-light regulator	W. J. and S. B. Paine	321,748	July 7	452	120, 121	32	84
Electric lights. Circuit for arc and incandescent	H. P. Brown	325,389	Sept. 1	230	59	32	1058
Electric lights. Holder for incandescent	O. A. Moses	322,744	July 21	1795	474	32	342
Electric lights. Regulating	W. J. Paine	321,845	July 7	607	157	32	111
Electric lights. Regulating	W. J. Paine	321,846	July 7	609	157	32	111
Electric lights. Regulating	W. J. and S. B. Paine	321,749	July 7	457	121, 122	32	85
Electric lighting system	E. Thomson	321,461	July 7	69	20	32	16

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Electric lighting systems. Regulator for incandescent	C. J. Van Depoele	323,981	Aug. 11	777	216	32	676
Electric lighting. Temporary	L. Goldenberg	324,551	Aug. 18	1554	429	32	827
Electric machine. Dynamo	L. Bollmann	323,108	July 28	2315	612, 613	32	445
Electric machine. Dynamo	J. J. Bradley	324,075	Aug. 11	904	250	32	698
Electric machine. Dynamo	H. Cushman and J. P. Hall	324,752	Aug. 18	1835	506	32	880
Electric machine. Dynamo	E. Jones	321,609	July 7	272	72, 73	32	52
Electric machine. Dynamo	R. H. Mather	326,575	Sept. 22	1793	470	32	1369
Electric machine. Dynamo	C. L. F. Mueller	325,619	Sept. 1	530	134, 135	32	1116
Electric machine. Dynamo	C. F. Rnset	322,310	July 14	1206	317	32	229
Electric machine. Dynamo	W. B. Smit and A. Pot	326,796	Sept. 22	2135	555, 556	32	1428
Electric machine. Dynamo	E. R. Whitney	322,230	July 14	1113	290	32	212
Electric-machine regulator. Dynamo	P. Diehl	324,666	Aug. 18	1725	475	32	858
Electric-machine regulator. Dynamo	E. Thomson	324,501	Aug. 18	1491	408	32	815
Electric-machine regulator. Dynamo	C. J. Van Depoele	325,133	Aug. 25	2349	648	32	983
Electric machine regulator. Dynamo or magneto	R. R. Moffatt	323,059	July 28	2250	595	32	432
Electric machines and electric motors. Armature for dynamo	B. F. Orton	323,362	July 28	2678	713	32	510
Electric machines and electric motors. Armature for dynamo	S. F. Van Choate	325,714	Sept. 8	673	169	32	1146
Electric machines and motors. Regulator for dynamo	R. H. Mather	324,862	Aug. 25	1994	548	32	916
Electric machines. Armature for dynamo	B. F. Orton	323,363	July 28	2679	713, 714	32	510
Electric machines. Automatic commutator-adjuster for dynamo	E. Thomson	323,976	Aug. 11	770	215	32	675
Electric machines. Automatic stop apparatus for motors driving dynamo	O. F. Jönsson	326,223	Sept. 15	1343	347	32	1277
Electric machines. Commutator-brush for dynamo or magneto	J. A. Powers	324,500	Aug. 18	1606	442	32	838
Electric machines. Commutator for dynamo	B. F. Orton	323,361	July 28	2676	713	32	510
Electric machines. Current-regulator for dynamo	J. A. Lannert	324,566	Aug. 18	1571	434	32	830
Electric machines. Current-regulator for dynamo	J. J. Wood	326,894	Sept. 22	2275	595	32	1453
Electric machines. Cut-out for dynamo	C. J. Van Depoele	323,470	Aug. 4	111	32	32	542
Electric machines. Device for preventing sparking in dynamo	R. H. Mather	321,990	July 14	797	208	32	153
Electric machines. Support for the armatures of dynamo	R. H. Mather	321,991	July 14	799	208	32	154
Electric motor	P. Diehl	324,667	Aug. 18	1726	475	32	858
Electric motor	M. G. Farmer	323,653	Aug. 4	357	102	32	589
Electric motor	C. J. Van Depoele	323,962	Aug. 11	779	217	32	677
Electric motor	L. G. Woolley	325,641	Sept. 1	565	144	32	1122
Electric motor and other circuits. Switch for	L. W. Stockwell	326,603	Sept. 22	1840	483	32	1376
Electric-motor regulator	M. G. Farmer	323,650	Aug. 4	352	100	32	588
Electric motor. Vibrating	A. L. Parcelle	324,152	Aug. 11	1004	276, 277	32	717
Electric primer	R. H. S. Thompson	323,974	Aug. 11	766	214	32	674
Electric regulator	W. Stanley, Jr	325,576	Sept. 1	480	120	32	1107
Electric signal apparatus	M. W. and M. F. Parrish	322,474	July 21	1437	377	32	278
Electric signaling apparatus	F. G. Sargent	326,158	Sept. 15	1247	320	32	1259
Electric switch	L. Daft	322,915	July 28	2042	538, 539	32	394
Electric switch	L. Daft	322,916	July 28	2043	539	32	394
Electric switch	H. K. Goodwin	324,248	Aug. 11	1149	313	32	744
Electric switch	E. B. Nicolaus	322,745	July 21	1799	475	32	343
Electric switch	F. Schaefer	322,857	July 21	1949	515	32	370
Electric switch	E. Thomson	321,463	July 7	75	21	32	16
Electric-switch plug	J. H. Bunnell	325,653	Sept. 8	582	147	32	1131
Electric wires. Conduit for underground	J. Teggart	321,865	July 7	633	163, 164	32	115
Electric wires. Laying	W. D. Smith	325,984	Sept. 8	1009	258	32	1209
Electrical alarm for window-screens	H. Garrett	324,019	Aug. 11	828	239	32	685
Electrical apparatus for the propulsion of vehicles	F. Wynne	324,447	Aug. 18	1420	388	32	802
Electrical cable	H. C. Spalding	327,491	Sept. 29	3053	796	32	1598
Electrical cable	H. C. Spalding	327,493	Sept. 29	3056	797	32	1598
Electrical cable. Anti-induction	H. C. Spalding	327,[illegible]	Sept. 29	3049	796	32	1597
Electrical cable. Compound	H. C. Spalding	327,459	Sept. 29	3017	788	32	1592
Electrical cable. Compound	H. C. Spalding	327,476	Sept. 29	3036	793	32	1595
Electrical cable. Multiplex	H. C. Spalding	327,473	Sept. 29	3033	792	32	1594
Electrical cable. Submarine	H. C. Spalding	327,484	Sept. 29	3044	795	32	1596
Electrical circuit	H. C. Spalding	327,496	Sept. 29	3059	798	32	1599
Electrical circuits. Apparatus for testing	I. H. Farnham	325,520	Sept. 1	413	102	32	1095
Electrical circuits. Safety device for	E. Thomson	327,039	Sept. 29	2466	644	32	1495
Electrical conducting system	J. Kruesi	322,385	July 14	1310	341, 342	32	240
Electrical conductor	H. C. Spalding	327,482	Sept. 29	3042	794	32	1596
Electrical-conductor splice	H. C. Spalding	327,479	Sept. 29	3039	793	32	1595
Electrical conductor. Underground	D. Brooks	325,495	Sept. 1	373	91	32	1086
Electrical conductor. Underground	H. C. Spalding	327,481	Sept. 29	3042	794	32	1595
Electrical conductors. Apparatus for laying underground lines of	H. C. Spalding	327,478	Sept. 29	3038	793	32	1595
Electrical conductors from the heat of subterranean steam-pipes. Protecting	H. C. Spalding	327,468	Sept. 29	3028	790	32	1593
Electrical conductors. Pipe for underground	H. C. Spalding	327,475	Sept. 29	3035	793	32	1594
Electrical conductors. Underground conduit for	W. B. Rogers	323,964	Aug. 11	754	210	32	672
Electrical conductors underground. Protecting	H. C. Spalding	327,463	Sept. 29	3021	789	32	1592
Electrical contact-point	E. T. Gilliland	324,678	Aug. 18	1741	479	32	862
Electrical conveyer. Suspended	C. J. Van Depoele	323,984	Aug. 11	781	217	32	677
Electrical indicator	M. Bacon	324,635	Aug. 18	1687	465	32	851
Electrical switch-board	A. C. Mather	323,182	July 28	2423	642	32	465
Electrical synchronous movement	A. L. Parcelle	324,153	Aug. 11	1008	277	32	718
Electrical synchronous movements. Effecting	P. B. Delany	322,690	July 21	1721	455	32	330
Electrical synchronous movements. Effecting	P. B. Delany	322,691	July 21	1723	455	32	330

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Electrically maintaining synchronous movements	P. B. Delany	322,692	July 21	1725	456	32	331
Electro-dynamic motor	F. J. Sprague	323,460	Aug. 4	99	29	32	541
Electro-dynamic motor	F. J. Sprague	324,891	Aug. 25	2035	557	32	923
Electro-magnetic log	L. B. Favor and C. A. Jacobs	326,207	Sept. 15	1323	343	32	1273
Electro-magnetic motor	M. G. Farmer	323,652	Aug. 4	355	101	32	568
Electro-magnetic motor. Reciprocating	E. Knabe, Jr.	322,206	July 14	1188	311, 312	32	226
Electro-motive force. Conveying persons, &c., by	E. W. Siemens	321,934	July 7	720	188, 189	32	130
Elevator; *See* Coal-elevator. Ram-elevator. Electric elevator. Tobacco-elevator. Hay-rack elevator. Water-elevator.							
Elevator	C. L. Anderson and C. F. Reed	321,567	July 7	219	58, 59	32	43
Elevator	L. Daso	323,919	Aug. 11	695	195	32	661
Elevator	H. J. Reedy	325,971	Sept. 8	905	253, 254	32	1206
Elevator brake mechanism	J. A. Hurley	326,504	Sept. 15	1701	444	32	1344
Elevator-bucket	C. Banker and J. H. Roberts	325,478	Sept. 1	353	86	32	1062
Elevator-cage and safety appliance	A. B. See	324,493	Aug. 18	1480	406	32	812
Elevator-indicator	O. N. Evans	327,075	Sept. 29	2512	655	32	1503
Elevator safety-brake	J. W. Metz	324,144	Aug. 11	995	274	32	715
Elevator safety device	R. M. Curtiss	324,751	Aug. 18	1629	505, 506	32	879
Elevator safety-gate	G. T. Fallis	324,544	Aug. 18	1547	427	32	825
Elevators and inclined railways. Safety attachment for	F. Wittram	327,048	Sept. 29	2478	647	32	1497
Elevators. Automatic feeder and register for barrel-	J. Meyer	327,007	Sept. 29	2423	633, 634	32	1498
Elevators. Automatic safety-guard for	F. P. Hinds	322,452	July 21	1406	368	32	272
Ellipsograph	A. Marichal	324,395	Aug. 18	1352	368	32	790
Elliptic spring	E. Cliff	326,847	Sept. 22	2205	575	32	1442
Embalming device	J. Jackson	322,541	July 21	1524	402	32	294
Embalming-table	C. M. Lukens	325,550	Sept. 1	451	112, 113	32	1102
Embalming-table. Adjustable	G. P. Gaston	322,437	July 21	1378	361	32	268
Embalming-tables. Head-rest for	C. M. Lukens	325,551	Sept. 1	453	113	32	1102
Embossed fabric for decorating walls, &c	T. McGovern	325,687	Sept. 8	623	158	32	1138
Embroidering-machine	J. Sobotka	322,860	July 21	1956	518	32	372
Embroidering-machines. Device for securing the needles in	W. H. Farmer	322,704	July 21	1745	461	32	334
Embroidery	J. Krüsi	322,386	July 14	1313	242	32	240
Embroidery-envelope	J. E. Lee	324,854	Aug. 25	1983	545	32	914
Embroidery. Imitation-bead	E. Cornely	322,582	July 21	1589	419	32	304
Emery-wheel for card-grinders. Traveling	J. H. Loudon	323,172	July 28	2399	636	32	460
Enameled goods. Making	J. Hines	322,290	July 14	1180	310	32	225
End-gate and scoop-board. Combined	R. Casa, J. McArthur, and W. H. Adkins.	326,714	Sept. 22	1993	522, 523	32	1404
End-gate fastening	D. W. McKinnon	322,192	July 14	1069	277	32	203
End-gate. Wagon	F. F. Everett	321,891	July 7	661	172	32	120
End-gate. Wagon	C. A. Gale	326,420	Sept. 15	1601	417	32	1326
End-gate. Wagon	S. G. Travis	322,506	July 21	1491	392	32	287
Engine: *See* Air-engine. Oscillating engine. Blowing-engine. Pumping-engine. Duplex engine. Rotary engine. Fire-engine. Steam-engine. Gas-engine. Traction-engine. Hot-air engine. Valveless engine. Hydraulic engine. Water-pressure engine. Locomotive-engine. Wind-engine.							
Engine	G. W. Price	324,592	Aug. 18	1608	443	32	838
Engine cross-head	W. J. Creelman	324,367	Aug. 18	1314	357	32	783
Engines. Electrical apparatus for controlling marine	L. M. Sanders	326,337	Sept. 15	1501	392	32	1307
Engraving-machine	R. Burgess	321,492	July 7	99	27	32	20
Envelope-blank-feeding mechanism	L. P. Bouvier	324,644	Aug. 18	1698	468	32	853
Envelope-folding machine	F. H. Richards	323,207	July 28	2454	652	32	471
Envelope-moistener	E. Ryder	325,632	Sept. 1	550	140	32	1120
Eraser. Knife-	F. L. Stowell	322,991	July 28	2154	571	32	415
Evaporating-pan	T. F. Krajewski	326,299	Sept. 15	1452	379	32	1298
Evaporating-pan	J. F. Porter	326,149	Sept. 15	1236	316	32	1257
Evaporating pan. Salt-	G. H. Smith	321,456	July 7	64	18	32	15
Excavating-machine	H. J. Scherff and C. B. Wolf	322,858	July 21	1951	515, 516	32	370
Excavator	B. K. Reed and B. L. Burris	322,319	July 14	1217	320	32	232
Excavator	C. H. Watson	325,370	Sept. 1	193	50	32	1051
Excelsior-machine	G. Brooks	326,395	Sept. 15	1572	408	32	1330
Excreta, &c. Apparatus for the reception and deodorization of human	R. Nicholls	324,146	Aug. 11	997	275	32	716
Exercising apparatus	P. E. McDonnell	327,403	Sept. 29	2951	770	32	1580
Exercising-chair	M. G. Farmer	325,519	Sept. 1	412	102	32	1095
Exercising-machine	W. L. Coop and J. C. Bome	323,792	Aug. 4	527	149	32	622
Exercising-machine	W. E. Forest	325,404	Sept. 1	256	64	32	1064
Exercising-machine	J. B. Root	326,247	Sept. 15	1384	350	32	1284
Exhibiting-case	J. M. Clapp	322,903	July 28	2024	534	32	390
Exhibitor for articles of merchandise	J. P. Marshall and A. R. Howze	327,000	Sept. 29	2416	631, 632	32	1487
Expansion-joint	P. Koch	322,457	July 21	1413	370	32	273
Expansion-joint	J. Letzkus	327,281	Sept. 29	2786	725	32	1552
Extension-table	E. Neumer and M. Derx	323,580	Aug. 4	180	52	32	556
Extractor: *See* Lemon-juice extractor. Nail-extractor. Spike-extractor.							
Eye-links. Manufacture of	A. H. Emery	322,048	July 14	877	228	32	168

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Eyeglass	J. J. Bausch	322,673	July 21	1699	450	32	326
Eyeglass nose-guards. Cushion for	G. W. Wells	323,550	Aug. 4	222	66	32	563
Eyeglasses	A. C. Lord	322,461	July 21	1418	371	32	274
Eyeglasses	J. W. Riglander	323,736	Aug. 4	462	130	32	609
Eyeglasses. Nose-guard for	J. Currin	324,540	Aug. 18	1543	426	32	824
Eyeleting-machine	H. H. Cummings	327,142	Sept. 29	2604	679, 680	32	1519
Eyeleting-machine	L. D. Hawkins	325,077	Aug. 25	2279	626, 627	32	970
Fabric: *See* Embossed fabric.							
Fabrics. Machine for forming raised ornaments by threads on	R. Guerrand	322,537	July 21	1521	401	32	293
Fan	E. W. Hoefle	323,811	Aug. 4	550	156	32	626
Fan	J. M. Seymour	326,888	Sept. 22	2265	592	32	1452
Fan attachment	C. K. Eaton	322,530	July 21	1514	399	32	291
Fan attachment	H. P. Roberts	325,863	Sept. 8	868	218	32	1182
Fan. Automatic	A. M. Richardson	325,862	Sept. 8	867	218	32	1182
Fan. Rotary	G. M. Capell	324,006	Aug. 11	807	224, 225	32	681
Fan. Rotary	J. M. Seymour	325,453	Sept. 1	321	78	32	1076
Fanning-machines, &c. Blast-regulator for	C. Dickinson	324,242	Aug. 11	1140	310	32	742
Fanning-mill	W. S. Wood	321,563	July 7	216	57	32	43
Fanning-mill sieve	S. J. Aasen	322,096	July 28	2303	608	32	442
Fare-box	F. O. Landgrane and M. E. Willis	325,348	Sept. 1	154	42	32	1044
Fare-box	W. G. Price	326,778	Sept. 22	2108	548	32	1423
Fare-box	W. Zachringer	322,236	July 14	1118	291, 292	32	213
Fare-box register	F. F. Mattoon	324,396	Aug. 18	1354	368, 369	32	791
Fare-recorder	E. Baldwin	323,553	Aug. 4	226	67	32	564
Fare register and recorder	J. Corbett	326,720	Sept. 22	2011	526, 527, 528, 529	32	1407
Farm-gate	L. T. Akin	321,413	July 7	1	1	32	3
Farm-gate	E. M. Coombs	325,657	Sept. 8	585	148	32	1131
Farm-gate	J. G. Sherman	325,123	Aug. 25	2338	643	32	980
Farm-gate	T. E. Wilson	323,476	Aug. 4	120	35	32	544
Farm-gate	G. W. Mohrstadt	327,009	Sept. 29	2427	634	32	1489
Fastener	J. F. Thayer	324,895	Aug. 25	2043	559	32	924
Fastener	E. Wright	325,221	Aug. 25	2468	679	32	1004
Fastening device	A. J. Bantin	321,476	July 7	93	25	32	19
Faucet	H. P. Drew	325,825	Sept. 8	824	206	32	1173
Faucet	E. U. Scoville	322,129	July 14	986	257	32	188
Faucet	F. F. Wolff	323,094	July 28	2301	607	32	441
Faucet	M. L. Deering	326,482	Sept. 15	1613	437	32	1339
Faucet and air-pump combined. Beer-	H. Naderff	326,319	Sept. 15	1480	385	32	1303
Faucet and bushing	E. A. Byrne and J. P. Lenahan	325,316	Sept. 1	115	33	32	1037
Faucet. Beer-	F. W. Polle	322,318	July 14	1217	319	32	231
Faucet. Beer-	T. C. Clark	323,563	Aug. 4	237	69	32	565
Faucet for wash-bowls	J. E. Carey	325,317	Sept. 1	117	33	32	1037
Faucet. Measuring-	J. Darling	321,694	July 7	382	102	32	71
Faucet or valve	A. J. Homan	325,412	Sept. 1	266	66	32	1066
Faucet. Self-closing	H. B. Leach	322,114	July 14	967	252	32	185
Faucet. Self-closing	C. A. Chandler	321,689	July 7	377	101	32	70
Faucet-socket	F. Seymour	325,870	Sept. 8	875	220	32	1184
Feather. Artificial	H. Berger	324,521	Aug. 18	1521	419	32	820
Feather-renovator	H. Eldridge	324,463	Aug. 18	1440	394	32	806
Feather-renovator	F. Burkhard	322,253	July 14	1138	297	32	216
Feed-bag	M. Burton	326,103	Sept. 15	1171	309	32	1246
Feed-bag for horses	W. G. Howe	325,607	Sept. 1	515	129	32	1113
Feed-bag holder	J. S. Hall	322,927	July 28	2057	543	32	397
Feed-lubricator	T. C. Cadwgan	323,561	Aug. 4	235	69	32	565
Feed-mill	H. S. Crabtree	327,070	Sept. 29	2503	654	32	1501
Feed-rack	B. F. Waggoner	325,461	Sept. 1	329	80	32	1078
Feed-rack	L. C. Shroeder	324,888	Aug. 25	2031	556	32	923
Feed-regulator	P. Hanavan	325,339	Sept. 1	144	40	32	1042
Feed-roll	J. A. Roberts	322,324	July 14	1223	321	32	233
Feed-roll	A. P. Urey	326,465	Sept. 15	1657	432	32	1336
Feed-water alarm	J. T. Bryant	326,014	Sept. 8	1053	268	32	1216
Feed-water cleaner	H. Cummings	326,203	Sept. 15	1318	341	32	1272
Feed-water heater	G. G. Minor and J. D. Sullivan	326,580	Sept. 22	1802	473	32	1317
Feed-water heater	J. W. Pearce	323,957	Aug. 11	745	207	32	670
Feed-water heater	D. E. Rice	323,076	July 28	2273	601	32	436
Feed-water heater	H. W. Shepard	321,541	July 7	188	50	32	37
Feed-water heater	F. S. Zwickl	324,910	Aug. 25	2062	564	32	928
Feed-water heater and purifier	M. W. Hazelton	326,082	Sept. 8	1148	292	32	1234
Feed-water heater and purifier	D. D. Wass	323,611	Aug. 4	299	85	32	577
Feed-water. Heating	J. Kirkaldy	324,120	Aug. 11	964	365, 366	32	710
Feed-water purifier and heater	J. P. Warner	322,767	July 21	1894	482	32	347
Feeder. Automatic boiler-	W. H. Page	326,143	Sept. 15	1225	313	32	1255
Feeder. Hog-	H. M. Carter	324,531	Aug. 18	1534	423	32	822
Feeder. Safety stock-	J. E. Roach	327,110	Sept. 29	2565	669	32	1512
Feeder. Steam-boiler	F. Kleine and W. F. Achter	321,981	July 14	782	204	32	150
Feeder. Time stock-	T. L. Bissell	327,062	Sept. 29	2495	651	32	1500
Feeding device	J. W. Craig	324,090	Aug. 11	923	255	32	702
Felly-making machine	H. D. Jeffrey	325,841	Sept. 8	837	210	32	1176
Felly. Wheel-	J. Marie	321,832	July 7	587	152	32	108
Felt and knit fabric. Combined	S. G. Alexander	325,808	Sept. 8	801	201	32	1169
Fence	L. Barnes	324,517	Aug. 18	1510	417	32	819
Fence	A. Brock	321,576	July 7	230	61	32	45
Fence	J. G. Chambers and L. Byers	324,656	Aug. 18	1713	472	32	856

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Fence	J. H. Crain	327,384	Sept. 29	2028	764	32	1576
Fence	J. S. Ferguson	323,032	July 28	2214	565	32	424
Fence	J. F. Glidden	323,316	July 28	2612	694	32	498
Fence	G. H. Ives	322,939	July 28	2074	552	32	400
Fence	E. Myers	325,621	Sept. 1	537	136	32	1117
Fence	J. W. Read	325,444	Sept. 1	309	75	32	1074
Fence	I. N. Watson	324,439	Aug. 18	1412	385	32	801
Fence	R. F. Wilcox	325,140	Aug. 25	2358	649	32	984
Fence	A. Zimmerman and J. Q. Shipley	324,741	Aug. 18	1817	502	32	877
Fence-barb	G. H. Pattison	323,724	Aug. 4	445	127	32	606
Fence. Barbed-wire	M. Kelly	322,108	July 14	959	249	32	183
Fence. Farm-	A. Ewer	326,902	Sept. 22	2288	598	32	1455
Fence. Farm-	W. H. Reed	321,531	July 7	175	47	32	35
Fence. Flood-	A. Spear	326,690	Sept. 22	1960	515	32	1398
Fence. Flood-	J. D. Whittenburg	326,931	Sept. 22	2326	609	32	1463
Fence-machine	G. W. Homsher	322,822	July 21	1899	504, 505	32	361
Fence machine. Wire-	O. Jackson	323,423	Aug. 4	51	13, 14	32	532
Fence machine. Wire-	S. Watson	322,872	July 21	1972	522, 523	32	374
Fence-making machine	S. D. Fry	326,029	Sept. 8	1076	274	32	1220
Fence-making machine	W. S. and D. Romigh	321,534	July 7	179	48	32	35
Fence-making machine	J. Williams and J. Reynolds	323,841	Aug. 4	589	166	32	634
Fence-making machine	J. Zengel	326,007	Sept. 8	1043	265, 266	32	1215
Fence. Metallic	L. T. and W. H. Brookhart	326,535	Sept. 15	1745	455, 456	32	1353
Fence-nail. Barbed-wire	P. Dunn and T. Harris	324,310	Aug. 11	1235	336	32	760
Fence. Portable	G. T. Bale	324,801	Aug. 25	1915	526, 527	32	901
Fence. Portable	W. Kemery	321,978	July 14	779	203	32	150
Fence-post	D. P. Baker	323,256	July 28	2516	668	32	4e2
Fence-post	E. R. Copeland	323,793	Aug. 4	527	149	32	622
Fence-post	W. H. Gates	322,172	July 14	1042	270	32	198
Fence-post	J. J. Ogilvie	325,357	Sept. 1	165	44	32	1046
Fence-post	D. Schweickhard	322,072	July 14	910	236	32	174
Fence-post	T. E. Wilson	325,302	Sept. 1	99	28	32	1034
Fence-post	J. A. Wright	321,564	July 7	217	57	32	43
Fence-post and wire-fastening	E. C. Jones	327,443	Sept. 29	3000	784	32	1589
Fence-posts. Wire fastening device for	I. Droege, Jr	322,359	July 14	1273	332	32	242
Fence stay. Wire-	W. M. Clow	323,399	Aug. 4	21	6	32	527
Fence. Wire	W. J. Adam	326,087	Sept. 15	1156	295	32	1243
Fence. Wire	C. W. Weld	327,208	Sept. 29	2695	700	32	1537
Fence-wire. Machine for winding	E. W. Shoesmith	324,887	Aug. 25	2029	556	32	922
Fence-wire machines. Barb-	L. W. Connell	325,733	Sept. 8	697	174, 175	33	1150
Fence-wire reel	H. C. Lyons	325,616	Sept. 1	526	133	32	1115
Fences. Brace-wire fastening for wire	A. Lott	326,911	Sept. 22	2296	601	32	1457
Fences. Machine for building and rerolling wire	J. S. Edge	323,303	July 28	2597	689	32	495
Fences. Machine for building picket	J. B. Snyder	325,574	Sept. 1	478	119	32	1107
Fences. Machine for making wire	L. W. and J. A. Fillebrown	322,096	July 14	940	243, 244	32	180
Fences. Visible guard for wire	R. Boone, Jr	321,787	July 7	515	136	32	96
Fencing. Machine for making wire and picket	M. F. Connett	325,504	Sept. 1	382	94, 95	32	1088
Fencing. Metallic	J. J. Brinkerhoff	324,221	Aug. 11	1118	303, 304	32	738
Fender: *See* Carriage-fender.							
Fermenting liquids. Pressure-regulator for	A. S. Bigelow	324,642	Aug. 18	1696	467, 468	32	853
Fertilizer	L. Haas	327,256	Sept. 29	2756	------	32	1547
Fertilizer-distributer	S. Freeman	321,705	July 7	306	106	32	74
Fertilizer-distributer	P. Johnson	325,249	Sept. 1	22	7	32	1019
Fertilizer-distributer	J. F. Keller. (Reissue)	10,640	Aug. 25	2481	682	32	1007
Fertilizer-distributer	H. O. Peabody	325,269	Sept. 1	49	15	32	1025
Fertilizer from tank-waters. Making a	C. Gibson	324,103	Aug. 11	940	------	32	705
Fiber-decorticating machine	T. A. Smith	321,863	July 7	630	162, 163	32	115
Fibers from leaves or plants. Machine for obtaining	G. Sanford	321,536	July 7	181	48	32	36
Fibers from plants. Machine for separating	J. B. Vogel	324,054	Aug. 11	872	240, 241	32	692
Fifth-wheel	L. C. Fuller	324,827	Aug. 25	1949	535	32	907
Fifth-wheel	S. P. Stillman	324,965	Aug. 25	2131	582	32	942
Fifth-wheel. Vehicle	A. G. Johnson	324,116	Aug. 11	956	263	32	708
Fifth-wheel. Vehicle	L. B. Sneden and H. N. Holden	326,686	Sept. 22	1955	514	32	1397
Fifth-wheel. Vehicle	E. E. Rowe	321,641	July 7	313	83	32	60
File-case	E. B. Wight	324,625	Aug. 18	1669	460, 461	32	848
File case. Bill-	C. H. Moulton	323,877	Aug. 4	635	179	32	643
File-cutting machine	H. F. W. Liebmann	323,874	Aug. 4	628	177, 178	32	642
File for preserving prescriptions	B. H. Colby	327,140	Sept. 29	2602	678	32	1518
File. Letter-	L. L. Ferris	327,389	Sept. 29	2934	766	32	1577
File. Letter-	F. M. Rand	327,310	Sept. 29	2823	736	32	1559
File. Paper-	W. F. Crafts	321,950	July 14	747	195	32	144
File. Paper-	J. M. Jenkins	325,676	Sept. 8	613	155	32	1136
File. Paper-	R. H. Welch	322,663	July 21	1687	448	32	323
File. Permanent and temporary letter-	G. M. Patten	325,625	Sept. 1	542	137	32	1118
Filing-cabinet	F. W. Hoyt	324,324	Aug. 11	1256	341	32	764
Filing way-bills, &c. Device for	W. H. Fox	322,274	July 14	1161	304	32	221
Filler and faucet. Combined	E. Kells	326,747	Sept. 22	2065	537	32	1416
Filter	J. Demarest	324,541	Aug. 18	1544	426	32	825
Filter	J. W. Hyatt	322,103	July 14	951	247	32	182
Filter	E. F. Wheelock	324,622	Aug. 18	1666	460	32	847

Alphabetical list of inventions, July to September, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Filter-bed	E. Holden	323,680	Aug. 4	389	111	32	595
Filter for purifying water. Submerged water-	W. G. Himrod	326,500	Sept. 15	1697	443	32	1343
Filter. Hydrant-	G. W. Shawk	322,486	July 21	1458	384	32	281
Filter-ventilator	T. B. Howe	325,803	Sept. 8	704	199	32	1108
Filter. Water-	O. S. Lindon	325,681	Sept. 8	619	157	32	1137
Filtering apparatus	W. Anderson	322,148	July 14	1015	264	32	193
Filtering apparatus	J. W. Hyatt	322,102	July 14	949	246	32	181
Filtering media. Producing	F. Breyer	321,947	July 14	742	194	32	143
Finger-nail cleaning and trimming apparatus	G. D. Burton	327,065	Sept. 29	2985	780	32	1586
Finger-ring	J. Bulova	327,431	Sept. 29	2619	696	32	500
Finger-ring	J. W. Gwinn	323,322	July 28	2611	693	32	498
Finger-ring. Adjustable	F. N. Foster	322,435	July 21	1377	360	32	268
Finger-rings. Manufacture of	E. E. Hanf	324,553	Aug. 18	1557	429	32	826
Fire-arm	W. H. Davenport	326,276	Sept. 15	1417	369	32	1290
Fire-arm	W. H. Elliot	325,513	Sept. 1	403	98	32	1092
Fire-arm	A. Hyde	326,986	Sept. 29	2397	627	32	1483
Fire-arm. Breech-loading	E. A. Bassett	325,901	Sept. 8	903	227	32	1189
Fire-arm. Breech-loading	A. Dickerman	323,501	Aug. 4	156	46	32	551
Fire-arm. Breech-loading	W. S. Teall	322,506	July 21	1570	414	32	300
Fire-arm. Breech-loading	J. Turner	321,923	July 7	703	184	32	128
Fire-arm lock	J. S. Landers and D. B. Wesson	323,873	Aug. 4	627	177	32	641
Fire-arm. Magazine	J. M. and M. S. Browning	324,297	Aug. 11	1216	331	32	757
Fire-arm. Magazine	W. H. Elliot	323,922	Aug. 11	699	196	32	662
Fire-arm. Magazine	W. B. Franklin	326,491	Sept. 15	1683	440	32	1341
Fire-arm. Magazine	F. F. Knous	324,330	Aug. 11	1263	343	32	766
Fire-arm. Magazine	C. Salvator and G. Von Dormus	326,676	Sept. 22	1935	509, 510	32	1303
Fire-arm. Magazine	P. W. Strong	325,774	Sept. 8	755	189	32	1161
Fire-arm. Repeating	A. Chuchu	325,053	Aug. 25	2250	618	32	964
Fire-arm. Revolving	D. B. and J. H. Wesson	323,837	Aug. 4	584	165	32	633
Fire-arm safety-lock mechanism	D. B. Wesson	323,838	Aug. 4	586	165	32	634
Fire-arm safety-lock mechanism	D. B. Wesson	323,839	Aug. 4	587	165	32	634
Fire-arms. Gas-check for	J. E. Tyler	325,678	Sept. 8	883	223	32	1186
Fire-cracker	C. E. Masten	321,833	July 7	588	152	32	108
Fire-engine	H. Losse	321,510	July 7	133	35	32	27
Fire-engine houses. Man-hole for	E. O. Chase	325,731	Sept. 8	995	173	32	1149
Fire-escape	M. A. Arrowsmith	323,288	July 28	2561	682	32	490
Fire-escape	W. C. Barkley	325,381	Sept. 1	217	55	32	1056
Fire-escape	E. H. Bergmann	324,914	Aug. 25	2065	565	32	929
Fire-escape	D. F. Davis	325,390	Sept. 1	250	62	32	1062
Fire-escape	J. Dittrick	326,726	Sept. 22	2040	531	32	1412
Fire-escape	W. B. Doolittle	324,670	Aug. 18	1730	476, 477	32	859
Fire-escape	L. A. H. Engelke	326,961	Sept. 29	2369	619	32	1477
Fire-escape	W. A. Evers	323,924	Aug. 11	701	196, 197	32	662
Fire-escape	H. Gollings	323,140	July 28	2355	625	32	453
Fire-escape	G. W. Kern	322,613	July 21	1626	430	32	311
Fire-escape	F. Kogoschek	325,160	Aug. 25	2414	663	32	994
Fire-escape	W. Robinson	327,111	Sept. 29	2566	669	32	1512
Fire-escape	J. E. Sandberg and M. Akeson	326,336	Sept. 15	1499	391	32	1307
Fire-escape	I. S. Smeltzer	322,206	July 14	1085	289	32	206
Fire-escape	S. Snyder	325,450	Sept. 1	318	77	32	1076
Fire-escape	F. Steinebach and H. Wright	326,169	Sept. 15	1363	325	32	1262
Fire-escape	J. Walsh	325,998	Sept. 8	1031	262	32	1212
Fire-escape	L. Werner	323,092	July 28	2298	607	32	441
Fire-escape	J. H. Wilson	325,142	Aug. 25	2359	650	32	984
Fire-escape	H. O. Woodbury and S. T. Thacher, Jr.	326,616	Sept. 22	1862	497	32	1379
Fire-escape	R. Woolliscroft	324,971	Aug. 25	2139	585	32	943
Fire-escape. Portable	W. H. Bechtel	322,778	July 21	1638	488	32	351
Fire-extinguisher	D. B. Smith	325,982	Sept. 8	1008	257	32	1209
Fire extinguisher and alarm. Automatic	G. W. Landon	323,160	July 28	2380	631	32	457
Fire-extinguisher. Automatic	E. H. Ashcroft	324,909	Aug. 11	1104	298	32	735
Fire-extinguisher. Automatic	C. Barnes	324,977	Aug. 25	2149	587	32	945
Fire-extinguisher. Automatic	W. Harkness	323,578	Aug. 4	954	75	32	569
Fire-extinguisher. Chemical	J. A. De Mauclerc	322,587	July 21	1593	420	32	305
Fire-extinguisher. Chemical	R. Dowson and J. Taylor	323,859	Aug. 4	612	172	32	638
Fire-extinguisher. Chemical	G. A. Lindgren	323,170	July 28	2396	636	32	459
Fire-extinguisher. Chemical	E. F. Steck	327,342	Sept. 29	2866	748, 749	32	1565
Fire-extinguisher. Hand	G. L. Chapin	322,683	July 21	1709	453	32	328
Fire-extinguisher. Hand	A. W. Porter	323,528	Aug. 4	199	55	32	557
Fire-extinguisher. Hand-grenade	H. C. Hart	324,024	Aug. 11	833	231	32	696
Fire-extinguisher. Hand-grenade	N. Mitchell	324,577	Aug. 18	1590	438	32	834
Fire-extinguisher holder	E. C. Nelson	322,468	July 21	1425	373	32	276
Fire-extinguishers. Fusible link for automatic	O. B. Hall	324,316	Aug. 11	1244	338	32	702
Fire-extinguishing apparatus	T. Evans	326,963	Sept. 29	2371	620	32	1478
Fire-extinguishing apparatus. Automatic	D. C. Stillson	326,691	Sept. 22	1961	516	32	1398
Fire-extinguishing grenade	M. H. Piper	324,414	Aug. 18	1382	376	32	795
Fire-place	C. L. Page	325,962	July 28	2109	561	32	407
Fire-place attachment	T. W. Dickinson	321,588	July 7	945	65	32	47
Fire-place. Hot-air	D. Pearson	322,634	July 21	1650	436	32	316
Fire-place. Hot-air	J. Philips	324,337	Aug. 11	1273	345	32	767
Fire-place niche	J. N. Long	324,710	Aug. 18	1782	492	32	869
Fire-place. Open	D. E. Jones	327,396	Sept. 29	2942	768	32	1578
Fire-pot	W. C. Higgins	322,289	July 14	1180	310	32	224
Fire. Protecting buildings from	J. G. Merrill	323,518	Aug. 4	178	52	32	555
Fireproofing compound	J. T. Greenwood, Jr	322,280	July 14	1168	------	32	222
Fish and method of preparing. Cake of cured	A. B. Bray	326,069	Sept. 15	1167	------	32	1245
Fish-grapple	E. W. Clark	321,796	July 7	531	140	32	99
Fish-hook	J. G. Weatherly	326,816	Sept. 22	2166	564	32	1434
Fish-line float	C. Palm	327,100	Sept. 29	2556	666	32	1510
Fish-packing apparatus	D. O. Marshall and C. F. York	325,102	Aug. 25	2310	636	32	975

Alphabetical list of inventions, July to September, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Fish-pond trunk	W. S. Mallard	325,552	Sept. 1	454	113	32	1102
Fishing-float	J. McNeal	326,134	Sept. 15	1215	310	32	1254
Fishing-gig	R. N. Stockton	326,803	Sept. 22	2142	557	32	1430
Fishing-line float	H. C. Behrens	322,088	July 14	930	241	32	178
Fishing-reel	H. L. Joslin	321,900	July 7	675	175	32	123
Fishing-rod	R. W. Andrews	324,450	Aug. 18	1425	389	32	803
Fishing-rods. Joint-ferrule for	W. H. Reed	322,750	July 21	1804	476	32	344
Fishing-tackle box. Pocket	F. C. Wilson	324,443	Aug. 18	1417	387	32	801
Fishing-tackle line-reel	C. H. Briggs	325,813	Sept. 8	807	203	32	1170
Flask: *See* Milk or coffee flask. Molder's flask.							
Flies, hooks, &c. Device for holding artificial	M. A. Shipley	326,794	Sept. 22	2134	555	32	1428
Flies, &c. Implement for catching	I. J. Edge	322,268	July 14	1154	302	32	219
Flood-gate	W. Donnan	321,697	July 7	385	103	32	72
Flood-gate	M. E. Scherer	326,922	Sept. 22	2310	605	32	1460
Floor-clamp	J. M. Groce	322,369	July 14	1287	336	32	244
Floor-cloth, water-proof cloth, &c. Figured fabric or material for	J. Hebblewaite and E. Holt	322,601	July 21	1608	.....	32	308
Floor. Fire-proof	W. W. Hazlett	326,735	Sept. 22	2050	534	32	1413
Flooring	S. C. Little	323,697	Aug. 4	412	118	32	600
Flour-bin	E. A. Powell	322,965	July 28	2113	562	32	408
Flour-bolt	G. Halliday	325,833	Sept. 8	831	208	32	1175
Flour-bolt	J. Koelner	324,029	Aug. 11	839	232	32	687
Flour-bolt	V. Teague	324,187	Aug. 11	1058	290	32	727
Flour-bolt reel	W. C. Marr	324,859	Aug. 25	1990	547	32	916
Flour box and sifter. Combined	D. Shuler	324,419	Aug. 18	1389	378	32	797
Flour-chest	W. H. Williams	326,893	Sept. 22	2274	595	32	1453
Flour-dressing machine	I. H. Eisenberg	322,432	July 21	1374	359	32	267
Flouring-mill rolls. Adjusting device for	R. Georgi	322,367	July 14	1286	336	32	244
Flower. Artificial	R. W. Perry	323,525	Aug. 4	187	54, 55	32	557
Flower-pot shelf	N. E. Burch	324,079	Aug. 11	910	252	32	699
Flower-stand	A. Ilke	323,690	Aug. 4	404	116	32	598
Flower-stand	H. Mecke	325,850	Sept. 8	850	213	32	1178
Flower-stand. Folding	G. Booth	324,216	Aug. 11	1113	301	32	737
Flue-stop	R. Goeling	324,552	Aug. 18	1556	429	32	827
Flues of boilers. Baffle-plate for	N. S. Valentine	322,081	July 14	922	238	32	176
Fluid-cooler	R. Deuel	327,388	Sept. 29	2933	765	32	1577
Fluid diaphragm-meter	J. A. Tilden	324,503	Aug. 18	1496	409, 410	32	815
Fluid-meter. Rotary	G. W. W. Edson	325,163	Aug. 25	2383	656	32	988
Fly-trap	P. D. Horton	321,437	July 7	29	8	32	8
Fly-trap	R. S. Merrill	325,755	Sept. 8	731	182	32	1157
Folding box	R. S. Merrill	325,757	Sept. 8	731	183	32	1157
Folding box	R. S. Merrill	326,577	Sept. 22	1797	471	32	1369
Folding box	S. C. Hopkins	326,564	Sept. 22	1782	467	32	1367
Folding chair	J. Pierce	327,105	Sept. 29	2560	667	32	1511
Folding chair	J. C. Kneeland	326,125	Sept. 15	1198	306	32	1250
Folding-machine	J. G. Northrup	322,552	July 21	1539	406, 407	32	296
Folding-machine. Rotary	A. Campbell	321,684	July 7	369	98, 99	32	69
Folding-machine sheet-conveyer	R. T. Brown	322,344	July 14	1254	328	32	238
Folding table	G. H. Allen	326,260	Sept. 15	1398	364	32	1287
Food for poultry. Preparing	S. S. Myers	321,909	July 7	684	.....	32	124
Foot-rest	J. S. Clark	322,792	July 21	1854	492	32	354
Foot-warmer	H. Sack	325,116	Aug. 25	2327	640	32	978
Foot-wear made of combined textile and felting material. Manufacturing	A. A. Hawley	322,285	July 14	1175	308	32	224
Forge	H. W. Ransom	326,588	Sept. 22	1811	476	32	1372
Forges. Adjustable leg for	J. F. Winchell	326,006	Sept. 8	1042	265	32	1214
Forging blacksmiths' tongs. Die for	F. T. Smith	326,797	Sept. 22	2136	556	32	1429
Forging-dies	H. P. Phipps	327,309	Sept. 29	2821	736	32	1558
Forging-machine	H. Hammond	322,928	July 28	2058	544, 545	32	397
Forging-machine	H. Hammond	322,929	July 28	2060	545, 546, 547, 548	32	398
Forging-machine	H. Hammond	322,930	July 28	2062	548, 549	32	398
Fork: *See* Agricultural fork. Hay-fork. Carving-fork. Hay-stacker fork. Grappling-fork.							
Fork	W. H. Withington	324,908	Aug. 25	2060	563, 564	32	928
Form for displaying dress-goods, &c	A. A. Murphy	322,196	July 14	1072	278	32	204
Foundryman's clamp	T. Harding	321,812	July 7	548	144	32	102
Fowls. Perch for	J. G. Staunton	322,076	July 14	915	237	32	175
Frame: *See* Bed-screen frame. Sewing-machine quilting-frame. Net-frame. Roving-frame.							
Freezing-machine. Absorption	R. Habermann	321,965	July 14	763	199	32	147
Fringe-reel	C. Rothengatter	321,454	July 7	62	18	32	14
Fruit-bleaching apparatus	A. W. Miller, W. Bower, and A. W. Coleman.	321,741	July 7	442	117	32	82
Fruit-drier	A. Blatchly and A. J. Hatch	325,782	Sept. 8	764	191	32	1163
Fruit-drier	J. G. McNaughton	327,006	Sept. 29	2422	633	32	1488
Fruit-drier	C. P. Rogers and L. Allen	325,360	Sept. 1	170	46	32	1047
Fruit-drier	N. G. Williams	323,008	July 28	2176	577, 578	32	419
Fruit-drier	B. A. Wright	325,777	Sept. 8	758	190	32	1162
Fruit-drier. Steam	M. M. Burchfield	323,781	Aug. 4	518	146	32	620
Fruit-gatherer	P. and J. W. Hutcherson	324,326	Aug. 11	1258	341	32	765

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Fruit-jar	W. C. Moody	324,036	Aug. 11	847	236	32	689
Fruit-jar	E. A. Taylor	325,577	Sept. 8	822	222	32	1185
Fruit-jar cap	C. H. Fry, Jr.	326,492	Sept. 15	1685	440	32	1341
Fruit-jar fastener	J. C. Baldwin	321,475	July 7	92	25	32	19
Fruit-jar fastener	J. H. Cassidy	326,625	Sept. 22	1872	490	32	1361
Fruit-jar fastener	C. F. Fisler	326,416	Sept. 15	1597	415	32	1324
Fruit-jar fastening	J. J. Walsh	323,000	July 28	2164	574	32	417
Fruit. Machine for cleaning and brightening dried	E. Kimball	325,546	Sept. 1	446	111	32	1101
Frying-pan	J. O. Drake	324,671	Aug. 18	1732	477	32	859
Fuel and air. Apparatus for mixing liquid	J. W. and F. R. Hoard	326,981	Sept. 29	2390	625, 626	32	1482
Fuel-converter and gas-engine. Combined	L. H. Nash	322,062	July 14	896	232	32	171
Fuel. Feeding fine	W. Westlake	327,210	Sept. 29	2697	701	32	1537
Funnel. Self-closing	J. Jochum	326,566	Sept. 22	1783	468	32	1367
Furnace: *See* Blast-furnace. House-furnace. Boiler-furnace. Ore-roasting furnace. Crucible-furnace. Revolving furnace. Cupola-furnace. Roasting-furnace. Gas-furnace. Skeleton furnace. Gas-generating retort-furnace. Smoke-consuming furnace. Glass-furnace. Steam-generator furnace. Hot-air furnace.							
Furnace	E. Gurney and C. Sellers	324,315	Aug. 11	1244	338	32	762
Furnace	J. Hill	325,175	Aug. 25	2406	661	32	992
Furnace	J. Neville	321,519	July 7	158	42	32	31
Furnace	C. H. Van Benschoten	322,215	July 14	1095	284	32	208
Furnace	R. R. Zell	322,863	July 21	1994	527	32	379
Furnace-door arch	D. H. Burrell	324,005	Aug. 11	806	224	32	681
Furnace for burning liquid and gaseous fuel	J. H. Selwyn	326,161	Sept. 15	1253	321, 322	32	1260
Furnace for the combustion of liquid fuel	G. W. Blackburn and W. F. Cordray	325,651	Sept. 8	580	147	32	1130
Furnace-grate	S. E. Burke	323,290	July 28	2563	682	32	491
Furnace-grate	R. S. T. Cissel	323,112	July 28	2323	615	32	446
Furnace-grate	F. E. Culver	321,951	July 14	748	195	32	144
Furnace-grate	J. M. Duncan	321,890	July 7	660	171	32	120
Furnace-grate	S. H. Huntington	326,295	Sept. 15	1448	377, 378, 382, 383	32	1207
Furnace-grate	C. Martin	326,309	Sept. 15	1470	382, 383	32	1301
Furnace-grate	J. Smead	324,421	Aug. 18	1392	379	32	797
Furnace-grate	J. Storer	324,966	Aug. 25	2132	583	32	942
Furnace-grate	L. Nobel	321,840	July 7	595	154	32	109
Furnace. Liquid-fuel	J. H. Flagler	325,403	Sept. 1	254	63, 64	32	1064
Furnace-roof	T. J. Fennell	325,330	Sept. 1	134	37	32	1040
Furnaces. Air-blast mechanism for	J. B. Davis and W. Walker	325,644	Aug. 4	345	98	32	586
Furnaces and forges. Air-injector for	F. C. Weber	325,292	Sept. 1	83	25	32	1032
Furnaces. Apparatus for applying liquid fuel to blast-	E. W. Visger	323,966	Aug. 11	783	218	32	678
Furnaces. Ash-receptacle for	P. L. Weimer and H. T. Euston	326,181	Sept. 15	1285	332	32	1266
Furnaces. Filling	J. R. McElligott	325,105	Aug. 25	2313	637	32	976
Furnaces. Fire-door casing for	H. Mason	321,736	July 7	432	115	32	81
Furnaces. Fuel-injector for	W. Mathews	326,232	Sept. 15	1353	350	32	1278
Furnaces. Steam and air injector for	H. L. Goodwin	326,730	Sept. 22	2044	532	32	1412
Furnitnre	W. F. Davis	325,737	Sept. 8	706	176	32	1152
Furniture. Attachment for articles of	W. Dunkerly	326,727	Sept. 22	2041	531	32	1412
Furniture. Fan attachment for rocking	L. F. Deming	321,586	July 7	242	64	32	47
Furniture. Folding cabinet	F. Delmont	323,566	Aug. 4	242	71	32	566
Furniture. Knockdown	J. B. Brolaski	325,049	Aug. 25	2243	615, 616, 617	32	963
Furniture. Self-leveling ship's	A. J. V. Tegner	323,231	July 28	2486	660	32	476
Furniture. Woven or knitted cord	J. Springer	326,064	Sept. 8	1123	286	32	1230
Gag and muzzle	J. R. Noble and J. D. Bullock	325,434	Sept. 1	292	72	32	1071
Gage: *See* Clapboard-gage. Scratch-gage. Drawing-knife gage. Seed-drill gage. Pressure-gage. Siding-gage. Pressure-indicating gage. Track-gage. Saw-table gage. Water-gage.							
Gaining-machine table	D. Adams	322,237	July 14	1122	292	32	214
Gaiter. Over-	E. Cowan	324,365	Aug. 18	1312	356	32	782
Galvanic battery	H. J. Brewer	323,902	Aug. 11	677	190	32	658
Galvanic battery	H. J. Brewer	323,903	Aug. 11	678	190	32	658
Galvanic battery	H. J. Brewer	323,904	Aug. 11	679	190	32	658
Galvanic battery	H. J. Brewer	323,905	Aug. 11	680	190	32	658
Galvanic battery	E. F. Leighton	324,708	Aug. 18	1779	491	32	869
Galvanic battery	J. B. Low	324,858	Aug. 25	1989	547	32	915
Galvanic battery	W. T. Lyman	324,475	Aug. 18	1454	397	32	808
Galvanic battery	C. P. Orne	321,446	July 7	51	15	32	12
Galvanometer. Reflecting	R. J. Pratt	323,203	July 28	2450	650, 651	32	470
Game	J. B. Morse	324,873	Aug. 25	2014	552	32	920
Game apparatus	S. L. Clemens	324,535	Aug. 18	1539	425	32	824
Game apparatus	W. F. C. Dunklau	324,462	Aug. 18	1439	393	32	805
Game apparatus. Parlor	M. S. Thomas	324,189	Aug. 11	1060	290	32	727
Game apparatus. Railway	J. B. Wood	326,078	Sept. 8	1145	291	32	1233
Garden. Window	J. M. Bennett	324,291	Aug. 11	1207	329	32	755
Garment and carrying device attached thereto	H. L. Myers and J. W. Rogers	322,844	July 21	1933	511	32	367
Garment-clasp	C. B. Weeks	327,363	Sept. 29	2898	756	32	1570
Garment-hanging stand	J. Black	322,036	July 14	861	224	32	164
Garment. Separable	M. Bischoff	326,834	Sept. 22	2188	571	32	1438

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Garment-support. Elastic	J. A. Steinan	324,426	Aug. 18	1399	380	32	798
Garment-supporter	C. C. Shelby	321,647	July 7	318	84	32	61
Garment-supporter	C. C. Shelby	321,648	July 7	319	85	32	61
Garment-supporter	C. C. Shelby	326,102	Sept. 15	1256	322	32	1261
Garment-supporter	S. H. Whiting	327,367	Sept. 29	2903	757	32	1571
Garment-supporter clasp	W. D. Smith and W. H. Paul	325,126	Aug. 25	2341	644	32	981
Garments. Staying slits in	T. E. Kent	326,749	Sept. 22	2067	537	32	1416
Garments. Strengthening	A. E. Fuechsel	323,666	Aug. 4	621	174	32	640
Garter	J. R. Schrimshaw	325,448	Sept. 1	316	76	32	1075
Gas and air. Apparatus for mixing	H. P. Drew	322,167	July 14	1037	269	32	197
Gas and lamp bracket. Jointed	W. F. Cosgrove and E. F. Jennings	325,590	Sept. 1	496	124	32	1110
Gas and oil pipes. Automatic stop-valve for	J. Hanlon	324,685	Aug. 18	1752	483	32	864
Gas. Apparatus for generating hydrocarbon	R. Boeklen and J. D. Averell	324,809	Aug. 25	1925	529	32	903
Gas. Apparatus for generating illuminating	R. M. Potter and R. Boeklen	325,766	Sept. 8	742	186	32	1159
Gas. Apparatus for generating illuminating	W. P. Elliott	326,959	Sept. 29	2366	619	32	1477
Gas. Apparatus for making	F. Egner	326,488	Sept. 15	1681	439	32	1340
Gas. Apparatus for the manufacture of illuminating	F. Weck	321,870	July 7	639	165, 166	32	116
Gas. Apparatus for washing and scrubbing coal	E. Detwiler	324,665	Aug. 18	1723	474	32	858
Gas-burner	I. Kendrick	325,747	Sept. 8	720	179	32	1155
Gas-burner	F. Siemens	323,537	Aug. 4	202	59	32	560
Gas-burner	O. M. Smith	322,399	July 14	1327	346	32	252
Gas-burner	A. Vreeland	326,358	Sept. 15	1533	398	32	1312
Gas-burner	J. H. J. Haines and J. F. Strong	325,928	Sept. 8	937	237	32	1196
Gas-burner. Automatic safety	H. A. Kimball	323,813	Aug. 4	552	157	32	627
Gas-burner. Heat-generating	A. S. Bower and T. Thorp	322,038	July 14	864	224, 225	32	165
Gas-burner. Regenerative	J. E. Birch	326,832	Sept. 22	2185	570	32	1438
Gas-burners. Automatic cut-off for	F. H. Root	325,509	Sept. 1	473	118	32	1106
Gas by electricity. Device for lighting	A. Clark	324,231	Aug. 11	1130	307	32	740
Gas-cleansing apparatus	J. B. Stobaeus	323,751	Aug. 4	480	136	32	613
Gas-compressor	J. N. Pew	321,637	July 7	307	82	32	59
Gas conductor. Natural	G. Westinghouse, Jr	323,840	Aug. 4	587	165	32	634
Gas conveying and supplying	J. A. Lyon	325,615	Sept. 1	525	132	32	1115
Gas-detector for mines	W. A. Hoeveler	323,685	Aug. 4	399	114	32	597
Gas-distribution	C. W. Baldwin	325,377	Sept. 1	206	52	32	1053
Gas-engine	C. W. Baldwin	325,378	Sept. 1	208	53, 54	32	1053
Gas-engine	C. W. Baldwin	325,379	Sept. 1	212	54, 55	32	1055
Gas-engine	C. W. Baldwin	325,380	Sept. 1	215	55	32	1055
Gas-engine	H. Hartig	324,554	Aug. 18	1557	430	32	898
Gas-engine	G. M. and I. N. Hopkins	326,561	Sept. 22	1777	465, 466	32	1366
Gas-engine	G. M. and I. N. Hopkins	326,562	Sept. 22	1779	466, 467	32	1366
Gas-engine	J. F. Place	322,477	July 21	1442	378, 379, 380	32	279
Gas-engine	C. Shelburne	322,650	July 21	1668	441, 442	32	319
Gas-engine for railway-cars	H. P. Feister	324,244	Aug. 11	1142	311, 312	32	742
Gas from escaping. Means for holding and preventing	T. Prosser	326,242	Sept. 15	1373	355	32	1282
Gas from sawdust. Apparatus for manufacturing	G. Walker	321,868	July 7	635	164, 165	32	116
Gas furnace. Regenerative natural	W. Swindell	322,994	July 28	2157	572	32	416
Gas furnace. Regenerative natural	W. Swindell	322,995	July 28	2158	573	32	416
Gas. Generating hydrogen	B. Sloper	324,179	Aug. 11	1047	286	32	725
Gas-generating retort-furnace	R. H. Smith	321,770	July 7	493	130	32	92
Gas-governor	S. J. Wakeley	322,083	July 14	924	239	32	176
Gas, &c. Heating-burner for	H. B. Chess	322,791	July 21	1852	492	32	354
Gas-lighter	J. A. Cabot	325,786	Sept. 8	769	192	32	1163
Gas-lighter. Percussion	J. H. Wesson	323,893	Aug. 4	659	186	32	647
Gas-lighting apparatus. Electric	L. S. White	324,058	Aug. 11	879	242	32	693
Gas-lighting apparatus. Electric	H. N. Williams	322,233	July 14	1117	291	32	213
Gas-lighting apparatus. Portable electrical	C. L. Clarke	324,009	Aug. 11	812	226	32	682
Gas-machine	A. W. Frail	321,959	July 14	757	198	32	146
Gas. Manufacturing illuminating	C. M. Gearing	323,660	Aug. 4	369	105	32	591
Gas. Method of and apparatus for generating	C. W. Isbell and W. H. Taylor	322,608	July 21	1618	428, 429	32	310
Gas or vapor burner	M. B. and C. G. Dyott	326,550	Sept. 22	1763	461, 462	32	1363
Gas-pipes. Expansion-joint for	W. S. Turner	323,834	Aug. 4	579	163	32	632
Gas-pressure regulator	E. Derval	325,509	Sept. 1	395	97	32	1090
Gas-pressure regulator	R. B. Dick	325,510	Sept. 1	398	98	32	1091
Gas-producer and gas-engine. Combined	L. H. Nash	322,063	July 14	898	233	32	171
Gas. Producing	A. W. Putman-Cramer	323,366	July 28	2685	715	32	511
Gas. Regulating-valve for natural	J. F. Maxson	324,571	Aug. 18	1581	416	32	832
Gas-regulator	T. Angell	322,572	July 21	1577	415	32	302
Gas-regulator	J. Fleischer, H. W. Müller, and J. G. Arnold	324,762	Aug. 18	1852	510	32	883
Gas-regulator	C. L. Phillips and J. J. Ricketts	322,002	July 14	814	213	32	157
Gas-regulator	J. D. West	325,138	Aug. 25	2356	649	32	984
Gas-retorts. Apparatus for receiving and conveying away coke drawn from	H. Hack and F. Ley	323,323	July 28	2020	696, 697	32	500
Gas-service valve	H. A. Stearns	325,989	Sept. 8	1016	259	32	1210
Gas supplied to burners. Device for enriching	N. Finck	324,992	Aug. 25	2176	595	32	949
Gas-trap cover for wash-basins	N. Schwab	324,492	Aug. 18	1479	405	32	812
Gas under pressure. Controlling	J. W. Ellis	321,426	July 7	18	4	32	6
Gases and fluids. Device for regulating the flow of	G. Taylor	325,430	Sept. 1	327	79	32	1077
Gases. Apparatus for utilizing wood	H. M. Pierce	326,451	Sept. 15	1637	428	32	1332
Gases for metallurgical purposes. Utilizing wood	H. M. Pierce	326,452	Sept. 15	1638	.....	32	1332
Gasket for man-holes	W. T. Y. Schenck	326,593	Sept. 22	1822	479	32	1374

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Gaskets for steam-boilers. Manufacture of	W. T. Y. Schenck	326,594	Sept. 22	1823	480	32	1374
Gate: *See* Automatic gate. Bridge-gate. Elevator safety-gate. End-gate. Farm-gate. Flood-gate. Hatch-gate. Railway-gate. Swinging gate. Water-gate. Wire gate.							
Gate	G. A. Barlow	323,102	July 28	2309	610	32	443
Gate	J. B. Campbell	323,395	Aug. 4	16	5	32	596
Gate	W. W. Carpenter and A. S. Dudley	322,419	July 21	1358	354	32	264
Gate	W. H. Cox	322,352	July 14	1264	330	32	240
Gate	S. C. Gridley	326,732	Sept. 22	2047	533	32	1412
Gate	J. Hartman	326,870	Sept. 22	2242	584	32	1448
Gate	J. F. Hopgood	321,604	July 7	267	71	32	51
Gate	C. P. Howe	323,684	Aug. 4	398	114	32	597
Gate	W. G. Kyte and J. A. Martin	325,213	Aug. 25	2480	676	32	1002
Gate	J. F. Peck	322,000	July 14	812	213	32	156
Gate	W. A. Peoples	322,316	July 14	1214	319	32	231
Gate	W. A. Preston	322,852	July 21	1943	514	32	369
Gate	O. E. Seymour	324,735	Aug. 18	1810	500, 501	32	875
Gate	I. E. Smith	321,767	July 7	488	129	32	91
Gate	W. G. Stone	326,173	Sept. 15	1271	327	32	1264
Gate	J. G. Wilson	325,468	Sept. 1	337	89	32	1079
Gate attachment. Swinging	J. F. Mock	324,571	Aug. 25	2011	532	32	919
Gate-hanger	I. Crowfoot	326,548	Sept. 22	1762	461	32	1363
Gate-hanger	J. S. Pringle	322,556	July 21	1547	409	32	297
Gate-roller	D. Gardner	321,708	July 7	309	106, 107	32	75
Gate-spring	M. Kious and W. A. Morton	327,445	Sept. 29	3002	784	32	1589
Gates and signals. Automatically-operating	J. F. Sharp	322,327	July 14	1226	322	32	233
Gates. Mechanism for operating road-crossing	J. H. Clayton	326,975	Sept. 15	1416	368, 369	32	1290
Gates. Operating device for swinging	G. Zink	325,144	Aug. 25	2369	651	32	965
Gathering and ruffling fabrics. Machine for	J. H. Trowbridge	323,544	Aug. 4	214	63	32	562
Gathering and shipping can	H. Haak	323,931	Aug. 11	710	199	32	664
Gear-cutter	D. Slate	326,689	Sept. 22	2266	592, 593, 594	32	1452
Gear-cutting machine	A. Swasey	327,037	Sept. 29	2461	643, 644	32	1495
Gear-cutting machines. Chip-clearer for	U. and H. E. Eberhardt	321,698	July 7	396	103	32	72
Gear. Portable speed-reducing	J. S. Worth	325,220	Aug. 25	2467	679	32	1004
Gear. Reversing	H. D. Coleman	322,797	July 21	1859	494	32	355
Gear-wheel	J. C. Wilson, Sr	322,667	July 21	1691	448	32	324
Gears. Device for starting the dead-wheel in mutilated	M. M. Hooton	326,984	Sept. 29	2393	626	32	1482
Gearing	R. Campbell	324,455	Aug. 18	1432	391	32	804
Gearing and relief mechanism for driving rolls	W. F. Cochrane	327,240	Sept. 29	2728	709, 710	32	1542
Gearing. Belt	O. M. Morse	326,670	Sept. 22	1927	507	32	1392
Gearing. Chain	H. Knowlton	327,446	Sept. 29	3003	784	32	1589
Gearing for reverse-shafts	W. F. Cowden	322,798	July 21	1860	494	32	355
Gearing. Traction-chain	G. E. Burt	325,654	Sept. 8	582	148	32	1131
Gearing. Transmitting	W. G. Gase	326,861	Sept. 22	2220	582	32	1445
Generator: *See* Electric generator. Motor-pressure generator. Steam-generator. Vapor-generator. Vinegar-generator.							
Girder	J. Vanes	327,360	Sept. 29	2896	756	32	1570
Girders. Manufacturing	A. H. Emery	322,049	July 14	879	228	32	168
Glass: *See* Jelly-glass.							
Glass case for clocks, &c	J. G. Schultheis	325,866	Sept. 8	871	219	32	1183
Glass cigar-molds. Form or mold for	H. Hilde	321,498	July 7	118	31	32	23
Glass-cutting apparatus	W. H. Munford	325,855	Sept. 8	857	215, 216	32	1180
Glass. Forming screw-threads on	J. G. Pennycuick	324,157	Aug. 11	1019	278	32	719
Glass from annealing-ovens. Apparatus for removing sheets of	J. Casner	324,533	Aug. 18	1536	424	32	823
Glass-furnace	H. L. Dixon	324,307	Aug. 11	1231	335, 336	32	760
Glass-furnace	L. Houze	323,937	Aug. 11	720	201	32	666
Glass, &c. Furnace for melting	J. Pedder	323,728	Aug. 4	453	128	32	608
Glass. Imitation stained	F. G. Lyon	326,572	Sept. 22	1790	.....	32	1368
Glass-molds. Apparatus for cooling	G. W. Blair and W. Buttler	325,724	Sept. 8	687	172	32	1148
Glass or mica in sheet-metal structures. Securing	C. A. Fletcher and W. H. Wilder	325,523	Sept. 1	417	103	32	1066
Glass ornamentation	G. A. Macbeth	324,133	Aug. 11	992	270	32	713
Glass ornamentation for imitation of fine polished stone	T. E. Strickland	327,348	Sept. 29	2881	752	32	1568
Glass-rolling machinery	F. Mason and J. Conqueror	326,764	Sept. 22	2089	542, 543	32	1419
Glass surfaces and signs. Decoration of silvered	R. Stern	322,864	July 21	1963	520	32	373
Glass vessels. Screw-collar for	J. Spruce and J. Tonks	327,338	Sept. 29	2882	747	32	1565
Glassware. Crimping device for	J. Northwood	327,406	Sept. 29	2956	772	32	1581
Glazing	T. W. Taylor	324,499	Aug. 18	1488	407	32	814
Glove	R. F. Bartel	325,699	Sept. 8	901	227	32	1189
Glove	J. Blomstrom	323,263	July 28	2522	670	32	483
Glove	G. H. Rawlings	325,968	Sept. 8	992	253	32	1206
Glove and glove-fastening	J. I. McMartin	326,770	Sept. 22	2096	544	32	1422
Glove-fastener	S. Florsheim	325,524	Sept. 1	418	103	32	1066
Glove-fastening	J. C. Field	323,926	Aug. 11	705	196	32	663
Glove-fastening	W. S. Richardson	325,698	Sept. 8	638	162	32	1140

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Glove-fastening	W. S. Richardson	325,609	Sept. 8	639	163	32	1140
Glove-holder. Self-closing	C. Connolly	326,104	Sept. 15	1172	299	32	1246
Glove. Husking	E. F. Rate	321,529	July 7	170	46	32	34
Glove or mitten	S. Helfaer	321,497	July 7	117	31	32	23
Gloves, &c. Fastening for	H. Baner	321,940	July 14	734	192	32	142
Gold and other metallic amalgam	S. P. Buatt	324,650	Aug. 18	1707	.....	32	854
Gold and vulcanite. Uniting	J. H. Wood	325,469	Sept. 1	338	.....	32	1080
Gold from its ores by chlorination. Apparatus for the separation of	E. P. Thompson	323,755	Aug. 4	485	137	32	614
Gold from placer mines. Apparatus for extracting	G. M. Levette	324,856	Aug. 25	1987	546	32	915
Gold from sand, &c. Apparatus for separating fine	I. R. McKinney	321,623	July 7	291	76	32	56
Gold, silver, &c. Composition for cleaning and polishing	O. W. Young	327,426	Sept. 29	2978	.....	32	1585
Gold, silver, and copper from their ores. Extracting	J. W. Simpson	323,222	July 28	2473	.....	32	474
Goods to accord with the price paid therefor. Apparatus for automatically delivering prepaid	J. G. Sandeman and P. Everitt	323,213	July 28	2461	654	32	472
Gopher-trap	A. S. Hallidie	326,864	Sept. 22	2234	583	32	1446
Governor	L. and A. Y. Gray	326,497	Sept. 15	1694	442	32	1342
Governor. Electric steam	E. H. Amet	326,933	Sept. 29	2332	611	32	1471
Governor. Marine-engine	A. Fuller	323,314	July 28	2608	694	32	497
Governor. Steam	J. D. McRae	326,441	Sept. 15	1628	426	32	1330
Governor. Steam-engine	P. Armington	327,128	Sept. 29	2591	675	32	1516
Governor. Steam-engine	J. Begtrup	326,092	Sept. 15	1160	296, 297	32	1244
Governor. Steam-engine	G. H. Corliss	324,459	Aug. 18	1436	392	32	865
Governor. Steam-engine	F. Fosdick	323,411	Aug. 4	38	10	32	530
Governor. Steam-engine	J. Kelly	322,456	July 21	1411	369	32	273
Governor. Steam-engine	J. Moore	322,956	July 28	2099	559	32	405
Governor. Steam-engine	J. Moore	321,501	July 7	249	66	32	48
Grade-delineator. Automatic	B. Faymonville	324,178	Aug. 11	1046	285	32	724
Grader and leveler. Road	J. Skinner	325,156	Aug. 25	2376	654	32	987
Grader. Road	C. A. Calaway	323,536	Aug. 4	200	58, 59	32	559
Grading-machine	P. B. Sheldon	326,464	Sept. 15	1655	432	32	1335
Grain-adjuster	H. Tuttle	322,465	July 21	1423	372	32	275
Grain and seed separators. Recleaner for	A. Miller	321,769	July 7	491	130	32	92
Grain and the storage thereof. Apparatus for transferring	L. Smith	322,305	July 14	1199	315	32	228
Grain-bin	J. Mason	325,170	Aug. 25	2395	659	32	991
Grain-bin ventilator	B. F. Harrell	321,692	July 7	380	101	32	71
Grain-binder	O. Cooley	322,439	July 21	1381	362, 363	32	268
Grain-binder	J. E. Giles	327,086	Sept. 29	2526	658, 659, 660, 661	32	1506
Grain-binder	M. M. Hooton	324,771	Aug. 18	1861	512, 513	32	885
Grain-binder	E. W. Jenkins	324,122	Aug. 11	966	266, 267	32	710
Grain-binder	I. Lancaster	326,233	Sept. 15	1354	350	32	1279
Grain-binder	J. C. McLachlan	323,353	July 28	2064	710	32	507
Grain-binder	C. Miller	322,951	July 28	2092	556	32	404
Grain-binder	L. Miller	322,015	July 14	832	218	32	160
Grain-binder	S. C. Shepard	323,001	July 28	2165	575	32	417
Grain-binder	J. Wedlake and L. M. Jones	322,770	July 21	1827	483	32	348
Grain-binder	C. M. Young	321,639	July 7	311	82	32	59
Grain-binder knot-tyer	C. Reeb	323,126	July 28	2337	620, 621	32	449
Grain-binder knotter	E. Ebi	324,353	Aug. 18	1296	352	32	780
Grain-binders. Cord-holder for	W. R. Baker	323,386	Aug. 4	4	1, 2	32	523
Grain-binders. Grain-carrier for low-down	J. F. Appleby	324,464	Aug. 18	1441	394	32	806
Grain-binding machine	W. H. Fritts	326,694	Sept. 22	1966	517	32	1400
Grain-binding machines. Bundle-carrier for	J. Van De Water	323,099	July 28	2306	609	32	443
Grain cleaner and grader	S. R. Backus	323,317	July 28	2612	695	32	498
Grain-conveyers and attachments. Pneumatic apparatus for	B. F. Goodrich and L. Smith	323,224	July 28	2475	657	32	474
Grain-conveyers. Mouth-piece for pneumatic lifting apparatus for	L. Smith	324,651	Aug. 18	1708	471	32	855
Grain cutting or mowing machines. Cutting apparatus for	J. Burke	322,092	July 14	935	242	32	179
Grain-drier	G. Cottrell	323,221	July 28	2472	657	32	474
Grain-drier	D. E. Sibley	324,737	Aug. 18	1814	501	32	876
Grain-drier	J. R. Stiler	324,182	Aug. 11	1051	287	32	726
Grain-drier	H. Stollwerck	325,583	Sept. 1	488	122	32	1109
Grain-drill	J. L. Ashurst	325,512	Sept. 1	401	98	32	1092
Grain-drill	W. P. Elam	323,327	July 28	2627	699	32	501
Grain-drill	S. B. Hart	324,110	Aug. 11	948	261	32	707
Grain-drill	A. C. Hendricks	326,748	Sept. 22	2066	537	32	1416
Grain-drill	J. F. Keller	322,669	July 21	1693	449	32	325
Grain-drill	H. R. Wolfe	322,187	July 14	1092	275	32	202
Grain-drill attachment	W. C. Lathrop	323,953	Aug. 11	737	206	32	669
Grain-drill-tooth attachment	J. Outram	323,326	July 28	2625	698	32	501
Grain-drills. Force-feed fertilizer attachment for	S. B. Hart	322,252	July 14	1137	297	32	216
Grain. Drying	D. M. Bunnell	322,257	July 14	1142	298	32	217
Grain. Drying	H. I., P. F., and H. G. Chase	323,226	July 28	2478	658, 659	32	475
Grain-elevator and transfer apparatus. Pneumatic	L. Smith	322,080	July 14	921	238	32	176
Grain-hulling mill	D. Uhlhorn, Jr	323,509	Aug. 4	166	49	32	553
Grain-meter. Oscillating	G. B. Howland	327,390	Sept. 29	2936	766	32	1577
Grain-scourer	G. B. Gray	323,035	July 28	2218	586, 587	32	425
Grain scouring and cleaning machine	L. J. Harvey	325,919	Sept. 8	928	234, 235	32	1194
Grain-screen	A. G. Deobold	327,061	Sept. 29	2494	651	32	1500
	S. H. Bills						

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Grain screen or separator	F. Wulfert	327,050	Sept. 29	2480	648	32	1497
Grain-separator	G. Brooks and S. B. Pike	324,454	Aug. 18	1429	391	32	804
Grain-separator	L. Hess	322,890	July 21	1696	503	32	361
Grain-transfer apparatus. Mouth-piece for pneumatic	L. Smith	323,225	July 28	2477	658	32	474
Grain-trier	T. Meylor	323,057	July 28	2249	594	32	432
Grapple	G. H. Spencer	322,019	July 14	841	219	32	161
Grappling-fork	M. W. Chamberlain	326,953	Sept. 29	2360	617	32	1476
Grate	L. L. Culver	326,481	Sept. 15	1673	437	32	1338
Grate	W. Ernst	323,031	July 28	2214	585	32	424
Grate-bar	J. D. McKinnon	321,442	July 7	37	10	32	10
Grate-bar	J. B. Miller	325,852	Sept. 8	852	214	32	1179
Grate for burning anthracite coal	A. W. Decrow	321,585	July 7	240	64	32	47
Grate. Portable basket	H. Friedrich and C. W. Carson	324,102	Aug. 11	939	259	32	705
Grate. Shaking	T. J. Graff	323,929	Aug. 11	709	198	32	664
Grate. Shaking	E. H. Stone	323,969	Aug. 11	760	212	32	673
Grating. Window	J. W. Showalter and G. W. Mauger	322,328	July 14	1228	322	32	234
Grave coffin-receptacle	J. H. Robey	324,167	Aug. 11	1030	281	32	721
Gravity-separator	W. H. Wakeford	321,552	July 7	209	53	32	40
Grease-cup	F. H. Bolte	325,726	Sept. 8	690	172	32	1148
Grease-trap for sinks	J. Reid	323,532	Aug. 4	195	57	32	558
Gridiron	C. M. Cooke	322,666	July 21	1712	454	32	388
Grinding-mill	A. L. and W. T. Anderson	322,773	July 21	1832	484, 485	32	349
Grinding-mill	W. H. Browne	326,264	Sept. 15	1402	365	32	1287
Grinding-mill	M. C. Cogswell	324,363	Aug. 18	1310	356	32	782
Grinding-mill	G. K. Smith	324,181	Aug. 11	1050	286, 287	32	725
Grinding-mill	A. W. Straub	322,400	July 14	1329	346	32	252
Grinding-mill	W. C. Westaway. (Reissue)	10,634	Aug. 11	1288	349	32	770
Grinding-mill, bolt, and purifier. Combined	C. F. King	324,473	Aug. 18	1459	397	32	808
Grinding-mill. Roller	W. H. Wakeford	321,554	July 7	209	53	32	40
Grinding mill. Wet	T. L. Sturtevant	327,501	Sept. 29	3066	799	32	1600
Grinding-mills. Rotary head for	T. L. Sturtevant	324,047	Aug. 11	864	239	32	691
Guano-distributer	B. B. and A. C. Grant	324,833	Aug. 25	1957	537	32	909
Guano-distributer and seed-planter. Combined	J F. Harrison	325,535	Sept. 1	432	107	32	1099
Guard: *See* Automatic guard. Bedstead-guard. Bridge-guard. Car window-guard. Cattle-guard. Nut-guard. Railway foot-guard. Railway-switch safety-guard. Saw-guard. Wheel-guard.							
Gun-barrels. Machine for boring	H. H. Hackman and T. P. Walter	327,160	Sept. 29	2634	685	32	1523
Gun. Breech-loading	O. W. Horr	323,936	Aug. 11	719	201	32	665
Gun. Machine	H. Allender	323,997	Aug. 11	794	221	32	679
Gun. Machine	H. S. Maxim	321,513	July 7	144	39	32	28
Gun. Machine	H. S. Maxim	321,514	July 7	151	40	32	29
Gun. Magazine	J. M. and M. S. Browning	324,296	Aug. 11	1213	330, 331	32	756
Gun. Magazine	H. Updegraff	325,369	Sept. 1	186	49, 50	32	1049
Gun. Magazine spring	A. J. Benjamin	325,042	Aug. 25	2236	613	32	961
Guns. Support for whaling	J. J. Haviside	324,935	Aug. 25	2091	572	32	935
Gusset. Armhole	W. Sachs	322,855	July 21	1947	515	32	370
Gutter and spout	L. J. Hardy	326,647	Sept. 22	1897	499	32	1386
Gypsum. Treating	W. Manning	326,047	Sept. 8	1093	.....	32	1224
Hacker for chipping pine trees	R. M. Barron	325,480	Sept. 1	355	86	32	1083
Hair-crimper	S. E. Norton	324,877	Aug. 25	2018	553	32	920
Hair-frizzler	J. Matzinger	323,184	July 28	2426	642	32	465
Hair-frizzling iron	E. Elzenheimer	325,515	Sept. 1	405	99	32	1092
Hair-restorative	R. Damann	321,487	July 7	106	.....	32	21
Halter	E. Deming	324,237	Aug. 11	1135	309	32	741
Halter	J. Enoch	321,957	July 14	755	197	32	145
Hame	C. H. Fields	326,490	Sept. 15	1682	439	32	1340
Hame	J. S. Mitchell	324,950	Aug. 25	2112	577	32	939
Hame and clip	T. E. Van Ness	324,739	Aug. 18	1815	502	32	877
Hame-fastener	M. E. Campany	323,853	Aug. 4	602	169	32	636
Hame-fastener	F. A. Hake	327,258	Sept. 29	2757	715	32	1547
Hame-fastener	S. Killebrew	327,177	Sept. 29	2661	691	32	1529
Hame. Reversible harness	L. Lewis	327,181	Sept. 29	2666	693	32	1530
Hames. Die for manufacturing	J. S. Mitchell	324,951	Aug. 25	2113	578	32	939
Hammer	J. Wolf	323,248	July 28	2508	666	32	480
Hammer. Drop	W. Hassel	327,062	Sept. 29	2521	657	32	1505
Hammers. Machine for making claw-ends of	J. Dodge	326,632	Sept. 22	1881	493	32	1383
Hammock-spreader	W. E. Brock	325,048	Aug. 25	2242	615	32	963
Hammock-support	J. W. Horner	324,027	Aug. 11	837	231	32	687
Hammock-support	C. A. Lindblom	324,128	Aug. 11	976	269	32	712
Hammocks. Head-rest for	A. Nickerson	325,691	Sept. 8	629	159	32	1138
Hammocks. Net attachment for	A. Nickerson	326,321	Sept. 15	1482	386	32	1303
Hand and arm rest	A. C. Perry	326,326	Sept. 15	1489	388	32	1305
Hand-rake	W. H. Jones	324,940	Aug. 25	2097	574	32	936
Handkerchief	J. E. Lee	321,732	July 7	427	114	32	80
Handle: *See* Bicycle-handle. Knife-handle. Saw-handle. Tool-handle. Valve-handle.							
Hanger: *See* Door-hanger. Eaves-trough hanger. Gate-hanger. Picture-hanger. Lamp-hanger. Shaft-hanger.							
Harmonica-holder	W. H. Dawley	322,586	July 21	1592	420	32	305
Harness	M. W. Amer	326,932	Sept. 29	2331	611	32	1471
Harness attachment	T. G. Hanbery and J. D. Wall	324,684	Aug. 18	1751	482	32	864
Harness attachment	J. Siebel	321,652	July 7	324	86	32	62
Harness. Breast	B. McDevitt	323,436	Aug. 4	67	17, 18	32	535

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Harness-check	W. B. Frost	324,765	Aug. 18	1855	511	32	883
Harness-loop	T. Barrett	327,060	Sept. 29	2493	651	32	1500
Harness-support	J. E. Ricker	326,330	Sept. 15	1493	389	32	1305
Harrow	J. H. Barley	326,704	Sept. 22	1978	519	32	1402
Harrow	A. H. Bell	325,151	Aug. 25	2371	653	32	986
Harrow	E. R. Bernhamer	322,241	July 14	1126	293	32	214
Harrow	E. T. Bettreton	323,104	July 28	2311	611	32	444
Harrow	J. T. Bird and R. Simons	324,292	Aug. 11	1208	329	32	755
Harrow	M. H. Cogswell	323,400	Aug. 4	22	6	32	527
Harrow	J. Cullen	325,734	Sept. 8	702	175	32	1151
Harrow	J. Darby	325,735	Sept. 8	703	175	32	1151
Harrow	F. Dawson, Sr	325,917	Sept. 8	926	234	32	1194
Harrow	A. C. Evans	321,805	July 7	540	142	32	100
Harrow	C. Fischer and L. Grother	325,065	Aug. 25	2267	623	32	967
Harrow	A. Hirshheimer	325,541	Sept. 1	439	109	32	1100
Harrow	F. A. Johnson	322,827	July 21	1907	506	32	363
Harrow	J. Maunder	323,705	Aug. 4	420	120	32	601
Harrow	J. F. Platt	325,694	Sept. 8	633	161	32	1139
Harrow	B. F. Rix	327,020	Sept. 29	2440	638	32	1491
Harrow	E. J. Rogers	324,168	Aug. 11	1031	282	32	721
Harrow	A. J. Sprague	321,458	July 7	67	19	32	15
Harrow	L. Theis	324,896	Aug. 25	2044	559	32	925
Harrow	E. E. Whipple	324,057	Aug. 11	877	242	32	693
Harrow	A. Wilcox	324,626	Aug. 18	1671	461	32	848
Harrow	T. J. Williams	324,442	Aug. 18	1415	386	32	801
Harrow	W. Boatner	321,676	July 7	356	94	32	67
Harrow	W. A. Dobb	326,206	Sept. 15	1322	343	32	1273
Harrow	J. R. Whittemore	323,614	Aug. 4	303	87	32	578
Harrow	W. T. Ferguson	322,919	July 28	2046	540	32	395
Harrow	S. Franklin	325,598	Sept. 1	506	126	32	1112
Harrow	J. S. Corbin	325,224	Aug. 25	2471	680	32	1005
Harrow. Disk	C. La Dow	323,343	July 28	2647	705	32	504
Harrow. Disk	C. La Dow	323,344	July 28	2652	705	32	505
Harrow. Disk	P. Mongey	325,760	Sept. 8	734	184	32	1158
Harrow. Riding	J. W. Cureton and J. Kaino	323,299	July 28	2591	687	32	494
Harrow. Rotary	J. R. Hicks	325,932	Sept. 8	941	238	32	1197
Harrow. Rotary	L. N. Petersen, M. L. Harksen, and H. Hagge.	326,775	Sept. 22	2105	547	32	1422
Harrow. Rotary	S. P. Sayre	325,865	Sept. 8	870	219	32	1183
Harrow-teeth. Machine for inserting	A. Hirshheimer and C. M. Mueller	325,542	Sept. 1	440	109	32	1100
Harrow-tooth attachment	C. E. Hogeboom	325,839	Sept. 8	836	209	32	1176
Harrow-tooth. Spring	T. G. Cook	322,351	July 14	1263	330	32	240
Harrow-tooth. Spring	L. J. Stanton	327,340	Sept. 29	2965	747	32	1565
Harrow. Wheel	D. W. Carter	324,655	Aug. 18	1712	472	32	856
Harrow. Wheel	G. J. Cline	322,258	July 14	1144	299	32	217
Harrow. Wheel	T. B. Fagan	323,132	July 28	2346	622	32	451
Harrow. Wheel	A. E. Myers	324,953	Aug. 25	2116	579	32	940
Harrow. Wheel	T. A. Sweet	321,922	July 7	702	183	32	127
Harvester	J. F. Appleby	324,350	Aug. 18	1292	351	32	779
Harvester	W. R. Baker	324,744	Aug. 18	1820	503	32	877
Harvester	W. R. Baker	324,745	Aug. 18	1822	503	32	878
Harvester	A. Bumgarner	325,392	Sept. 1	241	60	32	1061
Harvester	W. F. Cochrane	325,319	Sept. 1	119	34	32	1037
Harvester	W. P. Hale	325,208	Aug. 25	2450	674, 675	32	1001
Harvester	D. Houser	324,607	Aug. 18	1769	487, 488	32	867
Harvester	A. B. Mouck	325,266	Sept. 1	46	14	32	1024
Harvester	G. W. Packer and C. M. Grim	323,954	Aug. 11	739	206	32	669
Harvester	J. A. Peck	322,001	July 14	813	213	32	156
Harvester	W. F. Weirick	326,817	Sept. 22	2166	564, 565	32	1434
Harvester	W. N. Whiteley and W. Bayley	322,229	July 14	1113	289	32	212
Harvester adjusting mechanism	N. W. Miller	323,588	Aug. 4	266	78	32	571
Harvester and binder	W. N. Whiteley	323,613	Aug. 4	301	86, 87	32	576
Harvester and binder. Grain	G. F. Messinger	326,443	Sept. 15	1630	426	32	1330
Harvester-binder	E. W. Jenkins	324,772	Aug. 18	1864	513, 514	32	885
Harvester-binder	J. G. Watson	324,283	Aug. 11	1197	325	32	753
Harvester-binders. Bundle-carrier for	G. A. Strout	325,710	Sept. 8	669	167, 168	32	1145
Harvester bundle-carrier	W. N. Whiteley	322,228	July 14	1112	289	32	211
Harvester. Corn	G. H. Kunsman	326,993	Sept. 29	2406	629	32	1485
Harvester. Corn	K. E. Lathrop	323,046	July 28	2234	590, 591	32	498
Harvester. Corn	W. D. Murray	321,908	July 7	683	177, 178	32	124
Harvester. Corn	C. Williamson	325,190	Aug. 25	2425	666, 667	32	996
Harvester. Corn	S. H. Young	323,618	Aug. 4	310	89, 90	32	580
Harvester. Cotton	J. Ledward	321,440	July 7	35	9	32	9
Harvester. Cotton	E. F. O'Haver	326,142	Sept. 15	1222	312, 313	32	1255
Harvester. Cotton	C. L. Walter	325,880	Sept. 8	885	223, 224, 225	32	1186
Harvester-cutter	G. R. and W. G. Sigler	323,745	Aug. 4	472	133	32	612
Harvester cutting apparatus	D. Michaels	321,837	July 7	593	153	32	109
Harvester grain-binder	C. Wheeler, Jr	321,467	July 7	81	21, 22	32	17
Harvester. Grain-binding	W. W. Marsh and M. E. Blood	321,511	July 7	134	35, 36, 37, 38	32	27
Harvester. Grain-binding	T. C. Marshall	325,752	Sept. 8	726	181, 182	32	1156

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Harvester. Grain-binding	J. F. Selberling	325,871	Sept. 8	876	221	32	1184
Harvester-knife grinder	J. F. Webster and W. H. and C. F. Pease.	323,244	July 28	2501	664, 665	32	479
Harvester. Low-down self-binding	P. F. Hodges	323,333	July 28	2637	701, 702	32	503
Harvester-platforms. Mechanism for adjusting	G. H. Spaulding	325,367	Sept. 1	183	49	32	1049
Harvester-reel	W. R. Baker	324,290	Aug. 11	1206	328	32	755
Harvester-reel	L. W. Noyes and T. O. Perry	323,592	Aug. 4	271	79	32	572
Harvester. Self-binding	G. W. Blakeslee	324,524	Aug. 18	1527	421	32	821
Harvester. Self-binding	J. Harris and J. Lucas	322,931	July 28	2064	549	32	398
Harvester. Self-binding	W. F. Olin	326,884	Sept. 22	2258	589, 590, 591	32	1451
Harvester tongue-support	D. Wallace and J. Darcus	323,471	Aug. 4	113	32	32	543
Harvesters. Comb for grass-seed	J. I. C. Naff	325,109	Aug. 25	2318	638	32	977
Harvesters. Grain-adjusting mechanism for grain-binding	W. McGregor and T. M. Flenniken	323,167	July 28	2430	643	32	466
Harvesting-machine	W. R. Baker	324,354	Aug. 18	1298	353	32	780
Harvesting-machine	P. F. Hodges	321,813	July 7	549	145	32	102
Harvesting-machine. Corn	L. V. Lewis and S. S. Allen	322,459	July 21	1415	370	32	274
Harvesting-machine cutting apparatus	S. R. Owen	323,880	Aug. 4	639	180	32	644
Harvesting-machine dropping-cradle	J. Hornsby, F. C. Southwell, and J. Innocent.	327,067	Sept. 29	2557	661	32	1507
Harvesting-machines. Mechanism for dumping the bundle-carriers of	J. Harris and J. Lucas	322,932	July 28	2065	550	32	399
Hat	W. J. Harris	324,687	Aug. 18	1756	484	32	865
Hat	J. Thomas	327,354	Sept. 29	2988	754	32	1569
Hat and bonnet fastener	J. L. Ubellar	322,213	July 14	1092	284	32	208
Hat-bodies, &c. Machinery for felting	J. T. Waring	326,608	Sept. 22	1849	485	32	1378
Hat-brims. Apparatus for curling and setting silk, felt, and other	H. Polak and H. Lowe	322,004	July 14	816	214	32	157
Hat-brims. Finishing or binding the edges of	J. Thomas	327,353	Sept. 29	2987	754	32	1569
Hat-brims. Machine for curling	A. C. Arnold and W. Thompson	326,935	Sept. 29	2336	611	32	1472
Hat-curling machine	F. Cocker and G. Yule	323,296	July 28	2583	666, 667	32	493
Hat felting and sizing machine	T. Longshaw	323,171	July 28	2398	636	32	460
Hat-flanging apparatus	L. G. Williams	327,212	Sept. 29	2700	702	32	1538
Hat-forming machine	D. Almond	326,377	Sept. 15	1552	403	32	1316
Hat-forming machine	I. F. Brown	323,023	July 28	2197	582	32	422
Hat frame and body	J. L. Kendall	327,273	Sept. 29	2774	720	32	1550
Hat-holder	F. Blinzler	323,262	July 28	2521	670	32	483
Hat-ironing machine	M. Davis and T. W. G. Cook	322,963	July 14	1149	300	32	218
Hat or cap	N. Baruch and O. L. Williams	324,073	Aug. 11	902	249	32	697
Hat-paring machine	E. Tweedy and G. Yule	327,122	Sept. 29	2578	672, 673	32	1515
Hat-paring machine	E. Tweedy and G. Yule	327,123	Sept. 29	2582	673	32	1515
Hat-sweat	H. Charmbury	324,082	Aug. 11	913	253	32	700
Hat-sweat	J. N. Harson	326,081	Sept. 8	1147	292	32	1234
Hats. Brushing and finishing silk	E. F. Brown	321,690	July 7	361	96	32	68
Hatch gate. Elevator	C. T. Schulze	322,485	July 21	1457	383	32	281
Hatches of elevators. Device for automatically opening and closing	J. T. Pacey	325,858	Sept. 8	862	217	32	1181
Hatchway	A. Ralph	321,638	July 7	309	82	32	59
Hawse-pipe for vessels	H. H. Kramer	324,902	Aug. 11	1171	318	32	747
Hay and straw burner	H. W. McClure	322,737	July 21	1786	471	32	340
Hay and straw cutter	W. Barrett	326,382	Sept. 15	1558	404	32	1317
Hay-carrier	J. P. Davis	323,858	Aug. 4	611	172	32	638
Hay-carrier	L. Y. Myers	327,451	Sept. 29	3007	785	32	1580
Hay-carrier	J. W. Provan	322,968	July 28	2119	564	32	409
Hay-derrick	M. V. B. Kenney	321,821	July 7	575	149	32	106
Hay-fork	C. A. Gutenkunst	324,836	Aug. 25	1961	538	32	910
Hay-gatherer	J. H. Poage	322,639	July 21	1655	438	32	317
Hay-loader	J. H. and P. Lux and S. Ede	322,836	July 21	1923	509	32	366
Hay loading and unloading apparatus	K. E. Lathrop	322,618	July 21	1631	431	32	312
Hay or corn ricks. Cover for	L. A. Conteau	324,985	Aug. 25	2159	590	32	947
Hay or cotton press	T. P. Bragg	323,268	July 28	2530	672	32	484
Hay or cotton press	B. J. Curry	327,435	Sept. 29	2990	781	32	1587
Hay-rack	B. Tanner	323,467	Aug. 4	108	31	32	542
Hay-rack elevator	J. P. Pegg	324,483	Aug. 18	1467	402	32	810
Hay rake and loader	J. Dwigans	321,499	July 7	107	29	32	22
Hay-rake. Hand	C. C. Carter	323,786	Aug. 4	522	147	32	621
Hay-rake. Hand	C. C. Carter	323,787	Aug. 4	523	148	32	621
Hay-rake. Hand	C. C. Carter	323,788	Aug. 4	524	148	32	621
Hay-rake. Horse	J. Anderson	321,479	July 7	90	24	32	18
Hay-rake. Horse	F. Bentel	324,000	Aug. 11	798	222	32	688
Hay-rake. Horse	P. F. Fleming	326,417	Sept. 15	1598	415	32	1325
Hay-rake. Horse	S. Mellinger	322,948	July 28	2089	555	32	403
Hay-rake. Revolving horse	W. A. Donnell	325,511	Sept. 1	400	98	32	1091
Hay-stacker	G. W. Moyer	322,958	July 28	2101	559	32	405
Hay-stacker fork	J. H. and T. K. Barley	324,636	Aug. 18	1689	465	32	852
Hay-tedder	J. F. Winchell	322,878	July 21	1983	525	32	376
Head-light. Electric	E. B. Cutten	327,143	Sept. 29	2909	680	32	1520
Head-light signal. Locomotive	W. W. Richards	326,523	Sept. 15	1729	450	32	1349
Head-protector	O. Schlemmer	321,644	July 7	315	84	32	60
Head-rest	D. G. and C. J. McDiarmid	324,398	Aug. 18	1357	369	32	791
Head-rest	C. E. Neeley	325,006	Aug. 25	2193	601	32	952
Header and thrasher. Combined	T. Powell	323,961	Aug. 11	749	208, 209	32	671
Heading-machine	E. Jordan	322,060	July 14	892	231, 232	32	170
Heat from one current of air to another. Apparatus for transferring	C. L., Jr., and I. Braithwaite	326,839	Sept. 22	2193	572	32	1439
Heat. Machine for producing cylindrical non-conductors for	H. Bolze	325,490	Sept. 1	367	89, 90	32	1085
Heat-transmitter	J. H. L. Tuck	323,545	Aug. 4	215	64	32	502

Alphabetical list of inventions, July to September, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Heater:							
See Air and steam heater. Soldering-iron heater. Car-heater. Tire-heater. Feed-water heater. Water-heater.							
Heater	E. S. Wilber	326,004	Sept. 8	1040	264	32	1214
Heating and ventilating apparatus	J. L. Hamilton	324,106	Aug. 11	943	259, 260	32	706
Heating apparatus. Electro-magnetic	M. G. Farmer	323,651	Aug. 4	354	100, 101	32	588
Heating boiler. Steam	T. P. Hogan	326,922	Sept. 29	2392	626	32	1462
Heating. System of steam	M. Foreman	325,667	Sept. 8	602	152	32	1134
Hedge-trimmer	W. McLaughlin	322,193	July 14	1049	278	32	203
Hedge-trimmer	W. Williams, Jr	323,010	July 28	2179	378	32	419
Heel and sole edge trimming machine	W. Manley	322,945	July 28	2079	553, 554	32	401
Heel-attaching machine	F. F. Raymond, 2d	322,126	July 14	982	256	32	188
Heel-attaching machine	F. F. Raymond, 2d	326,779	Sept. 22	2110	548	32	1424
Heel-blanks. Applying top lifts to	F. F. Raymond, 2d	322,561	July 21	1553	409	32	298
Heel-machine	J. Tingley	322,761	July 21	1814	479	32	346
Heel-nail plates. Making	F. F. Raymond, 2d	325,271	Sept. 1	51	15	32	1026
Heel-nailing machine	F. F. Raymond, 2d	321,530	July 7	172	46, 47	32	34
Heel-nailing machine	F. F. Raymond, 2d	321,756	July 7	469	124, 125	32	87
Heel-nailing machine	F. F. Raymond, 2d	322,560	July 21	1551	409	32	297
Heel-stiffeners. Machine for making	C. Dancel	327,244	Sept. 29	2740	711	32	1544
Heel-stiffeners. Machine for making	H. H. Garwood	325,071	Aug. 25	2273	625	32	968
Heel-stiffeners. Machine for molding	G. A. Fullerton	325,797	Sept. 8	781	196, 197	32	1166
Heel-trimming machine	H. J. Huiskamp	324,844	Aug. 25	1972	541	32	912
High and low water indicator	J. C. Palmer	327,304	Sept. 29	2816	735	32	1558
Hinge	S. H. Atkins	323,018	July 28	2187	580	32	421
Hinge	F. W. Beckwith	322,239	July 14	1124	292	32	214
Hinge	F. F. Parker	327,192	Sept. 29	2679	696	32	1533
Hinge	J. A. Resch	326,784	Sept. 22	2118	550	32	1425
Hinge. Awning-blind	C. Garlick	326,967	Sept. 29	2376	622	32	1479
Hinge. Ball-and-socket	A. G. Rockfellow	327,319	Sept. 29	2833	739	32	1560
Hinge. Blind	R. Ghiselin	326,729	Sept. 22	2043	532	32	1412
Hinge for scuttles, skylights, &c	P. J. Curley	324,368	Aug. 18	1315	357	32	783
Hinge. Gate	P. C. Goshorn	323,574	Aug. 4	249	73	32	568
Hinge. Lock	A. R. Brown, Jr	325,909	Sept. 8	916	231	32	1192
Hinge. Lock	J. Wolf	324,444	Aug. 18	1418	387	32	801
Hinge. Spring	L. M. Devore	326,956	Sept. 29	2363	618	32	1476
Hinge. Spring	S. S. Niles	325,761	Sept. 8	734	184	32	1158
Hinge. Step-ladder	G. J. Cline	325,501	Sept. 1	380	93	32	1088
Hinge. Stop	J. M. Dodge. (Reissue)	10,637	Aug. 18	1896	521	32	892
Hinge. Stop	J. M. Dodge. (Reissue)	10,638	Aug. 18	1898	521	32	892
Hitching and releasing device. Animal	J. and W. Wagner	325,482	Sept. 1	330	80	32	1078
Hitching device	W. C. Boone	323,022	July 28	2195	582	32	422
Hitching-strap holder	C. D. Page	325,359	Sept. 1	170	45	32	1046
Hoe. Wheel	S. Fuller	324,466	Aug. 18	1444	395	32	806
Hoes. Manufacture of	J. W. Ells	323,130	July 28	2343	622	32	450
Hog-cholera remedy	G. W. Saxton	324,418	Aug. 18	1388	------	32	797
Hog-cholera remedy	R. A. Wilson	326,615	Sept. 22	1861	------	32	1379
Hog-ringer	S. H. Taylor	327,119	Sept. 29	2575	671	32	1514
Hog-ringing pincher	J. H. Lindsley	324,391	Aug. 18	1347	366	32	789
Hog-snout cutter	W. C. Bliler	323,261	July 28	2220	669	32	483
Hog-trap	C. Arnold	325,473	Sept. 1	342	83	32	1081
Hog-trough	J. Nelson and L. P. Larson	325,690	Sept. 8	628	159	32	1138
Hoist. Miner's	H. S. Bailey	322,516	July 21	1501	394, 395	32	289
Hoisting and conveying apparatus	L. Earth	325,398	Sept. 1	131	36, 37	32	1040
Hoisting and lowering apparatus	I. I. Lancaster	325,614	Sept. 1	523	139	32	1615
Hoisting-machine	G. Heukel	324,690	Aug. 18	1759	485	32	865
Hoisting-machine	E. K. Preston	323,074	July 28	2270	600	32	436
Hoisting-machine	J. Sprogell and H. S. Haskins	324,425	Aug. 18	1397	380	32	798
Hoisting machine or dredge. Coal	B. M. Mann	323,589	Aug. 4	267	78	32	571
Holdback	D. T. Chambers	322,158	July 14	1026	266	32	195
Holdback	R. S. Morse	321,838	July 7	594	154	32	109
Holdback	C. Snyder	325,573	Sept. 1	478	119	32	1107
Holdback for vehicle-shafts	D. T. Chambers	322,159	July 14	1027	267	32	195
Holder:							
See Bag-holder. Lead and crayon holder. Blind-slat holder. Manuscript-holder. Blotter-holder. Oil-cup holder. Book-holder. Paper-holder. Book-leaf holder. Pen and pencil holder. Broom-holder. Pencil and crayon holder. Brush and broom holder. Pencil or crayon holder. Carbon-holder. Plane-holder. Card-holder. Program and hat holder. Cartridge-shell holder. Reflector-holder. Copy-holder. Rein-holder. Cuff-holder. Ribbon and braid holder. Dental lip-holder. Sad-iron holder. Eaves-trough holder. Sash-holder. Egg-holder. Shade-holder. Feed-bag holder. Spool-holder. Hat-holder. Stereotype-plate holder. Hitching-strap holder. Strap-holder. Kettle-holder. Ticket-holder. Lamp-holder. Tobacco-stick holder. Trace-holder. Tool-holder. Work-holder.							
Holder for legal blanks	C. R. Smead	322,758	July 21	1811	478	32	345

Alphabetical list of inventions, July to September, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Holder for small wares	G. K. Jenkins	327,270	Sept. 29	2771	719	32	1549
Hoof-pad	E. F. Collins	323,914	Aug. 11	689	193	32	660
Hoof-pad	T. W. Leonard	323,166	July 28	2392	634	32	459
Hook:							
See Back-band hook. Conductor-hook. Cant-hook. Fish-hook. Check-hook. Pot-hook. Check-rein hook. Rein-hook. Check-rein and post hook. Snap-hook. Whiffletree-hook.							
Hook	C. F. Hartman	324,025	Aug. 11	834	231	32	686
Hook	A. B. Robinson	322,484	July 21	1457	383	32	281
Hoop:							
See Bowling-hoop.							
Hoop-bundling machine	W. Bowker	325,492	Sept. 1	369	90	32	1086
Hoop-driver	G. W. Packer	325,440	Sept. 1	304	74	32	1073
Hoop fastening. Cask	C. W. Barnes	321,938	July 14	733	192	32	142
Hoop for barrels, &c	I. S. Hagenbacher and A. Strauss	324,021	Aug. 11	690	230	32	685
Hoop for barrels, tubs, &c	J. H. Bard	325,809	Sept. 8	802	202	32	1170
Hoop machine. Barrel	P. Kettenring	324,707	Aug. 18	1778	491	32	869
Hoop-shaving machine	J. Prince	322,967	July 28	2116	563, 564	32	408
Hoop-shaving machines. Knife for	J. Prince	322,966	July 28	2114	563	32	408
Hoop-skirt	L. H. Day	322,806	July 21	1870	496	32	356
Hoop-skirt	B. S. Reed	323,963	Aug. 11	753	209	32	672
Hoops. Machine for rolling	G. G. Annable and H. W. Leonard	324,973	Aug. 25	2142	585	32	944
Hop-breaker	F. L. Sebastian	325,979	Sept. 8	1006	256	32	1208
Hopping wort	J. C. Bauer	326,383	Sept. 15	1559	405	32	1318
Horse-bit	D. McCance	321,737	July 7	434	115	32	81
Horse-blanket fastening	F. A. Look	326,228	Sept. 15	1349	349	32	1278
Horse block or step	M. B. Duncan	323,646	Aug. 4	348	99	32	587
Horse-detacher	A. F. Godefroy	325,334	Sept. 1	138	38	32	1041
Horse rake and tedder. Combined	E. F. Stoddard	322,136	July 14	996	259	32	190
Horses. Device for stopping runaway	P. Gumbinner	323,868	Aug. 4	622	175	32	640
Horses' hoofs. Tool for trimming	J. Bernadac	326,831	Sept. 22	2184	570	32	1437
Horseshoe	J. B. Finch	325,664	Sept. 8	598	151	32	1133
Horseshoe	W. W. Hallenbeck	326,290	Sept. 15	1439	375	32	1295
Horseshoe	J. Hollinger, D. A. Wolgamot, and A. B. Gonser.	326,738	Sept. 22	2056	534	32	1414
Horseshoe	J. Knoder	324,562	Aug. 18	1568	433	32	830
Horseshoe	L. Schwaab	323,601	Aug. 4	288	83	32	575
Horseshoe	C. Sheather	322,564	July 21	1563	412, 413	32	299
Horseshoe	W. Somerville, Sr	322,652	July 21	1673	443	32	330
Horseshoe	A. L. Stevens	323,062	July 28	2281	603	32	438
Horseshoe	A. T. Culver	321,420	July 7	8	2	32	4
Horseshoe-bar	G. G. Schroeder	322,398	July 14	1326	345	32	252
Horseshoe. Detachable	C. C. Allen	322,671	July 21	1697	450	32	325
Horseshoe. Expanding	J. N. Clarke, Jr	325,054	Aug. 25	2251	618	32	964
Horseshoe-machine	J. C. Kearns	322,542	July 21	1526	402	32	294
Horseshoe-nail	M. S. Starkweather	322,861	July 21	1959	519	32	372
Horseshoe-pad	J. Adams	325,145	Aug. 25	2363	651	32	985
Horseshoe toe-calk	W. A. Sweet	321,659	July 7	331	88	32	63
Horseshoes. Machine for cutting toe-calks for	L. G. Claude	324,360	Aug. 18	1304	354	32	781
Horseshoes. Manufacture of	L. G. Claude	324,361	Aug. 18	1306	355	32	781
Horseshoes. Manufacture of	J. Murphy	323,062	July 28	2255	596	32	433
Hose. Apparatus for the manufacture of india-rubber	G. F. Canniff, Jr	324,224	Aug. 11	1122	305	32	739
Hose bridge for railway-tracks. Fire	E. F. Steck	326,930	Sept. 22	2322	606, 609	32	1463
Hose-carriage	C. Hemje	322,226	July 14	1176	309	32	224
Hose-coupling	W. Strong	326,604	Sept. 22	1842	483	32	1377
Hose-coupling for street-washers	A. T. Holt	323,149	July 28	2264	627	32	454
Hose. Manufacture of	J. Ashworth	325,720	Sept. 8	682	170	32	1147
Hose-nozzle. Valved	S. T. Brooks	326,012	Sept. 8	1050	267	32	1216
Hose-patch	J. A. Coultaus	325,501	Sept. 1	497	124	32	1110
Hose-pipe. Spring-armored	H. Herrmann and W. B. Doolittle	322,227	July 14	1177	300	32	224
Hose. Street-bridge for fire	E. F. Steck	325,990	Sept. 8	1019	260	32	1210
Hose-wagon	A. P. Hurd	325,805	Sept. 8	796	200	32	1168
Hot-air engine	J. J. McTighe	321,739	July 7	438	116, 117	32	82
Hot-air engine	J. A. Woodbury, J. Merrill, and G. Patten.	324,060	Aug. 11	883	243	32	694
Hot-air engine	J. A. Woodbury, J. Merrill, G. Patten, and E. F. Woodbury.	324,061	Aug. 11	886	244, 245	32	695
Hot-air engine	J. A. Woodbury, J. Merrill, G. Patten, and E. F. Woodbury.	325,640	Sept. 1	561	142, 143	32	1121
Hot-air furnace	J. R. Barker	326,541	Sept. 22	1753	458	32	1361
Hot-air furnace	H. B. Dewey	324,239	Aug. 11	1137	309	32	742
Hot-air furnace	M. H. Jacobs	322,107	July 14	956	249	32	183
Hot-air furnace	C. W. Oakes and E. B. Camp	321,632	July 7	301	80	32	57
Hot-air furnace	I. D. Smead	326,598	Sept. 22	1833	482	32	1376
House:							
See Bath-house. Smoke-house. Chicken-house.							
House-furnace	J. Spear	325,981	Sept. 1	70	21	32	1029
House. Portable	W. Elford	323,030	July 28	2213	585	32	424
Hub and axle. Vehicle	C. P. Robertson and J. R. Hicks	325,769	Sept. 8	747	187	32	1160
Hub-band	T. Brown	321,792	July 7	519	137, 138, 159	32	97
Hub-band	A. S. Parker	325,692	Sept. 8	630	160	32	1138
Hub. Vehicle	J. Dump	321,424	July 7	16	4	32	6
Hub. Vehicle	P. P. Smith	322,759	July 21	1812	479	32	346

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Hub. Vehicle	F. W. Starr	322,863	July 21	1902	519	32	373
Hub. Vehicle-wheel	A. Bradley	324,218	Aug. 11	1115	302	32	737
Hub. Vehicle-wheel	C. W. Fillmore	324,927	Aug. 25	2082	570	32	933
Hub. Vehicle-wheel	C. W. Fillmore	324,928	Aug. 25	2083	570	32	933
Huller: *See* Clover-huller.							
Hydrant	O. P. Pence	325,764	Sept. 8	739	185	32	1158
Hydraulic dirt-conveyer	A. Boschke	321,573	July 7	227	60	32	45
Hydraulic-elevator valve	G. H. Reynolds	323,367	July 28	2086	715	32	511
Hydraulic elevators. Regulator for	O. N. Evans	327,074	Sept. 29	2510	655	32	1503
Hydraulic engine	P. B. Perkins	325,965	Sept. 8	990	252	32	1205
Hydraulic jack for cranes	W. F. Durfee	323,403	Aug. 4	26	7	32	592
Hydraulic press attachment	O. R. Nelson	321,745	July 7	447	118, 119	32	83
Hydraulic testing-machine	U. Cummings	322,800	July 21	1862	495	32	355
Hydrocarbon-burner	J. B. Apple	323,385	Aug. 4	3	1	32	523
Hydrocarbon-burner	H. A. Bradley	322,676	July 21	1702	451	32	326
Hydrocarbon-burner	L. Colburn	324,816	Aug. 25	1935	532	32	905
Hydrocarbon-burner	G. Machlet	325,617	Sept. 1	596	133	32	1115
Hydrocarbon-burners. Absorbent cowl for the chimneys of	R. J. Jacobus	326,565	Sept. 22	1782	468	32	1367
Hydrocarbon-burning apparatus	E. Baker	325,376	Sept. 1	203	52	32	1053
Ice-cave or apparatus for freezing soufflés and molding ice-puddings, &c.	A. W. Marshall	322,117	July 14	972	253	32	186
Ice-cream can	M. J. Dixon and J. W. Wallace	321,954	July 14	752	196	32	145
Ice-cream freezer	J. P. Anderson and J. C. Keller	326,827	Sept. 22	2180	569	32	1436
Ice-cream freezer	A. L. Platt	323,732	Aug. 4	457	129	32	608
Ice-cutting machinery	W. S. Moyer	325,163	Aug. 25	2417	664	32	994
Ice-machine	H. A. Fleuss	326,027	Sept. 8	1070	273	32	1220
Ice-machine	A. R. Kenney	322,820	July 21	1909	507	32	363
Ice-machine	J. M. W. Neff	322,550	July 21	1535	405	32	295
Ice-machine compressor	F. Stitzel	323,749	Aug. 4	476	135	32	612
Incandescents. Furnace for baking	C. Coultas	323,500	Aug. 4	154	45, 46	32	550
Incandescents. Making	J. A. Cabot	324,981	Aug. 25	2154	589	32	946
Incandescents. Making	H. H. Grubbe	323,319	July 28	2615	.....	32	499
Incandescents. Making	C. J. Van Depoele	324,193	Aug. 11	1085	292	32	732
Incandescents. Manufacture of	P. N. Mackay	325,257	Sept. 1	31	.....	32	1021
Incubator	A. A. Gehman	321,712	July 7	403	107, 108	32	75
Incubator	L. Kuhner	324,390	Aug. 18	1345	366	32	780
Incubators. Removable egg-tray for	F. Rosebrook	324,274	Aug. 11	1188	323	32	751
Index	B. M. Payne	324,584	Aug. 18	1600	441	32	836
Index	R. H. Wyman	323,484	Aug. 4	128	37	32	545
Index or directory case	E. B. Martindale	324,661	Aug. 25	1993	547	32	916
Indicating-plate	W. A. Connelly	322,259	July 14	1145	299	32	217
Indicator: *See* Boiler-indicator. Electrical indicator. Elevator-indicator. High and low water indicator. Railway time-indicator. Shallow-water indicator. Shoe-box indicator. Speed-indicator. Station-indicator. Time and interest indicator. Valve-indicator.							
Induction-coil	W. Burnley	326,270	Sept. 15	1411	367	32	1289
Induction disturbances. Apparatus for suppressing	W. A. Jackson and J. C. Chambers	322,724	July 21	1770	467	32	338
Induction. Neutralizing	W. A. Jackson and J. C. Chambers	322,728	July 21	1774	468	32	339
Induction-neutralizing coil	W. A. Jackson and J. C. Chambers	322,727	July 21	1773	468	32	338
Induction. Suppressing	W. A. Jackson and J. C. Chambers	322,726	July 21	1772	468	32	338
Inhaler	A. M. Long	321,904	July 7	678	176	32	123
Inhaler	J. F. Pond	324,161	Aug. 11	1024	280	32	720
Injector	J. S. Bancroft	322,342	July 14	1247	327	32	237
Injector	J. T. Hancock	323,828	Aug. 4	569	162	32	630
Injector	J. Loftus	326,758	Sept. 22	2079	541	32	1418
Injector and injector-nozzle	O. Westphal	322,768	July 21	1825	482	32	348
Injector. Steam	J. Desmond	326,408	Sept. 15	1586	413	32	1323
Inkstand	M. J. Hughes	326,118	Sept. 15	1189	304	32	1248
Inkstand	T. J. Litle	326,044	Sept. 8	1091	278	32	1223
Inkstand	R. Lockwood	324,393	Aug. 18	1346	367	32	790
Inkstand	F. B. Woodhouse	323,249	July 28	2500	666	32	480
Inkstand and calendar. Combined	F. A. Woodmansee	326,468	Sept. 15	1650	433	32	1336
Insect-powder gun	W. P. Honchin	326,037	Sept. 8	1064	276	32	1222
Insect-powder gun	D. M. Somers	326,600	Sept. 22	1835	482	32	1376
Insecticide	A. Müller	322,630	July 21	1644	.....	32	315
Insecticide-wash	F. H. Harman	325,169	Aug. 25	2294	.....	32	991
Insulated conductor	H. C. Spalding	327,464	Sept. 29	3022	789	32	1502
Insulated electrical conductor	H. C. Spalding	327,467	Sept. 29	3027	790	32	1503
Insulating and anti-induction tube for electric conductors	F. B. Rae	325,630	Sept. 1	547	139	32	1119
Insulating-blocks for electrical conductors. Manufacture of	H. C. Spalding	327,465	Sept. 29	3024	790	32	1502
Insulating compound for electrical cables, &c	H. C. Spalding	327,462	Sept. 29	3021	.....	32	1502
Insulating material. Composition of matter for use as	I. P. Wendell	325,890	Sept. 8	893	.....	32	1187
Insulating material. Composition of matter for use as	I. P. Wendell	325,891	Sept. 8	894	.....	32	1187
Insulating material. Die for covering wire with	G. M. Cruickshank	326,021	Sept. 8	1062	270	32	1218
Insulating underground electric conductors. Compound for	H. C. Spalding	327,477	Sept. 29	3037	.....	32	1505
Insulating wires. Applying gum-balata for	P. C. Matherson	326,132	Sept. 15	1214	.....	32	1253
Insulator	T. McGrory	323,055	July 28	2247	594	32	431
Insulator. Electric-lamp	J. R. Fletcher	323,504	Aug. 4	160	47	32	552
Insulator. Electric-wire	E. T. Schoonmaker	321,646	July 7	317	84	32	61
Insulator for securing telegraph and other wires	G. W. Hill	324,692	Aug. 18	1763	486	32	866
Insulator. Telegraph	J. D. Putnam	324,957	Aug. 25	2122	580	32	941
Interfering-pad for horses	D. B. Bleser	326,010	Sept. 8	1048	267	32	1215

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Interlocking switch and signal apparatus	J. T. Hambay	322,283	July 14	1171	307, 308	32	223
Iodoform, bromoform, and chloroform. Manufacture of	T. Kempf	322,940	July 28	2075	.....	32	400
Iron: *See* Hair-frizzling iron. Soldering-iron. Sad-iron.							
Iron and steel. Compound for purifying	W. H. Purdy	322,557	July 21	1547	.....	32	297
Iron and steel. Purifying	W. H. Purdy	322,558	July 21	1548	.....	32	297
Iron into steel. Apparatus for converting	P. L. Weimer	324,903	Aug. 25	2059	361, 362	32	927
Iron. Making wrought	W. Price	323,365	July 28	2683	714	32	511
Iron. Manufacture of sheet	I. E. Craig	321,693	July 7	381	102	32	71
Iron or steel. Manufacturing	J. Lletget y Sardá	324,790	Aug. 18	1869	.....	32	890
Iron. Utilizing the waste cuttings of tinned	J. H. Kolb	322,833	July 21	1917	.....	32	365
Iron. Utilizing waste hoop	W. E. Harris. (Reissue)	10,620	July 7	723	180	32	131
Ironing-machine	C. Angus	321,671	July 7	349	93	32	66
Ironing-machine	F. Corbett	324,068	Aug. 11	921	255	32	701
Ironing-machine	A. T. Hagen	326,556	Sept. 22	1770	463	32	1365
Ironing-machine	C. Marck	323,174	July 28	2401	637	32	461
Ironing-table	J. M. Ellison	326,857	Sept. 22	2225	581	32	1444
Ironing-table	F. A. Johnson	326,744	Sept. 22	2061	536	32	1415
Ironing-table	I. C. Reid	326,453	Sept. 15	1643	430	32	1333
Ironing-table	J. M. Smyth	325,985	Sept. 8	1012	258	32	1209
Irrigating. Movable gate for	J. A. Fry	321,593	July 7	255	67	32	49
Jack: *See* Carriage-jack. Carriage and wagon jack. Hydraulic jack. Lifting-jack. Wagon-jack.							
Jacket. Hunting	F. Walloch	323,987	Aug. 11	784	218	32	678
Jar: *See* Fruit-jar.							
Jar-fastener	C. Watts	326,696	Sept. 22	1969	517	32	1400
Jar-fastening	P. Briody	321,575	July 7	229	61	32	45
Jar-fastening	G. W. Weyman	326,818	Sept. 22	2168	565	32	1434
Jar fastening. Preserve	R. B. Bard	323,101	July 28	2308	610	32	443
Jar, &c., stopper	W. W. Guptill	326,641	Sept. 22	1890	496	32	1385
Jar stopper. Preserve	J. Comly	323,636	Aug. 4	336	90	32	584
Jelly-glass and money-box. Combined	J. F. Loeble	326,757	Sept. 22	2078	540	32	1418
Jetties. Building	R. S. Littlefield	324,857	Aug. 25	1969	547	32	915
Jewelers' findings. Manufacture of	G. H. Fuller	323,927	Aug. 18	706	198	32	664
Jewelry	L. Grebenau	324,681	July 14	1744	480	32	862
Jewelry-pin	H. Fletcher	322,364	Sept. 15	1283	335	32	244
Jewelry-pins, &c. Catch for	C. E. Carpenter	326,477	Aug. 11	1668	436	32	1338
Jib-hank	J. L. Bradley and R. T. Smith	325,047	Aug. 25	2242	615	32	962
Joint: *See* Bridge-joint. Expansion-joint. Pipe-joint. Rail-joint. Railway-rail joint. Swing-joint. Toggle-joint. Tube-joint. Universal joint.							
Journal-box	S. and W. Shufflebarger	321,651	July 7	323	86	32	62
Journal-box	W. W. Worswick	322,032	July 14	856	223	32	164
Journal-box. Anti-friction	T. Tripp	323,468	Aug. 4	109	31	32	542
Journal-lubricator	W. Robinson	326,156	Sept. 15	1246	319	32	1259
Kerite compounds. Manufacturing of crude	A. G. Day	322,804	July 21	1808	.....	32	356
"Kerite." Making the compound termed	A. G. Day	322,802	July 21	1864	.....	32	356
"Kerite." Vulcanized product termed	A. G. Day	322,803	July 21	1866	.....	32	356
Kettle-drainer and steam ventilator and conductor	J. A. Clother	326,629	Sept. 22	1878	492	32	1392
Kettle-holder	E. A. Seely	325,968	Sept. 8	874	220	32	1184
Key	J. F. Wollensak	323,479	Aug. 4	122	35	32	544
Key-seating machine	D. W. Porter	325,695	Sept. 8	635	161	32	1139
Key. Self-locking	T. Young	321,565	July 7	218	57	32	43
Kiln: *See* Brick-kiln. Brick-burning kiln.							
Kitchen-cabinet	L. P. Slaughter	323,223	July 28	2474	657	32	474
Kitchen-cabinet	J. M. Swaim	323,374	July 28	2695	717	32	512
Kitchen-dresser	J. F. Roth	326,248	Sept. 15	1385	360	32	1284
Kneader. Dough	L. Durand	326,023	Sept. 8	1064	271, 272	32	1218
Knife: *See* Budding-knife. Oil-cloth knife. Pocket-knife.							
Knife-handle	P. Koska	324,563	Aug. 18	1568	433	32	830
Knife-handles. Machine for inserting rivets in	W. A. C. Oaks	326,141	Sept. 15	1221	312	32	1254
Knives. Machine for burnishing the blades of table	E. A. Severance	327,327	Sept. 29	2841	741	32	1503
Knives. Machine for burnishing the handles of plated	E. A. Severance	327,328	Sept. 29	2843	742	32	1502
Knit jacket	J. Frankel	325,525	Sept. 1	420	104	32	1096
Knitting-machine	W. Aiken	324,795	Aug. 25	1902	523, 524	32	899
Knitting-machine	W. Aiken	324,796	Aug. 25	1907	525	32	900
Knitting-machine	A. T. L. Davis	326,854	Sept. 22	2214	578, 579, 580	32	1443
Knitting-machine	W. Esty	322,361	July 14	1275	333	32	242
Knitting-machine	T. Langham	325,943	Sept. 8	957	243	32	1200
Knitting-machine	S. M. Levy	321,733	July 7	428	114	32	90
Knitting-machine	R. Schofield and G. Davidson	322,978	July 28	2138	568	32	412
Knitting-machine needle	G. E. Jones	322,454	July 21	1409	360	32	272
Knitting-machine stop-motion attachment	O. H. Edwards	324,097	Aug. 11	831	257	32	704
Knitting-machine stop-motion mechanism	W. D. Huse, W. E. Sheehan, and G. F. Davis	327,170	Sept. 29	2646	668	32	1506
Knitting-machines. Needle-presser for	A. H. Brothers	325,815	Sept. 8	814	204	32	1171

Alphabetical list of inventions, July to September, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg's.	Official Gazette. Vol.	Official Gazette. Page.
Knitting-machines. Transferring device for	W. Aiken	324,797	Aug. 25	1910	525	32	900
Knob-attachment	J. Bellamy	324,640	Aug. 18	1692	466	32	852
Knob-attachment	C. W. Bullard	323,393	Aug. 4	13	4	32	525
Knob attachment	T. D. Davis	327,386	Sept. 29	2930	764 / 765	32	1576
Knob attachment	R. M. Keating	325,545	Sept. 1	445	110	32	1101
Knob attachment	T. J. Morgan	326,048	Sept. 8	1094	279	32	1294
Knob attachment	H. E. Russell, Jr	326,920	Sept. 22	2308	604	32	1459
Knob attachment	H. J. P. Whipple	321,927	July 7	710	185	32	129
Knob attachment. Door	B. F. Libby	321,897	July 7	581	151	32	107
Knob. Door	J. H. Shaw	321,862	July 7	629	162	32	115
Knob. Drawer	J. R. Sutliff	325,712	Sept. 8	671	168	32	1146
Knobs to spindles. Attaching	W. Regan	325,445	Sept. 1	311	75	32	1075
Knobs to spindles. Attaching	H. J. P. Whipple	321,928	July 7	712	185	32	129
Knobs to spindles. Attaching door	R. M. Keating	321,818	July 7	563	147	32	104
Knockdown box	H. T. Boulden	326,262	Sept. 15	1400	364 / 365	32	1287
Knockdown table	H. F. Gray	326,112	Sept. 15	1181	302	32	1247
Knockdown table	G. Rohrbach	327,413	Sept. 29	2964	773	32	1582
Labels for tacks, brads, or nails. Series of	W. H. Hart	327,360	Sept. 29	2759	716	32	1547
Labels. Machine for folding and eyeletting	E. A. Pallister	323,067	July 28	2264	598	32	434
Laces. Display box and package for	J. E. Lee	321,731	July 7	425	113	32	90
Lacing-hooks. Press for setting	E. H. Train	323,978	Aug. 11	773	216	32	675
Ladder	R. Furlong	322,171	July 14	1042	270	32	198
Ladder	H. H. Schumann	322,980	July 28	2140	568	32	413
Ladder-bracket	J. D. and L. M. Norton	324,782	Aug. 18	1879	516	32	888
Ladder. Extensible	T. R. Park	322,632	July 21	1646	435	32	315
Ladder. Extension	W. N. Derby	326,905	Sept. 15	1321	342	32	1273
Ladder. Folding	T. S. Disston	322,099	July 21	1740	459	32	333
Ladder. Step	C. E. Brownson	322,414	July 21	1353	352	32	263
Ladder. Step	E. L. Hendrickson	324,254	Aug. 11	1157	315	32	745
Ladder. Step	W. Pearson	325,441	Sept. 1	305	74	32	1073
Ladder. Tree	J. M. Cunning	323,641	Aug. 4	342	97	32	586
Ladders. Basket-support for	J. B. Wardwell	325,290	Sept. 1	82	24	32	1031
Ladders, pipes, &c. Mechanism for raising	S. N. Bloom	323,264	July 28	2523	670	32	483
Lambrequin-pin	J. Berbecker	323,259	July 28	2519	669	32	482
Lamp	J. Burnet, Jr	324,747	Aug. 18	1825	504	32	878
Lamp	T. Hipwell	323,037	July 28	2221	587	32	426
Lamp	C. Pabst	321,522	July 7	161	43	32	32
Lamp	C. Pabst	321,634	July 7	302	81	32	58
Lamp	F. S. Svenson	321,657	July 7	330	87	32	62
Lamp	A. L. Schryver	323,450	Aug. 4	86	25	32	538
Lamp and foot-warmer. Carriage	J. F. Gibson	321,713	July 7	405	108	32	76
Lamp and holder. Sealing-wax	F. J. Hoyt and A. M. Nichols	322,539	July 21	1523	402	32	293
Lamp. Arc	A. H. Bowman	324,978	Aug. 25	2151	587 / 588	32	945
Lamp. Arc	G. M. Hopkins	325,802	Sept. 8	793	199	32	1168
Lamp. Arc	O. P. Loomis	324,778	Aug. 18	1874	515	32	887
Lamp attachment	F. Goldsmith	324,933	Aug. 25	2088	571 / 572	32	934
Lamp attachment for show-globe brackets	A. Lemon	325,845	Sept. 8	845	212	32	1177
Lamp-bracket	F. J. Cross	321,887	July 7	658	171	32	120
Lamp-burner	L. J. Atwood	324,067	Aug. 11	896	247	32	697
Lamp-burner	L. J. Atwood	324,068	Aug. 11	897	247	32	697
Lamp-burner	L. J. Atwood	324,069	Aug. 11	898	248	32	697
Lamp-burner	L. J. Atwood	327,054	Sept. 29	2484	649	32	1498
Lamp-burner	W. Bertram	322,035	July 14	861	223	32	164
Lamp-burner	H. W. Hayden	322,509	July 21	1606	424	32	308
Lamp-burner	N. Jenkins	322,183	July 14	1058	274	32	201
Lamp-burner	R. S. Maine	323,173	July 28	2400	637	32	460
Lamp-burner	H. D. Place	322,850	July 21	1941	513	32	369
Lamp-burners. Trimming and extinguishing attachment for	F. H. Marker	321,989	July 14	795	208	32	153
Lamp-chains. Friction-pulley for	J. S. Oakley	326,140	Sept. 15	1221	312	32	1254
Lamp. Electric	J. Du Shane	326,487	Sept 15	1679	438 / 439	32	1340
Lamp. Electric-arc	J. G. Allen	327,375	Sept. 29	2911	760	32	1573
Lamp. Electric-arc	J. E. L. and W. J. K. Clark and R. D. Bowman.	324,008	Aug. 11	809	225 / 226	32	682
Lamp. Electric-arc	E. B. Cutten	324,305	Aug. 11	1227	334 / 335	32	759
Lamp. Electric-arc	R. F. Jones	326,123	Sept. 15	1194	305	32	1249
Lamp. Electric-arc	N. McCarty	325,423	Sept. 1	279	69	32	1068
Lamp. Electric-arc	N. McCarty	325,424	Sept. 1	281	69	32	1069
Lamp. Electric-arc	E. Thomson	324,502	Aug. 18	1493	408	32	815
Lamp. Electric-arc	A. B. Worth	324,792	Aug. 18	1891	519 / 520	32	890
Lamp. Extension	H. F. Jaeger	324,793	Aug. 18	1892	520	32	891
Lamp-extinguisher	E. Beach	326,707	Sept. 22	1963	520	32	1403
Lamp-extinguisher. Automatic	W. S. Burgess	322,579	July 21	1585	418	32	303
Lamp-filling device	A. Freygang	324,547	Aug. 18	1552	428	32	827
Lamp-fixture. Extension	J. A. Evarts	324,700	Aug. 18	1848	509	32	882
Lamp fixture. Hanging	G. W. Hubbell	323,687	Aug. 4	401	115	32	598
Lamp for illuminating, heating, and ventilating rooms.	B. F. Enoch	322,168	July 14	1038	269	32	197
Lamp. Gas	L. Julig	327,089	Sept. 29	2539	662	32	1507
Lamp-globe support. Electric	A. Bossard	321,788	July 7	516	136	32	96
Lamp hanger. Electric	W. S. Weston	326,363	Sept. 15	1540	399	32	1314
Lamp hanger. Electric	W. S. Weston	326,364	Sept. 15	1541	400	32	1314
Lamp heating attachment	E. E. Leach	327,278	Sept. 29	2781	722	32	1551
Lamp holder. Electric	A. Haid	321,493	July 7	113	30	32	23
Lamp holder. Incandescent	H. Pieper	321,933	July 7	719	187	32	130
Lamp. Incandescent	C. G. Perkins	326,584	Sept. 22	1807	475	32	1372
Lamp. Incandescent	C. J. Van Depoele	323,963	Aug. 11	780	217	32	677

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg's.	Official Gazette. Vol.	Official Gazette. Page.
Lamp. Incandescent electric	O. A. Moses	324,038	Aug. 11	849	237	32	689
Lamp. Incandescent electric	O. A. Moses	325,958	Sept. 8	977	249	32	1204
Lamp. Incandescent electric	P. K. Stern	322,496	July 21	1482	389	32	285
Lamp. Incandescent electric	J. Van Gestel and C. F. Beck	322,024	July 14	847	220	32	162
Lamp. Incandescent electric	J. Fern	326,858	Sept. 22	2226	581	32	1445
Lamp. Miner's	C. Wolf and H. Friemann	322,514	July 21	1499	394	32	288
Lamp. Miner's safety	R. H. Mather	323,516	Aug. 4	175	51	32	554
Lamp. Multiplex electric-arc	W. Stanley	322,496	July 21	1477	388	32	285
Lamp. Multiple incandescent electric	M. Matthews	324,715	Aug. 18	1787	493	32	870
Lamp. Oil	W. P. Butler	323,851	Aug. 4	600	169	32	636
Lamp or stove. Vapor-burning	B. A. Fiske	324,311	Aug. 11	1237	337	32	761
Lamp-regulating mechanism. Arc	A. Barn and E. Desjardins-Lieux	323,624	Aug. 4	322	92	32	582
Lamp-shade	W. H. Belknap	321,942	July 14	736	193	32	142
Lamp-shade	J. Spillinger	321,545	July 7	195	51	32	39
Lamp-support	E. H. Brown	323,294	July 28	2568	684	32	491
Lamp suspension device	A. Evarts	325,203	Aug. 25	2444	672	32	999
Lamp suspension device	T. A. Weber	323,089	July 28	2290	606	32	440
Lamp suspension device	T. A. Weber	323,090	July 28	2293	606	32	440
Lamp suspension device	T. A. Weber	323,091	July 28	2296	606	32	441
Lamps. Alternating switch for incandescent	J. A. Cabot	324,979	Aug. 25	2153	588	32	946
Lamps. Apparatus for suspending arc	J. Young	322,515	July 21	1500	394	32	288
Lamps. Arch for supporting electric	P. H. Griffin	326,498	Sept. 15	1695	442	32	1343
Lamps. Bulb-case for incandescent electric	S. H. Sprague	326,459	Sept. 15	1648	431	32	1334
Lamps. Carbon electrode for	G. D. Burton	322,895	July 28	2014	531	32	389
Lamps. Carbon for incandescent	W. Stanley, Jr., and E. P. Thompson.	323,372	July 28	2693	.....	32	512
Lamps. Drip-cup for	E. A. Condit	325,057	Aug. 25	2254	619	32	965
Lamps. Holder for incandescent electric	F. M. Brown	324,530	Aug. 18	1533	423	32	822
Lamps. Manufacture of carbons for incandescent	J. W. Swan	322,993	July 28	2156	572	32	415
Lamps. Manufacture of incandescent	A. L. Reinmann	323,205	July 28	2453	651	32	470
Lamps. Manufacturing incandescent electric	W. Holzer	323,150	July 28	2366	627	32	455
Lamps. Manufacturing incandescent electric	O. A. Moses	324,334	Aug. 11	1269	344 / 345	32	767
Lamps or stoves. Oil-burner for	E. Beach	326,706	Sept. 22	1981	520	32	1402
Lamps. Overflow device for pump	T. W. Hamilton	326,427	Sept. 15	1611	419 / 420	32	1327
Lamps. Safety device for incandescent	J. A. Cabot	324,980	Aug. 25	2154	588	32	946
Lamps. Socket for incandescent electric	W. Stanley, Jr	324,894	Aug. 25	2041	559	32	924
Lamps, &c. Suspension device for	E. H. Brown	323,293	July 28	2566	683	32	491
Lamps, &c. Suspension device for	C. H. Lyman	324,332	Aug. 11	1266	344	32	767
Lamps. System for operating incandescent	H. P. Brown	325,391	Sept. 1	235	59, 60	32	1059
Lamps to hats, caps, &c. Securing miners'	M. S. Lorsch	324,131	Aug. 11	979	270	32	713
Land-roller	W. H. Knowles	325,749	Sept. 8	723	180	32	1155
Lantern	E. K. Haynes	322,448	July 21	1399	367	32	271
Lantern	J. Hirth and J. Ruff	325,210	Aug. 25	2455	675	32	1002
Lantern	G. H. Lomax	325,255	Sept. 1	29	9	32	1021
Lantern	F. Meyrose	326,136	Sept. 15	1217	311	32	1254
Lantern	M. McRoberts	321,993	July 14	801	209 / 210	32	154
Lantern for electric lamps	S. Heiman	326,979	Sept. 29	2388	625	32	1481
Lantern. Signal	A. H. Handlan, Jr	324,995	Aug. 25	2179	596	32	949
Lantern. Signal	A. W. Hazelrigg, F. A. Jacob, and H. P. Hood.	326,293	Sept. 15	1445	377	32	1296
Lantern. Tubular	B. B. Merrill	323,710	Aug. 4	425	122	32	603
Lantern. Tubular	J. H. Stone	324,183	Aug. 11	1054	288	32	726
Lap-board	W. L. Lance	322,942	July 28	2076	552	32	401
Last	J. R. Holmes and J. F. Egan	323,033	Aug. 11	713	200	32	665
Latch	O. H. Gilbert	327,157	Sept. 29	2631	684	32	1523
Latch	M. C. Niles	323,063	July 28	2257	596	32	433
Latch	R. E. Woodrich and C. Langbein	326,258	Sept. 15	1396	363	32	1286
Latch and lock. Combined	G. H. and H. W. Chubb	326,626	Sept. 22	1873	491	32	1381
Latch. Car-door	C. H. White	325,371	Sept. 1	195	50	32	1051
Latch-case	H. B. Sargent	321,856	July 7	623	160	32	114
Latch. Coach	A. Ochsner	323,719	Aug. 4	439	125	32	605
Latch. Gate	S. B. Elzey	322,589	July 21	1594	421	32	305
Latch. Gate	W. L. Stovall	325,577	Sept. 1	482	120	32	1107
Lath-sawing machine	J. T. Hall	321,716	July 7	409	109	32	76
Lathe	J. O. Haas	325,832	Sept. 8	830	207	32	1174
Lathe	L. M. Nutting	324,409	Aug. 18	1373	374	32	794
Lathe	G. T. Reiss	324,416	Aug. 18	1383	377	32	796
Lathe	F. A. Wellman	326,000	Sept. 8	1034	263	32	1213
Lathe. Boring	H. B. Stevens	327,343	Sept. 29	2872	749	32	1506
Lathe-center	G. Rich	322,392	July 14	1222	321	32	232
Lathe-dog	C. S. Beach	323,900	Aug. 11	674	189	32	657
Lathe. Engine	V. H. Ernst	325,602	Sept. 8	591	150 / 151	32	1139
Lathe for turning cross-head pins	N. Thomas	322,212	July 14	1090	283	32	207
Lathe for turning irregular forms	W. H. Doane and G. W. Bugbee	321,423	July 7	11	3	32	5
Lathe for turning polygonal forms	D. C. and S. E. Smith	321,762	July 7	480	127	32	89
Lathe tool-feeding mechanism	E. S. Cobb	322,904	July 28	2025	535	32	391
Lathe. Wood-turning	W. A. Kettenring	324,847	Aug. 25	1977	543	32	913
Lathe. Wood-turning	D. C. and S. E. Smith	321,763	July 7	482	127 / 128	32	90
Laundry-reel	B. R. Hawley	322,538	July 21	1522	401	32	203
Lawn-rake	H. D. Alexander and D. Harrington	323,252	July 28	2513	667	32	481
Lawn-rake	L. Gibbs	324,374	Aug. 18	1323	360	32	784
Lead and crayon holder	C. W. Boman	321,784	July 7	510	135	32	95
Lead and crayon holder	C. W. Boman	321,785	July 7	512	135	32	95
Lead and crayon holder	O. A. Moses	325,959	Sept. 8	983	249	32	1204
Lead. Apparatus for making sheet	R. Poensgen	323,201	July 28	2447	649	32	469
Lead. Apparatus for the manufacture of white	H. G. Blyth	322,782	July 21	1842	489	32	352
Lead. Apparatus for the manufacture of white	S. D. Cornell	323,499	Aug. 4	153	45	32	550
Lead. Apparatus for the manufacture of white	W. V. Wilson	322,235	July 14	1118	291	32	213
Lead. Manufacture of white	W. H. Wetherill	324,200	Aug. 11	1093	.....	32	734

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Lead-press. Hydraulic	J. Robertson	327,317	Sept. 29	2831	739	32	1560
Lead traps. Machine for making	F. N. Du Bois	321,955	July 14	752	197	32	145
Leather-blacking machine	J. Hodskinson	322,606	July 21	1615	427	32	309
Leather cutting and piling mechanism	J. V. Abbott and C. E. Luce	325,037	Aug. 25	2229	611 612	32	960
Leather-dressing machine	S. Haley	325,675	Sept. 8	609	154 155	32	1135
Leather. Emery and sand-paper machine for dressing	F. H. Meyers	325,431	Sept. 1	290	71	32	1071
Leather. Glazed kid	T. R. Clark	322,521	July 21	1507	.....	32	290
Leather washer	T. Gingras	322,923	July 28	2053	542	32	396
Leathery compound. Manufacture of	S. P. M. Tasker	322,996	July 28	2159	.....	32	416
Ledger and blotter. Combined petit	W. B. Pershing	323,729	Aug. 4	455	129	32	608
Lemon-juice extractor	J. P. Manny	325,099	Aug. 25	2308	635	32	975
Lemonade. Apparatus for making and dispensing	S. Van Hennik	327,418	Sept. 29	2970	775	32	1583
Lens	J. W. Cloud	325,656	Sept. 8	584	148	32	1131
Lens for optical instruments	A. Wagner	326,255	Sept. 15	1393	363	32	1286
Letter-box	N. A. and J. W. Cadwell	326,948	Sept. 29	2353	615	32	1475
Letter-box alarm	C. S. Ellis	323,129	July 28	2312	621	32	450
Level. Spirit	R. Barker	325,479	Sept. 1	354	86	32	1063
Leveler. Road	S. A. Moulton	325,354	Sept. 1	162	44	32	1045
Lever-shears	J. W. Douglas	321,804	July 7	538	142	32	100
Life or other boat	F. L. Norton	323,357	July 28	2669	711 712	32	502
Life-raft	W. M. Van Wagenen	323,377	July 28	2696	718	32	513
Life-saving apparatus	O. Arnold	322,149	July 14	1016	264	32	193
Life-saving mattress	A. A. Young	325,227	Aug. 25	2477	681	32	1006
Lifter: *See* Stone-lifter. Transom-lifter. Stove-lifter.							
Lifting-jack	A. E. Herman	323,580	Aug. 4	256	75	32	566
Lifting-jack	L. Furman	326,966	Sept. 29	2375	621	32	1479
Lifting-jack	I. Hogeland	325,411	Sept. 1	264	66	32	1065
Lifting-jack	E. A. Peasley	322,315	July 14	1213	319	32	231
Lifting-jack	J. C. Silsbee	326,340	Sept. 15	1506	393	32	1308
Light: *See* Electric light. Skylight. Electric-arc light.							
Light or taper. Ready	J. B. Mitchell	323,058	July 28	2250	595	32	432
Lighting device	R. F. Cooke	326,852	Sept. 22	2211	576 577	32	1443
Lighting system. Arc and incandescent	H. P. Brown	325,390	Sept. 1	233	59	32	1059
Lightning-arrester	E. Thomson	321,464	July 7	77	21	32	16
Lightning-arrester for line-wires	G. W. Mingle	323,822	Aug. 4	564	160	32	629
Lightning-rod connections. Machine for making	S. Bradley	323,105	July 28	2313	611	32	444
Lime-distributer	J. Hotham	323,663	Aug. 4	306	113 114	32	597
Liniment	G. W. Christopher	324,919	Aug. 25	2070	.....	32	930
Link-bending machine	W. R. Lewis	321,734	July 7	429	114	32	80
Link-machine	T. A. Griffin and C. Alkine	326,973	Sept. 29	2363	623	32	1480
Link. Open	T. Barnes	324,637	Aug. 18	1690	465	32	852
Liquid-cooler	A. Kurtz	325,418	Sept. 1	272	67	32	1067
Liquid-meter	P. Samain	325,975	Sept. 8	999	255	32	1207
Liquid substances with purifying or other liquids. Method of and apparatus for treating semi-	E. Langen	323,694	Aug. 4	408	117	32	599
Lithographic stone. Artificial	W. Von Pittler	326,254	Sept. 15	1383	362	32	1286
Lithographic stones. Apparatus for setting	J. T. Hawkins and R. Preston	323,932	Aug. 11	711	199	32	665
Lock: *See* Alarm-lock. Oar-lock. Bolt-lock. Ordnance-lock. Cabinet-lock. Padlock. Combination-lock. Rope-lock. Fire-arm lock. Safe-lock. Milk-can lock. Seal-lock. Mortise-lock. Time-lock. Nut-lock. Trunk-lock.							
Lock	J. R. Ames	327,053	Sept. 29	2483	649	32	1498
Lock	G. B. Cowles	324,818	Aug. 25	1938	533	32	906
Lock	E. G. Gory	324,313	Aug. 11	1241	337	32	762
Lock	A. Kelly	326,507	Sept. 15	1705	445	32	1344
Lock	C. A. Ludlow	321,049	July 28	2239	592	32	430
Lock	A. Paciorkowski	326,673	Sept. 22	1932	508	32	1393
Lock	C. F. Veit	325,028	Aug. 25	2216	608	32	957
Lock	J. E. Young	325,305	Sept. 1	101	29	32	1034
Lock for the frames of satchels, &c	F. C. Schmidt	325,017	Aug. 25	2204	604	32	954
Locks. Locking and unlocking mechanism for electric	C. H. Crockett and C. C. Allen	323,918	Aug. 11	692	194	32	660
Locking device for jails	C. S. and U. Snead	323,748	Aug. 4	475	134 135	32	612
Locket and coin and letter scale. Combined	E. Fuchs	324,465	Aug. 18	1443	395	32	806
Locomotion. Electric	J. M. Pendleton	323,199	July 28	2443	648	32	469
Locomotive ash-pan	J. Graham	326,731	Sept. 22	2046	532	32	1412
Locomotive-engine	J. A. Longridge	323,045	July 28	2231	590	32	428
Locomotive-engine. Electric	L. Daft	325,915	Sept. 8	924	233	32	1193
Locomotive sand-feeder	H. R. Campfield	322,156	July 14	1023	266	32	195
Locomotive-spring clip	W. Evans	325,201	Aug. 25	2442	671 672	32	999
Locomotive-spring clip	W. Evans	325,202	Aug. 25	2443	672	32	999
Locomotives. Coaling	H. McLaughlin	323,586	Aug. 4	264	77	32	571
Locomotives. Traction-increaser for	M. A. Dees	323,263	July 28	2551	679	32	488
Log-binder	H. Pangborn	323,445	Aug. 4	81	24	32	577
Log-mover and dog	W. E. Hill	325,745	Sept. 8	718	179	32	1154
Log-turner	D. W. Dorrance	321,803	July 7	537	142	32	100
Log-turner	J. Evered	326,260	Sept. 15	1422	370	32	1291

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Log-unloader	W. E. Hill	324,840	Aug. 25	1966	539	32	911
Looking-glass	E. M. Carpentier	324,227	Aug. 11	1125	306	32	739
Loom	A. Urbahn	326,071	Sept. 8	1134	288 289	32	1231
Loom for weaving chenille or fur pile fabrics	W. Adam	324,287	Aug. 11	1201	326 327	32	754
Loom for weaving double pile fabrics	R. Mair and W. H. Royal	324,304	Aug. 18	1349	367 368	32	790
Loom for weaving looped or terry fabrics	J. Nugent	321,631	July 7	299	90	32	57
Loom-harness	W. J. Hulford and T. P. Walsh	323,421	Aug. 4	49	13	32	532
Loom-harness. Machine for opening the eyes of	J. Sladdin	324,490	Aug. 18	1390	378 379	32	797
Loom-picker	W. R. Thrash	322,140	July 14	1008	262	32	192
Loom positive shuttle-motion	C. B. Rumsey	323,738	Aug. 4	464	131	32	610
Loom-shuttle	J. Baldwin	323,554	Aug. 4	228	67	32	564
Loom-shuttle	H. Bardsley	325,721	Sept. 8	683	171	32	1147
Loom-shuttle	A. Boissonneault	322,892	July 28	2010	530	32	388
Loom-shuttle	J. H. Nolan	323,438	Aug. 4	69	18	32	536
Loom-shuttle spindle	W. T. Coggeshall	323,115	July 28	2326	616	32	447
Looms. Device for connecting picking-straps to the picking-sticks of	T. H. Logan	325,350	Sept. 1	157	43	32	1044
Looms. Needle for Jacquard	A. Mutter	327,188	Sept. 29	2673	695	32	1531
Looms. Tension-regulator for the let-off motions of	A. Middleton, Jr	327,187	Sept. 29	2672	694	32	1531
Looms. Warp-beam for	E. S. Burlingame	325,236	Sept. 1	7	3	32	1016
Looms. Warp-beam for	G. F. Hutchins	324,770	Aug. 18	1860	512	32	884
Lounge	J. T. Collins	323,915	Aug. 11	689	193	32	660
Low-water alarm	J. A. Straight	322,021	July 14	843	220	32	161
Low-water alarm	H. Wilson	326,370	Sept. 15	1546	401	32	1315
Low-water alarm for boilers. Electric	W. P. Ryman	323,600	Aug. 4	287	83	32	575
Lubricating apparatus	C. M. Long	326,304	Sept. 15	1465	381	32	1300
Lubricating car-axles	O. A. Pierce	325,966	Sept. 8	991	252	32	1206
Lubricating compound	G. P. French	324,018	Aug. 11	827	.....	32	685
Lubricating composition	A. A. Martinez	326,311	Sept. 15	1472	.....	32	1301
Lubricator: *See* Axle-lubricator. Steam-engine lubricator. Feed-lubricator. Steam-engine cross-head Journal-lubricator. lubricator. Rotary lubricator.							
Lubricator	P. Barclay	322,407	July 21	1343	349	32	261
Lubricator	F. Bold	325,904	Sept. 8	910	229	32	1190
Lubricator	J. Günther	321,597	July 7	259	69	32	49
Lubricator	C. C. Harlow	324,996	Aug. 25	2179	596 597	32	949
Lubricator	C. B. Hodges	322,291	July 14	1181	310	32	225
Lubricator	W. R. Holder	321,436	July 7	28	8	32	8
Lubricator	T. W. Kinkaid	327,398	Sept. 29	2945	709	32	1579
Lubricator	J. M. W. Long	326,998	Sept. 29	2414	631	32	1486
Lubricator	C. W. Mills	325,264	Sept. 1	43	13	32	1024
Lubricator	J. C. Mulberry	321,996	July 14	806	210 211	32	155
Lubricator	A. Noteman	325,356	Sept. 1	164	44	32	1046
Lubricator	L. Pfingst	322,123	July 14	979	255	32	187
Lubricator	J. Powell	326,517	Sept. 15	1719	448	32	1348
Lubricator	J. Powell	326,518	Sept. 15	1721	449	32	1348
Lubricator	J. Powell	326,519	Sept. 15	1723	449	32	1348
Lubricator	J. Powell	326,520	Sept. 15	1724	449	32	1348
Lubricator	J. Powell	326,521	Sept. 15	1726	450	32	1349
Lubricator	R. Ruddy and L. Kaczander	324,339	Aug. 11	1275	346	32	768
Lubricator	W. Y. Thomas	325,578	Sept. 1	483	121	32	1108
Lumber-drier	A. M. Schilling	327,322	Sept. 29	2836	740	32	1561
Lumber-drier	H. S. Smith	327,030	Sept. 29	2451	640 641	32	1493
Lumber-trimmer	M. Dutrisac	326,635	Sept. 22	1883	494	32	1383
Machine band or belting	G. S. Sapsworth	323,214	July 28	2463	655	32	473
Machine-table	R. L. and R. S. Greenlee	326,640	Sept. 22	1889	495 496	32	1385
Machinery. Implement for cleaning	W. Edwards	323,502	Aug. 4	157	47	32	552
Machinery. Sliding connection for	J. Clayton	326,622	Sept. 22	1876	491	32	1381
Magazine-boiler	J. White	323,764	Aug. 4	501	141	32	616
Magnet. Electro-	H. C. Spalding	327,469	Sept. 29	3028	791	32	1593
Magnets. Armature for electro-	J. F. Gilliland	323,663	Aug. 4	371	105	32	592
Magnets. Machine for winding electro-	H. C. Spalding	327,470	Sept. 29	3030	791	32	1593
Mail-bag	A. S. Haines	323,610	Aug. 4	376	108	32	593
Mail-bag	A. J. Morrison	323,194	July 28	2437	645 646	32	467
Mail-crane	J. H. Harden	322,709	July 21	1750	462	32	334
Mail-crane	F. W. Sensiba	327,200	Sept. 29	2686	698	32	1535
Mainspring-winder	A. F. Robbins	325,973	Sept. 8	997	254	32	1207
Majolica-ware. Imitating objects of	J. G. Müller	323,823	Aug. 4	565	.....	32	630
Malt-drier	F. Grathwohl	324,469	Aug. 18	1447	396	32	807
Malt-drier	A. Schultz	325,018	Aug. 25	2205	604	32	954
Malt-floors. Spraying apparatus for	O. Bothner	326,197	Sept. 15	1305	338	32	1270
Malt-stirring machine	A. J. Reynolds	325,012	Aug. 25	2199	602	32	953
Mandrel for use in welding links	T. A. Griffin and C. Alkine	326,974	Sept. 29	2384	624	32	1480
Mantel	J. Hewitt	321,723	July 7	416	111	32	78
Manuscript-holder. Automatic revolving	H. E. Twichell	323,979	Aug. 11	775	216	32	676
Map, chart, or picture suspender	J. Brownlee	326,013	Sept. 8	1051	267	32	1216
Map-rack	A. H. Hall	325,337	Sept. 1	142	39	32	1042
Marking device	S. H. Brown	325,154	Aug. 25	2374	654	32	967
Marking or graduating machine	W. E. Hatheway	324,319	Aug. 11	1248	339	32	763
Mash. Apparatus for boiling and cooling	E. Kaufield	325,091	Aug. 25	2209	632	32	973
Mask	C. C. Fuller	327,438	Sept. 29	2993	782	32	1588
Mat: *See* Advertising-mat.							
Match	R. F. Cooke	326,851	Sept. 22	2210	576	32	1443

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Match-blanks. Machine for making	G. E. Norris and W. E. Hagan	321,444	July 7	39	11, 12	32	10
Match-box and cigar-cutter. Combined	W. M. Ducker	323,025	July 28	2207	583	32	423
Match-box and cigar-cutter. Combined	W. M. Ducker	323,026	July 28	2209	584	32	423
Match-box and cigar-cutter. Combined	W. M. Ducker	323,028	July 28	2211	584	32	424
Match-box and cigar-cutter. Combined	W. M. Ducker	323,029	July 28	2212	584	32	424
Match-box and cigar-cutter. Combined	E. P. Williams, Jr	327,369	Sept. 29	2905	758	32	1572
Match-boxes. Machine for making	F. P. Newton and E. B. Beecher	322,470	July 21	1427	373, 374, 375, 376	32	276
Match-splint machine	G. Flewwelling and G. J. Harris	322,706	July 21	1746	461	32	334
Match-splints. Machine for straightening	W. H. Wyman	322,145	July 14	1012	263	32	192
Matches. Machine for making	G. E. Norris and W. E. Hagan	321,445	July 7	45	12, 13, 14, 15	32	11
Matting and carpet binding	C. E. Knapp	324,942	Aug. 25	2008	514	32	936
Mattress	A. Altmann	324,349	Aug. 18	1292	351	32	779
Mattress	S. Fulton	322,366	July 14	1285	336	32	244
Mattress. Baby	L. Koss	321,983	July 14	789	205	32	152
Mattress-machine	J. M. Mears and R. Jennings	322,740	July 21	1793	472, 473	32	342
Measure	G. W. Knapp	325,842	Sept. 8	832	210	32	1176
Measure for horses. Height	I. Wainwright	325,134	Aug. 25	2351	648	32	983
Measure for thrashing-machines. Automatic grain	J. Borah	325,046	Aug. 25	2240	614	32	902
Measure. Liquid	W. and J. H. Mittendorf	325,265	Sept. 1	45	13	32	1024
Measure. Shoe-maker's	A. S. Adler	322,238	July 14	1123	292	32	214
Measuring and trimming fabrics. Machine for	G. W. Parsons	324,155	Aug. 11	1016	278	32	719
Measuring apparatus for liquid carbonic acid	E. Luhmann	327,448	Sept. 29	3004	785	32	1589
Measuring device. Tailor's	J. S. Hand	324,022	Aug. 11	831	230	32	685
Measuring for garments. System of	H. A. Jackson	326,172	Sept. 29	2649	589, 600	32	1527
Measuring garments. System and device for	S. M. Hendrick	325,400	Sept. 1	262	65	32	1065
Measuring machine. Fabric	J. W. Kruger	327,178	Sept. 29	2662	692	32	1529
Meat and vegetable slicer	A. Iske	322,293	July 14	1184	311	32	225
Meat cutter. Sausage	J. R. Grath and T. K. Watson	324,835	Aug. 25	1960	538	32	909
Meat-cutting machine	B. F. Penny	321,751	July 7	463	122	32	86
Meat extract	J. Schweitzer	326,793	Sept. 22	2133	.....	32	1428
Meat-tenderer	C. Lacosse	326,660	Sept. 22	1915	503	32	1389
Mechanical movement	C. T. Brown	324,003	Aug. 11	803	223	32	681
Mechanical movement	L. Chevallier	323,789	Aug. 4	524	148	32	621
Mechanical movement	T. A. Macaulay	326,573	Sept. 22	1791	470	32	1368
Mechanical movement	C. H. Newbury	326,052	Sept. 8	1103	281	32	1226
Mechanical movement	O. A. Pickle	323,070	July 28	2267	599	32	435
Mechanical movement	H. E. Pridmore	325,270	Sept. 1	50	15	32	1025
Mechanical movement	C. F. Veit	324,280	Aug. 11	1195	324	32	753
Medical compound	J. T. Bunting	325,586	Sept. 1	402	.....	32	1110
Medical compound	J. O'Flaherty	325,007	Aug. 25	2194	.....	32	952
Medical compound	S. W. Neher	321,839	July 7	595	.....	32	109
Medicinal emulsion	J. Carnrick	327,229	Sept. 29	2717	.....	32	1541
Medicinal emulsion	J. Carnrick	327,230	Sept. 29	2718	.....	32	1541
Medicinal emulsion	J. Carnrick	327,231	Sept. 29	2719	.....	32	1541
Medicinal emulsion	J. Carnrick	327,232	Sept. 29	2720	.....	32	1541
Medicinal emulsion	J. Carnrick	327,233	Sept. 29	2721	.....	32	1541
Medicine for diphtheria	J. A. Ream	326,589	Sept. 22	1813	.....	32	1373
Medicine for hog-cholera	C. Rohning	327,412	Sept. 29	2964	.....	32	1582
Metal bar. Composite	E. S. Brainard	324,527	Aug. 18	1531	422	32	922
Metal-boring bit	L. R. Faught	327,148	Sept. 29	2617	682	32	1521
Metal-cutters. Device for holding	L. R. Faught	327,149	Sept. 29	2619	682	32	1521
Metal-cutters. Device for holding	L. R. Faught	327,151	Sept. 29	2623	683	32	1522
Metal mold	T. O. Bennett	325,043	Aug. 25	2237	614	32	902
Metal ovals. Machine for cutting	J. Lyall	324,331	Aug. 11	1265	343	32	766
Metal pipes or tubes. Construction of wrought	A. H. Emery	322,053	July 14	885	229	32	169
Metal rods or bars. Machine for drawing	W. Allderdice	323,619	Aug. 4	313	90, 91	32	580
Metal-workers' shears	W. L. Warner	325,291	Sept. 1	82	24	32	1031
Metal-working machine. Compound	E. A. Oliver	322,847	July 21	1937	512	32	368
Metal-working machine. Compound	A. S. Towle	321,847	July 7	198	52	32	39
Metals. Apparatus for pouring and casting	C. A. Caspersson	324,918	Aug. 25	2009	566	32	930
Metals. Porte caustique for testing	E. Huber	323,581	Aug. 4	257	75	32	569
Metallic compound	F. Kavanaugh	323,426	Aug. 4	54	.....	32	533
Metallic fabric	W. C. Edge	324,014	Aug. 11	823	228	32	684
Metallic fabric	W. C. Edge	324,015	Aug. 11	824	228	32	684
Metallic strips. Machine for barbing	T. H. Morgan	323,713	Aug. 4	429	123	32	604
Meter: *See* Current-meter. Electro-current meter. Fluid-meter. Grain-meter. Liquid-meter. Oscillating meter. Water-meter.							
Methylene-blue by electrolysis. Manufacture of	W. Majert	323,514	Aug. 4	172	50	32	534
Microtome	E. Bausch	325,722	Sept. 8	684	171	32	1147
Middlings-purifiers. Combined dust catcher and separator for	J. R. Taylor and P. Lockwood	325,713	Sept. 8	672	168	32	1146
Milk and water cooler	E. Williams	322,144	July 14	1011	263	32	192
Milk-aerator	H. B. Long and E. L. Hill	323,347	July 28	2655	706	32	505
Milk-can	E. Slaght	326,341	Sept. 15	1507	393	32	1308
Milk-can	H. Taylor	324,611	Aug. 18	1641	452	32	843
Milk-can cover	D. F. Crippen	324,539	Aug. 18	1543	426	32	824
Milk-can cover	H. L. Ives	323,153	July 28	2369	628	32	455
Milk-can cover	J. A. Seal	327,325	Sept. 29	2839	741	32	1562
Milk-can lock	W. J. Hussey	326,663	Sept. 8	1149	292	32	1234
Milk-cans. Non-conducting covering for	T. Williams	326,189	Sept. 15	1296	336	32	1264
Milk. Condensed peptonized	W. H. Thew	323,754	Aug. 4	484	.....	32	614
Milk. Condensing peptonized	W. H. Thew	324,048	Aug. 11	866	.....	32	691
Milk-cooler	G. B. Dawson	322,044	July 14	874	227	32	167
Milk-cooler	J. R. Ensminger	321,490	July 7	108	29	32	22

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Milk-cooling can	J. Wilhelm, Jr	321,774	July 7	497	131	32	93
Milk. Device for aerating	J. D. Patterson	323,069	July 28	2266	599	32	430
Milk or coffee flask	A. Abrahamson	325,806	Sept. 8	798	201	32	1169
Milk or cream can	G. W. Evans	323,864	Aug. 4	618	174	32	640
Milk-pan and cnrd or cheese mold. Combined	S. J. Noessel	324,148	Aug. 11	999	275	32	716
Milk-pan	S Sanborn	327,023	Sept. 29	2442	.....	32	1491
Milk. Preservative for	W. H. Thew	324,049	Aug. 11	868	.....	32	691
Milk with cocoa. Condensed peptonized	W. H. Thew	324,050	Aug. 11	868	.....	32	691
Milk with coffee. Condensed peptonized							
Mill: *See* Bark-mill. Cider-mill. Crushing-mill. Crushing and grinding mill. Feed-mill. Grain-hulling mill. Grinding-mill. Ore pulverizing and amalgamating mill. Paint-mill. Pumping-mill. Reduction-mill. Roller-mill. Rolling-mill. Saw-mill. Smut-mill. Windmill.							
Mill-feed regulator	H. R. Desler	322,164	July 14	1034	268	32	196
Mill-stock feeder	G. Cottrell	325,788	Sept. 8	772	193	32	1164
Mill-stock feeder	G. Downie and A. F. Eisan	325,327	Sept. 1	129	36	32	1039
Mill-stock feeder	E. W. Lockwood	324,392	Aug. 18	1347	366	32	789
Millstone-dressing device	J. E. Jones	327,444	Sept. 29	3001	784	32	1589
Millstone-driver	C. H. Polsey and A. A. Smith	327,107	Sept. 29	2562	668	32	1511
Milling-cutter	F. A. Pratt	323,302	July 28	2448	649, 650, 542, 543	32	469
Milling-machine	M. C. Johnson	324,845	Aug. 25	1973		32	912
Milling machine. Drill	D. Mills	325,559	Sept. 1	461	115	32	1104
Milling-machine. Portable	H. Crow	321,888	July 7	659	171	32	120
Milling-spout for conducting granular pulverized material	T. Wilson, Jr	325,034	Aug. 25	2223	610	32	959
Mine-ventilator	T. E. Knauss	323,940	Aug. 11	723	202	32	666
Mining-machine	M. Golding	321,714	July 7	407	168, 169	32	76
Mining-pit	A. G. Beebe	325,810	Sept. 8	803	202	32	1170
Mineral separator and amalgamator	J. J. Langdon	325,419	Sept. 1	272	67	32	1067
Mirror-bracket. Adjustable	A. C. Estabrook	323,649	Aug. 4	350	100	32	588
Mirror. Hand	O. P. Breithut	325,493	Sept. 1	371	91	32	1086
Mirror-pivot. Spring-friction	S. L. F. Melohn	323,191	July 28	2434	645	32	467
Mirror. Window	W. Chrystler	327,067	Sept. 29	2500	653	32	1501
Molasses-cooler							
Mold: *See* Brick-machine mold. Metal mold. Solder-mold. Type-mold.							
Mold for cored objects of plastic material	T. F. Lemassena	326,878	Sept. 22	2250	586	32	1449
Molder's flask	H. H. Garrett	327,252	Sept. 29	2750	713, 714	32	1546
Molding as an article of manufacture. Interlocking spiral	M. Y. Ransom	326,329	Sept. 15	1492	389	32	1305
Molding-machine for making molds in sand	A. Rice	322,203	July 14	1081	281	32	206
Molding machine. Sand	A. Rice	322,202	July 14	1079	280, 281	32	205
Molding machines. Safety-guard and work-holder for edge	G. Jamieson	321,728	July 7	422	112	32	79
Molding or embossing plastic material. Machine for	H. McHugh and T. L. Manchester	324,309	Aug. 18	1358	369	32	701
Mole-trap	J. F. Maxson	326,766	Sept. 22	2092	543	32	1420
Mole-trap	D. H. Payne	321,524	July 7	163	44	32	32
Money-drawer register	W. G. Hennings	326,114	Sept. 15	1184	303	32	1248
Mop-head	D. McLellan	325,261	Sept. 1	40	12	32	1023
Mop-wringer	A. M. Burnham	326,898	Sept. 22	2283	596, 597	32	1454
Mop-wringer	W. Gavin	325,528	Sept. 1	424	105	32	1097
Mop-wringer	J. F. Walter	323,738	Aug. 4	491	138	32	615
Mop-wringer	W. C. Nye	324,336	Aug. 11	1272	345	32	767
Mortar. Implement for mixing and working	S. G. Randall	321,853	July 7	620	159	32	113
Mortise-cutter	G. B. Cowles	323,564	Aug. 4	230	70	32	566
Mortise-lock	L. Tighe	322,505	July 21	1490	391	32	287
Mortise-lock	C. Snow	323,227	July 28	2460	659	32	475
Mosquito-bar canopy	I. E. Palmer	322,066	July 14	903	233, 234	32	172
Mosquito-canopies. Suspension device for	D. R. Cameron	321,579	July 7	233	62	32	45
Motion between axes. Coupling to communicate rotary	R. Campbell	322,670	July 21	1705	452	32	327
Motion. Device for converting	T. C. Fleming	322,815	July 21	1884	500	32	359
Motion. Device for converting	J. C. Potts	326,777	Sept. 22	2107	547	32	1423
Motion. Device for converting	C. H. Tuckwood	323,546	Aug. 4	217	64	32	562
Motion. Device for converting	J. S. Bancroft	323,019	July 28	2189	580	32	421
Motion. Machinery for transmitting	H. C. Lowrie	324,132	Aug. 11	980	270	32	713
Motion. Mechanism for converting	G. Lieb	324,709	Aug. 18	1781	492	32	869
Motion. Mechanism for transmitting	I. James	326,430	Sept. 15	1615	420	32	1328
Motive power by aid of air and hydrocarbon oils. Apparatus for manufacturing, using, and furnishing	F. Luchini	324,266	Aug. 11	1178	319	32	749
Motive power. Marine							
Motor: *See* Air-motor. Electric motor. Electro-dynamic motor. Electro-magnetic motor. Railway-motor. Reciprocating motor. Rotary motor. Sewing-machine or other motor. Spring-motor. Water-motor. Wind-motor.							
Motor	E. B. Benham and H. B. Richardson	323,258	July 28	2517	668, 669	32	462
Motor	T. L. Chisholm	325,318	Sept. 1	118	34	32	1037

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drgs.	Official Gazette. Vol.	Official Gazette. Page.
Motor	J. W. Cloud and A. Vogt	322,794	July 21	1856	493	32	354
Motor	H. R. Horton	326,117	Sept. 15	1188	304	32	1248
Motor	A. Marck	323,943	Aug. 11	726	203	32	667
Motor-pressure generator	O. Gassett	324,828	Aug. 25	1951	535	32	908
Mouse-cage	C. Schantz	321,643	July 7	314	83	32	60
Movement-cure apparatus	H. Main	323,701	Aug. 4	416	119	32	601
Mower	W. S. Halsey	326,643	Sept. 22	1892	498	32	1385
Mower and reaper cutting apparatus	L. Randell	323,599	Aug. 4	286	92	32	575
Mower and reaper knives. Machine for sharpening	J. M. Connel	325,159	Aug. 25	2378	655	32	986
Mower. Lawn	H. H. Dille and E. W. McGuire	323,285	July 28	2554	680, 681	32	489
Mowers and reapers. Endless-chain rackle for	S. S. Turner	323,609	Aug. 4	297	85	32	577
Mowing-machine	D. C. Markham	325,949	Sept. 8	968	246	32	1201
Mowing-machines. Bell-crank for	D. C. Markham	325,950	Sept. 8	968	246	32	1202
Multiplication of numbers. Apparatus for facilitating the	J. V. Charpantier	322,160	July 14	1027	267	32	195
Muscle-beater	J. E. Ruebsam	323,447	Aug. 4	83	24	32	538
Music-box safety-check	C. H. Jacot	326,743	Sept. 22	2060	536	32	1415
Music-leaf turner	G. G. Benjamin	321,570	July 7	224	60	32	44
Music-leaf turner	T. H. Hathaway	321,509	July 7	202	69	32	50
Music. Sheet	W. Shaw	322,013	July 14	827	216	32	159
Music-sheets to rollers. Device for attaching	H. Thomas	327,038	Sept. 29	2465	644	32	1495
Musical instrument. Mechanical	J. McTammany	321,738	July 7	435	116	32	81
Musical instrument. Mechanical	R. W. Paln	322,554	July 21	1543	408	32	297
Musical instrument. Mechanical	L. T. Stanley	322,566	July 21	1567	413	32	300
Musical instrument. Mechanical	F. Stone	326,172	Sept. 15	1268	326, 327	32	1263
Musical instruments. Barrel for mechanical	H. B. Morris	322,390	July 14	1318	343	32	250
Musical instruments. Key-board attachment for	W. R. Eddington	326,412	Sept. 15	1591	414	32	1324
Musical instruments. Key-board attachment for	C. F. Meyering	326,444	Sept. 15	1631	427	32	1331
Musical reed	C. E. Bramhall	321,689	July 7	653	169	32	119
Musical scales. Device for illustrating the transposition of	J. F. Neill	323,196	July 28	2439	646, 647	32	468
Musket-rack. Portable	G. Wunderlick	321,930	July 7	715	186	32	129
Mustache-protector	L. B. France	323,802	Aug. 4	540	154	32	625
Muzzle for cattle	P. Prioleau, Jr	322,199	July 14	1076	279	32	204
Nail: *See* Boot or shoe nail. Screw-nail. Horseshoe-nail. Shoe-nail.							
Nail	E. K. Page	325,859	Sept. 8	863	217	32	1181
Nail and ear cleaner. Combined	W. A. Bernard	324,001	Aug. 11	799	222	32	680
Nail-driving machine	T. E. Smith	323,081	July 28	2279	603	32	438
Nail-extractor	J. M. Herndon	326,649	Sept. 22	1900	500	32	1387
Nail-extractor	J. M. Herndon	326,650	Sept. 22	1901	500	32	1387
Nail-machine	M. B. Brown	329,413	July 21	1351	352	32	263
Nail-machine	B. H. Gedge and H. Meyerer	325,670	Sept. 8	804	153	32	1134
Nail-making machine	F. F. Raymond, 2d	325,272	Sept. 1	52	16, 17	32	1026
Nail or tack. Split	R. S. Pickett	323,200	July 28	2446	648	32	469
Nail-plate feeder	L. Patterson	322,963	July 28	2110	561, 562	32	407
Nail-plate feeding machine	G. W. McKim	324,572	Aug. 18	1582	436, 467	32	832
Nail-strips. Forming heads on	M. Brock	323,847	Aug. 4	596	168	32	636
Nail-strips. Machine for forming heads on shoe	M. Brock	323,846	Aug. 4	595	167	32	635
Nails. Machine for making shoe	A. Prestat	326,940	Sept. 15	1368	353, 354	32	1281
Nailing-machine	F. F. Raymond, 2d	326,780	Sept. 22	2112	548, 549	32	1424
Nailing-machine	F. F. Raymond, 2d	326,781	Sept. 22	2114	549, 550	32	1424
Napkin-supporter	W. C. Nelson	324,039	Aug. 11	855	237	32	689
Neck and ear protector. Combined	I. B. Kleinert	322,614	July 21	1627	430	32	311
Neck-wear	E. D Smith	322,207	July 14	1066	282	32	207
Neck-wear tip	J. M. Guilbert	326,905	Sept. 22	2291	599	32	1456
Necktie-fastening	B. F. Hutches, Jr	323,870	Aug. 4	625	176	32	641
Necktie-retainer	J. A. Esbleman	323,648	Aug. 4	350	100	32	587
Needle	E. Kratz	324,030	Aug. 11	840	232	32	687
Needles. Cabinet for papers of	F. Meyers	324,717	Aug. 18	1789	494	32	871
Needles, &c. Holder for	J. Hölzgens	324,557	Aug. 18	1561	431	32	829
Net. Fishing	T. S. Brown	325,652	Sept. 8	581	147	32	1130
Net. Fishing	B. K. Moscopoulos	326,139	Sept. 15	1220	311	32	1254
Net for horses. Fly	R. Brownson	321,884	July 7	655	170	32	119
Net frame. Mosquito	T. A. Watson	325,464	Sept. 1	333	80	32	1079
Net. Landing	C. P. Utley	325,267	Sept. 1	78	23	32	1031
Nipple-protector	C. Ware	322,508	July 21	1493	392	32	287
Nose-ring	L. Drais	321,889	July 7	659	171	32	120
Numbering-machine	J. W. Maclachlan	326,663	Sept. 22	1919	503, 504	32	1390
Nursery-chair	M. M. Gooch	326,110	Sept. 15	1179	301	32	1247
Nut. Cap-headed screw	C. D. Thatcher	322,867	July 21	1966	520	32	373
Nut-cracker	E. B. Benham and C. R. Watrous	322,240	July 14	1135	293	32	214
Nut-guard	E. Over	325,762	Sept. 8	737	184	32	1158
Nut-lock	N. Bosmann	325,906	Sept. 8	913	230	32	1191
Nut-lock	L. Brandt	322,153	July 14	1022	266	32	195
Nut-lock	F. S. D. Broughton	324,295	Aug. 11	1212	330	32	756
Nut-lock	G. D. and C. Bulmer	325,235	Sept. 1	6	2	32	1016
Nut-lock	J. H. Burdick	323,560	Aug. 4	234	69	32	565
Nut-lock	A. M. Card	325,589	Sept. 1	495	124	32	1110
Nut-lock	J. H. Comstock	321,691	July 7	379	101	32	71
Nut-lock	J. Cunningham	325,397	Sept. 1	248	62	32	1062
Nut-lock	T. Decker	326,407	Sept. 15	1585	412	32	1323
Nut-lock	A. Fisher	325,899	Sept. 8	827	207	32	1174
Nut-lock	R. Howarth	321,500	July 7	120	32	32	34
Nut-lock	J. M. Lindsly	321,735	July 7	431	115	32	81

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drgs.	Official Gazette. Vol.	Official Gazette. Page.
Nut-lock	F. L. Miller	322,628	July 21	1642	434	32	314
Nut-lock	J. W. Morton	322,715	Aug. 4	432	123	32	604
Nut-lock	F. F. Robb	326,333	Sept. 15	1496	390	32	1306
Nut-lock	W. W. Shaller	324,174	Aug. 11	1039	283	32	732
Nut-lock	F. Taylor	326,345	Sept. 15	1518	395	32	1310
Nut-lock	D. S. Troy	322,960	July 21	1967	521	32	374
Nut-lock	I. Van Kuran	324,194	Aug. 11	1066	293	32	732
Nut-lock	L. N. White	326,075	Sept. 8	1142	290	32	1233
Nut-lock	L. N. White	326,076	Sept. 8	1143	291	32	1233
Nut-lock	L. J. Williamson	327,213	Sept. 29	2701	702	32	1536
Nut-lock	S. J. Wisdom	326,700	Sept. 22	1973	518	32	1401
Nut-lock	G. S. Wynn	324,347	Aug. 11	1287	348	32	770
Nut-lock	H. V. Wysong	326,927	Sept. 29	2316	606	32	1461
Nut. Lock	G. S. Robinson	323,078	July 28	2275	602	32	437
Nut-machine	A. Marland	326,762	Sept. 22	2086	541, 542	32	1419
Nut. Screw	E. C. Ibbotson	323,422	Aug. 4	50	13	32	532
Nut-tapping machine	W. R. and T. Eynon	322,363	July 14	1281	335	32	243
Nuts. Die for cutting hexagonal	G. Dunham	324,756	Aug. 18	1843	507, 508	32	881
Oar. Bow-facing	M. M. Clark	325,055	Aug. 25	2252	618	32	964
Oar-lock	J. Klenk and S. H. Haas	325,748	Sept. 8	721	180	32	1155
Oatmeal-machine	G. H. Cormack	326,853	Sept. 22	2212	577	32	1443
Oatmeal-machine	J. C. Holloway	324,556	Aug. 18	1560	430, 431	32	828
Obstetrical supporter	J. T. Surbaugh	324,498	Aug. 18	1487	407	32	814
Odometer	H. O. Brooks	326,396	Sept. 15	1573	408	32	1320
Odometer	D. N. B. Coffin	323,498	Aug. 4	148	44, 45	32	549
Oil and water. Separator for mingled	H. H. Garrett	322,817	July 21	1887	501	32	359
Oil. Apparatus for treating wheels with	B. Young	323,015	July 28	2184	580	32	420
Oil-burner and oil-burning stove	R. H. Howard	325,413	Sept. 1	267	66	32	1066
Oil-cabinet	H. Krömmelbein	322,834	July 21	1918	508	32	365
Oil-can	G. Gerdom	323,928	Aug. 11	706	198	32	664
Oil-can	H. B. Hart	322,447	July 21	1397	367	32	271
Oil-can	W. C. F. Schoellkopf	321,537	July 7	183	48	32	36
Oil-can	A. Tufts	322,569	July 21	1574	414	32	301
Oil-can	C. H. Worthen	325,642	Sept. 1	566	144	32	1122
Oil-can. Lubricating	J. S. Hull	325,087	Aug. 25	2294	631	32	972
Oil-cloth knife	A. S. Seaman	322,755	July 21	1808	477	32	344
Oil-cup	P. W. Leffler	326,602	Sept. 22	1918	503	32	1390
Oil-cup	G. G. Prefantaine	327,452	Sept. 29	3009	786	32	1590
Oil-cup holder	J. J. Ludwick	321,618	July 7	286	76	32	55
Oil. Drying	C. A. Wittmack	326,467	Sept. 15	1659	.....	32	1336
Oil previously used in mechanical operations. Process of and apparatus for reclaiming	G. O. Cromwell and H. E. Coy	322,425	July 21	1306	357	32	265
Oil. Rosin	D. J. Ogilvy	324,878	Aug. 25	2019	.....	32	920
Oiler. Car-axle	J. Gibbons. (Reissue)	10,644	Sept. 8	1152	294	32	1235
Oiler. Car-axle	G. R. Menecely and J. Gibbons	322,625	July 21	1638	433	32	314
Oiler for lubricating wool. Automatic	J. C. Thickins	324,612	Aug. 18	1642	452, 453	32	843
Oiler. Valve	S. D. Mershon	324,574	Aug. 18	1586	437	32	833
Oliver	M. Headen	325,342	Sept. 1	148	41	32	1043
Opera-chair	H. S. Bacon	325,149	Aug. 25	2368	652	32	986
Opera-chair	E. G. Durant	323,301	July 28	2363	688	32	494
Opera-chair	T. I. Knight	324,561	Aug. 18	1565	432, 433	32	829
Opera-chair	E. Shupe	327,026	Sept. 29	2445	639	32	1492
Opera-chair	I. L. Stone	325,283	Sept. 1	72	22	32	1029
Ordnance. Apparatus for firing	J. Jeno	325,544	Sept. 1	443	110	32	1100
Ordnance-lock. Breech-loading	G. Quick	324,272	Aug. 11	1184	321, 322	32	750
Ore by means of petroleum. Smelting	F. C. Weber	325,293	Sept. 1	85	25	32	1032
Ore-concentrating apparatus	H. C. and J. A. Henderson	325,835	Sept. 8	833	208	32	1175
Ore-concentrating table	L. S. Osgood	324,783	Aug. 18	1580	517	32	888
Ore-concentrator	E. W. Stephens	325,129	Aug. 25	2344	646	32	981
Ore-concentrator	H. P. Tobey and G. B. Thayer	326,808	Sept. 22	2152	560, 561	32	1431
Ore-concentrators. Apparatus for cleaning filters of	A. D. Clarke	323,700	Aug. 4	525	148	32	621
Ore-concentrators. Attachment for	A. McCormick	325,104	Aug. 25	2312	637	32	976
Ore-concentrators. Filtering-table for	A. D. Clarke	323,701	Aug. 4	526	149	32	622
Ore-crusher	U. Cummings	324,664	Aug. 18	1721	474	32	858
Ore-crushing machine	W. Waring	324,197	Aug. 11	1069	294	32	733
Ore-feeder	J. Hendy	322,716	July 21	1758	464, 465	32	336
Ore-feeder	W. S. Sharpneck	325,701	Sept. 8	641	163	32	1140
Ore for the production of alloys, bronzes, and metallic compounds. Electric process of smelting	E. H. and A. H. Cowles	324,658	Aug. 18	1716	472	32	857
Ore pulverizing and amalgamating mill	J. W. Bailey	321,937	July 14	731	191	32	141
Ore-roasting furnace	E. Green	323,766	Aug. 4	374	106	32	592
Ore-separating machine	H. S. and V. M. Gideon	324,550	Aug. 18	1553	429	32	827
Ore-separator	D. F. McKim	325,429	Sept. 1	287	71	32	1070
Ore, &c. Separator for sizing	W. A. Miles	325,557	Sept. 1	459	114, 115	32	1103
Ore-washer	G. W. Lyon	323,875	Aug. 4	632	178	32	642
Ores. Apparatus for disintegrating	H. B. Meech	321,835	July 7	591	153	32	108
Ores, &c. Machine for pulverizing	G. Frisbee	321,429	July 7	22	5	32	7
Ores, &c. Machine for pulverizing	G. Frisbee	321,430	July 7	23	6	32	7
Ores, &c. Machine for pulverizing	J. W. Hilton	323,147	July 28	2363	627	32	454
Organ-action	E. P. Carpenter and M. S. Wright	326,694	Sept. 22	1869	489, 490	32	1361
Organ-action	F. Stone	326,171	Sept. 15	1266	326	32	1263
Organ-action. Electric	G. G. Wacker	326,359	Sept. 15	1534	398	32	1313
Organ mute. Reed	J. G. Earhuff and R. Alden	326,551	Sept. 22	1765	402	32	1364

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Organ octave-coupler	W. Murphy	322,121	July 14	976	254, 255	32	186
Organ-pedal	S. W. Herrick and P. J. Lawrence	323,678	Aug. 4	386	111	32	595
Organ-pipe	A. Wales	324,437	Aug. 18	1410	384	32	800
Organ-reed	M. Gally	324,371	Aug. 18	1318	358	32	784
Organ-reed	M. Gally	326,638	Sept. 22	1886	495	32	1385
Organ-reed	A. Newell	322,469	July 21	1426	373	32	276
Organ. Reed-	G. B. Kelly	321,820	July 7	573	148	32	105
Organ stop-action	C. F. Sharps	321,455	July 7	64	18	32	15
Organ stop-action. Reed-	M. Clark	326,274	Sept. 15	1415	368	32	1290
Organ stop-action. Reed-	J. A. Warren	322,509	July 21	1494	392	32	287
Organs. Composition stop-action for	H. L. Roosevelt	323,211	July 28	2459	653	32	472
Organs. Pneumatic action for	H. L. Roosevelt and C. S. Haskell	323,829	Aug. 4	571	102	32	631
Ornamental comb	J. G. Elsely	323,798	Aug. 4	533	151	32	622
Oscillating engine	A. Cunningham	323,298	July 28	2588	687	32	493
Oscillating meter	E. Tatham	322,500	July 21	1484	389, 390	32	286
Oven	W. H. Albach	324,448	Aug. 18	1422	388	32	802
Oven. Bake-	J. L. W. Olsen	324,721	Aug. 18	1793	495	32	872
Oven. Baker's	L. Dathis, Fils	323,643	Aug. 4	344	98	32	586
Oven. Baker's	S. L. Hall	322,282	July 14	1170	307	32	222
Oven. Domestic	W. G. Croom	323,280	July 28	2547	677	32	488
Oven-shelf	M. Armington	325,645	Sept. 8	574	145	32	1129
Oven. Steam-	T. C. St. John	326,170	Sept. 15	1265	325	32	1263
Overflow-fixture trap	F. L. Brown	325,153	Aug. 25	2373	653	32	987
Overseaming-machine	F. Egge	324,672	Aug. 18	1733	477, 478	32	860
Overshoe-fastening	L. B. Belknap	325,650	Sept. 8	579	147	32	1130
Oversocks. Manufacturing	R. Greener	321,811	July 7	548	144	32	102
Ox-bow fastening	J. Lowe	326,220	Sept. 15	1350	349	32	1278
Oyster-dredge	E. Watts	322,511	July 21	1496	393	32	288
Oyster-dredge windlass	A. and H. Lawson	323,047	July 28	2236	501	32	429
Package-filling apparatus	C. W. Young	326,826	Sept. 22	2179	568	32	1436
Packing-box	O. Place	324,485	Aug 18	1469	402	32	810
Packing for axle-boxes	E. Waite	326,179	Sept. 15	1283	331	32	1265
Packing for oil-well tubing	M. Dayhuff	321,488	July 7	106	29	32	21
Packing for stuffing-boxes	J. H. Mars	326,574	Sept. 22	1792	470	32	1369
Packing for vessels, &c	G. R. Phillips	323,731	Aug. 4	456	129	32	608
Packing. Metallic	J. Richards	323,446	Aug. 4	82	24	32	538
Packing. Piston-	T. Barber. (Reissue)	10,628	July 28	2767	721	32	515
Packing. Piston-	G. Dick	324,754	Aug. 18	1841	507	32	880
Packing. Piston-	W. W. St. John	325,022	Aug. 25	2209	606	32	955
Packing. Piston-rod	J. W. Dudley	324,096	Aug. 11	930	257	32	703
Packing. Piston-rod	J. H. Guiley	323,320	July 28	2617	695	32	499
Packing. Piston-rod	R. W. Killmer	324,776	Aug. 18	1872	515	32	887
Packing. Piston-rod	S. H. Reynolds and G. E. Danforth	324,884	Aug. 25	2026	555	32	922
Packing-ring. Asbestus	W. Wood	326,079	Sept. 8	1146	291	32	1234
Packing. Stuffing-box	F. J. Roth	327,456	Sept. 29	3015	787	32	1591
Pad: *See* Bosom-pad. Collar-pad. Hoof-pad. Horseshoe-pad. Interfering-pad. Stair-pad. Tailor's press-pad.							
Padlock	S. McCarter	323,185	July 28	2427	643	32	465
Padlock. Permutation-	J. Knbler	323,941	Aug. 11	724	202	32	667
Padlock. Permutation-	E. W. Wilson	327,046	Sept. 29	2475	646	32	1497
Pail. Commode-	E. H. Beers	325,039	Aug. 25	2234	612	32	961
Pail. Dinner-	E. P. Ryder	325,217	Aug. 25	2464	678	32	1003
Pail for commodes	D. E True	323,469	Aug. 4	111	32	32	542
Pail. Milk-	W. Koegel and F. Strohacker	325,179	Aug. 25	2413	663	32	994
Paint	J. Klee	325,415	Sept. 1	269	.....	32	1066
Paint-breamer	T. Poyser	324,163	Aug. 11	1026	280	32	721
Paint-cans. Cap for sheet-metal	E. K. Baker	323,623	Aug. 4	321	92	32	582
Paint composition	P. C. Connell	325,160	Aug. 25	2380	.....	32	988
Paint. Fire and water proof	C. H. Phillips, J. Troden, and J. Golling.	326,776	Sept. 22	2106	.....	32	1423
Paint-mill. Double-grinding	J. A. Berrill	321,675	July 7	355	94	32	67
Paint. Mixed	G. T. Clare	324,230	Aug. 11	1129	307	32	740
Paint. Mixed	R. W. Davis	324,236	Aug. 11	1134	.....	32	741
Paint. Mixed	D. Lubliuski	327,447	Sept. 29	3003	.....	32	1589
Paint. Mixed	W. H. Van Kenren	322,659	July 21	1682	.....	32	322
Paint-pot	C. M. Hills	323,420	Aug. 4	48	12	32	532
Painter's sander	J. P. Ryan	325,016	Aug. 25	2203	603	32	954
Painting-machine	L. T. Hatfield	327,264	Sept. 29	2763	717, 718	32	1548
Pan: *See* Amalgamating-pan. Bed-pan. Dust-pan. Evaporating-pan. Frying-pan. Milk-pan.							
Panel and wood trimmings. Manufacturing	F. Maukey	325,351	Sept. 1	159	43	32	1045
Pannier or pannier-skirt	C. C. Carpenter and G. W. Lockwood	324,300	Aug. 11	1220	332	32	758
Pantaloon-strap and waistband combined	H. Goodman	321,962	July 14	761	199	32	146
Pantaloons, drawers, or overalls	J. Eisner	323,569	Aug. 4	245	72	32	567
Pantaloons for hunters, &c	F. Walloch	323,988	Aug. 11	785	218	32	678
Pantaloons support	F. Ashton	323,899	Aug. 11	673	189	32	657
Pants, overalls, and drawers. Supporting attachment for	I. Stark	321,654	July 7	326	86	32	62
Paper and other fibrous material for journal-bearings, beltings, &c. Treatment of	H. W. Morrow	322,629	July 21	1642	434	32	314
Paper. Apparatus for making wax or paraffine	E. G. Sparks	326,688	Sept. 22	1957	514	32	1398
Paper bag	J. Arkell	325,147	Aug. 25	2366	652	32	986
Paper bag	H. P. Feister	325,922	Sept. 8	931	236	32	1195
Paper-bag machine	F. W. Leinbach, C. A. Wolle, and E. H. Brunner.	327,280	Sept. 29	2783	723, 724	32	1551

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Paper-bag machine	B. F. Sawyer	326,592	Sept. 22	1816	477, 478, 479	32	1373
Paper-bag machine	J. West	324,620	Aug. 18	1657	457, 458	32	846
Paper bags. Machinery for making satchel-bottom	W. C. Cross	325,059	Aug. 25	2256	620	32	965
Paper bags. Making	J. Arkell	325,148	Aug. 25	2368	652	32	986
Paper box	R. W. Betts	327,224	Sept. 29	2713	706	32	1540
Paper box	C. S. Bird	320,937	Sept. 29	2338	612	32	1472
Paper box	R. P. Brown and E. L. Bailey	327,379	Sept. 29	2921	762	32	1574
Paper box	G. L. Jaeger	324,114	Aug. 11	954	263	32	708
Paper box	R. S. Merrill	325,758	Sept. 8	732	183	32	1157
Paper box	D. E. Powers	324,588	Aug. 18	1604	442	32	837
Paper box	D. M. Smith	325,773	Sept. 8	754	189	32	1161
Paper box. Knockdown	J. C. Bauer	326,705	Sept. 22	1980	520	32	1402
Paper-box machine	F. Schoettle	326,338	Sept. 15	1504	392	32	1308
Paper clip or file	C. D. Crane	322,913	July 28	2039	538	32	394
Paper-clip. Upright	I. W. Heysinger	327,440	Sept. 29	2905	783	32	1588
Paper cuffs. Manufacture of	A. K. Merrill	324,267	Aug. 11	1179	320	32	749
Paper-cutting machine	W. G. Finlay	326,859	Sept. 22	2227	581	32	1445
Paper-cutting machine	L. W. Morse, Jr	326,916	Sept. 22	2303	603	32	1458
Paper-cutting machine	H. C. Spalding	327,471	Sept. 29	3031	791, 792	32	1594
Paper-cutting machine	S. Whitlock	326,002	Sept. 8	1037	264	32	1213
Paper-cutting machines. Slitter-shaft for	E. H. Bridgman	325,812	Sept. 8	805	202	32	1170
Paper-drying cylinders, &c. Steam-pipe joint for rotary	M. J. Roach	325,972	Sept. 8	996	254	32	1206
Paper-feeding machine	J. C. Kneeland	326,124	Sept. 15	1196	305, 306	32	1250
Paper. Filtering-	E. W. Carter	324,750	Aug. 18	1828	505	32	879
Paper-folding machine	L. P. Brault	323,558	Aug. 4	232	68	32	564
Paper-folding machine	T. C. Dexter	324,926	Aug. 25	2080	569	32	932
Paper-folding machine	J. Kurten	326,910	Sept. 22	2296	601	32	1457
Paper-folding machine	G. Reznor	326,785	Sept. 22	2119	551, 552	32	1425
Paper-folding machines. Pasting attachment for	J. H. Stonemetz	325,023	Aug. 25	2210	606	32	956
Paper-folding mechanism	A. F. Madden	324,034	Aug. 11	843	234, 235	32	688
Paper for checks, &c. Manufacturing safety-	G. Schreiber	322,130	July 14	987	.....	32	188
Paper for checks, &c. Manufacturing safety-	G. Schreiber	322,131	July 14	988	.....	32	189
Paper-holder	R. White	325,139	Aug. 25	2357	649	32	984
Paper keg or barrel	J. Cosgrove	322,011	July 28	2033	537	32	393
Paper keg or cask	C. H. Wickersham	324,906	Aug. 25	2058	563	32	928
Paper-machines. Automatic steam-regulator for	R. Smith	324,601	Aug. 18	1620	446	32	840
Paper-machines. Suction-box for	W. A. Fletcher and W. E. Keightley.	325,165	Aug. 25	2386	657	32	989
Paper-making machines. Vat for	J. F. Seiberling	323,079	July 28	2275	602	32	437
Paper-matrix drier	E. Stosch	324,496	Aug. 18	1485	407	32	813
Paper or wood pulp. Manufacture of cartridge-shells and other receptacles from	G. M. Peters	321,849	July 7	614	158	32	112
Paper. Preparation of paraffine or wax	E. G. Sparks	326,687	Sept. 22	1956	514	32	1497
Paper-pulp and bleached or unbleached textile fabric. Cold process of manufacturing	H. Vessier and A. Wilbaux	323,378	July 28	2099	718	32	513
Paper-pulp. Manufacture of	S. M. Allen	323,771	Aug. 4	510	.....	32	618
Paper-pulp. Manufacture of cartridge-shells and other receptacles from	G. M. Peters	321,848	July 7	612	158	32	111
Paper-pulp. Treating vegetable substances for making	T. G. Young and J. Pettigrew	322,882	July 21	1993	.....	32	379
Paper-stock. Apparatus for bleaching	A. W. Wilson	322,605	July 21	1689	448	32	323
Paper-stock drainer	W. Gray	325,206	Aug. 25	2448	673	32	1000
Paper through calender-rolls. Pneumatic device for leading	R. Smith	327,031	Sept. 29	2453	641	32	1493
Paper. Waxing	E. G. Sparks	326,689	Sept. 22	1959	515	32	1398
Paper-weight and guide-rule	C. E. Babbitt	321,672	July 7	351	93	32	66
Parcel-carrier	L. A. Smith	322,329	July 14	1229	323	32	234
Parcel-carrier	G. W. Thomas	323,233	July 28	2488	661	32	476
Parcel-transmitter for stores	D. M. Skinner	322,565	July 21	1566	413	32	300
Parer. Apple-	J. Bittenbender	325,903	Sept. 8	908	229	32	1190
Parer. Apple-	J. L. Wilcox	321,667	July 7	341	90, 91	32	65
Paring and slicing device	P. Schwarzenhoelzer	323,451	Aug. 4	87	25	32	538
Pattern for drafting garments. Adjustable	M. Jacobsen	324,472	Aug. 18	1451	396	32	807
Pavements, &c. Process of making and composition for	J. E. Wynkoop	325,718	Sept. 8	679	.....	32	1147
Pea and oat separator. Wild	J. M. King	325,093	Aug. 25	2301	633	32	974
Pea-sheller	G. W. Fisher	326,026	Sept. 8	1069	272	32	1220
Pedomotor-treadle	G. J. Taylor	323,085	July 28	2287	605	32	439
Pelts. Machine for plucking	J. W. Sutton	322,137	July 14	999	260	32	190
Pen and pencil holder	F. G. Davison	325,060	Aug. 25	2259	620	32	966
Pen and pencil holder	E. Wiley	327,044	Sept. 29	2473	646	32	1496
Pen. Fountain-	L. W. Fairchild	325,663	Sept. 8	597	151	32	1133
Pen. Fountain-	J. B. Heyt and F. S. Bartram	325,211	Aug. 25	2456	676	32	1002
Pen-holder	R. C. Fay	325,921	Sept. 8	930	235	32	1195
Pencil	J. Hoffman	326,502	Sept. 15	1699	443	32	1343
Pencil and crayon holder	C. W. Boman	321,786	July 7	513	136	32	95
Pencil-case	J. Dicker	325,325	Sept. 1	127	36	32	1039
Pencil case and sharpener	G. A. Wilbur	326,697	Sept. 22	1970	517	32	1400
Pencil compass attachment	C. W. Stuart	322,865	July 21	1964	520	32	373
Pencil or crayon holder	F. Froescheis	324,764	Aug. 18	1854	510	32	883
Pencil or crayon holder	J. Hoffman	326,736	Sept. 22	2051	534	32	1414
Pencil or crayon holder	J. Hoffman	326,737	Sept. 22	2054	534	32	1414
Pencil or crayon holder	C. Walpuski	324,504	Aug. 18	1501	411	32	816
Pencil-sharpener	J. W. Alexander	324,798	Aug. 25	1911	596	32	900
Pencil-sharpener	S. S. Woodcock	323,769	Aug. 4	508	143	32	618
Pencil sharpener. Slate-	J. Putnam	324,787	Aug. 18	1885	518	32	889

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Pendulum. Electric impulsion device for a torsion-	H. Rabe	325,113	Aug. 25	2323	639	32	978
Pendulum-regulator	J. Ganss	322,097	July 14	942	244	32	180
Perforating-machine	A. G. Burton	323,295	July 28	2570	684, 685, 686	32	492
Permanganates. Manufacturing	T. Kempf	326,657	Sept. 22	1913	.....	32	1389
Petroleum. Refining	J. H. Tiemann	321,465	July 7	79	.....	32	16
Pew. Church	I. Lancaster	326,571	Sept. 22	1789	470	32	1368
Photograph-exhibitor	E. Kürschner	322,111	July 14	963	250	32	184
Photographer's chair. Child's	O. C. White	326,184	Sept. 15	1291	334	32	1267
Photographic camera	F. Roussel	324,489	Aug. 18	1474	404	32	811
Photographic-plate holder	S. Russell	326,921	Sept. 22	2309	604	32	1459
Photographic washing apparatus	H. W. Oliver	323,721	Aug. 4	441	125	32	605
Piano	G. Cook	326,105	Sept. 15	1173	300	32	1246
Piano	G. Cook	326,106	Sept. 15	1174	300	32	1246
Piano	C. W. Brewer	323,632	Aug. 4	330	95	32	584
Piano-action	F. Engelhardt	325,401	Sept. 1	251	63	32	1063
Piano-action	P. Menges	321,517	July 7	156	41, 42	32	31
Piano-action	C. E. Rogers	326,335	Sept. 15	1497	391	32	1306
Piano-action	S. Brambach	322,089	July 14	931	241	32	178
Piano action. Upright	I. Fuso	325,669	Sept. 8	604	153	32	1134
Piano action. Upright	G. J. Couchois	326,020	Sept. 8	1060	270	32	1218
Piano-agraffe	W. Umland	324,051	Aug. 11	869	240	32	691
Piano case. Upright	W. Umland	324,052	Aug. 11	870	240	32	692
Piano-cover	S. E. Richey	326,154	Sept. 15	1243	318, 319	32	1259
Piano-forte	E. Gabler	324,467	Aug. 18	1445	395	32	807
Piano-forte music-rack illuminator	H. Ward and J. S. Utter	324,901	Aug. 25	2051	561	32	926
Piano-frame	J. Bourry	322,154	July 14	1022	266	32	194
Piano music-desk	J. B. Brown	326,542	Sept. 22	1754	458	32	1362
Piano. Transposing	W. L. Hays	326,871	Sept. 22	2243	584, 585	32	1448
Piano. Upright	F. G. Smith	323,747	Aug. 4	474	134	32	612
Pianos and organs. Mechanical key-board attachment for	W. R. Eddington	326,413	Sept. 15	1593	414	32	1324
Pianos. Music-rack for upright	J. J. Decker	323,282	July 28	2550	679	32	488
Pianos. Repeating-action for square and grand	F. Polster	326,586	Sept. 22	1809	475	32	1372
Pianos. Repeating-action for upright	P. Menges	326,576	Sept. 22	1795	471	32	1369
Pianos. Repetition-action for upright	L. F. Deming	326,278	Sept. 15	1420	370	32	1291
Pianos. Stringing	F. A. R. Günther	327,439	Sept. 29	2995	783	32	1588
Pianos. Stringing	J. Vivier	325,189	Aug. 25	2494	666	32	996
Pick	A. Womack	324,445	Aug. 18	1418	387	32	801
Picker: *See* Cotton-picker. Fruit-picker.							
Picket-fastening	W. W. Hamilton	321,717	July 7	410	109	32	77
Picture-exhibitor	G. F. Dyar	321,425	July 7	17	4	32	6
Picture-hanger	A. J. Lyons	324,779	Aug. 18	1875	515	32	887
Picture-hanger	J. V. R. Towers	321,866	July 7	634	164	32	116
Picture-hanger	E. S. Brainard	324,598	Aug. 18	1532	422	32	822
Pile. Combined iron and steel	L. E. Blake	325,484	Sept. 1	360	87	32	1064
Piles. Sinking hydraulic	J. Lusby	323,349	July 28	2657	707, 708	32	506
Pill-making machine	A. L. Pitney	324,785	Aug. 18	1882	517	32	889
Pillow	H. S. Sternberger	324,604	Aug. 18	1629	448	32	841
Pillow. Folding dress-							
Pin: *See* Breastpin. Jewelry-pin. Colter-pin. Lambrequin-pin. Drapery-pin. Safety-pin.							
Pin-machines. Die-holder for	E. Smart	327,028	Sept. 29	2449	640	32	1492
Pinch-bar	F. J. Smith	327,029	Sept. 29	2450	640	32	1492
Pinchers. Lasting	H. P. Aldrich	322,338	July 14	1242	326	32	236
Pipe: *See* Hawse-pipe. Stove and furnace pipe. Stove-pipe. Tobacco-pipe.							
Pipe and monkey wrench	G. S. Armstrong	323,017	July 28	2186	580	32	421
Pipe-cleaning apparatus	W. Thomas	323,542	Aug. 4	211	62	32	561
Pipe-coupling	J. and W. Agnew	325,895	Sept. 8	896	236	32	1188
Pipe-coupling	T. W. Alexander	325,191	Aug. 25	2427	667	32	996
Pipe-coupling	J. M. Bailey	324,211	Aug. 11	1106	299	32	736
Pipe-coupling	M. Dillenburg	323,567	Aug. 4	243	71	32	567
Pipe-coupling	C. A. May and T. Siddall	325,686	Sept. 8	925	158	32	1137
Pipe-coupling	R. C. Nugent	322,845	July 21	1334	511	32	367
Pipe-coupling	T. Shelton	324,598	Aug. 18	1517	445	32	839
Pipe-coupling	F. E. Youngs	327,215	Sept. 29	2702	703	32	1538
Pipe-coupling	F. E. Youngs	326,469	Sept. 15	1060	433	32	1336
Pipe-coupling. Permanent	A. Campbell	323,109	July 28	2319	613, 614	32	445
Pipe-flanging machine	P. Patterson	323,956	Aug. 11	743	207	32	670
Pipe-joint	G. Westinghouse, Jr	323,246	July 28	2505	665	32	480
Pipe-line	C. Lutomski	321,905	July 7	679	176	32	123
Pipe system having auxiliary leakage-conduit	W. Harris	326,978	Sept. 29	2288	625	32	1481
Pipe-wrench	J. T. Hayden	324,378	Aug. 18	1329	361	32	785
Pipe-wrench	J. Kirkaldy	326,569	Sept. 22	1786	469	32	1368
Pipes. Appliance for preventing dirt from passing into	F. George	326,425	Sept. 15	1609	418, 419	32	1327
Pipes. Connection for lead and other like	J. J. Lacey	324,631	Aug. 11	840	233	32	688
Pipes. Coupling for connecting	M. Chase	322,790	July 21	1851	492	32	353
Pipes. Machine for forming flanges upon soft	C. F. Search	326,957	Sept. 22	2264	592	32	1451
Pitman	P. T. Vannice	325,994	Sept. 8	1027	261	32	1211
Plaiting-board	G. W. Pine	322,476	July 21	1440	378	32	278
Plaiting machine. Bosom-	J. P. Gage	323,504	Aug. 4	543	154	32	625
Plane. Bench-	W. W. Preston	323,395	Aug. 4	220	81	32	573
Plane-guide	F. F. Mattoon	323,517	Aug. 4	177	51	32	565
Plane-holder							

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Planer. Machinist's	J. S. Alcorn	325,229	Sept. 1	1	1	32	1015
Planer-table-driving mechanism	F. H. Richards	323,208	July 28	2456	652	32	471
Planing and finishing thin pieces of wood. Machine for	A. M. Ford and J. M. Moore	322,616	July 21	1885	500	32	359
Planing and polishing lumber. Machine for	W. R. Norris	327,189	Sept. 29	2674	695	32	1531
Planing and slotting machine	C. K. Dawes	325,061	Aug. 25	2260	620, 621	32	966
Planing-machine	H. A. Holt	322,935	July 28	2068	551	32	399
Planing-machine	H. B. Stillman and W. F. Patterson	327,346	Sept. 29	2877	751	32	1567
Planing machine. Wood-	J. F. Welch, A. B. Hutchinson, and W. H. Gray	324,056	Aug. 11	875	241	32	692
Plant-beds. Apparatus for burning and preparing	J. H. Homer	323,151	July 28	2367	628	32	455
Plant-protector	W. Johnston	326,672	Sept. 22	2244	585	32	1448
Plants. Machine for making hills for tobacco and other	C. A. McCormick	327,004	Sept. 29	2420	633	32	1488
Planter	A. and J. Y. Savage	322,752	July 21	1806	476	32	344
Planter and check-rower. Combined corn-	J. Gannett	323,505	Aug. 4	160	47, 48	32	552
Planter and cultivator	B. J. Curry	327,434	Sept. 29	2988	781	32	1587
Planter and cultivator. Universal	J. M. Hutson	324,938	Aug. 25	2095	573	32	936
Planter and fertilizer-distributer. Combined	S. W. Hatcher	325,341	Sept. 1	146	41	32	1042
Planter and fertilizer-distributer. Combined corn-	J. Campbell	324,983	Aug. 25	2156	589	32	946
Planter and fertilizer-distributer. Combined seed-	S. O. Richardson	321,453	July 7	61	17, 18	32	14
Planter and fertilizer-distributer. Seed-	R. M. and J. M. Brooks	325,496	Sept. 1	374	91, 92	32	1067
Planter and fertilizer-distributer. Seed-	E. W. and J. W. McLendon	322,306	July 14	1199	315	32	228
Planter and guano-distributer. Combined seed-	C. B. Hood	326,740	Sept. 22	2057	535	32	1414
Planter and guano-distributer. Cotton-	H. D. and E. L. Wilson	323,995	Aug. 11	792	220	32	679
Planter attachment. Check-row corn-	A. Wally and H. Beckman	326,813	Sept. 22	2162	563	32	1433
Planter. Check-row corn-	W. D. Hayner and C. W. Mangus	323,324	July 28	2622	697	32	500
Planter. Check-row corn-	A. Liston and W. H. Navert	323,048	July 28	2237	591, 592	32	429
Planter check-rower attachment. Corn-	L. J. Odell	326,449	Sept. 15	1635	428	32	1332
Planter check-rower. Corn-	L. D. Benner	321,943	July 14	737	193	32	142
Planter check-rower. Corn-	R. Faries	326,282	Sept. 15	1424	370, 371	32	1292
Planter. Combined cotton and corn	J. E. Loafman	326,756	Sept. 22	2077	540	32	1418
Planter. Corn-	J. M. Bolton	326,388	Sept. 15	1563	406	32	1318
Planter. Corn-	L. Easley	325,400	Sept. 1	250	63	32	1063
Planter. Corn-	J. J. Fralkin	323,601	Aug. 4	540	154	32	625
Planter. Corn-	F. M. Lucas	323,942	Aug. 11	725	202, 203	32	667
Planter. Corn-	N. Newman	327,301	Sept. 29	2812	733, 734	32	1557
Planter. Corn-	F. H. Rybacek	326,525	Sept. 15	1731	451	32	1350
Planter. Corn-	C. Shadday, Jr	325,121	Aug. 25	2333	642, 643	32	979
Planter. Corn-	J. C. Tunnicliff	325,638	Sept. 1	556	141	32	1121
Planter. Corn and cotton	W. F. Wear	326,600	Sept. 22	1851	485	32	1378
Planter. Corn and cotton	G. W. Williams and J. Hook	325,716	Sept. 8	676	170	32	1146
Planter. Cotton-	J. S. Daniell	323,642	Aug. 4	343	97	32	586
Planter. Cotton and corn	K. P. Alston, Jr	322,772	July 21	1831	484	32	349
Planter, cotton-chopper, and scraper	W. I. Holt	326,560	Sept. 22	1776	465	32	1360
Planter. Cotton, corn, and pea-	D. T. Applewhite	324,514	Aug. 18	1513	416	32	818
Planter. Cotton-seed	J. J. Elliston	325,514	Sept. 1	404	99	32	1092
Planter. Cotton-seed	T. Meikle	326,771	Sept. 22	2097	545	32	1421
Planter feeding apparatus	D. M. Parry	325,763	Sept. 8	738	184	32	1158
Planter, harrow, and cultivator. Combined	J. M. Walker	326,180	Sept. 15	1284	331	32	1266
Planter. Potato-	J. M. Karr	321,439	July 7	33	9	32	9
Planter. Potato-	J. Norton, Sr	327,011	Sept. 29	2429	635	32	1489
Planter. Seed-	J. L. Bruce and T. E. Sikes	326,712	Sept. 22	1989	522	32	1404
Planter. Seed-	A. E. Choate	322,421	July 21	1361	356	32	265
Planter. Seed-	J. W. Clark	324,458	Aug. 18	1435	392	32	805
Planter. Seed-	J. Friday	322,593	July 21	1598	422	32	306
Planter. Seed-	W. B. Gibson	323,413	Aug. 4	41	10	32	530
Planter. Seed-	J. Lande	325,844	Sept. 8	842	211	32	1177
Planter, seeder, and fertilizer-distributer	J. B. Butts	325,393	Sept. 1	243	60, 61	32	1061
Planter. Sulky corn and seed	C. C. Henderson	324,322	Aug. 11	1252	340	32	763
Planting cranberry-vines. Implement for	F. B. Hiller	323,419	Aug. 4	47	12	32	531
Plaque-stand. Adjustable	E. Blaesius	326,387	Sept. 15	1563	406	32	1318
Plaster for building purposes. Composition of matter to be used as a	E. and E. W. Marsh	321,620	July 7	287	.....	32	55
Plastering composition	J. W. Rees	322,751	July 21	1805	.....	32	344
Plastic composition	J. J. Varley	321,548	July 7	199	.....	32	39
Plastic compound for walls, &c	H. W. Merritt	322,307	July 14	1200	.....	32	228
Plates or tubes. Machine for corrugating	G. S. Strong	324,608	Aug. 18	1633	449, 450	32	842
Plates, tubes, and other articles from clay, cement, plaster-of-paris, &c. Apparatus for manufacturing	F. C. A. Meier	323,190	July 28	2432	644	32	467
Platform: *See* Window-platform.							
Plating purposes. Preparing articles for	W. A. Gay	321,711	July 7	402	.....	32	75
Pliers. Cutting-	A. L. Pickett	326,327	Sept. 15	1490	388	32	1305
Plow	C. D. Adams	323,097	July 28	2304	608	32	442
Plow	C. Atkinson	322,573	July 21	1578	415, 416	32	302
Plow	A. J. Craig	324,660	Aug. 18	1718	473	32	857
Plow	J. R. Cummins	325,239	Sept. 1	10	4	32	1017
Plow	L. C. Reed	324,415	Aug. 18	1383	377	32	796
Plow	J. D. Roberson	326,591	Sept. 22	1814	476, 477	32	1373
Plow	H. M. Skinner	324,789	Aug. 18	1887	519	32	890
Plow	J. Stoll	324,607	Aug. 18	1632	449	32	842
Plow	T. Ward	323,836	Aug. 4	582	164	32	633
Plow	J. Zeek	323,770	Aug. 4	510	143	32	618

Alphabetical list of inventions, July to September, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Plow and cultivator	R. M. Henderson	323,676	Aug. 4	383	109, 110	32	594
Plow and cultivator. Sulky	S. Langford	324,849	Aug. 25	1979	544	32	914
Plow and seeder. Combined	A. Glenn	322,595	July 21	1600	423	32	306
Plow attachment	O. R. and G. B. Hanchett	322,443	July 21	1393	366	32	270
Plow attachment	C. W. McCormick	321,906	July 7	681	177	32	124
Plow attachment	S. B. Williams	322,769	July 21	1896	483	32	348
Plow attachment. Shovel	C. W. Luyster	326,912	Sept. 22	2299	601	32	1457
Plow beams. Bed-plates for sulky	J. F. Packer	323,442	Aug. 4	75	21, 22	32	536
Plow-beams. Machine for finishing	W. C. Margedant	322,838	July 21	1926	510	32	366
Plow. Ditching	J. W. Humphreys	321,898	July 7	671	174	32	122
Plow. Double	M. Flynn	327,154	Sept. 29	2628	684	32	1523
Plow-extension	A. R. Mallory	326,759	Sept. 22	2080	541	32	1418
Plow. Gang	J. R. Gill	326,969	Sept. 29	2380	622	32	1479
Plow. Gang	J. Ingham	322,825	July 21	1904	505, 506	32	362
Plow. Gang	H. W. Wynne	326,534	Sept. 15	1744	455	32	1353
Plow. Hand	C. W. Terpening	325,775	Sept. 8	757	189	32	1162
Plow-handles. Machine for finishing	W. C. Margedant	325,258	Sept. 1	32	10	32	1021
Plow harrow attachment	G. W. Spencer	322,760	July 21	1813	479	32	346
Plow. Planting	T. Pates	324,480	Aug. 18	1465	401	32	810
Plow. Planting	T. Pates	324,481	Aug. 18	1466	401	32	810
Plow. Reversible	W. C. Haulbrook	324,109	Aug. 11	947	260	32	706
Plow. Rotary-mold-board	E. G. Goddard	326,030	Sept. 8	1076	275	32	1221
Plow. Self-cleaning	A. Jones	324,559	Aug. 18	1563	432	32	829
Plow. Sulky	A. A. Betty	322,243	July 14	1127	294	32	215
Plow. Sulky	J. R. Ervin	322,094	July 14	938	243	32	179
Plow. Sulky	A. J. Gale	325,069	Aug. 25	2270	624	32	968
Plow. Sulky	T. T. Miller	322,953	July 28	2005	557	32	404
Plow. Sulky	W. S. Pates	322,633	July 21	1648	435	32	315
Plow. Sulky	S. Rockafellow	324,788	Aug. 18	1886	518, 519	32	890
Plow. Sulky	R. A. Thompson	322,331	July 14	1232	323	32	235
Plow. Sulky	J. M. Young	325,719	Sept. 8	681	170	32	1147
Plow. Wheel	W. L. Casaday	323,496	Aug. 4	145	44	32	549
Plow. Wheel	A. Lindgren	323,169	July 28	2394	639	32	459
Plow. Wheel gang	W. J. Browne	325,783	Sept. 8	765	191, 192	32	1163
Plows. Landside for	G. B. St. John. (Reissue)	10,641	Aug. 25	2483	622	32	1008
Plowing, &c. Machinery for	W. C. Morton	324,578	Aug. 18	1592	439	32	835
Plug. Turning	J. H. Blessing	326,195	Sept. 15	1303	337	32	1209
Plumber's trap	J. A. Whitney	326,612	Sept. 22	1657	486, 487	32	1379
Plumbers' traps. Apparatus for making	J. McCloskey	327,292	Sept. 29	2800	729	32	1555
Plumbers' traps. Making	J. A. Whitney	326,611	Sept. 22	1654	486	32	1378
Plush articles of clothing. Making	C. Theinert and S. Christianson	326,348	Sept. 15	1521	395	32	1311
Pneumatic dispatch and speaking tube system	R. J. P. Goodwin	322,178	July 14	1049	272, 273	32	199
Pneumatic systems. Engine for	C. L. Broadbent	324,076	Aug. 11	906	250, 251	32	699
Pneumatic tool	J. S. McCoy	323,053	July 28	2245	593	32	431
Pneumatic tool	J. S. McCoy	326,312	Sept. 15	1473	383	32	1302
Pocket for wearing-apparel	S. A. Goodale	326,971	Sept. 29	2381	623	32	1480
Pocket-knife	C. H. Kahler	323,938	Aug. 11	721	201	32	666
Poke and muzzle. Combined	J. H. Downing	326,634	Sept. 22	1683	493	32	1383
Poke. Animal	W. H. Bosworth	321,789	July 7	516	136	32	96
Polariscope	W. G. King	324,560	Aug. 18	1564	432	32	829
Pole and shafts	J. M. Jacobsen	326,987	Sept. 29	2399	627	32	1483
Pole or shafts. Vehicle	T. Lauzon	326,301	Sept. 15	1461	380	32	1299
Pole tip. Vehicle	A. W. Bagg	326,379	Sept. 15	1554	404	32	1317
Polishing painted, varnished, or japanned surfaces. Machine for	I. E. Ingraham and R. B. Codling	325,610	Sept. 1	518	130	32	1114
Pool-ball cabinet	L. H. F. Coquard and F. A. McGinnis	323,854	Aug. 4	603	169	32	637
Pool-ball rack and spotter	G. Henkel	322,602	July 21	1609	425	32	308
Pool-rack and ball-spotter. Combined	T. M. Walker	323,635	Aug. 4	581	164	32	632
Portfolio	S. D. King	326,750	Sept. 22	2068	538	32	1416
Portfolio	W. H. Weir	325,294	Sept. 1	91	26	32	1032
Post: *See* Fence-post.							
Post-hole digger	F. E. Kohler	325,212	Aug. 25	2458	676	32	1002
Post or pole	J. Smith	321,543	July 7	193	51	32	38
Pot: *See* Coffee or tea pot. Slag-pot. Paint-pot. Slag and matte pot.							
Pot-hook or trammel	A. Bittner	326,835	Sept. 22	2139	571	32	1438
Potato-digger	A. Ansley	324,911	Aug. 25	2063	564	32	928
Potato-digger	C. W. Ashley	324,743	Aug. 18	1819	503	32	877
Potato-digger	H. and J. Nelson	321,629	July 7	296	79	32	57
Potato-digger	A. L. Purdy	327,017	Sept. 29	2436	637	32	1490
Potato-digger	W. D. Robinson	325,631	Sept. 1	548	139	32	1119
Potato-digger	J. Spring	324,424	Aug. 18	1396	380	32	798
Potato-digger	F. M. Thorn	327,357	Sept. 29	2892	755	32	1570
Potato-digger	C. S. Torrey	326,461	Sept. 15	1650	431	32	1334
Potato-digger	F. O. Williams, A. and J. C. Mattice	324,202	Aug. 11	1096	296	32	734
Potato digger and coverer	C. Baker	325,475	Sept. 1	350	85	32	1082
Potato-peeling machine	C. E. Herzog	325,078	Aug. 25	2283	628	32	970
Potato-vines with a poisonous solution. Machine for sprinkling	A. O. Packard	322,747	July 21	1801	475	32	343
Pottery-kilns. Apparatus for the utilization or disposition of surplus or waste heat in	R. Porter	324,882	Aug. 25	2022	554	32	921
Poultry-house runway	J. G. Staunton	322,075	July 14	914	237	32	174
Powder-gun	J. A. Peer	326,324	Sept. 15	1487	387	32	1304
Powder-puff	J. C. Austin	324,800	Aug. 25	1915	526	32	901
Powder-puff	E. A. Bailey	323,255	July 28	2515	668	32	482

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Power: *See* Animal-power. Motive power.							
Power by steam under pressure. Storing	M. Honigmann	324,696	Aug. 18	1768	487	32	867
Power. Device for transmitting	G. R. Mitchell	326,914	Sept. 22	2301	602	32	1458
Power mechanism for operating steam-hammers, &c.	J. W. Pertz	325,960	Sept. 8	865	217, 218	32	1181
Power-transmitting machinery	E. Winans	324,509	Aug. 18	1507	413	32	817
Preserving and displaying vegetables, &c. Apparatus for	G. D. Basse	325,310	Sept. 1	108	31	32	1035
Preserving animal matters	G. Holgate	326,035	Sept. 8	1082		32	1222
Preserving apparatus. Fruit and vegetable	L. H. Moise	325,954	Sept. 8	973	247, 248	32	1203
Press: *See* Backing, plowing, and gilding press. Bale-press. Bark-press. Brick-press. Cheese-press. Cider-press. Cider and wine press. Copying-press. Cotton-press. Hay or cotton press. Seal-press. Sheet-metal-cutting press. Stamping-press. Tobacco-press. Wine-press.							
Pressure-gage	A. V. Hartwell	324,251	Aug. 11	1152	314	32	744
Pressure-gage	S. Wilcox	323,992	Aug. 11	788	219	32	679
Pressure-indicating gage	C. H. Fisher and P. Schwamb	323,033	July 28	2216	586	32	425
Pressure-regulator	C. Pfaudler	323,364	July 28	2681	714	32	510
Pressure-regulator	F. Widmer	323,093	July 28	2299	607	32	441
Pressure-regulator and cut-off	G. Westinghouse, Jr	324,905	Aug. 25	2056	563	32	927
Pressure regulator. Fluid	M. S. Cabell and W. W. Abney	322,519	July 21	1505	396	32	290
Pressure-regulator for carburetors, &c	A. H. Phillippi	324,160	Aug. 11	1023	279	32	720
Primary or galvanic battery	E. T. Starr	321,917	July 7	694	181	32	126
Printed. Mechanism for feeding boards to be	A. H. Walker	324,195	Aug. 11	1066	293	32	733
Printer's case. Job	G. W. Butler	326,475	Sept. 15	1606	435	32	1337
Printer's locking-quoin	J. N. O. Hankinson	326,428	Sept. 15	1613	420	32	1327
Printer's quoin	J. R. Drodzewski and J. McConnell	326,484	Sept. 15	1676	438	32	1339
Printer's quoin	J. McConnell	326,438	Sept. 15	1625	425	32	1329
Printing apparatus. Chromatic	H. R. Allen	322,147	July 14	1014	264	32	193
Printing-machine	E. Anthony	324,974	Aug. 25	2144	586	32	944
Printing-machine	E. Anthony	324,975	Aug. 25	2145	586	32	944
Printing-machine	E. Anthony	324,976	Aug. 25	2146	586, 587, 651, 652	32	945
Printing-machine	E. Anthony	325,146	Aug. 25	2365	651, 652	32	985
Printing-machine	J. Brooks	322,090	July 14	932	241	32	178
Printing-machine	J. Brooks	322,091	July 14	933	241	32	178
Printing-machine	C. B. Coltrell	327,243	Sept. 29	2737	710, 711	32	1544
Printing-machine	L. C. Crowell	324,986	Aug. 25	2160	590, 591, 592, 593	32	947
Printing-machine	L. C. Crowell	325,197	Aug. 25	2435	669, 670	32	998
Printing-machine	M. Davis	323,024	July 28	2199	582, 583	32	423
Printing-machine	H. P. Feister	323,925	Aug. 11	703	197	32	663
Printing-machine	P. Jackson	322,609	July 21	1622	429	32	311
Printing-machine	A. W. Jerome	326,988	Sept. 29	2400	627	32	1484
Printing-machine	R. Miehle	322,309	July 14	1203	315, 316, 317	32	223
Printing-machine	J. G. Northrup	321,630	July 7	298	79, 80	32	57
Printing-machine chromatic attachment	W. H. Golding	322,441	July 21	1386	364, 365	32	269
Printing-machine. Cylinder	W. Scott	321,539	July 7	185	49	32	37
Printing-machine. Cylinder	W. Scott	322,132	July 14	988	257, 258	32	189
Printing-machine delivery apparatus	A. Campbell	323,394	Aug. 4	14	4	32	525
Printing-machine delivery apparatus	S. D. Tucker	324,967	Aug. 25	2133	583, 584	32	943
Printing-machine flier	L. W. Hyde and A. H. Seaman	321,608	July 7	271	72	32	52
Printing-machine gripper	P. Lindemeyer, Jr	323,168	July 28	2394	635	32	450
Printing-machine gripper-motion	A. Campbell	321,682	July 7	362	96, 97	32	68
Printing-machine ink-fountain	T. E. Bomar	326,936	Sept. 29	2339	612	32	1472
Printing-machine inking apparatus	T. H. Fitnam	327,248	Sept. 29	2744	712, 713	32	1545
Printing-machine inking apparatus	J. T. Hawkins	326,215	Sept. 15	1332	345	32	1275
Printing-machine. Oscillating-cylinder	J. T. Hawkins	324,253	Aug. 11	1154	314, 315	32	745
Printing-machine sheet-delivery mechanism	W. Scott	325,118	Aug. 25	2329	641	32	979
Printing-machine. Stenographic	G. K. Anderson	323,286	July 28	2559	681	32	490
Printing-machines. Sheet-delivery for oscillating-cylinder	J. T. Hawkins	326,216	Sept. 15	1334	345	32	1275
Printing-machines. Sheet-flier for	L. W. Hyde and A. H. Seaman	324,939	Aug. 25	2096	573	32	936
Printing machinery. Plate	J. Milligan	321,743	July 7	445	118	32	83
Printing-plates. Producing photo-mechanical	L. De Roux	322,046	July 14	875		32	168
Printing-press delivery apparatus	J. S. Scheidell	323,215	July 28	2465	655	32	473
Printing-press feeder. Electrical	J. A. Wetmore	322,335	July 14	1237	324, 325	32	235
Printing-press feeding attachment	E. Yates	322,670	July 21	1696	450	32	325
Printing-press sheet-delivery apparatus	J. T. Hawkins	323,330	July 28	2631	700	32	502
Printing-press sheet-delivery apparatus	J. T. Hawkins	323,331	July 28	2633	700, 701	32	502
Printing-presses, &c. Counter for	C. T. Brown	323,382	July 28	2704	720	32	515

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Printing-presses, &c. Counter for	C. T. Brown	324,002	Aug 11	801	222, 223	32	680
Printing-presses. Dampening-machine for	W. Scott	325,867	Sept. 8	872	220	32	1183
Profile-cutting machine	H. Schumann	324,491	Aug. 18	1477	404, 405	32	812
Programme and hat holder	J. Badger	323,773	Aug. 4	512	143	32	619
Projectile. Explosive	J. Hunter	325,608	Sept. 1	516	129	32	1113
Prop-block cushion	J. H. Alexander	324,632	Aug. 18	1684	464	32	851
Protecting-screen for air and light shafts	A. A. Hagen	323,576	Aug. 4	251	74	32	568
Protector: *See* Electric-apparatus protector. Head-protector. Mustache-protector. Neck and ear protector. Nipple-protector. Plant-protector. Sole-protector. Watch-protector.							
Protractor. Bevel-	T. B. Williams	323,009	July 28	2178	578	32	419
Pruning-shears	I. M. McKay	326,314	Sept. 15	1476	384	32	1302
Puller: *See* Stump-puller.							
Pulley	W. W. Carey	322,898	July 28	2016	533	32	389
Pulley	G. W. Thompson	327,120	Sept. 29	2577	672	32	1514
Pulley. Band-	R. Jones	326,873	Sept. 22	2245	585	32	1448
Pulley-block	H. Beard	322,890	July 28	2007	530	32	388
Pulley. Clothes-line	S. Seib	327,326	Sept. 29	2841	741	32	1562
Pulley or wheel	J. Lathrop and A. Tyrrell	325,251	Sept. 1	24	8	32	1020
Pulley. Split	H. Underwood and C. Schweizer	327,206	Sept. 29	2694	700	32	1536
Pulley. Suspender clutch-	J. Smith	325,963	Sept. 8	1009	258	32	1200
Pulley, wheel, &c. Loose	M. L. Senderling	326,596	Sept. 22	1825	480, 481	32	1375
Pulleys. Apparatus for molding	W. J. Early	323,302	July 28	2595	688, 689	32	495
Pulleys. Machine for boring and turning	W. J. Muncaster	326,050	Sept. 8	1098	280, 281	32	1225
Pulp and other fibrous materials. Bleaching wood	G. H. Pond	321,452	July 7	59	.....	32	14
Pulp. Machine for reducing wood and other fibrous material to a	G. H. Pond	321,451	July 7	58	17	32	13
Pulverizer and cultivator	J. R., S., and A. Chambers and W. J. Davis.	322,420	July 21	1360	355	32	264
Pulverizer and spreader	G. E. Burt	326,015	Sept. 8	1054	268	32	1217
Pump	J. P. Cobb	326,201	Sept. 15	1312	340	32	1271
Pump	L. G. Engel	322,269	July 14	1155	302	32	219
Pump	W. H. and C. A. Holcombe	321,499	July 7	119	32	32	24
Pump	L. A. Kelly	326,434	Sept. 15	1021	424	32	1329
Pump	E. A. Miller and W. H. Brown	324,401	Aug. 18	1360	370	32	792
Pump	J. M. Normand	325,623	Sept. 1	539	136	32	1117
Pump. Air-	M. Coryell and F. M. Wheeler	324,069	Aug. 11	922	255	32	702
Pump. Air-	R. P. Garsed	325,996	Sept. 8	935	237	32	1195
Pump. Air or gas compressing	J. B. Clot	325,395	Sept. 1	245	61	32	1062
Pump and water-elevator. Automatic	A. H. Bryan	326,266	Sept. 15	1404	366	32	1288
Pump. Beer-forcing	F. E. Snyder	322,073	July 14	912	236	32	174
Pump. Bilge-	M. Waters	324,438	Aug. 18	1411	385	32	800
Pump bucket. Chain-	W. B. Wilcox	322,674	July 21	1975	523	32	375
Pump. Chain-	H. and C. F. Dickinson	324,243	Aug. 11	1141	310	32	742
Pump. Deep-well	L. and J. P. Griscom	323,805	Aug. 4	544	155	32	625
Pump. Double-acting	D. R. Cloud	323,398	Aug. 4	20	5, 6	32	526
Pump. Double-acting force-	D. J. Nysewander	326,053	Sept. 8	1104	281, 282	32	1226
Pump. Force-	J. P. Turner	326,891	Sept. 22	2271	594	32	1453
Pump. Hydraulic air-	W. S. Taylor	326,346	Sept. 15	1519	395	32	1310
Pump. Measuring-	S. M. Cole	324,301	Aug. 11	1222	332	32	758
Pump. Mercurial air-	A. L. Reinmann and C. G. Ott	327,313	Sept. 29	2827	737	32	1559
Pump, &c. Portable	R. Phillips	326,146	Sept. 15	1232	315	32	1256
Pump regulator. Steam-	D. R. Stiles	322,077	July 14	916	237	32	175
Pump. Rotary	F. M. Roots	325,276	Sept. 1	63	19	32	1027
Pump. Rotary steam and air	L. Fox	324,370	Aug. 18	1317	358	32	783
Pump. Sand-	W. S. Smith and C. W. Clift	323,458	Aug. 4	95	28	32	540
Pump. Single-acting	W. H. De Valin	326,409	Sept. 15	1586	413	32	1323
Pump. Steam-	F. M. Leavitt	323,346	July 28	2653	706	32	505
Pump. Vacuum-	F. H. Smith	321,764	July 7	484	128	32	90
Pump-valve	P. T. Coffield	322,795	July 21	1857	494	32	355
Pumps. Pawl and ratchet for chain-	H. and J. Kelly	324,320	Aug. 11	1262	343	32	766
Pumps. Valve-gear for duplex	W. J. Lewis	326,996	Sept. 29	2411	630	32	1486
Pumps. Valve-motion for steam-	J. Mayher	327,009	Sept. 29	2418	632	32	1487
Pumping apparatus. Converting motion in oil-	G. Allen	326,008	Sept. 8	1046	266	32	1215
Pumping-engine. Duplex	H. F. Gaskill	322,922	July 28	2049	541, 542	32	396
Pumping-engine. Duplex	H. F. Gaskill	324,372	Aug. 18	1319	358, 359	32	784
Pumping-engine. Duplex	T. J. Rider	324,488	Aug. 18	1472	403	32	811
Pumping-engine. Portable steam	J. Gwynne	326,642	Sept. 22	1801	496, 497	32	1385
Pumping-engine. Steam	J. C. Born	322,784	July 21	1846	490	32	352
Pumping-machine	C. Hoffman and H. R. Lyman	324,026	Aug. 11	835	231	32	686
Pumping-machine for stone-saws	F. R. Patch	326,323	Sept. 15	1486	387	32	1304
Pumping mill. Hand water-	J. H. Hunter	321,972	July 14	772	201	32	148
Pumping or elevating water. Device for	J. J. and J. A. Lamb	323,816	Aug. 4	555	158	32	627
Punch and bending-machine. Combined gang-	W. H. Johnson	326,746	Sept. 22	2064	536, 537	32	1415
Punch. Duplex ticket-	M. M. Welch	322,662	July 21	1685	447	32	323
Punch. Ticket-	W. H. Bonnell	326,369	Sept. 15	1565	406	32	1319
Punch. Ticket-	J. F. Hanscom	326,429	Sept. 15	1614	420	32	1327
Punch. Ticket-	W. C. Harden	321,718	July 7	411	110	32	77
Punching-machine	C. M. Carnahan	326,950	Sept. 29	2356	616	32	1475

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Punching-machine	J. L. Fletcher	324,930	Aug. 25	2085	570	32	934
Purse, bag, &c	G. B. Adams	325,807	Sept. 8	900	201	32	1169
Putting-out machine	W. M. Hoffman	323,334	July 28	2639	702	32	503
Puzzle	C. M. Dewey	326,725	Sept. 22	2040	531	32	1411
Quilting-frame	J. H. McGee	326,133	Sept. 15	1215	310	32	1253
Quilting-machine	J. B. Hagenbüchle	325,799	Sept. 8	783	197, 198	32	1166
Quilting-machine	W. Koch	323,584	Aug. 4	261	76, 77	32	570
Quilts or comforts. Filling for bed	M. H. Marcus	322,735	July 21	1784	470	32	340
Quoin and side-stick	M. J. Hughes	324,699	Aug. 18	1771	489	32	867
Rack: *See* Broom and tool rack. Chalk-rack. Cloth-rack. Feed-rack. Hay-rack. Map-rack. Musket-rack. Pool-rack. Towel-rack. Umbrella and overshoe rack.							
Radiator	C. E. Ashcroft	326,473	Sept. 15	1664	434	32	1337
Radiator	F. E. Corey	323,277	July 28	2544	676	32	487
Radiator and heating-oven. Combined	L. C. Rodier	323,209	July 28	2458	653	32	471
Radiator. Hot water or steam	S. D. Tompkins and J. N. Matlock	323,235	July 28	2489	661	32	476
Radiator. Steam-	T. L. McKeen	325,554	Sept. 1	456	114	32	1103
Rail-chair	T. L. Beaman	321,673	July 7	352	93	32	66
Rail clamp. Guide-	W. P. Wylly	323,895	Aug. 4	661	186	32	648
Rail-joint	J. D. Green	321,715	July 7	408	109	32	76
Rail-joint	R. V. Jones	322,828	July 21	1908	507	32	363
Rail-joint	J. Stewart	321,655	July 7	326	87	32	62
Rail-joint	J. S. Warren	322,027	July 14	850	221	32	163
Rails. Making	W. R. Jones	326,908	Sept. 22	2294	600	32	1456
Rails. Roll for street girder-	A. J. Moxham	321,627	July 7	294	78	32	56
Railway-alarm	E. L. Edmonds	322,430	July 21	1373	359	32	267
Railway and car, &c. Parabolic	M. Geber	322,594	July 21	1600	423	32	306
Railway block signaling apparatus	F. N. Kelsey	324,119	Aug. 11	962	265	32	709
Railway bumping-post	E. W. Ellis	322,812	July 21	1892	499	32	358
Railway. Cable	A. Bonzano	326,536	Sept. 15	1746	456	32	1354
Railway. Cable	R. Gornall	325,205	Aug. 25	2447	673	32	1000
Railway. Cable	E. D. Haven	327,083	Sept. 29	2522	657, 658	32	1505
Railway. Cable	W. M. Levering	326,754	Sept. 22	2073	538, 539	32	1417
Railway. Cable	O. D. Orvis and N. B. Adams	323,593	Aug. 4	275	80	32	572
Railway. Cable	H. Root. (Reissue)	10,621	July 7	723	189, 190	32	131
Railway-chair	H. J. Gray	321,595	July 7	256	68	32	49
Railway chair, tie, and break-joint	P. Davey	322,261	July 14	1147	299	32	218
Railway construction train or carriage	B. B. Hill	325,246	Sept. 1	18	6, 7	32	1018
Railway-controlling system. Electric	C. A. Mayrhofer	324,476	Aug. 18	1455	398, 399, 400	32	808
Railway-crossing	J. Daly	322,801	July 21	1863	495	32	356
Railway-crossing	A. C. Rumble	327,457	Sept. 29	3015	787	32	1591
Railway. Electric	E. M. Bentley	322,517	July 21	1502	395	32	289
Railway. Electric	H. T. Clay	327,381	Sept. 29	2925	762, 763	32	1575
Railway. Electric	R. L. Cohen	327,382	Sept. 29	2926	763	32	1576
Railway. Electric	O. Gassett	323,138	July 28	2352	624	32	452
Railway. Electric	E. W. Siemens	322,859	July 21	1952	516, 517	32	371
Railway. Electric	E. W. Siemens	324,176	Aug. 11	1040	284, 285	32	723
Railway. Electric	C. J. Van Depoele	324,899	Aug. 25	2048	560	32	935
Railway. Elevated	H. Monk	322,954	July 28	2096	557, 558	32	405
Railway foot-guard	L. S. Keeler	325,746	Sept. 8	719	179	32	1154
Railway-frog	G. Lehlbach	323,585	Aug. 4	263	77	32	570
Railway-frog	C. B. Price	323,596	Aug. 4	282	81, 82	32	574
Railway frog, crossing, &c	H. N. Wright	325,778	Sept. 8	760	190	32	1162
Railway-gate	W. C. Baird	326,628	Sept. 22	2181	569	32	1437
Railway-gate	H. Gridley and T. Johnson	324,934	Aug. 25	2089	572	32	934
Railway-gate	A. Lowe	326,306	Sept. 15	1467	382	32	1301
Railway-gate	J. J. Murray, Jr	324,780	Aug. 18	1676	516	32	888
Railway-gate	G. F. Oehrl	326,515	Sept. 15	1717	448	32	1347
Railway-gate	J. A. Smith	325,874	Sept. 8	880	222	32	1185
Railway-motor. Electric	F. J. Sprague	324,892	Aug. 25	2037	557, 558	32	924
Railway-rail	F. W. Brooks	322,412	July 21	1350	352	32	202
Railway rail and joint	S. McCarty	323,946	Aug. 11	729	204	32	668
Railway-rail brace	M. R. Perkins	327,013	Sept. 29	2431	636	32	1489
Railway-rail clamp	J. Lockhart	327,285	Sept. 29	2790	726	32	1552
Railway-rail fish-plate	R. R. Bridgers, Jr., and W. H. Good	326,393	Sept. 15	1570	408	32	1320
Railway-rail joint	J. C. Leder and A. Swivel	322,300	July 14	1193	313	32	227
Railway-rail joint	C. Taylor	325,458	Sept. 1	326	79	32	1077
Railway rail. Street-	E. Barnes	321,414	July 7	2	1	32	3
Railway rail support or tie	J. K. Clark	323,275	July 28	2541	675, 676	32	487
Railway-rails. Machine for straightening	M. L. O'Brien	327,098	Sept. 29	2552	665	32	1510
Railway-signal	J. E. Baker	323,388	Aug. 4	8	3	32	524
Railway-signal	A. A. Morrill	327,299	Sept. 29	2809	732	32	1556
Railway-signal	J. R. Park	324,411	Aug. 18	1378	375	32	795
Railway-signal	I. A. Timmis and S. C. C. Currie	326,068	Sept. 8	1130	287	32	1231
Railway-signal	J. N. Toole	325,286	Sept. 1	77	23	32	1030
Railway-signal	J. S. Trites	326,069	Sept. 8	1132	288	32	1231
Railway-signal	C. F. Williams	325,465	Sept. 1	334	81	32	1079

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Railway-signal. Automatic	J. M. Peirce	323,958	Aug. 11	745	207, 208	32	670
Railway-signal box	C. F. Williams	321,538	July 7	209	55	32	41
Railway-signal. Electric	A. G. Warren	323,243	July 28	2499	664	32	479
Railway-signal. Pneumatic	J. L. L. Knox	323,428	Aug. 4	56	15	32	533
Railway. Street cable	J. D. Isaacs	326,120	Sept. 15	1192	304	32	1249
Railway-switch	J. B. Batt	327,220	Sept. 29	2709	705	32	1539
Railway-switch	W. J. Davies and W. Penglase	326,406	Sept. 15	1584	412	32	1322
Railway-switch	T. M. Foote	322,920	July 28	2047	541	32	395
Railway-switch	J. T. Richardson	322,067	July 14	905	234	32	173
Railway-switch	F. W. Snow	327,115	Sept. 29	2571	670	32	1513
Railway-switch	F. S. Wood	323,481	Aug. 4	124	36	32	544
Railway-switch. Automatic	S. H. Jenkins	324,773	Aug. 18	1867	514	32	886
Railway-switch. Automatic	B. F. Purviance	322,395	July 14	1323	344	32	251
Railway-switch. Safety	E. H. Tobey	324,613	Aug. 18	1646	453, 454, 489, 490	32	844
Railway-switch safety-guard	M. F. Bonzano	322,783	July 21	1845	454, 455	32	352
Railway switches and signals. Interlocking mechanism for	E. H. Tobey	324,614	Aug. 18	1648	454, 455	32	845
Railway-switches. Grab-iron for	P. J. Swan	323,230	July 28	2485	660	32	476
Railway system. Electric	F. J. Sprague	323,459	Aug. 4	96	28, 29	32	540
Railway-tie	G. Murray	323,356	July 28	2669	711	32	508
Railway-tie and fastener. Metallic	R. R. Shepard	325,020	Aug. 25	2207	606	32	955
Railway-tie and track-fastening	W. B. Henning	323,809	Aug. 4	548	156	32	626
Railway-tie support	A. A. Shobe	323,455	Aug. 4	92	27	32	540
Railway time-indicator	J. P. Rhoads	326,059	Sept. 8	1119	285	32	1229
Railway-track gage and level	S. McManus	323,351	July 28	2662	708, 709	32	507
Railway-track support and traction-cable and electric-conductors conduit. Combined	J. H. Gould	325,531	Sept. 1	427	106	32	1098
Railway-tracks. Gage and level indicating device for	F. B. Stevens	325,706	Sept. 8	657	166	32	1143
Railway-tracks. Machine for clearing the sides of	D. M. Harris	325,340	Sept. 1	145	40	32	1042
Railway-tracks. Machine for cutting grass and weeds from	W. H. Bartels	325,584	Sept. 1	490	122	33	1109
Railway. Traction-rope	D. J. Miller	325,004	Aug. 25	2191	600	32	951
Railway water-tank	A. Roberts	322,068	July 14	906	234	32	173
Railways. Conductor for electric	J. Hopkinson	325,083	Aug. 25	2289	629, 630	32	971
Railways. Conduit for cable and electric	I. W. Heysinger	325,173	Aug. 25	2297	660	32	991
Railways, &c. Construction and operation of permanent	W. F. Goodwin	326,312	Sept. 15	1328	344	32	1274
Railways. Electric grip for	J. C. Henderson	323,675	Aug. 4	382	109	32	594
Railways, &c. Electrical conductor for	J. Perry and W. E. Ayrton	326,237	Sept. 15	1360	352	32	1280
Railways. Grip for cable	C. Scholz	325,633	Sept. 1	551	140	32	1120
Railways. Hydromotor for street	R. F. Bridewell	326,136	Sept. 15	1305	338, 339	32	1270
Railways. Rail-scraper for street and other	W. H. Robertson	324,731	Aug. 18	1807	499	32	875
Rake: *See* Hand-rake. Lawn-rake. Hay-rake. Stalk-rake. Horse-rake.							
Rake	M. F. Thayer and J. S. Smith	322,022	July 14	844	220	32	162
Rake and hoe. Combined	J. W. Calef	322,254	July 14	1139	297	32	217
Rakes. Manufacture of	A. P. Clarke	323,913	Aug. 11	688	193	32	660
Ram elevator. Hydraulic	J. Moore	322,957	July 28	2100	559	32	405
Ramie and sugar-cane. Machine for treating	L. U. Fasnacht	324,674	Aug. 18	1737	478	32	861
Range-boiler	E. Bourne	321,790	July 7	517	137	32	96
Range-doors. Safety device for	S. Wilks	324,441	Aug. 18	1414	386	32	801
Ranges. Apparatus for utilizing the waste heat from	W. T. Holland	324,841	Aug. 25	1967	540	32	911
Rasp	J. Anthony	324,912	Aug. 25	2063	565	32	929
Rasp	T. Judge and T. Clayton	324,889	Aug. 18	1345	366	32	789
Rat and mouse trap	T. P. Wise	325,717	Sept. 8	677	170	32	1147
Rat-trap	S. Dennis	324,925	Aug. 25	2079	569	32	932
Ratchet-and-pawl mechanism	E. M. Palmer	321,523	July 7	162	43	32	32
Ratchet-drill	J. J. Bantz	326,381	Sept. 15	1556	404	32	1317
Ratchet driving mechanism	D. H. McCoy	322,622	July 21	1634	432	32	313
Ratchet-wrench	L. Kramer and A. Eickhoff	326,876	Sept. 22	2247	586	32	1449
Ratchet-wrench	A. H. Rollin	324,169	Aug. 11	1032	282	32	722
Razor. Safety	A. Partridge	326,885	Sept. 22	2262	591	32	1451
Reamer. Pipe	R. G. Marcy	325,948	Sept. 8	966	245	32	1201
Reamer-relieving machine	A. Whitney	323,006	July 28	2172	576, 577	32	418
Reciprocating motor	W. F. Class and A. J. Weatherhead	326,545	Sept. 22	1757	460	32	1362
Reclining-chair	F. Hunger	325,248	Sept. 1	21	7	32	1019
Reclining-chair	J. J. Mettler	327,298	Sept. 29	2807	731	32	1556
Reclining-chair	G. W. Munshower	323,824	Aug. 4	565	161	32	630
Recorder: *See* Cable-recorder. Fare-recorder.							
Reduction-mill	H. C. Ingraham	323,640	July 28	2225	588, 589	32	427
Reel: *See* Belt-reel. Flour-bolt reel. Bolting-reel. Fringe-reel. Centrifugal reel. Harvester-reel. Fence-wire reel. Laundry-reel. Fishing-reel. Wire reel. Fishing-tackle line-reel. Wire-unwinding reel.							
Reflector-holder for stationary lamps and other lights. Adjustable	W. J. Wilkinson	324,627	Aug. 18	1672	461	32	848
Reflector. Lamp	M. F. Potter	323,530	Aug. 4	192	56	32	558
Reflector. Lamp	J. H. White	322,142	July 14	1010	262	32	192

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Reflector. Reversible	G. W. Kisinger	326,041	Sept. 8	1088	277	32	1222
Reflector. Self-acting solar	H. A. W. Braune	326,711	Sept. 22	1987	521, 522	32	1403
Refrigerating and ice machine	W. H. Wood	321,609	July 7	344	91, 92	32	65
Refrigerating apparatus	W. T. Forbes	321,702	July 7	393	105	32	73
Refrigerating apparatus	T. B. Lightfoot	325,097	Aug. 25	2306	634	32	974
Refrigerating apparatus	A. Natanson	327,300	Sept. 29	2810	732, 733	32	1557
Refrigerating apparatus. Air	O. J. Ellis	323,304	July 28	2598	689, 690, 691	32	495
Refrigerating apparatus for houses	J. and J. Stuber	324,278	Aug. 11	1192	324	32	752
Refrigerating-car	D. Hennessy	321,602	July 7	265	70	32	51
Refrigerating-rooms and liquids and apparatus used therefor.	F. Windhausen	323,767	Aug. 4	504	142	32	617
Refrigerator	J. Castell	326,952	Sept. 29	2359	617	32	1476
Refrigerator	A. J. Chase	324,229	Aug. 11	1127	307	32	740
Refrigerator	J. A. Davis	322,043	July 14	872	226, 227	32	167
Refrigerator	A. L. Potter	323,733	Aug. 4	450	130	32	609
Refrigerator	J. A. Stocken	323,463	Aug. 4	103	30	32	541
Refrigerator-building	J. F. Hanrahan	322,446	July 21	1396	366, 367	32	270
Refrigerator system for cars	D. Hennessy	321,601	July 7	263	70	32	50
Refrigerator-wagon	I. M. Hoffman	321,970	July 14	769	201	32	148
Register: *See* Bottle-drink-register. Fare-register. Cash-register. Money-drawer register.							
Register	I. A. Kilmer	323,340	July 28	2644	704	32	504
Registering apparatus	W. M. Bushfield	327,134	Sept. 29	2597	676	32	1517
Regulator: *See* Damper-regulator. Gas-regulator. Draft-regulator. Gas-pressure regulator. Electric regulator. Pendulum-regulator. Electric-light regulator. Pressure-regulator. Electric-machine regulator. Pump-regulator. Electric-motor regulator. Windmill water-regulator. Feed-regulator. Windmill water-supply regulator.							
Rein holder. Check	W. D. Taber	325,285	Sept. 1	76	22	32	1030
Rein hook. Check	E. Kohler	325,612	Sept. 1	522	132	32	1114
Rein-support	W. S. R. Tarkington	321,460	July 7	69	19	32	15
Retorts. Machinery for charging	T. F. Rowland	322,128	July 14	985	256, 257	32	188
Reversible seat or bed-frame	J. and F. H. W. Livesey	324,129	Aug. 11	977	260	32	712
Reversing mechanism. Automatic	J. C. Poland	327,409	Sept. 29	2959	772, 773	32	1581
Revolving furnace	H. Mathey	325,259	Sept. 1	34	10, 11	32	1021
Ribbon and braid holder	C. M. Stone	322,209	July 14	1088	282	32	207
Rice-cleaning machine	W. B. Vardell	326,532	Sept. 15	1742	454	33	1352
Riddle for extracting cockle and wild peas from grain.	W. Atwell and R. Floeter	321,881	July 7	652	169	32	119
Ring: *See* Ear-ring. Nose-ring. Finger-ring.							
Ripping device	J. P. Lavigne	322,299	July 14	1192	313	32	227
Rivet	W. C. Bray	326,100	Sept. 15	1168	298	32	1245
Rivet. Carriage-joint	G. L. Crandal	327,385	Sept. 29	2929	764	32	1576
Riveting-machine	W. H. H. Sisum	326,252	Sept. 15	1389	361, 362	32	1285
Road-worker. Steam	W. D. Yeager	321,778	July 7	501	132, 133	32	94
Road-working machine	E. F. Welch	323,002	July 28	2167	573	32	417
Roads. Constructing	H. W. Thornton	323,086	July 28	2288	605	32	439
Roads. Forming tracks or ruts in ice-covered logging	A. Gallinger	326,209	Sept. 15	1326	343	32	1274
Roaster: *See* Coffee-roaster. Coffee or nut roaster.							
Roaster. Self-basting	N. R. Baar	323,622	Aug. 4	320	92	32	582
Roasting-furnace	W. Black and T. Larkin	322,780	July 21	1840	488	32	351
Roasting-furnace. Rotary	A. Arents	321,780	July 7	504	134	32	94
Rock and coal drill	T. Willard	323,007	July 28	2173	577	32	418
Rock and ore crusher	F. H. McDowell	321,834	July 7	589	153	32	108
Rock crusher or breaker	F. A. Huntington	324,937	Aug. 25	2094	573	32	935
Rock-drill	A. McConnell	326,511	Sept. 15	1713	446	32	1346
Rock-drill	I. Reese	322,642	July 21	1659	439	32	317
Rock-drill	H. C. Sergeant	326,597	Sept. 22	1829	481	32	1375
Rock-drill	H. C. Sergeant	326,681	Sept. 22	1947	511, 512	32	1396
Rock-drill	H. C. Sergeant	326,682	Sept. 22	1950	512	32	1396
Rock-drill	C. S. Westbrook	323,245	July 28	2503	665	32	479
Rock-drill	L. S. Woodbury	321,670	July 7	346	92	32	66
Rock-drill support	G. W. Nixon	325,264	Sept. 1	465	116	32	1105
Rock-drill support	L. S. Woodbury	323,482	Aug. 4	125	36	32	545
Rock-drilling and well-boring machine	L. B. Embry	321,700	July 7	389	103, 104	32	73
Rock-pulverizer	J. L. Hayward	323,674	Aug. 4	381	109	32	594
Rocking-chair	N. G. Franzen	323,137	July 28	2351	624	32	452
Rocking-chair	G. W. Large	322,943	July 28	2077	553	32	401
Rocking-chair. Base	G. A. Watkins	326,361	Sept. 15	1537	399	32	1313
Rocking-chair-fan attachment	J. Britton	322,893	July 28	2011	531	32	388
Rocking-horse	W. E. Crandall	326,721	Sept. 22	2035	529	32	1410

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Rod: *See* Fishing-rod. Sucker-rod. Stair-rod.							
Rod and bolt cutter	D. R. Nichols	326,772	Sept. 22	2098	545	32	1421
Rod-pointing machine	J. Wilson	323,616	Aug. 4	306	88	32	579
Roll for bending plate metal	R. Kent	325,677	Sept. 8	614	155, 156	32	1136
Rolls. Dressing	R. Brown	326,263	Sept. 15	1401	365	32	1287
Roller: *See* Curtain-roller. Shade-roller. Gate-roller. Skate-roller. Land-roller.							
Roller-mill	W. Griscom, T. McFeely, and E. T. Butler.	325,601	Sept. 1	510	127, 128	32	1112
Roller-mill driving mechanism	J. V. Hecker	321,600	July 7	263	69	32	50
Roller-mill feeder	L. Nolden and A. E. May	326,447	Sept. 15	1634	427	32	1331
Roller-mill feeder	J. Mooney	326,512	Sept. 15	1714	447	32	1347
Roller-mill roll	J. W. Jackson	326,121	Sept. 15	1192	305	32	1249
Roller-press	C. F. Schmidt	325,447	Sept. 1	314	76	32	1075
Rolling metal cylinders. Machine for	V. Daelen	323,281	July 28	2547	677, 678	32	488
Rolling-mill	J. M. Baker	323,100	July 28	2307	609, 610	32	443
Rolling-mill	H. B. Chess	321,794	July 7	523	138, 139	32	97
Rolling-mill	C. F. Elmes	321,427	July 7	20	4	32	7
Rolling-mill	E. B. Meatyard	324,867	Aug. 25	2006	550, 551	32	918
Rolling-mill	J. T. Wainwright	324,222	Aug. 11	1196	325	32	753
Rolling-mill feeding mechanism	R. W. Hunt and M. M. Suppes	323,510	Aug. 4	167	49	32	553
Rolling-mill furnaces. Charging-carriage for	J. L. McDonald	323,186	July 28	2428	643	32	466
Rolling-mill roll	D. W. Bradford	324,807	Aug. 25	1921	528	32	902
Rolling mill. Wire-rod	H. Grey and R. Bowater	322,281	July 14	1169	306	32	222
Rolling tubes. Machinery for	C. Kellogg	324,117	Aug. 11	957	263, 264	32	708
Rolling wire. Billet for	W. A. Sweet	321,658	July 7	331	88	32	63
Roof. Cement	A. N. D. Delffs	321,800	July 7	533	141	32	99
Roof. Portable	H. C. Herron	321,722	July 7	415	111	32	78
Roofing	B. B. Adams	326,374	Sept. 15	1550	402	32	1316
Roofing. Felt	L. F. Blair and J. W. Roche	322,153	July 14	1020	265	32	194
Roofing. Machine for double-seaming tin	E. L. Osborn	322,848	July 21	1938	512, 513	32	368
Roofing. Metal	J. H. Eller	326,958	Sept. 29	2366	618	32	1477
Roofing. Metallic	F. A. Guthrie	324,994	Aug. 25	2178	596	32	949
Roofing-plate	J. Sporny and I. Zarski	322,990	July 28	2150	571	32	415
Roofing-tile	J. E. Donaldson	322,917	July 28	2044	540	32	395
Root-digger	C. S. Torrey	326,462	Sept. 15	1651	431	32	1335
Rope-clamp	J. Weigel and J. Barclay	325,136	Aug. 25	2353	648	32	983
Rope-fastener	S. J. Crites	321,799	July 7	533	141	32	99
Rope-fastener	T. Taylor	322,501	July 21	1487	390	32	286
Rope-lock	G. W. Cook	324,964	Aug. 25	2158	589	32	947
Rotary cutter	A. J. Wilbur	324,970	Aug. 25	2138	584	32	943
Rotary engine	F. H. Crass	324,353	July 14	1266	331	32	241
Rotary engine	C. R. Harvin	322,179	July 14	1054	273	32	200
Rotary engine	H. F. Hodges	323,038	July 28	2223	588	32	426
Rotary engine	M. S. Huff	324,698	Aug. 18	1771	488	32	867
Rotary engine	D. McColgan	325,863	Aug. 25	1997	548, 549	32	917
Rotary engine	W. O'Keefe	326,654	Sept. 8	1106	282	32	1226
Rotary engine	A. Wildern	323,993	Aug. 11	789	219, 220	32	679
Rotary engine or pump	C. H. Cary	326,543	Sept. 22	1755	459	32	1362
Rotary lubricator	D. L. McCorkindale	324,864	Aug. 25	2001	550	32	917
Rotary motor	J. Fielding	324,246	Aug. 11	1147	313	32	744
Rotary shears	G. O. Gilmer	322,440	July 21	1385	363, 364	32	269
Rotary shears	E. Shepard	326,163	Sept. 15	1257	323	32	1261
Rotary steam-engine	H. Moon	322,389	July 14	1317	343	32	250
Roughing-machines. Electrotype-plate-shaving attachment for	E. A. Blake	325,781	Sept. 8	763	191	32	1162
Roughing-machines. Roll-guard for	E. A. Blake	324,806	Aug. 25	1920	528	32	902
Roundabout	G. Bungarz	326,474	Sept. 15	1665	435	32	1337
Roving-frame, &c	R. Curtis and W. H. Rhodes	323,857	Aug. 4	609	171, 172	32	638
Rowing appliance, &c	G. W. Briggs	323,292	July 28	2565	683	32	491
Rubber ball. India-	J. P. Rider	326,788	Sept. 22	2126	553	32	1497
Rubber bottles, &c. Closing the openings in	E. A. Fellows	321,491	July 7	109	29	32	22
Rubber-covered compound	L. S. Hoyt	322,936	July 28	2071	551	32	400
Rubber, gutta-percha, &c. Manufacture of compounds of india-	A. H. Huth	326,220	Sept. 15	1338	.....	32	1276
Rubber. Machine for cutting india-	J. Murphy	323,061	July 28	2253	596	32	432
Rubber tires, hoops, and bands to wheels, &c. Manufacture of and application of india-	C. Moseley and B. Blundstone	322,391	July 14	1319	.....	32	250
Rubber. Vulcanizing	F. W. Seabury	325,119	Aug. 25	2330	641	32	979
Rule. Carpenter's	W. H Greene	325,533	Sept. 1	428	106	32	1098
Ruler and paper-cutter. Combination	R. S. Thain	325,992	Sept. 8	1024	260	32	1211
Saccharine compound	C. Fahlberg	326,281	Sept. 15	1424	.....	32	1292
Sack filler and weigher	H. T. Wiley	321,468	July 7	85	23	32	17
Sad-iron	H. S. Pease	324,585	Aug. 18	1600	441	32	837
Sad-iron	W. C. Smalstig	327,331	Sept. 29	2847	742	32	1563
Sad-iron holder	W. M. McIntyre	326,313	Sept. 15	1474	383	32	1302
Saddle-bar	T. J. Haslam	327,165	Sept. 29	2639	687	32	1525
Saddle. Harness	A. Jacquot	325,088	Aug. 25	2295	631, 632	32	972

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Saddle. Riding	M. Macleod	321,830	July 7	585	152	32	107
Safe	O. Gassett	326,424	Sept 15	1606	418	32	1326
Safe	E. Petit	325,765	Sept. 8	741	185	32	1159
Safe	W. Knowles	325,416	Sept. 1	270	67	32	1066
Safe and flour-chest. Kitchen-	H. F. Newbury	323,590	Aug. 4	269	78, 79	32	571
Safe. Burglar-proof	A. Kirke	323,158	July 28	2377	630	32	457
Safe-lock	E. Williams	324,143	July 14	1011	263	32	192
Safety-pin	J. M. Wetherell	323,759	Aug. 4	492	139	32	615
Safety pin and buckle. Combined	J. Peters	327,308	Sept. 29	2880	736	32	1558
Salt-brine from deep salt-veins. Apparatus for making and raising.	J. Peters	327,307	Sept. 29	2880	736	32	1558
Salt-brine from deep veins. Making and raising	C. A. Merrill	324,142	Aug. 11	992	273, 274	32	715
Salt-grainer	J. M. Duncan	322,360	July 14	1274	333	32	242
Salt-hopper	S. C. Johnson	322,378	July 14	1301	340	32	247
Salter. Stock	S. J. Cox	321,582	July 7	237	63	32	46
Salting cattle. Device for	R. S. Penniman	321,636	July 7	305	81, 82	32	58
Salts. Apparatus for drying fusible	E. Clayton	323,113	July 28	2324	616	32	447
Sample. Clothing	J. E. Mathewson	321,512	July 7	143	38	32	26
Sand-blast process	F. W. Coy	325,789	Sept. 8	773	193, 194	32	1164
Sand-paper-molding apparatus	F. S. Strong	325,708	Sept. 8	667	167	32	1145
Sand-paper roll	P. M. Pfeil	324,158	Aug. 11	1020	279	32	719
Sand separating and washing machine	P. M. Pfeil	324,159	Aug. 11	1022	279	32	720
Sand separating and washing machine	G. W. Henry	321,603	July 7	266	71	32	51
Sash and frame. Window	G. C. Bolgiano	325,152	Aug. 25	2372	653	32	987
Sash-balance	L. M. Devore	324,819	Aug. 25	1939	533	32	906
Sash-balance	W. S. Michael and D. W. Geib	321,984	July 14	804	210	32	154
Sash-balance	A. Worner	321,871	July 7	641	166	32	117
Sash-cord fastener	G. W. Graves	322,707	July 21	1747	461	32	334
Sash-cord fastener	S. Land	327,276	Sept. 29	2778	721	32	1550
Sash-fastener	J. I. Baringer	323,998	Aug. 11	796	221	32	680
Sash-fastener	W. J. Barron	325,481	Sept. 1	356	86	32	1063
Sash-fastener	F. A. Bascom	326,090	Sept. 15	1158	296	32	1244
Sash-fastener	J. Y. Bassell	323,020	July 28	2190	581	32	421
Sash-fastener	C. O. Cole	326,848	Sept. 22	2207	575	32	1442
Sash-fastener	W. S. Cunningham	322,496	July 21	1367	357	32	265
Sash-fastener	W. B. Dager	327,144	Sept. 29	2611	681	32	1520
Sash-fastener	L. S. Garrett	324,930	Aug. 25	1954	536	32	908
Sash-fastener	J. H. Hamaker	325,834	Sept. 8	832	208	32	1175
Sash-fastener	C. W. Littlefield	325,846	Sept. 8	845	212	32	1178
Sash-fastener	J. M. McCormick and C. McKinnon	325,754	Sept. 8	730	189	32	1157
Sash-fastener	J. Paillet	322,553	July 21	1543	408	32	297
Sash-fastener	E. T. Prindle	324,883	Aug. 25	2025	555	32	922
Sash-fastener	A. Schmackers	323,741	Aug. 4	467	132	32	610
Sash-holder	F. P. Catlin	322,520	July 21	1506	396	32	290
Sash-holder	A. Haskins	324,252	Aug. 11	1153	314	32	745
Sash-holder	W. D. Isett	322,182	July 14	1057	274	32	201
Sash-holder	H. Laurence	326,226	Sept. 15	1347	348	32	1278
Sash-holder	F. L. Rosentreter	324,885	Aug. 25	2027	555	32	922
Sash-holder	H. Stalb	323,603	Aug. 4	290	83	32	576
Sash-weight	R. Vosburgh	326,073	Sept. 8	1140	290	32	1232
Sash. Window	L. and H. Fuller	323,867	Aug. 4	621	175	32	640
Saw	M. Brown	324,357	Aug. 18	1300	353	32	781
Saw	J. Ledward	325,679	Sept. 8	616	156	32	1136
Saw article. Scroll	A. Bernritter	321,571	July 7	225	60	32	44
Saw-buck	W. E. Brock	323,107	July 28	2314	612	32	444
Saw-buck	C. Klein	321,823	July 7	577	150	32	106
Saw. Buck-	A. H. Loebs	326,045	Sept. 8	1092	278	32	1223
Saw. Chain-	W. S. Shipe	323,602	Aug. 4	269	83	32	575
Saw. Chain-	W. S. Shipe	325,364	Sept. 1	181	48	32	1048
Saw. Drag-	R. Gurney	322,596	July 21	1602	423	32	307
Saw. Drag-	J. J. Parker	322,473	July 21	1436	377	32	277
Saw-filing machine. Gin-	F. M Sisk	326,167	Sept. 15	1261	324	32	1222
Saw-fitting device. Crosscut-	W. H. Dessureau	322,165	July 14	1035	268	32	196
Saw-guard	J. A. Comer	321,484	July 7	103	28	32	21
Saw-guard	J. G. Groff	323,318	July 28	2613	695	32	499
Saw-gummer	J. B. Clopton	323,114	July 28	2324	616	32	447
Saw-gummer	J. R. B. Hunt	324,380	Aug. 18	1331	349	32	786
Saw-gummer	H. Ibsen	324,022	Aug. 11	837	222	32	687
Saw gummer and sharpener	S. J. Randall	326,243	Sept. 15	1374	355	32	1292
Saw. Hand-	G. N. Clemson	325,157	Aug. 25	2376	654	32	987
Saw-handle	J. Hilton	323,508	Aug. 4	164	48	32	553
Saw-handle	R. E. Poindexter	327,015	Sept. 29	2433	636	32	1490
Saw-handle	W. R. Towse	323,233	Aug. 4	578	163	32	632
Saw. Insertible-tooth	G. F. Simonds	326,685	Sept. 22	1954	513	32	1397
Saw mill. Band-	D. K. Allington	327,428	Sept. 29	2980	779	32	1586
Saw mill. Band-	L. T. Pyott	325,629	Sept. 1	546	138, 139	32	1119
Saw-mill carriages. Feed mechanism for	W. A. Campbell	324,223	Aug. 11	1121	304	32	738
Saw-mill carriages. Feed mechanism for	H. R. Wolfe	324,059	Aug. 11	882	243	32	693
Saw mill. Circular	A. Brogden	325,727	Sept. 8	691	172	32	1149
Saw mill. Circular	W. J. Perkins	321,525	July 7	164	44	32	33
Saw-mill dog	A. Delaney and J. M. Bond	325,507	Sept. 1	392	97	32	1090
Saw-mill head-block	G. M. Pelton	327,103	Sept. 29	2558	667	32	1510
Saw-mill. Reciprocating	A. Rodgers	324,273	Aug. 11	1187	322, 323	32	751
Saw-mill set-works	C. W. Metcalfe	324,576	Aug. 18	1586	436	32	834
Saw-mill set-works	G. Hanson and C. D. Clark	326,291	Sept. 15	1440	375, 376	32	1295
Saw-mill set-works. Indicator for	A. J. West	325,295	Sept. 1	92	26	32	1032
Saw-set	H. M. Chamberlin	325,052	Aug. 25	2248	617	32	964
Saw-set	J. S. Long	326,305	Sept. 15	1466	381	32	1300
Saw-set	L. F. Markham	325,101	Aug. 25	2310	636	32	975

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Saw-set	G. Marsh	326,308	Sept. 15	1469	382	32	1301
Saw-set	M. B. W. Wheeler	323,005	July 28	2171	576	32	418
Saw-sets. Feed mechanism for	H. H. Hitchcock	325,080	Aug. 25	2285	628	32	970
Saw-setting device	G. H. Massingham	325,951	Sept. 8	969	246	32	1202
Saw-setting machine	J. H. C. Winston	325,035	Aug. 25	2224	610 / 611	32	959
Saw sharpening and gumming machine	J. H. Totman	324,434	Aug. 18	1406	393	32	799
Saw-sharpening device	W. Tucker	327,416	Sept. 29	2968	775	32	1583
Saw-swage	W. C. B. Hunmel	324,701	Aug. 18	1773	499	32	868
Saw-swage	N. Johnson	327,271	Sept. 29	2772	710	32	1549
Saw-swage	W. D. Sherman	326,164	Sept. 15	1258	323	32	1261
Saw-swage	H. R. Wolfe	323,996	Aug. 11	793	221	32	679
Saw-swaging device	H. Williamson	325,467	Sept. 1	336	81	32	1079
Saw-swaging machine	P. R. Ward	326,360	Sept. 15	1535	398 / 399	32	1313
Saw-table gage	M. B. Banowetz	322,775	July 21	1834	485	32	350
Saw-table gage	H. T. Rawlings	326,454	Sept. 15	1641	429	32	1333
Saw-teeth. Device for inserting and withdrawing removable	G. F. Simonds	326,683	Sept. 22	1952	512	32	1397
Saw-teeth. Securing diamonds in	A. H. Lucas	324,945	Aug. 25	2105	575	32	938
Saw-tooth-dressing machine	C. Loveland	321,617	July 7	284	75	32	54
Saw-tooth jointer and gage	J. Hug	326,907	Sept. 22	2294	600	32	1456
Saw-tooth swage	G. S. Black	323,628	Aug. 4	326	93	32	583
Saw with insertible teeth	G. F. Simonds	326,684	Sept. 22	1953	513	32	1397
Saw with insertible teeth	J. Smith	326,798	Sept. 22	2137	556	32	1429
Saws. Adjusting	R. W. Clarke	323,912	Aug. 11	687	192	32	660
Saws. Device for operating vertical reciprocating	C. W. Page	327,303	Sept. 29	2815	734	32	1557
Saws. Machine for dressing mill	J. H. McFadden and P. Houser	327,294	Sept. 29	2803	730	32	1555
Saws. Manufacture of	C. T. Shoemaker	324,600	Aug. 18	1619	446	32	840
Saws while being ground. Device for supporting	H. F. Campbell and G. H. Mills	326,397	Sept. 15	1574	409	32	1320
Sawing-machine	W. W. Smith	326,343	Sept. 15	1510	394	32	1309
Sawing machine. Circular	J. H. Jones	321,976	July 14	776	202	32	149
Sawing machine. Circular	J. H. Palm	326,583	Sept. 22	1805	474	32	1371
Sawing machine. Circular	A. Rodgers	322,396	July 14	1324	345	32	251
Sawing machine. Circular	P. B. H. Smith	322,134	July 14	993	258	32	189
Sawing machine. Circular	C. Trier	322,658	July 21	1680	445 / 446	32	321
Sawing machine. Scroll	H. L. Hopkins	324,842	Aug. 25	1969	540 / 541	32	911
Sawing machine. Scroll	D. W. Perry	322,748	July 21	1802	475	32	343
Sawing spouts. Machine for	C. M. Strobridge and W. Houghton	323,229	July 28	2483	660	32	475
Scaffold-binder	J. A. Morose	326,514	Sept. 15	1716	447	32	1347
Scaffold. Painter's	W. T. Howes	323,152	July 28	2368	628	32	455
Scaffolding, &c. Socket-clamp for	G. W. Zeigler	327,427	Sept. 29	2979	778	32	1585
Scale. Balance weighing	W. B. Guild	326,975	Sept. 29	2385	624	32	1481
Scale. Graduated	H. J. Leighton and J. Coffin	325,096	Aug. 25	2305	634	32	974
Scale. Grain	A. J. Buie	321,481	July 7	98	26	32	20
Scale. Platform	H. R. Allen	322,146	July 14	1012	263 / 264	32	193
Scale. Plotting	F. E. Shaw	323,218	July 28	2469	656	32	473
Scale. Portable or folding	F. Fairbanks	326,025	Sept. 8	1067	272	32	1219
Scale. Prescription	C. H. Fitch	327,152	Sept. 29	2625	683	32	1522
Scale. Recording weighing	E. R. Puffer	323,885	Aug. 4	643	182 / 183	32	645
Scale. Weighing	D. Hallock	325,534	Sept. 1	430	107	32	1098
Scale. Weighing	F. I. Hitchcock	322,100	July 14	946	245	32	181
Scale. Weighing	L. G. Spencer and P. F. Hazen	323,371	July 28	2690	716	32	512
Scale. Weighing	A. Turnbull	322,870	July 21	1969	521	32	374
Scale. Weighing	W. Watkins	326,815	Sept. 22	2164	564	32	1433
Scarf	F. Baldwin	324,802	Aug. 25	1916	527	32	901
Scarf exhibitor. Neck	M. Krueger	321,903	July 7	678	176	32	123
Scarf. Neck	D. Schlesinger	326,251	Sept. 15	1389	361	32	1285
Scenery. Apparatus for holding and shifting stage	W. H. Gifford	325,927	Sept. 8	936	237	32	1196
School seat and desk	S. W. Peregrine	326,774	Sept. 22	2101	546	32	1422
Scissors-sharpener	J. W. Hilton	323,146	July 28	2362	626	32	454
Scourer: *See* Grain-scourer.							
Scow. Dumping	G. D. Barney	322,409	July 21	1346	350	32	262
Scraper. Foot	P. M. Lutz	327,182	Sept. 29	2667	693	32	1530
Scraper	D. H. Sweeney	323,972	Aug. 11	764	214	32	674
Scraper-attachment for removing calcimine and the like from ceilings	H. C. Dexter	323,123	July 28	2334	619	32	449
Scraper. Road	M. E. Cook	326,719	Sept. 22	2008	525 / 526	32	1406
Scraper. Road	W. E. Jacobs	325,934	Sept. 8	943	239	32	1197
Scraper. Wheel	W. M. Welch	321,557	July 7	208	55	32	41
Scratch-gage	D. S. Conrad	325,505	Sept. 1	389	96	32	1089
Screen: *See* Coal-screen. Grain-screen. Protecting-screen. Window-screen.							
Screen stretcher. Wire	C. Ehrenfeld	324,673	Aug. 18	1735	478	32	860
Screw-blank heading-machine	M. Stannard	323,373	July 28	2694	716 / 717	32	512
Screw-cutting die	A. J. Polk	321,755	July 7	467	124	32	87
Screw-cutting lathe	J. C. Smith	327,334	Sept. 29	2852	744	32	1564
Screw-cutting machine	L. Wilkinson	322,875	July 21	1977	523 / 524	32	375
Screw-driver	G. F. Kolb	324,121	Aug. 11	966	266	32	710
Screw-nail	W. T. McGinnis	327,296	Sept. 29	2806	730	32	1556
Screw-plate	B. Elmore	325,790	Sept. 8	775	194	32	1164
Screw-stock	J. Bentley	327,223	Sept. 29	2712	706	32	1540
Screw-tap	H. A. Harvey	327,261	Sept. 29	2760	716	32	1547
Screw-tap	H. A. Harvey	327,263	Sept. 29	2762	717	32	1548
Screw-tap	J. C. Steber. (Reissue)	10,646	Sept. 22	2329	610	32	1464

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Screw-thread-cutting tool	J. Gnedel	326,733	Sept. 22	2048	533	32	1413
Screw-threaded links, bars, or bolts. Construction of	A. H. Emery	322,052	July 14	884	229	32	169
Screw. Tubular	F. R. Hunt	324,768	Aug. 18	1858	512	32	884
Scythe	W. Harvey	327,163	Sept. 29	2638	686	32	1524
Scythe-snath fastener	D. T. Chambers	322,682	July 21	1708	453	32	338
Seal	E. J. Brooks	323,849	Aug. 4	598	168	32	636
Seal	E. J. Brooks	326,199	Sept. 15	1307	339	32	1271
Seal	J. M. Edgar	325,661	Sept. 8	589	150	32	1132
Seal-lock	J. G. Mnatin	325,620	Sept. 1	535	136	32	1117
Seal-lock	J. A. Kirby	322,530	July 21	1911	507	32	364
Seal-lock. Car-door	J. A. Kirby	322,831	July 21	1913	508	32	364
Seal-lock. Car-door	P. Hien	324,691	Aug. 18	1702	486	32	865
Seal-lock for railway-cars	E. J. Brooks	324,647	Aug. 18	1703	469	32	854
Seal. Metallic	E. J. Brooks	326,897	Sept. 22	2281	506	32	1454
Seal-press	E. J. Brooks	323,633	Aug. 4	331	95	32	584
Seal. Tin-strip	F. A. Fay	326,283	Sept. 15	1490	371	32	1292
Seals. Machine for making wires for metallic	C. W. and W. C. Collyer	324,086	Aug. 11	918	254	32	701
Seam-beating machine	C. W. and W. C. Collyer	324,085	Aug. 11	916	254	32	701
Seam-rubbing machine	H. M. Miller	325,108	Aug. 25	2316	638	32	977
Seamer. Roofing	C. L. Hart	324,318	Aug. 11	1247	330	32	762
Seaming and crimping machine. Can	V. Sharp	324,736	Aug. 18	1612	501	32	876
Seaming machine. Sheet-metal							
Seat: *See* Car-seat. Reversible seat. School-seat. Tree-seat. Vehicle-seat.							
Seat-lock	E. H. Booth	324,643	Aug. 18	1697	468	32	853
Seats. Support for adjustable and revolving	L. Postawka	322,005	July 14	817	214	32	157
Secondary battery	J. S. Sellon	324,597	Aug. 18	1616	445	32	839
Secondary battery	E. T. and E. E. Starr	327,341	Sept. 29	2865	747	32	1565
Secondary battery or electrical accumulator	J. S. Sellon	321,759	July 7	476	126	32	88
Secondary battery or electrical accumulator	J. S. Sellon	325,120	Aug. 25	2331	641 / 642	32	979
Secondary or storage battery	E. T. and E. E. Starr	323,890	Aug. 4	652	184 / 185	32	646
Seed-case	R. P. Carpenter	323,396	Aug. 4	18	5	32	596
Seed cleaner and huller	R. B. Hutchcraft	322,824	July 21	1903	505	32	302
Seed cleaner. Flax	T. R. Rosier	324,275	Aug. 11	1189	323	32	751
Seed-distributer	G. J. McMillan	325,106	Aug. 25	2314	637	32	976
Seed-distributer	J. B. Scarborough	322,976	July 28	2136	567	32	412
Seed-drill and fertilizer-distributer	S. F. Barber	324,605	Aug. 25	1919	598	32	902
Seed-drill gage	F. H. Chesebro	327,234	Sept. 29	2722	706	32	1541
Seed-drill. Hand	J. J. Koch and W. P. Grath	321,824	July 7	577	150	32	106
Seed linter. Cotton	F. Montgomery	322,842	July 21	1931		32	367
Seed. Removing fiber from cotton	H. Amundson and M. S. Field	321,890	July 7	650	169	32	118
Seeder	S. Freeman	321,704	July 7	395	105	32	74
Seeder. Broadcast	J. S. Heath	324,321	Aug. 11	1251	340	32	763
Seeding and drilling machine. Combined	R. Gosman, Jr	327,253	Sept. 29	2752	714	32	1546
Seeding-machine	T. T. Miller	322,932	July 28	2004	557	32	404
Seeding-machine	G. W. Miskimen	322,841	July 21	1930	510	32	367
Seeding-machine	J. F. Packer	321,443	Aug. 4	77	22, 23	32	537
Seeding-machine	J. F. Packer	323,444	Aug. 4	80	23	32	537
Seeding-machine	S. B. Hart	323,328	July 28	2028	609	32	501
Seeding-machine. Broadcast	C. E. Patric	324,722	Aug. 18	1795	495	32	872
Seeding-machine. Force-feed	C. L. Smith	325,195	Aug. 25	2340	644	32	981
Seeding-machines. Distributing mechanism for	J. C. Britton	321,948	July 14	745	195	32	144
Self-opening can							
Separator: *See* Centrifugal separator. Grain-separator. Gravity-separator. Mineral-separator. Ore-separator. Steam-separator. Thread-separator. Wheat, oats, and cockle separator.							
Separator	A. N. Wolf	326,077	Sept. 8	1144	291	32	1233
Service and valve-shut-off box. Extension	W. A. Burrows	321,483	July 7	102	27	32	21
Settee, crib, and cradle. Folding	A. M. Freeman	325,794	Sept. 8	778	195	32	1165
Settee or bench. Folding	J. A. Taylor and J. F. Knapp	324,431	Aug. 18	1404	382	32	799
Sewer	J. H. Clark	325,820	Sept. 8	819	205	32	1172
Sewer-gas check for sinks	J. Neale	322,961	July 28	2198	561	32	407
Sewer-gas cut-off for basins	F. G. Johnson	321,974	July 14	774	202	32	149
Sewer-gas excluder	L. N. Jackson	321,504	July 7	126	33	32	25
Sewer-gas valve	F. G. Johnson	321,973	July 14	773	201	32	149
Sewer-pipe valve. Automatic	T. L. McKeen	325,553	Sept. 1	455	113	32	1102
Sewer-trap	B. P. Bower	324,645	Aug. 18	1701	469	32	854
Sewer-trap and cesspool	H. G. Badgley	325,231	Sept. 1	2	1	32	1015
Sewers. Structure for submarine	H. Case	326,544	Sept. 22	1756	459	32	1362
Sewing and other machines. Belt-applying device for	E. T. Thomas and A. Schenck	324,432	Aug. 18	1404	383	32	799
Sewing-chair	C. G. Little	322,547	July 21	1532	404	32	295
Sewing-machine	A. Boecber	322,245	July 14	1129	294	32	215
Sewing-machine	T. W. Bracher and T. Webb	324,217	Aug. 11	1114	301 / 302	32	737
Sewing-machine	C. M. Dewey	326,724	Sept. 22	2038	530	32	1411
Sewing-machine	A. Faulkner	322,533	July 21	1517	400	32	292
Sewing-machine	W. J. Stewart	323,968	Aug. 11	758	212	32	673
Sewing-machine	A. A. Sturtevant	326,067	Sept. 8	1128	287	32	1231
Sewing-machine	J. Thomas	327,352	Sept. 29	2884	753 / 754	32	1568
Sewing-machine	S. W. Wardwell, Jr	322,571	July 21	1576	415	32	301
Sewing-machine	R. Whitehill	326,821	Sept. 22	2174	566 / 567	32	1435
Sewing-machine	R. Whitehill	326,822	Sept. 22	2176	567	32	1435
Sewing-machine attachments. Attachment-holder or means for securing	A. Johnston	321,817	July 7	561	147	32	104
Sewing-machine attachments. Combined presser-foot and clamp for holding	F. L. Goodrich	324,247	Aug. 11	1148	313	32	744
Sewing-machine. Boot and shoe	A. Eppler, Jr	325,063	Aug. 25	2263	621 / 622	32	966

Alphabetical list of inventions, July to September, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drs.	Official Gazette. Vol.	Official Gazette. Page.
Sewing-machine. Button-hole	P. Diehl	322,428	July 21	1370	357, 358	32	266
Sewing-machine. Button-hole	J. S. Freese	325,599	Sept. 1	508	126, 127	32	1112
Sewing-machine button-hole attachment	F. Egge and C. J. A. Sjoberg	322,611	July 21	1379	498	32	357
Sewing-machine button-hole attachment	T. S. Huntington	327,169	Sept. 29	2643	688	32	1526
Sewing-machine button-hole attachment	J. H. Palmer	324,150	Aug. 11	1001	275	32	716
Sewing-machine cabinet	A. F. Gerald	322,279	July 14	1167	306	32	222
Sewing-machine cabinet	W. H. Hiteshew	325,081	Aug. 25	2287	629	32	971
Sewing-machine cover-fastener	J. Kitson	323,342	July 28	2646	704	32	504
Sewing-machine embroidering attachment	F. H. Chilton	322,902	July 28	2022	534	32	390
Sewing-machine embroidering attachment	F. H. Chilton	325,499	Sept. 1	377	92	32	1087
Sewing-machine embroidering attachment	J. P. Lavigne	324,124	Aug. 11	971	267	32	711
Sewing-machine feeding mechanism	J. W. Corey	325,396	Sept. 1	247	62	32	1062
Sewing-machine. Hand-	R. W. Whitney	326,365	Sept. 15	1542	400	32	1314
Sewing-machine hand-motor	C. W. Taylor	327,349	Sept. 29	2881	752	32	1568
Sewing-machine needle-threader	S. R. Wilson	321,469	July 7	86	23	32	18
Sewing-machine oil-drip pan	W. Connolly	322,522	July 21	1507	396	32	290
Sewing-machine or other motor	C. W. and W. C. Collyer	322,422	July 21	1363	356	32	265
Sewing-machine quilting-frame	H. T. Davis	322,262	July 14	1148	300	32	218
Sewing-machine quilting-frame	E. H. Taliaferro	327,118	Sept. 29	2575	671	32	1514
Sewing-machine quilting-support	J. A. Coppock	323,118	July 28	2328	617	32	447
Sewing-machine right and left corder	W. R. Somers	322,074	July 14	913	237	32	174
Sewing-machine ruffling or gathering attachment	A. Johnston	324,261	Aug. 11	1166	317, 318	32	747
Sewing-machine shuttle	J. Keith	322,381	July 14	1304	340	32	248
Sewing-machine shuttle	S. Larkin	323,345	July 28	2652	706	32	505
Sewing-machine shuttle	C. Parton	323,068	July 28	2266	599	32	435
Sewing-machine shuttle and shuttle-holder	S. Arnold	324,351	Aug. 18	1293	351, 352	32	779
Sewing-machine shuttle-bobbin	D. W. Corey	323,916	Aug. 11	690	193	32	660
Sewing-machine table	W. M. Cuthbert	324,753	Aug. 18	1838	507	32	880
Sewing-machine table	D. Porter	323,529	Aug. 4	192	56	32	558
Sewing-machine table-top	N. A. Hull	326,294	Sept. 15	1446	377	32	1297
Sewing-machine take-up device	A. Becker	323,999	Aug. 11	797	222	32	680
Sewing-machine take-up mechanism	D. F. Ranney	327,410	Sept. 29	2960	773	32	1582
Sewing-machine take-up mechanism	J. E. Wiggin	326,533	Sept. 15	1743	455	32	1353
Sewing-machine tension	G. H. Dimond	324,755	Aug. 18	1842	507	32	881
Sewing-machine tension device	J. C. Goodwin	324,249	Aug. 11	1150	313	32	744
Sewing-machine tension device	E. Murphy	324,579	Aug. 18	1593	439	32	835
Sewing-machine tension-release	J. C. Goodwin	324,250	Aug. 11	1151	314	32	744
Sewing-machine thread-case	A. Dewhurst	324,240	Aug. 11	1138	309	32	742
Sewing-machine thread-controlling device	E. Murphy	324,580	Aug. 18	1594	439	32	835
Sewing-machine trimmer	T. K. Ober	323,439	Aug. 4	71	19	32	536
Sewing-machine trimming attachment	W. S. Clark and J. F. Murphy	324,813	Aug. 25	1930	531	32	904
Sewing-machine trimming attachment	F. B. Dillingham	322,355	July 14	1268	331	32	241
Sewing-machine trimming attachment	G. Schoen	322,326	July 14	1225	322	32	233
Sewing-machine tucker	W. T. Johnson	325,089	Aug. 25	2297	632	32	973
Sewing-machines. Attachment-holding device for use on	J. P. Lavigne	326,302	Sept. 15	1462	380	32	1300
Sewing-machines. Bracing or staying attachment for button-hole	F. D. Walden	326,811	Sept. 22	2159	562	32	1432
Sewing-machines. Mechanism for controlling steam-driven	J. H. Rohme	326,457	Sept. 15	1645	430	32	1334
Sewing-machines. Operating	C. G. Spengler	324,044	Aug. 11	860	238	32	690
Sewing-machines. Presser-foot-lifting and brake mechanism for	D. W. Allen	327,218	Sept. 29	2706	704	32	1539
Shade-holder	W. H. Wible	321,926	July 7	709	185	32	129
Shade-roller	S. Hartshorn	322,713	July 21	1754	463	32	335
Shade-roller. Friction	J. Hardman, Jr.	327,161	Sept. 29	2636	686	32	1524
Shaft and coupling. Flexible	A. W. Browne	326,941	Sept. 29	2343	613	32	1473
Shaft and pulley bearing	W. E. Crist	322,525	July 21	1510	397	32	291
Shaft-bearing	O. Mergenthaler	324,400	Aug. 18	1359	370	32	792
Shaft-casing	W. F. Hutchinson	322,540	July 21	1524	402	32	293
Shaft-coupling	H. Tabor	322,866	July 21	1965	520	32	373
Shaft. Flexible	J. C. Wilson, Sr	322,666	July 21	1691	448	32	324
Shaft-hanger	W. Roberts	326,789	Sept. 22	2127	553	32	1427
Shaft-liner	W. J. S. Osborn and J. Madden	323,626	Aug. 4	567	161	32	630
Shaft-loop	H. F. Bock	325,045	Aug. 25	2239	614	32	962
Shafts. Apparatus for fitting and finishing crank-	H. See	322,205	July 14	1084	281	32	206
Shafts. Ball and roller bearing for	D. H. Rice	322,462	July 21	1454	382	32	280
Shafts. Manufacture of crank-	H. See	322,204	July 14	1082	281	32	206
Shafts. Vehicle-	J. A. Johnson	326,505	Sept. 15	1702	444	32	1344
Shaftings, pipes, &c. Hanger for	F. Cadwallader	325,051	Aug. 25	2248	617	32	963
Shaker	M. Seips	324,173	Aug. 11	1037	283	32	723
Shallow-water indicator	F. E. Forster	326,028	Sept. 8	1072	274	32	1220
Shampooing. Apparatus for	H. Mais	325,098	Aug. 25	2307	635	32	975
Sheaf-carrier	G. Berger and A. M. Harris	322,779	July 21	1839	488	32	351
Shear-blade for hot blooms, bars, &c	S. M. Guss	325,673	Sept. 8	907	154	32	1135
Shears: *See* Lever-shears. Metal workers' shears. Pruning-shears. Rotary shears. Sheep-shears.							
Shears	J. L. Dufrane	326,485	Sept. 15	1678	438	32	1339
Shears	R. G. Lewis and S. E. Mosher	327,092	Sept. 29	2543	663	32	1508
Shears	B. F. McCarty	326,768	Sept. 22	2094	544	32	1420
Shears for iron	D. K. Beals	323,389	Aug. 4	9	3	32	524
Shearing-die	H. Hammond	326,644	Sept. 22	1893	498	32	1386
Sheave. Metal	G. A. Ford	323,136	July 28	2350	624	32	452
Sheep-shears	E. Kellogg	323,691	Aug. 4	405	116	32	598
Sheet-delivery apparatus	G. P. Fenner	324,245	Aug. 11	1145	312	32	743
Sheet-delivery apparatus	J. T. Hawkins	323,329	July 28	2029	699, 700, 333, 334	32	501
Sheet-metal cutting press	W. Werts	326,183	Sept. 15	1290		32	1967

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drs.	Official Gazette. Vol.	Official Gazette. Page.
Sheet-metal hollow ware. Die for the manufacture of	C. Kind	321,922	July 7	575	149	32	106
Sheet-metal pipes. Machine for forming and threading	M. K. Pierce	326,516	Sept. 15	1719	448	32	1348
Shell	J. Garrick	322,275	July 14	1161	304	32	221
Shell	J. Garrick	325,166	Aug. 25	2388	657	32	989
Shell	C. W. Hayes	325,538	Sept. 1	435	106	32	1099
Shell. Chain-	F. H. Williams	325,300	Sept. 1	97	27	32	1033
Sheller: *See* Corn-sheller. Pea-sheller.							
Shelving	F. O. Reisener	322,901	July 14	1077	279, 280	32	205
Shelving-bracket	J. Baine	327,129	Sept. 29	2592	675	32	1516
Shelving. Portable	C. H. Post	325,696	Sept. 8	636	162	32	1139
Shingle-binding tool	H. E. Brackett and F. L. Sawyer	326,621	Sept. 29	1867	489	32	1360
Shingle-bunch band	H. E. Brackett and F. L. Sawyer	323,493	Aug. 4	140	42	32	548
Shingle. Metallic	M. G. Farmer	326,108	Sept. 15	1176	301	32	1246
Shingle. Metallic	J. T. Hyndman	326,655	Sept. 22	1911	502	32	1389
Shingle-sawing machine	W. J. Perkins	325,693	Sept. 8	631	160	32	1138
Shipping-box	A. H. Morrison and W. A. Preston	323,714	Aug. 4	431	123	32	604
Shipping-can	J. F. Brown	326,940	Sept. 29	2349	613	32	1473
Ships and transferring curves. Apparatus for molding the frames of	T. Johnson and J. McDonnell	326,506	Sept. 15	1703	444	32	1344
Ships. Construction of	E. Swindell	323,831	Aug. 4	576	163	32	631
Ships. Construction of	E. Swindell	323,832	Aug. 4	577	163	32	632
Ships from foundering, &c. Saving	T. Bridge	326,896	Sept. 22	2260	596	32	1454
Ship's log. Registering	J. and G. H. Bliss. (Reissue)	10,625	July 21	1997	528	32	379
Ship's logs. Electro-magnetic speed-register for	B. Faymonville	323,134	July 28	2348	623	32	451
Shirt	L. Lemos	325,253	Sept. 1	27	8	32	1050
Shirt	N. Roggen and T. Eisenstein	322,397	July 14	1326	345	32	252
Shirt	J. W. Smith	321,544	July 7	194	51	32	38
Shirt	S. Thal	322,502	July 21	1488	391	32	286
Shirt or shirt-waist	J. Simon	327,329	Sept. 29	2844	742	32	1563
Shirt-bosom	S. Dentsch	321,801	July 7	535	141	32	99
Shirt-cabinet	J. L. Libby	322,303	July 14	1197	314	32	227
Shirts. Attaching bosoms to	J. W. Cadby	323,783	Aug. 4	520	147	32	620
Shirts. Attaching bosoms to	M. Hermann	322,717	July 21	1759	465	32	336
Shirts. Attaching bosoms to	M. Hermann	322,718	July 21	1760	465	32	336
Shoe	S. C. K. Böhm	324,810	Aug. 25	1927	530	32	903
Shoe	J. Morton	324,405	Aug. 18	1366	371	32	739
Shoe. Ankle-supporting	L. Smadbeck and B. Nathan	325,220	Sept. 1	69	21	32	1028
Shoe-box indicator	F. L. Kerr	323,042	July 28	2228	589	32	427
Shoe-clasp	S. A. Chapman	322,789	July 21	1850	492	32	353
Shoe-clasp	J. C. Hammond, Jr	321,495	July 7	115	31	32	23
Shoe-clasp	J. C. Hammond, Jr	324,107	Aug. 11	945	260	32	706
Shoe-fastener	F. Jacob	324,702	Aug. 18	1774	489	32	868
Shoe-fastening	P. Flad	325,622	Sept. 1	417	103	32	1096
Shoe-fastening	S. H. Raymond	325,115	Aug. 25	2326	640	32	978
Shoe-form. Bottomless	A. W. Rogers	321,640	July 7	312	83	32	60
Shoe-nail	L. J. Atwood	324,070	Aug. 11	806	248	32	697
Shoe-nail	E. J. Le Gay	324,126	Aug. 11	974	268	32	712
Shoe-quarters. Machine for crimping	T. Nally	325,267	Sept. 1	46	14	32	1024
Shoe-soles and other purposes. Fabric for	G. F. Butterfield	325,785	Sept. 8	769	192	32	1163
Shoe-upper	W. G. Slater	327,114	Sept. 29	2570	670	32	1513
Shoes. Manufacture of turned	T. O'Bolger	321,998	July 14	810	212	32	156
Shovel: *See* Cultivator-shovel.							
Shovel	J. Johnson	327,174	Sept. 29	2654	690	32	1527
Show-stand	M. Brenner	323,631	Aug. 4	329	94	32	583
Show-stand. Revolving	S. T. Culp	324,663	Aug. 18	1720	473	32	857
Shutter-bower	G. F. S. Zimmerman	326,373	Sept. 15	1549	402	32	1316
Shutter-fastener	W. Delano	324,460	Aug. 18	1437	393	32	805
Shutter-fastener	J. S. Dunham	326,486	Sept. 15	1679	438	32	1340
Shutter-fastener	G. J. Thomas	323,232	July 28	2467	660	32	476
Shutter-worker	J. Dierks	322,588	July 21	1594	420	32	305
Shutter-worker	J. C. Driggs	324,989	Aug. 25	2171	594	32	948
Shutter-worker	H. Palmer	324,149	Aug. 11	1000	275	32	716
Siding-gage	L. C. Benson and E. F. Perry	325,811	Sept. 8	804	202	32	1170
Sieve for sifting flour, meal, &c	E. L. Barber	325,780	Sept. 8	763	190	32	1162
Sifter. Flour-	A. F. Tripp and I. Woeppel	322,141	July 14	1009	262	32	192
Sign	J. C. Brewster	322,248	July 14	1133	295	32	215
Sign-board	W. H. Bushnell and W. H. Van Glider	325,817	Sept. 8	816	204	32	1172
Sign. Electric incandescent	I. W. Heysinger	322,375	July 14	1296	339	32	246
Sign. Lamp and window	C. S. Watson	327,362	Sept. 29	2897	756	32	1570
Sign or banner	M. R. Levy	323,696	Aug. 4	411	118	32	599
Sign. Street-lamp	W. P. Butler	323,850	Aug. 4	509	168	32	636
Signal: *See* Block and switch signal. Head-light signal. Railway-signal.							
Signal	M. B. Mills and W. Henley	323,949	Aug. 11	732	205	32	668
Signal stations. Apparatus for weather-	R. Hirsh	326,558	Sept. 22	1773	464	32	1365
Silk. Machine for throwing	J. E. Tynan	326,531	Sept. 15	1740	454	32	1352
Silo	W. E. Simonds	325,365	Sept. 1	182	48	32	1048
Sink. Slop-	S. G. McFarland	322,119	July 14	974	254	32	186
Sink-trap	A. Koegel	326,126	Sept. 15	1300	306	32	1250
Siphon for ice-boxes and refrigerators	S. A. Saydam	322,992	July 28	2135	572	32	415
Siphon-head	P. E. Malmström and P. E. Dummer	327,402	Sept. 29	2950	770	32	1580
Siphon-starter	L. Hirt	326,034	Sept. 8	1081	276	32	1221
Sirup and beer from maize. Making	A. E. Feroe	324,761	Aug. 18	1849	509	32	882
Sirup. Purifying maple-	A. M. Bailey	323,254	July 28	2515	.....	32	482
Skate	C. G. Lamont	324,564	Aug. 18	1589	433	32	830
Skate bottom. Roller-	J. H. Fearis	323,135	July 28	2349	623	32	452
Skate-clamp	T. C. Merz	322,464	July 21	1421	372	32	275
Skate-clamp	S. Winslow	324,204	Aug. 11	1098	296	32	734

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Skate. Convertible	F. A. Terherst	327,350	Sept. 29	2882	732 733	32	1568
Skate heel-plate	J. B. James, Jr	324,115	Aug. 11	955	263	32	708
Skate. Roller	G. W. Baker	326,539	Sept. 22	1751	457	32	1361
Skate. Roller	G. W. Baker	326,540	Sept. 22	1752	457	32	1361
Skate. Roller	H. W. Barrows	326,261	Sept. 15	1399	364	32	1267
Skate. Roller	C. J. Belknap and F. W. Wood	327,222	Sept. 29	2711	705	32	1540
Skate. Roller	I. F. Brown	321,931	July 7	715	186	32	130
Skate. Roller	T. M. and T. M. Conner	322,350	July 14	1262	330	32	240
Skate. Roller	W. F. Cornelius	324,364	Aug. 18	1311	356	32	782
Skate. Roller	W. F. Cornelius	325,161	Aug. 25	2381	656	32	968
Skate. Roller	C. H. Doty	324,309	Aug 11	1234	336	32	760
Skate. Roller	W. H. Elliot	323,405	Aug. 4	30	8	32	528
Skate. Roller	M. H. Fletcher	322,271	July 14	1157	303	32	220
Skate. Roller	T. W. Grosvenor and W. B. Gray	322,371	July 14	1289	337	32	245
Skate. Roller	O. Hanson	321,434	July 7	27	7	32	8
Skate. Roller	D. A. Harris	326,734	Sept. 22	2049	533	32	1413
Skate. Roller	H. C. Hart	324,376	Aug. 18	1327	361	32	785
Skate. Roller	H. C. Hart	324,377	Aug. 18	1328	361	32	785
Skate. Roller	J. T. Henderson	321,968	July 14	767	200	32	147
Skate. Roller	F. B. Hunt	324,325	Aug. 11	1257	341	32	765
Skate. Roller	J. T. and C. T. Jones	322,611	July 21	1634	429	32	311
Skate. Roller	J. D. Kefuss	326,224	Sept. 15	1344	348	32	1277
Skate. Roller	W. Kelley	325,937	Sept. 8	947	240	32	1198
Skate. Roller	D. E. Kempster	321,979	July 14	780	203	32	150
Skate. Roller	A. L. Kitselman	322,383	July 14	1306	341	32	248
Skate. Roller	A. L. and D. M. Kitselman	321,980	July 14	781	203	32	150
Skate. Roller	C. P. Kramer and W. J. Snider	322,617	July 21	1630	431	32	312
Skate. Roller	J. M. W. Long	325,214	Aug. 25	2460	676	32	1003
Skate. Roller	N. H. Long	324,130	Aug. 11	978	269	32	712
Skate. Roller	C. F. Miller	321,443	July 7	38	11	32	10
Skate. Roller	W. R. Mount	324,875	Aug. 25	2016	553	32	920
Skate. Roller	H. Ogborn	322,846	July 21	1935	511 512	32	368
Skate. Roller	C. D. Rice	326,151	Sept. 15	1239	317	32	1258
Skate. Roller	W. S. Rogers	327,411	Sept. 29	2963	773	32	1582
Skate. Roller	J. H. Thompson	322,504	July 21	1489	391	32	286
Skate. Roller	F. W. Walt	321,466	July 7	80	21	32	16
Skate. Roller	D. Walters	324,618	Aug. 18	1654	456 457	32	846
Skate-roller	J. Greacen	325,406	Sept. 1	259	64	32	1064
Skate-roller	A. G. Wicker	321,873	July 7	643	167	32	117
Skate-roller attachment	J. H. Jacoby	324,327	Aug. 11	1259	349	32	765
Skater's safety apparatus	A. Van Vleck	321,867	July 7	635	164	32	116
Skates. Ankle-support for	E. G. Macomber	323,700	Aug. 4	415	119	32	600
Skates. Machine for cleaning and repairing roller	R. F. Hull	323,689	Aug. 4	403	115	32	598
Skates. Stilt for roller	M. Zack and F. Geraghty	327,374	Sept. 29	2910	759	32	1573
Skates. Stop attachment for roller	J. P. Geran	322,173	July 14	1044	271	32	198
Skeleton furnace and steam-generator	L. A. Doble	324,461	Aug. 18	1438	393	32	805
Skins. Machine for softening sheep-	H. R. Churchhill	327,138	Sept. 29	2600	677	32	1518
Skylight	B. Overman	326,056	Sept. 8	1109	293 294	32	1227
Slag and matte pot	R. H. Terhune	323,541	Aug. 4	210	62	32	561
Slag-pot	R. H. Terhune	323,607	Aug. 4	295	84	32	576
Slat-fastening	S. P. Keith	322,392	July 14	1306	341	32	248
Slate for blackboards. Artificial or plastic	A. F. Parshall	323,722	Aug. 4	442	.....	32	606
Slate-frame	L. Klueber	323,814	Aug. 4	553	157	32	627
Sled	P. Coy	325,658	Sept. 8	586	149	32	1131
Sled	J. W. Russell	325,570	Sept. 1	475	118	32	1106
Sled	C. H. Weisgerber, Jr	326,362	Sept. 15	1538	399	32	1313
Sleeper for permanent ways	P. Kirk	326,674	Sept. 22	2246	585	32	1448
Sleeve. Garment	G. S. Gates	323,506	Aug. 4	102	48	32	553
Sleigh	J. M. Barnes	322,065	July 14	927	240	32	177
Sleigh	P. Hilger	327,168	Sept. 29	2642	687	32	1525
Sleigh. Bob	I. Bronson	327,227	Sept. 29	2716	707	32	1540
Sleigh-knee	A. S. Larson	324,567	Aug. 18	1573	434	32	831
Sleigh-runner	J. L. Mason	323,177	July 28	2407	639	32	462
Sleigh-runner	G. W. Thompson	323,334	July 28	2488	661	32	476
Slicer	D. J. Gilchrist	322,175	July 14	1046	271	32	198
Smoke-burning appliance for steam-boilers	C. J. Bruschke	322,894	July 28	2013	531	32	388
Smoke-consumer	J. H. Shank	323,217	July 28	2467	656	32	473
Smoke-consuming furnace	C. C. Carter	324,532	Aug. 18	1535	423 424	32	822
Smoke-consuming furnace	F. B. Giesler. (Reissue)	10,639	Aug. 25	2479	681	32	1007
Smoke-consuming furnace	H. B. Grove	325,207	Aug. 25	2449	674	32	1001
Smoke-house	J. Kremser	325,417	Sept. 1	271	67	32	1066
Smoke-house	N. Murphy	324,408	Aug. 18	1372	373	32	794
Smoke-house	J. Price	327,453	Sept. 29	3010	786	32	1590
Smoke-house	J. Fitz	325,066	Aug. 25	2267	623	32	967
Smut-mill	J. Gibbons	322,438	July 21	1380	362	32	268
Snap. Harness	T. Beecher	322,674	July 21	1700	451	32	326
Snap-hook	E. J. Miller	327,008	Sept. 29	2426	634	32	1488
Snap-hook	J. Franz	323,656	Aug. 4	362	103	32	590
Snow-plow	E. Hand	325,075	Aug. 25	2277	626	32	969
Snow-plow	J. G. Kuhlmann	323,043	July 28	2229	589	32	427
Snow-plow	J. Wackerman	325,029	Aug. 25	2217	608 609	32	957
Snow-plow	E. Payne	322,849	July 21	1940	513	32	368
Snow-plow rail-clearer	A. F. Priest	326,917	Sept. 22	2304	603	32	1458
Snow-scraper	G. A. Birch	323,491	Aug. 4	137	41	32	547
Snow-scraper	A. J. Phillips	323,730	Aug. 4	456	129	32	608
Snow scraper and compressor. Combined	B. F. Leeds	323,433	Aug. 4	64	16	32	535
Sod cutter and pulverizer	J. R. Phillips	322,638	July 21	1655	437	32	317
Soda from slags. Extraction of phosphate of	L. Imperatori	324,471	Aug. 18	1450	.....	32	807

Alphabetical list of inventions, July to September, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Soda. Purifying ammonia	H. Gaskell, Jr	326,423	Sept. 15	1604	418	32	1326
Soda-water apparatus. Fitting for	A. D. Puffer	323,383	July 28	2706	720	32	515
Sofa	F. Koskul	323,872	Aug. 4	627	176	32	641
Solder-mold	M. J. Stark	325,704	Sept. 8	654	165	32	1142
Soldering-clamp	S. Bull	325,497	Sept. 1	375	92	32	1067
Soldering-clamp. Spectacle-frame	J. H. Scribner	324,276	Aug. 11	1190	323	32	752
Soldering eaves-troughs. Clamp for	S. Yates	326,372	Sept. 15	1548	402	32	1316
Soldering-fluid	C. N. Waite	325,579	Sept. 1	484	.....	32	1108
Soldering-iron	R. W. Coffee	325,158	Aug. 25	2377	655	32	988
Soldering-iron heater	C. L. Riker	323,534	Aug. 4	197	58	32	559
Soldering-machine	E. Norton	322,065	July 14	901	233	32	172
Soldering machine. Can	W. H. H. Stevenson	325,130	Aug. 25	2346	646 647	32	982
Sole-nailing machine	F. F. Raymond, 2d	322,502	July 21	1554	410 411 412	32	298
Sole-protector	J. F. Pratt	327,194	Sept. 29	2681	696	32	1533
Sole-trimming cutter. Telescopic rotary	E. F. White	324,345	Aug. 11	1285	348	32	769
Sole-trimming machine	A. F. Smith	325,703	Sept. 8	654	165	32	1142
Sonometer	E. S. Ritchie	322,010	July 14	824	216	32	158
Sower. Broadcast seed	S. and M. Freeman	321,706	July 7	398	106	32	74
Sower. Force-feed seed	H. Amundson and F. J. Henrichsen	321,878	July 7	648	168	32	118
Sower. Seed	H. Amundson and F. J. Henrichsen	321,879	July 7	649	168 169	32	118
Sower. Seed	H. J. Foster	321,703	July 7	394	105	32	74
Spark-arrester	F. S. Bragg	325,907	Sept. 8	914	230	32	1191
Spark-arrester	D. Groesbeck, C. A. Ball, and J. A. Sterling.	324,683	Aug. 18	1747	481 482	32	863
Spark-arrester	J. Westinghouse	327,366	Sept. 29	2902	757	32	1571
Spark-arrester and smoke-consumer	J. G. Nessel and W. H. Steinbrecher	326,671	Sept. 22	1928	506	32	1392
Speaking-tube	J. A. Kessel	326,568	Sept. 22	1785	468	32	1368
Speaking-tube	P. Pereira y Albizu	326,450	Sept. 15	1636	426	32	1332
Specific-gravity apparatus. Automatic	G. A. Bobrick	324,808	Aug. 25	1922	528	32	902
Spectacle-case	G. H. Striker	326,065	Sept. 8	1126	296	32	1230
Spectacle-frame	S. Z. De Ferranti	327,145	Sept. 29	2612	681	32	1520
Speculum	G. D. Baily	325,647	Sept. 8	576	146	32	1130
Speculum	J. G. Ellis	326,856	Sept. 22	2224	580	32	1444
Speed-changing mechanism	B. B. Powell	324,955	Aug. 25	2119	579 580	32	940
Speed-governor	R. McKenna	326,881	Sept. 22	2254	587	32	1450
Speed-governor	J. Morton	326,235	Sept. 15	1357	351	32	1279
Speed-governor	E. Penney	322,637	July 21	1653	437	32	316
Speed-indicator	W. Kaplin	325,991	Sept. 8	1022	260	32	1211
Speed-indicator for shafts, pulleys, and axles	S. C. Shepard	324,042	Aug. 11	858	238	32	690
Spelter-furnaces. Preparing the charge for	E. Phillips and T. Jones	323,959	Aug. 11	747	208	32	671
Spider	H. C. Whitten	323,894	Aug. 4	661	186	32	647
Spigot and faucet	J. H. O'Connor	326,448	Sept. 15	1635	428	32	1331
Spigot. Measuring	J. W. Wilt	322,876	July 21	1979	524	32	376
Spike-blank	W. Koplin	326,298	Sept. 15	1451	378	32	1298
Spike-extractor	J. Sloop	322,133	July 14	992	258	32	189
Spile. Sap	C. Mattice	323,704	Aug. 4	418	120	32	601
Spile. Sheet-iron lock-joint	H. C. Herron	325,172	Aug. 25	2397	659	32	991
Spindle. *See* Loom-shuttle spindle.							
Spindle and bearing	L. D. Van Valkenburgh	324,900	Aug. 25	2050	560	32	926
Spindle-bearing for mules and jacks	J. T. Meats	324,966	Aug. 25	2004	550	32	918
Spindle-bolster	W. T. Carroll	327,135	Sept. 29	2598	677	32	1517
Spindle-bolster	H. P. Chase	327,137	Sept. 29	2600	677	32	1518
Spindles on jennies. Safety-lock for	M. Furst	323,315	July 28	2610	694	32	498
Spinning and doubling yarn. Machine for	W. Lancaster	326,300	Sept. 15	1455	379 380	32	1298
Spinning and twisting machine	L. Binns	322,675	July 21	1701	451	32	326
Spinning and twisting machines, &c. Drawing mechanism for	E. E. Baker	326,538	Sept. 22	1750	457	32	1361
Spinning and twisting machines. Spindle and bolster for	J. J. Sumner	322,654	July 21	1674	444	32	330
Spinning-frames. Guide-board for	J. Barker	325,307	Sept. 1	105	29	32	1035
Spinning-frames. Thread-guard for	W. H. Rivers	324,730	Aug. 18	1807	499	32	875
Spinning hemp, &c. Machine for	A. L. Tubbs	325,368	Sept. 1	184	49	32	1049
Spinning-machine	J. Cuthbertson	326,900	Sept. 22	2285	597	32	1455
Spinning-machine	P. Fleury	324,931	Aug. 25	2086	571	32	934
Spinning-machine, &c. Top-roll for	G. O. Boynton and G. Stephen	321,574	July 7	398	61	32	45
Spinning mules or frames. Sliver trumpet or guide for	E. Rounds	325,700	Sept. 8	640	163	32	1140
Spirometer	D. A. A. Buck	325,784	Sept. 8	767	192	32	1163
Splint-cutting machine	J. D. Jones	324,387	Aug. 18	1342	365	32	798
Splint fabric for chairs, &c	T. W. Moore	323,000	July 28	2252	595	32	432
Splint. Plaster-of-paris	J. W. Bender and J. C. Hinkle	323,775	Aug. 4	514	144	32	619
Spoke-setting machine	C. P. Lewis	321,616	July 7	283	75	32	54
Spokeshave	C. W. Smith	325,571	Sept. 1	476	112	32	1106
Spokeshave and chamfer-cutter	J. Mander	322,304	July 14	1198	314	32	227
Spoke-socket	M. S. Weller	323,990	Aug. 11	786	219	32	678
Spoke-tenoning machine	G. R. Kidder	326,508	Sept. 15	1707	445	32	1345
Spool-holder. Portable	E. Carlson	325,655	Sept. 8	584	148	32	1131
Spooler	E. S. Gary and H. T. Heath	326,422	Sept. 15	1603	417	32	1326
Spooling-machines. Knot-tying apparatus for	J. H. Northrop	325,024	Sept. 1	541	137	32	1118
Spoon. Agitating	J. Rider	327,109	Sept. 29	2565	669	32	1512
Spoons, &c. Marking	F. W. Dexter	324,241	Aug. 11	1139	310	32	742
Spring: *See* Air-spring. Bag and satchel-frame spring. Buggy-top spring. Car-spring. Carriage-spring. Door-spring. Elliptic spring. Gate-spring. Vehicle-spring. Wagon-spring. Watch-case spring.							
Spring	W. I. Bunker	326,944	Sept. 29	2349	614	32	1474

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Spring	E. A. Jones	326,039	Sept. 8	1096	277	32	1222
Spring-clasp	J. J. Unbehend	326,352	Sept. 15	1525	396	32	1311
Spring-clasp	J. J. Unbehend	326,353	Sept. 15	1526	397	32	1312
Spring-coupling	T. D. Lines	322,734	July 21	1784	470	32	340
Spring for boxes, &c	W. M. Ducker	323,027	July 28	2210	584	32	424
Spring head-clip. Vehicle	W. Evans	323,307	July 28	2602	691, 692	32	496
Spring heads. Die and punch for making clips for carriage	A. Kronenbitter	322,544	July 21	1528	403	32	294
Spring-heads. Ear-piece for forming	A. Kronenbitter	322,545	July 21	1529	403	32	294
Spring jack-switch	J. C. Warren	321,553	July 7	203	54	32	40
Spring-motor	W. H. Ostrander	323,197	July 28	2441	647	32	468
Spring-motor	B. F. Teal	323,540	Aug. 4	209	61, 62	32	561
Spring-seat	G. W. Murray	324,335	Aug. 11	1271	345	32	767
Springs. Attachment for connecting coil	C. Carleton	325,618	Sept. 8	817	204	32	1172
Sprinkler: *See* Automatic sprinkler. Broom-sprinkler.							
Sprocket-wheel	L. Herman	325,539	Sept. 1	436	108	32	1099
Square and bevel. Combined try-	L. D. Howard	324,323	Aug. 11	1253	341	32	764
Squares. Adjustable pitch-board for	H. Levy	327,283	Sept. 29	2788	725	32	1552
Squib. Miner's	J. R. Powell	326,057	Sept. 8	1115	284	32	1228
Squib. Miner's	J. R. Powell	326,239	Sept. 15	1367	353	32	1280
Stack-cover	A. Cooley	323,638	Aug. 4	339	96	32	585
Stack-cover	F. Dean	322,045	July 14	874	227	32	167
Stacking-machine	B. Jackson	322,106	July 14	957	248, 249	32	183
Stair-pad	T. H. Kirk	323,341	July 28	2645	704	32	504
Stair-rod	T. A. Goodwin	324,679	Aug. 18	1742	480	32	862
Stalk-cutter	R. L. Price	325,628	Sept. 1	545	138	32	1119
Stalk-rake	W. and N. Hollingsworth	326,739	Sept. 22	2056	535	32	1414
Stalls. Device for releasing animals from	B. E. Hiestand and A. W. Swade	322,603	July 21	1611	425	32	308
Stalls. Device for releasing cattle from	R. H. and H. E. Kline	321,901	July 7	676	175	32	123
Stamp-canceling and postmarking machine	M. V. B. Ethridge	323,799	Aug. 4	533	151, 152, 153	32	623
Stamp. Hand-	W. A. Force	326,418	Sept. 15	1599	416	32	1325
Stamp-moistener	T. W. Wharmby	327,211	Sept. 29	2699	701	32	1537
Stamps. Apparatus for affixing	V. I. H. Bundsen	322,578	July 21	1583	417, 418	32	303
Stamps. Box and pad for canceling	J. A. Fife	322,534	July 21	1518	400	32	292
Stamps. Inking-pad for hand-	C. A. Klinkner	326,042	Sept. 8	1088	277	32	1223
Stamping-press	J. H. Clapp	324,812	Aug. 25	1929	530	32	904
Stand: *See* Bottle-stand. Flower-stand. Garment-hanging stand. Plaque-stand. Show-stand. Switch-stand. Umbrella-stand. Umbrella show-stand. Wash-stand.							
Stand and tilter for casks	J. T. Vaughan	324,436	Aug. 18	1400	384	32	800
Staple	R. M. Squire	327,339	Sept. 29	2864	747	32	1565
Staple-making machine	O. P. Briggs	325,814	Sept. 8	806	203	32	1171
Staples. Cutting	J. F. Thayer	322,997	July 28	2160	573	32	416
Staples. Machine for forming and driving wire	G. D. King	325,611	Sept. 1	520	130, 131	32	1114
Staples. Machine for making	J. Adt	327,217	Sept. 29	2704	703, 704	32	1538
Staples. Machine for making	J. F. Hanscom	322,372	July 14	1290	337, 338	32	245
Starch. Apparatus for the manufacture of	F. P. Stiker	327,034	Sept. 29	2458	642	32	1494
Starch. Drying	R. Johnson	323,425	Aug. 4	53	14	32	532
Starch. Manufacturing	F. P. Stiker	327,035	Sept. 29	2459	642	32	1494
Starch refuse from each other. Apparatus for separating the solid and liquid portions of	F. P. Stiker	327,345	Sept. 29	2876	750, 751	32	1567
Station-indicator	M. Anthony	325,643	Sept. 8	571	145	32	1129
Station-indicator for railway-cars, &c	D. J. Faris	323,407	Aug. 4	33	8	32	529
Stave-bending machine	E. M. Jewett	327,173	Sept. 29	2653	690	32	1527
Stave-jointing machine	W. B. McCarty	321,515	July 7	153	40	32	30
Stay for dresses, corsets, &c	S. M. and H. Moschcowitz	323,716	Aug. 4	433	124	32	604
Steam and water boiler	E. Gurney and C. Sellers	324,314	Aug. 11	1242	338	32	762
Steam-boiler	J. B. Birdsell, L. H. Bratt, and W. F. Wetmore.	326,833	Sept. 22	2187	570	32	1438
Steam-boiler	T. Drummond	322,701	July 21	1743	460	32	333
Steam-boiler	J. Elliot, Jr., and T. A. Cunningham	323,647	Aug. 4	349	99	32	587
Steam-boiler	E. E. Ellis	326,960	Sept. 29	2369	619	32	1477
Steam-boiler	J. Ferrando	324,545	Aug. 18	1550	427	32	926
Steam-boiler	W. Flagg	325,392	Sept. 1	135	38	32	1040
Steam-boiler	A. H. Fowler	323,412	Aug. 4	39	10	32	530
Steam-boiler	G. Fox	324,101	Aug. 11	938	258	32	705
Steam-boiler	W. Malam	324,134	Aug. 11	963	271	32	713
Steam-boiler	J. McEwan	326,440	Sept. 15	1627	426	32	1330
Steam-boiler	J. C. McNeil	322,623	July 21	1636	432	32	313
Steam-boiler	B. N. Payne	322,475	July 21	1439	377	32	278
Steam-boiler	G. A. Porter	325,967	Sept. 8	992	252	32	1206
Steam-boiler	J. A. Svedberg	324,430	Aug. 18	1402	382	32	799
Steam-boiler	G. G. Tindall	325,027	Aug. 25	2214	608	32	956
Steam-boiler	C. Wheeler, Jr	322,226	July 14	1108	288	32	211
Steam-boiler	B. F. Wright	321,999	July 7	713	186	32	129
Steam-boiler alarm	C. E. Brown	325,193	Aug. 25	2429	667, 668	32	997
Steam-boiler cleaner	H. B. Baker	325,476	Sept. 1	351	85	32	1082
Steam-boiler scale-collector	J. F. Martin	323,703	Aug. 4	418	120	32	601
Steam-boiler. Upright	G. A. Thode	324,188	Aug. 11	1059	290	32	727
Steam-boiler water-feeder	J. P. Buckley	325,195	Aug. 25	2433	668	32	997
Steam-boilers. Automatic feed for	H. A. Sanford	324,417	Aug. 18	1385	377, 378	32	796

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Steam-engine	J. L. Bogert	325,487	Sept. 1	363	88	32	1085
Steam-engine	T. Brantley	325,725	Sept. 8	689	172	32	1148
Steam-engine	W. E. Hill	325,079	Aug. 25	2283	628	32	970
Steam-engine	C. M. Long	326,303	Sept. 15	1464	380, 381	32	1300
Steam-engine	C. B. Turner	327,417	Sept. 29	2968	775	32	1583
Steam-engine	B. C. Waite	322,999	July 28	2163	574	32	416
Steam-engine	H. H. Westinghouse	323,334	July 14	1235	324	32	235
Steam-engine cross-head	A. L. Ide	321,727	July 7	420	112	32	79
Steam-engine-cross-head lubricator	A. L. Ide	321,726	July 7	418	112	32	78
Steam-engine for reciprocating propellers	R. Smith and G. H. Collins	327,335	Sept. 29	2854	744, 745	32	1564
Steam-engine link	S. T. Bryant	322,415	July 21	1353	373	32	903
Steam-engine lubricator	J. W. Cloud and S. Porcher	324,302	Aug. 18	1309	355, 356	32	782
Steam-engine lubricator	W. H. Craig	322,912	July 28	2036	537	32	393
Steam-engine. Oscillating	W. Elder	324,098	Aug. 11	933	257	32	704
Steam-engine piston	J. J. Love	326,046	Sept. 8	1093	279	32	1223
Steam-engine stuffing-box	S. C. Berry	326,324	Sept. 15	1560	405	32	1318
Steam-engines. Automatic device for stopping	J. M. Laing	325,941	Sept. 8	954	243	32	1200
Steam-generator	S. Fiske	326,552	Sept. 22	1706	402	32	1364
Steam-generator	A. P. Holcomb	324,694	Aug. 18	1765	486, 487	32	866
Steam-generator	W. H. Lewis	326,510	Sept. 15	1711	446	32	1346
Steam-generator	N. W. Pratt	323,881	Aug. 4	641	181	32	644
Steam-generator	N. W. Pratt	323,882	Aug. 4	641	181	32	644
Steam-generator	H. H. Ward	326,466	Sept. 15	1658	433	32	1336
Steam-generator	M. M. Whittemore, R. H. Arnold, and E. S. Staples.	326,196	Sept. 15	1293	335	32	1268
Steam-generator furnace	N. W. Pratt	323,883	Aug. 4	642	181	32	644
Steam-generator surface-blow	N. W. Pratt	323,884	Aug. 4	643	182	32	644
Steam. Heating exhaust and superheating live	L. Hussey. (Reissue)	10,632	Aug. 4	668	187, 188	32	649
Steam-pipe support	J. Finnegan	324,929	Aug. 25	2085	570	32	933
Steam-pipes, &c. Device for holding	T. W. Prior	325,767	Sept. 8	745	186	32	1160
Steam-pipes, &c. Manufacture of coverings for	R. Hammill	326,865	Sept. 22	2235	583	32	1447
Steam-separator	E. P. Stratton	323,891	Aug. 4	655	185	32	646
Steam-table	C. E. Emery	323,570	Aug. 4	246	72	32	567
Steam-trap	I. Cumberbatch	327,433	Sept. 29	2987	780	32	1587
Steam-trap	J. B. Erwin	321,701	July 7	391	104	32	73
Steam-trap	M. J. Redmond	323,204	July 28	2452	651	32	470
Steam-trap	C. Watson and A. Gaukroger	321,556	July 7	206	54	32	41
Steam-trap	W. W. Taylor	326,347	Sept. 15	1520	395	32	1310
Steaming and ore-scouring apparatus	T. C. Simonton	323,456	Aug. 4	93	27	32	540
Steel by the pneumatic operation. Making	J. P. Witherow	327,419	Sept. 29	2972	775	32	1584
Steel die	H. A. Harvey and C. S. Clark	327,262	Sept. 29	2761	716, 717	32	1548
Steel forgings and castings. Manufacturing	A. Tindel	324,433	Aug. 18	1405	.....	32	799
Steel-plant appliance	J. P. Witherow	327,425	Sept. 29	2977	778	32	1585
Stem-setting device	E. A. Marsh	324,570	Aug. 18	1580	436	32	832
Stem winding and setting mechanism	E. B. Douglass	325,594	Sept. 1	502	125	32	1111
Stencil	M. Bendick	325,041	Aug. 25	2235	613	32	961
Step and end-gate. Combined	E. R. Fish	325,665	Sept. 8	599	151	32	1133
Stereoscope	J. Lyons	327,449	Sept. 29	3006	785	32	1590
Stereotype-boxes. Fastening for	E. E. Pratt	324,956	Aug. 25	2121	580	32	941
Stereotype-plate and securing it in printers' forms	J. R. Cummings	325,324	Sept. 1	126	35	32	1039
Stereotype-plate holder	A. Z. Boda and L. Klopsch	323,557	Aug. 4	231	68	32	564
Still	G. R. Bruchmann	325,728	Sept. 8	692	173	32	1149
Still	M. V. Monarch	325,955	Sept. 8	974	248	32	1203
Stirrup	W. F. Birge	325,902	Sept. 8	908	228	32	1190
Stirrup	H. Langhlin	321,984	July 14	790	205	32	152
Stitch mechanism. Imitation-	E. L. Wheeler	325,297	Sept. 1	94	26, 27	32	1033
Stock-releasing device	T. Arndt	324,742	Aug. 18	1818	502	32	877
Stocking	S. Appleton	323,287	July 28	2561	662	32	490
Stockings. Frame for stretching and drying	W. C. Perkins	324,880	Aug. 25	2021	554	32	921
Stoker. Mechanical	J. Hodgkinson	322,605	July 21	1613	426	32	309
Stone-lifter	D. English	322,813	July 21	1882	499	32	358
Stone. Method of and compound for preserving	T. Egleston	323,128	July 28	2341	.....	32	450
Stone or marble. Artificial	W. H. Stearns, Jr	321,459	July 7	68	.....	32	15
Stone or marble. Manufacture of artificial	S. Mixer	326,317	Sept. 15	1478	.....	32	1303
Stone-polishing machine	J. W. Maloy	327,288	Sept. 29	2792	726	32	1553
Stone-sawing machine	J. G. Höfer	322,621	July 21	1898	503	32	361
Stones. Setting real and artificial	J. F. Mahla	322,191	July 14	1068	277	32	203
Stool. Music-	G. A. Ramseyer	325,443	Sept. 1	308	75	32	1074
Stool. Piano-	C. W. Blackburn	325,044	Aug. 25	2238	614	32	962
Stool. Piano-	H. T. Merrill	324,143	Aug. 11	994	274	32	715
Stop-box	P. White	325,298	Sept. 1	96	27	32	1033
Stopper: *See* Bottle-stopper. Jar-stopper.							
Store casing or finishing	R. W. Bates	324,518	Aug. 18	1517	418	32	819
Store-service apparatus	G. A. Badger	324,210	Aug. 11	1105	298	32	736
Store-service apparatus	I. Birgé	325,382	Sept. 1	218	56	32	1056
Store-service apparatus	I. Birgé	325,383	Sept. 1	220	56	32	1056
Store-service apparatus	I. Birgé	325,384	Sept. 1	221	56	32	1056
Store-service apparatus	I. Birgé	325,385	Sept. 1	224	57	32	1057
Store-service apparatus	E. Chapman	326,845	Sept. 22	2201	574, 575	32	1441
Store-service apparatus	R. A. McCarty	325,427	Sept. 1	285	70	32	1070
Store-service apparatus	R. A. McCarty	325,618	Sept. 1	527	133, 134	32	1116
Store-service apparatus	S. G. North	323,952	Aug. 11	736	206	32	669
Store-service apparatus	S. G. North	325,435	Sept. 1	294	72, 73	32	1071
Store-service apparatus	S. G. North	325,436	Sept. 1	295	73	32	1072
Stove	L. F. Bette	326,386	Sept. 15	1562	405	32	1318

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Stove	T. Burkhard	322,580	July 21	1587	418	32	304
Stove	C. Lancaster	322,731	July 21	1777	469	32	330
Stove	W. C. Smith	327,336	Sept. 29	2850	746	32	1564
Stove	A. T. Young	323,250	July 28	2511	666	32	481
Stove	I. P. Vance	322,216	July 14	1097	285	32	206
Stove and boiler	A. R. Bennett	326,093	Sept. 15	1161	297	32	1244
Stove and furnace pipe. Asbestus or amianthus	S. H. La Rue	324,944	Aug. 25	2100	575	32	937
Stove and heater	T. W. Wood	324,346	Aug. 11	1286	348	32	770
Stove-back	J. H. Whissemore	323,380	July 28	2702	718	32	514
Stove-bracket	J. H. Harper and D. V. Brooks	326,867	Sept. 22	2227	583	32	1447
Stove. Cooking	J. R. Webb	324,055	Aug. 11	873	241	32	692
Stove. Cooking	J. W. Baker	326,089	Sept. 15	1157	295, 296	32	1243
Stove. Gas	T. Fletcher	322,592	July 21	1597	422	32	306
Stove. Gas	S. Lightburne, Jr.	322,387	July 14	1314	349	32	249
Stove. Gasoline	M. J. S. Boeye	324,074	Aug. 11	903	249	32	608
Stove. Heating	E. L. Calely	321,681	July 7	361	96	32	68
Stove. Heating	J. H. Keyser	325,678	Sept. 8	615	156	32	1136
Stove. Heating	J. O'Keefe	325,857	Sept. 8	860	216, 217	32	1181
Stove-leg	C. R. Haverly and G. E. Gary	325,171	Aug. 25	2396	659	32	991
Stove lifter, rake, and poker. Combined	J. P. Beck	323,845	Aug. 4	594	167	32	635
Stove. Oil	F. A. Abendroth	325,471	Sept. 1	339	92	32	1080
Stove. Oil	J. McConnell	322,949	July 28	2089	555	32	403
Stove or furnace regulating device	S. W. Jackson	322,610	July 21	1623	429	32	311
Stove or range	J. A. Price	321,327	July 7	167	45	32	33
Stove-oven cover	O. W. Noble	323,925	Aug. 4	566	161	32	630
Stove-oven. Gas, oil, and vapor	R. M. Caln	322,418	July 21	1357	354	32	264
Stove-pipe	L. Paré and H. Reichenbach	324,154	Aug. 11	1015	278	32	719
Stove-pipe. Decorated	A. R. Bennett	326,094	Sept. 15	1162	297	32	1244
Stove-pipe fastener or clamp	H. W. Goodwin	321,806	July 7	542	143	32	101
Stove-pipe thimble or sleeve	J. Scheuermann	327,321	Sept. 29	2835	740	32	1561
Stove. Summer cooking	E. F. Gordon and H. Hobbs	323,665	Aug. 4	373	106	32	592
Stove. Vapor	F. A. Lyman	324,947	Aug. 25	2108	576	32	938
Stove. Vapor-burner	Z. Davis	323,120	July 28	2330	618	32	448
Stove. Vapor-burner	Z. Davis	325,592	Sept. 1	499	124, 125	32	1110
Stoves and grates. Balance-door for	G. Wellhouse	323,379	July 28	2700	718	32	514
Stoves, &c. Hinge for	H. Pretschold	322,394	July 14	1322	344	32	251
Stoves. Lid for gas	S. B. Long	325,683	Sept. 8	620	157	32	1137
Strainer. Coffee	W. D. Brown	323,780	Aug. 4	517	146	32	620
Strainer for funnels, &c	F. O. Butterfield	324,080	Aug. 11	911	252	32	699
Strainer. Liquid	J. L. Abell	321,877	July 7	647	168	32	117
Strainer. Milk	F. Heyl	325,601	Sept. 8	792	199	32	1167
Strainer. Oil	W. Connolly	323,637	Aug. 4	337	96	32	585
Strap: *See* Pantaloon-strap.							
Strap-holder	R. L. Beaumont	322,151	July 14	1019	265	32	194
Straw and other boards. Machine for lining	G. Munro	327,404	Sept. 29	2953	771	32	1580
Straw-board-lining machine	J. Albev	325,779	Sept. 8	761	190	32	1162
Straw-cutter	F. L. Strobridge	326,923	Sept. 22	2311	605	32	1460
Straw-cutter	A. H. Wellington	327,365	Sept. 29	2901	757	32	1571
Straw-stacker	I. Brokaw and W. Butler	322,249	July 14	1134	295, 296	32	216
Straw-stacker	J. M. Gaar	325,526	Sept. 1	421	104	32	1097
Straw-stacker	J. H. and D. Meltzer and J. J. Baker	323,332	July 28	2663	709	32	507
Straw-stacker	P. J. Sprague	326,801	Sept. 22	2140	557	32	1429
Straw-stacker	J. J. Moore and J. A. Ball	324,477	Aug. 18	1462	400	32	809
Straw-stackers. Folding conveyer-trough for	M. Richardson	326,757	Sept. 22	2124	553	32	1426
Strawberry-vines. Tool for trimming	J. D. L. H., and C. M. Charles	324,228	Aug. 11	1126	306	32	739
Stretcher	D. Bates	321,939	July 14	733	192	32	142
Structure. Self-supporting	E. and E. W. Marsh	321,621	July 7	289	.....	32	55
Stucco. Plastic compound to be used as a	F. M. Piper and J. H. Reed	326,148	Sept. 15	1235	316	32	1257
Stud. Lacing	F. Stitzel	323,750	Aug. 4	478	135, 136	32	613
Stuffing-box	J. Powell	326,522	Sept. 15	1727	450	32	1349
Stuffing-boxes. Gland-adjuster for	H. L. Bennett	326,095	Sept. 15	1162	297	32	1244
Stump-puller	F. Blazier	322,781	July 21	1841	489	32	351
Stump-puller	J. L. Martin	326,310	Sept. 15	1471	383	32	1301
Stump-puller	D. Spangler	325,127	Aug. 25	2342	645	32	981
Submarine wall	J. M. Davidson	324,922	Aug. 25	2072	567	32	931
Sucker-rod for deep wells	L. Lefranc	325,349	Sept. 1	155	.....	32	1044
Sugar from juices, sirups, &c. Extracting	K. Trobach	322,079	July 14	919	.....	32	175
Sugar. Manufacture of	G. M. Newhall	321,746	July 7	449	119	32	83
Sugar, &c., mixing, heating and drying apparatus	T. J. McMurray and W. B. Fisher	324,140	Aug. 11	990	272, 273	32	715
Sulky	E. D. Kendall	323,583	Aug. 4	259	76	32	570
Sulphuric anhydrids. Recovering	A. Campbell	321,683	July 7	366	97, 98	32	69
Superimposing and folding machine	F. Dibben	322,698	July 21	1739	.....	32	333
Superphosphate. Manufacture of							
Supporter: *See* Abdominal supporter. Belt-supporter. Clothes-line supporter. Curtain-supporter. Garment-supporter. Obstetrical supporter.							
Suppositories. Composition for	E. A. Hecker and C. F. McKhann	327,367	Sept. 29	2767	.....	32	1549
Surface-plate	P. O. Sundin	326,925	Sept. 22	2314	605	32	1460
Surgical and other instruments. Hard-rubber spring-bar for	R. Lockwood	323,698	Aug. 4	413	118	32	600
Surgical chair	A. P. Gould and H. R. Spencer	321,809	July 7	543	143, 144	32	101
Surgical instrument	M. W. Hassan	321,721	July 7	414	110	32	77
Surgical instrument	J. S. Poynor	322,198	July 14	1075	279	32	204
Surgical instrument	J. Somers	327,204	Sept. 29	2692	699	32	1536

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Surveying-instrument. Air-line	J. A. Flower and E. B. Ruddock	324,017	Aug. 11	825	229	32	634
Suspender attachment	T. O. Potter	322,479	July 21	1450	380, 381	32	280
Suspenders	C. B. Bird	326,194	Sept. 15	1302	337	32	1269
Suspenders	A. M. Freeman and J. B. Overmeyer	325,740	Sept. 8	710	177, 178	32	1153
Suspenders	G. C. Hale	323,416	Aug. 4	44	11	32	531
Suspenders	T. O. Potter	322,478	July 21	1449	380	32	279
Suspenders	T. O. Potter	322,480	July 21	1451	381, 382	32	280
Suspension device	C. H. Lyman	323,051	July 28	2242	592	32	430
Suspension device	C. J. Petersen	324,724	Aug. 18	1799	497	32	873
Swing	O. M. Ahlberg	327,051	Sept. 29	2481	646	32	1408
Swing	J. T. Dees	323,121	July 28	2232	618	32	448
Swing and exercising apparatus. Combined	H. Albrecht	324,513	Aug. 18	1513	416	32	818
Swing-joint for steam	H. J. Morton	324,874	Aug. 25	2015	552	32	920
Swinging chair. Automatic	J. C. McMullen	323,709	Aug. 4	424	121	32	602
Swinging chair convertible into a swinging hammock	R. S. Baldwin	326,619	Sept. 22	1864	488	32	1380
Swinging gate	H. B. Bookout	326,620	Sept. 22	1865	488	32	1380
Switch: *See* Automatic frogless switch. Electric switch. Railway-switch. Spring jack-switch. Telephone-switch.							
Switch-stand	D. Bowen	324,596	Aug. 18	1529	428	32	821
Switch-stand	J. T. Hambay	324,838	Aug. 25	1963	539	32	910
Syringe	J. H. Foote	327,249	Sept. 29	2747	713	32	1545
Syringe	M. Hart	326,596	July 21	1605	424	32	306
Syringe	G. E. Philbrick	321,850	July 7	616	158	32	112
Syringe	J. Suydam	324,429	Aug. 18	1402	382	32	799
Syringe	C. J. Taglialabue	325,132	Aug. 25	2348	647	32	982
Table: *See* Billiard-table. Center or other table. Combination-table. Cooking-table. Embalming-table. Folding table. Gaining-machine table. Ironing-table. Knockdown table. Machine-table. Ore-concentrating table. Sewing-machine table. Steam-table.							
Table	J. Moeller	324,718	Aug. 18	1790	494	32	871
Table	S. A. Nolen	323,064	July 28	2259	596	32	433
Table and culinary receptacle. Combined	A. W. Steers	326,596	Sept. 15	1733	451, 452	32	1350
Table and writing-desk. Combined	I. W. Moore	325,956	Sept. 8	975	248	32	1203
Table and writing-desk. Combined	M. M. Walsh	326,814	Sept. 22	2163	563	32	1433
Table-leg	O. F. Mitchell	321,907	July 7	692	177	32	124
Table-leg. Detachable	W. A. Osborn and D. M. Estey	326,592	Sept. 22	1985	473	32	1371
Table-leg. Removable	T. C. Beach	327,221	Sept. 29	2710	705	32	1539
Table-legs. Locking-plate for	H. A. Kaufhold and C. Steinly	323,592	Aug. 4	258	76	32	570
Table-service articles. Individual holder or rest for	K. E. Nichols and E. V. W. Hale	324,478	Aug. 18	1463	401	32	809
Table-waiter	J. H. Kamerer	321,977	July 14	778	203	32	150
Tablet. Writing	W. W. Patteson	322,313	July 14	1209	318	32	230
Tag	S. M. Guss	321,895	July 7	668	173	32	121
Tag	C. A. Squier	323,461	Aug. 4	99	29	32	541
Tag	C. F. Webster	323,472	Aug. 4	113	33	32	543
Tag and tag-fastener	O. W. Conner	326,404	Sept. 15	1583	411	32	1322
Tag-fastener	E. H. Taylor	321,864	July 7	632	163	32	115
Tag. Pin	J. J. Murphy	322,631	July 21	1645	435	32	315
Tailor's press-pad	S. C. Rugland	325,277	Sept. 1	65	19, 20	32	1028
Tailor's pressing-machine	A. Varney	322,217	July 14	1096	285	32	209
Tamping-tool	H. M. Hoxie	324,998	Aug. 25	2183	596	32	950
Tan-bark. Machine for reducing	B. Holbrook	321,725	July 7	416	112	32	76
Tan-vats. Agitator for	A. T. Ball and W. Hill, Jr	324,916	Aug. 25	2067	566	32	929
Tanning composition	G. H. Leonard	326,753	Sept. 22	2072	.....	32	1417
Tank: *See* Cream-transportation tank.							
Tank	C. Olsen	322,746	July 21	1800	475	32	343
Tap. Automatic	A. J. Geyer, Jr	325,072	Aug. 25	2274	625	32	968
Tapping barrels. Device for	L. Darozir and N. Bouret	321,491	July 7	9	3	32	4
Tapping mains. Device for	G. Richardson	327,314	Sept. 29	2928	738	32	1560
Target-dart	T. J. Shears	325,984	July 28	2146	569	32	414
Target. Flying	L. H. Macomber	326,064	Sept. 22	1921	504	32	1391
Target. Flying	C. F. Stock	323,897	Aug. 4	664	187	32	648
Target-trap	A. H. Hebbard	322,714	July 21	1755	464	32	335
Targets. Apparatus for the manufacture of flying	C. F. Stock	323,896	Aug. 4	663	187	32	648
Targets. Trap for throwing	C. F. Stock	322,020	July 14	842	219	32	161
Telegraph and domestic-supply circuits. Circuit-controller for combined district-	D. Rousseau	322,973	July 28	2130	566	32	411
Telegraph box. Fire-alarm	F. F. Loomis	321,435	Aug. 4	65	17	32	535
Telegraph-cable	H. C. Spalding	327,461	Sept. 29	3020	788	32	1592
Telegraph-cable anchor	H. C. Spalding	327,460	Sept. 29	3019	788	32	1592
Telegraph-cables. Hydrostatic testing-machine for	W. R. Patterson	324,412	Aug. 18	1380	375, 376	32	795
Telegraph cut-out	C. H. Lothrop	324,711	Aug. 18	1783	492	32	870
Telegraph. Duplex	L. A. McCarthy	321,992	July 14	800	209	32	154
Telegraph for synchronous telegraphy. Printing	P. B. Delany and E. A. Calahan	322,693	July 21	1727	456, 457	32	331
Telegraph-keys. Automatic circuit-closer for	H. P. Thompson	322,023	July 14	845	220	32	162
Telegraph. Printing	R. J. Sheehy	325,702	Sept. 8	643	164, 165	32	1141
Telegraph. Quadruplex	L. O. McPherson	322,739	July 21	1788	472	32	341
Telegraph. Railway	E. B. Ives and C. W. Williams	324,381	Aug. 18	1331	362, 363	32	786
Telegraph receiver. Printing	C. M. Jordon	326,969	Sept. 29	2401	628	32	1484
Telegraph repeater. Quadruplex	G. W. Gardanier	320,637	Sept. 22	1886	495	32	1384

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Telegraph. Submarine duplex	A. Muirhead	327,097	Sept. 29	2551	665	32	1509
Telegraph transmitter. Printing	G. B. Scott	321,858	July 7	625	161	32	114
Telegraph-wires. Supporting	M. Hettinger	325,743	Sept. 8	716	178	32	1153
Telegraphs. Controlling press-circuits of printing	C. L. Healy	326,084	Sept. 8	1150	293	32	1234
Telegraphs. Preventing false signals on reversals in quadruplex	F. Van Rysselberghe	326,892	Sept. 22	2272	595	32	1453
Telegraphs. Receiving apparatus for synchronous	P. B. Delany	322,688	July 21	1716	455	32	329
Telegraphic and telephonic systems. Preventing interference in combined	F. Van Rysselberghe	322,333	July 14	1234	324	32	235
Telegraphic and telephonic systems. Preventing interference in combined	F. Van Rysselberghe	323,239	July 28	2493	663	32	477
Telegraphy	W. E. Athearn	324,799	Aug. 25	1912	526	32	901
Telegraphy	W. Maver, Jr	326,880	Sept. 22	2252	587	32	1449
Telegraphy. Magneto-electric	F. H. Brown	324,746	Aug. 18	1823	504	32	878
Telegraphy. Printing device for synchronous	P. B. Delany	322,689	July 21	1718	455	32	329
Telegraphy. Relay for synchronous multiplex	P. B. Delany	322,808	July 21	1873	496, 497	32	357
Telegraphy. Synchronous	P. B. Delany	322,427	July 21	1368	357	32	266
Telepher	S. H. Owens	322,392	July 14	1320	343	32	251
Telephone	J. H. Freeto	321,960	July 14	759	198	32	146
Telephone. Acoustic	W. T. Black	324,356	Aug. 18	1300	353	32	780
Telephone. Acoustic	J. B. Cleaver	325,500	Sept. 1	379	93	32	1048
Telephone. Acoustic	A. Iske	322,294	July 14	1185	311	32	225
Telephone-circuit	M. Brooks and H. R. Mason	323,269	July 28	2531	672	32	485
Telephone circuit and apparatus	T. N. Vail	324,191	Aug. 11	1062	291	32	728
Telephone-exchange system, circuit, and apparatus. Central and subsidiary	T. N. Vail	324,192	Aug. 11	1071	291, 292	32	729
Telephone. Magneto	J. H. and J. W. Rogers	326,675	Sept. 22	1934	509	32	1303
Telephone. Mechanical	H. Seligman	326,458	Sept. 15	1646	430	32	1334
Telephone-offices. Signal-call for	A. H. Low	322,835	July 21	1920	509	32	365
Telephone-receiver	C. L. Fortier	323,311	July 28	2606	693	32	497
Telephone-receiver	J. E. Fuller	322,884	July 21	1995	527	32	379
Telephone-repeater	M. G. Farmer	325,920	Sept. 8	929	235	32	1194
Telephone-switch	J. A. Cabot	324,358	Aug. 18	1301	354	32	781
Telephone-switch	T. J. Perrin	322,122	July 14	977	255	32	187
Telephone-switch	C. Whitlock and A. C. Knapp	326,610	Sept. 22	1852	485	32	1378
Telephone-switch-board plug	C. K. Mead	325,952	Sept. 8	970	247	32	1202
Telephone system	A. E. Dolbear	325,650	Sept. 8	587	149	32	1131
Telephone system	C. W. Price and A. Barrett	324,591	Aug. 18	1607	442, 443	32	838
Telephone-toll system	H. Edmunds and C. T. Howard	327,073	Sept. 29	2506	654, 655	32	1502
Telephone-transmitter	W. Barnley	326,269	Sept. 15	1409	367	32	1289
Telephone-transmitter	T. J. Perrin	324,729	Aug. 18	1805	499	32	874
Telephone transmitter and relay	T. J. Perrin	324,726	Aug. 18	1801	497	32	874
Telephone transmitter and relay	T. J. Perrin	324,727	Aug. 18	1803	498	32	874
Telephone transmitting apparatus	T. J. Perrin	324,728	Aug. 18	1804	498	32	874
Telephones. Auxiliary mouth-piece for	C. A. Harrison	327,393	Sept. 29	2939	767	32	1578
Telephones. Increasing the efficiency of	A. E. Dolbear	325,660	Sept. 8	588	149	32	1132
Telephonic receiver	W. Barnley	326,268	Sept. 15	1407	366	32	1288
Tennis-court marker	R. B. Brown	324,649	Aug. 18	1797	470	32	856
Tennis-racquet	I. J. Turner	323,608	Aug. 4	296	85	32	577
Thawing-machine	F. L. Mentel	325,002	Aug. 25	2189	599	32	951
Thermometer-case and magnifying-lens. Combined	F. A. Reichardt	325,186	Aug. 25	2421	665	32	995
Thermostat	F. Biven	323,556	Aug. 4	230	67	32	564
Thermostat	W. H. Schuh	327,324	Sept. 29	2839	741	32	1502
Thermostat. Electric	C. E. Kells, Jr	322,619	July 21	1625	430	32	311
Thermostat for fire-alarms	J. J. Byrne	322,417	July 21	1355	354	32	263
Thill-coupling	G. W. Beaver	325,648	Sept. 8	577	146	32	1130
Thill-coupling	A. Filkins	325,331	Sept. 1	134	37	32	1040
Thill-coupling	N. T. Hale	326,863	Sept. 22	2231	582	32	1446
Thill-coupling	M. Hall and J. C. Ryan	324,637	Aug. 25	1902	509	32	910
Thill-coupling	J. Harriman	321,720	July 7	413	110	32	77
Thill-coupling	A. McDowell	325,428	Sept. 1	286	70	32	1070
Thill-coupling	A. B. McKay	325,352	Sept. 1	160	43	32	1045
Thill-coupling	A. B. Perine	324,725	Aug. 18	1801	497	32	873
Thill-coupling	T. P. Randall	322,481	July 21	1453	382	32	280
Thill-coupling	A. L. Romans	325,864	Sept. 8	869	219	32	1182
Thill-coupling	E. H. Smith	323,746	Aug. 4	473	134	32	612
Thill-coupling	F. M. Waters	322,510	July 21	1495	393	32	288
Thill-coupling	W. H. Metherell and A. Keiser	323,821	Aug. 4	563	160	32	629
Thill for sleighs. Shifting	J. Hurrle	324,769	Aug. 18	1860	512	32	884
Thill-support	D. C. Matteson	322,118	July 14	972	253, 254	32	186
Thrasher and separator	F. Payne	323,726	Aug. 4	449	127, 128	32	607
Thrasher and separator	D. Young	326,617	Sept. 22	1862	488	32	1379
Thrasher. Traveling	C. Grover	324,767	Aug. 18	1856	511	32	884
Thrashers. Combined band-cutter and grain-feeder for	G. A. Roberts	326,334	Sept. 15	1497	390	32	1303
Thrashing-cylinder	E. C. Souney	322,135	July 14	994	259	32	190
Thrashing-cylinder	A. Arrieta	325,582	Sept. 1	487	121, 122	32	1108
Thrashing grain. Machine for	J. E. Kimble	326,991	Sept. 29	2404	628	32	1484
Thrashing-machine	J. Hershberger	324,997	Aug. 25	2182	597	32	950
Thrashing-machine	J. W. Roweton	326,249	Sept. 15	1386	360, 361	32	1224
Thrashing-machine	T. J. Widemire	322,232	July 14	1116	290	32	213
Thrashing-machine	C. Woolnough	324,063	Aug. 11	893	246	32	696
Thrashing-machine band-cutter and feeder	R. Aitken	322,886	July 28	2003	529	32	387
Thrashing-machine band-cutter and self-feeder	J. N. Naly	321,997	July 14	808	211	32	155
Thrashing-machine belt-winder	P. Olmsted	321,521	July 7	160	43	32	31
Thrashing-machine elevator	D. B. Fisk	326,964	Sept. 29	2373	621	32	1478
Thrashing-machine grain-cleaner	D. L. Stroud	326,805	Sept. 22	2144	558	32	1430

Alphabetical list of inventions, July to September, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Thrashing-machines. Band-cutting feeder for	J. B. Davis	325,736	Sept. 8	704	176	32	1151
Thrashing-machines. Straw-cutting attachment for	J. A. Buchanan	327,064	Sept. 29	2496	652	32	1500
Thread-cutter	B. F. Walker	324,616	Aug. 18	1652	455	32	845
Thread-separator and traveler-cleaner	J. H. Osborn	326,236	Sept. 15	1359	351	32	1280
Threshold	D. Bartholomew	322,066	July 14	928	240	32	177
Thresholds. Device to be substituted for	A. A. Chase and D. H. Hesselton	325,237	Sept. 1	8	3	32	1016
Ticket-case	L. J. Blades	321,783	July 7	507	135	32	95
Ticket-chart	H. E. Lomas	326,879	Sept. 29	2251	587	32	1449
Ticket-holder	T. M. Metcalf	324,869	Aug. 25	2008	551	32	919
Tie: *See* Bale-tie. Railway-tie. Bale and package tie. Railway-chair tie.	J. Hines	321,794	July 7	417	111	32	78
Tile for walls, wood-work, &c.	G. Keith	327,274	Sept. 29	2775	720	32	1550
Tile-laying machine	R. J. Carson and W. D. Sherman	326,018	Sept. 8	1058	269	32	1217
Tile. Machine for making drain	E. F. Mac Kusick	321,619	July 7	287	76	32	55
Tile-work adapted to hearths, fire-places, and vestibules	B. W. Peterson	325,009	Aug. 25	2195	601	32	953
Tiles. Method of and apparatus for setting	D. W. Housley	321,816	July 7	560	146	32	104
Tilting chair	C. A. Perley	324,954	Aug. 25	2117	579	32	940
Tilting-chair	R. T. Sitterley	322,757	July 21	1810	478	32	345
Time and interest indicator	J. S. Goldsmith	326,495	Sept. 15	1691	441	32	1342
Time-check system	J. S. Goldsmith	326,493	Sept. 15	1685	440	32	1341
Time-checks. Apparatus for controlling the issue of	J. S. Goldsmith	326,494	Sept. 15	1688	441	32	1341
Time checks. Apparatus for receiving	L. Zehnder	324,972	Aug. 25	2140	585	32	944
Time-detector. Watchman's	H. Gross	321,893	July 7	663	172	32	121
Time-lock	H. Gross	321,894	July 7	666	173	32	121
Time-lock	W. E. Peirce	329,317	July 14	1214	319	32	231
Time-lock. Electric	W. E. Doolittle	323,796	Aug. 4	530	150	32	623
Time-pieces. Hand-setting attachment for	T. C. Adams	324,512	Aug. 18	1512	416	32	818
Tin can	C. A. Catlin	322,157	July 14	1024	.....	32	195
Tin from tin scraps. Recovering	J. L. Geier	322,056	July 14	889	230	32	170
Tin-plate. Apparatus for crystallizing	C. R. H. M. Habenicht	323,806	Aug. 4	544	155	32	626
Tin plates in crystallization. Apparatus for cooling	E. H. Brown	324,648	Aug. 18	1704	470	32	855
Tintograph	W. F. Brown	323,392	Aug. 4	12	4	32	525
Tire-bolts. Device for clamping	J. Munton	324,406	Aug. 18	1367	372	32	793
Tire-expanding machine	M. Hoyt	323,686	Aug. 4	400	115	32	598
Tire-heater	H. A. and E. S. Burlingame	321,578	July 7	232	62	32	45
Tire-tightener	E. R. Powers	325,442	Sept. 1	307	75	32	1074
Tire-tightener	G. W. Ford	325,793	Sept. 8	777	195	32	1165
Tire-upsetter	W. Harrison	326,869	Sept. 22	2240	584	32	1447
Tire-welding apparatus. Wheel	S. H. Brown and L. Sibley	325,315	Sept. 1	114	33	32	1037
Tires. Centering and holding device for	M. Chase	324,534	Aug. 18	1538	424	32	823
Tires, &c., of vehicle-wheels. Cushion for	W. Demuth	325,918	Sept. 8	927	234	32	1194
Tobacco-box	A. M. Guyton	324,105	Aug. 11	949	259	32	706
Tobacco-box	A. Gloeser	327,158	Sept. 29	2642	.....	32	1523
Tobacco. Compound for treating	W. H. Snow	322,330	July 14	1231	323	32	234
Tobacco-curing device	J. Adt	323,251	July 28	2512	667	32	481
Tobacco-drier	S. Collins	321,707	July 7	531	140	32	99
Tobacco-drier	S. D. Hurst	327,088	Sept. 29	2538	662	32	1507
Tobacco-elevator	A. T. Lendrum	321,614	July 7	221	74	32	54
Tobacco-leaves. Machine for crushing and stemming	E. H. Peck	327,306	Sept. 29	2818	735	32	1558
Tobacco. Machine for making and affixing tin tags to plug	L. J. A. Laurier	324,853	Aug. 25	1962	545	32	914
Tobacco-moistening apparatus	A. C. Winning	323,842	Aug. 4	501	166	32	635
Tobacco-pipe	J. A. and C. F. Foster	323,312	July 28	2606	693	32	497
Tobacco-plant cutter	C. C. Nagley	323,718	Aug. 4	438	125	32	605
Tobacco-plant cutter	C. B. Adams	324,631	Aug. 18	1675	462, 463, 464	32	849
Tobacco-press	J. C. Barkley	322,776	July 21	1835	485	32	350
Tobacco-press	G. Blythe	322,244	July 14	1122	294	32	215
Tobacco-stick holder	E. Neuman	325,110	Aug. 25	2319	638	32	977
Tobacco. Treating	F. W. Tucker	326,463	Sept. 15	1653	432	32	1335
Toe-calks. Machine for making	F. L. Ellis	322,531	July 21	1516	399	32	292
Toggle-joint	O. H. Hicks	325,174	Aug. 25	2404	660	32	992
Toilet-paper fixture	O. H. Hicks	325,410	Sept. 1	263	65	32	1065
Toilet paper. Package of	H. Schmelz	322,977	July 28	2137	567	32	412
Toilet-powder box	W. Mosley	322,195	July 14	1072	278	32	203
Tongs. Nail	P. B. Stone	325,187	Aug. 25	2422	665	32	995
Tongue-support	F. Orlikowski and C. Yanker	321,633	July 7	302	80	32	58
Tongue support. Wagon	G. Cutter	322,914	July 28	2041	538	32	394
Tool. Combination	W. B. Kennedy	326,297	Sept. 15	1450	378	32	1298
Tool. Combination	W. C. Miller	324,145	Aug. 11	996	274	32	716
Tool. Combination	C. Herman	323,145	July 28	2360	626	32	454
Tool-handle	J. C. Hirst and E. Dickie	324,379	Aug. 18	1330	362	32	785
Tool-handle	A. J. Peavey	323,727	Aug. 4	451	128	32	607
Tool-holder	W. R. Evans	323,306	July 28	2601	691	32	496
Tooth. Artificial	T. S. Phillips	325,626	Sept. 1	543	137	32	1118
Tooth. Artificial	W. H. Hall	323,808	Aug. 4	547	155	32	626
Top. Spinning	C. Pilgrim	323,071	July 28	2268	600	32	435
Torpedo	A. Castro	322,900	July 28	2019	533	32	390
Torpedo. Marine	W. I. Chambers	327,380	Sept. 29	2922	762	32	1575
Torpedo. Marine	E. F. Wineman	323,478	Aug. 4	122	35	32	544
Towel-rack	C. Coester, Jr	324,233	Aug. 11	1132	308	32	740
Toy	E. R. Ives	324,260	Aug. 11	1166	317	32	747
Toy	A. Wilke	325,141	Aug. 25	2358	650	32	984
Toy	W. W. Armington	323,843	Aug. 4	592	166	32	635
Toy ball-throwing device	P. Burkel	322,416	July 21	1354	353	32	263
Toy bowling-alley. Circular	C. L. Linney	327,400	Sept. 29	2949	770	32	1580
Toy bubble-blower	E. Schueller	322,754	July 21	1807	477	32	344
Toy. Educational	C. G. Shepard and P. Adams, Jr	321,650	July 7	321	85	32	61
Toy savings-bank	D. L. Wilcox	326,366	Sept. 15	1543	400	32	1314
Toy spring-gun	F. Weber	327,043	Sept. 29	2472	646	32	1496
Toy top							

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Trace and hame connection	O. P. Cobb	326,546	Sept. 22	1758	460	32	1363
Trace-carrier	A. C. Judson	322,380	July 14	1303	340	32	248
Trace-carrier	B. F. Stevens	326,802	Sept. 22	2141	557	32	1430
Trace-carrier for harness	J. B. Gathright	325,831	Sept. 8	829	207	32	1174
Trace-holder for back-bands	A. Collins	325,502	Sept. 1	330	93	32	1068
Traces to back-bands. Plate for securing	B. F. Jones	322,059	July 14	892	231	32	170
Track	P. D. Wagner	322,660	July 21	1663	446	32	322
Track-gage	R. Caffrey	326,271	Sept. 15	1412	367	32	1269
Track-laying device	G. A. Smith	321,765	July 7	485	128	32	90
Traction-engine	H. Rendleman	325,768	Sept. 8	746	186	32	1160
Traction-engine gear	M. Lafever	326,994	Sept. 29	2408	629	32	1485
Traction-engine wheel	C. M. Giddings	326,109	Sept. 15	1177	301	32	1247
Traction-way	R. Gornall	325,167	Aug. 25	2390	658	32	990
Traction-wheel	F. F. Landis	325,750	Sept. 8	734	180, 181	32	1155
Traction-wheel	L. W. Noyes	323,391	Aug. 4	270	79	32	572
Tramway-switches. Device for operating	W. F. Shorey	322,487	July 21	1459	384	32	281
Transits and other instruments of precision. Securing the parts of	F. W. Gardam	325,070	Aug. 25	2271	624	32	968
Transits for vertical sighting. Attachment for engineers'	G. N. Saegmuller	327,320	Sept. 29	2834	739	32	1561
Transom-lifter	A. Langstrom	324,943	Aug. 25	2099	574	32	936
Transom-lifter	G. H. Sargent	324,170	Aug. 11	1034	282	32	722
Trap: *See* Animal-trap. Plumber's trap. Fly-trap. Rat-trap. Gopher-trap. Rat and mouse trap. Grease-trap. Sewer-trap. Hog-trap. Sink-trap. Mole-trap. Steam-trap. Overflow-fixture trap. Target-trap. Water-trap.							
Trap for bath-tubs, sinks, &c	C. A. Blessing	325,486	Sept. 1	362	88	32	1064
Trap for wash-basins. Automatic	W. E. Delehanty and E. J. Murphy	326,277	Sept. 15	1418	369	32	1290
Traps. Non-siphoning attachment for closet and other	H. Mackley and J. B. Ross	321,829	July 7	584	151	32	107
Traveling-bag handles. Manufacturing	F. Armbruster	326,471	Sept. 15	1662	434	32	1337
Traveling device. Circular	C. Bliven	325,386	Sept. 1	227	57	32	1057
Tray, &c. Rotary	A. W. Stevens	327,032	Sept. 29	2456	641	32	1493
Treadle	T. P. Gooch	326,862	Sept. 22	2230	582	32	1445
Treadle and rod. Combined foot	W. B. Cleves and F. G. Ryan	322,793	July 21	1854	493	32	354
Treadle attachment	A. B. McAtee	325,103	Aug. 25	2311	636	32	976
Tree-box	K. H. Nichols	325,184	Aug. 25	2419	664, 665	32	995
Tree-prop	I. H. Kizer	324,777	Aug. 18	1874	515	32	687
Tree-protectors. Constructing oil-troughs for	A. G. Cook	322,523	July 21	1508	396	32	290
Tree-seat	J. F. Gressle	323,415	Aug. 4	43	11	32	531
Tremolo. Fan	J. A. Hendrick	322,450	July 21	1401	368	32	271
Tricycle	D. M. Babcock	322,406	July 21	1342	349	32	261
Tricycle	T. P. and J. B. Hall	325,338	Sept. 1	143	39	32	1042
Tricycle	J. W. Matteson	323,052	July 28	2243	593	32	430
Tricycle	F. Von Palstring. (Reissue)	10,624	July 14	1337	348	32	254
Tricycle	D. H. Rice	326,244	Sept. 15	1376	356	32	1282
Tricycle	D. H. Rice	326,245	Sept. 15	1379	356, 357, 358	32	1283
Tricycle	T. Shakespear	325,019	Aug. 25	2206	605	32	955
Tricycle hobby-horse	R. P. Heilman and R. B. Perkins	325,408	Sept. 1	261	65	32	1064
Trimmer: *See* Hedge-trimmer. Lumber-trimmer.							
Trimming-machine	J. C. Wetmore	323,760	Aug. 4	492	139	32	615
Trough: *See* Drinking-trough. Hog-trough. Eaves-trough.							
Truck	H. A. Stevens	322,499	July 21	1483	389	32	285
Truck. Barrel	J. E. Hunter	322,823	July 21	1902	505	32	362
Truck. Cable-car	J. J. Endres	326,107	Sept. 15	1175	300	32	1246
Truck. Car	J. Gerhardt	324,831	Aug. 25	1955	536	32	909
Truck. Car	F. A. Graff	325,532	Sept. 1	428	106	32	1098
Truck. Car	M. G. Hubbard	326,652	Sept. 22	1903	500, 501	32	1388
Truck. Car	M. G. Hubbard	326,653	Sept. 22	1906	501	32	1388
Truck. Car	M. G. Hubbard	326,654	Sept. 22	1908	501	32	1388
Truck. Car	L. K. Jewett	324,383	Aug. 18	1337	363	32	787
Truck. Car	E. C. Manning	326,999	Sept. 29	2415	631	32	1487
Truck. Car	W. H. Montz	322,741	July 21	1794	473, 474	32	342
Truck. Freight	J. Dixon and E. B. Rhodes	321,802	July 7	536	141	32	100
Truck. Hand	J. C. Dean	321,695	July 7	383	102	32	72
Truck. Hand	G. A. Kollenberg	321,902	July 7	677	176	32	123
Truck. Piano	J. F. Barrows	322,150	July 14	1018	265	32	194
Truck. Warehouse	G. F. Armstrong	324,066	Aug. 11	895	247	32	696
Trunk	G. Cronch	324,091	Aug. 11	994	255	32	702
Trunk	L. A. Leeser	323,434	Aug. 4	65	17	32	535
Trunk and camp-bedstead. Combined	G. Vuitton	325,879	Sept. 8	885	223	32	1185
Trunk-catch	J. E. Ladd	325,347	Sept. 1	153	42	32	1044
Trunk catch or fastener	G. H. Blakesley	325,234	Sept. 1	5	2	32	1016
Trunk desk attachment	L. Ganick	321,961	July 14	759	198	32	146
Trunk-fastening	J. H. Alexander	321,779	July 7	503	134	32	94
Trunk-lid support	C. P. Howell	326,038	Sept. 8	1085	276	32	1222
Trunk-lock	C. F. Veit	325,995	Sept. 8	1028	261	32	1212
Trunk. Wardrobe	O. H. Meurer and G. N. Klein	325,555	Sept. 1	457	114	32	1103
Trunks and boxes. Fastening for	C. Mark	324,948	Aug. 25	2110	577	32	939
Truss	D. Pomeroy	324,586	Aug. 18	1601	441	32	837

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Truss. Hernial	N. Jones	326,122	Sept. 15	1193	305	32	1249
Tub: *See* Wash-tub.							
Tube: *See* Boiler-tube. Speaking-tube.							
Tube-expander	R. Barnard and E. Miles	325,150	Aug. 25	2369	653	32	986
Tube-expander	H. Hayes	325,244	Sept. 1	15	6	32	1018
Tube-expander	W. A. Miles	325,556	Sept. 1	458	114	32	1103
Tube joint. Metal	W. Wattie	324,198	Aug. 11	1089	394, 395	32	733
Tube-machine	W. R. Walton	324,507	Aug. 18	1504	411, 419	32	816
Tube. Machine for contracting the end of a	C. Kellogg	325,938	Sept. 8	947	240, 241	32	1198
Tube-rolling machine	G. S. Strong	324,610	Aug. 18	1638	450, 451, 452	32	843
Tube-welding machine	F. G. Stone and W. R. Walton	324,495	Aug. 18	1484	406	32	813
Tubes. Testing metallic	V. and J. Royle, Jr	325,363	Sept. 1	176	47, 48	32	1047
Tubing and cord, and for covering telegraph and other wires. Machine for making	C. Kellogg	324,118	Aug. 11	960	264, 265	32	709
Tubing. Manufacturing	A. D. Davis. (Reissue)	10,636	Aug. 18	1895	520	32	892
Tubular boiler	H. J. Bickle	321,944	July 14	739	193	32	143
Tug and buckle. Hame	J. J. Lance	325,547	Sept. 1	447	111	32	1101
Tug and hip strap attachment for harness	L. Gustavel, Jr	323,321	July 28	2618	696	32	499
Tug. Hame	A. L. Hill	322,934	July 28	2067	550	32	399
Tug. Hame	T. L. Rivers	325,013	Aug. 25	2201	603	32	953
Tug. Hame	J. H. Moyer	324,876	Aug. 25	2017	553	32	990
Tug. Metallic shaft	J. Wagner	322,570	July 21	1575	415	32	301
Tugs. Roll for harness-loop	D. McCance	322,021	July 21	1634	432	32	313
Tumbling-barrel	H. E. Forrest	322,272	July 14	1159	303	32	220
Tuning-pin for musical instruments	A. Krause	326,659	Sept. 29	1914	502	32	1389
Tunneling-shield	H. A. Reed and W. H. Maddock	322,320	July 14	1218	320	32	232
Turning crank-pins. Machine for	H. W. Hubbard	325,085	Aug. 25	2201	631	32	972
Turning-tool	J. W. Seaver	323,743	Aug. 4	469	133	32	611
Turn-tables and bridges. Center for	W. Watson	327,307	Sept. 29	2695	700	32	1536
Turpentine-hacker	R. Hemsley	327,394	Sept. 29	2940	767	32	1578
Tweezers. Diamond	G. A. Letter	321,615	July 7	292	75	32	54
Twist drill socket	R. H. Smith	326,599	Sept. 22	1834	482	32	1376
Type. Elastic-faced printing	J. M. Hepburn	324,111	Aug. 11	949	261, 262	32	707
Type-founding machine	I. Baas, Jr., and L. B. Benton	326,009	Sept. 8	1047	266	32	1215
Type-mold	E. S. Belden	324,520	Aug. 18	1518	418, 419	32	819
Type-writing machine	V. W. Blanchard	321,479	July 7	97	26	32	19
Type-writing machine	B. A. Brooks	323,495	Aug. 4	143	42, 43	32	548
Type-writing machine	P. T. Dodge	322,810	July 21	1877	497	32	357
Type-writing machine	J. R. Murphy	324,407	Aug. 18	1368	372, 373	32	793
Type-writing machine	E. R. Roe	325,446	Sept. 1	312	76	32	1075
Type-writing machine	C. Spiro	322,495	July 21	1472	386, 387, 388	32	284
Type-writing machine	C. Spiro	322,989	July 28	2150	571	32	415
Type-writing machine	F. X. Wagner	326,178	Sept. 15	1292	330, 331	32	1265
Type-writing machines. Aligner for	C. Smith	325,635	Sept. 1	553	141	32	1120
Type-writing machines. Escapement or feeding device for	W. S. Boyd	326,011	Sept. 8	1049	267	32	1216
Type-writing machines. Type-aligner for	C. Smith	326,062	Sept. 8	1121	285	32	1229
Types. Manufacturing elastic-faced printing	R. H. Smith	324,423	Aug. 18	1394	380	32	797
Typographic blocks or plates from photo-negatives. Producing	G. Sutherland	325,636	Sept. 1	554	.....	32	1120
Umbrella	F. Haitz	326,213	Sept. 15	1331	344	32	1275
Umbrella	J. D. Nesbitt	324,581	Aug. 18	1595	440	32	835
Umbrella	E. V. Whitaker	322,227	July 14	1110	289	32	211
Umbrella and overshoe rack	H. J. Smith and C. Bounds	322,987	July 28	2148	570	32	414
Umbrella and parasol	E. C. Kuhn	321,612	July 7	277	74	32	53
Umbrella and parasol	J. T. Smith	326,890	Sept. 22	2270	594	32	1453
Umbrella-displayer	F. R. Hazelton	322,600	July 21	1607	425	32	308
Umbrella. Folding	S. J. Wilson	321,561	July 7	213	56	32	42
Umbrella, parasol, or sunshade	T. Wrench	323,381	July 28	2703	720	32	515
Umbrella rib-tip shield	W. P. Richards	321,855	July 7	622	160	32	113
Umbrella show-stand	T. M. Togus	323,977	Aug. 11	772	215	32	675
Umbrella-stand	W. C. Carter	323,397	Aug. 4	19	5	32	526
Umbrella-support	F. Haitz	326,214	Sept. 15	1331	345	32	1275
Under-garment	J. D. Gidley	326,639	Sept. 22	1889	495	32	1385
Underground conductor	P. McMackin	327,458	Sept. 29	3017	788	32	1591
Underground conductors. Apparatus for laying	H. C. Spalding	327,474	Sept. 29	3034	792	32	1594
Underground conductors. Conduit for	H. C. Spalding	327,466	Sept. 29	3026	790	32	1593
Underground conduit	D. H. Dorsett	322,529	July 21	1513	399	32	291
Underground wires. Conduit for	W. D. Smith and F. J. Milliken	322,018	July 14	839	219	32	161
Underskirt	J. Mayer	327,183	Sept. 29	2667	693	32	1530
Underwaist. Child's	M. J. Flynn	326,553	Sept. 22	1767	462	32	1364
Universal joint for steam, water, and other liquid pipes.	E. D. Cody	325,056	Aug. 25	2253	619	32	965
Upholstering purposes. Preparing feather-vanes for	E. K. Warren	327,127	Sept. 29	2590	.....	32	1516
Upholstering-springs. Machine for making	P. Fraser	323,657	Aug. 4	362	103, 104, 453	32	590
Urn for cooking purposes. Water	J. F. Trout	326,529	Sept. 15	1736	454	32	1351
Vacuum. Producing a	G. Hambruch	323,325	July 28	2624	698	32	500

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Valve: *See* Sewer-pipe valve.							
Valve	D. D. Buick	321,885	July 7	655	170	32	119
Valve	W. F. Durfee	323,404	Aug. 4	28	8	32	528
Valve	L. G. Engel	322,270	July 14	1150	303	32	220
Valve	T. and J. Galvin	321,807	July 7	541	143	32	101
Valve	F. Hennebochle	323,144	July 28	2358	626	32	453
Valve	V. O. Strobel	327,117	Sept. 29	2572	671	32	1513
Valve	A. Beckert	325,649	Sept. 8	578	146	32	1130
Valve	W. A. Campbell	324,299	Aug. 11	1219	332	32	758
Valve	G. T. Snowden	326,800	Sept. 22	2130	557	32	1429
Valve	M. N. Packard	325,963	Sept. 8	967	251	32	1205
Valve	C. Whittaker	326,613	Sept. 22	1859	457	32	1379
Valve	F. W. Gordon	325,074	Aug. 25	2276	625	32	960
Valve	D. Austin and F. H. Smith	322,899	July 28	2006	530	32	388
Valve	J. D'Esté	326,549	Sept. 22	1762	461	32	1363
Valve	P. G. Van Wie	325,269	Sept. 1	81	24	32	1031
Valve. Differential-pressure	A. Kaiser. (Reissue)	10,645	Sept. 22	2327	609 / 610	32	1464
Valve for engines	J. L. Bogert	325,488	Sept. 1	364	88, 89	32	1085
Valve for engines. Relief	C. B. Turner	326,670	Sept. 8	1134	288	32	1231
Valve for fluid-pressure brakes. Engineer's	J. Kearney	325,092	Aug. 25	2300	833	32	973
Valve-gear	P. Brotherhood	323,270	July 28	2333	672 / 673	32	485
Valve-gear	S. E. Crawford	321,563	July 7	238	63	32	46
Valve-gear	W. H. Donaldson	324,094	Aug. 11	929	256	32	703
Valve-gear	C. P. Holst	323,935	Aug. 11	717	200	32	665
Valve-gear	M. N. Packard	325,964	Sept. 8	968	251	32	1205
Valve-gear	D. D. Pinkham	324,784	Aug. 18	1881	517	32	889
Valve-gear	W. Wilson	327,047	Sept. 29	2476	647	32	1497
Valve-gear. Steam-engine	A. J. Stevens	324,964	Aug. 25	2130	562	32	942
Valve-gear. Steam-engine	T. B. Vau Anken	323,238	July 28	2492	602	32	477
Valve-gear. Steam-engine	J. Wheelock	326,819	Sept. 22	2169	565	32	1434
Valve. Governor	E. Wright	324,446	Aug. 18	1419	387	32	802
Valve handle. Steam	J. E. Gaitley	327,251	Sept. 29	2749	713	32	1546
Valve-indicator	A. L. Ide	322,723	July 21	1708	467	32	338
Valve. Lock	F. Engelhard	322,590	July 21	1595	421	32	305
Valve-motion for steam-engines	W. G. Chapin	322,348	July 14	1259	329	32	239
Valve-operating mechanism	F. M. Stevens	323,606	Aug. 4	292	84	32	576
Valve. Piston	F. Fosdick	323,410	Aug. 4	36	9	32	529
Valve. Pop safety	J. E. Davis	323,794	Aug. 4	528	150	32	622
Valve. Pressure-regulating	H. F. Hodges	323,039	July 28	2224	588	32	426
Valve. Regulator	C. Prüsmann	321,913	July 7	689	179 / 180	32	125
Valve. Reversing	W. A. Campbell	324,222	Aug. 11	1120	304	32	738
Valve. Reversing	H. Stevens	323,462	Aug. 4	100	30	32	541
Valve. Safety	W. E. Granger	326,904	Sept. 22	2290	599	32	1456
Valve. Safety	G. W. Richardson	325,273	Sept. 1	54	17	32	1026
Valve. Safety	H. C. Wilder	322,064	July 14	925	239 / 240	32	177
Valve. Steam-actuated	J. S. Bartlett	325,900	Sept. 8	901	227	32	1189
Valve. Steam-actuated	L. B. Carricaburu	321,561	July 7	235	62	32	46
Valve. Steam-actuated	E. M. Coryell	327,069	Sept. 29	2502	653	32	1501
Valve. Steam-actuated	J. E. Denton	325,508	Sept. 1	394	97	32	1090
Valve. Steam-actuated	A. Horsfield	321,605	July 7	909	71	32	52
Valve. Steam-engine	C. A. Carlson	326,398	Sept. 15	1576	409 / 410	32	1321
Valve. Steam-engine	P. L. Weimer	323,474	Aug. 4	115	33, 34	32	543
Valve. Steam-engine	J. Wheelock	326,820	Sept. 22	2171	566	32	1435
Valve. Stop	J. Pfau	326,238	Sept. 15	1365	352 / 353	32	1280
Valve. Stop	P. Reilly	324,486	Aug. 18	1469	403	32	811
Valves and their spindles. Swivel-connection for	H. R. Frisbie	324,676	Aug. 18	1739	479	32	861
Valves. Mechanism for operating	J. H. Blessing	326,196	Sept. 15	1304	337	32	1269
Valveless engine	M. J. O'Connor	321,842	July 7	600	156	32	110
Vapor-burner	C. Barton	323,103	July 28	2310	611	32	444
Vapor-burner	N. L. Pouschkareff	323,504	Aug. 4	279	81	32	573
Vapor-burner	C. and J. Whittingham and R. A. Jones.	321,872	July 7	642	166	32	117
Vapor burner. Oil	F. Marquart	322,020	July 21	1633	432	32	313
Vapor-generator	M. Chase	326,478	Sept. 15	1669	436	32	1338
Vaporizer	J. H. Valentine	323,547	Aug. 4	218	64, 65	32	562
Varnish	H. T. Smith	322,016	July 14	837	.....	32	160
Varnishing-machine	J. E. Hiuds	325,176	Aug. 25	2407	661 / 662	32	993
Varnishing-machine	C. E. Myers	326,051	Sept. 8	1101	281	32	1225
Vault. Burial	O. H. Anderson	325,230	Sept. 1	9	1	32	1015
Vault. Burial	L. Dydynski	325,826	Sept. 8	825	206	32	1174
Vault cover or grating. Illuminating	T. Hyatt. (Reissue)	10,626	July 21	1998	528	32	380
Vault. Grave	W. Corbett	323,917	Aug. 11	691	194	32	660
Vegetable-cutter	J. Eckhardt	323,127	July 28	2340	621	32	450
Vegetable-cutter	A. John	326,922	Sept. 15	1342	347	32	1276
Vegetable-slicing device	W. Popp	323,960	Aug. 11	748	208	32	671
Vegetable-washer	J. S. Dodge	322,429	July 21	1372	358	32	266
Vehicle	D. S. Anderson	327,429	Sept. 29	2983	779	32	1586
Vehicle-body corner-iron	C. R. Wilson and G. M. Chalfant	327,045	Sept. 29	2473	646	32	1496
Vehicle-brake	E. Steck	321,546	July 7	196	52	32	39
Vehicle-coupling	J. Klenk	324,474	Aug. 18	1453	397	32	808
Vehicle. Dumping	E. Von Oven	327,505	Sept. 29	3071	800	32	1601
Vehicle. One-wheeled	J. O. Lose	325,548	Sept. 1	448	111 / 112	32	1101
Vehicle. Road	W. J. Brewer. (Reissue)	10,635	Aug. 18	1894	520	32	891
Vehicle running-gear	C. Ahrens	324,207	Aug. 11	1102	297	32	735
Vehicle running-gear	N. L. Holmes	326,116	Sept. 15	1186	303	32	1218

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Vehicle running-gear	R. T. Killey	322,109	July 14	960	249	32	183
Vehicle running-gear	T. C. Muns	327,405	Sept. 29	2954	771	32	1581
Vehicle running-gear	A. K. Wilson and B. F. Holder	327,371	Sept. 29	2907	759	32	1572
Vehicle-seat	F. W. Coleman	322,684	July 21	1710	453	32	326
Vehicle-seat	R. T. Crawford	324,603	Aug. 18	1790	473	32	857
Vehicle-seat	W. P. Walling	324,196	Aug. 11	1068	293	32	733
Vehicle-seat and end-gate. Combined	J. F. Pace	327,191	Sept. 29	2678	696	32	1532
Vehicle-shaft support	C. K. Mellinger	321,625	July 7	292	77	32	56
Vehicle shifting seat	E. Depew	321,587	July 7	244	65	32	47
Vehicle. Side-bar	L. Stouffer	326,692	Sept. 22	1963	516	32	1399
Vehicle. Side-bar	H. A. Meyer	325,182	Aug. 25	2416	663 / 664	32	994
Vehicle. Side-spring	J. W. Whittle	326,823	Sept. 22	2176	567	32	1436
Vehicle. Spring	A. Armstrong	326,472	Sept. 15	1664	434	32	1337
Vehicle-spring	F. T. Batzlaff	323,291	July 28	2564	683	32	491
Vehicle-spring	J. A. Birkimer	322,574	July 21	1580	416	32	302
Vehicle-spring	A. S. Bridges	326,906	Aug. 11	681	191	32	658
Vehicle-spring	T. Graether	326,031	Sept. 8	1077	275	32	1221
Vehicle-spring	A. Gummer	322,924	July 28	2054	543	32	397
Vehicle-spring	F. Horn	323,335	July 28	2639	702	32	503
Vehicle-spring	J. Hutchins	325,609	Sept. 1	517	130	32	1113
Vehicle-spring	E. F. Morse	324,872	Aug. 25	2013	552	32	920
Vehicle-spring	F. Rupp and D. F. Smith	325,015	Aug. 25	2203	603	32	954
Vehicle-spring	E. C. Tecktonius	321,663	July 7	337	89	32	64
Vehicle-spring	J. W. Wetmore	325,033	Aug. 25	2222	610	32	958
Vehicle-spring	W. Evans	324,990	Aug. 25	2172	594	32	948
Vehicle-spring clip	W. Evans	326,963	Sept. 29	2372	620	32	1478
Vehicle-spring clip	S. M. Chester	321,795	July 7	529	140	32	98
Vehicle-top	J. M. Perkins	326,585	Sept. 22	1808	475	32	1372
Vehicle-top bow	A. A. Abbott	324,794	Aug. 25	1901	523	32	899
Vehicle. Two-wheeled	J. H. Barker	321,477	July 7	94	25	32	19
Vehicle. Two-wheeled	C. S. Beebe	323,257	July 28	2517	668	32	482
Vehicle. Two-wheeled	H. Esche	324,823	Aug. 25	1943	534	32	906
Vehicle. Two-wheeled	L. St. Ores	327,036	Sept. 29	2461	643	32	1494
Vehicle. Two-wheeled	H. W. Ransom	326,587	Sept. 22	1810	475 / 476	32	1372
Vehicle. Two-wheeled	W. H. Schmedlen	326,595	Sept. 22	1824	480	32	1374
Vehicle. Two-wheeled	D. M. Sechler	324,886	Aug. 25	2028	555	32	922
Vehicle. Two-wheeled	D. M. Sechler	324,902	Aug. 25	2128	581	32	942
Vehicle. Two-wheeled	N. W. Sherman	325,772	Sept. 8	754	188	32	1161
Vehicle. Two-wheeled	H. B. Sortor	326,168	Sept. 15	1263	325	32	1262
Vehicle-wheel	H. J. Barrett	324,072	Aug. 11	900	248 / 249	32	697
Vehicle-wheel	W. Gibby	322,174	July 14	1045	271	32	198
Vehicle-wheel	C. W. Long	322,188	July 14	1063	276	32	202
Vehicle-wheel	B. Rushmer and G. A. Joyce	325,278	Sept. 1	66	20	32	1028
Vehicle-wheel	M. Sattley	321,758	July 7	475	125	32	88
Vehicle-wheel	J. Taylor	325,024	Aug. 25	2212	607	32	956
Vehicle-wheel	H. G. Cady	323,910	Aug. 11	685	192	32	659
Vehicle-wheel wedge	M. H. Crane	325,914	Sept. 8	923	233	32	1193
Vehicles. Boot for drivers' seats for	J. W. Burroughs	324,740	Aug. 18	1627	505	32	879
Velocipede	W. Clemson	324,536	Aug. 18	1540	425	32	824
Velocipede	D. Crowley	323,640	Aug. 4	341	97	32	585
Velocipede	J. M. Dillon	325,823	Sept. 8	822	205	32	1173
Velocipede	A. Fritz	324,826	Aug. 25	1949	535	32	907
Velocipede	J. Harrington	324,317	Aug. 11	1245	338 / 339	32	762
Velocipede	T. F. Hennesy	327,084	Sept. 29	2524	658	32	1505
Velocipede	H. A. King	327,397	Sept. 29	2943	768 / 769	32	1579
Velocipede	J. Knous	322,543	July 21	1527	403	32	294
Velocipede	E. G. Latta	322,733	July 21	1780	470	32	339
Velocipede	E. G. Latta	323,102	July 28	2382	632	32	458
Velocipede	E. G. Latta	323,695	Aug. 4	409	117	32	599
Velocipede	E. G. Latta	324,568	Aug. 18	1574	435	32	831
Velocipede	E. G. Latta	325,944	Sept. 8	958	243 / 244	32	1200
Velocipede	E. G. Latta	326,752	Sept. 22	2069	538	32	1416
Velocipede	E. G. Latta	327,399	Sept. 29	2946	769	32	1579
Velocipede	E. G. and A. C. Latta	322,113	July 14	965	251	32	184
Velocipede	E. G. and A. C. Latta	325,420	Sept. 1	273	68	32	1067
Velocipede	W. E. Nye	321,910	July 7	685	178	32	124
Velocipede	A. Rugally	321,642	July 7	313	83	32	60
Velocipede	C. F. Stillman	324,605	Aug. 18	1630	448	32	841
Velocipede	A. Vreeland	327,125	Sept. 29	2588	674	32	1516
Velocipede-saddle	J. A. Lamplugh	323,693	Aug. 4	406	116 / 117	32	709
Velocipedes. Ball-bearing for	O. Pihlfeldt	327,408	Sept. 29	2957	779	32	1581
Ventilating apparatus for rocking-chairs	J. Fernie	322,705	July 21	1746	461	32	334
Ventilating attachment	B. J. Goldsmith	325,243	Sept. 1	14	5	32	1017
Ventilating buildings	I. J. Ordway	326,055	Sept. 8	1106	283	32	1227
Ventilating-cap	J. A. Hughes and C. S. Mengel	322,377	July 14	1301	339	32	247
Ventilating sewers	G. Hargreaves	321,719	July 7	412	110	32	77
Ventilation. House	L. Merriman	323,587	Aug. 4	265	78	32	571
Ventilator: *See* Beer-ventilator. Car-ventilator. Filter-ventilator. Grain-bin ventilator. Mine-ventilator. Water-closet ventilator. Window-ventilator.							
Ventilator	V. Dorneck	323,300	July 28	2592	686	32	494
Ventilator	W. H. Payne	324,271	Aug. 11	1183	321	32	750
Ventilator	W. Scharnweber	327,414	Sept. 29	2965	774	32	1582
Ventilator	T. J. Simpson	327,330	Sept. 29	2845	742	32	1563
Vessel for transporting liquid cargoes in bulk	L. Y. Sone	326,344	Sept. 15	1511	394	32	1309
Vessels. Construction of	A. Belus	321,569	July 7	223	59	32	44

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Vessels, &c. Construction of the hulls of	G. H. Pond	321,450	July 7	57	16, 17	32	13
Vibrations of forks, reeds, &c. Actuating and correcting the	P. B. Delany	322,809	July 21	1874	497	32	357
Vibrations of forks, reeds, &c. Regulating the	P. B. Delany	322,694	July 21	1733	458	32	332
Vibrations of reeds. Actuating and correcting the	P. B. Delany	322,696	July 21	1735	458	32	332
Vibrations of reeds and forks. Mechanically correcting the	P. B. Delany	322,695	July 21	1734	458	32	332
Vinegar-generator	H. P. McMaster	323,056	July 28	2248	594	32	431
Violin	I. Hall	322,925	July 28	2054	543	32	397
Violin	M. W. White	323,765	Aug. 4	502	141	32	617
Violin attachment	I. J. Hart	322,098	July 14	944	244	32	180
Violin-bow	R. N. Gilmore	323,139	July 28	2354	624	32	433
Violin-string holder	J. D. Loppentien	323,513	Aug. 4	171	50	32	554
Vise	O. Flagstad	323,655	Aug. 4	361	103	32	589
Vise	P. Mines	321,995	July 14	805	210	32	155
Vise	V. M. Moore	326,137	Sept. 15	1218	311	32	1254
Vise	V. M. Moore	326,138	Sept. 15	1219	311	32	1254
Vise	J. B. Wilder	324,907	Aug. 25	2059	563	32	928
Vulcanizable compound or crude kerite	A. G. Day	322,805	July 21	1869	.....	32	356
Wagon	C. Roberts	327,316	Sept. 29	2830	738	32	1560
Wagon and carriage brake. Automatic	S. Kennedy	326,658	Sept. 22	1913	502	32	1389
Wagon-body	A. D. Gingerich	326,970	Sept. 29	2381	623	32	1480
Wagon-body	W. H. Jenkins	324,558	Aug. 18	1562	431	32	929
Wagon-body	W. H. Teets	323,973	Aug. 11	765	214	32	674
Wagon bottom. Dumping	G. W. Richardson	321,533	July 7	177	47	32	35
Wagon-box brace	P. Andersen	323,552	Aug. 4	225	66	32	563
Wagon-box fastener	J. A. Jonas	322,184	July 14	1059	274	32	201
Wagon-brake	E. M. Allen	322,340	July 14	1244	326	32	237
Wagon-brake	A. K. Barmore	325,038	Aug. 25	2233	612	32	980
Wagon-brake	G. P. Card	322,788	July 21	1849	491	32	353
Wagon-brake	M. Cartmell and N. Bayless	324,081	Aug. 11	911	252	32	700
Wagon-brake	A. M. Garman	321,709	July 7	401	107	32	75
Wagon-brake	F. Stalder	324,045	Aug. 11	862	229	32	691
Wagon-brake. Automatic	D. Oltmanns	323,521	Aug. 4	182	53	32	556
Wagon brake. Hay	O. C. Walker and L. B. Altaffer	322,025	July 14	849	221	32	162
Wagon circle-iron	N. L. Holmes	323,934	Aug. 11	714	200	32	665
Wagon-clip	C. A. Gale	321,707	July 7	399	106	32	75
Wagon. Dumping	H. Nolen	325,185	Aug. 25	2420	665	32	995
Wagon. Farm	M. Spaulding	325,455	Sept. 1	324	78	32	1077
Wagon-frame for moving tobacco	L. N. Cash	322,039	July 14	865	225	32	165
Wagon-gear	E. E. Hatheway	327,265	Sept. 29	2765	718	32	1548
Wagon-gearing	H. Seeman	325,869	Sept. 8	875	220	32	1184
Wagon-jack	J. F. Eastman	324,543	Aug. 18	1546	427	32	925
Wagon-jack	J. L. Gray	321,810	July 7	546	144	32	102
Wagon loading and unloading device	A. M. Woolfolk	322,881	July 21	1966	526, 527	32	377
Wagon running-gear	W. C. Boyle	322,246	July 14	1131	295	32	215
Wagon running-gear	L. D. Hurd	321,503	July 7	124	33	32	25
Wagon-spring	T. R. La Due	324,263	Aug. 11	1171	318	32	748
Wagon-spring	N. A. Newton	325,355	Sept. 1	163	44	32	1045
Wagon. Spring	H. C. Swan	324,342	Aug. 11	1282	347	32	769
Wagon-stake	F. Lang	323,512	Aug. 4	171	50	32	554
Wagon-standard	J. M. Roberts and B. W. Case	324,958	Aug. 25	2124	580	32	941
Wagon-standard	J. Starmer	323,604	Aug. 4	291	84	32	576
Wagon-standard	B. W. Tuttle	327,504	Sept. 29	3070	800	32	1601
Wagon-step	E. Bodman	326,098	Sept. 15	1167	298	32	1245
Wagon. Trade	M. Esten	325,596	Sept. 1	505	126	32	1111
Wagon-wheel	J. W. Weiser	325,137	Aug. 25	2354	649	32	983
Waist-lining	J. Reinhardt	325,697	Sept. 8	637	162	32	1140
Wall-bracket	C. H. Smith	325,456	Sept. 1	324	78	32	1077
Wall-covering	G. Jordan	325,090	Aug. 25	2296	632	32	973
Wall-covering, leather-cloth, &c. Manufacture of ornamental	S. Loewenthal	327,266	Sept. 29	2791	.....	32	1553
Wall-decoration. Fabric for	J. Klee	324,941	Aug. 25	2098	574	32	936
Wall-paper	W. Wilson	326,190	Sept. 15	1297	.....	32	1268
Wall-paper. Decorating	F. Beck	322,034	July 14	850	.....	32	164
Wall-paper. Device for hanging	A. and E. B. Wilcox	323,991	Aug. 11	787	219	32	678
Wall-paper. Hanging-up and carrying-off machine for	J. Waldron	322,871	July 21	1970	521, 522	32	374
Wall-paper, &c. Manufacture of	S. E. Trout	322,507	July 21	1492	.....	32	287
Wall-paper-manufacturers' use. Hanging-up and carrying-off machine for	J. Waldron	322,765	July 21	1820	481	32	347
Walls and for other purposes. Manufacture of material for covering and decorating	J. A. Turner	324,343	Aug. 11	1283	.....	32	769
Wardrobe and bedstead. Combined	R. M. Huston	322,938	July 28	2073	552	32	400
Wardrobe and book-case. Portable	F. C. Arbenz	325,644	Sept. 8	573	145	32	1129
Wardrobe or clothes-press. Folding	J. B. Atkinson	322,688	July 28	2005	529	32	387
Warping and beaming machine	H. F. Straw and J. D. Butler	325,284	Sept. 1	74	22	32	1030
Warping-machine	O. Sheehan	322,014	July 14	899	216, 217	32	159
Warping-machines. Adjustable reed for	H. F. Straw	322,401	July 14	1331	346	32	253
Wash-bench. Folding	F. Hanson	324,320	Aug. 11	1251	340	32	763
Wash-board	H. C. Carter	326,490	Sept. 15	1579	410	32	1321
Wash-board	P. T. Gates	326,554	Sept. 22	1767	463	32	1365
Wash-boiler	H. T. Wilson	327,214	Sept. 29	2701	702	32	1538
Wash-stand and bureau. Combined	J. M. Stryker, Jr	323,970	Aug. 11	762	213	32	674
Wash-stand. Stationary	C. Morfit	323,437	Aug. 4	68	18	32	535
Wash-tub	G. W. Crouse	326,480	Sept. 15	1671	436	32	1338
Washer: *See* Bottle-washer. Clothes-washer. Dish-washer. Leather washer. Ore-washer. Vegetable-washer.							
Washers. Machine for cutting	M. V. Doyle	323,860	Aug. 4	614	173	32	639
Washers. Machine for finishing	G. W. Griffin	324,662	Aug. 18	1744	480, 481	32	862

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Washing and dyeing. Apparatus for	J. Worrall	323,095	July 28	2302	606	32	441
Washing-machine	J. O. Austin	325,300	Sept. 1	104	29	32	1034
Washing-machine	M. Baer	326,378	Sept. 15	1553	403	32	1316
Washing-machine	H. C. Barnard	327,659	Sept. 29	2492	650	32	1500
Washing-machine	J. S. Bearell	321,789	July 7	506	134, 135	32	95
Washing-machine	L. Becker	325,319	Sept. 1	111	32	32	1036
Washing-machine	F. Beliel	326,708	Sept. 22	1984	521	32	1403
Washing-machine	W. Birth	323,260	July 28	2519	669	32	483
Washing-machine	F. B. Black	323,273	July 28	2539	675	32	486
Washing-machine	M. Carroll	324,811	Aug. 25	1928	530	32	904
Washing-machine	S. Converse	325,913	Sept. 8	922	232, 233	32	1193
Washing-machine	A. F. Ekman	321,699	July 7	388	103	32	72
Washing-machine	H. Falkenthal	323,133	July 28	2347	623	32	451
Washing-machine	E. Goodwin	326,903	Sept. 22	2289	599	32	1455
Washing-machine	M. L. Grover	327,159	Sept. 29	2633	685	32	1523
Washing-machine	J. O. Hardwick	325,076	Aug. 25	2278	626	32	969
Washing-machine	G. Hargreaves	322,710	July 21	1751	462	32	335
Washing-machine	A. A. Hinds	326,501	Sept. 15	1698	443	32	1343
Washing-machine	W. B. Huber	325,336	July 28	2640	703	32	503
Washing-machine	R. Lynn, Sr	326,913	Sept. 22	2300	602	32	1457
Washing-machine	B. A. Mauring and R. E. Gibbons	323,820	Aug. 4	561	160	32	629
Washing-machine	S. P. Mecay	327,003	Sept. 29	2419	632	32	1487
Washing-machine	A. J. Mercer	322,840	July 21	1929	510	32	367
Washing-machine	C. W. Postlethwaite	323,073	July 28	2269	600	32	435
Washing-machine	F. A. Ruff	326,000	Sept. 8	1120	285	32	1229
Washing-machine	J. Scharr	323,740	Aug. 4	466	132	32	610
Washing-machine	A. Schwarz	327,024	Sept. 29	2443	638	32	1491
Washing-machine	C. R. Sell and W. S. Davis	326,339	Sept. 15	1505	392	32	1303
Washing-machine	I. E. Smith	321,766	July 7	467	129	32	91
Washing-machine	J. M. Tanner	325,457	Sept. 1	325	79	32	1077
Washing-machine	H. W. Webster	324,199	Aug. 11	1091	295	32	734
Washing-machine	V. Wilhelmi	326,257	Sept. 15	1395	363	32	1286
Washing-machine	J. F. Wood	327,507	Sept. 29	3076	801	32	1602
Washing-machine	J. P. Wright	326,926	Sept. 22	2315	606	32	1461
Washing-machine	N. W. Chain	327,136	Sept. 29	2599	677	32	1518
Washing-machine. Boiler	A. Sly and H. E. Gile	327,201	Sept. 29	2688	698	32	1535
Washing-machine. Roller	G. Koons	326,575	Sept. 22	2246	586	32	1442
Washing-machine. Steam	R. G. Baldwin	326,690	Sept. 22	2183	570	32	1437
Washing-machines. Agitator for	F. M. Watkins	321,555	July 7	205	54	32	40
Washing-machines. Driving mechanism for	J. M. Oakley	326,672	Sept. 22	1930	508	32	1392
Washing-machines. Reversing-gearing for	R. Patrick, Jr., and G. Godfrey	324,723	Aug. 18	1796	496	32	872
Washing piece-goods. Apparatus for	W. D. Davies	322,093	July 14	937	242	32	179
Watch balance-wheel	C. S. Guernsey	325,605	Sept. 1	514	129	32	1113
Watch-balances. Manufacture of	C. S. Guernsey	325,603	Sept. 1	512	128	32	1113
Watch-barrel	L. Van Bemmel	327,359	Sept. 29	2695	755	32	1570
Watch-barrel	W. Carpenter	322,680	July 21	1705	452	32	327
Watch-case	R. E. Fenner	323,654	Aug. 4	360	102	32	580
Watch-case	E. C. Fitch	324,675	Aug. 18	1738	479	32	861
Watch-case	W. H. Fitz Gerald	327,078	Sept. 29	2517	656	32	1504
Watch-case	E. F. Heffernan	322,449	July 21	1400	367	32	271
Watch-case	J. Lamont	321,826	July 7	579	151	32	106
Watch-case	V. Nivois	325,433	Sept. 1	292	72	32	1071
Watch-case	C. H. Shaw	323,370	July 28	2689	716	32	512
Watch-case	W. Burns, Jr	321,886	July 7	657	170	32	130
Watch-case bezel	G. W. Blakeslee	326,710	Sept. 22	1985	521	32	1403
Watch-case spring	C. Chabot	321,687	July 7	376	100	32	70
Watch-cases. Forming rims on	C. Chabot	321,686	July 7	375	100	32	70
Watch-cases. Mechanism for forming beveled rims on	D. R. Buchanan and E. L. Dodge	323,272	July 28	2538	674	32	486
Watch dials and faces. Producing the painted Roman capital numeral letters upon	E. D. Wetherbee	325,296	Sept. 1	93	26	32	1032
Watch-dials. Apparatus for recessing	G. Krichevski and A. Edmonds	321,611	July 7	276	73, 74	32	53
Watch-escapement	J. Lamont	322,297	July 14	1190	312	32	226
Watch key and pendant	A. D. Bingham	323,777	Aug. 4	515	145	32	619
Watch-movement	G. E. Hart	324,689	Aug. 18	1758	485	32	865
Watch-movement	A. F. Freeland and C. H. Whitten	325,204	Aug. 25	2446	673	32	1000
Watch-movement box	N. V. Randolph	321,854	July 7	621	160	32	113
Watch-movement box	S. T. J. Byam	323,852	Aug. 4	601	169	32	636
Watch-plate	G. E. Hart	321,896	July 7	669	173	32	121
Watch-plate	J. Adler	321,471	July 7	90	24	32	18
Watch-protector	P. and C. Kaul	322,185	July 14	1060	274	32	201
Watch-regulator	C. Morlet and E. Dupuis	325,854	Sept. 8	853	214, 215	32	1179
Watch. Repeating	D. H. Church. (Reissue)	10,631	Aug. 4	665	187	32	648
Watch. Stem-winding	A. E. Hotchkiss	325,247	Sept. 1	90	7	32	1019
Watch. Stem-winding	H. A. T. Reinecke	325,568	Sept. 1	472	118	32	1106
Watch. Stem-winding	A. Sandoz	326,677	Sept. 22	1943	240	32	1395
Watch. Stem-winding	C. P. Corliss	325,506	Sept. 1	389	96	32	1069
Watch. Stem winding and setting	N. R. Varney	323,965	Aug. 11	782	217	32	677
Watch. Stem winding and setting	F. Fitt	325,402	Sept. 1	252	63	32	1063
Watch. Stop	C. S. Guernsey	325,604	Sept. 1	513	128	32	1113
Watch-winding attachment	C. S. Guernsey	325,602	Sept. 1	512	128	32	1113
Watches. Balance-wheel for	W. E. Doolittle	323,795	Aug. 4	529	150	32	622
Watches. Hand-setting mechanism for	G. E. Hart	325,536	Sept. 1	432	107, 108	32	1099
Watches. Stem-winding attachment for	W. A. O. Hegeman	327,269	Sept. 29	2769	719	32	1549
Water and other fluids. Apparatus for purifying	A. R. Leeds	323,431	Aug. 4	61	16	32	534
Water. Apparatus for purification of	A. R. Leeds	323,432	Aug. 4	63	16	32	534
Water. Apparatus for purification of	C. Burnett	325,588	Sept. 1	494	123	32	1110
Water. Apparatus for raising	F. Armstrong	324,515	Aug. 18	1515	417	32	818
Water-back	H. J. Bailey	327,219	Sept. 29	2707	704, 705	32	1539
Water-closet	W. Bunting, Jr	325,587	Sept. 1	492	123	32	1110
Water-closet							

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Water-closet	J. L. and C. P. Howard	322,101	July 14	947	246	32	181
Water-closet	F. J. Merz	322,626	July 21	1640	433, 434	32	314
Water-closet	R. Sayer	324,173	Aug. 11	1036	283	32	722
Water-closet attachment	W. H. Graham	326,496	Sept. 15	1093	442	32	1342
Water-closet bowl	H. C. Weeden	323,473	Aug. 4	114	33	32	543
Water-closet bowl	H. C. Weeden	323,549	Aug. 4	221	65	32	563
Water-closets. Cistern and flushing apparatus for	W. Strong	322,078	July 14	917	238	32	175
Water-closet cisterns. Door-connection for	D. Burrows	327,133	Sept. 29	2596	676	32	1517
Water-closet supply-valve	H. S. Lord	322,388	July 14	1315	342, 343	32	250
Water-closet valve	E. A. Straat	326,528	Sept. 15	1735	453	32	1351
Water-closet ventilator	J. H. McGovern and J. H. Willson	323,707	Aug. 4	422	121	32	602
Water-cooler	J. H. Ward	327,361	Sept. 29	2896	756	32	1570
Water, &c. Cooler for	J. A. Van Drelzen	321,666	July 7	339	90	32	64
Water-distributer. Automatic	J. Cornell	327,141	Sept. 29	2603	678	32	1518
Water-elevator	H. S. Daggett	324,235	Aug. 11	1133	308	32	741
Water-elevator	B. J. Hewitt	327,167	Sept. 29	2641	687	32	1525
Water-elevator	J. W. Thorp	327,205	Sept. 29	2693	699, 700	32	1536
Water for sanitary purposes. Appliance and arrangement for controlling, regulating, and arresting the supply of	G. H. and S. Jennings and J. Morley	326,431	Sept. 15	1616	421, 422	32	1328
Water for sanitary purposes, &c. Appliance and arrangement for controlling, regulating, and arresting the supply of	G. H. and S. Jennings and J. Morley	326,432	Sept. 15	1618	422, 423	32	1328
Water-gage and faucet. Combined	J. G. L. Boettcher	323,778	Aug. 4	516	145	32	619
Water-gate	C. J. Cheney	323,562	Aug. 4	236	69	32	565
Water-gate	D. T. Hopgood	322,607	July 21	1617	428	32	310
Water-gate	M. Matthews	322,946	July 28	2085	554	32	402
Water-heater	J. Baker	326,192	Sept. 15	1300	336	32	1269
Water. Means for supplying	G. S. Follansbee	327,155	Sept. 29	2628	684	32	1523
Water-meter	J. Rowbotham	325,361	Sept. 1	172	46	32	1047
Water-meter. Rotary	J. Rowbotham	325,362	Sept. 1	174	46, 47	32	1047
Water-meter. Rotary	C. P. Bradway	322,785	July 21	1847	490, 491	32	353
Water-motor	J. N. S. Williams	321,559	July 7	210	55	32	42
Water-pressure engine	J. W. Hyatt	326,221	Sept. 15	1340	346, 347	32	1276
Water. Purifying	J. W. Hyatt	322,104	July 14	955	248	32	182
Water-purifying apparatus	R. H. Thurston	322,332	July 14	1233	323	32	235
Water-purifying apparatus	A. and C. Melzer	322,839	July 21	1928	.....	32	367
Water-purifying compound	C. Burnett	326,267	Sept. 15	1405	366	32	1288
Water-raising apparatus	J. Howes	322,722	July 21	1760	466, 467	32	337
Water-service. Purifying and aerating apparatus for	A. R. Leeds	327,091	Sept. 29	2542	662	32	1508
Water-supply pipes. Automatic relief-valve in	W. P. Buchan	326,713	Sept. 22	1990	522	32	1404
Water-trap. Siphon	W. Kent	326,990	Sept. 29	2403	628	32	1484
Water-tube boiler	J. B. Collins	326,718	Sept. 22	2007	525	32	1406
Water-wheel	L. L. Randall	323,734	Aug. 4	460	130	32	609
Water-wheel	J. W. Wesson	322,028	July 14	851	221	32	163
Water-wheel	R. A. Wingo	322,879	July 21	1984	526	32	377
Water-wheel	E. H. Amet	326,934	Sept. 29	2334	611	32	1471
Water-wheel governor. Electric	B. V. Idol	324,113	Aug. 11	953	262	32	708
Water-wheel. Turbine	J. Raab	325,112	Aug. 25	2321	639	32	978
Water-wheel. Turbine	C. R. Sylvester	321,660	July 7	332	88, 89	32	63
Water-wheel. Turbine	W. Waddell	322,764	July 21	1819	481	32	347
Waterer. Stock	A. J. Balch	326,929	Sept. 22	2183	569	32	1437
Watering device. Stock	E. A. and M. C. Mika	324,870	Aug. 25	2009	551	32	919
Water-proof composition for felt, paper, &c.	O. Zlurek	323,016	July 28	2185	.....	32	421
Water-proof. Rendering cloth, wood, paper, &c.	N. A. Alexanderson	326,088	Sept. 15	1156	.....	32	1243
Waterproofing boots, shoes, &c. Compound for	J. B. Dupret	323,402	Aug. 4	24	.....	32	527
Weather-strip	G. L. Fowler	325,597	Sept. 1	505	126	32	1112
Weather-strip	W. H. Plympton	327,106	Sept. 29	2561	668	32	1511
Wedge-driving machine	F. S. Strong	325,709	Sept. 8	668	167	32	1145
Weeding implement	J. Jenkins	324,382	Aug. 18	1336	363	32	787
Weeding-tool. Hand	F. N. Lang	324,565	Aug. 18	1570	434	32	830
Weigher. Automatic grain	G. J. Gibbons	324,373	Aug. 18	1322	360	32	784
Weighing-machine. Automatic	J. Stevens	325,282	Sept. 1	70	21	32	1029
Weighing-machine. Automatic	V. Weber and J. R. Harrison	326,074	Sept. 8	1140	290	32	1232
Weighing machine. Automatic grain	C. Reuther	323,533	Aug. 4	196	57	32	558
Welding compound	E. Watkins	322,223	July 14	1106	.....	32	210
Welding-machine	G. S. Strong	324,609	Aug. 18	1635	450	32	842
Well-boring drill or bit	R. P. Williams and E. B. Morrell	321,560	July 7	212	56	32	42
Well boring. Expanding drill-bit for Artesian	C. C. Lane	326,661	Sept. 22	1916	503	32	1390
Well-cover	H. P. Bullock and H. B. Cook	325,816	Sept. 8	815	204	32	1172
Well-pipe-closing clamp	H. L. Aden, Jr	323,098	July 28	2305	609	32	442
Well point. Drive	J. Vosburgh	321,550	July 7	201	53	32	40
Wells. Casing-head for oil, gas, and other deep bored	D. Berry	322,242	July 14	1126	293	32	214
Wells. Protecting	S. McEachen	326,439	Sept. 15	1627	425	32	1329
Wheat, oats, and cockle separator	J. Lucas	322,548	July 21	1532	404	32	295
Wheat-meal product	T. H. Foulds	327,250	Sept. 29	2748	.....	32	1546
Wheat scouring and cleaning machine	F. Dorsey	322 700	July 21	1741	459	32	333
Wheel: *See* Car-wheel. Cog-wheel. Elastic-tired wheel. Fifth-wheel. Gear-wheel. Sprocket-wheel. Traction-wheel. Traction-engine wheel. Vehicle-wheel. Wagon-wheel. Water-wheel. Wind-wheel.							
Wheel	W. P. Bettendorf	325,585	Sept. 1	491	123	32	1109
Wheel	G. W. Mecham	324,141	Aug. 11	991	273	32	715
Wheel	J. E. Mustard	324,952	Aug. 25	2115	579	32	940
Wheel	E. W. Otis	325,439	Sept. 1	303	74	32	1073
Wheel	J. F. Packer	323,441	Aug. 4	74	20, 21	32	536

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Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Wheel	S. T. Williams	325,301	Sept. 1	98	28	32	1033
Wheel	S. T. Williams	325,893	Sept. 8	895	225	32	1187
Wheel and axle coupling	A. B. Carter	324,653	Aug. 18	1709	471	32	856
Wheel and axle coupling	A. B. Carter	324,654	Aug. 18	1711	471	32	856
Wheel-guard	A. B. Cole	325,821	Sept. 8	890	205	32	1173
Wheel or pulley	G. P. Clark	322,581	July 21	1588	418, 419, 637, 638	32	304
Wheels. Machine for cutting teeth of duplex	E. A. Marsh	323,175	July 28	2402	.....	32	461
Wheelbarrow	P. Gendron	322,277	July 14	1164	305	32	221
Wheelbarrow	J. Stoll	324,606	Aug. 18	1631	448	32	841
Wheelbarrow	D. B. Tiffany	326,349	Sept. 15	1522	396	32	1311
Wheelbarrow	M. B. Kirker	324,848	Aug. 25	1978	544	32	913
Whiffletree	S. Austin	325,192	Aug. 25	2428	667	32	997
Whiffletree-hook	C. H. Collins	323,116	July 28	2327	616	32	447
Whiffletree-hook	H. B. Davis	322,163	July 14	1033	268	32	196
Whiffletree-hook	J. R. Davis	322,527	July 21	1512	398	32	291
Whiffletree-hook	F. E. Corey	322,909	July 28	2031	536	32	392
Whiffletree rein-guard	J. A. McPherson	321,624	July 7	291	77	32	56
Whip-rack	J. P. Niemann	325,562	Sept. 1	464	116	32	1104
Whip-socket	J. P. Niemann	325,563	Sept. 1	465	116	32	1105
Whip-socket	G. P. Rose	327,021	Sept. 29	2441	638	32	1491
Whip-socket	E. W. Scott	323,452	Aug. 4	87	26	32	536
Whip-socket	M. M. Zellers	324,064	Aug. 11	894	246	32	696
Whip-socket	A. Searls	327,113	Sept. 29	2569	670	32	1513
Whip-socket fastener	R. McDougall	327,184	Sept. 29	2668	694	32	1530
Whip-socket lock	M. W. Ryland	323,369	July 28	2088	715	32	511
Whip-socket. Locking	C. S. Corning	325,322	Sept. 1	123	35	32	1039
Whisky. Making	F. L. Johnson	326,745	Sept. 22	2063	536	32	1415
Whistle. Bicycle alarm	C. F. Crockett	322,583	July 21	1590	419	32	304
Whitewash-package	A. Combs	324,087	Aug. 11	990	254	32	701
Wick raiser. Lamp	P. T. Cofield	322,796	July 21	1859	494	32	355
Wind-engine	C. Leavitt	321,985	July 14	791	206	32	152
Wind-engine	J. W. and F. E. Wood	324,510	Aug. 18	1510	413, 414, 415	32	818
Wind-instruments. Mouth-piece for	O. A. Watson	325,715	Sept. 8	676	169	32	1146
Wind-motor	C. A. Geiger and B. Beale	324,090	Aug. 11	829	229	32	685
Wind-motor	F. S. McKibben	327,186	Sept. 29	2671	694	32	1531
Wind-wheel	L. D. Abrams	326,066	Sept. 15	1155	295	32	1243
Wind-wheel	J. S. Rohrer	326,157	Sept. 15	1246	319	32	1259
Wind-wheel	T. J. Simpson	326,166	Sept. 15	1259	323	32	1262
Wind-wheel	M. B. Williams	326,614	Sept. 22	1860	487	32	1379
Wind-wheel	W. E. Williams	327,370	Sept. 29	2906	758	32	1572
Wind-wheel	T. J. Simpson	325,366	Sept. 1	183	48	32	1048
Wind-wheel. Horizontal	J. Boyd	326,391	Sept. 15	1567	407	32	1319
Winding and twisting machines, &c. Stop-motion mechanism for	H. C. Hill and H. H. Brown	322,451	July 21	1402	368	32	272
Winding yarn or thread onto spools or bobbins. Machinery for	J. Q. Adams	323,485	Aug. 4	129	37	32	546
Windmill	W. R. Allen	322,341	July 14	1245	327	32	237
Windmill	J. Burky	322,345	July 14	1255	328	32	238
Windmill	A. R. and C. B. Dempster	324,092	Aug. 11	925	256	32	702
Windmill	H. Manvel and M. B. Williams	322,463	July 21	1420	371, 372	32	274
Windmill	A. L. Sherred	321,760	July 7	478	126	32	89
Windmill	F. W. Starr	322,862	July 21	1961	519	32	372
Windmill	D. C. Stover	325,707	Sept. 8	661	166, 167	32	1143
Windmill	P. Tefft	325,025	Aug. 25	2213	607	32	956
Windmill	D. D., G. L., and C. W. Wiley	323,615	Aug. 4	304	87, 88	32	579
Windmill	R. F. Wilson	324,284	Aug. 11	1199	325	32	753
Windmill	H. Woodmansee and S. Lebkicher	327,508	Sept. 29	3077	801	32	1602
Windmill-gearing	G. H. Pattison	321,750	July 7	460	122	32	85
Windmill-gearing	G. H. Pattison	322,314	July 14	1210	318	32	230
Windmill-gearing	G. H. Pattison	323,725	Aug. 4	446	127	32	606
Windmill-gearing	A. M. Otis	327,190	Sept. 29	2677	695	32	1532
Windmill water-regulator	B. W. Tuttle	327,503	Sept. 29	3068	799	32	1600
Windmill water-supply regulator	W. I. Wooster	321,777	July 7	500	132	32	93
Windmills. Controlling	A. T. Winchell	323,011	July 28	2160	578	32	419
Windmills. Device for transmitting power to	M. S. Buckner	326,943	Sept. 29	2348	614	32	1474
Window	R. Martinez	325,753	Sept. 8	729	182	32	1156
Window	S. C. Taylor	326,605	Sept. 22	1844	483, 484	32	1377
Window-cleaner	J. S. Rutan	322,070	July 14	908	235	32	173
Window construction and fastening and hinge	O. Flagstad	325,333	Sept. 1	137	38	32	1041
Window-platform	H. Hagemann	326,977	Sept. 29	2386	624	32	1481
Window-screen	W. G. Anderson	323,898	Aug. 11	673	189	32	657
Window-screen	S. F. Gilmore	325,529	Sept. 1	425	105	32	1097
Window-screen and ventilator	J. G. Bronson	324,077	Aug. 11	908	251	32	698
Window-screen. Rolling	A. E. Swain	321,921	July 7	701	183	32	127
Window-shade	R. W. Bates	324,519	Aug. 18	1518	418	32	819
Window-shade fastener	N. Tomlinson	324,738	Aug. 18	1615	501	32	876
Window-shade rollers. Gudgeon for	J. Lines	325,422	Sept. 1	278	69	32	1068
Window-ventilator	W. Scharnweber	327,415	Sept. 29	2967	774	32	1583
Window ventilator. Show	J. N. Baer and J. S. Edwards	323,387	Aug. 4	7	2	32	524
Windows. Weight-cord and attachment for	E. T. Bradbury	326,392	Sept. 15	1269	407	32	1319
Wine-press	J. B. Tupper, Jr	327,121	Sept. 29	2577	672	32	1514
Wire-barbing machine	A. J. Bates	325,311	Sept. 1	109	31	32	1036
Wire-barbing machines. Barb straightening and compressing attachment for	A. Jorgensen	322,379	July 14	1303	340	32	248
Wire-cleaning machine	H. Borchardt	326,939	Sept. 29	2340	612, 613	32	1473
Wire cloth or fabric	W. Hewitt	322,933	July 28	2066	550	32	309

Alphabetical list of inventions, July to September, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Wire-cutting tool	W. H. Flinn	327,153	Sept. 29	2626	683	32	1522
Wire. Drawing	C. S. Hall, A. B. Clemence, and H. F. A. Setterwall.	325,800	Sept. 8	790	.....	32	1167
Wire-drawing. Coating for	F. N. Haskell	325,537	Sept. 1	434	.....	32	1099
Wire-drawing die	F. M. Blake	326,097	Sept. 15	1166	298	32	1245
Wire-drawing machine	A. R. Benton	321,478	July 7	95	25	32	19
Wire fabric	H. T. Windt	323,477	Aug. 4	121	35	32	514
Wire-feeding device	J. Withington	323,013	July 28	2182	579	32	420
Wire for pegs. Machine for making screw-	S. W. Robinson	325,275	Sept. 1	61	19	32	1027
Wire gate	D. J. Rundell	321,535	July 7	180	48	32	36
Wire gate	H. O. Thomas	325,219	Aug. 25	2466	678	32	1004
Wire hardening and tempering apparatus	J. Thornton	323,087	July 28	2280	605	32	439
Wire in the coil. Reel for holding	A. Cavalli	325,394	Sept. 1	244	61	32	1062
Wire machine. Barb-	C. H. Baker	323,490	Aug. 4	136	40	32	547
Wire machine. Barb-	C. H. Baker and F. L. Bestor	323,487	Aug. 4	131	38, 39	32	546
Wire machine. Barb-	C. H. Baker and F. L. Bestor	323,488	Aug. 4	133	39	32	546
Wire machine. Barb-	C. H. Baker and F. L. Bestor	323,489	Aug. 4	134	40	32	547
Wire machine. Barb-	G. H. Lasar	322,112	July 14	963	250, 251	32	184
Wire machine. Barb-	G. H. Lasar	323,161	July 28	2381	631	32	458
Wire machine. Barb-	G. H. Lasar	327,277	Sept. 29	2779	721, 722	32	1551
Wire machine. Barb-	G. P. Schuster	322,981	July 28	2141	568	32	413
Wire machine. Barb-	C. Skinner	322,469	July 21	1461	384, 385	32	282
Wire machine. Barb-	J. Stubbe	326,806	Sept. 22	2144	358, 559, 560	32	1431
Wire machine. Barbed-	G. H. Lasar	322,546	July 21	1530	403, 404	32	295
Wire. Machine for forming blanks or articles from	M. L. Bassett	323,626	Aug. 4	324	93	32	583
Wire-reel. Portable	D. A. Roberts	327,195	Sept. 29	2682	697	32	1533
Wire-reel. Portable	D. A. Roberts	327,196	Sept. 29	2682	697	32	1534
Wire-splicer	J. A. Helvin and H. Van Hoevenbergh.	326,906	Sept. 22	2292	509	32	1456
Wire spool. Barbed-	D. C. Stover	327,347	Sept. 29	2880	752	32	1567
Wire-strainer	C. O. R. Walker	327,126	Sept. 29	2589	674	32	1516
Wire-stretcher	W. H. Forker	326,419	Sept. 15	1600	416, 417	32	1325
Wire-stretcher	S. Green	321,963	July 14	761	199	32	147
Wire-stretcher	A. W. Laughlin	325,095	Aug. 25	2304	634	32	974
Wire-stretcher	E. Long	322,460	July 21	1417	371	32	274
Wire-stretcher	S. J. McDonald	323,054	July 28	2246	594	32	431
Wire-stretcher	L. S. McMickin	323,947	Aug. 11	730	204	32	668
Wire-stretcher	C. N. Pulse	326,919	Sept. 22	2307	604	32	1459
Wire-stretcher	H. H. Staugaard	324,893	Aug. 25	2038	558	32	924
Wire-stretcher	A. J. Upham	325,460	Sept. 1	328	79	32	1077
Wire-stretching implement	J. Withington	324,285	Aug. 11	1200	326	32	754
Wire-twisting machine	H. Frank	321,492	July 7	110	30	32	22
Wire-unwinding reel	J Withington	323,012	July 28	2181	579	32	420
Wires. Composition of matter for the preservation and insulation of	J. W. Ellis	321,956	July 14	754	197	32	145
Wires. Machine for grinding the ends of	J. Berry	324,641	Aug. 18	1694	467	32	853
Wood-bending machine	C. E. Sargent	322,856	July 21	1948	515	32	370
Wood-bundling machine	J. W. Blaisdell	325,483	Sept. 1	358	87	32	1084
Wood-cutting machine	A. L. Stanford	324,603	Aug. 18	1626	447	32	841
Wood-dressing machine	C. D. Smith	327,203	Sept. 29	2690	699	32	1535
Wood-filler	A. Hoexter and G. Schulter	327,085	Sept. 29	2525	.....	32	1505
Wood-fluting mechanism	O. C. Donecker	324,669	Aug. 18	1729	476	32	859
Wood. Machine for spirally winding a strip of	J. Macfarlane	323,699	Aug. 4	413	118, 119	32	600
Wood, &c. Ornamenting surfaces of	J. M. Wade	322,219	July 14	1100	.....	32	209
Wood-polishing machine	F. Gale	325,527	Sept. 1	423	104, 105	32	1097
Wood-preserving apparatus	L. Hansen and A. Smith	322,819	July 21	1894	502	32	360
Wood-splitting machine	E. A. and S. B. Hildreth	321,969	July 14	768	200	32	148
Wood-working machine	H. H. Sheip	325,279	Sept. 1	67	20, 21	32	1028
Wool. Apparatus for removing vegetable fiber from	J. Illingworth	321,899	July 7	672	174, 175	32	122
Wool-drier	F. G. and A. C. Sargent	327,198	Sept. 29	2684	697	32	1534
Wool. Machine for feeding, opening, and mixing	S. R. Parkhurst	323,523	Aug. 4	184	53, 54	32	556
Wool or cotton. Machine for picking and burring	J. R. Clark and H. Tindell	326,273	Sept. 15	1413	368	32	1280
Wool-washing machine	F. G. and A. C. Sargent	327,199	Sept. 29	2685	698	32	1534
Work-holder	S. L. Otis	322,312	July 14	1208	318	32	229
Wrapper. Sample-package	S. G. Howe	322,453	July 21	1408	369	32	272
Wrench: *See* Pipe-wrench. Ratchet-wrench. Pipe and monkey wrench.							
Wrench	D. S. Blue	326,837	Sept. 22	2191	571	32	1439
Wrench	T. J. Campbell	322,256	July 14	1141	296	32	217
Wrench	R. F. Cook	325,503	Sept. 1	381	93	32	1088
Wrench	W. D. Goodson	324,104	Aug. 11	941	259	32	705
Wrench	E. Harris	326,868	Sept. 22	2240	584	32	1447
Wrench	E. M. Hungerford	322,937	July 28	2072	551	32	400
Wrench	B. F. Lancaster	325,942	Sept. 8	956	243	32	1200
Wrench	J. McLean	325,001	Aug. 25	2188	599	32	951
Wrench	D. R. Porter	325,010	Aug. 25	2197	602	32	953
Wrench	K. Seifried	326,680	Sept. 22	1946	511	32	1395
Wrench. Automatic self-setting	B. F. Bennett	323,776	Aug. 4	515	145	32	619
Wringer: *See* Mop-wringer.							
Yarn chains. Machine for separating warp-	A. Mungall	323,355	July 28	2667	711	32	508
Yarn or thread for filling. Preparing	E. H. Eisenhart	325,241	Sept. 1	12	4, 5	32	1017
Yokes. Machine for making clip-	P. Deffensmith	323,284	July 28	2352	679	32	489

ALPHABETICAL LIST OF DESIGNS.

Design.	Name.	No.	Date.	Official Gazette. Volume.	Official Gazette. Page.
Arm-rest support	T. A. Koche	16,251	Sept. 15	32	1242
Badge	C. Holyland	16,197	Aug. 11	32	656
Bar-handle	A. J. Manning	16,244	Sept. 8	32	1128
Bas-relief of General Grant	E. Fox	16,257	Sept. 22	32	1360
Bedstead. Folding	Q. S. Backus	16,203	Aug. 18	32	778
Belt. Ornamentation of a	L. Werner	16,158	July 7	32	2
Boot or shoe. Rubber	E. B. Preston	16,208	Aug. 18	32	778
Bottle	T. B. Atterbury	16,159	July 14	32	140
Bottle	E. C. Wadsworth	16,200	Aug. 11	32	656
Bottle-case	H. Worden	16,188	July 28	32	386
Bottle. Perfumery-	D. R. Bradley	16,181	July 28	32	386
Bottle-stand	F. A. Ohrenschall	16,152	July 7	32	2
Brush-handle	F. J. Kaldenberg	16,190	Aug. 4	32	522
Burial-casket	J. Einsfield	16,293	Sept. 29	32	1470
Candy-box	B. Meyer	16,253	Sept. 15	32	1242
Card. Back of a playing-	I. Levy	16,217, 16,218	Sept. 1	32	1014
Card. Show-	F. Eberlein	16,246	Sept. 15	32	1242
Carpet	M. F. Beal	16,255	Sept. 22	32	1360
Carpet	E. Fisher	16,247	Sept. 15	32	1242
Carpet	E. Fisher	16,258 to 16,267	Sept. 22	32	1360
Carpet	H. Horan	16,249, 16,250	Sept. 15	32	1242
Carpet	E. Poole	16,271	Sept. 22	32	1360
Carpet	O. Righter	16,298 to 16,305	Sept. 29	32	1470
Carpet	E. G. Sauer	16,272 to 16,274	Sept. 22	32	1360
Carpet	C. W. Swapp	16,275 to 16,287	Sept. 22	32	1360
Carriage body. Baby-	G. A. Ellis	16,224	Sept. 8	32	1128
Carriage-step	F. V. Wooster	16,187	July 28	32	386
Carriage-step plate	J. H. Alexander	16,194, 16,195	Aug. 11	32	655
Carriage-steps. Plate for	J. H. Alexander	16,222, 16,223	Sept. 8	32	1128
Catalogue-cover	J. De Yongh	16,173	July 21	32	260
Chain. Jewelry-	J. W. Simpson	16,307	Sept. 29	32	1470
Chain or bracelet	J. F. Imfeld	16,149	July 7	32	2
Chenille	E. Held	16,212	Aug. 25	32	898
Clock-stand	W. S. Weiss	16,157	July 7	32	2
Dish or tureen	L. Sherry	16,193	Aug. 4	32	522
Dish. Vegetable-	A. E. Hills	16,166	July 14	32	140
Door-hanger	J. S. Buhrer	16,179	July 21	32	260
Easel frame or holder	H. L. Palmer	16,199	Aug. 11	32	656
Exhibition-case	F. M. Garland	16,211	Aug. 25	32	898
Fabric	B. Galland	16,163	July 14	32	140
Fire-place lining	J. A. Page	16,153	July 7	32	2
Fish-palls. Ornamentation of	S. Kilbourn	16,209	Aug. 18	32	778
Flange-union	R. T. Crane	16,160	July 14	32	140
Fork	T. Murray and F. W. Britton	16,169	July 14	32	140
Fringe	J. Zebley	16,308	Sept. 29	32	1470
Glassware	F. S. Shirley	16,172	July 14	32	140
Hardware. Ornamentation of	H. Jaworski	16,205	Aug. 18	32	778
Hitching-post	J. F. Rogers	16,306	Sept. 29	32	1470
Hosiery	E. E. Scatchard	16,245	Sept. 8	32	1128
Hubs. Ornamentation of wheel-	J. Maris	16,295, 16,296	Sept. 29	32	1470
Hubs. Shell-band for wheel-	J. Maris	16,168	July 14	32	140
Jewelry-box	H. B. Sommer	16,254	Sept. 15	32	1242
Lamp-chimney	T. B. Atterbury	16,180	July 28	32	386
Medal	J. H. L. Nauwerck	16,219	Sept. 1	32	1014
Mold for jelly, &c	A. Joyce	16,174	July 21	32	260
Muff. Lady's	A. Platky	16,220	Sept. 1	32	1014
Oil-cloth	C. T. and V. E. Meyer	16,268 to 16,270	Sept. 22	32	1360
Panel	F. Mankey	16,225 to 16,238	Sept. 8	32	1128
Panel	F. Mankey	16,297	Sept. 29	32	1470
Paper. Ornamentation of	B. Dash	16,291	Sept. 29	32	1470
Paper. Ornamentation of	W. Demuth	16,256	Sept. 22	32	1360
Pedestal or stand for a statue	R. M. Hunt	16,167	July 14	32	140
Picture-hanger	P. W. Miller	16,207	Aug. 18	32	778
Plate. Oyster-	E. Haviland	16,204	Aug. 18	32	778

Alphabetical list of designs, July to September, inclusive—Continued.

Design.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Quilting-pattern for skirts	L. Dryfoos	16,292	Sept. 29	32	1470
Quilting-pattern for skirts	W. Koch	16,175 to 16,176	July 21	32	260
Range	W. S. Whitman	16,202	Aug. 11	32	656
Rug	H. Finck	16,161	July 14	32	140
Rug	R. P. Hemming	16,147 to 16,148	July 7	32	2
Rug	R. P. Hemming	16,164 to 16,165	July 14	32	140
Rug	A. Petzold	16,154 to 16,156	July 7	32	2
Rug	A. Petzold	16,170	July 14	32	140
Rug	A. Petzold	16,177 to 16,178	July 21	32	260
Rug	A. Petzold	16,183 to 16,184	July 28	32	386
Rug	A. Petzold	16,192	Aug. 4	32	522
Rug	A. Petzold	16,214	Aug. 25	32	898
Shawl or breast pin	D. Stone	16,221	Sept. 1	32	1014
Sinks. Ornamentation of	I. J. Baxter	16,210	Aug. 25	32	898
Sofa	A. Hausske	16,248	Sept. 15	32	1242
Spoon-handle	C. T. Groejean	16,216	Sept. 1	32	1014
Stove	H. C. Bascom and T. S. Heister	16,145	July 7	32	2
Stove	J. Dwyer and J. W. Herrick	16,196	Aug. 11	32	655
Stove. Cook-	J. L. Gobeille	16,201	Aug. 11	32	656
Stove or range. Cooking	A. Garbutt	16,189	Aug. 4	32	522
Table-ware	E. Mountford	16,206	Aug. 18	32	778
Thermometer-back	C. H. Myers	16,151	July 7	32	2
Toy bank	H. C. Hart	16,146	July 7	32	2
Toy savings-bank	C. G. Shepard and P. Adams, Jr	16,171	July 14	32	140
Tray	A. Ledig	16,150	July 7	32	2
Tray	J. F. Lockwood	16,191	Aug. 4	32	522
Tray. Candy-	W. Loft	16,213	Aug. 25	32	898
Trimming	E. Kunke	16,252	Sept. 15	32	1242
Trolling-spoon	W. T. J. Lowe	16,198	Aug. 11	32	650
Type	H. Ihlenburg	16,294	Sept. 29	32	1470
Type	A. Little	16,182	July 28	32	386
Vase	F. Kaiffer	16,288	Sept. 22	32	1360
Walls, &c. Surface ornamentation of	F. Mankey	16,239 to 16,243	Sept. 8	32	1128
Walls, &c. Surface ornamentation of	F. Mankey	16,289 to 16,290	Sept. 22	32	1360
Whiffletree-coupling	H. K. Porter	16,186	July 28	32	386
Window-guard	J. Pirkl	16,215	Aug. 25	32	898
Yoke. Axle	H. K. Porter	16,185	July 28	32	386

ALPHABETICAL LIST OF TRADE-MARKS.

Title.	Name.	No.	Date.	Official Gazette. Volume.	Page.
Aerated waters	G. T. Maginnis and W. J. Blackwell	12,561	Sept. 8	32	1128
Ale. Ginger-	Klee, Coleman & Co	13,495	Aug. 11	32	656
Axes	J. C. O. Wetmore	12,392	July 7	32	2
Baking-powder	A. Richards & Co	12,535	Aug. 25	32	898
Baking-powder	H. H. Warner	12,613	Sept. 29	32	1470
Bitters	O. A. Krauss	12,496	Aug. 11	32	656
Bitters	R. Sternsdorff	12,397	July 7	32	2
Blacking for leather	Swan & Howland	12,506	Aug. 11	32	656
Bone-black, ivory-black, &c	C. Ott & Co	12,607	Sept. 29	32	1470
Boots and shoes	J. W. Rodgers	12,596	Sept. 22	32	1360
Boots and shoes. Rubber, leather, and canvas	Goodyear Boot and Shoe Company	12,419	July 21	32	260
Boots, shoes, and slippers	A. J. Cammeyer	12,567	Sept. 15	32	1242
Braids and cords	Schloss & Sons	12,501	Aug. 11	32	656
Braids and laces	Balas Frères	12,508	Aug. 18	32	778
Brooms	A. Stephen and F. B. Hemingway	12,504	Aug. 11	32	656
Brushes. Whitewash	J. B. Carroll & Brother	12,543	Sept. 1	32	1014
Bustles. Spiral	Bradley, Voorhees & Day Manufacturing Company.	12,529	Aug. 25	32	898
Butter	Jimenes, Haustedt & Co	12,449	July 28	32	386
Butter and cheese	Crew, Widgery & Co	12,530	Aug. 25	32	898
Candles	Procter & Gamble	12,477	Aug. 4	32	522
Candy	G. J. Blome	12,458	Aug. 4	32	522
Candy	Lindsey & Lefevre	12,533	Aug. 25	32	898
Canned goods for food	J. W. Brown	12,586	Sept. 22	32	1360
Canned salmon	George & Barker	12,464	Aug. 4	32	522
Canned tomatoes	N. Borzner	12,472	Aug. 4	32	522
Canned vertebrate fish, as salmon	Kariuk Packing Company	12,558	Sept. 8	32	1128
Carpets. Tapestry	Stinson Bros. & Kurlbaum	12,505	Aug. 11	32	656
Carriage-tops. Dressing for	L. M. West	12,601	Sept. 22	32	1360
Cathartic cordial	Beall & Steele	12,402	July 14	32	140
Cholera preventive	G. C. Beresford	12,566	Sept. 15	32	1242
Cigarettes	L. Ginter	12,603	Sept. 29	32	1470
Cigarettes	J. Turnbull and T. Somerville	12,600	Sept. 22	32	1360
Cigars	G. Davidson	12,510	Aug. 18	32	778
Cigars	J. F. Portnondo	12,499	Aug. 11	32	656
Cigars	J. F. Portnondo	12,500	Aug. 11	32	656
Cigars	C. Stoffregen	12,480	Aug. 4	32	522
Cigars	J. P. Wallace, J. Purnell, and J. A. Wallace.	12,434	July 21	32	260
Coal. Bituminous and semi-bituminous	Castner & Co	12,602	Sept. 29	32	1470
Coats, vests, and pantaloons	D. Marks & Son	12,497	Aug. 11	32	656
Cocaine. Tablets and other preparations containing	J. H. Allen	12,454	Aug. 4	32	522
Cocoanut. Desiccated	E. Dudley	12,545	Sept. 1	32	1014
Coffee and tea urns and pots	G. A. Jones	12,384	July 7	32	2
Coffee, tea, and cocoa	Ceylon Tea & Coffee Agency	12,447	July 28	32	386
Confectionery made of sugar, sirup, chocolate, and nuts	P. Wunderle	12,415	July 14	32	140
Cosmetic for the face and hands	H. B. Shaw	12,411	July 14	32	140
Cotton goods	Nashville Cotton Mills	12,410	July 14	32	140
Cotton goods. Bleached and unbleached woven	Massachusetts Cotton Mills	12,409	July 14	32	140
Cotton goods, bleached or unbleached. Woven	Massachusetts Cotton Mills	12,394	July 7	32	2
Dental amalgam	J. R. B. Ransom and T. F. Randolph	12,452	July 28	32	386
Disinfectant	J. E. Davis	12,544	Sept. 1	32	1014
Disinfectant and insecticide	U. S. Importing Co	12,481	Aug. 4	32	522
Drawing materials and instruments. Certain named	E. G. Soltmann	12,439	July 21	32	260
Dress-goods. Ladies'	B. Priestley & Co	12,561	Sept. 15	32	1242
Dress-shields	A. H. Brinkmann	12,435	July 21	32	260
Drillings. Colored	Massachusetts Cotton Mills	12,385	July 7	32	2
Dust-pan	Steel Edge Dust Pan Company	12,609	Sept. 29	32	1470
Electric batteries	Leclanché Battery Company	12,516	Aug. 18	32	778
Eye-salve	Howard Bros	12,514	Aug. 18	32	778
Fencing. Barbed-wire	J. T. and J. C. Johnson	12,408	July 14	32	140
Fertilizer	C. L. Wright and R. T. Craighill	12,484	Aug. 4	32	522
Flavoring extracts and powders	M. Michaelis & Son	12,395	July 7	32	2
Flavors. Fruit	McMonagle & Rogers	12,396	July 7	32	2
Flour	Houston, Meeks & Co	12,468	Aug. 4	32	522
Flour	Lyon & Co	12,592	Sept. 22	32	1360
Flour	Sidle Fletcher Holmes Company	12,412	July 14	32	140
Flour. Corn-	Glen Cove Manufacturing Company	12,485	Aug. 11	32	656
Flour. Corn-	Glen Cove Manufacturing Company	12,486	Aug. 11	32	656
Flour. Corn-	Glen Cove Manufacturing Company	12,487	Aug. 11	32	656
Flour. Corn-	Glen Cove Manufacturing Company	12,488	Aug. 11	32	656
Flour. Patent	F. A. Johnston	12,383	July 7	32	2
Flour. Straight	F. A. Johnston	12,382	July 7	32	2
Flour. Wheat-	Steelton Flouring Mill Company	12,390	July 7	32	2
Flour. Wheat-	Steelton Flouring Mill Company	12,433	July 21	32	260
Flux for metals	B. F. Ruth	12,608	Sept. 29	32	1470
Food for horses or cattle	Merriam & Rolph	12,471	Aug. 4	32	522
Food for infants	Fairchild Bros. & Foster	12,418	July 21	32	260
Food-preservative	J. P. Ober	12,534	Aug. 25	32	898
Gin	C. Booth	12,459	Aug. 4	32	522
Gin	C. M. Roof	12,518	Aug. 18	32	778

Alphabetical list of trade-marks, July to September, inclusive—Continued.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Glass fruit-jars	Woodbury Glass Works	12,583	Sept. 15	32	1242
Grinding, sharpening, and polishing purposes. Certain articles for	J. C. Montgomerie	12,441	July 28	32	386
Grinding, sharpening, and polishing purposes. Certain articles for	J. C. Montgomerie	12,442	July 28	32	386
Grinding, sharpening, and polishing purposes. Certain articles for	J. C. Montgomerie	12,443	July 28	32	386
Hair-restorative. Liquid	S. V. R. Ford & Co	12,557	Sept. 8	32	1128
Hair-tonic	L. C. Morris	12,517	Aug. 18	32	778
Harmonicas	M. Hohner	12,492	Aug. 11	32	656
Harvester-cutters. Sections for	W. A. Wood Mowing and Reaping Machine Company.	12,414	July 14	32	140
Hats, caps, and bonnets	C. Treas	12,425	July 21	32	260
Hats for men and boys	E. Keith, A. B. Adam, A. E. Faxon, and O. R. Keith.	12,559	Sept. 8	32	1128
Herbal remedies	S. and J. M. Kilmer	12,422	July 21	32	260
Horse-blankets	W. Ayres & Sons	12,456	Aug. 4	32	522
Horse-blankets	W. Ayres & Sons	12,457	Aug. 4	32	522
Hose. Rubber	Commercial Rubber Company	12,555	Sept. 8	32	1128
Hosiery	H. Schopper	12,597	Sept. 22	32	1360
India pale ale, ale, porter, and brown stout	Bergner & Engel Brewing Company	12,528	Aug. 25	32	898
Ink. Writing	W. Allen & Co	12,455	Aug. 4	32	522
Lamps and lanterns	R. E. Dietz	12,448	July 28	32	386
Lamps. Incandescent	C. M. Ball	12,538	Sept. 1	32	1014
Lamps. Substitute for carbon filament in incandescent	C. M. Ball	12,539	Sept. 1	32	1014
Leather-dressing	Swan & Howland	12,536	Aug. 25	32	898
Leather. Kid	C. Levor	12,450	July 28	32	386
Leather. Shoe-kid	Rose, McAlpin & Co	12,583	Sept. 15	32	1242
Lime-juice syrup or cordial	R. H. Pugh	12,479	Aug. 4	32	522
Liniment or balsam	C. Speicher	12,503	Aug. 11	32	656
Malt liquors	S. Allsop & Sons	12,401	July 14	32	140
Meats. Smoked	T. Stokes	12,523	Aug. 18	32	778
Medicaments and homeopathic extracts and tinctures. Certain electro-homeopathic	A. Santer	12,400	July 7	32	2
Medicated plasters	Potter Drug and Chemical Co	12,548	Sept. 1	32	1014
Medicinal beverage made from fermented milk	M. G. Dadirrian	12,556	Sept. 8	32	1128
Medicinal preparation for nervous affections	D. Dick	12,462	Aug. 4	32	522
Medicine containing the extract of pine needles or sprouts	Gardner Pine Needle Extract Company.	12,403	July 14	32	140
Medicine for certain-named diseases	H. Knorr	12,393	July 7	32	2
Medicine for horses	Dalmo Company	12,531	Aug. 25	32	898
Medicine for stomach complaint	T. J. Thompson	12,445	July 28	32	386
Medicines. Certain-named	F. A. Richter & Co	12,388	July 7	32	2
Mineral water. Natural	St. Clair Mineral Springs Company	12,509	Sept. 22	32	1360
Mowing and reaping machines and grain-binders	W. A. Wood Mowing and Reaping Machine Company.	12,399	July 7	32	2
Mustard	H. Wichert	12,526	Aug. 18	32	778
Needles for hand-sewing	W. Bartleet & Sons	12,584	Sept. 22	32	1360
Needles, sharps and betweens	A. A. Wright	12,537	Aug. 25	32	898
Needles, toilet-pins, bodkins, and crochet-hooks	W. Bartleet & Sons	12,585	Sept. 22	32	1360
Oil for lighting purposes. High-test carbon	Central Oil Company	12,460	Aug. 4	32	522
Oil. Refined petroleum	A. F. Sise	12,519	Aug. 18	32	778
Ointment	J. D. Topp	12,551	Sept. 1	32	1014
Ointment for the cure of piles, and a remedy for lung diseases	W. S. Norris	12,546	Sept. 1	32	1014
Paper. Printing, writing, and wrapping	J. W. Butler Paper Company	12,515	Aug. 18	32	778
Peanuts	P. D. Gwaltney	12,473	Aug. 4	32	522
Peanuts	P. D. Gwaltney	12,474	Aug. 4	32	522
Perfumery and perfumed preparations for the toilet	C. A. and C. P. Goenell	12,420	July 21	32	260
Petroleum for illuminating purposes	Meissner, Ackermann & Co	12,451	July 28	32	386
Petroleum. Refined	H. W. Peabody & Co	12,563	Sept. 8	32	1128
Pianos	T. F. Scanlan	12,502	Aug. 11	32	656
Pills. Leucorrhœa	F. G. Morris	12,606	Sept. 29	32	1470
Plows	A. G. Starke	12,413	July 14	32	140
Plushes and velvets	S. C. Lister	12,440	July 28	32	386
Precious stones. Artificial	E. E. & A. W. Kipling	12,494	Aug. 11	32	656
Preparation for the cure of paralysis and mental diseases	A. Thompson	12,565	Sept. 8	32	1128
Printing-presses	Babcock Printing Press Manufacturing Company.	12,552	Sept. 8	32	1128
Razors, razor-guards, razor-strops, and shaving-cream	A. V. Brokhahne	12,417	July 21	32	260
Remedy. Certain named	S. W. Neuer	12,444	July 28	32	386
Remedy for certain indicated diseases	Farbwerke, vormals Meister, Lucius & Brüning.	12,511	Aug. 18	32	778
Remedy for certain named diseases	F. R. Hadley	12,405	July 14	32	140
Remedy for certain named diseases	Wooden & Melvill	12,527	Aug. 18	32	778
Remedy for diseases arising from disordered condition of the stomach, liver, and bowels.	Iler & Morris	12,407	July 14	32	140
Remedy for malarial diseases	G. V. Dunn	12,391	July 7	32	2
Remedy for malarial diseases	Sure Cure Medicine Company	12,610	Sept. 29	32	1470
Remedy for rheumatism	J. D. Beardsley	12,509	Aug. 18	32	778
Remedy for rheumatism	J. Stine	12,416	July 14	32	140
Remedy for skin diseases	F. Levy	12,591	Sept. 22	32	1360
Sewing-machines and sewing-machine attachments and supplies.	Singer Manufacturing Company	12,396	July 7	32	2
Sheep-dipping powder or insecticide	W. Cooper & Nephews	12,507	Aug. 11	32	656
Sheetings, shirtings, drills, and jeans	Fearon, Low & Co	12,574	Sept. 15	32	1242
Sheetings, shirtings, drills, and jeans	Fearon, Low & Co	12,575	Sept. 15	32	1242
Sheetings, shirtings, drills, and jeans	Fearon, Low & Co	12,576	Sept. 15	32	1242
Sheetings, shirtings, drills, and jeans	Fearon, Low & Co	12,577	Sept. 15	32	1242
Sheetings, shirtings, drills, and jeans	Fearon, Low & Co	12,578	Sept. 15	32	1242
Sheetings, shirtings, drills, and jeans	Fearon, Low & Co	12,587	Sept. 22	32	1360
Sheetings, shirtings, drills, and jeans. Gray and bleached	Fearon, Low & Co	12,380	July 7	32	2
Shoe and garment clasp	J. C. Hammond, Jr	12,421	July 21	32	260
Silver-plated table-ware and fancy articles	Pairpoint Manufacturing Company	12,580	Sept. 15	32	1242
Syrup and sugar. Maple	D. M. Hasen	12,436	July 21	32	260

Alphabetical list of trade-marks, July to September, inclusive—Continued.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Snuff	P. Lorillard & Co	12,423	July 21	32	260
Soap for laundry and toilet use	L. & J. Oakley	12,547	Sept. 1	32	1014
Soap. Hard	I. Stine	12,550	Sept. 1	32	1014
Soap. Laundry	J. S. Kirk & Co	12,568	Sept. 15	32	1242
Soap. Laundry	J. S. Kirk & Co	12,569	Sept. 15	32	1242
Soap. Laundry	J. S. Kirk & Co	12,570	Sept. 15	32	1242
Soap. Laundry	J. S. Kirk & Co	12,571	Sept. 15	32	1242
Soap. Laundry	J. S. Kirk & Co	12,572	Sept. 15	32	1242
Soap. Laundry	J. S. Kirk & Co	12,573	Sept. 15	32	1242
Soap. Laundry	J. S. Kirk & Co	12,588	Sept. 22	32	1360
Soap. Laundry	J. S. Kirk & Co	12,589	Sept. 22	32	1360
Soap. Laundry	J. S. Kirk & Co	12,590	Sept. 22	32	1360
Soap. Laundry	J. S. Kirk & Co	12,604	Sept. 29	32	1470
Soap. Laundry	Oberne, Hosick & Co	12,431	July 21	32	260
Soap. Laundry	Procter & Gamble	12,478	Aug. 4	32	522
Soap. Laundry and toilet	Gardner Pine Needle Extract Company.	12,404	July 14	32	140
Soap. Laundry and toilet	S. Strunz	12,438	July 21	32	260
Soap. Powdered or granulated	J. Loughrey	12,560	Sept. 8	32	1128
Soaps. Family	N. K. Fairbank & Co	12,463	Aug. 4	32	522
Soaps. Family	N. K. Fairbank & Co	12,464	Aug. 4	32	522
Soaps. Laundry and toilet	J. H. Keller	12,532	Aug. 25	32	898
Spectacle and eyeglass frames. Certain	Morgan & Headly Optical Manufacturing Company.	12,430	July 21	32	260
Spectacles and eyeglasses	H. Hirschberg	12,437	July 21	32	260
Spectacles and eyeglasses	Spencer Optical Manufacturing Company.	12,520	Aug. 18	32	778
Spectacles and eyeglasses	Spencer Optical Manufacturing Company.	12,521	Aug. 18	32	778
Spectacles and eyeglasses	Spencer Optical Manufacturing Company.	12,522	Aug. 18	32	778
Starch. Gloss lump	W. F. Piel & Co	12,387	July 7	32	2
Starch. Laundry	B. Brown	12,554	Sept. 8	32	1128
Starch. Laundry	J. M. Porter	12,595	Sept. 22	32	1360
Stationery. Certain-named articles of	F. G. Froeschels and C. L. H. Grasser	12,381	July 7	32	2
Stout. Guinness's extra	T. McMullen & Co	12,593	Sept. 22	32	1360
Stove-polish	Phœnix Plumbago Mining Company	12,475	Aug. 4	32	522
Stove-polish in powdered form	J. Taylor	12,524	Aug. 18	32	778
Stove. Wood-burning base-heating	Culter & Proctor Stove Company	12,379	July 7	32	2
Stoves. Vapor cooking and heating	American Vapor Stove Company	12,377	July 7	32	2
Suspenders and shoulder-braces	T. O. Potter	12,549	Sept. 1	32	1014
Table-ware and cutlery and German-silver forks and spoons. Steel	Pairpoint Manufacturing Company	12,594	Sept. 22	32	1360
Teas. Mixed	C. D. Kenny	12,469	Aug. 4	32	522
Thread. Gilling	J. Dukehart & Co	12,461	Aug. 4	32	522
Tobacco. All kinds of fine-cut chewing	J. Schriber & Co	12,432	July 21	32	260
Tobacco. Chewing and smoking	J. G. Dill	12,427	July 21	32	260
Tobacco. Chewing and smoking	J. G. Dill	12,428	July 21	32	260
Tobacco. Chewing and smoking	Pace & Sizer	12,498	Aug. 11	32	656
Tobacco, cigars, and cigarettes. Smoking and chewing	S. Busnitz & Co	12,541	Sept. 1	32	1014
Tobacco, cigars, cigarettes, and snuff. Smoking and chewing	S. Busnitz & Co	12,542	Sept. 1	32	1014
Tobacco, cigars, cigarettes, and snuff. Smoking and chewing	Gem City Tobacco Works	12,513	Aug. 18	32	778
Tobacco. Plug	Larus & Bro	12,470	Aug. 4	32	522
Tobacco. Plug	L. H. Neudecker	12,562	Sept. 8	32	1128
Tobacco. Plug and smoking	B. F. Gravely & Sons	12,489	Aug. 11	32	656
Tobacco. Plug chewing	B. F. Gravely & Sons	12,490	Aug. 11	32	656
Tobacco. Plug chewing	B. F. Gravely & Sons	12,491	Aug. 11	32	656
Tobacco. Plug chewing	C. W. Allen Company	12,378	July 7	32	2
Tobacco. Smoking and chewing	G. W. Gail & Ax	12,512	Aug. 18	32	778
Tobacco. Smoking and chewing	E. C. Wardsworth	12,398	July 7	32	2
Tooth-powder	Vail Brothers	12,446	July 28	32	386
Tooth-power and toilet-soap	L. Waterbury & Co	12,483	Aug. 4	32	522
Twine. Binder's	L. Waterbury & Co	12,482	Aug. 4	32	522
Twine for reaping-machines. Binder's	H. F. Woodward & Co	12,453	July 28	32	386
Underwear. Certain articles of gentlemen's	W. Powell & Co	12,476	Aug. 4	32	522
Valves, lubricators, plugs, and similar devices	T. T. Lines	12,429	July 21	32	260
Varnishes and japans	Hillman, Herbert & Cooper	12,406	July 14	32	140
Velocipedes	G. Singer	12,598	Sept. 22	32	1360
Velocipedes and their parts and materials	Tootal Broadhurst, Lee & Co	12,611	Sept. 29	32	1470
Velveteens	F. S. Pinkus	12,564	Sept. 8	32	1128
Velvets	A. Wimpfheimer & Bro	12,496	July 21	32	260
Velvets	J. S. Kirk & Co	12,579	Sept. 15	32	1242
Washing compound	C. A. Bentzen	12,553	Sept. 8	32	1128
Washing-machine	J. W. Miller	12,605	Sept. 29	32	1470
Water. Natural spring	H. Bridenthal	12,540	Sept. 1	32	1014
Wheat-germ flakes	E. K. Warren	12,525	Aug. 18	32	778
Whips	S. B. Hopkins	12,493	Aug. 11	32	656
Whisky	Rheingauer Schaumweinfabrik Schierstein.	12,389	July 7	32	2
Wines. Champagne	Tittel & Krüger	12,424	July 21	32	260
Worsted	R. N. Havers	12,466	Aug. 4	32	522
Yarns or chenilles. Fancy	R. N. Havers	12,467	Aug. 4	32	522
Yarns or chenilles. Fancy	H. H. Warner	12,612	Sept. 29	32	1470
Yeast					

ALPHABETICAL LIST OF LABELS.

Title.	Name.	No.	Date.	Official Gazette. Volume.	Page.
"Abietene and Yerba Santa, Cough Candy"	D. F. Fryer	4,533	July 28	32	386
"Andrew Johnson's Pain Liniment"	A. Johnson	4,551	Aug. 11	32	656
"Argenta" (for soap)	J. S. Kirk & Co	4,557	Aug. 18	32	778
"B. Payn's Son's Tobacco Co's Little Havana"	B. Payn's Son's Tobacco Company	4,554	Aug. 11	32	656
"Bullion," (for Laundry Soap)	J. S. Kirk & Co	4,578	Sept. 22	32	1360
"C. P. Jadwin's Pine Tar Syrup"	C. P. Jadwin	4,550	Aug. 11	32	656
"Catarrh Remedy"	A. J. McFarland	4,498	July 7	32	2
"Catholicon" (for Medicine)	H. W. Webster	4,569	Sept. 8	32	1128
"Cooper's Sheep Dipping Powder"	W. Cooper & Nephews	4,583	Sept. 29	32	1470
"Corn Husker's Salve"	A. Gay	4,541	Aug. 11	32	656
"D. A. Sawyers' Compound Cathartic and Vegetable Blood Purifier."	D. A. Sawyers	4,528	July 21	32	260
"D. A. Sawyers' Cough Syrup"	D. A. Sawyers	4,530	July 21	32	260
"D. A. Sawyers' Pain Specific"	D. A. Sawyers	4,524	July 21	32	260
"D. A. Sawyers' Remedy for Kidney, Bladder, and Urinary Organs."	D. A. Sawyers	4,525	July 21	32	260
"D. A. Sawyers' Specific for Croup"	D. A. Sawyers	4,527	July 21	32	260
"D. A. Sawyers' Tonic Bitters"	D. A. Sawyers	4,526	July 21	32	260
"Dimmick's Kidney and Bladder Cure"	A. D. Dimmick	4,531	July 28	32	386
"Directions for using I. A. Potter & Co's New American Strengthening Plaster."	I. A. Potter & Co	4,579	Sept. 22	32	1360
"Dr. Davis's Compound Syrup of Wild Cherry and Tar"	J. H. Collins & Co	4,500	July 14	32	140
"Dr. Davis' Liver Pills"	J. H. Collins & Co	4,574	Sept. 22	32	1360
"Dr. Gray's Detergent Perspiration Powder"	C. Lawrence	4,523	July 21	32	260
"Dr. Hand's Chafing Powder for Children and Adults"	D. B. Hand	4,544	Aug. 11	32	656
"Dr. Hand's Colic Cure for Children"	D. B. Hand	4,547	Aug. 11	32	656
"Dr. Hand's Cough and Croup Medicine for Children"	D. B. Hand	4,548	Aug. 11	32	656
"Dr. Hand's Diarrhœa Mixture for Children"	D. B. Hand	4,545	Aug. 11	32	656
"Dr. Hand's General Tonic for Children"	D. B. Hand	4,542	Aug. 11	32	656
"Dr. Hand's Pleasant Physic for Children and Invalids"	D. B. Hand	4,543	Aug. 11	32	656
"Dr. Hand's Teething Lotion for Infants"	D. B. Hand	4,546	Aug. 11	32	656
"Dr. Hand's Worm Elixir for Children"	D. B. Hand	4,549	Aug. 11	32	656
"Dr. J. B. Henion's Sure Cure for Malaria"	Sure Cure Medicine Company	4,588	Sept. 29	32	1470
"Dr. Paris Nervous Restorative Lozenges"	L. Lewis	4,584	Sept. 29	32	1470
"Dr. Wadsworth's Tooth Powder"	E. C. Wadsworth	4,506	July 14	32	140
"Ebony Harness Soap"	J. S. Kirk & Co	4,558	Aug. 18	32	778
"Egg Crystal" (a Preparation for Clearing and Enriching Coffee.)	M. L. McKean	4,502	July 14	32	140
"Egyptian Balsam"	F. R. Hadley	4,522	July 21	32	260
"Emley's Sarsaparilla"	C. A. Emley	4,532	July 28	32	386
"Eutoca" (for toilet soap)	J. S. Kirk & Co	4,559	Aug. 18	32	778
"Factory 540, First District, Penna." (for Cigars)	J. F. Portuondo	4,535	Aug. 4	32	522
"Farmer's" (for Horse and Cattle Powder)	C. H. Vanauken	4,529	July 21	32	260
"Fifty cents" (for Change Envelopes)	S. Raynor & Co	4,586	Sept. 29	32	1470
"Fresh Corn and Tomatoes, C. C. Lang, Baltimore, Md."	C. C. Lang	4,501	July 14	32	140
"Gates" (a Remedy for Diphtheria)	M. E. Gates	4,540	Aug. 11	32	656
"Hakka Cream"	E. A. Talbot	4,565	Sept. 1	32	1014
"Imperial Olive," (for Laundry Soap)	J. S. Kirk & Co	4,577	Sept. 22	32	1360
"Improved German Fly Paper"	B. F. B. Willson	4,570	Sept. 8	32	1128
"Improved Lititz Bretzel"	J. M. Kissinger	4,552	Aug. 11	32	656
"John H. Rowland's Vegetable Astringent Pills"	J. H. Rowland	4,537	Aug. 4	32	522
"L. Wolff & Co., Copaline"	W. T. Baker	4,566	Sept. 8	32	1128
"Landry's French Syrup," (for a Cough Medicine)	J. O. Landry	4,573	Sept. 15	32	1242
"Lehigh Laundry Soap"	J. S. Kirk & Co	4,576	Sept. 22	32	1360
"Liebig's Condensed Mineral Waters"	J. Clarke	4,563	Aug. 25	32	898
"Liquid Purifier & Preserver"	J. P. Ober	4,564	Aug. 25	32	898
"Lloyd's Colorless Hydrastis"	Lloyd Bros	4,553	Aug. 11	32	656
"Morris' Cascarine," (for a Medicine)	Iier & Morris	4,503	July 14	32	140
"Nymphœa Vegetable Compound," (for a Medicine)	M. Webster	4,539	Aug. 4	32	522
"Old Fashion Bourbon" (for Whisky)	Geis & Co	4,571	Sept. 15	32	1242
"One Dollar" (for Change Envelopes)	S. Raynor & Co	4,587	Sept. 29	32	1470
"Our Union Soap"	J. S. Kirk & Co	4,561	Aug. 18	32	778
"Pear Phosphates" (for a beverage)	Lilly, Rogers & Co	4,562	Aug. 18	32	778
"Post Boy" (for a laundry soap)	J. S. Kirk & Co	4,555	Aug. 18	32	778
"Potatoe Juice Toilet Soap"	Clifford & Co	4,572	Sept. 15	32	1242
"Revenue" (for laundry Soap)	J. S. Kirk & Co	4,560	Aug. 18	32	778
"Smith's Vegetable Tonic"	E. G. Smith & Son	4,580	Sept. 22	32	1360
"Sparkling Banana Liqueur"	W. H. Ussher	4,582	Sept. 22	32	1360
"Stower's Lime Juice Cordial"	R. H. Pugh	4,536	Aug. 4	32	522
"T. J. Armstrong's Diphtheria & Quinsy Drops"	T. J. Armstrong	4,499	July 14	32	140
"The B X Swift" (for Edge Tools, &c)	Collins Company	4,510	July 21	32	260
"The B v Wise" (for Edge Tools, &c)	Collins Company	4,518	July 21	32	260
"The Challenge Clipper" (for Edge Tools)	Collins Company	4,519	July 21	32	260
"The Collins Clipper" (for Edge Tools, &c)	Collins Company	4,507	July 21	32	260
"The Collins Plow"	Collins Company	4,515	July 21	32	260
"The Collins Spanish Machete"	Collins Company	4,521	July 21	32	260
"The Collins Wrench"	Collins Company	4,517	July 21	32	260
"The Iowa Shoe"	Gifford & Douglas	4,568	Sept. 8	32	1128
"The L. M. and S. Shirt"	L. Mange & Son	4,538	Aug. 4	32	522
"The Large King," (for Edge Tools, &c)	Collins Company	4,512	July 21	32	260
"The Mexican Rheumatic Cure"	G. M. Ryder	4,504	July 14	32	140

Alphabetical list of labels, July to September, inclusive—Continued.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
"The New Large Collins Axe"	Collins Company	4,511	July 21	32	260
"The New Small Collins Axe"	Collins Company	4,509	July 21	32	260
"The New Spanish—Large." (for Edge Tools, &c)	Collins Company	4,508	July 21	32	260
"The New Spanish—Small." (for Edge Tools, &c)	Collins Company	4,520	July 21	32	260
"The Old Collins Axe"	Collins Company	4,513	July 21	32	260
"The Old Spanish—Small." (for Edge Tools, &c)	Collins Company	4,514	July 21	32	260
"The Positive Catarrh Cure"	H. Franz	4,567	Sept. 8	32	1128
"The Profitable Hog & Chicken Cholera Cure"	E. Heun	4,575	Sept. 22	32	1360
"The Reliable" (for Umbrellas and Parasols)	U. G. Steinmetz	4,581	Sept. 22	32	1360
"The Small King" (for Cast Steel Tools)	Collins Company	4,516	July 21	32	260
"There's Life in Every Drop," (for Dr. Petzold's Genuine German Bitters.)	L. Petzold & Co	4,534	July 28	32	386
"Tutti Frutti Juice"	Tarrant & Company	4,505	July 14	32	140
"Twenty five Cents" (for Change Envelopes)	S. Raynor & Co	4,585	Sept. 29	32	1470
"Vampire Black" (for a Waterproof Leather Dressing)	Canton Paint and Oil Company	4,497	July 7	32	2
"White Russian Soap"	J. S. Kirk & Co	4,556	Aug. 18	32	778

DISCLAIMER.

Invention.	Patentee.	No. of patent.	Date of patent.	Disclaimer filed.	Official Gazette. Vol.	Page.
Glassware	Joseph Locke	282,002	July 24, 1883	Aug. 29, 1885	32	1128

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